

communication  
system | 2021











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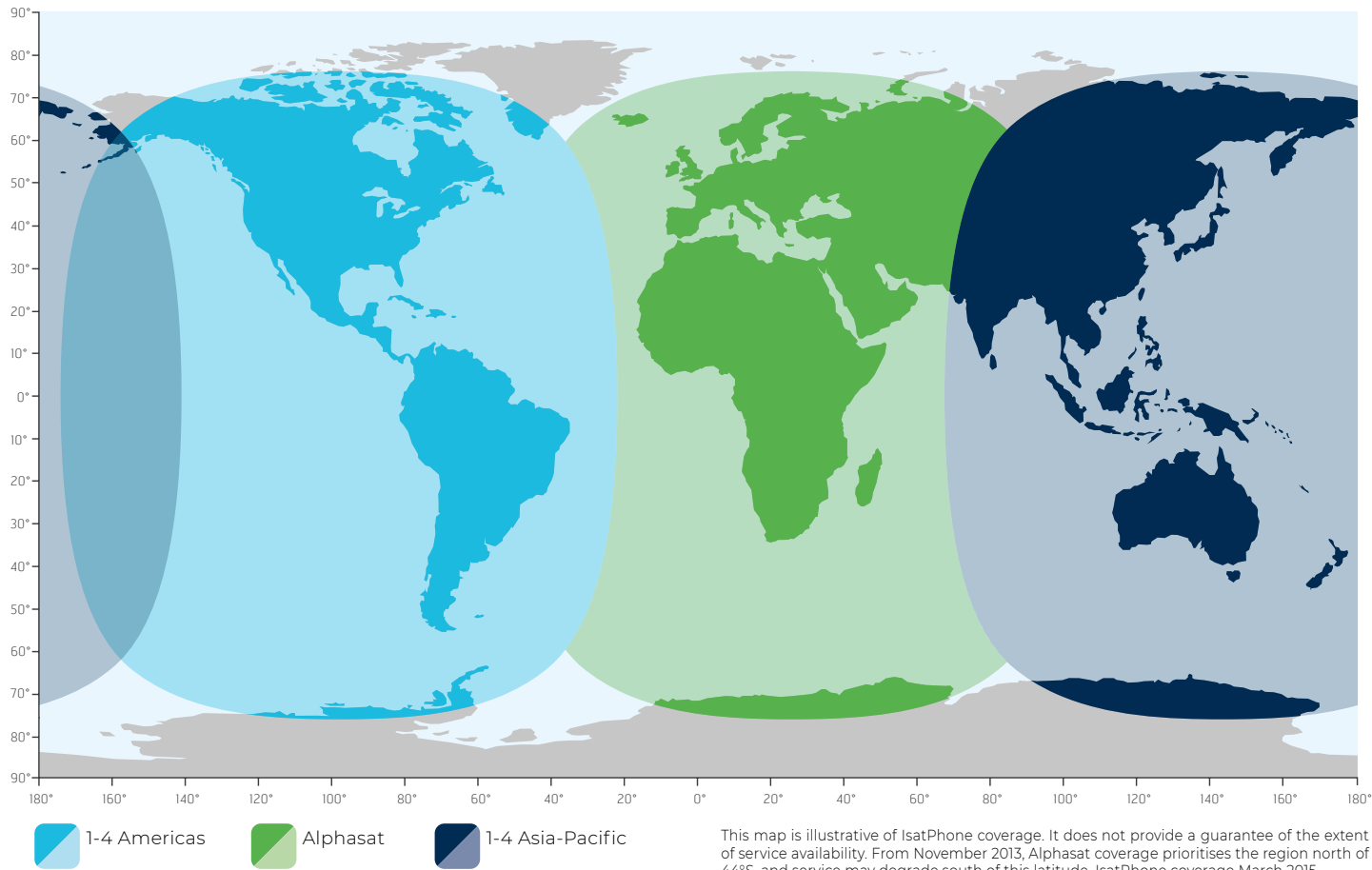
# Global satellite coverage

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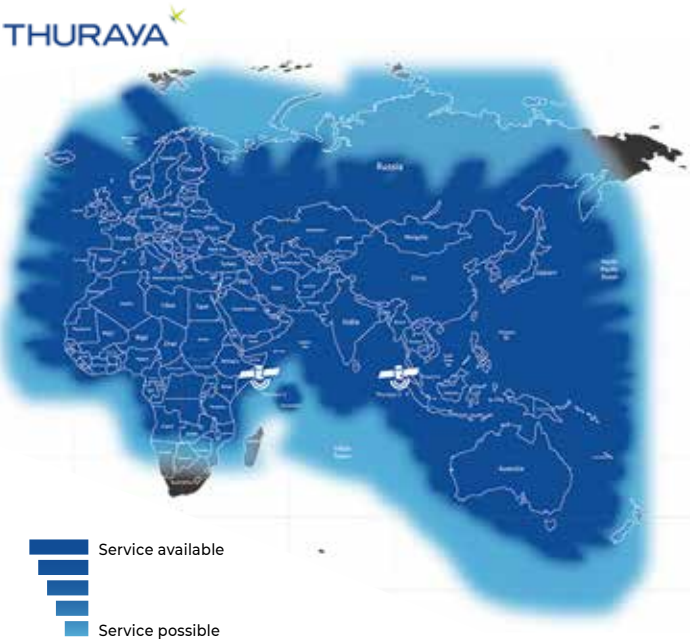


# Inmarsat coverage

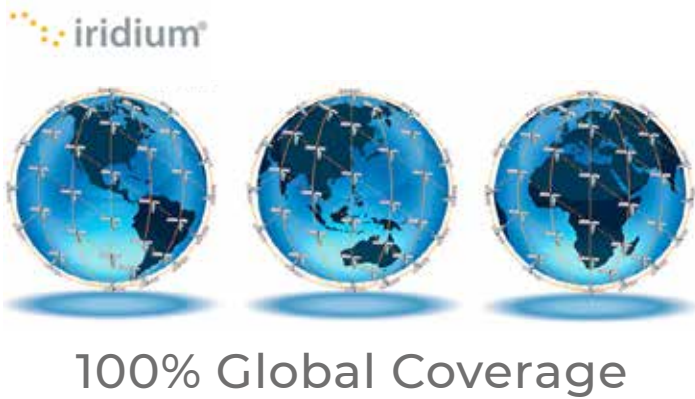


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# Thuraya coverage



# Iridium coverage



Thuraya's robust satellite network provides coverage in the most remote locations, ensuring congestion-free satellite communications to keep you connected at all times. Thuraya's satellites provide reliable L-band coverage across Africa, Asia, Australia and Europe.







# Portable communication







## IsatPhone<sup>2</sup>

Introducing the **IsatPhone<sup>2</sup>** from Inmarsat, designed for the most reliable satellite communications network in the world.

**IsatPhone<sup>2</sup>** is the latest addition to our handheld satellite phone portfolio with a range of additional features that help you to stay connected in the most extreme and remote locations.

**IsatPhone<sup>2</sup>** is a tough phone for a tough world. The robust handset has been engineered to cope with anything that nature can throw at it - from searing heat to icy blasts; desert sandstorms or monsoon rain. And with fast network registration, an unrivalled battery life offering 8 hours of talk time and up to 160 hours of standby time, you know you can always depend on the IsatPhone<sup>2</sup>.

What's more, **IsatPhone<sup>2</sup>** gives you the excellent voice clarity and call stability you have come to expect from Inmarsat's network.



- ▶ Dependable connectivity
- ▶ High quality voice Rugged design
- ▶ Assistance button and GPS tracking
- ▶ Extended battery capacity
- ▶ Incoming call alerts even with antenna stowed

From the world’s leading provider of mobile satellite communications.



A powerful, dependable satellite phone delivering high voice quality, voicemail, text and email messaging, plus tracking and assistance alert features. All packaged in an ergonomically designed rugged handset.

- ▶ **Ready:** fast network registration in under 45 seconds and unrivalled battery life, with 8 hours of talk time and up to 160 hours of standby time.
- ▶ **Reliable:** operates over global geostationary satellites ensuring reliable call stability and network connection.
- ▶ **Robust:** designed and engineered to withstand the most extreme conditions; operates at -20°C to +55°C (larger keypad for easy dialling when wearing gloves); dust, splash and shock resistant (IP65, IK04); humidity tolerance from 0 to 95%.
- ▶ **Reassuring:** location services, including tracking and assistance button, keep people updated of your GPS coordinates when it matters. Receive notification of inbound calls even with antenna stowed.
- ▶ **Readable:** easy-to-use interface with large high-visibility, scratch-resistant transfective display that is readable even in bright sunlight.

Ready. Reliable. Robust.

Features	Benefits
<ul style="list-style-type: none"><li>▶ Voicemail, text and email messaging</li><li>▶ Assistance button – send GPS location data</li><li>▶ Text to pre-set emergency number</li><li>▶ Tracking – send location information</li><li>▶ Bluetooth for hands-free use</li><li>▶ Incoming call alerts while antenna is stowed</li></ul>	<ul style="list-style-type: none"><li>▶ Highly dependable connectivity</li><li>▶ High voice quality and stability</li><li>▶ Ergonomic handset</li><li>▶ Robust, rugged build</li><li>▶ Compact design</li><li>▶ Highly portable</li><li>▶ Extended battery capacity</li><li>▶ Easy to read and use</li><li>▶ Ready to use at all times – 45 second network registration</li></ul>



# IsatPhone<sup>2</sup> in action

The capabilities of our handheld satellite phone have been proven across a wide range of sectors, in each case delivering dependable voice calling services that people and organisations can depend upon to stay connected and safe, as well as to improve operational efficiency.



## Mining

Across the world, mining teams rely on the resilience of **IsatPhone<sup>2</sup>**, whether communicating with control centres or with other teams across remote mining projects, such as exploration teams who are often on the move and in harsh environments.

## Agriculture

Growers and livestock farmers also benefit from the reliability of **IsatPhone<sup>2</sup>** to stay connected across large, remote farms. Rapid, resilient voice communications allow for effective response to business risks like fire or remote worker injuries, and help teams keep in touch with their control centres.

## Utilities

Workers in the utilities sector frequently have to carry out maintenance and routine checks in remote parts of the world, operating across complex power grids and pipelines where terrestrial connectivity fails to reach. **IsatPhone<sup>2</sup>** can provide these teams with vital reassurance that they can make contact with control centres regardless of where they are working.

## Aid & NGO

**IsatPhone<sup>2</sup>** plays a key role for many organisations in the sector when it comes to keeping personnel safe. Frequently operating under harsh, dangerous conditions in inhospitable environments, having reliable voice communications in an emergency is of paramount importance to the teams working on the ground.

Ready	Reliable	Robust
<ul style="list-style-type: none"><li>► Fast network registration in under 45 seconds</li><li>► 8 hours of talk time and up to 160 hours standby</li><li>► Easy to use in multiple languages</li></ul>	<ul style="list-style-type: none"><li>► Operates over Inmarsat's I-4 global geostationary satellites, ensuring call stability and reliable network connection</li><li>► High voice quality</li></ul>	<ul style="list-style-type: none"><li>► Operates at -20°C to +55°C</li><li>► Dust, splash and shock resistant (IP65, IK04)</li><li>► Humidity tolerance from 0 to 95 percent</li><li>► High-visibility, scratch-resistant transfective display readable in bright sunlight</li></ul>

**IsatPhone<sup>2</sup>** operates over the global Inmarsat satellite network, which has an average network availability of 99.9 percent so you can depend on **IsatPhone<sup>2</sup>** for reliable voice connectivity, wherever and whenever you need it.

Technical specifications



Physical	Dimensions	Length: 169mm (6.7") Width: 52mm (2") without antenna 75mm (3") with antenna Depth: 29mm (1.1") in hand 36mm (1.4") at deepest point	
	Weight	318g (11.2oz) – including battery	
	Display	High contrast colour screen	
	Interfaces	Micro USB Audio socket Antenna port Bluetooth 2.0	
	Durability	IP65 IK04	
	Operating range	-20°C to +55°C (-4°F to +131°F)	
	Storage range	-20°C to +70°C (-4°F to +158°F) (with battery)	
	Charging range	0°C to +45°C (+32°F to +113°F)	
	Battery	Type Lithium-ion, 3.7 volts	
		Talk time Up to 8 hours	
Services		Standby time Up to 160 hours	
	Satellite telephony	2.4kbps voice codec	
	Voicemail	Speed dial 1	
	Supplementary voice services	Call history Caller ID Call waiting Call divert Call holding	Conferencing Call barring Speed dialling Fixed number dialling
	Text-to-text	160 Latin / ~74 non-Latin characters Up to 10 concatenations Standard and predictive text	
	Text-to-email	160 Latin / ~74 non-Latin characters Up to 10 concatenations Incoming email – 160 Latin characters / ~74 non-Latin characters	
	Web message-toIsatPhone 2	Free from message.inmarsat.com	
	GPS location data	View position Send as text/email	
	Features	Tracking Assistance button eCompass for enhanced pointing Alarm Minute minder	Microphone muting Incoming call alerts with antenna stowed Speakerphone Bluetooth
	Contact synchronisation	With MS Outlook 2007 (PC) O/S compatibility: Windows XP Pro SP3, Windows Vista SP1, Windows 7 and Windows 8	
Accessories	Languages supported	Arabic, Chinese, English, French, Japanese, Portuguese, Russian, Spanish	
	In the box	Battery Chargers: • Mains universal AC charger (4 adaptors) • Car charger – 10-30 volts Micro USB cable Wired handsfree headset	Wrist strap Quick start guide (8 languages) Warranty documentation Support USB memory drive Holster
	Also available	Bluetooth headset Solar charger Vehicular antenna	





## Iridium 9555

Mobile communication can expand frontiers, create opportunities, and establish critical lifelines. But only when it works.

From distant rigs to pitching decks, baking deserts to frozen ice packs, the **Iridium® 9555** satellite phone can handle any environment. It is small but determined, sleek but durable, easy to use but powerful. It is every bit as rugged as our previous handsets – still industrial grade and packed with innovative new features.

**Iridium® 9555** is the evolution of trusted, reliable mobile communications.

And it is connected to the only truly global mobile communications network. So anywhere on the planet you need to be, **Iridium® 9555** is connected and backed by superior network quality and world-class technical support.



### A Satellite Phone You Can Really On

**Iridium 9555** is compact, light, and easy to use right out of the box. It's engineered to withstand rugged environments and connected to the only truly global mobile network — so you can depend on it as a communications lifeline whenever and wherever it's called for.



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Compact Power

**Iridium 9555** packs serious power into its small frame. With a significantly reduced footprint from our previous phone, more hand-friendly form factor, and space-saving features such as an internally stowed antenna, this sleek handset is designed to easily go wherever your customers go.

Rugged and  
Reliable Critical Lifelines

**Iridium 9555** is a dependable, ruggedly built tool, not a toy. It won't play games, take pictures, or play MP3s. What it will do is work. Everywhere. It is engineered to withstand some of the world's toughest environments, so the world's toughest customers can depend on it as a critical lifeline whenever and wherever need takes them.

Enhanced Features

In addition to all the features you and your customers have come to expect from our trusted satellite phones, **Iridium 9555** also incorporates an integrated speakerphone, SMS and email messaging capabilities, and a Mini-USB data port. It continues the evolution of satellite phones, making communication more efficient and effective for end users.

Intuitive Communications

**Iridium 9555** features an intuitive user interface – making reliable communication more efficient than ever. We make it so easy, users can start making calls right out of the box, skipping the traditional learning curve.



Features

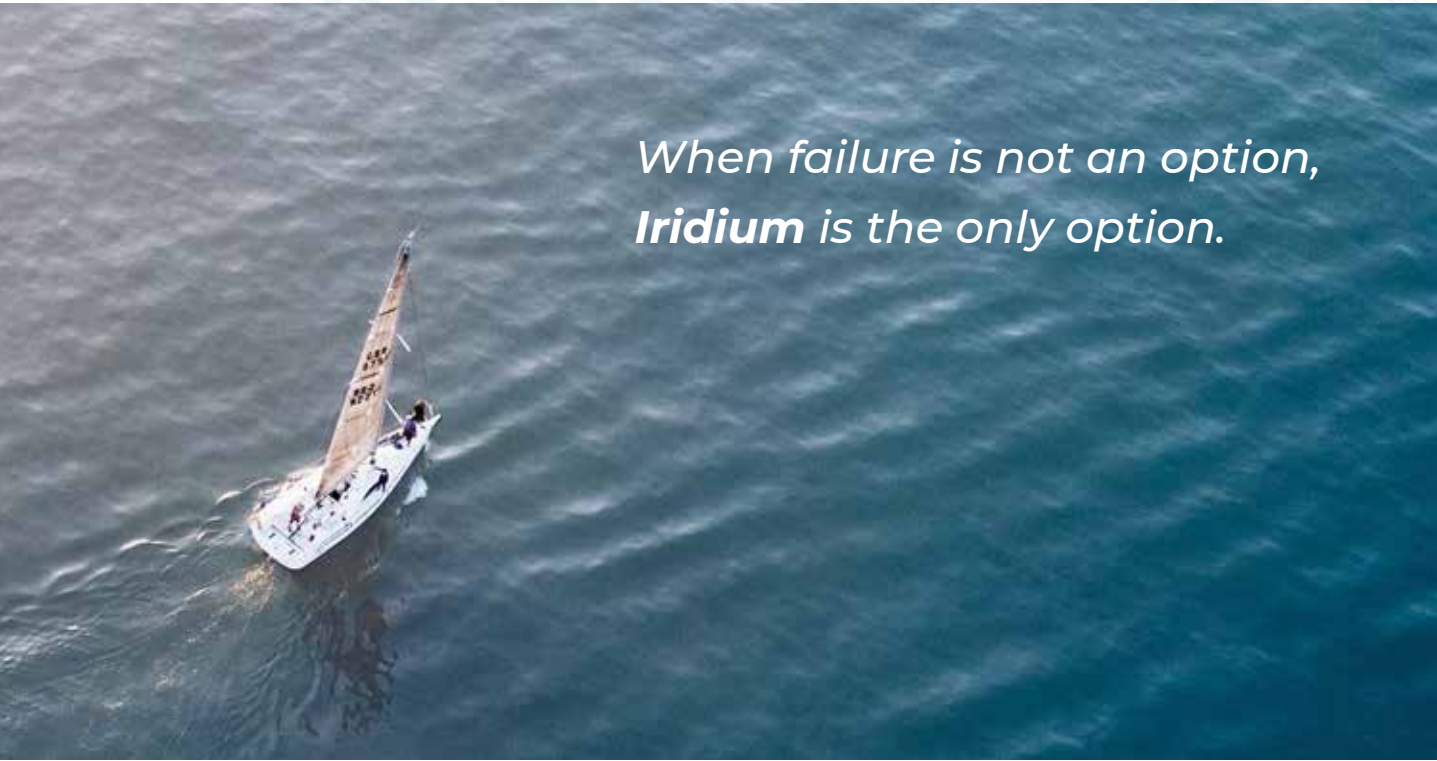
- ▶ Compact size for easy portability
- ▶ Intuitive user interface for out-of-the-box functionality
- ▶ Industrial grade design for unparalleled durability
- ▶ Enhanced SMS and email messaging capability
- ▶ Integrated speakerphone
- ▶ Headset and hands-free capability
- ▶ Internally stowed antenna
- ▶ Mini-USB data port



# Technical specifications



Dimensions	143 mm (L) x 55 mm (W) x 30 mm (D)
Weight	266g (9.4 oz)
Duration	<ul style="list-style-type: none"><li>• Standby time: Up to 30 hours</li><li>• Talk time: Up to 4 hours</li></ul>
Display	<ul style="list-style-type: none"><li>• 200 character illuminated graphic display</li><li>• Volume, signal and battery strength meters</li><li>• Illuminated weather-resistant keypad</li></ul>
Calling Features	<ul style="list-style-type: none"><li>• Integrated speakerphone</li><li>• Quick-connect to Iridium voicemail</li><li>• Two-way SMS and short email capability</li><li>• Pre-programmable International Access Code (00 or +)</li><li>• Mailbox for voice, numeric and text messages</li><li>• Selectable ring and alert tones (8 choices)</li></ul>
Memory	<ul style="list-style-type: none"><li>• 100 entry internal address book, with capacity for multiple phone numbers, email addresses and notes</li><li>• SIM-based address book with 155 entry capacity</li><li>• Call history retains received, missed and dialed calls</li></ul>
Usage Control Features	<ul style="list-style-type: none"><li>• User-configurable call timers to manage costs</li><li>• Keypad lock and PIN lock for additional security</li></ul>



*When failure is not an option,  
Iridium is the only option.*



# Some acesories



## Iridium 9505A / Iridium 9555 - AC Travel Charger

This AC Travel Charger for Iridium 9505A and Iridium 9555 satellite phones provides a rapid charge for optimal performance.

### Technical Specifications & Features

- ▶ May be used with Iridium 9505A or Iridium 9555 satellite phone.
- ▶ Enables use of satellite phone while recharging battery.
- ▶ Battery charge time to 90% capacity is 3 hours when charged at 25°C (77°F).
- ▶ For optimum performance, only charge your battery between 0°C (32°F) and 40°C (104°F).
- ▶ Fast charge will be complete in about 3 hours 15 minutes.
- ▶ Input: 100-240 VAC, 50-60Hz
- ▶ Output: 6 VDC, 850 mA
- ▶ Operating temperature range: 0-40°C
- ▶ Charge time: 3 hours 15 minutes



## Iridium 9505A / Iridium 9555 - Auto Accessory Adaptor

The charger is designed for use in standard 12 VDC accessory sockets fitted in vehicles. It plugs directly into and charges the Iridium 9505A or Iridium 9555 satellite phone.

### Technical Specifications & Features

- ▶ Charges 9505A or 9555 phone battery through a charging connector
- ▶ May be used with 9505A or 9555 portable phone
- ▶ Enables use of phone while battery is recharging
- ▶ Input: 10 – 32 VDC
- ▶ Output: 6 VDC, 825mA
- ▶ Operating temperature range: 0-55°C
- ▶ Charge time: 3 hours 15 minutes
- ▶ Battery charge time to 90% capacity is 3 hours when charged in a 9505A handset at 25°C (77°F)
- ▶ For optimum performance, only charge battery between 0°C (32°F) and 40°C (104°F)
- ▶ Fast charge will be complete in about 3 hours 15 minutes



## Iridium 9505A / Iridium 9555 - International Plug Kit

The charger is designed for use in standard 12 VDC accessory sockets fitted in vehicles. It plugs directly into and charges the Iridium 9505A or Iridium 9555 satellite phone.

### Technical Specifications & Features

- ▶ Charges 9505A or 9555 phone battery through a charging connector
- ▶ May be used with 9505A or 9555 portable phone
- ▶ Enables use of phone while battery is recharging
- ▶ Input: 10 – 32 VDC
- ▶ Output: 6 VDC, 825mA
- ▶ Operating temperature range: 0-55°C
- ▶ Charge time: 3 hours 15 minutes
- ▶ Battery charge time to 90% capacity is 3 hours when charged in a 9505A handset at 25°C (77°F)
- ▶ For optimum performance, only charge battery between 0°C (32°F) and 40°C (104°F)
- ▶ Fast charge will be complete in about 3 hours 15 minutes



Portable communication



## Iridium 9575

It's time to raise expectations of what a satellite phone should be. **Iridium Extreme**® combines location awareness, a fully integrated SOS button with included emergency response service, and market leading toughness — letting you take durability, reliability and versatility with you in hand, all over the world.







In Touch

**Iridium Extreme®** is built with the same reliable voice and data capability that users have come to trust from the only real mobile, real global satellite communications company in the world. But **Iridium Extreme** doesn't stop there.

Feature-Rich

**Iridium Extreme** is engineered with an expansive feature set and wide range of accessories, providing people with more opportunities to connect and keep in contact anytime, anywhere.

On Track

**Iridium Extreme** offers the fully integrated services of customizable GPS, Online Tracking and Emergency SOS with notification. More than a phone, it is a real mobile, real reliable tracking device with truly global coverage.

Integrated Tracking

- Through accredited online portals, **Iridium Extreme** offers an open development platform for partner-developed location-based solutions providing real time tracking to increase business efficiencies, improve military and emergency response, track critical assets or simply keep family and friends up-to-date.
- ▶ Access users through on-demand tracking
  - ▶ Monitor employees en route through position updates and geo-fencing
  - ▶ Use scheduled check-ins to instruct daily missions
  - ▶ Let family and friends track your location online through social network updates
  - ▶ Ensure safety of remote personnel
  - ▶ Disable tracking on demand for stealth operations
  - ▶ Using Google Maps™, Iridium Extreme even allows you to send an SMS text message with your exact location coordinates to anyone, from anywhere on the surface of the planet

Built-in SOS Button

**Iridium Extreme** integrates a programmable, GPS-enabled, one-touch SOS button. With a Satellite Emergency Notification Device (SEND) compliant SOS button design, Iridium Extreme will alert your programmed contact of your location and will help create a two-way connection to assist in the response. It includes GPS-enabled SOS with emergency services supported by GEOS Travel Safety Group Limited, at no additional charge\*.

Military-Grade Toughness

- It may be our smallest satellite phone, but **Iridium Extreme** is big on toughness and is built to take a beating. It is ruggedly engineered to support the toughest, highest usage customers of satellite phone communications in harsh conditions, everywhere.
- Iridium Extreme** is built with as much guts and grit as those who use it.
- ▶ Military-grade 810F durability
  - ▶ Ingress Protection rating of IP65
  - ▶ Built dust-proof, shock-resistant and jet-water resistant
  - ▶ Includes a speakerphone and wind resistant microphone
  - ▶ A diamond tread, tapered grip gives it superior in-hand ergonomics

Features

- ▶ GPS-enabled location-based services
- ▶ Online tracking
- ▶ Customized solutions enabled for diverse markets
- ▶ Accessories to dramatically enhance personal communications
- ▶ Satellite Emergency Notification Device (SEND) compliant SOS button design
- ▶ Reliable two-way global coverage
- ▶ Toughest military-grade designed satellite handset ever built



# Technical specifications



Dimensions	140 mm (L) x 60 mm (W) x 27 mm (D)
Weight	247g
Duration	<ul style="list-style-type: none"><li>• Standby time: Up to 30 hours</li><li>• Talk time: Up to 4 hours</li></ul>
Display	<ul style="list-style-type: none"><li>• 200-character, daylight-readable display</li><li>• Integrated backlight for nighttime viewing</li><li>• Illuminated weather resistant keypad</li></ul>
Calling Features	<ul style="list-style-type: none"><li>• Integrated speakerphone</li><li>• Quick-connect to Iridium voice mail</li><li>• Two-way SMS and short email</li><li>• 21 supported menu languages</li><li>• Pre-programmable International Access Code (00 or +)</li><li>• Mailbox for voice, numeric and text messages</li><li>• Selectable ring and alert tones (8 choices)</li></ul>
Memory	<ul style="list-style-type: none"><li>• 100-entry internal phonebook, with capacity for multiple phone numbers, email addresses and notes</li><li>• Call history retains received, missed and dialed calls</li></ul>
Durability Specifications	<ul style="list-style-type: none"><li>• Military-grade ruggedness (MIL-STD 810F)</li><li>• Ingress Protection (IP65)</li></ul>
Usage Control Features	<ul style="list-style-type: none"><li>• User-congurable call timers to manage costs</li><li>• Keypad lock and PIN lock for additional security</li></ul>



Unparalleled reach.  
In hand, everywhere.

# Some acesories



## Flightcell Iridium Extreme Cradle

The Flightcell Iridium Extreme Cradle is a rugged MILSPEC mounting system for the Iridium Extreme handset. Built from machined aluminum, it is designed to withstand forces exceeding 16G. As the cradle contains all required connections to the handset, the phone can be installed or removed in seconds. The cradle has an inbuilt power supply to power and charge the Iridium handset. It is designed to automatically turn the phone on and off with the aircraft power supply.

### Technical Specifications & Features

The Flightcell Iridium Extreme Cradle is fully self-contained, with inbuilt TNC antenna, data, voice/audio and power supply connections. The cradle has been designed to be installed as a stand-alone product or as part of the Flightcell DZM voice, data and tracking system. The cradle is built from machined aluminum, which makes it very robust and ensures the phone will not come loose.

- ▶ Length: 205 mm
- ▶ Width: 73 mm
- ▶ Depth: 68 mm Including Phone
- ▶ Weight: 795 g
- ▶ Input Power: 12-32 VDC
- ▶ Operating Temperature Range: 0 to 55°C (-32 to 130°F)



## ASE Extreme Docking Station

The ASE Extreme Dock supports and enhances the power of the Iridium Extreme™ handset by coupling external Iridium and GPS signals and exposing all handset ports and buttons to the user when docked. This includes easy access to the SOS emergency button. The ASE Extreme Dock securely locks the handset in place and provides a latching connection to eliminate vibration and ensure reliable communications even in the most rugged conditions. The Dock fully supports all location and tracking features including Iridium Extreme portal providers and partners of location-based services (LBS).

### Technical Specifications & Features

- ▶ Tracking
- ▶ Location
- ▶ GPS
- ▶ SOS
- ▶ SMS
- ▶ PTT
- ▶ Direct USB
- ▶ Wi-Fi Access Point
- ▶ Pots/RJ-11
- ▶ Smartdial
- ▶ Star-8 Diagnostics
- ▶ Handset Charging
- ▶ Antenna Solutions
- ▶ Operating Voltage Range: 9 – 36 VDC unregulated
- ▶ Power Consumption: 12 watts peak
- ▶ Operating Temperature Range: – 15°C to + 70°C
- ▶ Exposure: Dry, protected location per IEC 60945
- ▶ Iridium antenna: any Iridium approved antenna
- ▶ GPS L1 antenna: 3V active, 26 – 33dB gain



Portable communication

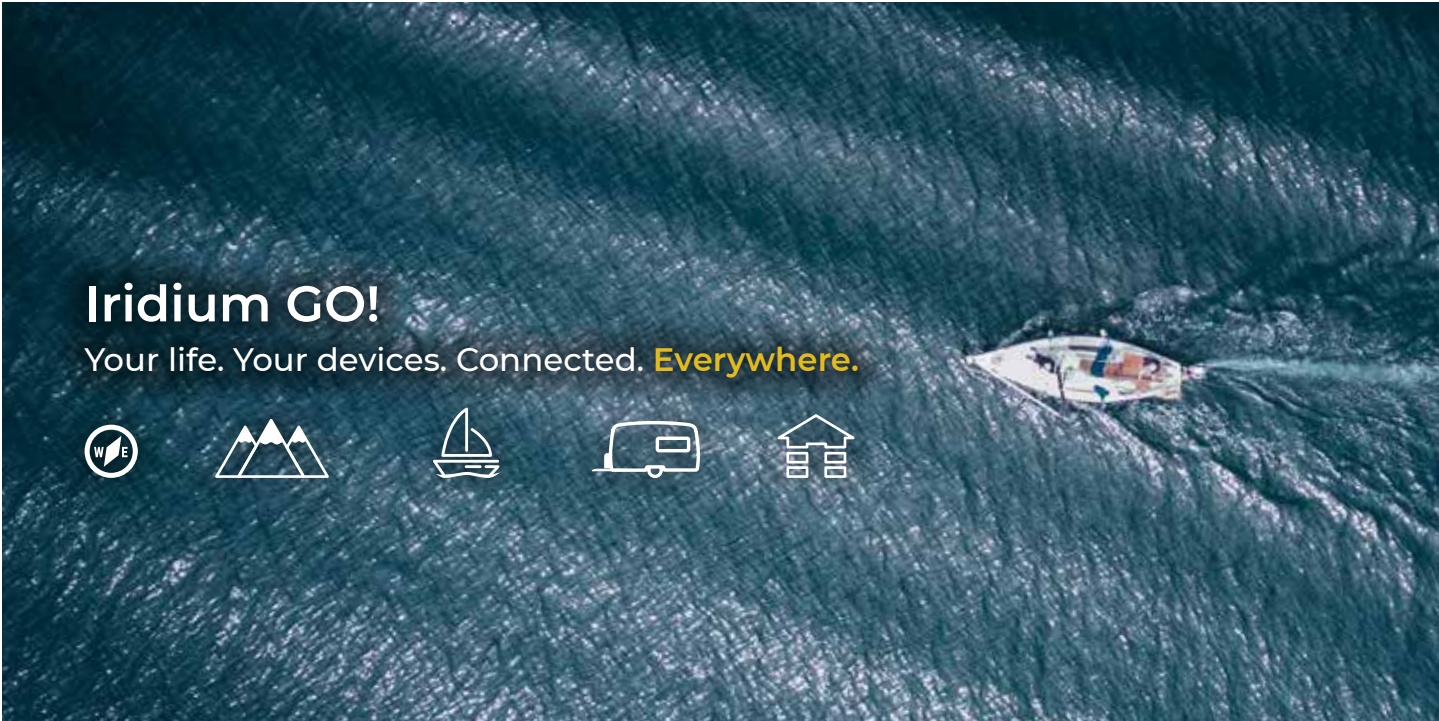


# Iridium GO!

Your smartphone will work anywhere on the planet.

**Iridium GO!®** creates the first ever reliable global connection for voice calling and text messaging using your own smartphone or tablet, as well as provides enhanced data capabilities offered through optimized apps to meet your unique needs. No worries. No roaming charges. Just connected and in touch wherever you are, whenever you need, with the devices you rely on every day.





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Take personal communications even further

Iridium GO!® is unlike anything the world has seen before. Powered by the world’s furthest reaching network, this compact, rugged and portable unit dramatically extends the capabilities of your smartphone or tablet – anywhere on the planet.

Transform your smartphone

Iridium GO! instantly transforms your trusted device into a global communications powerhouse. For weekend warriors, individuals, enterprises or governments, for anyone who is on the move, out of range or off the grid – by land or at sea or in the air – Iridium GO! provides global voice and text messaging for smartphone users with data capabilities offered through optimized apps on up to 5 mobile devices.

Critical connectivity for all

No matter who you are, the ability to conduct business, connect with friends and family, access information, respond rapidly to any situation or simply stay in touch is critical, particularly beyond the reach of terrestrial networks.

Iridium GO! simplifies global communications for:

- ▶ Recreational Marine
- ▶ Adventurers and explorers
- ▶ Emergency and first responders
- ▶ General aviation
- ▶ Remote residents and vacationers
- ▶ Government and NGOs
- ▶ Foreign missions
- ▶ Military operations
- ▶ Global and business travelers
- ▶ Executives and diplomats
- ▶ Global enterprise
- ▶ Anyone out of cellular range





## A personal communications revolution

- ▶ **Simple** **Iridium GO!** enables satellite connectivity for your mobile devices where terrestrial networks cannot. Simply flip up the integrated antenna and the battery-powered unit connects quickly and automatically to the Iridium LEO satellite constellation, enabling connectivity for your smartphone or tablet within an approximate 30 meter (100 foot) radius. You can easily connect and operate multiple devices within this area using the **Iridium GO!** applications.
- ▶ **Versatile** **Iridium GO!** supports a full range of global communications using optimized apps:
  - ▶ Voice calls
  - ▶ Email access
  - ▶ Customized third-party apps
  - ▶ Photo sharing
  - ▶ Posting to Facebook/Twitter
  - ▶ Text messaging
  - ▶ Weather updates
  - ▶ Emergency alerts (SOS)
  - ▶ GPS tracking
- ▶ **Mobile** You can take **Iridium GO!** anywhere. It's small enough to fit in your pocket and, like other Iridium devices, tough enough to withstand rain, sand, dust and rough use. It can be carried, easily stowed in your backpack, or used in vehicles, aircraft and boats for mobile applications.
- ▶ **Innovative** Combining the best that both satellite and cellular phones offer, **Iridium GO!** is an industry first in a whole new category of personal satellite connectivity devices. It is also a powerful development platform for Iridium partners to build optimized applications, extending communication capabilities even further in remote locations.
- ▶ **Affordable** **Iridium GO!** is an affordable solution for truly global connectivity. It leverages and extends your existing trusted devices, is compatible with Apple® and Android™ operating systems, and eliminates roaming charges. It allows connections to be shared among multiple users and is supported by affordable rate plans that keep voice and data costs reasonable

## Technical specifications



Dimensions	11.4 x 8.2 x 3.2 cm
Weight	247g
Duration	<ul style="list-style-type: none"><li>• Standby time: Up to 15.5 hours</li><li>• Talk time: Up to 5.5 hours</li></ul>
Easy to Use	<ul style="list-style-type: none"><li>• Stable, lay-flat design</li><li>• Flip-up antenna</li><li>• Built-in menu/status display</li></ul>
Durability Specifications:	<ul style="list-style-type: none"><li>• Military-grade ruggedness (MIL-STD 810F)</li><li>• Ingress Protection (IP65)</li></ul>
Flexible	<ul style="list-style-type: none"><li>• Custom app platform for developers (SDK)</li><li>• Robust line of accessories</li></ul>
What's in the box	<ul style="list-style-type: none"><li>• Iridium GO! device</li><li>• Battery</li><li>• Universal AC Travel Charger</li><li>• USB Charging/Data Cable</li><li>• Four International Adapters</li><li>• AC Adapter (Car Charger)</li><li>• Protective Cover</li><li>• User Manual</li><li>• Legal Information Booklet</li><li>• GEOS Emergency Services Brochure</li></ul>

# Some acesories



## Iridium GO!® Fixed Installation Kit

Transform your communications with a valuable add-on that makes Iridium GO!® even more versatile on land and at sea. The Iridium GO! Fixed Installation Kit extends the capability of Iridium GO!, is easy to install and enables smooth connectivity inside and out. This kit offers affordable accessories designed specifically for marine and land applications, extending the capability of Iridium GO!

The Iridium GO! Fixed Installation Kit can be paired with any Iridium GO! device for extended capabilities and smooth connectivity both inside and outdoors.

- ▶ A variety of mariners can maintain satellite communications offshore
- ▶ Fishing fleets can access the latest weather reports to stay up to date on changing conditions or connect through social media to stay in touch with family and friends on land
- ▶ Remote home owners and vacationers can connect anywhere. Iridium GO! can easily be tossed in a backpack for day trips or mounted on a wall for use in buildings and secluded cabins
- ▶ Lone aid workers can make phone calls and send text messages to help coordinate humanitarian efforts, even if the local infrastructure has been compromised

Whether you're a sailor, fisherman, remote vacationer or NGO worker, the Iridium GO! Fixed Installation Kit will help you stay connected regardless of your location.

### What's in the kit

- ▶ Iridium Passive Omnidirectional Antenna
- ▶ Mast/Rail Mount 1"-14NF
- ▶ Wall Mount Bracket
- ▶ 12m/39ft Passive Antenna Cable
- ▶ Iridium GO! Cable Adapter

### Technical Specifications & Features

Iridium GO! Marine Certifications (IEC 60945)

- ▶ Corrosion
- ▶ Vibration
- ▶ Compass Interference



# Satellite phone. Comparision sheet.



## Thuraya XT-PRO DUAL

The World's First  
Dual Mode, Dual SIM Phone.

Form Factor	Thuraya XT-PRO DUAL	Thuraya XT-PRO
Size	138x57x27 mm	128x53x27 mm
Volume	212 cm <sup>3</sup>	183 cm <sup>3</sup>
Weight	222 g	212 g
Display size	2.4 inch	2.4 inch
Navigation System		
Navigation System	GPS/BeiDou/ Glonass/Galileo	GPS/BeiDou/Glonass
Reliability:		
Battery Life	11 hrs talk / 100 hrs standby	9 hrs talk / 100 hrs standby
Ingress Protection	Shock, dust and jet water resistant	Shock, dust and jet water resistant
Display	Advanced color outdoor display with Gorilla® glass	Advanced color outdoor display with Gorilla® glass
Walk-and-Talk Functionality	Full walk-and-talk	Full walk-and-talk
Call Stability (dropped calls)	Stable calls due to design of satellite and high gain spot beams and dynamic frequency reuse	
Voice Codec (call quality)	4 kbps	4 kbps
Others:		
Dual-mode (SAT and GSM)	Yes	No
Dual-SIM	Yes	No
Satellite Coverage	Europe, Africa, Asia, Australia	Europe, Africa, Asia, Australia
GSM Coverage	Most global 2G/3G frequencies	n/a
Data	GmPRS: Up to 60 kbps Circuit switched: 9.6 kbps HSPA: Up to 7.2 mbps	GmPRS: Up to 60 kbps Circuit switched: 9.6 kbps
GSM Roaming (GSM SIM via satellite network)	380+ roaming partners	380+ roaming partners
Additional Features:		
GPS - Waypoint Navigation	✓	✓
Calendar	✓	✓
Alarms	✓	✓
Calculator	✓	✓
Price		
Retail Price		

	Thuraya XT-LITE	Iridium 9555	Iridium 9575	IsatPhone 2
	128x53x27 mm	143x55x30 mm	140x60x27 mm	169 x 75 x 29 mm
	183 cm <sup>3</sup>	236 cm <sup>3</sup>	227 cm <sup>3</sup>	367 cm <sup>3</sup>
	186 g	266 g	247g	318g
	2.0 inch	1.9 inch	1.9 inch	2.3 inch
ss	GPS (GPS/BeiDou on Chinese firmware)	GPS only	GPS only	GPS only
ndby	6 hrs talk / 80 hrs standby	4 hrs talk / 30 hrs standby	4 hrs talk / 30 hrs standby	8 hrs talk / 160 hrs standby
t	n/a	n/a	Shock, dust and jet water resistant	Shock, dust and jet water resistant
oor glass	Standard color display	Daylight readable LCD	Daylight readable LCD	Daylight readable LCD
k	Full walk-and-talk	Basic walk-and-talk	Basic walk-and-talk	No walk-and-talk
ndset antenna supported by resource allocation		Can experience delay during call handover from one satellite to the next, through inter-satellite links		Satellite antennas are weaker which impacts call quality
	4 kbps	2.2 - 3.8 kbps	2.2 - 3.8 kbps	2.4 kbps
	No	No	No	No
	No	No	No	No
	Europe, Africa, Asia, Australia	Americas, Europe, Africa, Asia, Australia, Antarctica	Americas, Europe, Africa, Asia, Australia, Antarctica	Americas, Europe, Africa, Asia, Australia
	n/a	n/a	n/a	n/a
pps kbps	n/a	Circuit switched: 9.6 kbps	Circuit switched: 9.6 kbps	Circuit switched: 9.6 kbps
ers	380+ roaming partners	No GSM Roaming	No GSM Roaming	No GSM Roaming
	✓	✗	✗	✗
	✓	✗	✗	✗
	✓	✗	✗	✗
	✓	✗	✗	✗





## ShatSleeve+

The perfect blend of mobility and simplicity, the **Thuraya SatSleeve+** is the fastest way to transform your phone into a satellite smartphone.

**Thuraya SatSleeve+** supports the communication needs of all smartphone users - from frequent travelers and adventurous explorers to corporate and NGO users. It provides customers with access to phone calls, emails, instant messages and popular social media apps in satellite mode across Europe, Africa, Asia and Australia.

The **SatSleeve+** comes with a universal adaptor inside the package and is compatible with various iOS and Android models.

# Features

## Calls and Text Messages in Satellite Mode

- Use your smartphone in satellite mode when there is no terrestrial network available to call and send text messages using your existing list of contacts.

## Email On-the-Go

- Send and receive emails from wherever you are.

## Apps

- Access your apps while you're on the move – Social Media, Instant Messaging, information apps and many more.

## Easy-to-Use

- Simply connect your smartphone via Wi-Fi to the satellite unit and stay connected. The sound is now routed through the smartphone, resulting in even better sound quality

## Compatibility

- The SatSleeve+ / Hotspot App is available as a free download from the App Store or from Google Play. Our app is available in 12 languages. This App is applicable for SatSleeve+ and SatSleeve Hotspot only and not for previous SatSleeve models.

## Enhanced Safety Features

- **SatSleeve+** comes equipped with an SOS call button that works even if the smartphone isn't connected. The SOS button will make an outgoing call to a predefined number set by the user or receive an incoming call.

## A World of Choices

- Thuraya's reliable and uninterrupted satellite network enables you to stay connected via satellite mode anywhere under its coverage area across Europe, Africa, Asia and Australia. Thuraya SatSleeve+ works either with a Thuraya SIM card or with a GSM SIM card from any of the 360+ Thuraya roaming partners worldwide.

## Universal Adaptor

- **SatSleeve+** comes with a universal adaptor in the package that allows you to switch between various Android and iPhone phone models between 58 and 85 mm in width.

## Built-in compression

- To increase the speed when loading websites, the **SatSleeve+** can be used with 3 different access points (APNs). Select either high compression (no images will be downloaded for fastest website loading), low compression (images will be compressed), or no compression (full website content will be loaded). Depending on your requirements, select the most suitable APN in the GmPRS settings on your **Thuraya SatSleeve+**.

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# Technical specifications



Size	138 x 69 x 42 mm
Weight	256g
Connectivity	Headset, Micro USB, DC Charging jack
Battery	3.7V Li-ion, 2440 mAh
Satellite Data Speed	Download up to 60kbps, Upload up to 15kbps (GmPRS)



## XT Pro Dual

### Two worlds in one

At Thuraya, innovation never stops. The **Thuraya XT-PRO DUAL** is the world's first dual-mode, dual-SIM phone, bridging the gap between satellite and terrestrial communications. By using both a satellite SIM card and a GSM SIM card, you can now move in and out of terrestrial coverage with ease, enjoying connectivity no matter where you are.

Highly ruggedized with a shockproof, water and dust resistant body, the **XT-PRO DUAL** also comes with advanced navigation capabilities through GPS, BeiDou, Glonass and Galileo for the highest flexibility in all regions. No matter where you are or how remote your location, we keep you connected. Thuraya's comprehensive satellite network provides reliable, clear and uninterrupted communications in more than 160 countries across Europe, Africa, Asia and Australia; and in GSM-mode the phone supports most 2G/3G frequencies across the world.

## Convergence you can customize



The Always On capability of the **XT-PRO DUAL** allows the phone to work in satellite and GSM-mode simultaneously. This lets you to make calls seamlessly and ensures you are always reachable on both networks. For a true dual active experience, you can be contacted on your GSM number even while on an active satellite call - and vice versa. This unique dual-mode concept offers full flexibility. You can choose the setting that is best and most convenient for you. The **XT-PRO DUAL** has a dedicated SIM slot for satellite communications and a second one for GSM communications. You can use a Thuraya SIM card and a GSM SIM card, or choose any combination of SIM cards that meets your requirements.

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## Features

### Dual mode. Dual SIM.

- Communicate seamlessly in satellite and GSM mode: the world's first phone to combine dual-mode and dual-SIM, the Thuraya **XT-PRO DUAL** has two SIM card slots for complete flexibility and choice.

### SAT and GSM "Always On"

- Make and receive calls simultaneously on both networks with the **XT-PRO DUAL**'s unique SAT and GSM "Always On" function.

### Advanced navigation capabilities

- Select your preferred navigation system and choose between GPS, BeiDou, Glonass and Galileo for the highest flexibility in all regions. Then use your **XT-PRO DUAL** to send your coordinates to pre-defined numbers via SMS or email, based on preset time intervals, distance travelled or movement beyond your preset geofence.

