NVLAP TESTING
NVLAP LAB CODE 600341-0

BACL Bay Area Compliance Labs Corp.

TEST REPORT

Applicant:	**Cobra Electronics Corporation**
Address:	**1701 Golf Road Suite 3-900, Rolling Meadows, Illinois, 60008, United States**
Product Name:	**VHF Marine Radio Transceiver**
FCC ID:	**BBOBB150**
Standard(s):	**47 CFR Part 2 47 CFR Part 80 ANSI C63.26-2015 ANSI/TIA 603-E-2016**
Report Number:	**2402X24375E-RF-00A**
Report Date:	**2024/10/30**

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

Reviewed By: Pedro Yun	**Approved By:** Ivan Cao
Title: Project Engineer	Title: EMC Manager

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402X24375E-RF-00A	Original Report	2024/10/30

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	VHF Marine Radio Transceiver
EUT Model:	BlueBound 150B
Multiple Model:	0190009-1
Operation Frequency Range:	156.05~157.425MHz
Types Of Equipment:	Portable VHF Ship Station (radiotelephones-voice only)
Modulation Mode:	FM
Channel Spacing:	25kHz
Emission Type:	G3E
DSC Function:	Not Support
AIS Function:	Not Support
Maximum Output Power:	3W(High power Level) 0.5W(Low power Level)
Rated Input Voltage:	DC 6V from battery or DC 5V from adapter
Serial Number:	2RF0-2(Radiated Unwanted Emissions) 2RF0-1(RF Conducted)
EUT Received Date:	2024/9/14
EUT Received Status:	Good
Note: The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

1.2 Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Power Cord	Cobra Electronics Corporation	/	Input: DC 12V Output: DC 5V

1.3 Antenna Information Detail▲:

Antenna Manufacturer	Antenna Connector	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range
Cobra Electronics Corporation	Integrated	Helical	50	0dBi(-2.15dBd) 156~162MHz

1.4 Equipment Modifications

No modifications are made to the EUT during all test items.

2. SUMMARY OF TEST RESULTS

Rules	Description of Test	Results
§2.1055; §80.209	Transmitter Frequency Tolerances	Compliant
§2.1047; §80.213	Modulation Requirements	Compliant
§2.1046; §80.215	Transmitter Power	Compliant
§2.1049; §80.205, §80.211	Bandwidth And Emission Mask	Compliant
§2.1051; §80.211	Transmitter Unwanted Emissions(Conducted)	Compliant
§80.217	Suppression of Interference Aboard Ships	Compliant
§2.1053; §80.211	Transmitter Unwanted Emissions(Radiated)	Compliant

3. DESCRIPTION OF TEST CONFIGURATION

3.1 Operation Frequency Detail:

Channel	Transmit Frequency (MHz)	Receive Frequency (MHz)	Channel Number	Transmitting Frequency (MHz)	Receiving Frequency (MHz)
01A	**156.050**	156.050	27	157.350	161.950
05A	156.250	156.250	28	157.400	162.000
6	156.300	156.300	63A	156.175	156.175
07A	156.350	156.350	65A	156.275	156.275
8	156.400	156.400	66A	156.325	156.325
9	156.450	156.450	67	**156.375***	156.375
10	156.500	156.500	68	156.425	156.425
11	156.550	156.550	69	156.475	156.475
12	156.600	156.600	71	**156.575***	156.575
13	156.65*	156.650	72	156.625	156.625
14	156.700	156.700	73	156.675	156.675
15	…….	156.750	74	156.725	156.725
16	**156.800**	156.800	77	**156.875***	156.875
17	156.850*	156.850	78A	156.925	156.925
18A	156.900	156.900	79A	156.975	156.975
19A	156.950	156.950	80A	157.025	157.025
20	157.000	161.600	81A	157.075	157.075
20A	157.000	157.000	82A	157.125	157.125
21A	157.050	157.050	83A	157.175	157.175
22A	157.100	157.100	84	157.225	161.825
23A	157.150	157.150	85	157.275	161.875
24	157.200	161.800	86	157.325	161.925
25	157.250	161.850	87	157.375	157.375
26	157.300	161.900	88A	**157.425**	157.425

Note:
1. The channel frequency plan for USA maritime radio communications, based on the 25 kHz channel spacing, is set forth in §80.373(f).
2. All above channels support High and low power level, except the channels mark with '*' are only low power level.
3. The channels in bold was tested in the report.

3.2 EUT Operation Condition:

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

3.3 EUT Exercise Software

No software was used during test.

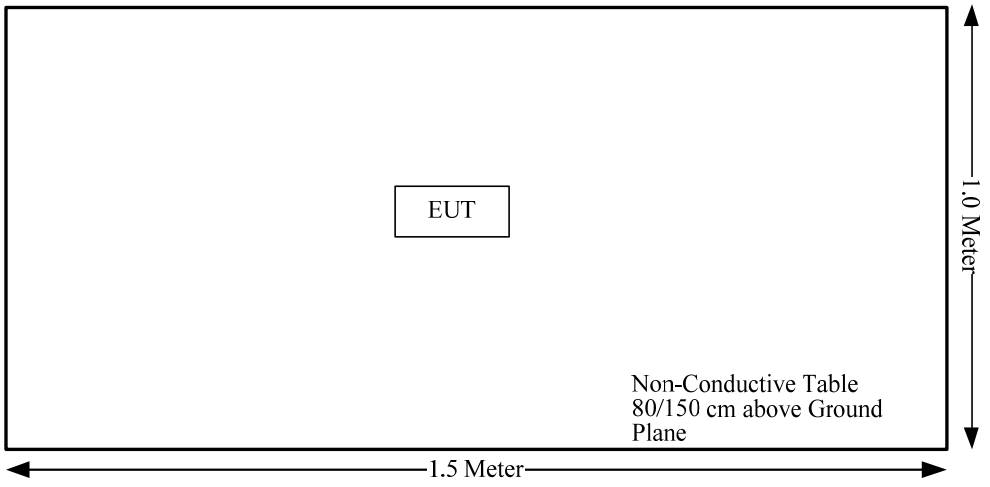
3.4 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

3.5 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length(m)	From Port	To
/	/	/	/	/	/

3.6 Block Diagram of Test Setup



3.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 829273, the FCC Designation No. : CN5044.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

3.8 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
RF Frequency	0.082×10^{-6}
Unwanted Emissions, radiated	±3.62 dB
Unwanted Emissions, conducted	±2.47 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
Audio Frequency/Low Pass Filter Response	4.02%
Modulation Limiting	1.19%

4. REQUIREMENTS AND TEST RESULTS

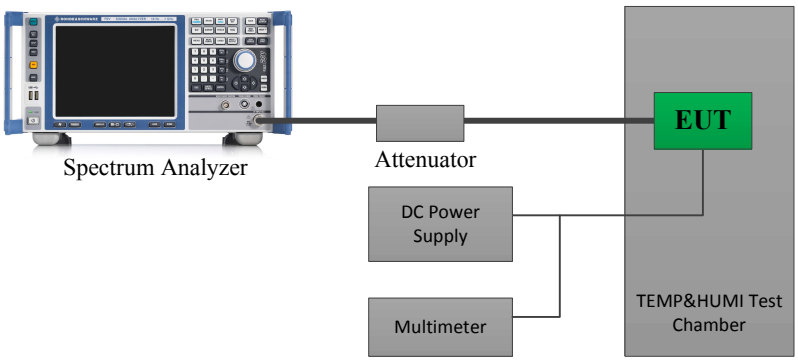
4.1 Transmitter frequency tolerances

4.1.1 Applicable Standard

FCC §80.209

Frequency bands and categories of stations	Tolerances[1]
(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]
(ii) Ship stations	10.[4]
(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.[6]	10.

4.1.2 Block Diagram of Test Setup



4.1.3 Test Procedure

According to ANSI C63.26-2015 Section 5.6:

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

a) At 10 °C intervals of temperatures between −30 °C and +50 °C at the manufacturer's rated supply voltage, and

b) At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the −15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy). Full details on the choice of values shall be included in the test report.

4.1.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.4	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
All-sun	Multimeter	EM305A	8348897	2024/8/16	2025/8/15
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Un-modulation, Test Frequency: 156.800MHz, Limit: ±10.0 ppm			
Temperature	**Voltage Supplied**	**Measured Frequency**	**Frequency Error**
(℃)	**(V_{DC})**	**(MHz)**	**(ppm)**
-30	6	156.8000744	0.47
-20		156.8000657	0.42
-10		156.8000563	0.36
0		156.8000480	0.31
10		156.8000406	0.26
20		156.8000321	0.20
30		156.8000238	0.15
40		156.8000135	0.09
50		156.8000042	0.03
20	5	156.8000463	0.30
20	8	156.8000166	0.11

Note: the operation voltage range was declared by manufacturer▲.

