

RADIO TEST REPORT

Report Reference No. : NTEK-2011NT0606785E

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Test specification:


Standard : FCC Part 15.247,RSS-210 Issue 8

Test procedure : ANSI C63.4 : 2003,RSS-Gen Issue 3

Non-standard test method..... : N/A

Test item description

Product name : Android tablet

Trademark : 

Model and/or type reference : MID988,MID886

Rating(s) : DC 9V, 2.5A

Testing Laboratory information:

Testing Laboratory Name : NTEK Testing Technology Co., Ltd.

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Possible test case verdicts:

- test case does not apply to the test object N/A
.....:
- test object does meet the requirement.: P (Pass)
- test object does not meet the F (Fail)
requirement:

Testing

Date of receipt of test item: 2011-06-10

Date (s) of performance of tests: 2011-06-15~2011-06-22

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C&RSS-210 Annex 8			
Standard Section	Test Item	Judgment	Remark
15.207&7.2.4	Conducted Emission	PASS	
15.247 (c)&A8.5	Antenna conducted Spurious Emission	PASS	
15.247 (a)(2) & A8.2	6dB Bandwidth	PASS	
15.247 (b) & A8.4	Peak Output Power	PASS	
15.247 (c) &A8.5	Radiated Spurious Emission	PASS	
15.247 (d)& A8.2	Power Spectral Density	PASS	
15.203	Antenna Requirement	PASS	
1.1307 1.1310 2.1091 2.1093	RF Exposure Compliance	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1 MEASUREMENT UNCERTAINTY

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

A. Conducted Measurement :


Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
OS-01	ANSI	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		All emissions,radiated(>1G)	V	4.89	
		All emissions,radiated(>1G)	H	4.70	
OS-02	ANSI	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	
		All emissions,radiated(>1G)	V	4.68	
		All emissions,radiated(>1G)	H	4.55	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Android tablet														
Trade Name															
Model Name	MID988,MID886														
OEM Brand/Model Name	N/A														
Model Difference	All model is totally identical,Just color is different.														
Product Description	<p>The EUT is a Android tablet</p> <table border="1"> <tr> <td>Operation Frequency:</td><td>2412~2462 MHz</td></tr> <tr> <td>Modulation Type:</td><td>802.11b:CCK, DQPSK, DBPSK 802.11g:OFDM</td></tr> <tr> <td>Bit Rate of Transmitter</td><td>802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps</td></tr> <tr> <td>Number Of Channel</td><td>11 CH, Please see Note 2.</td></tr> <tr> <td>Antenna Designation:</td><td>Please see Note 3.</td></tr> <tr> <td>Antenna Gain(Peak)</td><td>Please see Note 3.</td></tr> <tr> <td>Output Power:</td><td>802.11b 11.89 dBm (Max.) 802.11g 10.32 dBm (Max.)</td></tr> </table> <p>Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</p>	Operation Frequency:	2412~2462 MHz	Modulation Type:	802.11b:CCK, DQPSK, DBPSK 802.11g:OFDM	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps	Number Of Channel	11 CH, Please see Note 2.	Antenna Designation:	Please see Note 3.	Antenna Gain(Peak)	Please see Note 3.	Output Power:	802.11b 11.89 dBm (Max.) 802.11g 10.32 dBm (Max.)
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Antenna Designation:	Please see Note 3.														
Antenna Gain(Peak)	Please see Note 3.														
Output Power:	802.11b 11.89 dBm (Max.) 802.11g 10.32 dBm (Max.)														
Channel List	Please refer to the Note 2.														
Power Source	DC Voltage supply														
Power Rating	DC 9V														
Connecting I/O Port(s)	Please refer to the User's Manual														
Products Covered	N/A														

Note

:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442				
2	2417	8	2447				
3	2422	9	2452				
4	2427	10	2457				
5	2432	11	2462				
6	2437						

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	PIFA Antenna	NA	0.5	N/A

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH01/ CH06/ CH11
Mode 2	802.11g CH01/ CH06/ CH11

For Conducted Emission	
Final Test Mode	Description
Mode 3	N/A

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH01/ CH06/ CH11
Mode 2	802.11g CH01/ CH06/ CH11

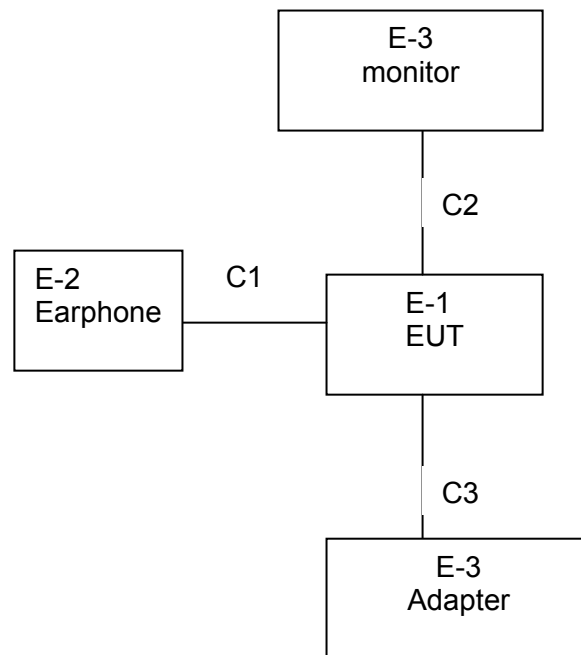
Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

2.3 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software Version	Test program: Ralink RT3x7x_V1.5.2.0		
Frequency	2412 MHz	2437 MHz	2462 MHz
802.11b	42	42	42
802.11g	45	45	45

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Android tablet	N/A	MID988	ZLFMID988	N/A	EUT
E-2	Earphone	N/A	ABD567	VOC	3490754	
E-3	Monitor	Konka	MK-047	DOC	N/A	
E-4	adapter	Match	AK04G-0900250U	DOC	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	
C2	NO	YES	1M	
C3	NO	NO	1.5M	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Due Date
1	Spectrum Analyzer	ADVANTEST	R3182	150900201	2012.04.16
2	EMI Measuring Receiver	Schaffner	SCR3501	235	2012.04.06
3	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2011.09.06
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2012.04.07
5	TRILOG Super Broadband test Antenna	testq	CBL611D	9160-3206	2011.07.01
6	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	451	2011.07.14
7	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2011.09.06
8	EMI Test Receiver	R&S	ESCI	100124	2011.12.27
9	LISN	R&S	ENV216	40765	2012.04.06
10	LISN	Kyoritsu	KNW-407	8-1789-3	2012.04.06
11	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2011.09.06
12	Loop Antenna	ARA	PLA-1030/B	1029	2011.07.14
13	Power meter	ANRITSU	ML2487A	6K00001568	2011.07.14

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " mark ed band means the limit ation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

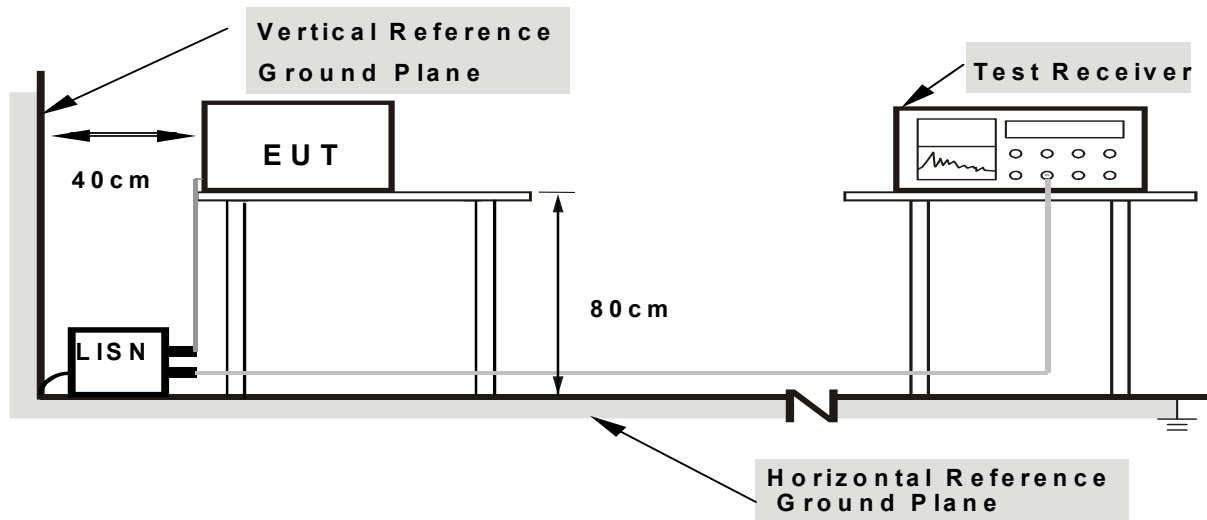
3.1.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

