

# 2022

## CATALOG



 vesper



# WE ARE SAFER **BOATING**

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Vesper Marine revolutionised marine communications with the launch of Cortex, a marine VHF radio with touchscreen handsets, integrated AIS transponder, and remote vessel monitoring and control. Since 2007, Vesper Marine has led the world with innovative marine devices and apps that make advanced features intuitive to use. Our award-winning solutions include *smartAIS*, *WatchMate*, *deckWatch* and *Guardian*. Every person in the Vesper Marine team is dedicated to enabling boaters to do what they love most. Enjoy the water.



# CORTEX

VHF | AIS | MONITOR



## CORTEX

Cortex is the world's first VHF radio with wireless touchscreen handsets, built-in Class B SOTDMA smartAIS transponder and remote vessel monitoring.

PAGE 6



# WatchMate®



## WATCHMATE XB SERIES

Leading innovation in enhanced AIS delivering award-winning safety in navigation.

PAGE 9



# VHF REIMAGINED

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Cortex is a revolution in marine communication that will change your VHF experience forever. Be alerted to potential collision threats, see critical information about their position, speed and time until impact. Tap the vessel on the intuitive wet and glove capable touchscreen to initiate a DSC call immediately. Monitor and control on board systems both on and off the boat via apps. And that is just the beginning. VHF will never be the same again.

**CORTEX**  
VHF | AIS | MONITOR

# THE POWER OF VHF & AIS COMBINED

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Cortex is the world's first VHF with high speed SOTDMA AIS transponder technology, making your boat visible to others. A built-in heading sensor tells other vessels your direction, helping them more accurately predict potential collisions. See critical information about vessels, AIS Aids to Navigation and man overboard devices on your MFD, mobile or Cortex handset.



# AIS

## AUTOMATIC IDENTIFICATION SYSTEM

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The Universal Shipborne Automatic Identification System (AIS) is a system of transponders installed on vessels which transmit over two dedicated digital marine VHF channels.

The AIS data is sent from each vessel every few seconds and contains latitude, longitude and movement information such as course, speed and heading. Static information about the vessel is sent every few minutes and includes the name, type of vessel, length, beam, draft and more. Nearly all commercial ships are required to carry AIS transponders and each year more sail, power and work boats are fitting AIS equipment.

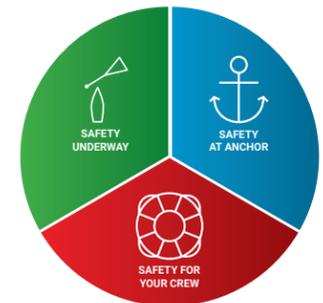
An AIS transponder sends AIS signals, making your vessel visible to others with AIS equipment, and receives and processes the AIS signals for critical safety information. Your safety is enhanced day and night, when offshore or in busy marine traffic areas or in bad weather when visibility is reduced. AIS devices are also fitted on Aids to Navigation and as portable man overboard (MOB) devices on individuals for visibility to all AIS equipped vessels.

# WHAT IS SMARTAIS

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Unlike an ordinary AIS transponder which only sends and receives data, *smartAIS* transponders from Vesper Marine have an active safety system with smart alarm logic that proactively alerts you when you have potential collision situations. It plots your anchor position and alerts you if your anchor drags. It continuously watches for a man overboard and triggers an alarm for quick action.

*smartAIS* puts you in control of every situation, furnishing you with navigation sensor data, GPS and AIS information. Its intelligent alarm management prioritizes alarms for most critical action. Its low power consumption keeps it always on, always visible, always watching. *smartAIS* transmits information over WiFi to your mobile device for access anywhere on your vessel. Using the WatchMate *smartAIS*, Cortex Onboard or Cortex Monitor apps, you can monitor vessel information, customize alarms, change alarm profiles, be alerted if the anchor drags or if there is a man overboard.



# COLLISION AVOID



## Collision Avoidance

*smartAIS* Collision Avoidance continuously calculates collision risk and warns you with alarms or voice annunciated alerts.

*smartAIS* Collision Avoidance combines GPS data such as position, course and speed of your boat with AIS data received from other vessels. Smart logic calculates the risk of collision. Medium and high risk vessels are highlighted to make them visible. You will become alerted to the highest risk vessels and presented with key information like the closest point of approach and the time until the closest point of approach.

Alarm management organizes alarms for the most critical response. The alarms are always on and do not need any additional interface.

Scroll from one target to the next. When a target vessel turns orange that's a warning sign of a potential collision. When red, you have a high collision risk and an alarm is triggered. See the target that is on a collision path with your vessel to enable you to take immediate action.

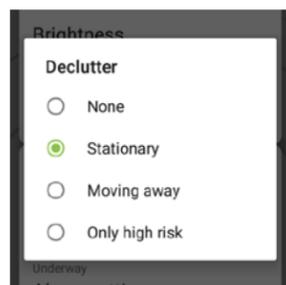


### BEARING AND RANGE

Computes the bearing and range to each vessel. Bearing can be displayed in magnetic to facilitate easy visual identification using your compass and binoculars. Bearings can alternatively be displayed in true degrees.

### ON TOUCH DSC CALLING

Initiate direct calls with other vessels on Cortex using DSC by simply tapping the vessel on your handset touchscreen. Push to talk to quickly hail another vessel when every second counts.



### RISK PRIORITIZATION

Vessels are presented in priority order of collision risk. As a vessel becomes an increasing risk, it will move from Low Risk through Moderate Risk to High Risk and trigger appropriate alarms.



### CPA ALARM

smartAIS computes the Closest Point of Approach (CPA) and time until CPA (TCPA). A CPA alarm is triggered if a vessel's CPA will be close and the alarm is prioritized by TCPA.

### DECLUTTER

Targets on the Plotter Screen can be filtered out using 'Declutter' to make it easier to identify targets of interest in busy shipping areas.

### ALARM PROFILES

Choose from multiple alarm profiles like Offshore, Coastal, Harbor, Anchored and Marina (Cortex). Profiles offer different alarming thresholds for CPA, TCPA and risk vessel speed.

### HEADING & LIGHT SECTORS

With Cortex, any vessel can be viewed on the Collision Avoidance screen to determine its relative heading. Cortex also shows the light sectors that should be visible on the target vessel at night.



# WHAT IS ANCHOR WATCH?



## Anchor Watch

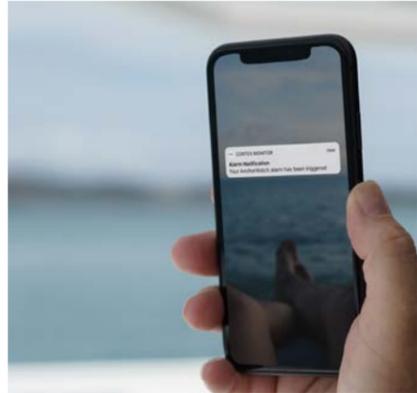
Anchor Watch alerts you if your anchor drags or if there is a change in wind speed, direction or water depth. Activate Anchor Watch when you drop anchor and it will continuously monitor the position of your boat.

*smartAIS* plots your position in relation to the anchor and marks your positions over time to determine if you are dragging.

The alarm sounds if you drag outside a circular zone configured around your anchor position. Set customized alarms for increased wind speed, wind direction change or minimum water depth. When you drop anchor, activate Anchor Watch using your smartphone, tablet or smart watch from anywhere on board. Even if your mobile is powered off or the app is closed, the *smartAIS* Anchor Watch continues to monitor the situation and sound the alarm to warn you. You'll be safer and sleep better because of the dedicated Anchor Watch.

## IT'S MUCH MORE THAN A GEOFENCE ALARM

*smartAIS* Anchor Watch is much more than just a geofence alarm for you at anchor. Anchor Watch uses your actual anchor position from the bow which is offset from the device. It accounts for the Scope, which is the additional distance created by the length of rode/warp and the depth. It will track your every movement and when your anchor drags, you will get alerted on board via the transponder (Cortex Hub or XB-8000), Cortex Handsets, remotely via Cortex Onboard, WatchMate or deckWatch App, or off the boat using the Cortex Monitor App.



### RECEIVE ALERTS ANYWHERE ON BOARD

*smartAIS* transponders are WiFi enabled and communicate alarms and navigation data to your smartphone.

If your anchor drags, an alert is triggered on your mobile devices and an audible alarm sounds (if connected) so you can take prompt action.



### GO ASHORE WITH PEACE OF MIND

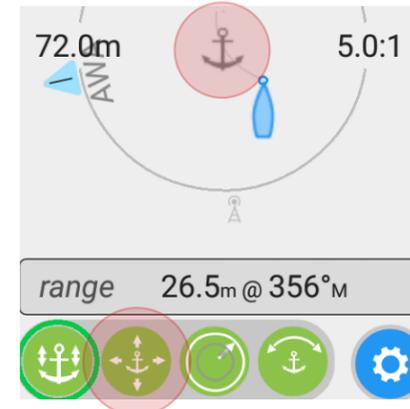
With a Cortex Monitor subscription, receive Anchor Watch alarms when ashore. Anchor your boat and enjoy a picnic or explore an island, knowing your boat is exactly where you anchored it. While ashore, if Anchor Watch detects a dragging anchor it immediately sends an alert to your mobile device, provided you and your boat both have cellular coverage.



### DEPTH AND WIND ALARMS

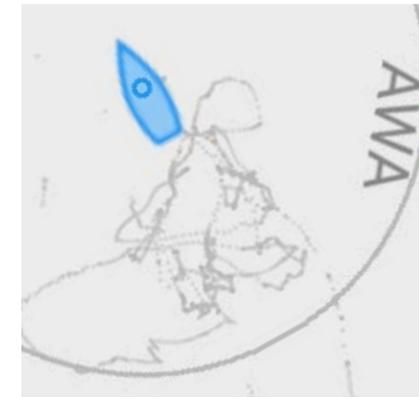
Get added safety at anchor by setting up wind speed, wind direction and water depth alarms using Cortex.

Be alerted on board by connecting your mobile devices to your Cortex via WiFi, or ashore with the Cortex Monitor app.



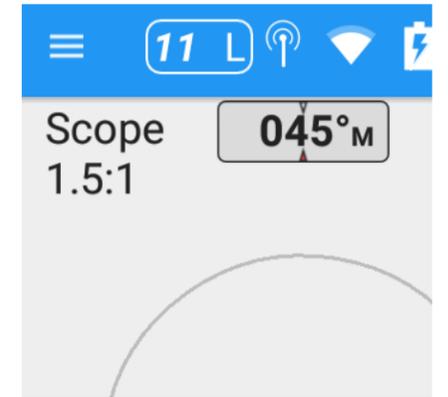
### ANCHOR MOVE

Anchor Move allows you to fine-tune your anchored position after your initial setup. You can adjust your marked anchored position if you didn't get it quite right or forgot to activate it when you dropped anchor.



### BREAD CRUMBS

Bread crumbs track your boat's position at anchor over time. This will give you a clear understanding about anchor swing behavior. This will quickly show any slip, or allow you to manually move the anchor position to a more accurate final position.