Un-modulation, Test Frequency: 156.575MHz,Limit: ±10.0 ppm			
Temperature	**Voltage Supplied**	**Measured Frequency**	**Frequency Error**
(℃)	**(V_{DC})**	**(MHz)**	**(ppm)**
-30	6	156.5750758	0.48
-20		156.5750672	0.43
-10		156.5750585	0.37
0		156.5750494	0.32
10		156.5750407	0.26
20		156.5750321	0.21
30		156.5750236	0.15
40		156.5750163	0.10
50		156.5750069	0.04
20	5	156.5750470	0.30
20	8	156.5750185	0.12

Note: the operation voltage range was declared by manufacturer▲.

4.2 Modulation requirements

4.2.1 Applicable Standard

FCC §80.213

(a) Transmitters must meet the following modulation requirements:

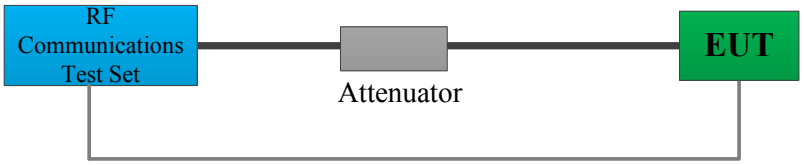
(1) When double sideband emission is used the peak modulation must be maintained between 75 and 100 percent;
(2) When phase or frequency modulation is used in the 156-162 MHz band the peak modulation must be maintained between 75 and 100 percent. A frequency deviation of ±5 kHz is defined as 100 percent peak modulation; and
(3) In single sideband operation the upper sideband must be transmitted. Single sideband transmitters must automatically limit the peak envelope power to their authorized operating power and meet the requirements in § 80.207(c).

(b) Radiotelephone transmitters using A3E, F3E and G3E emission must have a modulation limiter to prevent any modulation over 100 percent. This requirement does not apply to survival craft transmitters, to transmitters that do not require a license or to transmitters whose output power does not exceed 3 watts.

(c) Coast station transmitters operated in the 72.0-73.0 MHz and 75.4-76.0 MHz bands must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 15 kHz it must have an attenuation greater than at 1 kHz by at least 40log10 (f/3) dB where "f" is the frequency in kilohertz. At frequencies above 15 kHz the attenuation must be at least 28 dB greater than at 1 kHz.

(d) Ship and coast station transmitters operating in the 156-162 MHz and 216-220 bands must be capable of proper operation with a frequency deviation that does not exceed ±5 kHz when using any emission authorized by § 80.207.

4.2.2 Block Diagram of Test Setup



4.2.3 Test Procedure

According to ANSI C63.26-2015 Section 5.3.2:

Modulation limiting test methodology

Modulation limiting is the ability of a transmitter circuit to limit the transmitter from producing deviations in excess of a rated system deviation.

a) Connect the equipment as illustrated in Figure.
b) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
c) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤0.25 Hz to ≥15000 Hz. Turn the de-emphasis function off.
d) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation. This is the 0 dB reference level.
e) Increase the level from the audio generator by 20 dB in 5 dB increments recording the deviation as measured from the test receiver in each step. Verify that the audio level used to make the OBW measurement is included in the sweep.
f) Repeat for step e) at 300 Hz, 2500 Hz and 3000 Hz at a minimum using the 0 dB reference level obtained in step d).
g) Set the test receiver to measure peak negative deviation and repeat step d) through step f).
h) The values recorded in step f) and step g) are the modulation limiting.
i) Plot the data set as a percentage of deviation relative to the 0 dB reference point versus input voltage.

According to ANSI C63.26-2015 Section 5.3.3:

Audio frequency response test methodology—Constant Input

a) Connect the equipment as illustrated in Figure.
b) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤50 Hz to ≥15 000 Hz. Turn the de-emphasis function off.
c) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
d) Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
e) Set the test receiver to measure rms deviation and record the deviation reading as DEVREF.
f) Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.

4.2.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.4	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17

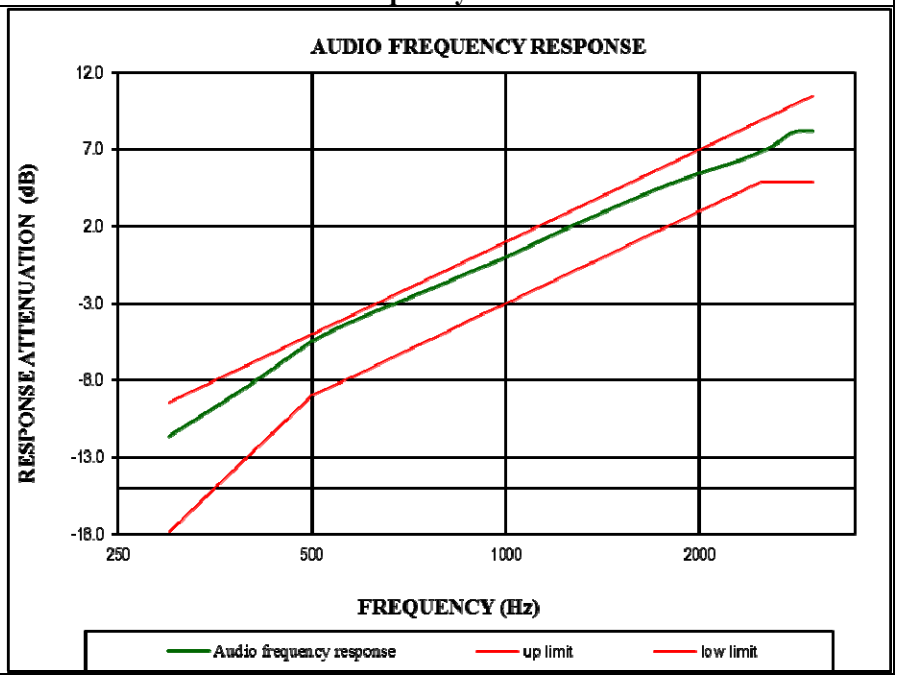
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Audio Frequency Response

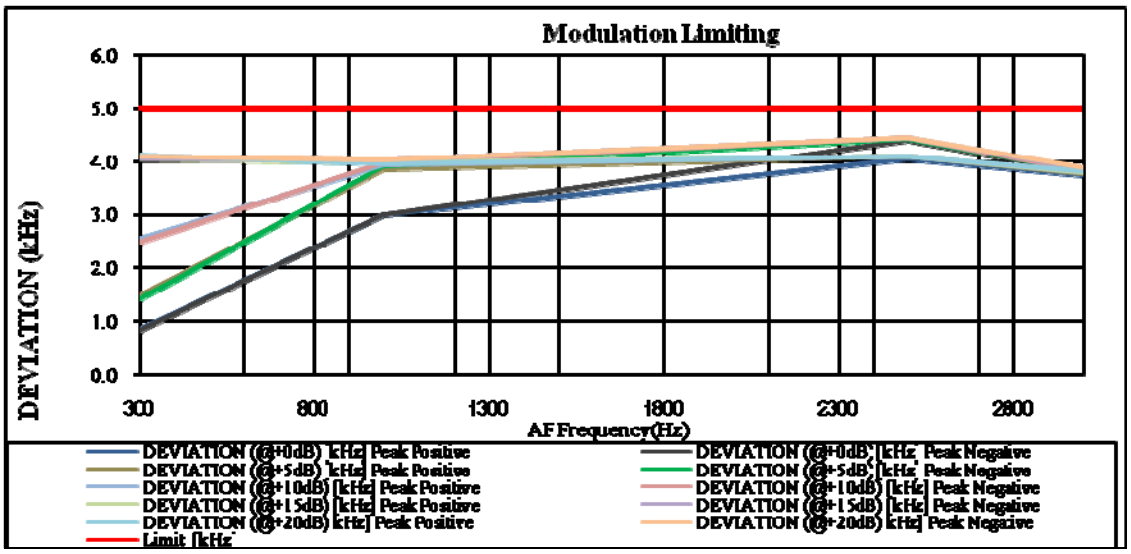
Channel Spacing: 25kHz	
Modulation Frequency (Hz)	**Response data (dB)**
300	-11.62
400	-8.30
500	-5.48
600	-3.87
700	-2.71
800	-1.71
900	-0.79
1000	0.00
1200	1.58
1400	2.84
1600	3.90
1800	4.78
2000	5.46
2200	6.02
2400	6.57
2600	7.24
2800	8.15
3000	8.23

Carrier Frequency: 156.800 MHz



Modulation Limiting

Carrier Frequency: 156.800 MHz, Channel Spacing:25kHz											
Audio Frequency(Hz)	DEVIATION (@+0dB)		DEVIATION (@+5dB)		DEVIATION (@+10dB)		DEVIATION (@+15dB)		DEVIATION (@+20dB)		Limit [kHz]
	[kHz]		[kHz]		[kHz]		[kHz]		kHz]		
	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	Peak Positive	Peak Negative	
300	0.836	0.819	1.465	1.408	2.541	2.469	4.052	4.036	4.118	4.100	5.000
1000	3.000	3.000	3.857	3.899	3.927	3.964	3.961	4.015	3.953	4.019	5.000
2500	4.049	4.384	4.085	4.420	4.092	4.431	4.095	4.432	4.097	4.434	5.000
3000	3.745	3.793	3.766	3.811	3.774	3.807	3.796	3.858	3.802	3.868	5.000



4.3 Transmitter power

4.3.1 Applicable Standard

FCC §80.215

(a) Transmitter power shown on the radio station authorization is the maximum power the licensee is authorized to use. Power is expressed in the following terms:

(1) For single sideband emission: Peak evelope power
(2) For G3E emission: Carrier power;
(3) For PON and F3N emission: Mean power;
(4) For all emissions in the 1626.5-1646.5 MHz band: equivalent isotropic radiated power.
(5) For all other emissions: the carrier power multiplied by 1.67.

