



## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037702

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# TEST REPORT

Application No.:	FYCR2209000377AT
Applicant:	Navico Inc.
Address of Applicant:	4500 S. 129th East Avenue, Ste. 200, Tulsa, Oklahoma, 74134 United States
Manufacturer:	Navico Auckland Ltd.
Address of Manufacturer:	44 Arrenway Drive, Rosedale, Auckland 0632, New Zealand
Factory:	Shenzhen Fastrain Technology Co., Ltd.
Address of Factory:	No.3 Baolong 4th Rd., Baolong Industrial Area, Longgang District, Shenzhen, China
Equipment Under Test (EUT):	
EUT Name:	MARINE BLACK BOX DSC/AIS VHF RADIO SYSTEM
Model No.:	NRS-1
Trade mark:	NAVICO
FCC ID:	RAYVHFNR1
Standards:	47 CFR Part 80
Date of Receipt:	2022-09-21
Date of Test:	2022-11-07 to 2022-11-22
Date of Issue:	2022-11-30
Test Result:	Pass*

\* In the configuration tested, the EUT complied with the standards specified above.

Winkey Wang  
EMC Technical Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-11-30		Original

Authorized for issue by:			
		Tree Zhan/Project Engineer	
		Winkey Wang/Reviewer	

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## 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 80	N/A	47 CFR Part 80.3(e),	Pass

Item	Standard	Method	Requirement	Result
Transmitter frequency tolerances	47 CFR Part 80	ANSI/TIA-603-E-2016 ANSI C63.26:2015	47 CFR Part 2.1055, 80.209(a)	Pass
Spurious Emissions at antenna Terminals	47 CFR Part 80		47 CFR Part 2.1047, 80.211(f)(3)	Pass
Transmitter power	47 CFR Part 80		47 CFR Part 2.1046, 80.215	Pass
Transmitter Carrier Power Reduction	47 CFR Part 80		47 CFR Part 80.215(e)(f)	Pass

Remark:

Model No.: NRS-1

This report is prepared for FCC class II permissive change.

The modular approval by TCB, FCC ID:RAYVHFNRS1, Granted on 12/08/2020.

According to the declaration from the applicant, review this report and original report, this report just replaces the MCU, but the specification is the same as previous, the models in this report and models in original report were identical, only difference with being the supplier of the MCU, considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report, the test items in the above table were fully retested on Model NRS-1 and shown the data in this report.

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Shenzhen Branch



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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	12 VDC battery system
Cable:	DC cable: longer than 300cm unshielded
Sample Type:	Mobile device
Internal Source:	More than 108MHz
Transmitter Frequency Range:	VHF:156.025MHz-157.425MHz
DSC Transmitter Frequency Range:	156.525MHz(CH70), Meets Global DSC Class D standards.
Modulation Type:	VHF:FM for Analog; DSC:FSK
Frequency Spacing:	VHF: 25KHz
Emission Type:	16K0G3E for VHF; 16K0G2B for DSC;
Rated Output Power:	25W/1W for VHF/DSC;
VHF/DSC Antenna Connectors:	SO-239(50 ohm, Dipole Antenna)
VHF/DSC Antenna Gain:	6dBi
Type of Equipment:	Ship stations

### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power	ZHAOXIN	RXN-305D	REF. No.SEA2700
Coaxial Attenuator	Provided by client	TS4	HYT168793
Wired Handset	SIMRAD	HS100	/

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### 4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 5.4 \times 10^{-8}$
2	Occupied Bandwidth	$\pm 0.3\%$
3	RF conducted power	$\pm 0.8\text{dB}$
4	Conducted Spurious emissions	$\pm 2.7\text{dB}$
5	Radiated Spurious emission test	$\pm 3.1\text{dB}$ (Below 1GHz)
		$\pm 4.4\text{dB}$ (Above 1GHz)



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## 4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

## 4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 6606.01)

Compliance Certification Services (Kunshan) Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

