FCC Test Report

Report No.: AGC02931200901FE10A

FCC ID	:	POD-DMR3
PRODUCT DESIGNATION	:	DMR mobile radio
BRAND NAME	:	TYT
MODEL NAME	:	MD-9600-5P GPS, MD-9600-5P, MD-9600 GPS, MD-9600
APPLICANT	:	TYT ELECTRONICS CO., LTD
DATE OF ISSUE	:	Jan. 13, 2021
STANDARD(S)	:	FCC Part 90 Rules
REPORT VERSION	:	V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan. 13, 2021	Valid	Initial release

Note: The original test report Ref. No. (AGC02931200901FE10) (dated 2020-11-03), was modified on 2021-01-13 to include the following changes and additions for:

-Updated Software version.

- Change a small part of the circuit, resistance, capacitance, add 5-pins cable -Update hardware version. Re-evaluate the radiated spurious test of VHF and UHF

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1. GENERAL INFORMATION

Applicant	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
Manufacturer	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
Factory	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
Product Designation	DMR mobile radio
Brand Name	TYT
Test Model	MD-9600-5P GPS
Series Model(s)	MD-9600-5P, MD-9600 GPS, MD-9600
Difference Description	The model is only GPS and 5-Pin cable installation difference MD-9600-5P GPS has GPS & 5-Pin cable MD-9600-5P only has 5-Pin cable MD-9600 GPS only GPS MD-9600 without GPS & 5-Pin cable
Deviation from Standard	None
Date of Receipt	Dec. 24, 2021
Date of Test	Dec. 24, 2021~Jan. 13, 2021
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

Donjon Huang
(Project Engineer) Jan. 13, 2021

Reviewed By

Calvin Liu
(Reviewer) Jan. 13, 2021

Approved By

Forrest Lei
Authorized Officer Jan. 13, 2021

2.PRODUCT INFORMATION

2.1 PRODUCT TECHNICAL DESCRIPTION

Hardware Version	MD-9600-UV-V5.0	
Software Version	V1.35	
Power Supply	DC 13.80V	
Communication Type	Voice / Data	
Operation Frequency Range	From 136MHz to 174MHz--VHF From 400MHz to 480MHz--UHF	
Modulation Type	Analog Voice:	FM
	Digital Voice/Digital Data:	4FSK
Digital Type	DMR	
Channel Separation	Analog Voice:	12.5 kHz
	Digital Voice/Digital Data:	12.5 kHz
Support Data Rate	9600bps	
Rated Output Power	VHF:40W/5W UHF:35W/5W (It was fixed by the manufacturer, any individual can't arbitrarily change it.)	
Antenna Designation	External Antenna	
Antenna Gain	0dBi	

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.

2.2 TEST FREQUENCY LIST

Operation mode	Channel Separation	Operation Frequency Range	Test channel	Test Frequency
Analog/ Digital	12.5 kHz	400-470MHz	Bottom	406.125 MHz
	12.5 kHz	400-470MHz	Middle	453.2125 MHz
	12.5 kHz	400-470MHz	Middle	454.025 MHz
	12.5 kHz	400-470MHz	Middle	458.2125 MHz
	12.5 kHz	400-470MHz	Top	479.975 MHz
Analog/ Digital	12.5 kHz	136-174MHz	Bottom	136.025 MHz
	12.5 kHz	136-174MHz	Middle	151.850 MHz
	12.5 kHz	136-174MHz	Middle	155.025 MHz
	12.5 kHz	136-174MHz	Middle	161.610 MHz
	12.5 kHz	136-174MHz	Top	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.

2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: **POD-DMR3,** filing to comply with Part 2 and 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	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
4	KDB 971168 D01	KDB 971168 D01 Power Meas License Digital Systems v03r01
5	KDB 579009 D03	KDB 579009 D03 Applications Part 90 Refarming Bands v01
6	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 (ChannelSpacing: 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 = 11K0
F3E portion of the designator represents an FM voice transmission.
Therefore, the entire designator for 12.5 kHz channel spacing FM mode is 11K0F3E.

For FM Mode (Channel Spacing: 25kHz)
Emission Designator 16K0F3E
In this case, the maximum modulating frequency is 3.0 kHz with a 5.0 kHz deviation.
BW = 2(M+D) = 2*(3.0 kHz + 5.0 kHz) = 16 kHz = 16K0
F3E portion of the designator represents an FM voice transmission.
Therefore, the entire designator for 25 kHz channel spacing FM mode is 16K0F3E.

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.

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.

3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS
Temperature range (℃)	15 - 35	-20 - 50
Relative humidty range	20 % - 75 %	20 % - 75 %
Pressure range (kPa)	86 - 106	86 - 106
Power supply	DC 13.8V	LV:11.73V/HV: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 %

3.5 LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9020A	W1312-60196	Oct. 08, 2019	Oct. 07, 2020
EXA Signal Analyzer	Aglient	N9020A	MY52090123	Sep. 03, 2020	Sep. 02, 2021
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.16, 2019	Sep.15, 2021
preamplifier	ChengYi	EMC184045SE	980508	Oct 27, 2020	Oct 26, 2021
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 17, 2019	May. 16, 2021
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun. 09, 2020	Jun. 08, 2021
HORN ANTENNA	EM	EM-AH-10180	/	Feb.28, 2020	Feb.27, 2021
SIGNAL GENERATOR	AGILENT	E4421B	MY43351603	Jun. 09, 2020	Jun. 08, 2021
SIGNAL GENERATOR	R&S	SMT03	A0304261	Jun. 09, 2020	Jun. 08, 2021
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 09, 2019	Jan. 08, 2021
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.20, 2019	Sep.19, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Jun. 11, 2020	Jun. 10, 2021
Modulation Domain Analyzer	HP	53310A	3121A02467	Jul. 03, 2020	Jul. 02, 2022
Small environmental tester	ESPEC	SH-242	--	Feb. 23, 2020	Feb. 22, 2021
RF Communication Test Set	HP	8920B	--	Jun. 09, 2020	Jun. 08, 2021
Attenuator	Weinachel Corp	58-30-33	ML030	Oct. 26, 2020	Oct. 25, 2021
RF Cable	R&S	1#	--	Each time	N/A
RF Cable	R&S	2#	--	Each time	N/A
Fliter-UHF	Microwave	N25155M2	498705	May 11, 2020	May 10, 2021
Fliter-VHF	Microwave	N26460M1	498703	May 11, 2020	May 10, 2021

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
☒ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	DMR mobile radio	RDM-DB-G	FCC ID: POD-DMR3	EUT
2	Hand microphone	N/A	N/A	Accessory

4.5 SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	§90.210& 2.1053	Spurious Ratiated Emission	Pass

5.DESCRIPTION OF TEST MODES

The EUT (**Two-way 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-UHF	12.5 kHz
2	TX Middle channel-UHF	12.5 kHz
3	TX Middle channel-UHF	12.5 kHz
4	TX Top channel-UHF	12.5 kHz
5	TX Bottom channel-VHF	12.5 kHz
6	TX Middle channel-VHF	12.5 kHz
7	TX Middle channel-VHF	12.5 kHz
8	TX Middle channel-VHF	12.5 kHz
9	TX Top channel-VHF	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.
5. Manufacturers use computer PC programming software to switch and operate frequency points, refer to the instructions for details

6. SPURIOUS RATIATED EMISSION

6.1 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:

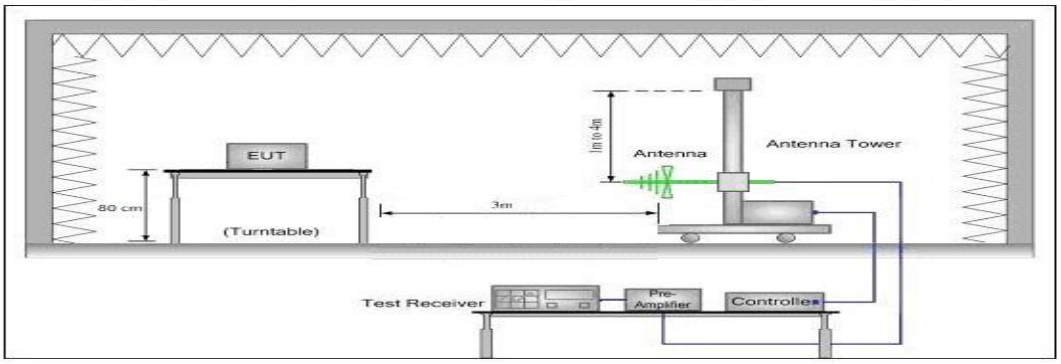
(1) On any frequency removed from the center of the authorized bandwidth fo to 5.625 kHz removed from fo: Zero dB.
(2) On any frequency removed from the center of the authorized bandwidth by a displacement Frequency (fd in kHz) fo of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(fd-2.88 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.