### Most powerful battery

- Equipped with a long lasting battery, the **XT-PRO DUAL** has a talk-time of up to 11 hours and a standby time of up to 100 hours, enabling reliable communications whenever you need them across an extended period. The status indicator gives you accurate readings with the remaining battery percentage indicated in 1% intervals..

### Glare resistant Gorilla® glass display

- Toughened glass for harsh conditions and a customized outdoor display delivers easy readability in direct sunlight, no matter how bright the conditions are.

### Dedicated SOS button

- The **XT-PRO DUAL** has a dedicated SOS button, which is easy to use in times of distress. Even when the phone is switched off, simply press and hold the SOS button for three seconds. This starts the handset and triggers the emergency service call (and/or SMS) to any pre-programmed number.

### Rugged design

- The **XT-PRO DUAL** is water and dust resistant as well as shockproof to withstand harsh environments. Supported by the most robust and powerful satellite network, Thuraya's system is renowned for having the most reliable satellite network, and the advanced omni-directional antenna of the **XT-PRO DUAL** ensures uninterrupted signals when walking or moving, offering full walk-and-talk capability.

### Incoming call notifications in satellite mode

- The call notification function operates in satellite mode even if your satellite signal is too weak to receive the call itself. This is particularly useful when your phone is in your pocket with the antenna stowed, keeping you connected at all times.



Technical specifications



System / Frequencies	Satellite: Thuraya L-Banc satellite	GSM: 2G: 850, 900, 1800, 1900 MHz 3G: 800/850, 900, 2100 MHz
SIM Cards	Satellite: 1 SAT SIM slot (Mini-SIM)	GSM: 1 SAT SIM slot (Micro-SIM)
Data services	Satellite: GmPRS up to 60/15 Kbps (down/up) Circuit switched 9.6 Kbps	GSM/3G: up to 7.2/5.76 Mbps (down/up)
Size (phone body)	138 x 57 x 27 mm	
Weight	222 g	
Satellite services	Calls, SMS, SMS to email, fax	
Battery	3400 mAh battery - up to 11 hours talk time - up to 100 hours standby time	
Global Navigation Satellite System (GNSS)	GPS, BeiDou, Glonass, Galileo	
Display	2,4" toughened Gorilla® glass outdoor display	
Ingress protection	Water resistant, dust resistant, shock proof (IP55/IK05)	
External interfaces	Micro USB charger, UDC jack for data transmission, Earphone connector (3.5mm), Antenna connector for docking units	
PC compatibility	Win 10/8.1/8/7	
Languages	<b>Multi-language firmware:</b> English, Arabic, Banasa Indonesia, Farsi, French, German, Hindi, Italian, Russian, Spanish, Turkish, Portuguese, Urdu. <b>Chinese firmware:</b> Simplified Chinese, English	
Environmental specifications	Operating temperature -10°C to +55°C	



# Some acesories



## Fixed Docking Units (FDU)

The Fixed Docking Units allow you to dock your XT-PRO DUAL and use it as a desktop phone for Thuraya satellite services indoors.



## Vehicle Docking Kit

Ensures reliable and hands-free satellite services through its loudspeaker and microphone when on the move with your XT-PRO DUAL.



## Indoor Repeaters

Indoor repeaters use an indoor antenna to transmit Thuraya satellite services inside buildings.



## Solar Chargers

A solar charger can be used to charge the XT-PRO DUAL, removing the need for access to electricity.



## Spare Car Chargers

A car charger ensures that the XT-PRO DUAL is never out of power while you are on the move.



## Spare Travel Chargers

The travel charger connects your phone to a mains socket. The exchangeable plugs allow charging in most parts of the world.



## Spare Batteries

An additional battery serves as a backup for the XT-PRO DUAL and extends usage time when you have no access to electricity.



## Spare USB Data Cables

With a USB data cable, you can upgrade the software of the XT-PRO DUAL easily when new software versions are released.



## External handset antenna

For improved satellite signal reception when used on the move (e.g. in boats or cars) or in areas at the edge of the Thuraya coverage.

## Thuraya Aquapac (new)

Waterproof your Thuraya handset with a submersible Aquapac! Safely protect your Thuraya phone from water, dust, dirt, snow, sand, oil and whatever else you might encounter.

## Wrist strap

Attach a wrist strap for added convenience and security.





## X5 touch

**Thuraya** satellite phones boldly go where no smartphones have gone before. They keep you connected from almost anywhere because they operate on a network in outer space.

The **Thuraya X5-Touch** is the world's first Android™ based satellite & GSM phone offering unparalleled flexibility. It runs on the Android operating system and has a 5.2" full HD touchscreen for users, who frequently move in and out of terrestrial coverage across a range of market sectors including government missions, energy projects, enterprise communications and NGO deployments. It offers fast and simple connectivity on the move, in remote areas normally beyond the reach of smartphones.

# Features

## Fully ruggedized

- The **Thuraya X5-Touch** is the most rugged phone in the industry with IP67 standard and compliance with MIL 810 G/F. That means the phone is full dust and water protected and tested to withstand shock, vibration and extreme temperature.

## Dual mode. Dual SIM.

- Communicate seamlessly in satellite and GSM mode: The **Thuraya X5-Touch** works over Thuraya's L-band satellite network as well as GSM 2G/3G/4G/LTE networks. It comes equipped with two nano SIM card slots for complete flexibility and choice. Choose from a combination of both a Thuraya SIM card and a GSM SIM card, or any combination of SIM cards that meets your requirements.

## SAT and GSM "Always On"

- Make and receive calls simultaneously on both networks with the unique SAT and GSM "Always On" function. For a true dual experience, you can receive calls on your GSM number even when on an active satellite call and vice versa.

## Advanced navigation capabilities

- The phone comes equipped with GPS, BeiDou, and Glonass systems for the highest flexibility in all regions. Use the preinstalled navigation and tracking apps to send your current location details to pre-defined numbers via SMS or email, based on pre-set time intervals, distance travelled or when moving inside or outside your pre-set geofence.

## Most powerful battery

- Equipped with the most powerful battery in the industry, the **X5-Touch** has a talk-time of up to 11 hours and a standby time of up to 100 hours enabling reliable communications whenever you need it across an extended period of time.

The **Thuraya X5-Touch** is the world's first Android based satellite & GSM phone offering unparalleled flexibility. It runs on the Android operating system and has a 5.2" full HD touchscreen for users who frequently move in and out of terrestrial coverage across a range of market sectors including government missions, energy projects, enterprise communications, and NGO deployments. It offers fast and simple connectivity on the move, in remote areas normally beyond the reach of smartphones.

## Android OS

The **Thuraya X5-Touch** device runs on the Android platform from Google. A range of Google applications and services are preinstalled on your device, for example Gmail, Google Maps, Google Chrome, Google Search and the Google Play Store which gives you access to a multitude of available 3rd party apps.

## Dedicated SOS button

- The **Thuraya X5-Touch** has a dedicated SOS button, which is easy to use in times of distress. Even when the phone is switched off, simply press and hold the SOS button for 3 seconds, which starts the handset and triggers the SOS call (and/or SMS) to any pre-programmed number.

## Make the most out of your camera

- With the front and rear cameras take photos and videos anywhere. Enjoy state-of-the-art features like built-in flash, panorama mode, face detection and many more.

## Expand your phone memory

- With a dedicated Micro-SD slot, expand your phone memory up to 32GB and make sure you don't run out of memory when you need it.

## Connect anyway you want

- Enjoy using your **X5-Touch** in a multi-device world. The phone comes with Wi-Fi, Bluetooth and NFC connectivity making it easy to connect.

## Walk-and-Talk

- The **Thuraya X5-Touch** facilitates reliable and efficient walk-and-talk communications due to the combination of high performance satellites from Thuraya's network and an omni-directional antenna designed to ensure enhanced mobility.

## Bring Your Own App (BYOA)

- The Android platform on the **Thuraya X5-Touch** allows every customer and every developer to personalize the phone to their needs and to take advantage of the vast range of customization that Android provides. Don't like the preinstalled keyboard or browser? Just download other ones from Google Play. Choose from a wide range of apps that are readily available from third party developers. The phone also integrates easily with wearables like smartwatches, healthcare wearables, etc.

## Display

The **X5-Touch** comes equipped with a 5.2" full HD touchscreen made of glare resistant Gorilla® glass. The toughened glass also works while the display is wet or while you are wearing gloves.



Technical specifications



System/Frequencies	Satellite: Thuraya L-Band satellite	<ul style="list-style-type: none"><li>• GSM: 850, 900, 1800, 1900 MHz</li><li>• LTE: B1 (2100), B3 (1800), B5 (850), B7 (2600), B8 (900), B20 (800), B40 (2300), B41 (2500)</li><li>• UMTS   HSPA: B1 (2100), B2 (1900), B5 (850), B8 (900)</li></ul>
SIM cards	Satellite: 1 SAT SIM slot (nano-SIM)	GSM: 1 GSM SIM slot (nano-SIM)
Data services	Satellite: GmPRS: up to 60/15 Kbps (down/upload) Circuit switched: 9.6 Kbps	LTE: up to 300/150 Mbps (download/upload)
Satellite services	Calls, SMS, SMS to email, fax	
Size (phone body)	145 x 78 x 24 mm	
Weight	262 g	
Operating System	Android Nougat (7.1.2)	
Processor	Qualcomm Snapdragon 625, 2 GHz octa-core	
Battery	3800 mAh battery which provides up to 11 hours talk time and up to 100 hours standby time	
Global Navigation Satellite System (GNSS)	GPS, BeiDou, Glonass	
Display	5.2" full HD LCD touchscreen (1920 x 1080) with Corning Gorilla® glass (capacitive display works also with gloves and in wet conditions)	
Ingress protection	Water resistant, dust resistant (IP67), Complies with MIL-Standard 810 G/F (shock, vibration, extreme temperature)	
Camera	Rear camera: 8MP with flash · Front camera: 2MP	
Memory	16 GB eMMC memory 2 GB RAM Expandable memory up to 32 GB via microSD (optional)	
External interfaces	USB-C connector for charging and data transmission, Earphones jackconnector (3.5mm), Antenna connector	
PC compatibility	Windows 10, 8/8.1, 7	
Languages	16 languages supported: English, Arabic, Bahasa Indonesia, Chinese (Simplified), Chinese (Traditional), Farsi, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish, Turkish, Urdu	
Supplementary phone services (in SAT and GSM mode)	Conferencing, Call Waiting, Call Hold, Call Forwarding, Call Barring, Number Identification, Calling Line Identification Presentation, Calling Line Identification Restriction, Connected Line Identification Pre-sentation, Connected Line Identification Restriction, Unstructured supplementary services data (USSD)	
Phone sensors	Gyroscope sensor, Accelerometer & Geomagnetic sensor, ALPS Ambient Light Photo sensor, Digital Pressure sensor	
Other networks	Bluetooth 4.1, A2DP, LE; NFC; FM radio; Wi-Fi 802.11 a/b/g/n/ac, Wi-Fi direct, Wi-Fi Hotspot	
Audio	Multi-microphone active noise cancelling High-performance speakers incl. speakerphone	

# Some acesories



## Indoor Repeaters

Indoor repeaters use an indoor antenna to transmit Thuraya satellite services inside buildings.



## Solar Chargers

A solar charger can be used to charge the X5-Touch, removing the need for access to electricity.



## Spare Battery

An additional battery serves as a backup for the X5-Touch and extends usage time when you have no access to electricity.



## Car Charger

A car charger ensures that the X5-Touch is never out of power while you are on the move.



## Travel Charger

The travel charger connects your phone to a mains socket. The exchangeable plugs allow charging in most parts of the world.



## External Satellite Antenna

For improved satellite signal reception when used on the move (e.g. in boats or cars) or in areas at the edge of the Thuraya coverage. [Read more](#)



## Spare USB Data Cables

With a USB data cable, you can upgrade the software of the X5-Touch easily when new software versions are released.

## Aquapacs

Waterproof your Thuraya handset with a submersible Aquapac! Safely protect your Thuraya phone from water, dust, dirt, snow, sand, oil and whatever else you might encounter.





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## XT Lite

Thuraya's **XT-LITE** is the world's best-value satellite phone. Designed for cost-conscious users, this reliable satellite handset offers a clear and uninterrupted connection at an unbeatable price.

An easy-to-use satellite phone, users can make phone calls and send SMS messages in satellite mode. If you're about to embark on a journey of mountain-climbing or desert crossings, Thuraya's **XT-LITE** is the best choice on the market for keeping you in touch with friends and family - at an affordable price.





# The world's best-value satellite phone


Staying connected has never been this easy. Introducing **Thuraya XT-LITE**, the world's best-value satellite phone.

The **Thuraya XT-LITE** provides reliable satellite phone connectivity with unbeatable value. It is designed for cost-conscious users who need to stay securely connected, without compromising on a clear and uninterrupted connection.

It is very easy-to-use. You can make phone calls and send SMS messages in satellite mode, whether you are crossing the desert, sailing at sea or climbing mountains.

No matter where your journey takes you, you can rely on Thuraya's comprehensive satellite network to provide reliable, clear and uninterrupted communications in more than 160 countries across Europe, Africa, Asia and Australia.

With the **Thuraya XT-LITE**, staying connected via satellite has never been this easy.



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## Features

### Calls and text messages in satellite mode

- ▶ The **Thuraya XT-LITE** lets you make calls and send SMS messages in satellite mode when terrestrial networks are unavailable. For uninterrupted communication, our advanced omni directional antenna ensures seamless walk-and-talk functionality for calls on-the-go.

### Long-lasting battery life

- ▶ **Thuraya's XT-LITE** enables reliable communications with a long-lasting battery which provides users with up to six hours of talk time and up to 80 hours standby time.

### Easy to use

- ▶ The **XT-LITE** satellite handset is designed for ease of use. Simply charge your phone and make sure your SIM card is working... and you're ready to go. What's more, users can program the **Thuraya XT-LITE** to one of 12 languages available.

### Supported by the most robust and powerful satellite network

- ▶ Thuraya's satellite network is renowned for having reliable satellite coverage that includes two-thirds of the globe. The **Thuraya XT-LITE** also lets you receive a call notification even when the satellite antenna is stowed, keeping you connected at all times.

### Additional features

Address book, alarms, calculator, calendar, call logs, conference calls, contact groups, speed dialing, stopwatch, world time and many more.



Technical specifications



Size (phone body)	128 x 53 x 27 mm
Weight	186g
Services	Satellite calls and satellite SMS
Network frequency	L-Band
Satellite antenna	Omni directional (walk-and-talk functionality)
Battery life - talk time	Up to 6 hours
Battery life – standby time	Up to 80 hours
Network features	Call barring, Call diverting, Conference calls, Call waiting, Closed User Group, Voice mail
Organizer	Alarms, Calendar, Calculator, Stopwatch, World time
External interfaces UDC	data cable with USB connector, earphone jack (2.5 mm), DC power
Firmware versions	<b>Multi-language firmware:</b> Arabic, English, Farsi, French, German, Hindi, Italian, Portuguese, Russian, Spanish, Turkish, Urdu <b>Chinese firmware:</b> Simplified Chinese, English
PC compatibility (for firmware upgrades)	Windows 8/8.1, 7, Vista

# Some acesories



## Spare Batteries

An additional battery serves as a backup for the **Thuraya XT-LITE** and extends usage time when you have no access to electricity.



## Spare Travel Chargers (with EU/UK/CHN/AUS plugs)

The travel charger connects your phone to a mains socket. The exchangeable plugs allow charging in most parts of the world.



## Spare USB Data Cables

With a USB data cable you can upgrade the software of the **Thuraya XT-LITE** easily when new software versions are released.



## Car Chargers

A car charger ensures that the **Thuraya XT-LITE** is never out of power while you are on the move.



## Solar Chargers

Charge the **Thuraya XT-LITE** even when you have no access to electricity.



## Indoor Repeaters

With an Indoor Repeater you will be able to use the **Thuraya XT-LITE** in indoor environments.



## Earphones

Use the **Thuraya XT-LITE** in hands-free mode with an optional earphone.



## External Handset Antenna

For improved satellite signal reception when used on the move (e.g. in boats or cars) or in areas at the edge of the Thuraya coverage. Simply connect the antenna cable (5m length) with the **XT-LITE** and place the magnetic mounted antenna (IP66 rating) in a position with direct line of sight to the Thuraya satellite

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Portable communication

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## IC-SAT100

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One-to-Many  
Global Communications with  
Just a Push of a Button



# Real-Time Communications Across the Globe

The **IC-SAT100** provides a true Land Mobile Radio experience with an IP67-rated durable housing, large front-ported speaker for loud audio, a top mounted on/off volume selector, talkgroup selector for “no-look” operation, and a field replaceable antenna. Icom offers a large portfolio of Land Mobile Radio accessories for the radio to enhance the customers communication requirements.

The **IC-SAT100** operates exclusively on Iridium Push-To-Talk services, and is compatible with the full portfolio of Iridium and Iridium Partner PTT products for seamless, global push-to-talk capabilities. Icom also offers the VE-PG4, a RoIP router to interconnect and manage latency of other radio technologies into a seamless communication.

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## What is SATELLITE PTT?

- ▶ SATELLITE PTT (Push-To-Talk) is a two-way radio system that uses the Iridium® satellite network. It can be used as a communication tool in remote, isolated areas where there are no mobile phones or landline network infrastructure. Even if terrestrial network infrastructure is rendered unusable by human or natural disasters, SATELLITE PTT can provide a stable back-up, independent from other networks.

## One-to-Many Communications

- ▶ Unlike satellite phones, IC-SAT100 users can immediately start talking to all the radios in the same talkgroup, with just a push of the transmit (PTT) button.

## Wide Area Global Communications

- ▶ The Iridium® satellite network covers the entire earth, including both poles, and can provide wide area global communications anywhere on the planet\*. \* Depending on the country or region, carrying and/or use of the IC-SAT100 may be prohibited.

## Real-Time, Low-Latency Communication

- ▶ Using 66 Low Earth Orbit (LEO) Iridium® satellites, the IC-SAT100 provides low-latency communication, and broader, more reliable network coverage,

compared to Geosynchronous Equatorial Orbit (GEO) satellites.

## Built-in Emergency Key

- ▶ The orange key on the top panel can be used for emergency situations. You can transmit an emergency call to preprogrammed users with holding down the key.

## Waterproof, Dust-tight and Durable Body

- ▶ The IC-SAT100 provides IP67 waterproofing (1 m depth of water for 30 minutes) and dust-tight protection, making it ideal for use in harsh outdoor environments. The radio also meets MIL-STD 810G specifications. The operating temperature range is from -30°C to +60°C (-22 °F to 140 °F).

## 1500 mW Powerful Audio

- ▶ 1500 mW audio delivered from the internal speaker provides loud and clear communication, even in noisy environments.

## Long Lasting Battery Life

- ▶ The supplied BP-300 Li-ion battery pack provides 14.5 hours of operation.

## Private Conversations

- ▶ The IC-SAT100 provides secure conversations with AES 256-bit encryption.



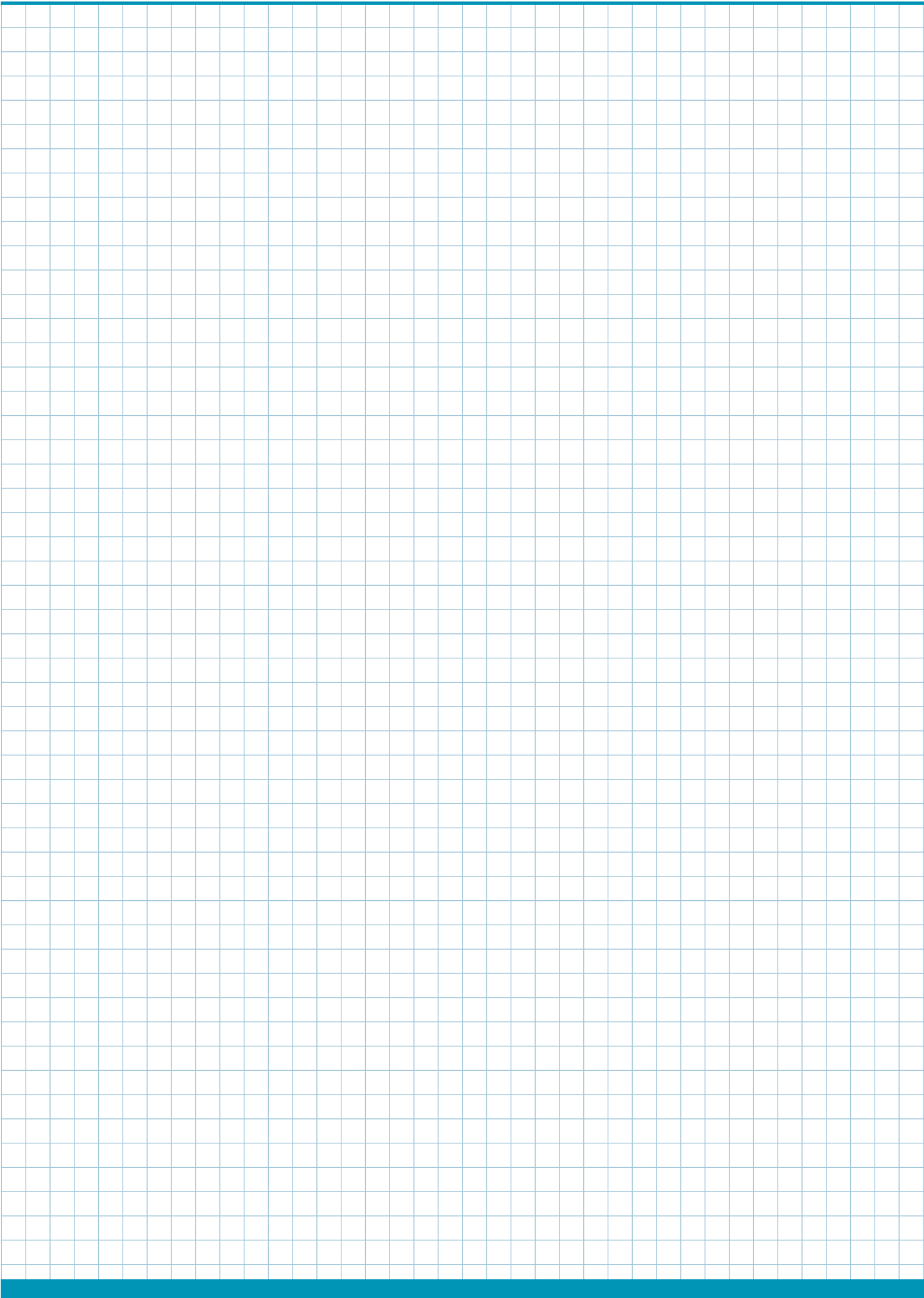
# Features

- ▶ Access to Iridium Push-To-Talk Service
  - ▶ One-to-Many Communications
  - ▶ Talkgroup Scan
  - ▶ Priority Interrupt Calling
  - ▶ Emergency Button
  - ▶ Vibration Alert
  - ▶ IP67 Waterproof and Dust-Tight
  - ▶ Built-in Bluetooth and GPS Receiver
  - ▶ 1500 mW Powerful Audio
- ▶ Multiple Languages (English, French, Japanese and Spanish)
  - ▶ Compatible with Iridium Extreme® PTT Handset
  - ▶ Interoperability with IDASTM and Analog Radios Through Optional VE-PG4, RoIP Gateway (Planned)
  - ▶ Short Data Messages (SDM)
  - ▶ SMA Type Antenna
  - ▶ USB Interface for Charging and Data Communications
  - ▶ 14-pin Type Accessories Connector

# Technical specifications



IP Rating / Military Standard	IP-67 / MIL-STD 810G
Messaging	Yes, Within Talkgroup
Dimensions	57.8 mm × 135 mm × 32.8 mm, (2.3" × 5.3" × 1.3")
Weight (Approx.)	360g, (12.7 oz) with BP-300 and Antenna
Display (W x H Approx.)	33 mm × 27 mm, (1.3" × 1.1") Viewing Area; 128 x 104 Pixels
Internal / External Speaker Output	1500/1000 mW Typical (At 5% Distortion into an 8 Ω Load)
Talkgroups	15 Groups (Max)
Operational Temperature Range	-30°C to +60°C, -22 °F to 140 °F
Battery Life (Approx.)	14.5-Hours (TX : RX : Standby = 5 : 5 : 90)
Battery Life (Approx.)	Up to 7-Hours (Talk Time), 24-Hours (Standby Time)
IP Rating	IP67 Waterproof and Dust-tight
Antenna Connector	SMA (50 Ω)









# Fixed satellite communication





Fixed satellite communication



## Iridium Certus

Compact and incredibly easy to install, Cobham's **SAILOR 4300** Iridium Connected terminal is a pinnacle of L-band satcom performance and reliability. It ensures that your link to the Iridium® network is always available so you can operate safer, smarter and more efficiently through the power of always available communication and digitally connected applications.

# Redefining Mobile Communications at Sea

## Next Generation

**SAILOR 4300** utilizes the Iridium network to provide your on-board link through high bandwidth IP connectivity and three high-quality voice lines for global calling wherever you are.

## Heavyweight Applications

Available in bulkhead and 19" rack-mount configuration, **SAILOR 4300** offers a reliable connection to the Iridium NEXT satellite network with speeds suitable for data-heavy applications including; videoconferencing, multi-user Internet/VPN, IoT and telemedicine, alongside regular usage including email, electronic forms/reporting and crew communication.

## Operational Continuity

**SAILOR 4300** is designed to withstand the harshest maritime environments. Reliability is high and lifecycle costs are inherently low – it is built to such high quality that there is no scheduled service interval and no maintenance for at least 10 years after installation. But

should something go wrong, you have the support and knowledge of Cobham SATCOM's unique Global Service Network to get you back online wherever you are.

## Seamless Integration

While delivering high-speed, global connectivity as a compact, easy to install standalone terminal, **SAILOR 4300** has also been designed for seamless integration with multi-band communication networks, making it easy for VSAT service providers to use it a cost-effective, high-speed secondary communications channel.

## Understanding Innovation

As a market leader in maritime L-band terminals, Cobham SATCOM delivers innovation based on innate understanding of the operational realities and strategic goals of their service provider partners and end-users. When moving to Iridium NEXT using **SAILOR 4300**, you get unparalleled Iridium Certus<sub>SM</sub> voice and data service anywhere in the world from an easy to install terminal with a rich feature-set and class-leading lifecycle costs.

# Technical specifications



Antenna	Size	38 cm (dia) x 23 cm (h)
	Weight	7 kg
	One cable connection to BDU	
Terminal	Bulkhead and 19" rack versions	
Telephony	Three independent voice lines	
Data	Supports Iridium Certus 300- Up to 176/352 kbps	
	Supports Iridium Certus 700- Up to 176/704 Kbps	
Operational Enhancements	Email, electronic forms/reporting and crew communication	
	Videoconferencing, multi-user Internet/VPN, IoT and telemedicine	





## Why choose Iridium Certus®?

### Powerful

- ▶ **High-Speed L-Band Anywhere on Earth:** Iridium Certus® offers superior connectivity for maritime customers whether used as a standalone service or as a complement to VSAT services.
- ▶ **Product Diversity:** Iridium Certus® offers a selection of service classes starting at 88Kbps and ranging up to 700Kbps, with eventual speeds to 1.4 Mbps.
- ▶ **Multi-Service:** Iridium Certus® customers will enjoy three high-definition voice lines, high-speed IP data and streaming, packet data service (Iridium Short Burst Data®), and safety services in one robust marine-grade terminal.
- ▶ **Highest Availability:** L-Band is the lowest frequency commonly available for maritime satellite communications, meaning that the Iridium® signal can penetrate clouds, fog, and rain better than higher frequency Ka- and Ku- band signals.

### Truly global

- ▶ **Sophisticated Network:** The Iridium® constellation located in Low-Earth Orbit consists of six orbital planes with 11 satellites in each plane. Satellites provide connectivity as they fly “over” users anywhere on the planet.
- ▶ **Global Coverage:** With coverage in the extreme latitudes and throughout the polar regions, Iridium provides a one-stop-shop for true global connectivity.

- ▶ **Rapid Routing:** Iridium Certus® routes traffic in space, ensuring that all areas, including the polar A4 zones, benefit from low-latency, high-speed, and always-on connections.

### Superior reliability

- ▶ **Redundant Design:** The sophisticated Iridium network is a fully-meshed global canopy with high-speed cross-links designed to deliver uniform coverage and data speed to every point on earth.
- ▶ **Solid Equipment:** Iridium Certus® maritime terminals, designed and built by world-class manufacturers, have no moving parts, making them reliable and low-maintenance.
- ▶ **Robust Spectrum:** Iridium’s L-band frequency is unaffected by weather conditions.

### Best value

Iridium is committed to providing great features at a reasonable cost, and Iridium Certus® has raised the bar for value. Iridium Certus® provides greater performance than other L-Band options, and the Iridium Certus® maritime terminals and airtime are available at competitive rates to allow for a fast return on investment. The small form-factor and lightweight equipment ensures ease of install and a streamlined upgrade path from existing service.



# VesseLINK™ by Thales

VesseLINK™ by Thales – a global leader in delivering sophisticated solutions for the world’s navies – gives your critical marine operation global communications coverage. It is the solution to depend on for essential communications wherever and whenever you are at sea. Whether you operate a large fleet or a single vessel, this solution is designed to meet your unique challenges through a simple, adaptable and robust design.

VesseLINK comes with an intuitive, user-friendly interface and can be quickly integrated into existing vessels or new fleets. It also includes built-in upgradeability to extend the life of your investment and ensure peak speed and performance.

## Features

### Safety Services:

- ▶ Voice and data enabled delivering up to 3 dedicated voice channels
- ▶ Telemedicine capable
- ▶ Location tracking

### Operational Enhancements:

- ▶ Enhanced at-sea reporting, service logging, crew connectivity, system/cargo monitoring and other operational requirements
- ▶ Real-time weather
- ▶ Embedded 802.11b/g Wi-Fi Access point
- ▶ Multiple user capability, up to 12 connected devices
- ▶ Application enabled functionality for Android and iOS devices

## Specifications

### Antenna

Size	35.6 cm dia. x 22.9 cm h
Weight	3.2 kg

### Terminal

Size	30.5 cm x 22.9 cm x 7.6 cm
Weight	3.4 kg



# Intellian C700



The Intellian C700 Maritime Satellite Terminal enables a variety of applications including safety, bridge and crew welfare communications, connected ship IoT capabilities like engine monitoring and remote diagnostics, as well as situational awareness reports.

Developed for Iridium’s global network and designed to provide the fastest L-band broadband service in the industry, the C700 delivers up to 352 kbps transmission and 704 kbps reception speeds through the Iridium Certus platform. Its 12-element patch technology also ensures seamless connectivity, even in adverse weather or environments.

All Intellian C700 terminals are optimized as VSAT companion devices. The combination of the traditional Intellian’s VSAT Ku-band and Intellian’s new C700 systems will guarantee a seamless connection wherever you are. Easy APIs for M&C, firewall security, and will easily integrate as part of a VSAT out-of-band management solution.

The 12-element patch antenna improves low elevation angle performance. This innovative electronic phased-array antenna guarantees a reliable and high-throughput connection in all conditions. Also, the H2 class high power amplifier enables uplink data speeds of up to 352 kbps as standard.

## Features

- ▶ Powerful (12) Element Patch Phased-Array Antenna
  - ▶ H2 Antenna Amplifier for 352 kbps Uplink Service Guarantees the Most Reliable & High Throughput in Rough Seas
  - ▶ Easy Installation & Simple Configuration
  - ▶ Built-in Power-over-Ethernet (PoE) for Powering IP Devices like SIP Phones, Cameras, Wireless Access Points, etc.
  - ▶ Reliable Solid-State Technology
  - ▶ Built-in Firewall for Cyber Secure Connections
- ▶ GMDSS Ready
  - ▶ Three (3) High Quality Voice Lines with Soft PBX Function
  - ▶ Supports Up to (16) SIP Phones & (2) Analog Phones
  - ▶ 4-Port Ethernet (LAN) PoE & WAN
  - ▶ Built-in WAN for Least-cost Routing of Data Traffic Via 3G/LTE
  - ▶ Built-in Router & Wi-Fi supporting Multiple Users of the Terminal

## Specifications

Antenna		Terminal	
Size	370 x 270 mm (14.5 x 11.0 in)	280 x 183.5 x 41 mm (11 x 7.21 x 1.45 in)	
Weight	14.3 lb (6.5 kg)	4.4 lb (2 kg) (Stand-alone Type)	





# Iridium Pilot

## Connect with True Value

Built to perform in tough conditions, **Iridium Pilot®** delivers reliable global broadband data and voice connectivity in one low-cost platform — keeping ships and crews connected when they need it most.





Powered by the world's furthest reaching network, **Iridium Pilot** is the only reliable truly global connection for broadband voice and data maritime communications – delivering exceptional performance, durability and value, everywhere on the planet.

### Unparalleled coverage and connectivity

**Iridium Pilot** is built with the same highquality voice and data capability the world has come to trust from the only pole-topole satellite communications company.

The unique cross-linked architecture of Iridium's global constellation of 66 Low-Earth Orbit (LEO) satellites gives **Iridium Pilot** inherent advantages in performance and dependability – making it an ideal platform for primary or back up communications.

### Multiple phone lines keep your crew connected

**Iridium Pilot's** three independent phone lines help boost crew morale by letting your crew stay in touch with family and friends. Affordable prepaid options allow calling even at peak times.

Crew calls are also easily separated from ship's business calls for simplified accounting.

### Flexible, high value data options

For email, web browsing or business operations, **Iridium Pilot** leverages the **Iridium OpenPort®** broadband service to offer a wide range of flexible, high value global service packages that meet the needs and budget of ships, large and small, everywhere.

### Lightweight, durable and easy-to-install

The lightweight, low profile **Iridium Pilot** omnidirectional satellite antenna can be easily mounted at any convenient location on deck, and can withstand the effects of nearly any maritime environment. **Iridium Pilot** also provides near real-time usage metrics to assist in troubleshooting.



**Iridium OpenPort®** equipment is easy install, surprisingly affordable and delivers more bandwidth to your customers.

### The Right Broadband Solution, Whatever Your Communication Needs.

For email, web browsing, social media, crew calls home to family and friends, or a back-up to your VSAT system the Iridium OpenPort broadband service gives you big ship communications capability on a small ship's budget.

# Features

- **Low-Cost Airtime:** The **Iridium OpenPort** broadband service can substantially reduce your satellite communications costs compared to mini-M, Fleet or even FleetBroadband, while providing better reliability and throughput.
- **Flexible Voice and Data Plans:** The **Iridium OpenPort** broadband service offers a wide range of customizable voice and data plans allowing you to choose what best suits your needs and your budget—if you don't use a service, you don't pay for it.
- **High Reliability and Availability:** The unique Iridium constellation of 66 cross-linked Low-Earth Orbit (LEO) satellites provides inherent advantages over GEO satellite constellations, delivering robust, low latency communications. Many customers with mission-critical communications requirements rely on the **Iridium OpenPort** Service for a reliable back-up to Ku-band and Ka-band VSAT, and other communications solutions on their vessel.
- **Global Coverage and Connectivity:** The **Iridium OpenPort** broadband service is powered by the world's largest and only truly global commercial communication network, providing pole-to-pole coverage for ships at sea. For ships traveling in the polar regions (Sea Area A4), Iridium OpenPort broadband service provides an excellent solution for reliable communications and is the only broadband option available.

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# Technical specifications



Outdoor unit	Height	8.0 in (203 mm)
	Diameter	22.44 in (570 mm)
	Weight	27.5 lbs (12.5 kg)
Indoor unit	Length	7.78 in (200 mm)
	Width	9.84 in (250 mm)
	Height	2.17 in (55 mm)
	Weight	2.98 lb (1.35 kg)
Data	Up to 134 kbps bidirectional with Iridium OpenPort broadband service	
Phone	3 independent lines for concurrent use	
Coverage	Global, pole-to-pole	



# Fleet One

## Broadband connectivity for all

**Fleet One** is specifically designed to meet the low data usage demands of occasional or seasonal users when they move out of VHF or GSM coverage areas. Inmarsat now offers two service plans to put satellite broadband in the reach of any size of commercial or leisure vessel.



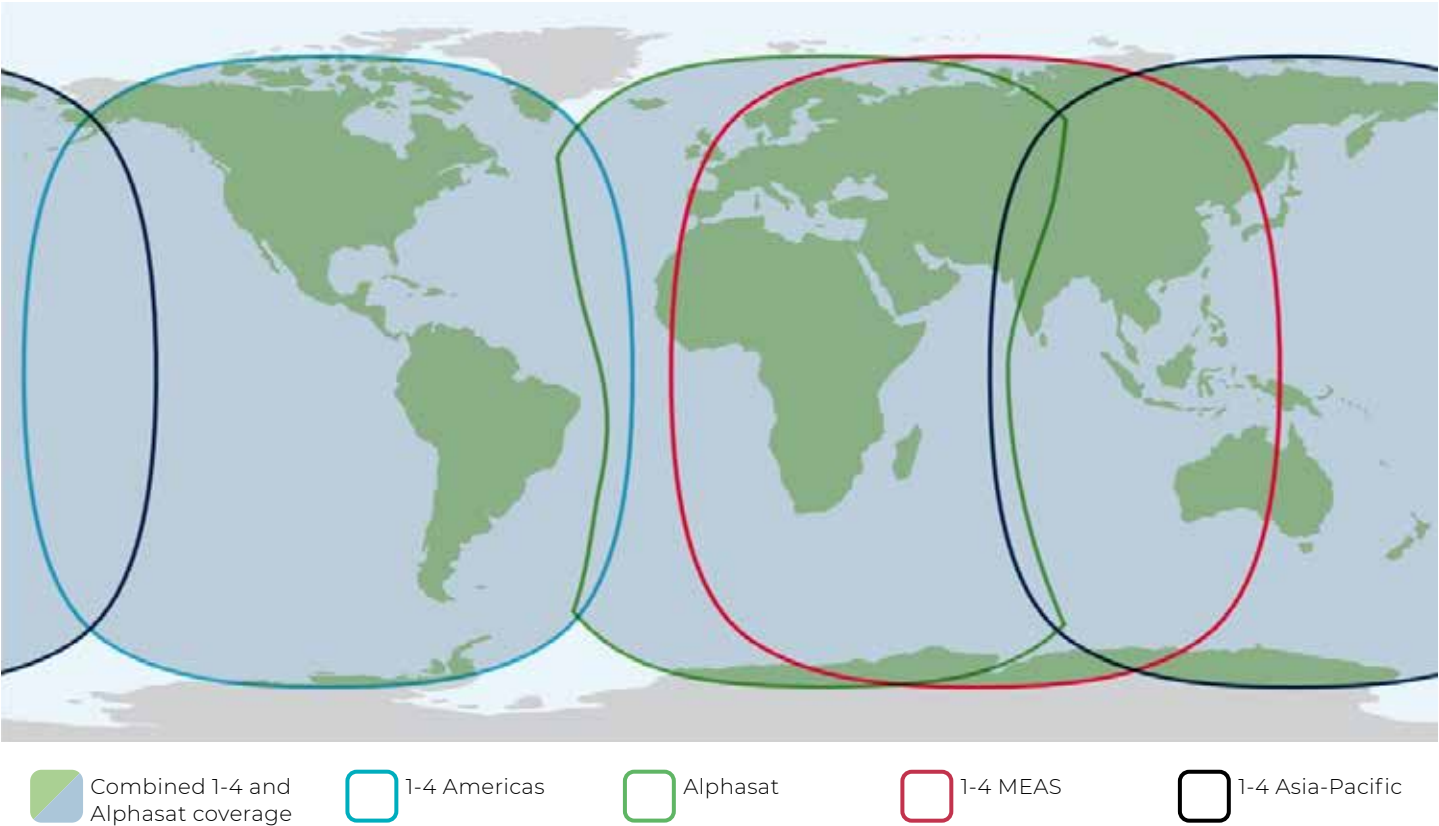
Fleet One Global

**Fleet One Global** offers flexible connectivity for any size of vessel, available for one price anywhere on the world's seas.

**Fleet One Global** meets the voice and data needs of a wide range of users, from fishing and regional merchant vessels to global recreational seafarers. There is no vessel size limit.

There is one global rate and a choice of prepaid or postpaid options. **Fleet One Global** is flexible – you can de-activate and re-activate the service at any time so you only pay for it when you need it – making it ideal for both seasonal and regular users.

Fleet One Global coverage



Fleet One Coastal

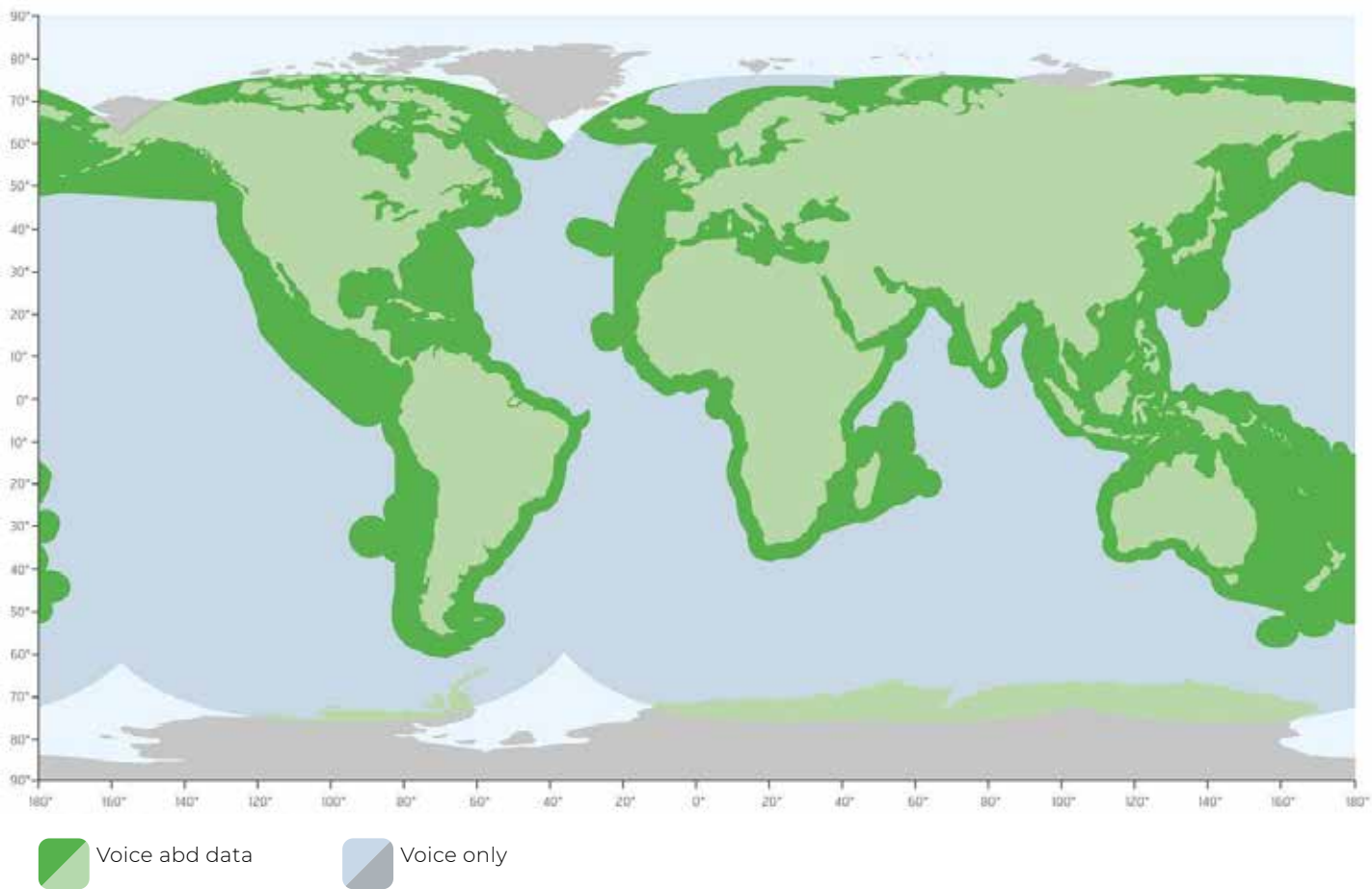
With **Fleet One Coastal**, recreational sailors and small regional fishing boat operators can access tailored airtime pricing in key coastal regions to keep costs down. The service is aimed at occasional users looking to stay connected without having to worry about cellular

coverage or network roaming charges. Competitive rates are available for prepaid use – ideal for one-off trips. **Fleet One Coastal** is available to vessels under 500 gross tonnage. Typical users are small fishing and leisure boats up to 24 metres.





Fleet One Coastal coverage and rate regions



Features

All the features you need

Both **Fleet One** options deliver all you need to stay connected at sea – email and business-critical applications like weather reports and navigation charts, simultaneous voice and SMS texting, plus Inmarsat’s free ‘505’ safety service, which in an emergency directs a call straight through to a Maritime Rescue Co-ordination Centre (MRCC). All delivered over the world’s most reliable commercial L-band satellite network using the Inmarsat-4s, with over 99.9% average network availability.

- ▶ Simultaneous voice and IP data at up to 100kbps
- ▶ Compact, low-cost antenna
- ▶ Flexible airtime pricing
- ▶ 505 Emergency Calling
- ▶ Wi-Fi capability to connect smart phones and tablets
- ▶ Easy installation

Compact terminals designed for small vessels

- ▶ The compact **Fleet One** antenna weighs from just 2.5kg and measures as little as 27.5 x 22.1cm.

Unrivalled reliability

- ▶ With Inmarsat, you can rely on crystal clear calls, SMS texts and important emails always getting through, and being able to get the information you need from the internet at any time – no matter how bad the weather conditions are. You can depend on Inmarsat to provide the most robust global communications links of any satellite operator, with network availability exceeding 99.9%.

Robust terminal

- ▶ Specially designed for the rough maritime environment, the **Fleet One** terminal is compact, robust, and easy to install. You can use the standard “plug and play” Ethernet connection for your laptop, or have the optional Wi-Fi router for multiple users.

# Technical specifications



Above-deck unit	Size (cm)	29.2 (height) x 27.6 (diameter)
	Weight (kg)	3.9
Below-deck unit	Size (cm)	27.8 x 26.4
	Weight (kg)	2.8
Features	Voice	4kbps AMBE +2
	Standard IP	Up to 100kbps
	SMS	Standard 160 characters
	Interfaces	Ethernet (PoE) x2
		RJ-11/RJ-45
		NMEA-0813 — GPS output
		I/O connector x5 configurable inputs/outputs
		Integral DHCP/NAT router
		Built-in PBX
		TNC female (BDU), N-type female (ADU) — antenna connectors
		SIM card slot



# Fleet Broadband

For 10 years, Inmarsat's proven maritime satellite service has been providing dependable, seamless voice and broadband data coverage across the world's oceans.

Choose from a range of capabilities, antenna sizes and price plans designed to suit your operational and crew communication needs, whether you operate a worldwide container fleet or own a leisure vessel.





# Broadband connectivity anywhere at sea

**FleetBroadband** provides cost-effective voice and data through a compact antenna, delivered globally via the I-4 satellite and ground network, which maintains over 99.9 per cent network availability.

