

# **FCC Test Report**

Report No.: AGC02415230703FE10

FCC ID : VO6CDR-700UV

APPLICATION PURPOSE : Original Equipment

**PRODUCT DESIGNATION**: Digital/Analogue Vehicle Radio

**BRAND NAME** : Kydera

**MODEL NAME** : CDR-700UV

**APPLICANT**: FUJIAN NEW CENTURY COMMUNICATIONS CO., LTD

**DATE OF ISSUE** : Jul. 28, 2023

**STANDARD(S)** : FCC Part 90 Rules

**REPORT VERSION** : V 1.0

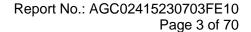
Attestation of Global Compliance (Shenzhen) Co., Ltd



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# REPORT REVISE RECORD

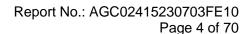
R	eport Version	Revise Time	Issued Date	Valid Version	Notes
	V1.0	/	Jul. 28, 2023	Valid	Initial Release





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# 1. GENERAL INFORMATION

Applicant	FUJIAN NEW CENTURY COMMUNICATIONS CO., LTD
Address	NO.1 FENGSHOU RD., ZHAOFENG IND. ZONE FENGZE DISTRICT, QUANZHOU, FUJIAN, CHINA.
Manufacturer	FUJIAN NEW CENTURY COMMUNICATIONS CO., LTD
Address	NO.1 FENGSHOU RD., ZHAOFENG IND. ZONE FENGZE DISTRICT, QUANZHOU, FUJIAN, CHINA.
Factory	FUJIAN NEW CENTURY COMMUNICATIONS CO., LTD
Address	NO.1 FENGSHOU RD., ZHAOFENG IND. ZONE FENGZE DISTRICT, QUANZHOU, FUJIAN, CHINA.
Product Designation	Digital/Analogue Vehicle Radio
Brand Name	Kydera
Test Model	CDR-700UV
Deviation from Standard	None
Date of receipt of test item	Jul. 14, 2023
Date of Test	Jul. 14, 2023~Jul. 27, 2023
Test Result	Pass

## WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI/TIA-603-E-2016. The sample tested as described in this report is in compliance with the FCC Rules Part 90. The test results of this report relate only to the tested sample identified in this report.

Prepared By	Alan Duan	
	Alan Duan (Project Engineer)	Jul. 28, 2023
Reviewed By	Calin Liu	
	Calvin Liu (Reviewer)	Jul. 28, 2023
Approved By	Max Zhang	
	Max Zhang Authorized Officer	Jul. 28, 2023



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# 2. PRODUCT INFORMATION

## 2.1 PRODUCT TECHNICAL DESCRIPTION

Hardware Version	3.0			
Software Version	V1.0			
Power Supply	DC 13.8V 15A			
Communication Type	Voice / Data			
Operation Frequency Range	From 136MHz to 174MHzVH From 400MHz to 480MHzUH			
Modulation Type	Analog Voice:	FM		
Wodulation Type	Digital (Voice + Data):	4FSK		
Digital Type	DMR			
Channal Canavation	Analog Voice:	12.5 kHz		
Channel Separation	Digital (Voice + Data):	12.5 kHz		
Support Data Rate	9600bps			
	Analog Voice:	11K0F3E		
Emission Designator	Digital (Voice + Data):	<ul> <li>✓ VHF:9K80F1D-50W-12.5kHz</li> <li>✓ VHF:9K80F1W-50W-12.5kHz</li> <li>✓ UHF:9K80F1D-40W-12.5kHz</li> <li>✓ UHF:9K80F1W-40W-12.5kHz</li> </ul>		
Rated Output Power	VHF: 50W, UHF: 40W (It was fixed by the manufacturer, any individual can't arbitrarily change it.			
Maximum Transmitter	VHF:46.64dBm- Analog VHF: 46.85dBm- Digital			
Power	UHF: 45.36dBm- Analog	UHF: 45.10dBm-Digital		
Antenna Designation	Detachable			
Antenna Gain	0dBi			
Frequency Tolerance	1.099ppm			

#### Note:

- 1. 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.
- 2. 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.
- 3. The actual working frequency band of the device is UHF: 400-480MHz. According to the frequency division requirements of KDB634817 and the federal frequency allocation requirements, the working frequency band that the device needs to meet is UHF: 406.1-480MHz



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#### 2.2 TEST FREQUENCY LIST

Operation mode	Channel Separation	Operation Frequency Range	Test channel	Test Frequency
	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
Analog/ Digital	12.5 kHz	400-480MHz	Bottom	406.125 MHz
	12.5 kHz	400-480MHz	Middle	453.2125 MHz
	12.5 kHz	400-480MHz	Middle	458.2125 MHz
	12.5 kHz	400-480MHz	Тор	479.975 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: **VO6CDR-700UV**, 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-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
4	ANSI TIA-102.CAAA-E	Project 25 Digital C4FM/CQPSK Transceiver Measurement Methods
5	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
6	KDB 971168 D01	KDB 971168 D01 Power Means License Digital Systems v03r01
7	KDB 579009 D03 KDB 579009 D03 Applications Part 90 Refarming Bands v01	
8 KDB 634817 D01 KDB 634817 D01 Freq		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: 12.5 kHz)

Emission Designator 11K0F3E

In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.

BW = 2(M+D) = 2\*(3.0 kHz + 2.5 kHz) = 11 kHz = 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 be in compliance with 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 be in compliance with 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

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 supply	DC 13.8V LV:DC 11.73V/HV: D0		

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 EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Aglient	N9020A	MY53300860	Jun. 01, 2023	May 31, 2024
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
preamplifier	ChengYi	EMC184045SE	980508	Oct. 29, 2021	Oct. 28, 2023
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Mar. 23, 2023	Mar. 22, 2024
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun. 03, 2023	Jun. 02, 2024
HORN ANTENNA	EM	EM-AH-10180	/	Feb. 22, 2023	Feb. 21, 2024
SIGNAL GENERATOR	AGILENT	E4421B	MY43351603	Feb. 17, 2023	Feb. 16, 2024
SIGNAL GENERATOR	KEYSIGHT	5182A	5182A	Feb. 17, 2023	Feb. 16, 2024
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
ANTENNA	SCHWARZBECK	VULB9168	D69250	May 11, 2023	May 10, 2025
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2022	May 21, 2024
Small environmental tester	ESPEC	SH-242	93008290	Aug. 03, 2022	Aug. 02, 2024
RF Communication Test Set	HP	8920B	US35010161	Aug. 03, 2022	Aug. 02, 2023
Attenuator	Weinachel Corp	58-30-33	ML030	Oct. 22, 2023	Oct. 21, 2023
RF Cable	R&S	1#		Each time	N/A
RF Cable	R&S	2#		Each time	N/A
Fliter-UHF	Microwave	N25155M2	498705	May 05, 2023	May 04, 2024
Fliter-VHF	Microwave	N26460M1	498703	May 05, 2023	May 04, 2024