- FCC –Designation Number: CN1322

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

## • Innovation, Science and Economic Development Canada

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

## 4.6 Deviation from Standards

None

## 4.7 Abnormalities from Standard Conditions

None

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## 5 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2022/07/12	2023/07/11
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2022/07/12	2023/07/11
Spectrum Analyzer	Rohde & Schwarz	FSU43	SEM004-08	2022/07/12	2023/07/11
Measurement Software	TST	TST PASS V2.0	N/A	N/A	N/A
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2022/07/12	2023/07/11
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2022/03/29	2023/03/28
Power Sensor	KEYSIGHT	U2021XA	SEM009-15	2022/07/12	2023/07/11

Radiated Spurious Emission(Below 1GHz & Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	CRT	N/A	SEM001-13	2021/7/13	2024/7/12
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
Biconical Antenna	Schwarzbeck	VUBA9117	SEM003-35	2021/12/26	2024/12/25
Loop Antenna	ETS-LINDGREN	6502	SEM003-36	2021/9/26	2024/9/25
MXE EMI receiver	Agilent	N9038A	SEM004-05	2022/7/12	2023/7/11
Pre-amplifier	HP	8447D	SEM005-02	2022/7/12	2023/7/11
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
Double-ridged waveguide horn	ETS-LINDGREN	3117	SEM003-34	2021/9/25	2024/9/24
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-23	2022/4/24	2023/4/23
Pre-amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2022/7/12	2023/7/11
Pre-amplifier	Rohde & Schwarz	CH14-H052	SEM005-17	2022/7/12	2023/7/11

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General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-22	2022-07-12	2023-07-11
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-23	2022-07-12	2023-07-11
Barometer	DUMAI	DYM3	SEM002-24	2022-07-12	2023-07-11

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## 6 Radio Spectrum Technical Requirement

## 6.1 Antenna Requirement

### 6.1.1 Test Requirement:

## 47 CFR Part Part 80.81

## 6.1.2 Conclusion

## 80.81 Requirements:

All telephony emissions of a ship station or a marine utility station on board ship within the frequency band 30-200 MHz must be vertically polarized.

### EUT Antenna:

Antenna location: Refer to external photos.

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## 7 Radio Spectrum Matter Test Results

### 7.1 Transmitter Frequency Tolerances.

Test Requirement 47 CFR FCC Part2.1055 &amp; FCC Part 80.209(a)

Test Method: ANSI/TIA-603-E:2016

Limit:

(a). The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 106 unless shown in Hz.

Frequency bands and categories of stations	Tolerances <sup>1</sup>
(1) Band 100-525 kHz:	
(i) Coast stations:	
For single sideband emissions	20 Hz.
For transmitters with narrow-band direct printing and data emissions	10 Hz <sup>2</sup>
For transmitters with digital selective calling emissions	10 Hz.
For all other emissions	100.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	20 Hz.
For transmitters with digital selective calling emissions	10 Hz <sup>2</sup>
For all other transmitters	10 Hz.
(iii) Ship stations for emergency only:	
For all emissions	20 Hz.
(iv) Survival craft stations:	
For all emissions	20 Hz.
(v) Radiodetermination stations:	
For all emissions	100.
(2) Band 1600-4000 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile	20 Hz.
For narrow-band direct printing and data emissions	10 Hz. <sup>2</sup>
For transmitters with digital selective calling emissions	10 Hz. <sup>2</sup>