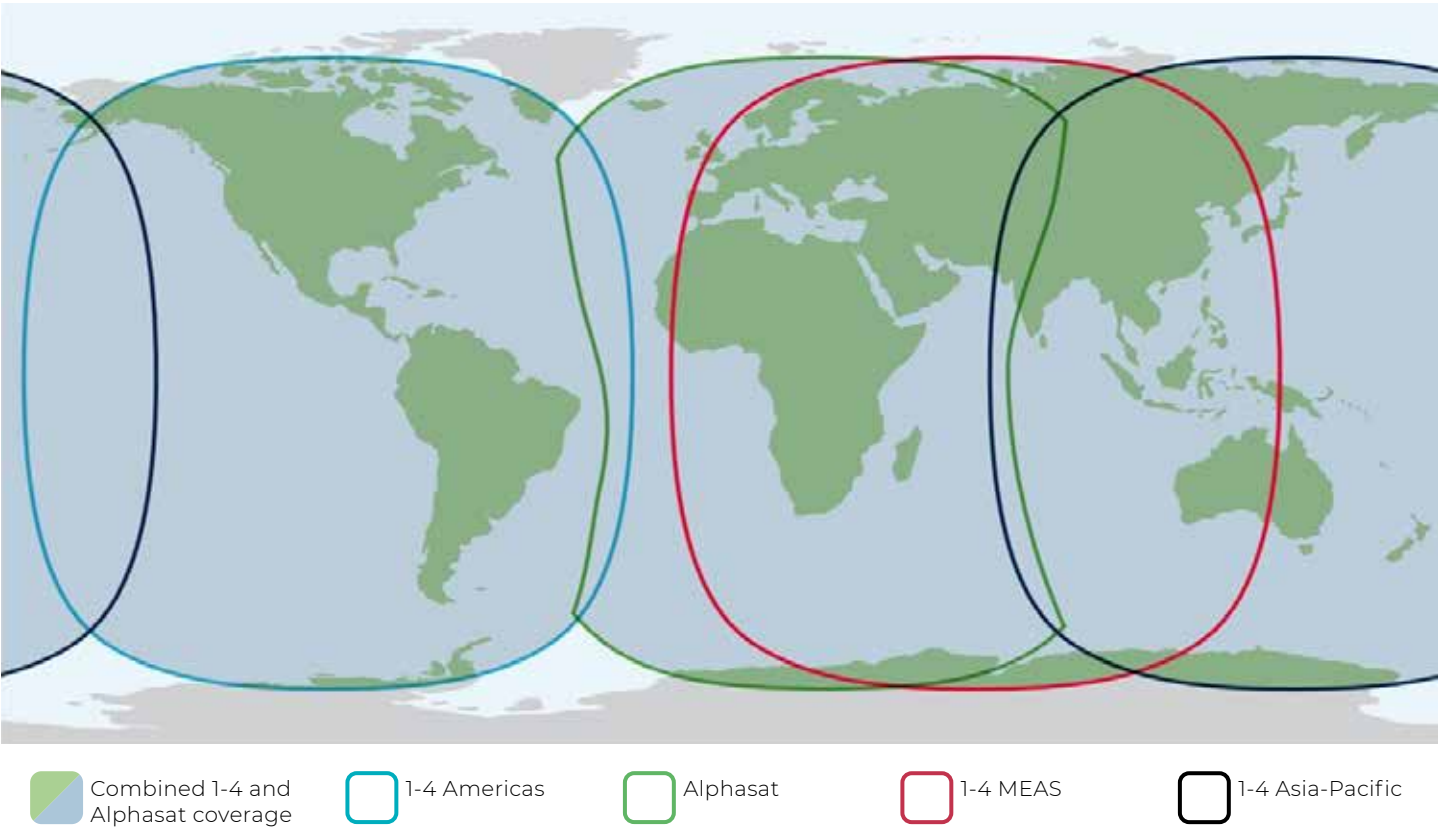
The reliability of the L-band service means it can provide unlimited back-up to our high-speed Fleet Xpress service, ensuring seamless global mobility.

Thousands of vessels of all sizes and in all maritime sectors trust in **FleetBroadband** for operational communications such as email, phone and applications that help them do

everything from plotting the most fuel-efficient route to diagnosing mechanical faults remotely by video link.

It boosts morale onboard by enabling crew to stay in touch with family and friends, use social media, and watch news and entertainment.

Crucially, **FleetBroadband** delivers safety services to non-SOLAS vessels so that in an emergency vessels can immediately get through to a Maritime Rescue and Coordination Centre (MRCC) by pressing the distress button or simply dialling 505.



## Choose the best fit for your vessel

There are a number of terminals, smartboxes, applications and value added services to choose from:

**FB150** delivers global voice, IP data up to 150kbps and SMS texting to smaller vessels with less need for high bandwidth applications. The above-deck and below-deck units are highly compact and easy to install, with antennas from 22.1cm x 29.1cm, weighing 2.5kg.

For larger vessels, such as coastal merchant and fishing fleets, **FB250** offers faster data speeds of up to

250kbps and live streaming for applications like video conferencing, plus up to nine telephone lines with FleetBroadband Multi-voice for crystal clear voice calls.

**FB500** is our fastest FleetBroadband service, delivering always-on connections speeds of up to 432kbps and streaming rates up to 256kbps for multiple user operational and crew communications, anywhere at sea, in any conditions.



# Features

## Standard IP data

- ▶ Always-on data service for applications such as email and internet access, real-time electronic charts and weather reporting.

## Streaming IP

- ▶ Guaranteed rates for live applications like video conferencing and database synchronisation (FB250 and FB500 only).

## Satellite voice

- ▶ Access up to nine telephone lines from a single terminal with FleetBroadband Multi-voice (three lines on FB150).

## Enhanced voice services

- ▶ Voicemail and other enhanced call management options are available, including caller identification, caller barring and call forwarding.

## Crew calling

- ▶ Prepay and post-paid options available.

## GSM calls

- ▶ GSM over FB250 and FB500 enables users to make and receive calls and send and receive SMS texts using the pre-paid SIM in their own mobile phone.

## SMS

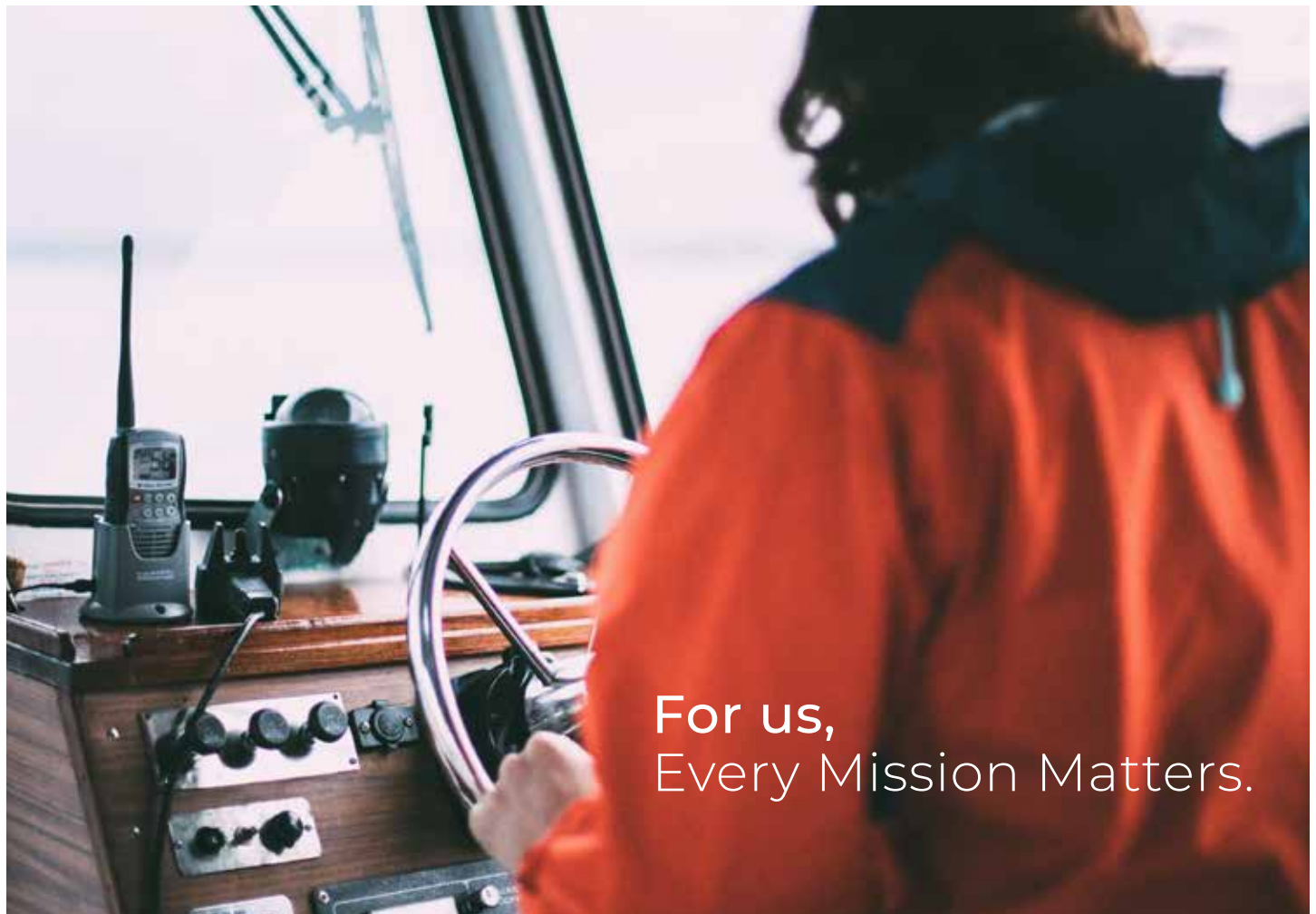
- ▶ Send and receive SMS text messages to and from other FleetBroadband terminals and land-based cellular networks through your PC or smart device.

## Safety

- ▶ 505 Emergency Calling puts vessels directly in contact with a Maritime Rescue Co-ordination centre (MRCC) free of charge for distress calls.

## Fax

- ▶ Circuit-switched data connection for legacy applications such as Group 3 and Group 4 fax (Group 3 only for FB150).



For us,  
Every Mission Matters.

# 150 Fleet Broadband

**150 FleetBroadband** is a compact, lightweight, easy to install and affordable communication system that provides reliable internet access, email and multiple voice lines.

Using the same proven technology as SAILOR’s heavy-use FleetBroadband solutions, **SAILOR 150 FleetBroadband** combines internet connectivity with simultaneous voice calling, ideal for single users and general IP applications.



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## Stay connected

- With **SAILOR 150 FleetBroadband** you always have a 150 kbps data connection available, so you can receive weather data and charts, or submit reports to shore at the same time as making calls or sending text messages. **SAILOR 150 FleetBroadband** helps you achieve increased efficiency; commercial owners can expand the opportunities for profit while reliable connectivity for cruisers provides safety and convenience anywhere in the world.

## Simple and secure installation

- **SAILOR 150 FleetBroadband** is easy and cost-effective to install, so professional and recreational users can be up and running within just a few hours. You’ll have everything you need to get started in the box and because the system is based on standard IP services and clear user interface, connecting your computer or phone system is simple and safe.

## A world of applications

- In addition to single user connectivity, enabling you to stay in touch with friends, family and colleagues regardless of your location or the weather, **SAILOR 150 FleetBroadband** can be

used for dedicated tracking and telemetry applications.

This advanced functionality helps to enhance efficiency by ensuring your support on shore has all the information they need, from real-time engine data for maintenance to position data for vessel tracking.

## Multiple voice lines

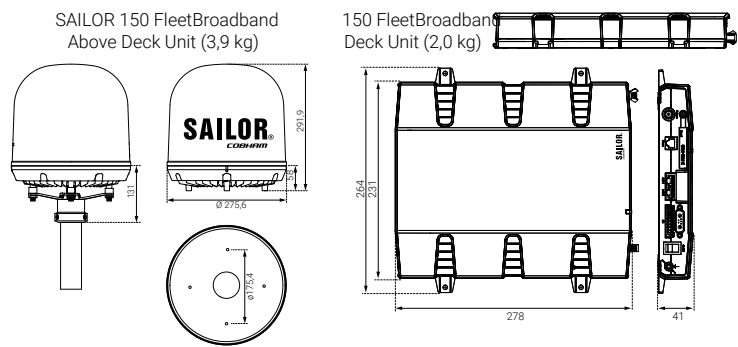
- With up to four simultaneous voice lines possible using the Inmarsat FleetBroadband Multi-voice service, you can turn your **SAILOR 150 FleetBroadband** into a multi-user voice solution. Combined with the Thrane IP Handset you get an even more flexible solution with access to a multitude of value added services.

## Communicate with confidence

- SAILOR products are highly regarded by maritime professionals for their design and build quality, which results in excellent reliability. To support this, we guarantee fast and dependable service through our established network of On Board Service Centers (OSC). With OSC locations all around the world, service and support is always available, whenever and wherever it is needed.



Technical specifications



Approvals	Inmarsat FleetBroadband approved. Compliant to RTTE, CE Marked. Testet to FCC part 25	
Frequency Band	Rx	1525.0 - 1559.0 MHz
	Tx	1626.5 - 1660.5 MHz
	Ch. width	10.5 -189 kHz, Rx
		21 - 189 kHz, Tx
Recommended Antenna Cable	Cable loss max/min	20 dB at 1,62 GHz and 1.0 Ω DC loop resistance 3 dB at 36 - 4 dB at 54 MHz
Power Supply and Consumption	DC input range (isolated)	10 to 32V DC
	Power (max), incl. antenna & PoE output	120 W @ 10-32 V
Environmental Conditions	Ambient Temperature	-25 to +55°C
	Storage	-40 to +85°C
	Survival (power on, non functional)	-40 to +80°C
	Automatic thermal surveillance shuts down system gradually in ease of own temperature	
	BDU operating humidity	95% non-condensing at +40°C
	ADU enclosure	IPX6
	ADU operating humidity	"Exposed" according to EN60 945
	BDU enclosure	IP31
	Icing (survival)	Max 25 mm
Vibration (ADU)	Vibration, operational	Random spectrum 1.05 g rms x 3 axes: 5 to 20 Hz: 0.02 g2/Hz 20 to 150 Hz: -3 dB/octave
	Vibration, non-operational	Random spectrum 1.7 g rms 2 h x 3 axes (6 h total): 5 to 20 Hz: 0.05 g2/Hz, 20 to 150 Hz: -3 dB/octave
Ship Motion	Roll	+/- 30 deg. per. 4 s, max 0.7 g tan.
	Pitch	+/- 15 deg. per. 3 s, max 0.6 g tan.
	Yaw	+/- 10 deg. per. 5 s, max 0.3 g tan.
	Surge	+/- 0.5g
	Sway	+/- 0.5g
	Heave	+/- 0.7g
	Turning rate	+/- 36° /s; ACC 12° /s²
	Headway speed	22 m/s (42 knots)
	Wind	100 knots
Mechanical Shock	20g/11 half-sine	
Antenna Connector	ADU	TNC, female
	BDU	TNC, female

# 250 Fleet Broadband

With data speeds up to 284 kbps from a compact, lightweight and simple to install antenna, **SAILOR 250 FleetBroadband** is the perfect balance between performance and price. It gives you fast data connectivity and voice simultaneously, allowing you to run online operational systems such as remote monitoring, whilst still having access to e-mail, intranet/internet and multiple voice lines.



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## Optimal connectivity

- FleetBroadband offers unrivalled global performance and opens up a world of communication possibilities. With SAILOR 250 FleetBroadband you have fast connectivity between your vessel and shore, regardless of location or conditions. You can ensure the smooth running of your business, increase crew welfare by providing easy to manage internet access and voice calling or simply enjoy your time at sea with high quality internet and voice communication always available.

## A world of applications

- In addition to complete office communication functionality, VPN and use of IP applications, SAILOR 250 FleetBroadband can be used for dedicated tracking and telemetry applications. This advanced functionality can enhance efficiency by ensuring your support on shore has all the information they need, from real-time engine data for maintenance to position data for fleet tracking and management. Simple and secure installation SAILOR 250 FleetBroadband is fast and easy to install, so getting connected aboard a single vessel or an entire fleet is straightforward and cost-effective. The system is

delivered with everything you need to get started in the box and because it is based on standard IP services and features a clear user interface, connecting your computer, corporate network or phone system is simple and secure.

## Multiple voice lines

- With up to six simultaneous voice lines possible using Inmarsat Multi-voice, an important part of the SAILOR 250 FleetBroadband solution is the Thrane IP Handset. This advanced plug-and-play handset provides an intuitive user interface through a 2.2" TFT colour screen and features cutting-edge technology, such as a state-of-the-art echo cancellation and noise suppression software, for excellent audio clarity.

## Communicate with confidence

- SAILOR products are highly regarded by maritime professionals for their design and build quality, which results in excellent reliability. To support this, we guarantee fast and dependable service through our established network of On Board Service Centers (OSC). With OSC locations all around the world, service and support is always available, whenever and wherever it is needed.



## Perfectly balanced

With data speeds up to 284 kbps from an antenna diameter less than 30 cm, which weighs just 5 kg, **SAILOR 250 FleetBroadband** is the perfect balance between form and function. Easy installation and the ability to provide affordable, high-speed access to internet/intranet and email, with voice calling and data simultaneously ensures professional communication possibilities for any vessel.

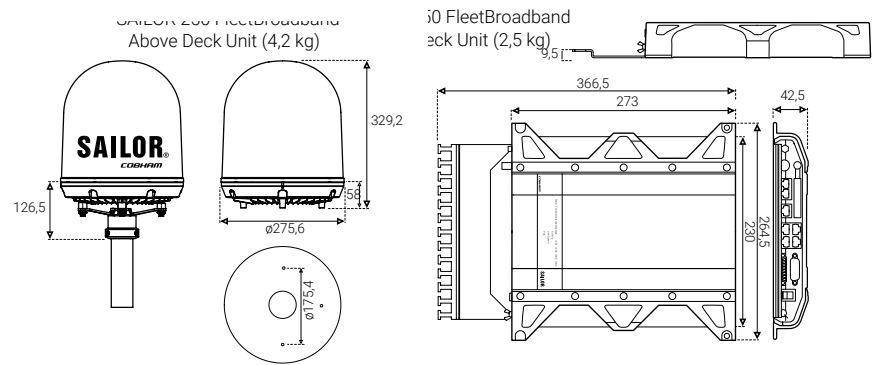
## Connected, wherever you are...

**SAILOR 250 FleetBroadband** harnesses the power of global broadband at sea making IP communication a cost-effective reality, anywhere in the world. You can provide the means for crew to keep in touch with friends and family whilst reducing operational costs by improving vessel efficiency with reliable data and voice communication.

## Thrane IP Handset - high quality voice

**SAILOR 250 FleetBroadband** can be transformed into a highly flexible multi-station voice solution, without the need for a separate PABX, simply by adding additional Thrane IP Handsets. With its intuitive user interface on a 2.2" TFT colour screen and state-of-the-art echo canceller and noise suppression software for excellent call clarity, you can add up to 16 rugged plug-and-play handsets anywhere on a vessel.

Technical specifications



Approvals	Inmarsat FleetBroadband approved. Compliant to RTTE, CE Marked. Testet to FCC part 25	
Frequency Band	Rx	1525.0 - 1559.0 MHz
	Tx	1626.5 - 1660.5 MHz
	Ch. width	10.5 -189 kHz, Rx
		21 - 189 kHz, Tx
Recommended Antenna Cable	Cable loss max/min	20 dB at 1,62 GHz and 1.0 Ω DC loop resistance 3 dB at 36 MHz- 4 dB at 54 MHz
Power Supply and Consumption	DC input range (isolated)	10 to 32V DC
	Power (max), incl. antenna & PoE output	150 W @ 10-32 V
Environmental Conditions	Ambient Temperature	-25 to +55°C
	Storage	-40 to +85°C
	Survival (power on, non functional)	-40 to +80°C
	Automatic thermal surveillance shuts down system gradually in ease of own temperature	
	BDU operating humidity	95% non-condensing at +40°C
	ADU enclosure	IPX6
	ADU operating humidity	"Exposed" according to EN60 945
	BDU enclosure	IP31
	Icing (survival)	Max 25 mm
Vibration (ADU)	Vibration, operational	Random spectrum 1.05 g rms x 3 axes: 5 to 20 Hz: 0.02 g2/Hz 20 to 150 Hz: -3 dB/octave
	Vibration, non-operational	Random spectrum 1.7 g rms 2 h x 3 axes (6 h total): 5 to 20 Hz: 0.05 g2/Hz, 20 to 150 Hz: -3 dB/octave
Ship Motion	Roll	+/- 30 deg. per. 4 s, max 0.7 g tan.
	Pitch	+/- 15 deg. per. 3 s, max 0.6 g tan.
	Yaw	+/- 10 deg. per. 5 s, max 0.3 g tan.
	Surge	+/- 0.5g
	Sway	+/- 0.5g
	Heave	+/- 0.7g
	Turning rate	+/- 36 ° /s; ACC 12 ° /s²
	Headway speed	22 m/s (42 knots)
	Wind	100 knots
Mechanical Shock	20g/11 half-sine	
Antenna Connector	ADU	TNC, female
	BDU	TNC, female



## 500 Fleet Broadband

The **SAILOR 500 FleetBroadband** is designed for vessels and platforms with demanding requirements for connectivity. It meets the critical needs for voice and data communication of maritime and offshore professionals globally but despite its power, is a compact, lightweight solution. It provides extensive functionality including full access to bandwidth-hungry IP applications, broadband internet/intranet, e-mail, secure VPN and nine simultaneous voice lines.



### High-end connectivity

With high-speed internet connectivity, running efficiency enhancing custom IP solutions in parallel with email, VPN and voice calling is all in a day's work for **SAILOR 500 FleetBroadband**. It enables tracking and telemetry functionality, so colleagues on shore have all the information they need; real-time engine data for maintenance, drilling data for improving production or position data for fleet tracking and management. With **SAILOR 500 FleetBroadband**, you can also provide communication and internet access for crew, which is vital for ensuring an efficient workforce.

### Professional & proven performance

**SAILOR 500 FleetBroadband** uses a fully stabilized 3-axis antenna with rate sensors for improved performance and fast, intelligent satellite tracking. It's built to the world-renowned SAILOR standards, so you benefit from reliable, always available connectivity at all times, regardless of location and conditions.

Simple and secure installation **SAILOR 500**

**FleetBroadband** is easy to deploy and getting connected is a straightforward, cost-effective process. The system is delivered with everything you need to get started in

the box and because it is based on standard IP services and features a clear user interface, connecting your computer, corporate network, external sensors or phone system is simple and secure.

### Multiple voice lines

With up to nine simultaneous voice lines possible using Inmarsat Multi-voice, an important part of the **SAILOR 500 FleetBroadband** solution is the Thrane IP Handset. This advanced plug-and-play handset provides an intuitive user interface through a 2.2" TFT colour screen and features cutting-edge technology, such as a state-of-the-art echo cancellation and noise suppression software, for excellent audio clarity.

### Communicate with confidence

SAILOR products are highly regarded by maritime professionals for their design and build quality, which results in excellent reliability. To support this, we guarantee fast and dependable service through our established network of On Board Service Centers (OSC). With OSC locations all around the world, service and support is always available, whenever and wherever it is needed.

## Flexible form and function

SAILOR 500 FleetBroadband is small and lightweight but enables a wealth of functionality including broadband internet/intranet, email and secure VPN with voice calling and data use simultaneously. Lower capital investment relative to competing connectivity services and flexible, simple installation, even by crew, enables cost-effective, high bandwidth connectivity and communication.

## Operational enhancements

Speeds up to 432 kbps bring the broadband experience to the oceans. With this much bandwidth available SAILOR 500 FleetBroadband enables the use of secure VPNs and custom IP applications. Empower your vessels with the latest technology. Improve performance with state-of-the-art remote monitoring, reporting and maintenance or enhance safety with telemedicine and distress alerting.

## Support your crew

With high quality voice and reliable multi-user data connectivity, SAILOR 500 FleetBroadband harnesses the power of global broadband at sea so friends and family are only a call or email away. Offer low-cost access to on-board telephones, broadband internet and personal email in order to support crew morale, retention and the safety and efficiency of operations.

## Leading technology

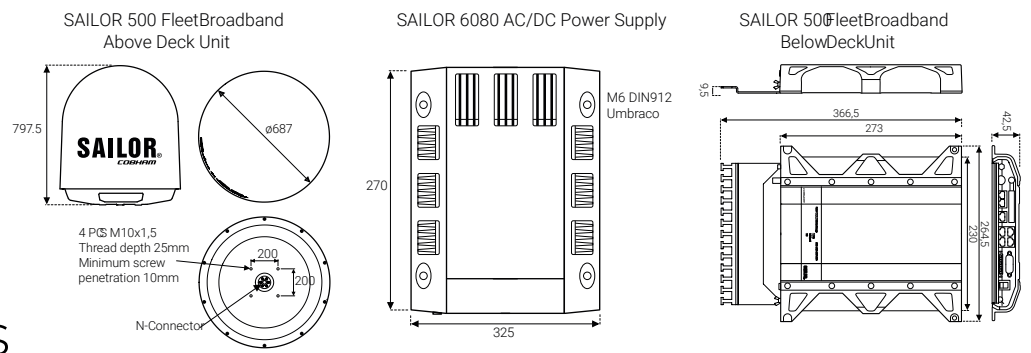
Designed to provide reliable operation in the harsh maritime environment, SAILOR 500 FleetBroadband antenna is a fully stabilized 3-axis antenna with rate sensors for improved performance and fast, intelligent satellite tracking. Built to the world-renowned SAILOR standards, the antenna really does place SAILOR 500 FleetBroadband miles ahead of the competition and ensures reliable connectivity at all times.

## Thrane IP Handset - high quality voice


SAILOR 500 FleetBroadband can be transformed into a highly flexible multi-station voice solution, without the need for a separate PABX, simply by adding additional Thrane IP Handsets. With its intuitive user interface on a 2.2" TFT colour screen and state-of-the-art echo canceller and noise suppression software for excellent call clarity, you can add up to 16 rugged plug-and-play handsets anywhere on a vessel.



Technical specifications



Approvals	Inmarsat FleetBroadband approved. Compliant to RTTE, CE Marked. Testet to FCC part 25	
Frequency Band	Rx	1525.0 - 1559.0 MHz
	Tx	1626.5 - 1660.5 MHz
	Ch. width	10.5 -189 kHz, Rx
		21 - 189 kHz, Tx
Recommended Antenna Cable	Cable loss max/min	20 dB at 1,62 GHz and 1.0 Ω DC loop resistance 3 dB at 36 MHz- 4 dB at 54 MHz
Power Supply and Consumption	DC input range (isolated)	10 to 32V DC
	Power (max), incl. antenna & PoE output	150 W @ 10-32 V
Environmental Conditions	Ambient Temperature	-25 to +55°C
	Storage	-40 to +85°C
	Survival (power on, non functional)	-40 to +80°C
	Automatic thermal surveillance shuts down system gradually in ease of own temperature	
	BDU operating humidity	95% non-condensing at +40°C
	ADU enclosure	IPX6
	ADU operating humidity	“Exposed” according to EN60 945
	BDU enclosure	IP31
	Icing (survival)	Max 25 mm
Vibration (ADU)	Vibration, operational	Random spectrum 1.05 g rms x 3 axes: 5 to 20 Hz: 0.02 g2/Hz 20 to 150 Hz: -3 dB/octave
	Vibration, non-operational	Random spectrum 1.7 g rms 2 h x 3 axes (6 h total): 5 to 20 Hz: 0.05 g2/Hz, 20 to 150 Hz: -3 dB/octave
Ship Motion	Roll	+/- 30 deg. per. 4 s, max 0.7 g tan.
	Pitch	+/- 15 deg. per. 3 s, max 0.6 g tan.
	Yaw	+/- 10 deg. per. 5 s, max 0.3 g tan.
	Surge	+/- 0.5g
	Sway	+/- 0.5g
	Heave	+/- 0.7g
	Turning rate	+/- 36 ° /s; ACC 12 ° /s²
	Headway speed	22 m/s (42 knots)
	Wind	100 knots
Mechanical Shock	20g/11 half-sine	
Antenna Connector	ADU	TNC, female
	BDU	TNC, female

Comparison chart			
	SAILOR 500 FleetBroadband	SAILOR 250 FleetBroadband	SAILOR 150 FleetBroadband
Standard IP	Up to 432 kbps	Up to 284 kbps	Up to 150 kbps
Streaming IP	8, 16, 32, 64, 128, 256 kbps	8, 16, 32, 64, 128 kbps	-
ISDN Data	64 kbps	-	-
Fax	G4 via UDI, G3 fax via 3.1 kHz Audio	G3 fax via 3.1 kHz Audio	G3 fax via 3.1 kHz Audio
SMS (standard 3G)	160 characters	160 characters	160 characters
Standard Voice	4 kbps	4 kbps	4 kbps
Premium Voice	3.1 kHz Audio, 64 kbps	3.1 kHz Audio, 64 kbps	3.1 kHz Audio, 64 kbps
Multi-voice	9 voice lines simultaneously	6 voice lines simultaneously	4 voice lines simultaneously
Ethernet/PoE	4 ports	4 ports	2 ports
Phone/Fax (2-wire)	2 ports	2 ports	1 ports
ISDN	1 port (data/3.1 kHz Audio)	1 port (3.1 kHz Audio)	-
I/O Connector	1 connector with 5 configurable inputs/outputs	1 connector with 5 configurable inputs/outputs	1 connector with 5 configurable inputs/outputs
L-Band Output	1 port for L-Band Broadcast service	1 port for L-Band Broadcast service	1 port for L-Band Broadcast service
Status LED	Full status LED panel	Full status LED panel	Full status LED panel
SIM Card Slot	1 SIM Card slot for BGAN SIM card	1 SIM Card slot for BGAN SIM card	1 SIM Card slot for BGAN SIM card
Router	Integral DHCP/NAT router	Integral DHCP/NAT router	Integral DHCP/NAT router
PBX	Built-in PBX	Built-in PBX	Built-in PBX



## LT-3100

The LT-3100 Satellite Communications System is a maritime fixed Iridium satellite phone from Lars Thrane A/S.

The LT-3100 system is designed for the professional market (deep sea, fishing, and workboats), but can be used for the leisure market as well. The LT-3100 system meets all standards and certification requirements needed for worldwide maritime satellite communication equipment.



The LT-3100 system has voice and data capabilities with 100% global coverage. The LT-3100 system consists of a control unit, handset unit, and antenna unit. A single cable solution connects the control unit with the antenna unit. Using a standard coaxial cable, up to 500 meters of separation between the units can be obtained, giving freedom to mount the antenna in the best possible location, with free line of sight to the satellites.

The LT-3100 system can be used as the primary satellite communication product on vessels, covering the basic communication needs in terms of connectivity between the ship and shore. In addition, the LT-3100 system can be used for crew calling or as a back-up satellite communication product. The LT-3100 system provides voice, SMS, data, vessel tracking, and other Iridium services with competitive airtime rates, making it the perfect satellite communication product on board any vessel.

The LT-3100 Iridium Communications System is designed and built for the demanding and rough environment at sea and with an operational temperature range from -25°C to +55°C (-13°F to +131°F).

### Installation

The LT-3100 system is very easy to install and requires no yearly maintenance or service. Everything is included in the box to get started with the installation and operating the LT-3100 system. The control unit can be installed using either a bracket mount or flush mount. The antenna unit can be mounted using either a pole mount (1.5" tube) or angle bracket mount (1" to

2.5" tube). The control unit has a large 4.3" TFT display, from where the system can be operated with overview and ease. The built-in webserver can be used for service and maintenance.

More than 40 years of experience have been put into the design and construction of the LT-3100 Iridium Communications System, with an exceptional performance and specification level.

## Features

- ▶ Voice, SMS, SBD, and Modem Data
- ▶ Single antenna cable solution (up to 500 m)
- ▶ High-performance GNSS/GPS receiver
- ▶ Built-in Webserver for configuration and maintenance
- ▶ Bluetooth for Private Area Network (PAN)
- ▶ Smartphone (SIP voice and messaging)
- ▶ Connect external SIP handsets
- ▶ Connect external POTS phones via an adaptor
- ▶ Vessel tracking (SBD, SMS, and E-mail)
- ▶ Remote management of vessel tracking
- ▶ NMEA 0183 GNSS/GPS output data via RS-422
- ▶ OnSatMail (AST) and SkyFile Mail (Marlink)
- ▶ RedPort Optimizer (GMN)
- ▶ RED BOX (mailasail)

Technical specifications



Certification & standards	Maritime CE, FCC, IC, RCM, RoHS 2, Iridium®
Vibration, operational	IEC 60945 (sine) & proprietary Maritime Random profile
Vibration, survival	Proprietary Maritime Random profile
Vibration, shock	Proprietary Maritime profile (20 g, 11 ms)
Power consumption: operating mode, max	37 W
Power consumption: standby mode, max	21 W
Power consumption: sleep mode, max	0.08 W
Compass Safe Distance, std.	0.85 m (2.8 ft)
Compass Safe Distance, steer.	0.65 m (2.1 ft)

LT-3110 Control Unit

Weight	658 g (1.45 lbs)
Dimensions	224.0 x 120.0 x 70.0 mm (8.82 x 4.72 x 2.76 in)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP 32
Interfaces	Ethernet, auxiliary, DC input, chassis ground Antenna Unit (N conn.), Handset, Bluetooth, SIM card
Input voltage	10 - 32 VDC

LT-3120 Handset

Weight	290 g (0.64 lbs)
Dimensions	208.8 x 52.8 x 38.2 mm (8.22 x 2.08 x 1.50 in)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP32

LT-3130 Antenna Unit

Weight	687 g (1.51 lbs)
Dimensions	151.1 x Ø 149.5 mm (5.95 x Ø 5.89 in)
Temperature, operational	-25°C to +55°C (-13°F to +131°F)
IP rating, dust and water	IP67
Interfaces	Control Unit (N conn.)
Antenna communication cable	Coaxial cable, up to 500 m (1500 ft)
Warranty	2 year
Maintenance	None



## LT-3100 Citadel

Pirate attacks around the world are still seen as a real threat to crews and vessels. As a consequence, more and more vessels are fitted with a citadel (safe room). Reliable communication is crucial in these situations.



The LT-3100 Satellite Communications System offers a solution combining voice, SMS, data and tracking in one terminal. The Antenna Unit can be installed up to 500 meters from the Control Unit making it possible to hide the antenna. Operating on the Iridium network, the LT-3100 system offers 100% global coverage.

The LT-3100 Satellite Communications System is a maritime fixed Iridium satellite phone from Lars Thrane A/S. The LT-3100 system is designed for the professional market (deep sea, fishing, and workboats), but can be used for the leisure market as well. The LT-3100 system meets all standards and certification requirements needed for worldwide maritime satellite communication equipment.

### Performance

The LT-3100 system has voice and data capabilities with 100% global coverage. The LT-3100 system consist of a control unit, handset unit, and antenna unit. A single cable solution connects the control unit with the antenna unit. Using a standard coaxial cable, up to 500 meters of separation between the units can be obtained, giving freedom to mount the antenna in the best possible location, with free line of sight to the satellites.

The LT-3100 system can be used as the primary satellite communication product on vessels, covering the basic communication needs in terms of connectivity between the ship and shore. In addition, the LT-3100 system can be used for crew calling or as a back-up satellite communication product. The LT-3100 system provides voice, SMS, data, vessel tracking, and other Iridium services with competitive airtime rates, making it the perfect satellite communication product on board any vessel.

The LT-3100 Iridium Communications System is designed and built for the demanding and rough environment at sea and with an operational temperature range from -25°C to +55°C (-13°F to +131°F).

### Installation

The LT-3100 system is very easy to install and requires no yearly maintenance or service. Everything is included in the box to get started with the installation and operating the LT-3100 system. The control unit can be installed using either a bracket mount or flush mount. The antenna unit can be mounted using either a pole mount (1.5" tube) or angle bracket mount (1" to 2.5" tube). The control unit has a large 4.3" TFT display, from where the system can be operated with overview and ease. The built-in webserver can be used for service and maintenance.

More than 40 years of experience have been put into the design and construction of the LT-3100 Iridium Communications System, with an exceptional performance and specification level.

## Features

- ▶ Voice, SMS & Data
- ▶ Tracking
- ▶ Up to 500 m antenna cable
- ▶ GNSS/GPS output to VHF/DSC
- ▶ Fullfills the ExxonMobile MESQAC E29 & E30 requirements
- ▶ Small antenna easy to hide

Technical specifications



Certification & standards	Maritime CE, FCC, IC, RCM, RoHS 2, Iridium®
Vibration, operational	IEC 60945 (sine) & proprietary Maritime Random profile
Vibration, survival	Proprietary Maritime Random profile
Vibration, shock	Proprietary Maritime profile (20 g, 11 ms)
Power consumption: operating mode, max	37 W
Power consumption: standby mode, max	21 W
Power consumption: sleep mode, max	0.08 W
Compass Safe Distance, std.	0.85 m (2.8 ft)
Compass Safe Distance, steer.	0.65 m (2.1 ft)

LT-3110 Control Unit

Weight	658 g (1.45 lbs)
Dimensions	224.0 x 120.0 x 70.0 mm (8.82 x 4.72 x 2.76 in)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP 32
Interfaces	Ethernet, auxiliary, DC input, chassis ground Antenna Unit (N conn.), Handset, Bluetooth, SIM card
Input voltage	10 - 32 VDC

LT-3120 Handset

Weight	290 g (0.64 lbs)
Dimensions	208.8 x 52.8 x 38.2 mm (8.22 x 2.08 x 1.50 in)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP32

LT-3130 Antenna Unit

Weight	687 g (1.51 lbs)
Dimensions	151.1 x Ø 149.5 mm (5.95 x Ø 5.89 in)
Temperature, operational	-25°C to +55°C (-13°F to +131°F)
IP rating, dust and water	IP67
Interfaces	Control Unit (N conn.)
Antenna communication cable	Coaxial cable, up to 500 m (1500 ft)
Warranty	2 year
Maintenance	None



## LT-3100S GMDSS



The LT-3100S GMDSS System is the new solution for GMDSS Distress and Safety communication via satellite. In early 2020, Iridium plans to start its GMDSS services and operation. Being recognized by the IMO and the SOLAS convention, it will be much more than an alternative to Inm-C, offering 100% global coverage and built-in Safety Voice.

In 2018, the IMO's Maritime Safety Committee (MSC) recognized Iridium as a provider of GMDSS satellite services. In early 2020, these GMDSS services, hereunder: Distress Alert, Safety Voice, and Maritime Safety Information (MSI) will be available via the LT-3100S GMDSS system, a terminal developed by Lars Thrane A/S. The LT-3100S GMDSS system is designed for all IMO vessels and will be an alternative to the Inmarsat C. The LT-3100S GMDSS system meets all standards and certification requirements needed for worldwide maritime satellite communications equipment (MED, Wheelmark).

### Performance

The LT-3100S GMDSS system has voice and data capabilities with 100% global coverage. The LT-3100S GMDSS system consists of a control unit, handset, and antenna unit. A single cable solution connects the control unit with the antenna unit. Using a standard coaxial cable, up to 500 meters of separation between the units can be obtained, giving freedom to mount the antenna in the best possible location, with free line of sight to the satellites.

The LT-3100S GMDSS system is not only designed for GMDSS services. It also offers SSAS and LRIT functionalities. It can be used as the primary satellite communication product on vessels, covering the basic communication needs in terms of connectivity between the ship and shore. The LT-3100S GMDSS system also provides voice, SMS, data, vessel tracking, and other Iridium services with competitive airtime rates, making it the perfect satellite communication product on board any vessel.

The LT-3100S GMDSS System is designed and built for the demanding and rough environment at sea and with an operational temperature range from -40°C to +55°C (-40°F to +131°F).

### Installation

The LT-3100S GMDSS system is very easy to install. Everything is included in the box to get started with the installation and operating the LT-3100S GMDSS system. The control unit can be installed using either a bracket mount or flush mount. The antenna unit can be mounted using either a pole mount (1.5" tube) or angle bracket mount (1" to 2.5" tube). The control unit has a large 4.3" TFT display, from where the system can be operated with overview and ease. The built-in webserver can be used for service and maintenance.

More than 40 years of experience have been put into the design and construction of the LT-3100S GMDSS system, with an exceptional performance and specification level.

## Features

- ▶ 100% Global GMDSS Coverage (Sea Areas A1 to A4)
- ▶ Distress Alert & Safety Voice
- ▶ Maritime Safety Information (MSI)
- ▶ General Message Communication
- ▶ Ship Security Alert System (SSAS)
- ▶ Support for external Alarm Panels
- ▶ Support for GMDSS Printer
- ▶ Support for Bridge Alert Management (BAM)
- ▶ Long Range Identification and Tracking (LRIT)
- ▶ Voice, SMS, SBD, and Modem Data (non-priority)
- ▶ Single antenna cable solution (up to 500 m)
- ▶ High-performance GNSS/GPS receiver
- ▶ Webserver for configuration and maintenance

# Technical specifications



Certification & standards	Maritime CE, FCC, IC, RCM, RoHS 2, Iridium®
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## LT-3110 Control Unit

Weight	658 g (1.45 lbs)
Dimensions	224.0 x 120.0 x 70.0 mm (8.82 x 4.72 x 2.76 in)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP 32
Interfaces	Ethernet, auxiliary, DC input, chassis ground Antenna Unit (N conn.), Handset, SIM card
Input voltage	12 - 24 VDC

## LT-3120 Handset

Weight	290 g (0.64 lbs)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP32

## LT-3130 Antenna Unit

Weight	687 g (1.51 lbs)
Temperature, operational	-40°C to +55°C (-40°F to +131°F)
IP rating, dust and water	IP67
Interfaces	Control Unit (N conn.)

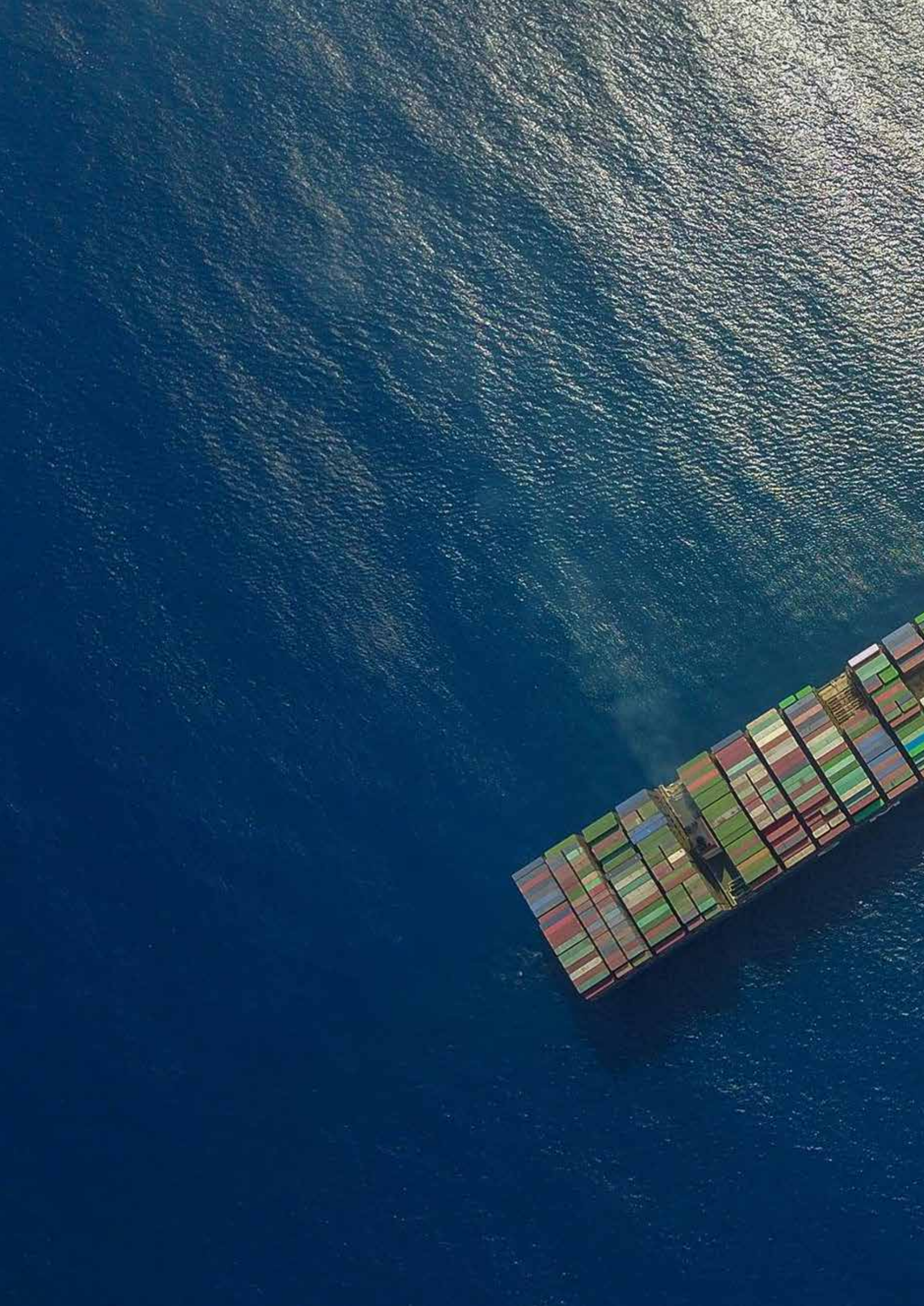
## LT-3140S Interface Unit

Weight	720 g (1.59 lbs)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP10
Interfaces	4 x Ethernet, 2 x RS422, 4 x GPIO, 4 x CAN, DC input, chassis ground
Input voltage	12 – 24 VDC

## LT-3150S Alarm Panel

Weight	68 g (0.15 lbs)
Temperature, operational	-15°C to +55°C (+5°F to +131°F)
IP rating, dust and water	IP32
Interface	CAN
Antenna communication cable	Coaxial cable, up to 500 m (1500 ft)
Warranty	2 year
Maintenance	None







# KVH Television





# TracVision HD-series

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# Commercial-grade **Satellite TV** for Your Fleet

Live TV is unmatched in its power to help your crew feel connected to home and world events. Turn to KVH's award-winning **TracVision®** systems with advanced tracking, easy-to-use controls, and support for regional satellite TV services worldwide to deliver the live entertainment and news they want with crystal-clear reception whether in rough seas or calm.



80  
81

## TracVision HD-series: Stunning HDTV

The advanced **TracVision HD-series** offers full support for the highest quality satellite TV programs with full support for HDTV services worldwide, including DIRECTV® Ka/Ku-band HDTV broadcasts, with rugged, commercial-grade, easy-to-use antennas.



