



TEST REPORT

Report Number : TZ0413260402FRF19
Product Name : Mobile Radio
Model/Type reference : UB15-G
FCC ID : 2AN62-UB15G
Prepared for : SAIN3 LLC
36 Berkley Drive Newark, DE 19702 United States

Prepared By : Shenzhen Tongzhou Testing Co.,Ltd.
1st Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street,
Longhua, Shenzhen, China

Standards : FCC CFR Title 47 Part 95 Subpart E, ANSI C63.26-2015

Date of Test : 2026-04-23 ~ 2026-05-10

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Prepared by : Nancy Li
Reviewed by : Allen Lai
Approved by : Max Zhang
(Authorized Officer)



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**** Report Revise Record ****

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2026-05-10	Valid	Initial release





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1. GENERAL INFORMATION

1.1. Client Information

Applicant	: SAIN3 LLC
Address	: 36 Berkley Drive Newark, DE 19702 United States
Manufacturer	: SAIN3 LLC
Address	: 36 Berkley Drive Newark, DE 19702 United States

1.2. Description of Device (EUT)

Product Name	: Mobile Radio
Trade Mark	: Radioddity
Model Number	: UB15-G
Power Supply	: DC 13.8V
Hardware version	: 3600DB15411001
Software version	: Ver 1.0

1.3. Wireless Function Tested in this Report

GMRS	
Operation Frequency Range	462.5500-462.7250MHz (GMRS 462MHz Main channels) : 462.5625-462.7125MHz (GMRS 462MHz Interstitial channels) 467.5500-467.7250MHz (GMRS 467MHz Main channels)
Channel bandwidth	: 12.5kHz/25kHz
Rated Power	: GMRS 462MHz Interstitial channels: 5W : Other channels: 5W/15W
Emission Designator	: 9K90F3E for 12.5kHz channel bandwidth : 14K9F3E for 25kHz channel bandwidth
Modulation Technology	: FM
Antenna Type And Gain	: External 50 ohm connector, 0dBi(Typical)

Note 1: Antenna position refer to EUT Photos.

Note 2: the above information was supplied by the applicant.





1.4. Description of Test Facility

FCC

Designation Number: CN1275

Test Firm Registration Number: 167722

Shenzhen Tongzhou Testing Co.,Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA

Certificate Number: 5463.01

Shenzhen Tongzhou Testing Co.,Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

IC

ISED#: 22033

CAB identifier: CN0099

Shenzhen Tongzhou Testing Co.,Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4 and CISPR 16-1-4:2010

1.5. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Shenzhen Tongzhou Testing Co.,Ltd.’s quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.





1.6. Measurement Uncertainty

Test Item		Uncertainty	Note
Radiation Uncertainty(9KHz~30MHz)	:	$\pm 3.26\text{dB}$	(1)
Radiation Uncertainty(30MHz~1000MHz)	:	$\pm 3.92\text{dB}$	(1)
Radiation Uncertainty(1GHz~40GHz)	:	$\pm 5.62\text{dB}$	(1)
Occupied Channel Bandwidth	:	$\pm 3.0\%$	(1)
Audio Level	:	$\pm 0.4\%$	(1)
FM deviation	:	$\pm 1.2\%$	(1)
Frequency stability	:	$\pm 0.12\text{ppm}$	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

1.7. Frequency of Channels

(a) 462 MHz main channels.

Only mobile, hand-held portable, repeater, base and fixed stations may transmit on these 8 channels. The channel center frequencies are: 462.5500, 462.5750, 462.6000, 462.6250, 462.6500, 462.6750, 462.7000, and 462.7250 MHz.

Condition and Frequency in Test: **mobile in 462.6500MHz**

(b) 462 MHz interstitial channels.

Only mobile, hand-held portable and base stations may transmit on these 7 channels. The channel center frequencies are: 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, and 462.7125 MHz.

Condition and Frequency in Test: **mobile in 462.6375MHz**

(c) 467 MHz main channels.

Only mobile, hand-held portable, control and fixed stations may transmit on these 8 channels. Mobile, hand-held portable and control stations may transmit on these channels only when communicating through a repeater station or making brief test transmissions in accordance with § 95.319(c). The channel center frequencies are: 467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, and 467.7250 MHz.

Condition and Frequency in Test: **mobile in 467.6500MHz**





1.8. Description of Test Modes

The EUT has been tested under operating condition.

Modulation	Channel separation	Power Level	Frequency (MHz)	Operation Description
FM	12.5 KHz	5W	462.6375	Op1
	12.5 KHz	15W	462.6500	Op2
	12.5 KHz	15W	467.6500	Op3
	25 KHz	5W	462.6375	Op4
	25 KHz	15W	462.6500	Op5
	25 KHz	15W	467.6500	Op6
	12.5 KHz	5W	462.6500	Op7
	12.5 KHz	5W	467.6500	Op8
	25 KHz	5W	462.6500	Op9
	25 KHz	5W	467.6500	Op10





2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.26-2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services. The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen Tongzhou Testing Co.,Ltd.

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.



2.2. EUT Related Submittal (s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: MMAUB15-G** filing to comply with FCC Part 2, FCC Part 95 Subpart E of the FCC CFR 47 Rules.

2.3. Test Sample

Sample ID	Description
TZ0413260402-1#	Normal sample – continuous transmit





3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in a continuous transmits condition.

3.2. Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
/	/	/	/	/	/	/	/

3.3. Block Diagram/Schematics

Please refer to the related document.

3.4. Equipment Modifications

Shenzhen Tongzhou Testing Co.,Ltd. has not done any modification on the EUT.

3.5. Test Setup

Please refer to the test setup photo.





4. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Sample ID	Result
\$ 95.1767 & 2.1046(a)	Transmitter Power	TZ0413260402-1#	Compliant
\$95.1775 & 2.1047(a) (b)	Modulation Limit	TZ0413260402-1#	Compliant
\$95.1775 & 2.1047(a)	Audio Frequency Response	TZ0413260402-1#	Compliant
S95.1775(e)	Audio Low Pass Filter Response	TZ0413260402-1#	Compliant
§95.1773 & 2.1049	Occupied Bandwidth	TZ0413260402-1#	Compliant
\$95.1779 & 2.1051	Emission Mask	TZ0413260402-1#	Compliant
\$95.1779 & 2.1051	Spurious Emission on Antenna Port	TZ0413260402-1#	Compliant
\$95.1779 & 2.1053	Spurious Radiated Emission	TZ0413260402-1#	Compliant
§95.1765 & 2.1055(a) (1)	Frequency Stability	TZ0413260402-1#	Compliant
§95.1787(a)	Additional requirements.	TZ0413260402-1#	N/A (Note)
Note: This device does not support digital data transmission; therefore, the requirements specified in § 95.1787(a) are not applicable.			





5. TEST RESULT

5.1. Frequency Stability

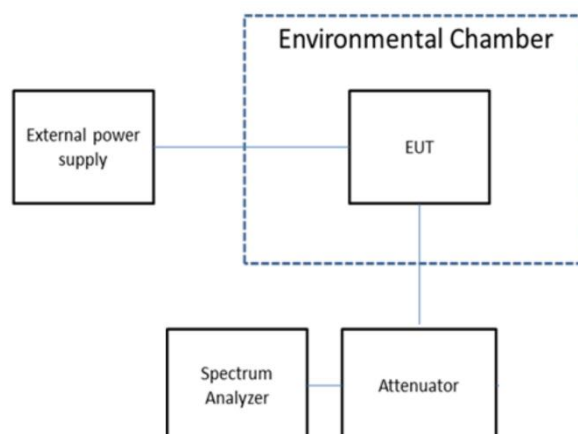
5.1.1. Standard Applicable

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.

5.1.2. Block Diagram of Test Setup



5.1.3. Test Procedures

Frequency stability versus environmental temperature

1. Setup the configuration for frequencies measurement inside an environment chamber, Install new battery in the EUT.
2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 300Hz and Video Resolution Bandwidth to 1kHz and Frequency Span to 10kHz. Record this frequency as reference frequency.
3. Set the temperature of chamber to 50°C. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measured frequencies on each temperature step.

Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15°C to 25°C. Otherwise, an environment chamber set for a temperature of 20°C shall be used. The EUT shall be





powered by normal voltage.

- Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 300Hz and Video Resolution Bandwidth to 1kHz. Record this frequency as reference frequency.
- Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

5.1.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.1.5. Test Results

NV: Normal Voltage 13.80V

LV: Low Voltage 11.73V

HV: High Voltage 15.87V

Test Channel: 462.6375MHz at 25kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.29
	-10	0.29
	0	0.29
	10	0.29
	20	0.29
	30	0.31
	40	0.31
	50	0.32
LV	20	0.29
HV	20	0.29
Limit(ppm)		5
Result		PASS





Test Channel: 462.6500MHz at 25kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.29
	-10	0.29
	0	0.30
	10	0.29
	20	0.30
	30	0.31
	40	0.32
	50	0.32
LV	20	0.30
HV	20	0.29
Limit(ppm)		5
Result		PASS

Test Channel: 467.6500MHz at 25kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.29
	-10	0.30
	0	0.29
	10	0.29
	20	0.30
	30	0.31
	40	0.31
	50	0.31
LV	20	0.29
HV	20	0.30
Limit(ppm)		5
Result		PASS





Test Channel: 462.6375MHz at 12.5kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.30
	-10	0.31
	0	0.29
	10	0.30
	20	0.29
	30	0.32
	40	0.32
	50	0.32
LV	20	0.30
HV	20	0.30
Limit(ppm)		2.5
Result		PASS

Test Channel: 462.6500MHz at 12.5kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.28
	-10	0.28
	0	0.30
	10	0.29
	20	0.29
	30	0.30
	40	0.31
	50	0.31
LV	20	0.28
HV	20	0.29
Limit(ppm)		2.5
Result		PASS





Test Channel: 467.6500MHz at 12.5kHz channel spacing

Test conditions		Frequency error (ppm)
Voltage Condition	Temp(°C)	
NV	-20	0.28
	-10	0.30
	0	0.30
	10	0.29
	20	0.28
	30	0.32
	40	0.32
	50	0.31
LV	20	0.29
HV	20	0.30
Limit(ppm)		2.5
Result		PASS





5.2. Occupied Bandwidth and Emission Mask

5.2.1. Standard Applicable

Bandwidth requirement:

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.

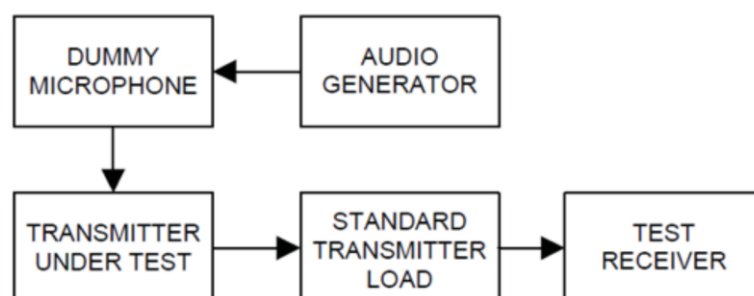
Emission Mask:

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.

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.

$43 + 10 \log (P)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

5.2.2. Block Diagram of Test Setup





5.2.3. Test Procedures

- 1 The EUT was modulated by 2.5 KHz Sine wave audio signal; the level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation.
- 2 Set EUT work at continuous transmitting.
- 3 Set SPA Centre Frequency = fundamental frequency.
For 12.5kHz channel spacing: RBW=100Hz, VBW= 300 Hz, span = 30 KHz.
For 25kHz channel spacing: RBW=300Hz, VBW= 1000 Hz, span = 50 KHz.
- 4 Set SPA Max hold. Mark peak, Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.
- 5 For emission mask test
For 12.5kHz channel spacing: RBW=100Hz, VBW= 300 Hz, span = 111.25 KHz.
For 25kHz channel spacing: RBW=100Hz, VBW= 300 Hz, span = 120 KHz.

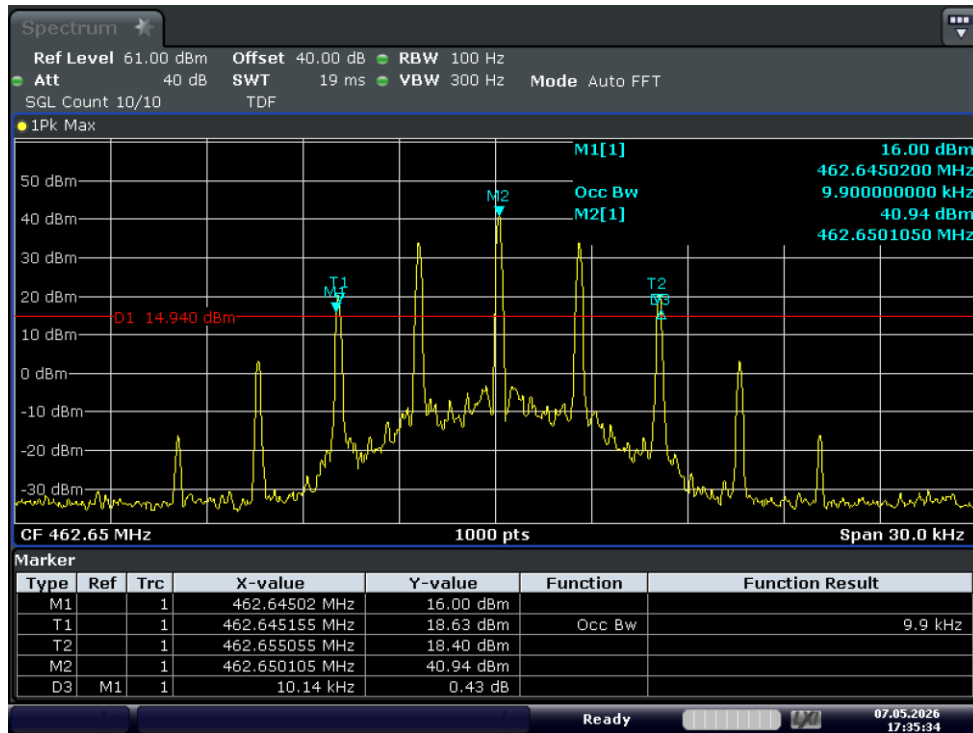
5.2.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

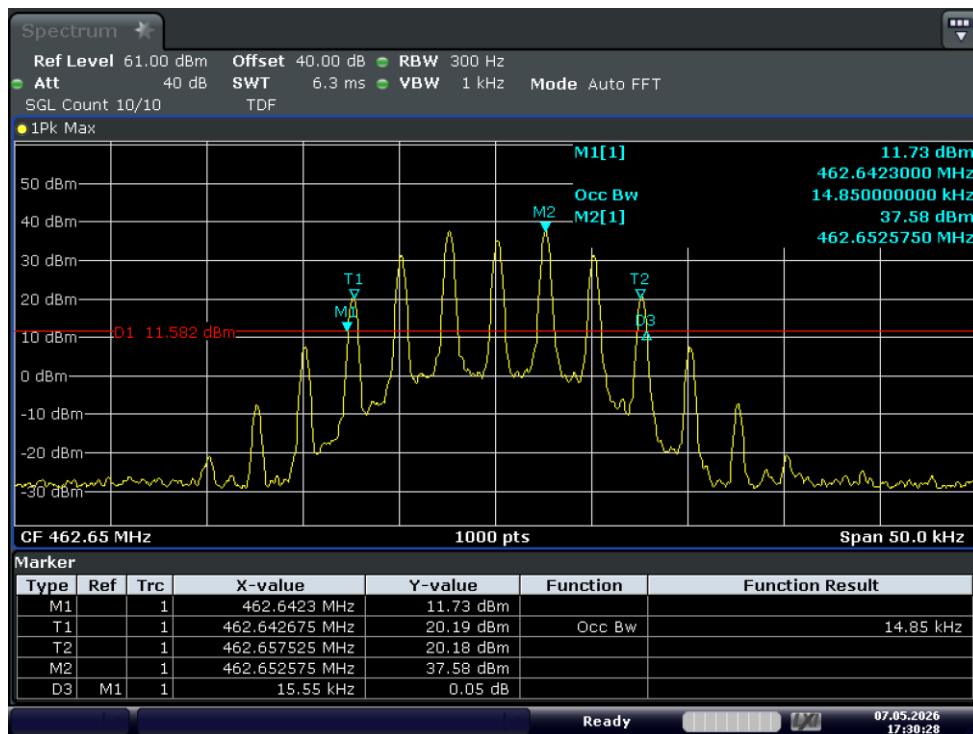
5.2.5. Test Results

Test data of Occupied Bandwidth							
Test Mode	Power Level	Channel Separation [Hz]	Test Frequency [MHz]	99% OBW [kHz]	-26dB Bandwidth [kHz]	Limit [kHz]	Verdict
GMRS	5W	25k	462.6375	14.85	15.5	20	Pass
GMRS	15W	25k	462.65	14.85	15.55	20	Pass
GMRS	15W	25k	467.65	14.85	15.55	20	Pass
GMRS	5W	12.5k	462.6375	9.9	10.14	20	Pass
GMRS	15W	12.5k	462.65	9.9	10.14	20	Pass
GMRS	15W	12.5k	467.65	9.9	10.14	20	Pass
GMRS	5W	25k	462.65	14.85	15.5	20	Pass
GMRS	5W	25k	467.65	14.85	15.5	20	Pass
GMRS	5W	12.5k	462.65	9.9	10.11	20	Pass
GMRS	5W	12.5k	467.65	9.9	10.14	20	Pass



