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Report On

FCC and Industry Canada Testing of the SRT Marine Technology Ltd
CS100 Coast Station

In accordance with FCC CFR 47 Part 80 and
Industry Canada RSS-182

COMMERCIAL-IN-CONFIDENCE

FCC ID: UYW-4230002

IC: 7075A-4230002

Document 75928171 Report 04 Issue 1

November 2014



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PREPARED FOR

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DATED

11 November 2014

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 80 and Industry Canada RSS-182. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

G Lawler



**CONTENTS**

| Section | | Page No |
|----------------|---|----------------|
| 1 | REPORT SUMMARY | 3 |
| 1.1 | Introduction | 4 |
| 1.2 | Brief Summary of Results | 5 |
| 1.3 | Declaration of Build Status | 6 |
| 1.4 | Product Information | 7 |
| 1.5 | Test Conditions | 7 |
| 1.6 | Deviations from the Standard | 7 |
| 1.7 | Modification Record | 7 |
| 2 | TEST DETAILS | 8 |
| 2.1 | Emission Limitations | 9 |
| 3 | TEST EQUIPMENT USED | 13 |
| 3.1 | Test Equipment Used | 14 |
| 3.2 | Measurement Uncertainty | 15 |
| 4 | ACCREDITATION, DISCLAIMERS AND COPYRIGHT | 16 |
| 4.1 | Accreditation, Disclaimers and Copyright | 17 |



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SECTION 1

REPORT SUMMARY

FCC and Industry Canada Testing of the
SRT Marine Technology Ltd
CS100 Coast Station

In accordance with FCC CFR 47 Part 80 and Industry Canada RSS-182



1.1 INTRODUCTION

The information contained in this report is intended to show the verification of FCC and Industry Canada Testing of the SRT Marine Technology Ltd CS100 Coast Station to the requirements of FCC CFR 47 Part 80 and Industry Canada RSS-182.

| | |
|--------------------------------|---|
| Objective | To perform FCC and Industry Canada Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out. |
| Manufacturer | SRT Marine Technology Ltd |
| Model Number(s) | CS100 Coast Station |
| Serial Number(s) | 4230001033940002 |
| Number of Samples Tested | 1 |
| Test Specification/Issue/Date | FCC CFR 47 Part 80 (2013) Industry Canada RSS-182 (Issue 5, 2012) |
| Incoming Release Date | Declaration of Build Status 09 October 2014 |
| Disposal Reference Number Date | Held Pending Disposal Not Applicable Not Applicable |
| Order Number Date | POR004895 03 October 2014 |
| Start of Test | 14 October 2014 |
| Finish of Test | 14 October 2014 |
| Name of Engineer(s) | G Lawler |



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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 80 and Industry Canada RSS-182 is shown below.

| Section | Spec Clause | | Test Description | Result | Comments/Base Standard |
|----------|-------------|-----|----------------------|--------|------------------------|
| | FCC | IC | | | |
| Transmit | | | | | |
| 2.1 | 80.211 | 7.9 | Emission Limitations | Pass | |



1.3 DECLARATION OF BUILD STATUS

| | |
|------------------------------------|--|
| Manufacturer | SRT Marine System Solutions |
| Country of origin | UK |
| Technical Description | Coast Station |
| Model No | CS100 |
| Part No | 423-0002 (423-0001 Packaged product) |
| Serial No | Sample 1: 4230002033940002 Sample 2: 4230002033940012 Sample 3: 4230002033940013 Sample 4: 4230002033940008 |
| Drawing Number | 423-0002 (423-0001 Packaged product) |
| Build Status | Pre-Production |
| Software Issue | Application Software: 080201.01.00.01 Bootloader Software: 080100.01.04.02 |
| Hardware Issue | Rev 3 |
| FCC ID | UYW-4230002 |
| IC ID | 7075A-4230002 |
| Highest Operating Frequency | 162.5 MHz |
| Signature |  |
| Date | 08.10.14 |
| D of B S Serial No | 001 |

Note: This document has been prepared to enable manufacturers with no mechanism for producing their own Declaration of Build Status, to declare the build state of the equipment submitted for test.



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1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a SRT Marine Technology Ltd CS100 Coast Station. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

The EUT was powered from a 110 V AC supply.

FCC Measurement Facility Registration Number
90987 Octagon House, Fareham Test Laboratory

Industry Canada Company Address Code
IC2932B-1 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.



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SECTION 2

TEST DETAILS

FCC and Industry Canada Testing of the
SRT Marine Technology Ltd
CS100 Coast Station

In accordance with FCC CFR 47 Part 80 and Industry Canada RSS-182



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2.1 EMISSION LIMITATIONS

2.1.1 Specification Reference

FCC CFR 47 Part 80, Clause 80.211
Industry Canada RSS-182, Clause 7.9

2.1.2 Equipment Under Test and Modification State

CS100 Coast Station S/N: 4230001033940002 - Modification State 0

2.1.3 Date of Test

14 October 2014

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

A preliminary profile of the Spurious Radiated Emissions was obtained up to the 10th harmonic by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Using the information from the preliminary profiling of the EUT, the list of emissions was then confirmed or updated under Alternative Open Site conditions. Emission levels were maximised by adjusting the antenna height, antenna polarisation and turntable azimuth.

The EUT was set to transmit on maximum power and each channel was tested independently.