## TracVision HD11



### Crystal-clear Satellite TV Reception with a Global Reach

Keep your crew entertained and reduce your operational challenges by bringing the **KVH TracVision® HD11** onboard. The ultimate 1-meter satellite TV antenna solution, the **TracVision HD11** features patented TriAD™ technology for simultaneous reception of DIRECTV® Ka- and Ku-band broadcasts for HDTV as well as a global LNB so crews can stay entertained via regional satellite TV services worldwide. Rugged enough to survive rough seas and bad weather, the **TracVision HD11** includes:

- ▶ Best global marine HDTV coverage and superior performance thanks to patented technology
- ▶ Superior tracking thanks to its four-axis, stabilized design, tracking satellites from the horizon to directly overhead, even in rough seas
- ▶ Universal World LNB for full compatibility with regional satellite TV services around the globe, all without any hardware swaps



## Key Features and Benefits

- ▶ Works with nearly every satellite TV service in the world without physically swapping LNBs
- ▶ Four-axis, fully stabilized 1-meter satellite TV antenna that tracks satellites on the horizon or directly overhead, even in the roughest seas
- ▶ Highest signal gain available for best offshore coverage and superior performance in bad weather
- ▶ Patented KVH TriAD™ technology for simultaneous Ka- and Ku-band reception – required to track all three DIRECTV® North American satellites
- ▶ Exclusive digitally programmable Universal World LNB with a 100+ satellite library
- ▶ IP-enabled Antenna Control Unit with Ethernet and Wi-Fi for easy system control via any web browser or via KVH's apps for iPhone® or iPad®
- ▶ Integrated GPS for fastest acquisition
- ▶ Built-in GSM Remote Support Module for diagnostics
- ▶ DVB®-S2 compatible
- ▶ Global support from KVH's Certified Support Network (CSN)

Enjoy easy & reliable access to virtually every Ka/Ku-band satellite TV service on earth

The **TracVision HD11** offers groundbreaking technology designed to provide years of reliable performance in the grueling commercial maritime environment. As your vessels cross the globe, this smart antenna system switches seamlessly from service to service thanks to KVH's integrated worldwide satellite TV library. Now, your crew can easily enjoy TV programming from linear and circular Ku-band satellite TV broadcasts as well as DIRECTV's U.S. HDTV Ka-band service, which requires reception of signals from three satellites simultaneously. Best of all, the TracVision HD11 reduces your costs and streamlines operations by eliminating the need to swap LNBs when you reach a new region. KVH's advanced digitally programmable multi- beam Ka/Ku/Ka-band Universal World LNB is compatible with virtually every Direct-to-Home (DTH) satellite TV service worldwide.

Rugged commercial-grade performance

The **TracVision HD11** antenna features a breakthrough four-axis pedestal design with a robotic direct drive that is both stronger and tracks better than any competing

product. The elegant design enables use of the largest possible antenna while covering the sky from the horizon to directly overhead, even in rough seas. **TracVision HD11's** rugged design is apparent in its solid construction and is guaranteed to track in all weather conditions. No other maritime satellite TV system can match this performance. State-of-the-art IPACU for the best user experience The **TracVision HD11's** Internet Protocol Antenna Control Unit (IPACU), Ethernet connection, and built-in Wi-Fi interface make system setup and operation as simple as opening a web browser.

Easy installation, support, and operation

With a light, compact design, the **TracVision HD11** is easy to install and even uses the same mounting pattern as legacy 1-meter satellite TV antennas to make upgrades easy! Using KVH's breakthrough satellite detection and identification technology, the **TracVision HD11** can easily be updated when service providers make satellite broadcast changes. An integrated support module enables remote diagnostics to ensure optimal performance, while the built-in GPS makes satellite acquisition a snap!

Technical specifications



Satellite Coverage Regions <sup>1</sup>	Worldwide <sup>2</sup>
Antenna Dish Diameter	1 m (41.5")
Antenna Unit Diameter x Height	1.2 m x 1.4 m (48.8" x 57.3")
Antenna Unit Weight	90.7 kg (200 lbs)
IPACU Belowdecks Unit: Width x Depth x Height / Weight	42.55 cm (16.75") x 30.99 cm (12.2") x 6.68 cm (2.63") / 3.17 kg (7 lbs)
Minimum EIRP <sup>3</sup>	42 dBW (Ku-band) 45 dBW (Ka-band)
LNB Types Available	Digitally programmable Universal World Ka/Ku/Ka-band Linear/Circular Quad
Tracking Technology	Multi-axis High-Performance (HP™) tracking
User Interface	Internet Protocol-enabled Antenna Control Unit (IPACU)
System Power	100-250 VAC 250 watts nominal 300 watts peak
Warranty <sup>4</sup>	2-year parts, 1-year labor



## TracVision UHD7



### The ultimate HD & 4K satellite TV solution for commercial vessels

Crews aboard commercial ships can enjoy an at-home HD and 4K DIRECTV® entertainment experience at sea, like never before, thanks to KVH's rugged TracVision® UHD7 commercial maritime satellite TV antenna system. The TracVision UHD7's innovative antenna design brings HD and 4K programming from DIRECTV® onboard using KVH's patented TriAD™ technology, which simultaneously receives broadcasts from three Ku- and Ka- band DIRECTV satellites. The TracVision UHD7 is also equipped with a built-in DISH Pro Module, allowing complete compatibility with DISH Network. With industry-leading technology, the TracVision UHD7 offers:

- ▶ Uninterrupted picture quality at sea on every TV with HD and ultra-high definition 4K clarity\* (4K DIRECTV only)
- ▶ Simultaneous tracking of DIRECTV's three primary satellites for uninterrupted reception and DVR support
- ▶ Full compatibility with DISH programming throughout U.S., Central America, or Caribbean waters, and Bell in Canada



## Highlights

- ▶ Advanced stabilization tracking for exceptional reception, even in the roughest seas
- ▶ Simple 2-cable installation
- ▶ Support for 26 tuners out of the box with the option to expand up to 104 tuners
- ▶ Exclusive TracVision App lets you check signal strength and more right from your phone
- ▶ Access to KVH's in-house DIRECTV support team for account creation, activation and troubleshooting
- ▶ World-class warranty coverage and support

# Exclusive Technology

## Patented TriAD Technology

This revolutionary technology simultaneously receives broadcasts from three separate DIRECTV satellites so every TV on board can be tuned to any channel on any device at any time. No locking up, rebooting, or lengthy satellite searches because the advanced TracVision UHD7 is constantly receiving program data.

## Digital Single Wire Multiswitch

This revolutionary technology simultaneously receives broadcasts from three separate DIRECTV satellites so every TV on board can be tuned to any channel on any device at any time. No locking up, rebooting, or lengthy satellite searches because the advanced TracVision UHD7 is constantly receiving program data.

## KVH TracVision UHD7 Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs.

Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.

## Easy Control via the TracVision TV-Hub

TV-Hub integrates advanced technology into a single compact, lightweight, and durable unit that's straightforward and easy to use. Automatic satellite switching and the fastest satellite acquisition speeds paired with built-in support for DIRECTV, DISH Network,<sup>1</sup> and Bell, provides continuous access to premium programming and local channels throughout the world. And its built-in Wi-Fi interface allows access to system information from any Wi-Fi enabled device.

## Optional Dome Designs

The TracVision UHD7 is also available in alternate dome designs for attractive dual-dome installs. Choose the tapered base version to match the award-winning TracPhone V7-HTS satellite communications system or an 89 cm dome for larger vessels.

# Technical specifications



Satellite Coverage Regions <sup>3</sup>	North & Central America, Caribbean <sup>4</sup>
Antenna Dish Diameter	60 cm (24")
Antenna Unit Diameter x Height	66.3 cm D x 69.6 cm H (26.1" x 27.4")
Antenna Unit Weight	23.6 kg (52 lbs)
LNB (polarization/output)	Ka/Ku/Ka-band Circular
Minimum EIRP <sup>5</sup>	46 dBW (Ku-band)/47 dBW (Ka-band)
TV-Hub Dimensions	42.5 cm x 28.4 cm x 6.6 cm (16.7" x 11.2" x 2.6")
TV-Hub Weight	0.95 kg (2.1 lbs)
Antenna Power	120 VAC 60 Hz 16 Watts nominal
TV-Hub Power	10-30 VDC 40 Watts nominal
Certifications	NMEA 2000 Certified; See all certifications at kvh.com/uhd7comm
Cabling	2 coax 75-Ohm cables for up to 13 tuners, 3 cables for 26 tuners, 5 cables for 104 tuners <sup>6</sup>
Warranty	2-year parts, 1-year labor <sup>7</sup>
KVH Part Number	01-0423-01SL (standard base)
MSRP (\$USD)	\$13,995 (standard base)









# TracVision TV-series

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Comparison chart

						
	Tracvision TV1	Tracvision TV3	Tracvision TV5	Tracvision TV6	Tracvision TV8	TracVision TV10
Satelliten Coverage Regions	Select Regions Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide
Antenna Dish Diameter	32 cm (12.5')	37 cm (14.5')	45 cm (18')	60 cm (24')	81.3 cm (32')	1 meter (41.5')
Antenna Unit: Diameter x Height	34.3 x 33.7 cm (13.5 x 13.3')	39.4 x 44.7 cm (15.5 x 17.6')	48.8 x 53.2 cm (19.2 x 20.9')	66.6 x 69.9 cm (26.2 x 27.4')	88.9 x 99.9 cm (35.0 x 39.3')	1.2 m x 1.4 m (48.8' x 57.3')
Weight	3.6 kg (8 lbs)	7.7 kg (17 lbs) Linear Universal Dual: 9.1 kg (20 lbs)	11.3 kg (25 lbs)	24.2 kg (53.4 lbs)	40.0 kg (88.2 lbs)	90.0 kg (198 lbs)
Minimum EIRP (Ku-band)	51 dBW	50 dBW	48 dBW	46 dBW	43 dBW	41.5 dBW
Elevation Azimuth Range	+20° to + 70°/ Continuous	+10° to + 80°/ Continuous Linear Universal Dual: +10° to + 80°/720°	+0° to + 80°/720°	+10° to + 80°/720°	-15° to + 80°/720°	0° to +80°/ 720°
Linear Skew Control	Manual	Manual	Manual or Automatic	Automatic	Automatic	Automatic
LNB Types Available (polarization/output)	Linear Universal Single Circular	Linear Universal Single Linear Universal Dual Circular	Linear Universal Quad DIRECTTV P.A. Circular Circular Tri-Americas Circular	Linear Universal Quad DIRECTTV P.A. Circular Circular Tri-Americas Circular	Linear Universal Quad DIRECTTV P.A. Circular Circular Tri-Americas Circular	Linear Universal Quad DIRECTTV P.A. Circular Circular Tri-Americas Circular
Tracking Technology	High-performance	High-performance	High-performance	High-performance	High-performance	High-performance
User Interface	TV-Hub web interface	TV-Hub web interface	TV-Hub web interface	TV-Hub web interface	TV-Hub web interface	TV-Hub web interface
Tri-Americas LNB Compatible	No	No	Yes	Yes	Yes	Yes
System Power	10-30 VDC 42 watts nominal	10-30 VDC 42 watts nominal	10-30 VDC 53 watts nominal	10-30 VDC 53 watts nominal	10-30 VDC 60 watts nominal	20-30 VDC 75 watts nominal
Cabling (consult price list for alternative cabling )	1 Power/RF cable RG6 15 m (50 ft) (single cable) included	1 Power/RF cable RG6 15 m (50 ft) (single cable) included	1 Power/RF cable RG6 30 m (100 ft) (single cable) included	1 Power/RF cable RG6 30 m (100 ft) (single cable) included	1 Power/RF cable RG11 30 m (100 ft) (single cable) included	1 Power/RF cable RG11 30 m (100 ft) (single cable) included
Antenna Operating Temperature	-25°C to +55°C (-13°F to +131°F)	-25°C to +55°C (-13°F to +131°F)	-25°C to +55°C (-13°F to +131°F)	-25°C to +55°C (-13°F to +131°F)	-25°C to +55°C (-13°F to +131°F)	-25°C to +55°C (-13°F to +131°F)
Antenna Survival Temperature	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)
Warranty	2 years parts, 1 year labor	2 years parts, 1 year labor	2 years parts, 1 year labor	2 years parts, 1 year labor	2 years parts, 1 year labor	2 years parts, 1 year labor
EMEA/Asia & SKY Brazil System Configuration: KVH Part Number	Linear Universal Single; 01-0366-02	Linear Universal Single; 01-0368-02 Linear Universal Dual; 01-0368-09	Linear Universal Quad; Autoskew; 01-0364-34 Linear Universal Quad; Manual; 01-0364-04	Linear Universal Quad; Autoskew; 01-0369-02	Linear Universal Quad; Autoskew; 01-0386-04	01-0445-01
SKY Mexico System Configuration: KVH Part Number	N/A	Linear Universal Single; 01-0368-02 Linear Universal Dual; 01-0368-09	Linear Universal Quad; Autoskew; 01-0364-34 Linear Universal Quad; Manual; 01-0364-04	Linear Universal Quad; Autoskew; 01-0369-02	Linear Universal Quad; Autoskew; 01-0386-04	01-0445-01, plus SKY Mexico LNB Conversion Kit: 72-0908
DURECTTV L.A. System Configuration: KVH Part Number	N/A	N/A	DIRECTV P.A. Circular; 01-0364-03 Circular; 01-0364-07	DIRECTV P.A. Circular; 01-0369-03 Circular; 01-0369-07	DIRECTV P.A. Circular; 01-0386-03 Circular; 01-0386-07	01-0445-01, plus DIRECTTV L.A. LNB Conversion Kit: 72-0906 Standard: 01-0445-01
North American System Configuration: KVH Part Number	Circular; 01-0366-07	Circular; 01-0368-07	Tri-Americas Circular; Manual; 01-0364-06	Tri-Americas Circular; 01-0369-06	Tri-Americas Circular; 01-0386-06	Tri-Americas Circular; 01-0445-01 + 72-0907





# TracVision TV1

## Advanced Functionality and Superior Performance in an Ultra-compact Antenna

With a 32 cm (12.5 inch) antenna, the TracVision® TV1 allows crews to enjoy live TV programming from DIRECTV®, DISH Network®, Bell TV, and select linear Ku-band regional services worldwide. The DVB-S2 compatible TracVision TV1 maritime satellite TV system packs big performance into its extremely compact antenna design:

- ▶ Easy installations and retrofits thanks to its single coaxial cable for power, data, and video
- ▶ Advanced inertial-based stabilized search for fast satellite acquisition
- ▶ High-performance tracking with enhanced algorithms for crystal-clear television picture in heavy seas

## Highlights

- ▶ Proprietary RingFire™ technology for stronger signals, wider geographic coverage, and better reception
- ▶ Sleek IP-enabled TracVision TV-Hub delivers easy setup and operation
- ▶ HDTV compatible (Ku-band services only)
- ▶ Integrated Single Wire Multiswitch (SWM-8) built into belowdecks TV-Hub supports up to 8 DIRECTV receivers
- ▶ IP AutoSwitch option for multiple receiver installations
- ▶ World-class warranty coverage and support



# Exclusive Technology

## Easy Control via the TracVision TV-Hub

The innovative TracVision TV-Hub integrates the advanced functionality of the TV-series system into one streamlined IP-enabled antenna control unit with Ethernet connection and built-in Wi-Fi interface. This system offers automatic satellite switching, built-in DiSEqC protocol to support select linear TV services worldwide, built-in SWM-compatible technology to support DIRECTV service, and built-in DISH Pro output to support DISH Network and Bell TV service. NMEA 0183/2000 input for heading and GPS enable fastest satellite acquisition.



## Superior Reception with RingFire™ Technology

KVH's proprietary RingFire™ technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than with competing antennas, even in extreme weather.

## KVH TracVision TV-series Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.

# Technical specifications



Satellite Coverage Regions <sup>2</sup>	North America & Europe <sup>3&amp;4</sup>
Antenna Dish Diameter	32 cm (12.5")
Antenna Unit Diameter x Height	34.3 cm x 33.7 cm (13.5" x 13.3")
Antenna Unit Weight	3.6 kg (8 lbs)
Minimum EIRP (Ku-band) <sup>5</sup>	51 dBW
LNB Types Available (polarization/output)	Linear Universal Single <sup>6</sup> Circular
Tracking Technology	High-performance
User interface	TV-Hub web interface
System Power	10-30 VDC 42 watts nominal
Warranty <sup>6</sup>	2-year parts, 1-year labor





# TracVision TV3

## Compact, Powerful Satellite TV System for Crew Entertainment

Give your crew the television entertainment that boosts morale with the award-winning TracVision® TV3, the 37 cm (14.5 inch) stabilized satellite TV antenna from KVH. Advanced inertial-based stabilized search enables fast satellite acquisition so there is no waiting time for the crew to start watching their favorite programs, even in rough seas. TracVision TV3 features:

- ▶ Proprietary RingFire™ technology for stronger signals, wider geographic coverage, and better reception
- ▶ Receives programming from DIRECTV®, DISH Network®, Bell TV, and circular and linear Ku-band regional services worldwide
- ▶ Automatic satellite switching makes it easy to access all programming and local channels

## Highlights

- ▶ Integrated Single Wire Multiswitch (SWM-8) built into belowdecks TV-Hub supports up to 8 DIRECTV receivers
- ▶ DVB-S2 compatible
- ▶ High-performance tracking with advanced algorithms for crystal-clear television picture in heavy seas
- ▶ Built-in worldwide satellite library
- ▶ World-class warranty coverage and support
- ▶ Single coaxial cable for power, data, and video enables easy installations and retrofits





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91

# Exclusive Technology

## Easy Control via the TracVision TV-Hub

The innovative TracVision TV-Hub integrates the advanced functionality of the TV-series system into one streamlined IP-enabled antenna control unit with Ethernet connection and built-in Wi-Fi interface. This system offers automatic satellite switching, built-in DiSEqC protocol to support linear TV services worldwide, built-in SWM-compatible technology to support DIRECTV service, and



built-in DISH Pro output to support DISH Network and Bell TV service. NMEA 0183/2000 input for heading and GPS enable fastest satellite acquisition.

## Superior Reception with RingFire™ Technology

KVH's proprietary RingFire™ technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than with competing antennas, even in extreme weather.



KVH TracVision TV-series Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.

Enjoy Easy Automatic Switching

KVH's IP AutoSwitch for multiple receiver installations delivers simple automatic switching on Dish Pro and DiSEqC-compatible services so you can easily access the channels

and programs you want to watch—even when they are not on the same satellite.

Complementary SATCOM Systems

Complement your KVH TracVision satellite TV system with a KVH TracPhone V3-HTS, V7-HTS, or V11-HTS satellite communications system for fast, reliable satellite Internet and VoIP services. Operating on KVH's global mini-VSAT Broadband HTS network, the world's No. 1 maritime VSAT service, the TracPhone HTS-series family delivers data speeds as fast as 20 Mbps and worldwide connectivity in compact, rugged domes.

Technical specifications



Satellite Coverage Regions <sup>2</sup>	Worldwide <sup>3</sup>
Antenna Dish Diameter	37 cm (14.5")
Antenna Unit Diameter x Height	39.4 cm x 44.7 cm (15.5" x 17.6")
Antenna Unit Weight	7.7 kg (17 lbs) Linear Universal Dual: 9.1 kg (20 lbs)
Minimum EIRP (Ku-band) <sup>4</sup>	50 dBW
LNB Types Available (polarization/output)	Linear Universal Single <sup>5</sup> Linear Universal Dual Circular
Tracking Technology	High-performance
User interface	TV-Hub web interface
System Power	10-30 VDC 42 watts nominal
Warranty <sup>6</sup>	2-year parts, 1-year labor



## TracVision TV5

### Rugged Satellite TV System for Hardworking Crews at Sea

With KVH's exclusive RingFire™ technology, the 45 cm (18-inch) TracVision® TV5 satellite TV antenna provides 30% greater reception than comparably sized systems, as well as stronger signals and wider geographic coverage. The DVB-S2 compatible system enables crew to enjoy the live TV programming they desire, regardless of sea state. TV5's Linear Universal Quad LNB configuration offers optional built-in GPS and autoskew. Features include:

- ▶ Support for DIRECTV® U.S., DIRECTV Latin America, DISH Network®, Bell TV, and circular and linear Ku-band regional services worldwide
- ▶ Low elevation angle for better tracking in Northern latitudes
- ▶ Rugged design, advanced algorithms, and precision sensors for high-performance tracking and reception

### Highlights

- ▶ Tri-Americas LNB option for seamless TV throughout the Americas
- ▶ Integrated Single Wire Multiswitch (SWM-8) built into belowdecks TV-Hub supports up to 8 DIRECTV receivers
- ▶ Easy installations and refits with the single coaxial cable for power, data, and video
- ▶ Advanced inertial-based stabilized search for fast satellite acquisition
- ▶ Built-in worldwide satellite library
- ▶ World-class warranty coverage and support





# Exclusive Technology

## Easy Control via the TracVision TV-Hub

The innovative TracVision TV-Hub integrates the advanced functionality of the TV-series system into one streamlined IP-enabled antenna control unit with Ethernet connection and built-in Wi-Fi interface. This system offers automatic satellite switching, built-in DiSEqC protocol to support linear TV services worldwide, built-in SWM-compatible technology to support DIRECTV service, and built-in DISH Pro output to support DISH Network and Bell TV service. NMEA 0183/2000 input for heading and GPS enable fastest satellite acquisition.



## Superior Reception with RingFire Technology

KVH’s proprietary RingFire technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than with competing antennas, even in extreme weather.

## KVH TracVision TV-series Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.



# Featured Options

## Tri-Americas LNB for Seamless TV in the Americas

If you cruise from North America to South America and back again, enjoy seamless satellite TV throughout your journey with KVH's Tri-Americas LNB.

## Exclusive Linear Universal Quad LNB

Linear Universal Quad LNB configuration offers built-in GPS and autoskew option.

# Additional Options

## Enjoy Easy Automatic Switching

KVH's IP AutoSwitch for multiple receiver installations delivers simple automatic switching on Dish Pro and DiSEqC-compatible services so you can easily access the channels and programs you want to watch—even when they are not on the same satellite.

## Complementary SATCOM Systems

Complement your KVH TracVision satellite TV system with a KVH TracPhone V3-HTS, V7-HTS, or V11-HTS satellite communications system for fast, reliable satellite Internet and VoIP services. Operating on KVH's global mini-VSAT Broadband HTS network, the world's No. 1 maritime VSAT service, the TracPhone HTS-series family delivers data speeds as fast as 20 Mbps and worldwide connectivity in compact, rugged domes.

# Technical specifications



Satellite Coverage Regions <sup>2</sup>	Worldwide <sup>3</sup>
Antenna Dish Diameter	45 cm (18")
Antenna Unit Diameter x Height	48.8 cm x 53.2 cm (19.2" x 20.9")
Antenna Unit Weight	11.3 kg (25 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	48 dBW
LNB Types Available (polarization/output)	Linear Universal Quad Circular DIRECTTV L.A. Circular Tri-Americas Circular <sup>5</sup>
Tracking Technology	High-performance
User interface	TV-Hub web interface
System Power	10-30 VDC 53 watts nominal
Warranty <sup>6</sup>	2-year parts, 1-year labor





# TracVision TV6

## Superior Satellite TV in a Commercial-grade 60 cm Design

The powerful, stabilized 60 cm (24-inch) diameter TracVision® TV6 satellite TV antenna supports the finest satellite TV programming from regional services around the globe. This advanced system from KVH provides reliability and high performance so crew members can count on their favorite programming during their off-duty hours. Features include:

- ▶ Compatible with DIRECTV® U.S., DIRECTV Panamericana, DISH Network®, Bell TV, and circular and linear Ku-band regional services worldwide
- ▶ Outstanding tracking even in rough seas thanks to its rugged design, precision sensors, and advanced algorithms
- ▶ KVH's exclusive RingFire™ technology for stronger signals, wider geographic coverage, and better reception

## Highlights

- ▶ Linear Universal Quad LNB configuration offers optional built-in GPS and autoskew
- ▶ Integrated Single Wire Multiswitch (SWM-8) built into belowdecks TV-Hub supports up to 8 DIRECTV receivers
- ▶ Simple installations and retrofits thanks to its single coaxial cable for power, data, and video
- ▶ IP AutoSwitch option for multiple receiver installations – for simple automatic switching on Dish Pro and DiSEqC-compatible services
- ▶ Built-in worldwide satellite library
- ▶ World-class warranty coverage and support



# Exclusive Technology

## Easy Control via the TracVision TV-Hub

The innovative TracVision TV-Hub integrates the advanced functionality of the TV-series system into one streamlined IP-enabled antenna control unit with Ethernet connection and built-in Wi-Fi interface. This system offers automatic satellite switching, built-in DiSEqC protocol to support linear TV services worldwide, built-in SWM-compatible technology to support DIRECTV service, and built-in DISH Pro output to support DISH Network and Bell TV service. NMEA 0183/2000 input for heading and GPS enable fastest satellite acquisition.



## Superior Reception with RingFire Technology

KVH's proprietary RingFire technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than with competing antennas, even in extreme weather.

## KVH TracVision TV-series Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.





# Featured Options

## Tri-Americas LNB for Seamless TV in the Americas

If you cruise from North America to South America and back again, enjoy seamless satellite TV throughout your journey with KVH's Tri-Americas LNB.

## Exclusive Linear Universal Quad LNB

Linear Universal Quad LNB configuration offers built-in GPS and autoskew option.

# Additional Options

## Enjoy Easy Automatic Switching

KVH's IP AutoSwitch for multiple receiver installations delivers simple automatic switching on Dish Pro and DiSEqC-compatible services so you can easily access the channels and programs you want to watch—even when they are not on the same satellite.

## Complementary SATCOM Systems

Complement your KVH TracVision satellite TV system with a KVH TracPhone V3-HTS, V7-HTS, or V11-HTS satellite communications system for fast, reliable satellite Internet and VoIP services. Operating on KVH's global mini-VSAT Broadband HTS network, the world's No. 1 maritime VSAT service, the TracPhone HTS-series family delivers data speeds as fast as 20 Mbps and worldwide connectivity in compact, rugged domes.

# Technical specifications



Satellite Coverage Regions <sup>2</sup>	Worldwide <sup>3</sup>
Antenna Dish Diameter	60 cm (24")
Antenna Unit Diameter x Height	66.6 cm x 66.9 cm (26.2" x 27.4")
Antenna Unit Weight	24.2 kg (53.4 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	46 dBW
LNB Types Available (polarization/output)	Linear Universal Quad Circular DIRECTTV L.A. Circular Tri-Americas Circular <sup>5</sup>
Tracking Technology	High-performance
User interface	TV-Hub web interface
System Power	10-30 VDC 53 watts nominal
Warranty <sup>6</sup>	2-year parts, 1-year labor



## TracVision TV8

### Powerful Satellite TV Antenna System for Merchant Vessels Worldwide

Keep your crew entertained with KVH's 81 cm (32 inch) diameter TracVision® TV8 commercial satellite TV antenna system. This rugged system equips commercial vessels with high-performance tracking and excellent reception for popular Ku-band HDTV and standard-definition satellite TV programming around the globe. Whether your vessel is in port or underway to its next destination in rough seas, the TracVision TV8 will bring the crew hundreds of channels of uninterrupted, crystal-clear entertainment. The TracVision TV8 features:

- ▶ Automatic skew control and integrated GPS for the fastest satellite acquisition and unmatched tracking
- ▶ Exclusive KVH TV-Hub for trouble-free setup and easy switching between satellite TV services
- ▶ Preprogrammed satellite library to track more than 90 TV satellites worldwide

### Highlights

- ▶ Single coaxial cable for power, data, and video for easy installations and retrofits
- ▶ Advanced inertial-based stabilized search for fast satellite acquisition
- ▶ System configurations support multiple receiver installations
- ▶ 43 dBW minimum EIRP signal strength for extended travel range
- ▶ High-performance DVB-S2 tracking for superior offshore performance in demanding conditions
- ▶ Global support from KVH's Certified Support Network (CSN)





# Exclusive Technology

## Easy Control via the TracVision TV-Hub

The innovative TracVision TV-Hub integrates the advanced functionality of the TV-series system into one streamlined IP-enabled antenna control unit with Ethernet connection and built-in Wi-Fi interface. This system offers automatic satellite switching, built-in DiSEqC protocol to support linear TV services worldwide, built-in SWM-compatible technology to support DIRECTV service, and built-in DISH Pro output to support DISH Network and Bell TV service. NMEA 0183/2000 input for heading and GPS enable fastest satellite acquisition; built-in worldwide satellite library.



## RingFire Technology

KVH’s proprietary RingFire technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than with competing antennas, even in extreme weather.

## KVH TracVision TV-series Configuration Wizard

Our Wizard will help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need and the wiring diagram for your selected configuration.



# Featured Options

## Tri-Americas LNB for Seamless TV in the Americas

If you cruise from North America to South America and back again, enjoy seamless satellite TV throughout your journey with KVH's Tri-Americas LNB.

## Exclusive Linear Universal Quad LNB

Linear Universal Quad LNB configuration offers built-in GPS and autoskew option.

# Additional Options

## Enjoy Easy Automatic Switching

KVH's IP AutoSwitch for multiple receiver installations delivers simple automatic switching on Dish Pro and DiSEqC-compatible services so you can easily access the channels and programs you want to watch—even when they are not on the same satellite.

## Complementary SATCOM Systems

Complement your KVH TracVision satellite TV system with a KVH Tracphone V3-HTS, V7-HTS, or V11-HTS satellite communications system for fast, reliable satellite Internet and VoIP services. Operating on KVH's global mini-VSAT Broadband HTS network, the world's no. 1 maritime VSAT service, the TracPhone HTS-series family delivers data speeds as fast as 20 Mbps and worldwide connectivity in compact, rugged domes.

# Technical specifications



Satellite Coverage Regions <sup>2</sup>	Worldwide <sup>3</sup>
Antenna Dish Diameter	81.3 cm (32")
Antenna Unit Diameter x Height	88.9 cm x 99.9 cm (35" x 39.3")
Antenna Unit Weight	40 kg (88.2 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	43 dBW
LNB Types Available (polarization/output)	Linear Universal Quad Circular DIRECTTV L.A. Circular Tri-Americas Circular <sup>5</sup>
Tracking Technology	High-performance
User interface	TV-Hub web interface
System Power	10-30 VDC 60 watts nominal
Warranty <sup>6</sup>	2-year parts, 1-year labor





# TracVision TV10

The Premier, Lightest 1 meter Marine Satellite TV System with Expanded Global Ku-band HD Reception

KVH's powerful high-gain TracVision TV10 offers a crystal-clear television experience at sea with high-definition support for regional Ku-band satellite TV services throughout the world. Featuring advanced stabilized tracking and extended coverage, the TracVision TV10 delivers premium and uninterrupted entertainment with reliable coverage offshore for the world's finest yachts.

Incorporating KVH's award-winning technology, the TracVision TV10 offers:

- ▶ Compatibility with the most Ku-band SD and HD regional satellite TV services around the world
- ▶ Fast satellite acquisition and rock-steady performance thanks to advanced inertial-based stabilized search algorithms
- ▶ High-performance tracking capability for crystal-clear television viewing in heavy seas

## Superior Reception with RingFire Technology

KVH's proprietary RingFire™ technology is a breakthrough in antenna design that allows TracVision to provide wider geographic coverage and better reception than competing antennas, even in extreme weather.

## Linear and Circular LNBs Included as Standard Equipment

KVH's Linear Universal Quad LNB and stacked U.S. Circular LNB for Ku-band DISH (HD and SD) and DIRECTV (SD) are included as standard equipment offering full compatibility with most regional satellite TV services around the world.

## Easy Control via the TracVision TV-Hub

At the heart of the TracVision TV10 is the innovative TV-Hub, which integrates advanced technology into a single compact, lightweight, and easy-to-use unit. The TV-Hub features a state-of-the-art interface designed for viewing on a smartphone, tablet, smart TV, or computer.

## KVH TracVision TV-series Configuration Wizard

The TV-series Wizard can help you choose the system configuration that best suits your satellite TV needs. Just answer a few brief questions to display the parts you will need along with a wiring diagram.

# Featured options

## Enjoy Easy Autoswitching

KVH's IP AutoSwitch for multiple receiver installations delivers simple auto-switching on Dish Pro and DiSEqC-compatible services so you can easily access the channels and programs you want to watch—even when they are not on the same satellite.

## Additional Quick-Install Conversion Kits Available

Enjoy easy access to other regional services with the optional Tri-Americas LNB, DIRECTV

Latin America LNB, and Sky Mexico stacked LNB conversion kits.

## Matching TracPhone Satellite Communications System

Bring the best onboard with a KVH TracPhone® satellite communications system in a matching dome to complement your TracVision TV10. Enjoy airtime service from KVH, the world's No.1 maritime total connectivity partner – your single source for all your maritime entertainment and communications needs.

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# Technical specifications



Satellite Coverage Regions <sup>1</sup>	Worldwide <sup>2</sup>
Antenna Dish Diameter	1 meter (41.5")
Antenna Unit Diameter x Height	1.2 m x 1.4 m (48.8" x 57.3")
Antenna Unit Weight	90 Kgs (198 lbs)
TV-Hub Dimensions	42.5 cm x 28.4 cm x 6.6 cm (16.7" x 11.2" x 2.6")
TV-Hub Weight	0.95 kg (2.1 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	41.5 dBW
Tracking Technology	High-performance
User Interface	TV-Hub Web Interface
System Power	20-30 VDC 75 watts nominal
KVH Part Number	01-0445-01 <sup>5</sup>



A photograph of a boat's dashboard and steering area at sunset. The dashboard is black with a red leather seat and a black steering wheel. A TracPhone is mounted on the dashboard. In the background, a large white yacht with a blue canopy is visible on the water. The sky is orange and pink from the setting sun.

TracPhone



# TracPhone V3-HTS

Work. Play. The Speed and Power to Do It All.

Get more out of life on your boat with TracPhone® V3-HTS, the marine VSAT system that saves you from being tethered to shore. Ultra-compact at only 37 cm (14 inches), lightweight, and packed with power, the TracPhone V3-HTS makes it easy to stream HD content and stay connected. Offering the most advanced maritime network available and perfect for smaller boats or a streaming fast VSAT backup for larger yachts, this end-to-end SATCOM solution provides:

- ▶ Rugged antenna with high-performance stabilization and tracking
- ▶ Data speeds as fast as 5 Mbps/2 Mbps (down/up)
- ▶ Choice of metered global and unlimited use regional airtime plans with no overages

## Highlights

- ▶ World's fastest, lightest ultra-compact marine VSAT system outperforms leading competition
- ▶ Automatic fast switching ensures seamless and reliable communications wherever you travel
- ▶ Global connectivity and crystal-clear voice calls via advanced next-generation Ku-band satellites
- ▶ Integrated CommBox Modem (ICM) includes everything you need in one single box
- ▶ Includes basic Vessel Tracking Service; Premium version also available
- ▶ Advanced network-level firewall with automated threat management provides additional security





# Exclusive Technology

## Ultra-compact Commercial-grade Antenna

The 37 cm commercial-grade TracPhone V3-HTS offers outstanding 2-axis, in-motion tracking in all sea states. TracPhone V3-HTS also ensures you'll enjoy exceptional call quality, plus support for Wi-Fi Calling via compatible cell phones.

## Global Connections, Unmatched Speed

The mini-VSAT Broadband HTS network offers 272 million square km (105 million square miles) of Ku-band coverage. Enjoy global connections and unmatched speed as fast as 5 Mbps/2 Mbps (down/up) using advanced next-generation high-throughput satellites (HTS) from Intelsat and SKY Perfect JSAT. Plus, you get greater resilience to weather and rain fade than with Ka-band services.

## The All-new Integrated CommBox Modem (ICM)

The powerful Integrated CommBox Modem (ICM) with its high-throughput modem, Voice over IP (VoIP) adapter, versatile network management software, and built-in Wi-Fi and Ethernet is the streamlined all-in-one belowdecks unit that drives the TracPhone V3-HTS.

## Exclusive 6-Level Cybersecurity Program

The TracPhone V3-HTS features automated threat management to provide additional security; plus,



the antenna's ICM includes the award-winning Videotel™ "Cybersecurity at Sea" training program for crew and guests.

## Precision Management of Your Data

The secure myKVH™ portal and mini-VSAT Manager™ suite of tools equips you with customizable usage alerts, detailed usage reports, data allocation for users onboard, and built-in data shaping and pinpoint application category control to limit unintended data consumption.

## Improved Performance through Proactive Monitoring

The TracPhone V3-HTS system's integrated IoT functionality reports daily on 150+ performance and health parameters to help optimize your system's performance for a premium connectivity experience.

## KVH OneCare Global Support Program

KVH OneCare™ is a comprehensive array of service offerings that spans the lifecycle of your mini-VSAT Broadband solution, from design and selection of the best possible solution, to smooth installation, and post-deployment support in 3,500+ ports worldwide to maximize long-term performance.



# Featured Options

## AgilePlans Regional

AgilePlans® Regional Connectivity as a Service is an affordable monthly subscription with everything you need for high-speed HTS broadband at sea.

## Extended Warranty & Preventative Maintenance Checks

KVH OneCare includes several options to ensure that your TracPhone V3-HTS delivers the finest performance:

- **Extended warranty** – extend the warranty to a total of 5 years from activation.
- **Preventative maintenance checks** – to help keep your system performing at its best.

## Global Static IP Addresses

KVH's global private terrestrial network links all mini-VSAT Broadband teleports worldwide, allowing for more robust malware and threat detection and enhanced network security. .

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# Additional Options

## Virtual “Local” Numbers

For an additional fee, you may assign up to 5 virtual phone numbers to the vessel's phone line.

## Premium KVH Vessel Tracking Service

Gain immediate access to up to a year of vessel and fleet track history along with latest position and weekly position reports.

## CommBox Network Management Tools

Built-in CommBox™ networking functionality enables least cost routing, web caching and compression, firewalls, content filtering, file transfers, email, crew accounts, and more with a subscription and without any additional hardware.

# Technical specifications



Satellite Coverage Regions <sup>1</sup>	Seamless Worldwide Regions
Antenna Dish Diameter	36.8 cm (14.5")
Antenna Unit Diameter x Height	39.4 cm D x 44.7 cm h (15.5" D x 17.6" h)
Antenna Unit Weight	11.3 kg (25 lbs)
TV-Hub Dimensions	42.6 cm l x 41.4 cm w x 2U h (16.8" x 16.3" x 2U) rack-mountable with optional mounting provisions
TV-Hub Weight	5.1 kg (11.25 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	
Tracking Technology	High-performance
User Interface	1 RJ11 port for VoIP services
System Power	100-240 VAC, 50-60 Hz auto switching, 250W max
KVH Part Number	01-0418-11





# TracPhone V7-HTS

## The Compact Marine VSAT Solution that Delivers Unlimited Data and Streaming Fast Speeds

Enjoy the Internet on the water the way you do at home. The TracPhone® V7-HTS delivers seamless global coverage with download/upload speeds as fast as 10 Mbps/3 Mbps. This award-winning 60 cm solution is faster than competing 60-85 cm Ku-band VSAT systems and enables you to stream HD content, video chat with friends and family, and more. TracPhone V7-HTS features:

- ▶ Global coverage via the No. 1 marine VSAT network\*
- ▶ Exclusive configuration and airtime plans deliver both a high-speed and a free unlimited use data channel
- ▶ Commercial-grade design and unique proactive monitoring to help ensure maximum uptime and performance

## Highlights

- ▶ Rugged, powerful, compact Ku-band VSAT antenna, 60 cm (24 in) diameter, 26.1 kg (57.6 lbs)
- ▶ Outstanding tracking thanks to 3-axis gyro-stabilization with 4th axis of automatic skew adjustment
- ▶ Flexible, affordable data plans with speeds as fast as 10 Mbps/3 Mbps (download/upload)
- ▶ 100% transparency into data use with powerful smart data tools for unmatched control
- ▶ All-in-one belowdecks unit – the Integrated CommBox Modem (ICM) includes modem, network manager, Ethernet switches, Wi-Fi, and more
- ▶ Two satellite-optimized voice lines with optional expansion to as many as nine concurrent voice lines



# Exclusive Technology

## Enterprise-grade Ku-band VSAT Antenna

The commercial-grade TracPhone V7-HTS uses a 60 cm-diameter antenna dish, in a 66 cm-diameter radome. The 3-axis gyro-stabilized maritime VSAT antenna with a 4th axis of automatic skew adjustment boasts an extended elevation range of -24° to 119° ensuring that the antenna tracks satellites directly above the vessel to low on the horizon. TracPhone V7-HTS also ensures you'll enjoy exceptional call quality, plus support for Wi-Fi Calling via compatible cell phones!

## Global Connections, Unmatched Speed

The mini-VSAT Broadband HTS network offers 272 million square km (105 million square miles) of Ku-band coverage. Enjoy global connections and unmatched speed as fast as 10 Mbps/3 Mbps (down/up)2 using advanced next-generation high-throughput satellites (HTS) from Intelsat and SKY Perfect JSAT. Plus, you get greater resilience to weather and rain fade than with Ka-band services.

## The All-new Integrated CommBox Modem (ICM)

The powerful Integrated CommBox Modem (ICM) with its high-throughput modem, Voice over IP (VoIP) adapter, versatile network management software, and built-in Wi-Fi and Ethernet is the streamlined all-in-one belowdecks unit that drives the TracPhone V7-HTS.



## Exclusive 6-Level Cybersecurity Program

The TracPhone V7-HTS features automated threat management to provide additional security; plus, the antenna's ICM includes the award-winning Videotel™ "Cybersecurity at Sea" training program for crew and guests.

## Precision Management of Your Data

The secure myKVH™ portal and mini-VSAT Manager™ suite of tools equips you with customizable usage alerts, detailed usage reports, data allocation for users onboard, and built-in data shaping and pinpoint application category control to limit unintended data consumption.

## Improved Performance through Proactive Monitoring

The TracPhone V7-HTS system's integrated IoT functionality reports daily on 150+ performance and health parameters to help optimize your system's performance for a premium connectivity experience.

## KVH OneCare Global Support Program

KVH OneCare™ is a comprehensive array of service offerings that spans the lifecycle of your mini-VSAT Broadband solution, from design and selection of the best possible solution, to smooth installation, and post-deployment support in 3,500+ ports worldwide to maximize long-term performance.





# Featured Options

## KVH Elite

Unlimited VSAT streaming service for yachts. Available for the Caribbean and Mediterranean regions.

- Dedicated VSAT service with prioritized bandwidth to deliver HD-quality streaming
- Unlimited with no overages or data limits
- Download speeds as fast as 10 Mbps

## Premium KVH Vessel Tracking Service

Gain immediate access to up to a year of vessel and

fleet track history along with your latest position and weekly position reports.

## Extended Warranty & Preventative Maintenance Checks

KVH OneCare includes several options to ensure that your TracPhone V7-HTS delivers the finest performance:

- **Extended warranty** – extend the warranty to a total of 5 years from activation
- **Preventative maintenance checks** – to keep your system performing at its best

# Additional Options

## Global Static IP Addresses

KVH’s global private terrestrial network links all mini-VSAT Broadband teleports worldwide, allowing for more robust malware and threat detection and enhanced network security.

## Virtual “Local” Numbers

For an additional fee, you may assign up to 5 virtual phone numbers to each vessel phone line.

## CommBox Network Management Tools

Built-in CommBox™ networking functionality enables least cost routing, web caching and compression, firewalls, content filtering, file transfers, email, crew accounts, and more with a subscription and without any additional hardware.

# Technical specifications



Satellite Coverage Regions <sup>1</sup>	Seamless Worldwide Regions
Antenna Dish Diameter	60 cm (24")
Antenna Unit Diameter x Height	66.6 cm D x 79.2 cm h (26.1" D x 31.2" h)
Antenna Unit Weight	26.1 kg (57.6 lbs)
TV-Hub Dimensions	42.6 cm l x 41.4 cm w x 2U h (16.8" x 16.3" x 2U) rack-mountable with optional mounting provisions
TV-Hub Weight	5.1 kg (11.25 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	
Tracking Technology	High-performance
User Interface	2 RJ11 ports for VoIP services
System Power	100-240 VAC, 50-60 Hz auto switching, 250W max
KVH Part Number	01-0408-15



# TracPhone V11-HTS

## High Speeds and Expanded Coverage for the Maritime Industry

The rugged, 1-meter Ku/C-band TracPhone® V11-HTS system delivers the speeds businesses and crews at sea want, along with affordable airtime that enables you to optimize your business with superior connectivity. Provided by the No. 1 maritime VSAT network – mini-VSAT Broadband\*, this comprehensive SATCOM solution provides data speeds as fast as 20 Mbps/3 Mbps (down/up) worldwide and includes:

- ▶ Seamless global coverage
- ▶ Smart data tools
- ▶ Exclusive dual-channel configuration

## Highlights

- ▶ Rugged, commercial-grade system, 1.2 m (48.8 in) diameter, 109 kg (240 lbs)
- ▶ Ku/C-band for superior reception in extreme weather and expanded coverage in Northern and Southern latitudes
- ▶ Affordable, flexible pricing
- ▶ Powerful smart data tools
- ▶ Greater resilience to weather and rain fade than Ka-Band
- ▶ Clear, prioritized VoIP service for exceptional call quality; Wi-Fi Calling via compatible cell phones





## Exclusive Technology

### Enterprise-grade Ku/C-band VSAT Antenna

The commercial-grade TracPhone V11-HTS uses a 1 meter-diameter antenna dish, in a 131 cm-diameter radome. The 3-axis gyro-stabilized maritime VSAT antenna with a 4th axis of automatic skew adjustment boasts an extended elevation range of -24° to 119° ensuring that the antenna tracks satellites directly above the vessel to low on the horizon. TracPhone V11-HTS also ensures you'll enjoy exceptional call quality, plus support for Wi-Fi Calling via compatible cell phones.

### Global Connections, Unmatched Speed

The mini-VSAT Broadband HTS network offers 272 million square km (105 million square miles) of Ku-band coverage. Get global connections and unmatched speed as fast as 20 Mbps/3 Mbps (down/up)2 using advanced next-generation high-throughput satellites (HTS) from Intelsat and SKY Perfect JSAT. Plus, you get greater resilience to weather and rain fade than with Ka-band services.

### Ku/C-band Integration

The TracPhone V11-HTS is the only 1-meter maritime system to offer fully integrated Ku/C-band capabilities. The addition of C-band delivers built-in communications redundancy, extended coverage in Southern Pacific Ocean and high northern and southern latitudes, superior reception in extreme weather, and support for our exclusive dual-channel configuration.

### The All-new Integrated CommBox Modem (ICM)

The powerful Integrated CommBox Modem (ICM) with its high-throughput modem, Voice over IP (VoIP) adapter, versatile network management software, and built-in Wi-Fi and Ethernet is the streamlined all-in-one belowdecks unit that drives the TracPhone V11-HTS.



### IP-MobileCast

The TracPhone V11-HTS is fully compatible with KVH's patented IP-MobileCast™ multicast service, which enables KVH to deliver KVH Link entertainment and operations content securely to many ships at once without using your monthly data plan or slowing down onboard connections to the Internet.

### Exclusive 6-Level Cybersecurity Program

The TracPhone V11-HTS features automated threat management to provide additional security; plus, the antenna's ICM includes the award-winning Videotel™ "Cybersecurity Safety at Sea" training program.