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

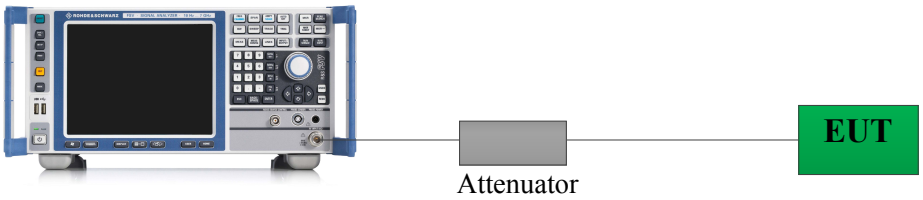
(1) Ship stations 156-162 MHz - 25W[6]

[6]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;
(3) [Reserved]
(4) Hand-held portable transmitters are not required to comply with the automatic reduction of carrier power in (g)(2) of this section; and
(5) Transmitters dedicated for use on public correspondence duplex channels as additional equipment to a VHF ship station in the Great Lakes which meet all pertinent rules in this part are not required to reduce their carrier power to one watt.

4.3.2 Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

4.3.3 Test Procedure

C63.26-2015, Clause 5.2.3.3

This procedure can be used to measure the peak power in either a CW-like or noise-like narrowband RF signal. The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.
a) Set the RBW ≥ OBW.
b) Set VBW ≥ 3 × RBW.
c) Set span ≥ 2 × OBW.
d) Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the peak amplitude level

4.3.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29~2024/10/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.8~26.4	Relative Humidity: (%)	47~61	ATM Pressure: (kPa)	100.4~101.5

Test Equipment List and Details:

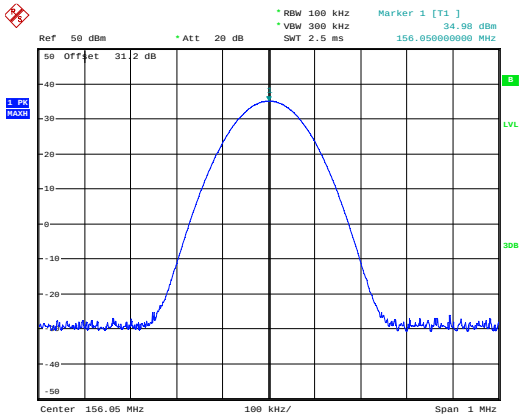
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17
HP	RF Communications Test Set	8920A	3438A05201	2024/10/17	2025/10/16

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Test Frequency (MHz)	**High Power Level**		**Low Power Level**	
	Conducted Output Power (dBm)	**Limit (dBm)**	**Conducted Output Power (dBm)**	**Limit (dBm)**
156.050	34.98	43.98	27.69	30.00
156.800	34.99	43.98	27.65	30.00
157.425	34.97	43.98	27.65	30.00
156.375	/	43.98	27.64	30.00
156.575	/	43.98	27.64	30.00
156.875	/	43.98	27.63	30.00

156.050 MHz High Power



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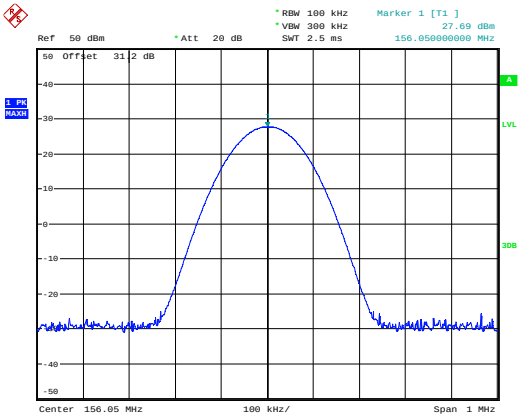
156.050 MHz Low Power



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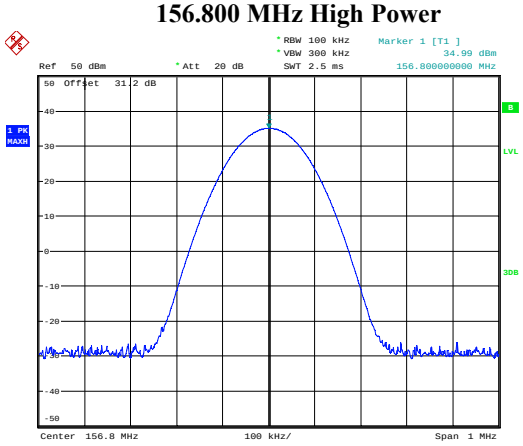
156.800 MHz High Power



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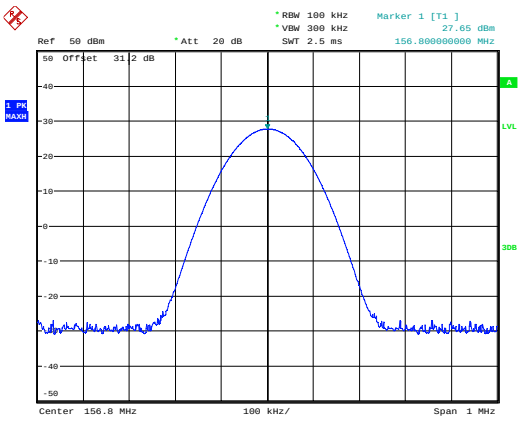
156.800 MHz Low Power



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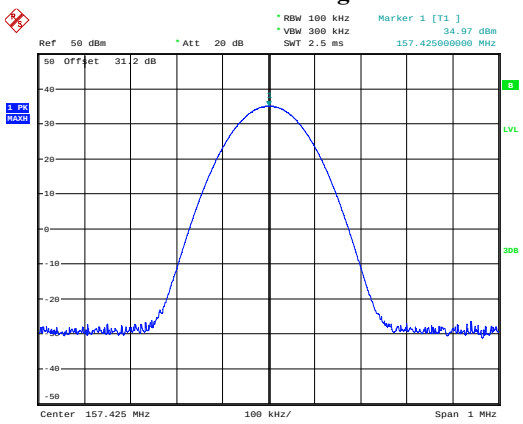
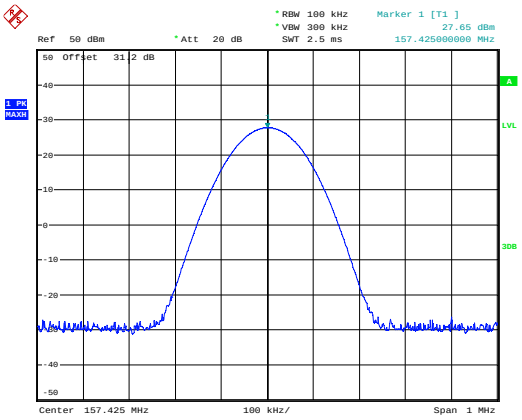
Date: 23.OCT.2024 18:19:25

157.425 MHz High Power



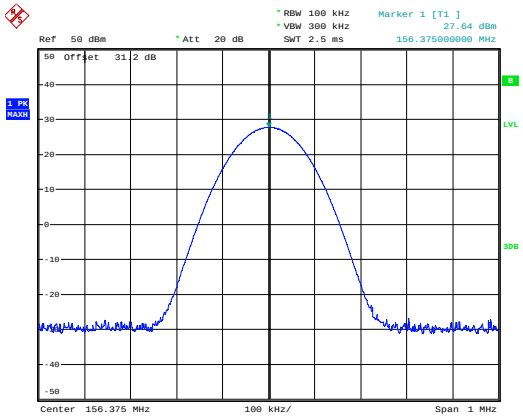
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 09:33:46

157.425 MHz Low Power



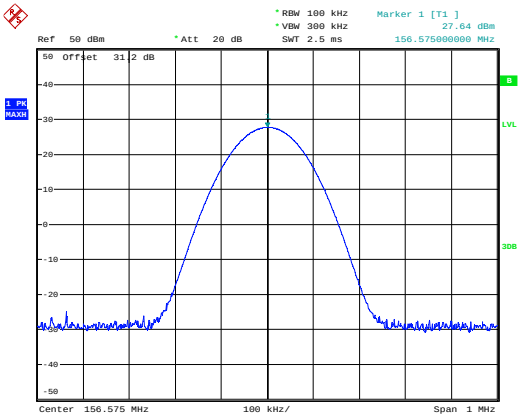
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 23.OCT.2024 18:20:36