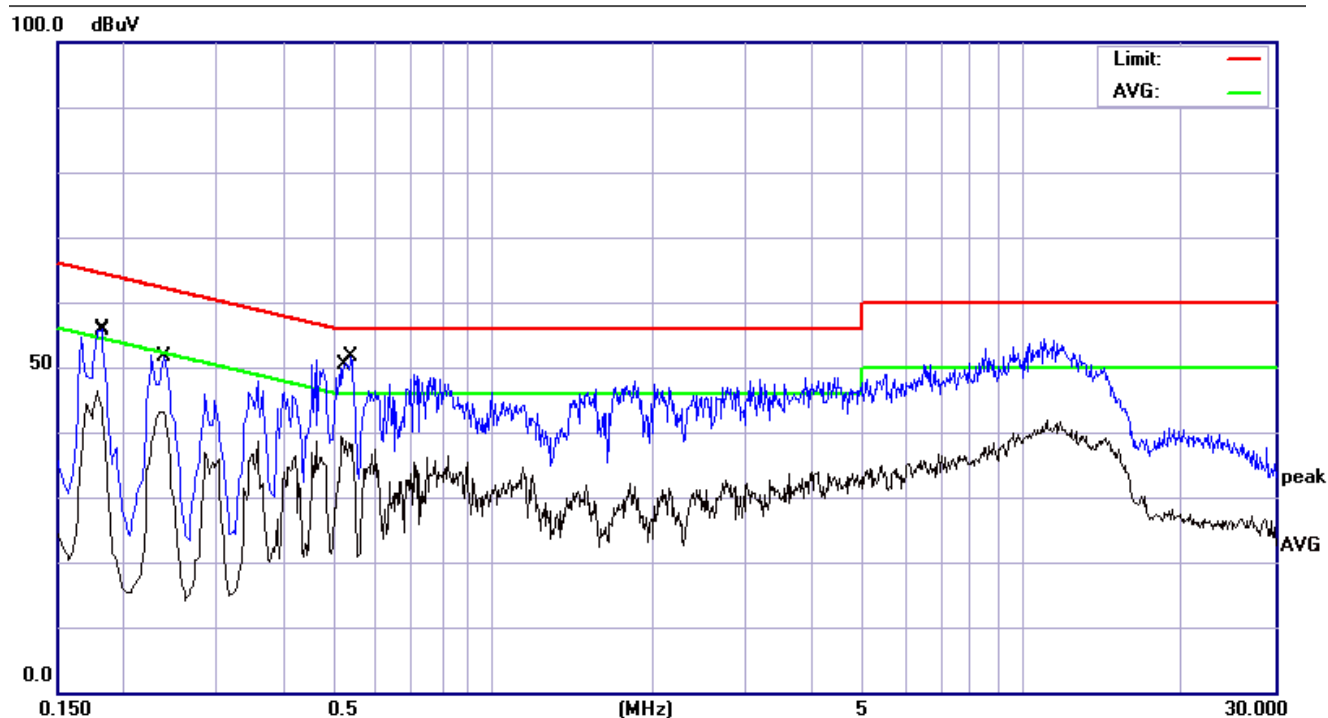
3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

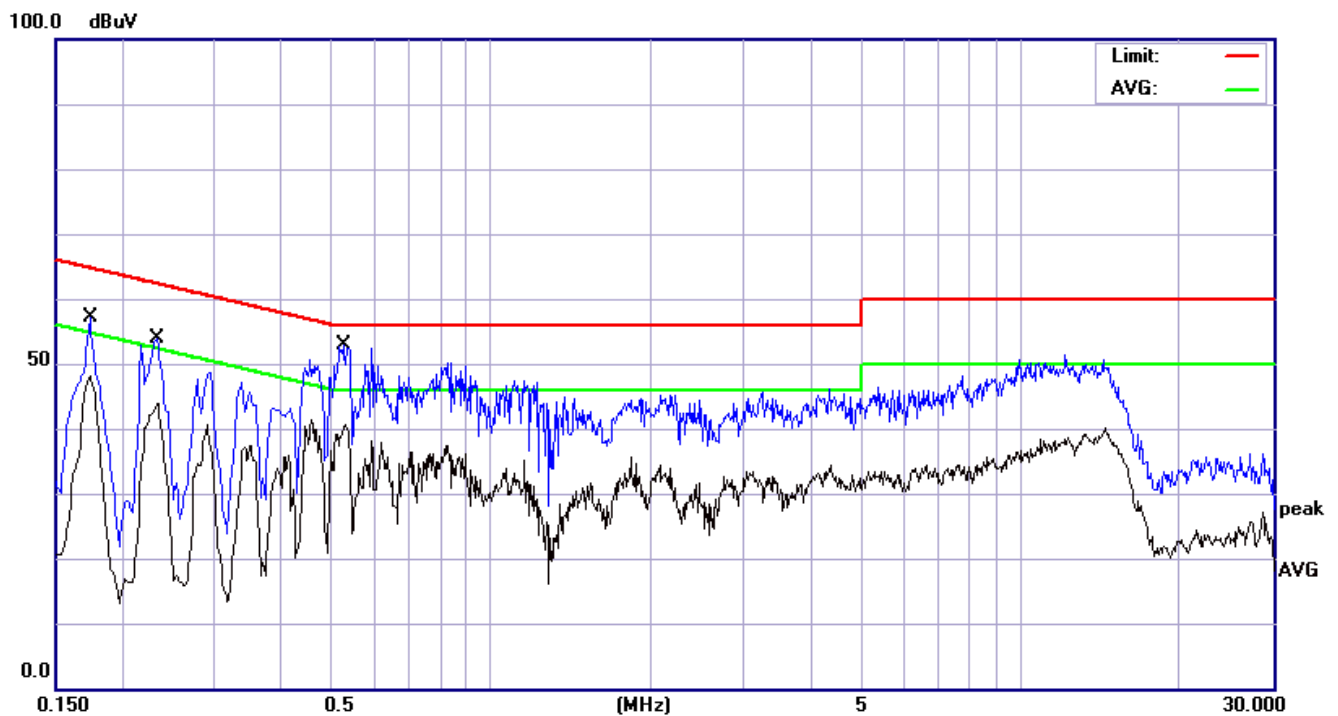
EUT :	Android tablet	Model Name. :	MID988
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2011-6-22
Test Mode :	Running	Phase :	L
Test Voltage :	DC 9V from adapter AC 120V/60Hz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1780	35.92	10.37	46.29	54.57	-8.28	AVG	
2		0.1819	45.47	10.38	55.85	64.39	-8.54	QP	
3		0.2380	41.11	10.43	51.54	62.16	-10.62	QP	
4		0.2380	32.67	10.43	43.10	52.16	-9.06	AVG	
5		0.5180	28.88	10.41	39.29	46.00	-6.71	AVG	
6	*	0.5380	41.14	10.41	51.55	56.00	-4.45	QP	



EUT :	Android tablet	Model Name. :	MID988
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2011-6-22
Test Mode :	Running	Phase :	N
Test Voltage :	DC 9V from adapter AC 120V/60Hz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1740	46.60	10.45	57.05	64.76	-7.71	QP	
2		0.1740	37.73	10.45	48.18	54.76	-6.58	AVG	
3		0.2340	43.49	10.44	53.93	62.30	-8.37	QP	
4		0.2340	33.47	10.44	43.91	52.30	-8.39	AVG	
5	*	0.5260	42.43	10.40	52.83	56.00	-3.17	QP	
6		0.5299	30.25	10.40	40.65	46.00	-5.35	AVG	



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

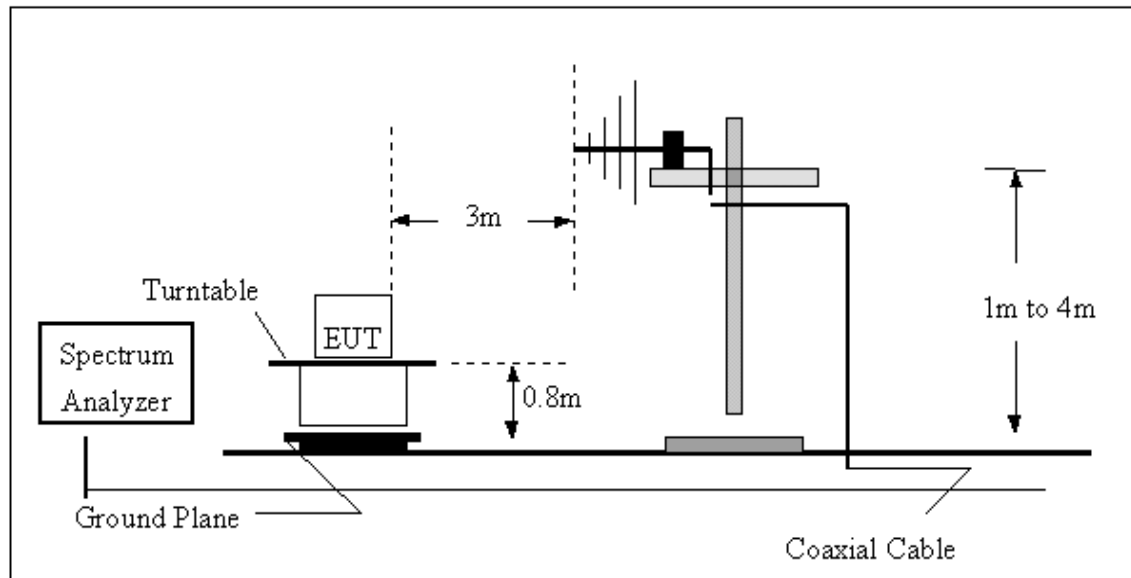
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 DEVIATION FROM TEST STANDARD