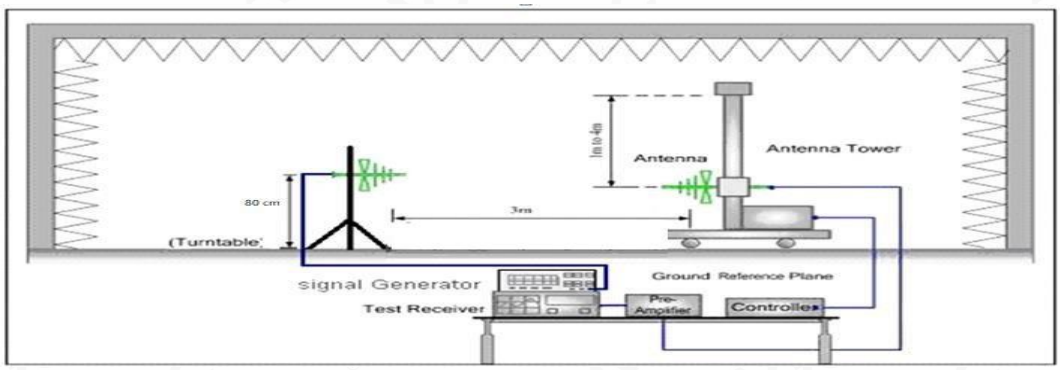
6.2 MEASUREMENT PROCEDURE

(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.

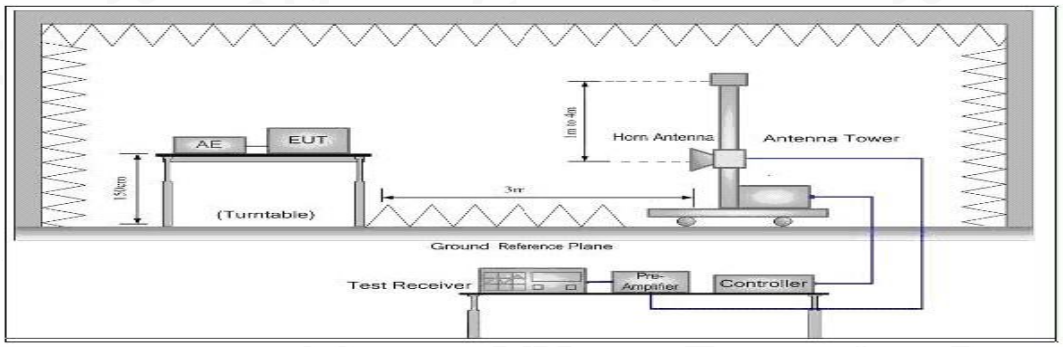
6.3 MEASUREMENT SETUP

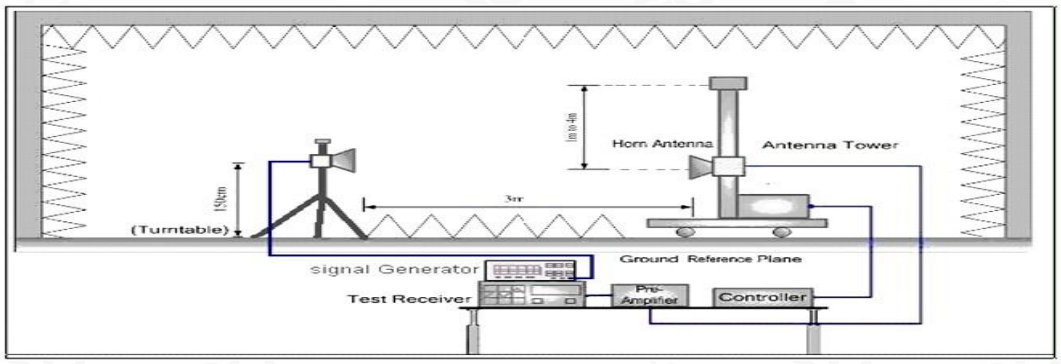
RADIATED BELOW1GHZ





RADIATED ABOVE 1 GHZ





6.4 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.

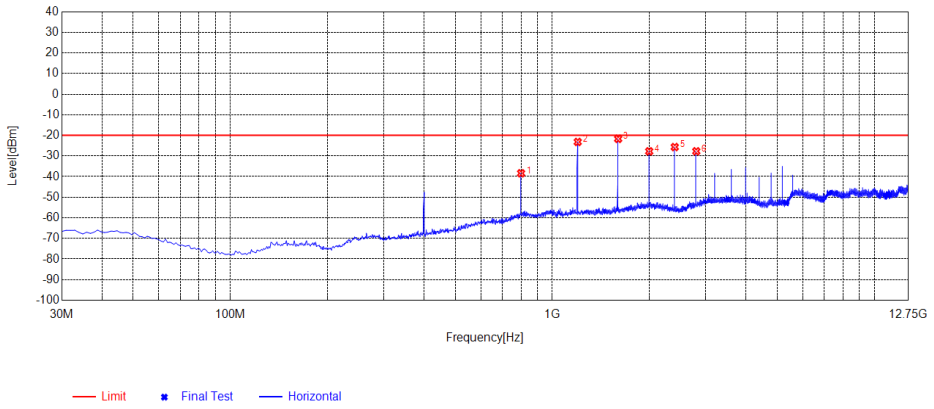
The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power.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

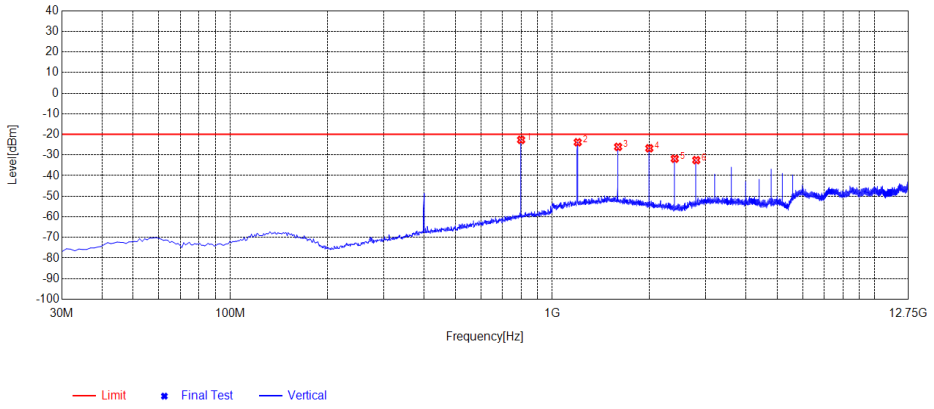
Preliminary calculation	Final Result
At least 50+10 log (P) =50+10log (40) =66.02 (dB)	Limit=P- Preliminary calculation=40.02-66.02=-20 dBm
At least 50+10 log (P) =50+10log (35) =65.44 (dB)	Limit=P- Preliminary calculation=45.44-65.44=-20 dBm
At least 50+10 log (P) =50+10log (5) =56.99 (dB)	Limit=P- Preliminary calculation=36.99-56.99=-20 dBm

