

TEST REPORT

Applicant Name: RCA Communications Systems
Address: 555 W. Victoria Street, Compton, California, United States
90220
Report Number: 2501V19299E-RF-00
FCC ID: XYH-RCR490

Test Standard (s)

FCC PART 95

Sample Description

Product Type: Consumer Two-Way Radio
Model No.: RCR490
Multiple Model(s) No.: N/A
Trade Mark: RCA
Date Received: 2025/07/28
Issue Date: 2025/09/01

Test Result:	Pass▲
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▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Bruce Lin

Bruce Lin
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked * is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501V19299E-RF-00	Original Report	2025/09/01

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Consumer Two-Way Radio
Tested Model	RCR490
Multiple Model(s)	N/A
Frequency Range	462.5500~462.7250MHz 467.5625~467.7125MHz
Transmit Power (ERP)	462.5500~462.7250MHz: 32.15dBm 467.5625~467.7125MHz: 26.35dBm
Channel Spacing	12.5kHz
Modulation Technique	FM
Antenna Specification [#]	2.15dBi (It is provided by the applicant)
Voltage Range	DC 3.6V by battery or 5V from USB Port
Sample serial number	378D-1 for Radiated Emissions Test 378D-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Normal/Extreme Condition [#]	L.V.: Low Voltage 3.3V _{DC} N.V.: Normal Voltage 3.6V _{DC} H.V.: High Voltage 4.5V _{DC} (provided by the applicant)
Adapter Information	N/A

Objective

This test report is in accordance with Part 2 and Part 95, Subpart A & Subpart B of the Federal Communication Commissions rules.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 95 Subpart B - Personal Radio Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

TIA-603-E: Land Mobile FM or PM-Communications Equipment-Measurement and Performance Standards

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
Audio Frequency Response		0.1dB(k=2, 95% level of confidence)
Low Pass Filter Response		1.2dB(k=2, 95% level of confidence)
Modulation Limiting		1%(k=2, 95% level of confidence)
Radiated Emissions	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

Channel List

Channel No.	Channel Frequency (MHz)	Channel No.	Channel Frequency (MHz)
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

Channel 4 and channel 11 was selected to test.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

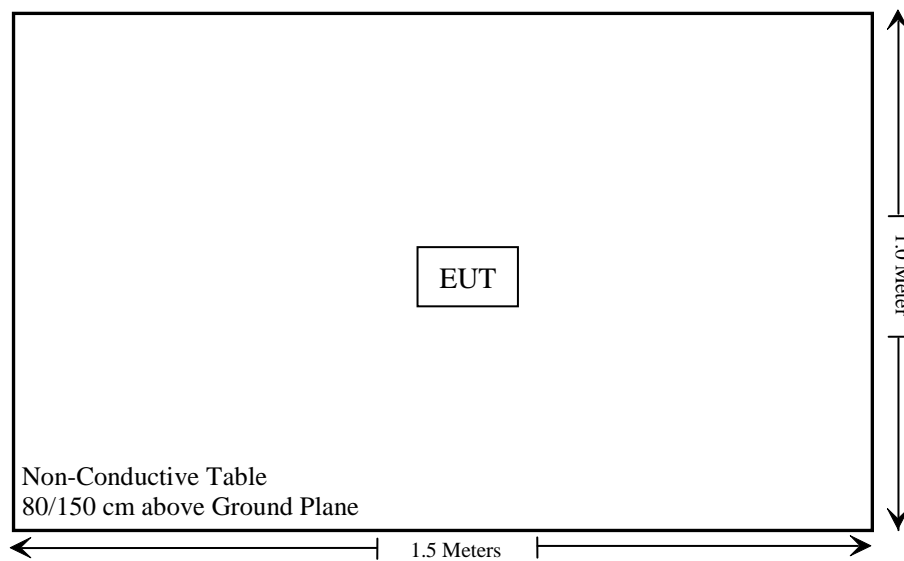
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

For radiated spurious emission



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§2.1093	RF Exposure	Compliant
§2.1046, §95.567	RF Output Power	Compliant
§2.1047, §95.575	Modulation Characteristic	Compliant
§2.1049, §95.573, §95.579	Authorized Bandwidth & Emission Mask	Compliant
§2.1053, §95.579	Radiated Spurious Emission	Compliant
§2.1055(d), §95.565	Frequency Stability	Compliant
§95.587	FRS additional requirements	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
COM-POWER	Dipole Antenna	3121C	9209-860	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(12 01)	1143	2023/07/26	2026/07/25
The Electro-Mechanics Co.	Horn Antenna	3115	9107-3694	2024/06/06	2027/06/05
Unknown	RF Cable	KMSE	735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
Agilent	Signal Generator	N5183A	MY50140588	2024/09/13	2025/09/12
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200982	2024/09/20	2025/09/19
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/12/04	2025/12/03
BACL	Temperature & Humidity Chamber	BTH-150-40	30145	2024/12/06	2025/12/05
HP	RF Communication test set	8920B	US36141849	2024/12/04	2025/12/03
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2025/04/29	2026/04/28
WEINSCHEL	30dB Attenuator	58-30-33	PS509	2025/06/25	2026/06/26

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

§2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

§2.1093

Test Result

Compliant, please refer to the SAR report: 2501V19299E-SAA.