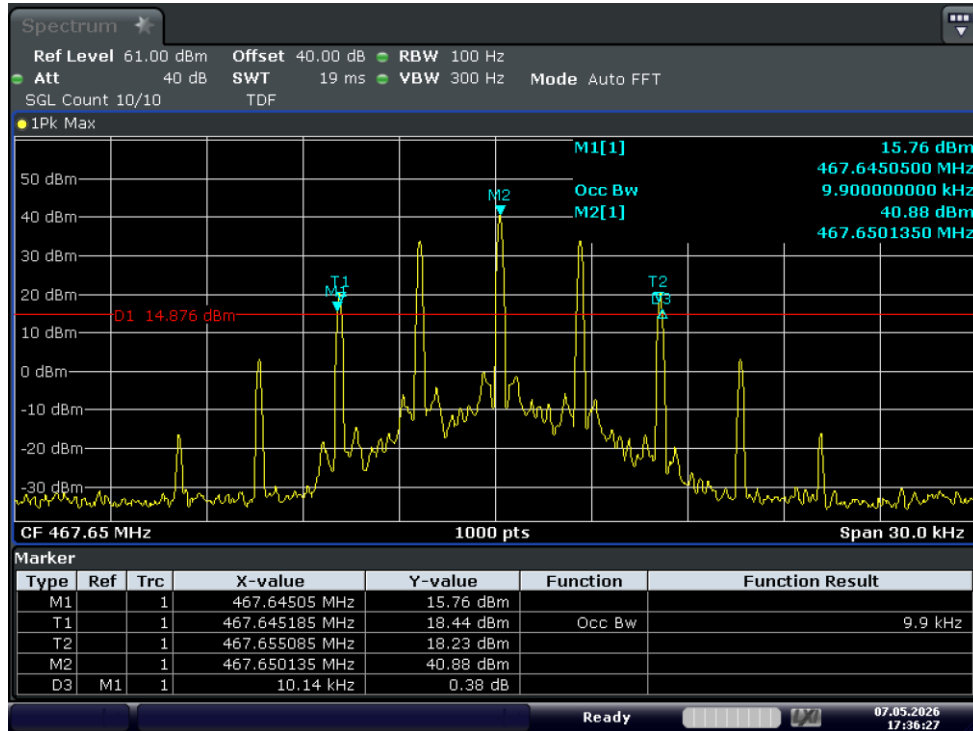


Test_Graph_GMRS_15W_462.65_12.5k_OBW

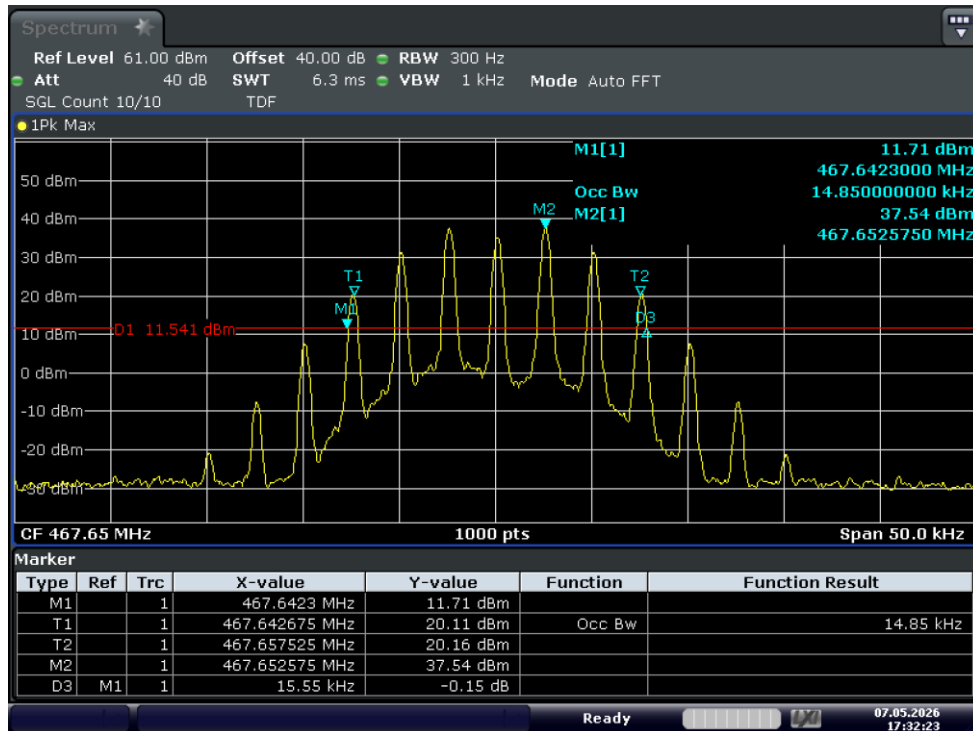


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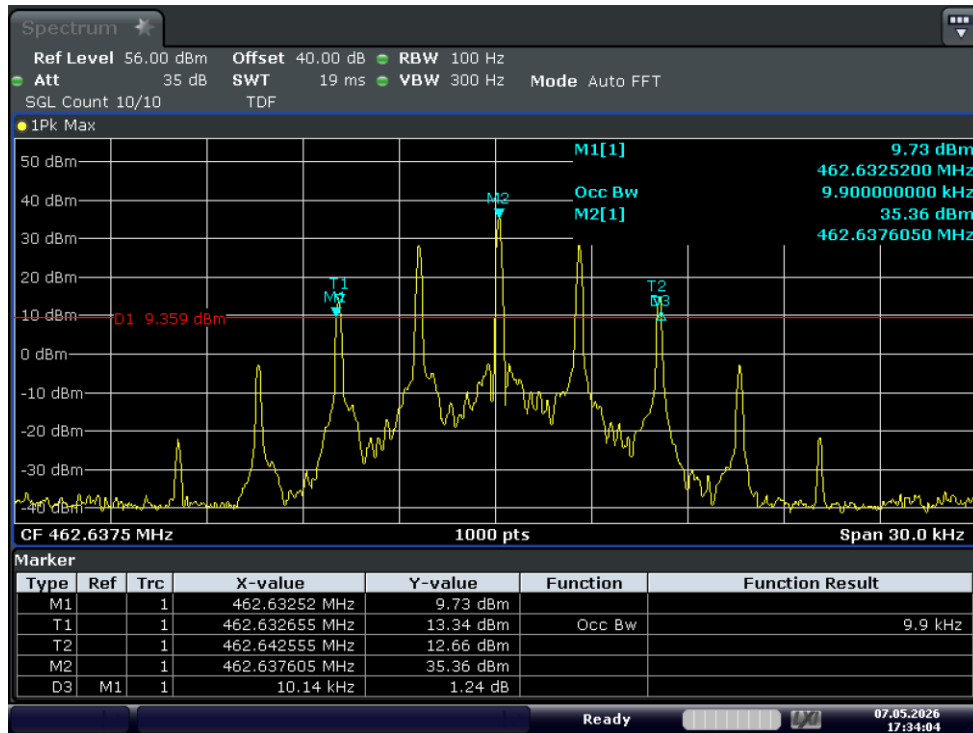


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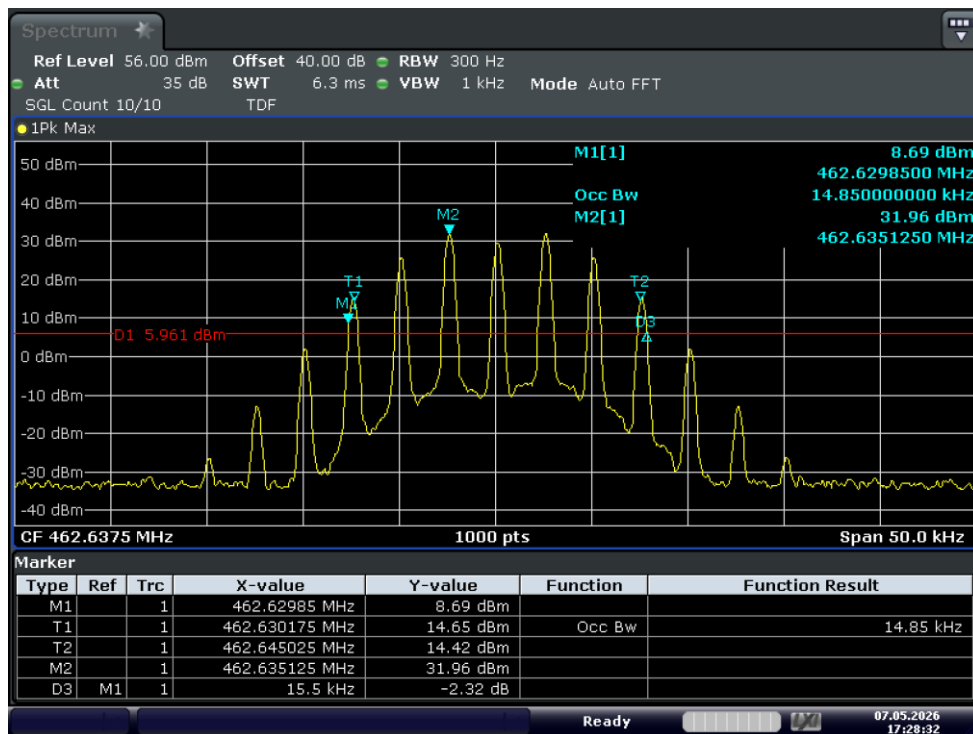


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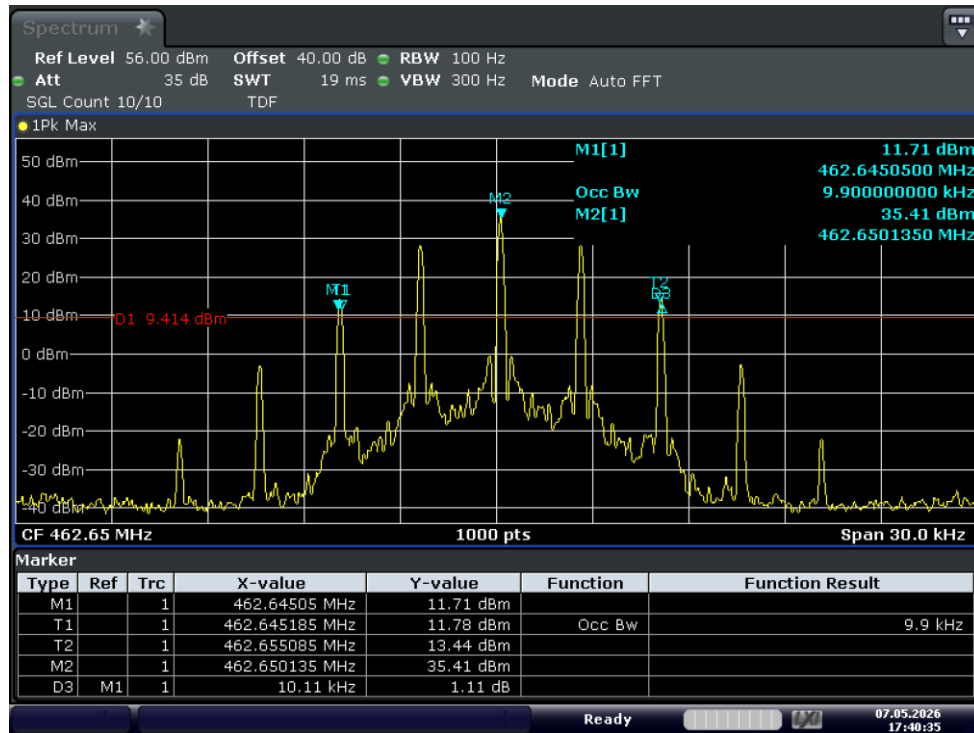


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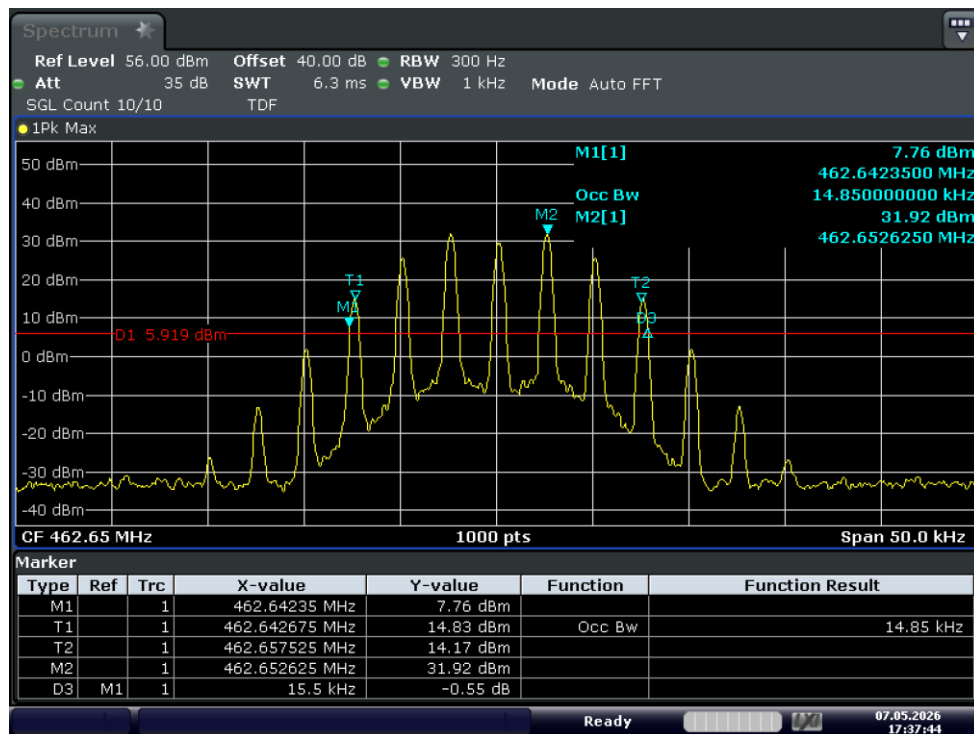


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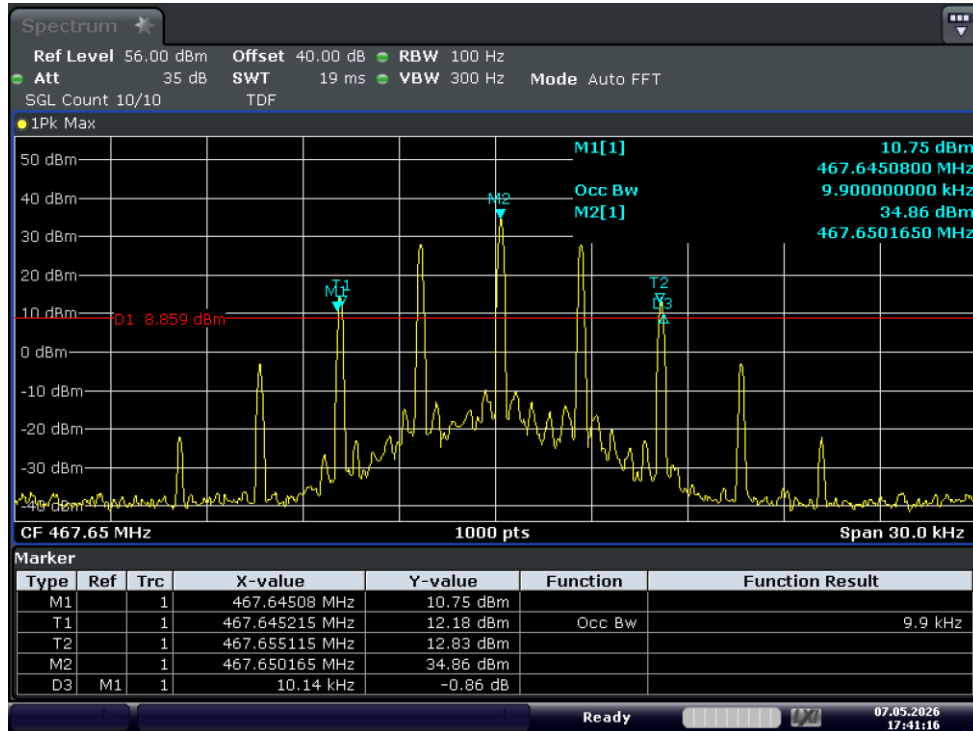


