

FCC Test Report

Report No.: AGC02931241101FR01

FCC ID : 2BLTR-RPT1V

APPLICATION PURPOSE: Original Equipment

PRODUCT DESIGNATION: DMR Repeater

BRAND NAME : TYTECH

MODEL NAME : MD-7500

APPLICANT : Quanzhou RadioBoss Technology Co., Ltd

DATE OF ISSUE : Nov. 20, 2024

STANDARD(S) : FCC Part 90 Subpart I

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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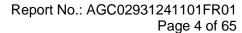
Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes	
V1.0	/	Nov. 20, 2024	Valid	Initial Release	



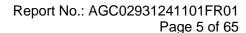
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1. General Information

Applicant	Quanzhou RadioBoss Technology Co., Ltd
Address	No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian
Manufacturer	Quanzhou RadioBoss Technology Co., Ltd
Address	No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian
Factory	Quanzhou RadioBoss Technology Co., Ltd
Address	No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian
Product Designation	DMR Repeater
Brand Name	TYTECH
Test Model	MD-7500
Series Model(s)	N/A
Difference Description	N/A
Date of receipt of test item	Oct. 11, 2024
Date of Test	Oct. 11, 2024~Nov. 20, 2024
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-PMR-V1

Note: The test results of this report relate only to the tested sample identified in this report.

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	Bibo Zhang (Project Engineer)	Nov. 20, 2024
Reviewed By	Colvin Lin	
	Calvin Liu (Reviewer)	Nov. 20, 2024
Approved By	Angole Li	
	Angela Li (Authorized Officer)	Nov. 20, 2024



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2. Product Information

2.1 Product Technical Description

Communication Type	Voice / Data (Voice /Tone only)				
Operation Frequency Range	From 136MHz to 174MHz				
Hardware Version	V2.0				
Software Version	V1.0.0.56				
Madulation Tuna	Analog Voice:	FM			
Modulation Type	Digital (Voice+Data):	4FSK			
Digital Type	DMR				
Channel Consertion	Analog Voice:	12.5 kHz			
Channel Separation	Digital (Voice+Data):	12.5 kHz			
Support Data Rate	9600bps				
Emission Designator	Analog Voice:	11K0F3E			
Emission Designator	Digital (Voice+Data):	7K73F1D/7K73F1W for VHF band			
Rated Output Power	50W (It was fixed by the manufac	cturer, any individual can't arbitrarily change it.)			
Maximum Transmitter Power	Analog:46.551dBm				
Maximum Hansimiler Power	Digital:46.541dBm				
Antenna Designation	Detachable Antenna				
Antenna Gain	0dBi				
Frequency Tolerance	1.096ppm				
Power Supply	AC 120V 60Hz&DC 13.8V,	12A			

Note:

The product has the same digital working characters when operating in both two digitized voice/data mode. So only one set of test results for digital modulation modes are provided in this test report.

This equipment is capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth. DMR interphone's bandwidth is 12.5 kHz, and it has a double time slot, one is the speech time slot, one is the data time slot, just language sequence is satisfied with 4800 bps/6.25 kHz BW.



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2.2 Test Frequency List

Operation mode	Channel Separation	Operation Frequency Range	Test channel	Test Frequency
Analog/ Digital	12.5 kHz	136-174MHz	Bottom	136.025 MHz
	12.5 kHz	136-174MHz	Middle	155.025 MHz
	12.5 kHz	136-174MHz	Тор	173.975 MHz

Note:

In section KDB 634817 D01 Sections II) (f) (1) and (2):

Test at least one frequency in each band for each rule part applied under and ensure the device is capable of operating on the frequency under each rule part. This requirement may result in testing on multiple frequencies. Testing on one frequency may be acceptable if multiple listed bands for a rule part with a continuous frequency range are split to remove a conflict with other rules and the technical requirements in the split bands are the same. Additional requirements for RF exposure may apply.



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2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2BLTR-RPT1V**, filing to comply with Part 2, Part 90 of the Federal Communication Commission rules.

2.4 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 90	Private Land Mobile Radio Services
2	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
3	ANSI TIA-102.CAAA-E	Project 25 Digital C4FM/CQPSK Transceiver Measurement Methods
4	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
5	KDB 971168 D01	KDB 971168 D01 Power Meas License Digital Systems v03r01
6	KDB 579009 D03	KDB 579009 D03 Applications Part 90 Refarming Bands v01
7	KDB 634817 D01	KDB 634817 D01 Freq Range Listing for Grants v04r01

2.5 Calculation of Emission Indicators

FCC Rules and Regulations Part 2.202: Necessary Bandwidth and Emission Bandwidth

For FM Mode (Channel Spacing: 12.5kHz)

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 = 11KO

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 Digital Mode (Channel Spacing: 12.5 kHz)

Emission Designator 7K60F1D and 7K60F1W

The 99% energy rule was used for digital mode. It basically states that 99% of the modulation energy falls within X kHz, in this case, 7.60 kHz.

F1D and F1W portion of the designator indicates digital information.

Therefore, the entire designator for 12.5 kHz channel spacing digital mode is 7K60F1D and 7K60F1W.

2.6 Special Accessories

Not available for this EUT intended for grant.

2.7 Equipment Modifications

Not available for this EUT intended for grant.



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3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842(CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



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3.3 Environmental Conditions

	Normal Conditions	Extreme Conditions	
Temperature range (°C)	15 - 35	-20 - 50	
Relative humidty range	20 % - 75 %	20 % - 75 %	
Pressure range (kPa)	86 - 106	86 - 106	
Power aupply	AC 120V	LV AC 102V/HV AC 138V	
Power supply	DC 13.8V	LV DC 11.73V/HV DC 15.87V	

Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.

3.4 Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Test Items	Measurement Uncertainty
Frequency stability	±0.5%
Transmitter power conducted	±0.8dB
Transmitter power Radiated	±1.3dB
Conducted spurious emission 9kHz-40 GHz	±2.7dB
Conducted Emission	±3.2 dB
Radiated Emission below 1GHz	±3.9 dB
Radiated Emission above 1GHz	±4.8 dB
Occupied Channel Bandwidth	±2 %
FM deviation	±2 %
Audio level	±0.98dB
Low Pass Filter Response	±0.65dB
Modulation Limiting	0.42 %
Transient Frequency Behavior	6.8 %



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3.5 List of Equipment Used

• R	RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
\boxtimes	AGC-ER-E086	Spectrum Analyzer	KEYSIGHT	N9020A	MY53300860	2024-05-23	2025-05-22	
\boxtimes	AGC-EM-E002	Wireless Connectivity Tester	HP	8920B	US35010161	2024-05-24	2025-05-23	
	AGC-EM-E001	Digital Connectivity Tester	Aeroflex	3920B	N/A	2023-05-11	2025-05-10	
\boxtimes	AGC-ER-E059	Signal Generator	Agilent	N5182B	MY53050647	2024-02-01	2025-01-31	
	AGC-ER-E037	Signal Generator	Agilent	N5182A	MY50140530	2024-05-23	2025-05-22	
\boxtimes	AGC-ER-E075	Small Environmental Tester	SH-242	ESPEC	93008290	2024-07-24	2026-07-23	
\boxtimes	AGC-EM-A007	30dB Attenuator	Weinachel	58-30-33	ML030	2023-06-01	2025-05-31	
\boxtimes	AGC-EM-E040	Directional coupler	Werlatone	C5571-10	99463	2024-02-01	2026-01-31	
\boxtimes		RF Connection Cable	N/A	1#	N/A	Each time	N/A	
		RF Connection Cable	N/A	2#	N/A	Each time	N/A	