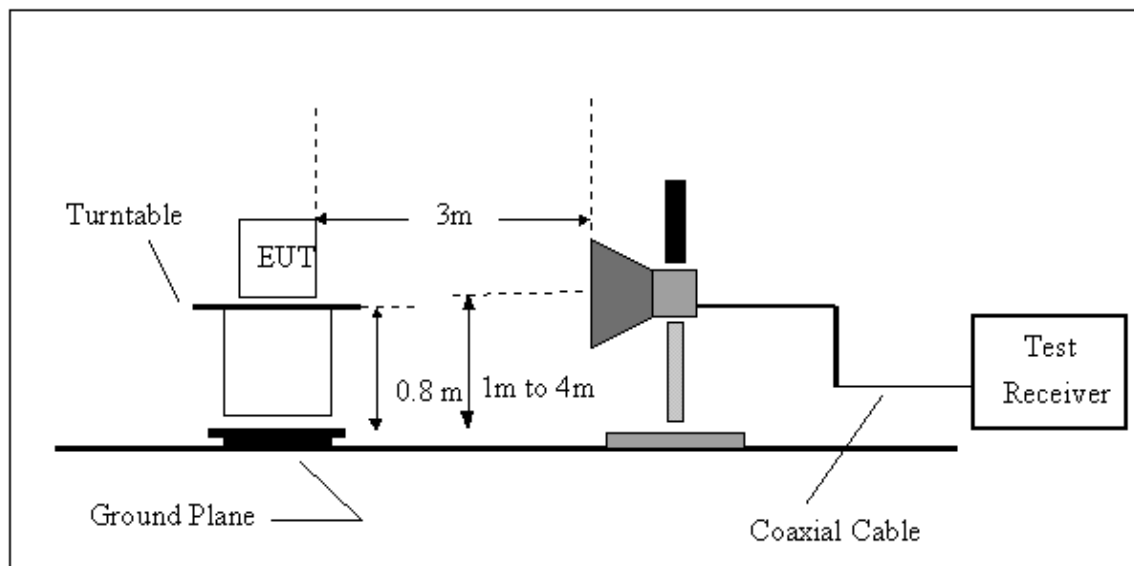
No deviation

3.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

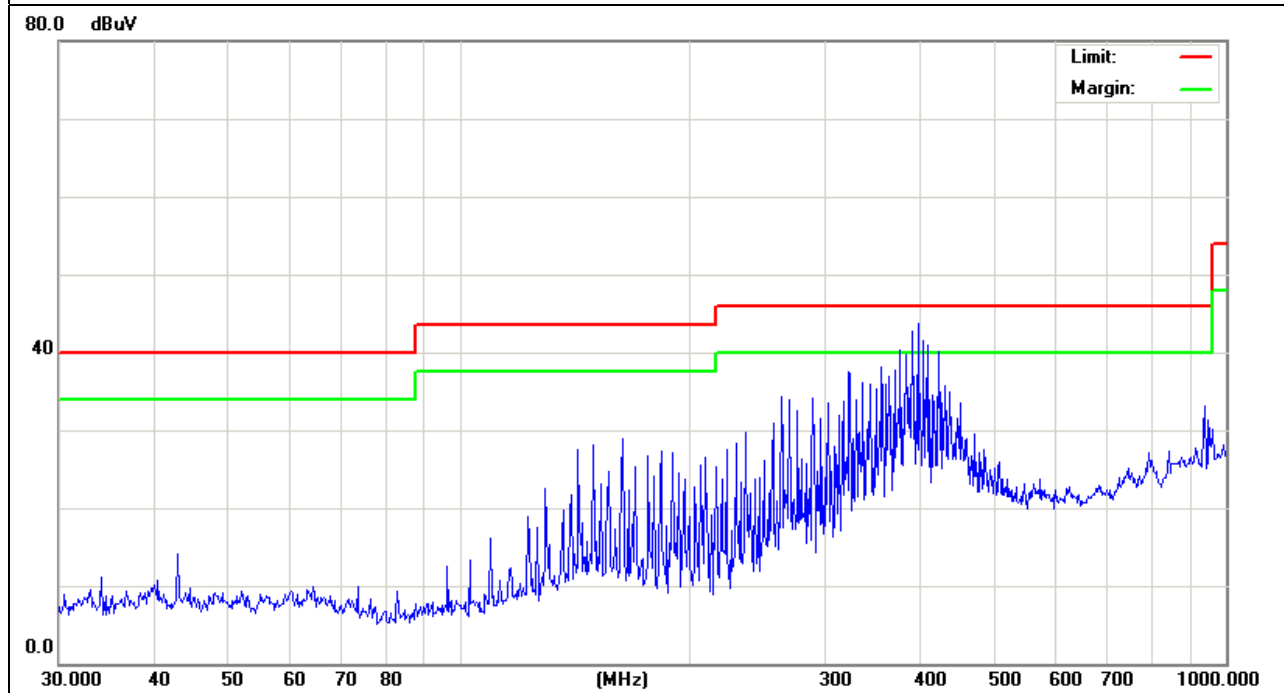
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 1000 MHZ)

EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	TX	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
142.8242	38.94	-11.44	27.50	43.50	-16.00	Quasi-Peak
163.1818	39.81	-11.01	28.80	43.50	-14.70	Quasi-Peak
262.8955	45.78	-11.55	34.23	46.00	-11.77	Quasi-Peak
322.1886	47.13	-9.64	37.49	46.00	-8.51	Quasi-Peak
396.2412	50.15	-7.47	42.68	46.00	-3.32	Quasi-Peak
422.0577	46.86	-6.83	40.03	46.00	-5.97	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

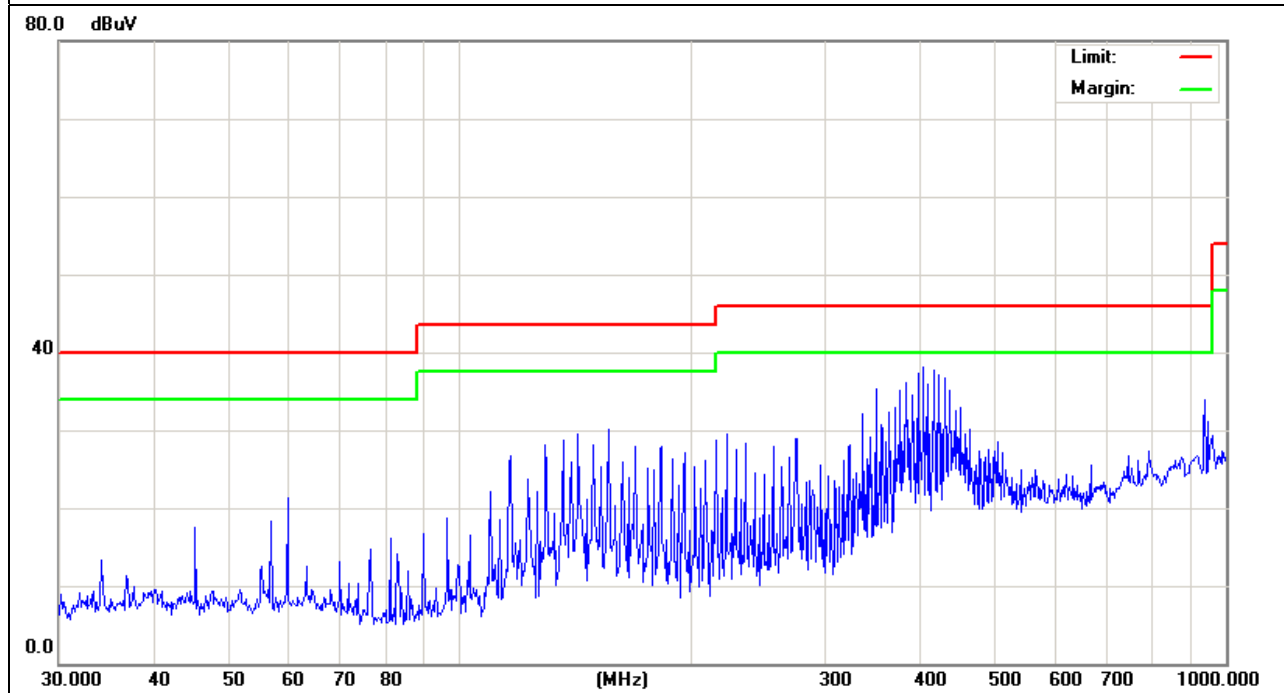


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	TX	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
129.4677	40.61	-12.50	28.11	43.50	-15.39	Quasi-Peak
156.4576	41.03	-10.88	30.15	43.50	-13.35	Quasi-Peak
183.2005	40.40	-12.60	27.80	43.50	-15.70	Quasi-Peak
349.2500	44.26	-8.93	35.33	46.00	-10.67	Quasi-Peak
403.2500	45.44	-7.28	38.16	46.00	-7.84	Quasi-Peak
416.1791	44.62	-6.97	37.65	46.00	-8.35	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