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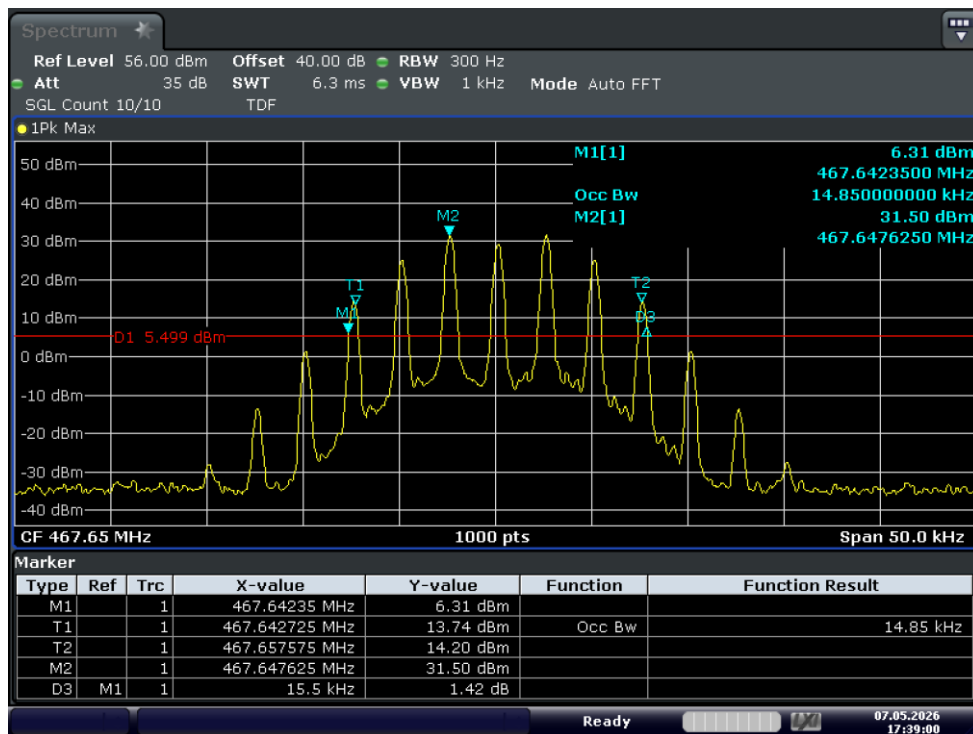


Test_Graph_GMRS_5W_462.65_25k_OBW





Test_Graph_GMRS_5W_467.65_12.5k_OBW

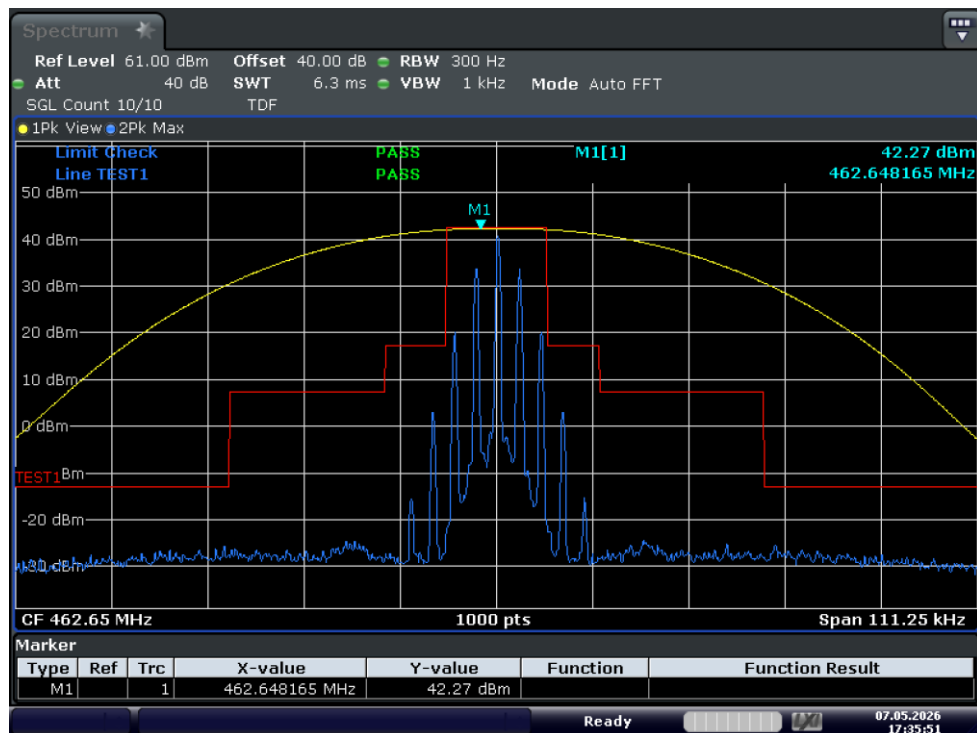


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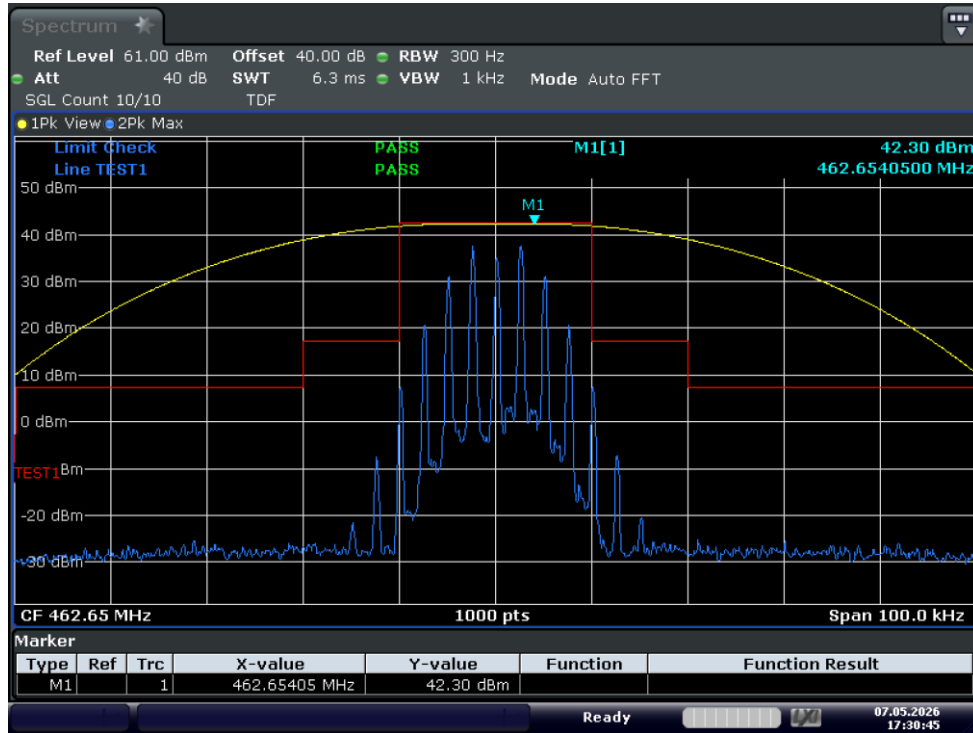


Test data of Emission Mask					
Test Mode	Power Level	Channel Separation [Hz]	Test Frequency [MHz]	Result	Verdict
GMRS	5W	25k	462.6375	See the graph	Pass
GMRS	15W	25k	462.65	See the graph	Pass
GMRS	15W	25k	467.65	See the graph	Pass
GMRS	5W	12.5k	462.6375	See the graph	Pass
GMRS	15W	12.5k	462.65	See the graph	Pass
GMRS	15W	12.5k	467.65	See the graph	Pass
GMRS	5W	25k	462.65	See the graph	Pass
GMRS	5W	25k	467.65	See the graph	Pass
GMRS	5W	12.5k	462.65	See the graph	Pass
GMRS	5W	12.5k	467.65	See the graph	Pass

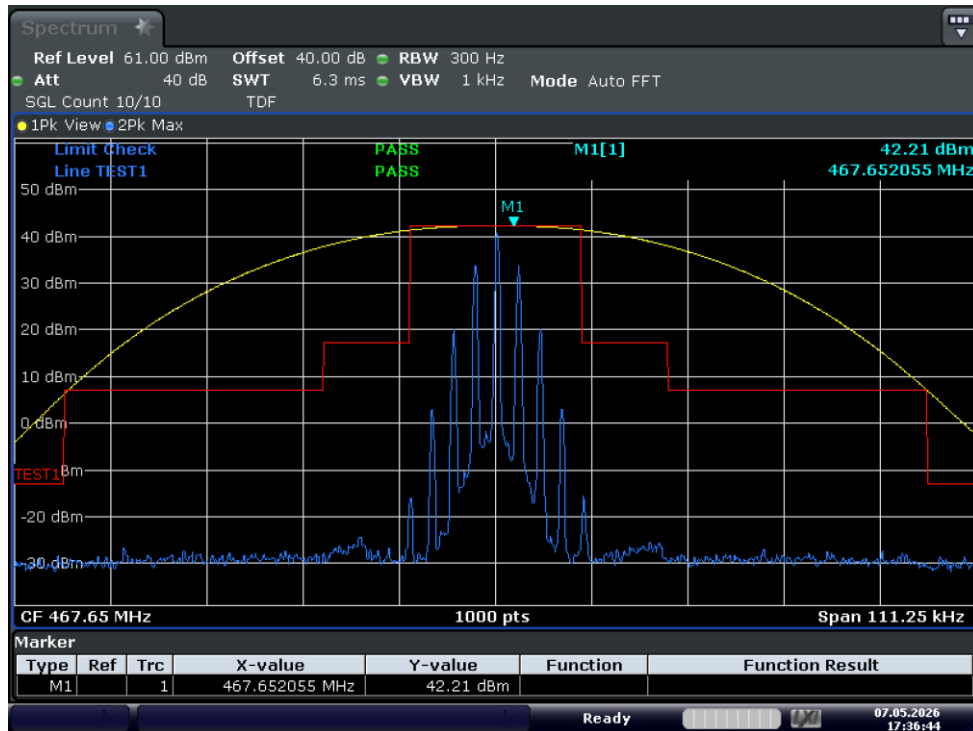


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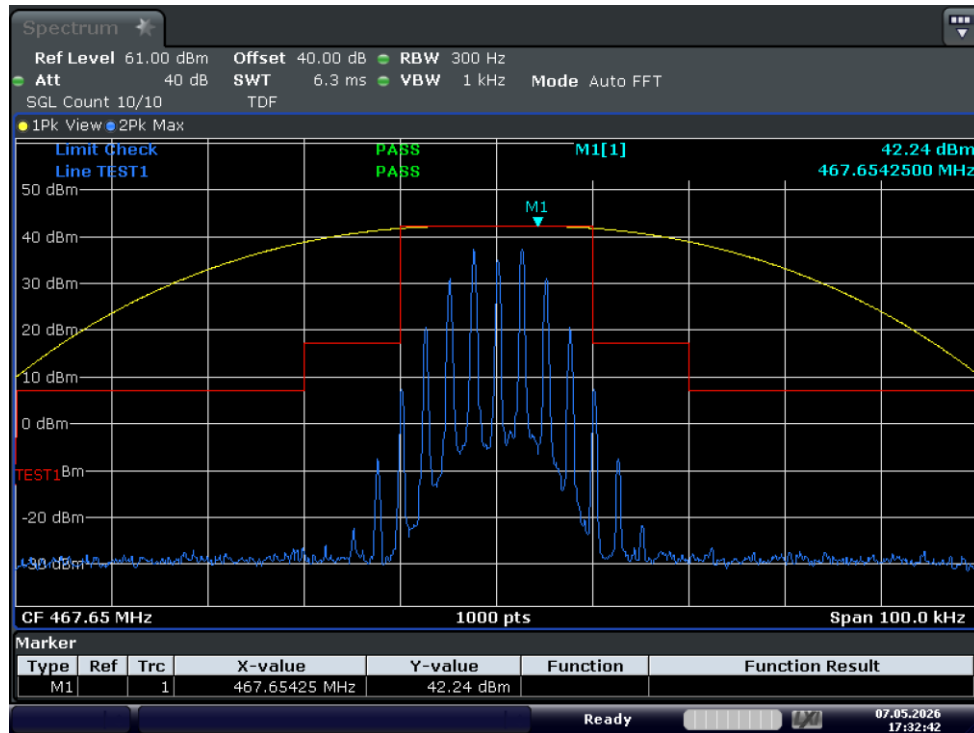


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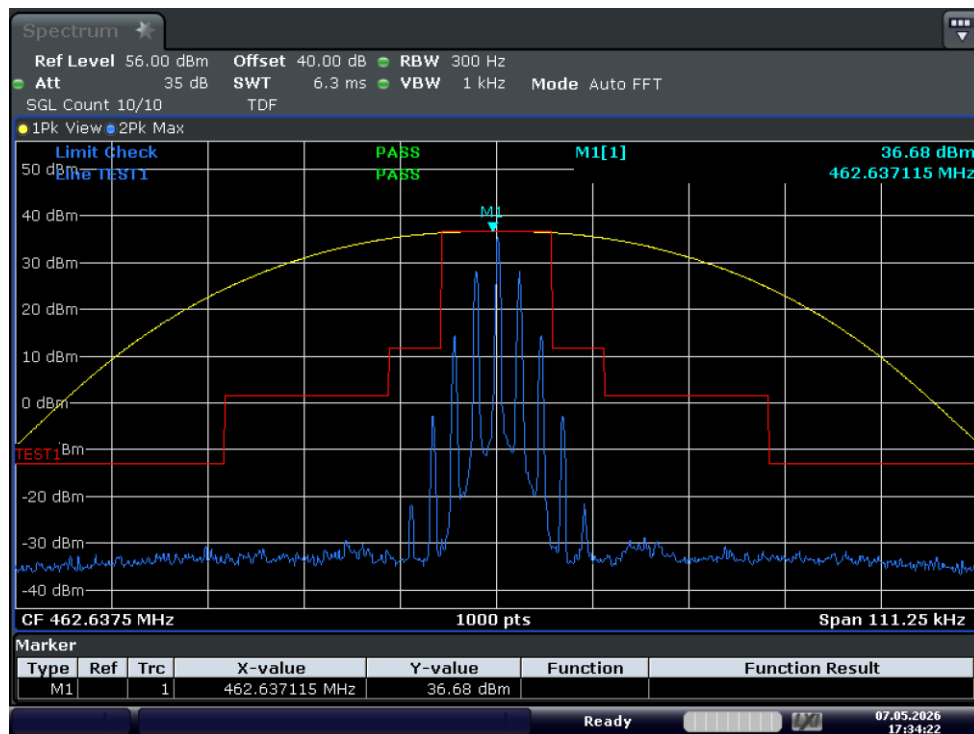


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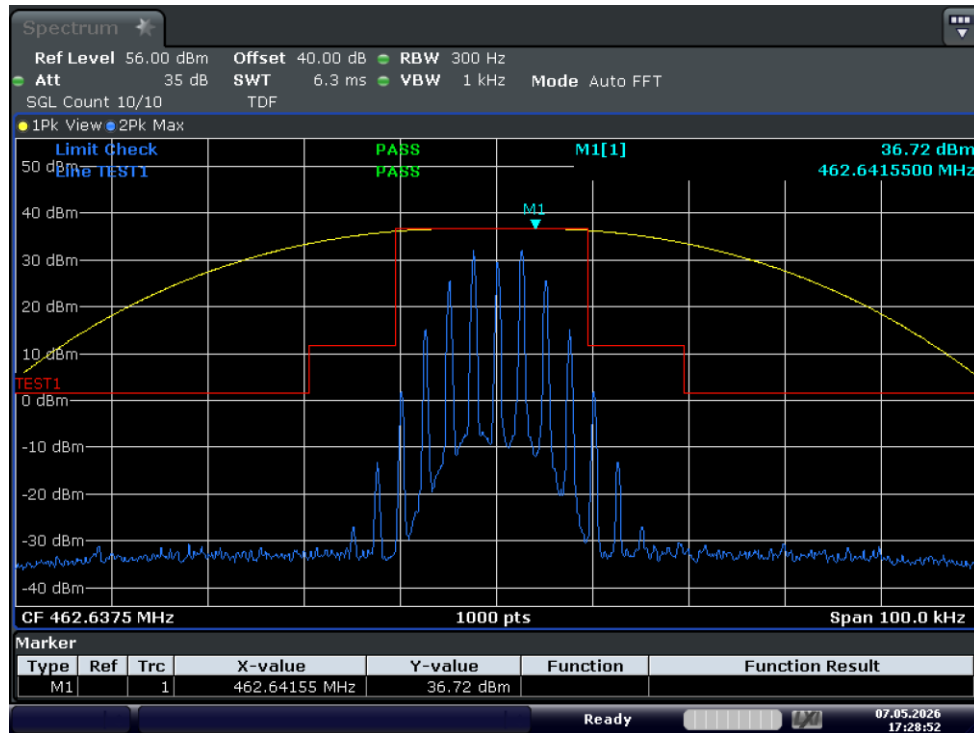