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For all other emissions	50 Hz.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	10 Hz. <sup>2</sup>
For transmitters with digital selective calling emissions	10 Hz. <sup>3</sup>
For all other transmitters	20 Hz.
(iii) Survival craft stations:	20 Hz.
(iv) Radiodetermination stations:	
With power 200W or less	20.
With power above 200W	10.
(3) Band 4000-27500 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile emissions	20 Hz.
For narrow-band direct printing and data emissions	10 Hz. <sup>2</sup>
For digital selective calling emissions	10 Hz.
For Morse telegraphy emissions	10.
For all other emissions	15 Hz.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	10 Hz. <sup>2</sup>
For transmitters with digital selective calling emissions	10 Hz. <sup>3</sup>
For all other transmitters	20 Hz.
(iii) Survival craft stations:	50 Hz.
(4) Band 72-76 MHz:	
(i) Fixed stations:	
Operating in the 72.0-73.0 and 75.4-76.0 MHz bands	5.
Operating in the 73.74.6 MHz band	50.
(5) Band 156-162 MHz:	
(i) Coast stations:	
For carriers licensed to operate with a carrier power:	
Below 3 watts	10.
3 to 100 watts	5.7

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(ii) Ship stations	10. <sup>4</sup>
(iii) Survival craft stations operating on 121.500 MHz	50.
(iv) EPIRBs:	
Operating on 121.500 and 243.000 MHz	50.
Operating on 156.750 and 156.800 MHz. <sup>6</sup>	10.
(6) Band 216-220 MHz:	
(i) Coast stations:	
For all emissions	5.
(ii) Ship stations:	
For all emissions	5.
(7) Band 400-466 MHz:	
(i) EPIRBs operating on 406-406.1 MHz	5.
(ii) On-board stations	5.
(iii) Radiolocation and telecommand stations.	5.
(8) Band 1626.5-1646.5 MHz:	
(i) Ship earth stations	5.

<sup>1</sup>Transmitters authorized prior to January 2, 1990, with frequency tolerances equal to or better than those required after this date will continue to be authorized in the maritime services provided they retain approval and comply with the applicable standards in this part.

<sup>2</sup>The frequency tolerance for narrow-band direct printing and data transmitters installed before January 2, 1992, is 15 Hz for coast stations and 20 Hz for ship stations. The frequency tolerance for narrow-band direct printing and data transmitters approved or installed after January 1, 1992, is 10 Hz.

<sup>3</sup>[Reserved]

<sup>4</sup>For transmitters in the radiolocation and associated telecommand service operating on 154.584 MHz, 159.480 MHz, 160.725 MHz and 160.785 MHz the frequency tolerance is 15 parts in 10<sup>6</sup>.

<sup>5</sup>[Reserved]

<sup>6</sup>[Reserved]

<sup>7</sup>For transmitters operated at private coast stations with antenna heights less than 6 meters (20 feet) above ground and output power of 25 watts or less the frequency tolerance is 10 parts in 10<sup>6</sup>.

(b) When pulse modulation is used in land and ship radar stations operating in the bands above 2.4 GHz the frequency at which maximum emission occurs must be within the authorized bandwidth and must not be closer than 1.5/T MHz to the upper and lower limits of the authorized bandwidth where "T" is the pulse



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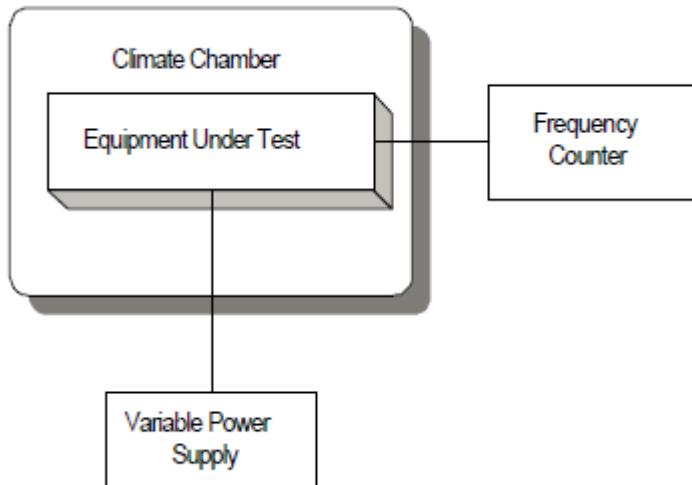
duration in microseconds. In the band 14.00-14.05 GHz the center frequency must not vary more than 10 MHz from 14.025 GHz.