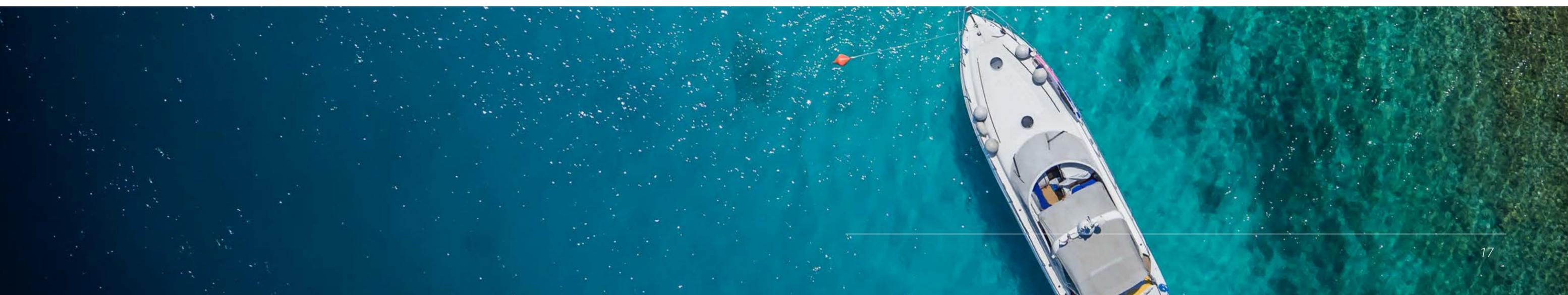
### SCOPE

Scope is the length of anchor rode/warp. A Scope of 5:1 would mean for every 1m of depth, there is 5m of rode/warp. Scope is shown when your depth is available and will calculate based on the alarm radius you have set.

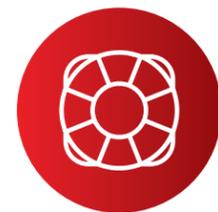


### LOW POWER CONSUMPTION

Cortex should be installed on a 24 hour circuit to ensure it remains live when the boat is shut down. This means Cortex Monitor will continue to alert you of issues on the vessel. Even with all the brains, Cortex still only draws a nominal current of 500mA.



# MAN OVERBOARD



## Man Overboard

*smartAIS* silently and continuously watches for Man Overboard (MOB) activations and sounds an audible alarm as soon as it detects one.

Man Overboard can be activated manually using a dedicated MOB button, or automatically when receiving a signal from an activated AIS equipped Man Overboard Beacon.

The dedicated Man Overboard Situation Screen activates automatically and displays only the information you need during a critical Man Overboard situation.

## UNCLUTTERED SITUATION SCREEN

The Man Overboard Situation Screen offers a dedicated view of all the information important to when a Man Overboard occurs.



name	BARNEY
range	79.8m @ 237°M

## LABEL AIS MOB DEVICES

Program each AIS Man Overboard Beacon into your *smartAIS* so the crew person can be quickly identified.



## DEDICATED MOB BUTTON

Man Overboard mode can be manually activated using the dedicated button on the Cortex Handset, or an external switch on any *smartAIS* device.





### WATER TEMPERATURE

Cortex will also display a networked water temperature source right on the Man Overboard Situation Screen.



### MAKE A MOB DSC CALL

During a Man Overboard situation, the situation screen features an 'MOB DSC CALL' button that will broadcast a DSC Call once pressed to all nearby stations as a Securite (Safety) Message. This makes it quick and easy to declare your situation and allow you to return to the task of finding and retrieving your crew.



### UNIVERSAL COMPATIBILITY

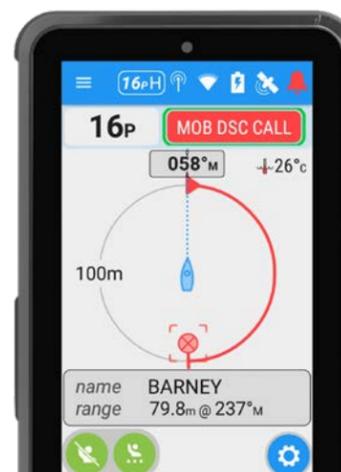
Universal compatibility means smartAIS Man Overboard devices receive signals from any AIS equipped Man Overboard beacon and will network with any NMEA 2000 MFD to display an MOB position.



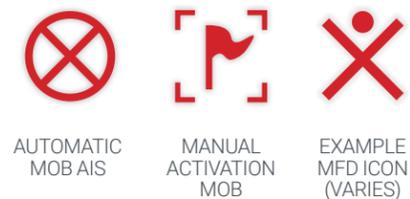
### LIVE MOB POSITION

Receive and alarm the instant somebody goes over the side and activates their AIS Man Overboard Device. The Man Overboard (MOB) Alarm clearly identifies the MOB on your Cortex or XB-8000 smartAIS display.

It clearly shows their location, bearing and range of the person for quick retrieval. It provides continuous updates of position, bearing and range as new information is received.

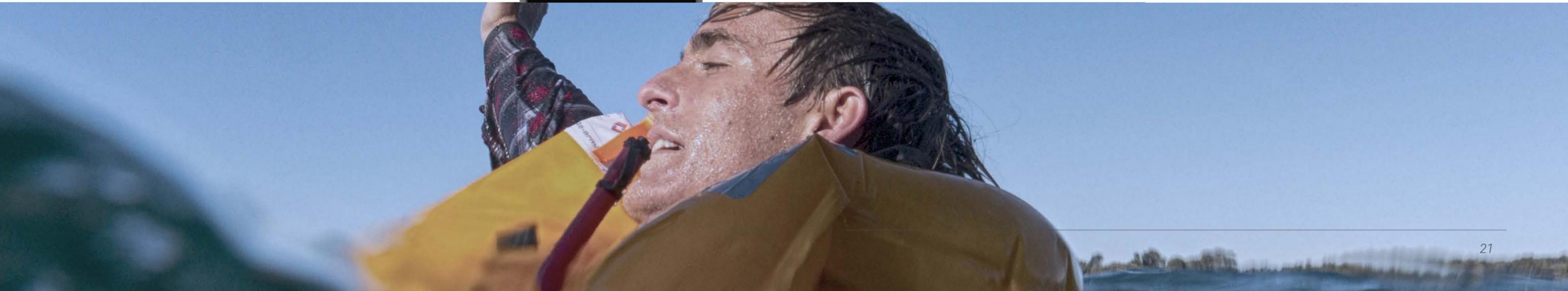


### MOB ICONS



### NETWORKED DEVICES

Pressing the dedicated MOB button activates a track back mode on all handsets and marks the MOB on NMEA 2000 connected MFDs.



# REMOTE MONITORING & CONTROL



## Cortex Monitoring

See boat status, receive alerts and control devices with Cortex's monitoring capability. Monitor instruments on board using the Cortex Handsets or Cortex Onboard App, or get monitoring off the boat using the Cortex Monitor App. Use out-of-the-box monitoring off the boat for free, or get real-time updates and control with a Premium Subscription. Add external sensors for greater monitoring capability.

### MONITORING ON THE BOAT

Configure and monitor instruments and sensors on the boat using the Cortex Handsets and Cortex Onboard App.



### NETWORK SENSORS

Connect to your NMEA 0183 or 2000 network and monitor network sensors.

### BUILT-IN SENSORS

Monitor battery level and position without any additional sensors. Monitor bilge pump and level simply by connecting the supplied GPIO connector cable.

### EXTERNAL SENSORS

Connect external sensors for bilge level, temperature, shore power, security and more.



### MONITORING & CONTROL OFF THE BOAT

Through the Cortex Monitor App, remotely monitor in real time, get push notifications and control critical sensors and circuits on your boat.

More on the Cortex Monitor App see page 38

## Monitoring with Cortex

With built-in and external sensors you can monitor key systems while on board or remotely. Here are just some of the systems you can monitor or control.



### HEATING AND COOLING

Add a relay to remotely activate air conditioning.



### LIGHTS

Add a relay control to remotely activate deck lights. Make it easy to spot your boat in a crowded anchorage.



### BOAT SECURITY

Add motion, magnetic door or pressure sensors to detect entry to your boat.



### LOCATION

Use built-in sensors for Geofence Alarms or Anchor Watch to know where your boat is, or if it moves.



### BAROMETER

Use built-in sensors to track barometric changes.



### REFRIGERATION/ ICE MAKER

Add a relay to remotely activate your refrigeration or ice-maker.



### BATTERY VOLTAGE

Use built-in sensors to ensure your battery is sufficiently charged.



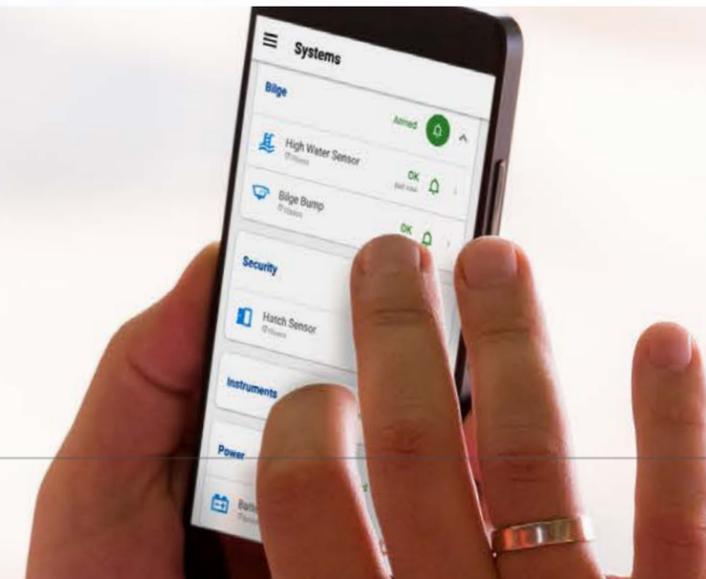
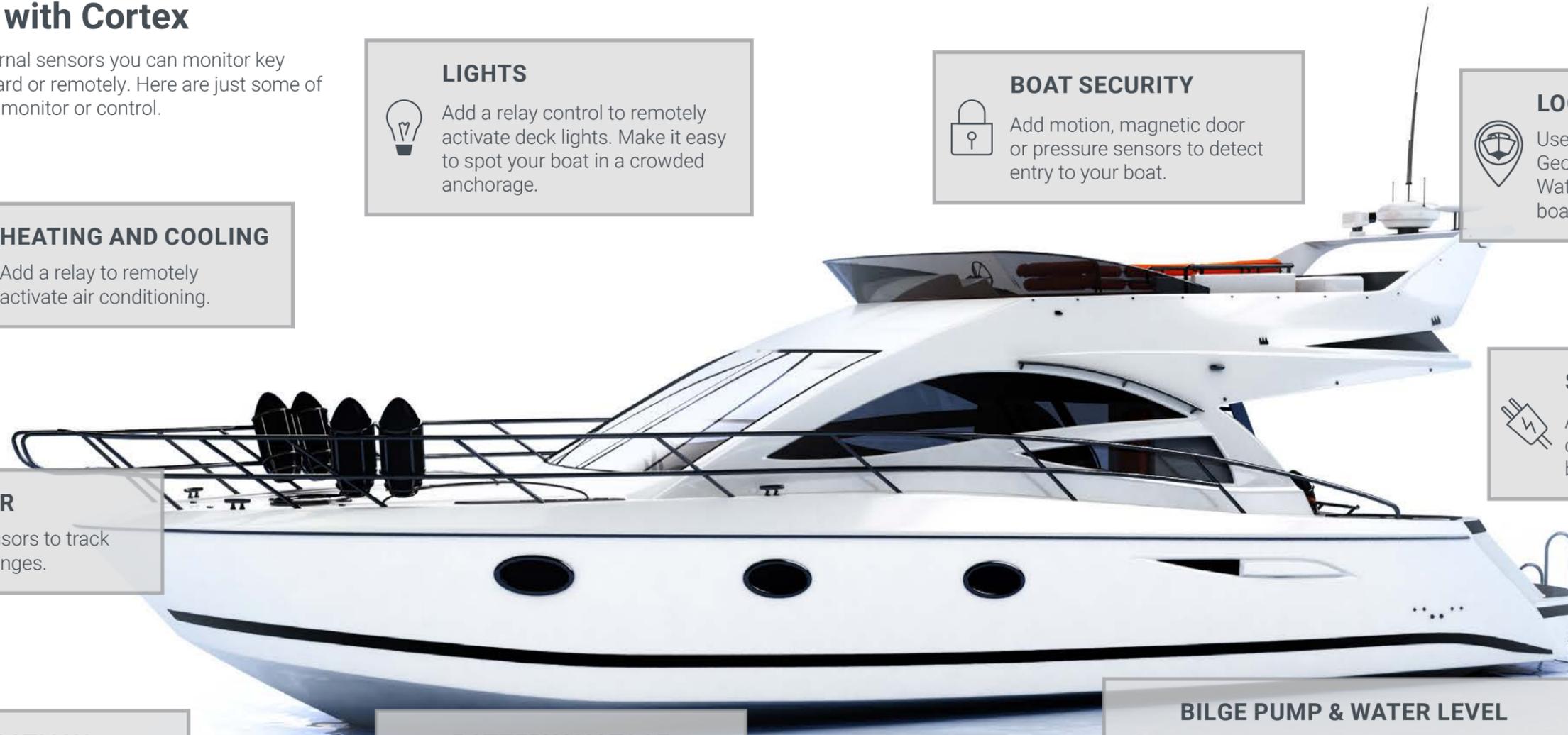
### BILGE PUMP & WATER LEVEL