### Precision Management of Your Data

The secure myKVH™ portal and mini-VSAT Manager™ suite of tools equips you with customizable usage alerts, detailed usage reports, data allocation for users onboard, and the ability to control data usage by application category to limit unintended data consumption.

### Improved Performance through Proactive Monitoring

The TracPhone V11-HTS system's integrated IoT functionality reports daily on 150+ performance and health parameters to help optimize your system's performance for a premium connectivity experience.

### KVH OneCare Global Support Program

KVH OneCare™ is a comprehensive array of service offerings that spans the lifecycle of your mini-VSAT Broadband solution, from design and selection of the best possible solution, to smooth installation, and post-deployment support in 3,500+ ports worldwide to maximize long-term performance.

# Featured Options

## AgilePlans

AgilePlans by KVH™, a monthly subscription with everything you need for fleet connectivity and crew welfare. Get unmatched flexibility plus hardware, airtime, free shipping and installation, news and training content, and more.

## KVH Link: News, Entertainment, and Operations Content

With a monthly subscription to KVH Link, your crew can enjoy news, sports, movies, TV, music radio, karaoke, and more in an array of languages. Plus, vessel operations benefit from delivery of the vital content needed to increase efficiency. And all of this is delivered affordably with no impact to your onboard data rates or monthly data plan.

# Additional Options

## Global Static IP Addresses

KVH’s global private terrestrial network links all mini-VSAT Broadband teleports worldwide, allowing for more robust malware and threat detection and enhanced network security.

## Virtual “Local” Numbers

For an additional fee, you may assign up to 5 virtual phone numbers to each vessel phone line.

## CommBox Network Management Tools

Built-in CommBox networking functionality enables least cost routing, web caching and compression, firewalls, content filtering, file transfers, email, crew accounts, and more with a subscription and without any additional hardware.

# Technical specifications



Satellite Coverage Regions <sup>1</sup>	Global except Arctic Regions
Antenna Dish Diameter	1.1 m (42.5")
Antenna Unit Diameter x Height	1.2 m D x 1.4 m h (48.8" D x 57.3" h)
Antenna Unit Weight	109 kg (240 lbs)
TV-Hub Dimensions	42.6 cm l x 41.4 cm w x 2U h (16.8" x 16.3" x 2U) rack-mountable with optional mounting provisions
TV-Hub Weight	5.1 kg (11.25 lbs)
Minimum EIRP (Ku-band) <sup>3</sup>	
Tracking Technology	High-performance
User Interface	2 RJ11 ports for VoIP services
System Power	100-240 VAC, 50-60 Hz auto switching, 250W max
KVH Part Number	01-0415-11



# TracPhone V30

The wait is over.

Ultra-compact, fast, and affordable VSAT for your vessels

Keep your business on track and your crew connected securely with **TracPhone® V30**, the 37cm digital SATCOM system, designed for the roughest seas. Choose accessible and affordable VSAT that offers blazing-fast speeds, fast and easy installation, next-generation technology, and flexible airtime plans. Get connected to meet your operational needs and provide crew access to web browsing and chat, email, and calls. VSAT within reach with this innovative KVH solution that delivers:

- ▶ Rugged digital SATCOM system with improved signal efficiency
- ▶ Uncompromised data speeds as fast as 6 Mbps/2 Mbps (down/up)
- ▶ Choice of metered and unlimited use global airtime plans with no overages

## Featured Options

### AgilePlans Regional

AgilePlans® Regional Connectivity as a Service is an affordable monthly subscription with everything you need for high-speed HTS broadband at sea. Get unmatched flexibility, award-winning hardware, airtime, unlimited e-mail and text, plus free shipping, free installation, and more.

### Global Static IP Addresses

KVH's global private terrestrial network links all mini-VSAT Broadband teleports worldwide, allowing for more robust malware and threat detection and enhanced network security. Sign up for a single public IP address for secure addressability to your onboard system from the Internet.

### Extended Warranty & Preventative Maintenance Checks

KVH OneCare includes several options to ensure that your TracPhone V30 delivers the finest performance:

- ▶ Extended warranty – extend the warranty to a total of 5 years from activation
- ▶ Preventative maintenance checks – to help keep your system performing at its best



# Additional Options

## Virtual “Local” Numbers

For an additional fee, you may assign up to 5 virtual phone numbers to the vessel's phone line. These numbers can be set up with a different country code and area/city code, allowing people on shore within those regions to avoid international or long-distance charges when they call.



# Highlights

- ▶ The smallest, lightest, lowest powered maritime VSAT system with precision two-axis stabilized pedestal design plus stabilized skew for solid connections in all sea states
- ▶ Simple installation using a single new or existing coaxial cable, rotary joint for unlimited rotation, DC power (optional AC-to-DC power converter available), and compact VSAT-Hub belowdecks unit
- ▶ Global connectivity and crystal-clear voice calls via KVH's mini-VSAT Broadband HTS network
- ▶ Powerful network management tools providing valuable insight and control over data usage via KVH's Manager
- ▶ Optimized system performance thanks to KVH's integrated IoT Proactive Monitoring
- ▶ Multi-level Cybersecurity Program with advanced network-level firewall and more

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# Technical specifications



Network	mini-VSAT Broadband HTS network
Antenna Type	Ku-band
Service Coverage Area	Seamless worldwide regions
Maximum Speed Download/Upload1	as fast as 6 Mbps/2 Mbps (down/up)
Antenna Dish Diameter	36.8 cm (14.5")
Antenna Unit Dimensions/Weight	39.4 cm D x 44.7 cm H (15.5" D x 17.6" H)/10.6 kg (23.4 lbs)
Elevation/Azimuth Range	7.7° to 75°/Unlimited rotation
Temperature	Operating: -30°C to 55°C (-22°F to 131°F); Survival: -35°C to 70°C (-31°F to 158°F)
Humidity/Salt Fog	IEC 60945; 40°C (104°F), 95% Humidity (non-condensing)
Rain	Precipitation rate of 1.7 mm/min, w/wind speeds up to 100 knots
Heading Input	NMEA 0183 and NMEA 2000 magnetic or true heading
Antenna Unit Power	48 VDC input from the VSAT-Hub
VSAT-Hub to Antenna Unit Connection	Single coaxial cable
Data Interfaces	4 Ethernet: Gigabit 1000BASE-T IEEE 802.3; 2.4/5GHz IEEE 802.11ac/a/b/g/n 2x2 MIMO Wi-Fi; USB 3.0 Port
Voice Interfaces	1 RJ11 port for VoIP services



# CommBox Network Services

KVH’s CommBox™ Network Services are an integral element of the Integrated CommBox Modem (ICM), the heart of every TracPhone® VSAT system. The CommBox Network Services suite of management tools help you get more out of your communications solution via data routing and management, web optimization, efficient file transfers, optimized email, and flexible crew accounts.

Choose from the Standard and Enterprise bundles and work with our Application Engineering experts to develop a custom configuration perfect for your networking needs.

Comparision chart	STANDARD BUNDLE	ENTERPRISE BUNDLE
Description	The Standard Bundle is a streamlined, low-cost solution <sup>1</sup>	The Enterprise Bundle is a robust solution for your fleet <sup>1,2</sup>
Rate plan cost per month	\$95	\$195
Products available	CommBox Ship/Shore Network Manager	CommBox Ship/Shore Network Manager
Quickbasic		
Least cost routing, bandwidth management, onboard firewall	yes	yes
Quickweb		
Web caching, web image compression and ad removal, url and content filtering	yes	yes
Quickfile		
Automated file transfers, differential synchronization		yes
Quickmail		
Mail server, web mail client, anti-spam and anti-virus filters		yes
Quickcrew		
Roaming crew accounts, prepaid internet and email services		yes

<sup>1</sup>Commbox software shall be subject to kvh's master services agreement  
<sup>2</sup>A commbox hub is required for enterprise bundle





KVH Link





## The **ultimate digital news & entertainment** experience for crew wellbeing and leading operations data for vessel optimization

### Entertainment, News & Sports

Best-in-class content and an exciting, entertaining experience for crew. Standout features include hundreds of daily news stories, clips and shows; early release movies and classics, and more; popular TV shows; music radio and karaoke; and trending social videos, all delivered in an array of languages.

### Improve Wellbeing and Crew Retention with the Best Content

The life of a commercial seafarer no longer means being disconnected from life on shore. Improve your crew recruitment and retention and improve crew wellbeing with best-in-class content, including the latest movies, television, sports, news, music radio, podcasts, karaoke, and more.



#### NEWSlink

NEWSlink™ keeps your crew connected to events at home with news content in video, audio, and text, covering virtually every country of the world, grouped by region and in the most popular crew languages. News reviews, updates and special interest items (business, science, tech) are all delivered daily.



#### SPORTSlink

Nothing brings crew together like cheering for their favorite teams. SPORTSlink™ offers video, audio and text covering your crew's favorite sports. Get news, stories, and video highlights, along with sports talk and documentaries, plus play-by-play text and interactive stats (coming soon).



### MOVIElink

Delight in blockbuster films delivered as soon as they are available, sometimes while they are still in cinemas, and months before they can be streamed at home. MOVIElink's™ expanding library of films includes both the biggest Hollywood hits along with regional content curated with seafarers in mind.



### MUSIClink

KVH Link offers more than 15 genres of fresh music radio, podcasts, entertainment news, karaoke, and more, easily played via the streamlined, user-friendly interface, and all constantly updated. Contact a KVH representative to learn more about MUSIClink.™



### TVlink

Enjoy full seasons of the most popular hit television series so crews can enjoy the best entertainment from home.



### Benefits of KVH Link

- Improved wellbeing and crew retention
- Engaging and affordable packages
- Licensed and cybersecure content
- Available to watch on any device

## Operations Content

The leading operational data for vessel efficiency. KVH partners with industry leaders in digital charting plus weather forecasting and voyage optimization. KVH Link delivers this vital, up-to-date data and custom corporate media content to you affordably, wherever your vessels operate.

### Enhance Operations & Efficiency with KVH Link Content

Your "office" is in motion, a vessel stocked with inventory worth millions that needs to reach its destination on schedule and in compliance with regulations. KVH Link offers services designed to deliver vital operations data to your fleet and your custom corporate content to crews so they can operate safely and efficiently.

- **Cybersecurity to Protect Networks and Data**  
While digitalization is revolutionizing maritime fleet

operational efficiency, there is a corresponding need to protect networks and vessels from cyber risks. KVH's 6-Level Cybersecurity Program delivers proactive protection for KVH hardware and global VSAT satellite networks and covers the human factor with crew training and incident response best practices.

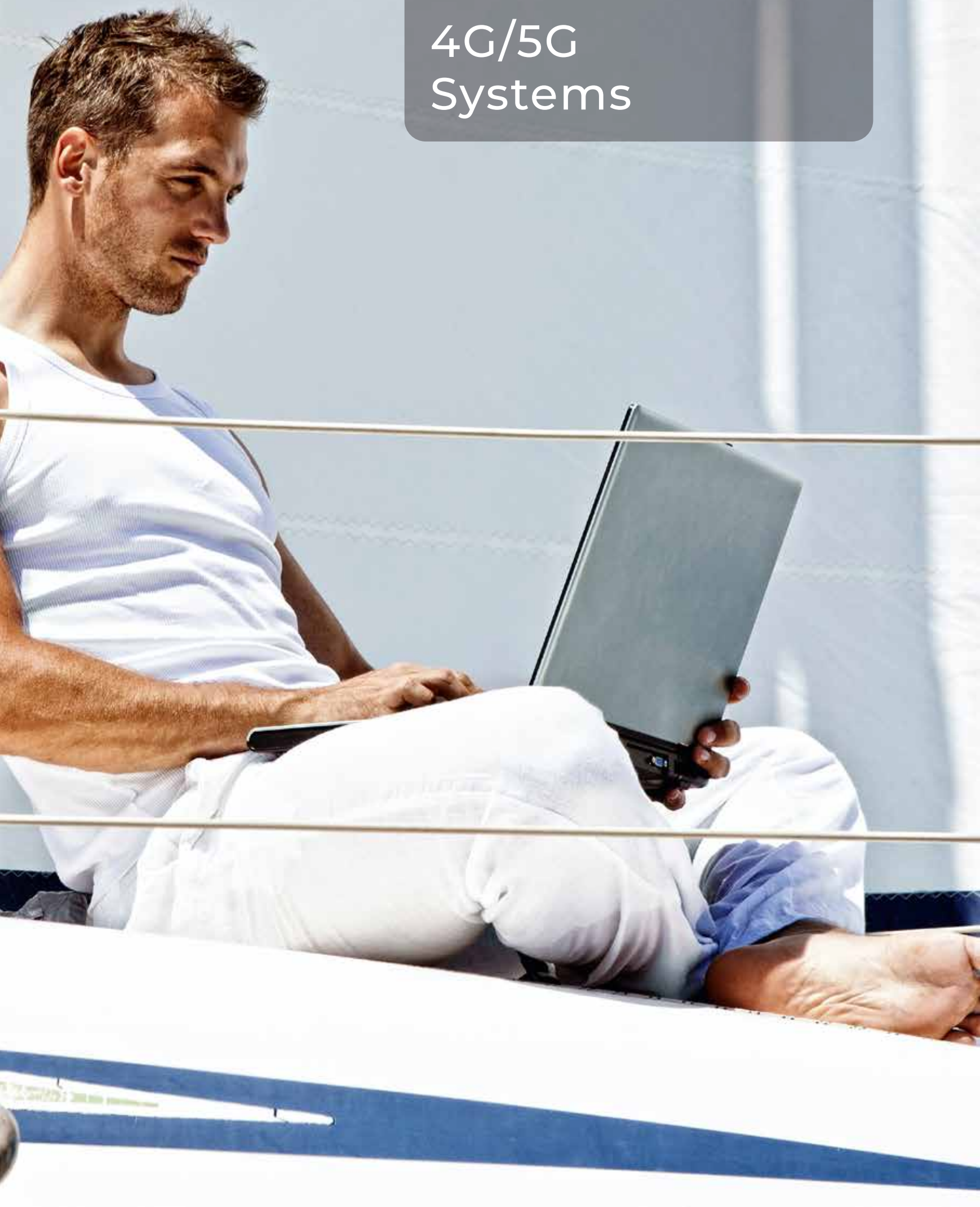
- **Communicate with Your Crew with YOURlink**  
Sometimes you have a message that simply can't wait for thumb drives to be delivered to your ships. YOURlink™ enables your business to share proprietary media files with every vessel in your fleet. Reach your crews quickly, easily, and affordably while enabling everyone onboard to watch via the TV in common areas, or on their own tablets, smartphones, and PCs.
- **Electronic Charting & More with CHARTlink**  
Electronic charting has gone from being an innovation to being the law. Thanks to secure, weekly delivery of up-to-date charts from C-MAP, a CHARTlink™ subscription enables you to easily satisfy mandatory ENC chart updating requirements without using your monthly data plan or slowing down onboard data speeds. Plus, you get the convenience that comes with Pay As You Sail licensing.







# 4G/5G Systems





MAX BR1 series





# MAX single cellular router

## Comparision chart

MODEL	MAX BR1 CLASSIC	MAX BR1 MK2	MAX BR1 MINI	MAX BR1 M2M	MAX BR1 SLIM	MAX BR1 ENT	MAX BR1 PRO	MAX HOTSPOT
Ethernet WAN Ports	1 (FE)	1 (GE)	1 (FE) #	1 (FE)	1 (FE)	1 (GE)	1 (GE)	1 (GE)
Ethernet LAN Ports	2 (FE)	1 (GE)	1-2 (FE)	1 (FE)	1 (FE)	2 (GE)	4 (GE)	1 (GE)
Embedded 4G LTE	1	1	1	1	1	1	1	1
Cellular Modem @	LTE / LTE-A	LTE / LTE-A	LTE / LTE-A	LTE	LTE	LTE / LTE-A	LTE / LTE-A	LTE / LTE-A
Wi-Fi AP <sup>[1]</sup>	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Transmit Power (2.4GHz)	25dBm	24dBm	20dBm	No	25dBm	No	26dBm	24dBm / 17dBm (CE)
Transmit Power (5GHz)	No	17dBm	No	No	No	No	25dBm	23dBm
Router Throughput <sup>[2]</sup>	100Mbps	100Mbps	100Mbps	100Mbps	100Mbps	300Mbps	120Mbps	100Mbps

[1] The frequency range for 802.11b/g/n Wi-Fi is 2412–2472 MHz.  
[2] Router Throughput is valid only for currently shipping devices running Firmware 7.0.1 or later. Router Throughput is based on Ethernet frame sizes of 1280 or 1518 bytes. Actual performance can vary across different networking environments.





# MAX BR1 MK2

## Automatic Failover 4G LTE Mobile Router

The MAX BR1 MK2 offers redundant SIM slots with automatic switching, DC or terminal block power capability, advanced GPS fleet tracking, and remote management, all packed into a durable metal enclosure. It is also Verizon certified.

## Redundant SIM Slots for Multiple Carriers

Redundant SIM slots with automatic switching for reliable network. You can also set the MAX BR1 mobile router to automatically switch SIM cards when you're in danger of exceeding a data cap. It also allows you travel across borders without changing SIM cards manually.

## Specifications

Ethernet WAN Ports	1 (GE)	Drop-In Mode	Yes
Ethernet LAN Ports	1 (GE)	IP Passthrough	Yes
Embedded 4G LTE	1	High Availability	Yes
Cellular Modem *	LTE / LTE-A	WAN as LAN	Yes
Redundant SIM Slots	Yes (( Mini-SIM (2FF))	Web Blocking	Yes
Wi-Fi WAN   Wi-Fi AP	Yes	Web Filtering Blacklist	Lite
Maximum number of SSID:	16	AC Adapter	AC Input 100V-240V DC Output 12V, 2A
Transmit Power (2.4GHz) / (5GHz)	24dBm / 17 dBm	Power Input   Terminal Block	DC 10V-30V, 2A
Recommended Users	1-60	Power Consumption	Max.: 16W, Typical: 11W, Min.: 8W
Router Throughput	100Mbps	Dimensions	1.6 x 5.8 x 5.0 inches   40 x 147 x 128 mm
PepVPN	Yes	Weight	0.96 pounds   435 grams
SpeedFusion Hot Failover	Yes	Operating Temperature	-40° – 131°F   -40° – 55°C
SpeedFusion WAN Smoothing	Yes	Certifications	FCC, CE, RoHS, E-Mark. EN 61373 Shock and Vibration Resistance. EN 50155 Railway Applications. Electronic Equipment used on Rolling Stock. EN 61000 Electromagnetic Compatibility.
Drop-in Mode	Yes		
Number of PepVPN SpeedFusion Peers	2/5!		
PepVPN/SpeedFusion Throughput (No Encryption/256-bit AES)	40 Mbps / 20 Mbps		
802.1q VLANs Supported	16		





# MAX BR1 Classic

## Specifications

Dimensions	4.1 x 4.3 x 1.2 inches   105 x 110 x 30 mm
Weight	0.54 pound   244 grams

### Industrial – Grade 4G LTE/3G Router

The **BR1 Classic** comes with a rugged metal enclosure, and a wide range of certifications at an affordable price.

### Deploy & Forget

Set up your **BR1 Classic** in minutes, and then let it connect your network for years without worry. The current uptime record for a Peplink device is 1,252 days and counting.

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# MAX BR1 Mini

## Specifications

Dimensions	4.1 x 4.3 x 1.2 inches   105 x 110 x 30 mm
Weight	0.54 pound   244 grams

### Cellular Router for Large-Scale Deployments

At last — an affordable, industrial-grade LTE router for transportation, digital signage, automated kiosk, and M2M deployments. From 3G to LTE, the BR1 Mini supports a wide range of cellular standards and worldwide frequencies to meet your every need. Enjoy GPS fleet, usage reports, and statistics.

### Multiple Failover Options

Failover between redundant SIM slots comes standard on the **BR1 Mini**. But If you need more failover options, you can also get the failover add-on feature which enables Ethernet WAN and Wi-Fi as WAN. That way, you can choose the WAN functionality you need for your deployment.



# MAX BR1 Core

## Specifications

Dimensions	4.1 x 4.3 x 1.2 inches   105 x 110 x 30 mm
Weight	0.54 pound   244 grams

### Unbreakable Connectivity. Unbeatable Price. Constant Connectivity

With the **BR1 Mini Core**, there is always a way to connect. Use a combination of cellular and Ethernet# to provide users with constant connectivity.



# MAX BR1 Pro

## Specifications

Dimensions	5.1 x 4.3 x 1.6 inches   130 x 110 x 41 mm
Weight	1.2 pounds   515 grams

### Versatile Single Cellular with High Port Capacity

The **MAX BR1 Pro** comes with 4-port LAN switch and automatic failover, making it an ideal choice for deployments that demand outstanding reliability and flexibility.

### Connect Everything Affordably

The **BR1 PRO** features 4x GE LAN ports to connect your wired clients, and 802.11 a/b/g/n Wi-Fi to connect your wireless clients. All this in rugged DIN mount compatible enclosure.

### Fits Anywhere

At 5.1 x 4.3 x 1.6 inches, the **BR1 Pro** can fit into tight spaces. It can also be mounted on DIN rails from different angles, so it fits anywhere that the rails can be installed





# MAX BR1 Ent

## Specifications

Dimensions	1.6 x 5.8 x 5.0 inches   40 x 147 x 128 mm
Weight	0.96 pounds   435 grams

### Your LTE Highspeed Broadband Router.

The **MAX BR1 ENT** delivers blazing 300Mbps router throughput with automatic failover to LTE and comes without Wi-Fi, making it an ideal choice for deployments that demand high performance, and outstanding reliability. It is also Verizon XLTE certified.Redundant

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### SIM Slots for Multiple Carriers

Redundant SIM slots with automatic switching for reliable network. You can also set the **MAX BR1** to automatically switch SIM cards when you're in danger of exceeding a data cap. It also allows you to travel across borders without changing SIM cards manually.



# MAX BR1 M2M

## Specifications

Dimensions	4.8 x 3.8 x 1.1 inches   120 x 97 x 26mm
Weight	0.8 pound   350 grams

### Compact LTE Router. Dedicated for M2M Deployments

The **MAX BR1 M2M** is compact (1.1 x 3.8 x 4.8 inches), and tough enough to be placed anywhere. It features a 9-pin serial connector for easy and durable M2M connectivity. Also, it can be remotely monitored and managed using InControl 2 Cloud management, saving service trips.

### Redundant SIM Slots for Multiple Carriers

Redundant SIM slots with automatic switching for reliable network. This is particularly useful for remote deployments where connectivity to any given carrier is unreliable. You can also set the **MAX M2M** mobile router to automatically switch SIM cards when you're in danger of exceeding a data cap.



# MAX BR1 IP67

## Specifications

Dimensions	5.55 x 6.38 x 3.98 inches   141 x 162 x 101 mm
Weight	1.50 lb   680 g

### Ruggedized Single Cellular Outdoor Router

The **BR1 IP67** outdoor router offers an embedded cellular modem in a tough IP67 enclosure, making this the most accessible of our IP67 rated cellular router family.

### Compact Super-Duty IP67 Enclosure

The **BR1 IP67** outdoor router is as small as it is tough. It has a waterproof IP67 enclosure that stands up to dust, vibration, and inclement weather.



# MAX BR1 IP55

## Specifications

Dimensions	11.8 x 4.9 x 1.75 inches   300 x 124 x 44.5 mm
Weight	0.96 pounds   435 grams

### Single Cellular Outdoor Router

The **BR1 IP55** Outdoor Router offers embedded Omni-directional cellular antennas, plus built-in PoE and a 3-port switch, all enclosed in a durable and waterproof IP55 enclosure.



## MAX HD series

Heavy Duty, Multi-Cellular  
Powerhouses for Mission Critical  
Connectivity

Powerful cellular routers that provide unbreakable connectivity and blazing speeds. Use them to connect to all available network operators in your country.





# MAX multi cellular router

## Comparision chart

MODEL	MAX HD2	MAX HD2 MINI	MAX HD4	MAX HD2/ HD4 WITH MEDIAFAST
Ethernet WAN Ports	2 (GE)	1 (GE)	2/5 (GE) @	2 (GE)
Ethernet LAN Ports	4 (GE)	2 (GE)	8/5 (GE) @	8 (GE)
Embedded 4G LTE/3G	2	2	4	2/4
Wi-Fi AP <sup>[1]</sup>	Yes	No	Yes	Yes
Transmit Power (2.4GHz)	23dBm	No	23dBm	23dBm
Transmit Power (5GHz)	21dBm	No	21dBm	21dBm
Router Throughput <sup>[2]</sup>	400Mbps	300Mbps	400Mbps	400Mbps

[1] The frequency range for 802.11b/g/n Wi-Fi and 802.11ac/a/n Wi-Fi are 2412–2472 MHz and 5180–5825 MHz respectively.  
[2] Recommendation for sizing purposes only. No software restrictions applied.

# MAX outdoor router

## Comparision chart

MODEL	MAX BR1 IP55	MAX BR2 IP55	MAX BR1 IP67	MAX HD2 IP67	MAX HD4 IP67	MAX HD1 DOME	MAX HD2 DOME
Ethernet WAN Ports	1 (GE)	1 (GE)	No	1 (GE)	1 (GE)	No	No
Ethernet LAN Ports	2 (GE)	2 (GE)	1 (FE)	1 (GE)	1 (GE)	1 (GE)	1 (GE)
Embedded 4G LTE	1	2 *	1	2	4	1	2
Wi-Fi AP [1]	Yes	Yes	Yes	No	No	No	No
Transmit Power (2.4GHz)	24dBm	24dBm	28dBm	No	No	No	No
Transmit Power (5GHz)	23dBm	23dBm	No	No	No	No	No
Router Throughput <sup>[3]</sup>	100Mbps	100Mbps	100Mbps	400Mbps	400Mbps	NA	NA

[1] The frequency range for 2.4GHz and 5GHz are 2412–2472 MHz and 5180–5825 MHz respectively.  
[3] Router Throughput is based on Ethernet frame sizes of 1280 or 1518 bytes. Actual performance can vary across different networking environments.



# MAX HD2 Mini

## Specifications

Dimensions	1.6 x 5.8 x 5 inches   40 x 147 x 128 mm
Weight	0.96 pounds   0.5 kg

### Compact Dual 4G LTE Mobile Router

The **MAX HD2 Mini** packs big features, such as dual embedded cellular, SpeedFusion bandwidth bonding, and PoE, into a tough, compact enclosure that stands up to life on the go.

### Dual Cellular and Redundant SIM Slots

Dual Cellular and Redundant SIM slots allow you to use the same or different cellular providers for bandwidth bonding, data overage protection or eliminating blind spots.

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# MAX HD2

## Specifications

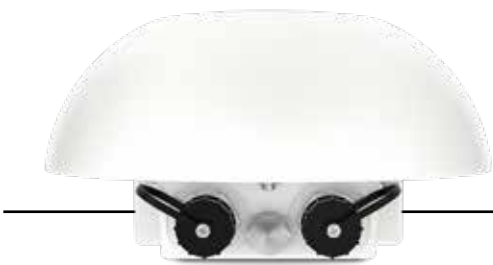
Dimensions	1.6 x 10.2 x 5.6 inches   40 x 260 x 143 mm
Weight	2.2 pounds   1 kg

### Dual 4G LTE Mobile Router

The **MAX HD2** gives you blazing fast connectivity on the road with dual embedded cellular modems and SpeedFusion, plus a built-in 4-port GE switch to reduce clutter in your mobile deployments.

### Simplify your Deployments

Cut down on cabling and simplify your deployments with **MAX HD2**. The HD2 includes a built-in 4-port GE LAN switch, reducing clutter and the need for extra equipment. As well as a terminal block for secure power installation in vehicles and other locations.



# MAX HD1 Dome

## Specifications

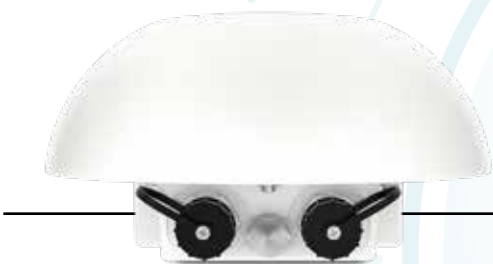
Dimensions (radius x height)	4.33in. x 4.49in.   110mm x 114mm
Weight	With Ethernet Splitter 3.75 pounds   1700 grams Without Ethernet Splitter 2.65 pounds   1200 grams

### Single Cellular Router for Mobile Outdoor Deployments

The **HD1 Dome** provides single-cellular Bandwidth Bonding in an IP67 enclosure that has a minimal profile on the rooftop while providing maximum signal. With redundant SIM, the **HD1 Dome** supports single cellular radios and four SIM cards. Combine the **HD1 Dome** with the SIM Injector, and the number of cards increases to twelve.

### 8 Additional SIM With the SIM Injector

With the addition of the SIM Injector, the **HD1 Dome** can support up to 12 SIM at your fingertips. Simply connect an Ethernet cable between the SIM Injector and the **HD1 Dome**. The SIM Injector is capable of PoE output, so you don't need to add aother PoE switch to your deployment.



# MAX HD2 Dome

## Specifications

Dimensions (radius x height)	4.33in. x 4.49in.   110mm x 114mm
Weight	With Ethernet Splitter 3.75 pounds   1700 grams Without Ethernet Splitter 2.65 pounds   1200 grams

### Dual Cellular Router for Mobile Outdoor Deployments

The **HD2 Dome** provides dual-cellular Bandwidth Bonding in an IP67 enclosure that has a minimal profile on the rooftop while providing maximum signal. With redundant SIM, the **HD2 Dome** supports two cellular radios and four SIM cards. Combine the **HD2 Dome** with the SIM Injector, and the number of cards increases to twelve.





# MAX HD2 IP67

## Specifications

Dimensions	9.0 x 12.2 x 2.6 inches   230 x 310 x 66 mm
Weight	5.84 pounds   2.65 kg

### Dual 4G/3G LTE Mobile Outdoor Router

The **HD2 IP67** outdoor router offers dual embedded cellular modems and PoE+ support, all encased in a shock and vibration certified, waterproof enclosure that's more than a match for almost any environment.

The **HD2 IP67** includes two built-in outdoor 4G LTE/3G modems. It allows you to use the same or different cellular providers for bandwidth bonding or eliminating blind spots.

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# MAX HD4

## Specifications

Dimensions	1.9 x 11.5 x 6.9 inches   50 x 292 x 177 mm
Weight	4.20 pounds   1.9 kg

### Quad 4G LTE Mobile Router

The **MAX HD4** delivers outstanding performance from all your connections with the help of SpeedFusion bandwidth bonding and intelligent load balancing.



# MAX HD4 IP67

## Specifications

Dimensions	11.6 x 15.3 x 2.6 inches   295 x 390 x 66 mm
Weight	9.48 pounds   4.3 kg

### Quad 4G/3G Mobile Outdoor Router

The **HD4 IP67** outdoor router offers quad embedded cellular modems and PoE support, all encased in a shock and vibration certified, waterproof enclosure that's more than a match for almost any environment.

### Quad Cellular and Redundant SIM slots for Multiple Carrier

The **HD4 IP67** includes four built-in outdoor 4G LTE/3G modems, each with two SIM slots to support a total of 8 SIM slots. This enables you to use the same or different cellular providers for bandwidth bonding or eliminating blind spots.



# MAX HD4 MBX

## Specifications

Dimensions	1.7 x 11.5 x 7.0 inches   43 x 292 x 177 mm
Weight	7.28 pounds   3.3 kg

### Quad Cellular Gigabit LTE Mobile Powerhouse

The **HD4 MBX** is capable of combining the bandwidth of up to 4 cellular links into an unbreakable, high-speed SD-WAN connection. The **HD4 MBX** supports up to 8 SIM cards, with room for another 8 with the optional SIM Injector. With up to 16 cellular providers to connect to, spotty coverage will simply not be a problem.



# MAX TRANSIT series

Built and Certified for  
Transportation Industry

Built from the ground up to fit the needs of transportation deployments. Features full certifications as well as vehicle-specific features such as ignition sensing.





Comparison  
chart

chart	MAX-TST (CAT-18)	MAX-TST	MAX-TST-DUO
Cellular WAN Interfaces	Single LTE-A Pro Modem		Dual LTE-A Pro Modem
SpeedFusion Hot Failover	yes		
SpeedFusion WAN Smoothing	yes		#
SpeedFusion Bandwidth Bonding	yes		#
Number of PepVPN SpeedFusion Peers	5 ^	2 /5 ^^	
WAN Interface	1x GE*		
LAN Interface	1x GE		
Load Balancing/Failover	yes		
Router Throughput	400 Mbps		
SpeedFusion Throughput (No Encryption)	100 Mbps		
SpeedFusion Throughput (256-bit AES)	60 Mbps		
Recommended Users	150		
LTE Modem	Downlink/Uplink Datarate:	Downlink/Uplink Datarate:	
LTE-A Modem		100 Mbps/50 Mbps	
LTE-A Pro Modem	1.2 Gbps/150 Mbps	300 Mbps/50Mbps	
		600 Mbps/150 Mbps	
Wi-Fi Standard	802.11ac/a/b/g/n 2x2 MIMO		
Transmit Power (2.4GHz / 5GHz )	19 dBm / 21 dBm		
Simultaneous Dual-Band Wi-Fi AP	yes		
Antenna Connectors	4x SMA Cellular, 1x SMA GPS, 2x RP-SMA Wi-Fi	2x SMA Cellular*, 1x SMA GPS, 2x RP-SMA Wi-Fi	
Power Input	Device: 12V – 48V DC AC Adapter: AC Input 100V – 240V / DC Output 12V Terminal Block: 12V – 48V DC		
USB LAN Port	2x Micro-USB B with 5V, 2A each for Power Input	Micro-USB B	
Power Consumption	18W (max.)		
Dimensions (L x W x H)	6.3 x 3.8 x 1.3 inches 160 x 97 x 33.5 mm		
Weight	1.3 pounds / 590 grams		
Operating Temperature	-40° – 149°F / -40° – 65°C		
Humidity	15% – 95% (non-condensing)		
Warranty	1-Year Limited Warranty		
Package Content	1x MAX Transit (CAT-18), 12V2A Power Supply (ACW-601), 2x 5dBi Wi-Fi Antennas (ACW-341), 1x GPS Active Antenna (ACW-232), 4x 2dBi 4G LTE Antennas (ACW-234), 1 Pair of Mounting Brackets (ACW-724)	1x MAX Transit, 12V2A Power Supply (ACW-601), 2x 5dBi Wi-Fi Antennas (ACW-341), 1x GPS Active Antenna (ACW-232), 2x 2dBi 4G LTE Antennas (ACW-234), 1 Pair of Mounting Brackets (ACW-724)	1x MAX Transit Duo, 12V2A Power Supply (ACW-601), 2x 5dBi Wi-Fi Antennas (ACW-341), 1x GPS Active Antenna (ACW-232), 2x 2dBi 4G LTE Antennas (ACW-234), 1 Pair of Mounting Brackets (ACW-724)

+ The WAN port can act as a LAN port if needed.  
^ Requires PrimeCare Subscription, complementary for the first year.  
^^ 2 PepVPN Peers are enabled by default. 5 PepVPN Peers are enabled for PrimeCare models..  
\* The MAX-TST-DUO has 4x SMA cellular antenna connectors.  
# Available as a license add-on



# MAX Transit

## Built for Transportation Deployments

With a compact form factor, simultaneous dual-band 11ac Wi-Fi, and embedded cellular modem, the **MAX Transit** is ready to deliver fast, reliable Wi-Fi hotspots to your passengers.

## Simultaneous Dual-Band 11ac Wi-Fi

Reduce Wi-Fi congestion and interference. Simultaneous dual-band Wi-Fi gives you two independent networks that also work together, maximizing the throughput that your passengers can enjoy.

## Install it Anywhere

With DIN rail mounts and mounting ears that can be installed from many angles, the **MAX Transit** is ready to fit into just about any space you have available.

# Specifications

Embedded 4G LTE/3G	1	Number of PepVPN/SpeedFusion Peers	2
SIM Card Size	Mini-SIM (2FF)	PepVPN/SpeedFusion Throughput (No Encryption)   (256-bit AES)	100Mbps   60Mbps
Redundant SIM Slots	Yes	Number of IPsec Tunnels	5
Ethernet WAN Ports	1 (GE) *	Enclosure	Indoor Metal
Ethernet LAN Ports	1 (GE)	Terminal Block Power Connector for Mobile/Vehicular Deployment	Yes
Recommended Users	150	Dimensions (Height x Width x Depth)	6.3 x 3.8 x 1.3 inches   160 x 97 x 33.5 mm
Router Throughput	400Mbps	Weight	1.3 pounds   590 grams
Wi-Fi Standard	802.11ac/a/b/g/n 2x2 MIMO	AC Adapter	AC Input 100V – 240V / DC Output 12V, 2A
Maximum number of SSID:	16	Power Input	2x Micro-USB B with 5V, 2A each
Transmit Power (2.4GHz)   (5GHz)	19dBm   21dBm	Power Consumption	18W (max.)
Simultaneous Dual-Band Wi-Fi AP	Yes	Operating Temperature	-40° – 149°F   -40° – 65°C
Wi-Fi as WAN	Yes	Humidity	15% – 95% (non-condensing)
High Availability	Yes	Certifications	FCC, CE, RoHS.
WAN as LAN	Yes		E-Mark.
Web Blocking	Yes		EN 61373:1999 IEC 61373:1999.
Content Filtering Blacklist	Lite		Shock and Vibration Resistance.
PepVPN	Yes		Railway Applications – Electronic.
SpeedFusion Hot Failover	Yes	Warranty	EN 50155.
SpeedFusion WAN Smoothing	No		Equipment used on Rolling Stock.
SpeedFusion Bandwidth Bonding	No		EN 61000.
			Electromagnetic Compatibility.
			1-Year Limited Warranty



# MAX Transit Duo

## Specifications

Dimensions	6.3 x 3.8 x 1.3 inches   160 x 97 x 33.5 mm
Weight	1.3 pounds   590 grams

## Built for Transportation Deployments

With a compact form factor, simultaneous dual-band 11ac Wi-Fi, and two embedded LTE modems, the **MAX Transit DUO** is ready to deliver fast, reliable connectivity in transportation and public safety deployments



# MAX Transit Mini

## Specifications

Dimensions	.1 x 4.3 x 1.2 inches   105 x 110 x 30 mm
Weight	0.54 pound   244 grams

## Band 71 and FirstNet Ready

The **Transit Mini** supports both band 71 and FirstNet, providing additional coverage as the situation demands. Band 71 operates at a 600MHz frequency that travels twice as far and works four times better in buildings than conventional LTE bands. This means Band 71 provides better coverage in remote areas as well as indoors. FirstNet (band 14) provides first responders with a specialized LTE network with more priority and network capacity.





# SD Switch Rugged

## Simplified LAN Management

No more command lines. Use InControl 2 cloud management to remotely monitor, troubleshoot, and configure your network:

## Ready for Any Environment

The SD-Switch Rugged can handle -40°F (-40°C) to 149°F (65°C). The fanless design enables it to function in high-particle environments.

## Greater Deployment Flexibility

16-Port SD-Switch Rugged: LAN Bypass and Combo Port

## Specifications

	SD Switch Rugged, 8-Port	SD Switch Rugged, 16-Port	SD Switch Rugged, 24-Port
LAN Interface	8x 802.3at (PoE+) GE Ports, 2x SFP Ports	8x 802.3at (PoE+) GE Ports, 8x GE Ports 2x SFP Ports	8x24 802.3at (PoE+) GE Ports, 2x SFP+ Ports
VLAN Groups	Yes		
Fiber Module	2x 1 Gbps		2x 10 Gbps
Switch Capacity	20 Gbps	36 GBPS	88 Gbps
Max. Packet Forwarding Rate	14.9 Mpps	26.8 Mpps	66 Mpps
MAC Address Table	8,000		32,000
Inter-VLAN Routing	No		Yes
AC Adaptor	AC Input 100V-240V DC Output 54V^		
Power Input	DC Power DIN 2x 54V Terminal Block: 12V - 56V DC		Redundant DC Power DIN: 54V Terminal Block: 12V - 54V DC
Power Consumption	20W System, 90W PoE+ Power Budget (supports up to 240W^)		50W System, 120W PoE+ Power Budget (supports up to 250W^)
Dimensions (L x W x H)	8.2 x 6.3 x 1.7 inches   210 x 160 x 43 mm	7.5 x 9.0 x 1.5 inches   190 x 226 x 35 mm	10.5 x 19.1 x 1.7 inches   265 x 485 x 45 mm
Weight	2.2 pounds   1.0 kg	4.4 pounds   2.0 kg	11.3 pounds   5.14 kg
Operating Temperature	-40° – 149°F   -40° – 65°C		
Humidity	15% – 95% (non-condensing)		
Certification	FCC, CE, RoHS, E-Mark, IC EN 61373:1999 IEC 61373:1999 : Shock and Vibration Resistance EN 50155: Railway Applications EN 61000: Electromagnetic Compatibility EN 45545-2: Fire Protection on Railway Vehicles	FCC, CE, RoHS, E-Mark, IC EN 61373:1999 IEC 61373:1999 : Shock and Vibration Resistance EN 50155: Railway Applications EN 61000: Electromagnetic Compatibility	FCC, CE, RoHS, IC* EN 61000: Electromagnetic Compatibility*
Warranty	1-Year Limited Warranty		

^The bundled PSU provides 90W of PoE power budget. If you require 240W of power budget, please add 180W PSU (ACW-623) to your device.



# AP One series

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Pepwave AP One access points deliver enterprise-grade performance, the flexibility to deploy anywhere, and easy setup and management. From the tiny but mighty AP One AC Mini to the super tough AP One Flex, the AP One series offers fast, secure, long-range Wi-Fi that goes wherever you do.

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## Go the Distance.

Our exclusive signal-boosting technology virtually eliminates dead spots and dropouts. You get full transmit power across all channels, unmatched range and reliability with less equipment and less management effort.

## Go for Easier AP Management.

It's simple to configure AP One series access points wherever you work. For onsite management, you have complete control and comprehensive reporting from any Peplink Balance/MAX# router. And with InControl 2, our cloud management solution, you get real-time client lists and bandwidth activity, plus a handy device snapshot, all from any device running a supported web browser.

## Go Wireless Anywhere.

Indoors or outdoors, there's an AP One access point for any job.

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Series

AP One Flex

The AP One Flex features an IP55 all-weather enclosure and provides seamless coverage over large areas.

AP One Rugged

Housed in tough metal enclosures and easy to integrate with the rest of your network, the AP One Rugged set the standard for high-performance, low-maintenance indoor Wi-Fi.

AP One In-Wall

The AP One In-Wall mounts on a standard electrical outlet box for installations without big boxes or nests of wires.

AP One AC mini

Compact and capable, the AP One AC mini delivers true AP One power in a palm-sized package that fits in your pocket.

AP One Enterprise

Powered by PoE, the AP One Enterprise has 3x3 MIMO dualradio Wi-Fi transmits wireless data at up to 1750Mbps. You can mount it directly to the ceiling at office.

Specifications

	AP One AC Mini	AP One Rugged	AP One Enterprise	AP One In-Wall	AP One Flex
Product Code	APO-AC-MINI	APO-RUG	APO-ENT	APO-AGN2-IW-US/ APO-AGN2-IW	APO-FLX
Ethernet Port	1x GE	2x GE	2x GE	1x FE Uplink 4x FE	3x GE
Wi-Fi Standard	Simultaneous 802.11ac wave 2 /ac/a/n and 802.11b/g/n	Simultaneous 802.11ac/a/n and 802.11b/g/n	Simultaneous 802.11ac/a/n and 802.11b/g/n	Simultaneous 802.11a/n and 802.11b/g/n	Simultaneous 802.11ac wave 2 /ac/a/n and 802.11b/g/n
Data Rates	2x2 MU-MIMO 2.4 GHz: 300Mbps 5GHz: 866Mbps	3x3 MIMO 2.4GHz: 450Mbps 5GHz: 1300Mbps	3x3 MIMO 2.4GHz: 450Mbps 5GHz: 1300Mbps	2x2 MIMO 2.4 GHz: 300Mbps 5 GHz: 300Mbps	2x2 MU-MIMO 2.4 GHz: 300Mbps 5 GHz: 866Mbps
Recommended Concurrent Users Per Radio	60	60	60	60	60
SSID Per Radio	16	16	16	16	16
Transmit Power	2412 – 2472 MHz: 23dBm 5180 – 5825 MHz: 17dBm	2412 – 2472 MHz: 24dBm 5180 – 5825 MHz: 22dBm	2412 - 2472 MHz: 24dBm 5180 - 5825 MHz: 23dBm	2412 – 2472 MHz: 17dBm 5180 – 5825 MHz: 17dBm	2412 - 2472 MHz: 20dBm 5180 - 5825 MHz: 21dBm
Included Antenna	Built-In Omni Antenna Antenna gain: 2.2dBi for 2.4GHz, 3dBi for 5GHz	2x Dual-Band Omni Antenna Antenna gain: 3dBi for 2.4GHz, 5dBi for 5GHz	Built-in Omni antenna Antenna gain: 3dBi for 2.4GHz, 4dBi for 5GHz	Built-In MIMO Omni Antenna Antenna gain: 2dBi for 2.4GHz, 4dBi for 5GHz	Built-In MIMO Directional Antenna Antenna gain: 9dBi for 2.4GHz, 10dBi for 5GHz
Antenna Connector	N/A	3x RP-SMA Connectors	N/A	N/A	2x RP-SMA Connectors (5GHz)
Enclosure	Plenum-rated, Indoor Plastic	Ruggedized Metal	Plenum-rated, Indoor Plastic	Plenum-rated, Indoor Plastic Mounts Into Standard US/EU Single Gang Wall Jack	Waterproof IP55 Outdoor
Weight	0.33 pounds 150 grams	0.93 pounds 420 grams	0.57 pounds 260 grams	0.37 (US) / 0.34 pounds 170 (US) / 155 grams	1.15 pounds 520 grams
Power Input	AC Input 100V – 240V, DC Output 12V, 802.3af PoE (Injector Not Included)	AC Input 100V – 240V, DC Output 12V, 802.3af PoE	802.3af PoE (Injector Not Included)	48V DC Connector 802.3af/802.3at PoE	802.3at PoE+ (56V Pepwave Passive PoE Input is Needed for full 1x 802.3at PoE+ LAN Output^)
Power Consumption	12W (max.)	13W (max.)	13W (max.)	15W (max.)	22W (max.)
Operating Temperature	23° - 113°F -5° - 45°C	-40° – 149°F -40° – 65°C	23° - 113°F -5° - 45°C	-4° – 104°F -20° – 40°C	-40 - 131°F -40 - 55°C
Humidity	15% – 95% (non-condensing)				
Certifications	FCC, CE, RoHS				
Warranty	1-Year Limited Warranty				





# AP One AX

Better Coverage and Speed with Wi-Fi 6  
Deploy Anywhere, Manage Centrally  
Enterprise-Grade Fast Roaming

Turnkey or Custom Captive Portals  
Seamless Peplink SD-WAN Integration

## Manage Centrally, No Extra Hardware Needed

Each AP One AX comes equipped with InControl central management. View the health and data usage of your network from any web browser. Centrally manage your network's SSID and radio settings from a single pane of glass. Use the searchable event log to quickly diagnose your entire network.