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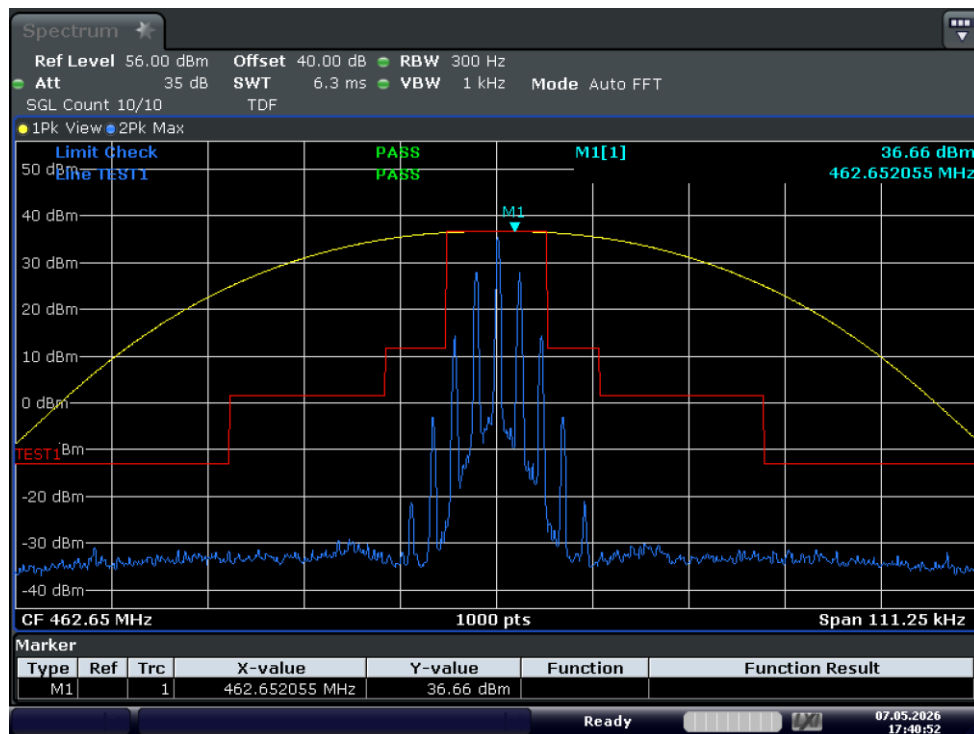


Test_Graph_GMRS_5W_462.6375_12.5k_Mask_D



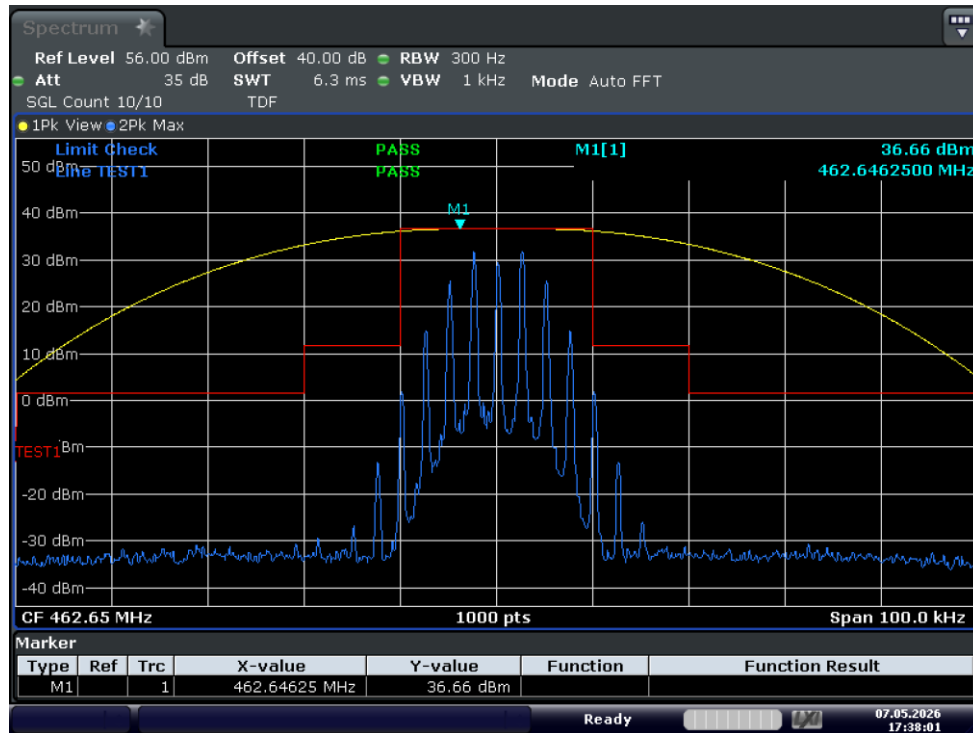


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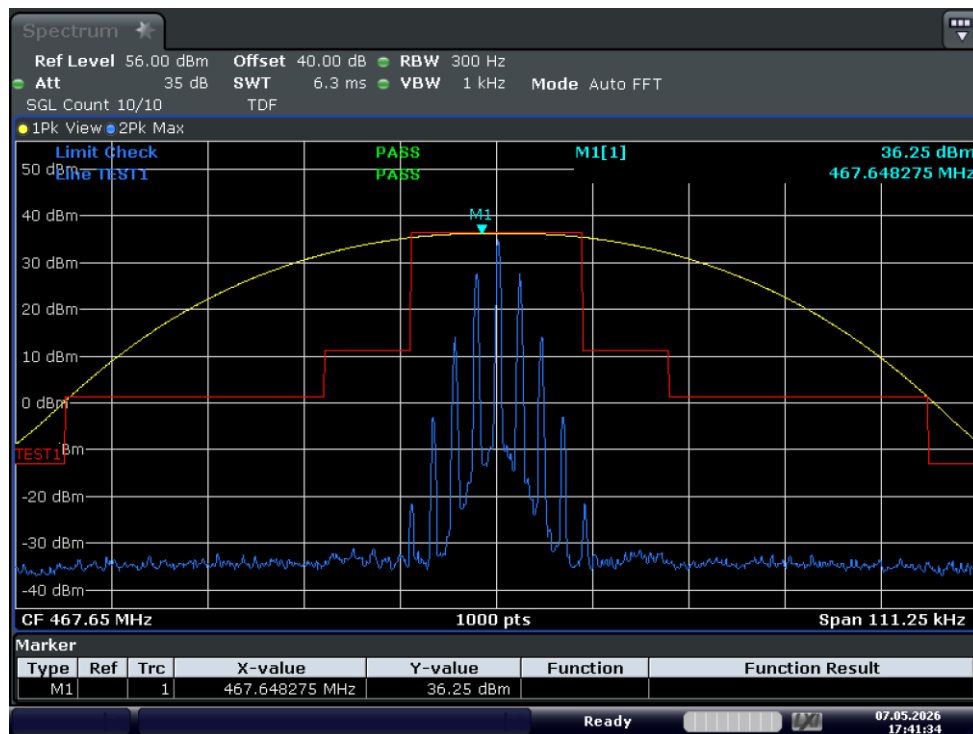


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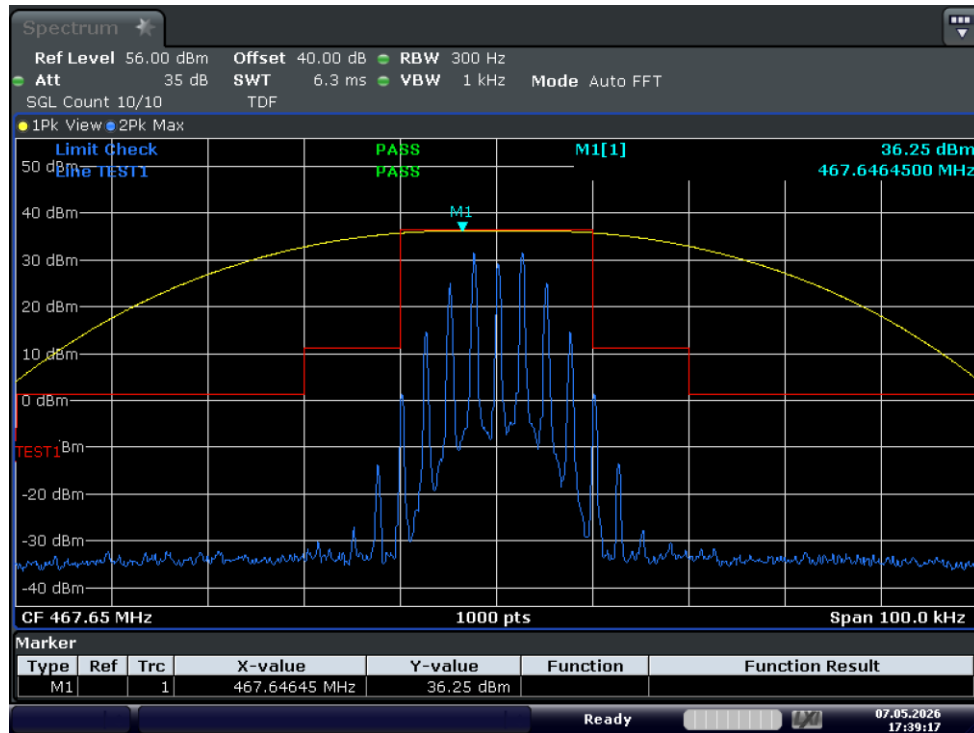


Test_Graph_GMRS_5W_462.65_25k_Mask_D



Test_Graph_GMRS_5W_467.65_12.5k_Mask_D





Test_Graph_GMRS_5W_467.65_25k_Mask_D





5.3. Transmitter Power

5.3.1. Standard Applicable

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.

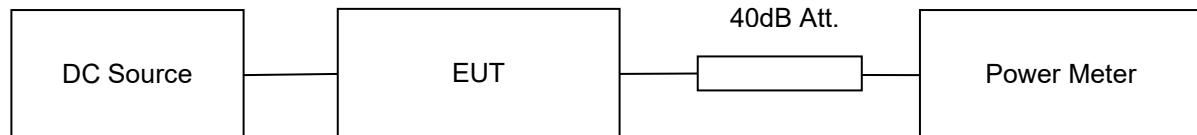
(b) 462 MHz interstitial channels.

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.

5.3.2. Block Diagram of Test Setup



5.3.3. Test Procedures

1) The EUT transmitter connected to Power Meter using the 40 dB attenuator and power sensor with above setup.

2) Path loss for the measurement included.

3) All the measurement was done at low, mid, high frequency for each band.

4) Record the power into the test report.

In the case, RF output power limits are specified in terms of the ERP or EIRP, The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given as follows:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

5.3.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.





5.3.5. Test Results

Test data of RF Power Output						
Test Mode	Power Level	Channel Separation [Hz]	Test Frequency [MHz]	RF Power Output [dBm]	Limit [dBm]	Verdict
GMRS	15W	25k	462.65	42.297	46.99	Pass
GMRS	15W	25k	467.65	42.244	46.99	Pass
GMRS	15W	12.5k	462.65	42.268	46.99	Pass
GMRS	15W	12.5k	467.65	42.212	46.99	Pass
GMRS	5W	25k	462.65	36.656	46.99	Pass
GMRS	5W	25k	467.65	36.253	46.99	Pass
GMRS	5W	12.5k	462.65	36.663	46.99	Pass
GMRS	5W	12.5k	467.65	36.252	46.99	Pass

Test data of ERP							
Test Mode	Power Level	Channel Separation [Hz]	Test Frequency [MHz]	RF Power Output [dBm]	ERP [dBm]	Limit [dBm]	Verdict
GMRS	5W	25k	462.6375	36.716	34.566	36.99	Pass
GMRS	5W	12.5k	462.6375	36.675	34.525	36.99	Pass





5.4. Modulation Characteristics

5.4.1. Standard Applicable

According to FCC§2.1047 and §95.1775, for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

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

(b) 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.

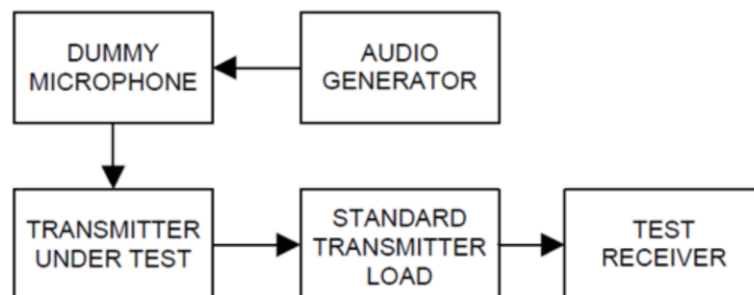
Audio filter:

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.

5.4.2. Block Diagram of Test Setup



5.4.3. Test Procedures

Modulation Limit

1. Test layout and build equipment as shown above.
2. adjust the audio input for 60% of rated system deviation at 1kHz using this level as a reference (0dB).
3. Vary the input level from -20 to +20dB.
4. Record the frequency deviation obtained as a function of the input level.
5. Repeat step 2 with input frequency changing to 300, 1000, 1500 and 3000Hz in sequence.

Audio Frequency Response

1. Test layout and build equipment as shown above.
2. Adjust the audio input for 20% of rated system deviation at 1 kHz using this level as a reference (0 dB).
3. Vary the Audio frequency from 100 Hz to 10 kHz and record the frequency deviation.





4. Audio Frequency Response = $20\log_{10}$ (Deviation of test frequency/Deviation of 1 kHz reference).

Audio Low Pass Filter Frequency Response

- 1 Configure the EUT as shown in figure 2.
- 2 Connect the audio frequency generator as close as possible the input of the post limiter low pass filter within the transmitter under test.
- 3 Connect the audio spectrum analyzer to the output of the post limiter low pass filter within the transmitter under test.
- 4 Apply a 1000 Hz tone from the audio frequency generator and adjust the level per manufacturer's specifications.
- 5 Record the dB level of the 1000 Hz spectral line on the audio spectrum analyzer as LEV_{REF} .
- 6 Set the audio frequency generator to the desired test frequency between 3000 Hz and the upper low pass filter limit.
- 7 Record audio spectrum analyzer levels, at the test frequency in step 6).
- 8 Record the dB level on the audio spectrum analyzer as LEV_{REQ} .
- 9 Calculate the audio frequency response at the test frequency as:
- 10 low pass filter response = $LEV_{REQ} - LEV_{REF}$
- 11 Repeat steps 6) through 10) for all the desired test frequencies.