Monitor for high water level and bilge pump activity by connecting to your existing bilge pump system. Simply use the supplied GPIO cable. You can also set alarms based on frequency of bilge pump operation.



### SHORE POWER STATUS

Add a sensor to check you are connected to shore power so your boat and devices are powered up.





# Cortex Hub

Class B SOTDMA with *smartAIS* send and receive, and integrated no-loss splitter. Monitor and control on board systems and keep alerted on board or ashore from your smartphone.

- Add H1 Tethered & H1P Portable handsets for VHF capability
- Built-in Class B SOTDMA
- Built-in antennas for WiFi and cloud connectivity for monitoring on board and ashore
- Transmit AIS and VHF simultaneously
- Universal compatibility
- Low power consumption
- Galvanically isolated ports
- Monitor up to 5 external sensors connected directly
- Connect to NMEA 2000 to monitor network sensors remotely
- Integrated no-loss AIS / VHF splitter
- IPx7 full plastic housing
- 10Hz GPS and external antenna port
- GNSS: GPS, GLONASS, Bei Dou, Galileo
- Anti jamming feature



## WHAT'S A CORTEX M1

The Cortex M1 is our Cortex *smartAIS* using our Cortex Hub with full Class B SOTDMA AIS and built-in monitoring and control. See page 30



## WHAT'S A CORTEX V1

The Cortex V1 is our full Cortex VHF with built-in *smartAIS* and Monitoring. The Cortex V1 is a Cortex Hub (M1) combined with a tethered Cortex H1 handset. See page 32.

## WIFI ACCESS ON BOARD

Receive alerts directly on your smartphone and tablet anywhere on board using Cortex's built-in WiFi (Cortex Network).

Connect to an existing network (Boat Network) on board for increased range and up to 10 devices.

View nearby vessels, instruments and configure alarms from your device anywhere on board.



## BUILT-IN SPLITTER

Vesper is known for offering high-performance no-loss VHF/AIS Splitters. The Cortex Hub now has this built-in. What's more is it features fail-safe pass-through. Should a fault or power loss occur to Cortex, it will still supply an uninterrupted connection from the Cortex connected antenna to an auxiliary VHF.



## EASY INSTALL SINGLE ANTENNA

Use a single existing VHF antenna for both AIS and VHF, saving time and money on installation. Upgrade to a single AIS/VHF Antenna for optimised AIS performance, see page 58.



## VHF AND AIS TRANSMIT SIMULTANEOUSLY

With tight integration of VHF and AIS in the same system, Cortex can provide guarantee of AIS transmission while simultaneously broadcasting and receiving VHF transmission.

## HEADING SENSOR BUILT-IN

A built-in heading offers critical accuracy to Cortex's Anchor Watch function, significantly increasing performance over GNSS anchor position alarms available on most chartplotters. Heading is also broadcast through AIS ensuring other vessels know your exact heading.



## UNIVERSAL COMPATIBILITY

Cortex can receive and broadcast information over NMEA 0183 & 2000, making it compatible with the majority of modern chartplotters and multi-function displays.



## SOFTWARE UPGRADEABLE

Using the Cortex Onboard App, your cortex will get smarter. New features and functionality are being developed all the time and are easily and freely downloaded to your Cortex system via the App Store and Google Play.

More on the Cortex Onboard App

See page 40.





### INNOVATIVE IPX7 DESIGN

Water resistant IPX7 is achieved using a uniquely design thermal polymer with fins to disperse heat without venting the internal components. The thermal polymer offers a thermally conductive material without the weight and risks of corrosion associated with more traditional materials.

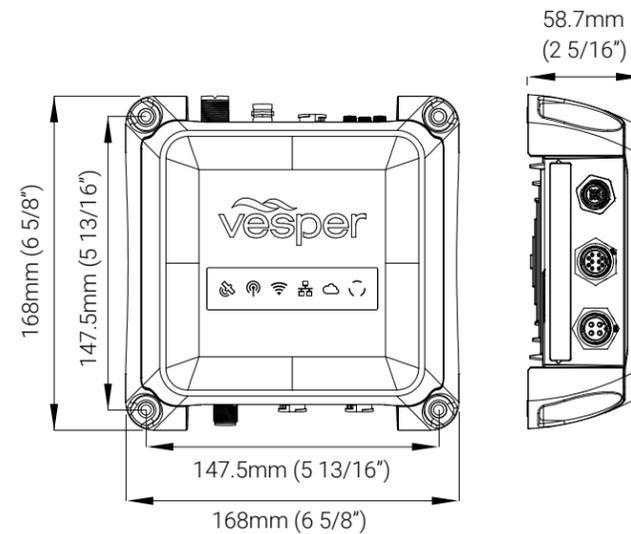


### LOW POWER CONSUMPTION

Engineered for minimal power consumption at just 500mA. Cortex can always stay on for when you need it. Ideal if you need to conserve power when anchored or on a long voyage.

Cortex is always watching for crossing situations, man overboard or anchor drag and will alert you even when your MFD is turned off.

### TECHNICAL



### SPECIFICATIONS

CORTEX HUB	
GENERAL SPECIFICATIONS	
HUB SIZE	168 x 168 x 58.7mm (6 5/8" x 6 5/8" x 2 5/16")
POWER SUPPLY	9-33V. 12V. 6A max, 500mA nom
WEIGHT	770g (1.7lb)
ENVIRONMENTAL	Waterproof (IPx7)
OPERATING TEMPERATURE	-25°C to +55°C (-13°F to +131°F)
SUPPORTED PROTOCOLS	AIS Class B SOTDMA, VHF Voice, Class D DSC, ATIS (user configurable, EU region) NOAA Weather (US region)
TRANSMITTER FREQUENCY ERROR	Less than 300Hz
ANT CONNECTOR	S0239
SPLITTER	Max input power 25W, Insertion Loss RX 0dB, TX < 1dB
SPLITTER CONNECTOR	BNC

VHF VOICE	
VHF FREQUENCY RANGE	TX 156.025-161.600 MHz RX 156.050-163.275 MHz
DEDICATED RX CHANNELS	3
POWER OUTPUT	25W, 1W (High, Low)
REGIONS	USA, CAN, INT
SENSITIVITY (12 DB SINAD)	-116 dBm
ADJACENT CHANNEL SELECTIVITY	80 dB
SPURIOUS RESPONSE	70 dB
INTERMODULATION	70 dB
SPURIOUS EMISSIONS	Less than -80 dBc (at 25 W)
MAX AUDIO OUTPUT POWER	10W, < 1% THD

CLASS D DSC	
DEDICATED RX CHANNELS	1
SENSITIVITY (1% BER)	-116 dBm
ADJACENT CHANNEL SELECTIVITY	80 dB
SPURIOUS RESPONSE	70 dB
INTERMODULATION	70 dB

SOTDMA CLASS B AIS	
DEDICATED RX CHANNELS	2
FREQUENCY RANGE	156.025 - 162.025 MHz
POWER OUTPUT	5W, 1W (High, Low)
AIS SENSITIVITY (20% PER)	-112 dBm
ADJACENT CHANNEL SELECTIVITY	80 dB
SPURIOUS RESPONSE	70 dB
INTER-MODULATION	65 dB

AUDIO	
SUPPORTED FUNCTIONS	VHF RX, Alarms
AMPLIFIER	10W Class D, THD < 1%
SPEAKER	4 ohm

GNSS	
SENSITIVITY	-167dBm
CONSTELLATIONS	GPS, GLONASS, Bei Dou, Galileo
CHANNELS	72
DIFFERENTIAL SUPPORT	SBAS, WAAS, EGNOS
NAVIGATION RATE	10Hz
CONNECTOR	SMA
CERTIFICATIONS	IEC 61108
FEATURES	Anti-jamming, Anti-spoofing

NETWORKING	
NMEA 2000 GATEWAY	1 x Isolated Micro-C male port, AIS, GPS & MOB PGN output, Gateway Translations to/from NMEA 0183
NMEA 0183	1 x Isolated NMEA 0183 port, AIS and GPS sentences, Gateway Translations to/from NMEA 2000, 4800 / 38400 baud
WIRELESS	Access Point for up to 10 devices, 2.4GHz, 802.11b/g/n, Integrated Antenna, SMA-RP external antenna port (optional)
WIRELESS SECURITY	WPA2 Personal
CLOUD CONNECTIVITY	LTE-Cat1 with 3G fallback (USA), 3G (Canada, EU, Asia), Integrated SIM, Integrated Antenna, SMA-RP external antenna port (optional)
CONTROL OUTPUTS	2 Outputs, Low side driven (max 120mA)

SENSORS	
HEADING	9-Axial, Internal use only, Accuracy: +/- 1 deg, Updated rate: 10Hz (max)
BAROMETER	Update rate 1Hz max (averaged)
BATTERY VOLTAGE	Measured at power input
EXTERNAL SENSORS INPUTS	5 Inputs, Digital (0-24V), Analog (0-17V)



1. VHF Antenna In
2. VHF Antenna Out (no-loss splitter)
3. DC Power (12/24V)
4. GPS/GNSS, WiFi and Cloud antenna ports
5. Mounting holes
6. External Speaker output
7. General Purpose Input / Output, NMEA 0183
8. NMEA 2000 port
9. Colored back-lit status indicators for GPS/GNSS, VHF/AIS, WiFi, NMEA 2000, Cloud and Power

# Cortex M1 smartAIS

## CORTEX-M1

### DESCRIPTION

The Cortex M1 is a full Class B SOTDMA with *smartAIS* send and receive, with integrated no-loss splitter. Monitor and control on board systems and keep alerted on board or ashore from your smartphone.

- Add H1 Tethered & H1P Portable handset for VHF capability
- Class B SOTDMA
- Integrated no-loss AIS / VHF splitter
- Built-in antennas for WiFi and cloud connectivity for monitoring on board and ashore
- Transmit AIS and VHF simultaneously
- Universal compatibility
- Low power consumption
- Galvanically isolated ports
- Monitor up to 5 external sensors connected directly
- Connect to NMEA 2000 to monitor network sensors remotely
- IPX7 full plastic housing
- 10Hz GPS and external Antenna port
- GNSS: GPS, GLONASS, Bei Dou, Galileo
- Anti jamming feature



CORTEX M1 AIS	
PRODUCT CODE	CORTEX- M1
UPC	0793591743578
DESCRIPTION	SOTDMA <i>smartAIS</i> transponder with remote vessel monitoring
INCLUDED	M1 Hub, GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, External WiFi Antenna, VHF patch cable
PACKAGING	330 x 218 x 148mm (1' 1" x 8 9/16" x 5 13/16") 1.64 kg (3.61 lb)

### INCLUDED

ACCESSORY CODE	DESCRIPTION
PTC-VHF	M1 PATCH CABLE (BNC TO PL259 FOR SPLITTER)
PTC-GPS	GPS LOW LOSS PATCH CABLE, 10M (32' 9 11/16")



111210 (OPTIONAL)



505005 (INCLUDED)



211010 (INCLUDED)

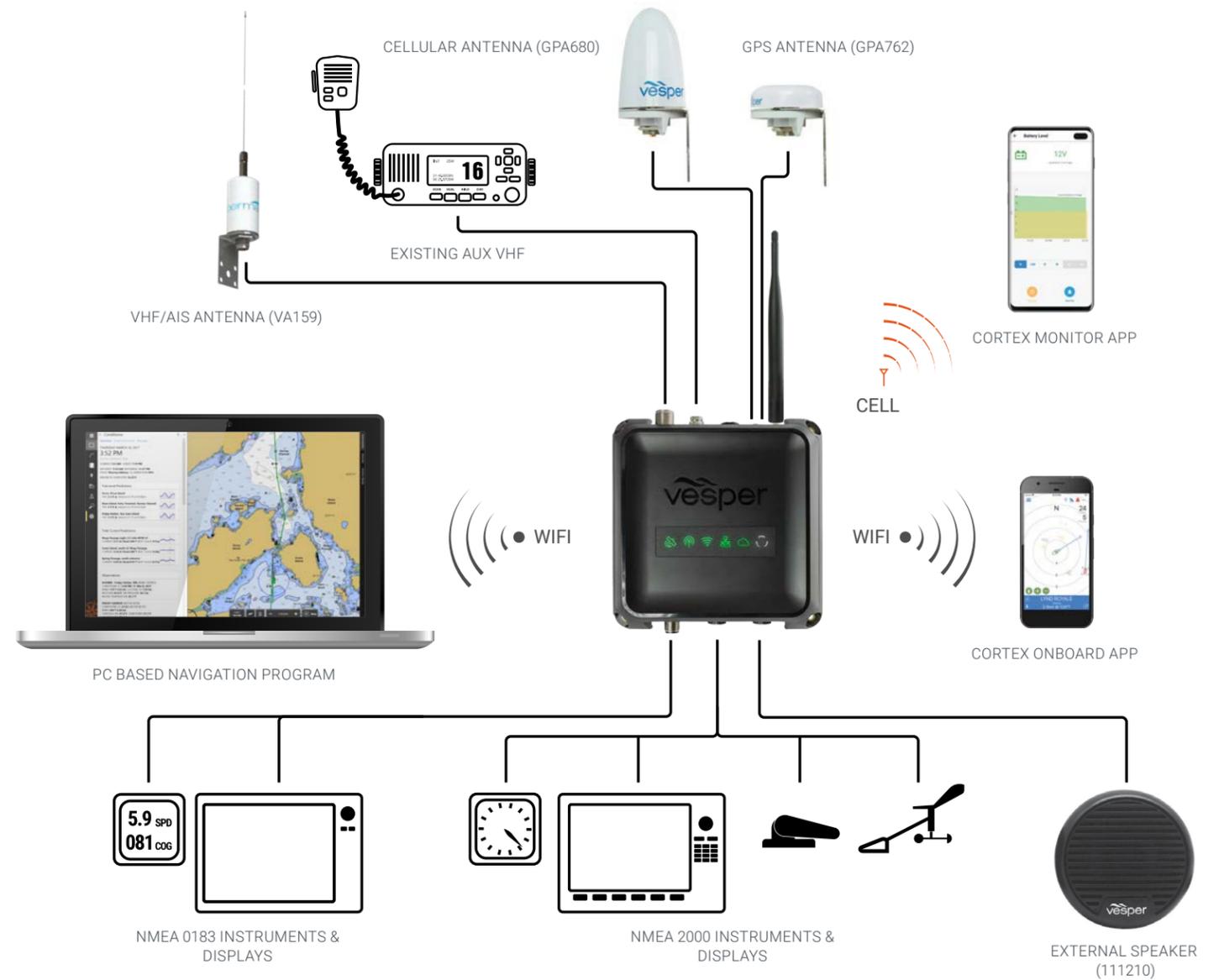


211002 (INCLUDED)



GPA762 (INCLUDED)

## SYSTEM VIEW



+

CONNECT TO AN EXISTING ON BOARD NETWORK FOR UP TO 5 ADDITIONAL HANDSETS OR MOBILE DEVICES AND TO ACCESS MONITORING VIA SATELLITE COMMUNICATIONS

+

ADD A CORTEX HANDSET FOR FULL CORTEX VHF FUNCTIONALITY

# Cortex V1 VHF with smartAIS

## CORTEX-V1

### DESCRIPTION

Cortex V1 is an advanced multi-station VHF with intuitive touchscreen operation. Full Class B SOTDMA with *smartAIS* send and receive, and integrated no-loss splitter. Monitor and control on board systems and keep alerted on board or ashore from your smartphone.

Cortex V1 VHF radio combines Cortex M1 full Class B SOTDMA *smartAIS* with Cortex H1 Tethered Handset to provide full VHF functionality. Optionally add H1P Portable Handsets for even greater freedom on board.

- Includes M1 Hub, H1 Tethered Handset and Installation Accessories
- Add H1P Portable Handset for wireless freedom
- Combined AIS and VHF display with voiced alerts
- Transmit AIS and VHF simultaneously
- Universal compatibility
- Internal no-loss splitter for single antenna use



CORTEX M1 AIS	
PRODUCT CODE	CORTEX-V1
UPC	0797776885848
DESCRIPTION	VHF radio with SOTDMA <i>smartAIS</i> and remote vessel monitoring
INCLUDED	M1 Hub, H1 Tethered Handset, GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, External WiFi Antenna, Bulkhead connector, Non Powered H1 Cradle
PACKAGING	330 x 218 x 148mm (1' 1" x 8 9/16" x 5 13/16") 1.98 kg (4.37 lb)

ACCESSORY CODE	DESCRIPTION
CRDL-H1	NON-POWERED H1 CRADLE
PTC-GPS	GPS LOW LOSS PATCH CABLE, 10M (32' 9 11/16")



111210 (OPTIONAL)



311011 (INCLUDED)



505005 (INCLUDED)



CORTEX-H1 (INCLUDED)



CRDL-H1 (INCLUDED)



GPA762 (INCLUDED)

## SYSTEM VIEW



**+** CONNECT TO AN EXISTING ON BOARD NETWORK FOR UP TO 5 ADDITIONAL HANDSETS OR MOBILE DEVICES AND TO ACCESS MONITORING VIA SATELLITE COMMUNICATIONS

**+** ADD A TOTAL OF 5 CORTEX HANDSETS DIRECTLY TO THE CORTEX NETWORK

# Cortex Handsets

The handset's touchscreen display is the primary interface together with dedicated buttons and the Click-Wheel for swift navigation, ease of operation and single-handed use. The touchscreen is purpose-built for the harsh marine environment and is designed and manufactured for use in wet conditions and with gloves.

- Powered handset for connection to Cortex M1 or Cortex V1
- 4-inch multi-touch display with gorilla glass for maximum durability
- Single hand operation with unique click wheel and dedicated buttons
- Wet and gloves capable touchscreen
- IPX8 submersible
- Navigate and use all key functions using just the keypad
- Optically bonded display for wide-angle and sunlight view-ability, even in the harshest midday sun.
- 85 dBA of crystal-clear audio
- Combined AIS and VHF display with voiced alerts
- Touch a vessel onscreen for direct calling (DSC)



## DESIGNED TOUGH

It's not like your smartphone. Cleverly designed overmolding creates a tacky non-slip surface with padded impact absorption zones to stop it sliding and becoming damaged on impact when dropped.

## ROTARY CLICK-WHEEL

For quick single handed operation, the unique Click-Wheel allows for quick navigation through menus and settings.



## MULTIPLE HANDSETS

Multiple Cortex H1 and Cortex H1P handsets can be connected to each Hub. Up to 5 can connect directly to the Cortex Network, with an additional 5 through an existing Boat Network for increased range on larger vessels.



## CONNECT WIRELESSLY

Both Cortex H1 and Cortex H1P handsets connect to the Hub using Wifi and only needs power to the Bulkhead Connector or Charging Cradle.



## GORILLA GLASS

Industry leading Gorilla Glass delivers durability against impact and abrasion. It's also recessed to help protect against face-down impacts.



## EXTREME DAYLIGHT VIEWABLE

Bright optically bonded LCD offers brilliant daylight visibility and unbeatable viewing angle. A built in ambient light sensor allows automatic adjustment as conditions change.



## ONE TOUCH DSC

Initiate direct calls with other vessels by simply tapping the vessel on your handset. Initiate VHF calls to friends or quickly hail another vessel when every second counts.



## WET & GLOVE CAPABLE

Cortex Handsets are designed to operate with wet and gloved hands. Tested to operate with salt water and a range of common gloves.



## RESPONSIVE MULTI-TOUCH

With responsive multi-touch, pinch-to-zoom and panning ensures fast and smooth navigation and operation.

# Cortex Handsets

## DESCRIPTION

Cortex handsets are the ultimate interface for your Cortex system. Use multiple tethered or portable handsets for the best situational awareness and VHF communication at your fingertips, no matter where you are on your boat.

Both Cortex H1 Tethered and Cortex H1P Portable handsets connect to the Cortex Hub using WiFi. Cortex H1 gets power through its tethered cable, while Cortex H1P uses a rechargeable cradle and can roam around the boat.



CORTEX-H1



CORTEX-H1P

## CORTEX H1 TETHERED HANDSET

CORTEX H1 TETHERED HANDSET	
PRODUCT CODE	CORTEX-H1
UPC	0793591743585
DESCRIPTION	Cortex H1 Tethered Handset
INCLUDED	Tethered Powered Handset (CORTEX-H1), Non Powered Cradle (CRDL-H1)
PACKAGING	213 x 98 x 58 mm (8 3/8" x 3 7/8" x 2 5/16") 0.34 kg (0.75 lb)

## CORTEX H1P PORTABLE HANDSET

CORTEX H1P PORTABLE HANDSET	
PRODUCT CODE	CORTEX-H1P
UPC	0735850824765
DESCRIPTION	Cortex H1P Portable Rechargeable Handset
INCLUDED	Portable Rechargeable Handset (CORTEX-H1P), Charging Cradle (CRDL-H1P), Non Powered Cradle (CRDL-H1)
PACKAGING	213 x 98 x 58 mm (8 3/8" x 3 7/8" x 2 5/16") 0.34 kg (0.75 lb)



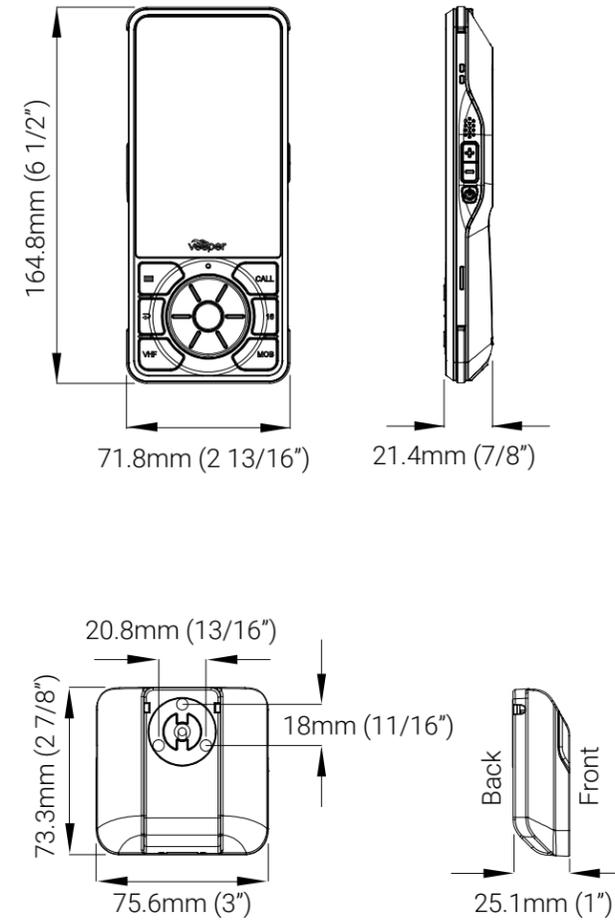
CRDL-H1  
(INCLUDED IN CORTEX-H1 & CORTEX-H1P)



CRDL-H1P  
(INCLUDED IN CORTEX-H1P)

## CORTEX-H1 - TETHERED HANDEST CORTEX-H1P - PORTABLE HANDSET

## DIMENSIONS



## KNOW YOUR HANDSET

1. DSC distress call button
2. 2W high fidelity loud speaker
3. Side volume buttons
4. Power On button
5. DSC Call shortcut button
6. Channel 16 shortcut button
7. MOB way-point activation
8. Click-wheel rotary controller
9. Microphone
10. VHF screen shortcut button
11. Return button
12. Menu button
13. Push to talk button
14. 4-inch touch screen
15. Protective rubber overmould
16. Power cable (H1 Handset Only)



## SPECIFICATIONS

CORTEX HANDSET	
GENERAL SPECIFICATIONS	
HANDSET SIZE	164.8 x 71.8 x 21.4mm (6 1/2" x 2 13/16" x 7/8")
POWER SUPPLY	12V, 1A max, 200mA nom 12-24V compatible
BATTERY (CORTEX H1P)	Lithium Polymer 2 hour full charge, >12 hours nominal operation
WEIGHT	CORTEX H1 285g (0.63lb) CORTEX H1P 235g (0.52lb)
ENVIRONMENTAL	Waterproof (IPx8)
OPERATING TEMPERATURE	-20°C to +55°C (-13°F to +131°F)
AUDIO	2W, THD < 5% @ 85dBA
CABLE LENGTH	300mm (CRDL-H1P)

DISPLAY	
SCREEN	LCD TFT Si, 640 x 800, 24bit Color, Polarized Compatibility
TOUCH	Capacitive, optically bonded, LCD, glove and salt water operable
BACKLIGHT	600 cd/m2, Ambient Light sensor for auto dimming

All stated specifications are subject to change without notice or obligation. Dimensional measurements based on metric.



# Cortex Monitor App



## SYSTEMS

See status and history of built-in and connected sensors. Monitor bilge, security, power and other instruments. Set alarms and alarm thresholds, review data history and know when the sensor was last active.



## REMOTE MONITOR AND CONTROL WHILE OFF YOUR BOAT

Download the free Cortex Monitor App from Google Play or the App Store. Use your smartphone to monitor your vessel and receive alerts.

Know your vessel is safe and secure while you are ashore. See boat status, receive alerts and control devices. Cortex sends updates to the cloud and sends status and alerts directly to your mobile via the Monitor App.



## Subscriptions

### MONITOR LITE

Monitor Lite is FREE with Cortex. See twice daily updates on your Cortex system. See alarms from within the Cortex Monitor App.

### MONITOR PREMIUM

See real-time updates on the Cortex Monitor App. Receive instant alarm notifications and control on board devices. Access advanced features like Geofence and Anchor Watch. Monitor Premium is available on a Monthly or Annual subscription and can be cancelled at any time.

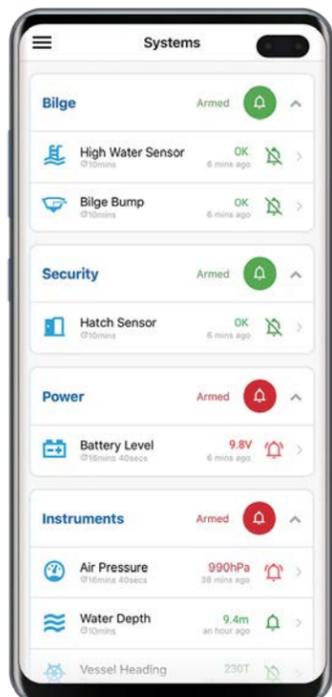
## Benefits of Premium

### CONTROL

Remotely control devices like lights, air-con and ice-makers on your boat by connecting them to Cortex.

### GEO-FENCING

Know where your boat is and get an alert if it moves outside a designated area.



## EASY TO USE

Register your phone or tablet with Cortex Monitor, pairing it to your M1 Hub.

Use the Cortex Monitor App to remotely monitor your boat through built-in and connected sensors to your M1 Hub.

Upgrade to a Premium Subscription to get access to Anchor Watch and receive real-time push notifications.

## REAL TIME UPDATES

Receive alerts on your smartphone or tablet.



## ANCHOR WATCH

Know your boat is safely anchored. Receive alerts if your anchor drags or there is a change in wind speed, direction or water depth. See page 15



# Cortex Onboard App

## CONFIGURE AND MANAGE CORTEX WHILE ON YOUR BOAT

Configure your Cortex Hub and download updates to your Cortex devices with new features and improvements. Use Cortex Onboard to receive and manage alerts and view AIS information and instrument data while on your boat.



**Download Updates**  
Download *NEW* features to your Cortex Onboard



**Update Cortex**  
Use your smartphone to update your Cortex

## CONFIGURE YOUR CORTEX

Use the Cortex Onboard App to configure, manage and display information from your Cortex. The Configuration Menu is used for initial configuration, AIS programming, network settings, firmware updates and input / output sensor setup. This is essential if you are using the Cortex Hub (Cortex M1) without any handsets.

Once the Cortex Hub is configured, the Cortex Onboard App provides access to all Cortex Hub status and *smartAIS* display screens in a similar layout to a Cortex handset.



## ANCHOR WATCH

Power down your Cortex Handsets and keep informed of your Anchored position and swing behavior on your smartphone or tablet. Change Anchor Watch setup directly with Anchor Move, Alarm Zone and more.



## INSTRUMENT DATA

See a wide range of configured sensors and data available through Cortex on your smartphone or tablet. Choose from different screen layouts and sources of information.



## COLLISION AVOIDANCE

Receive warnings of potential collisions with another target vessel on AIS directly to your smartphone or tablet. Quickly visualize a crossing situation and clearly see key details like range and bearing of the risk vessel, as well as how close they might get.



## MAN OVERBOARD

Receive Man Overboard alerts to your smartphone or tablet anywhere on board the boat.



## WatchMate XB Series

The WatchMate XB Series brings together a desire for powerful high performing recreational AIS and feature rich capability as a high value low cost transponder that is easy to use. Integrate data with other electronics on board from chart and navigation software on your tablet or computer, to networked MFD's and the dedicated WatchMate apps. WatchMate XB Series remains the most awarded recreational AIS product on the market today.

- Fully waterproof IPx7 (submersible to 1m for 30 minutes)
- Wide operating temperature range
- Galvanic isolated NMEA and USB connections prevent ground loops and damage to connected devices
- Self diagnosis status lights to indicate functioning AIS, GPS and antenna
- World-wide two year warranty
- 5Hz GPS Antenna



### AWARD WINNING

The WatchMate XB Series remains the most awarded recreational AIS transponder available on the market today - including being voted most popular in the **2020 NMEA Product of Excellence Award**

### SILENT MODE

Turn off AIS transmission while continuing to receive signals from other vessel. Activate Silent Mode using an external switch or the connect WatchMate app. XB-8000 Only.



### USB/WIFI TO PC/MAC

Output data over USB and Wifi to other devices. Connect by USB of Wifi to Mac or PC to input data off your network, or wireless connect your smartphone or tablet and use the dedicate WatchMate app or compatible 3rd Party app.



### XB-8000 IS SMARTAIS

Enjoy boating with the comfort of full *smartAIS* safety. Anchor Watch on board to alert you to anchor drift. Collision Avoidance underway to identify risky vessels and keep you alert. Man Overboard actively monitoring for crew PLB activation to alert you if and where someone goes overboard.



### NMEA 2000-0183 GATEWAY

Translate NMEA 2000 instrument data such as heading, wind, depth, speed, log, and temperature and output over NMEA 0183. You can also translate NMEA 0183 sources to NMEA 2000 and output them for other networked devices.



### NMEA 2000 CERTIFIED

WatchMate Series are fully NMEA 2000 certified and compliant.

### THIRD-PARTY APPS

The XB-8000 outputs data over Wifi which can be used on a number of compatible 3rd Party Apps or Programs, such as Navionics, TZ iBoat, Aquamaps, iNavX and iSailor or your favorite computer based navigation software on computer.

Find out more at [support.vespermarine.com](http://support.vespermarine.com)



### DEDICATED WATCHMATE ANDROID & IOS APP

Use our dedicated WatchMate App on you Apple iOS or Android device to configure and use your XB-8000 wirelessly. See page 30



### DECK WATCH APP

Get *smartAIS* on your compatible smartwatch. See page 48.

# XB-8000 smartAIS

XB-8000

## DESCRIPTION

The full-featured Class B *smartAIS* transponder from Vesper Marine has all the *smartAIS* functions of Collision Prevention, Anchor Watch and Man Overboard (MOB) Alarms actively keeping your vessel and crew safe.

It can be viewed on any tablet, smartphone, PC or Mac over WiFi or USB, but is continuously watching and alerting you even when your screen is off. Integrate it with your network of chart plotters, MFD's and NMEA instruments. All your navigation instrument data from NMEA 2000 or NMEA 0183 along with GPS and AIS is available on your mobile devices or PC for alarm management and critical action, giving you complete control of every situation.

XB-8000 sounds its own dedicated external alarm for anchor drag, man overboard or collision alarms. Mount the external silence switch anywhere on board.

- NMEA 2000 / 0183, WiFi and waterproof USB
- Fast 5Hz GPS update rate provides greater detail and higher resolution plotting
- Can be put in Silent Mode (receive-only)
- Includes 50 channel GPS with WAAS/EGNOS and powerful external GPS antenna
- Free WatchMate App for iPhone / iPad / Android providing interactive remote control
- Free deckWatch App for Android Wear 2 smart watches providing navigation data and alarms right on your wrist.
- Wide variety of compatible 3rd party apps for Windows, Mac, iPhone, iPad and Android.



## SPECIFICATIONS

XB-8000 SMARTAIS	
SIZE	200mm wide x 130mm high x 60mm depth (7 7/8" x 5 1/8" x 2 3/8")
POWER SUPPLY	10-32 VDC 2A max, 3W nominal
ENVIRONMENTAL	Waterproof (IPx7)
OPERATING TEMPERATURE	-25°C to +55°C (-13°F to 131°F)
STORAGE TEMPERATURE	-25°C to +80°C (-13°F to 176°F)
NUMBER OF RECEIVERS	2 AIS, 1 DSC (timeshared)
NUMBER OF TRANSMITTERS	1 AIS
RECEIVE FREQUENCY RANGE	156.025 – 162.025 MHz
TRANSMIT FREQUENCY RANGE	161.500 – 162.025 MHz
AIS SENSITIVITY	-113 dBm < 20% PER
POWER OUTPUT	33 dBm (2W)
GPS SENSITIVITY	-159dBm tracking & navigation -142dBm acquisition
GPS DIFFERENTIAL SUPPORT	SBAS: WAAS, EGNOS, MSAS, GAGAN
GPS NAVIGATION RATE	Selectable 1Hz or 5Hz with magnetic variation included in output
SERIAL DATA	1 USB port (isolated), 1 NMEA input (isolated RS422), 1 NMEA output (RS422)
NMEA 2000 GATEWAY	Converts selected instrument PGN's to and from 0183, WiFi and USB
USB CONNECTOR	Mini USB (USB 2.0)
NMEA 2000 CONNECTOR	NMEA 2000 Micro-C male. Requires female drop cable (not included)
WIRELESS	802.11 b/g in Access Point or Client Mode
ACCESS POINT SECURITY	WPA2 Personal
CLIENT MODE SECURITY	None, WPA & WPA2 Personal

All stated specifications are subject to change without notice or obligation. Dimensional measurements based on metric.

XB-8000 SMARTAIS	
PRODUCT CODE	Class B smartAIS with NMEA 2000, USB, WiFi
UPC	0609728265359
DESCRIPTION	WatchMate XB-8000 smartAIS Transponder with WiFi and NMEA 2000 Gateway
INCLUDED	GPS antenna with 10m (33') cable, External Alarm and Switch, Installation Guide, 2m (6.5') Power/data cable, 1m (3') USB cable
PACKAGING	200 x 130 x 60mm (7 7/8" x 5 1/8" x 2 3/8")

## OPTIONAL ACCESSORIES

CODE	DESCRIPTION
SP160	SP160 VHF/AIS Antenna Splitter
39307	5m (15ft) Locking Waterproof USB cable

## BUNDLES

CODE	DESCRIPTION
XB8000B1	XB-8000 smartAIS Transponder Bundle (Includes SP160 Splitter)

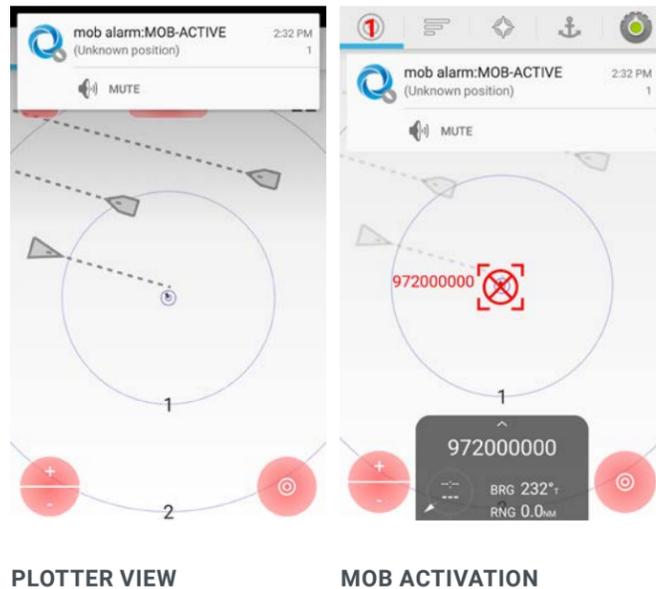


# WatchMate App

Configure and Monitor your XB-8000 *smartAIS* anywhere on board with the FREE WatchMate App. WatchMate is available for your smartphone and tablet and works with your XB-8000 *smartAIS* transponder.

WatchMate is available for Android and Apple iOS. Connect up to 5 devices to your XB-8000 via the on board Wifi connection.

WatchMate turns your mobile devices into a convenient and powerful interface to configure and manage your *smartAIS* transponder. See nearby AIS targets. Be alerted to potential collisions or Man Overboard emergencies. Manage alarms and alarm profiles. Update your transponders firmware with the latest improvements and updates.



PLOTTER VIEW

MOB ACTIVATION



## AIS DATA FOR NAVIGATION SOFTWARE

Third party apps and software (examples include Navionics, TZ iBoat, Aquamaps, iNavX, iSailor and others) also display AIS data. Many come with pre-configured set-up for Vesper Marine *smartAIS* transponders. If not, simply enter the *smartAIS* transponder IP address and Port number to begin receiving data from a Vesper Marine transponder equipped with WiFi. For more information visit [support.vespermarine.com](http://support.vespermarine.com)

## COMPLETE MONITORING AND CONTROL

View and update vessel information, monitor transponder and GPS status, display all AIS-equipped vessels within range on the easy to view 'radar' plotting screen.

## MANAGE ALARM SETTINGS

Set collision avoidance alarms such as Closest Point of Approach (CPA) and Guard Alarm individually or together. The CPA Alarm sounds if a vessel will get too close in the future if you both continue as you are while the Guard Alarm alerts you if a vessel comes within a specified distance of your boat.

## ANCHOR WATCH

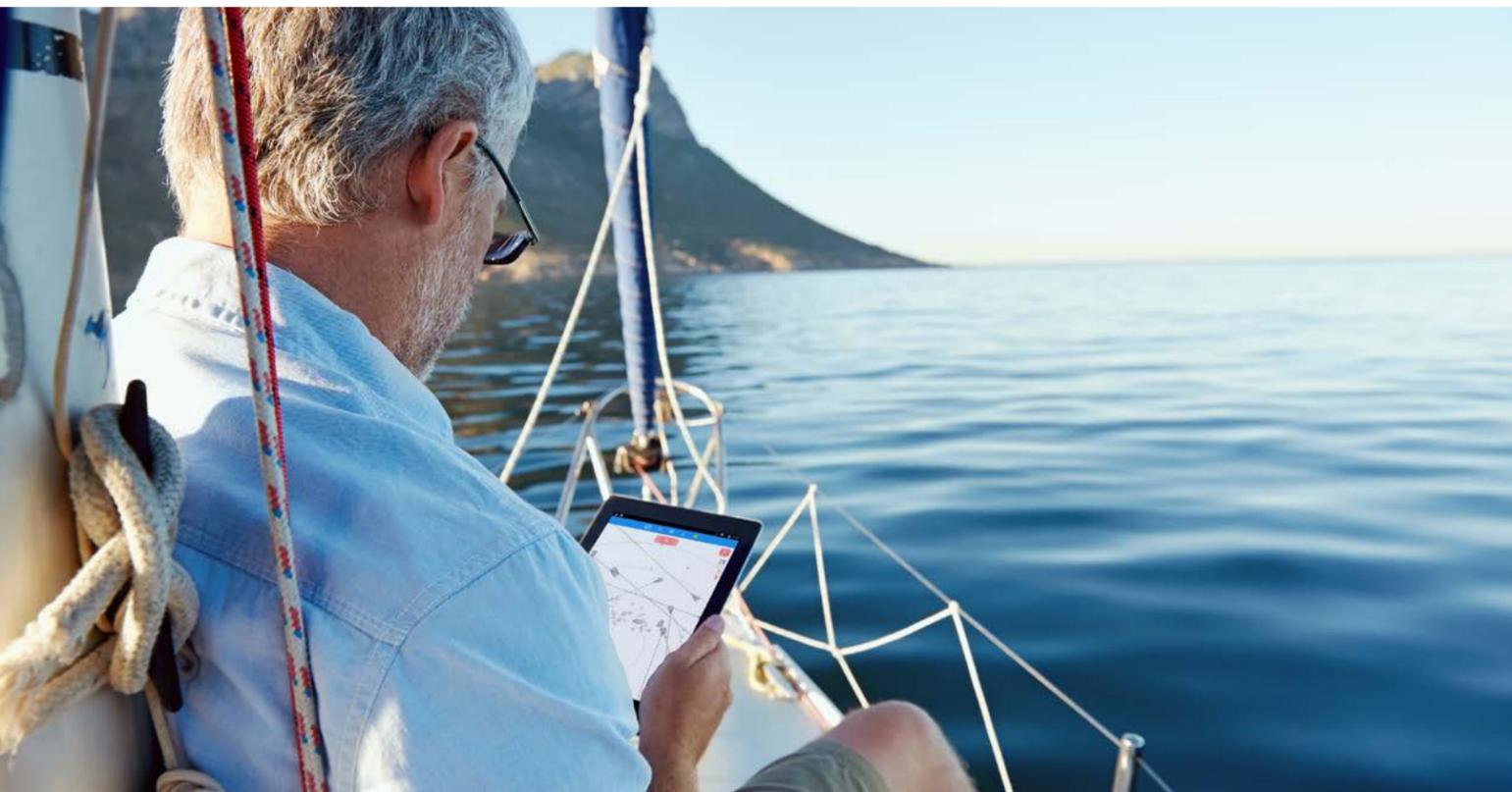
Activate the Anchor Watch on your WatchMate XB-8000 from anywhere on your boat. Monitor your position relative to the anchor location on your Apple or Android phone or tablet and receive alarms wherever you are on board.

## TRANSPONDER FIRMWARE UPGRADE

Download updates for your XB-8000 *smartAIS* to your smart device using the WatchMate App. You can then update your transponder from your smart device when on board the boat. Updates to firmware ensure performance and offer new features as they are released.

## INSTANT TARGET ACQUISITION

The WatchMate App is the only mobile app with instant identification of other vessels. All other apps and MFDs take time for AIS targets to appear, but the WatchMate app takes advantage of unique NMEA gateway capabilities of your WatchMate XB-8000, so it displays all received vessel information the instant you start the app.





# deckWatch App



## SMARTAIS ON YOUR WRIST

deckWatch will transform your boating safety. deckWatch is a FREE smartwatch app designed to operate on any Android Wear 2 smartwatch.

deckWatch gives you instant access to critical safety information from your wrist, anywhere on board. Get alerted to important *smartAIS* alarms for Anchor Watch, Collision Avoidance or Man Overboard.

deckWatch works with WatchMate Vision2 and WatchMate XB-8000 *smartAIS*. Download deckWatch from Google Play to your Android Wear 2 smartwatch. Connect your smartwatch to your *smartAIS* transponders Wifi source and you are ready to go!

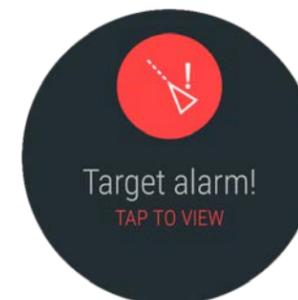
## AWARD WINNING

deckWatch is the winner of the NMMA Innovation Award in the Safety Equipment Category (IBEX) as well as a nominee for the DAME Design Award in the Life-saving and Safety Equipment Category (METSTRADE) Exhibition (IBEX).



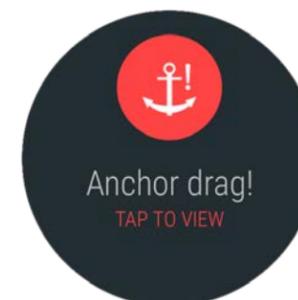
## COLLISION AVOIDANCE

View collision target with details of vessel name, CPA, TCPA, distance and bearing information to help you contact the vessel in an emergency. Scroll from one target to the next. When a target vessel turns orange, that's a warning sign of a potential collision. When red, you have a high collision risk and an alarm is triggered. See the target that is on a collision path with your vessel to enable you to take immediate action.



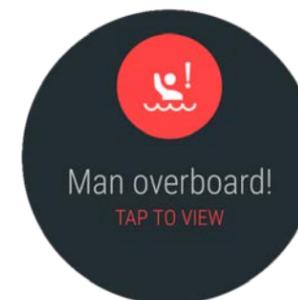
## ANCHOR WATCH

When you drop anchor, tap the Anchor Icon on the deckWatch App to mark its position. deckWatch updates the bearing and distance of the vessel from the Anchor position. If the Anchor drags outside the specified radius, you get an alarm and the anchor icon turns red on the deckWatch screen. See the anchor position, monitor navigation information and take necessary action.



## MAN OVERBOARD

In case a crew member falls overboard and activates an MOB device (of any manufacturer) an MOB alarm sounds on your *smartAIS* transponder. Check the alarm on your deckWatch App and continuously monitor the MOB location with bearing and distance for immediate retrieval.



## INSTRUMENT DATA

See key instrument data from your *smartAIS* or connected network sensors.



**THE DECKWATCH APP IS ONLY AVAILABLE ON ANDROID WEAR2 DEVICES AND IS ONLY COMPATIBLE WITH WATCHMATE VISION2 AND XB-8000. DECKWATCH IS NOT COMPATIBLE WITH CORTEX.**

# XB-6000

XB-6000

## DESCRIPTION

This high performance Class B AIS with built-in NMEA 2000 gateway and internal GPS, XB-6000 integrates AIS, GPS and NMEA information so that you can see your safety and navigation on any AIS-capable chart plotter or MFD. Or use your PC and Mac for easy computer navigation. Easily integrate AIS to your existing marine electronics and convert NMEA 2000 & 0183 instrument data to USB, facilitating 3rd party navigation software.



- NMEA 2000 / 0183 and waterproof USB
- Compatible with all NMEA 2000 certified chart plotters and MFD's
- Can be used as a GPS source for NMEA 2000
- Fast 5Hz GPS update rate provides greater detail and higher resolution plotting
- Silent Mode (receive-only)
- Includes 50 channel GPS with WAAS/EGNOS and powerful external GPS antenna
- Built-in internal GPS antenna allows for easy installation when the XB-6000 has a view of the sky. Perfect for small vessels
- Galvanically isolated, protecting NMEA and USB connections from ground loops and damage to connected devices

XB-6000	
PRODUCT CODE	XB6000
UPC	0799439639010
DESCRIPTION	WatchMate XB-6000 Transponder with NMEA 2000 Gateway
INCLUDED	GPS antenna with 10m (33') cable, Installation Guide, 2m (6.5') Power/data cable, 1m (3') USB cable
PACKAGING	240 x 182 x 140mm (X" x X" x X") 1.43kg (X.XX lb)

## OPTIONAL ACCESSORIES

CODE	DESCRIPTION
SP160	SP160 VHF/AIS Antenna Splitter
39307	5m (15ft) Locking Waterproof USB cable

## BUNDLES

CODE	DESCRIPTION
XB6000B2	XB-6000 Transponder Bundle (Includes SP160 Splitter)

## SPECIFICATIONS

XB-6000	
SIZE	200mm wide x 130mm high x 60mm depth (7 7/8" x 5 1/8" x 2 3/8")
POWER SUPPLY	10-32 VDC 2A max, 2.5W nominal
ENVIRONMENTAL	Watertight (IPx7)
OPERATING TEMPERATURE	-25°C to +55°C (-13°F to 131°F)
STORAGE TEMPERATURE	-25°C to +80°C (-13°F to 176°F)
NUMBER OF RECEIVERS	2 AIS, 1 DSC (timeshared)
NUMBER OF TRANSMITTERS	1 AIS
RECEIVE FREQUENCY RANGE	156.025 – 162.025 MHz
TRANSMIT FREQUENCY RANGE	161.500 – 162.025 MHz
AIS SENSITIVITY	-113 dBm < 20% PER
POWER OUTPUT	33 dBm (2W)
GPS SENSITIVITY	-159dBm tracking & navigation -142dBm acquisition
GPS DIFFERENTIAL SUPPORT	SBAS: WAAS, EGNOS, MSAS, GAGAN
GPS NAVIGATION RATE	Selectable 1Hz or 5Hz with magnetic variation included in output
SERIAL DATA	1 USB port (isolated), 1 NMEA input (isolated RS422), 1 NMEA output RS422)
NMEA 2000 GATEWAY	Converts selected instrument PGN's to 0183 and USB
USB CONNECTOR	Mini USB (USB 2.0)
NMEA 2000 CONNECTOR	NMEA 2000 Micro-C male. Requires female drop cable (not included)
POWER/DATA CONNECTOR	10 pin circular. Includes 2m cable with molded waterproof locking plug
VHF ANTENNA REQUIRED	50 ohm, max 2:1 VSWR @ 162 MHz. PL-259 connector

All stated specifications are subject to change without notice or obligation. Dimensional measurements based on metric.



# SP160

## SP160

### DESCRIPTION

The SP160 splitter uses amplification to increase gain and sensitivity of the AIS signal, improving AIS signal quality and range. Whilst compatible with other AIS transponders, the SP160 is designed to work with the award winning Vesper Marine WatchMate XB-Series, XB-6000 and XB-8000 smartAIS.

- Amplification to the AIS signal results in much higher AIS sensitivity, improving AIS receive range
- Very low power consumption
- Connect using standard PL-259 patch cables. There are 2x 2m (6.5ft) cables included
- Compact and easy to install with built-in mounting flanges
- LED status indicators with 4 status LEDs for power, VHF transmit, AIS transmit, antenna quality
- 12 or 24V supply
- IPx7 rated high quality rugged construction

### NO LOSS

The unique design of the SP160 means it doesn't have the signal loss associated with other AIS splitters ensuring you can achieve full performance from your VHF radio and your Vesper Marine WatchMate Transponder (or other AIS receiver or transponder).

### USE A SINGLE ANTENNA

Using an antenna splitter allows both AIS and VHF devices on board to use a shared antenna without the need to install a second.

### OPTIMALLY TUNED ANTENNA

AIS and VHF operates on very similar frequency bands. An existing VHF antenna will work to provide signal through a splitter between each. To optimise performance of the AIS it is recommended to use a correctly tuned AIS and VHF antenna. See VA159 on page 58

### VHF FAIL-SAFE

If power to the splitter fails, or the device faults, the VHF signal remains uninterrupted to ensure the VHF Radio can continue to broadcast.

### IMPROVES AIS RECEIVE RANGE

The SP160 improves AIS receive range by providing amplification to the AIS signal resulting in much higher AIS sensitivity. This is important for receiving the lower power 2W Class B AIS transceivers, AIS SART and AIS MOB devices.

### AM AND FM RADIO CONNECTION

Provides AM/FM radio connection. An optional cable with a standard 'Motorola plug' is available to make installation easy. Plugs directly into almost all car or marine stereos.



### SPECIFICATIONS

SP160	
FREQUENCY RANGE	156MHz to 163MHz
OPERATING TEMPERATURE	-25°C to +55°C (-13°F to 131°F)
ENVIRONMENTAL	Watertight (USCG CFR-46, IPx7)
POWER SUPPLY	10-32 VDC, <0.8W nominal
MAXIMUM CURRENT	270 mA
OVERALL SIZE	135mm Long x 107 Wide x 56 Deep (5 5/16" x 4 1/4" x 2 1/4") (includes connectors)
MAXIMUM VHF POWER	25W
MAXIMUM AIS POWER	12.5W
COMPATIBILITY	Fully compatible with all Vesper Marine AIS transponders and receivers. Also compatible with other manufacturer's AIS receivers and transponders and will typically increase their performance.
ANTENNA CONNECTOR	50 ohm, SO-239 (UHF)
VHF & AIS CONNECTORS	SO-239 (UHF). Requires two appropriate length standard 50 ohm patch cables with PL-259 plugs (two 2m (6.5ft) cables included).
AM / FM CONNECTOR	75 ohm, BNC, optional 2m (6') cable available BNC to Motorola plug
PATCH CABLE	Two provided as standard. 2m (6.5ft) long 50 Ω cable with PL259 connectors.
INSERTION LOSS	VHF RX <1.5dB / VHF TX <1dB / AIS TX <1dB
AIS RECEIVE GAIN	12dB
NOISE FIGURE	<1.5dB
SWITCHING TIME	<10µs
SENSITIVITY	-119 dBm, 6dB improvement

All stated specifications are subject to change without notice or obligation. Dimensional measurements based on metric.