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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

EUT

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

Item	n Equipment Model No.		Identifier	Note
1	Load Antenna	HG-E10	Terminator DC -3G 50W	Accessories

## 

Item	Equipment	Model No.	Identifier	Note
1	Digital/Analogue Vehicle Radio	CDR-700UV	VO6CDR-700UV	EUT
2	Hand Microphone	N/A	N/A	AE



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## 4.5 SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	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	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 Ratiated Emission	Pass



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## **5.DESCRIPTION OF TEST MODES**

The EUT (**Digital/Analogue Vehicle Radio**) 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	12.5 kHz
2	TX Middle channel-VHF	12.5 kHz
3	TX Top channel-VHF	12.5 kHz
4	TX Bottom channel-UHF	12.5 kHz
5	TX Middle channel-UHF	12.5 kHz
6	TX Middle channel-UHF	12.5 kHz
7	TX Top channel-UHF	12.5 kHz

#### Note:

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



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#### **6.FREQUENCY TOLERANCE**

## **6.1 PROVISIONS APPLICABLE**

- a). According to FCC §2.1055,§90.213, the frequency stability shall be measured with variation of ambient temperature from  $-30^{\circ}$ C to  $+50^{\circ}$ C centigrade.
- b). 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.
- c). 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**

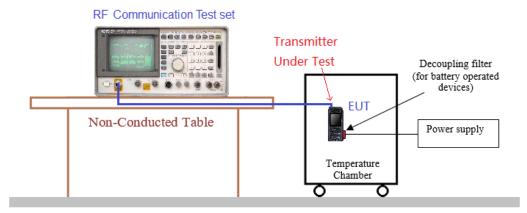
# 6.2.1 Frequency stability versus environmental temperature

- 1. Setup the configuration per figure 1 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 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.
- 4. Repeat step 2 with a 10℃ decreased per stage until the lowest temperature -30℃ 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 DC 7.4V.
- 2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 kHz and Video 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**



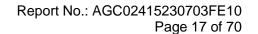


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## **6.4 MEASUREMENT RESULTS**

	12.5 kHz Channel Separation, Analog modulation, Assigned Frequency For VHF					
Test conditions		Free	quency error (ppr	n)		
Voltage	Temp	Tes	t Frequency (MH	z)	Limit (ppm)	Result
(°C)	136.025	155.025	173.975	(PP111)		
	-30	0.838	0.904	1.010		
	-20	0.738	0.680	0.560		
	-10	0.547	1.086	0.504		
	0	0.952	0.946	0.741		
13.8	10	0.907	1.013	0.723		
	20	0.571	0.621	0.822	2.5	Pass
	30	0.816	0.969	0.862		
	40	0.884	0.775	0.755		
	50	0.694	0.544	0.639		
15.87	20	1.053	1.049	1.016		
11.73	20	1.024	0.727	0.737		

12.5 kHz Channel Separation, Digital modulation, Assigned Frequency For VHF						
Test conditions		Free	quency error (ppr	m)		
Voltage	Temp	Tes	t Frequency (MH	z)	Limit (ppm)	Result
(V)	(℃)	136.025	155.025	173.975	(PP)	
	-30	0.874	0.518	0.870		
	-20	0.535	0.585	0.696		
	-10	1.098	0.557	0.564		
	0	0.945	0.616	1.036		
13.8	10	0.970	1.095	0.767		
	20	0.906	0.783	0.585	2.5	Pass
	30	1.091	1.018	0.588		
	40	0.613	0.795	0.646		
	50	1.028	0.594	0.875		
15.87	20	0.511	0.590	0.765		
11.73	20	0.914	1.026	0.811		





	12.5 kHz Channel Separation, Analog modulation, Assigned Frequency For UHF						
Test c	onditions		Frequency	error (ppm)			Result
Voltage	Temp		Test Freque	ency (MHz)		Limit (ppm)	
(V)	(℃)	406.125	453.2125	458.2125	479.975	(PP)	
	-30	0.776	0.653	0.985	0.334		
	-20	0.759	0.950	0.945	0.494		
	-10	0.838	0.704	1.021	0.682		
	0	0.516	0.952	1.077	0.638		
13.80	10	0.972	0.612	0.959	0.618		
	20	0.796	1.053	0.672	0.803	2.5	Pass
	30	1.049	0.757	0.845	0.526		
	40	0.533	1.098	0.868	0.568		
	50	0.503	0.834	0.898	0.734		
15.87	20	0.669	0.942	0.934	0.326		
11.73	20	0.720	0.822	0.912	0.328		

	12.5 kHz Channel Separation, Digital modulation, Assigned Frequency For UHF						
Test conditions			Frequency	error (ppm)			
Voltage	Temp		Test Freque	ency (MHz)		Limit (ppm)	Result
(V)	(℃)	406.125	453.2125	458.2125	479.975	(PP)	
	-30	0.873	0.653	1.061	0.632		
	-20	0.508	0.961	1.051	0.604		
	-10	0.779	0.984	0.946	0.405		
	0	0.912	0.813	0.542	0.583		
13.80	10	0.925	0.710	0.576	0.304		
	20	0.607	0.750	0.912	0.514	2.5	Pass
	30	1.069	0.562	0.662	0.997		
	40	0.681	1.054	0.840	0.354		
	50	0.544	0.943	0.763	0.450		
15.87	20	0.738	1.018	0.517	0.409		
11.73	20	0.879	1.099	1.000	0.733		



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## 7. EMISSION 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

1.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.

Rated system deviation is 2.5 kHz for 12.5kHz channel spacing).

2.Spectrum set as follow:

Centre frequency = fundamental frequency, span=50kHz for 12.5kHz channel spacing, RBW=100Hz, VBW=300Hz, Sweep = auto,

Detector function = peak, Trace = max hold

- 3.Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.
- 4. Measure and record the results in the test report.