5.4.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

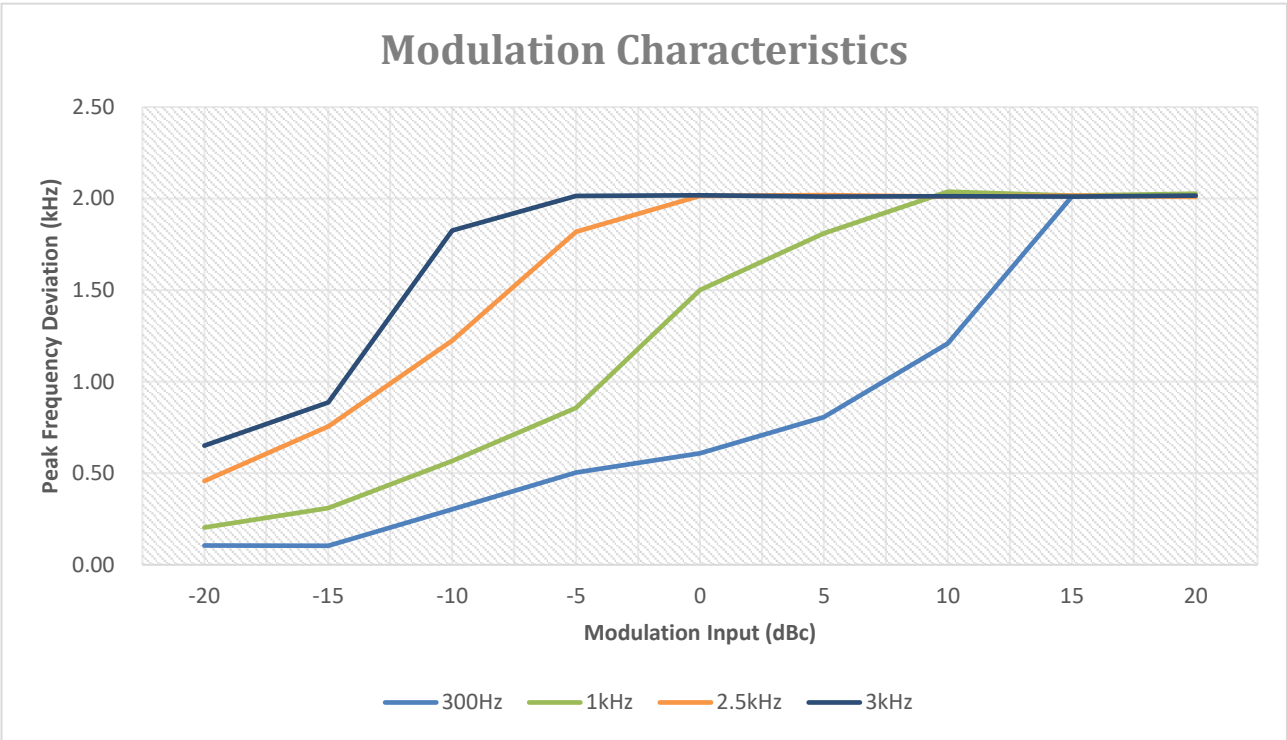




5.4.5. Test Results

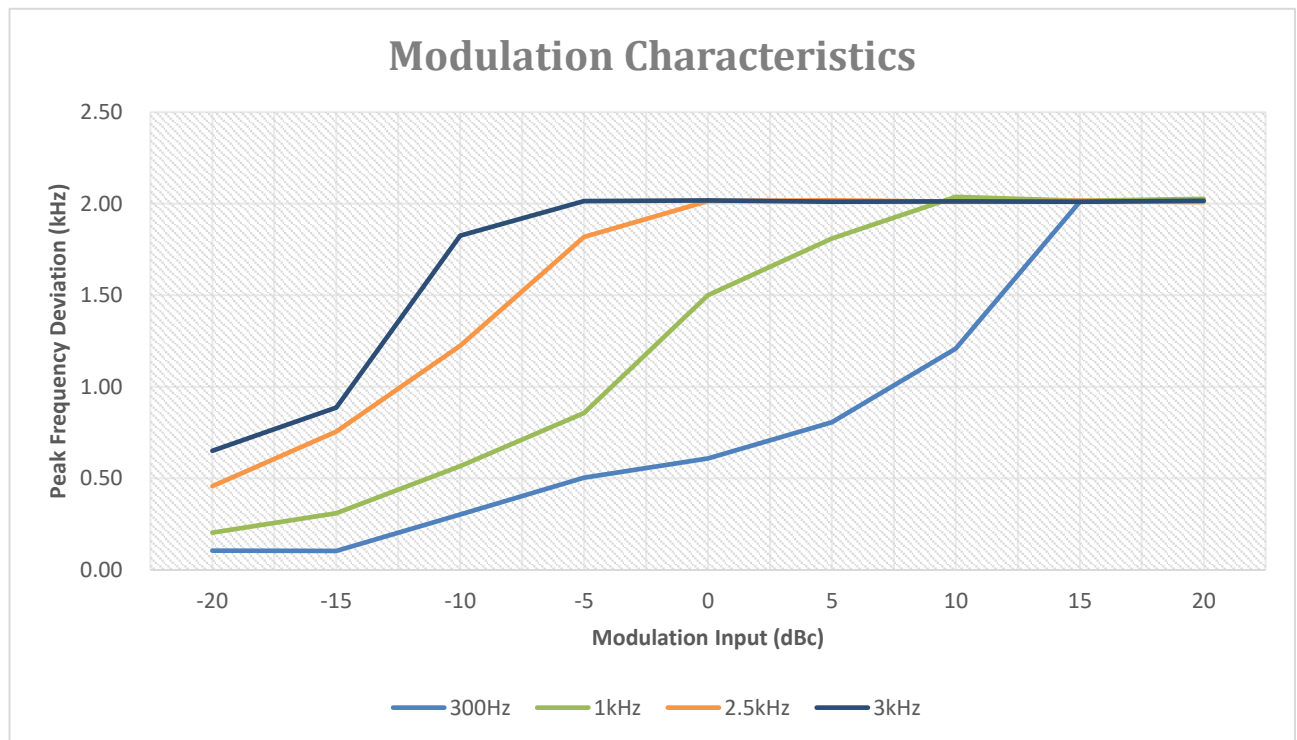
Modulation Limit:

Test Frequency: 462.6375MHz				
Modulation Level (dB)	Peak Freq. Deviation At 300 Hz (kHz)	Peak Freq. Deviation At 1000 Hz (kHz)	Peak Freq. Deviation At 1500 Hz (kHz)	Peak Freq. Deviation At 3000 Hz (kHz)
-20	0.10	0.20	0.46	0.66
-15	0.11	0.31	0.75	0.88
-10	0.30	0.57	1.23	1.83
-5	0.51	0.86	1.82	2.01
0	0.60	1.50	2.01	2.01
+5	0.80	1.81	2.01	2.02
+10	1.21	2.03	2.01	2.02
+15	2.01	2.02	2.01	2.02
+20	2.01	2.03	2.01	2.02



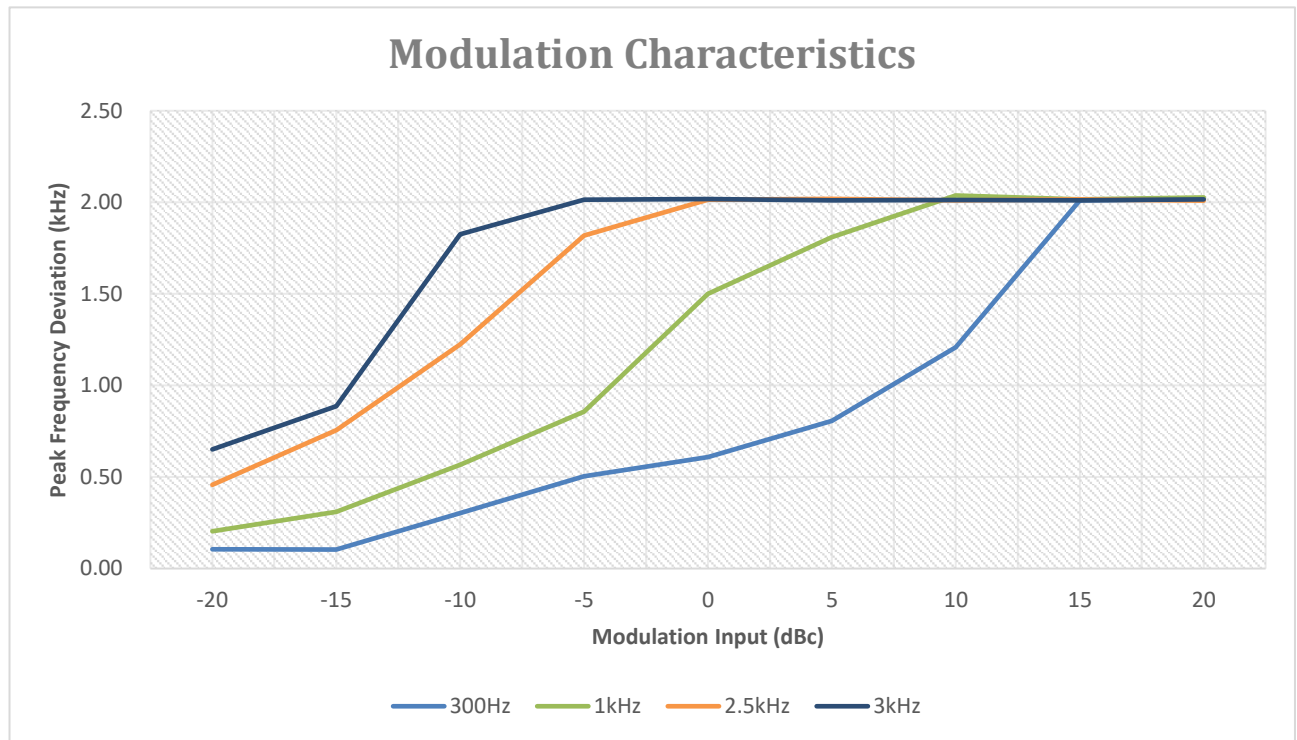


Test Frequency: 462.6500MHz				
Modulation Level (dB)	Peak Freq. Deviation At 300 Hz (kHz)	Peak Freq. Deviation At 1000 Hz (kHz)	Peak Freq. Deviation At 1500 Hz (kHz)	Peak Freq. Deviation At 3000 Hz (kHz)
-20	0.11	0.20	0.45	0.65
-15	0.11	0.30	0.76	0.88
-10	0.31	0.57	1.22	1.82
-5	0.50	0.85	1.82	2.02
0	0.61	1.50	2.01	2.01
+5	0.81	1.80	2.02	2.02
+10	1.21	2.03	2.02	2.02
+15	2.01	2.01	2.02	2.01
+20	2.02	2.03	2.01	2.01





Test Frequency: 467.6500MHz				
Modulation Level (dB)	Peak Freq. Deviation At 300 Hz (kHz)	Peak Freq. Deviation At 1000 Hz (kHz)	Peak Freq. Deviation At 1500 Hz (kHz)	Peak Freq. Deviation At 3000 Hz (kHz)
-20	0.10	0.21	0.45	0.66
-15	0.11	0.30	0.75	0.89
-10	0.30	0.57	1.23	1.82
-5	0.51	0.85	1.81	2.02
0	0.60	1.50	2.01	2.02
+5	0.81	1.80	2.01	2.01
+10	1.21	2.04	2.01	2.01
+15	2.01	2.01	2.01	2.02
+20	2.02	2.02	2.02	2.02

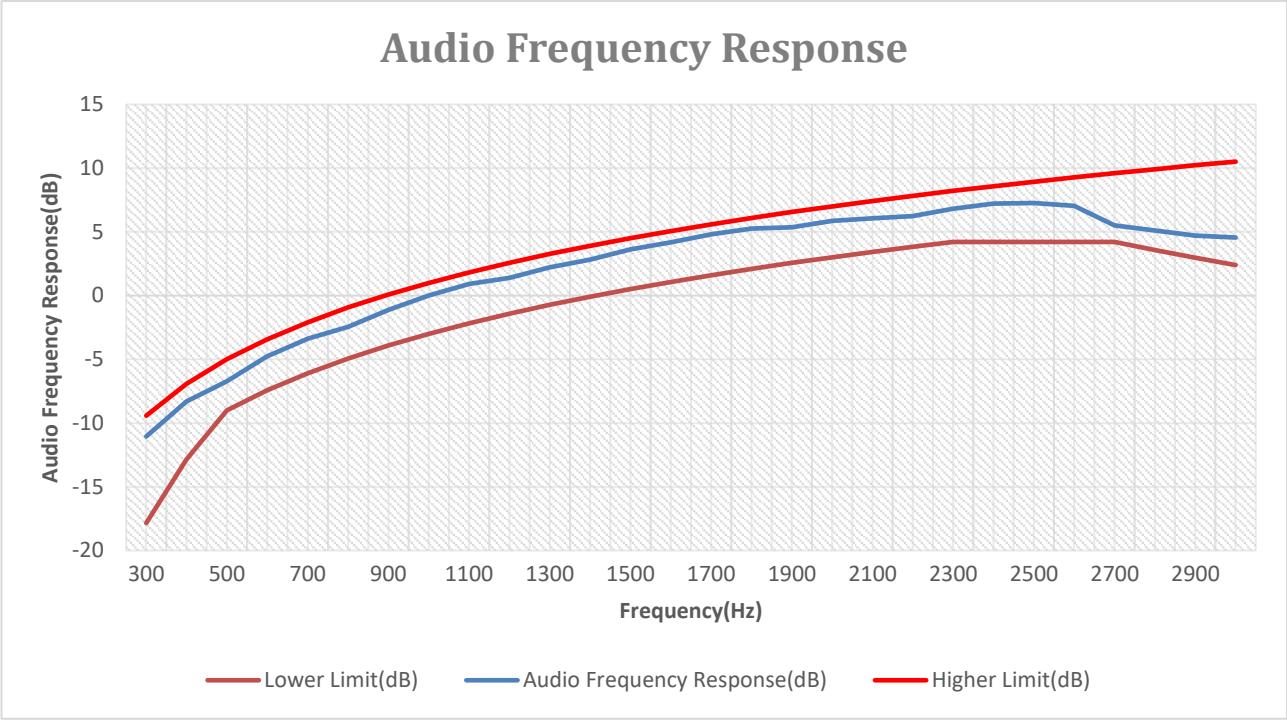




Audio Frequency Response:

Test Frequency: 462.6375MHz			
Frequency (Hz)	Lower Limit(dB)	Audio Frequency Response(dB)	Higher Limit(dB)
300	-17.84	-11.06	-9.42
400	-12.86	-8.33	-6.93
500	-9.00	-6.73	-5.00
600	-7.42	-4.76	-3.42
700	-6.09	-3.40	-2.09
800	-4.93	-2.45	-0.93
900	-3.91	-1.12	0.09
1000	-3	0.00	1.00
1100	-2.17	0.89	1.83
1200	-1.42	1.45	2.58
1300	-0.73	2.19	3.27
1400	-0.09	2.86	3.91
1500	0.51	3.62	4.51
1600	1.07	4.20	5.07
1700	1.59	4.80	5.59
1800	2.09	5.22	6.09
1900	2.56	5.36	6.56
2000	3.00	5.84	7.00
2100	3.42	6.06	7.42
2200	3.83	6.22	7.83
2300	4.21	6.76	8.21
2400	4.21	7.21	8.58
2500	4.21	7.25	8.93
2600	4.21	7.03	9.27
2700	4.21	5.50	9.60
2800	3.58	5.11	9.91
2900	2.97	4.74	10.22
3000	2.39	4.57	10.51

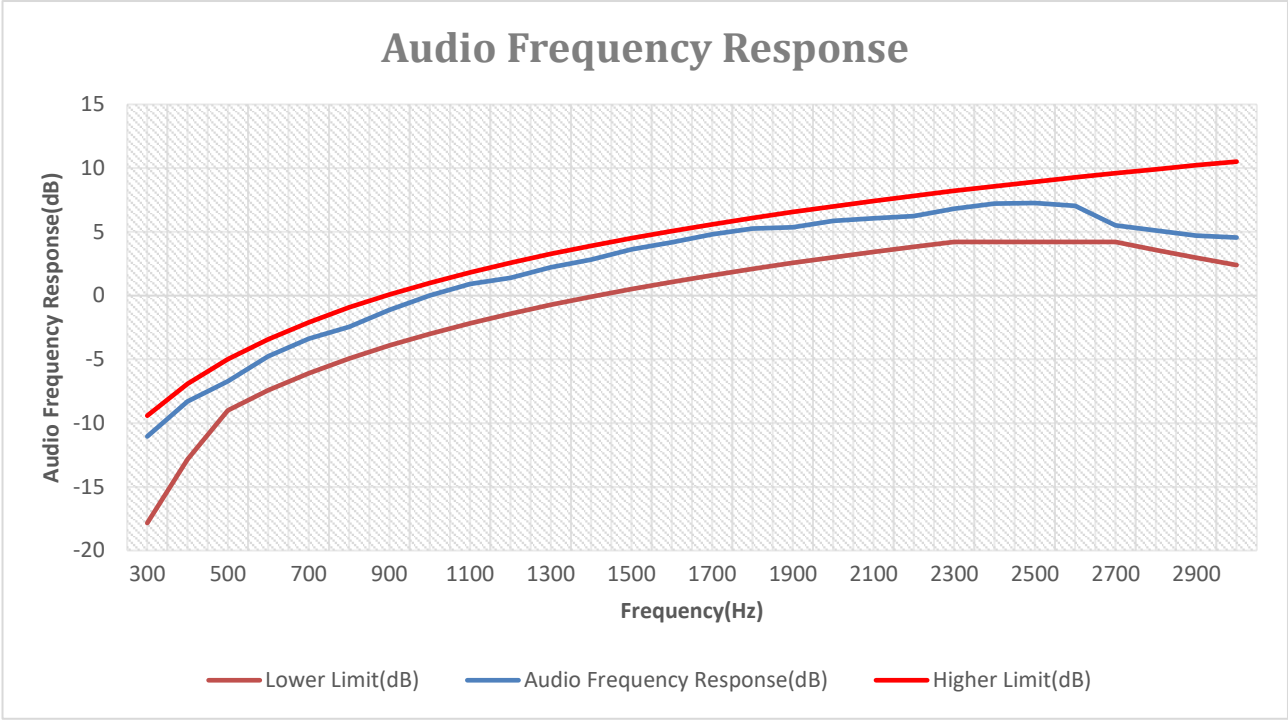






Test Frequency: 462.6500MHz			
Frequency (Hz)	Lower Limit(dB)	Audio Frequency Response(dB)	Higher Limit(dB)
300	-17.84	-11.02	-9.42
400	-12.86	-8.31	-6.93
500	-9.00	-6.77	-5.00
600	-7.42	-4.77	-3.42
700	-6.09	-3.39	-2.09
800	-4.93	-2.41	-0.93
900	-3.91	-1.10	0.09
1000	-3	0.00	1.00
1100	-2.17	0.89	1.83
1200	-1.42	1.45	2.58
1300	-0.73	2.20	3.27
1400	-0.09	2.84	3.91
1500	0.51	3.64	4.51
1600	1.07	4.19	5.07
1700	1.59	4.82	5.59
1800	2.09	5.28	6.09
1900	2.56	5.32	6.56
2000	3.00	5.86	7.00
2100	3.42	6.05	7.42
2200	3.83	6.25	7.83
2300	4.21	6.78	8.21
2400	4.21	7.24	8.58
2500	4.21	7.29	8.93
2600	4.21	7.01	9.27
2700	4.21	5.51	9.60
2800	3.58	5.17	9.91
2900	2.97	4.73	10.22
3000	2.39	4.55	10.51