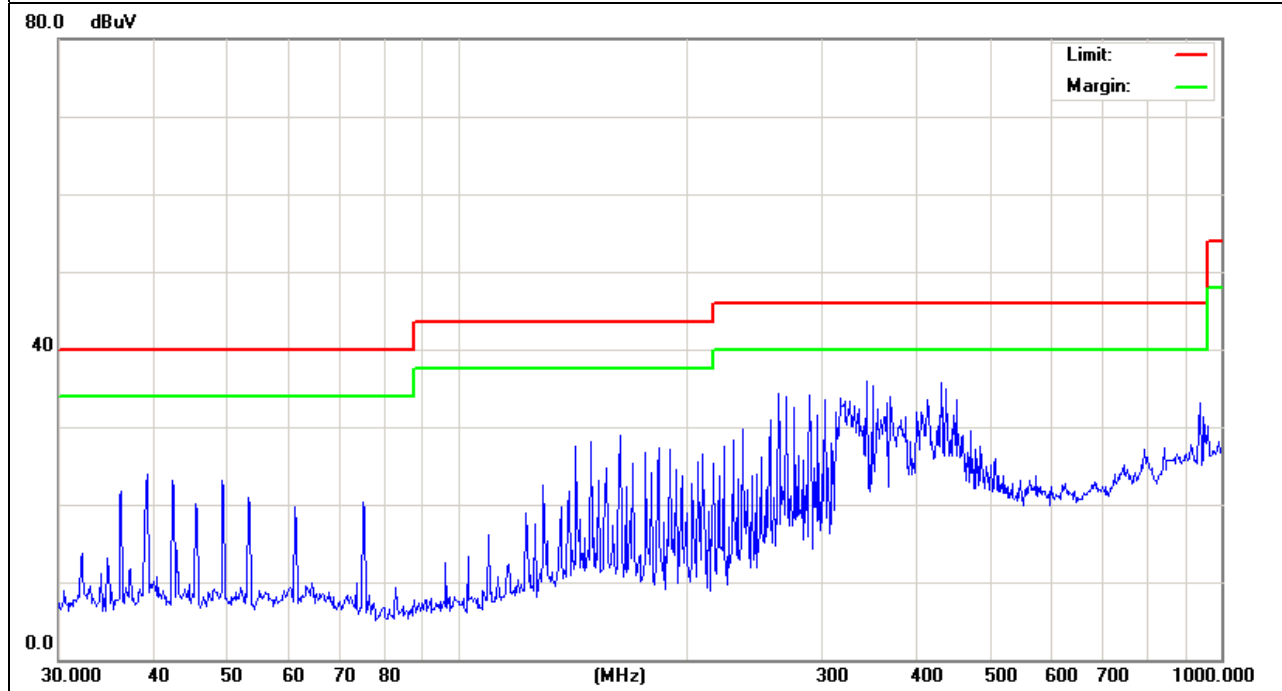


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	RX	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
49.1865	36.65	-13.45	23.20	40.00	-16.80	Quasi-Peak
149.4857	39.03	-11.00	28.03	43.50	-15.47	Quasi-Peak
169.5988	36.69	-11.34	25.35	43.50	-18.15	Quasi-Peak
235.8163	42.19	-12.52	29.67	46.00	-16.33	Quasi-Peak
262.8955	45.78	-11.55	34.23	46.00	-11.77	Quasi-Peak
343.1800	45.01	-9.08 35.93		46.00	-10.07	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

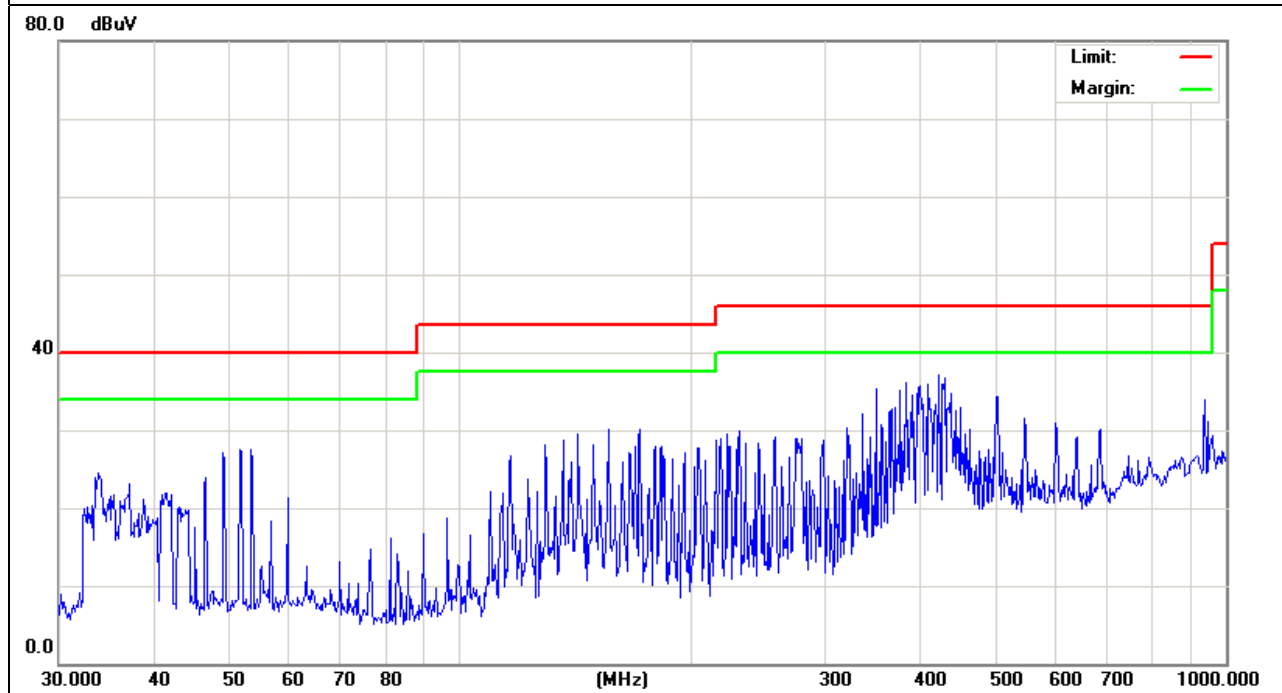


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	RX	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
49.1865	40.55	-13.45	27.10	40.00	-12.90	Quasi-Peak
149.4857	39.04	-11.00	28.04	43.50	-15.46	Quasi-Peak
231.7178	42.56	-12.76	29.80	46.00	-16.20	Quasi-Peak
349.2500	44.26	-8.93 35.33		46.00	-10.67	Quasi-Peak
382.5878	43.97	-7.90 36.07		46.00	-9.93	Quasi-Peak
501.1788	39.45	-5.05 34.40		46.00	-11.60	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



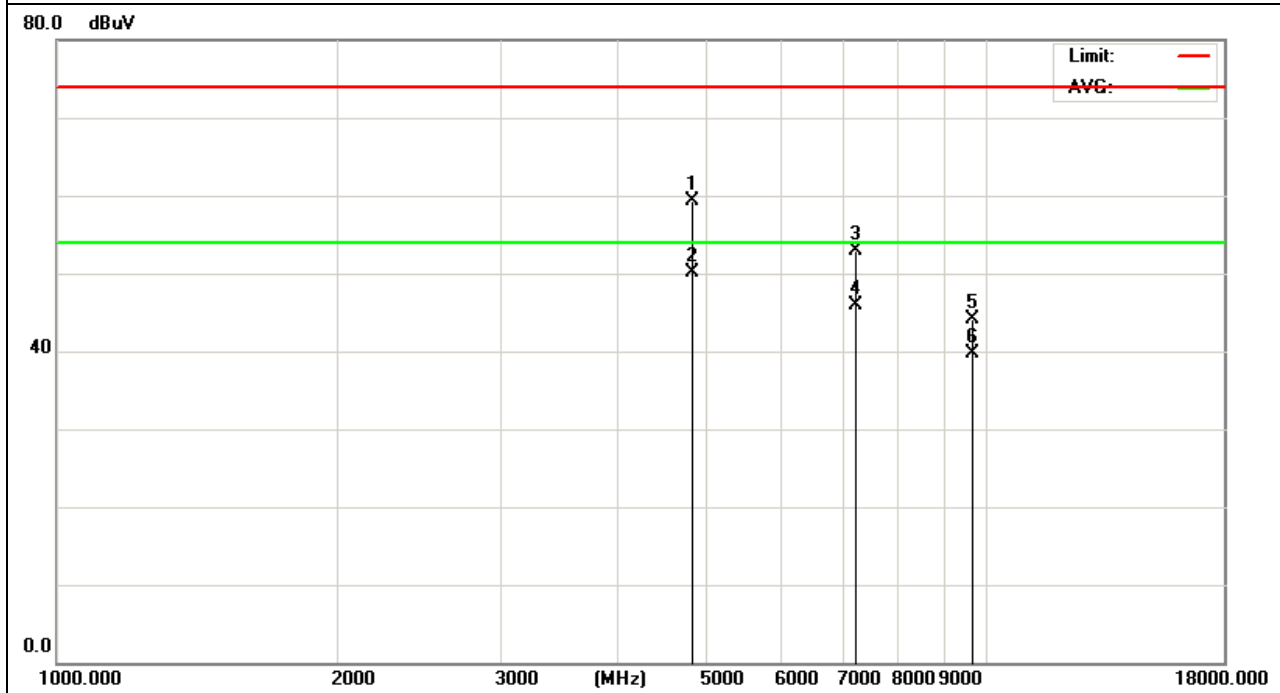
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH01 (802.11b Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4824.00	55.24	4.15	59.39	74.00	-14.61	peak
4824.00	45.87	4.15	50.02	54.00	-3.98	AVG
7236.00	41.21	11.70	52.91	74.00	-21.09	peak
7236.00	34.24	11.70	45.94	54.00	-8.06	AVG
9648.00	26.36	17.81	44.17	74.00	-29.83	peak
9648.00	21.89	17.81	39.70	54.00	-14.30	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

