

SRT Marine Systems statement regarding Navico/AMEC Class B AIS

November 3, 2017

Last month SRT Marine Systems PLC was contacted by some vessel owners about performance issues with their AIS Class B transceivers. These were sent to SRT for testing. The product in question was the NAIS-500 AIS Class B from Navico which uses an AIS Class B engine supplied by ALLTEK/AMEC in Taiwan. (Please note that the NAIS400 uses an SRT supplied AIS Class B engine).

Upon initial inspection by our engineers it was evident to us that, in our opinion, due to the design it would be impossible for the product to fully comply with the AIS Class B standard as defined by the IEC and ITU and that this would most probably be the cause of the issues. Our engineering department carried out some testing which confirmed non-compliance with the AIS Class B standards.

There are many hundreds of parameters defined by the AIS standards, therefore due to the substantial resources required for full testing we only focused on a couple of evident areas. The tests revealed that the product was non-compliant in respect of the performance of the receiver. The receiver is an essential part of all AIS transceivers.

The potential effect of this non-compliance to a user is two-fold:

1. The transceiver may miss transmissions. Due to the inability of the radio to efficiently filter spurious radio signals, AIS transmissions will be blocked. The result is that the user may not see the ship about to collide with them.
2. The radio will believe that transmit slots are busy. Due to the radio mistakenly believing that transmit slots are busy, it will not transmit. In busy areas this may result in the transceiver not transmitting.

Because of the potentially serious impact of these issues, we decided to contract the world's largest and most respected independent, government accredited testing organisation (TUV) to test the product and check our own results. The TUV testing and formal report confirmed the non-compliances.

Upon receipt of this formal corroboration, given the seriousness of the matter, we immediately informed Navico and the relevant radio approval authorities, providing them with copies of the test report.

In Europe and North America, if a manufacturer claims that a product is compliant to a certain standard and or specification, it is usual that an accredited independent test house is engaged to test and confirm this claim. In the case of transmitting devices, such as AIS, then the law requires that any product claiming to conform to a particular standard/specification is certified by the relevant bodies. In the US, for an AIS transceiver those certifying bodies are the FCC and USCG, in Canada, it is Industry Canada and in Europe it is the Radio Equipment Directive.

It is illegal for a transmitting product to be sold and or used without formal approval. The process for a manufacturer to gain formal approval/certification is both simple and complex. Simple, in that you simply need to present a package of test reports from accredited testing houses to the certifying body (such as the FCC) which prove that the product is compliant to the relevant standard in all respects. These test reports are reviewed and then a certificate issued confirming approval. Complex, in that the testing process by a proper test house is extremely intensive and detailed, normally costing \$100,000's and taking more than 6 months. Done properly many thousands of tests are undertaken to ensure the product really does conform to the required standards.

SRT Marine Systems has been developing AIS transceivers since the 1990's. We were the first to develop a base station and Class A transceiver engine in the 1990's for a major marine electronics company, and the first to develop Class B in 2005. We are active contributors to the IEC and ITU AIS standard committees. We have manufactured and shipped over 200,000 transceivers in the last decade which are used around the world by leisure, commercial and military users.

We believe that AIS is an incredible technology and therefore its reliability, performance and integrity is critical to its future. As such we are extremely interested in ensuring that the minimum required AIS standards are truly maintained in all AIS products for the benefit of all users. This is why all SRT based AIS products are over engineered to deliver exceptional performance, functionality and reliability and independently tested by the world's most robust and respected test houses.

This action has arisen from a customer product return to SRT. When testing showed such a material non-compliance, as a professional company with a major stake in the success of AIS, we had no choice but to check our testing was correct and when this was confirmed to advise all those concerned. This will protect AIS and most importantly the mariners who rely upon its functionality for their safety.