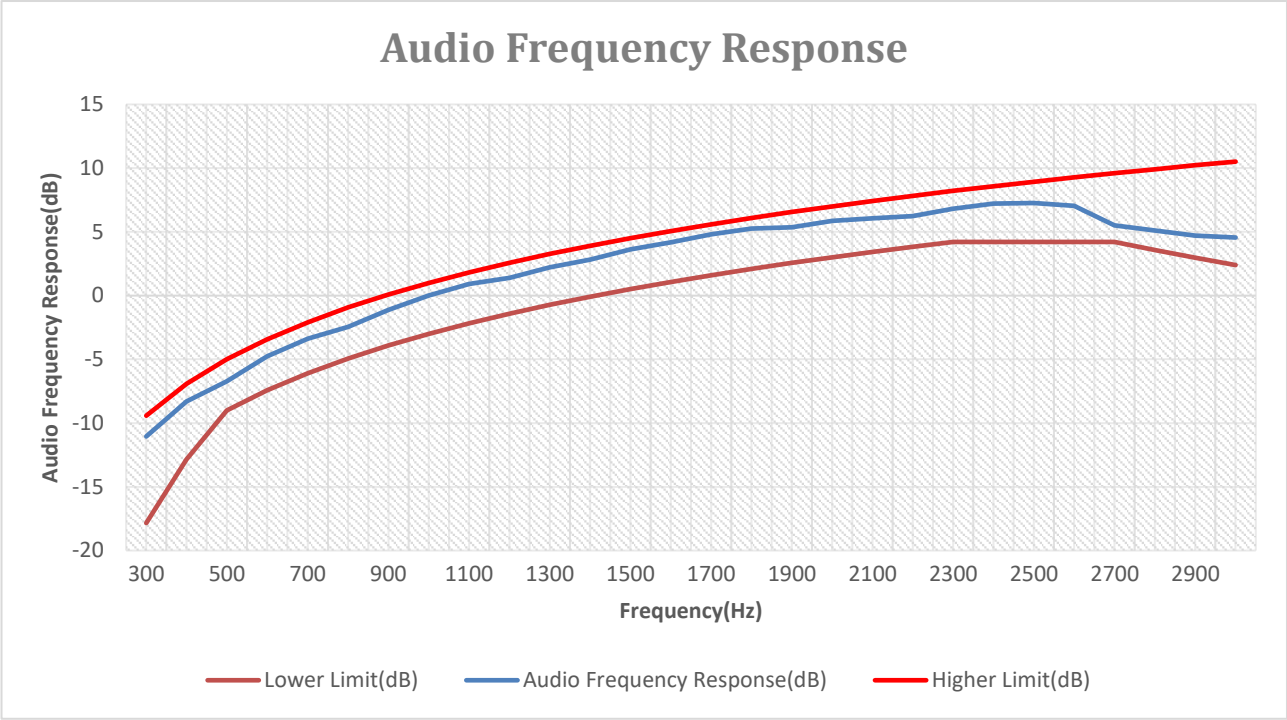






Test Frequency: 467.6500MHz			
Frequency (Hz)	Lower Limit(dB)	Audio Frequency Response(dB)	Higher Limit(dB)
300	-17.84	-11.05	-9.42
400	-12.86	-8.32	-6.93
500	-9.00	-6.77	-5.00
600	-7.42	-4.73	-3.42
700	-6.09	-3.36	-2.09
800	-4.93	-2.45	-0.93
900	-3.91	-1.11	0.09
1000	-3	0.02	1.00
1100	-2.17	0.92	1.83
1200	-1.42	1.41	2.58
1300	-0.73	2.22	3.27
1400	-0.09	2.86	3.91
1500	0.51	3.66	4.51
1600	1.07	4.20	5.07
1700	1.59	4.79	5.59
1800	2.09	5.22	6.09
1900	2.56	5.37	6.56
2000	3.00	5.82	7.00
2100	3.42	6.06	7.42
2200	3.83	6.23	7.83
2300	4.21	6.77	8.21
2400	4.21	7.24	8.58
2500	4.21	7.27	8.93
2600	4.21	7.02	9.27
2700	4.21	5.48	9.60
2800	3.58	5.16	9.91
2900	2.97	4.70	10.22
3000	2.39	4.56	10.51

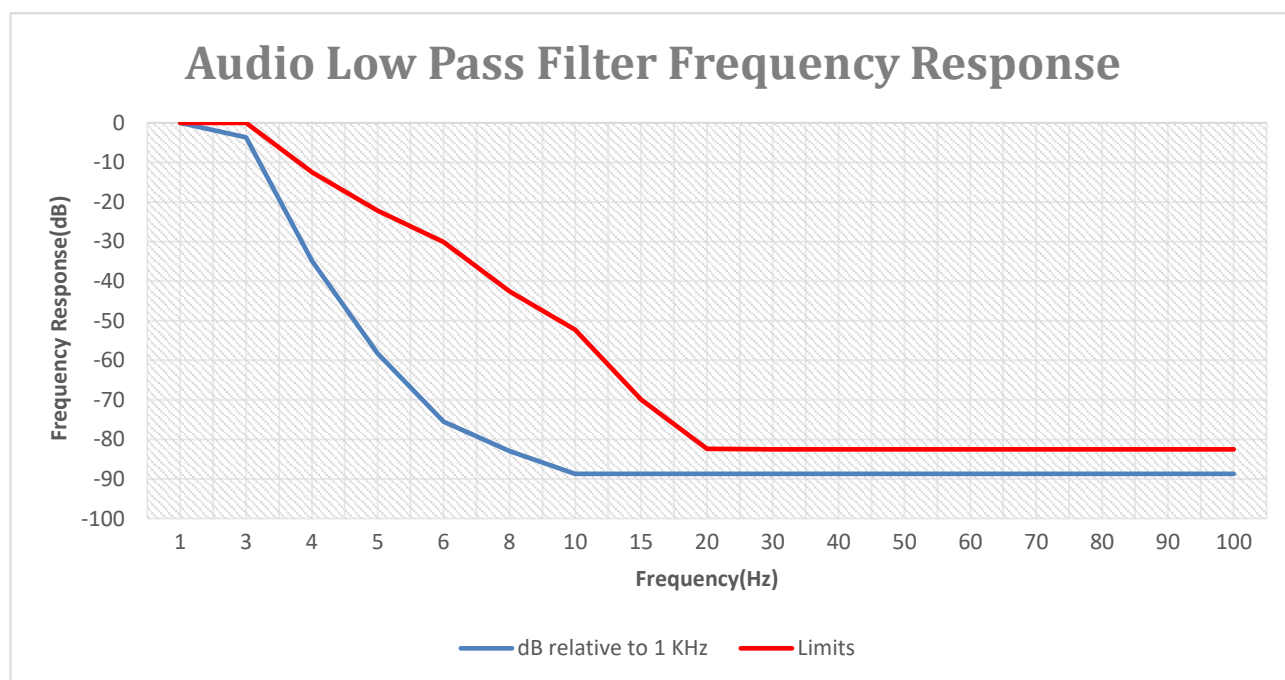






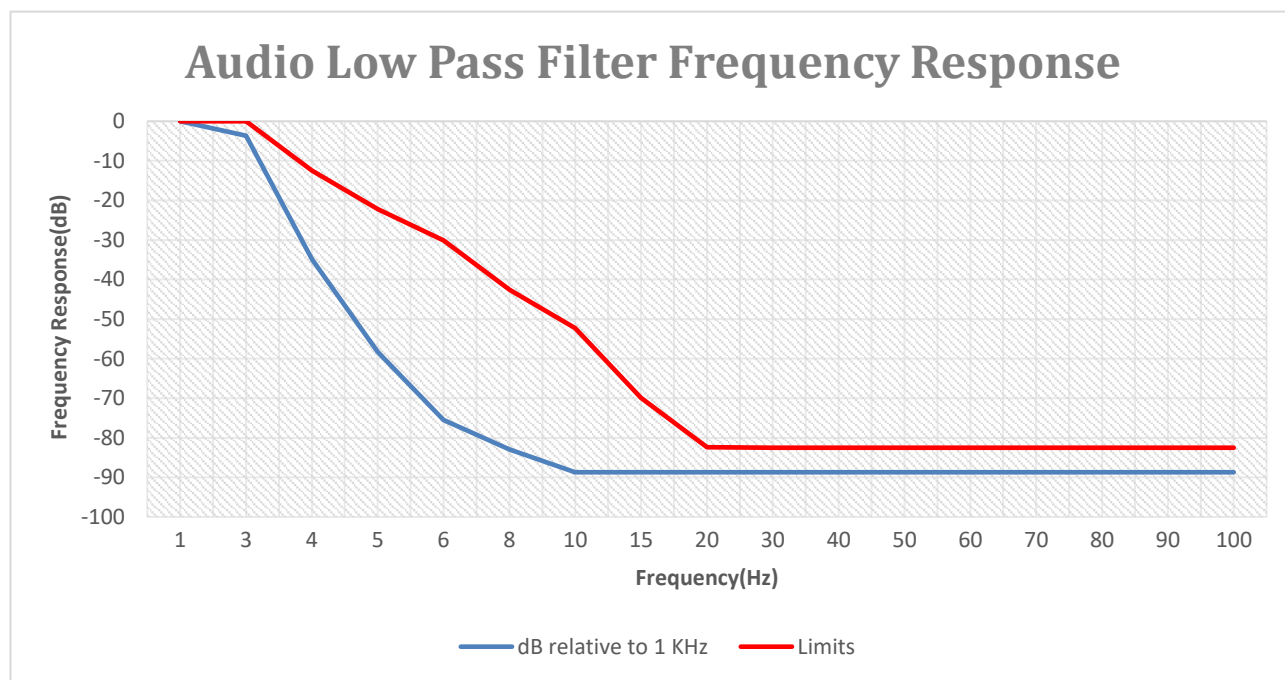
Audio Low Pass Filter Frequency Response

Test Frequency: 467.6375MHz		
Audio Frequency (KHz)	dB relative to 1 KHz	Limits
1	0	0
3	-3.2	0
4	-35.4	-12.5
5	-57.9	-22.2
6	-75.7	-30.1
8	-82.4	-42.6
10	-88.7	-52.3
15	-88.7	-69.9
20	-88.7	-82.4
30	-88.7	-82.5
40	-88.7	-82.5
50	-88.7	-82.5
60	-88.7	-82.5
70	-88.7	-82.5
80	-88.7	-82.5
90	-88.7	-82.5
100	-88.7	-82.5



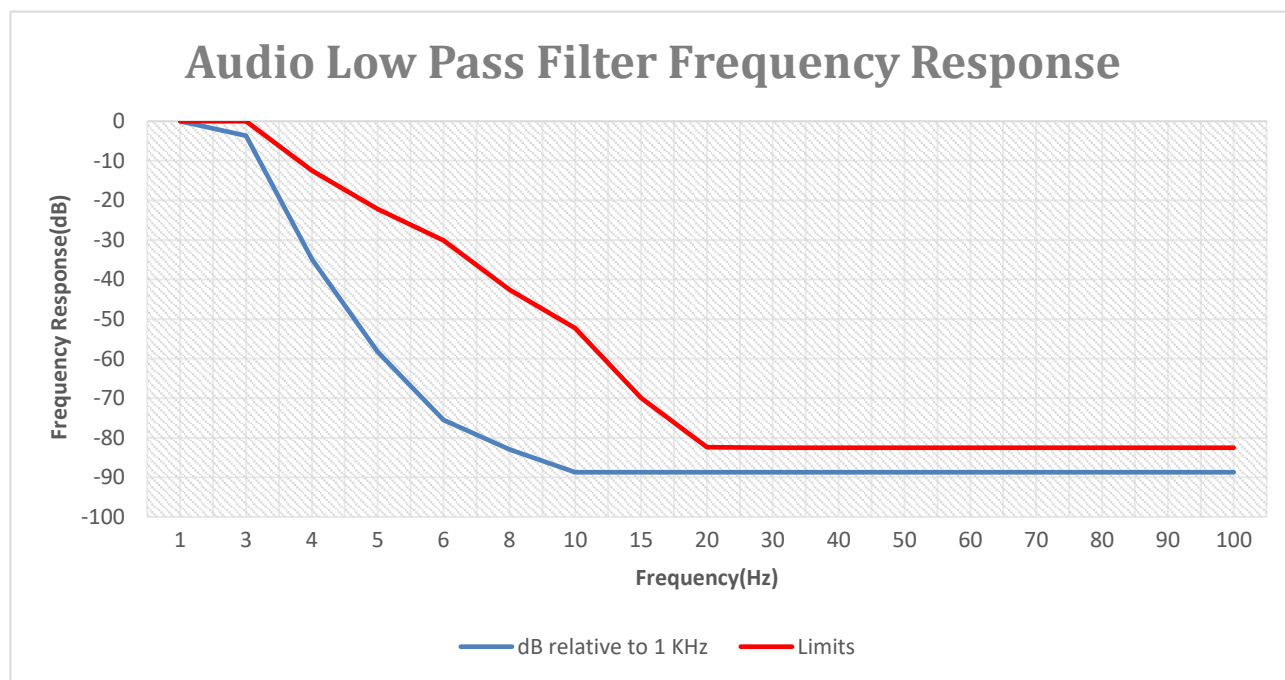


Test Frequency: 462.65MHz		
Audio Frequency (KHz)	dB relative to 1 KHz	Limits
1	0	0
3	-3.7	0
4	-36.1	-12.5
5	-57.5	-22.2
6	-75.3	-30.1
8	-82.9	-42.6
10	-88.7	-52.3
15	-88.7	-69.9
20	-88.7	-82.4
30	-88.7	-82.5
40	-88.7	-82.5
50	-88.7	-82.5
60	-88.7	-82.5
70	-88.7	-82.5
80	-88.7	-82.5
90	-88.7	-82.5
100	-88.7	-82.5





Test Frequency: 467.65MHz		
Audio Frequency (KHz)	dB relative to 1 KHz	Limits
1	0	0
3	-3.7	0
4	-34.9	-12.5
5	-58.3	-22.2
6	-75.5	-30.1
8	-82.9	-42.6
10	-88.7	-52.3
15	-88.7	-69.9
20	-88.7	-82.4
30	-88.7	-82.5
40	-88.7	-82.5
50	-88.7	-82.5
60	-88.7	-82.5
70	-88.7	-82.5
80	-88.7	-82.5
90	-88.7	-82.5
100	-88.7	-82.5



Note: All test channels were evaluated, and the high power level at 25k channel spacing was selected as the worst-case condition for reporting.





5.5. Spurious Emission on Antenna Port

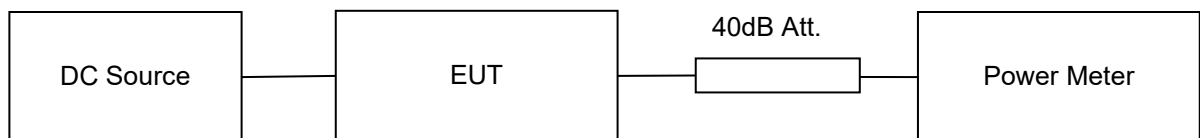
5.5.1. Standard Applicable

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.

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.

$43 + 10 \log (P)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

5.5.2. Block Diagram of Test Setup



5.5.3. Test Procedures

- 1) Connect the equipment as illustrated.
- 2) Set EUT working in continuous mode in low, middle, high frequency, read and record the peak power value.