• F	Radiated Spurious Emission						
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2024-02-01	2025-01-31
\boxtimes	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2024-05-28	2025-05-27
\boxtimes	AGC-ER-E032	Universal Radio Communication Tester	R&S	CMW500	120909	2024-05-28	2025-05-27
\boxtimes	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04
\boxtimes	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10
\boxtimes	AGC-EM-E005	Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	2023-01-05	2025-01-04
\boxtimes	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2024-03-31	2025-03-30
	AGC-EM-E102	Broadband Ridged Horn Antenna	ETS	3117	00154520	2023-06-03	2025-06-02
	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2023-09-24	2025-09-23
\boxtimes	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-07-24	2026-07-23
	AGC-EM-E021	Pre-amplifier	MITEQ	AM-4A-000115	1465421	2024-05-28	2026-05-27
\boxtimes	AGC-ER-E037	Signal Generator	Agilent	N5182A	MY50140530	2024-05-23	2025-05-22
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-2W	N/A	2023-06-09	2025-06-08
	AGC-EM-A088	UHF Filter	N/A	N/A	N/A	2024-05-23	2025-05-22
\boxtimes	AGC-EM-A089	VHF Filter	N/A	N/A	N/A	2024-05-23	2025-05-22



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•	● Test Software					
	Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information
	\boxtimes	AGC-EM-S004	RE Test System	Tonscend	TS ⁺ Ver2.1(JS32-RE)	4.0.0.0



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4. System Test Configuration

4.1 EUT Configuration

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

4.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 Configuration of Tested System

Fig. 2-1 Configuration of Tested System



Table 2-1 Equipment Used in Tested System

4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☐ Test Accessories Come From The Laboratory

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	50ohm Load	N/A	Amphenol	DC-3G, Max.50W	N/A

☐ Test Accessories Come From The Manufacturer

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	AC Power Cable	N/A	TYT	N/A	0.6m Unshielded
2	Write frequency line	N/A	TYT	N/A	0.6m Shielded
3	Hand microphone	N/A	N/A	N/A	0.8m Shielded



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4.5 Summary of Test Results

Item	FCC Rules	Description Of Test	Result
1	47 CFR FCC PART 90	Antenna Equipment	Pass
2	§90.205& 2.1046	Maximum Transmitter Power	Pass
3	§90.207& 2.1047	Modulation Characteristic	Pass
4	§2.1047	Audio Low Pass Filter Response	Pass
5	§90.209& 2.1049	26dB Emission Bandwidth and 99% Occupied Bandwidth	Pass
6	§90.210& 2.1049	Emission Mask	Pass
7	§90.213& 2.1055	Frequency Tolerance	Pass
8	§90.214	Transmitter Frequency Behavior	Pass
9	§90.210& 2.1051	Spurious Emission on Antenna Port	Pass
10	§90.210& 2.1053	Spurious Radiated Emission	Pass



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5. Description of Test Modes

The EUT (**DMR Repeater**) has been tested under normal operating condition. (The top channel, the middle channel and the bottom channel) are chosen for testing at each channel separation.

No.	Test Mode Description	Channel Separation
1	TX Bottom channel-VHF_AC 120V	12.5 kHz
2	TX Middle channel-VHF_AC 120V	12.5 kHz
3	TX Top channel-VHF_AC 120V	12.5 kHz
4	TX Bottom channel-VHF_DC 13.8V	12.5 kHz
5	TX Middle channel-VHF_DC 13.8V	12.5 kHz
6	TX Top channel-VHF_DC 13.8V	12.5 kHz

Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
- 4. Manufacturers use computer PC programming software to switch and operate frequency points, refer to the instructions for details



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6. Frequency Stability

6.1 Provisions Applicable

- According to FCC §2.1055, §90.213, the frequency stability shall be measured with variation of ambient temperature from -30° C to $+50^{\circ}$ C centigrade.
- According to FCC Part 2 Section 2.1055(d)(2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacturer.
- According to FCC Part 90 Section 90.213, the frequency tolerance must be maintained within 0.00025% for 12.5 kHz channel separation and 0.0001% for 6.25 kHz channel separation.

6.2 Measurement Procedure

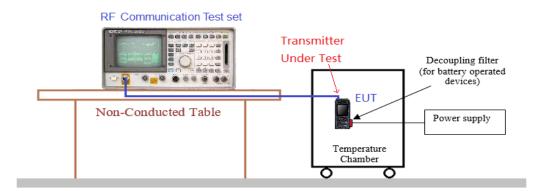
6.2.1 Frequency stability versus environmental temperature

- Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
- Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 2. 1kHz and Video Resolution Bandwidth to 1kHz and Frequency Span to 50kHz.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.
- 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.

6.2.2 Frequency stability versus input voltage

- Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15℃ to 25℃. Otherwise, an environment chamber set for a temperature of 20°C shall be used. The EUT shall be powered by AC 120V/DC 13.8V.
- Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 kHz and Video 2. Resolution Bandwidth to 1kHz. Record this frequency as reference frequency.
- 3. Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

6.3 Measurement Setup





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6.4 Measurement Result

12.5 kHz Channel Separation, Analog modulation, Assigned Frequency-50W						
Test conditions		Frequency error (ppm)				
Voltage	Temp		Test Frequency (MHz	<u>z</u>)	Limit (ppm)	Result
(V)	(℃)	136.025	155.7525	173.975	(PP)	
	-30	0.853	0.760	0.922		
	-20	0.728	0.687	0.637		
	-10 0	0.966	0.551	0.841		
		0.735	0.625	0.832		
120	10	0.594	0.880	0.674		
	20	0.929	0.769	0.615	2.5	Pass
	30	1.070	0.715	1.018		
	40	1.016	0.901	0.525		
	50	1.036	0.631	1.060		
138	20	0.910	0.938	0.961		
102	20	0.862	0.553	1.017		

12.5 kHz Channel Separation, Analog modulation, Assigned Frequency-50W							
Test conditions		Frequency error (ppm)					
Voltage	Temp		Test Frequency (MHz	<u>z</u>)	Limit (ppm)	Result	
(V)	(℃)	136.025	155.7525	173.975	(PP)		
	-30	0.559	1.096	0.629			
	-20	0.553	0.685	0.685 0.741			
	-10	0.715	0.516	1.016		Pass	
	0	0.633	0.710	0.644			
13.8	10	0.595	0.576	0.730	2.5		
	20	0.819	0.794	0.511			
	30	0.685	0.507	0.753			
	40	0.704	0.593	1.011			
	50	0.880	0.634	0.703			
15.87	20	0.509	0.576	0.995			
11.73	20	0.703	0.712	1.035			



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7. 26dB Emission Bandwidth and 99% Occupied Bandwidth

7.1 Provisions Applicable

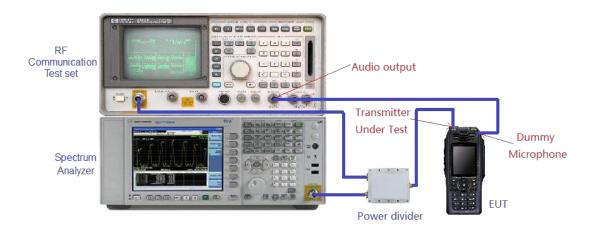
FCC Part 90.209 & FCC Part 2.1049:

The authorized bandwidth shall be 11.25 kHz for 12.5 kHz channel separation and 6 kHz for 6.25 kHz channel separation.