(c) For stations in the maritime radiodetermination service, other than ship radar stations, the authorized frequency tolerance will be specified on the license when it is not specified in this part.

**7.1.1 E.U.T. Operation**

Operating Environment:

Temperature: 22.4 °C      Humidity: 55.1 % RH      Atmospheric Pressure: 1015 mbar  
Test mode: 20: TX mode, Keep the EUT in transmitting mode.

**7.1.2 E.U.T. Operation****7.1.3 Measurement Data**

The detailed test data see: Appendix FCC data.



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### 7.2 Transmitter Unwanted Emissions(Radiated)

Test Requirement: 47 CFR FCC Part2.1047 & FCC Part 80.211(f)

Test Method: ANSI/TIA-603-E:2016

Limit:

- (f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:
- (1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;
  - (2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and
  - (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus  $10\log_{10}$  (mean power in watts) dB.



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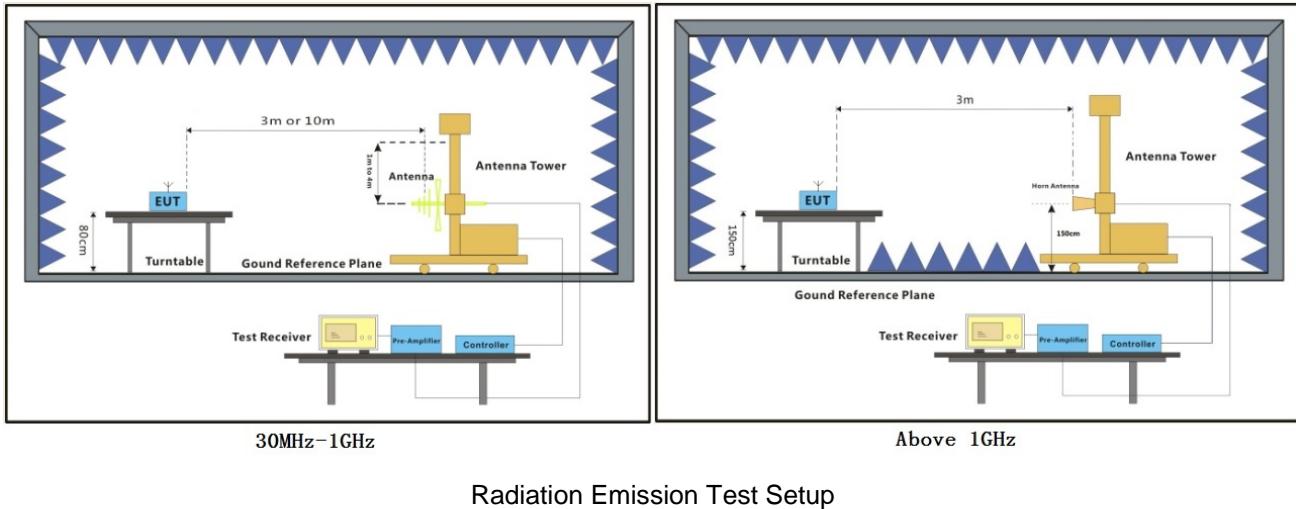
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## 7.2.1 E.U.T. Operation