Test Mode:	TX:400.025MHz-35W- Analog	Polarity:	Horizontal



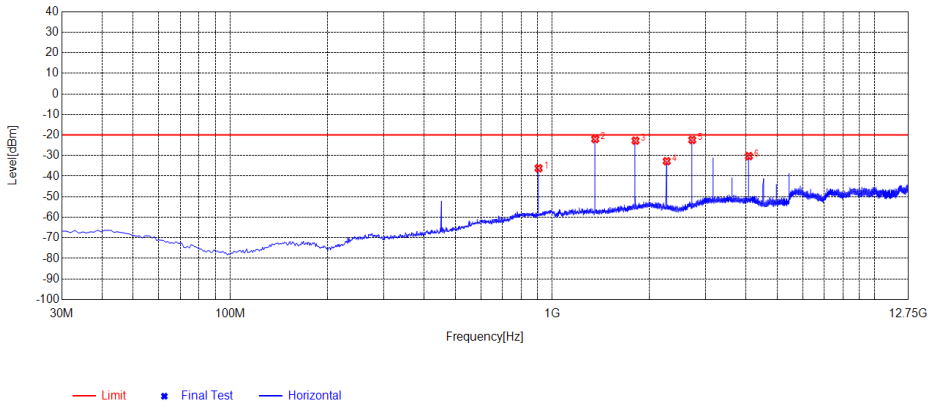
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	800.1800	-81.81	-38.39	-20.00	18.39	43.42	26	Horizontal
2	1199.7700	-19.35	-23.19	-20.00	3.19	-3.84	259	Horizontal
3	1601.6602	-19.24	-21.69	-20.00	1.69	-2.45	204	Horizontal
4	2000.0250	-28.29	-27.76	-20.00	7.76	0.53	316	Horizontal
5	2400.7401	-24.62	-25.67	-20.00	5.67	-1.05	306	Horizontal
6	2800.2800	-29.13	-27.73	-20.00	7.73	1.40	241	Horizontal

Test Mode:	TX:400.025MHz-35W- Analog	Polarity:	Vertical



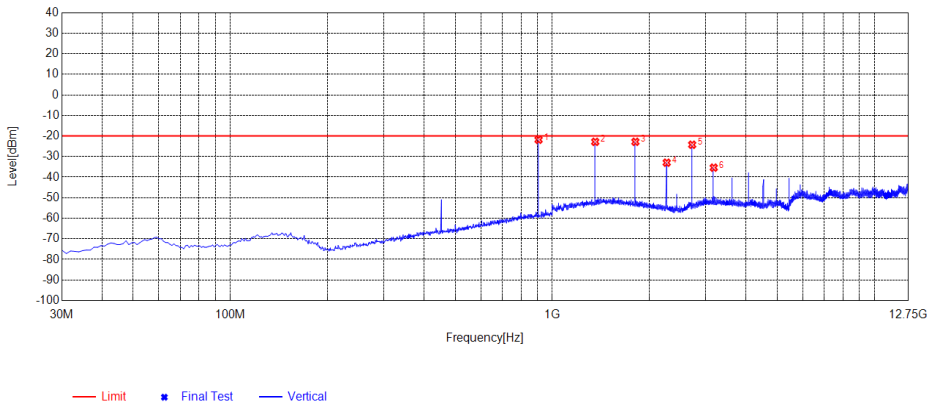
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	800.1800	-65.05	-22.68	-20.00	2.68	42.37	44	Vertical
2	1199.7700	-24.03	-23.86	-20.00	3.86	0.17	165	Vertical
3	1601.6602	-27.88	-26.08	-20.00	6.08	1.80	258	Vertical
4	2001.2001	-27.17	-26.76	-20.00	6.76	0.41	332	Vertical
5	2400.7401	-31.04	-31.83	-20.00	11.83	-0.79	258	Vertical
6	2800.2800	-33.99	-32.50	-20.00	12.50	1.49	26	Vertical

Test Mode:	TX:453.225MHz-35W- Analog	Polarity:	Horizontal



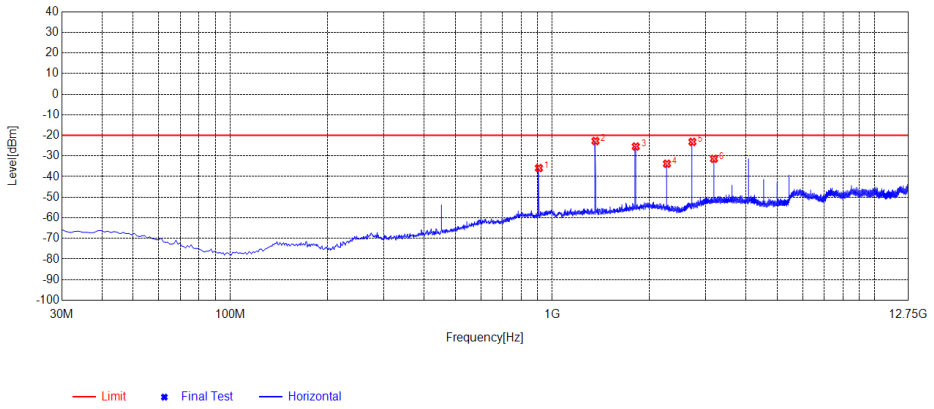
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	906.8800	-79.24	-36.15	-20.00	16.15	43.09	269	Horizontal
2	1359.5860	-18.47	-21.97	-20.00	1.97	-3.50	222	Horizontal
3	1813.1813	-21.88	-22.75	-20.00	2.75	-0.87	297	Horizontal
4	2266.7767	-32.21	-32.73	-20.00	12.73	-0.52	251	Horizontal
5	2720.3720	-23.04	-22.40	-20.00	2.40	0.64	251	Horizontal
6	4078.8079	-34.82	-30.27	-20.00	10.27	4.55	195	Horizontal

Test Mode:	TX:453.225MHz-35W- Analog	Polarity:	Vertical



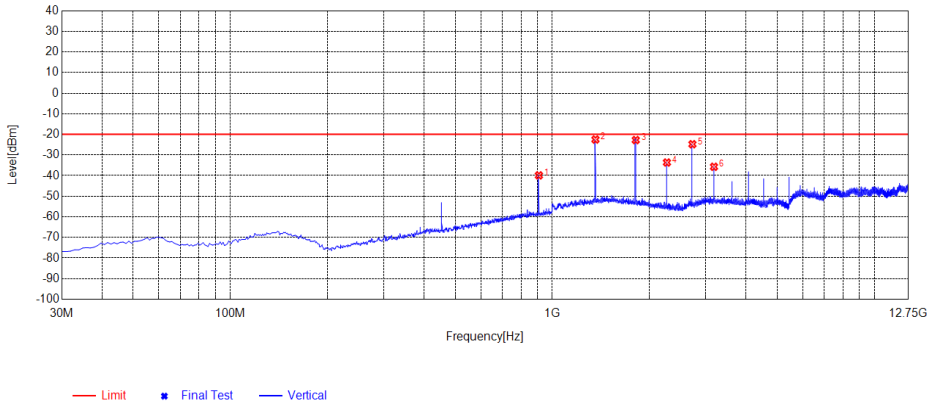
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	906.8800	-65.19	-21.81	-20.00	1.81	43.38	184	Vertical
2	1359.5860	-24.06	-22.83	-20.00	2.83	1.23	156	Vertical
3	1812.0062	-23.89	-22.82	-20.00	2.82	1.07	351	Vertical
4	2266.7767	-32.58	-32.97	-20.00	12.97	-0.39	286	Vertical
5	2719.1969	-25.05	-24.25	-20.00	4.25	0.80	35	Vertical
6	3172.7923	-38.55	-35.39	-20.00	15.39	3.16	100	Vertical