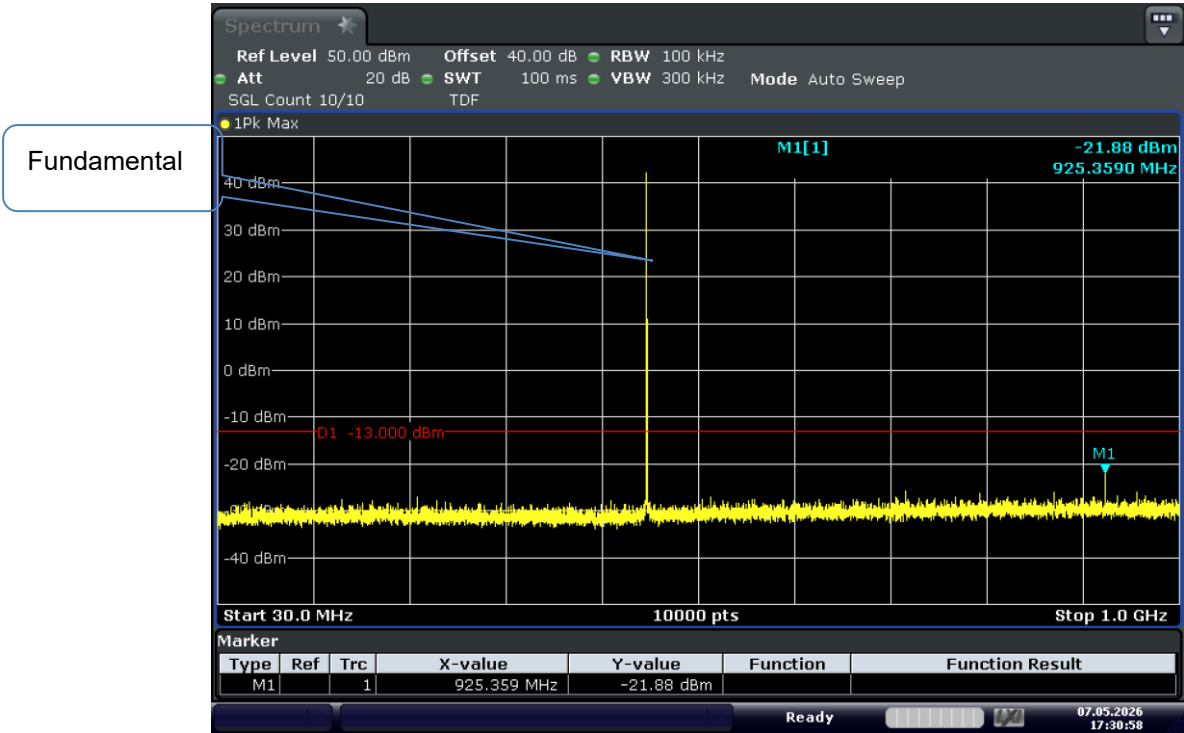
5.5.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