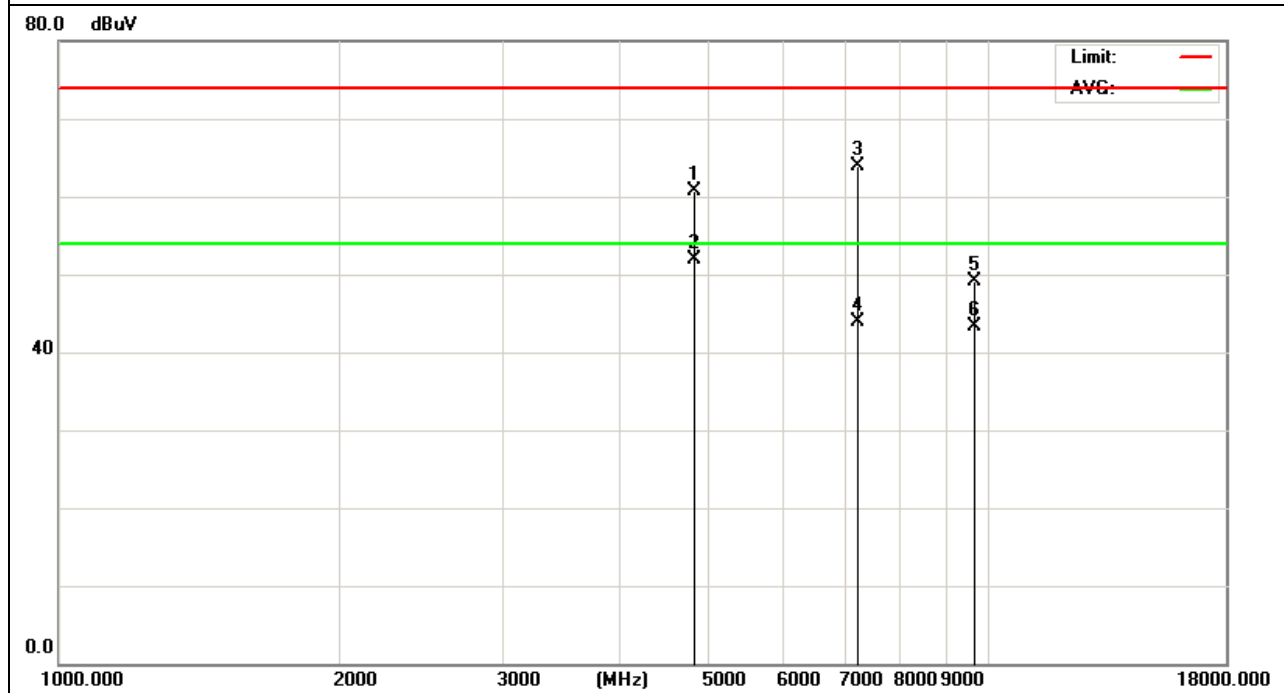


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH01 (802.11b Mode)	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824.00	56.48	4.15	60.63	74.00	-13.37	peak
4824.00	47.66	4.15	51.81	54.00	-2.19	AVG
7236.00	52.14	11.70	63.84	74.00	-10.16	peak
7236.00	32.11	11.70	43.81	54.00	-10.19	AVG
9648.00	31.26	17.81	49.07	74.00	-24.93	peak
9648.00	25.47	17.81	43.28	54.00	-10.72	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

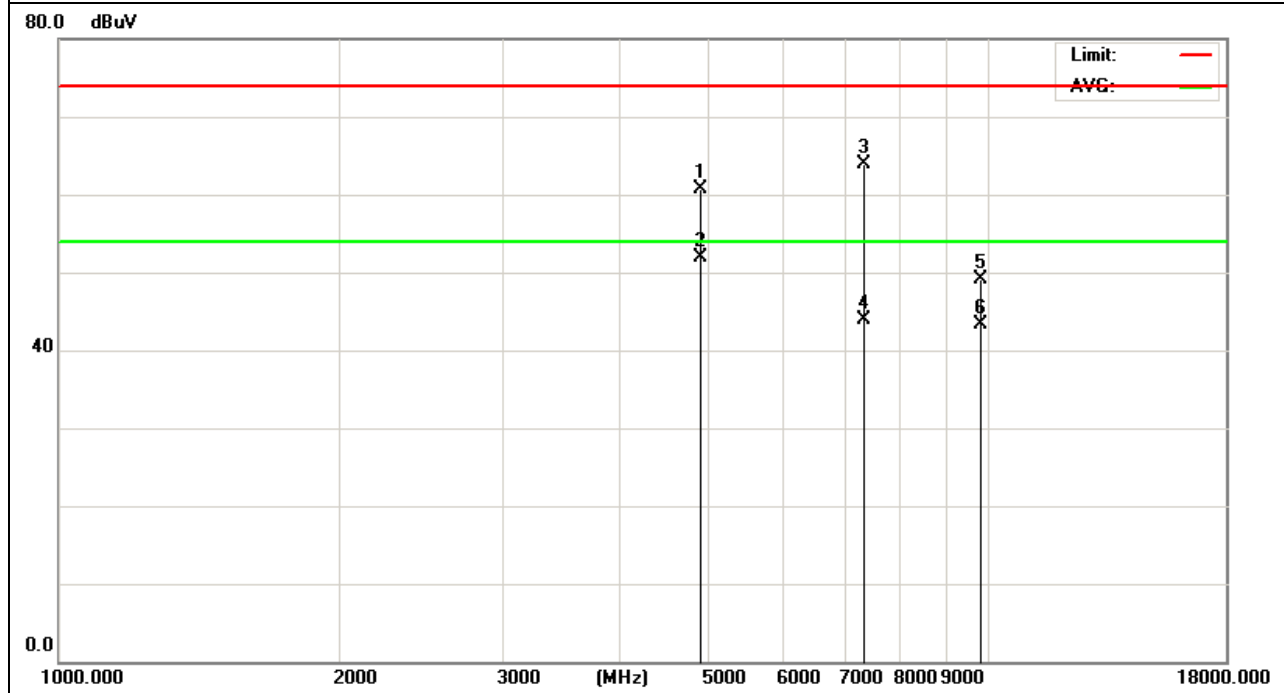


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH06 (802.11b Mode)	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4894.00	56.35	4.28	60.63	74.00	-13.37	peak
4894.00	47.53	4.28	51.81	54.00	-2.19	AVG
7341.00	51.82	12.02	63.84	74.00	-10.16	peak
7341.00	31.79	12.02	43.81	54.00	-10.19	AVG
9788.00	30.85	18.22	49.07	74.00	-24.93	peak
9788.00	25.06	18.22	43.28	54.00	-10.72	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

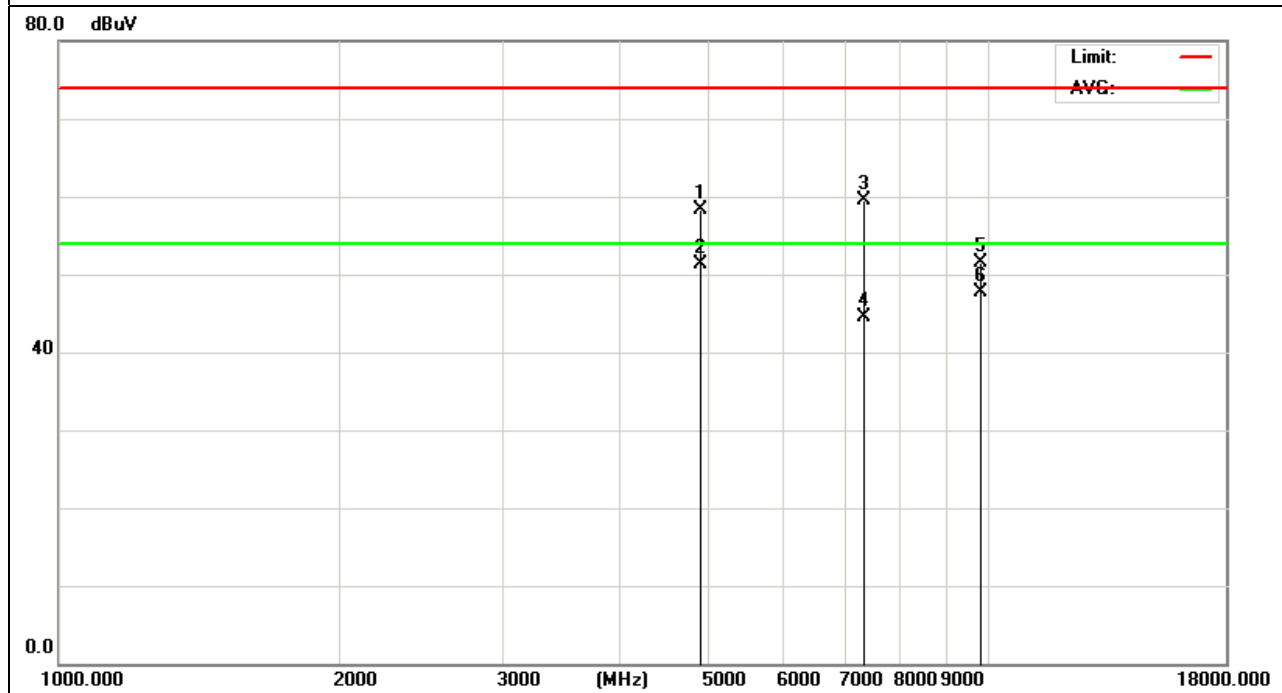


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH06 (802.11b Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4894.00	54.11	4.28	58.39	74.00	-15.61	peak
4894.00	47.12	4.28	51.40	54.00	-2.60	AVG
7341.00	47.54	12.02	59.56	74.00	-14.44	peak
7341.00	32.56	12.02	44.58	54.00	-9.42	AVG
9788.00	33.22	18.22	51.44	74.00	-22.56	peak
9788.00	29.47	18.22	47.69	54.00	-6.31	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