7.2 Measurement Procedure

- The EUT was modulated by 2.5kHz sine wave audio signal; the level of the audio signal employed is 16dB greater than that necessary to produce 50% of rated system deviation.
- 2. Rated system deviation is 2.5 kHz for 12.5kHz channel spacing.
- 3. Spectrum set as follow:
- 4. Centre frequency = fundamental frequency.
- 5. Span=50kHz for 12.5kHz channel spacing.
- 6. RBW=100Hz, VBW=300Hz, Sweep = auto.
- 7. Detector function = peak, Trace = max hold.
- 8. Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.
- 9. Measure and record the results in the test report.

7.3 Measurement Setup





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7.4 Measurement Result

Measurement Power Supply: DC 13.8V

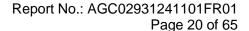
Measurement Result of VHF-Analog Modulation-50W					
Operating Frequency		12.5 kHz Channel Sepa	aration		
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	9.852 kHz	10.46 kHz	11.25 kHz	Pass	
155.7525MHz	9.831 kHz	10.45 kHz	11.25 kHz	Pass	
173.975MHz	9.841 kHz	10.45 kHz	11.25 kHz	Pass	

Measurement Result of VHF-Digital Modulation-50W					
O	12.5 kHz Channel Separation				
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	7.729 kHz	9.640 kHz	11.25 kHz	Pass	
155.7525MHz	7.555 kHz	9.752 kHz	11.25 kHz	Pass	
173.975MHz	7.509 kHz	9.338 kHz	11.25 kHz	Pass	

Measurement Power Supply: AC 120V

Measurement Result of VHF-Analog Modulation-50W					
Operating Frequency		12.5 kHz Channel Sepa	aration		
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	9.837 kHz	10.45 kHz	11.25 kHz	Pass	
155.7525MHz	9.760 kHz	10.43 kHz	11.25 kHz	Pass	
173.975MHz	9.854 kHz	10.46 kHz	11.25 kHz	Pass	

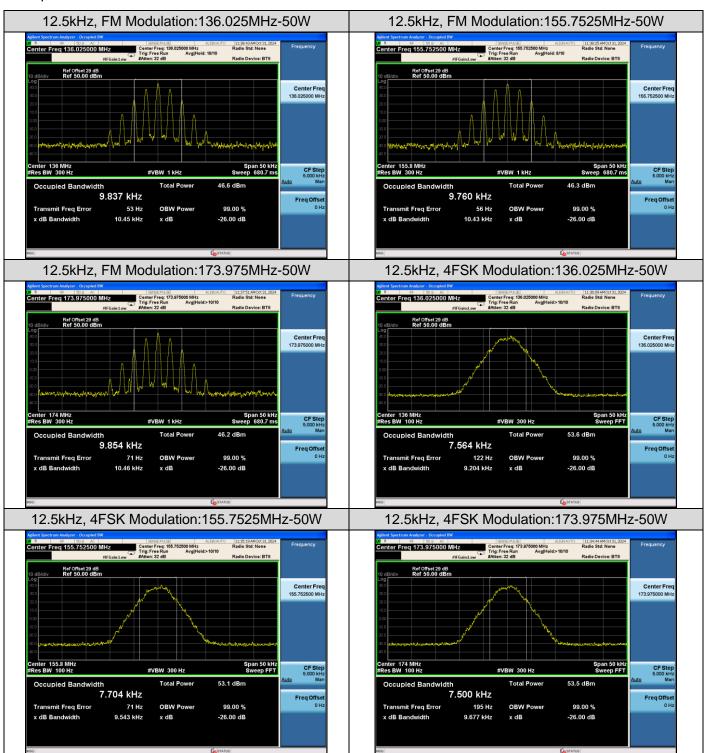
Measurement Result of VHF-Digital Modulation-50W					
Operating Frequency	12.5 kHz Channel Separation				
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	7.564 kHz	9.204 kHz	11.25 kHz	Pass	
155.7525MHz	7.704 kHz	9.543 kHz	11.25 kHz	Pass	
173.975MHz	7.500 kHz	9.677 kHz	11.25 kHz	Pass	

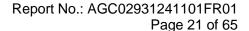




Measurement Power Supply: AC 120V

Test plot as follows:

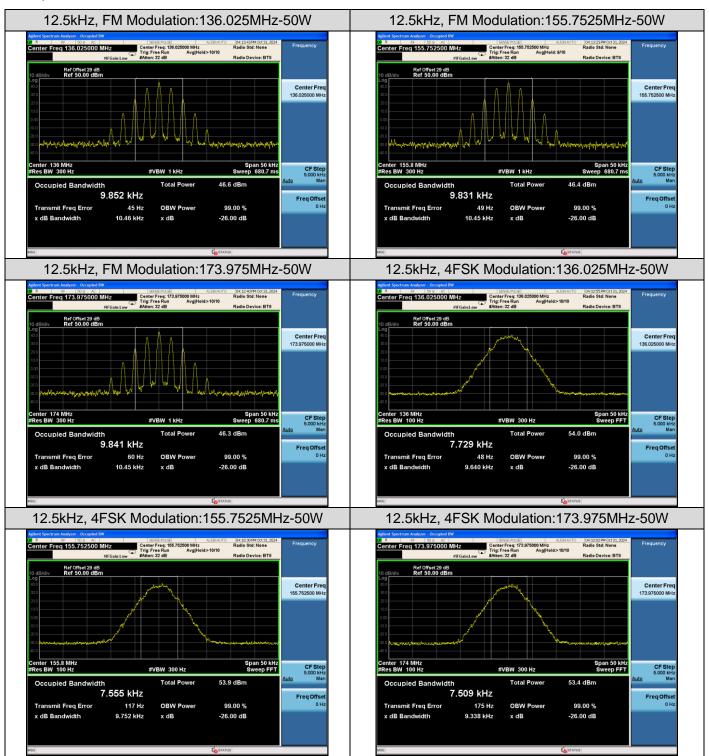






Measurement Power Supply: DC 13.8V

Test plot as follows:





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8. Spurious Radiated Emission

8.1 Provisions Applicable

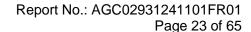
According to FCC §2.1053 and §90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with each channel separation.

- Emission Mask D -for 12.5 kHz Channel Separation:
- (1) On any frequency removed from the center of the authorized bandwidth fo to 5.625 kHz removed from fo: Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement Frequency (fd in kHz) fo of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(fd-2.88 kHz) dB
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement Frequency (fd in kHz)fo of more than 12.5 kHz: At least 50+10 log(P) dB or 70 dB, whichever is lesser attenuation.