#### 7.3 MEASUREMENT SETUP





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## 7.4 MEASUREMENT RESULTS

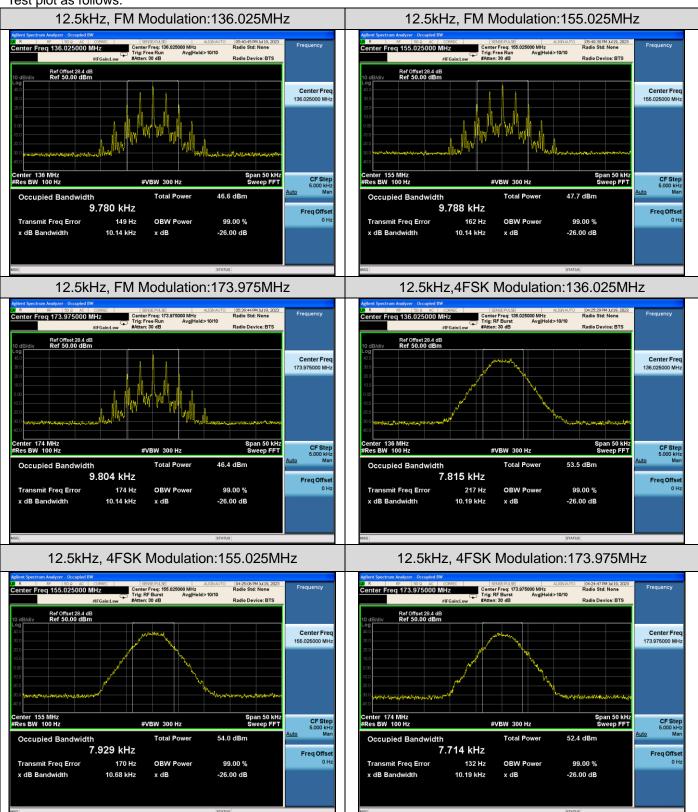
Measurement Result of VHF-Analog Modulation					
Operating Frequency	12.5 kHz Channel Separation				
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	9.780 kHz	10.14 kHz	11.25 kHz	Pass	
155.025MHz	9.788 kHz	10.14 kHz	11.25 kHz	Pass	
173.975MHz	9.804 kHz	10.14 kHz	11.25 kHz	Pass	

Measurement Result of VHF-Digital Modulation					
Operating Frequency	12.5 kHz Channel Separation				
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
136.025MHz	7.815 kHz	10.19 kHz	11.25 kHz	Pass	
155.025MHz	7.929 kHz	10.68 kHz	11.25 kHz	Pass	
173.975MHz	7.714 kHz	10.19 kHz	11.25 kHz	Pass	



Report No.: AGO

# Test plot as follows:

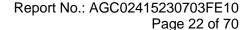




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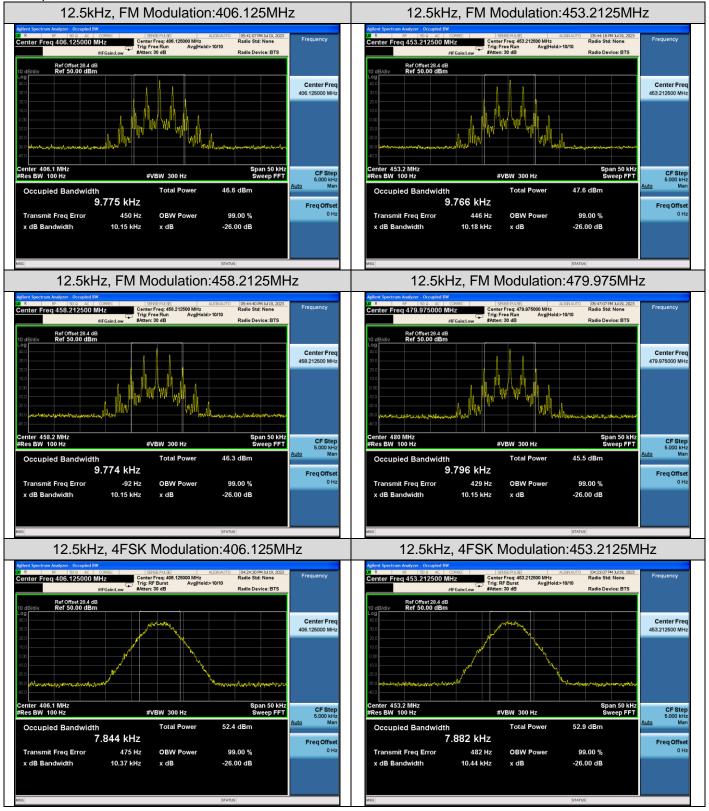
Measurement Result of UHF-Analog Modulation						
On another Francisco		12.5 kHz Channel Separation				
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result		
406.125 MHz	9.775 kHz	10.15 kHz	11.25 kHz	Pass		
453.2125 MHz	9.766 kHz	10.18 kHz	11.25 kHz	Pass		
458.2125 MHz	9.774 kHz	10.15 kHz	11.25 kHz	Pass		
479.975 MHz	9.796 kHz	10.15 kHz	11.25 kHz	Pass		

Measurement Result of UHF-Digital Modulation					
Operating Frequency		12.5 kHz Channel Sepa	aration		
Operating Frequency	Occupied Bandwidth	Emission Bandwidth	Limits	Result	
406.125 MHz	7.844 kHz	10.37 kHz	11.25 kHz	Pass	
453.2125 MHz	7.882 kHz	10.44 kHz	11.25 kHz	Pass	
458.2125 MHz	7.981 kHz	10.36 kHz	11.25 kHz	Pass	
479.975 MHz	7.825 kHz	10.07 kHz	11.25 kHz	Pass	

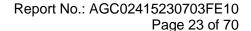




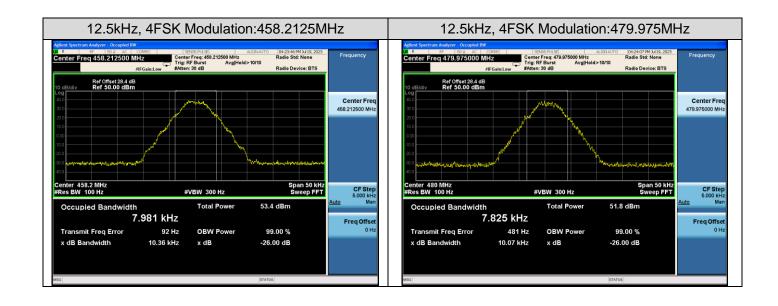
# Test plot as follows:



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# 8. SPURIOUS RATIATED EMISSION

#### 8.1 PROVISIONS APPLICABLE

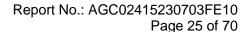
According to FCC §2.1053 and §90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with each channel separation.

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**

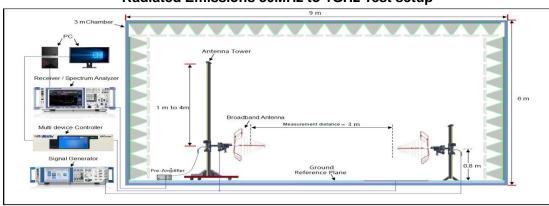
- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall 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.