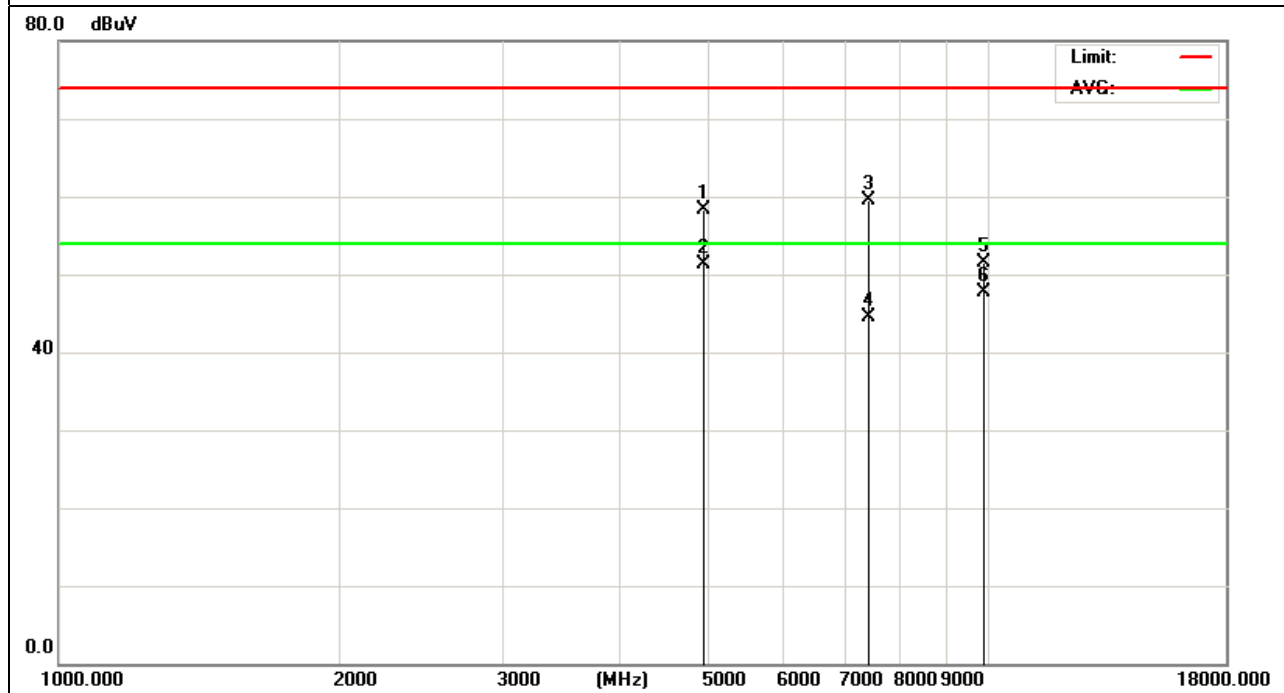


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH11 (802.11b Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4944.00	54.03	4.36	58.39	74.00	-15.61	peak
4944.00	47.04	4.36	51.40	54.00	-2.60	AVG
7416.00	47.32	12.24	59.56	74.00	-14.44	peak
7416.00	32.34	12.24	44.58	54.00	-9.42	AVG
9888.00	32.94	18.50	51.44	74.00	-22.56	peak
9888.00	29.19	18.50	47.69	54.00	-6.31	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

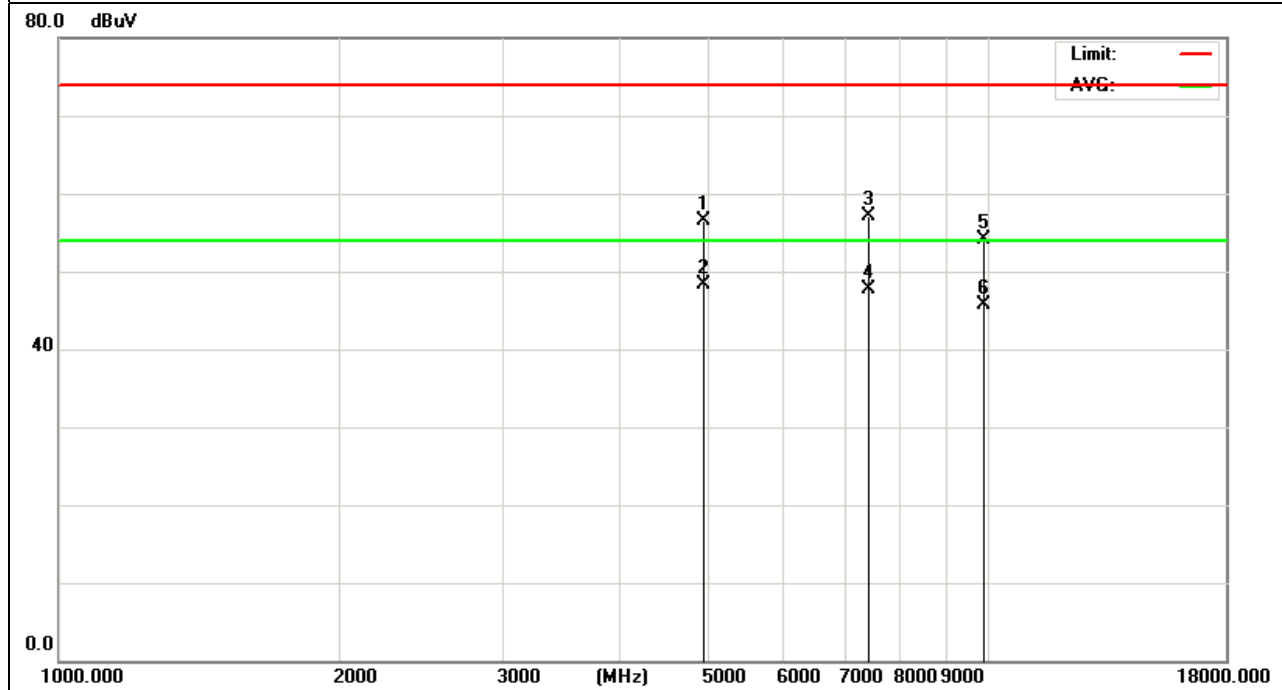


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH11 (802.11b Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4944.00	52.11	4.36	56.47	74.00	-17.53	peak
4944.00	43.98	4.36	48.34	54.00	-5.66	AVG
7416.00	44.77	12.24	57.01	74.00	-16.99	peak
7416.00	35.51	12.24	47.75	54.00	-6.25	AVG
9888.00	35.58	18.50	54.08	74.00	-19.92	peak
9888.00	27.23	18.50	45.73	54.00	-8.27	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