8.2 Measurement Procedure

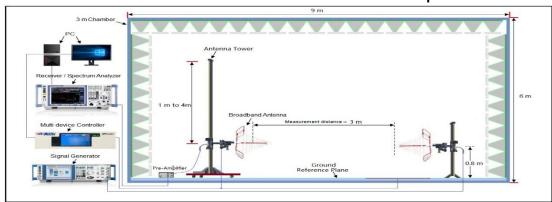
- On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- 2. The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- The output of the antenna shall be connected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

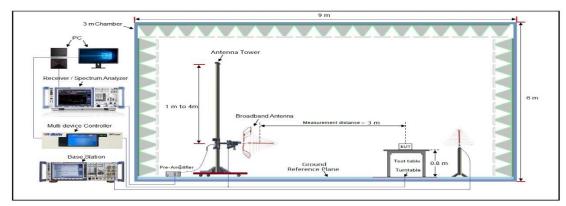
8.3 MEASUREMENT SETUP



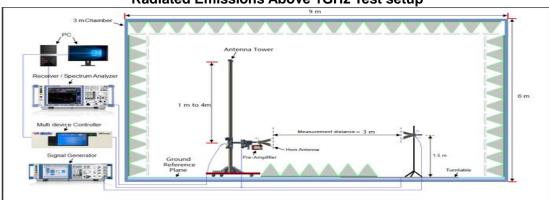


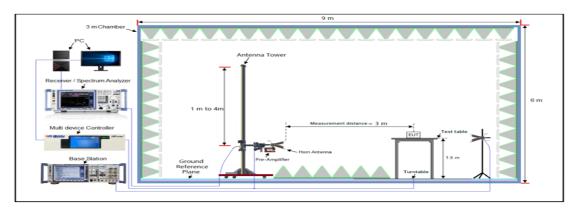
Radiated Emissions 30MHz to 1GHz Test setup





Radiated Emissions Above 1GHz Test setup







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8.4 Measurement Result

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for below 1GHz, and 1MHz for above 1GHz. Sufficient scans were taken to show any out of band emissions up to 10 harmonic.

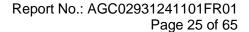
In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.

The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

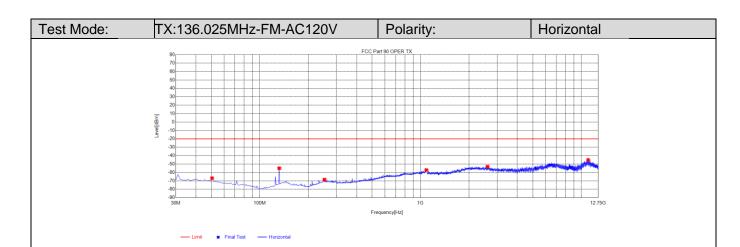
EIRP = "Read Value" + Measured substitution value + 2.15.

Test limit calculation:

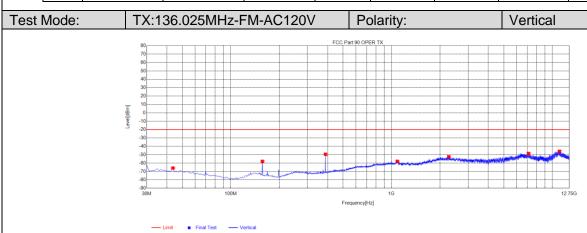
Preliminary calculation	Final Result
At least 50+10 log (P) =50+10log (50) =66.99 (dB)	Limit=P- Preliminary calculation=46.99-66.99=-20dBm



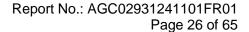




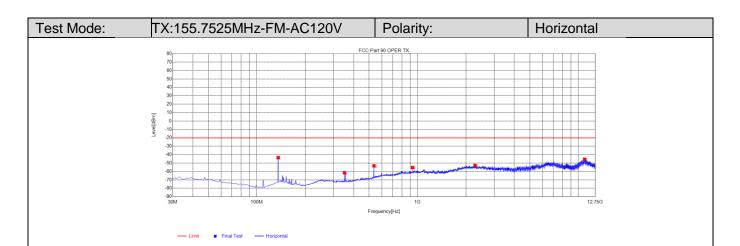
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	50.37	-95.42	-66.82	-20.00	46.82	28.60	39	Horizontal
2	131.85	-80.39	-54.97	-20.00	34.97	25.42	350	Horizontal
3	252.13	-97.10	-68.45	-20.00	48.45	28.65	359	Horizontal
4	1084.6085	-53.02	-57.08	-20.00	37.08	-4.06	57	Horizontal
5	2604.0354	-55.41	-53.09	-20.00	33.09	2.32	92	Horizontal
6	11029.628	-58.85	-45.06	-20.00	25.06	13.79	137	Horizontal



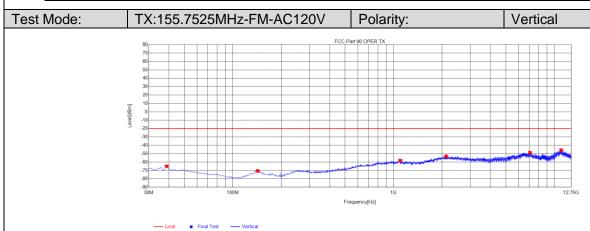
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	43.58	-95.06	-65.87	-20.00	45.87	29.19	360	Vertical
2	157.07	-82.96	-57.88	-20.00	37.88	25.08	336	Vertical
3	387.93	-78.75	-49.40	-20.00	29.40	29.35	360	Vertical
4	1084.6085	-53.76	-57.82	-20.00	37.82	-4.06	168	Vertical
5	2267.9518	-54.67	-52.38	-20.00	32.38	2.29	360	Vertical
6	7102.3852	-56.57	-48.43	-20.00	28.43	8.14	266	Vertical
	11071.9322	-59.67	-45.90	-20.00	25.90	13.77	80	



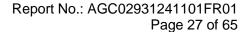




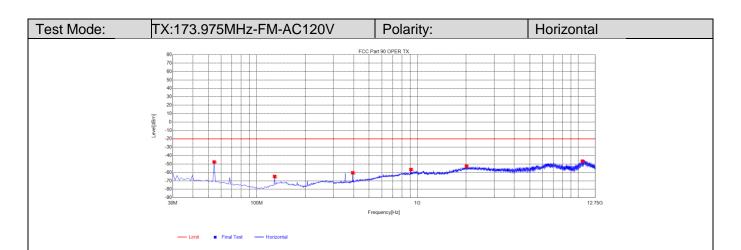
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	135.73	-69.86	-43.53	-20.00	23.53	26.33	359	Horizontal
2	351.07	-89.99	-61.64	-20.00	41.64	28.35	359	Horizontal
3	535.37	-85.81	-53.28	-20.00	33.28	32.53	148	Horizontal
4	930.16	-93.44	-55.31	-20.00	35.31	38.13	148	Horizontal
5	2279.703	-55.09	-52.79	-20.00	32.79	2.30	218	Horizontal
6	10946.1946	-59.09	-45.45	-20.00	25.45	13.64	156	Horizontal