Test Mode:	TX:454.025MHz-35W- Analog	Polarity:	Horizontal



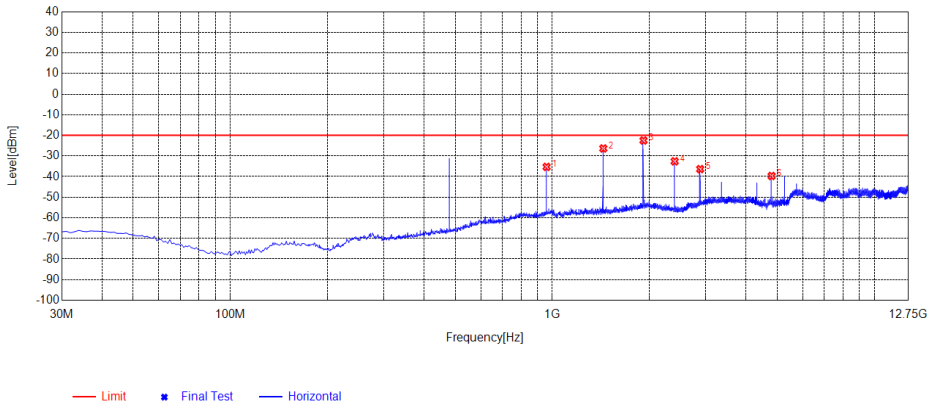
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	908.8200	-79.00	-35.87	-20.00	15.87	43.13	270	Horizontal
2	1361.9362	-19.25	-22.75	-20.00	2.75	-3.50	214	Horizontal
3	1816.7067	-24.59	-25.43	-20.00	5.43	-0.84	298	Horizontal
4	2270.3020	-33.25	-33.78	-20.00	13.78	-0.53	336	Horizontal
5	2723.8974	-23.84	-23.16	-20.00	3.16	0.68	252	Horizontal
6	3178.6679	-34.98	-31.37	-20.00	11.37	3.61	224	Horizontal

Test Mode:	TX:454.025MHz-35W- Analog	Polarity:	Vertical



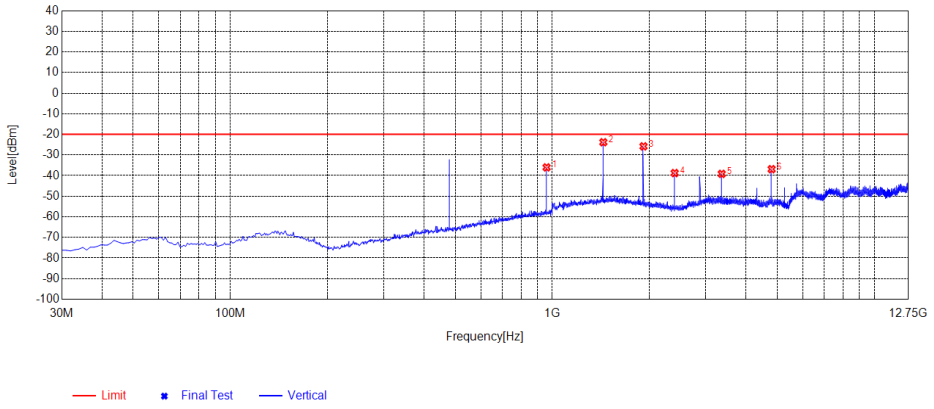
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	908.8200	-83.31	-39.91	-20.00	19.91	43.40	184	Vertical
2	1361.9362	-23.75	-22.51	-20.00	2.51	1.24	156	Vertical
3	1816.7067	-23.81	-22.76	-20.00	2.76	1.05	350	Vertical
4	2270.3020	-33.26	-33.66	-20.00	13.66	-0.40	286	Vertical
5	2723.8974	-25.63	-24.79	-20.00	4.79	0.84	34	Vertical
6	3178.6679	-38.89	-35.73	-20.00	15.73	3.16	99	Vertical

Test Mode:	TX:479.975MHz-35W- Analog	Polarity:	Horizontal



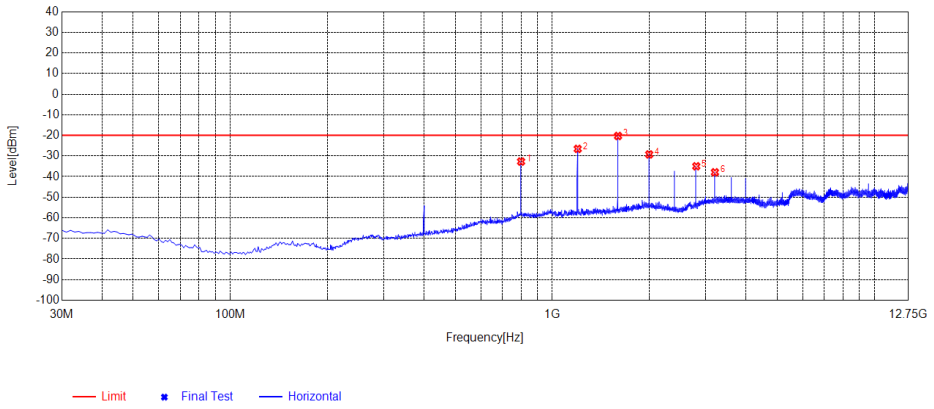
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.2300	-79.55	-35.30	-20.00	15.30	44.25	299	Horizontal
2	1440.6691	-23.03	-26.36	-20.00	6.36	-3.33	131	Horizontal
3	1920.1170	-22.42	-22.49	-20.00	2.49	-0.07	215	Horizontal
4	2399.5650	-31.56	-32.60	-20.00	12.60	-1.04	309	Horizontal
5	2880.1880	-38.53	-36.37	-20.00	16.37	2.16	261	Horizontal
6	4800.3300	-43.34	-39.70	-20.00	19.70	3.64	243	Horizontal

Test Mode:	TX:479.975MHz-35W- Analog	Polarity:	Vertical



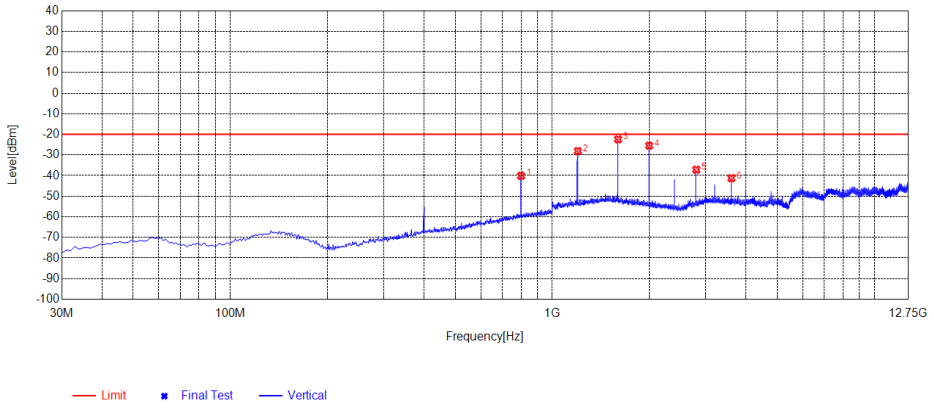
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.2300	-79.95	-36.03	-20.00	16.03	43.92	359	Vertical
2	1440.6691	-25.59	-23.82	-20.00	3.82	1.77	174	Vertical
3	1920.1170	-26.52	-25.83	-20.00	5.83	0.69	174	Vertical
4	2399.5650	-37.99	-38.78	-20.00	18.78	-0.79	71	Vertical
5	3359.6360	-42.28	-39.18	-20.00	19.18	3.10	183	Vertical
6	4800.3300	-40.46	-36.90	-20.00	16.90	3.56	146	Vertical