## Turnkey or Custom Captive Portals

Customize your captive portal as little or as much as you would like. Right out of the box, it includes a captive portal ready for immediate use. For a more branded user experience, you can edit every aspect of the captive portal using InControl.

## Simply Better Wi-Fi

### Wi-Fi 6: Faster, Better

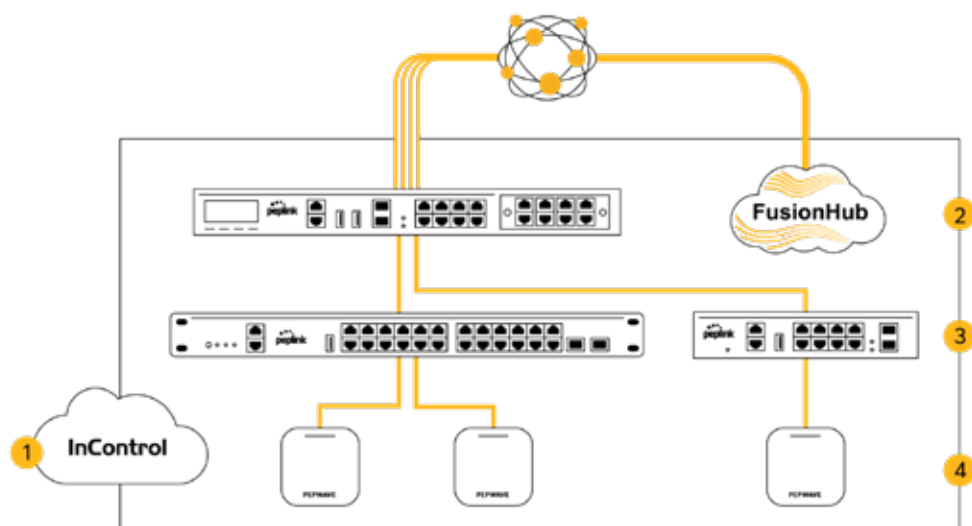
This technology is 45% faster than Wi-Fi 5, has 4x more device capacity, and consumes less power for connected devices.

### Enterprise-Grade Fast Roaming

This device supports 802.11k, v, and r, providing users with a more seamless roaming experience between access points.

## Seamless Peplink SD-WAN Integration

The AP One AX works seamlessly with other services in the Peplink ecosystem, providing unique network capabilities, unmatched network flexibility and ease of use.



## 1. InControl Central Management

Monitor network health on a single dashboard.  
Push configuration profiles on multiple devices at once.  
Remotely access the Web Admin of any device.

## 2. Balance/MAX/FusionHub

Provides unbreakable connectivity by combining multiple WANs. Works with InControl to centralize VLAN, rewall, and outbound policy.

### 3. SD-Switch

Works with InControl to remotely configure and activate PoE ports. Monitor power consumption.

#### 4. AP One

Works with InControl to centralize SSIDs, radio settings, and deliver captive portals.

## Specifications

APO-AX	
Ethernet Port	1x 2.5 Multigigabit Ethernet
Wi-Fi Standard	1x 2.4Ghz 802.11b/g/n/ax 1x 5Ghz 802.11a/n/ac/ax
Data Rates	4X4 MU-MIMO 2.4 GHz: up to 1148 Mbps 5 GHz: up to 2400 Mbps
Channel Width	20/40/60/80 MHz
Recommended Concurrent Users per Radio	256
SSID Per Radio	16
Transmit Power	2412 – 2472 MHz: up to 17dBm 5180 – 5825 MHz: up to 17dBm
Included Antenna	Built-in Omni Antenna Antenna gain: 5dBi for 2.4GHz, 5dBi for 5GHz
Enclosure	Plenum-rated, Indoor Plastic
Dimensions	8.1 x 8.1 x 1.3 inches / 205 x 205 x 32 mm
Weight	1.73 pounds / 785 grams
Power Input	DC Jack: 12V DC AC Adapter: AC Input 100V – 240V, DC Output 12V, 3A* 802.3 at PoE #
Power Consumption	24W (max.)
Operating Temperature	32° - 104°F / 0° - 40°C
Certifications	FCC, CE, RoHS
Warranty	1 Year Limited Warranty

\* Optional feature.

# PoE Injector is available separately.

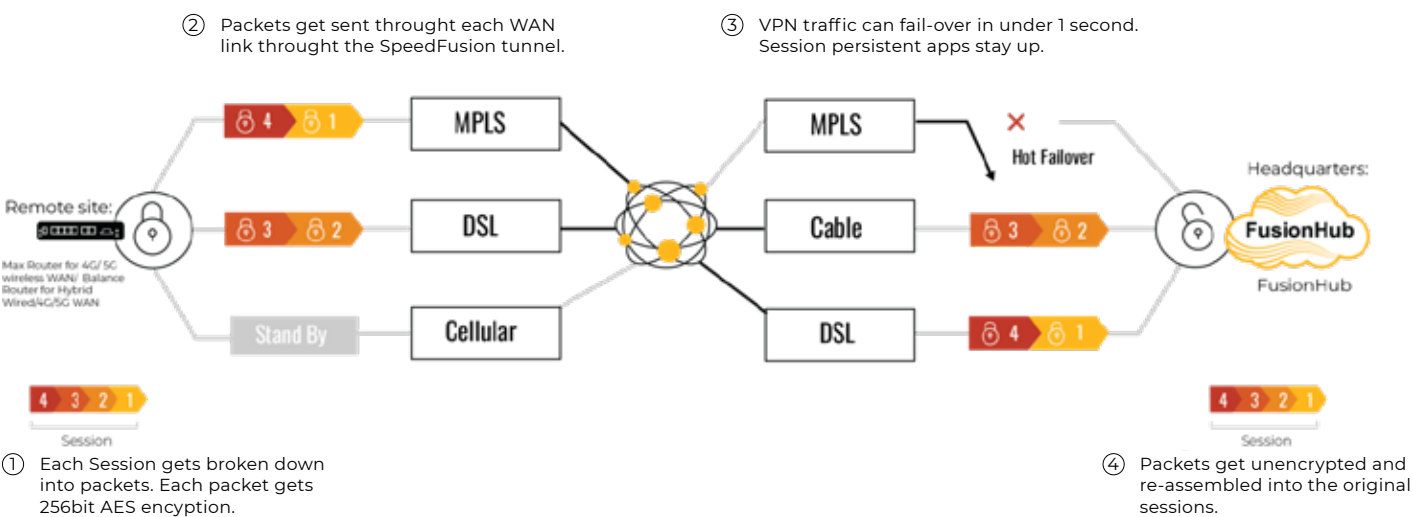
# SpeedFusion™

Speed & Reliability

## Speed & Reliability

Peplink's patented SpeedFusion technology powers enterprise VPNs that tap into the bandwidth of up to 13 low-cost cable, DSL, 3G/4G/LTE, and other links connected anywhere on your corporate or institutional WAN. Whether you're transferring a few documents or driving real-time POS data, video feeds, and VoIP conversations, SpeedFusion pumps all your data down a single bonded data-pipe that's budget-friendly, ultra-fast, and easily configurable to suit any networking environment.

## How it Works?



Once the bandwidth bonded SpeedFusion tunnel is formed, sessions are broken down and the resulting packets are sent separately across as available WAN-to-WAN connections. Because each WAN-to-WAN connection is encrypted separately, potential hackers would need to obtain the key to every WAN-to-WAN connection before they stand a chance of accessing the data contained within. This makes SpeedFusion SD-WAN technology virtually impervious to man-in-the-middle attacks.



## SpeedFusion Technologies

We have developed multiple technologies with **SpeedFusion** designed to address specific networking problems.

### Hot Failover

In the event of a WAN disconnection, Hot failover will transfer your traffic to another connection while maintaining session persistence. That is, if a WAN connection breaks during a videoconference, the videoconference can still continue without having to hang up or call again.

### WAN Smoothing

WAN Smoothing utilizes intelligent algorithms to fill in connectivity gaps, trading bandwidth for greater connection resiliency. WAN Smoothing minimizes latency and reduces the impact of packet loss. This is useful for times when you need connection reliability and responsiveness more than speed.

### Consistency

WAN Smoothing consumes more bandwidth than Bandwidth Bonding, but increases connection consistency. Use it when you need consistent delivery of time-sensitive traffic.

### Adjust Smoothing Strength

Adjust the amount of extra bandwidth to use for improving your connection consistency, striking your perfect balance between fast uploads and smooth streaming.

### Configure WAN Priority

Determine the priority of each WAN connection in the SpeedFusion Tunnel. This enables you to dedicate specific links (such as cellular) for backup.

### Bandwidth Bonding

Bandwidth bonding combines data at the packet level, enabling you to combine the speed of up to 13 connections. This is useful for situations where bandwidth is scarce, such as at a remote site, or

in a moving vehicle. This technology also enables branch offices to connect to the head office at greater connection speeds.

### Forward Error Correction

This technology has been developed to provide packet loss protection while minimizing bandwidth consumption. While WAN Smoothing duplicates actual packets, Forward Error Correction (FEC) sends additional reserve packets which could be used to mitigate the effects of packet loss via interpolation.

### SpeedFusion Traffic Steering

Modern networks carry a variety of traffic such as video streams, ERP sessions, HTTP sessions, and more. Depending on your deployment, you may need to give priority to certain kinds of traffic while throttling or even blocking others. SpeedFusion gives you granular control of how different kinds of traffic travels within your network.

### Bandwidth on Demand

Bandwidth on Demand allows you to use improvised cellular WAN connections whenever, wherever. No longer will there be a need to predict your next location and be tied down to huge data costs or lengthy contract periods. SpeedFusion will provide you with the ultimate solution, a perfect match for you.

### Bandwidth Overflow

Bandwidth Overflow monitors network bandwidth usage and switches to the most suitable connection as bandwidth usage changes. This allows network users to access high bandwidth connections when needed or switch to less costly connections when bandwidth usage is low. The result is a more optimized connection.

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# Incontrol2

## Cloud Based SD-WAN Network Management

InControl is our cloud-based endpoint management system. When connected to your devices, it aggregates data to generate useful reports on all aspects of your network. On a single screen, you can push configurations to any and all of your endpoints. If you need to dig deeper, you can remotely access the web admin of any device on your network.

Using InControl, you can save configuration time, minimize truck rolls, stay on top of the status of your network, and proactively resolve any emerging problems with speed and precision.



### Zero Touch Configuration

InControl simplifies network management by aggregating

network information and presenting them in easy-to-read reports. Push configuration and firmware updates to hundreds of devices with a click of a button and apply schedules to SSID, Wi-Fi radios, and SD-Switch ports.



### SD – WAN Provisioning

Provisioning SD-WAN configurations to endpoints used to take

hours. With InControl, you can now build your PepVPN network in one minute. Simply open the PepVPN configurator, select your topography, and select your peers.



### GPS Fleet Management

InControl 2 provides full-fleet device management when

used in combination with our vehicle-mounted, GPS-enabled devices, such as the MAX HD2 and BR1. Track your devices wherever they are using our interactive maps. Check vehicle speed, cellular coverage, and traffic conditions. Play back complete route histories for any time period.



### Network Troubleshooting

Set up email notifications for

important network events. Monitor WAN quality and bandwidth usage using intuitive graphical reports. InControl 2 provides detailed logs of your network's events and operations. Finally, the Remote Web Admin feature lets you directly access the WebUI of any device, saving truck rolls

# PrimeCare

## Simpler Package. Bigger Pie

PrimeCare makes SpeedFusion networks easier to build. It’s a subscription that bundles InControl, Warranty, SpeedFusion license upgrades, and FusionHub Licenses.

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### Full SpeedFusion Capability

Peplink PrimeCare enables full SpeedFusion (Bonding, WAN Smoothing, Hot Failover), opening up deployment possibilities for any PrimeCare device. For example, the MAX Transit Duo will be upgraded with full SpeedFusion in order to enable faster file transfer and higher quality streaming from mobile locations. Use WAN Smoothing to deliver smooth and consistent videoconferencing, protecting it from packet loss.

### Centralized Management

All devices with Peplink PrimeCare enabled will have access to InControl: our SD-WAN management cloud. Use it to build and push complex network topologies to devices in minutes. On a single screen, review the health of your network and remotely make configuration changes as needed.

InControl makes enterprise deployments simple by centralizing a number of important functions. Zero Touch Configurations and firmware updates in bulk. Standardize VLAN, SSID, firewall, and outbound policies. For access control and energy efficiency, apply schedules to SSID, Wi-Fi radios, and SD-Switch PoE ports.

### Warranty Support

Each PrimeCare subscription includes standard warranty coverage, so you can deploy your PrimeCare devices with peace of mind at an excellent price.

### SpeedFusion Cloud Usage #

The SpeedFusion Cloud enables Peplink devices under a Care Plan to use SpeedFusion (Bandwidth Bonding, Hot Failover, WAN Smoothing, Bandwidth Overflow) without any additional hardware.

## PrimeCare is available on these models



**MAX Transit Duo**  
Dual LTE-A Pro Router ideal for transportation deployments.



**MAX Transit**  
Single LTE-A Pro Router ideal for transportation deployments.



**MAX Transit Mini**  
Single Cellular FirstNet & Band 71 Ready Router



**UBR LTE**  
Dual-cellular router built to provide unbreakable connectivity at an affordable price.



**Balance 20X**  
Groundbreaking price-performance router for branches





# Teltonika RUT950

Rugged and durable professional 4G/LTE Dual SIM cellular router with advanced WiFi, Ethernet and industrial grade networking functionality support. Quick to deploy, easy to manage and flexible for applications across the most demanding market sectors.

This router is equipped with Dual-SIM, 4 x Ethernet interfaces and WiFi. Device is designed as Main/ Backup Internet source and can guarantee reliable Internet connection with high data throughput and data redundancy. RUT950 comes with RutOS software and security features such as multiple VPN services, Firewall, Hotspot, Auto Failover, Load Balancing, SMS control and RMS support.

## LTE Cat 4

LTE Cat 4 with speeds up to 150 Mbps

## WAN failover

Automatic switch to available backup connection



Wireless Access Point with Hotspot functionality



Dual SIM + significantly reduce roaming costs



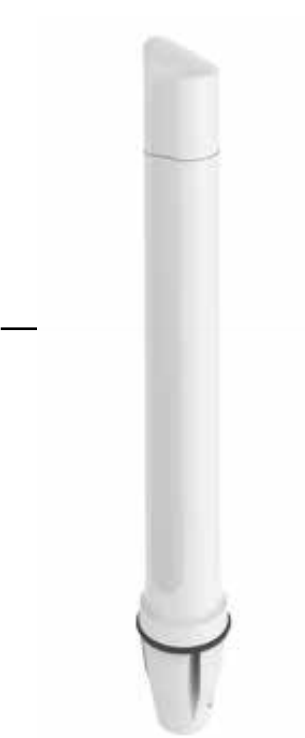
4x Ethernet ports with VLAN functionality



Teltonika Remote Management System compatible

## Specifications

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps
SIM switch	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail, SIM idle protection
Wireless mode	IEEE 802.11b/g/n, Access Point (AP), Station (STA)
WiFi security	WPA2-Enterprise - PEAP, TLS, TTLS. AES-CCMP, TKIP, Auto Cipher modes. Client separation
WAN	1 x WAN port (can be configured to LAN) 10/100 Mbps, comply IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
LAN	3 x LAN ports, 10/100 Mbps, comply IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
Input voltage range	9 – 30 VDC (4 pin industrial socket), reverse polarity protection; surge protection >31 VDC 10us max
Dimensions	50 mm x 100 mm x 110 mm (H x W x D)
Weight	280 g



# OMNI-291

Omni directional, marine & coastal lte antenna  
450 – 2700 MHz, 7dBi (Marine White)

The OMNI-291 is a high-performance marine antenna. This antenna uses a standard 1-inch (14 TPI) marine mount for simplified installation to most marine attachments. The ultra-wide frequency band covers all contemporary LTE operating frequencies with excellent balanced gain across all frequencies, including the LTE & CDMA 450 MHz bands which are common requirements for marine applications. Higher frequencies are not compromised, and the antenna design allows Poynting to have superior pattern control over the entire frequency range making the OMNI-291 a true high performance omni-directional antenna. The OMNI-291 guarantees signal reception almost everywhere along the coast, allowing it to be usable in all parts of the world. Poynting Antennas achieves this through new antenna configuration using multiple dipoles and a uniquely (patented) feed network. The antenna is future proof as it covers the 450 MHz LTE frequency getting more and more popular in various regions and countries!

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## Specifications

Product dimensions	560 mm x 75 mm (Incl. Marine Bracket)
Weight	0.576 kg
Ports	1
SISO / MIMO	SISO
Frequency Bands	450 – 2700 MHz
Gain	2 dBi @ 450 – 470 MHz 2.7 dBi @ 698 – 960 MHz 7 dBi @ 1710 – 2700 MHz
Polarisation	Linear Vertical
Peak Gain	7 dBi
Coax Cable Type	N/A
Coax Cable Length	N/A
Coax cable loss	Optional, cable dependant
Connector Type	N-Type (F)

## Features

- ▶ Medium gain omni-directional antenna
- ▶ Purpose built antenna for marine and coastal applications
- ▶ Lightweight
- ▶ UV and saltwater resistant
- ▶ Robust and weather resistant
- ▶ Operational in the 2.4 – 2.5 GHz Wi-Fi band



# OMNI-402

Omni-directional, marine & coastal lte mimo antenna  
*410 MHz – 3800 MHz, 6.2dBi*

The OMNI-402 is an ultra-wide band antenna, which covers all contemporary LTE operating frequencies with excellent balanced gain across all frequencies. The antenna also offers 2X2 MIMO capability from its vertically separated radiating elements, all in the same radome. The antenna design allows the antenna to have superior pattern control over the entire frequency range making the OMNI-402 a true high performance omni-directional MIMO antenna, suitable for marine and coastal applications. Usable in all parts of the world, the OMNI-402 guarantees signal reception almost everywhere. Poynting Antennas achieves this through new antenna configuration using multiple dipoles and a unique (patented) feed network. The antenna is future proof as it covers the 450 MHz LTE frequency band, which is becoming more popular in various regions and countries. This antenna is also 3400 – 3800 MHz capable for coastal and inland use.

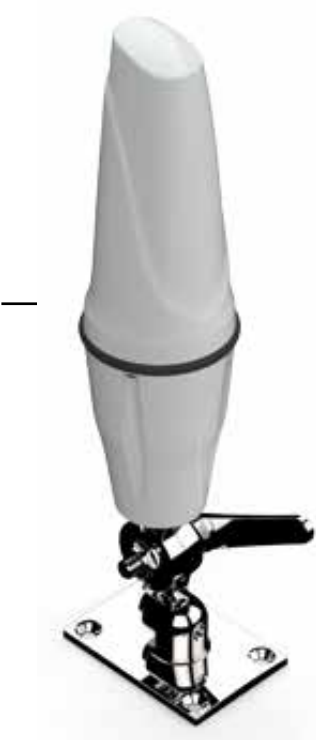
## Specifications

Product dimensions	750 mm x Ø75 mm (Incl. BRKT-40)
Weight	0.86 kg
Ports	2
SISO / MIMO	2x2 MIMO
Frequency Bands	410 – 3800 MHz
Gain	1 dBi @ 410-470 MHz 6.2 dBi @ 698-2700 MHz 2.5 dBi @ 3400-3800 MHz
Polarisation	Linear Vertical
Peak Gain	6.2 dBi
Coax Cable Type	Twin HDF 195
Coax Cable Length	2 m
Coax cable loss	0.385 dB/m @ 900 MHz 0.565 dB/m @ 1800 MHz 0.666 dB/m @ 2400 MHz 0.788 dB/m @ 3000 MHz
Connector Type	SMA (M)

## Features

- ▶ Medium gain omni-directional antenna
- ▶ Antenna is purpose-built for marine and coastal operation
- ▶ UV and salt-water resistant
- ▶ Robust and weather resistant design with IP 68 rating
- ▶ 2X2 MIMO capable for improved performance
- ▶ Includes 3.5 GHz CBRS band and is 5G ready





# OMNI-404

Omni-directional marine and coastal LTE/5G antenna  
698 – 3800 MHz; 2.5dBi

The OMNI-404 is a wide band LTE/5G antenna with a smaller profile radome which is specifically designed for adverse marine & coastal environments. This antenna covers all contemporary LTE operating frequencies, from 698 to 3800 MHz, with excellently balanced gain across all frequencies, enhancing LTE performance features, such a multi carrier aggregation (CA). This antenna is also suitable on all 5G networks up to 3800 MHz. The antenna is designed for superior pattern control over the entire frequency range, making the OMNI-404 an exceptional omni-directional antenna for its size and application. Poynting Antennas achieves this through a new antenna design using multiple dipoles and a unique (patented) feed network. A standard 1-inch (14 TPI) marine mount connector is used for simplified installation to most standard marine attachments.

## Specifications

Product dimensions	252 mm x Ø75 mm (Incl. BRKT-40)
Weight	0.35 Kg
Ports	1
SISO / MIMO	SISO
Frequency Bands	698 – 3800 MHz
Gain	-4 dBi @ 698-960 MHz 2 dBi @ 1710-2700 MHz 1.5 dBi @ 3400-3800 MHz
Polarisation	Linear Vertical
Peak Gain	2 dBi
Coax Cable Type	N/A
Coax Cable Length	N/A
Coax cable loss	Optional, cable dependant
Connector Type	N-Type (F)

## Features

- ▶ Medium gain omni-directional antenna
- ▶ The antenna is purpose-built for marine and coastal applications
- ▶ Fits directly to standard 1-inch (14 TPI) marine mount
- ▶ UV and salt-water resistant
- ▶ Robust and weather resistant with IP68 rating



# OMNI-496

Omni-directional, marine & coastal antenna; dual-band Wi-Fi 2400 – 2500 MHz, 3400 – 3800 MHz, 5000 – 6000 MHz; 7.5dBi

The OMNI-496 is a dual-band Wi-Fi omni-directional antenna, developed by Poynting Antennas. The antenna can connect to any Wi-Fi access point whether it is older Wi-Fi technology or new dual band 802.11ac enabled Wi-Fi technology. The antenna can resolve channel saturation and provide the ultimate in Wi-Fi performance and flexibility. The OMNI-496 is an IP68 marine version of its urban, industrial & commercial counterpart; the OMNI-296. The antenna operates in two frequency bands 2.4 GHz and 5 GHz, offering excellent utilization of the radio spectrum. The antenna has a maximum gain of 6 dBi at 2.4 GHz band and 7.5 dBi in the 5 GHz band, which offers the best performance with reliable connections. The antenna has a N-Type female connector at its base which can be terminated to a cable of the desired type and length.

## Specifications

Product dimensions	560 mm x 75 mm (Incl. BRKT-40)
Weight	0.57 kg
Ports	1
SISO / MIMO	SISO
Frequency Bands	2400 – 2500, 3400 – 3800 & 5000 -6000 MHz
Gain	6 dBi @ 2400-2500 MHz 7 dBi @ 3400-3800 MHz 7.5 dBi @ 5000-6000 MHz
Polarisation	Linear Vertical
Peak Gain	7.5 dBi
Coax Cable Type	N/A
Coax Cable Length	N/A
Coax cable loss	Optional, cable dependant
Connector Type	N-Type (F)

## Features

- ▶ Operational in the 2.4 GHz and 5 GHz Wi-Fi bands
- ▶ Medium gain omni-directional antenna
- ▶ Purpose built antenna for marine and coastal applications
- ▶ Lightweight
- ▶ UV and saltwater resistant
- ▶ Robust and weather resistant



# MIMO-3-15

5-In-1 transportation & automotive antenna  
410 - 3800 MHz; 2X2 LTE (MIMO), 5.8 dBi; 2X2 Wi-Fi (MIMO), 7 dBi; GPS/GLONASS, 21 dBi

The MIMO-3-15 is a 5-in-1 high performance multi frequency antenna within a single housing, providing two cellular, two Wi-Fi and a GPS/GLONASS antenna. The two cellular MIMO antennas (for 2G/3G/4G) covers the contemporary 698 MHz to 2700 MHz bands, as well as the new emerging LTE and 5G spectrum for 450MHz and 3.5GHz CBRS bands, which is becoming popular across the various international cellular network operators for LTE. The ultra-wideband performance of the antenna allows it to be used across different operators and technologies and is ready for future cellular technologies up to 3.8 GHz for 5G applications. The antenna provides two separate dual-band Wi-Fi antennas, providing concurrent 2.4 GHz and 5 GHz on each antenna with 2x2 MIMO capability. The fifth antenna is a high-performance active GPS/GLONASS system operating down to -40°C. The MIMO-3-15 exceeds the performance of most competitors due to the attention to the design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation. This is an important criterion for the transportation and marine market. which the antenna was specifically designed for. Main applications are for commercial/industrial vehicles, marine, M2M and other IoT systems using a wide range of radio technologies, while remaining futureproof over the wide frequency band.

## Specifications

	LTE	WiFi	GPS
Product dimensions	253 mm x 128 mm x 144 mm		
Weight	1.36 kg		
Ports	1-2	3 & 4	5
SISO / MIMO	2x2 MIMO	2x2 MIMO	N/A
Frequency Bands	410-3800 MHz	2400-2500 MHz 5000-6000 MHz	1575.42 MHz/ 1600 MHz
Gain	1 dBi @ 410-470 MHz 3.5 dBi @ 698-960 MHz 5.8 dBi @ 1710-2700 MHz 4 dBi @ 3400-3800 MHz		
Polarisation	Linear Vertical		
Peak Gain	5.8 dBi	7 dBi	21 dBi
Coax Cable Type	Twin HDF 195		RTK-031
Coax Cable Length	2m		
Coax cable loss	0.232 dB/m @ 400 MHz 0.362 dB/m @ 900 MHz 0.514 dB/m @ 1800 MHz 0.603 dB/m @ 3000 MHz		
Connector Type	SMA (M)		

## Features

- ▶ Ultra-wideband from 410 to 470 MHz, 698 to 2700 MHz and 3400 to 3800 MHz bands.
- ▶ Cleverly designed decorrelated antennas give superior MIMO performance in both Wi-Fi bands and cellular bands
- ▶ Above features maintained from 698 to 5800 MHz in relevant bands, including the 450 MHz
- ▶ Includes high-performance GPS/GLONASS antenna · Careful mechanical design provides ruggedness, corrosion, water, dust resistance (IP 68)
- ▶ Ground plane independent: MIMO-3 is designed with an internal ground plane, making the antenna suitable for implementation on all surface types





# MIMO-3-17

7-In-1 transportation & automotive antenna  
410 - 3800 MHz; 4X4 LTE (MIMO), 6.2 dBi; 2X2 Wi-Fi (MIMO), 7 dBi; GPS/GLONASS, 21 dBi

The MIMO-3-17 is a 7-in-1 high performance multi frequency antenna within a single housing, providing four cellular, two Wi-Fi and a GPS/GLONASS antenna. The four cellular MIMO antennas (for 2G/3G/4G) covers the contemporary 698 MHz to 2700 MHz bands, as well as the new emerging LTE and 5G spectrum for 450MHz and 3.5GHz CBRS bands, which is becoming popular across the various international cellular network operators for LTE. The ultra-wideband performance of the antenna allows it to be used across different operators and technologies and is ready for future cellular technologies up to 3.8 GHz for 5G applications. The antenna also provides two separate dualband Wi-Fi antennas, providing concurrent 2.4 GHz and 5 GHz on each antenna with 2x2 MIMO capability. The seventh antenna is a highperformance active GPS/GLONASS system operating down to -40°C. The MIMO-3-17 exceeds the performance of most competitors due to the attention to the design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation. This is an important criterion for the transportation and marine market. which the antenna was specifically designed for. Main applications are for commercial/industrial vehicles, marine, M2M and other IoT systems using a wide range of radio technologies, while remaining futureproof over the wide frequency band.

## Specifications

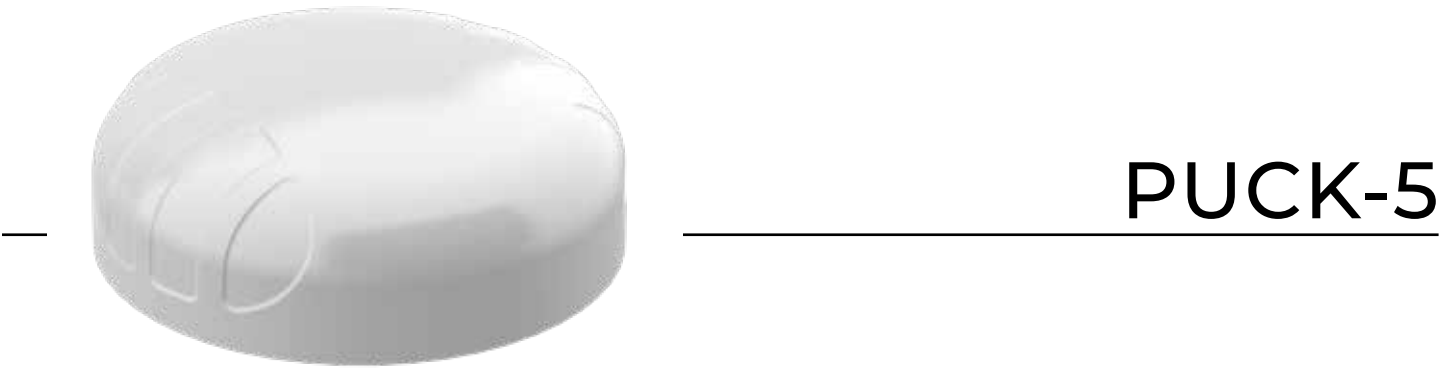
	LTE	WiFi	GPS
Product dimensions	253 mm x 128 mm x 144 mm		
Weight	1.51 kg		
Ports	1-4	5 & 6	7
SISO / MIMO	4x4 MIMO	2x2 MIMO	N/A
Frequency Bands	410-3800 MHz	2.4-2.5 GHz & 5-6 GHz	1575.42 MHz/ 1600 MHz
Gain	1.5 dBi @ 410-470 MHz 2.2 dBi @ 698-960 MHz 6.2 dBi @ 1710-2700 MHz 4.8 dBi @ 3400-3800 MHz		
Polarisation	Linear Vertical		
Peak Gain	6.2 dBi	7 dBi	21 dBi
Coax Cable Type	RTK-031		
Coax Cable Length	2m		
Coax cable loss	0.350 dB/m @ 400 MHz 0.560 dB/m @ 900 MHz 0.785 dB/m @ 1800MHz 1.20 dB/m @ 3000 MHz		
Connector Type	SMA (M)		

## Features

- ▶ Ultra-wideband 410MHz to 470MHz, 698MHz to 2700MHz and 3400MHz to 3800MHz bands
- ▶ Cleverly designed decorrelated antennas give superior MIMO performance in both Wi-Fi (dual band) and cellular bands
- ▶ Above features maintained from 698MHz to 5800MHz in relevant bands and the 450MHz band
- ▶ Includes high-performance GPS/GLONASS antenna
- ▶ Careful mechanical design provides ruggedness, corrosion, water, dust resistance (IP68)
- ▶ Ground plane independent: The MIMO-3 is designed with an internal ground plane, making this antenna suitable for implementation on all surface types







Poynting's new PUCK antenna offers a small profile antenna for use in the IoT/M2M, Smart Meter, Smart Utilities, Transportation, Marine and the Agricultural/Farming markets. The PUCK-5 consists of a 5-in-1 antenna system within a single housing, featuring 2X2 MIMO LTE, 2X2 MIMO Wi-Fi (Dual-band 2.4 GHz & 5 GHz) and GPS/GLONASS. The 2x Cellular MIMO antennas (for 2G/3G/4G) cover the 698 MHz to 3800 MHz band, this includes the most popular international LTE bands. The antenna provides two separate dual-band Wi-Fi antennas offering concurrent 2.4GHz and 5 GHz bands, capable of 802.11n and 802.11ac/ax with 2x2 MIMO. The fifth antenna is a high-performance active GPS/GLONASS system operating at temperatures as low as -40°C. The PUCK exceeds the performance of many competitors due to the attention to design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation, which is often overlooked in such a small size antenna. Despite its small size, this antenna provides excellent performance especially at the higher frequency bands, where performance is critical for LTE throughput and connection stability. This antenna is designed so that both the LTE ports are connected to the router/device to ensure the best performance. Please see other derivatives of the PUCK range that are more suitable for a SISO application.

## Specifications

Weight	
Height	
Coax Cable Type	RTK-031
Coax Cable Length	2.00m
Connector Type	SMA (m) & RPSMA adaptors
Colour	Black / White

## Features

- ▶ 5-in-1 LTE high performance multi frequency
- ▶ 2G/3G/4G/LTE antenna (5G Ready)
- ▶ LTE (2X2 MIMO), Dual-band Wi-Fi (2X2 MIMO), GPS/GLONASS
- ▶ Wideband – covers wide frequency band, incl. 3.5 GHz CBRS band
- ▶ Ground plane independent
- ▶ Robust, vandal resistant and waterproof (IP 68)
- ▶ Ideal for transportation, marine and IoT/M2M use
- ▶ Ultra-versatile mounting options for easy installation





# PUCK-12

Poynting’s new PUCK range offers a small profile antenna which can be used in the IoT/M2M, Smart Meter, Smart Utilities, Transportation, Marine and the Agricultural/Farming markets. The PUCK-12 consists of a 2-in-1 antenna system within a single housing, featuring 2x2 MIMO Wi-Fi (Dual-band 2.4 GHz & 5 GHz). The antenna provides two separate dual-band Wi-Fi antennas offering concurrent 2.4 GHz and 5 GHz bands, capable of 802.11n and 802.11ac/ax with 2x2 MIMO. The PUCK exceeds the performance of many competitors due to the attention to design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation, which is often overlooked in such a small size antenna. Despite its small size, this antenna provides excellent performance especially at the higher frequency bands, where performance is critical for Wi-Fi throughput and connection stability

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## Specifications

Weight	
Height	
Coax Cable Type	RTK-031
Coax Cable Length	2.00m
Connector Type	SMA (m) & RPSMA adaptors
Colour	Black / White

## Features

- ▶ 2-in-1 high performance omni-directional antenna
- ▶ Dual-band Wi-Fi, 2.4 GHz and 5 GHz frequency bands
- ▶ 2X2 MIMO for improved performance
- ▶ Ground plane independent
- ▶ Robust, vandal resistant and waterproof enclosure (IP68)
- ▶ Ultra-versatile mounting options for easy installation



A close-up photograph of a person's hand gripping a thick, grey rope. The hand is wearing a dark, possibly navy blue or black, jacket. The background is a blurred view of a boat's interior, showing a wooden cabin structure and a window. The lighting is soft, suggesting an overcast day or late afternoon. A semi-transparent dark grey rectangle is overlaid in the upper right corner, containing the text 'VHF' in white.

VHF



A photograph taken from the deck of a fishing boat, looking out over the ocean. In the foreground, several fishing rods are mounted on the boat, each with a bright yellow reel and a red float. The rods are angled towards the horizon. The ocean is a deep blue, with white foam from the boat's wake visible in the middle ground. In the far distance, a city skyline is visible on the horizon under a sky with scattered white clouds. A semi-transparent white box with rounded corners is overlaid on the upper part of the image, containing text.

## Nothing Comes Close to a Cobra

When heading out on the water, a fixed-mount VHF radio is vital for communication and safety. With advanced safety features, easy menu navigation, and 24 hr access to emergency alerts and broadcasts, Cobra's got you covered.



# Cobra MRF57B

## 25 Watt Class-D Fixed Mount VHF Radio

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The MRF57 is a powerful VHF radio perfect for short or long range communication. Gain 24hr. access to NOAA weather alerts, one-touch access to channel 16/9 and advanced features like Rewind-Say-Again® so you'll never miss a VHF call.

## Features

- ▶ Rewind-Say-Again®– Replay missed VHF calls. Automatically records the last 20 seconds with a digital voice recorder.
- ▶ PA Output – PA function for public address to external speaker.
- ▶ All NOAA Weather Channels – Instant access to national All Hazards and weather information, 24 hours a day.
- ▶ Radio Check – Checks battery voltage when transmitting, RF power output and antenna output.
- ▶ Submersible – Designed to IPX8 (JIS8) standards

## Specifications

Weight	2.7 lbs (1.22kg)
Height	3 in. (76.2mm)
Width	6 in. (152.4mm)
Depth	6.25 in. (158.75mm)



# Cobra MRF77B GPS

## Our most advanced marine radio

The MRF77 is a unique VHF radio with an integrated GPS receiver and exact location for a true life saving device. Instant emergency channel 16/9, Rewind-Say-Again® feature, and access to all NOAA weather channels make this a complete solution.

## Features

- ▶ Built-In GPS Receiver - Simply connect the radio to power and the radio will know your location.
- ▶ Rewind-Say-Again®- Replay missed VHF calls. Automatically records the last 20 seconds with a digital voice recorder.
- ▶ PA Output – PA function for public address to external speaker.
- ▶ All NOAA Weather Channels – Instant access to national All Hazards and weather information, 24 hours a day.

## Specifications

Weight	2.7 lbs (1.22kg)
Height	3 in. (76.2mm)
Width	6 in. (152.4mm)
Depth	6.25 in. (158.75mm)





# Cobra MR HH150 FLT

## 3 Watt handheld floating VHF radio

The MR HH150 FLT is convenient and quality built. The entry level, handheld floating radio is anything but basic. The large display, signal strength indicators, and maximum range give you unmatched reliability and peace of mind.

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## Features

- ▶ Floating - Floating design and orange core make retrieving radio easy if dropped overboard.
- ▶ Submersible - Rated submersible to industry standard JIS7 (IPX7) Specifications. One meter for 30 minutes.
- ▶ 3 Watt VHF - Low/Med/High Output power for short and long range communication
- ▶ USA, Canada & International Channels - Allows operation on any of the three different channel maps established for these areas. Includes the latest 4 digit channels.
- ▶ 10 NOAA Weather Channels and Weather Alert - Instant access to national All Hazards and weather information, 24 hours a day, and alerts if threatening weather is nearby.
- ▶ Weather Alert - Alerts with an audible tone and visual alarm if threatening weather is nearby

## Specifications

Weight	8 oz (227 g)
Height	4.5" (114.3 mm)
Width	2.7" (68.58 mm)
Depth	1.5" (38.1 mm)



# Cobra MR HH350W FLT

## 6 Watt Floating VHF Radio, White

The best value in our handheld VHF radio line up! Backed by 50 years of Cobra quality, this floating radio has an orange core for higher visibility and is easy to retrieve if dropped overboard. It features 6 Watts of power for longer range communications and full access to all NOAA weather channels and alarm tones for weather emergencies. It also includes all of the core features like Noise canceling microphone, JIS7/IPX7 rated Submersible, Tri-Watch, Memory Channels, Memory Scan and BURP.

## Features

- ▶ Noise-Cancelling Microphone - Blocks background noise for clearer conversations.
- ▶ 6 Watt VHF - Select between 1, 3 and 6 watts for short and long range communication.
- ▶ USA, Canada & International Channels - Allows operation on any of the three different channel maps established for these areas.
- ▶ All NOAA Weather Channels and Weather Alert - Instant access to national All Hazards and weather information, 24 hours a day, and alerts if threatening weather is nearby.

## Specifications

Weight	9.59oz
Height	4.8" (123 mm) - not including antenna
Width	2.4" (62 mm)
Length	1.4" (36 mm)



# Cobra MR HH500 FLT BT

## 6 watt floating handheld VHF radio

The MRHH500 is our legacy handheld VHF radio and now features Bluetooth® connectivity so you can make and receive calls right from your VHF radio. Get access to all NOAA weather channels and Cobra's Rewind-Say-Again® feature so you never miss a VHF call.

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## Specifications

Weight	0.59 Lbs (262.00 g)
Height	4.75" (121.00 mm)
Width	2.66" (67.00 mm)
Length	2.09" (53.00 mm)

## Features

- ▶ Bluetooth® Wireless Technology - Keep your cell phone safe and dry by pairing it to the radio.
- ▶ Rewind-Say-Again® - Replay missed VHF calls.
- ▶ Floating - Never lose your radio. The floating design and orange core make retrieval easy if dropped overboard.
- ▶ Noise-Cancelling Microphone - Blocks background noise for clearer conversations.
- ▶ 6 Watt VHF - Select between 1, 3 and 6 watts for short and long range communication.





# Sailor 6222

## VHF DSC Radio

The SAILOR 6222 VHF DSC radio continues the SAILOR tradition of setting new standards for GMDSS VHF radio design. It is a vital tool for daily operation and has been developed for the harsh maritime environment as part of the innovative SAILOR 6000 Series. It is based on the same foundation of high reliability, ease-of-use and leading-edge functionality that has positioned SAILOR as the top name in maritime VHF.

SAILOR 6222 VHF radio provides flexibility through straightforward installation, either as part of a GMDSS console or on its own. As a result of improved, high performance and innovative, easy-to-use functionality the radio offers important operational enhancements. It introduces several new hardware and software improvements, including the improved SAILOR Replay functionality.

The highly advanced 3.2" QVA display ensures the information can be read regardless of the light conditions on the bridge – day or night. The text can be displayed as white on black background, and as black on white background, to provide the optimal reading condition in daylight. Red backlight protects the night vision of the user.

## Features

- ▶ Unique SAILOR Replay (240 sec.) of incoming communication
- ▶ High-quality display – perfect night and day vision
- ▶ Powerful 6W loudspeaker
- ▶ Intuitive and easy to operate menu structure
- ▶ Large tactile buttons and wheelknobs for easy operation
- ▶ The popular and reliable SAILOR handset
- ▶ ThraneLINK

## Specifications

Weight	2,5 kg
Height	24,1 cm
Width	10,0 cm
Depth	10,7 cm



# Sailor 6249

## VHF Survival Craft

The SAILOR 6249 VHF Survival Craft is Wheelmark (MED-B) approved and complies with the ETSI EN 301 466 standards.

This allows it to be installed as a fixed mounted VHF in a Survival Craft. It is rated waterproof to both IPx6 and IPx8 and in order to achieve this rating the SAILOR 6249 VHF Survival Craft has been subjected to an extreme series of testing, proving its resistance to fluctuating temperature, shock, water and oil among other environmental challenges.

You can trust the SAILOR 6249 VHF Survival Craft in a distress situation because it has been designed for just that.

## Specifications

Weight	1,5 kg
Transceiver dimensions:	34cm x 31cm x 5.5cm
Transceiver weight:	2,15 kg
Antenna dimensions:	16cm x 27cm x 4.2cm
Antenna weight:	1,15 kg
Below deck unit dimensions:	14,5cm x 19,1cm x 6,1cm
Below deck unit weight:	1,1 kg

## Features

- ▶ High-performance Rx/Tx
- ▶ Powerful 6W loudspeaker
- ▶ Professional, high-quality SAILOR handsets
- ▶ Intuitive and easy operation
- ▶ High-quality display – perfect night and day vision
- ▶ Unique SAILOR Replay function – playback the last 240 sec.
- ▶ Large tactile buttons and dials for easy operation
- ▶ ThraneLINK for easy integration and maintenance



# Sailor 6300

## Models

Sailor 6310	(150W)
Sailor 6320	(250W)
Sailor 6350	(500W)

## Features

- ▶ SAILOR Replay – 240 seconds
- ▶ High quality graphical display - perfect night and day vision
- ▶ 6W internal loudspeaker for excellent sound quality
- ▶ Improved, intuitive and easy to operate menu structure
- ▶ Unique, next generation radiotelex software
- ▶ Multiple control units
- ▶ 150W-250W-500W versions
- ▶ ThraneLINK
- ▶ Tune cache. Fast tuning to frequencies previously used

## MF/HF DSC Radio

Based on the same foundation of high reliability, ease of use and leading-edge functionality that has positioned SAILOR as the leading product in maritime communications, the SAILOR 6300 MF/HF DSC Class A offers much more than just a way to meet mandatory GMDSS requirements. In addition to being part of the innovative SAILOR 6000 GMDSS series, it is an integral part of a vessels communication system and a crucial tool when in distress and rugged, reliable, easy to use communications are a must.

The SAILOR 6300 MF/HF provides several unique features such as message replay functionality, and the ability to connect two control units. A highly efficient power amplifier with control hardware ensures high performance and reliable communication in the marine bands from 1.6 to 30 MHz, and ensures constant and full output power on all ITU channels.

## Specifications

Weight	X kg
Height	27,3 cm
Width	9,9 cm
Depth	12,4 cm

Instead of connecting the SAILOR 6300 MF/HF to an external GPS, the GPS input can be taken from the SAILOR 6110 mini-C GMDSS or other network gps. Therefore, no additional cabling apart from LAN is needed.





# Sailor SP3510

## Portable VHF Radio

The SAILOR SP3510 Portable VHF radio from Cobham SATCOM is designed to focus on user-friendliness. The unit fits perfectly in any hand with or without gloves, wet or dry. Large tactile buttons make it easy to operate even in a harsh environment at sea and the large backlit display is easy to read, even at night where the red backlight prevents disturbance of the user's night vision.

The SAILOR SP3510 radio is waterproof, IP67 rated (submersible to 1/2 meter for 1/2 hour) tested and approved by international standards for portable units.

## Features

- ▶ Dual Watch, Tri Watch and Scanning
- ▶ Robust design
- ▶ Waterproof (IP67)
- ▶ Large display
- ▶ Clear sound
- ▶ Large tactile buttons
- ▶ Ribbed grip
- ▶ Interface to external accessories

## Specifications

Weight	0,34 kg
Height	27,6 cm
Width	6,6 cm
Depth	5,2 cm



# Sailor SP3515

## Portable VHF Radio with Scrambler

The SAILOR SP3515 Portable VHF radio with Scrambler and CTCSS from Cobham SATCOM is designed to focus on user-friendliness. The unit fits perfectly in any hand with or without gloves. Large tactile buttons make it easy to operate even in a harsh environment at sea and the large backlit display is easy to read, even at night where the red backlight prevents disturbance of the user's night vision.

The SAILOR SP3515 is waterproof, IP67 rated (submersible to 1/2 meter for 1.2 hour) and offers scrambler and CTCSS (signalling used in Private Mobile Radio).

## Features

- ▶ Dual Watch, Tri Watch and Scanning
- ▶ Robust design
- ▶ Waterproof (IP67)
- ▶ Large display
- ▶ Clear sound
- ▶ Large tactile buttons
- ▶ Ribbed grip
- ▶ Interface to external accessories

## Specifications

Weight	0,34 kg
Height	27,6 cm
Width	6,6 cm
Depth	5,2 cm



# Sailor SP3520 GMDSS

## Portable VHF Radio

The SAILOR SP3520B Portable VHF radio from Cobham SATCOM is designed to focus on user-friendliness. The unit fits perfectly in any hand with or without gloves, wet or dry.

Large tactile buttons make it easy to operate even in a harsh environment at sea and the large backlit display is easy to read, even at night where the red backlight prevents disturbance of the user's night vision.

The SAILOR SP3520B is waterproof, IP67 rated (submersible to 1/2 meter for 1/2 hour) tested and approved on top of all international standards for portable units.