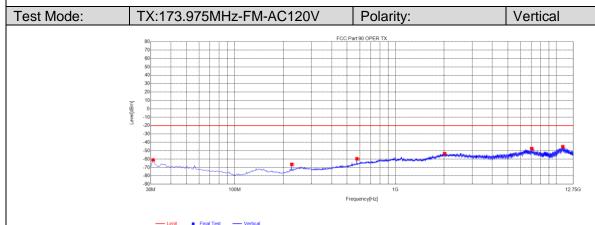
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	38.73	-94.30	-64.89	-20.00	44.89	29.41	224	Vertical
2	142.52	-97.51	-70.42	-20.00	50.42	27.09	360	Vertical
3	1098.7099	-53.97	-58.03	-20.00	38.03	-4.06	100	Vertical
4	2119.887	-55.13	-52.99	-20.00	32.99	2.14	329	Vertical
5	7047.1547	-56.82	-48.60	-20.00	28.60	8.22	20	Vertical
6	11024.9275	-59.38	-45.58	-20.00	25.58	13.80	46	Vertical



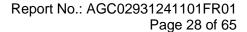




NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	54.25	-75.24	-47.54	-20.00	27.54	27.70	340	Horizontal
2	128.94	-89.48	-64.76	-20.00	44.76	24.72	350	Horizontal
3	394.72	-89.94	-60.42	-20.00	40.42	29.52	305	Horizontal
4	908.82	-94.21	-56.50	-20.00	36.50	37.71	66	Horizontal
5	2015.3015	-54.66	-52.62	-20.00	32.62	2.04	127	Horizontal
6	10610.111	-59.07	-46.54	-20.00	26.54	12.53	127	Horizontal



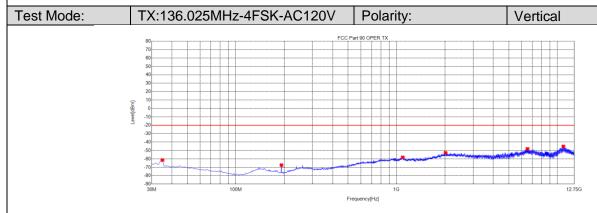
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	30.97	-90.04	-60.94	-20.00	40.94	29.10	97	Vertical
2	225.94	-92.33	-66.23	-20.00	46.23	26.10	53	Vertical
3	575.14	-93.38	-59.55	-20.00	39.55	33.83	124	Vertical
4	2017.6518	-55.45	-53.42	-20.00	33.42	2.03	115	Vertical
5	7023.6524	-55.69	-47.43	-20.00	27.43	8.26	360	Vertical
6	10974.3974	-58.79	-45.06	-20.00	25.06	13.73	360	Vertical





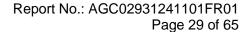
Test Mode: TX:136.025MHz-4FSK-AC120V Polarity: Horizontal

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	126.03	-80.40	-56.36	-20.00	36.36	24.04	86	Horizontal
2	173.56	-77.91	-53.28	-20.00	33.28	24.63	86	Horizontal
3	316.15	-93.47	-65.37	-20.00	45.37	28.10	350	Horizontal
4	2410.141	-55.70	-53.27	-20.00	33.27	2.43	51	Horizontal
5	6566.5317	-55.72	-47.97	-20.00	27.97	7.75	359	Horizontal
6	10890.9641	-57.41	-43.95	-20.00	23.95	13.46	325	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	34.85	-90.58	-61.32	-20.00	41.32	29.26	294	Vertical
2	191.99	-90.49	-67.30	-20.00	47.30	23.19	197	Vertical
3	1091.6592	-53.99	-58.05	-20.00	38.05	-4.06	20	Vertical
4	2014.1264	-54.77	-52.74	-20.00	32.74	2.03	347	Vertical
5	6510.126	-55.68	-48.00	-20.00	28.00	7.68	126	Vertical
6	10894.4894	-58.56	-45.09	-20.00	25.09	13.47	153	Vertical

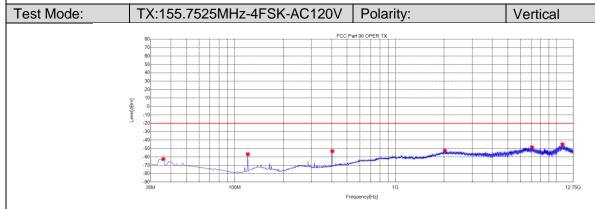
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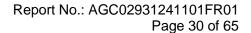
Test Mode: TX:155.7525MHz-4FSK-AC120V Polarity: Horizontal

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	32.91	-91.72	-62.54	-20.00	42.54	29.18	359	Horizontal
2	141.55	-98.07	-70.89	-20.00	50.89	27.18	0	Horizontal
3	391.81	-88.23	-58.79	-20.00	38.79	29.44	296	Horizontal
4	765.26	-92.62	-56.35	-20.00	36.35	36.27	0	Horizontal
5	2280.8781	-55.03	-52.73	-20.00	32.73	2.30	22	Horizontal
6	10942.6693	-59.12	-45.49	-20.00	25.49	13.63	0	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	35.82	-91.85	-62.57	-20.00	42.57	29.28	46	Vertical
2	120.21	-79.32	-56.65	-20.00	36.65	22.67	46	Vertical
3	403.45	-82.72	-52.96	-20.00	32.96	29.76	197	Vertical
4	2022.3522	-54.43	-52.39	-20.00	32.39	2.04	73	Vertical
5	7051.8552	-56.58	-48.36	-20.00	28.36	8.22	360	Vertical
6	10895.6646	-58.37	-44.90	-20.00	24.90	13.47	1	Vertical

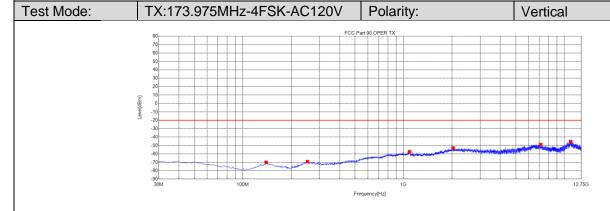
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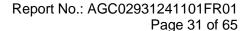
Test Mode: TX:173.975MHz-4FSK-AC120V Polarity: Horizontal

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	54.25	-89.82	-62.12	-20.00	42.12	27.70	359	Horizontal
2	144.46	-98.05	-71.16	-20.00	51.16	26.89	128	Horizontal
3	1088.1338	-52.53	-56.60	-20.00	36.60	-4.07	119	Horizontal
4	2303.2053	-55.04	-52.71	-20.00	32.71	2.33	252	Horizontal
5	6323.2823	-56.04	-48.72	-20.00	28.72	7.32	359	Horizontal
6	10906.2406	-59.10	-45.59	-20.00	25.59	13.51	110	Horizontal

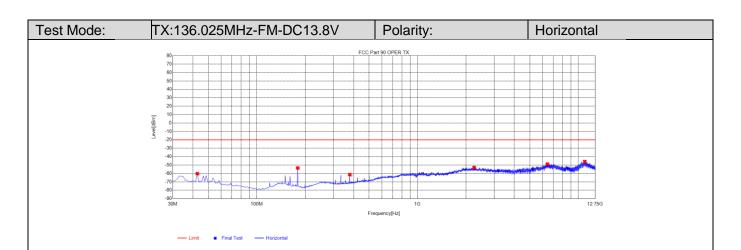


NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	139.61	-97.31	-70.05	-20.00	50.05	27.26	187	Vertical
2	252.13	-97.76	-69.11	-20.00	49.11	28.65	142	Vertical
3	1086.9587	-53.24	-57.30	-20.00	37.30	-4.06	187	Vertical
4	2030.5781	-54.84	-52.79	-20.00	32.79	2.05	124	Vertical
5	7107.0857	-56.82	-48.70	-20.00	28.70	8.12	360	Vertical
6	10946.1946	-58.86	-45.22	-20.00	25.22	13.64	133	Vertical

