SRT Marine Systems plc

Apollo Product Version Register

Issue	Date	Author	Review No.	Details
1	13/04/16	Adam Morris		Initial Version
2	13/12/17	Abdul Mohammed		Updated to requirements
3	20/03/18	Abdul Mohammed		Updated Koden MKD
4	17/10/18	Abdul Mohammed		Updated Raymarine MKD

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1. GENERAL INFORMATION

Applicant:	SRT Marine Systems plc Wireless House First Avenue Westfield Industrial Estate Midsomer Norton BA3 4BS UK
Equipment under test:	Marine AIS (Automatic Identification System) Class A Transceiver
Type:	Apollo
Manufacturer:	SRT Marine Systems plc Wireless House First Avenue Westfield Industrial Estate Midsomer Norton BA3 4BS UK

2. Summary

This document defines the changes to the design of the Apollo AIS Class A transceiver which took place during the testing carried out in order to achieve compliance with the Marine Equipment Directive for this type of equipment.

The following sections define the version of the design which is being submitted for an opinion under the MED and the changes made to reach this design after formal testing had commenced.

The version of the design is defined in terms of a number of elements as follows:

1. AIS modem software version
2. MKD software version
3. AIS modem PCA hardware version
4. MKD PCA hardware version

3. Declaration of Product version

The Apollo product version being submitted under the Marine Equipment Directive is defined as follows:

AIS modem software version	110200.01.
MKD software version	110400.01.
AIS modem PCA hardware version	5.0
MKD PCA hardware version	5.0

SRT declares that all testing completed on earlier product versions and included as part of this TCF submission are equally valid for the final versions as defined above. All new versions of software and hardware undergo significant design proving and regression testing to ensure that all previous test results remain valid.

4. Differences between versions

4.1 AIS modem hardware

Start version	End version	Changes
3.0	4.0	Circuit and layout improvements for enhanced EMC emissions performance. Circuit and layout improvements for enhanced EMC immunity performance. Circuit and layout improvements for enhanced RF performance. Layout improvements to enhance manufacturability.
4.0	4.1	BoM changes for enhanced RF performance.
4.1	4.1 + mod 2	Addition of capacitor and signal ferrites to enhance EMC performance.
4.1	5.0	Implementation of mod 2 into PCB design. Layout and PCB improvements to enhance manufacturability.

4.2 MKD hardware

Start version	End version	Changes
3.0	4.0	Circuit and layout improvements for enhanced EMC emissions performance. Circuit and layout improvements for enhanced EMC immunity performance. Circuit and layout improvements for enhanced RF performance. Layout improvements to enhance manufacturability.
4.0	5.0	Layout and PCB improvements to enhance manufacturability.

4.3 AIS modem software (110200.01.xx.xx)

Start version	End version	Changes
	01.00.00	The first version for software dependent type approvals testing. All testing performed with software versions prior to this does not test the performance and functionality of the software.
01.00.00	01.01.00	RF transmission control enhancements to improve RF performance. RF receiver spurious response performance improvements. Improvements and bug fixes of the NMEA 2000 interface. Improvements to the IEC 61993-2 operational performance.
01.01.00	01.01.03	Upgrade of the NMEA 2000 interface to v3.10. Improvements and bug fixes of the IEC 61993-2 operational performance.
01.01.03	01.01.05	Upgrade of the NMEA 2000 interface to v3.10 (continued). Improvements and bug fixes of the IEC 61993-2 operational performance. General operational improvement due to issues found in product validation.

01.01.05	01.01.06	Improvements and bug fixes of the IEC 61993-2 operational performance.
01.01.06	01.01.07	Improvements and bug fixes of the IEC 61993-2 operational performance.
01.01.07	01.01.08	Improvements and bug fixes of the NMEA 2000 interface.

4.4 MKD software (110400.01.xx.xx) (Standard Apollo)

Start version	End version	Changes
	01.06.00	The first version for software dependent type approvals testing. All testing performed with software versions prior to this does not test the performance and functionality of the software.
01.06.00	01.07.00	Improvements to the IEC 61993-2 operational performance. General operational improvement due to issues found in product validation. User interface and display improvements.
01.07.00	01.08.00	Improvements to the IEC 61993-2 operational performance. General operational improvement due to issues found in product validation. Improvements to the display and user interface.
01.08.00	01.08.03	Improvements to the IEC 61993-2 operational performance. General operational improvement due to issues found in product validation. Improvements to the display and user interface.
01.08.03	01.08.04	Improvements to the IEC 61993-2 operational performance. Improvements to the display and user interface.
01.08.04	01.08.05	Improvements to the display and user interface.
01.08.05	01.08.06	Improvements to the display and user interface.
01.08.06	01.08.07	Improvements to the display and user interface. Improvements to the IEC 61993-2 operational performance.

4.5 Koden MKD (110403.01.xx.xx) Software

Start version	End version	Changes
	01.10.01	The first version for software which is same as standard Apollo SRT MKD software but only with branding changes i.e. The branding in this Software will be reflecting to Koden Electronics

4.6 Raymarine MKD (110404.01.xx.xx) Software

Start version	End version	Changes
	01.13.00	The first version for software which is same as standard Apollo SRT MKD software but only with branding changes i.e. The branding in this Software will be reflecting to Raymarine

5. Statement

The Apollo software's have been modified a number of times to create new versions. These modifications have been to address issues or bugs discovered with the product or to add new features not associated with the RF function of the product. Every new version of software undergoes extensive testing that ensures the continued performance of the product in line with certification requirements.

The other product revision updates include
• updating the ratings labels with approvals numbers after all certification was completed;
• updating the enclosure fixing design to improve robustness and reliability;

Signed

Abdul Mohammed
Compliance Engineer
SRT Marine Systems plc