## Features

- ▶ Dual Watch, Tri Watch and Scanning
- ▶ Robust design
- ▶ Waterproof (IP67)
- ▶ Large display
- ▶ Clear sound
- ▶ Large tactile buttons
- ▶ Ribbed grip
- ▶ Interface to external accessories

## Specifications

Weight	0,34 kg
Height	27,6 cm
Width	6,6 cm
Depth	5,2 cm





# Sailor SP3530

## Portable VHF ATEX Radio

The SAILOR SP3530 Portable VHF ATEX radio is a high-quality, durable model specifically designed for use in the dangerous offshore and tanker environment.

The SAILOR SP3530 Portable VHF ATEX radio features powerful transceivers and high quality audio ensuring that all parties can be heard loud and clear even when working in windy and noisy conditions.

The SAILOR SP3530 Portable VHF ATEX conforms to the 94/9/EC ATEX Directive. The approved rating is II 2 G Ex ib IIC T4. Accessories have been approved together with the SP3500 ATEX radios.

## Specifications

Weight	0,34 kg
Height	27,6 cm
Width	6,6 cm
Depth	5,2 cm

## Features

- ▶ Robust design
- ▶ Waterproof (IP67)
- ▶ Large display
- ▶ Clear sound
- ▶ Large tactile buttons
- ▶ Ribbed grip
- ▶ Interface to external accessories



# Sailor SP3540 GMDSS

## Portable VHF ATEX GMDSS Radio

The SAILOR SP3540 Portable VHF ATEX GMDSS radio is a high-quality, durable model specifically designed for use in the dangerous offshore and tanker environment.

SAILOR SP3540 Portable GMDSS ATEX radio features powerful transceivers and high quality audio ensuring that all parties can be heard loud and clear even when working in windy and noisy conditions. The SAILOR name gives you confidence that your portable VHF radio was built for the job at sea.

The SAILOR SP3540 Portable GMDSS ATEX radio conforms to the 94/9/EC ATEX Directive. The approved rating is II 2 G Ex ib IIC T4. Accessories have been approved together with the SP3500 ATEX radios.

## Features

- ▶ Robust design
- ▶ Waterproof (IP67)
- ▶ Large display
- ▶ Clear sound
- ▶ Large tactile buttons
- ▶ Ribbed grip
- ▶ Interface to external accessories

## Specifications

Weight	0,34 kg
Height	27,6 cm
Width	6,6 cm
Depth	5,2 cm



# Sailor 6210

## Features

- ▶ Full waterproof to IPx8 (submersible) and IPx6 (spray) all over
- ▶ Large easy-to-read display with red backlight and dimming
- ▶ High quality, powerful 6W loudspeaker
- ▶ 2 hand microphones/handsets
- ▶ 1 control speaker microphone
- ▶ Detachable hand microphones - front and rear
- ▶ SAILOR Replay function
- ▶ DW, Tri-watch and scanning
- ▶ Loudhailer functionality with talkback
- ▶ Foghorn functionality

## Specifications

Weight	< 1,5 kg
Height	19,1 cm
Width	13,2 cm
Depth	10,7 cm

## VHF DSC Class D

Safety and efficiency at sea depend on superior communication, so professionals have for decades chosen SAILOR VHF.

Now, the proven performance and unrivalled solid build quality that makes SAILOR the VHF choice for the discerning user have been passed on to the next generation, the SAILOR 6200 VHF series.

With competitive value, introduced to ensure availability to all professional vessels, the new generation SAILOR 6210 VHF and SAILOR 6215 VHF DSC Class D still retain the same premium, rugged feel of previous generations, but with improvements across the board. Designed with ease-of-use in mind, the SAILOR 6210 VHF and SAILOR 6215 VHF belong at the helm of any vessel crewed by professionals.

The robust, solid qualities of the SAILOR 6200 VHF series are apparent immediately. A large display with red backlight protects the user's night vision and makes it easy to read the intuitive menu. The tactile feel of the buttons and wheelknobs makes the VHF's very easier to operate. The powerful 6W built in loudspeaker ensures good sound quality, even in noisy environments.





# Sailor 6248

## VHF DSC Radio

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## Features

- ▶ High performance Rx/Tx
- ▶ Powerful 6W loudspeaker
- ▶ Professional, high-quality SAILOR
- ▶ Handsets
- ▶ Intuitive and easy operation
- ▶ High quality display – perfect night and day vision
- ▶ Unique SAILOR Replay function – play back the last 240 sec.
- ▶ Large tactile buttons and dials for easy operation
- ▶ ThraneLINK for easy integration and maintenance

SAILOR 6248 VHF continues the SAILOR tradition of setting new standards for VHF design. A vital and reliable tool for daily operation, it has been developed for the harsh maritime environment as a part of the SAILOR 6000 series. It is based on the same foundation of high reliability, ease-of-use and leading-edge functionality that has positioned SAILOR as the frontrunner in maritime VHF radios.

The SAILOR 6248 VHF is the perfect communication partner in your daily work. Built to the exacting standards that have made SAILOR VHF's famous.

The SAILOR 6248 VHF is rated waterproof to both IPx6 and IPx8, making it possible to install on open workboats or outside deck areas.

## Specifications

Weight	< 2,5 kg
Height	27,3 cm
Width	13,2 cm
Depth	10,7 cm



AIS





A photograph of a sailboat on the ocean. The boat's white sail is visible, and a black antenna is mounted on the deck. The water is blue with small waves, and the sky is a pale blue. The text 'Weatherdock' is overlaid in the upper right corner.

# Weatherdock

AIS Know-How: Data transfer (SOTDMA vs. CSTDMA)

Since the end of 2000, the Automatic Identification System (AIS) has become a binding standard to improve the navigation and safety at sea. Position, course, speed, and other ship data are transmitted alternately on the two maritime VHF channels 161.975 MHz and 162.025 MHz. Per minute there are 2,250 Slots available for the transmission of AIS data telegrams.

Two methods are available for transmitting the AIS data telegrams.

On the one hand, the CSTDMA (Carrier Sense Time-Division Multiple Access) method, which is used primarily for pleasure boating (Class B). The CSTDMA method uses carrier-sensing to defer transmissions until no other stations are transmitting. If a free slot is found, the transmission starts. Than the transmission is stopped for a 30 second time interval before the next one starts.

On the other hand, there is the SOTDMA (Self-Organized Time-Division Multiple Access) technology, which was used only by commercial vessels (Class A) but is now also authorized for pleasure boating at Class B level. With the SOTDMA method only the first free slot for the transmission has to be found. The next five slots are always reserved automatically.

The following hierarchy results for the transmission of AIS data telegrams:

- 1. Class A (commercial vessels) & SART (rescue transmitter)
- 2. Class B SOTDMA (pleasure boating)
- 3. Class B CSTDMA (pleasure boating)

The main advantages of the SOTDMA compared to the CSTDMA technology for pleasure boating (Class B) at a glance:

SOTDMA (Class B)	CSTDMA (Class B)
Self-organized Time-Division Multiple Access	Carrier Sense Time-Division Multiple Access
<ul style="list-style-type: none"><li>▶ + 5 watt transmission power</li><li>▶ Transmission interval up to every 15 sec. (depending on speed)</li><li>▶ Reservation of future slots</li><li>▶ Sending/receiving of text messages (addressing to MMSI possible)</li><li>▶ 2nd priority to Class A devices</li></ul>	<ul style="list-style-type: none"><li>▶ 2 watt transmission power</li><li>▶ Send interval every 30 sec. (fixed)</li><li>▶ no reservation of future slots</li><li>▶ no sending/receiving of text messages</li><li>▶ 3rd priority to Class A devices</li></ul>



# easyTRX3

## AIS Class B Transceiver SOTDMA – Be seen with increased visibility!

5 Watt radiated transmission power, faster transmission rates and SOTDMA technologies – all this benefits contains the new easyTRX3, the new AIS Class B generation from Weatherdock.

The rigid and waterproof housing of the easyTRX3 has up to date plug connectivity for NMEA2000, 3\*NMEA0183 as well as USB.

The Class B transceiver can easily be configured at home because power supply is given via USB when connected to the PC. It is the same with the internal storage: no external power supply for read out the data.

The easyTRX3 is working with SOTDMA technologies. This means that the device scans for used time slots and will reserve available slots for own transmission. Other AIS Class B units are informed that this slot will be used also for next transmission as well. Thanks to the increased radiated transmission power of 5 Watt and the subject to speed transmission rate, the new easyTRX3 will increase your navigational work and your safety board – to see and to be even better seen – what else do you need?

The modular design allows the easyTRX3 to meet future requirements. The device can be equipped and extended with other modules such as WiFi, DVB-T2 and DAB + or 3G mobile phone.

## Highlights

- ▶ AIS Class B SOTDMA
- ▶ 5 Watt radiated power
- ▶ Higher transmission rates (subject to speed)
- ▶ Integrated VHF splitter
- ▶ Integrated GPS antenna and receiver
- ▶ NMEA2000, NMEA0183 and USB Port connectivity
- ▶ CPA-Alarm & Anchor-Alarm
- ▶ Internal storage; read-out with USB power supply possible
- ▶ Configuration with USB power supply possible
- ▶ Reading out the internal data memory with USB power supply possible
- ▶ Rigid and waterproof housing
- ▶ Conform to the new international standard IEC62287-2



# DAB+

The optional product variant “DVB-T2” comes along with an additional DAB+ board. This board allows to connect the antenna cable of a DAB+ Radio receiver with an F-connector. The board is working as a kind of antenna and amplifies the received DAB+ signals a little bit

before forwarding them to the DAB+ receiver. The DAB+ board does not contain an integrated splitter for DAB+. The DAB+ signals will not be received by the top of the mast VHF antenna and not be forwarded to the easyTRX3.

# easyTRX3 Manager App

With the easyTRX3-Manager app, all settings of the easyTRX3 can be easily and conveniently made via a smartphone or tablet.

- Definition of static data (MMSI, name, call sign and type of ship)

- Configuration of the interfaces (USB, NMEA0183, NMEA2000)
- Anchor and CPA alarm can be switched on and off



## Products Variants



# Technical data

	1 channel VHF transponder
	2 channel VHF receiver for 161.975 MHz and 162.025 MHz AIS frequencies
	Multi-channel GPS receiver
Channel sensitivity	≤ -112 dBm
	Protection class IP67 (dust and waterproof against temporary submersion)
	GPS antenna connector
	Installation below deck
Operating temperature	-10 °C – + 55 °C
NMEA telegram type	VDM
Transmitting power	5 watts / 1 watt
Dimensions (L/W/H)	180mm x 120mm x 50mm
Weight	700 grams
Approvals	BSH IEC62287-2



# A21100 raspAIS

## AIS Receiver | Multimedia-Center

AIS reception within the smallest space – this advantage brings up the new raspAIS from Weatherdock.

Equipped with a latest generation 2-channel-receiver, the unit picks up AIS Class A and AIS Class B signals out of your vicinity and will forward these data to a connected mobile device for displaying on a chart.

But the new raspAIS is even more than an AIS receiver. It can also be used as a multimedia center for videos and music. 4 USB slots keep enough space for USB storage additional connected to mouse and keyboard.

The new raspAIS from Weatherdock is equipped with a latest generation 2-channel-receiver for parallel and persistent reception of the two AIS frequencies.

The unit picks up all kind of AIS signals:

AIS Class A, AIS Class B, AIS SART, AIS MOB as well as AtoN signals will be received out of the vicinity.

A low power consumption management ensures that as less power as possible will be used running the system.

The collected data will be interpreted and forwarded to a connected mobile device for displaying on an electronic chart.

As the central basic component a Raspberry Pi® Modell 3B is doing a perfect job in the background. Due to the wide range of possible connectivity, received AIS data can be forwarded via WiFi or LAN connection.

# Features

- ▶ Real parallel AIS reception mode on both AIS frequencies (161,025 MHz + 162,025 MHz)
- ▶ High channel sensitivity
- ▶ Multi-Port data output
- ▶ HDMI port
- ▶ AUX output for speaker
- ▶ LAN and WiFi connectivity
- ▶ Pre-installed AIS capable software
- ▶ Less power consumption

# How to run

With the received AIS data there are several ways to work with the raspAIS for display and navigation:

- ▶ via WiFi connection to a smartphone or table. The used mobile device has to be connected to the WiFi network of the raspAIS. Within the AIS capable app on the mobile device IP and port of the raspAIS has to figured in.
- ▶ via HDMI conection to a PC or TV screen. The integrated AIS software running in the background is managing all neccessary steps to display the position reports of all objects around you. PC or TV screen is used as huge display.

- ▶ via WiFi connection to a smartphone or table without AIS app. With a free of charge software running on the used mobile device you will be able to mirroring the raspAIS display. Just connect the mobile device to the WiFi network of the raspAIS.
- But the new raspAIS is even more than an AIS receiver. It can also be used as a multimedia center for videos and audio content. 4 USB slots keep enough space for USB storage additional connected to mouse and keyboard.

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# Technical data



	2-Channel VHF receiver for both AIS frequencies
	Connection port for mobile AIS antenna
	Connection ports for USB, LAN, HDMI & 3,5mm audio-out
	WiFi and LAN connectivity
	Pre-installed AIS software „openPlotter“ based on Raspberry PI® Modell 3B
Palm-sized housing	85 x 56 x 45mm
Weight	only 150g weight
	external GPS source required





easyONE

The new easyONE-DSC-CL unit from Weatherdock is a combined AIS MOB/DSC maritime survivor locating device (MSLD).

It is developed to increase the efficiency of Man over Board emergency alerting to the vicinity according to all existing standards by starting broadcasting within seconds after activation. Basement of this device is the world's first AIS MOB unit with full automatic activation – the easyONE which is successful in the market since 2014.

In case of a “man over board” situation, the life jacket inflates and exposes the easyONE-DSC-CL which is placed between the folded blatter. When fully submerged, the unit is activated and the antenna is automatically unfolded. This AIS MOB is attached to the victim's life jacket by a cord and floats on the water around the victim. A strong LED flash light ensures better visibility at night.

Two LEDs indicate functionality of the unit. This simplifies the use in distress. If the easyONE-DSC-CL is triggered, the battery capacity lasts for more than 24 hours of parallel transmission of AIS and DSC. Due to this fact and its palm size, the AIS MOB easyONE-DSC-CL is the perfect companion.

AIS

Being activated, the easyONE-DSC-CL starts transmitting a full AIS MOB emergency message. It contains the individual unit ID, current GPS position, as well as COG and SOG of the victim. As the unit ID starts with “972...”,

each AIS receiver within range up to 7 to 8 nautical miles (bad weather conditions and height of receiving antenna may reduce the range) receives this emergency message. The connected chart plotter or PC screen displays the official MOB symbol (red X with red circle).

DSC

Goal of the easyONE-DSC-CL is to fasten-up the alerting of the “next to the MOB” vessels. The combination of these two most effective communication ways will be the result which probably can make the difference between saving or losing a life at sea.

Due to the palm size the MSLD easyONE-DSC-CL is ready for usage with every kind of automatic life jackets, no matter which manufacturer. With a bright red LED flare the MSLD has got a high visibility for miles.

easyone-M-DSC-CL

The identically constructed AIS MOB easyONE-M-DSC-CL differs only in triggering in an emergency. There is only a purely manual triggering of the AIS and DSC safety messages. The easyONE-M-DSC-CL has been designed for all the fun water sports you can ever get wet without an emergency. However, if the extreme case occurs, then the device can be used immediately.

The easyONE is ready to use and registration or license is not required.

Technical data

Approvals	CE IC (Industry Canada) FCC (USA)
Dimensions	168*48*27mm
Weight	120g
Battery	6V, 2 Lithium units, CR2
Frequency	AIS: 161,975 and 162,025 MHz DSC: 156,525 MHz
Controls	2 Buttons (“TEST” and “ON”)
Display	2 LED's (“GPS status” and “FLASH”) red LED Flare
Operating temperature	-20°C to +55°C
Storage temperature:	-40°C to +70°C

# AIS rescue transmitter

## MOB / SART / DSC distress call / 121.5 MHz Homing

Sea rescue transmitter for every requirement with different ways of alerting.



### easyRESCUE-PRO3

#### AIS MOB incl. DSC and 121.5 Homing

3 different alarm and location functions combined in one device. Based on the AIS SART **easyRESCUE**, the **easyRESCUE-PRO3** also includes DSC “distress call” and the 121.5 MHz homing location function. The TOP solution for tough operations on the high seas from Weatherdock

Operating conditions	-20°C to 55°C
Dimensions (L/W/H)	125 x 68 x 30 mm
Weight approx.	350 g



### easyRESCUE-PRO

#### AIS MOB incl. DSC

The AIS MOB **easyRESCUE-PRO** combines with AIS and the DSC Distress Call two different alarm functions in one device and is the perfect solution for the “man overboard” emergency.

Operating conditions	-20°C to 55°C
Dimensions (L/W/H)	125 x 68 x 30 mm
Weight approx.	350 g



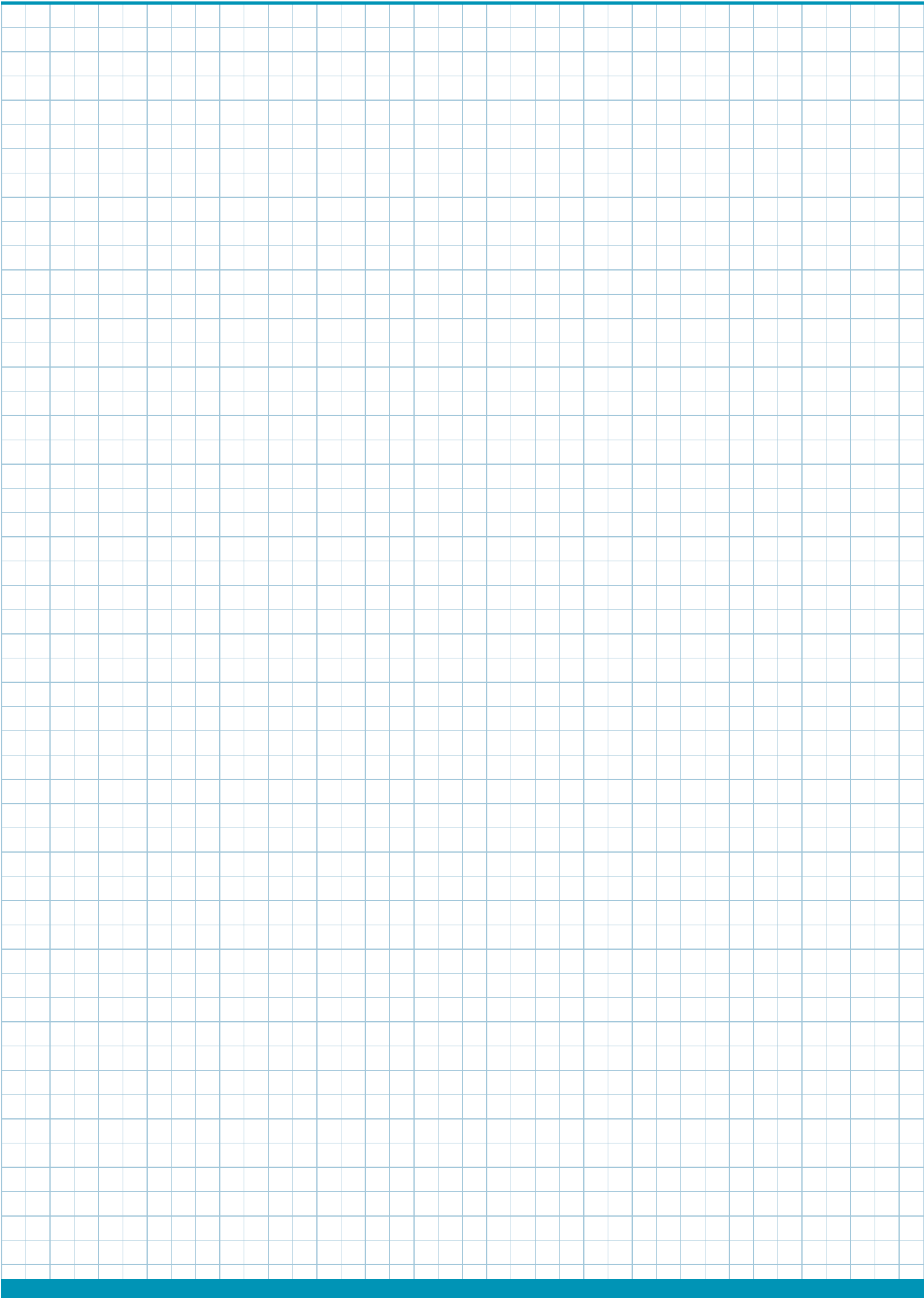
### easyRESCUE

#### AIS SART (SOLAS)

The AIS SART **easyRESCUE** is a SOLAS certified rescue transmitter that withstands the highest demands under the toughest conditions. The rescue transmitter has three different activation options: manually – automatically via water contact – automatically via pull cord and magnetic contact

Ambient working conditions	-20°C to 65°C
Dimensions (L/W/H)	128 x 76 x 32 mm
Weight: app.	350 g







# COMNAV

ComNav's X Series AIS combine innovation with highest quality engineering to deliver Class A and Class B solutions that meet the needs of all marine enhanced safety and security at sea.



# X5 Class A AIS Transceiver

- ▶ Sophisticated yet simple to use
  - ▶ SOLAS, MED, CE, FCC, Inland Waterway and Industry Canada certified
  - ▶ Meets IMO Resolutions: A.694 (17), MSC.191 (79), MSC.74(69) , ITU-R M.1371-5(2014)
  - ▶ Supports GPS, GLONASS, GALILEO & BEIDOU
  - ▶ MOB & SART alert tracking
  - ▶ Collision Alert
  - ▶ AIS data-target overlay on standard radars and multifunction chart displays
  - ▶ Effective port traffic management using Class A and Class B data
- ▶ Compact design
  - ▶ Intuitive and simple operation
  - ▶ High-contrast, backlit color display
  - ▶ Monitors vessels of Class A and Class B
  - ▶ Helps reduce search & rescue time
  - ▶ Available in various languages (optional)
  - ▶ Optional encryption for additional security
  - ▶ IPx6 and IPx7 rated
  - ▶ CE and FCC for EMC compliance
  - ▶ Shock and vibration resistant
  - ▶ Worldwide service

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# X2 Class B AIS Transceiver

- ▶ Display graphically AIS target overlay on standard radars and multifunction chart displays
  - ▶ Standard NMEA 0183, NMEA 2000® and USB interface
  - ▶ Worldwide service
  - ▶ Built-in 50 channel GPS receiver complemented by an integrated GPS antenna
  - ▶ Four LED status indicators
- ▶ Silent mode — User selectable
  - ▶ Small and rugged, shock and vibration resistant
  - ▶ Includes Pro AIS2 software for configuration and diagnostics
  - ▶ Operating temp -15oC to +55oC
  - ▶ Easily upgradeable through PC software via USB
  - ▶ Real time display for serial data output
  - ▶ Displays receiver and transmitter statistics





# NMEA 2000, NMEA 08183





# DSM410

## 4.1" High bright Color Display

**Maretron's DSM410** is a 4.1" high-resolution sunlight viewable color display that interprets and displays NMEA 2000 instrument, navigation, and vessel monitoring data. The **DSM410** is a user friendly dedicated marine display with custom screen configurations and an easy-to-use five-key illuminated keypad. In addition to the monitoring and display capabilities, the **DSM410** features an alert/ alarm package and electrical switching capability.

Unlike traditional single-display units, **DSM410** users can choose numeric, gauge, bar o graph formats in single or multiple displays, with cycling options possible for a wide range of favorite data. These multiple display options conserve mounting space and reduce overall system cost.

The **DSM410** will directly connect with any NMEA 2000 network and with the exception of AIS data will display any or all information captured throughtout the vessel. Various audio and visual alarms are also programmable.

The **DSM410** displays a multitude of information including AC power, anchor status, battery, depth, electrical distribution, engine, environment, fuel management, GPS, heading, navigation, pressure/vacuum, rudder, speed, status indicators, tanks, temperature, time, transmission, water, makers, weather, wind and more.

## Specifications

Size	4.49" (H) x 4.49" (W) x 0.37" (Forward D) x 0.81" (Rear D) 114mm (H) x 114mm (W) x 9.5mm (Forward D) x 20.5mm (Rear D)
Weight	12.2 oz. (346 g)
Mounting	Flush Mount





# DSM570

## 5.7" High Resolution Color Display

**Maretron's DSM570** is a high-resolution sunlight viewable color display that allows easy interpretation of NMEA 2000® instrument and navigation data through custom display configurations, featuring an easy-to-use five-key illuminated keypad.

Unlike traditional single-display units, **DSM570** users can choose numeric, gauge, or graph formats in single or multiple displays, with cycling options possible for a wide range of favorite data. These multiple display options conserve mounting space and reduce overall system cost.

The **DSM570** will directly connect with any NMEA 2000® network and display any or all information captured throughout the vessel. Various audio and visual alarms are also programmable.

The **DSM570** displays a multitude of information including AC power, battery, depth, engine, environment, fuel management, GPS, heading, navigation, rudder, speed, tanks, time, transmission, weather, wind and more.

## Specifications

Size	5.77" (H) x 6.16" (W) x 0.37" (Forward D) x 0.81" (Rear D) 146.5mm (H) x 156.5mm (W) x 10mm (Forward D) x 19.9mm (Rear D)
Weight	12.2 oz. (346 g)
Mounting	Flush Mount



# TSM810C

## 8" Vessel Monitoring and Control Touchscreen

The **TSM810C** is an 8" dedicated touchscreen that includes Maretron's N2KView® vessel monitoring and control software. The N2KView software allows you to configure as many favorite screens as you want with exactly the information you want to see. The **TSM810C** provides an extremely simple touch interface for monitoring and controlling critical systems from anywhere on the vessel.

The **TSM810C** is ruggedized for marine use and includes a solid state disk drive to withstand the pounding associated with waves. And since the **TSM810C** only dissipates 10 watts, there is no need for internal cooling fans that are noisy and wear out causing electronics to overheat and fail. The **TSM810C** can be mounted outside given the high bright screen and waterproof front.

As an alternative to controlling the **TSM810C** through the touch screen, the **TSM810C** includes two USB ports for connecting keyboards, mice, or trackballs. The **TSM810C** also has an Ethernet port for connecting Internet Protocol (IP) cameras for viewing within the N2KView® software. Lastly, the **TSM810C** contains two completely isolated CAN bus connectors (M12) for easy connection to single or redundant NMEA 2000® networks.

## Features

- ▶ 8" TFT LCD Panel, LED Backlit
- ▶ Widescreen Aspect Ratio 5:3
- ▶ 800 x 480 Pixels
- ▶ 1350 nits Brightness (Optically Bonded)
- ▶ Solid State Disk Drive
- ▶ Fanless Cooling System • Flush or VESA Mounting
- ▶ Dual CAN Bus for Single or Redundant NMEA 2000® Network Connections

## Specifications

Size	2.87" x 10.4" x 6.5" (73mm x 265mm x 164mm)
Weight	4.2 lbs (1.9kg)
Mounting	4 x M4 VESA Mounting 75mm x 75mm Front Mount flush into console with 6 screws



# IPG100

## Internet Protocol Gateway

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The **Internet Protocol Gateway (IPG100)** lets you connect PC's, Mac's, tablets, or smartphones to an NMEA 2000® network so you can monitor and control your vessel using **Maretron's N2KView®** software or using **Maretron's N2KView®** Mobile app. The conventional way of viewing NMEA 2000® information on the vessel is with a display that is directly connected to an NMEA 2000® network, but with the **IPG100**, you are not limited to direct connected displays. With the **IPG100**, you can use devices running **N2KView®** software and the **N2KView®** Mobile app to monitor and control your vessel from onboard or ashore.

The **IPG100** has an NMEA 2000® and an Ethernet data port for exchanging information between the onboard NMEA 2000® network and Internet Protocol (IP) enabled devices using conventional technology such as routers, switches, and wireless modems. Once enabled, the **IPG100** will automatically connect to Maretron's Real Time Cloud Service (see page 12), which allows you to remotely connect to your vessel via the Internet. This allows you to keep an eye on your vessel from anywhere in the world.

## Specifications

Size	5.000" x 4.500" x 2.375" 127mm x 114mm x 60 mm)
Weight	12 oz. (340 g)





# NBE100

## Network Bus Extender

Maretron's **NBE100** allows you to go beyond the maximum NMEA 2000® network design rules and extend an NMEA 2000® network to two, three, four, and even five times larger than normal. The **NBE100** also solves problems associated with network errors and other electrical issues caused by exceeding NMEA 2000® rules and it simplifies the design of large networks

NMEA 2000® network rules allow a maximum of 50 products connected on a single network, a maximum trunk length of 200 meters, and a maximum drop length of 78 meters. If you have a network that exceeds any of these specifications, you can simply extend the network trunk by inserting the **NBE100**, along with the additional termination resistors and powertaps. This will split the network into multiple electrical segments allowing 50 products per segment. The **NBE100** will transparently route NMEA 2000® messages between multiple network segments, making them work as a single logical NMEA 2000® network.

Lastly, the **NBE100** can be used to build redundant networks or isolate certain network segments so that if one segment is compromised, the other segments continue to operate.

## Features

- ▶ Segments a single large NMEA 2000® network into smaller multiple electrical segments.
- ▶ Allows you to exceed the 50 product limitation on a NMEA 2000® network.
- ▶ Allows you to exceed the 200 meter trunk length limitation on a NMEA 2000® network.
- ▶ Allows you to exceed the 78 meter drop lengths limitation on a NMEA 2000® networks.
- ▶ Allows all NMEA 2000® devices to operate as if they were still on a single NMEA 2000® network.
- ▶ Optically isolates network segments, increasing signal integrity and network reliability.

## Specifications

Size	3.11" x 3.46" x 1.38" (79mm x 88mm x 35mm)
Weight	8 oz. (227 g)



# ALM100

## Alarm Module

**Maretron's Alarm Module** generates visual and audible alerts for any monitored condition. The **Alarm Module** includes an extremely loud 105 dB SPL Piezoelectric sounder, along with a red high-brightness LED to indicate an alarm condition. A second green LED indicates that the **Alarm Module** is powered and ready to be triggered. The audible alarm can sound any one of 32 distinct pre-programmed patterns to indicate different alerts. The **Alarm Module** can be triggered by alarms generated by **Maretron's N2KView®** Vessel Monitoring System, or by Maretron's Color Graphics Displays (**DSM150** or **DSM250**). The **Alarm Module** mounts in a standard electric box or can be flush mounted on any surface. Completely waterproof, the **Alarm Module** can be mounted inside or outside the vessel.

## Features

- ▶ NMEA 2000® Network Interface
- ▶ Super loud 105dB audible alarm
- ▶ Bright Red LED visual alarm
- ▶ Green LED status indicator
- ▶ Mounts in standard electrical wall box or flush mount directly in wall
- ▶ 32 selectable alarm patterns
- ▶ Waterproof - Can be mounted indoors or outdoors

## Specifications

**Size** 2.75" x 4.50" x 2.00"  
(70mm x 114mm x 51mm)

**Weight** 13 oz. (368.5g)



# USB100

## NMEA 2000® USB Gateway

**Maretron's USB100** is a gateway for bridging computers to an NMEA network. This allows you to use PC based vessel monitoring and control software like **Maretron's N2KView®** or PC based navigation software. The gateway provides one simple connection between the network and the PC, which eliminates conventional multiplexers and the maze of wires usually associated with interfacing equipment to PCs.

For older PC based navigation software that requires receiving data in NMEA 0183 format, the **USB100** automatically converts information from the NMEA 2000® network to NMEA 0183 sentences. You can continue benefiting from navigational and charting software that you already own while enjoying the many benefits of networked NMEA 2000® instruments.

Maretron's **USB100** gateway is also used together with **Maretron's N2KAnalyzer®** software (see page 123), which allows you to use a PC for configuring, updating, and troubleshooting products connected to an NMEA 2000® network. You can even save all of the vessel's product configurations and easily restore them if a product needs to be replaced.

## Specifications

Size	3.11" x 3.46" x 1.38" (79mm x 88mm x 35mm)
Weight	8 oz. (227 g)





# SMS100

## Short Message Service (Text) Module

**Maretron's SMS100** is a mobile or cellular modem that automatically sends text message alerts from your vessel to your phone. The **SMS100** works together with Maretron's dedicated displays (**DSM150/DSM250**) or **N2KView®** software to detect programmable alert conditions from sensors interconnected on an NMEA 2000® network. The displays or **N2KView®** software instruct the **SMS100** to connect to the cellular network and transmit an alert message to selected telephone numbers. Whether it is high bilge water, low battery voltage, unplugged shore power, or an opened hatch or door, the **SMS100** quickly alerts you to conditions onboard your vessel that require attention anywhere you have cellular network coverage. You can also send a text message to your vessel, and with the proper sensors installed, the **SMS100** will respond with status information including the vessel's position, bilge status, battery and shore power voltage, wind speed, inside and outside temperature.

## Features

- ▶ Programmable Alerts (Alarms or Warnings) from Maretron Installed Displays and Sensors on the Vessel Automatically Triggers Text Message(s) Sent to Your Phone
- ▶ User Can Text Vessel for Status (Position, Bilge Status, Battery and Shore Power Voltage, Wind Speed, Inside and Outside Temp) Which Also Double Checks Communication Path to Ensure Alerts Get Through
- ▶ Six Band GSM Modem with Easily Interchangeable mini-SIM Card (SIM Card is User Supplied)
- ▶ Dipole Terminal Antenna with Hinged SMA Connector with Versatile Mounting Options
- ▶ Waterproof (IP65) Enclosure

## Specifications

Size	6.871" x 3.571" x 2.045" (174.5mm x 90.7mm x 51.9mm)
Weight	10.6 oz. (301 g)



# TLM100-150

## Tank Level Monitor (40" Depth)

Maretron's **TLM100** is used to sense fluid levels of tanks by using ultrasonic technology. Ultrasonic, or sound waves, are transmitted via the **TLM100** mounted at the top of the tank and the flight times of the sound waves to and from the fluid are measured much like a depth sensor. What this means for you is that there are no difficult to handle long probes protruding into the tank, which often foul and/ or corrode. Once the **TLM100** calculates and transmits the fluid level over the NMEA 2000® network, you can observe tank levels anywhere on the vessel where there is an NMEA 2000® compatible display such as the Maretron **DSM150** or **DSM250**.

The **TLM100** is capable of sensing fluid levels in tanks up to 40" (1.02m) in depth. It can be used for diesel, fresh water, waste water, black water, and oil tanks (see **TLM150** for gasoline tanks or **TLM200** for deeper tanks). Unlike most tank senders that only work with rectangular tanks, the **TLM100** can be calibrated for irregular tank shapes so you can know the true fluid level in your tanks.

The **TLM100** is mounted directly to the top of tanks using the industry standard SAE J1810 5-hole mounting pattern. The **TLM100** can also be mounted to tanks with threaded tank openings using optional adapters that included both a 1.5" NPT and a 1.25" BSP adapter. There are other important **TLM100** optional accessories including an optional focus tube to permit use on boats with planing hulls, which is required if the vessel spends a significant amount of time with the bow pitched up. Most importantly, the **TLM100** is NMEA 2000® certified so you can view any and all tank levels anywhere on the vessel when using a compatible NMEA 2000® display. The **TLM100** is another key component of **Maretron's N2KView®** vessel monitoring and control system.

## Specifications

<b>Size</b>	3.9" x 1.2" x 1.0" (99mm x 30.5mm x 25.4mm) Interface Component 2.7" dia. X 0.9" (68.6mm dia. x 22.9mm) Sensor Component 8.5" (215.9mm) Interconnecting Cable
<b>Weight</b>	12 oz. (340g)
<b>Mounting</b>	SAE J1810 5-hole bolt pattern



# TLA100

## Tank Level Adapter

The **TLA100** is used to adapt commercially available resistive tank senders to the NMEA 2000® network. This allows you to observe tank levels anywhere on the vessel where there are NMEA 2000® compatible displays such as the Maretron **DSM150** or **DSM250**.

The **TLA100** is compatible with both the American standard (240-30 ohm) and the European standard (10-180 ohm) resistive senders. In fact, the **TLA100** can be calibrated for any resistance between 0 and 300 ohms.

Unlike most tank senders that only work with rectangular tanks, the **TLA100** can be calibrated for irregular tank shapes so you know the true level of the tanks. You can also use the **TLA100** with analog gauges at the same time as NMEA 2000® so you don't have to give up existing analog gauges to enjoy the advantages of digitally networked information.

## Features

- ▶ NMEA 2000® Interface
- ▶ Adapts American standard (240-30 ohm) resistive senders to NMEA 2000® Network
- ▶ Adapts European standard (10-180 ohm) resistive senders to NMEA 2000® Network
- ▶ Can be user calibrated for any Resistance Range from 0 to 300 Ohms or 300 to 0 Ohms
- ▶ Accommodates Irregularly Shaped Tanks with 16 Point Calibration
- ▶ 16 Programmable Tank Types Including Fuel, Fresh Water, Waste Water, Live Well
- ▶ Programmable Tank Number(s) Up to 16 per Tank Type
- ▶ Programmable Tank Capacity
- ▶ Works Alongside of Analog Gauges
- ▶ Can be Used Standalone without Analog Gauges

## Specifications

Size	3.9" x 1.2" x 1.0" (99mm x 30mm x 25mm)
Weight	9 oz. (255g)
Mounting	Mounting Any Orientation





# VDR100

## Vessel Data Recorder

**Maretron's Vessel Data Recorder (VDR100)** is used to record messages transmitted from every product interconnected on the vessel's NMEA 2000® network. Each message is stored using solid-state memory technology with simple data retrieval via a removable USB flash drive. The supplied 16 Gbyte USB Flash Drive will hold weeks or more of data, and with the optional purchase of a larger USB Flash Drive, a year or more of data can be stored. And you never have to worry about losing the most recent data because the **VDR100** uses a circular buffer where the oldest data is overwritten only after the entire memory is filled.

Recorded vessel data can be used in many ways including performance analysis, vessel tracking, preventative maintenance, network diagnostics, warranty incident, and accident investigation, all in an effort to reduce operating cost and improve safety. As an example of how the recorded data might be used, consider an NMEA 2000® fuel flow monitor plugged into the network, which will provide a complete record of how much fuel was used and how fast it was used. With a GPS antenna/receiver plugged into the NMEA 2000® network, you will have a complete record of where the vessel has been including its speed and course over ground.

Analyzing or graphing recorded data is done using a spreadsheet program like Microsoft® Excel®. Simply remove the USB flash drive and plug it into a PC or Mac and run Maretron's free extraction software (**N2KExtractor®**). Choose any or all of the recorded data including the associated dates and times and the program will create a comma delimited file (.csv) that can be read into a spreadsheet for graphing or any other type of data analysis.

With the **VDR100**, you have a complete record of all the information produced by NMEA 2000® products connected to the vessel's network. And because the **VDR100** is engineered and manufactured to the highest standards (IEC 60945 Maritime Navigation and Radio Communication Equipment), your data is safely protected in a compact waterproof housing.

## Features

- ▶ Data Recorded on Solid State Memory via Removable USB Flash Drive
- ▶ Circular Buffer Preserves Latest Recorded Data while Oldest Data Overwritten when Memory is Full
- ▶ Recorded Data Available for Performance Analysis, Vessel Tracking, Preventive Maintenance, and More
- ▶ Optional Waterproof USB Flash Drive Cover
- ▶ Free Data Extraction Software (N2KExtractor™) Builds Comma Delimited Files for your customized Data Analysis



# FPM100

## Fluid Pressure Monitor

**Maretron's Fluid Pressure Monitor** is used to adapt up to six pressure transducers to the NMEA 2000® network (pressure transducers sold separately). This allows you to observe fluid pressures and tank levels anywhere on the vessel where there are NMEA 2000® compatible displays. With the appropriate transducer, the **FPM100** reports either pressure or vacuum for a variety of applications including water pressures, oil pressures, hydraulic pressures, or system vacuum for detecting clogged filters.

The **FPM100** also has a tank level mode, so that fluid levels in a tank can be monitored via a pressure transducer mounted at the bottom of the tank and transmitted over the NMEA 2000® network. This allows you to monitor the fluid levels in tanks that are extremely deep, have internal structures, or are otherwise not suited for other tank level sensing technologies. In this mode, the **FPM100** can be calibrated for irregular tank shapes so that you know the true level of the tanks.

## Features

- ▶ NMEA 2000® interface
- ▶ Adapts up to six pressure transducers to the NMEA 2000® network
- ▶ Each channel independently programmable to match pressure transducer characteristics
- ▶ Each channel independently programmable in pressure/vacuum mode or tank level mode

## Specifications

Size	3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm)
Weight	13 oz. (368.5 g)



# FFM100

## Fuel/Fluid Flow Monitoring

Maretron's **FFM100** provides precision fuel flow information to help optimize fuel consumption, which can save thousands of dollars in fuel operating cost. The **FFM100** uses state-of-the-art, positive displacement metering technology for unprecedented accuracy. In fact, the accuracy of the **FFM100** is nearly that of commercial vessel systems costing tens of thousands of dollars, yet the **FFM100** costs less than existing recreational systems found on the market today. Additional benefits of the positive displacement metering technology are the elimination of flow conditioning components such as straighteners and pulsation dampers. Other flow meter technologies require flow conditioning components that increase system and installation cost. The **FFM100** also uses true temperature compensation with embedded temperature sensors within the meters. The returning fuel is generally hotter than the supply fuel and if not properly compensated, inaccuracies as much as 5% can occur in computing the engine's fuel consumption. The **FFM100** also detects momentary reverse flow in the fuel lines due to fluctuating pressure caused by the injection pump. Less accurate systems count the reverse fuel flow as part of the consumed fuel where the **FFM100** properly accounts for momentary reverse flow. Lastly, the **FFM100** can be used for fluid types other than fuel (e.g., water, oil, etc.) by ordering the appropriate flow sender.

## Features

- ▶ FFM100 converts a variety of flow senders (e.g., fuel, water, etc.) to NMEA 2000® Network Data
- ▶ All flow senders ordered separately depending on application (i.e., single fuel flow sender for gas engine, dual fuel flow senders for diesel engine, water flow sender for sea water, etc.)
- ▶ Fuel flow senders to facilitate fuel consumption optimization for reduced fuel operating cost
- ▶ Fuel flow senders use positive displacement metering technology for superior accuracy over other measurement technology such as turbine meters
- ▶ Fuel flow senders do not require costly fuel conditioning components like flow straighteners and pulse dampers
- ▶ Fuel flow senders implement true temperature compensation with precision built-in thermistors for increased accuracy
- ▶ Fuel flow senders automatically detect reverse flow due to fluctuating pressure difference from injection pumps
- ▶ Fuel flow senders pass particle sizes up to 70 micrometers (diesel fuel filters normally filter down to 2 micrometers to prevent clogging injectors)

## Specifications

Size	3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm)
Weight	13 oz. (368.5 g)





# J2K100

## J1939 to NMEA 2000® Gateway

Maretron's **J2K100** attaches directly into J1939 networks of compatible engines, transmissions, and gensets and converts the J1939 data to the marine digital interface (NMEA 2000®). Critical engine, transmission, and genset data is then distributed throughout the vessel over a single cable where it can be monitored by any NMEA 2000® compatible display.

The **J2K100** can also be used as part of a complete fuel computer. Simply connect the **J2K100** together with Maretron universal displays (**DSM150**, **DSM250**, **N2KView**) and GPS antenna/receiver (**GPS200**) and you have a system capable of displaying gallons per hour and/or miles per gallon.

## Features

- ▶ AC Generator Current
- ▶ AC Generator Frequency
- ▶ AC Generator Voltage
- ▶ Tachometer · Engine Hours
- ▶ Coolant Pressure
- ▶ Coolant Water Temperature
- ▶ Engine Oil Pressure
- ▶ Engine Oil Temperature
- ▶ Boost Pressure
- ▶ Fuel Rate Monitoring
- ▶ Charging Voltage
- ▶ Percent Engine Load
- ▶ Percent Engine Torque
- ▶ Rated Engine Speed
- ▶ VIN
- ▶ Software ID
- ▶ Transmission Gear
- ▶ Transmission Oil Pressure
- ▶ Transmission Oil Temperature

## Specifications

Size	3.11" x 3.46" x 1.38" (79mm x 88mm x 35mm)
Weight	8 oz. (227 g)



# RAA100

## Rudder Angle Adapter

Maretron's **RAA100** is used to adapt commercially available resistive rudder senders to the NMEA 2000® network. This allows you to observe rudder angle anywhere on the vessel where there are NMEA 2000® compatible displays such as the Maretron **DSM150** or **DSM250**.

The **RAA100** is compatible with both the American standard (240-30 ohms) and European standard (10-180 ohm) resistive senders. In fact, the **RAA100** can be calibrated for any resistance between 0 and 300 ohms.

You can also use the **RAA100** with analog gauges at the same time as NMEA 2000® so you don't have to give up existing analog gauges to enjoy the advantages of digitally networked information.

## Features

- ▶ NMEA 2000® Interface
- ▶ Adapts American standard (240-30 ohm) resistive senders to NMEA 2000® Network
- ▶ Adapts European standard (10-180 ohm) resistive senders to NMEA 2000® Network
- ▶ Can be Calibrated for any Resistive Sender Ranging from 0-300 Ohms or 300-0 Ohms
- ▶ Three Point Electronic Calibration eliminates need for Mechanical Adjustment or Calibration
- ▶ Can be Used Standalone Without Analog Gauges

## Specifications

Size	3.9" x 1.2" x 1.0" (99mm x 30mm x 25mm)
Weight	9 oz. (255g)
Mounting	Mounting Any Orientation



# CLM100

## Current Loop Monitor

Maretron's **CLM100** converts commercially available 4-20mA current loop transducers into digital data so a wide variety of information can be displayed on Maretron displays. Numerous 4-20mA current loop transducers are supported by the **CLM100** including transducers for monitoring DC voltage and current, flow rate, distance, linear velocity and acceleration, angle, angular velocity and acceleration, temperature, humidity, resistance, strain gauges, force (load cell), pressure, decibels, and rotational rate. Some typical applications where the **CLM100** is used together with a commercial available 4-20mA transducers include machinery monitoring using accelerometers and vibration sensors. Vibration monitoring of pumps, motors, fans, compressors, and gear boxes provides an early warning of potential problems resulting in fewer breakdowns and reduced maintenance expenses. Another application example using the **CLM100** is shaft speed monitoring. A commercially available 4-20mA rotational rate transducer is coupled to the shaft of interest and the **CLM100** converts the transducer data to an RPM that can be read on a compatible NMEA 2000® display. And if you're concerned about the force exerted on a mast stay or perhaps a vessel tow attachment point, commercially available clevis pins with a 4-20mA interface can be connected to the **CLM100** and the corresponding load monitored using any of Maretron's display products.

## Specifications

Size	3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm)
Weight	13 oz. (368.5 g)

## Features

- ▶ Used Together with Commercially Available 4-20mA Current Loop Transducers
- ▶ Converts Analog Transducer Data to Digital Data (NMEA 2000®)
- ▶ Digital Data Displayed on Maretron Displays





# ACM100

## Alternating Current Monitor

Maretron's **ACM100** is a device which monitors AC power sources and outputs information about these sources onto the industry standard NMEA 2000® marine data network. **ACM100** output information is then displayed with networked NMEA 2000® equipment such as the Maretron **DSM150** or **DSM250** dedicated display or with NMEA 2000® compatible software such as **Maretron N2KView®**.