FCC §2.1046 & §95.567 - RF OUTPUT POWER

Applicable Standard

Per FCC §2.1046, and §95.567, Each FRS transmitter type must be designed such that the effective radiated power (ERP) on channels 8 through 14 does not exceed 0.5 Watts and the ERP on channels 1 through 7 and 15 through 22 does not exceed 2.0 Watts.

Test Procedure

The transmitter was placed on a wooden turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the emissions were measured by the substitution.

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	58 %
ATM Pressure:	100.2~101.5 kPa

The testing was performed by Alex Yan on 2025-08-11.

Test Mode: Transmitting

Test Result: Compliant.

Frequency (MHz)	Receiver Reading (dBμV)	Polar (H / V)	Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
CH4: 462.6375MHz								
462.6375	93.51	H	18.8	1.05	0.0	17.75	33	15.25
462.6375	103.15	V	33.2	1.05	0.0	32.15	33	0.85
CH11: 467.6375MHz								
467.6375	90.71	H	16.0	1.05	0.0	14.95	27	12.05
467.6375	97.33	V	27.4	1.05	0.0	26.35	27	0.65

Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain

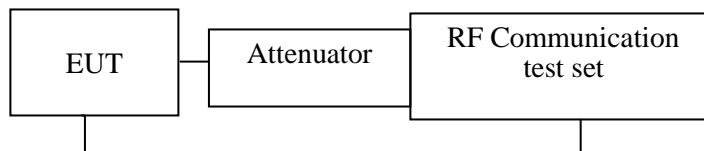
Margin = Limit -Absolute Level

FCC §2.1047 & §95.575 - MODULATION CHARACTERISTIC

Applicable Standard

Per FCC §2.1047 and §95.575: Each FRS transmitter type must be designed such that the peak frequency deviation does not exceed 2.5 kHz, and the highest audio frequency contributing substantially to modulation must not exceed 3.125 kHz.

Test Block Diagram



Path loss: 30dB attenuator +1dB cable loss, that total 31dB added into offset.

Test Procedure

ANSI C63.26-2015

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.

- Connect the equipment as illustrated in Figure 1.
- Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤ 0.25 Hz to $\geq 15\,000$ Hz. Turn the de-emphasis function off.
- 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.
- 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.
- 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).
- Set the test receiver to measure peak negative deviation and repeat step d) through step f).
- The values recorded in step f) and step g) are the modulation limiting.
- Plot the data set as a percentage of deviation relative to the 0 dB reference point versus input voltage.

5.3.3.2 Audio frequency response test methodology—Constant Input

- Connect the equipment as illustrated in Figure 3.
- Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤ 50 Hz to $\geq 15\,000$ Hz. Turn the de-emphasis function off.
- Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- 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.
- g) Record the test receiver deviation reading as DEVFREQ.
- h) Calculate the audio frequency response at the present frequency as follows in Equation (4):

$$\text{audio frequency response} = 20 \log_{10} \left(\frac{\text{DEV}_{\text{FREQ}}}{\text{DEV}_{\text{REF}}} \right) \quad (4)$$

- i) Repeat step f) through step h) for all the desired test frequencies.

Test Data

Environmental Conditions

Temperature:	26.6 °C
Relative Humidity:	46 %
ATM Pressure:	101.5 kPa

The testing was performed by Cheeb Huang on 2025-08-05.

Test Mode: Transmitting

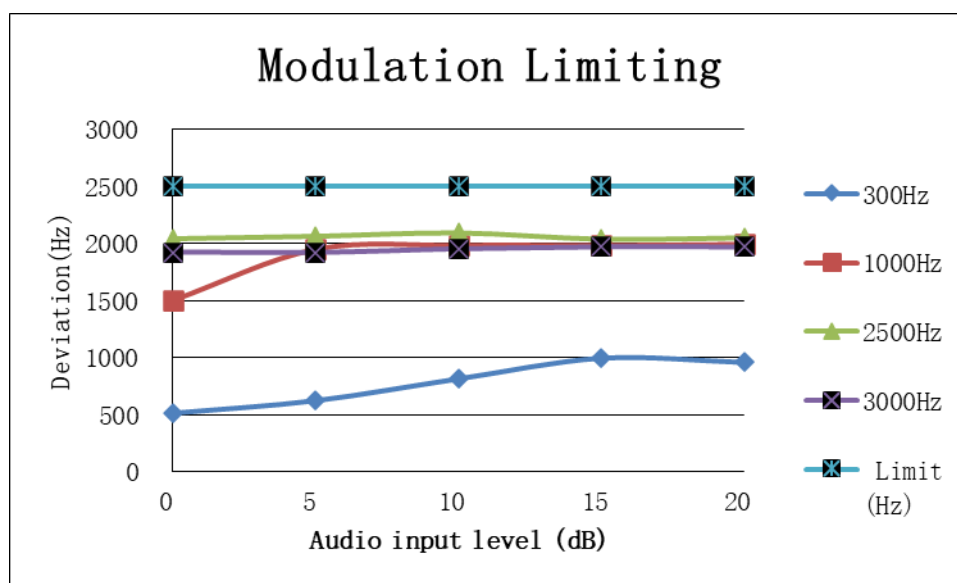
Please refer to the following tables and plots.