156.375 MHz Low Power



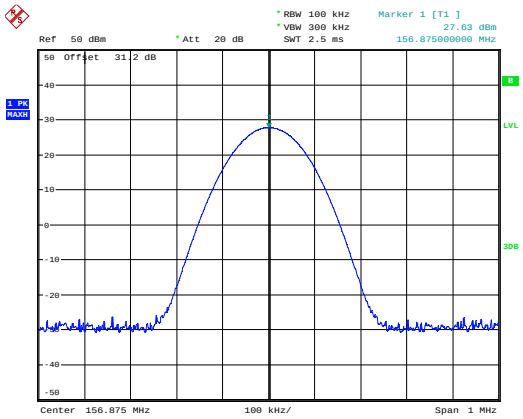
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 09:36:13

156.575 MHz Low Power



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 09:37:01

156.875 MHz Low Power



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 09:37:40

4.4 Bandwidths and Emission Mask

4.4.1 Applicable Standard

FCC §80.205 Bandwidths

(a) An emission designator shows the necessary bandwidth for each class of emission of a station except that in ship earth stations it shows the occupied or necessary bandwidth, whichever is greater. The following table gives the class of emission and corresponding emission designator and authorized bandwidth:

Class of emission	Emission designator	Authorized bandwidth (kHz)
G3E[8]	16K0G3E	20.0

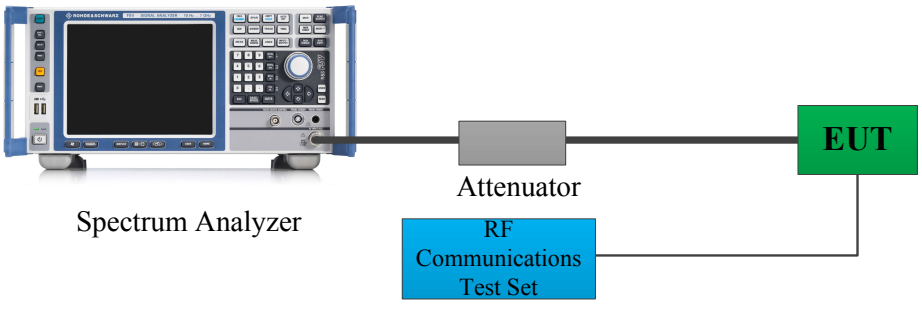
[8] Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:
(1) 5 kHz in the 72.0-73.0 MHz, 75.4-76.0 MHz and 156-162 MHz bands;
(2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0-74.6 MHz band.

FCC §80.211 Emission limitations

(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 10log10 (mean power in watts) dB.

4.4.2 Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

4.4.3 Test Procedure

According to ANSI C63.26-2015 Section 5.4.4:

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient).

b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.

c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3. NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.

d) Set the detection mode to peak, and the trace mode to max-hold.

e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.

f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

According to ANSI C63.26-2015 Section 5.7.3:

f) See Annex I for example emission mask plots.

4.4.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29~2024/10/30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.4~26.4	Relative Humidity: (%)	46~61	ATM Pressure: (kPa)	100.4~101.5

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
R&S	Spectrum Analyzer	FSV40	101947	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17
HP	RF Communications Test Set	8920A	3438A05201	2024/10/17	2025/10/16

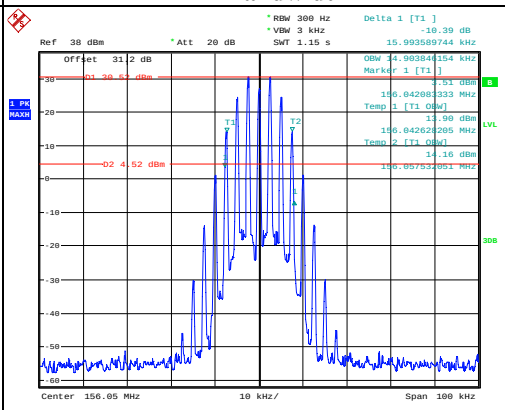
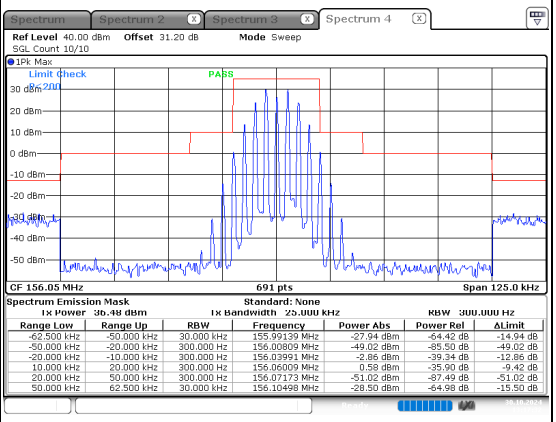
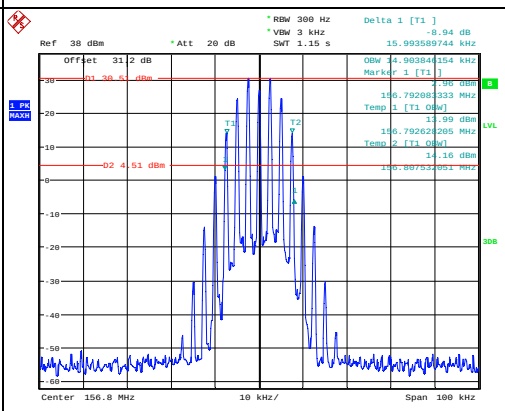
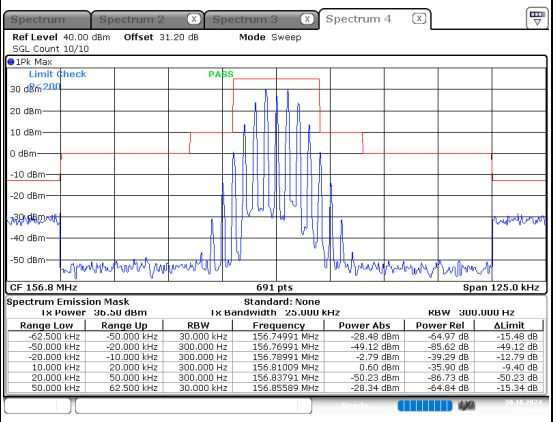
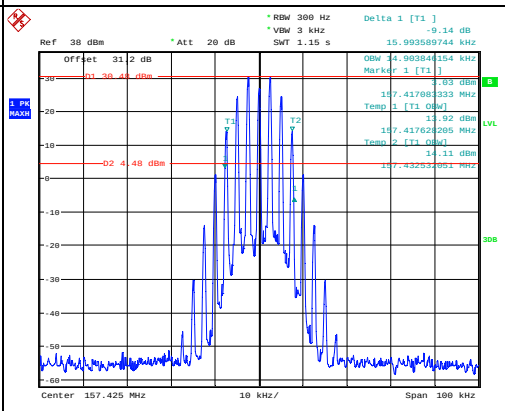
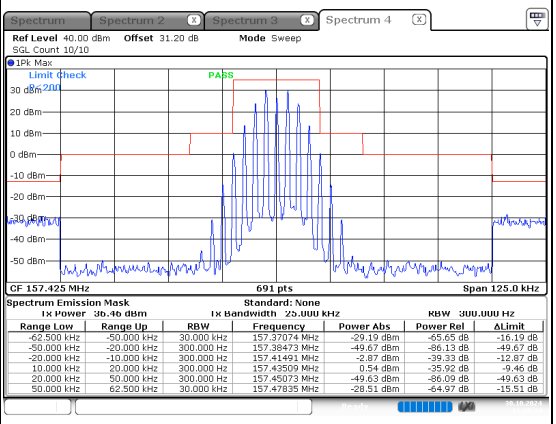
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