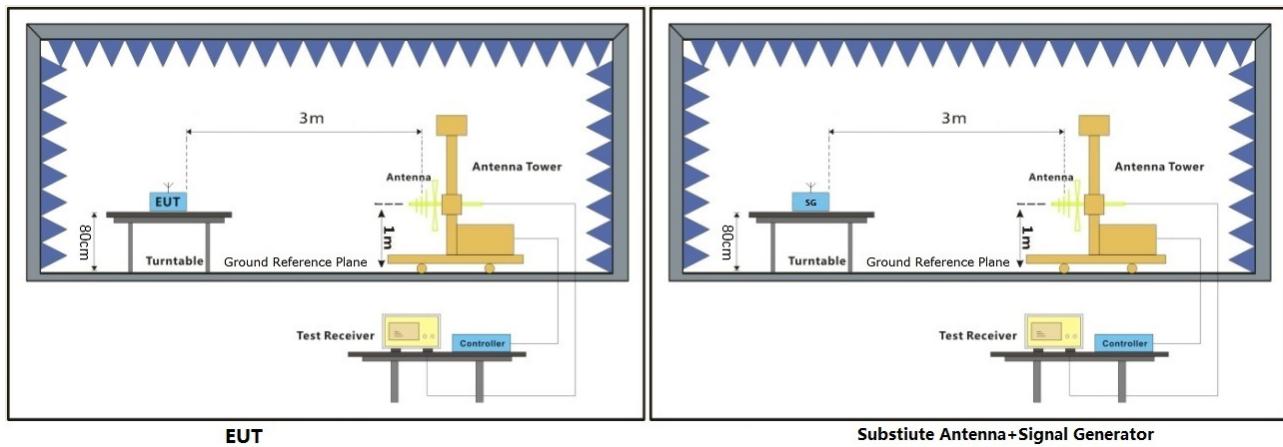
Operating Environment:

Temperature: 22.4 °C      Humidity: 55.1 % RH      Atmospheric Pressure: 1015 mbar  
Test mode: 20: TX mode, Keep the EUT in transmitting mode.

## 7.2.2 E.U.T. Operation



Radiation Emission Test Setup



Substitution Test Setup

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### 7.2.3 Measurement Data

### Test Procedure:

- (1)On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
  - (2)The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
  - (3)The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
  - (4)The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
  - (5)The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
  - (6)The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
  - (7)The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
  - (8)The maximum signal level detected by the measuring receiver shall be noted.
  - (9)The measurement shall be repeated with the test antenna set to horizontal polarization.
  - (10) Replace the antenna with a proper Antenna (substitution antenna).
  - (11)The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
  - (12)The substitution antenna shall be connected to a calibrated signal generator.
  - (13)If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
  - (14)The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
  - (15)The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
  - (16)The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
  - (17)The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

The detailed test data see: Appendix FCC data.



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## 7.3 Transmitter Power

Test Requirement: 47 CFR FCC Part 2.1046 & FCC Part 80.215

Test Method: ANSI/TIA-603-E:2016

Limit:

e) Ship stations frequencies above 27500 kHz. The maximum power must not exceed the values listed below.

(1) Ship stations 156-162 MHz—25W<sup>6</sup>

<sup>6</sup>Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

(g) The carrier power of ship station radiotelephone transmitters, except portable transmitters, operating in the 156-162 MHz band must be at least 8 but not more than 25 watts. Transmitters that use 12 volt lead acid storage batteries as a primary power source must be measured with a primary voltage between 12.2 and 13.7 volts DC. Additionally, unless otherwise indicated, equipment in radiotelephone ship stations operating in the 156-162 MHz band must meet the following requirements:

(1) All transmitters and remote control units must be capable of reducing the carrier power to one watt or less;

(2) Except as indicated in (g)(4) of this section, all transmitters manufactured after January 21, 1987, or in use after January 21, 1997, must automatically reduce the carrier power to one watt or less when the transmitter is tuned to 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;

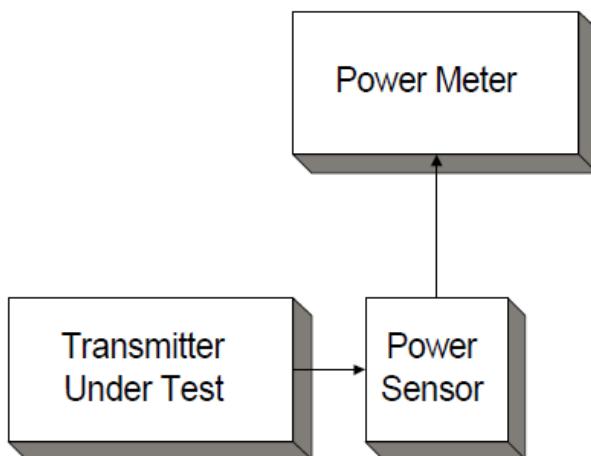
### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C Humidity: 55.1 % RH Atmospheric Pressure: 1015 mbar

Test mode: 20: TX mode, Keep the EUT in transmitting mode.