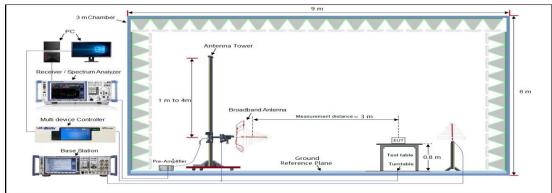




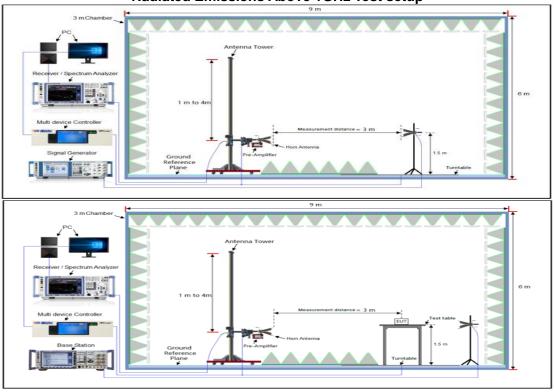
# **8.3 MEASUREMENT SETUP**

# Radiated Emissions 30MHz to 1GHz Test setup





# **Radiated Emissions Above 1GHz Test setup**



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#### **8.4 MEASUREMENT RESULTS**

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.

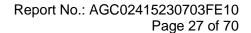
The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. 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.

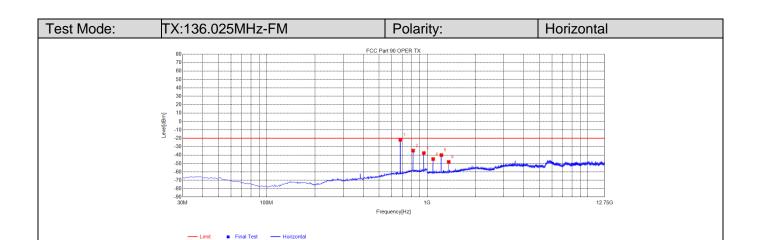
#### Test limit calculation:

Preliminary calculation	Final Result	
At least 50+10 log (P) =50+10log (50) =66.99 (dB)	Limit=P- Preliminary calculation=66.99-46.99=-20 dBm	
At least 50+10 log (P) =50+10log (40) =66.02 (dB)	Limit=P- Preliminary calculation=66.02-46.02=-20 dBm	

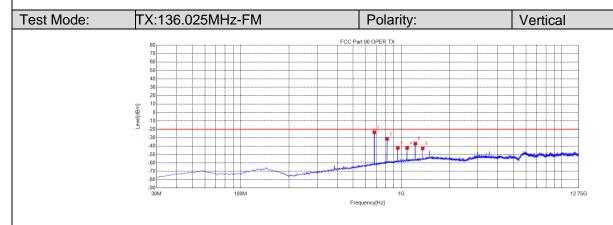
Note: The report only reflects high-power test data as the worst.



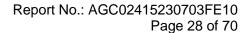




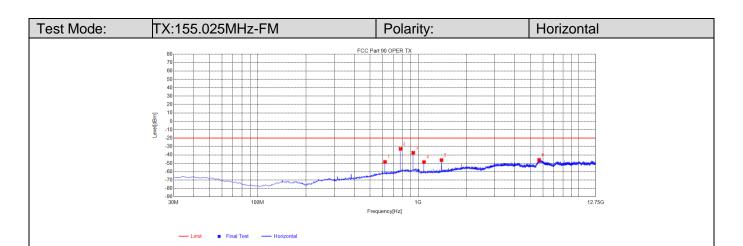
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	679.9	-61.86	-21.79	-20.00	1.79	40.07	129	Horizontal
2	816.67	-78.03	-34.69	-20.00	14.69	43.34	137	Horizontal
3	952.47	-81.63	-37.55	-20.00	17.55	44.08	137	Horizontal
4	1088.1338	-40.64	-44.71	-20.00	24.71	-4.07	191	Horizontal
5	1224.4474	-36.15	-39.94	-20.00	19.94	-3.79	15	Horizontal
6	1360.7611	-44.55	-48.05	-20.00	28.05	-3.50	173	Horizontal



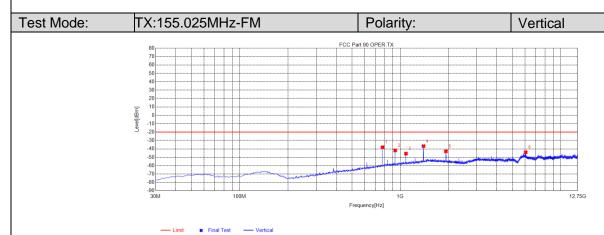
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	679.9	-63.59	-23.47	-20.00	3.47	40.12	0	Vertical
2	816.67	-73.94	-31.41	-20.00	11.41	42.53	0	Vertical
3	952.47	-86.13	-42.28	-20.00	22.28	43.85	66	Vertical
4	1088.1338	-41.64	-42.21	-20.00	22.21	-0.57	191	Vertical
5	1224.4474	-37.35	-37.02	-20.00	17.02	0.33	163	Vertical
6	1360.7611	-44.04	-42.80	-20.00	22.80	1.24	135	Vertical



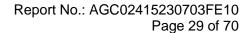




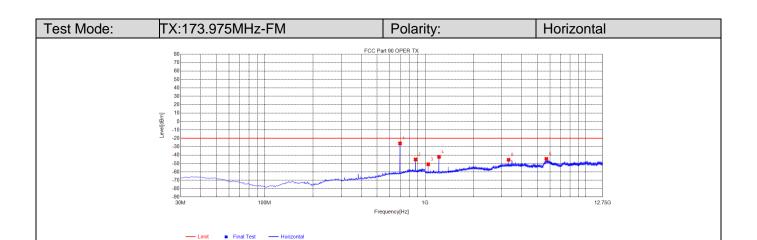
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	620.73	-88.32	-48.41	-20.00	28.41	39.91	154	Horizontal
2	775.93	-75.48	-32.85	-20.00	12.85	42.63	54	Horizontal
3	930.16	-81.14	-37.55	-20.00	17.55	43.59	154	Horizontal
4	1085.7836	-44.54	-48.62	-20.00	28.62	-4.08	266	Horizontal
5	1396.0146	-42.84	-46.27	-20.00	26.27	-3.43	18	Horizontal
6	5664.0414	-55.58	-46.04	-20.00	26.04	9.54	9	Horizontal



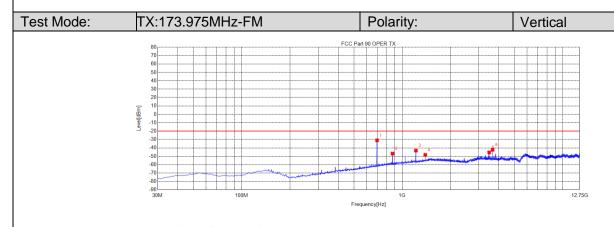
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	775.93	-79.99	-38.08	-20.00	18.08	41.91	359	Vertical
2	930.16	-85.49	-41.87	-20.00	21.87	43.62	76	Vertical
3	1085.7836	-45.10	-45.69	-20.00	25.69	-0.59	184	Vertical
4	1396.0146	-38.23	-36.76	-20.00	16.76	1.47	194	Vertical
5	1925.9926	-43.58	-42.91	-20.00	22.91	0.67	76	Vertical
6	6045.9546	-55.09	-44.09	-20.00	24.09	11.00	12	Vertical