## Features

- ▶ NMEA 2000® Interface
- ▶ Waterproof Connectors
- ▶ Sealed Waterproof Enclosure
- ▶ Opto-Isolated from NMEA 2000® Eliminating Potential Ground Loops
- ▶ Monitoring of busses carrying AC power and transmitting:
  - Voltage
  - Frequency
- ▶ Monitoring AC Power Sources such as Utilities and Generators and transmitting:
  - Voltage
  - Current
  - Frequency
  - Real Power
  - Reactive Power
  - Apparent Power
  - Power Factor
  - Total Energy Imported
  - Total Energy Exported

## Specifications

Size	3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm)
Weight	13 oz. (368.5 g)



# N2KMeter

## NMEA 2000® Diagnostic Tool

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The **N2KMeter** is a diagnostic tool for NMEA 2000® networks that allows users to validate NMEA 2000® network compatibility and operations during installation of a device or complete system, and diagnose possible network flaws or failures that occur on an operational network.

Cut troubleshooting time from hours to seconds, by effectively identifying and diagnosing network problems. **N2KMeter** provides the detailed technical information an NMEA 2000® troubleshooting expert needs, yet it simplifies and summarizes, allowing an NMEA 2000® novice to effectively identify and diagnose network problems. Battery-powered operation allows a novice user to save readings for experts to analyze later, off the boat.

**N2KMeter** uses a patented integrated intelligence technique to summarize multiple NMEA 2000® network operational variables into a single health index. To a service technician, it's a "guru-in-a-box", providing a detailed reading of network performance. It summarizes NMEA 2000® network health by displaying a happy face icon, indicating a healthy network; a sad face, indicating a serious problem; or a neutral face, indicating nominal performance (a good indication to repair things before they actually fail). **N2KMeter** then walks the user through each fault condition and its source, or it can record key operating parameters for offline review.

## Features

- ▶ Opens and shorts
- ▶ Incorrect topology
- ▶ Bad nodes
- ▶ Bad termination
- ▶ Improper shield connection
- ▶ Intermittent problems
- ▶ Excessive scan rate
- ▶ Common mode voltage

## Specifications

Size	3.45" W x 6.63" H x 2.20" D
Weight	13 oz. (368.5 g)



# N2KView

## Vessel monitoring and control software

Whether you are interested in monitoring your vessel's systems while underway or remotely from your home or office, **Maretron's N2KView®** software displays the information you need including engines, generators, tanks, rudders, navigation instruments, local weather, and much, much more. **N2KView®** is completely user-configurable and you are free to create different screens for your exact needs while easily switching from screen to screen for monitoring all your systems. Digital displays, analog gauges, graphic displays, warning lights, and bar graphs, all can be configured exactly how you want them to be. You can even set the operating limits and color bands for analog gauges so you know when things are within limits and when they are not.

**N2KView®** is a comprehensive vessel monitoring and control software that goes beyond simple monitoring. With **N2KView®** you get additional functionality including alerts, video, control, and fuel management. The alerts functionality allows you to setup as many warnings and alarms as you need so you can be forewarned of potential problems. With alerts, you can relax knowing that the system is watching for smoke, CO, high bilge water, or anything else you deem important. **N2KView®** video capability allows you to add cameras as part of the monitoring system - for example a camera in the engine room - or the cameras can be used as part of the security system. The control functionality gives you the ability to manage your electrical system; for example, you can turn lights or pumps on or off directly from **N2KView®** and even tell if the lights or pumps are burned out and not working. Lastly, the fuel management function uses information from the fuel flow monitor, tank monitors, and GPS to provide advanced information like distance and time to empty as well as fuel rate and fuel economy.







# N2KMeter

## Vessel monitoring and control black box

Maretron’s third generation Black Box (**MBB300C**) is a dedicated processing unit that includes **Maretron’s N2KView®** vessel monitoring and control software. Unlike a PC that allows any software to be loaded, the **MBB300C** runs only **N2KView®** software making it extremely stable and dedicated to monitoring and controlling your vessel.

The **MBB300C** is ruggedized for marine use and includes a solid state disk drive to withstand the pounding associated with waves. And since the **MBB300C** dissipates less than 10 watts, there is no need for internal cooling fans that are noisy and wear out causing electronics to overheat and fail.

The **MBB300C** connects to a monitor through a VGA connector or an HDMI connector while the associated touch screen connects through a USB or serial port. Alternatives to controlling the **N2KView®** software through a touch screen include keyboards, mice, or track balls connected through USB. In addition to the two completely isolated CAN bus connectors for simple connection to single or redundant **NMEA 2000®** networks, the **MBB300C** has an Ethernet port for connecting Internet Protocol (IP) cameras for viewing video within the **N2KView®** software.

Of course you get the same flexibility using Maretron’s **N2KView®** software from the **MBB300C** as you would running the software on a PC, which includes the ability to configure as many screens as you want with exactly the information you want to see. Plus you get free upgrades to the software as improvements and new features are added.

## Features

- ▶ 9-36 Volt Power Supply
- ▶ Solid State Disk Drive
- ▶ Fanless Cooling System
- ▶ Dual CAN Bus for Single or Redundant NMEA 2000® Network Connections
- ▶ Four USB Ports for Touchscreen, Keyboard, Mouse, Trackball, or Thumb Drive Connections
- ▶ VGA or HDMI Video Connection (2560 x 1600 Maximum Resolution)
- ▶ Ethernet Connector for IP Camera Input or Email Alert Notification

## Specifications

Size	5.21" x 8.02" x 1.91" (132.3mm x 203.8mm x 48.5mm)
Weight	2.27 lbs (1.03 kg)



# NGW-1

## NMEA Conversion Gateway

### Hook up to NMEA 2000® whilst keeping currently installed NMEA 0183 devices.

The Actisense **NGW-1** is an intelligent Gateway that converts **NMEA 0183** data to **NMEA 2000®** (and vice versa), allowing you to share information between devices from the two standards. This creates the possibility of upgrading some of the vessel's electronics to **NMEA 2000®** and keeping the remaining NMEA 0183 devices. This can help spread the cost of transitioning to **NMEA 2000®**, reducing the initial upgrade cost to accommodate a new **NMEA 2000®** device.

The ISO variant connects easily to **NMEA 0183** devices with a dedicated pair of data wires for transmit and receive, allowing the **NGW-1** to share data bidirectionally if required. As with all the latest Actisense products, OPTO-Isolation is included on the input and ground breaking ISO-Drive™ technology on the output to keep your devices safe from hazardous ground loops. A USB option is available for installations operating with PC software that requires **NMEA 0183** data.

Taking its power supply directly from the **NMEA 2000®** network (ISO variants) or from a PC (USB variants) removes the need for a separate power supply, reducing installation time and complexity.

The **NGW-1** can be configured for operation with AIS devices in the field, or preconfigured in the factory. Any Gateway variant can be purchased with an adaptor cable for connecting directly to Raymarine's SeaTalkNG network (part number: STNG-A06045)

## Features

- ▶ Fully isolated NMEA 0183 incorporating ISO-Drive™ technology
- ▶ Advanced configuration using Actisense Toolkit allows Tx / Rx lists and Tx rates to be set
- ▶ Supports Fast Heading at 10Hz
- ▶ Up to 230,400 baud data transfer rate
- ▶ Integrated 1.5m drop cable
- ▶ Diagnostic receive LEDs



# NBF-3

NMEA Buffer

Safely drive up to six **NMEA** Listeners, with power distribution for the connected Talker.

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The **NBF-3 NMEA Buffer** isolates and buffers **NMEA 0183** data, with the power to drive multiple devices.

Able to distribute up to six identical, amplified streams of data from one source.

The **NMEA** signals are buffered to ensure that each Listener receives the data at the required voltage levels, providing consistent data quality.

Isolation on the input and outputs ensures the protection of the source Talker device and Listening devices.

ISO-Drive™ technology on the outputs and OPTO-isolation on the input enables you to connect the **NBF-3** with complete peace of mind.

The **NBF-3** has the addition of power distribution for the **NMEA** Talker. By having power and data from the same source, cabling requirements are reduced and installation is made simpler.

## Features

- ▶ One OPTO-isolated input Six ISO-Drive™ outputs
- ▶ Compatible with RS422, RS232 and RS485 connections
- ▶ Pluggable screw terminals
- ▶ Power and input indicator LEDs
- ▶ Power feed (500 mA) for single cable installations to the NMEA Talker
- ▶ Optional DIN rail mount Up to 115200 baud
- ▶ Outputs automatically track the input baud rate
- ▶ Protocol independent





# NDC-5

## NMEA Conversion Gateway

The **NDC-5** is more than just an **NMEA 0183** Combiner/Multiplexer; it provides an installer with a highly flexible platform that can be used to solve many **NMEA 0183** interconnectivity headaches.

The five **NMEA 0183** inputs can be routed to any of the two **NMEA 0183** outputs, as well as the serial and Ethernet ports providing a highly customisable network. The bi-directional serial port and Ethernet port also allow for simple configuration and diagnostics using Actisense software.

The configuration tool is accessible via any popular web browser (using the Ethernet port) so there are no PC operating system compatibility issues to contend with. Using the web based configuration tool will allow the user to finely tune the exact data available on each output. The default setup is for all data to go to all outputs.

Industry leading isolation is provided on all inputs and outputs as standard, so that connected devices safely avoid hazardous ground loops, the number one cause of product failure in **NMEA 0183** networks. This makes the **NDC-5** robust enough to handle any **NMEA 0183** installation.

Pluggable connectors allow new devices to be easily installed without the need to remove the **NDC-5** from its mounted location. A professional DIN rail mounting mechanism keeps the **NDC-5** secure in high vibration environments. Helpful LEDs indicate power, data in, and status conditions to aid diagnostics.

## Features

- ▶ 5 OPTO-Isolated NMEA 0183 inputs
- ▶ 2 ISO-Drive NMEA 0183 outputs
- ▶ Dedicated bi-directional Serial port (fully isolated utilising ISO-Drive technology)
- ▶ Serial port can be used as additional input / output
- ▶ Ethernet port supports direct and network connection
- ▶ Configurable input and output baud rates
- ▶ Allows Data combining and rate conversion
- ▶ 2 independent Autoswitch virtual inputs with priority
- ▶ Isolation to battery supply
- ▶ Diagnostic LED's
- ▶ IP65 rated Polycarbonate housing
- ▶ Optional DIN rail mount



# PRO-BUF-1

Professional NMEA Buffer

Adaptable NMEA 0183 Buffer with two OPTO-isolated inputs and twelve ISO-Drive™ isolated outputs, making ground loops a thing of the past and keeping devices safe from damage.

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Introducing the Actisense® Professional NMEA 0183 Buffer (PRO-BUF-1), the first product in the new Actisense 'PRO' range.

**PRO-BUF-1** is reliable, robust and provides isolation on all inputs and outputs as standard. With two NMEA 0183 inputs, twelve NMEA 0183 outputs, a bi-directional serial port and an Ethernet port, the **PRO-BUF-1** is a perfect solution for larger leisure vessels and commercial shipping.

The **PRO-BUF-1** is designed to suit the majority of NMEA 0183 systems and ready to go 'out of the box' by simply hard-wiring the two mode inputs as required. The manually configurable basic modes of operation include variations of buffer modes, autoswitch modes, and combine modes. For all other configurations, leaving the mode inputs floating selects the 'User Configuration Mode'. The web browser based configuration tool allows full customisation of the **PRO-BUF-1**, and is compatible across all popular Operating Systems. The **PRO-BUF-1** supports a direct Ethernet connection to a PC without the need for a specialised Ethernet crossover cable.

To make installation quick and simple the **PRO-BUF-1** features 2-part pluggable connectors that allow use of screw or screwless terminals, and a professional DIN rail mounting mechanism (DIN rail included). Helpful LEDs indicate power, data in, data out and the alarm status to aid diagnostics.

## Features

- ▶ 2 OPTO-isolated NMEA 0183 inputs
- ▶ 12 ISO-Drive™ NMEA 0183 outputs
- ▶ Bi-directional isolated serial port (can be used for additional NMEA 0183 input/output)
- ▶ Ethernet port
- ▶ Alarm output (N/O and N/C contacts)
- ▶ Designed for 12 and 24 Volt supply
- ▶ Isolation to battery supply
- ▶ Browser based configuration tool
- ▶ Automatic baud rate matching on inputs
- ▶ Independently configurable outputs Provides data combining and autoswitching of inputs
- ▶ Alarm and Mode LED's
- ▶ 2 part pluggable connector system supports both screw and screwless terminals
- ▶ DIN rail or Panel mountable
- ▶ Advanced statistics are available via a Web Browser



# PRO-MUX-1

Professional NMEA Multiplexer

The Actisense® Professional NMEA 0183 Multiplexer (PRO-MUX-1) is a robust and highly flexible platform that cures many interconnectivity headaches.

The **PRO-MUX-1** is reliable, robust and provides industry leading isolation on all inputs and outputs as standard, so that connected devices safely avoid hazardous ground loops, the number 1 cause of product failure in **NMEA 0183** networks.

The eight **NMEA 0183** inputs can be routed to any of the six **NMEA 0183** outputs, providing a highly customisable network. A bi-directional serial port and an Ethernet port allow for simple configuration and diagnostics using Actisense software. The configuration tool is accessible via any popular web browser (using the Ethernet port) so there are no PC operating system compatibility issues to contend with. Using the web based configuration tool will allow the user to finely tune the exact data available on each output. The default setup is for all data to go to all outputs.

2-part pluggable connectors on the **PROMUX-1** mean that new devices can easily be installed without the need to remove the **PRO-MUX-1** from its mounted location. A professional DIN rail mounting mechanism keeps the **PRO-MUX-1** secure in high vibration environments. Helpful LEDs indicate power, data in, data out and the alarm status to aid diagnostics.

## Features

- ▶ 8 OPTO-isolated NMEA 0183 inputs
- ▶ 6 ISO-Drive NMEA 0183 outputs
- ▶ Bi-directional isolated serial port (can be used for additional NMEA 0183 input/ output)
- ▶ Ethernet port
- ▶ Alarm output (N/O and N/C contacts)
- ▶ Designed for 12- and 24-Volt supply
- ▶ Isolation to battery supply
- ▶ Configurable input and output baud rates for rate conversion
- ▶ Data combining from any input to any output
- ▶ 2 independent Autoswitch virtual inputs with priority
- ▶ Advanced sentence-based filtering / routing
- ▶ Diagnostic LEDs on all inputs and outputs
- ▶ Alarm, mode and Bi-colour Status LED's
- ▶ 2-part pluggable connector system supports both screw and screwless terminals
- ▶ DIN rail or Panel mountable

Advanced statistics are available via a Web Browser





# NGT-1

## NMEA 2000 to PC Interface

### Interface your PC to the NMEA 2000® bus with a functional firewall gateway.

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The Actisense **NGT-1** makes it possible to send and receive **NMEA 2000®** data safely between a PC and an **NMEA 2000®** network. This creates the possibility of feature rich software applications replacing or complementing dedicated hardware such as a Multifunction Display (MFD) or Chart Plotter.

The freely available diagnostic software **NMEA Reader** from Actisense uses the **NGT-1** to display all devices active on the network and all of the data messages flowing between them. The powerful set of tools that **NMEA Reader** offers the user can instil a better understanding of the network and help diagnose potential network issues.

A Software Development Kit (SDK) is also freely available for software developers to use in creating software applications that can fully interact with an **NMEA 2000®** network, its devices and its data.

Taking its power supply directly from the **NMEA 2000®** network (ISO variants) or from a PC (USB variants) removes the need for a separate power supply, reducing installation time and complexity.

The USB variant offers the easiest method of connecting to a PC, whilst the ISO variant is available for customers who prefer a serial interface that does not require USB drivers.

## Features

- ▶ Vital NMEA 2000 diagnostic tool
- ▶ USB version is fully isolated to prevent dangerous ground loops
- ▶ ISO version has OPTO-isolated input and ISO-Drive™ output for safely interfacing with RS232 or RS422
- ▶ Up to 230,400 baud data transfer rate
- ▶ Integrated 1.5m drop cable
- ▶ Diagnostic receive LEDs



# EMU-1

Engine Monitoring Unit

The **EMU-1** digitises analogue engine sensors enabling the sharing of engine data throughout the **NMEA 2000®** bus.

The Actisense **EMU-1** is a specialised analogue to **NMEA 2000® Gateway** which converts data from analogue engine senders into **NMEA 2000®**, enabling all **NMEA 2000®** display devices to monitor the connected engine(s) on a vessel.

Each **EMU-1** can be configured to suit the engine it is working with, offering a flexible solution for multiple engine makes and models. Capable of reading a wide range of engine parameters, the **EMU-1** will report how the engine is operating and share the information across the network.

The **EMU-1** can monitor two engines where each engine has three (or less) gauges that require monitoring. Where dual engines have more than three gauges each to monitor, multiple **EMU-1** units are required.

The **EMU-1** can be used to monitor fluid levels in up to six tanks with the addition of a configurable 'instance' for each tank allows the user to identify which tank the data is coming from.

The **EMU-1** has a PC based configuration tool that allows the settings inside the **EMU-1** to be changed to best suit the engine it is working with.

## Features

- ▶ Enables analogue signals to be converted to NMEA 2000 messages
- ▶ Convert signals from up to two engines (that share a common ground) with a single EMU-1
- ▶ 6 gauge / parameter inputs
- ▶ 4 alarm inputs
- ▶ 2 additional auxiliary inputs
- ▶ 2 Tacho inputs
- ▶ Customised IP65 case
- ▶ Diagnostic LED's
- ▶ Wide power compatibility of 9 to 35 Vdc



# W2K-1

NMEA 2000 to Wi-Fi

## The W2K-1 is a compact and low-power NMEA 2000 to Wi-Fi Gateway with voyage data recording.

It transfers data from an **NMEA 2000** backbone to any device (e.g. laptop, tablet or smartphone) connected to it via Wi-Fi.

It has built-in conversion of **NMEA 2000** messages into **NMEA 0183** sentences thus allowing a wide variety of vessel data (e.g. position, speed, course, wind speed, depth, engine data, AIS messages etc.) to be shared with **NMEA 0183** compatible software applications running on connected devices.

All the data received (or a selected subset) can be logged to its internal micro SD card for later downloading to use for analysing the voyage.

This is very useful for analysing race data, generating logbooks, diagnosing problems or even sharing your voyage details.

Approximately 16 days of data can be stored on the pre-installed industrial grade micro SD card, which can be upgraded should the user require more storage.

The **W2K-1** has the legendary Actisense “Reliability Built In” along with useful diagnostic LEDs, internal antenna, enhanced password security, full certification and all packaged in an extremely rugged IP67 case.

## Features

- ▶ Converts NMEA 2000 to/from NMEA 0183 (streamed over Wi-Fi)
- ▶ Supports both TCP and UDP, streams data using up to three separate data servers
- ▶ Data protocols are selectable to be compatible with a huge range of navigation software and apps
- ▶ Approximately 16 days of Voyage data recording (upgradable)
- ▶ Diagnostic LEDs for NMEA 2000 bus activity and Wi-Fi Status
- ▶ Works as an access point and client simultaneously
- ▶ Remote Firmware upgradability
- ▶ Low power- 2 LEN (100 mA)
- ▶ Supports 802.11 b/g/h (up to 150Mbps)
- ▶ Automatically measures and reports the NMEA 2000 bus voltage
- ▶ User Manual embedded on the device, easily accessible via browser
- ▶ Each device has unique default SSID and Password for enhanced security

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# QNB-1

Quick Network Block

## Fault-free NMEA 2000® backbone connections.

The Actisense® **Quick Network Block (QNB-1)** allows backbone networking connections to be made easy and fault-free on National Marine Electronics Association (NMEA) buses and networks.

The **QNB-1** is a multi-drop **NMEA 2000®** network backbone connection block, adhering to the barrier strip connection type detailed in the **NMEA 2000®** specification documents.

To protect the power hookup, a fused connection is provided to the network backbone.

This allows the current to be limited to the safe level for the network. Two fuses are provided, each powering two halves of the **QNB-1**, meaning that if the fuse blows to one half of the system, the other half can remain powered.

In the simplest configuration, the **QNB-1** can also be used as a simple fused IP66 sealed power connection block.

LED indicators show power status, detect power reversal, and show whether the fuses are still intact.

In addition, an indicator is provided to show the presence of data on the connected bus or network.

No software or setup is required. The installation manual provided with the **QNB-1** provides example connection diagrams to aid the user with setting up their network.

The **QNB-1-PMW** version is fitted with six standard **NMEA 2000®** M12 (micro-fit) female connectors which allow 'plug and play' connections for quick and easy installation.

## Features

- ▶ High quality NMEA 2000 barrier strip connections
- ▶ Diagnostic LEDs
- ▶ Uses standard ATO fuses



# YDVG-02

NMEA 2000 Wi-Fi Gateway

## Bi-directional gateway for NMEA 2000 with AIS and NMEA 0183 support

The **NMEA 2000 Wi-Fi Gateway** allows you to see data from a **NMEA 2000** marine digital network on a PC or smartphone. With it, you get marine network data including vessel course, speed, position, wind speed and direction, water depth, AIS messages from vessels and aircrafts and other navigation data in popular software applications.

The Device creates its own Wi-Fi network (with range of about 30 meters in open spaces) or it can be connected to an existing Wi-Fi network. In the second case, the coverage depends on coverage of the base network; laptops and PCs can be connected to Wi-Fi routers (and the Gateway) by Ethernet; and you can configure remote access to a Gateway over the Internet.



## Features

- ▶ Can duplicate or replace broken instruments or complement obsolete instruments;
- ▶ Has built-in web gauges, only a browser is required to view realtime vessel data and manage digital switching loads;
- ▶ Can act as a NMEA 2000 wireless extender and allows joining of two or more physical networks;
- ▶ Can be paired with our NMEA 0183 Wi-Fi Gateway to remotely connect NMEA 0183 devices to NMEA 2000;
- ▶ Can pass any message (including proprietary) between NMEA 2000 and a PC application by RAW protocol;
- ▶ With NMEA 0183 protocol, provides compatibility with virtually all marine applications, including Navionics;
- ▶ Allows to control Raymarine SeaTalk NG autopilots from NMEA 0183;
- ▶ Is compatible with NMEA 2000, J1939 and Volvo Penta EVC networks;
- ▶ Supports TCP and UDP protocols, works as a Wi-Fi Access Point or can be connected to an existing Wi-Fi network;
- ▶ Supports firmware updates over Wi-Fi and diagnostic data logging;
- ▶ Free diagnostic software for Microsoft Windows, Mac OS X and Linux is supplied;
- ▶ Contains an internal web server for diagnostics and configuration.



# YDEN-02

NMEA 2000 Ethernet Gateway

## NMEA 2000 data and Web Gauges for on-board PC or laptop

The Gateway connects navigation PCs and laptops to **NMEA 2000** over Ethernet, Garmin Marine Network, Raymarine SeaTalk HS and RayNet, Furuno NavNet, or NMEA OneNet, and allows bridging of **NMEA 2000** networks.

The Gateway is equipped with a standard Ethernet RJ45 connector, and you may need a proprietary adapter to connect it with your vessel's network; direct connection to PC with standard computer cable is also supported.

The Device provides **NMEA 0183** and **NMEA 2000** data streams using TCP and/or UDP protocols, and has a bi-directional converter between **NMEA 0183** and **NMEA 2000**. This allows viewing of navigational data including AIS as well as managing **NMEA** equipment including autopilot from virtually all marine software, e.g. OpenCPN (NMEA 0183 only) and Expedition 10 (both **NMEA 0183** and **NMEA 2000** protocols are supported). The Gateway has three data servers (TCP/UDP), which allows tailored settings for different applications.







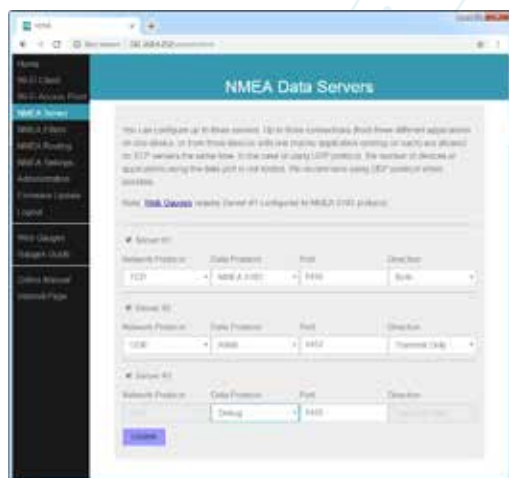
# YDNR-02

NMEA 2000 Wi-Fi Router

## Connect all Marine and Mobile Devices Easily

The Router connects all marine and mobile devices easily. It supports all popular marine protocols, is compatible with virtually all marine software, and even allows management of your vessel from a web browser without internet connection or installed software.

The Router is equipped with **NMEA 2000** and SeaTalk ports, two **NMEA 0183** ports, has three TCP/UDP data servers and a built-in web server, where you can easily configure it or update the firmware. It creates its own Wi-Fi network (Access Point) or can be connected to a boat's existing Wi-Fi.



## Features

- ▶ NMEA 2000 port with NMEA 2000 Micro Male connector;
- ▶ Two physical NMEA 0183 TX/RX ports (300..115200 bps);
- ▶ Both “single ended” (RS-232) and “differential” (RS-422) NMEA 0183 connections are supported;
- ▶ Has one SeaTalk port (multiple devices can be connected);
- ▶ Three TCP/UDP data servers (NMEA 0183 or NMEA 2000 data) for software and apps;
- ▶ Automatically records your track and other data to the internal memory;
- ▶ An internal web server for diagnostics, firmware updates and configuration.



# YDWN-02

## NMEA 0183 Wi-Fi Gateway

### With built-in web gauges, apps and internet are not required

The Gateway allows you to see data from **NMEA 0183** marine devices on a PC or smartphone. With it, you get marine network data including vessel course, speed, position, wind speed and direction, water depth, AIS messages from vessels and aircraft and other navigation data in popular software applications.

The Gateway has two physical **NMEA 0183** ports (two inputs and two outputs) with configurable speed from 300 to 115200 baud. This allows organization of data exchange between two devices with different speeds. Multiple physical listeners can be connected to the Gateway's outputs. Both "single ended" (RS-232) and "differential" (RS-422) **NMEA 0183** connections are supported. Compatible with COM (serial) ports of PC and with USB-to-serial adaptors.

The Gateway creates its own Wi-Fi network (with range of about 30 meters in open spaces) or it can be connected to an existing Wi-Fi network. In the second case, the coverage depends on coverage of the base network; laptops and PCs can be connected to Wi-Fi routers (and the Gateway) by Ethernet; and you can configure remote access to a Gateway over the Internet.



## Features

- ▶ Can duplicate or replace broken instruments or complement obsolete instruments;
- ▶ Has built-in web gauges, only a browser is required to view realtime vessel data;
- ▶ Has two physical NMEA 0183 ports (300 - 115200 baud), with flexible routing and data filtering;
- ▶ Compatible with virtually all marine applications;
- ▶ Can act as a NMEA 0183 wireless extender and allows wireless connection of two or more physical devices;
- ▶ Supports TCP and UDP protocols, works as a Wi-Fi Access Point or can be connected to an existing Wi-Fi network;
- ▶ Automatically records your track and other data to the internal memory;
- ▶ Contains an internal web server for diagnostics, firmware updates and configuration.



# YDWR-02

NMEA 0183 Wi-Fi Router

## SeaTalk, 4 x NMEA 0183 (300-115200 baud), 3 x TCP/UDP Servers, Web Gauges

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The Router is a smart **NMEA 0183** and SeaTalk multiplexer which also allows you to see data from marine devices on a PC or smartphone. With it, you get marine network data including vessel course, speed, position, wind speed and direction, water depth, AIS messages from vessels and aircraft and other navigation data in popular software applications.

The Router has four physical **NMEA 0183** ports (four inputs and four outputs) with configurable speed from 300 to 115200 baud. This allows organization of data exchange between multiple devices with different speeds. Multiple physical listeners can be connected to the Router's outputs.

SeaTalk is a proprietary binary protocol of Raymarine company. It allows co-existence of multiple devices on the bus, so the Router has only one SeaTalk port. A bi-directional converter between SeaTalk and **NMEA 0183** supports all known SeaTalk datagrams, including autopilot. This allows controlling SeaTalk autopilots from **NMEA 0183** chart plotters and marine apps.

The Router creates its own Wi-Fi network (with range of about 30 meters in open spaces) or it can be connected to an existing Wi-Fi network. The Router has three network data servers which can be configured for UDP or TCP network protocols. For UDP protocol, the number of clients (physical devices or software applications) is unlimited. In the routing settings, you can select one or more outputs (physical port or TCP/UDP server) for any data source, including the same port or server from which data is received.

## Features

- ▶ Can duplicate or replace broken instruments or complement obsolete instruments;
- ▶ Has built-in web gauges, only a browser is required to view realtime vessel data;
- ▶ Has four physical NMEA 0183 ports (300 - 115200 baud), one is galvanically isolated;
- ▶ Both "single ended" (RS-232) and "differential" (RS-422) NMEA 0183 connections are supported;
- ▶ Has one SeaTalk port, offers with flexible routing and data filtering between ports and servers;
- ▶ Compatible with virtually all marine applications;
- ▶ Can act as a NMEA 0183 or SeaTalk wireless extender and allows wireless connection of two or more physical devices;
- ▶ Supports TCP and UDP protocols, works as a Wi-Fi Access Point or can be connected to an existing Wi-Fi network;
- ▶ Automatically records your track and other data to the internal memory;
- ▶ Contains an internal web server for diagnostics, firmware updates and configuration.





# YDEG-04

Engine Gateway

## From Volvo Penta and J1939 engines to NMEA 2000 marine electronics network

Gateway for Volvo Penta, BRP Rotax, SmartCraft (Mercury, Mercruiser) and J1939 engines to **NMEA 2000** marine electronics networks. It will provides you with engine revolutions, motor hours, coolant temperature, battery voltage, warning and alarms, fuel rate and other data on the screen of your chart plotter.

The **Engine Gateway** is compatible with BRP Rotax (see customer's video with Rotax 1503 4-tec Engines), Yanmar 4JH series, SmartCraft (Mercury, Mercruiser), J1939 engines (Caterpillar, etc.) and most Volvo Penta engines manufactured since 2004, and even with some engines manufactured before 2000.



## Features

- ▶ Low cost installation, no extra cables required in most cases;
- ▶ Easy configuration with a simple text file on MicroSD card;
- ▶ High-voltage galvanic isolation between J1939 and NMEA 2000 interfaces;
- ▶ With factory settings, the Gateway only listens to J1939 network;
- ▶ J1939 data recording for diagnostics and configuration;
- ▶ Free diagnostic software for Microsoft Windows, Mac OS X and Linux is supplied;
- ▶ Special support for Volvo Penta D1 and D2 engines;
- ▶ Support tilt/trim calibration for EVC, MEFI4B and SmartCraft engines;
- ▶ Can substitute engine data by data from NMEA 2000 pressure and temperature sensors;
- ▶ First device on the market with support of Volvo Penta EVC-A and EVC-MC engines (Volcano protocol);
- ▶ First device on the market with support of BRP Rotax engines (BRP CAN protocol);
- ▶ Support of SmartCraft protocol (Mercury and Mercruiser engines), see the list of supported parameters;
- ▶ Up to 8 engines and transmissions, 8 batteries and 10 fuel tanks are supported by one device;
- ▶ Fuel tank capacity settings and 12-point sensor's calibration for all tanks.



# YDES-04

J1708 Engine Gateway

## From Volvo Penta EDC and J1708 engines to NMEA 2000 marine electronics network

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A gateway for engines with a J1708 serial interface to a **NMEA 2000** marine digital network. With it, you can see engine revolutions, temperature, working hours, fuel rate and other information on the screen of a chart plotter and other display devices on an **NMEA 2000** network.

The Gateway supports the two protocols that work over J1708: the standard J1587 used by many manufacturers, the proprietary Volvo Penta protocol used in engines with EDC I, for example KAD 44, KAD 300, TAMD 73..75; also compatible with EDC II (e.g. D12C-A MP) and the proprietary Cummins KCM-II protocol (e.g. KTA19 and KTA38 engines).

A J1708 interface is used for connection of gauges, electronic displays, diagnostics equipment and other vehicle modules. This interface was very popular until 2005-2007, when it began to be quickly replaced by the J1939 protocol that is based, the same as **NMEA 2000**, on a faster CAN network.



## Features

- First (and the only!) device on the market with support of proprietary Volvo Penta KAD/TAMD protocol;
- First (and the only!) device on the market with support of proprietary Cummins KCM-II protocol;
- User alert settings for high revolutions, boost pressure, coolant temperature, low oil pressure and low alternator voltage;
- Low cost installation, no extra cables required in most cases;
- Easy configuration with a simple text file on MicroSD card;
- High-voltage galvanic isolation between J1708 and NMEA 2000 interfaces;
- J1708 data recording for diagnostics and configuration;
- One engine and transmission, 2 batteries and 2 fuel tanks may be reported by one Device.



## YDTA-01

Tank Adapter

### Monitor from anywhere, log usage, view on any device

The **NMEA 2000** Tank Adapter **YDTA-01** allows you to connect an existing resistive type fluid level sensor installed on a tank and display the fluid level on **NMEA 2000** devices, including chart plotters and instrumental displays.

The Adapter can be configured to report one of the seven fluid types defined in the **NMEA 2000** standard: Diesel Fuel, Gasoline Fuel, Oil, Fresh Water, Waste Water, Black Water (Sewage), or Live Well. The tank number can be configured up to 16 tanks of one type are allowed in an **NMEA 2000**.

The Device can be used with European (10 to 180 Ohm range), American (240 to 33 Ohm range) or Japanese (0 to 310 Ohm range) standard fluid level sensors as well as with any nonstandard sensors with maximum resistance less than 400 Ohm.



## YDRA-01

Rudder Adapter

### Use an old angle sensor with a new NMEA 2000 autopilot

The **NMEA 2000** Rudder Angle Adapter **YDRA-01** allows you to connect an existing resistive type rudder angle sensor installed on a rudder and supply **NMEA 2000** autopilots, chart plotters and other devices with the rudder angle.

The Device can be used with a rudder angle sensor with maximal resistance less than 400 Ohm, including European (10 to 180 Ohm range) or American (240 to 33 Ohm range) standard sensors, and with 0-5V voltage output sensors.





## YDHS-01

Humidity Sensor

### NMEA 2000 humidity sensor with air and dew point temperature

The sensor provides chart plotters and instrumental displays with humidity and air temperature measurements and calculated dew point temperature. The device is plug and play; you only need to plug it into a **NMEA 2000** backbone to get readings on all chart plotters and instruments on board.

This product can be used for weather monitoring and fog prediction; mold prevention by monitoring of water intake or moisture condensation in lockers; and remote monitoring of living quarters. From the helm you can see how comfortable it is in the cabin.

The Device is equipped with a high quality sensor that provides  $\pm 2\%$  RH and  $\pm 0.3\text{ }^{\circ}\text{C}$  accuracy in most of the operating range. Operating range is 0-100 % RH and  $-40..120\text{ }^{\circ}\text{C}$  ( $-40..248\text{ }^{\circ}\text{F}$ ).

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## YDBC-05

Digital Barometer

### Miniature atmospheric pressure sensor for NMEA 2000 network

The Barometer is intended for measuring atmospheric pressure within the range from 300 to 1100 hPa or mbar (225 to 825 mmHg), it provides chart plotters and instrumental displays with barometric pressure data.

This product is designed for weather monitoring. The sensor is located inside the device case. Many chartplotters and digital navigation instruments are able to display data on pressure in the form of graphs (modern Vulcan7, old ST70) or show a trend indicator; this allows tracking of trends in the weather change.

Pressure data output resolution to a **NMEA 2000** Version 3 network is 0.01 hPa (mbar), absolute measurement accuracy is  $\pm 1\text{ hPa}$ , relative measurement accuracy is  $\pm 0.12\text{ hPa}$ . We also recommend our Humidity Sensor **YDHS-01**, it will provide your instruments with relative humidity, air temperature and calculated dew point temperature.



## YDTC-13

Digital Thermometer

### These and eight more data types to choose from

The Thermometer performs measurements within the range from -55 to +125°C (-67..+257°F) with absolute measurement accuracy of  $\pm 0.5^{\circ}\text{C}$ .

The sensor is placed outside the case on a flexible, 95cm wire in a sealed stainless steel sleeve and can be used to measure the temperature of gases or liquids. If necessary, the wire can be elongated up to 100 meters. The Thermometer can be configured by the user to display data as "Air temperature" (factory setting), "Sea temperature", "Temperature in the refrigerator", "Temperature in the engine room", "Bait Well Temperature", etc.

Temperature data output resolution to a **NMEA 2000** network is  $0.01^{\circ}\text{C}$ , absolute measurement accuracy is  $\pm 0.5^{\circ}\text{C}$ . To measure extremely hot temperatures we can recommend our Exhaust Gas Sensor **YDGS-01**, but it has much lower accuracy. For air temperature you can choose our Humidity Sensor **YDHS-01**, it will also provide you with relative humidity and calculated dew point temperature.



## YDTD-20

Text Display

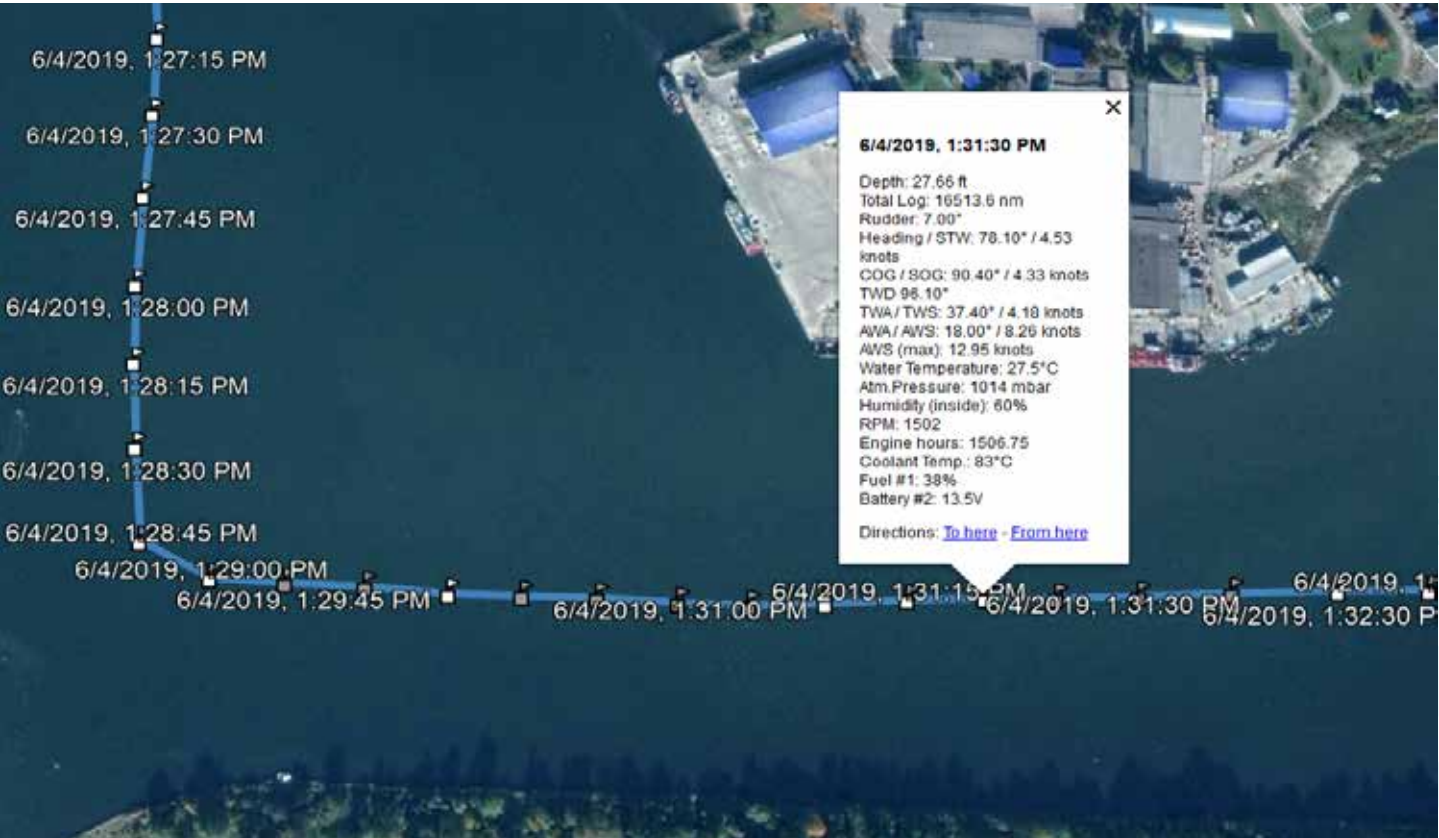
### NMEA 2000 instrument display with unbeatable price

Instrument display for **NMEA 2000** networks. It shows the vessel's position, course and speed, wind and weather data, water depth, log and trip distance, engine revolutions, batteries voltage, etc. With other firmware, you can monitor up to four engines and transmissions, temperature in the exhaust system, the vessel's trim tabs, four batteries, four diesel and four gasoline tanks and three fresh water and three black water tanks.

Our Display is a practical choice as an additional instrument display, mounted in a cabin or near a chart table. You will not be able to configure wind or depth sensors from our Display, but you will get the same readings as you would on displays that cost four times more.

# New Sailing Yacht data set

All important data from engine and sensors on your yacht can be logged by our NMEA 2000 Wi-Fi and Ethernet gateways to internal memory or to our Cloud Service.



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Many sailors like to analyze their trips. Many are interested in remotely monitoring of weather conditions in a marina or at anchorage, as well as the state of the boat's systems. Today we are proud to present an inexpensive solution without monthly fees or other payments. You only need to have our NMEA 2000 Wi-Fi Gateway, NMEA 2000 Wi-Fi Router or NMEA 2000 Ethernet Gateway.

These products can record sailing data to an internal memory. Recorded data can be exported as GPS tracks (see the screenshot of Google Earth above with a loaded track) or spreadsheets, and/

or uploaded to free our Cloud Service where you can monitor them in a web browser and share with any interested persons. With the new update, you can choose what data set to record (see the table below).

The Sailing Yacht data set includes all data from the Basic data set. The only reason to use the Basic data set is if you've been at work for a secret service agency and think that the total log and waste tank data are too personal. In future updates, we plan to add data sets for boats with twin engines, motor boats (focused on engine data instead of environmental), and for charter boats





(groundings, engine warnings, etc.). So you will be able to choose the data set most suitable for you.

## Memory Capacity

The internal memory of the NMEA 2000 Ethernet Gateway accommodates 16256 map points and the memory of NMEA 2000 Wi-Fi Gateway and NMEA 2000 Wi-Fi Router can fit 12160 points (regardless of the data set chosen). The points interval can be configured from 15 seconds to 1 hour, and the memory can thus hold from 2 days to 2 years of sailing data. Old data will be automatically overwritten. The setting "Do not save points closer than 5 meters apart" allows exclusion of anchorages from the recording.

The Cloud Service has no limitation on volume or age of saved data.

## Data Costs

Every record takes 64 bytes of memory. When the Cloud Service is configured, devices connect to the Cloud every 15 minutes. To monitor your boat in a marina, you can configure the device to record points every 5 minutes, and do not forget to remove the mark from "Do not save points closer than 5 meters apart" option.

With the Wi-Fi Gateway or Router, you can leave a cell phone configured as an access point on board and expect that the device will connect to the Cloud 96 times per day and each session will be less than 1 kb (we use HTTP protocol

to transfer data, so we send about 250 bytes of HTTP headers to the server in addition to binary data and receive an answer of about 300 bytes in length).

If you have 1GB of prepaid data, it will be enough for 10.000 days or 27 years. Note that apps or operating systems can download updates over Wi-Fi, so it is recommended to check settings and traffic if you leave the boat in another country for a long time.

The device connects to the Cloud when it has more than one point to transmit. If you configured the device to record points every 30 minutes, it will connect with the Cloud 24 times per day. In this case you can leave the boat with 1 GB of prepaid data for 100 years.

## Energy Costs

Our devices consume about 50 mA, the typical chart plotter (which provides GPS signal) at minimum brightness consumes about 1A, most of NMEA 2000 sensors consume 50-100 mA, and cell phones consume less than 100 mA when the screen is off and Wi-Fi and cell data are not used too frequently.

On a typical sailing yacht, you can expect that the current of your "monitoring system" with cell phone, chart plotter at minimum brightness, NMEA 2000 Wi-Fi Gateway and a dozen NMEA 2000 sensors will be less than 2Ah, maybe as low as 1.5Ah. If you have a dedicated NMEA 2000 GPS receiver, the total consumption can be less than 0.5 Ah or 6W/day. It can be easily covered by one solar panel.



## Use Cases

**Data backup.** It is always good to have a backup of your sailing with depth and other data. Just configure the logging and you will be able to export your data from the web interface of the device as spreadsheets or GPX tracks. We support different XML schemas, including Garmin, and exported tracks can be loaded to a chart plotter or displayed in any cartographic application like OpenCPN or Google Earth

**Racing.** The data record contains momentary data, and to analyze tacking performance, a 15 seconds interval is not enough. We are proud that many famous racers use our Voyage Recorder that provides data with 1-second resolution and min/max/avg/median calculation for important parameters, and even support tensiometers. But the data provided by Sailing Yacht data set are enough to analyze your tactics and sailing performance and compare with other boats. You can also use our devices for control on a long race to be sure that gear was not engaged during while under sail.

**Remote monitoring.** The new data set provides you with digital switching banks data, and in conjunction with the Run Indicator or the Circuit Control, you can monitor bilge pumps and other analog circuits. With the upcoming Battery Monitor, it will be able to monitor the charge of your batteries, and of course, you can use any NMEA 2000 sensor.

**Rented boats.** You can easily check that a boat has not visited prohibited areas, was not on ground, and that the engine was used at normal speeds. You may use a cell phone to monitor your boat all the time, or configure the device to use your home marina Wi-Fi, and you'll get data in the Cloud before they are finished with ropes. Note that you can make a Wi-Fi network using a cell phone or hidden device.

**Friends and family.** The Cloud Service allows sharing of your data to a registered user or by a "secret" link, and even your mom will be able to check that you are arrived with a web browser. Traffic is moderate and the Cloud Service can be used even with a satellite phone. Uploading during a typical 20-day Atlantic crossing will take about 2 MB of traffic.

Our lovely s/v Mur Mur has been out testing the new firmware over the last ten days (total traffic was 30 MB in 10 days, but we found that email and some other apps are running), and you can visit the page with the real-time vessel's data to check where she is, what the current conditions (we have broken Air-Mar water temperature sensor) are and export tracks to explore our sailing (we did not sail in last ten days, but today we plan to perform a short trip!). ♦

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