MODULATION LIMITING

Carrier Frequency: 462.6375MHz

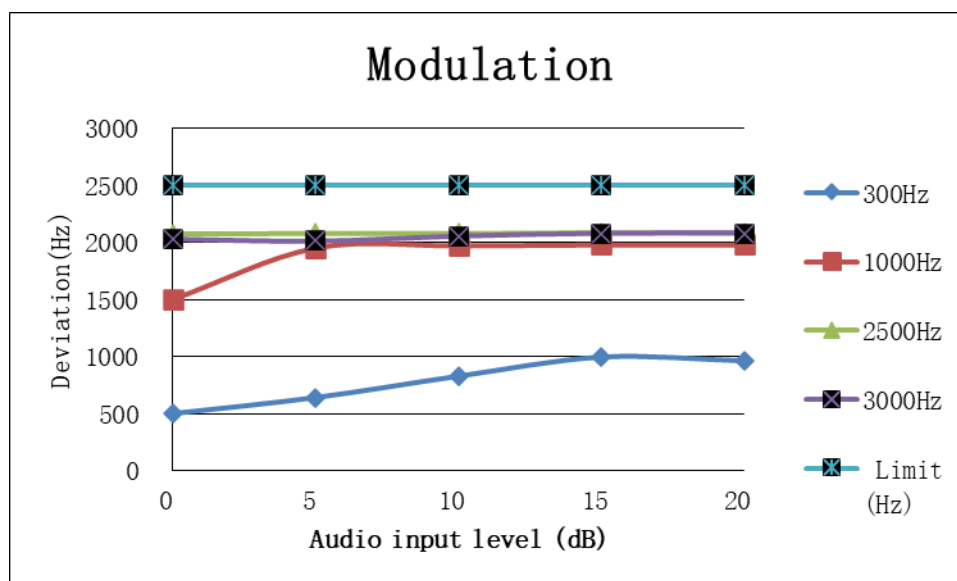
Peak+ deviation

Audio input level (dB)	Deviation (Hz)				Limit (Hz)
	300Hz	1000Hz	2500Hz	3000Hz	
20	963	1997	2051	1972	2500
15	1000	1987	2038	1973	2500
10	819	1988	2095	1954	2500
5	627	1953	2065	1917	2500
0	516	1500	2043	1922	2500



Peak- deviation

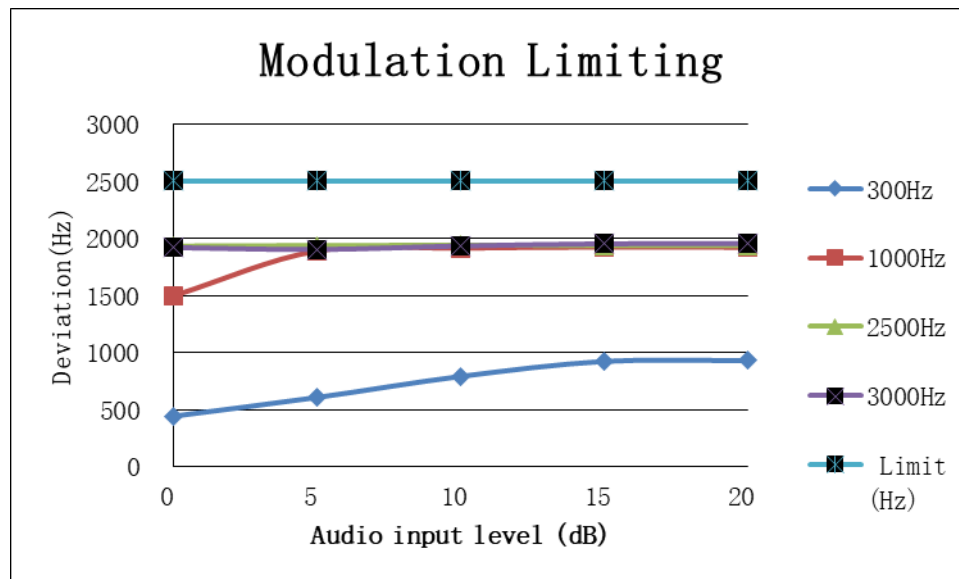
Audio input level (dB)	Deviation (Hz)				Limit (Hz)
	300Hz	1000Hz	2500Hz	3000Hz	
20	967	1981	2083	2079	2500
15	1001	1982	2087	2076	2500
10	831	1974	2081	2054	2500
5	641	1955	2082	2015	2500
0	498	1500	2078	2031	2500