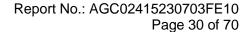




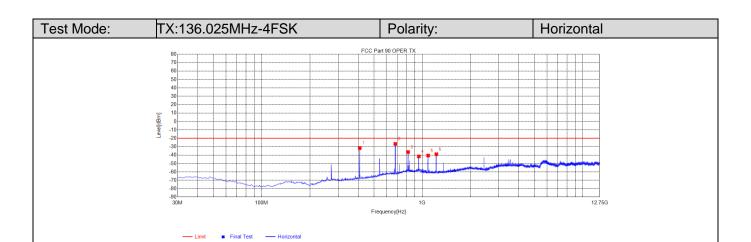
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	696.39	-66.12	-26.01	-20.00	6.01	40.11	274	Horizontal
2	870.02	-88.26	-45.18	-20.00	25.18	43.08	73	Horizontal
3	1043.4793	-46.74	-50.91	-20.00	30.91	-4.17	109	Horizontal
4	1218.5719	-38.27	-42.07	-20.00	22.07	-3.80	37	Horizontal
5	3305.5806	-49.40	-45.57	-20.00	25.57	3.83	117	Horizontal
6	5680.493	-54.08	-44.48	-20.00	24.48	9.60	360	Horizontal



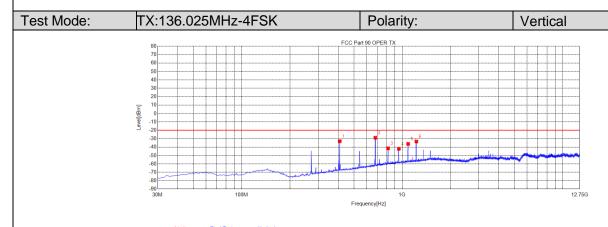
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	696.39	-71.43	-31.02	-20.00	11.02	40.41	12	Vertical
2	870.02	-89.80	-46.77	-20.00	26.77	43.03	351	Vertical
3	1217.3967	-43.51	-43.23	-20.00	23.23	0.28	306	Vertical
4	1391.3141	-49.76	-48.32	-20.00	28.32	1.44	170	Vertical
5	3479.498	-48.50	-45.43	-20.00	25.43	3.07	298	Vertical
6	3653.4153	-45.47	-42.34	-20.00	22.34	3.13	150	Vertical



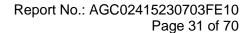




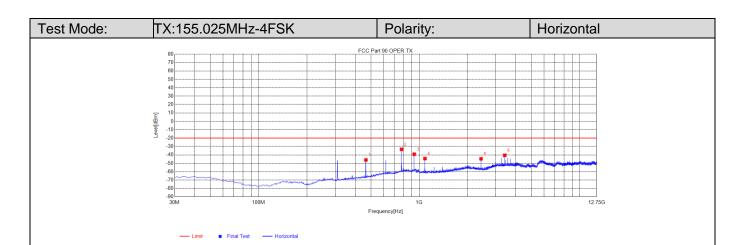
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	408.3	-66.19	-31.61	-20.00	11.61	34.58	348	Horizontal
2	679.9	-66.70	-26.63	-20.00	6.63	40.07	129	Horizontal
3	816.67	-79.65	-36.31	-20.00	16.31	43.34	53	Horizontal
4	952.47	-85.59	-41.51	-20.00	21.51	44.08	286	Horizontal
5	1088.1338	-36.40	-40.47	-20.00	20.47	-4.07	276	Horizontal
6	1224.4474	-35.13	-38.92	-20.00	18.92	-3.79	28	Horizontal



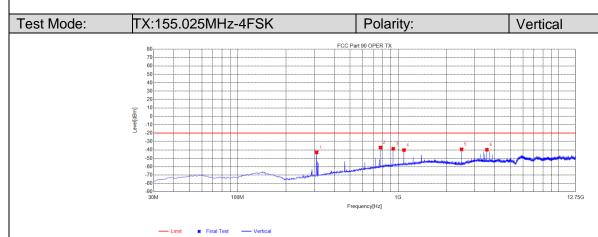
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	408.3	-68.07	-32.96	-20.00	12.96	35.11	60	Vertical
2	679.9	-68.95	-28.83	-20.00	8.83	40.12	192	Vertical
3	816.67	-83.98	-41.45	-20.00	21.45	42.53	359	Vertical
4	952.47	-85.99	-42.14	-20.00	22.14	43.85	192	Vertical
5	1088.1338	-35.60	-36.17	-20.00	16.17	-0.57	128	Vertical
6	1224.4474	-33.59	-33.26	-20.00	13.26	0.33	154	Vertical



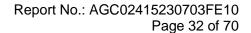




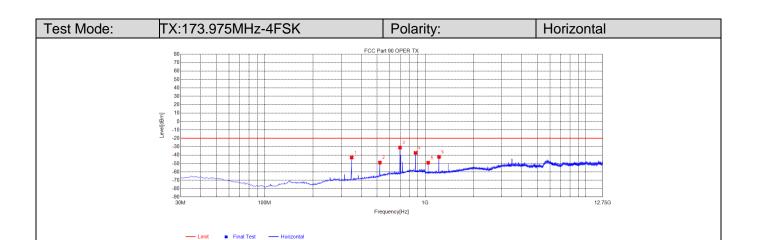
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	465.53	-81.74	-46.07	-20.00	26.07	35.67	250	Horizontal
2	775.93	-76.05	-33.42	-20.00	13.42	42.63	28	Horizontal
3	930.16	-82.81	-39.22	-20.00	19.22	43.59	268	Horizontal
4	1085.7836	-40.34	-44.42	-20.00	24.42	-4.08	44	Horizontal
5	2426.5927	-43.56	-44.71	-20.00	24.71	-1.15	204	Horizontal
6	3410.166	-44.55	-40.53	-20.00	20.53	4.02	120	Horizontal



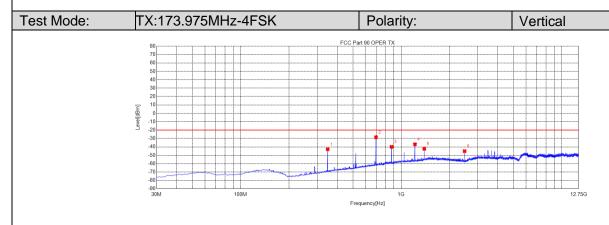
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	310.33	-74.34	-42.99	-20.00	22.99	31.35	135	Vertical
2	775.93	-79.17	-37.26	-20.00	17.26	41.91	351	Vertical
3	930.16	-82.29	-38.67	-20.00	18.67	43.62	145	Vertical
4	1085.7836	-39.68	-40.27	-20.00	20.27	-0.59	117	Vertical
5	2479.4729	-38.33	-39.36	-20.00	19.36	-1.03	351	Vertical
6	3565.2815	-42.89	-39.80	-20.00	19.80	3.09	183	Vertical