Test Mode:	TX:400.025MHz-5W- Analog	Polarity:	Horizontal



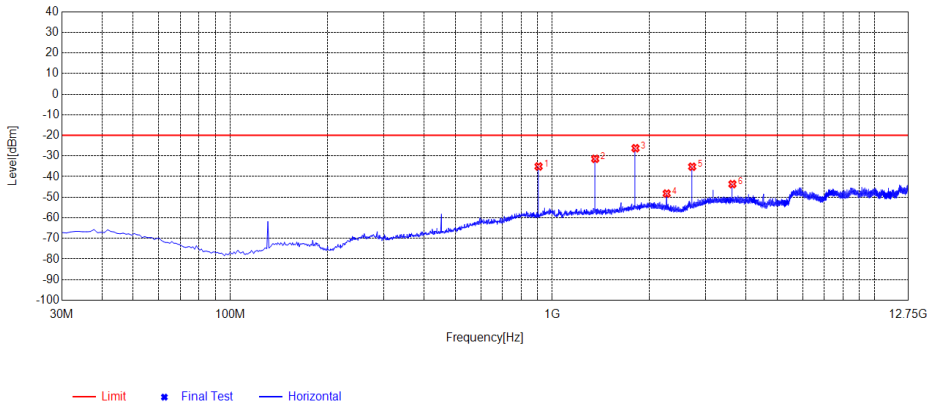
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	800.1800	-76.13	-32.71	-20.00	12.71	43.42	254	Horizontal
2	1199.7700	-22.72	-26.56	-20.00	6.56	-3.84	254	Horizontal
3	1600.4850	-17.84	-20.30	-20.00	0.30	-2.46	205	Horizontal
4	2000.0250	-29.79	-29.26	-20.00	9.26	0.53	214	Horizontal
5	2800.2800	-36.41	-35.01	-20.00	15.01	1.40	348	Horizontal
6	3199.8200	-41.57	-37.92	-20.00	17.92	3.65	214	Horizontal

Test Mode:	TX:400.025MHz-5W- Analog	Polarity:	Vertical



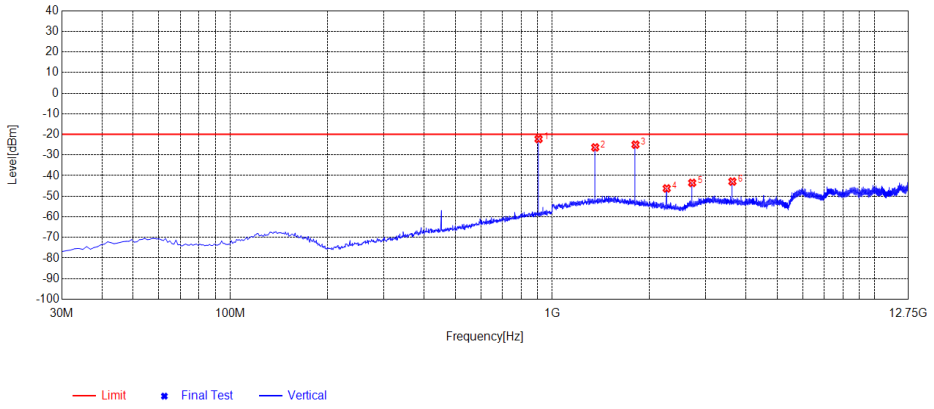
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	800.1800	-82.49	-40.12	-20.00	20.12	42.37	230	Vertical
2	1200.9451	-28.31	-28.14	-20.00	8.14	0.17	174	Vertical
3	1600.4850	-24.23	-22.42	-20.00	2.42	1.81	258	Vertical
4	2000.0250	-25.90	-25.49	-20.00	5.49	0.41	333	Vertical
5	2800.2800	-38.65	-37.16	-20.00	17.16	1.49	314	Vertical
6	3600.5351	-44.37	-41.26	-20.00	21.26	3.11	211	Vertical

Test Mode:	TX:453.225MHz-5W- Analog	Polarity:	Horizontal



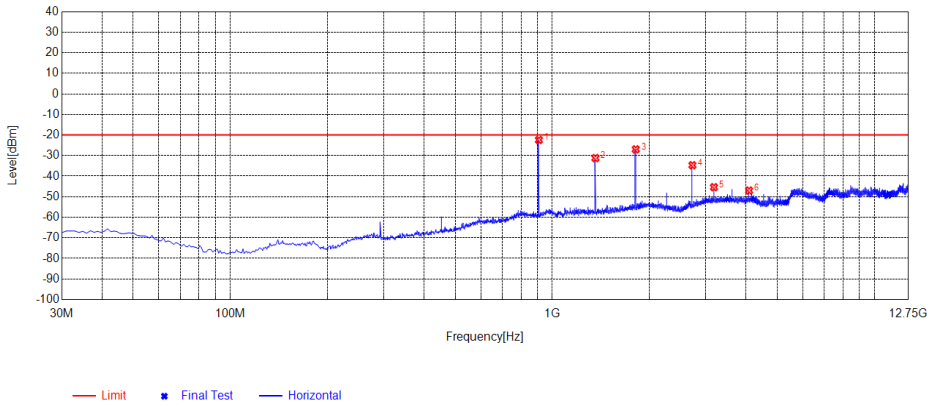
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	906.8800	-78.19	-35.10	-20.00	15.10	43.09	261	Horizontal
2	1359.5860	-27.89	-31.39	-20.00	11.39	-3.50	149	Horizontal
3	1813.1813	-25.37	-26.24	-20.00	6.24	-0.87	242	Horizontal
4	2266.7767	-47.71	-48.23	-20.00	28.23	-0.52	224	Horizontal
5	2719.1969	-35.85	-35.22	-20.00	15.22	0.63	252	Horizontal
6	3626.3876	-47.98	-43.66	-20.00	23.66	4.32	205	Horizontal

Test Mode:	TX:453.225MHz-5W- Analog	Polarity:	Vertical



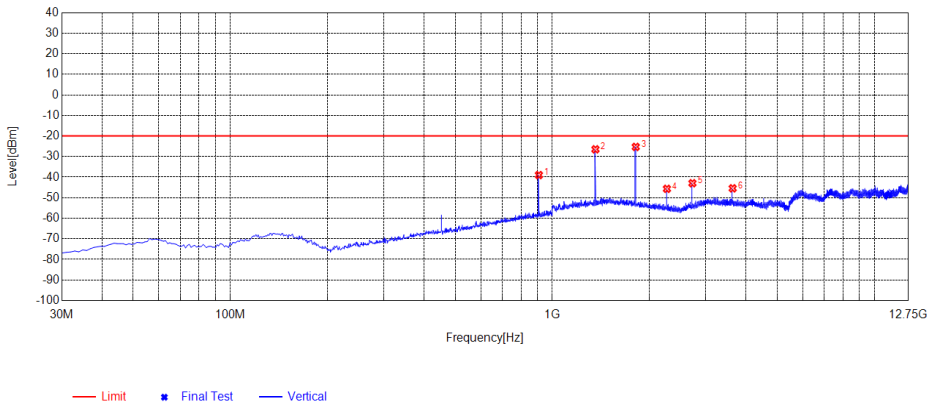
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	906.8800	-65.63	-22.25	-20.00	2.25	43.38	174	Vertical
2	1359.5860	-27.58	-26.35	-20.00	6.35	1.23	164	Vertical
3	1813.1813	-26.06	-25.00	-20.00	5.00	1.06	351	Vertical
4	2266.7767	-45.85	-46.24	-20.00	26.24	-0.39	164	Vertical
5	2719.1969	-44.34	-43.54	-20.00	23.54	0.80	0	Vertical
6	3626.3876	-46.03	-42.91	-20.00	22.91	3.12	108	Vertical