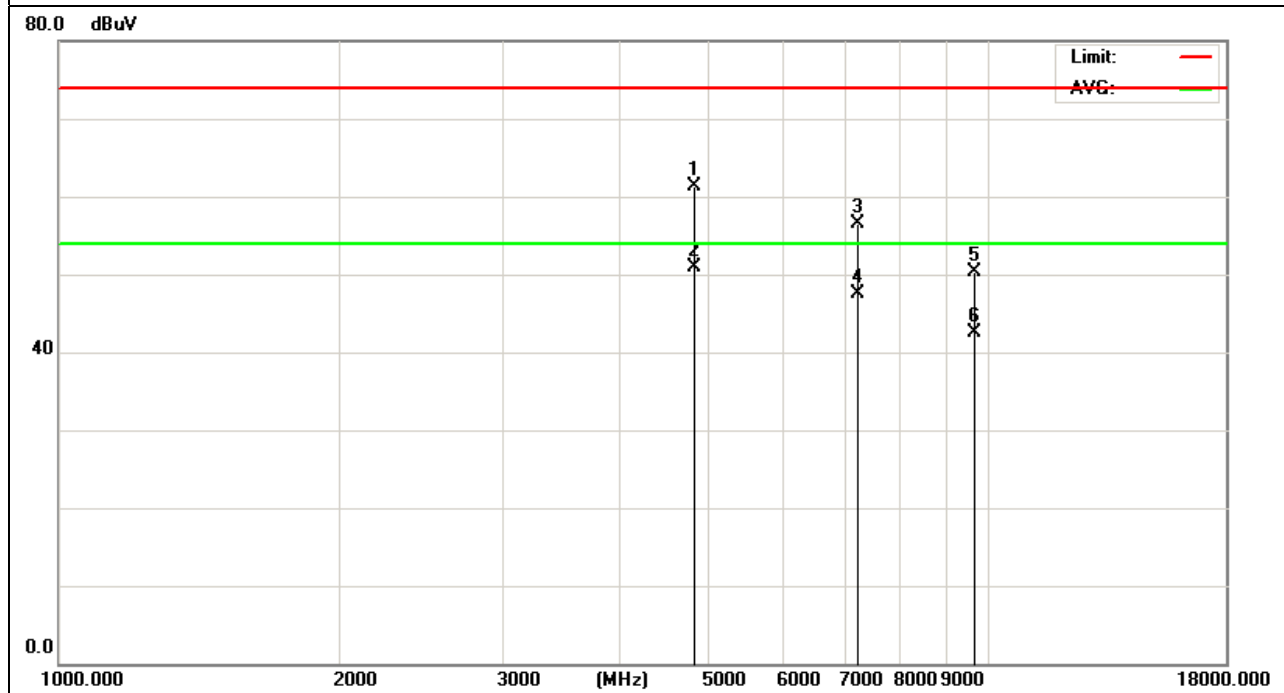


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH01 (802.11g Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4824.00	57.22	4.15	61.37	74.00	-12.63	peak
4824.00	46.78	4.15	50.93	54.00	-3.07	AVG
7236.00	44.77	11.70	56.47	74.00	-17.53	peak
7236.00	35.76	11.70	47.46	54.00	-6.54	AVG
9648.00	32.47	17.81	50.28	74.00	-23.72	peak
9648.00	24.72	17.81	42.53	54.00	-11.47	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

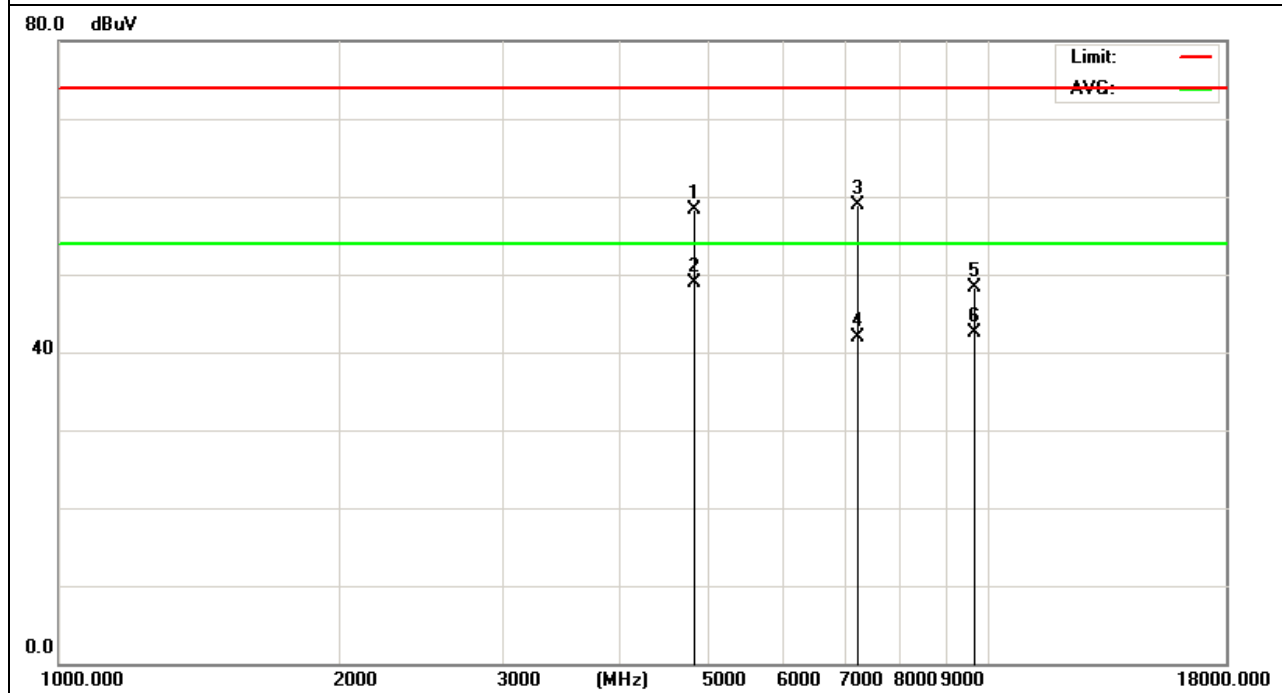


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH01 (802.11g Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4824.00	54.21	4.15	58.36	74.00	-15.64	peak
4824.00	44.78	4.15	48.93	54.00	-5.07	AVG
7236.00	47.24	11.70	58.94	74.00	-15.06	peak
7236.00	30.11	11.70	41.81	54.00	-12.19	AVG
9648.00	30.45	17.81	48.26	74.00	-25.74	peak
9648.00	24.77	17.81	42.58	54.00	-11.42	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

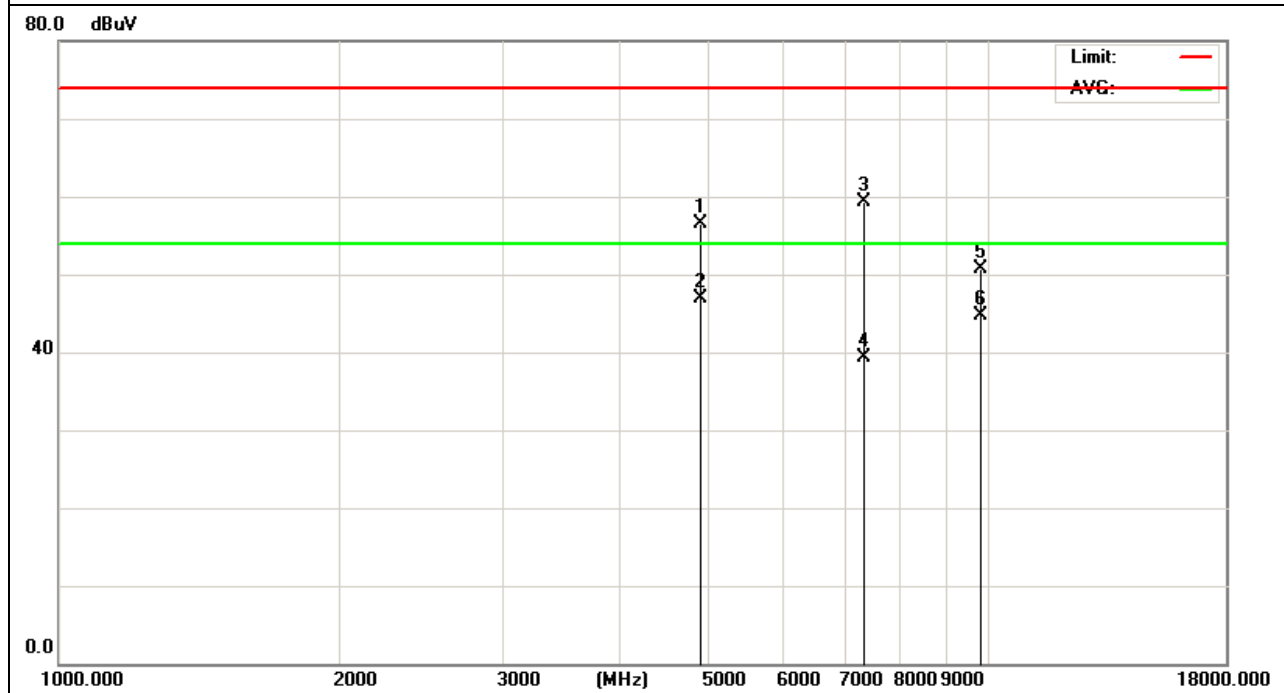


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH06 (802.11g Mode)	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4894.00	52.23	4.28	56.51	74.00	-17.49	peak
4894.00	42.57	4.28	46.85	54.00	-7.15	AVG
7341.00	47.22	12.02	59.24	74.00	-14.76	peak
7341.00	27.25	12.02	39.27	54.00	-14.73	AVG
9788.00	32.56	18.22	50.78	74.00	-23.22	peak
9788.00	26.57	18.22	44.79	54.00	-9.21	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