Carrier Frequency: 467.6375MHz

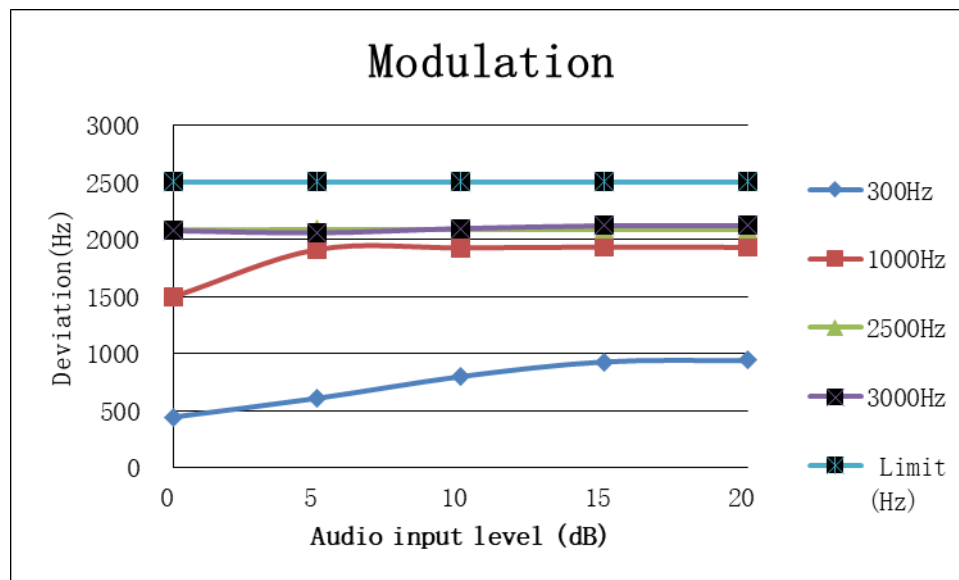
Peak+ deviation

Audio input level (dB)	Deviation (Hz)				Limit (Hz)
	300Hz	1000Hz	2500Hz	3000Hz	
20	932	1922	1939	1955	2500
15	924	1924	1938	1953	2500
10	793	1915	1941	1934	2500
5	609	1891	1938	1903	2500
0	445	1500	1933	1920	2500



Peak- deviation

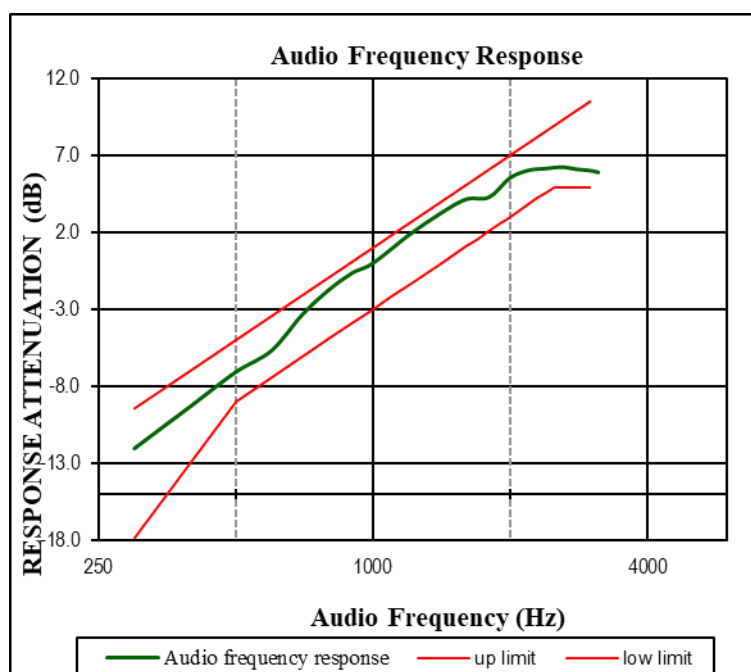
Audio input level (dB)	Deviation (Hz)				Limit (Hz)
	300Hz	1000Hz	2500Hz	3000Hz	
20	941	1930	2088	2120	2500
15	928	1933	2087	2119	2500
10	800	1926	2088	2095	2500
5	610	1911	2086	2057	2500
0	447	1500	2084	2076	2500