Test Mode:	TX:454.025MHz-5W- Analog	Polarity:	Horizontal



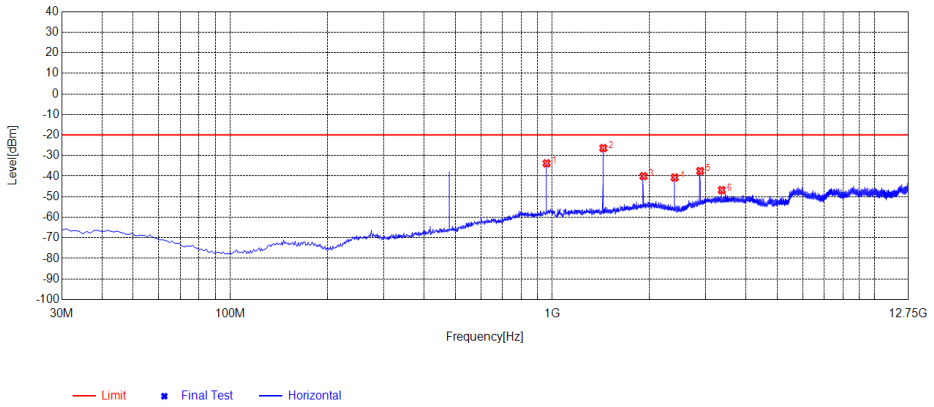
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	908.8200	-65.55	-22.42	-20.00	2.42	43.13	271	Horizontal
2	1361.9362	-27.72	-31.22	-20.00	11.22	-3.50	149	Horizontal
3	1816.7067	-26.14	-26.98	-20.00	6.98	-0.84	298	Horizontal
4	2723.8974	-35.38	-34.70	-20.00	14.70	0.68	251	Horizontal
5	3178.6679	-48.98	-45.37	-20.00	25.37	3.61	214	Horizontal
6	4085.8586	-51.53	-47.00	-20.00	27.00	4.53	271	Horizontal

Test Mode:	TX:454.025MHz-5W - Analog	Polarity:	Vertical



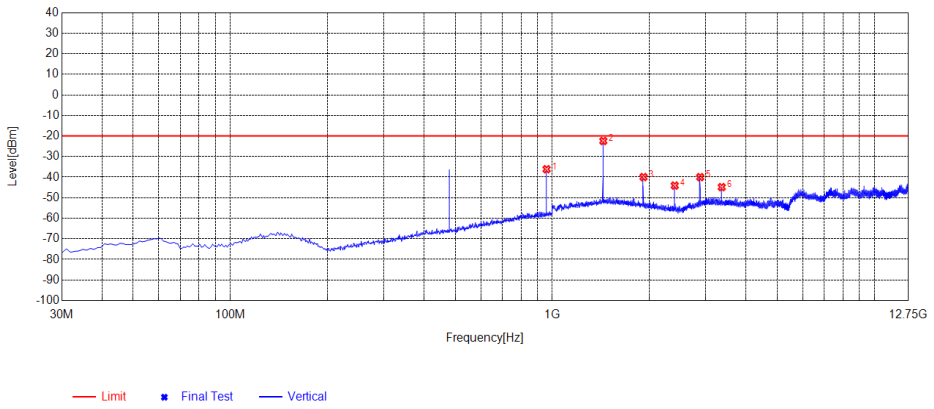
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	908.8200	-82.39	-38.99	-20.00	18.99	43.40	323	Vertical
2	1361.9362	-27.71	-26.47	-20.00	6.47	1.24	174	Vertical
3	1816.7067	-26.35	-25.30	-20.00	5.30	1.05	350	Vertical
4	2270.3020	-45.28	-45.68	-20.00	25.68	-0.40	164	Vertical
5	2723.8974	-43.79	-42.95	-20.00	22.95	0.84	276	Vertical
6	3632.2632	-48.56	-45.44	-20.00	25.44	3.12	98	Vertical

Test Mode:	TX:479.975MHz-5W- Analog	Polarity:	Horizontal



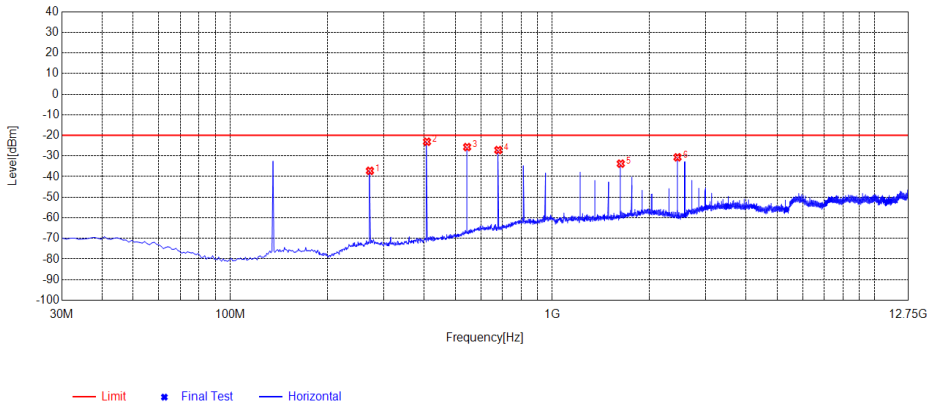
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.2300	-78.03	-33.78	-20.00	13.78	44.25	291	Horizontal
2	1440.6691	-23.05	-26.38	-20.00	6.38	-3.33	226	Horizontal
3	1920.1170	-39.93	-40.00	-20.00	20.00	-0.07	216	Horizontal
4	2399.5650	-39.63	-40.67	-20.00	20.67	-1.04	37	Horizontal
5	2880.1880	-39.68	-37.52	-20.00	17.52	2.16	216	Horizontal
6	3359.6360	-50.74	-46.81	-20.00	26.81	3.93	77	Horizontal

Test Mode:	TX:479.975MHz-5W- Analog	Polarity:	Vertical



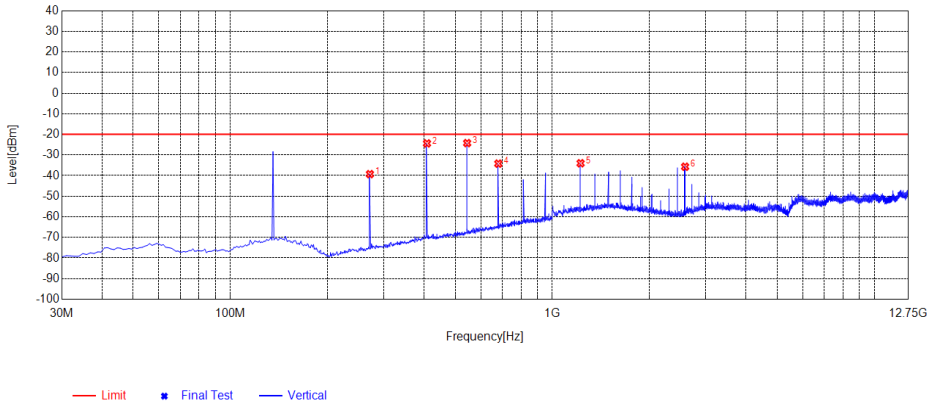
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	960.2300	-80.06	-36.14	-20.00	16.14	43.92	0	Vertical
2	1440.6691	-24.19	-22.42	-20.00	2.42	1.77	239	Vertical
3	1920.1170	-40.65	-39.96	-20.00	19.96	0.69	174	Vertical
4	2400.7401	-43.31	-44.10	-20.00	24.10	-0.79	192	Vertical
5	2880.1880	-42.17	-39.99	-20.00	19.99	2.18	6	Vertical
6	3359.6360	-47.95	-44.85	-20.00	24.85	3.10	108	Vertical