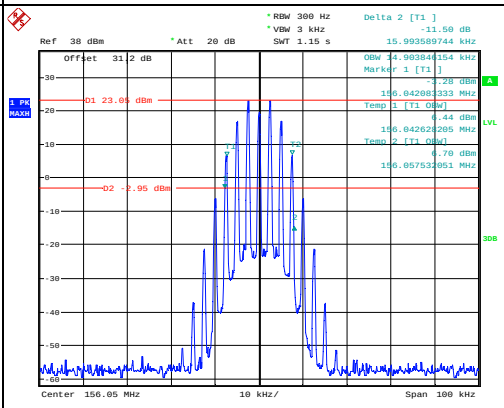
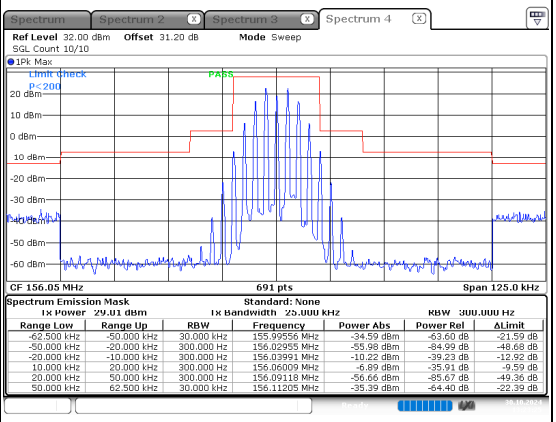
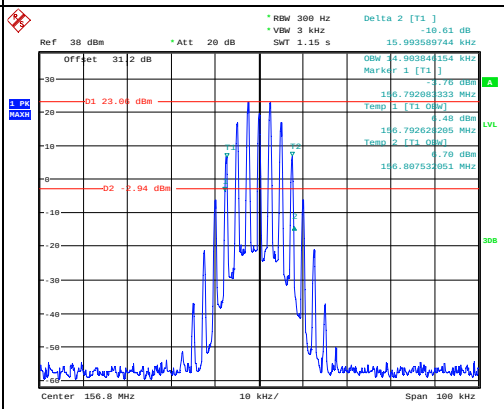
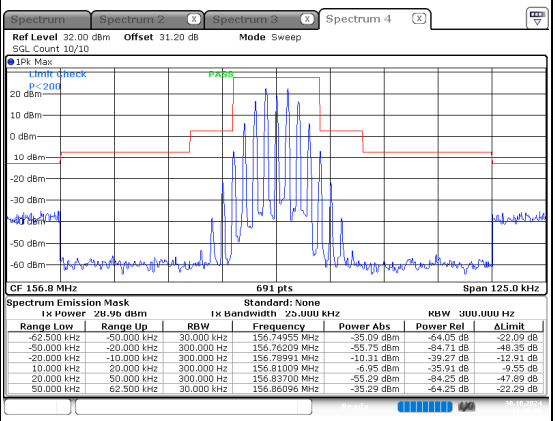
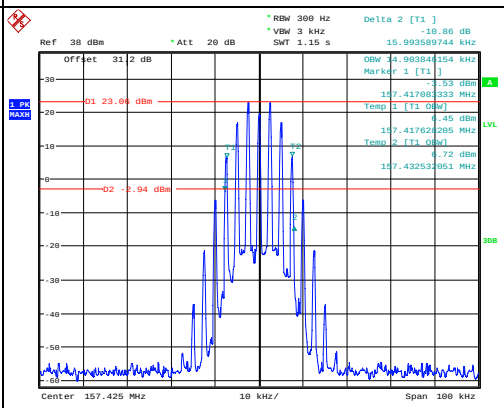
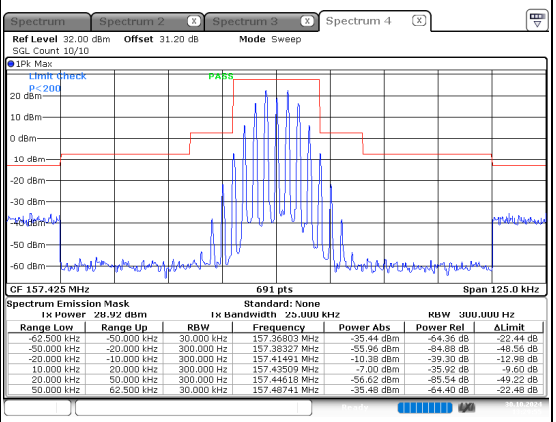
Test Frequency (MHz)	Occupied Bandwidth		
	High Power Level (kHz)	Low Power Level (kHz)	Limit (kHz)
156.050	14.904	14.904	20.0
156.800	14.904	14.904	20.0
157.425	14.904	14.904	20.0
156.375	/	14.904	20.0
156.575	/	14.904	20.0
156.875	/	14.904	20.0

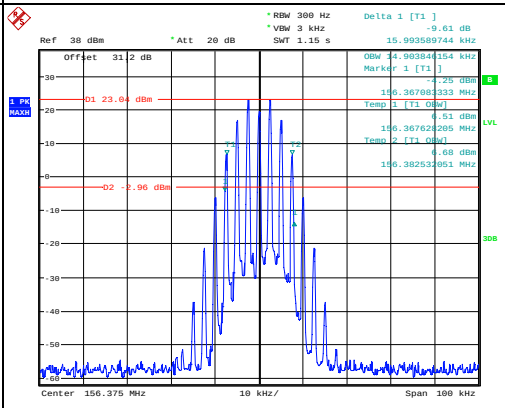
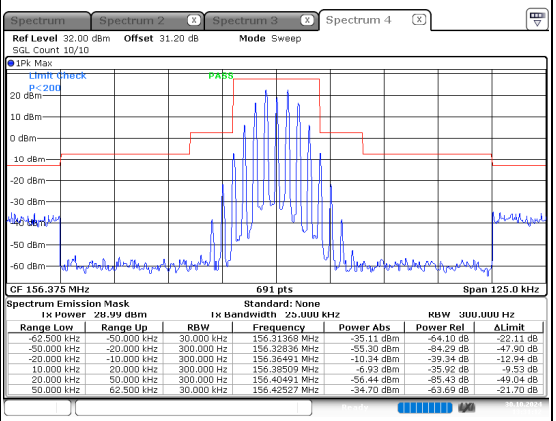
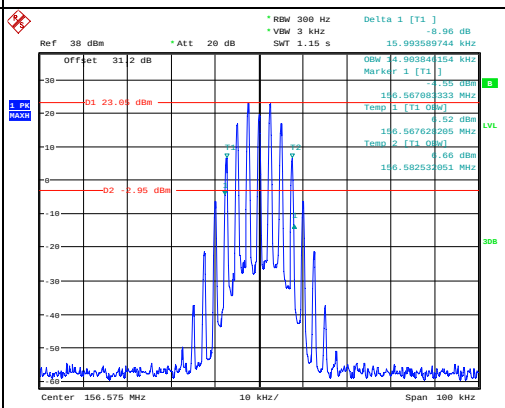
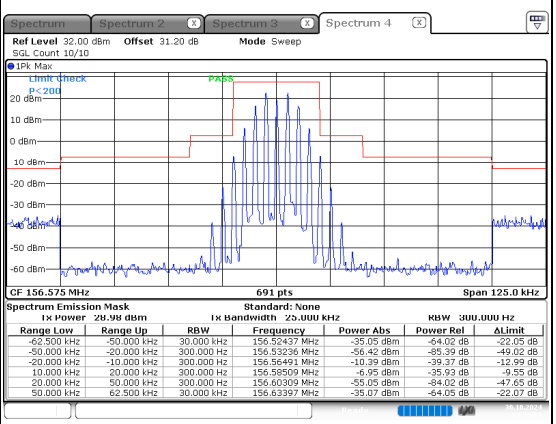
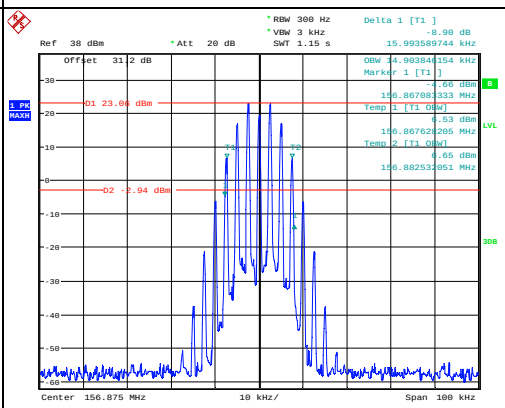
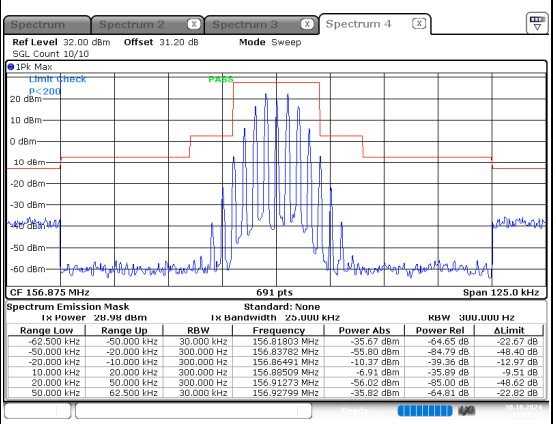
Note
Emission bandwidth was based on calculation method instead of measurement.
Emission Designator: BW = 2M + 2D
For FM Mode (Channel Spacing: 25 kHz)
Emission Designator 16K0G3E
In this case, the maximum modulating frequency is 3.0 kHz with a 5.0 kHz deviation.
BW = 2(M+D) = 2*(3.0 kHz + 5.0 kHz) = 16 kHz = 16K0
G3E portion of the designator represents a voice transmission
Therefore, the entire designator for 25 kHz channel spacing voice mode is 16K0G3E.

High Power Level:

Test Items	99% Occupied Bandwidth	Emission Mask
156.050 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:00:59	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:17:32
156.800 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:02:41	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:25:00
157.425 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:03:48	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:28:34

Low Power Level:

Test Items	99% Occupied Bandwidth	Emission Mask
156.050 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 23.OCT.2024 19:40:59	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:23:25
156.800 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 23.OCT.2024 19:42:33	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:26:56
157.425 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 23.OCT.2024 19:44:02	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:29:55

Test Items	99% Occupied Bandwidth	Emission Mask
156.375 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:04:59	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:31:12
156.575 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:06:10	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:31:51
156.875 MHz	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 29.SEP.2024 13:08:22	 ProjectNo.:2402X24375E-RF Tester:Stu Song Date: 30.OCT.2024 13:33:27

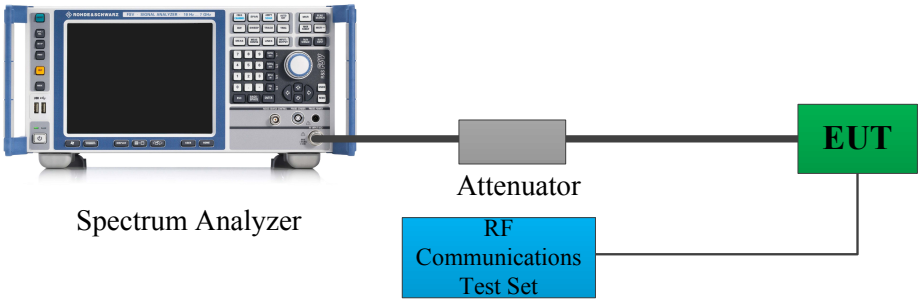
4.5 Transmitter Unwanted Emissions(Conducted)

4.5.1 Applicable Standard

FCC §80.211 Emission limitations

(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 10log10 (mean power in watts) dB.

4.5.2 Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

4.5.3 Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.

b) When using an average power (rms) detector, ensure that the number of points in the sweep ≥ 2 × (span / RBW). This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.

c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.

d) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.

e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.

f) Compare the results with the corresponding limit in the applicable regulation.

g) The test report shall include the data plots of the measuring instrument display and the measured data.

4.5.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.4	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.4

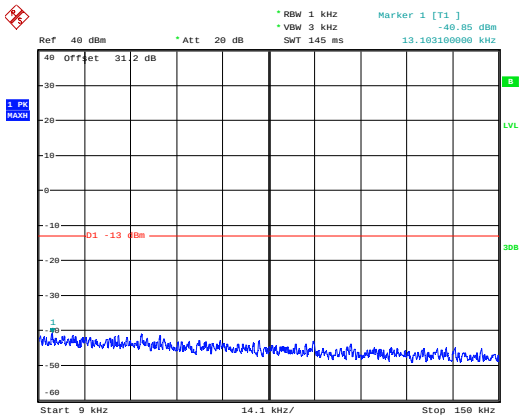
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17

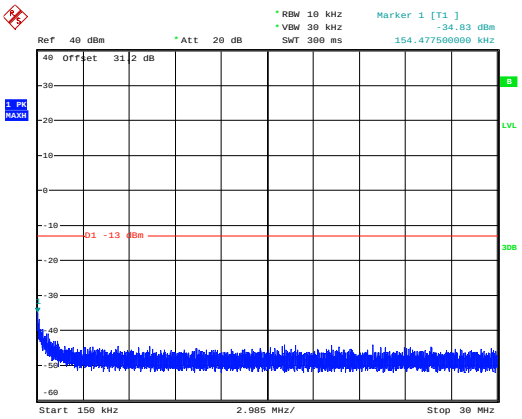
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:
Only the high power level channel was tested.

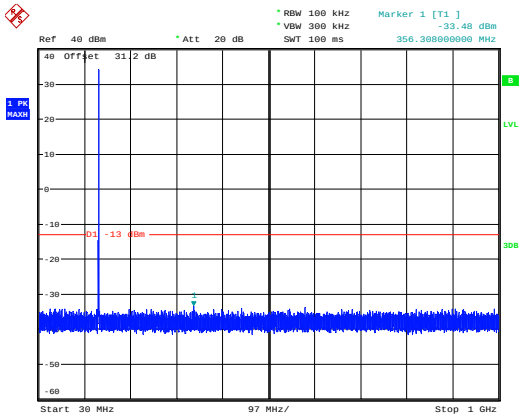
156.050 MHz



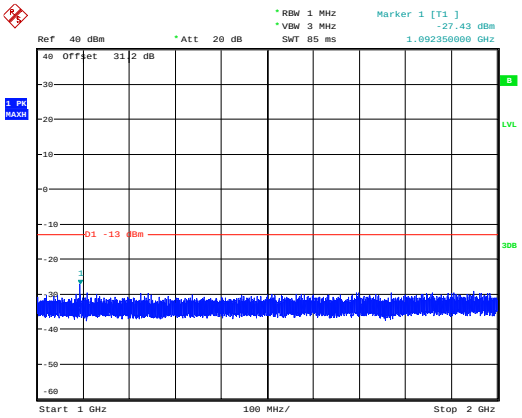
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:11:43



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:35:02

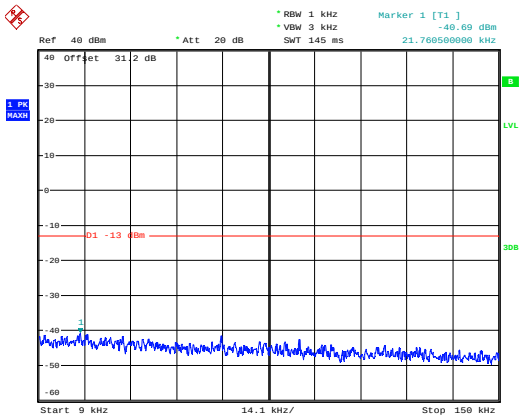


ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 15:01:39

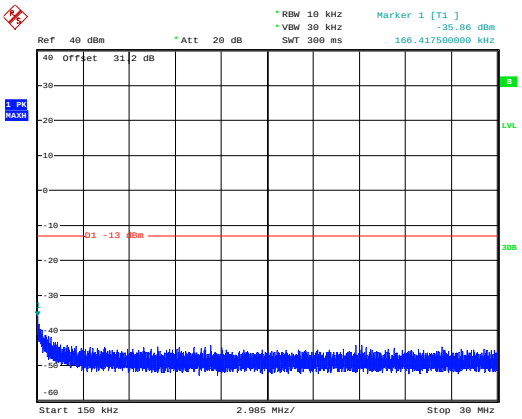


ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 15:34:22

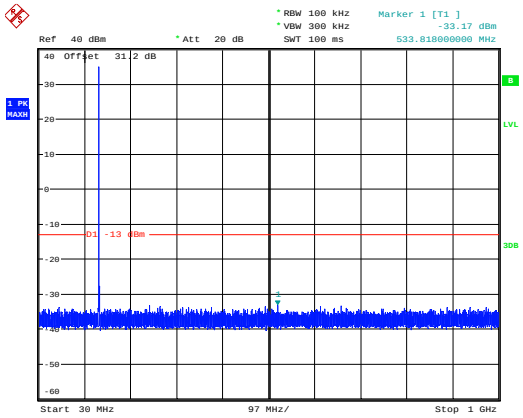
156.800 MHz



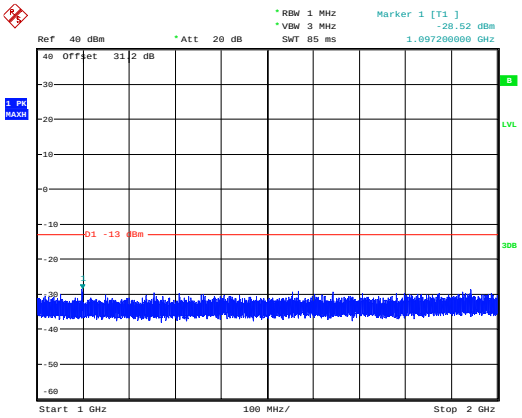
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:12:45



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:38:42

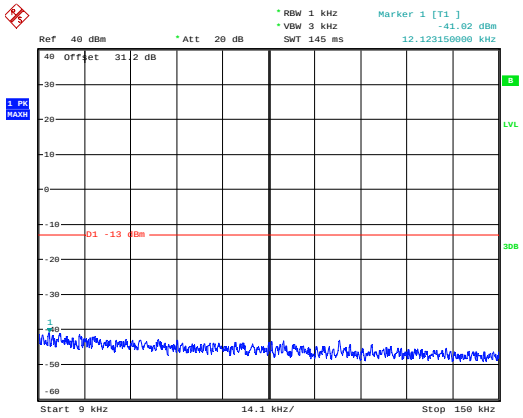


ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 15:16:41

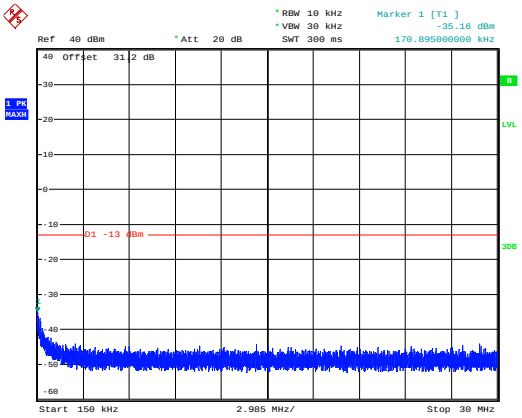


ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 15:35:12

157.425 MHz



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:13:48



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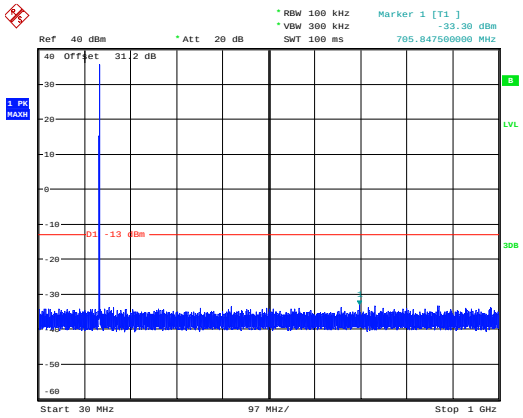
Date: 29.SEP.2024 14:39:51