Audio Frequency Response

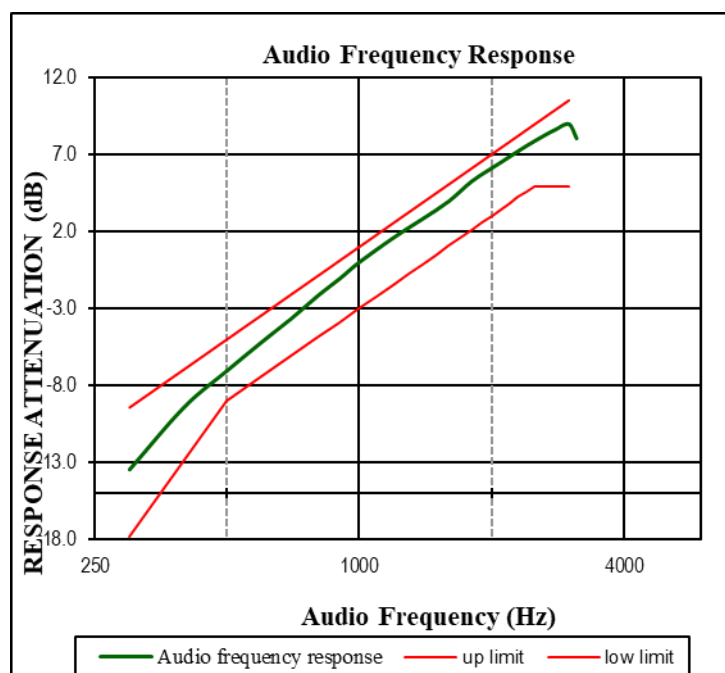
Carrier Frequency: 462.6375MHz

Audio Frequency (Hz)	Response Attenuation (dB)
300	-12.01
400	-9.24
500	-7.07
600	-5.66
700	-3.34
800	-1.74
900	-0.64
1000	0.00
1200	1.83
1400	3.19
1600	4.15
1800	4.29
2000	5.54
2200	6.04
2400	6.15
2600	6.25
2800	6.10
3000	6.02
3125	5.90



Carrier Frequency: 467.6375MHz

Audio Frequency (Hz)	Response Attenuation (dB)
300	-13.45
400	-9.38
500	-7.04
600	-5.17
700	-3.66
800	-2.23
900	-1.09
1000	0.00
1200	1.62
1400	2.85
1600	3.97
1800	5.24
2000	6.1
2200	6.86
2400	7.55
2600	8.13
2800	8.62
3000	8.97
3125	8.04



FCC §2.1049 & §95.573 & §95.579 - AUTHORIZED BANDWIDTH AND EMISSION MASK

Applicable Standard

According to §95.573. Each FRS transmitter type must be designed such that the occupied bandwidth does not exceed 12.5 kHz.

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

(a) Attenuation requirements. The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:

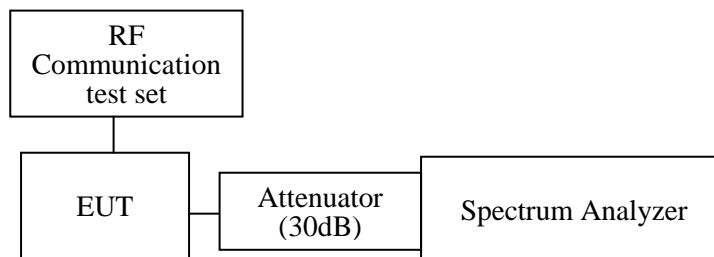
(1) 25 dB (decibels) in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.

(2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.

(3) $43 + 10 \log (P)$ dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.

(b) Measurement bandwidths. The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (2) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.

Test Block Diagram



Path loss: 30dB attenuator + 1dB cable loss, that total 31dB added into offset.

Test Procedure

ANSI C63.26-2015

5.4.4 Occupied bandwidth—Power bandwidth (99%) measurement procedure

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 $1.5 \times \text{OBW}$ 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 $\geq 3 \times \text{RBW}$.
- 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).

Test Data

Environmental Conditions

Temperature:	26.6 °C
Relative Humidity:	46 %
ATM Pressure:	101.5 kPa

The testing was performed by Cheeb Huang from 2025-08-05 to 2025-08-19.

Test Mode: Transmitting

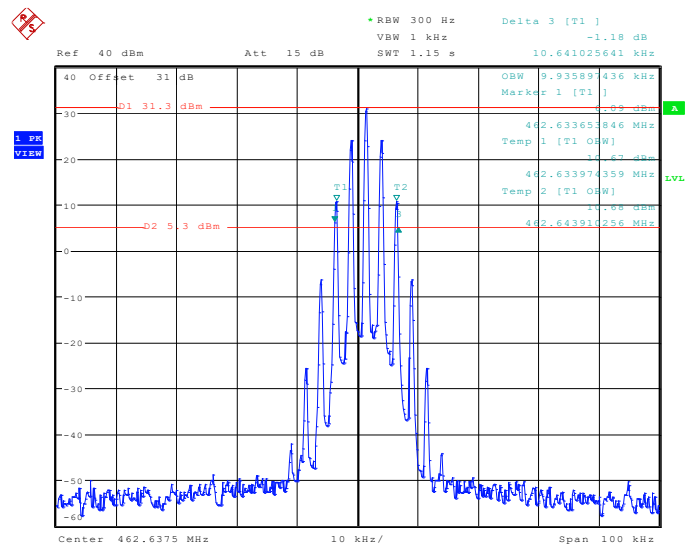
Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)
462.6375	9.936	≤ 12.5
467.6375	9.776	≤ 12.5