Test Mode:	TX:136.025MHz-40W- Analog	Polarity:	Horizontal



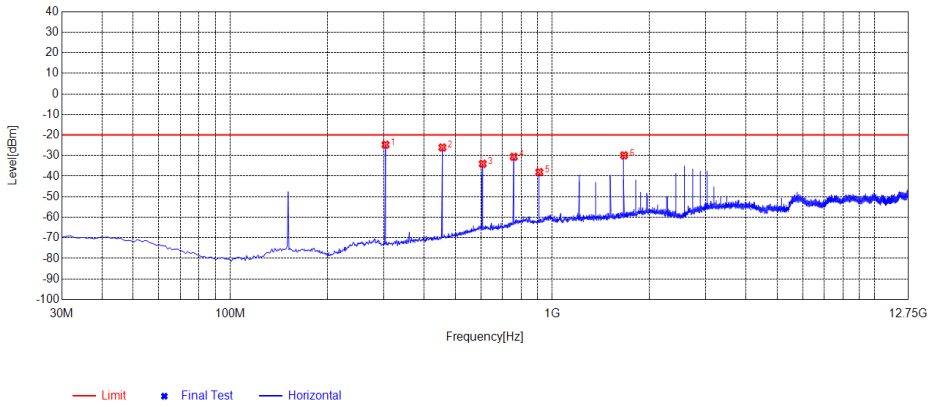
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	271.5300	-67.27	-37.21	-20.00	17.21	30.06	200	Horizontal
2	408.3000	-54.68	-23.10	-20.00	3.10	31.58	228	Horizontal
3	544.1000	-60.56	-25.68	-20.00	5.68	34.88	153	Horizontal
4	679.9000	-64.22	-27.15	-20.00	7.15	37.07	341	Horizontal
5	1632.2132	-28.52	-33.74	-20.00	13.74	-5.22	247	Horizontal
6	2448.9199	-26.41	-30.65	-20.00	10.65	-4.24	286	Horizontal

Test Mode:	TX:136.025MHz-40W- Analog	Polarity:	Vertical



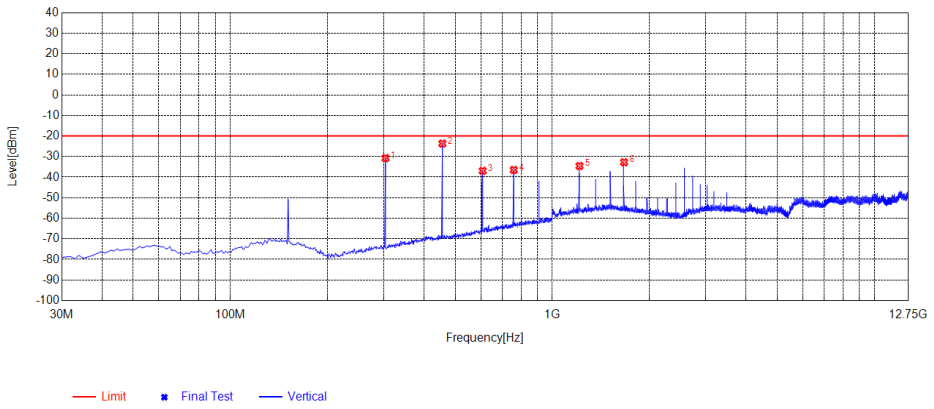
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	271.5300	-66.47	-39.29	-20.00	19.29	27.18	284	Vertical
2	408.3000	-56.50	-24.39	-20.00	4.39	32.11	116	Vertical
3	544.1000	-58.65	-24.24	-20.00	4.24	34.41	323	Vertical
4	679.9000	-71.32	-34.20	-20.00	14.20	37.12	313	Vertical
5	1224.4474	-31.35	-34.02	-20.00	14.02	-2.67	172	Vertical
6	2585.2335	-32.35	-35.71	-20.00	15.71	-3.36	200	Vertical

Test Mode:	TX:151.850MHz-40W- Analog	Polarity:	Horizontal



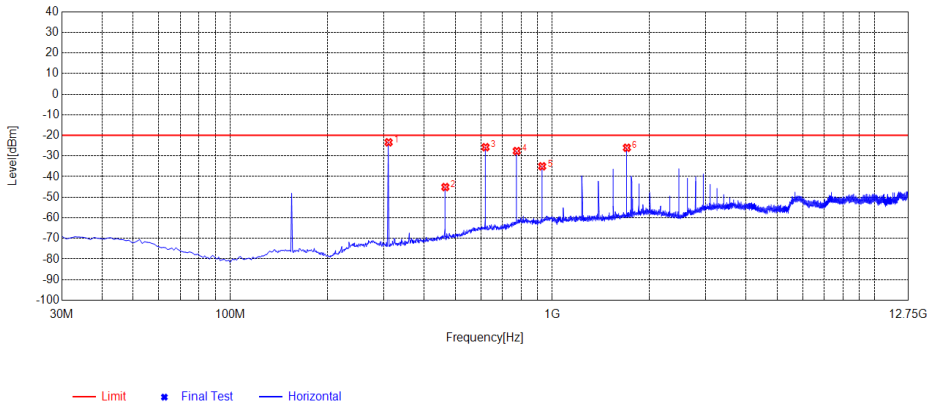
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	303.5400	-53.78	-24.73	-20.00	4.73	29.05	139	Horizontal
2	455.8300	-58.56	-26.07	-20.00	6.07	32.49	344	Horizontal
3	608.1200	-70.88	-34.01	-20.00	14.01	36.87	335	Horizontal
4	759.4400	-69.67	-30.59	-20.00	10.59	39.08	251	Horizontal
5	911.7300	-78.25	-38.06	-20.00	18.06	40.19	335	Horizontal
6	1670.9921	-24.97	-29.90	-20.00	9.90	-4.93	242	Horizontal

Test Mode:	TX:151.850MHz-40W- Analog	Polarity:	Vertical



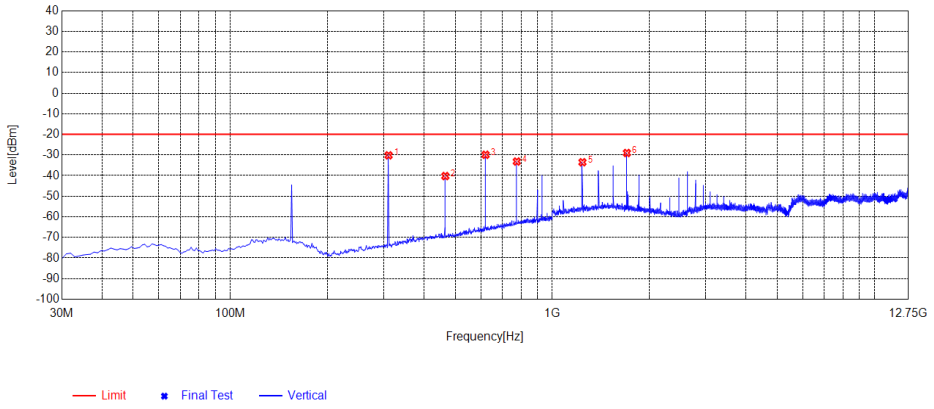
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	303.5400	-58.83	-30.76	-20.00	10.76	28.07	334	Vertical
2	455.8300	-56.44	-23.67	-20.00	3.67	32.77	17	Vertical
3	608.1200	-72.77	-36.92	-20.00	16.92	35.85	9	Vertical
4	759.4400	-75.09	-36.49	-20.00	16.49	38.60	26	Vertical
5	1215.0465	-31.87	-34.60	-20.00	14.60	-2.73	157	Vertical
6	1670.9921	-31.32	-32.76	-20.00	12.76	-1.44	351	Vertical

Test Mode:	TX: 155.025MHz-40W- Analog	Polarity:	Horizontal



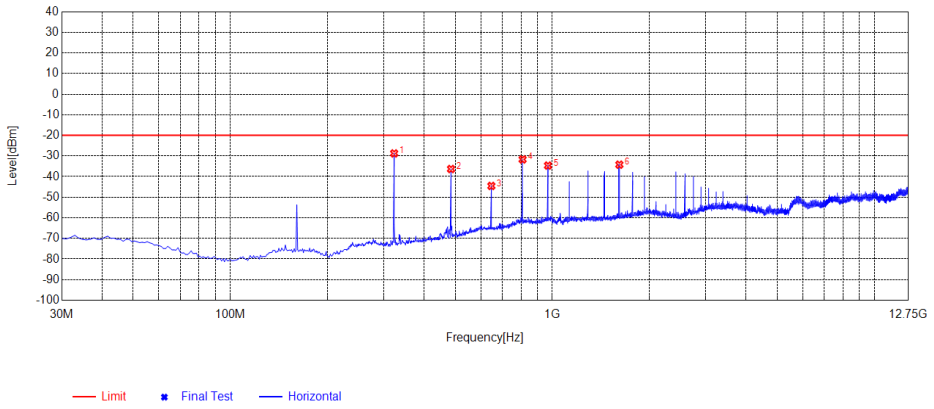
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	310.3300	-52.59	-23.38	-20.00	3.38	29.21	139	Horizontal
2	465.5300	-77.76	-45.09	-20.00	25.09	32.67	346	Horizontal
3	620.7300	-62.66	-25.75	-20.00	5.75	36.91	336	Horizontal
4	775.9300	-67.25	-27.62	-20.00	7.62	39.63	261	Horizontal
5	930.1600	-75.61	-35.02	-20.00	15.02	40.59	261	Horizontal
6	1705.0705	-21.36	-26.04	-20.00	6.04	-4.68	251	Horizontal

