

XB8000/XB9000 Wi-Fi Changes



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Version History

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Introduction

The Vesper Marine *WatchMate Vision* is a AIS Class B transponder (BSH/46162/4322190/12, BAPT:NC16912 i01). It uses an LCD as the primary interface for the device. The hardware of the *WatchMate Vision* has been updated. The *WatchMate vision* will maintain the current feature set while improving the performance of the Wi-Fi with a new Wi-Fi module.

A second product, the *XB-8000* (BSH/46162/4322189/12, BAPT:NC16912 i01) is a simplified version of the *WatchMate Vision* it's circuitry is identical except it omits the LCD display and is placed in a different housing. Since they are so similar, it is expected both products will have the same requirements, so this document will only refer to the *WatchMate Vision* (or *WatchMate Touch*).

The only change made is the replacement of a part that has gone EOL with a functionally equivalent part. This means that the model number do not need to change, as the model number reflects the functionality on the unit, and the functionality has not changed. In the test report R1706276-11 the test report refers to XB8000 as XB8010 and XB9000 as XB9010. This was done for clarity during testing.

Product Identification

Product Identification	
Products	WatchMate Vision, XB-8000
Trade Name	Vesper Marine Ltd
Model Number(s)	XB9000, XB8000
Intended Users	General Public
Equipment type	Fixed (Not portable), Exposed to Weather
General Technical Specifications	
Power Supply	12-24V DC
AIS Frequency Range	161.500 - 162.025 MHz TX 156.025 - 162.025 MHz RX
AIS Transmit Power	33dBm (2W)
Modulation Technique	FM GMSK
Channel Spacing	25KHz
Temperature Range	-25 - +55 deg C
GPS Antenna	Internal patch antenna (with connection for optional external antenna)
WiFi	802.11 b/g/n
WiFi Antenna	SMT PCB
WiFi Power Output	15 dBm
Enclosure	IPX7
Firmware Version	V5.19
Equipment Category	Exposed

Hardware Modifications

The only change that has been made is a replacement of the Wi-Fi module inside the product. Previously the WatchMate Vision was certified with the Wi2Wi module W2SW0001C. This module has gone end of life, has been replaced by a new module from the same manufacturer, W2CB0015W.

There are two variations of the W2CBW0015W module; W2CBW0015 and W2CBW0015W. The W2CB20015 has both Wi-Fi and Bluetooth, W2CBW0015W is the same module however the Bluetooth is disabled. The W2CBW0015W is the module used in the XB series.

Relevant Standards

Article 3.1(a)

EN 50385:2002

EN 60950-1:2006/A2:2013

EN 60945:2002 including IEC 60945 Corrigendum 1 (2008)

Article 3.1(b)

EN 60945:2002 including IEC 60945 Corrigendum 1 (2008)

EN 301 843-1 v1.3.1 (2012-08)

EN 301 489-17 V1.3.2 (2008-4)

Article 3.2

IEC 62287-1 Edition 3.0 (2017-04) – Clause 11

IEC 61108-1:Ed2 (2003-07)

EN 300 328 V2.1.1 (2016-11)

Article 3.3(e)

IEC 62287-1 Edition 3.0 (2017-04) – Clause 9, 10, 12, 13

FCC 47 CFR Part 15C

FCC 47 CFR Part 80

RSS-Gen Issue 4 (2014)

RSS-247 Issue 2 (2017)

The Testing Requirements section describe how previous test reports have been used to show compliance where retesting was not deemed necessary.

Risk Assessment

A complete risk assessment was completed and is covered by the test reports showing compliance to EN 60950 and EN 50385. These reports cover considerations given to both low voltage operation of the equipment and exposure to electromagnetic fields from its intentional radiation during an AIS transmission. The EN 60950 test report was reviewed, it was determined that the hardware modifications made do not affect this standard. The EN 50385 test report was updated to reflect the hardware changes. The changes made to the

WatchMate Vision only has a very small impact on the risk assessment.

Testing Requirements

The WatchMate Vision has already been tested to all the applicable standards with the previous Wi-Fi module. The new Wi-Fi module has modular certification for ISED, FCC and EU (EN 300 328 V1.8.1). The antenna used on the WatchMate Vision for Wi-Fi is not the same type as was used for certification.

The testing required is:

- EN 300 328 4.3.2.9: Tx Unwanted Emissions in the Spurious Domain
- EN 300 328 4.3.2.11: Receiver Blocking

EN 300 328 4.3.2.9: This test is required to show that the emissions of the Wi-Fi module have not degraded due to the change in the antenna type. This test can be applied to the other standards to show a permissive change for both FCC and the ISED certification of the Wi2Wi module.

EN 300 328 4.3.2.11: This test is required to update the EU certification of the Wi-Fi module to EN 300 328 V2.1.1. The only difference between V1.8.1 and V2.1.1 which requires a retest is the receiver blocking test.