Emission Designator Per CFR 47 §2.201& §2.202&, $B_n = 2M + 2D$:

Emission Designator 11K0F3E In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation. $BW = 2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz} \rightarrow 11K0$

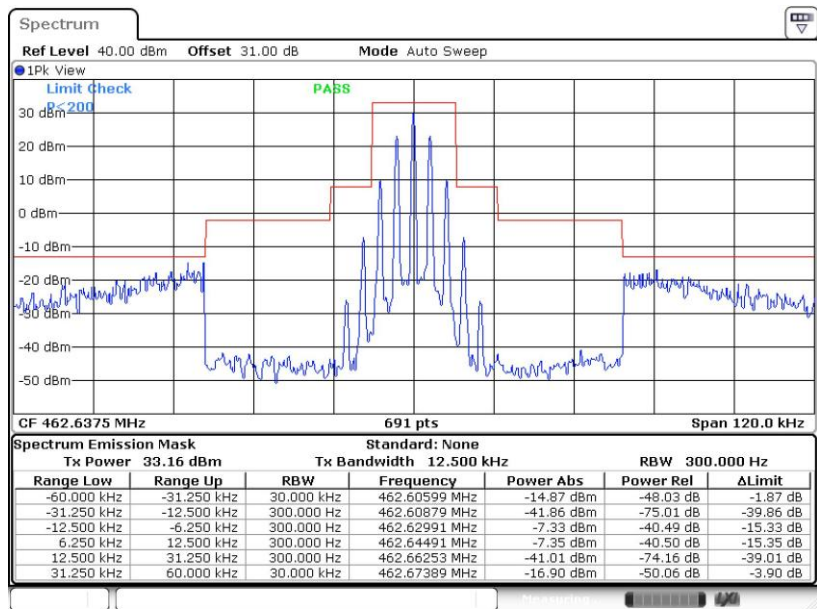
F3E portion of the designator represents an FM voice transmission Therefore, the entire designator for 12.5 kHz channel spacing FM mode is 11K0F3E.

OBW, 462.6375 MHz



ProjectNo.:2501V19299E-RF Tester:Cheeb Huang
Date: 5.AUG.2025 15:59:50

Emission Mask, 462.6375 MHz



ProjectNo.:2501V19299E-RF Tester:Cheeb Huang
Date: 19.AUG.2025 17:36:33

RBW 300 Hz
 VBW 1 kHz
 SWT 1.15 s
 Marker 1 [T1]
 1.60 dBm
 467.633589744 MHz

Ref 40 dBm
 Att 15 dB

40 Offset 31 dB
 30
 20
 10
 0
 -10
 -20
 -30
 -40
 -50

1. dB
 View

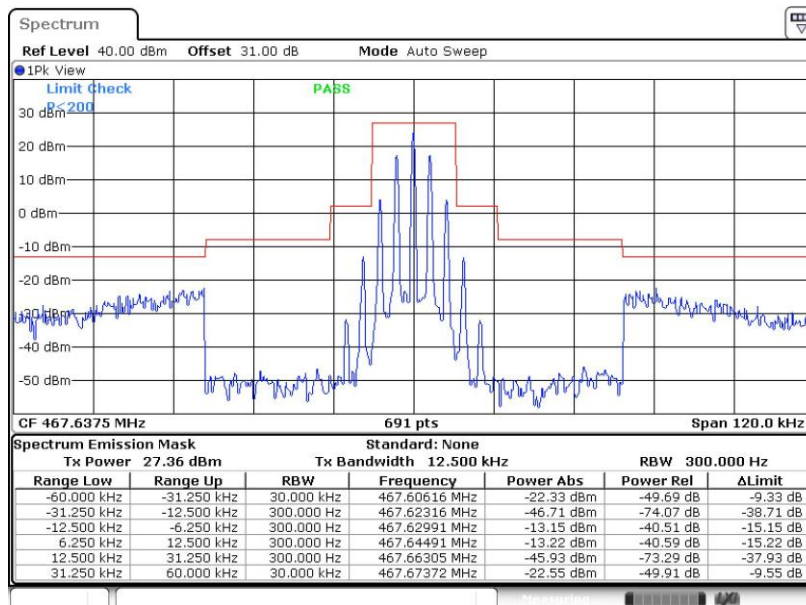
01 25.1 dBm
 02 -1.9 dBm

OBW 9.77564026 kHz
 Delta 3 [T1]
 -1.68 dB
 10.705128206 kHz
 Temp 1 [T1 OBW]
 -8.9 dBm
 467.633974359 MHz
 Temp 2 [T1 OBW]
 -1.00 dBm
 467.643750000 MHz

T1
 T2

Center 467.6375 MHz
 10 kHz/
 Span 100 kHz

Emission Mask, 467.6375 MHz



Version 3.0

FCC §2.1053 & §95.579 - RADIATED SPURIOUS EMISSION

Applicable Standard

FCC §2.1053 and §95.579. Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

(a) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:

- (1) 25 dB (decibels) in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.
- (2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.
- (3) $43 + 10 \log (P)$ dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.