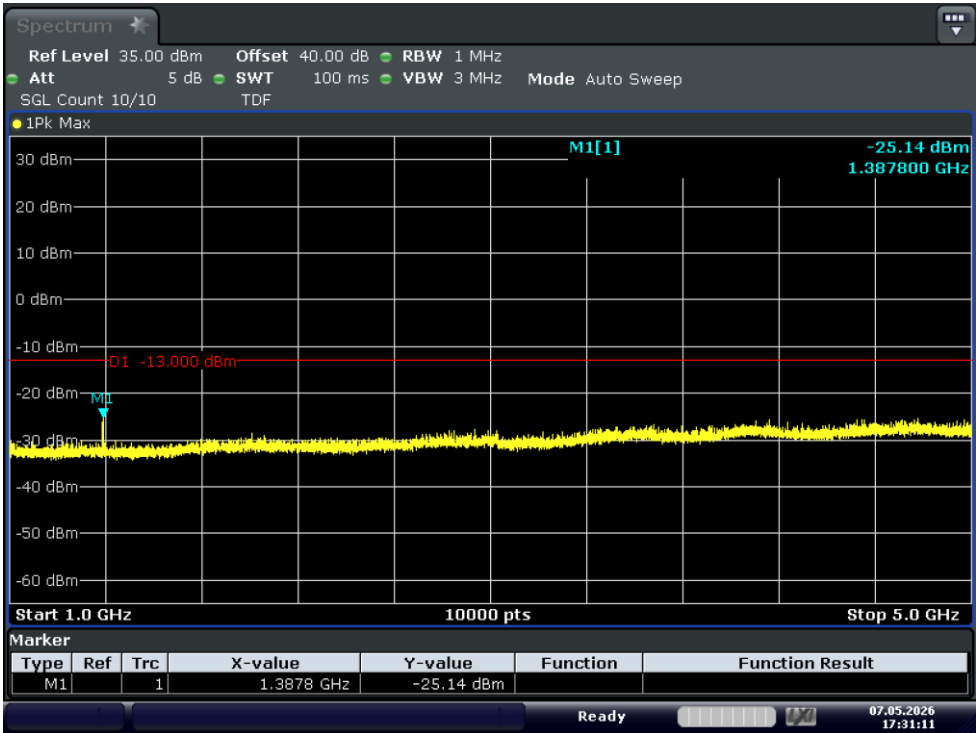




5.5.5. Test Results



Test_Graph_GMRS_15W_462.65_25k_TX_0.03G-1G

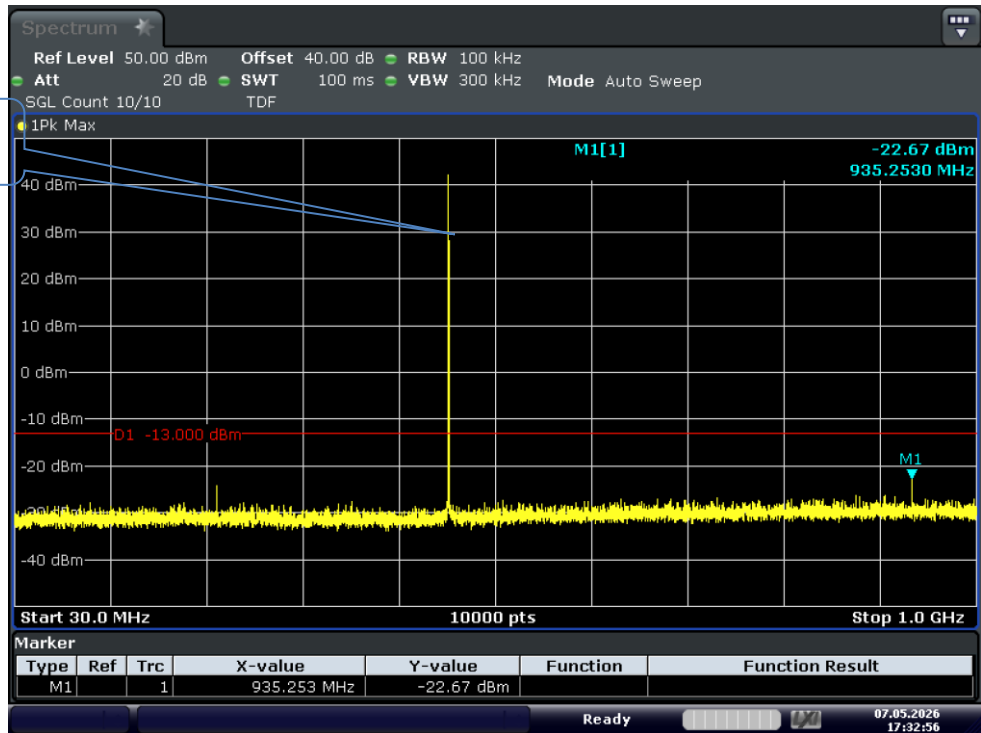


Test_Graph_GMRS_15W_462.65_25k_TX_1G-5G

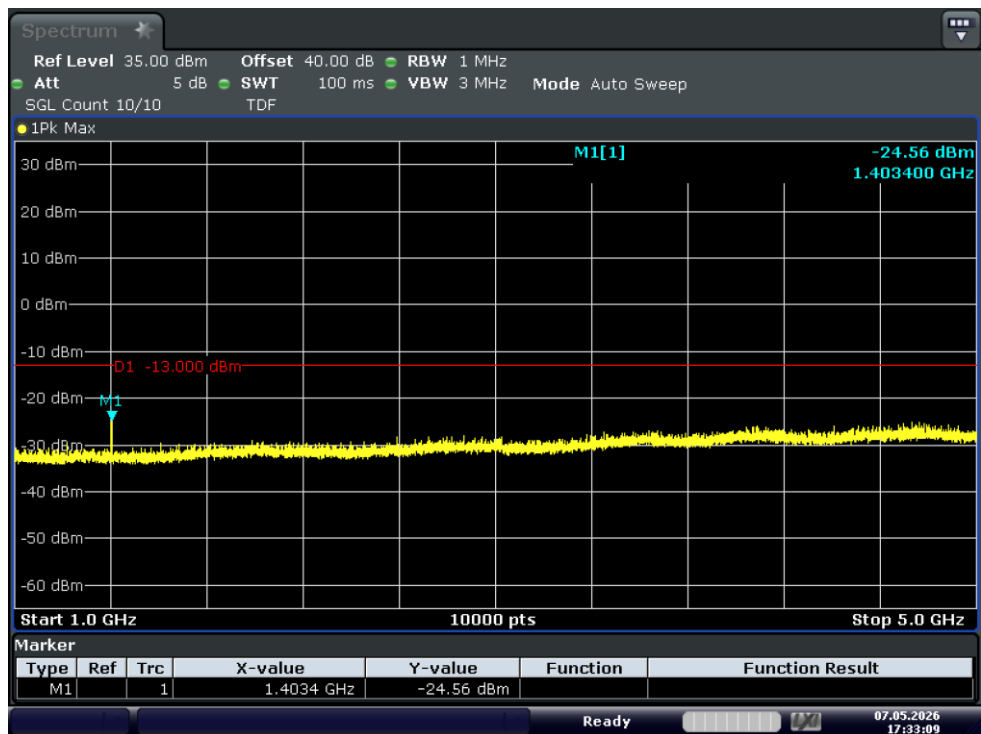




Fundamental



Test_Graph_GMRS_15W_467.65_25k_TX_0.03G-1G

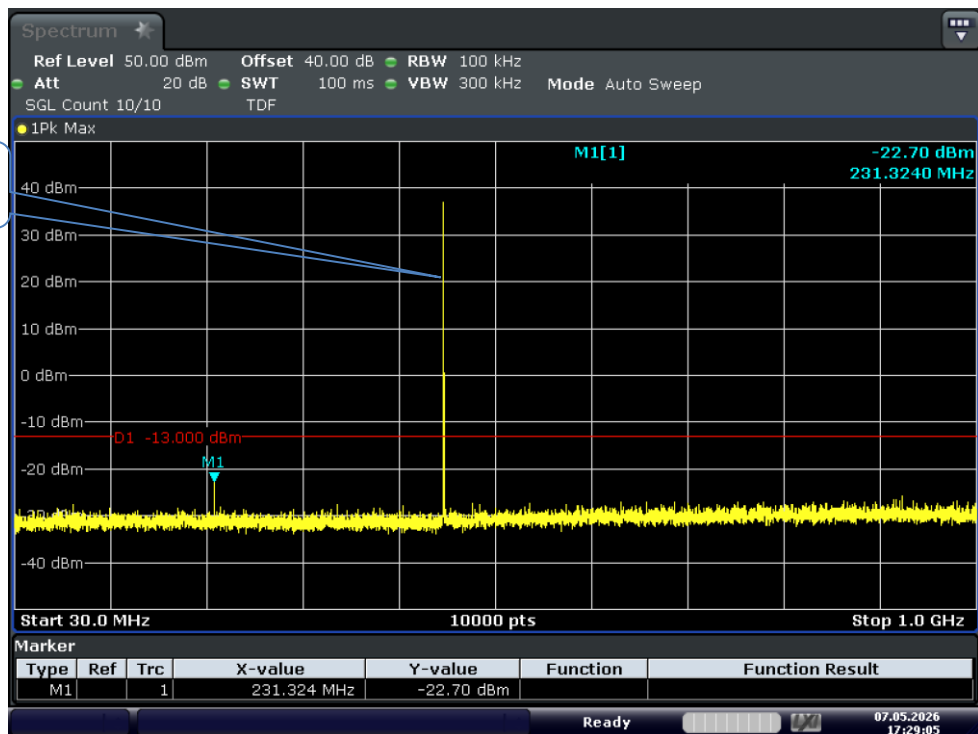


Test_Graph_GMRS_15W_467.65_25k_TX_1G-5G

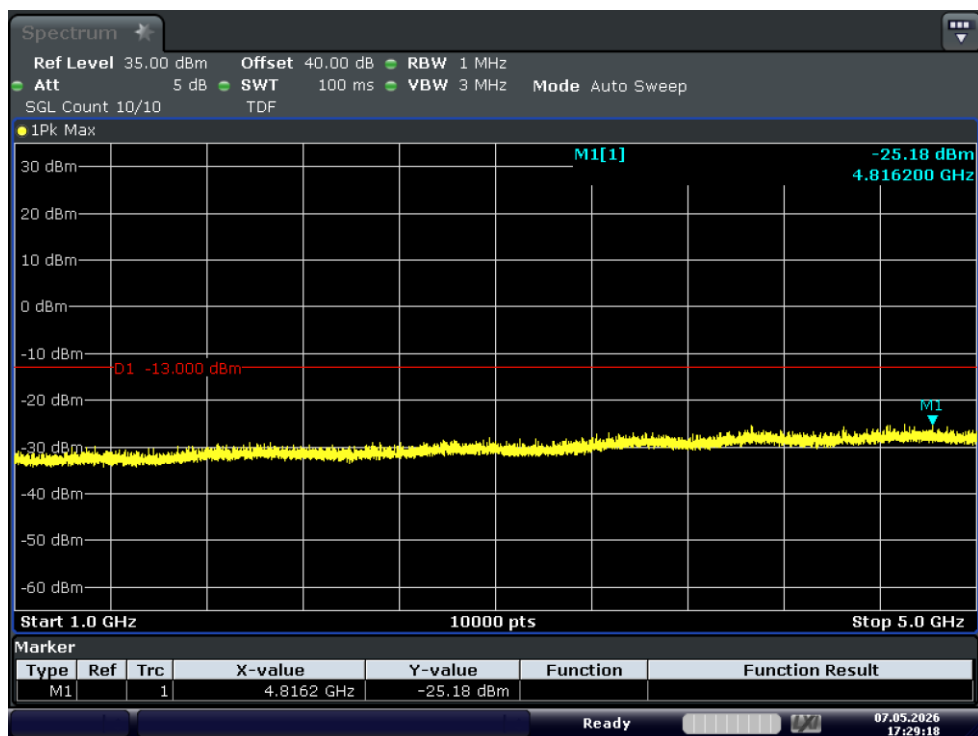




Fundamental



Test_Graph_GMRS_5W_462.6375_25k_TX_0.03G-1G

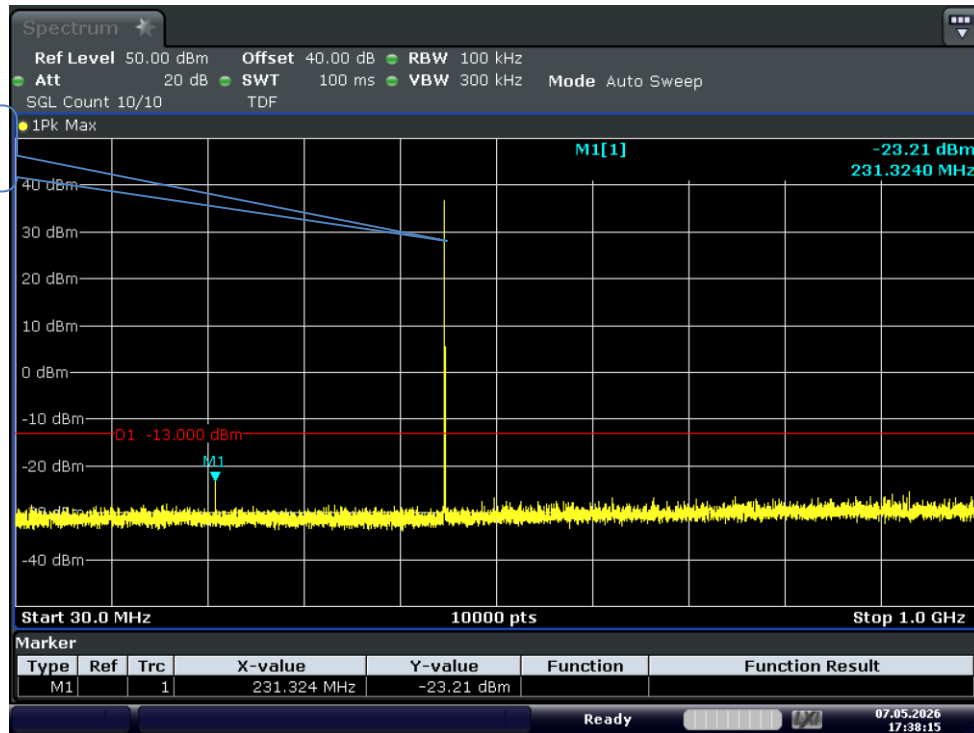


Test_Graph_GMRS_5W_462.6375_25k_TX_1G-5G

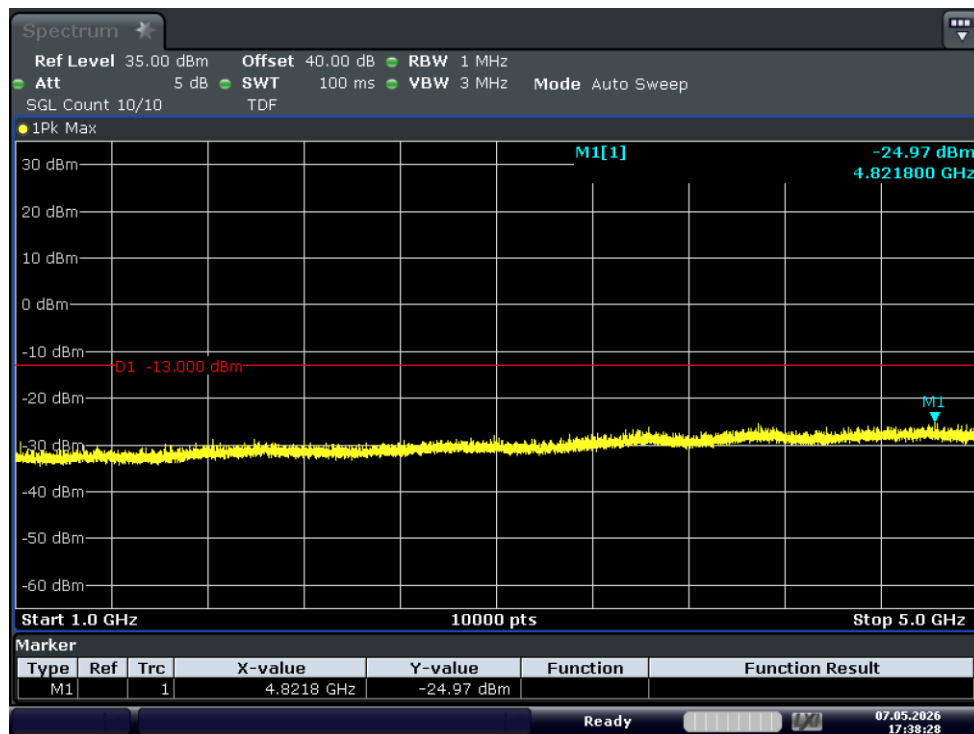




Fundamental



Test_Graph_GMRS_5W_462.65_25k_TX_0.03G-1G

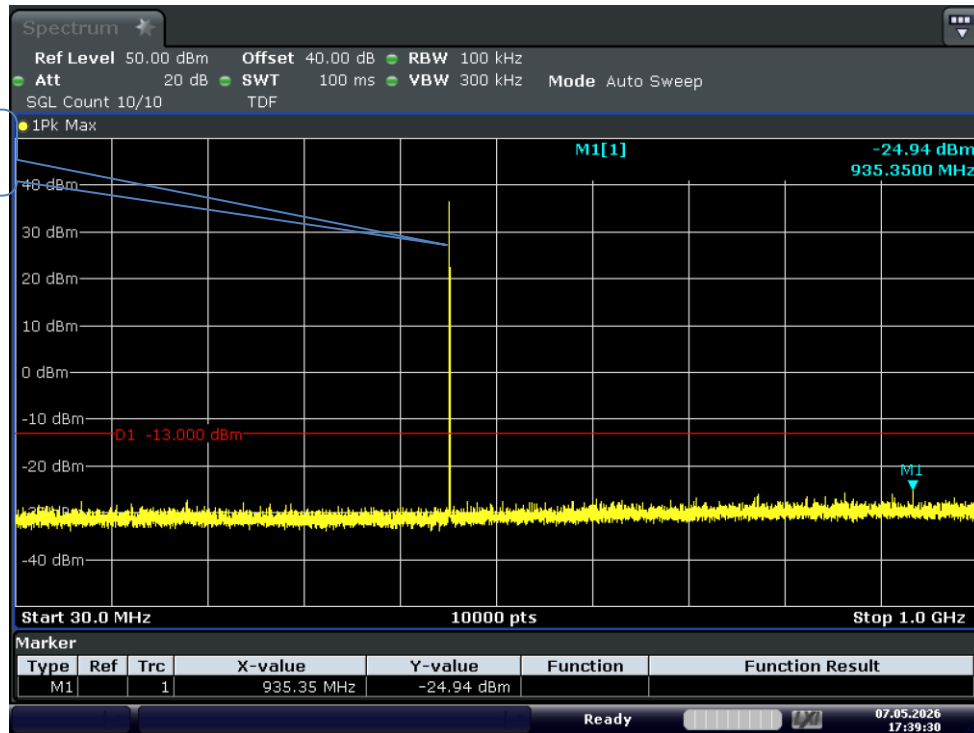


Test_Graph_GMRS_5W_462.65_25k_TX_1G-5G

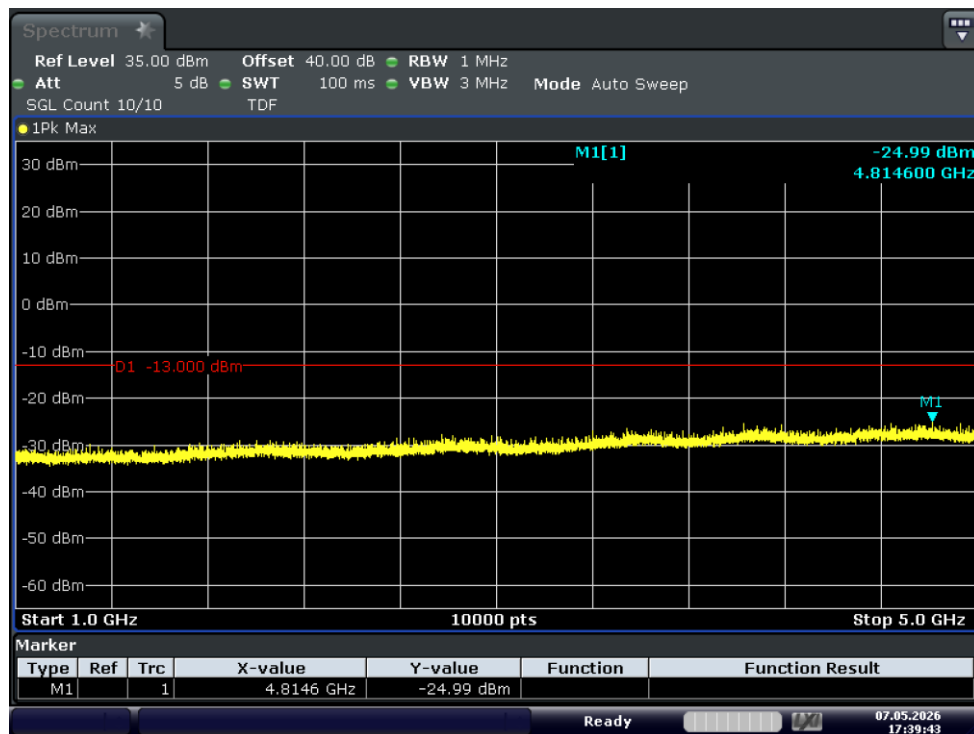




Fundamental



Test_Graph_GMRS_5W_467.65_25k_TX_0.03G-1G



Test_Graph_GMRS_5W_467.65_25k_TX_1G-5G

Note: All test channels were evaluated, and the 25k channel spacing was selected as the worst-case condition for reporting.





5.6. Spurious Radiated Emission

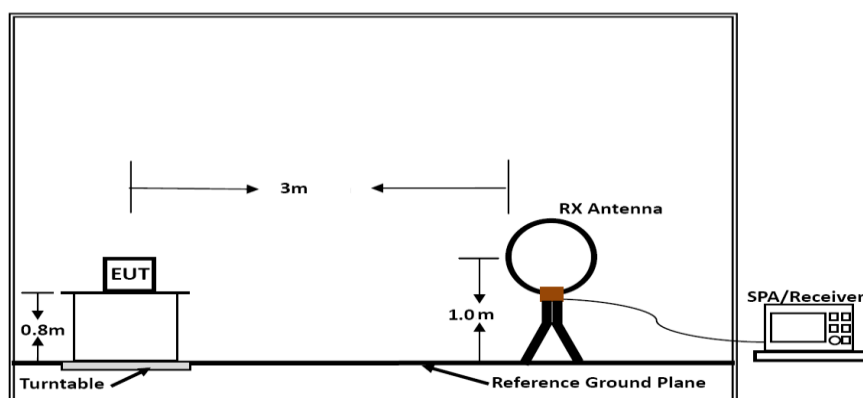
5.6.1. Standard Applicable

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.

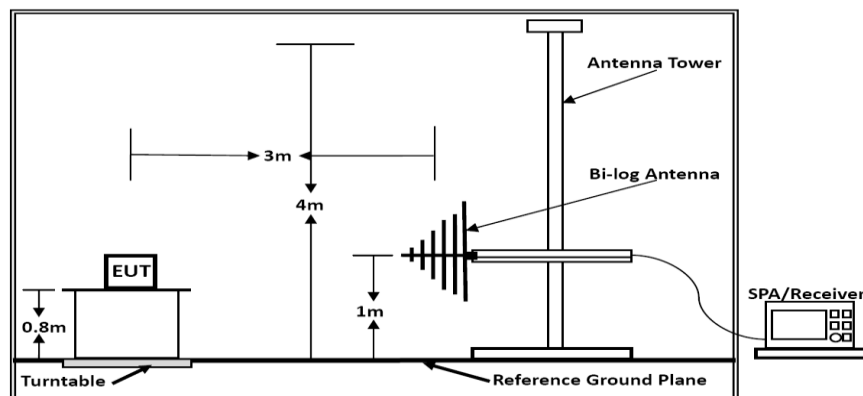
35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.

$43 + 10 \log (P)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

5.6.2. Block Diagram of Test Setup

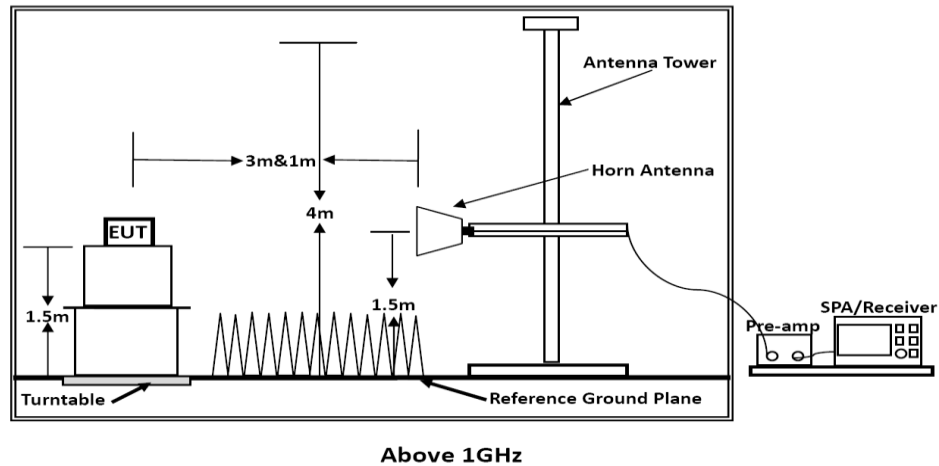


Below 30MHz



Below 1GHz





5.6.3. Test Procedures

For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80 cm above the reference ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25 cm.

For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table or support at a nominal height of 1.5 m above the ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The height scan of the measurement antenna shall be varied from 1 m to 4 m in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When using the direct field strength method and the EUT is manipulated through three different orientations, then the scan height range of the measurement antenna is limited to 2.5 m, or 0.5 m above the top of the EUT, whichever is higher.

Cables or wires inclusive to the EUT shall be configured so as to maximize the measured emission levels. The EUT controls shall also be adjusted to maximize the emission according to the manufacturer's specifications. The modulation applied shall be based on the guidance provided in the manufacturer's specifications. When necessary, field strength measurements shall be converted to ERP or EIRP for comparison to the applicable regulatory limits.

$E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$

$\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$, where D is the measurement distance (in the farfield region) in m.

5.6.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.





5.6.5. Test Results

Test Frequency: 462.6375MHz				Channel Separation:12.5KHz			
Frequency (MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Values (dBm)	Limit (dBm)	Polarization
925.275	-27.41	0.61	7.31	2.15	-22.86	-13	H
1,387.91	-30.25	0.88	7.73	0	-23.4	-13	H
1,850.55	-35.71	1.2	8.16	0	-28.75	-13	H
...	...	...	...	...	...	...	H
925.275	-29.84	0.61	7.31	2.15	-25.29	-13	V
1,387.91	-29.55	0.88	7.73	0	-22.7	-13	V
1,850.55	-35.43	1.2	8.16	0	-28.47	-13	V
...	...	...	...	...	...	...	V

Test Frequency: 462.65MHz				Channel Separation:12.5KHz			
Frequency (MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Values (dBm)	Limit (dBm)	Polarization
925.3	-25.45	0.65	7.4	2.15	-20.85	-13	H
1,387.95	-28.74	0.98	7.87	0	-21.85	-13	H
1,850.60	-35.61	1.34	8.35	0	-28.6	-13	H
...	...	...	...	...	...	...	H
925.3	-26.79	0.65	7.4	2.15	-22.19	-13	V
1,387.95	-29.54	0.98	7.87	0	-22.65	-13	V
1,850.60	-32.81	1.34	8.35	0	-25.8	-13	V
...	...	...	...	...	...	...	V

Test Frequency: 467.65MHz				Channel Separation:12.5KHz			
Frequency (MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dB)	Values (dBm)	Limit (dBm)	Polarization
935.3	-26.16	0.72	7.52	2.15	-21.51	-13	H
1,402.95	-29.05	1.12	8.06	0	-22.11	-13	H
1,870.60	-32.41	1.55	8.6	0	-25.36	-13	H
...	...	...	...	...	...	...	H
935.3	-28.04	0.72	7.52	2.15	-23.39	-13	V
1,402.95	-29.11	1.12	8.06	0	-22.17	-13	V
1,870.60	-32.45	1.55	8.6	0	-25.4	-13	V
...	...	...	...	...	...	...	V

Note: All test channels were evaluated, and the highest power level was selected as the worst-case condition for reporting.





6. LIST OF MEASURING EQUIPMENTS

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	EMI Test Receiver	R&S	ESCI-7	100849/003	2026-01-11	2027-01-10
2	Signal Generator	Keysight	N5182A	MY4620709	2026-01-11	2027-01-10
3	Signal Generator	R&S	SML03	102924/0013	2026-01-11	2027-01-10
4	Climate Chamber	KRUOMR	KRM-1000	KRM16072901	2026-01-11	2027-01-10
5	RF COMMUNICATION TEST SET	HP	8921A	3430A01131	2026-01-11	2027-01-10
6	Wideband Antenna	schwarzbeck	VULB 9163	958	2025-10-18	2028-10-17
7	Wideband Antenna	Sunol	JB3	A020115	2025-10-18	2028-10-17
8	Amplifier	schwarzbeck	BBV 9743	209	2025-10-18	2028-10-17
9	Amplifier	Tonscend	TSAMP-0518SE	--	2026-01-11	2027-01-10
10	Horn Antenna	schwarzbeck	BBHA 9120D	01989	2026-01-11	2027-01-10
11	Horn Antenna	schwarzbeck	9120D-1141	1574	2026-01-11	2027-01-10
12	50Ω RF Load	MKRF	RFA001	RFA001	2026-01-11	2027-01-10
13	Attenuator	JS	RFA004	RFA004	2026-01-11	2027-01-10
14	Controller	MF	MF7802	N/A	N/A	N/A
15	Spectrum Analyzer	R&S	FSV40	101321	2026-01-11	2027-01-10
16	Test Software	Tonscend	JS36-RSE	V5.0.0.0	N/A	N/A





7. TEST SETUP Photographs of EUT

Please refer to separated files for Test Setup Photos of the EUT.

8. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

9. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

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