Test Mode:	TX: 155.025MHz-40W- Analog	Polarity:	Vertical



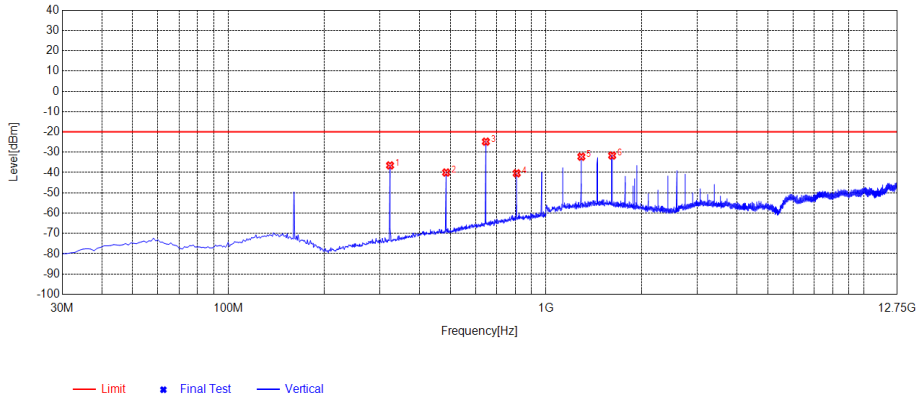
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
310.3300	-58.53	-30.18	-20.00	10.18	28.35	332	310.3300	Vertical
465.5300	-73.15	-40.24	-20.00	20.24	32.91	13	465.5300	Vertical
620.7300	-65.97	-29.90	-20.00	9.90	36.07	13	620.7300	Vertical
775.9300	-72.09	-33.18	-20.00	13.18	38.91	42	775.9300	Vertical
1240.8991	-30.98	-33.54	-20.00	13.54	-2.56	173	1240.8991	Vertical
1705.0705	-27.48	-29.04	-20.00	9.04	-1.56	341	1705.0705	Vertical

Test Mode:	TX:161.610MHz-40W- Analog	Polarity:	Horizontal



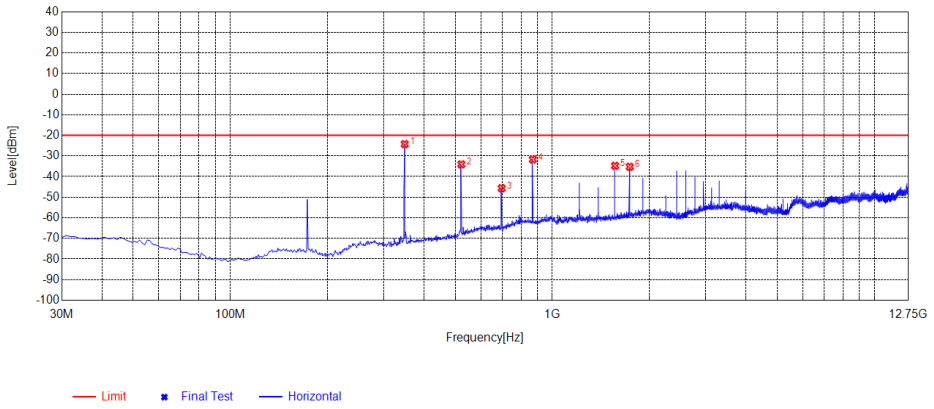
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	322.9400	-58.27	-28.75	-20.00	8.75	29.52	138	Horizontal
2	484.9300	-69.36	-36.32	-20.00	16.32	33.04	224	Horizontal
3	646.9200	-81.52	-44.54	-20.00	24.54	36.98	327	Horizontal
4	808.9100	-72.06	-31.68	-20.00	11.68	40.38	318	Horizontal
5	969.9300	-76.11	-34.65	-20.00	14.65	41.46	298	Horizontal
6	1615.7616	-28.87	-34.21	-20.00	14.21	-5.34	205	Horizontal

Test Mode:	TX:161.610MHz-40W- Analog	Polarity:	Vertical



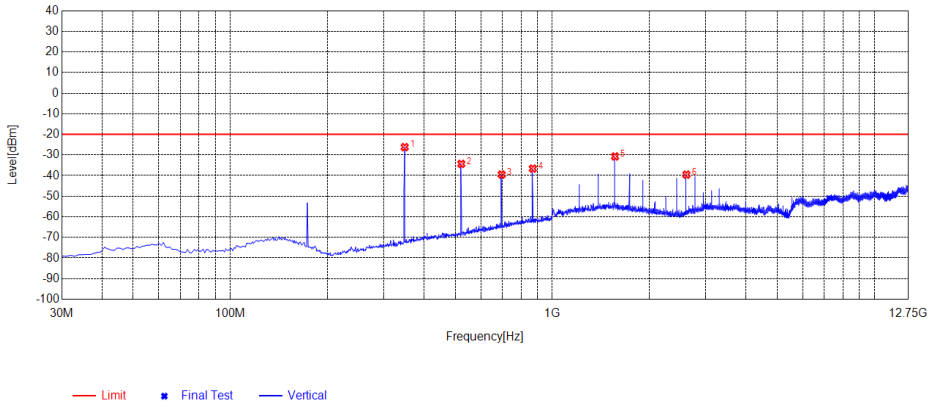
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	322.9400	-65.35	-36.49	-20.00	16.49	28.86	341	Vertical
2	484.9300	-73.18	-40.00	-20.00	20.00	33.18	351	Vertical
3	646.9200	-61.33	-24.79	-20.00	4.79	36.54	341	Vertical
4	808.9100	-79.83	-40.38	-20.00	20.38	39.45	295	Vertical
5	1292.6043	-29.99	-32.21	-20.00	12.21	-2.22	173	Vertical
6	1615.7616	-30.38	-31.63	-20.00	11.63	-1.25	144	Vertical

Test Mode:	TX:173.975MHz-40W - Analog	Polarity:	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	348.1600	-54.38	-24.24	-20.00	4.24	30.14	212	Horizontal
2	521.7900	-68.18	-34.08	-20.00	14.08	34.10	231	Horizontal
3	696.3900	-82.77	-45.66	-20.00	25.66	37.11	166	Horizontal
4	870.0200	-71.78	-31.70	-20.00	11.70	40.08	324	Horizontal
5	1566.4066	-29.06	-34.77	-20.00	14.77	-5.71	100	Horizontal
6	1740.3240	-30.83	-35.24	-20.00	15.24	-4.41	240	Horizontal

Test Mode:	TX:173.975MHz-40W - Analog	Polarity:	Vertical



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	348.1600	-56.07	-26.18	-20.00	6.18	29.89	174	Vertical
2	521.7900	-68.22	-34.32	-20.00	14.32	33.90	313	Vertical
3	696.3900	-76.90	-39.49	-20.00	19.49	37.41	313	Vertical
4	870.0200	-76.65	-36.62	-20.00	16.62	40.03	323	Vertical
5	1566.4066	-29.66	-30.73	-20.00	10.73	-1.07	146	Vertical
6	2609.9110	-36.41	-39.55	-20.00	19.55	-3.14	192	Vertical