(b) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (2) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.

(c) *Measurement conditions.* The requirements in this section apply to each FRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone and/or power cord.

Test Procedure

The transmitter was placed on a wooden turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ - the absolute level

Spurious attenuation limit in dB = $43 + 10 \lg_{10} (\text{power out in Watts})$

Test Data**Environmental Conditions**

Temperature:	25.2~25.6 °C
Relative Humidity:	50~58 %
ATM Pressure:	100.2~101.8 kPa

The testing was performed by Alex Yan on 2025-08-01 for below 1GHz and Wing K Ji on 2025-08-11 for above 1GHz.

Test Mode: Transmitting

Frequency (MHz)	Receiver Reading (dBm)	Polar (H/V)	Substituted Factor			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)			
462.6375 MHz								
925.28	41.65	H	-23.9	1.36	0.0	-25.26	-13	12.26
925.28	40.24	V	-22.8	1.36	0.0	-24.16	-13	11.16
1387.91	54.32	H	-60.0	0.90	7.80	-53.10	-13	40.10
1387.91	55.64	V	-59.4	0.90	7.80	-52.50	-13	39.50
1850.55	53.48	H	-60.9	1.20	9.40	-52.70	-13	39.70
1850.55	54.57	V	-60.5	1.20	9.40	-52.30	-13	39.30
2313.19	55.05	H	-59.2	1.50	9.60	-51.10	-13	38.10
2313.19	55.88	V	-58.5	1.50	9.60	-50.40	-13	37.40
2775.83	54.84	H	-59.1	1.70	9.30	-51.50	-13	38.50
2775.83	55.67	V	-58.0	1.70	9.30	-50.40	-13	37.40
3238.46	55.54	H	-57.7	2.00	9.50	-50.20	-13	37.20
3238.46	55.74	V	-57.2	2.00	9.50	-49.70	-13	36.70
3701.10	53.41	H	-59.4	2.10	9.70	-51.80	-13	38.80
3701.10	54.52	V	-58.1	2.10	9.70	-50.50	-13	37.50
4163.74	52.64	H	-59.8	1.80	9.60	-52.00	-13	39.00
4163.74	52.99	V	-59.4	1.80	9.60	-51.60	-13	38.60
4626.38	53.86	H	-58.6	1.80	10.20	-50.20	-13	37.20
4626.38	53.00	V	-59.4	1.80	10.20	-51.00	-13	38.00

Frequency (MHz)	Receiver Reading (dBm)	Polar (H/V)	Substituted Factor			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)			
467.6375 MHz								
935.275	42.18	H	-23.3	1.36	0.0	-24.66	-13	11.66
935.275	41.55	V	-21.5	1.36	0.0	-22.86	-13	9.86
1402.91	53.44	H	-60.9	0.90	7.80	-54.00	-13	41.00
1402.91	53.54	V	-61.5	0.90	7.80	-54.60	-13	41.60
1870.55	54.22	H	-60.1	1.20	9.40	-51.90	-13	38.90
1870.55	54.71	V	-60.3	1.20	9.40	-52.10	-13	39.10
2338.19	53.47	H	-60.8	1.50	9.60	-52.70	-13	39.70
2338.19	55.65	V	-58.8	1.50	9.60	-50.70	-13	37.70
2805.83	54.09	H	-59.8	1.70	9.30	-52.20	-13	39.20
2805.83	54.88	V	-58.8	1.70	9.30	-51.20	-13	38.20
3273.46	53.25	H	-60.2	1.70	9.60	-52.30	-13	39.30
3273.46	54.07	V	-59.1	1.70	9.60	-51.20	-13	38.20
3741.10	55.21	H	-57.6	2.10	9.70	-50.00	-13	37.00
3741.10	55.19	V	-57.4	2.10	9.70	-49.80	-13	36.80
4208.74	52.47	H	-60.0	1.80	9.60	-52.20	-13	39.20
4208.74	54.55	V	-57.8	1.80	9.60	-50.00	-13	37.00
4676.38	54.57	H	-58.0	2.10	10.40	-49.70	-13	36.70
4676.38	56.34	V	-56.3	2.10	10.40	-48.00	-13	35.00
1402.91	53.44	H	-60.9	0.90	7.80	-54.00	-13	41.00

Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain

Margin = Limit -Absolute Level

FCC §2.1055 (d) & §95.565 - FREQUENCY STABILITY

Applicable Standard

According to FCC §2.1055(a) (2), the frequency stability shall be measured with variation of ambient temperature from -20 °C to +50 °C, and according to FCC 2.1055(d) (2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.