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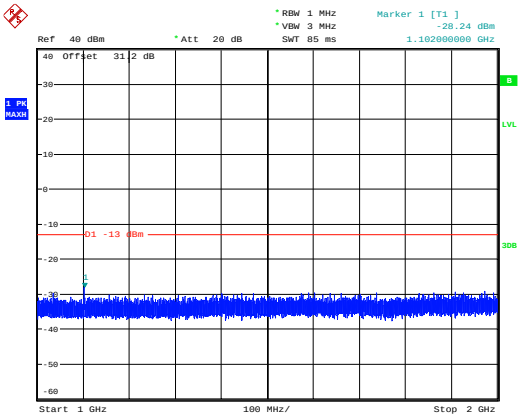


ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 15:48:15

4.6 Suppression of interference aboard ships

4.6.1 Applicable Standard

FCC §80.217 Emission limitations

(a) A voluntarily equipped ship station receiver must not cause harmful interference to any receiver required by statute or treaty.

(b) The electromagnetic field from receivers required by statute or treaty must not exceed the following value at a distance over sea water of one nautical mile from the receiver:

Frequency of interfering emissions	Field intensity in microvolts per meter
Below 30 MHz	0.1
30 to 100 MHz	.3
100 to 300 MHz	1.0
Over 300 MHz	3.0

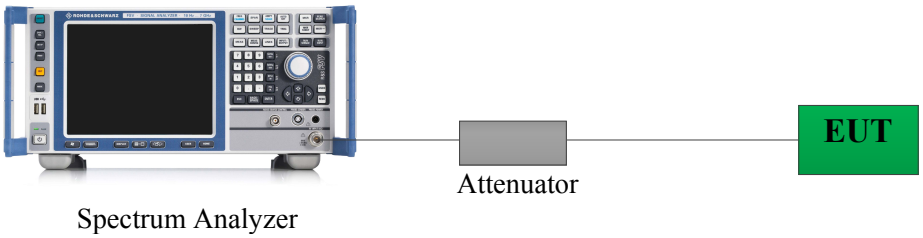
Or

Deliver not more than the following amounts of power, to an artificial antenna having electrical characteristics equivalent to those of the average receiving antenna(s) use on shipboard:

Frequency of interfering emissions	Power to artificial antenna in microwatts
Below 30 MHz	400
30 to 100 MHz	4,000
100 to 300 MHz	40,000
Over 300 MHz	400,000

NB-DP and data transmission equipment installed in ship and coast stations before October 1, 1990, that operates on the frequencies in the 4,000-27,500 kHz bands must be capable of operation in accordance with the technical requirements of either ITU-R M.476-5 or ITU-R M.625-3 (both incorporated by reference, *see* § 80.7), and may be used indefinitely. Equipment installed on or after October 1, 1990, must be capable of operation in accordance with the technical requirements of ITU-R M.625-3, 1995 (incorporated by reference, see § 80.7). NB-DP and data transmission equipment are additionally permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f) and the equipment is also capable of operation in accordance with ITU-R M.625-3 (incorporated by reference, see § 80.7).

4.6.2 Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

4.6.3 Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.

b) When using an average power (rms) detector, ensure that the number of points in the sweep ≥ 2 × (span / RBW). This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.

c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.

d) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.

e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.

f) Compare the results with the corresponding limit in the applicable regulation.

g) The test report shall include the data plots of the measuring instrument display and the measured data.

4.6.4 Test Data And Result

Serial Number:	2RF0-1	Test Date:	2024/9/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.4	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.4

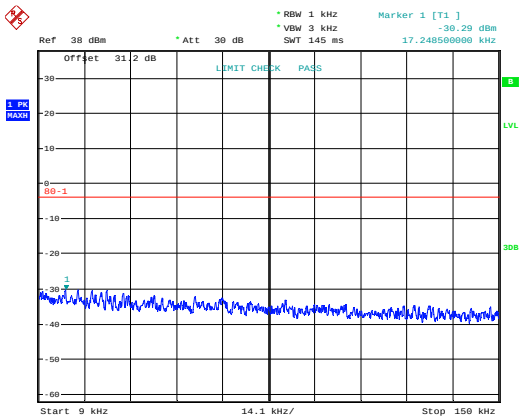
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Huaxiang	Coaxial Attenuator	DTS250-30	11022109	2024/6/7	2025/6/6
HP	RF Communications Test Set	8920A	3438A05201	2023/10/18	2024/10/17

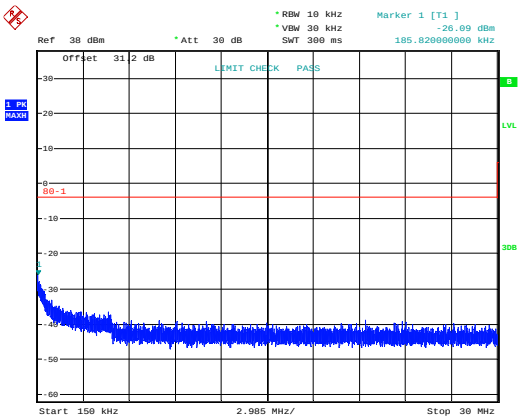
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

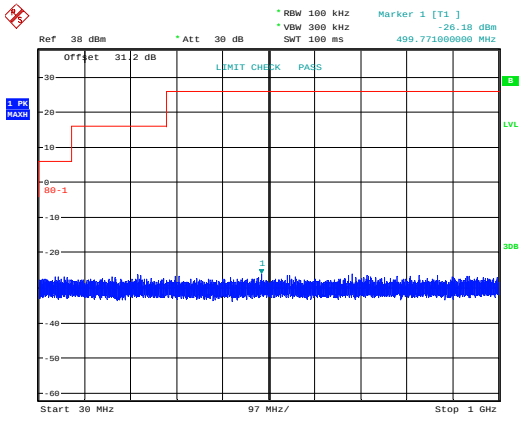
High power level 156.800MHz was tested.



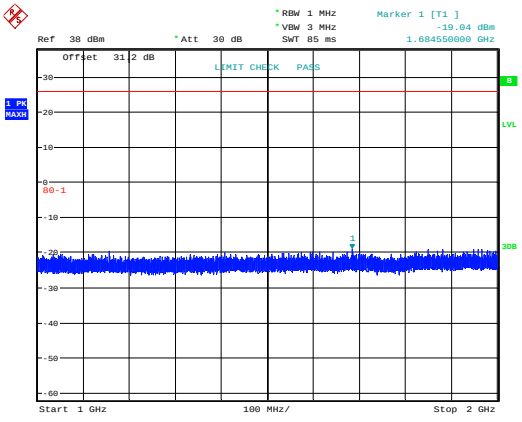
ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 13:57:18



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 13:58:49



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 13:59:45



ProjectNo.:2402X24375E-RF Tester:Stu Song
Date: 29.SEP.2024 14:01:51

4.7 Transmitter Unwanted Emissions(Radiated)

4.7.1 Applicable Standard

FCC §80.211 Emission limitations

(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 10log10 (mean power in watts) dB.