### EASY TO INSTALL

Once mounted, connection to AIS and VHF devices is done easily using standard PL-259 connector patch cables (2 are included with the SP160). For AM/FM signal, use a BNC connector, see AM/FM Patch Cable on page 59



# Which AIS is right for me?

BENEFIT	CORTEX M1 SMARTAIS	WATCHMATE XB-8000 SMARTAIS	WATCHMATE XB-6000 AIS
REMOTE MONITORING	✓	✗	✗
SOFTWARE UPDATEABLE VIA THE MOBILE APP	✓	✗	✗
AIS TRANSPONDER CLASS	CLASS B SOTDMA	CLASS B CSTDMA	CLASS B CSTDMA
BUILT-IN NO-LOSS AIS SPLITTER	✓	✗	✗
VHF AND DSC READY AIS TRANSPONDER	✓	✗	✗
AWARD WINNING SMARTAIS TECHNOLOGY	✓	✓	✗
EASY TO USE CUSTOMIZABLE ALARM CONTROLS	✓	✓	✗
EXTERNAL ALARM NOTIFICATION	Voice Annunciated	Alarm Buzzer	✗
COLLISION ALARM WITH MULTI PROFILES	✓	✓	✗
ALARMS FOR AIS PORTABLE MAN OVERBOARD DEVICES	✓	✓	Using chart plotters, MFD's and computer software
ANCHOR WATCH ALARM	✓	✓	✗
CAN CONNECT WIRELESSLY TO OTHER DEVICES USING WIFI	✓	✓	✗
CONTROLS TRANSPONDER, SILENT MODE AND OTHER SAFETY FEATURES REMOTELY VIA IPHONE/IPAD AND ANDROID APPS	✓	✓	✗
USE WITH STANDARD APPLICATIONS SUCH AS INAVX, SEAIQ, ISAILOR, ETC. ON IPADS AND ANDROID TABLETS	✓	✓	✗
EASY INTERFACING TO ALL CHART PLOTTERS, MFD'S AND COMPUTERS SUPPORTING AIS	✓	✓	✓
HIGH PERFORMANCE CHANNEL BUILT-IN GPS RECEIVER	72 Channel	50 Channel	50 Channel
GPS ANTENNA REFRESH REFRESH RATE	10Hz	5Hz	5Hz
CAN BE USED AS PRIMARY GPS ON A NMEA 2000 NETWORK	✓	✓	✓
INTERNAL GPS ANTENNA ELIMINATES NEED FOR EXTERNAL ANTENNA WHEN MOUNTED WITH A VIEW OF THE SKY	✗ Includes external antenna	✓ Includes external antenna (recommended)	✓ Includes external antenna (recommended)
BI-DIRECTIONAL NMEA 0183 TO WIFI GATEWAY	✓	✓	✗
BI-DIRECTIONAL NMEA 2000 TO WIFI GATEWAY	✓	✓	✗
BI-DIRECTIONAL NMEA 2000 TO NMEA 0183 AND USB GATEWAY	✓	✓	✓
ABILITY TO CONNECT TO COMPUTERS VIA WATERPROOF USB	✗	✓	✓
GALVANIC ISOLATED USB PROTECTS COMPUTER AND AIS FROM DAMAGE	N/A	✓	✓
WATERPROOF, CAN BE EXTERNALLY MOUNTED	✓	✓	✓
SELF DIAGNOSIS TO PROVIDE WARNINGS IF AIS, GPS OR ANTENNA ARE NOT FUNCTIONING	✓	✓	✓

BENEFIT	CORTEX M1 SMARTAIS	WATCHMATE XB-8000 SMARTAIS	WATCHMATE XB-6000 AIS
TRANSPONDER CAN BE PUT INTO SILENT MODE (RECEIVE ONLY)	✓	✓	✓
FULLY CERTIFIED NMEA 2000	✓	✓	✓
CUSTOMIZE AND FILTER TARGETS WHEN OPERATING IN BUSY AREAS	✓	✗	✗
COMPUTES & PRIORITIZES TARGETS BY CPA, TCPA, BEARING, RANGE ETC	Cortex Handsets, Cortex Onboard App (iOS & Android)	Using our free iOS and Android apps	✗
SHOWS YOUR OWN GPS POSITION, COURSE, SPEED AND HEADING	Provides GPS info to all connected devices	Provides GPS info to all connected devices	✗
GRAPHICALLY DEPICTS FUTURE CROSSING SITUATIONS	Cortex Handsets, Cortex Onboard App (iOS & Android)	Using our free iOS and Android apps	N/A
HEADING-UP/NORTH-UP DISPLAY	Cortex Handsets, Cortex Onboard App (iOS & Android)	Using our free iOS and Android apps	✗
DISPLAYS MAGNETIC BEARINGS AND AIDS TO NAVIGATION MARKS	Cortex Handsets, Cortex Onboard App (iOS & Android)	Using our free iOS and Android apps	✗
USING CHART PLOTTERS, MFD'S AND COMPUTER SOFTWARE	✓	✓	✓
VHF RADIO DSC CALLING BY SELECTING A TARGET ON THE SCREEN	✓	✗	✗
POWER CONSUMPTION @ 12V	500mA nominal	330mA nominal	<250mA nominal

## UNIVERSAL BENEFITS



### COMPATIBILITY

Vesper Marine products are fully compatible with all AIS capable MFDs and chart plotters.

If your MFD is not AIS capable you can use Vesper Marine transponders independently via a dedicated handset (Cortex) or connected tablet over built in WiFi.



### EASY INSTALLATION

Vesper Marine focuses on ensuring our products are simple to install and configure. Saving time and frustration.

No computer is required for configuration. XB-8000 can be configured over WiFi using the free WatchMate app. Cortex can be set up using a connected Handset or using the Cortex Onboard app on your device.



### LEADING SUPPORT

Diagnostics via your phone – use a smartphone or tablet via WiFi for diagnostics and troubleshooting.

Antenna troubleshooting – tools for identifying difficult to find antenna problems.

AIS expertise – nobody knows AIS like Vesper Marine. Customers rate Vesper Marine technical support as the best in the world.

# Vesper Marine Product

PRODUCTS			
SKU	IMAGE	NAME	DESCRIPTION
200221		Cortex V1 (Hub + Tethered Handset) USA & Canada	VHF radio with SOTDMA <i>smartAIS</i> transponder and remote vessel monitoring. H1 Tethered handset. Includes GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, WiFi Antenna. USA & Canada Monitoring.
267221		Cortex V1 (Hub + Tethered Handset) Rest of World	VHF radio with SOTDMA <i>smartAIS</i> transponder and remote vessel monitoring. H1 Tethered handset. Includes GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, WiFi Antenna. Rest of World Monitoring.
100131		Cortex M1 (Hub Only) USA & Canada	SOTDMA <i>smartAIS</i> transponder with remote vessel monitoring. (VHF ready) Includes GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, WiFi Antenna. VHF Patch Cable. USA & Canada Monitoring.
113131		Cortex M1 (Hub Only) Rest of World	SOTDMA <i>smartAIS</i> transponder with remote vessel monitoring. (VHF ready) Includes GPS Antenna, Power Cable, Audio Cable, External Sensors Cable, WiFi Antenna. VHF Patch Cable. Rest of World Monitoring.
100081		Cortex H1 Tethered handset	Tethered handset, bulkhead connector and non-powered cradle.
108116		Cortex H1P Portable handset	Wireless handset with charging cradle and non powered cradle.
XB8000		XB-8000 <i>smartAIS</i> Transponder	Class B <i>smartAIS</i> with NMEA 2000, USB, WiFi (incl. external GPS antenna)
XB6000		XB-6000 AIS Transponder	Class B AIS with NMEA 2000 gateway and built-in GPS antenna (incl. external GPS antenna)

ACCESSORIES			
SKU	IMAGE	NAME	DESCRIPTION
111210		3" Waterproof External Speaker	70W Waterproof External Speaker with 2M (6ft) of cable
233050		Cortex H1 Cradle	Cortex Non-powered H1 Tethered handset cradle
311011		Cortex H1 Bulkhead fitting	Cortex H1 handset bulkhead power fitting
233366		Cortex H1P Cradle	Cortex Charging H1P Portable handset cradle (Powered)
151000		Railblaza Adaptor	Fits to the rear of a Cortex handset cradle to connect with Railblaza mounting hardware.
GPA762		Cortex External GPS Antenna	Cortex GNSS Antenna. 10M (33ft) cable, Deck and Under deck mounts included.
GPA680		Cortex External Cellular Antenna	Cortex Cellular Antenna. 5M (16ft) cable, Deck and Under deck mounts included.
211010		Cortex GPS Antenna Patch Cable	10M (33ft) Cortex GPS Low Loss Patch Cable. SMA connection to Cortex M1.
111685		Cortex Cellular Antenna Patch Cable	5M (16ft) Cortex Cellular Antenna Low Loss Patch Cable. SMA connection to Cortex M1.
505005		Cortex External WiFi Antenna	Cortex WiFi Antenna. SMA connection to M1.

211002		Cortex VHF Patch Cable	2M (6ft) Cortex VHF Patch Cable. BNC to PL259 from the M1 VHF Auxiliary port to External VHF Radio.
505010		Cortex Power Cable	2M (6ft) Cortex Power Cable.
505042		NMEA 2000 Drop Cable	2M (6ft) NMEA 2000 Drop Cable.
505050		NMEA 2000 Tee	NMEA 2000 Tee
SP160		AIS / VHF Splitter	Low loss design with 12dB AIS amplifier gain and antenna VSWR indicator
VA159		AIS / VHF Antenna	AIS/VHF antenna specially designed for sharing with VHF radio. Uniquely optimized for both AIS and VHF.
GPA901		GPS Antenna	External GPS antenna for WatchMate Vision. With 10M ( 30ft) cable
39914		GPS Antenna Extension Cable	10M (33ft) Cortex GPS Low Loss Patch Cable. SMA connection to XB-6000, XB-800, XB-9010.
41005		External Alarm	External alarm with adjustable volume vane. Pulsed or continuous tone.
141025		Alarm Mute Switch	Exterior suitable stainless steel sealed momentary switch with bezel for alarm mute
141005		External Alarm and Alarm Mute Switch	Exterior suitable stainless steel sealed momentary switch with bezel for alarm mute and External alarm with adjustable volume.
39307		USB Cable	5M (15ft) locking USB cable that will not fall out due to vibration or impacts.

39425		PL259 Patch Cable	2M (6ft) patch cable. To go between Splitter and VHF radio or Splitter and AIS.
39309		Power Data Cable	2M (6ft) patch cable for WM850, XB-6000, XB-8000, XB-9010
39310		AM/FM Patch Cable	2M (6ft) cable with a BNC connector for the Splitter and a Motorola plug to the AM/FM radio.

## WHERE TO BUY

Vesper Marine products are available world-wide from a range of authorised resellers and installers.

Find a reseller near you at [vespermarine.com/where-to-buy](https://vespermarine.com/where-to-buy)