According to FCC §95.565, Each FRS transmitter type must be designed such that the carrier frequencies remain within ± 2.5 parts-per-million of the channel center frequencies specified in §95.563 during normal operating conditions.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a Frequency Counter via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

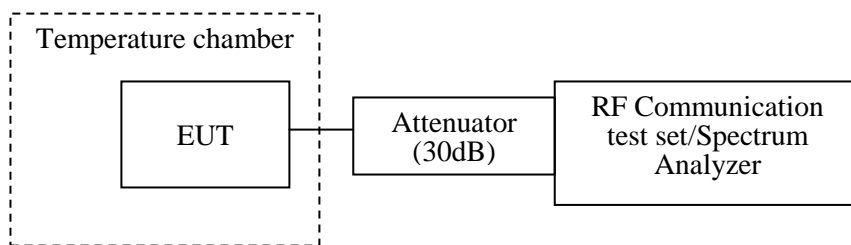
After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Frequency Counter.

Frequency Stability vs. Voltage (item 1 or item 2 will be chosen according to different condition) :

☐1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

☒2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

The output frequency was recorded for each voltage.



Test Data**Environmental Conditions**

Temperature:	26.6 °C
Relative Humidity:	46 %
ATM Pressure:	101.5 kPa

The testing was performed by Cheeb Huang on 2025-08-05.

Test Mode: Transmitting

Test Frequency (MHz)	Temperature (°C)	Voltage (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)	Limit (ppm)
462.6375	-30	3.6	462.6376293	0.2795	±2.5
	-20	3.6	462.6376067	0.2306	±2.5
	-10	3.6	462.6375801	0.1731	±2.5
	0	3.6	462.6375574	0.1241	±2.5
	10	3.6	462.6375355	0.0767	±2.5
	20	3.6	462.6375160	0.0346	±2.5
	30	3.6	462.6374856	-0.0311	±2.5
	40	3.6	462.6374629	-0.0802	±2.5
	50	3.6	462.6374438	-0.1215	±2.5
	20	3.3	462.6375542	0.1172	±2.5
	20	4.5	462.6374725	-0.0594	±2.5

Test Frequency (MHz)	Temperature (°C)	Voltage (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)	Limit (ppm)
467.6375	-30	3.6	467.6376362	0.2913	±2.5
	-20	3.6	467.6376151	0.2461	±2.5
	-10	3.6	467.6375916	0.1959	±2.5
	0	3.6	467.6375634	0.1356	±2.5
	10	3.6	467.6375407	0.0870	±2.5
	20	3.6	467.6375160	0.0342	±2.5
	30	3.6	467.6374925	-0.0160	±2.5
	40	3.6	467.6374738	-0.0560	±2.5
	50	3.6	467.6374509	-0.1050	±2.5
	20	3.3	467.6375603	0.1289	±2.5
	20	4.5	467.6374624	-0.0804	±2.5

§95.587 - FRS ADDITIONAL REQUIREMENTS

Applicable Standard

According to FCC §95.587

Each FRS transmitter type must be designed to meet the following additional requirements.

(a) Transmit frequency capability. FRS transmitter types must not be capable of transmitting on any frequency or channel other than those listed in §95.563.

(b) Antenna. The antenna of each FRS transmitter type must meet the following requirements.

- (1) The antenna must be a non-removable integral part of the FRS transmitter type.
- (2) The gain of the antenna must not exceed that of a half-wave dipole antenna.
- (3) The antenna must be designed such that the electric field of the emitted waves is vertically polarized when the unit is operated in the normal orientation.

(c) Digital data transmissions. FRS transmitter types having the capability to transmit digital data must be designed to meet the following requirements.

- (1) FRS units may transmit digital data containing location information, or requesting location information from one or more other FRS or GMRS units, or containing a brief text message to another specific FRS or GMRS unit or units.
- (2) Digital data transmissions may be initiated by a manual action or command of the operator or on an automatic or periodic basis, and FRS units may be designed to automatically respond with location data upon receiving an interrogation request from another
- (3) Digital data transmissions must not exceed one second in duration.
- (4) Digital data transmissions must not be sent more frequently than one digital data transmission within a thirty-second period, except that an FRS unit may automatically respond to more than one interrogation request received within a thirty-second period.

(d) Packet mode. FRS transmitter types must not be capable of transmitting data in the store-and-forward packet operation mode.

(e) Effective September 30, 2019, no person shall manufacture or import hand-held portable radio equipment capable of operating under this subpart (FRS) and other licensed or licensed-by-rule services in this chapter (part 15 unlicensed equipment authorizations are permitted if consistent with part 15 rules).

Result

- (a) Compliant, please refer to the channel list.
- (b) Compliant, EUT has an non-removable integral vertically polarized antenna arrangement and the antenna gain is 2.15dBi (0dBd), fulfill the requirement of this section. Please refer to the EUT photos.
- (c) Not Applicant, EUT not support this function, please refer to user manual.
- (d) Not Applicant, EUT not support this function, please refer to user manual.
- (e) Compliant, EUT only with FRS function operating under FCC part 95B, not support other function, please refer to user manual.

EUT PHOTOGRAPHS

Please refer to the attachment 2501V19299E-RF External photo and 2501V19299E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501V19299E-RFA Test Setup photo.

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