4.7.2 Test setup:

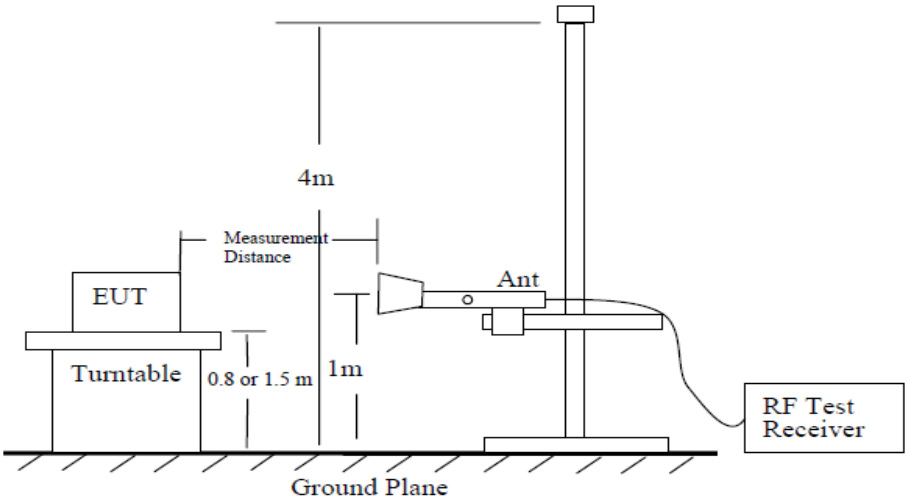


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

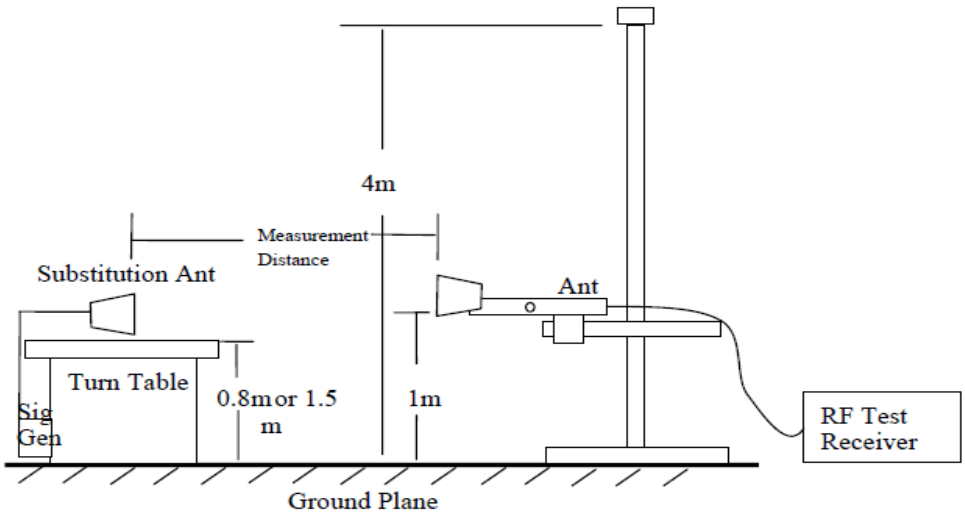


Figure 7—Substitution method set-up for radiated emission

4.7.3 Test Procedure:

a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.

b) Each emission under consideration shall be evaluated:

1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.

2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.

3) Return the turntable to the azimuth where the highest emission amplitude level was observed.

4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.

5) Record the measured emission amplitude level and frequency using the appropriate RBW.

c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.

d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.

e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.

f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.

g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:

1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.

2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).

3) Record the output power level of the signal generator when equivalence is achieved in step 2).

h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.

i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

$$Pe = Ps(dBm) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$

where

Pe = equivalent emission power in dBm
Ps = source (signal generator) power in dBm

NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) − 2.15 dB. If necessary, the antenna gain can be calculated from calibrated antenna factor information

k) Provide the complete measurement results as a part of the test report.

4.7.4 Test Data And Result

Serial Number:	2RF0-2	Test Date:	2024/9/25~2024/9/27
Test Site:	Chamber10m, Chamber B	Test Mode:	Transmitting
Tester:	Leesin Xiang, Nat Zhou	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.9~26.5	Relative Humidity: (%)	44~70	ATM Pressure: (kPa)	100.5~101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
9kHz~1000MHz					
Sunol Sciences	Hybrid Antenna	JB3	A060611-1	2023/9/6	2026/9/5
Narda	Coaxial Attenuator	779-6dB	04269	2023/9/6	2026/9/5
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-04	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2024/7/1	2025/6/30
R&S	EMI Test Receiver	ESCI	100224	2024/8/26	2025/8/25
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2023/10/18	2024/10/17
Above 1GHz					
AH	Horn Antenna	SAS-571	1177	2023/2/22	2026/2/21
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
Xinhang Macrowave	Coaxial Cable	XH750A-N/J-SMA/J-10M	20231117004 #0001	2023/11/17	2024/11/16
AH	Preamplifier	PAM-0118P	469	2024/4/15	2025/4/15
R&S	Spectrum Analyzer	FSV40	101944	2023/10/18	2024/10/17
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2023/10/18	2024/10/17

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Please refer to the below table.
Only the high power level channel was tested.
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Test Frequency: 156.05MHz								
312.10	H	66.36	-42.06	0.00	0.32	-42.38	-13.00	29.38
312.10	V	59.58	-47.06	0.00	0.32	-47.38	-13.00	34.38
468.15	H	64.32	-41.53	0.00	0.36	-41.89	-13.00	28.89
468.15	V	65.78	-37.39	0.00	0.36	-37.75	-13.00	24.75
624.20	H	48.39	-53.67	0.00	0.36	-54.03	-13.00	41.03
624.20	V	51.42	-47.99	0.00	0.36	-48.35	-13.00	35.35
780.25	H	47.85	-51.15	0.00	0.47	-51.62	-13.00	38.62
780.25	V	49.13	-46.77	0.00	0.47	-47.24	-13.00	34.24
936.30	H	44.66	-49.65	0.00	0.51	-50.16	-13.00	37.16
936.30	V	46.69	-44.49	0.00	0.51	-45.00	-13.00	32.00
1092.35	H	53.72	-71.10	7.44	1.00	-64.66	-13.00	51.66
1092.35	V	58.05	-67.18	7.44	1.00	-60.74	-13.00	47.74
1248.40	H	64.86	-59.35	7.78	1.14	-52.71	-13.00	39.71
1248.40	V	68.55	-56.67	7.78	1.14	-50.03	-13.00	37.03
1404.45	H	64.42	-59.86	9.02	1.21	-52.05	-13.00	39.05
1404.45	V	71.56	-53.30	9.02	1.21	-45.49	-13.00	32.49
1560.50	H	58.69	-67.29	9.86	0.94	-58.37	-13.00	45.37
1560.50	V	66.84	-59.54	9.86	0.94	-50.62	-13.00	37.62
Test Frequency: 156.8MHz								
313.60	H	67.59	-40.81	0.00	0.32	-41.13	-13.00	28.13
313.60	V	60.96	-45.64	0.00	0.32	-45.96	-13.00	32.96
470.40	H	62.80	-43.02	0.00	0.36	-43.38	-13.00	30.38
470.40	V	64.26	-38.88	0.00	0.36	-39.24	-13.00	26.24
627.20	H	50.06	-51.95	0.00	0.37	-52.32	-13.00	39.32
627.20	V	51.23	-48.11	0.00	0.37	-48.48	-13.00	35.48
784.00	H	47.87	-51.04	0.00	0.47	-51.51	-13.00	38.51
784.00	V	48.83	-46.99	0.00	0.47	-47.46	-13.00	34.46
940.80	H	41.90	-52.26	0.00	0.51	-52.77	-13.00	39.77
940.80	V	45.70	-45.35	0.00	0.51	-45.86	-13.00	32.86
1097.60	H	56.26	-68.49	7.41	1.01	-62.09	-13.00	49.09
1097.60	V	59.29	-65.86	7.41	1.01	-59.46	-13.00	46.46
1254.40	H	60.49	-63.77	7.84	1.14	-57.07	-13.00	44.07
1254.40	V	68.89	-56.36	7.84	1.14	-49.66	-13.00	36.66
1411.20	H	61.21	-63.20	9.06	1.22	-55.36	-13.00	42.36
1411.20	V	72.54	-52.42	9.06	1.22	-44.58	-13.00	31.58
1568.00	H	58.73	-67.23	9.91	0.89	-58.21	-13.00	45.21
1568.00	V	66.11	-60.29	9.91	0.89	-51.27	-13.00	38.27

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Test Frequency: 157.425MHz								
314.85	H	69.06	-39.31	0.00	0.32	-39.63	-13.00	26.63
314.85	V	59.61	-46.96	0.00	0.32	-47.28	-13.00	34.28
472.28	H	61.40	-44.39	0.00	0.36	-44.75	-13.00	31.75
472.28	V	62.82	-40.29	0.00	0.36	-40.65	-13.00	27.65
629.70	H	50.96	-51.02	0.00	0.37	-51.39	-13.00	38.39
629.70	V	52.23	-47.04	0.00	0.37	-47.41	-13.00	34.41
787.13	H	46.76	-52.08	0.00	0.48	-52.56	-13.00	39.56
787.13	V	48.57	-47.19	0.00	0.48	-47.67	-13.00	34.67
944.55	H	41.32	-52.70	0.00	0.51	-53.21	-13.00	40.21
944.55	V	44.26	-46.68	0.00	0.51	-47.19	-13.00	34.19
1101.98	H	56.40	-68.29	7.40	1.02	-61.91	-13.00	48.91
1101.98	V	55.40	-69.71	7.40	1.02	-63.33	-13.00	50.33
1259.40	H	59.50	-64.80	7.89	1.15	-58.06	-13.00	45.06
1259.40	V	68.80	-56.48	7.89	1.15	-49.74	-13.00	36.74
1416.83	H	59.72	-64.80	9.08	1.23	-56.95	-13.00	43.95
1416.83	V	73.21	-51.83	9.08	1.23	-43.98	-13.00	30.98
1574.25	H	57.94	-68.00	9.95	0.85	-58.90	-13.00	45.90
1574.25	V	63.65	-62.77	9.95	0.85	-53.67	-13.00	40.67

Note 1:The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the attachment 2402X24375E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402X24375E-RF-INP EUT INTERNAL PHOTOGRAPHS

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2402X24375E-RF-00A-TSP TEST SETUP PHOTOGRAPHS.

******* END OF REPORT *******