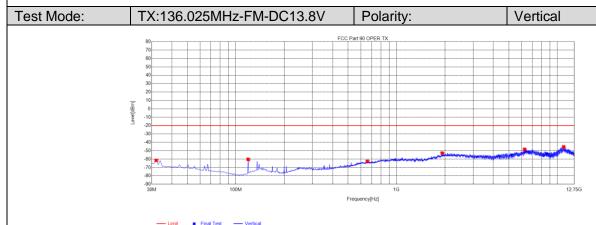
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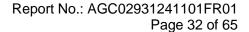




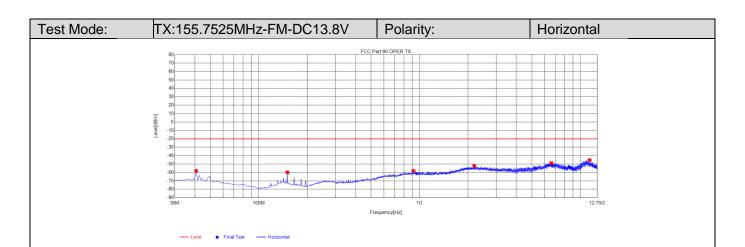
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	42.61	-89.45	-60.20	-20.00	40.20	29.25	350	Horizontal
2	179.38	-78.04	-53.48	-20.00	33.48	24.56	138	Horizontal
3	378.23	-90.49	-61.42	-20.00	41.42	29.07	14	Horizontal
4	2247.9748	-55.21	-52.94	-20.00	32.94	2.27	59	Horizontal
5	6417.2917	-56.40	-48.90	-20.00	28.90	7.50	340	Horizontal
6	10968.5219	-59.55	-45.83	-20.00	25.83	13.72	0	Horizontal



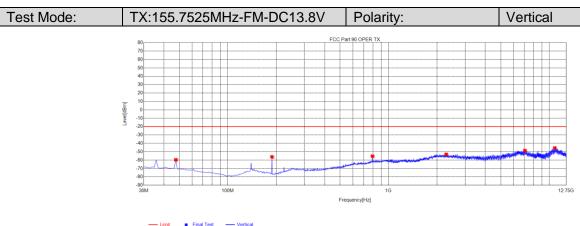
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	31.94	-90.67	-61.54	-20.00	41.54	29.13	239	Vertical
2	119.24	-82.69	-60.23	-20.00	40.23	22.46	1	Vertical
3	657.59	-97.32	-62.56	-20.00	42.56	34.76	18	Vertical
4	1921.2921	-53.86	-52.81	-20.00	32.81	1.05	222	Vertical
5	6255.1255	-55.44	-48.26	-20.00	28.26	7.18	169	Vertical
6	10948.5449	-58.93	-45.28	-20.00	25.28	13.65	311	Vertical



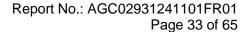




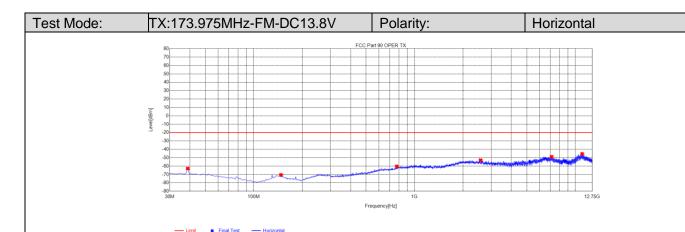
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	40.67	-87.45	-58.04	-20.00	38.04	29.41	324	Horizontal
2	150.28	-86.11	-59.84	-20.00	39.84	26.27	324	Horizontal
3	912.7	-95.72	-57.94	-20.00	37.94	37.78	351	Horizontal
4	2185.6936	-54.35	-52.13	-20.00	32.13	2.22	0	Horizontal
5	6585.3335	-56.58	-48.81	-20.00	28.81	7.77	333	Horizontal
6	11409.1909	-58.82	-45.33	-20.00	25.33	13.49	49	Horizontal



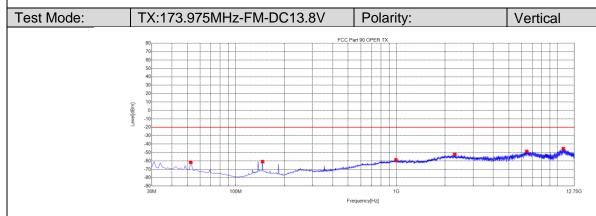
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	47.46	-88.49	-59.60	-20.00	39.60	28.89	294	Vertical
2	188.11	-79.43	-56.02	-20.00	36.02	23.41	89	Vertical
3	793.39	-92.65	-55.21	-20.00	35.21	37.44	89	Vertical
4	2283.2283	-55.36	-53.05	-20.00	33.05	2.31	35	Vertical
5	7045.9796	-56.81	-48.58	-20.00	28.58	8.23	284	Vertical
6	10818.1068	-58.72	-45.50	-20.00	25.50	13.22	116	Vertical



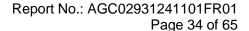




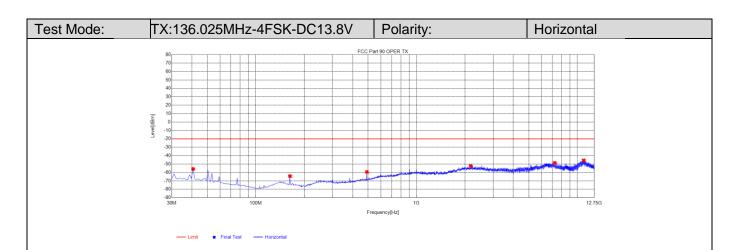
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	38.73	-92.27	-62.86	-20.00	42.86	29.41	136	Horizontal
2	147.37	-96.97	-70.39	-20.00	50.39	26.58	332	Horizontal
3	773.99	-96.88	-60.24	-20.00	40.24	36.64	340	Horizontal
4	2572.3072	-55.16	-52.78	-20.00	32.78	2.38	323	Horizontal
5	7098.8599	-56.89	-48.75	-20.00	28.75	8.14	359	Horizontal
6	11023.7524	-59.11	-45.31	-20.00	25.31	13.80	225	Horizontal



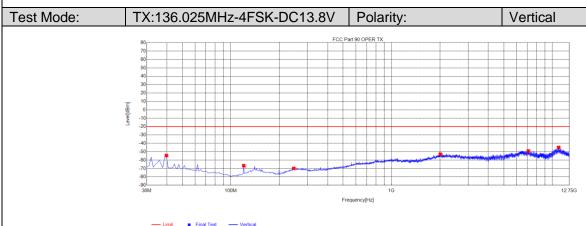
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	52.31	-89.79	-61.64	-20.00	41.64	28.15	10	Vertical
2	146.4	-87.41	-60.72	-20.00	40.72	26.69	337	Vertical
3	990.3	-97.39	-58.62	-20.00	38.62	38.77	354	Vertical
4	2298.5048	-54.52	-52.19	-20.00	32.19	2.33	168	Vertical
5	6456.0706	-56.12	-48.55	-20.00	28.55	7.57	168	Vertical
6	10894.4894	-58.88	-45.41	-20.00	25.41	13.47	360	Vertical