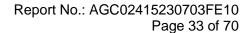




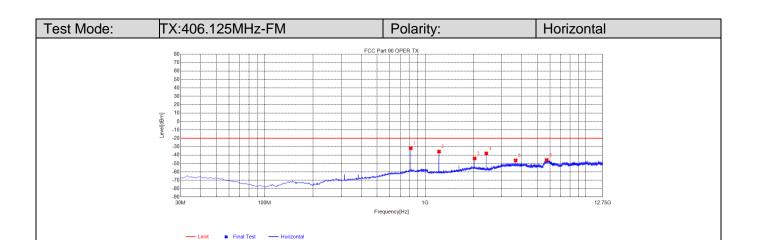
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	348.16	-76.00	-42.86	-20.00	22.86	33.14	82	Horizontal
2	521.79	-86.02	-48.92	-20.00	28.92	37.10	128	Horizontal
3	696.39	-71.06	-30.95	-20.00	10.95	40.11	304	Horizontal
4	870.02	-80.41	-37.33	-20.00	17.33	43.08	44	Horizontal
5	1043.4793	-44.89	-49.06	-20.00	29.06	-4.17	276	Horizontal
6	1218.5719	-38.33	-42.13	-20.00	22.13	-3.80	36	Horizontal



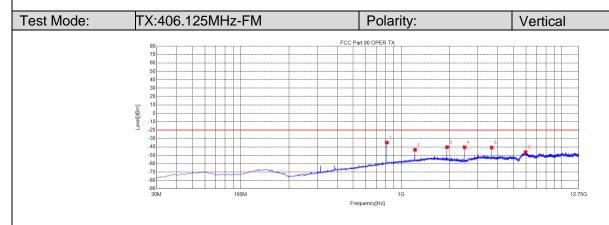
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	348.16	-75.77	-42.88	-20.00	22.88	32.89	351	Vertical
2	696.39	-68.91	-28.50	-20.00	8.50	40.41	17	Vertical
3	870.02	-82.99	-39.96	-20.00	19.96	43.03	9	Vertical
4	1217.3967	-37.16	-36.88	-20.00	16.88	0.28	158	Vertical
5	1391.3141	-43.79	-42.35	-20.00	22.35	1.44	168	Vertical
6	2480.6481	-44.10	-45.13	-20.00	25.13	-1.03	212	Vertical



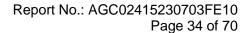




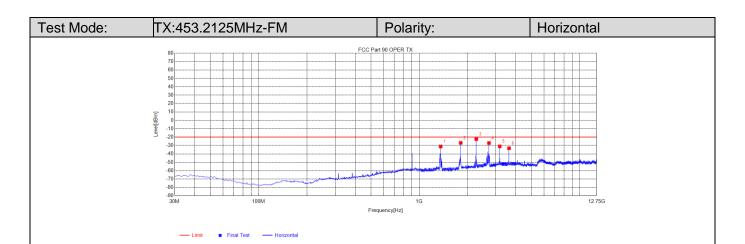
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	812.79	-75.13	-31.77	-20.00	11.77	43.36	43	Horizontal
2	1218.5719	-31.98	-35.78	-20.00	15.78	-3.80	69	Horizontal
3	2030.5781	-44.39	-43.98	-20.00	23.98	0.41	233	Horizontal
4	2401.9152	-36.90	-37.95	-20.00	17.95	-1.05	149	Horizontal
5	3654.5905	-50.69	-46.33	-20.00	26.33	4.36	133	Horizontal
6	5711.0461	-55.54	-45.83	-20.00	25.83	9.71	188	Horizontal



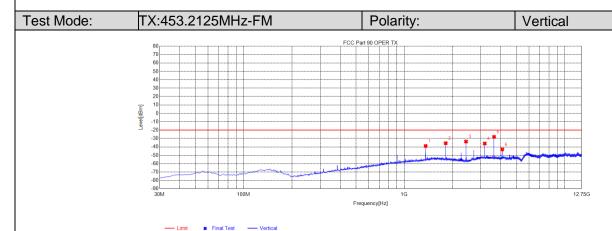
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	812.79	-77.42	-34.93	-20.00	14.93	42.49	0	Vertical
2	1218.5719	-43.77	-43.48	-20.00	23.48	0.29	236	Vertical
3	1927.1677	-41.06	-40.40	-20.00	20.40	0.66	0	Vertical
4	2480.6481	-39.45	-40.48	-20.00	20.48	-1.03	273	Vertical
5	3655.7656	-43.96	-40.83	-20.00	20.83	3.13	149	Vertical
6	5949.595	-56.82	-46.38	-20.00	26.38	10.44	291	Vertical



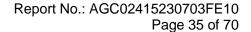




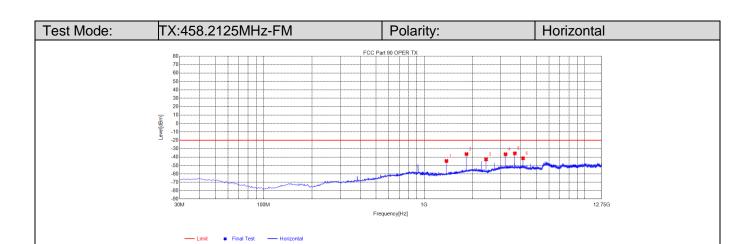
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	1359.586	-27.71	-31.21	-20.00	11.21	-3.50	236	Horizontal
2	1813.1813	-26.01	-26.88	-20.00	6.88	-0.87	236	Horizontal
3	2266.7767	-21.94	-22.46	-20.00	2.46	-0.52	236	Horizontal
4	2719.1969	-27.69	-27.06	-20.00	7.06	0.63	236	Horizontal
5	3172.7923	-34.65	-31.05	-20.00	11.05	3.60	236	Horizontal
6	3626.3876	-37.62	-33.30	-20.00	13.30	4.32	62	Horizontal



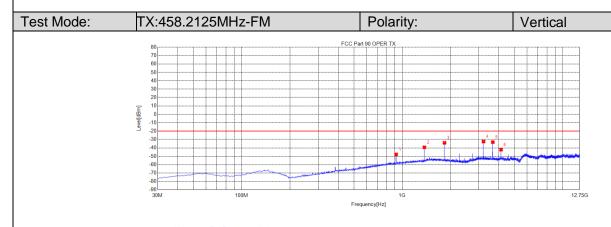
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	1359.586	-40.21	-38.98	-20.00	18.98	1.23	137	Vertical
2	1813.1813	-36.71	-35.65	-20.00	15.65	1.06	22	Vertical
3	2425.4175	-32.80	-33.67	-20.00	13.67	-0.87	30	Vertical
4	3172.7923	-39.17	-36.01	-20.00	16.01	3.16	107	Vertical
5	3626.3876	-31.19	-28.07	-20.00	8.07	3.12	153	Vertical
6	4078.8079	-46.24	-42.99	-20.00	22.99	3.25	163	Vertical