### 7.3.2 Test Setup Diagram



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### 7.3.3 Measurement Data

The detailed test data see: Appendix FCC data.



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## 7.4 Transmitter Carrier Power Reduction

Test Requirement 47 CFR FCC Part 80.215

Test Method: ANSI/TIA-603-E:2016

Limit:

e) Ship stations frequencies above 27500 kHz. The maximum power must not exceed the values listed below.

(1) Ship stations 156-162 MHz—25W6

6Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

(g) The carrier power of ship station radiotelephone transmitters, except portable transmitters, operating in the 156-162 MHz band must be at least 8 but not more than 25 watts. Transmitters that use 12 volt lead acid storage batteries as a primary power source must be measured with a primary voltage between 12.2 and 13.7 volts DC. Additionally, unless otherwise indicated, equipment in radiotelephone ship stations operating in the 156-162 MHz band must meet the following requirements:

(1) All transmitters and remote control units must be capable of reducing the carrier power to one watt or less;  
(2) Except as indicated in (g)(4) of this section, all transmitters manufactured after January 21, 1987, or in use after January 21, 1997, must automatically reduce the carrier power to one watt or less when the transmitter is tuned to 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;

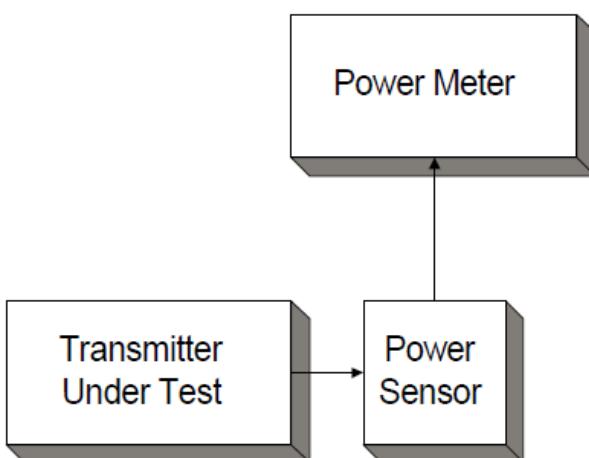
### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C Humidity: 55.1 % RH Atmospheric Pressure: 1015 mbar

Test mode: 20: TX mode, Keep the EUT in transmitting mode.

### 7.4.2 Test Setup Diagram



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### 7.4.3 Measurement Data

The detailed test data see: Appendix FCC data.



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## 8 Photographs

### 8.1 Test Setup

Please refer to “FYCR2209000377AT Appendix\_SetupPhoto NRS-1” .

### 8.2 EUT Constructional Details

Please Refer to “FYCR2209000377AT Appendix\_ExternalPhoto NRS-1” and “FYCR2209000377AT Appendix\_InternalPhoto NRS-1” photos for details.