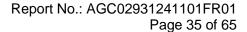




NO.	Freq. [MHz]	Reading [dBm]	Level [dBm	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	40.67	-85.24	-55.83	-20.00	35.83	29.41	296	Horizontal
2	162.89	-88.90	-64.30	-20.00	44.30	24.60	50	Horizontal
3	490.75	-91.06	-59.37	-20.00	39.37	31.69	0	Horizontal
4	2170.417	-54.51	-52.31	-20.00	32.31	2.20	6	Horizontal
5	7232.8233	-56.51	-48.61	-20.00	28.61	7.90	50	Horizontal
6	10948.5449	-59.26	-45.61	-20.00	25.61	13.65	6	Horizontal



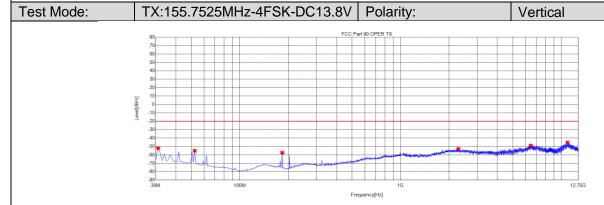
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	39.7	-83.95	-54.50	-20.00	34.50	29.45	283	Vertical
2	120.21	-89.22	-66.55	-20.00	46.55	22.67	20	Vertical
3	246.31	-98.13	-69.85	-20.00	49.85	28.28	160	Vertical
4	2010.6011	-54.88	-52.84	-20.00	32.84	2.04	124	Vertical
5	7087.1087	-57.12	-48.96	-20.00	28.96	8.16	230	Vertical
6	10942.6693	-58.43	-44.80	-20.00	24.80	13.63	354	Vertical





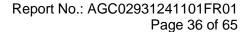
Test Mode: TX:155.7525MHz-4FSK-DC13.8V Polarity: Horizontal

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	33.88	-84.10	-54.89	-20.00	34.89	29.21	165	Horizontal
2	355.92	-81.65	-53.16	-20.00	33.16	28.49	41	Horizontal
3	743.92	-83.68	-48.13	-20.00	28.13	35.55	165	Horizontal
4	2286.7537	-54.48	-52.16	-20.00	32.16	2.32	350	Horizontal
5	6378.5129	-56.31	-48.89	-20.00	28.89	7.42	245	Horizontal
6	11019.0519	-59.12	-45.32	-20.00	25.32	13.80	298	Horizontal

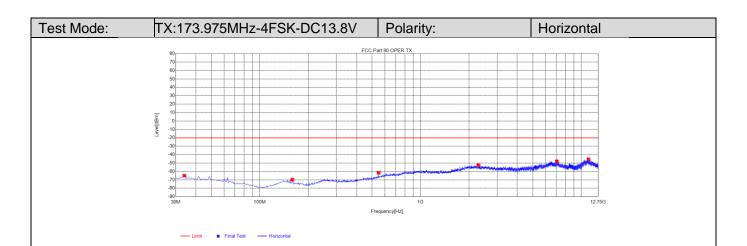


NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	30.97	-81.11	-52.01	-20.00	32.01	29.10	338	Vertical
2	52.31	-83.07	-54.92	-20.00	34.92	28.15	18	Vertical
3	183.26	-81.47	-57.37	-20.00	37.37	24.10	196	Vertical
4	2285.5786	-55.09	-52.77	-20.00	32.77	2.32	329	Vertical
5	6454.8955	-56.33	-48.76	-20.00	28.76	7.57	311	Vertical
6	10899.1899	-58.72	-45.23	-20.00	25.23	13.49	355	Vertical

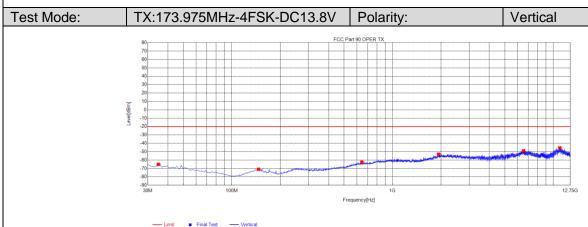
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.







NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	33.88	-94.33	-65.12	-20.00	45.12	29.21	340	Horizontal
2	159.01	-94.38	-69.63	-20.00	49.63	24.75	0	Horizontal
3	547.01	-94.23	-61.47	-20.00	41.47	32.76	127	Horizontal
4	2285.5786	-54.78	-52.46	-20.00	32.46	2.32	145	Horizontal
5	7035.4035	-56.14	-47.89	-20.00	27.89	8.25	234	Horizontal
6	11069.582	-59.23	-45.47	-20.00	25.47	13.76	0	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	34.85	-94.33	-65.07	-20.00	45.07	29.26	267	Vertical
2	146.4	-97.60	-70.91	-20.00	50.91	26.69	360	Vertical
3	644.01	-97.17	-62.43	-20.00	42.43	34.74	196	Vertical
4	1935.3935	-54.19	-52.97	-20.00	32.97	1.22	10	Vertical
5	6530.103	-56.58	-48.89	-20.00	28.89	7.69	45	Vertical
6	10975.5726	-59.14	-45.40	-20.00	25.40	13.74	284	Vertical

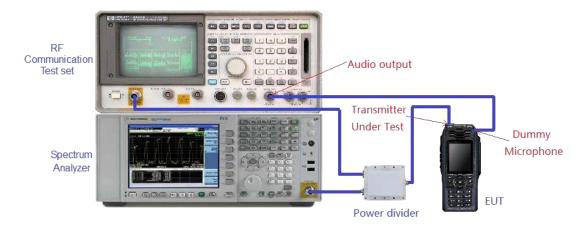


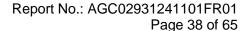
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8.5 Emission Mask Measurement Part

The detailed procedure employed for Emission Mask measurements are specified as following:

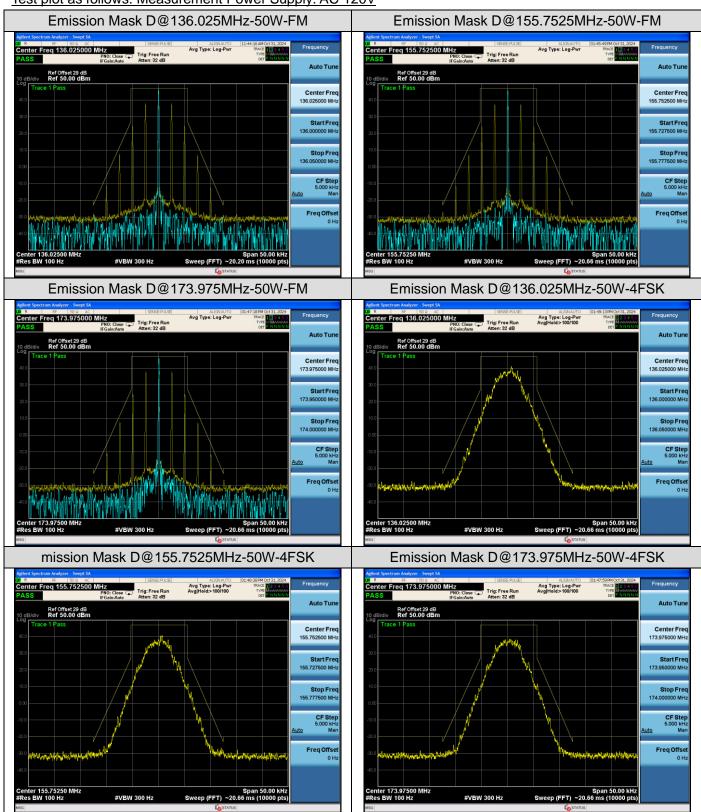
- -Connect the equipment as illustrated.
- -Spectrum set as follow:
- Centre frequency = fundamental frequency, Span=50kHz for 12.5kHz channel spacing,
 RBW=100Hz, VBW=300Hz for 12.5kHz, Sweep = auto, Detector function = peak, Trace = max hold
- 2. Key the transmitter, and set the level of the unmodulated carrier to a fullscale reference line. This is the 0dB reference for the measurement.
- 3. Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation (Rated system deviation is 2.5 kHz for 12.5kHz channel spacing).
 The input level shall be established at the frequency of maximum response of the audio modulating circuit.
- 4. Transmitters employing digital modulation techniques that bypass the limiter and the audio low-pass filter shall be modulated as specified by the manufacturer.
- 5. Measure and record the results in the test report.

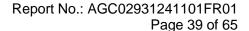






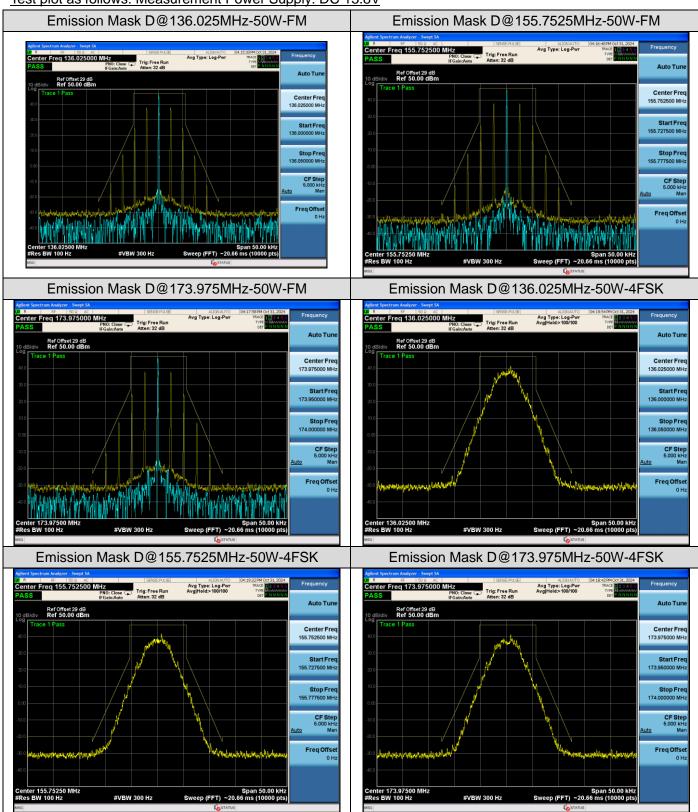
Test plot as follows: Measurement Power Supply: AC 120V







Test plot as follows: Measurement Power Supply: DC 13.8V





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9. Modulation Characteristics

9.1 Provisions Applicable

According to FCC§2.1047 and §90.207, for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

9.2 Measurement Procedure

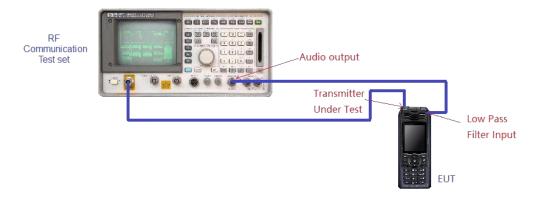
Modulation Limit

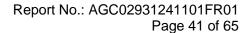
- 1. Test layout and build equipment as shown below.
- 2. adjust the audio input for 60% of rated system deviation at 1kHz using this level as a reference (0dB).
- 3. Vary the input level from -20 to +20dB.
- 4. Record the frequency deviation obtained as a function of the input level.
- 5. Repeat step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

Audio Frequency Response

- 1. Test layout and build equipment as shown below.
- 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 = 20log10 (Deviation of test frequency/Deviation of 1 kHz reference).

9.3 Measurement Setup





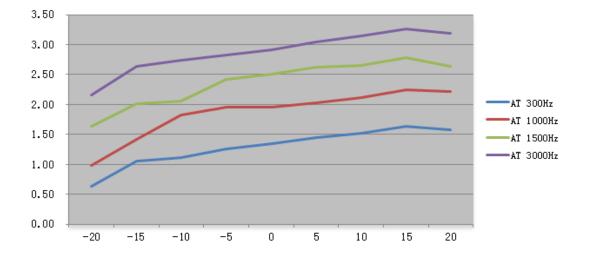


9.4 Measurement Result

Measurement Power Supply: AC 120V

A. Modulation Limit:

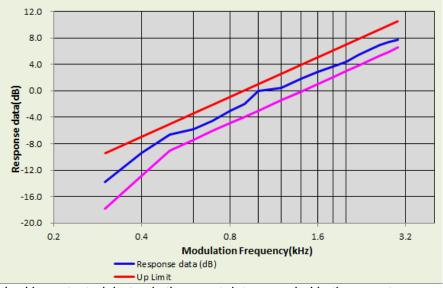
12.5kHz, Analog modulation, Assigned Frequency:136.025MHz-50W				
Modulation Level (dB)	Peak Freq. Deviation At 300 Hz (kHz)	Peak Freq. Deviation At 1000 Hz (kHz)	Peak Freq. Deviation At 1500 Hz (kHz)	Peak Freq. Deviation At 3000 Hz (kHz)
-20	0.63	0.98	1.63	2.16
-15	1.06	1.41	2.01	2.63
-10	1.11	1.82	2.05	2.74
-5	1.26	1.95	2.42	2.82
0	1.34	1.96	2.51	2.91
+5	1.45	2.02	2.62	3.04
+10	1.52	2.12	2.65	3.15
+15	1.63	2.25	2.78	3.26
+20	1.58	2.21	2.63	3.19





B. Audio Frequency Response:

12.5kHz, Analog modulation, Assigned Frequency:136.025MHz-50W				
Frequency (Hz)	Deviation (kHz)	Audio Frequency Response(dB)		
100				
200				
300	0.18	-13.78		
400	0.3	-9.35		
500	0.41	-6.63		
600	0.45	-5.83		
700	0.52	-4.57		
800	0.62	-3.04		
900	0.7	-1.99		
1000	0.88	0.00		
1200	0.93	0.48		
1400	1.09	1.86		
1600	1.22	2.84		
1800	1.35	3.72		
2000	1.46	4.40		
2400	1.63	5.35		
2500	1.81	6.26		
2800	1.94	6.87		
3000	2.06	7.39		



Note: All the modes had been tested, but only the worst data recorded in the report.