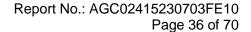




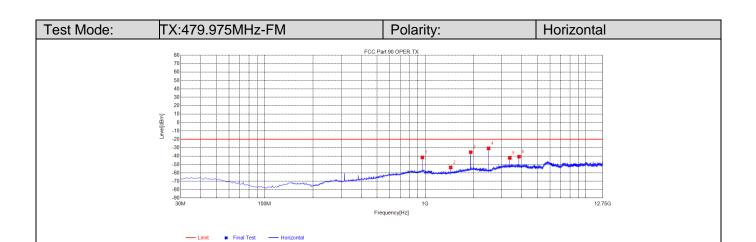
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	1374.8625	-41.14	-44.61	-20.00	24.61	-3.47	29	Horizontal
2	1833.1583	-35.65	-36.37	-20.00	16.37	-0.72	160	Horizontal
3	2426.5927	-41.64	-42.79	-20.00	22.79	-1.15	290	Horizontal
4	3208.0458	-40.24	-36.58	-20.00	16.58	3.66	152	Horizontal
5	3666.3416	-39.86	-35.49	-20.00	15.49	4.37	39	Horizontal
6	4124.6375	-45.76	-41.33	-20.00	21.33	4.43	244	Horizontal



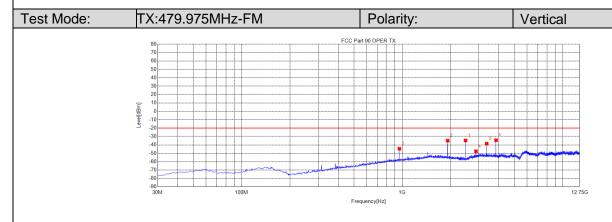
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	916.58	-91.32	-47.84	-20.00	27.84	43.48	183	Vertical
2	1374.8625	-40.70	-39.37	-20.00	19.37	1.33	165	Vertical
3	1833.1583	-35.01	-34.02	-20.00	14.02	0.99	15	Vertical
4	3208.0458	-35.60	-32.45	-20.00	12.45	3.15	15	Vertical
5	3666.3416	-36.31	-33.17	-20.00	13.17	3.14	173	Vertical
6	4123.4623	-45.35	-42.12	-20.00	22.12	3.23	341	Vertical



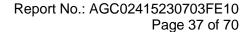




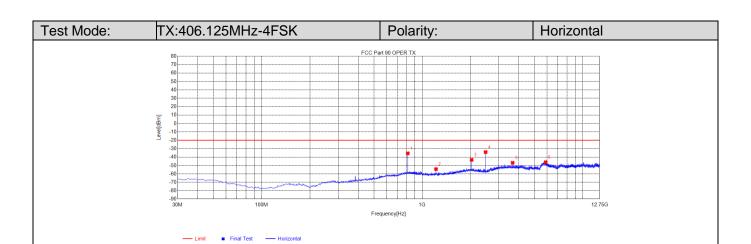
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.23	-85.79	-41.54	-20.00	21.54	44.25	55	Horizontal
2	1440.6691	-50.17	-53.50	-20.00	33.50	-3.33	249	Horizontal
3	1920.117	-35.32	-35.39	-20.00	15.39	-0.07	101	Horizontal
4	2480.6481	-29.43	-30.79	-20.00	10.79	-1.36	229	Horizontal
5	3359.636	-46.04	-42.11	-20.00	22.11	3.93	239	Horizontal
6	3840.259	-45.20	-40.63	-20.00	20.63	4.57	101	Horizontal



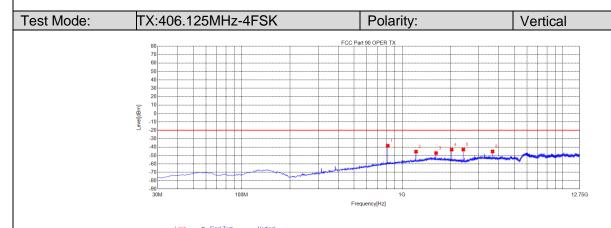
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.23	-88.52	-44.60	-20.00	24.60	43.92	229	Vertical
2	1920.117	-35.68	-34.99	-20.00	14.99	0.69	351	Vertical
3	2479.4729	-33.76	-34.79	-20.00	14.79	-1.03	303	Vertical
4	2880.188	-49.80	-47.62	-20.00	27.62	2.18	173	Vertical
5	3359.636	-41.67	-38.57	-20.00	18.57	3.10	181	Vertical
6	3840.259	-37.70	-34.48	-20.00	14.48	3.22	155	Vertical



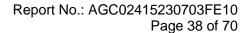




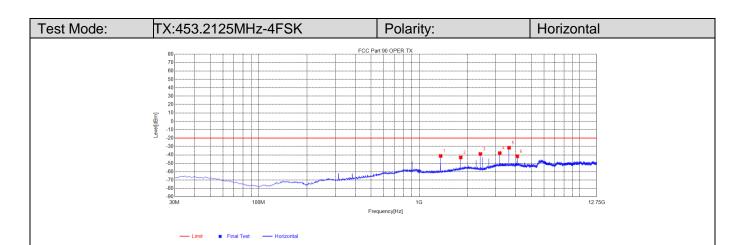
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	812.79	-78.86	-35.50	-20.00	15.50	43.36	82	Horizontal
2	1218.5719	-50.46	-54.26	-20.00	34.26	-3.80	9	Horizontal
3	2030.5781	-43.64	-43.23	-20.00	23.23	0.41	36	Horizontal
4	2480.6481	-32.67	-34.03	-20.00	14.03	-1.36	166	Horizontal
5	3655.7656	-51.14	-46.78	-20.00	26.78	4.36	9	Horizontal
6	5875.5626	-56.35	-46.02	-20.00	26.02	10.33	186	Horizontal



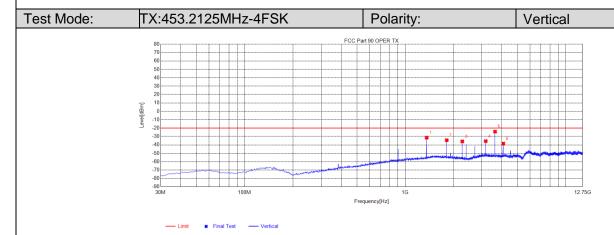
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	812.79	-80.82	-38.33	-20.00	18.33	42.49	128	Vertical
2	1218.5719	-45.67	-45.38	-20.00	25.38	0.29	248	Vertical
3	1625.1625	-48.80	-47.08	-20.00	27.08	1.72	314	Vertical
4	2030.5781	-43.27	-42.95	-20.00	22.95	0.32	156	Vertical
5	2401.9152	-42.12	-42.92	-20.00	22.92	-0.80	359	Vertical
6	3655.7656	-48.28	-45.15	-20.00	25.15	3.13	128	Vertical



