

Using Marinetraffic.com to Test if AIS Transponder is Transmitting

How do I know that I am transmitting my signal?

Each Vesper Marine transponder has an indicator that it is transmitting. On a WatchMate 850 and WatchMate Vision, look for the warning symbol (triangle with an exclamation point). If this symbol is not present, the transponder is transmitting. For an XB-8000, look for the green LED. If the green LED is showing solid, it is sending. The hub's status lights will indicate any transponder issues on the Cortex.

How to check that the antenna system is working? All three transponders have a VSWR meter, which is a good indicator. On the 850 and Vision, it's on the screen on the AIS Status page. For the XB-8000 and Vision, notices display on the iPhone app. And finally, for all three transponders, you can see if on the Status page of the vmAIS PC & Mac application. On the Cortex, the antenna icon will turn red if VSWR is above 3.1.

The VSWR meter is not a calibrated instrument but is a good indicator of antenna system quality.

- Low VSWR range, the antenna system is sound
- Mid-high VSWR range, the antenna system needs improvement
- High (red zone - far to the right on the 850), the antenna system is not doing its job and needs attention

All Vesper devices have an AIS system diagnostic view, which gives the AIS TX and RX status of the two Channels A/B. The channels measurements are MHz 161.975 and 162.025- and corresponding RSSI (noise reading) and RX and TX message counters- if these are going up over time, the AIS is transmitting and receiving.

The most common antenna system problems:

- Connectors - fastened and secure. Check for shorts or opens
- Cables - ensure all cables are proper 50ohms shielded antenna cables
- Antenna - some VHF antennas do not have enough bandwidth to cover the 162 MHz AIS frequency range. Choose an AIS-tuned antenna
- Antenna & cables - cables can degrade over time, water intrusion, or other damage, causing the cable to fail. Replace older cables if suspected

What about marinetraffic.com?

Sites like marinetraffic.com, Shipfinder, and others work by crowdsourcing AIS data from various users and AIS receivers. The quality of the AIS receivers and the location of receivers sometimes being inland further limit the

accuracy of sites that track marine vessels. The AIS data is shared via the internet, and the sites depend on a full-time connection to the receiver stations. Sites that follow ships are helpful but have limitations and are not a definitive or reliable indicator of transmission capability.

Not seeing your vessel? Are other vessels being seen? How long ago was the last position report of vessels shown? When stationary, the transponder will send a position every 3 minutes. If the receiver is a single channel model, it takes up to 6 minutes to receive the signal.

What's the best way to know it's transmitting?

Do the antenna system checks above, and if all that looks good, then do what radio operators have always done, call for a radio check, call a friend on a nearby boat or a passing ship to inquire. Keep in mind the expected range and the interval that the transponder is transmitting (every 3 minutes when stationary).

The vessel is displayed but not the boat name

AIS information transmits multiple messages. Position sends frequently (every 30 seconds when moving and every 3 minutes when stationary), boat name, size, callsign, non-critical are only sent once every 6 minutes. All Vesper Marine AIS receivers and transponders are two-channel. But if the other boat or shore station receiver is a single channel model, then it can take up to 12 minutes to receive details.

Are there any other ways to confirm?

Have a look at the AIS Status page (Advanced on Vision) shows TX counts for each channel. These will increase every time the transponder transmits, and it displays on the schedule above. It will alternate channels between transmissions; this also shows. Finally, the vessel details take two messages to send, so it "jumps" by two every 6 minutes confirming the boat's details have just been transmitted.