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## 9 Appendix

## 1. Transmitter Frequency Tolerances.

Unmodulated, Assigned Frequency:156.025MHz					
Voltage(V)	Temperature (°C)	Measured Frequency(MHz)	Frequency Error(ppm)	FCC Limit (ppm)	Result
12	-20	156.025017	0.1090	±10	Pass
	-15	156.025026	0.1666		
	-10	156.025027	0.1730		
	0	156.025011	0.0705		
	10	156.025013	0.0833		
	20	156.025006	0.0385		
	30	156.025019	0.1218		
	40	156.025034	0.2179		
	50	156.025004	0.0256		
	55	156.025028	0.1795		
10.2	25	156.025013	0.0833		
13.8	25	156.025046	0.2948		

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Unmodulated, Assigned Frequency:156.525MHz					
Voltage(V)	Temperature (°C)	Measured Frequency(MHz)	Frequency Error(ppm)	FCC Limit (ppm)	Result
12	-20	156.525031	0.1981	±10	Pass
	-15	156.525028	0.1789		
	-10	156.525014	0.0894		
	0	156.525006	0.0383		
	10	156.525031	0.1981		
	20	156.525015	0.0958		
	30	156.525006	0.0383		
	40	156.525014	0.0894		
	50	156.525011	0.0703		
	55	156.525024	0.1533		
10.2	25	156.525022	0.1406		
13.8	25	156.525017	0.1086		

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### 2. Transmitter Unwanted Emission(Radiated)

Assigned Frequency:156.025MHz, Modulation Type: FM								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit(dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain(dBi)	Polarization (H/V)	Result
1273.651	-74.66	-13	-61.66	-77.19	2.64	5.17	Horizontal	Pass
2231.576	-70.38	-13	-57.38	-72.71	4.75	7.08	Horizontal	Pass
5545.141	-65.96	-13	-52.96	-68.28	8.27	10.59	Horizontal	Pass
1562.283	-73.43	-13	-60.43	-77.09	3.77	7.43	Vertical	Pass
3321.707	-70.03	-13	-57.03	-72.61	5.72	8.3	Vertical	Pass
4997.811	-66.29	-13	-53.29	-68.88	7.47	10.06	Vertical	Pass

Assigned Frequency:156.525MHz, Modulation Type: FSK								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit(dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain(dBi)	Polarization (H/V)	Result
1485.075	-73.56	-13	-60.56	-76.09	2.64	5.17	Horizontal	Pass
3536.316	-71.05	-13	-58.05	-73.27	6.99	9.21	Horizontal	Pass
5446.516	-65.33	-13	-52.33	-67.33	8.3	10.3	Horizontal	Pass
1224.019	-72.98	-13	-59.98	-75.51	2.64	5.17	Vertical	Pass
2184.377	-68.07	-13	-55.07	-70.4	4.75	7.08	Vertical	Pass
5254.632	-66.06	-13	-53.06	-68.06	8.3	10.3	Vertical	Pass

Note: All modes and modulation have been tested and we found the three frequencies shown above has the worst test result. Only record the worst test result.

EIRP= S.G. Power- Cable loss+ Antenna Gain



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### 3. Transmitter Power

Test Voltage (V Dc)	Test Frequency (MHz)	Power Level	Output Power(dBm)	Output Power(W)	Limit
12	156.025	Max	43.72	23.55	25W
		Low	29.54	0.90	1W
	156.300	Max	43.66	23.23	25W
		Low	29.49	0.89	1W
	156.650	Max	43.68	23.33	25W
		Low	29.63	0.92	1W
	156.800	Max	43.82	24.10	25W
		Low	29.52	0.90	1W
	157.425	Max	43.84	24.21	25W
		Low	29.11	0.81	1W
	156.525	Max	43.76	23.77	25W
		Low	29.24	0.84	1W

**Note:**

- 1). The high power is 25W, the low power is 1W for VHF/DSC, that declared by manufacturer.

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### 4. Transmitter Carrier Power Reduction

Test Voltage (V Dc)	Test Frequency (MHz)	Power Level	Default Power (W)	Limit	Result
12	156.375	Low	0.81	one watt or less	Pass
	156.525	Low	0.84	one watt or less	Pass
	156.650	Low	0.81	one watt or less	Pass

Note:

- 1).All transmitters units must be capable of reducing the carrier power to one watt or less;
- 2).All transmitters must automatically reduce the carrier power to one watt or less when transmitting on 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;

-End of Report-



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