For any emissions found the EUT was then removed from the chamber and replaced with a substitution antenna. Using a signal generator the level was adjusted to achieve the same value on the measuring instrument as previously recorded with the EUT. The final result was determined by a calculation using the signal generator level, antenna gain and cable loss.

The measurements were performed at a 3m distance unless otherwise stated.

2.1.6 Environmental Conditions

| | |
|---------------------|--------|
| Ambient Temperature | 19.1°C |
| Relative Humidity | 46.0% |



2.1.7 Test Results

110 V AC Supply

Radiated

161.975 MHz

30 MHz to 1 GHz

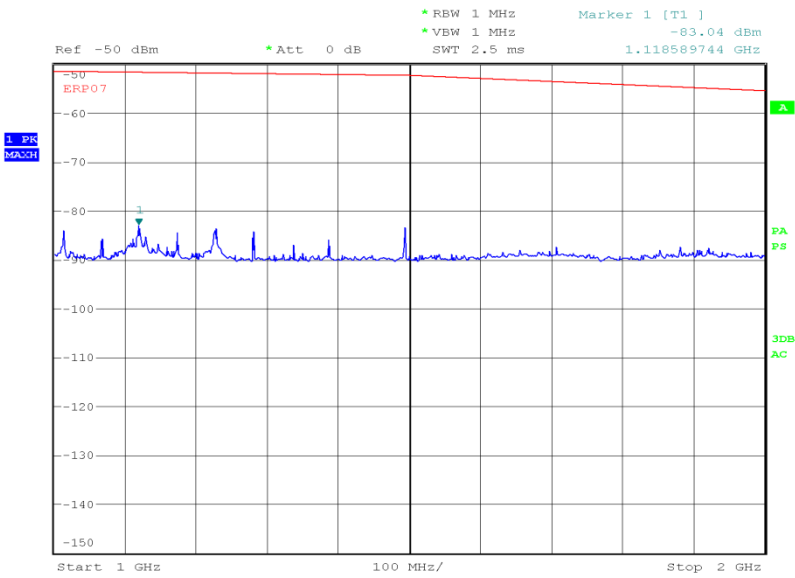


Date: 14.OCT.2014 20:11:54



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1 GHz to 2 GHz



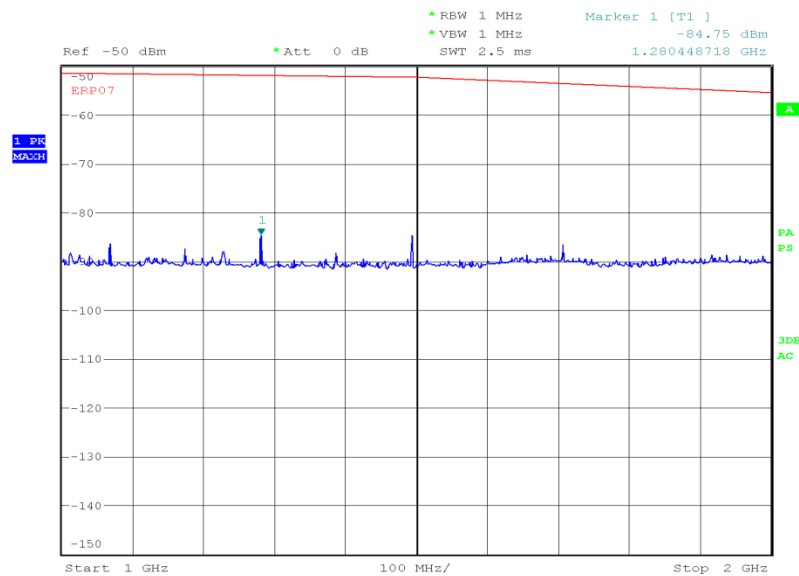
Date: 14.OCT.2014 19:22:47



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162.025 MHz30 MHz to 1 GHz

Date: 14.OCT.2014 20:20:18

1 GHz to 2 GHz

Date: 14.OCT.2014 20:22:04

Limit Clause 80.211>250 % of authorised bandwidth $43 + 10 \log P$ OR -13 dBm



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SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

| Instrument | Manufacturer | Type No. | TE No. | Calibration Period (months) | Calibration Due |
|---|-----------------|-------------------|--------|-----------------------------|-----------------|
| Section 2.1 - Emission Limitations | | | | | |
| Antenna (Double Ridge Guide, 1GHz-18GHz) | EMCO | 3115 | 234 | 12 | 2-May-2015 |
| Screened Room (5) | Rainford | Rainford | 1545 | 24 | 10-Jan-2015 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Antenna (Bilog) | Chase | CBL6143 | 2904 | 24 | 10-Jun-2015 |
| EMI Test Receiver | Rohde & Schwarz | ESU40 | 3506 | 12 | 22-Oct-2014 |
| 9m RF Cable (N Type) | Rhophase | NPS-2303-9000-NPS | 3791 | - | TU |
| Tilt Antenna Mast | maturo GmbH | TAM 4.0-P | 3916 | - | TU |
| Mast Controller | maturo GmbH | NCD | 3917 | - | TU |

TU – Traceability Unscheduled



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3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

| | |
|----------------------|-------------------------|
| Test Discipline | MU |
| Emission Limitations | Radiated: ± 3.08 dB |



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SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



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4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA
(Not UKAS Accredited).

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