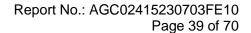




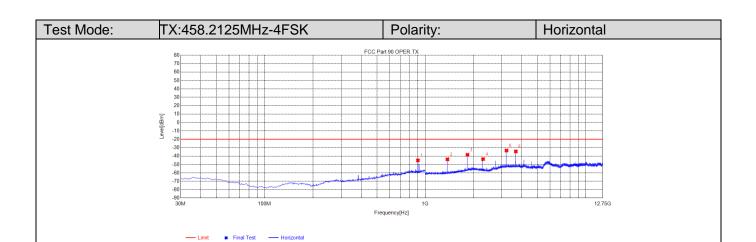
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	1359.586	-37.79	-41.29	-20.00	21.29	-3.50	52	Horizontal
2	1813.1813	-42.18	-43.05	-20.00	23.05	-0.87	167	Horizontal
3	2403.0903	-37.87	-38.93	-20.00	18.93	-1.06	52	Horizontal
4	3172.7923	-41.48	-37.88	-20.00	17.88	3.60	167	Horizontal
5	3626.3876	-35.88	-31.56	-20.00	11.56	4.32	9	Horizontal
6	4078.8079	-46.17	-41.62	-20.00	21.62	4.55	225	Horizontal



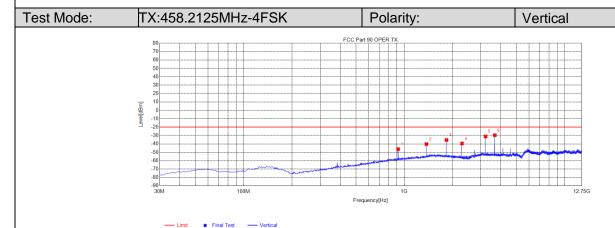
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	1359.586	-32.67	-31.44	-20.00	11.44	1.23	158	Vertical
2	1813.1813	-35.52	-34.46	-20.00	14.46	1.06	176	Vertical
3	2266.7767	-35.49	-35.88	-20.00	15.88	-0.39	351	Vertical
4	3172.7923	-38.74	-35.58	-20.00	15.58	3.16	351	Vertical
5	3626.3876	-27.35	-24.23	-20.00	4.23	3.12	133	Vertical
6	4078.8079	-41.74	-38.49	-20.00	18.49	3.25	176	Vertical



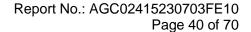




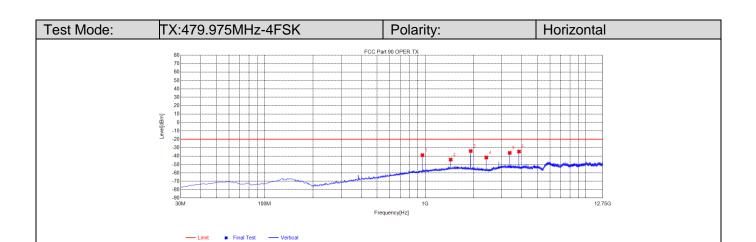
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	900.09	-88.01	-45.07	-20.00	25.07	42.94	288	Horizontal
2	1374.8625	-40.34	-43.81	-20.00	23.81	-3.47	332	Horizontal
3	1833.1583	-37.70	-38.42	-20.00	18.42	-0.72	166	Horizontal
4	2291.4541	-42.97	-43.59	-20.00	23.59	-0.62	148	Horizontal
5	3208.0458	-37.02	-33.36	-20.00	13.36	3.66	54	Horizontal
6	3666.3416	-38.79	-34.42	-20.00	14.42	4.37	54	Horizontal



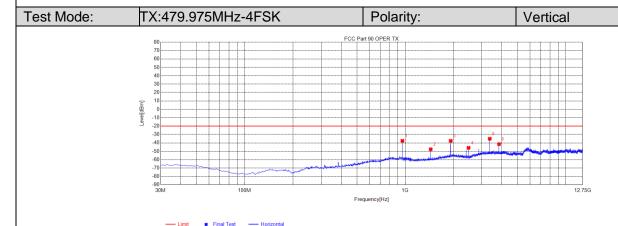
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	916.58	-89.74	-46.26	-20.00	26.26	43.48	0	Vertical
2	1374.8625	-41.62	-40.29	-20.00	20.29	1.33	148	Vertical
3	1833.1583	-36.39	-35.40	-20.00	15.40	0.99	120	Vertical
4	2291.4541	-39.12	-39.58	-20.00	19.58	-0.46	351	Vertical
5	3208.0458	-34.34	-31.19	-20.00	11.19	3.15	351	Vertical
6	3666.3416	-32.84	-29.70	-20.00	9.70	3.14	176	Vertical







NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.23	-82.77	-38.85	-20.00	18.85	43.92	208	Horizontal
2	1440.6691	-45.91	-44.14	-20.00	24.14	1.77	151	Horizontal
3	1920.117	-34.64	-33.95	-20.00	13.95	0.69	330	Horizontal
4	2401.9152	-40.88	-41.68	-20.00	21.68	-0.80	360	Horizontal
5	3359.636	-39.28	-36.18	-20.00	16.18	3.10	189	Horizontal
6	3840.259	-37.76	-34.54	-20.00	14.54	3.22	151	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.23	-81.86	-37.61	-20.00	17.61	44.25	47	Vertical
2	1440.6691	-44.33	-47.66	-20.00	27.66	-3.33	9	Vertical
3	1920.117	-37.58	-37.65	-20.00	17.65	-0.07	138	Vertical
4	2479.4729	-44.56	-45.92	-20.00	25.92	-1.36	0	Vertical
5	3359.636	-39.05	-35.12	-20.00	15.12	3.93	191	Vertical
6	3840.259	-46.09	-41.52	-20.00	21.52	4.57	64	Vertical

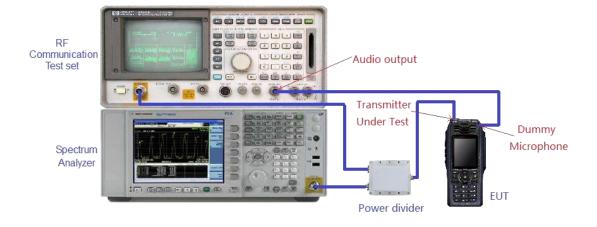


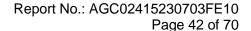
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#### **8.5 EMISSION MASK PLOT**

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

- -Connect the equipment as illustrated.
- -Spectrum set as follow:
- 1. Centre frequency = fundamental frequency, Span=50kHz for 12.5kHz, 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 full scale 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 12.5 kHz 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:

