FCC PART 95

TEST REPORT

For

WOUXUN COMMUNICATIONS LIMITED

11/F OFFICE A HARVARD COMMERCIAL BUILDING 105-111 THOMSON RD WAN CHAI HK, 999077 HONGKONG

FCC ID: 2BGESWX001

Report Type:	Product Name:
Original Report	TWO WAY RADIO(GMRS RADIO)

Report Number:	2407A21468E-RF-01
Report Date:	2025-01-13
Reviewed By:	Ash Lin
Approved By:	Miles Chen
Prepared By:	Bay Area Compliance Laboratories Corp. (Xiamen) Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen Tel: +86-592-3200111 www.baclcorp.com.cn

TABLE OF CONTENTS

REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2407A21468E-RF-01	R1V1	2025-01-13	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:		WOUXUN COMMUNICATIONS LIMITED
Product Name:		TWO WAY RADIO(GMRS RADIO)
Tested Model:		KG-915G
Multiple Model(s):		KG-915G+, KG-915G Plus, KG-915GR, KG-915GX, KG-905G+, KG-905G Plus, KG-905GR, KG-905GX, KG-910G, KG-910G+, KG-910G Plus, KG-910GR, KG-910GX
Trade Name:		WOUXUN
Charger Information	Model:	1A26KG-8
	Input:	DC 12V, 0.8A
	Output:	DC 8.4V, 0.8A
Adapter Information	Model:	DSX-120100-US
	Input:	AC100-240V, 50-60Hz, 0.3A
	Output:	DC 12V, 1A
Power Supply:		DC 7.4V from Battery or DC 8.4V from charger
Maximum Output Power:		462 MHz Main Channels: 36.80dBm (Conducted) 462 MHz interstitial channels: 36.76 dBm (ERP) 467 MHz Main Channels: 36.66dBm (Conducted) 467 MHz interstitial channels: 26.06 dBm (ERP)
Modulation Mode:		FM
Channel Spacing:		12.5kHz, 25kHz
EUT Received Status:		Good
Note: *1.The test model is identify with the series model except for the model name, please refer to declaration letter for more detail.* *2. All measurement and test data in this report was gathered from production sample serial number: 2WQK-2. (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2024-12-27).*		

Antenna Information

Antenna Manufacturer	Antenna Type	Antenna Connector	input impedance (Ohm)	Antenna Gain /Frequency Range
Zhongming Antenna	Whip	SMA	50	2.15dBi (0 dBd)/ 400-480MHz
Note: The Antenna information is provided by applicant.				

Objective

This test report is prepared for *WOUXUN COMMUNICATIONS LIMITED* in accordance with Part 2 and Part 95, Subpart E of the Federal Communication Commissions rules.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with Part 95 Subpart E of the Federal Communication Commissions rules with ANSI C63.26:2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

Measurement Uncertainty

Item		U_{lab}
Unwanted Emissions, radiated	9kHz-30MHz	2.59dB
	30MHz~200MHz	4.38dB
	200MHz~1GHz	4.50dB
	1GHz~6GHz	4.58dB
Occupied Channel Bandwidth		0.053kHz
RF output power, conducted		0.624 dB
Unwanted Emissions, conducted		2.52 dB
Temperature		1.0℃
Humidity		5%
DC and low frequency voltages		0.4%
Duty Cycle		1%
Frequency Error(RF Frequency)		0.082×10^{6}
Audio Frequency		3.96%
Modulation Limiting		1.01%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).	
Test mode:	Transmitting
Test voltage:	DC 7.4V from battery

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

Channel Type	Channel Number	Frequency (MHz)	Channel Type	Channel Number	Frequency (MHz)
462 MHz Main Channels	1	462.5500	467 MHz Main Channels	1	467.5500
	2	462.5750		2	467.5750
	3	462.6000		3	467.6000
	4	**462.6250**		4	**467.6250**
	5	462.6500		5	467.6500
	6	462.6750		6	467.6750
	7	462.7000		7	467.7000
	8	462.7250		8	467.7250
462 MHz Interstitial Channels	1	462.5625	467 MHz Interstitial Channels	1	467.5625
	2	462.5875		2	467.5875
	3	462.6125		3	467.6125
	4	**462.6375**		4	**467.6375**
	5	462.6625		5	467.6625
	6	462.6875		6	467.6875
	7	462.7125		7	467.7125
Per C63.26-2015, section 5.1, the above frequencies in bold were performed the test.					

★The voltage range below was declared by manufacturer.

EUT Operation Voltage(DC/V):					
Lowest:	6.8	**Normal:**	7.4	**Highest:**	8.2

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

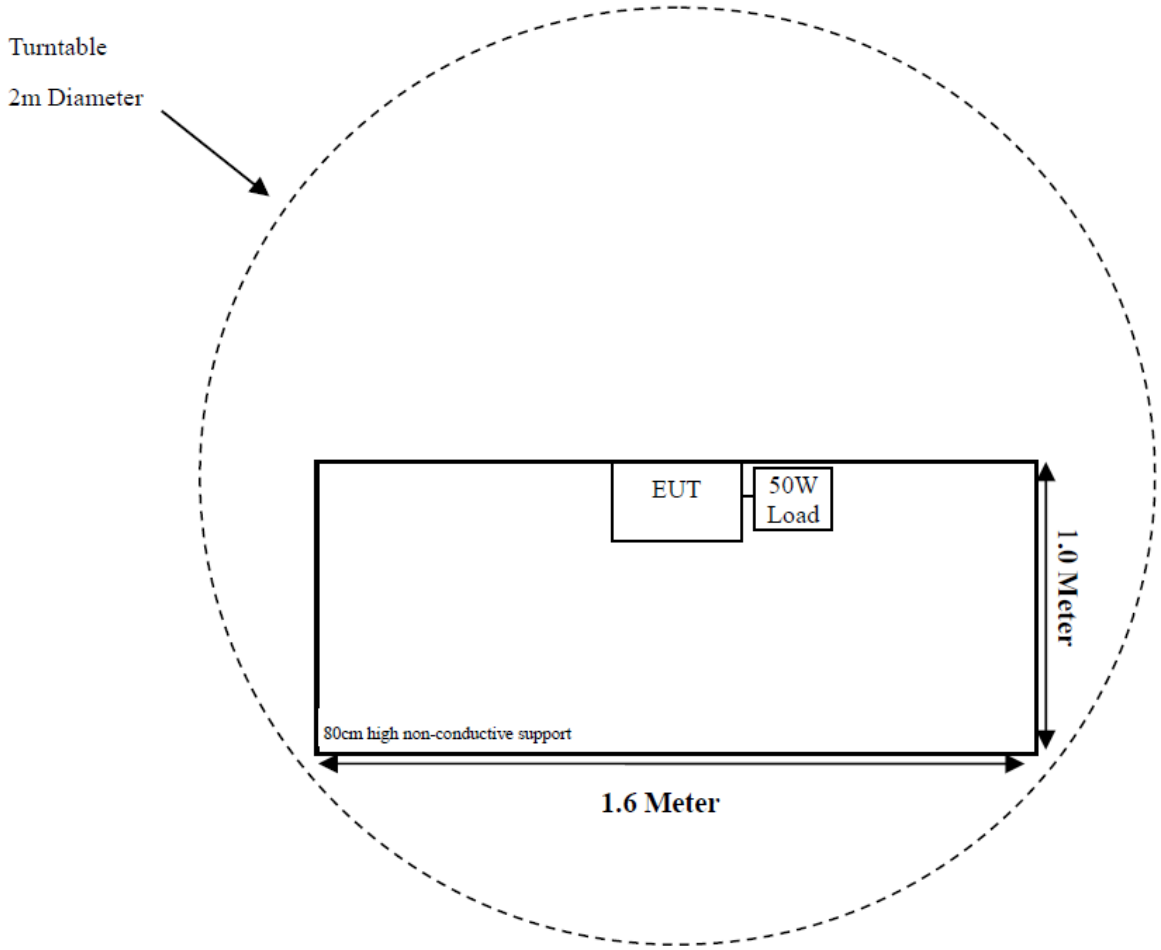
Manufacturer	Description	Model	Serial Number
/	50W load	20230613	121901

External I/O Cable

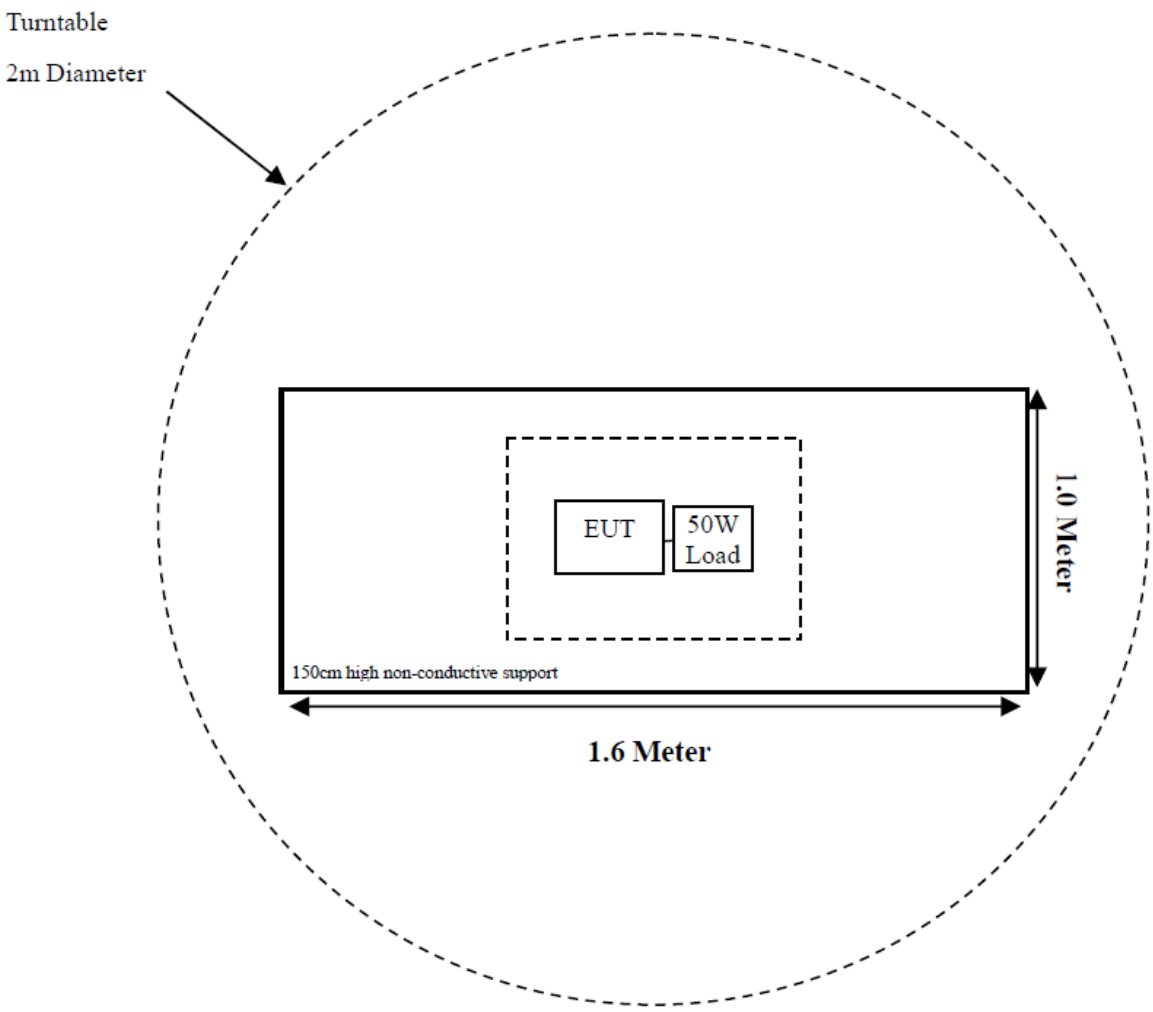
Cable Description	Length(m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

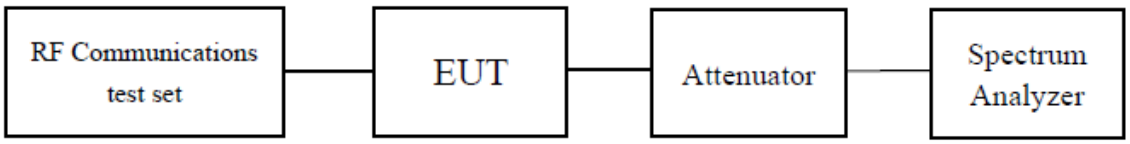
For Radiated Emissions(Below 1GHz):



For Radiated Emissions(Above 1GHz):



For RF Conducted:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§2.1055(d), §95.1765	GMRS Frequency Accuracy	Compliant
§2.1046, §95.1767	RF Output Power	Compliant
§95.1771	GMRS emission types	Compliant
§2.1049, §95.1773	GMRS Authorized Bandwidth	Compliant
§95.1779	Emission Mask	Compliant
§2.1047, §95.1775	GMRS modulation requirements	Compliant
§2.1051,§95.1779	GMRS unwanted emissions limits- Spurious emissions at antenna terminals	Compliant
§2.1053, §95.1779	GMRS unwanted emissions limits- Radiated Spurious emissions	Compliant

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emissions					
Hybrid Antenna	Sunol Sciences	JB6	A122022-5	2023/07/27	2026/07/26
Amplifier	Sonoma	310B	120903	2024/03/29	2025/03/28
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2024/03/29	2025/03/28
Spectrum Analyzer	Rohde & Schwarz	FSU	100405	2024/03/29	2025/03/28
Horn Aantenna	EMCO	3115	9002-3355	2024/11/19	2027/11/18
Preamplifier	A.H.Systems	PAM-0118P	489	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2024/03/29	2025/03/28
Dipole Antenna	COM-POWER	3121C	9209-860	N/A	N/A
Double Ridge Guide Horn Antenna	A.H.Systems	SAS-571	1980	2023/07/28	2026/07/27
Microwave Analog Signal Generator	Agilent	N5181A	MY48180319	2024/03/29	2025/03/28
Band Elimination Filter	HX Microwave	HXLBQ-DZA266LC	24031602-2	2024/03/29	2025/03/28
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSU 26	200199	2024/03/29	2025/03/28
Coaxial Cable	WEIHE	WH316	RFCC002	Each time	Each time
Attenuator	Electronic Corporation	300-WA-FFN-30	1172435	2024/03/29	2025/03/28
DC Power Supply	MAISHENG	MS-606DS	1027453694	N/A	N/A
Multimeter	deli	DL8490	23930192	2024/03/29	2025/03/28
RF Communications test set	HP	8920A	3524A07202	2024/04/26	2025/04/25
constant temperature and humidity testing machine	BACL	BTH-150	30211	2024/03/29	2025/03/28
Audio Analyzer	R&S	UPV	101782	2024/03/29	2025/03/28

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

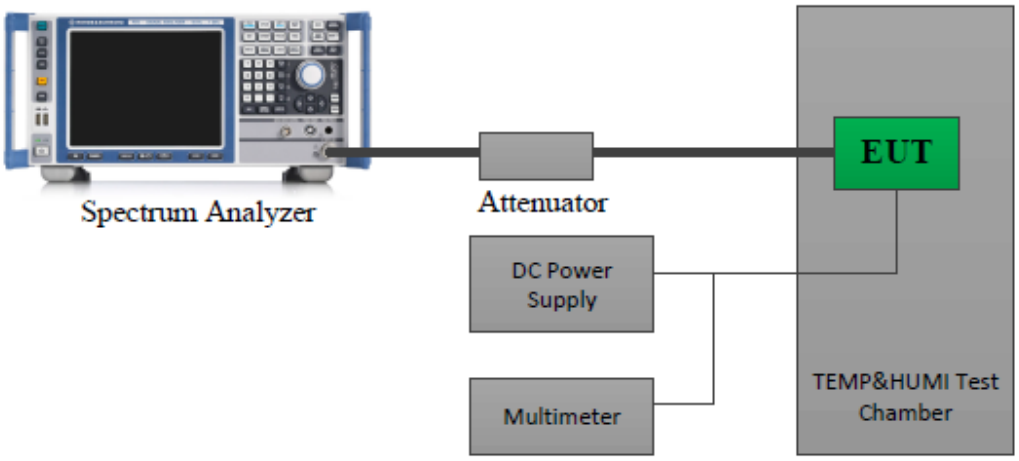
FCC § 2.1055(D), §95.1765 –GMRS FREQUENCY ACCURACY

Applicable Standard

FCC §95.1765

Each GMRS transmitter type must be designed to comply with the frequency accuracy requirements in this section under normal operating conditions. Operators of GMRS stations must also ensure compliance with these requirements.
(a) The carrier frequency of each GMRS transmitter transmitting an emission with an occupied bandwidth greater than 12.5 kHz must remain within 5 parts-per-million (ppm) of the channel center frequencies listed in §95.1763 under normal operating conditions.
(b) The carrier frequency of each GMRS transmitter transmitting an emission with an occupied bandwidth of 12.5 kHz or less must remain within 2.5 ppm of the channel center frequencies listed in §95.1763 under normal operating conditions.

EUT Setup Block Diagram



Test Procedure

C63.26-2015, Clause 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.

Test Data

Test Mode:	Transmitting	**Test Engineer:**	Lucas Lin
Test Date:	2024-12-30	**Test Result:**	Pass

Environment Conditions:					
Temperature: (℃)	22.7	Relative Humidity: (%)	41	ATM Pressure: (kPa)	100.1

Please refer to below tables.

Test Frequency (MHz)	**Temperature (℃)**	**Voltage (V_{dc})**	**Measured Frequency (MHz)**	**Frequency Error (ppm)**	**limit (ppm)**
462.625	-30	7.4	462.6252396	0.52	≤5.0
	-20	7.4	462.6252044	0.44	≤5.0
	-10	7.4	462.6251825	0.39	≤5.0
	0	7.4	462.6251482	0.32	≤5.0
	10	7.4	462.6250953	0.21	≤5.0
	20	7.4	462.6250601	0.13	≤5.0
	30	7.4	462.6251297	0.28	≤5.0
	40	7.4	462.6251828	0.40	≤5.0
	50	7.4	462.6252553	0.55	≤5.0
	20	6.8	462.6251735	0.38	≤5.0
	20	8.2	462.6251901	0.41	≤5.0

Test Frequency (MHz)	Temperature (℃)	Voltage (Vdc)	Measured Frequency (MHz)	Frequency Error (ppm)	limit (ppm)
462.6375	-30	7.4	462.6377253	0.49	≤5.0
	-20	7.4	462.6377049	0.44	≤5.0
	-10	7.4	462.6376722	0.37	≤5.0
	0	7.4	462.6376285	0.28	≤5.0
	10	7.4	462.6375988	0.21	≤5.0
	20	7.4	462.6375701	0.15	≤5.0
	30	7.4	462.6376118	0.24	≤5.0
	40	7.4	462.6376894	0.41	≤5.0
	50	7.4	462.6377319	0.50	≤5.0
	20	6.8	462.6376859	0.40	≤5.0
	20	8.2	462.6373315	-0.36	≤5.0

Test Frequency (MHz)	Temperature (℃)	Voltage (Vdc)	Measured Frequency (MHz)	Frequency Error (ppm)	limit (ppm)
467.625	-30	7.4	467.6252219	0.47	≤5.0
	-20	7.4	467.6251953	0.42	≤5.0
	-10	7.4	467.6251625	0.35	≤5.0
	0	7.4	467.6251382	0.30	≤5.0
	10	7.4	467.6250998	0.21	≤5.0
	20	7.4	467.6250201	0.04	≤5.0
	30	7.4	467.6251076	0.23	≤5.0
	40	7.4	467.6251964	0.42	≤5.0
	50	7.4	467.6252245	0.48	≤5.0
	20	6.8	467.6251731	0.37	≤5.0
	20	8.2	467.6251964	0.42	≤5.0

Test Frequency (MHz)	Temperature (℃)	Voltage (Vdc)	Measured Frequency (MHz)	Frequency Error (ppm)	limit (ppm)
467.6375	-30	7.4	467.6377479	0.53	≤2.5
	-20	7.4	467.6377104	0.45	≤2.5
	-10	7.4	467.6376496	0.32	≤2.5
	0	7.4	467.6376309	0.28	≤2.5
	10	7.4	467.6375982	0.21	≤2.5
	20	7.4	467.6375601	0.13	≤2.5
	30	7.4	467.6376356	0.29	≤2.5
	40	7.4	467.6376917	0.41	≤2.5
	50	7.4	467.6377291	0.49	≤2.5
	20	6.8	467.6376683	0.36	≤2.5
	20	8.2	467.6376823	0.39	≤2.5

Note: the voltage range was declared by manufacturer.

FCC § 2.1046, §95.1767 –RF OUTPUT POWER

Applicable Standard

FCC §95.1767
This section contains transmitting power limits for GMRS stations. The maximum transmitting power depends on which channels are being used and the type of station.

(a) 462/467 MHz main channels. The limits in this paragraph apply to stations transmitting on any of the 462 MHz main channels or any of the 467 MHz main channels. Each GMRS transmitter type must be capable of operating within the allowable power range. GMRS licensees are responsible for ensuring that their GMRS stations operate in compliance with these limits.

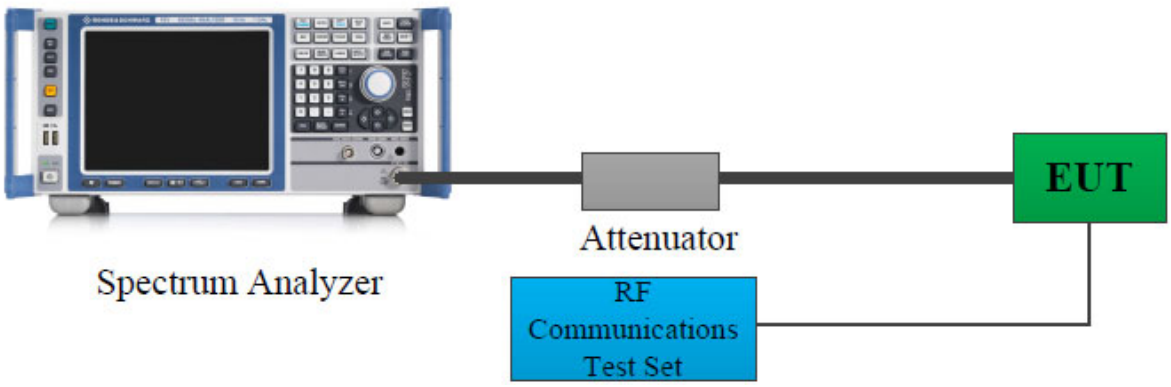
(1) The transmitter output power of mobile, repeater and base stations must not exceed 50 Watts.

(2) The transmitter output power of fixed stations must not exceed 15 Watts.

(b) 462 MHz interstitial channels. The effective radiated power (ERP) of mobile, hand-held portable and base stations transmitting on the 462 MHz interstitial channels must not exceed 5 Watts.

(c) 467 MHz interstitial channels. The effective radiated power (ERP) of hand-held portable units transmitting on the 467 MHz interstitial channels must not exceed 0.5 Watt. Each GMRS transmitter type capable of transmitting on these channels must be designed such that the ERP does not exceed 0.5 Watt.

Test Setup Block Diagram



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

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

ERP=Conducted Output Power+ Antenna Gain (dBd)

Test Data

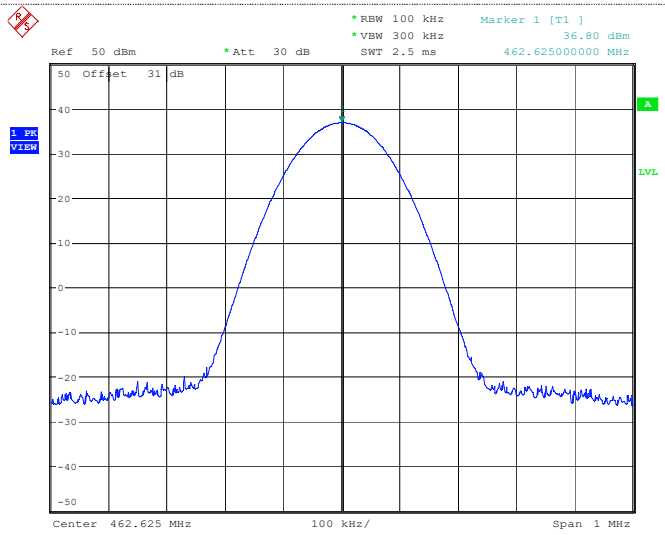
Test Mode:	Transmitting	**Test Engineer:**	Lucas Lin
Test Date:	2024-12-30~2025-01-03	**Test Result:**	Pass

Enviroment Conditions:					
Temperature: (℃)	22.7~23.3	Relative Humidity: (%)	41~48	ATM Pressure: (kPa)	100.1

Please refer to below table:

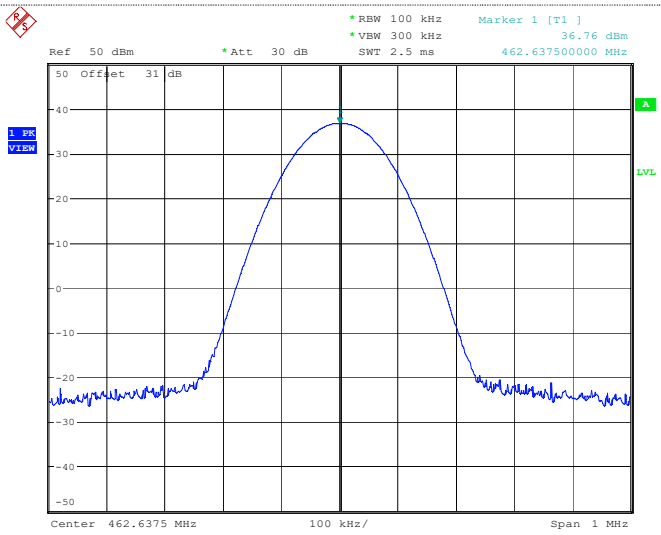
Test Bands	**Test Frequency (MHz)**	**Conducted Output power (dBm)**	**Conducted Output Power Limit (dBm)**	**ERP (dBm)**	**ERP Limit (dBm)**
462 MHz Main	462.625	36.80	⩽47.00	36.80	/
462 MHz interstitial	462.6375	36.76	/	36.76	⩽37.00
467 MHz Main	467.625	36.66	⩽47.00	36.66	/
467 MHz interstitial	467.6375	26.06	/	26.06	⩽27.00
ERP=Conducted Output Power+ Antenna Gain(dBd)					

462.6250 MHz



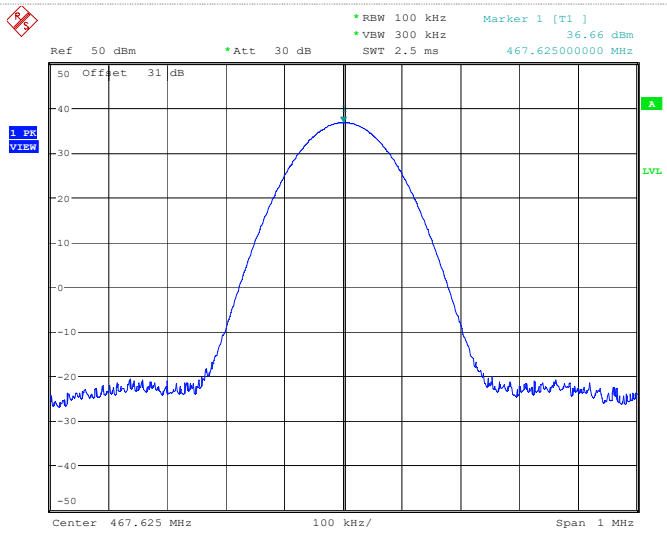
Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 30.DEC.2024 18:37:13

462.6375 MHz



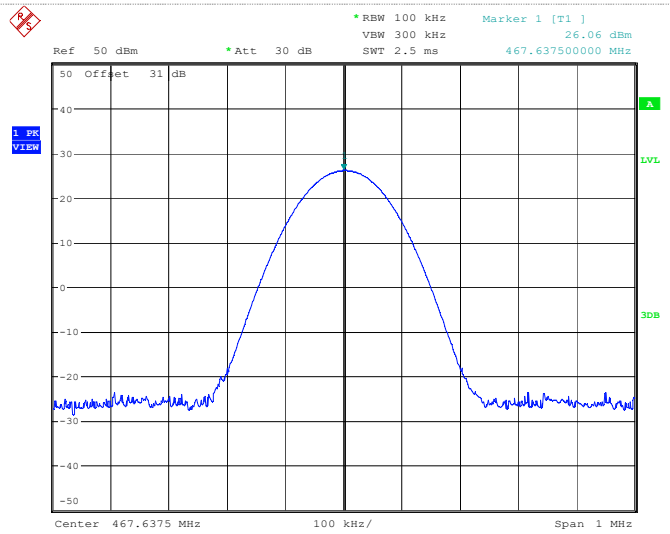
Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 30.DEC.2024 18:36:40

467.6250 MHz



Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 30.DEC.2024 18:37:47

467. 6375 MHz



Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 3.JAN.2025 13:00:42

FCC § 95.1771-GMRS EMISSION TYPE

Applicable Standard

FCC §95.1771
Each GMRS transmitter type must be designed to satisfy the emission capability rules in this section. Operation of GMRS stations must also be in compliance with these rules.

(a) Each GMRS transmitter type must have the capability to transmit F3E or G3E emissions.

(b) Only emission types A1D, F1D, G1D, H1D, J1D, R1D, A3E, F3E, G3E, H3E, J3E, R3E, F2D, and G2D are authorized for use in the GMRS. Equipment for which certification is sought under this subpart may have capabilities to transmit other emission types intended for use in other services, provided that these emission types can be deactivated when the equipment is used in the GMRS.

Judgment

Emission type is F3E.

FCC §95.1773 GMRS AUTHORIZED BANDWIDTH

Applicable Standard

FCC §95.1773

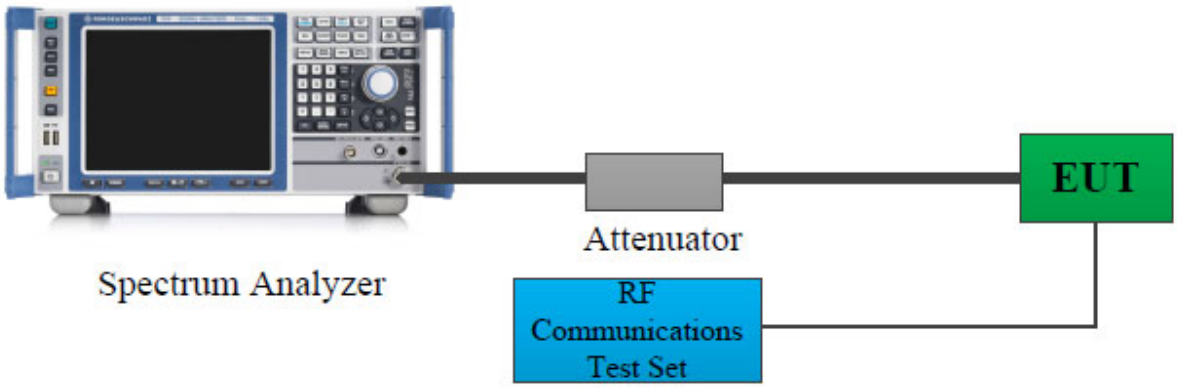
Each GMRS transmitter type must be designed such that the occupied bandwidth does not exceed the authorized bandwidth for the channels used. Operation of GMRS stations must also be in compliance with these requirements.

(a) Main channels. The authorized bandwidth is 20 kHz for GMRS transmitters operating on any of the 462 MHz main channels (see §95.1763(a)) or any of the 467 MHz main channels (see §95.1763(c)).

(b) Interstitial channels. The authorized bandwidth is 20 kHz for GMRS transmitters operating on any of the 462 MHz interstitial channels (see §95.1763(b)) and is 12.5 kHz for GMRS transmitters operating on any of the 467 MHz interstitial channels (see §95.1763(d)).

(c) Digital data transmissions. Digital data transmissions are limited to the 462 MHz main channels and interstitial channels in the 462 MHz and 467 MHz bands.

EUT Setup Block Diagram



Test Procedure

C63.26-2015, Clause 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).

Test Data

Test Mode:	Transmitting	**Test Engineer:**	Lucas Lin
Test Date:	2024-12-31~2025-01-03	**Test Result:**	Pass

Enviroment Conditions:					
Temperature: (°C)	23.0~23.3	Relative Humidity: (%)	43~48	ATM Pressure: (kPa)	100.1

Please refer to below table:

Test Bands	Test Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)
462 MHz Main	462.625	14.744	⩽20
462 MHz interstitial	462.6375	14.744	⩽20
467 MHz Main	467.625	14.744	⩽20
467 MHz interstitial	467.6375	9.776	⩽12.5

Note:
Emission bandwidth was based on calculation method instead of measurement.
Emission Designator
Per CFR 47 §2.201& §2.202, BW = 2M + 2D

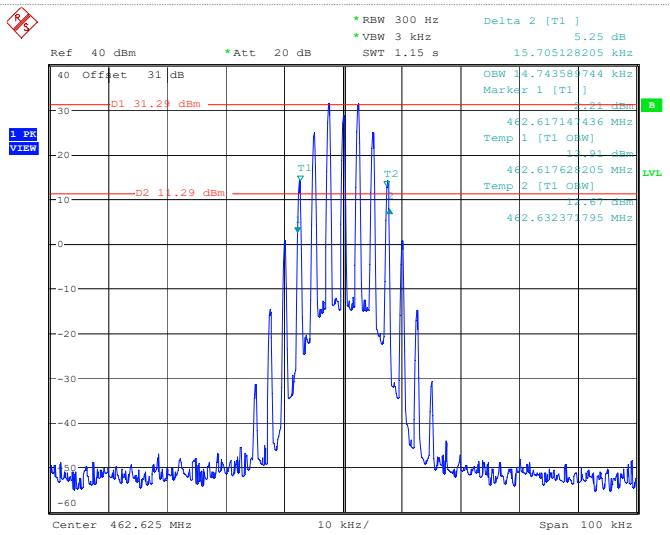
For FM Mode (Channel Spacing: 12.5 kHz)
Emission Designator 11K0F3E
In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.
BW = 2(M+D) = 2*(3.0 kHz + 2.5 kHz) = 11 kHz = 11K0

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

For FM Mode (Channel Spacing: 25 kHz)
Emission Designator: 16K0F3E
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

F3E portion of the designator represents an FM voice transmission
Therefore, the entire designator for 25 kHz channel spacing FM mode is 16K0F3E.

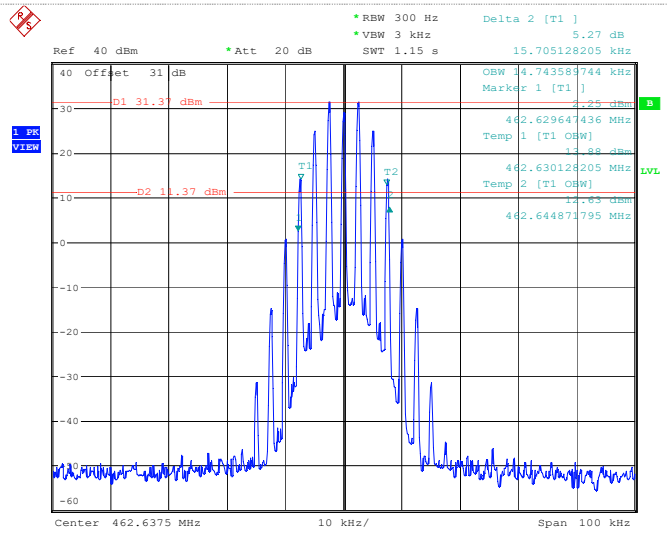
462.625MHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 15:29:48

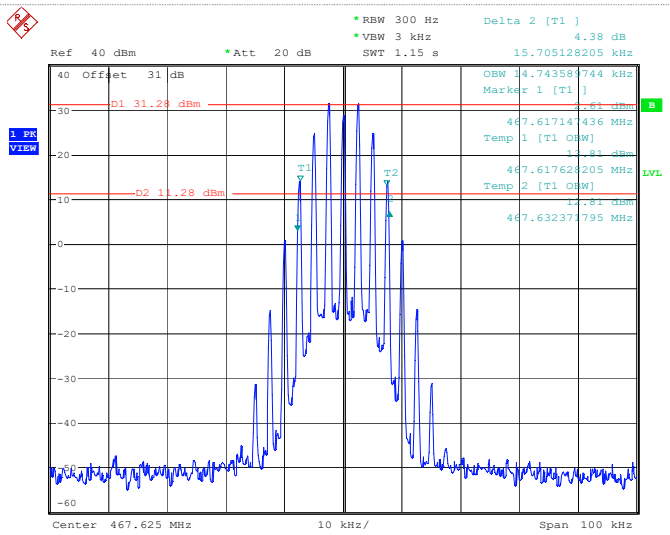
462.6375MHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 15:31:36

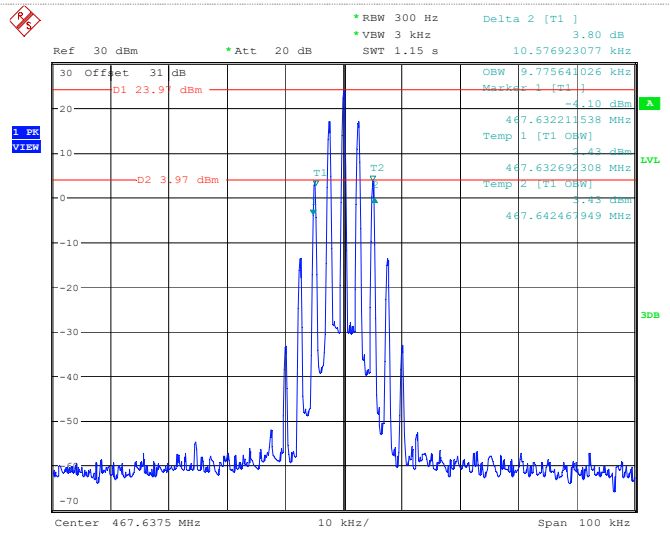
467.625MHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 15:33:04

467.6375MHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 3.JAN.2025 13:05:48

FCC § 2.1047, §95.1775 - GMRS MODULATION REQUIREMENTS

Applicable Standard

FCC §95.1775

Each GMRS transmitter type must be designed to satisfy the modulation requirements in this section. Operation of GMRS stations must also be in compliance with these requirements.

(a) Main channels. The peak frequency deviation for emissions to be transmitted on the main channels must not exceed ± 5 kHz.

(b) 462 MHz interstitial channels. The peak frequency deviation for emissions to be transmitted on the 462 MHz interstitial channels must not exceed ± 5 kHz.

(c) 467 MHz interstitial channels. The peak frequency deviation for emissions to be transmitted on the 467 MHz interstitial channels must not exceed ± 2.5 kHz, and the highest audio frequency contributing substantially to modulation must not exceed 3.125 kHz.

(d) Overmodulation. Each GMRS transmitter type, except for a mobile station transmitter type with a transmitter power output of 2.5 W or less, must automatically prevent a higher than normal audio level from causing overmodulation.

(e) Audio filter. Each GMRS transmitter type must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of §95.1779 (without filtering).

(1) The filter must be between the modulation limiter and the modulated stage of the transmitter.

(2) At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least 60 log (f/3) dB more than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB more than the attenuation at 1 kHz.

Test Prosedure

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 1.

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.

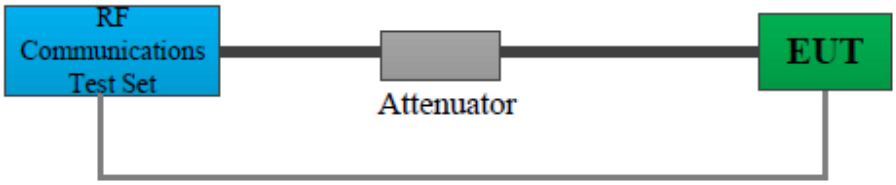
e) Increase the level from the audio generator by 20 dB in 5 dB increments recording the deviation as measured from the test receiver in each step. Verify that the audio level used to make the OBW measurement is included in the sweep.

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).

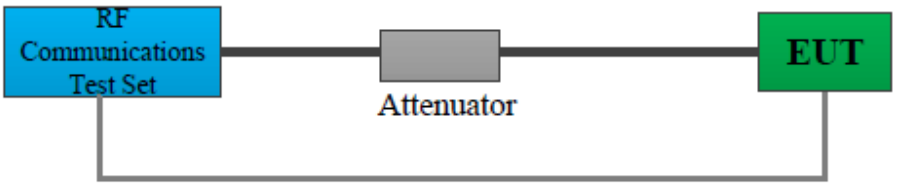
g) Set the test receiver to measure peak negative deviation and repeat step d) through step f).

h) The values recorded in step f) and step g) are the modulation limiting.

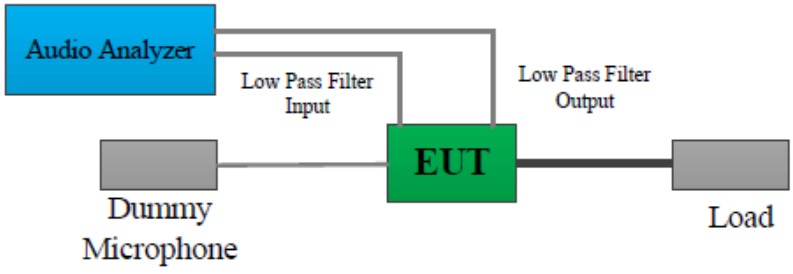
i) Plot the data set as a percentage of deviation relative to the 0 dB reference point versus input voltage.



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 3.
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.



According to ANSI/TIA 603-E-2016 Section 2.2.15: Audio Low Pass Filter Response
a) Connect the equipment as illustrated.
b) Connect the Audio Generator as close as possible the input of the post limiter low pass filter within the transmitter under test.
c) Connect the RF Communications Test Set to the output of the post limiter low pass filter within the transmitter under test.
d) Apply a 1000 Hz tone from the audio frequency generator and adjust the level per manufacturer's specifications.
e) Record the dB level of the 1000 Hz spectral line on the RF Communications Test Set as LEVREF .
f) Set the audio frequency generator to the desired test frequency between 3000 Hz and the upper low pass filter limit.
g) Record RF Communications Test Set levels, at the test frequency in step f).
h) Record the dB level on the RF Communications Test Set as LEVFREQ .



Test Data

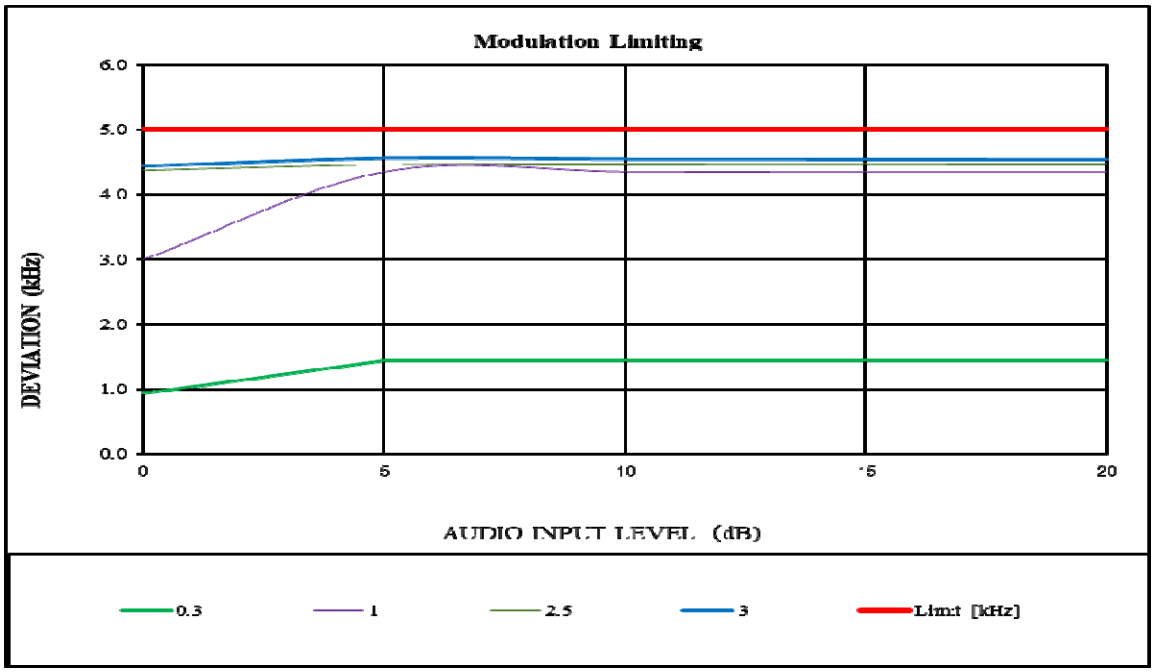
Test Mode:	Transmitting	Test Engineer:	Lucas Lin
Test Date:	2025-01-10	Test Result:	Pass

Enviroment Conditions:					
Temperature: (°C)	22.5	Relative Humidity: (%)	42	ATM Pressure: (kPa)	100.1

MODULATION LIMITING

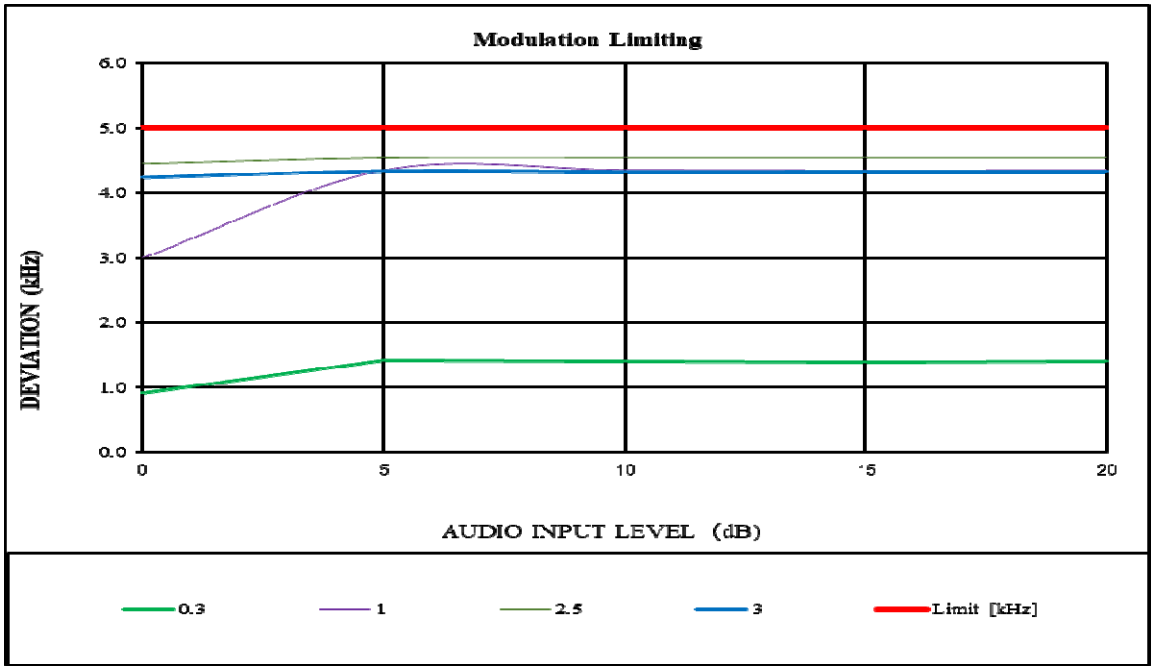
PK+

FM 25kHz	Carrier Frequency: 462.625 MHz				
AUDIO INPUT LEVEL（dB)	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.439	4.350	4.473	4.539	5
15	1.434	4.347	4.478	4.544	5
10	1.442	4.356	4.476	4.548	5
5	1.441	4.352	4.464	4.562	5
0	0.928	3.000	4.376	4.442	5

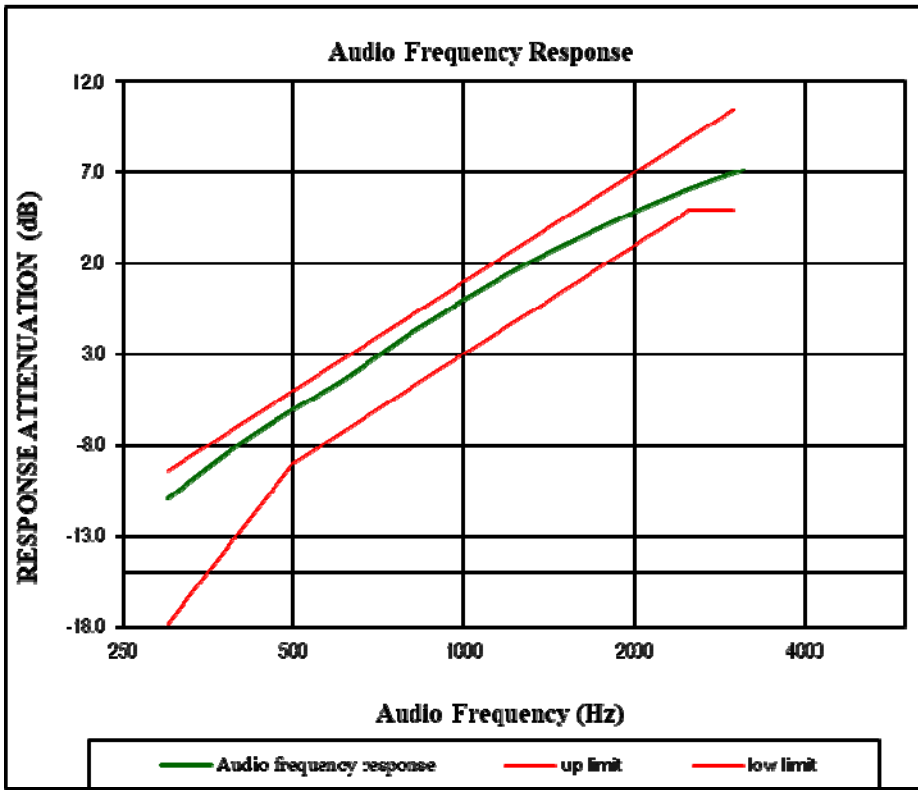


PK-

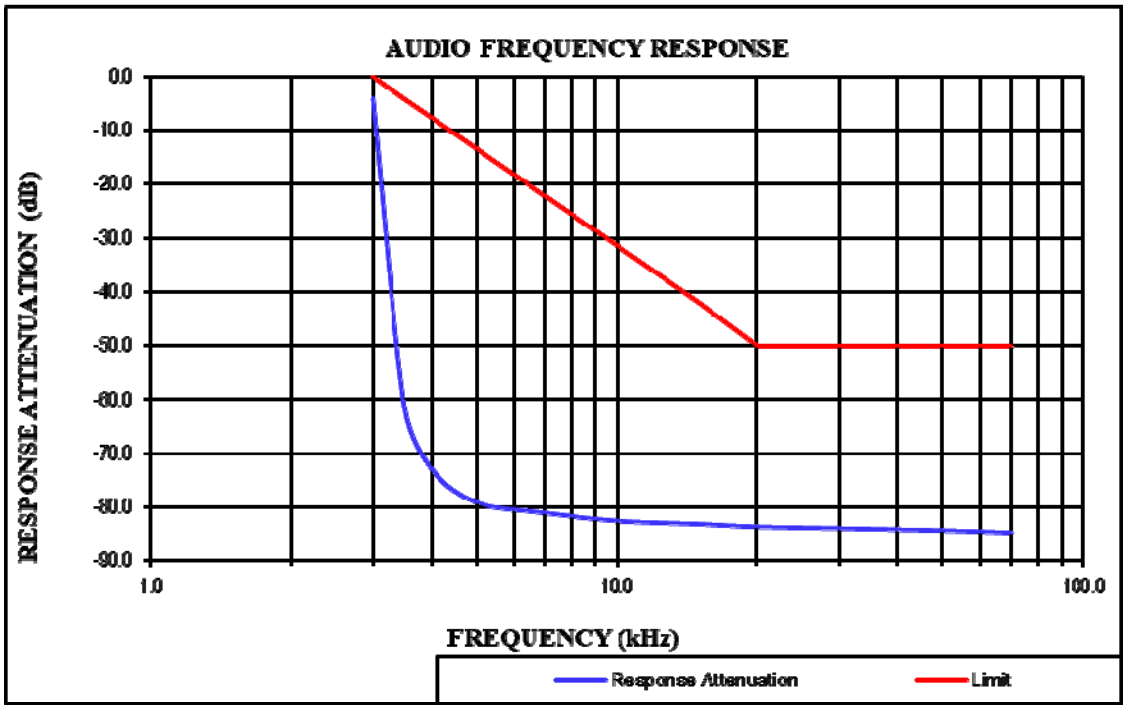
FM 25kHz	Carrier Frequency: 462.625 MHz				
AUDIO INPUT LEVEL（dB)	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.412	4.355	4.546	4.334	5
15	1.392	4.349	4.546	4.332	5
10	1.405	4.356	4.545	4.329	5
5	1.416	4.353	4.542	4.341	5
0	0.916	3.000	4.453	4.239	5



Audio Frequency Response	
Carrier Frequency: 462.6250 MHz	
Audio Frequency	**Response Attenuation**
Hz	**dB**
300	-10.94
400	-7.99
500	-6.03
600	-4.60
700	-3.16
800	-1.89
900	-0.91
1000	0.00
1200	1.45
1400	2.55
1600	3.44
1800	4.19
2000	4.84
2200	5.39
2400	5.89
2600	6.31
2800	6.68
3000	6.98
3125	7.14



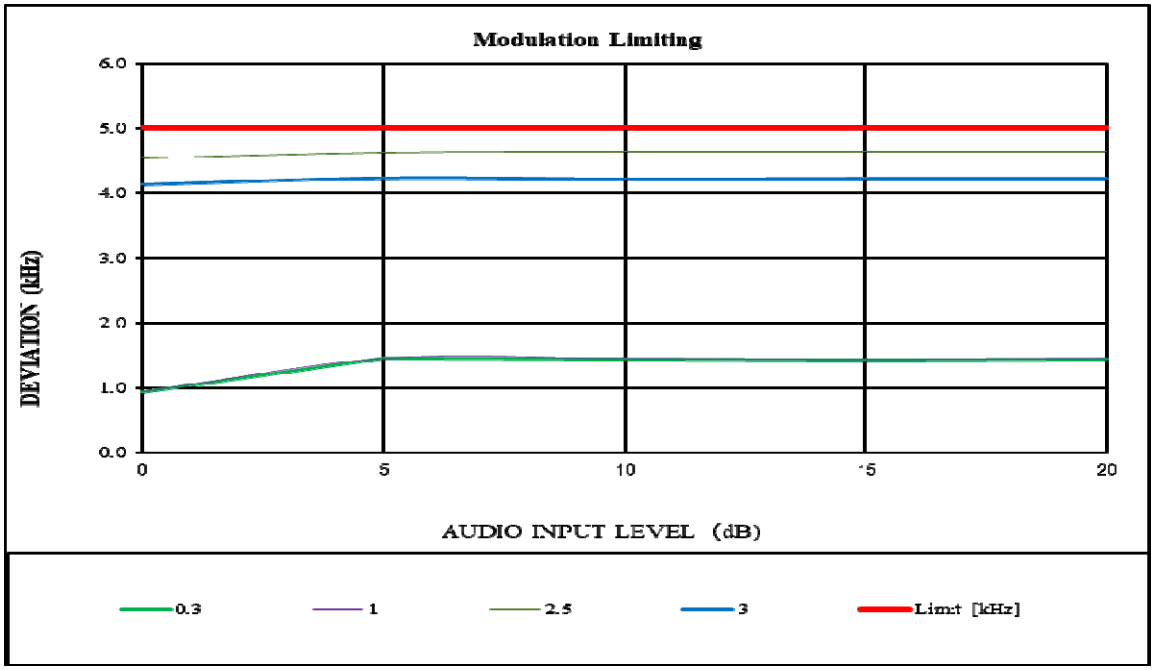
Audio Low Pass Filter Response		
Audio Frequency	Response Attenuation	Limit
kHz	dB	dB
3.0	-4.1	0
3.5	-61.2	-4.0
4.0	-72.8	-7.5
5.0	-79.1	-13.3
7.0	-81.0	-22.1
10.0	-82.5	-31.4
15.0	-83.1	-41.9
20.0	-83.6	-50.0
30.0	-83.9	-50.0
50.0	-84.3	-50.0
70.0	-84.7	-50.0



MODULATION LIMITING

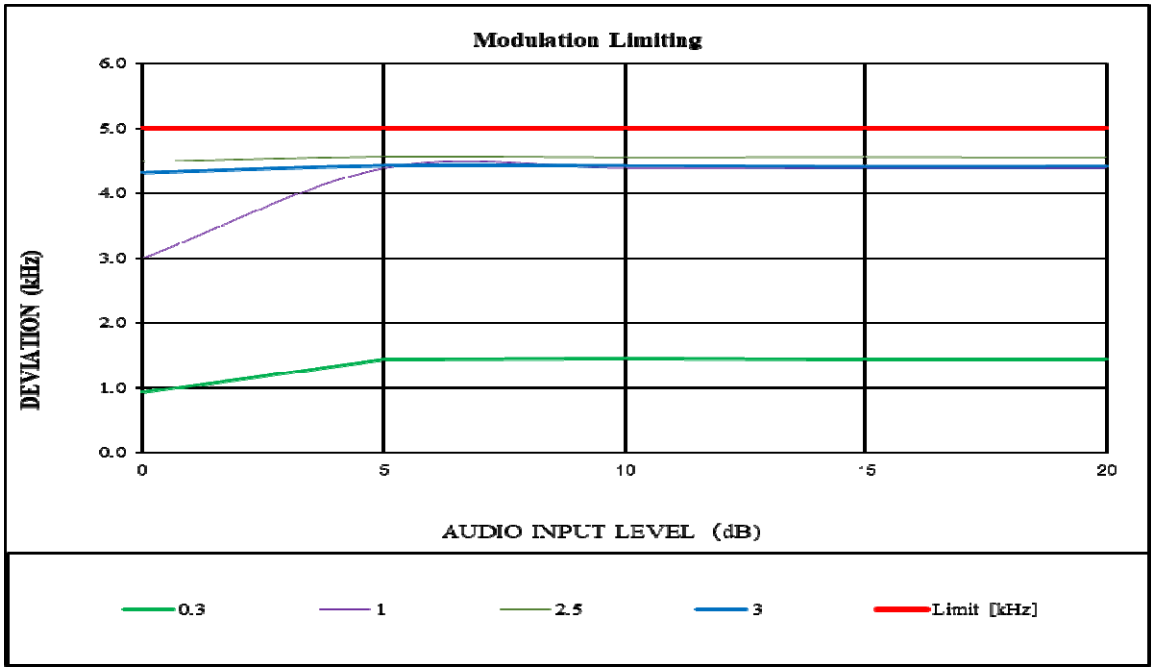
PK+

FM 25kHz	Carrier Frequency: 462.6375 MHz				
AUDIO INPUT LEVEL（dB）	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.445	4.332	4.639	4.225	5
15	1.431	4.327	4.639	4.225	5
10	1.444	4.331	4.639	4.216	5
5	1.448	4.333	4.625	4.233	5
0	0.935	3.000	4.542	4.133	5

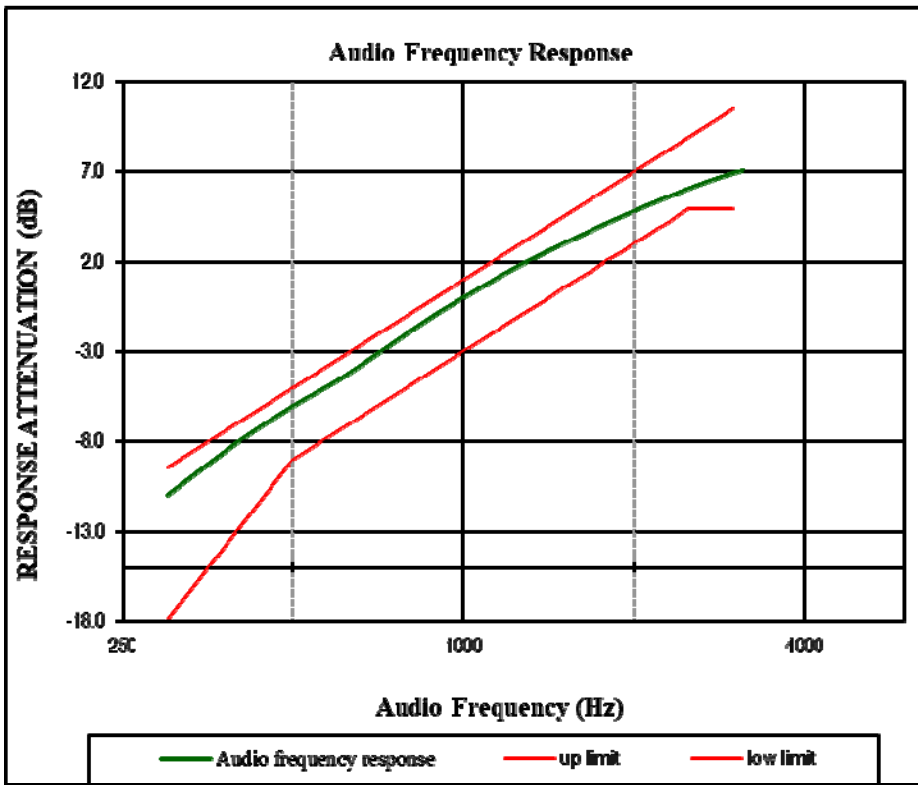


PK-

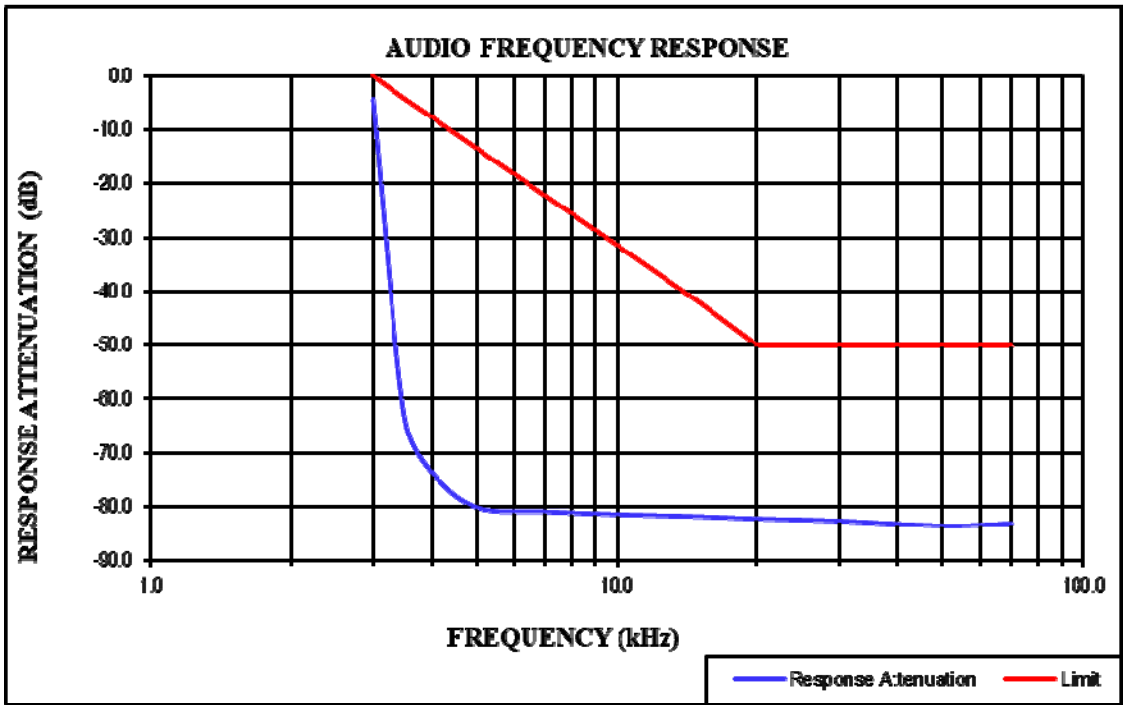
FM 25kHz	Carrier Frequency: 462.6375 MHz				
AUDIO INPUT LEVEL（dB)	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.428	4.386	4.558	4.412	5
15	1.428	4.388	4.563	4.408	5
10	1.441	4.393	4.559	4.421	5
5	1.431	4.386	4.568	4.425	5
0	0.924	3.000	4.494	4.321	5



Audio Frequency Response	
Carrier Frequency: 462.6375MHz	
Audio Frequency	**Response Attenuation**
Hz	**dB**
300	-10.97
400	-8.01
500	-6.02
600	-4.59
700	-3.18
800	-1.93
900	-0.86
1000	0.00
1200	1.45
1400	2.54
1600	3.42
1800	4.18
2000	4.82
2200	5.37
2400	5.85
2600	6.27
2800	6.64
3000	6.93
3125	7.08



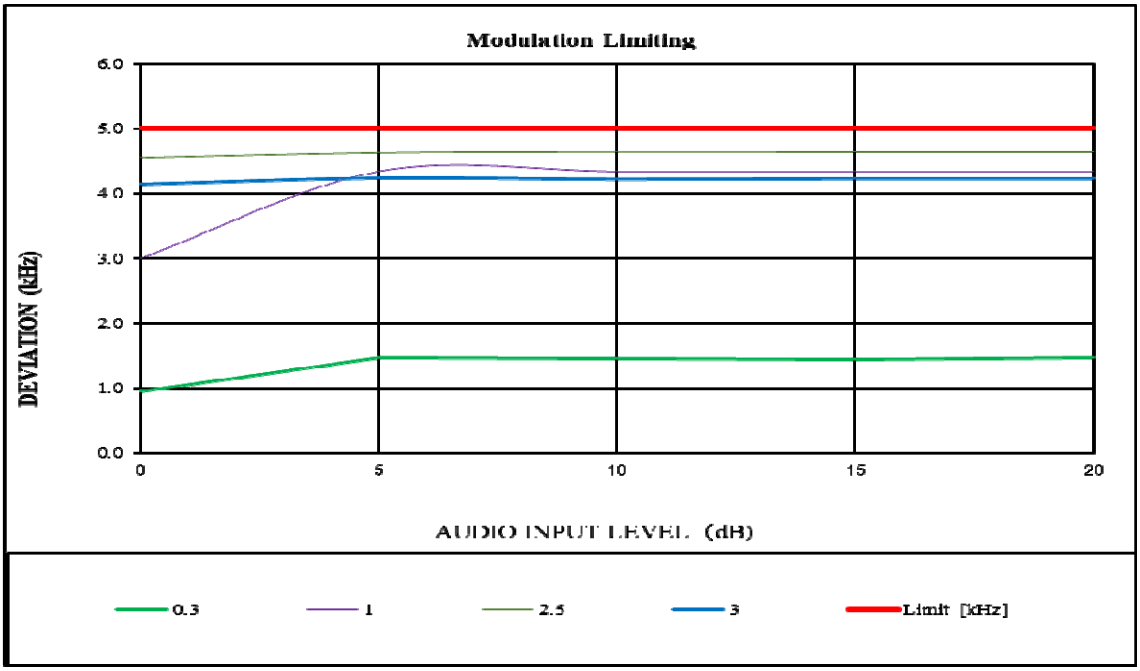
Audio Low Pass Filter Response		
Audio Frequency	Response Attenuation	Limit
kHz	dB	dB
3.0	-4.3	0
3.5	-63.2	-4.0
4.0	-73.5	-7.5
5.0	-80.1	-13.3
7.0	-80.9	-22.1
10.0	-81.4	-31.4
15.0	-81.8	-41.9
20.0	-82.2	-50.0
30.0	-82.6	-50.0
50.0	-83.5	-50.0
70.0	-83.1	-50.0



MODULATION LIMITING

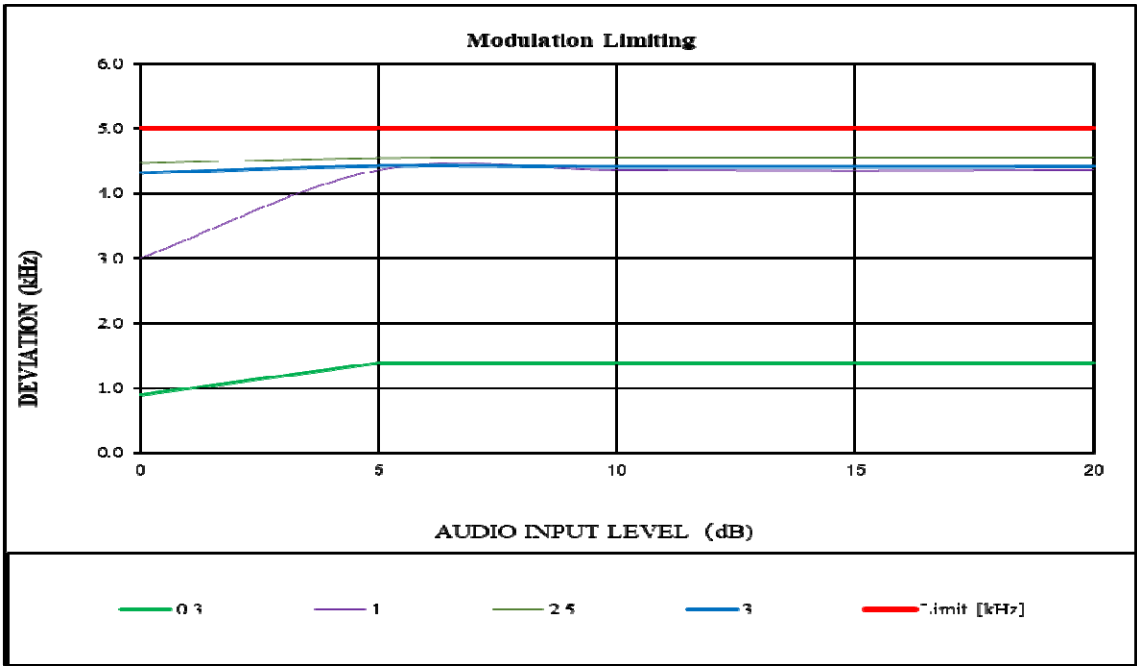
PK+

FM 25kHz	Carrier Frequency: 467.625 MHz				
AUDIO INPUT LEVEL（dB)	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.461	4.340	4.639	4.233	5
15	1.438	4.341	4.639	4.232	5
10	1.455	4.342	4.641	4.223	5
5	1.468	4.341	4.628	4.241	5
0	0.943	3.000	4.553	4.146	5

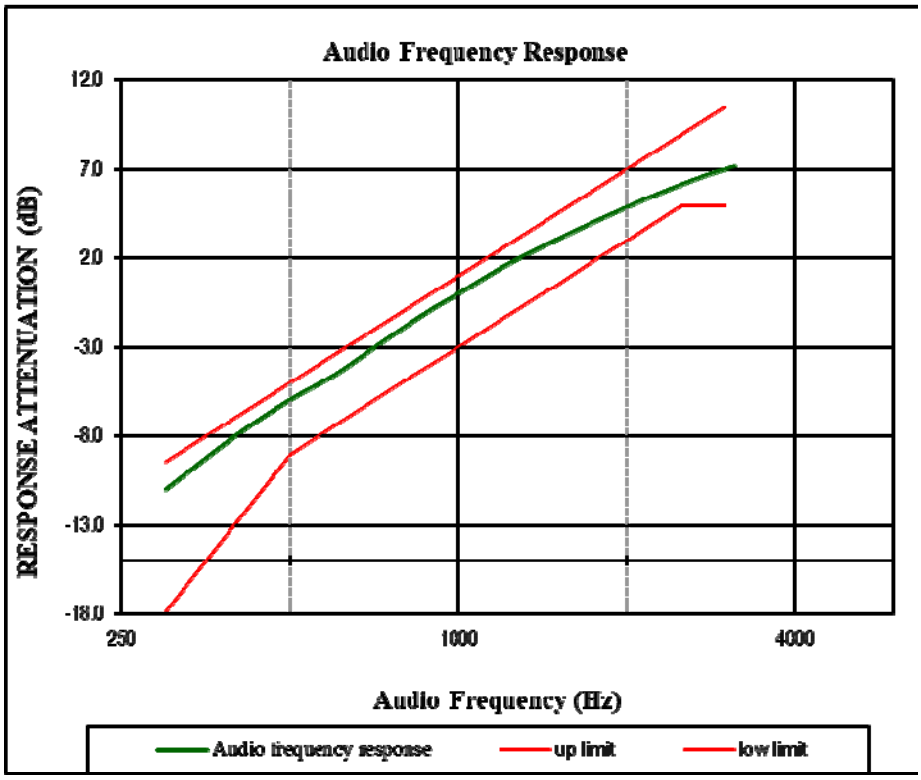


PK-

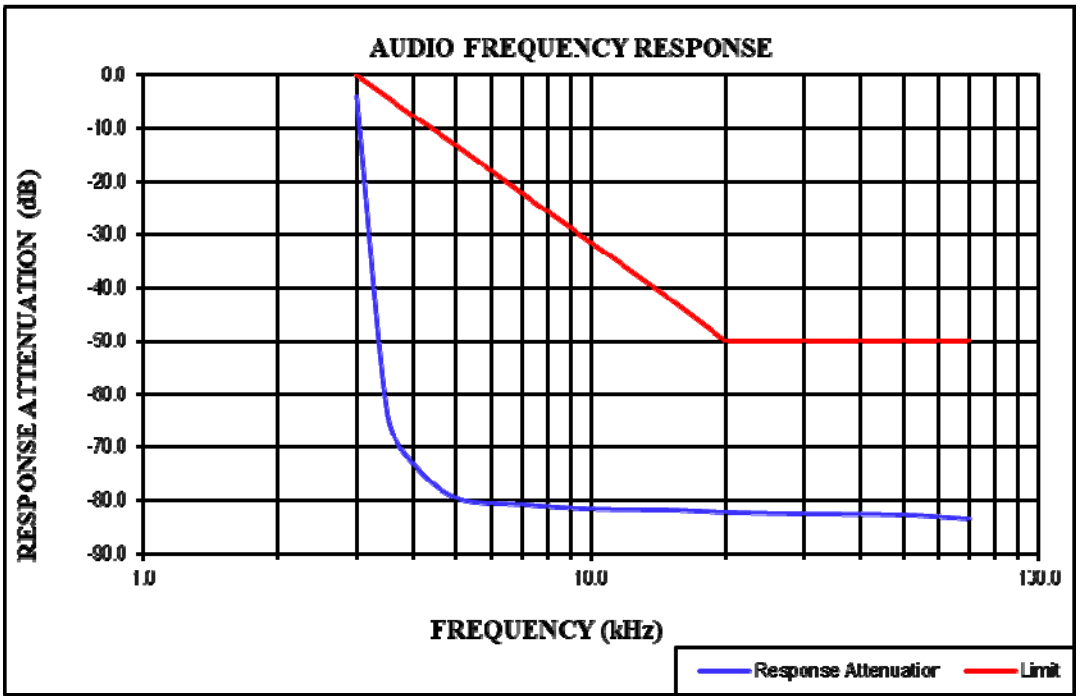
FM 25kHz	Carrier Frequency: 467.625 MHz				
AUDIO INPUT LEVEL（dB）	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	1.389	4.367	4.558	4.416	5
15	1.384	4.356	4.558	4.413	5
10	1.384	4.366	4.556	4.412	5
5	1.382	4.362	4.549	4.425	5
0	0.896	3.000	4.466	4.318	5



Audio Frequency Response		
Audio Frequency	Response Attenuation	Carrier Frequency: 467.6250 MHz
Hz	dB	
300	-10.99	
400	-7.97	
500	-5.96	
600	-4.58	
700	-3.13	
800	-1.87	
900	-0.83	
1000	0.00	
1200	1.50	
1400	2.59	
1600	3.48	
1800	4.23	
2000	4.87	
2200	5.43	
2400	5.91	
2600	6.34	
2800	6.71	
3000	7.00	
3125	7.16	



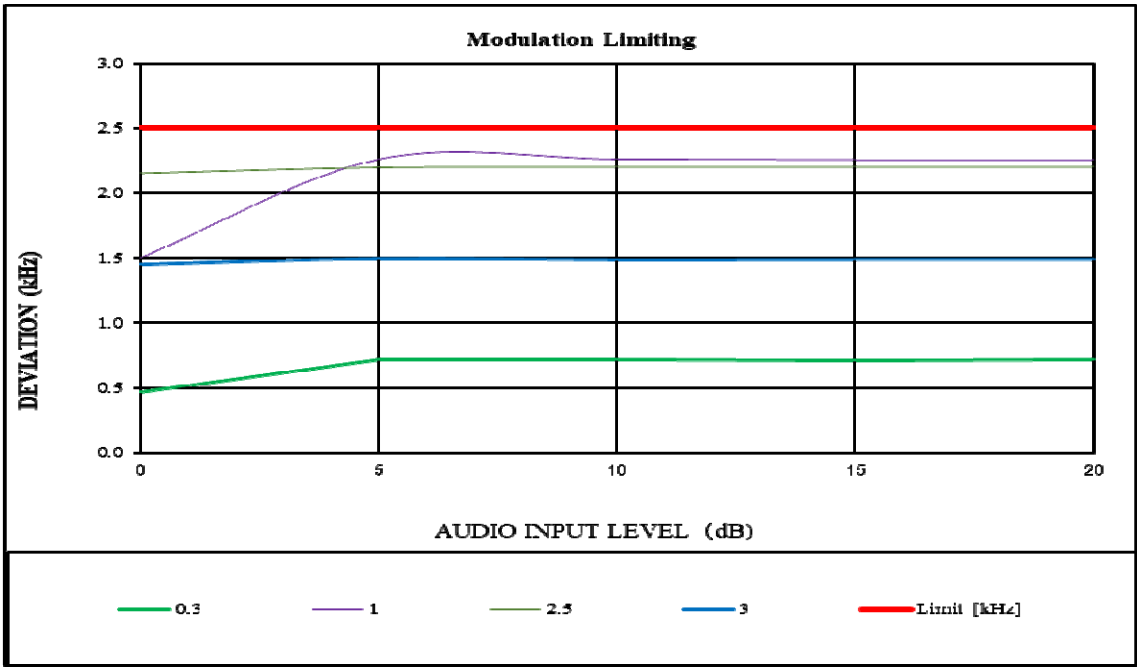
Audio Low Pass Filter Response		
Audio Frequency	Response Attenuation	Limit
kHz	dB	dB
3.0	-4.0	0
3.5	-63.8	-4.0
4.0	-72.9	-7.5
5.0	-79.5	-13.3
7.0	-80.7	-22.1
10.0	-81.5	-31.4
15.0	-81.7	-41.9
20.0	-82.1	-50.0
30.0	-82.4	-50.0
50.0	-82.6	-50.0
70.0	-83.3	-50.0



MODULATION LIMITING

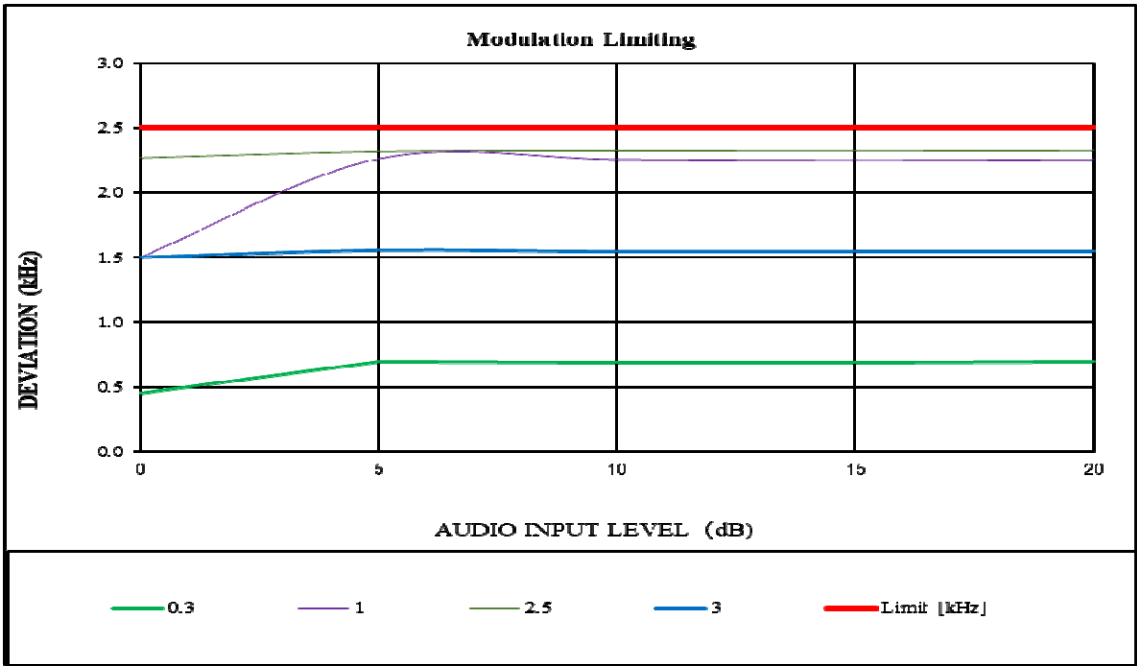
PK+

FM 12.5kHz	Carrier Frequency: 467.6375 MHz				
AUDIO INPUT LEVEL（dB）	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	0.712	2.256	2.202	1.488	2.5
15	0.711	2.257	2.203	1.488	2.5
10	0.712	2.262	2.202	1.486	2.5
5	0.714	2.260	2.199	1.496	2.5
0	0.463	1.500	2.154	1.449	2.5

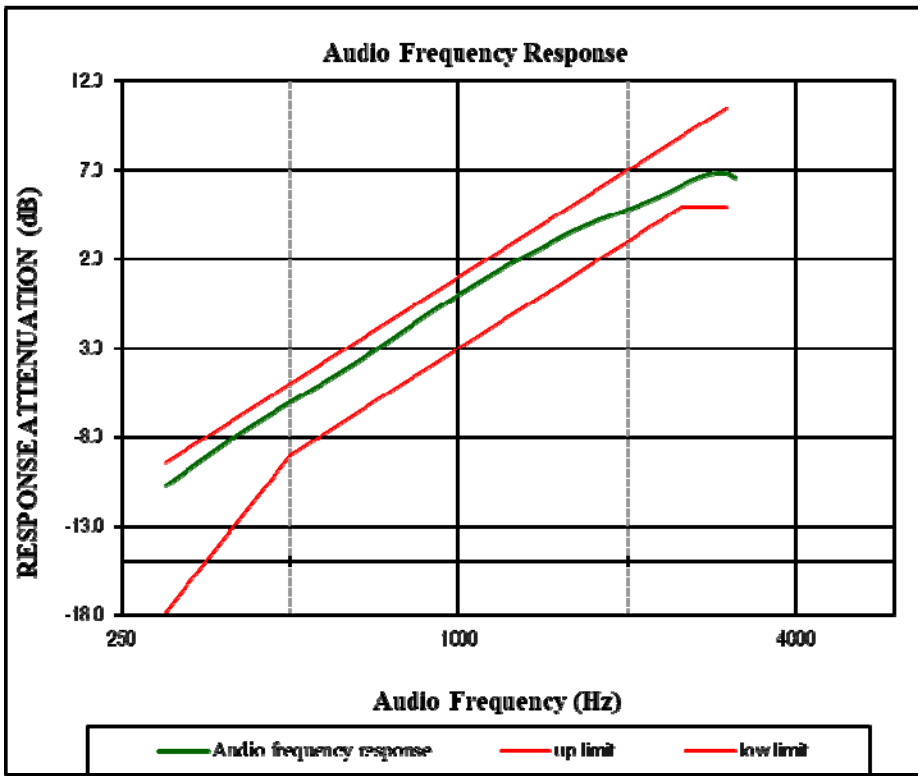


PK-

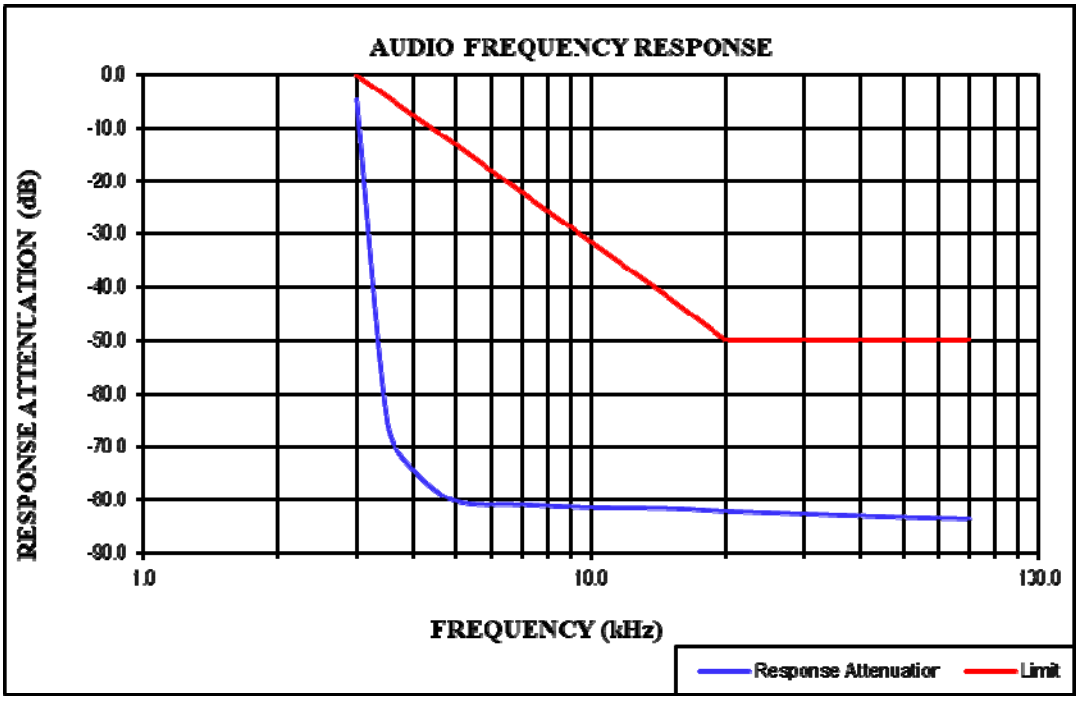
FM 12.5kHz	Carrier Frequency: 467.6375 MHz				
AUDIO INPUT LEVEL（dB）	DEVIATION (kHz)				Limit [kHz]
	0.3	1.0	2.5	3.0	
20	0.696	2.257	2.325	1.548	2.5
15	0.688	2.251	2.322	1.547	2.5
10	0.691	2.258	2.324	1.545	2.5
5	0.695	2.262	2.318	1.556	2.5
0	0.455	1.500	2.270	1.501	2.5



Audio Frequency Response	
Carrier Frequency: 467.6375 MHz	
Audio Frequency	**Response Attenuation**
Hz	**dB**
300	-10.73
400	-7.95
500	-6.05
600	-4.58
700	-3.24
800	-1.99
900	-0.90
1000	0.00
1200	1.51
1400	2.63
1600	3.60
1800	4.27
2000	4.79
2200	5.30
2400	5.84
2600	6.40
2800	6.76
3000	6.81
3125	6.56



Audio Low Pass Filter Response		
Audio Frequency	Response Attenuation	Limit
kHz	dB	dB
3.0	-4.7	0
3.5	-65.5	-4.0
4.0	-74.3	-7.5
5.0	-80.2	-13.3
7.0	-80.9	-22.1
10.0	-81.4	-31.4
15.0	-81.6	-41.9
20.0	-82.1	-50.0
30.0	-82.6	-50.0
50.0	-83.2	-50.0
70.0	-83.5	-50.0



FCC § 2.1051,§95.1779–ANTENNA PORT UNWANTED EMISSIONS

Applicable Standard

FCC §95.1779
Each GMRS transmitter type must be designed to comply with the applicable unwanted emissions limits in this section.
(a) Emission masks. Emission masks applicable to transmitting equipment in the GMRS are defined by the requirements in the following table. The numbers in the attenuation requirements column refer to rule paragraph numbers under paragraph (b) of this section.

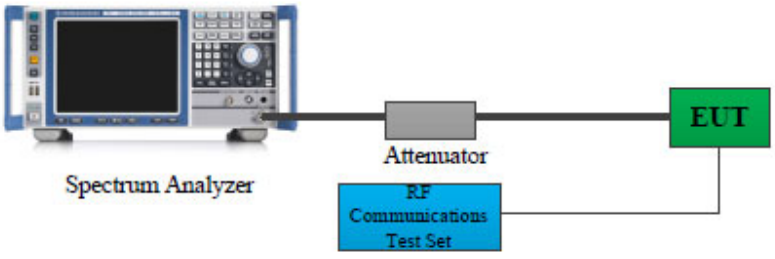
Emission types filter	Attenuation requirements
A1D, A3E, F1D, G1D, F2D, F3E, G3E with audio filter	(1), (2), (7)
A1D, A3E, F1D, G1D, F3E, G3E without audio filter	(3), (4), (7)
H1D, J1D, R1D, H3E, J3E, R2E	(5), (6), (7)

(1) Filtering noted for GMRS transmitters refers to the requirement in §95.1775(e).
(2) Unwanted emission power may be measured as either mean power or peak envelope power, provided that the transmitter output power is measured the same way.
(b) Attenuation requirements. The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:
(1) 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.

(2) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.
(3) 83 log (fd ÷ 5) dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz up to and including 10 kHz.

(4) 116 log (fd ÷ 6.1) dB or 50 + 10 log (P) dB, whichever is the lesser attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz), of more than 10 kHz up to and including 250% of the authorized bandwidth.
(5) 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth.
(6) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 150% up to and including 250% of the authorized bandwidth.
(7) 43 + 10 log (P) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.
(c) Measurement bandwidths. The power of unwanted emissions in the frequency bands specified in paragraphs (b)(1) through(4) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (b)(5) of this section is measured with a reference bandwidth of at least 30 kHz.
(d) Measurement conditions. The requirements in this section apply to each GMRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone, power cord and/or antenna.

EUT Setup Block Diagram



Test Procedure
C63.26-2015, Clause 5.7.3 Out-of-band unwanted emissions measurements

See Annex I for example emission mask plots.

C63.26-2015, Clause 5.7.4 Spurious unwanted emission measurements

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 $\geqslant 2 \times$ (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 peakdetected power measurements. When average power is specified by the applicable regulation, a peakdetector 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 outof-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.

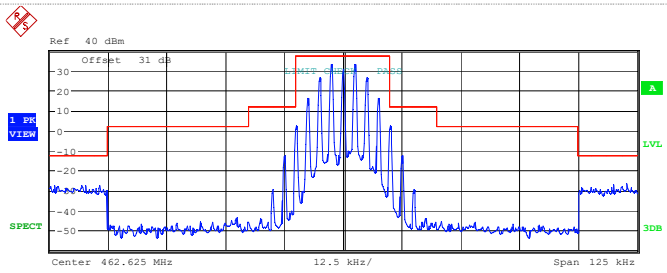
Test Data

Test Mode:	Transmitting	**Test Engineer:**	Lucas Lin
Test Date:	2024-12-31~2025-01-03	**Test Result:**	Pass

Enviroment Conditions:					
Temperature: (℃)	23.0~23.3	Relative Humidity: (%)	43~48	ATM Pressure: (kPa)	100.1

Please refer to below plots.

462.6250 MHz_Emission Mask

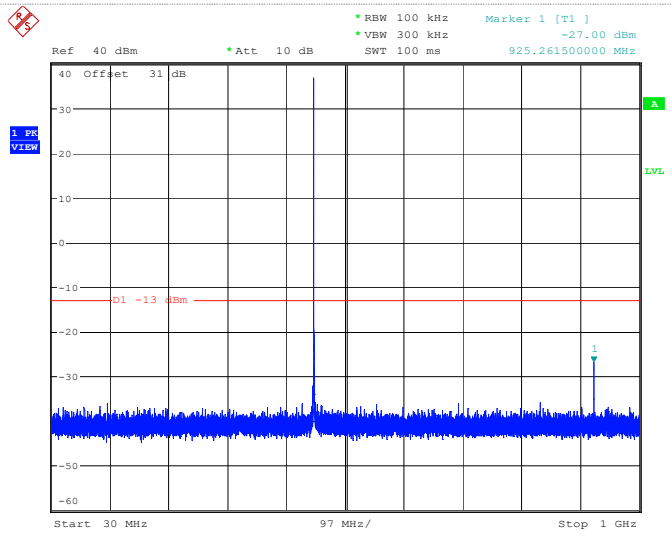


Tx Channel
Bandwidth 25 kHz Power 39.90 dBm

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	PwrRel [dBc]	ΔLimit [dB]
-62.500 k	-50.000 k	30.00 k	462.569311 M	-27.70	-67.60	-14.70
-50.000 k	-20.000 k	300.00	462.602364 M	-43.78	-83.68	-45.58
-20.000 k	-10.000 k	300.00	462.614784 M	0.50	-39.40	-11.30
10.000 k	20.000 k	300.00	462.635016 M	2.30	-37.60	-9.50
20.000 k	50.000 k	300.00	462.645833 M	-45.54	-85.45	-47.34
50.000 k	62.500 k	30.00 k	462.685296 M	-27.01	-66.91	-14.01

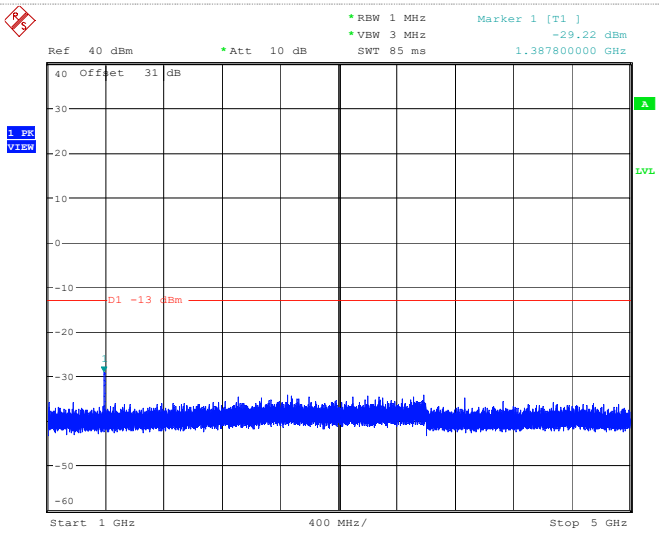
Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 3.JAN.2025 13:16:27

462.6250 MHz_30MHz~1GHz



Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 31.DEC.2024 10:14:39

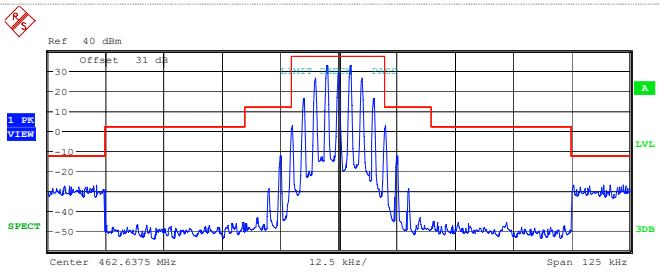
462.6250 MHz_1GHz~5GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 10:23:19

462.6375MHz_Emission Mask



Tx Channel

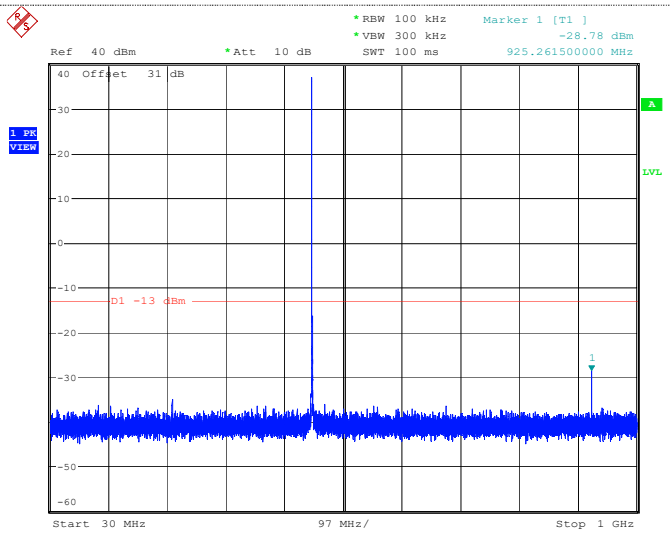
Bandwidth 25 kHz Power 39.32 dBm

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	PwrRel [dBc]	ΔLimit [dB]
-62.500 k	-50.000 k	30.00 k	462.585417 M	-27.46	-66.77	-14.46
-50.000 k	-20.000 k	300.00	462.616867 M	-46.20	-85.51	-47.96
-20.000 k	-10.000 k	300.00	462.627284 M	0.82	-38.50	-10.94
10.000 k	20.000 k	300.00	462.647516 M	2.43	-36.89	-9.33
20.000 k	50.000 k	300.00	462.657732 M	-45.79	-85.11	-47.55
50.000 k	62.500 k	30.00 k	462.687981 M	-27.17	-66.48	-14.17

Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 3.JAN.2025 13:18:44

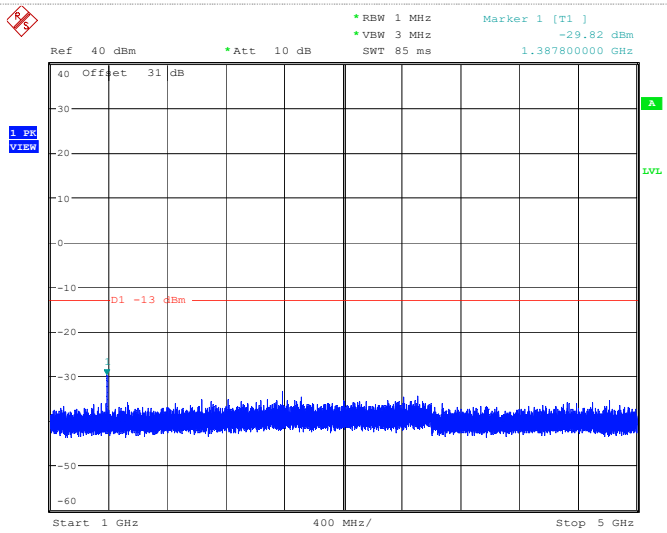
462.6375MHz_30MHz~1GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 10:15:55

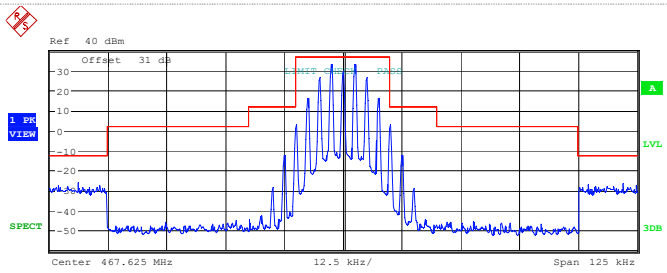
462.6375MHz_1GHz~5GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 10:22:26

467.625MHz_Emission Mask

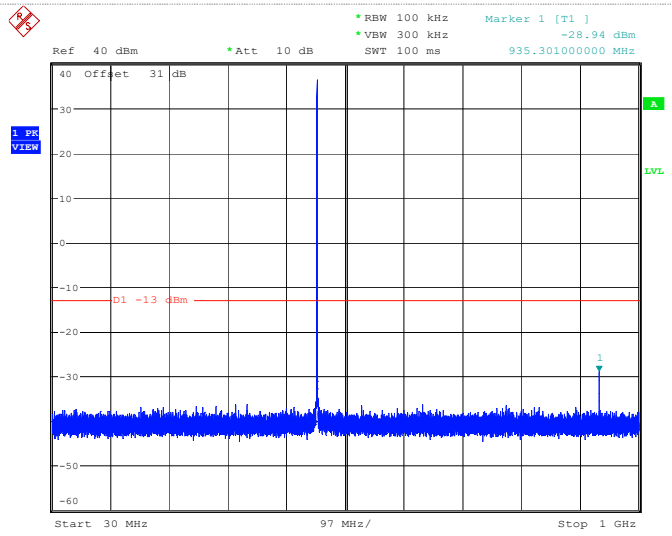


Tx Channel
Bandwidth 25 kHz Power 39.42 dBm

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	PwrRel [dBc]	ΔLimit [dB]
-62.500 k	-50.000 k	30.00 k	467.568510 M	-26.62	-66.04	-13.62
-50.000 k	-20.000 k	300.00	467.602163 M	-45.27	-84.69	-46.93
-20.000 k	-10.000 k	300.00	467.614784 M	1.01	-38.40	-10.65
10.000 k	20.000 k	300.00	467.635016 M	2.47	-36.95	-9.19
20.000 k	50.000 k	300.00	467.652644 M	-45.69	-85.10	-47.35
50.000 k	62.500 k	30.00 k	467.684495 M	-26.74	-66.16	-13.74

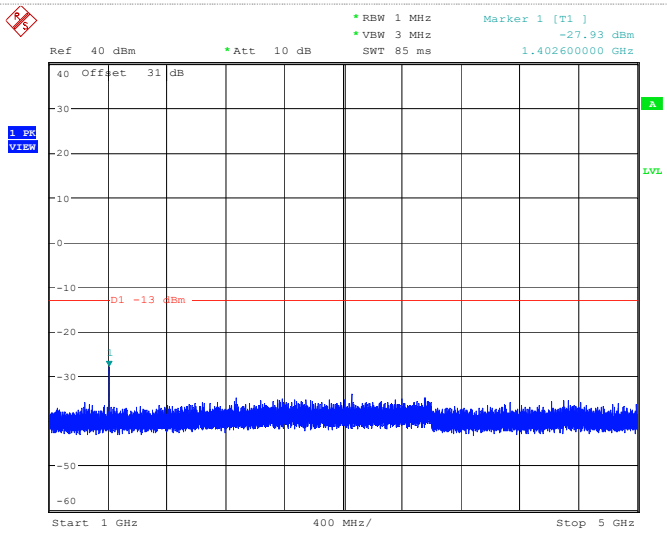
Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 3.JAN.2025 13:20:32

467.625MHz_30MHz~1GHz



Project No.:2407A21468E-RF Tester:Lucas Lin
Date: 31.DEC.2024 10:16:52

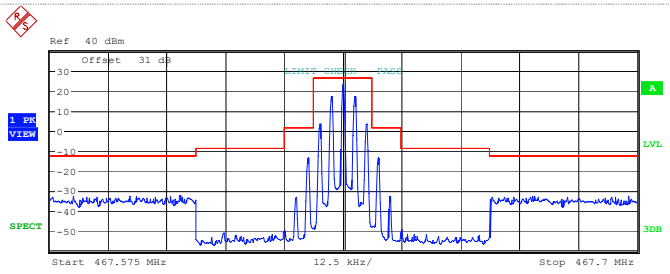
467.625MHz_1GHz~5GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 31.DEC.2024 10:21:27

467.6375MHz_Emission Mask



Tx Channel

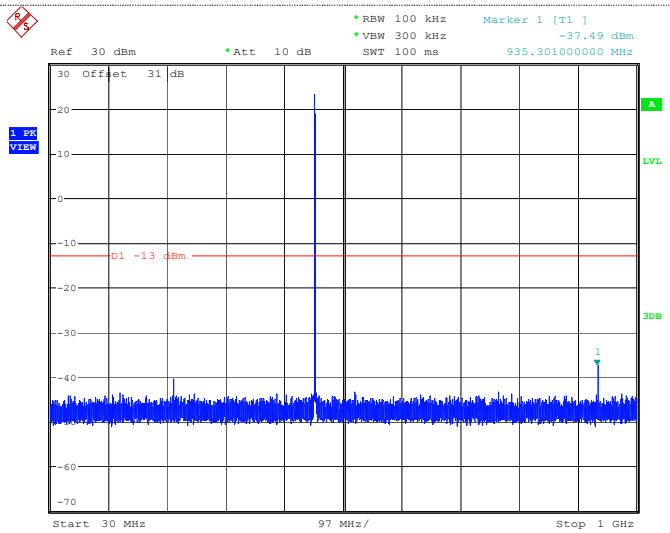
Bandwidth 12.5 kHz Power 27.54 dBm

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	PwrRel [dBc]	ΔLimit [dB]
-62.500 k	-31.250 k	30.00 k	467.602845 M	-32.44	-59.98	-19.44
-31.250 k	-12.500 k	300.00	467.624880 M	-50.30	-77.85	-41.36
-12.500 k	-6.250 k	300.00	467.630088 M	-13.94	-41.48	-15.00
6.250 k	12.500 k	300.00	467.644912 M	-13.94	-41.49	-15.00
12.500 k	31.250 k	300.00	467.650000 M	-49.50	-77.04	-40.56
31.250 k	62.500 k	30.00 k	467.677764 M	-32.82	-60.37	-19.82

Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 3.JAN.2025 13:13:34

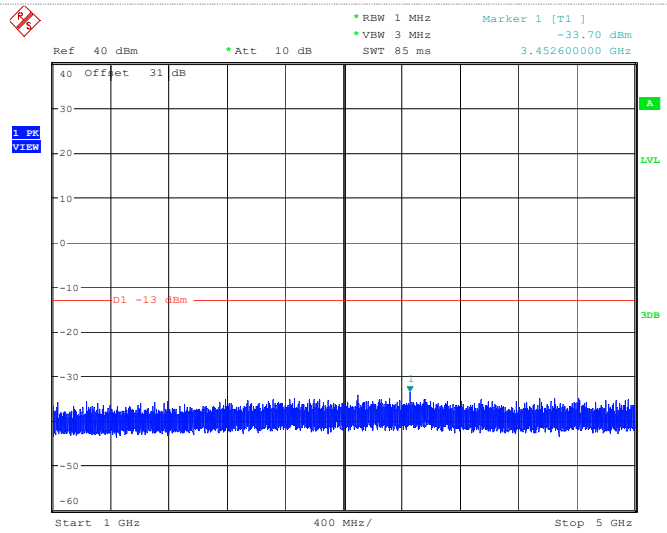
467.6375MHz_30MHz~1GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 3.JAN.2025 13:26:12

467.6375MHz_1GHz~5GHz



Project No.:2407A21468E-RF Tester:Lucas Lin

Date: 3.JAN.2025 13:22:53

FCC § 2.1053, §95.1779 –RADIATED UNWANTED EMISSIONS

Applicable Standard

FCC §95.1779

Each GMRS transmitter type must be designed to comply with the applicable unwanted emissions limits in this section.

(a) Emission masks. Emission masks applicable to transmitting equipment in the GMRS are defined by the requirements in the following table. The numbers in the attenuation requirements column refer to rule paragraph numbers under paragraph (b) of this section.

Emission types filter	Attenuation requirements
A1D, A3E, F1D, G1D, F2D, F3E, G3E with audio filter	(1), (2), (7)
A1D, A3E, F1D, G1D, F3E, G3E without audio filter	(3), (4), (7)
H1D, J1D, R1D, H3E, J3E, R2E	(5), (6), (7)

(1) Filtering noted for GMRS transmitters refers to the requirement in §95.1775(e).
(2) Unwanted emission power may be measured as either mean power or peak envelope power, provided that the transmitter output power is measured the same way.
(b) Attenuation requirements. The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:
(1) 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.

(2) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.

(3) 83 log (fd ÷ 5) dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz up to and including 10 kHz.

(4) 116 log (fd ÷ 6.1) dB or 50 + 10 log (P) dB, whichever is the lesser attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz), of more than 10 kHz up to and including 250% of the authorized bandwidth.

(5) 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth.

(6) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 150% up to and including 250% of the authorized bandwidth.

(7) 43 + 10 log (P) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.
(c) Measurement bandwidths. The power of unwanted emissions in the frequency bands specified in paragraphs (b)(1) through(4) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (b)(5) of this section is measured with a reference bandwidth of at least 30 kHz.
(d) Measurement conditions. The requirements in this section apply to each GMRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone, power cord and/or antenna.

EUT Setup Block Diagram

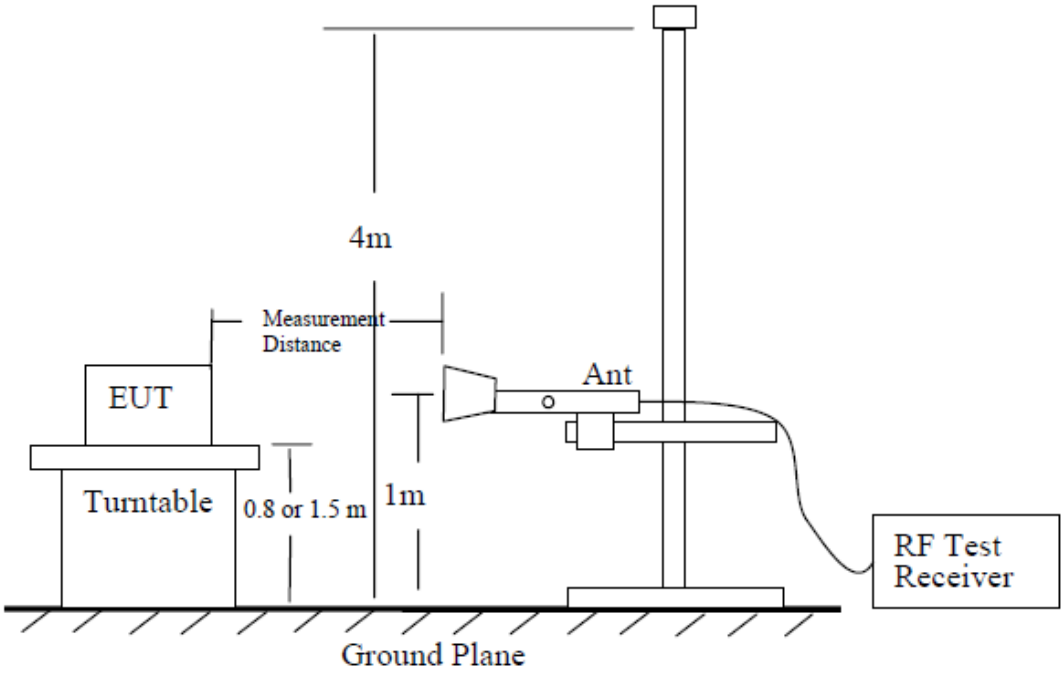


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

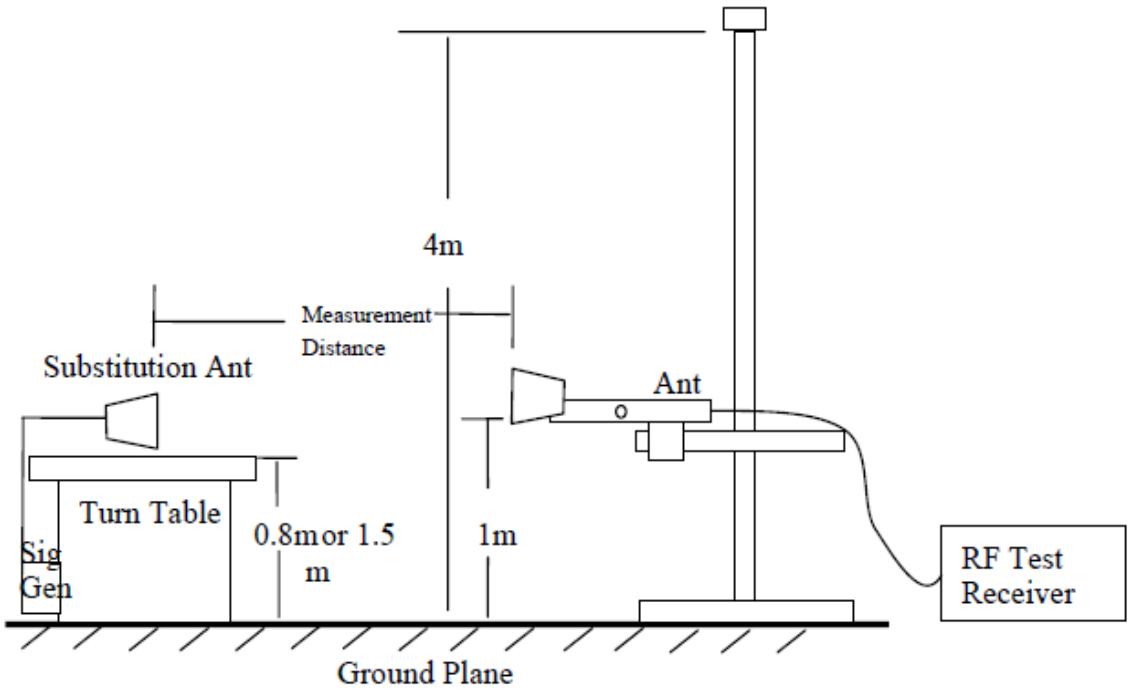


Figure 7—Substitution method set-up for radiated emission

Test Procedure:

ANSI C63.26-2015 Section 5.5.3

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.

Test Data

Test Mode:	Transmitting	**Test Engineer:**	Lucas Lin
Test Date:	2025-01-10	**Test Result:**	Pass

Enviroment Conditions:					
Temperature: (℃)	24	Relative Humidity: (%)	52	ATM Pressure: (kPa)	100.1

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case Y-axis of orientation was recorded.

Please refer to below tables.

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)			
462.625MHz								
925.25	H	72.23	-16.83	0.00	0.42	-17.25	-13.00	4.25
925.25	V	75.79	-13.09	0.00	0.42	-13.51	-13.00	0.51
1387.875	H	90.11	-25.72	7.65	1.52	-19.59	-13.00	6.59
1387.875	V	87.93	-28.37	7.65	1.52	-22.24	-13.00	9.24
1850.500	H	89.87	-21.57	6.69	1.72	-16.60	-13.00	3.60
1850.500	V	86.42	-25.30	6.69	1.72	-20.33	-13.00	7.33
2313.125	H	90.08	-17.54	3.75	1.91	-15.70	-13.00	2.70
2313.125	V	91.33	-16.59	3.75	1.91	-14.75	-13.00	1.75
2775.750	H	88.85	-16.80	3.85	2.09	-15.04	-13.00	2.04
2775.750	V	87.12	-18.80	3.85	2.09	-17.04	-13.00	4.04
3238.375	H	77.76	-27.32	4.09	2.26	-25.49	-13.00	12.49
3238.375	V	80.40	-25.11	4.09	2.26	-23.28	-13.00	10.28
3701.000	H	81.53	-23.45	6.00	2.39	-19.84	-13.00	6.84
3701.000	V	77.46	-27.80	6.00	2.39	-24.19	-13.00	11.19
4163.625	H	78.90	-26.06	7.88	2.51	-20.69	-13.00	7.69
4163.625	V	71.89	-32.84	7.88	2.51	-27.47	-13.00	14.47
4626.250	H	77.80	-27.70	10.61	2.65	-19.74	-13.00	6.74
4626.250	V	69.67	-35.94	10.61	2.65	-27.98	-13.00	14.98

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)			
462.6375MHz								
925.28	H	70.07	-19.00	0.00	0.42	-19.42	-13.00	6.42
925.28	V	74.56	-14.32	0.00	0.42	-14.74	-13.00	1.74
1387.913	H	89.79	-26.04	7.65	1.52	-19.91	-13.00	6.91
1387.913	V	87.55	-28.75	7.65	1.52	-22.62	-13.00	9.62
1850.550	H	89.23	-22.21	6.69	1.72	-17.24	-13.00	4.24
1850.550	V	85.13	-26.59	6.69	1.72	-21.62	-13.00	8.62
2313.188	H	89.18	-18.44	3.75	1.91	-16.60	-13.00	3.60
2313.188	V	90.84	-17.08	3.75	1.91	-15.24	-13.00	2.24
2775.825	H	88.15	-17.50	3.85	2.09	-15.74	-13.00	2.74
2775.825	V	85.85	-20.07	3.85	2.09	-18.31	-13.00	5.31
3238.463	H	78.71	-26.37	4.09	2.26	-24.54	-13.00	11.54
3238.463	V	80.96	-24.55	4.09	2.26	-22.72	-13.00	9.72
3701.100	H	82.04	-22.94	6.00	2.39	-19.33	-13.00	6.33
3701.100	V	76.61	-28.64	6.00	2.39	-25.03	-13.00	12.03
4163.738	H	80.17	-24.79	7.88	2.51	-19.42	-13.00	6.42
4163.738	V	72.23	-32.50	7.88	2.51	-27.13	-13.00	14.13
4626.375	H	77.96	-27.54	10.61	2.65	-19.58	-13.00	6.58
4626.375	V	70.26	-35.35	10.61	2.65	-27.39	-13.00	14.39

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)			
467.625MHz								
935.25	H	70.61	-18.88	0.00	0.42	-19.30	-13.00	6.30
935.25	V	75.28	-14.03	0.00	0.42	-14.45	-13.00	1.45
1402.875	H	89.56	-26.26	7.71	1.53	-20.08	-13.00	7.08
1402.875	V	88.10	-28.19	7.71	1.53	-22.01	-13.00	9.01
1870.500	H	86.80	-24.40	6.17	1.73	-19.96	-13.00	6.96
1870.500	V	81.98	-29.48	6.17	1.73	-25.04	-13.00	12.04
2338.125	H	82.94	-24.52	3.65	1.92	-22.79	-13.00	9.79
2338.125	V	87.55	-20.22	3.65	1.92	-18.49	-13.00	5.49
2805.750	H	85.19	-20.37	3.90	2.10	-18.57	-13.00	5.57
2805.750	V	84.43	-21.40	3.90	2.10	-19.60	-13.00	6.60
3273.375	H	79.11	-25.98	4.58	2.27	-23.67	-13.00	10.67
3273.375	V	80.62	-24.93	4.58	2.27	-22.62	-13.00	9.62
3741.000	H	80.68	-24.27	5.92	2.40	-20.75	-13.00	7.75
3741.000	V	77.45	-27.69	5.92	2.40	-24.17	-13.00	11.17
4208.625	H	81.48	-23.54	8.12	2.53	-17.95	-13.00	4.95
4208.625	V	73.14	-31.69	8.12	2.53	-26.10	-13.00	13.10
4676.250	H	74.51	-31.01	11.01	2.66	-22.66	-13.00	9.66
4676.250	V	68.43	-37.26	11.01	2.66	-28.91	-13.00	15.91

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)			
467.6375MHz								
935.28	H	65.42	-24.07	0.00	0.42	-24.49	-13.00	11.49
935.28	V	73.37	-15.94	0.00	0.42	-16.36	-13.00	3.36
1402.913	H	89.38	-26.44	7.71	1.53	-20.26	-13.00	7.26
1402.913	V	88.27	-28.02	7.71	1.53	-21.84	-13.00	8.84
1870.550	H	86.96	-24.23	6.17	1.73	-19.79	-13.00	6.79
1870.550	V	81.92	-29.54	6.17	1.73	-25.10	-13.00	12.10
2338.188	H	82.57	-24.89	3.65	1.92	-23.16	-13.00	10.16
2338.188	V	87.52	-20.25	3.65	1.92	-18.52	-13.00	5.52
2805.825	H	85.62	-19.94	3.90	2.10	-18.14	-13.00	5.14
2805.825	V	84.21	-21.62	3.90	2.10	-19.82	-13.00	6.82
3273.463	H	79.14	-25.95	4.58	2.27	-23.64	-13.00	10.64
3273.463	V	80.52	-25.03	4.58	2.27	-22.72	-13.00	9.72
3741.100	H	80.73	-24.22	5.92	2.40	-20.70	-13.00	7.70
3741.100	V	77.50	-27.64	5.92	2.40	-24.12	-13.00	11.12
4208.738	H	81.63	-23.39	8.12	2.53	-17.80	-13.00	4.80
4208.738	V	73.08	-31.75	8.12	2.53	-26.16	-13.00	13.16
4676.375	H	74.60	-30.92	11.01	2.66	-22.57	-13.00	9.57
4676.375	V	68.61	-37.08	11.01	2.66	-28.73	-13.00	15.73

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

EUT PHOTOGRAPHS

Please refer to the attachment 2407A21468E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2407A21468E-RF-INP EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2407A21468E-RF-TSP TEST SETUP PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

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