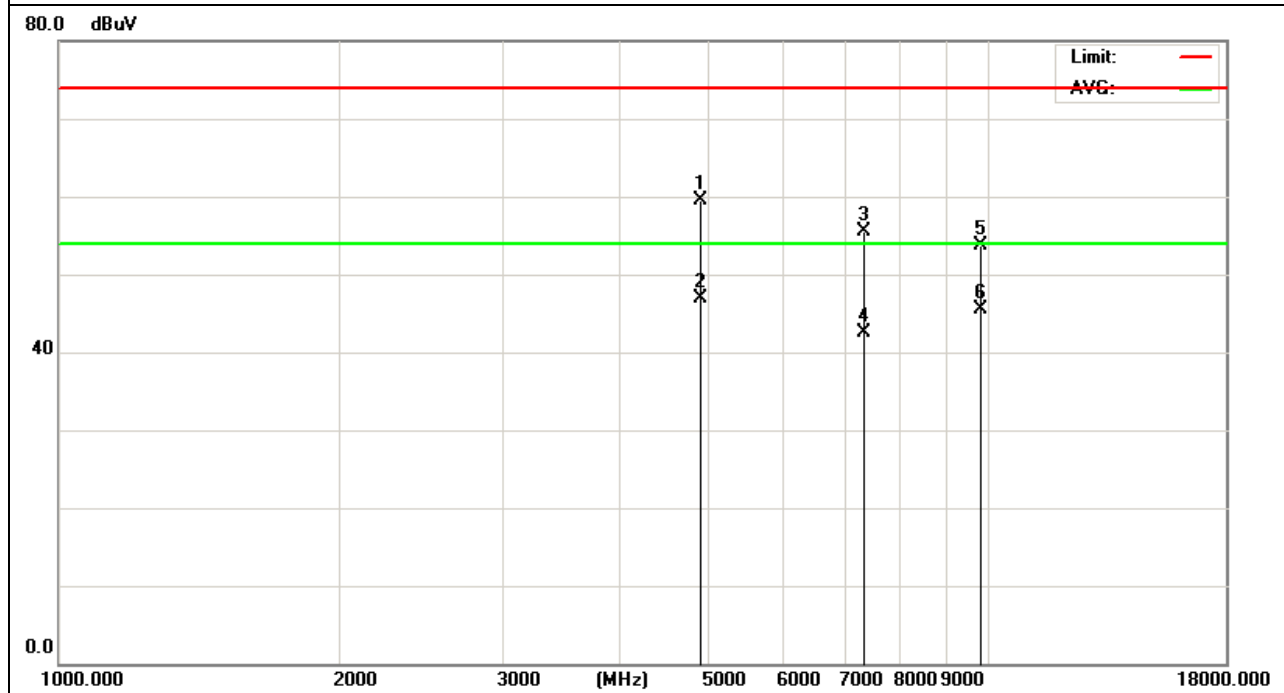


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH06 (802.11g Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4894.00	55.13	4.28	59.41	74.00	-14.59	peak
4894.00	42.72	4.28	47.00	54.00	-7.00	AVG
7341.00	43.56	12.02	55.58	74.00	-18.42	peak
7341.00	30.47	12.02	42.49	54.00	-11.51	AVG
9788.00	35.46	18.22	53.68	74.00	-20.32	peak
9788.00	27.26	18.22	45.48	54.00	-8.52	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

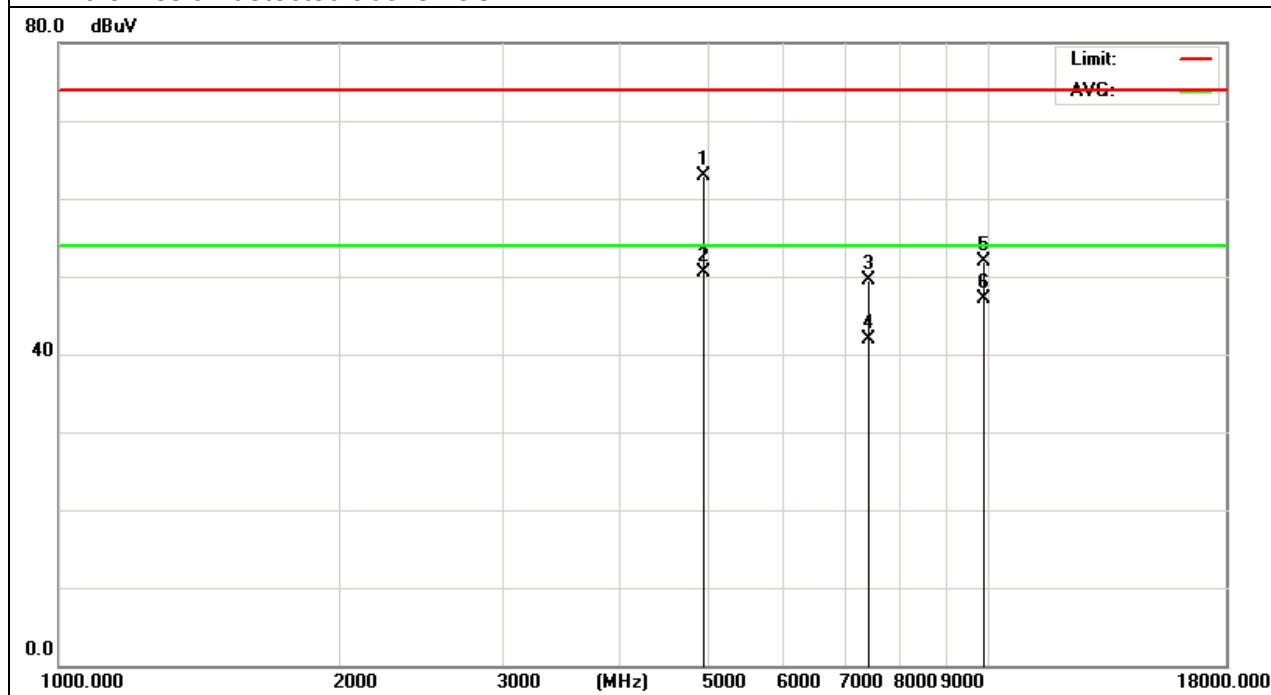


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH11 (802.11g Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4944.00	58.56	4.36	62.92	74.00	-11.08	peak
4944.00	46.23	4.36	50.59	54.00	-3.41	AVG
7416.00	37.35	12.24	49.59	74.00	-24.41	peak
7416.00	29.67	12.24	41.91	54.00	-12.09	AVG
9888.00	33.46	18.50	51.96	74.00	-22.04	peak
9888.00	28.56	18.50	47.06	54.00	-6.94	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

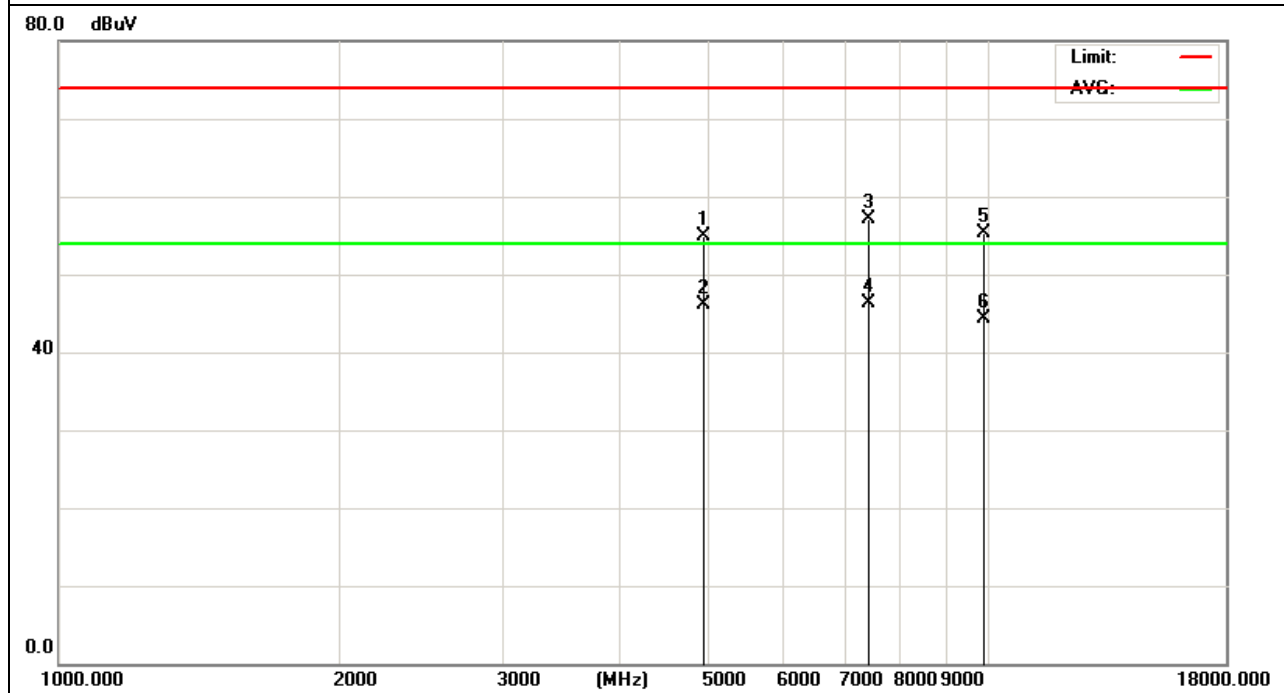


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	CH11(802.11g Mode)	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4944.00	50.47	4.36	54.83	74.00	-19.17	peak
4944.00	41.78	4.36	46.14	54.00	-7.86	AVG
7416.00	44.77	12.24	57.01	74.00	-16.99	peak
7416.00	34.13	12.24	46.37	54.00	-7.63	AVG
9888.00	36.72	18.50	55.22	74.00	-18.78	peak
9888.00	25.74	18.50	44.24	54.00	-9.76	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

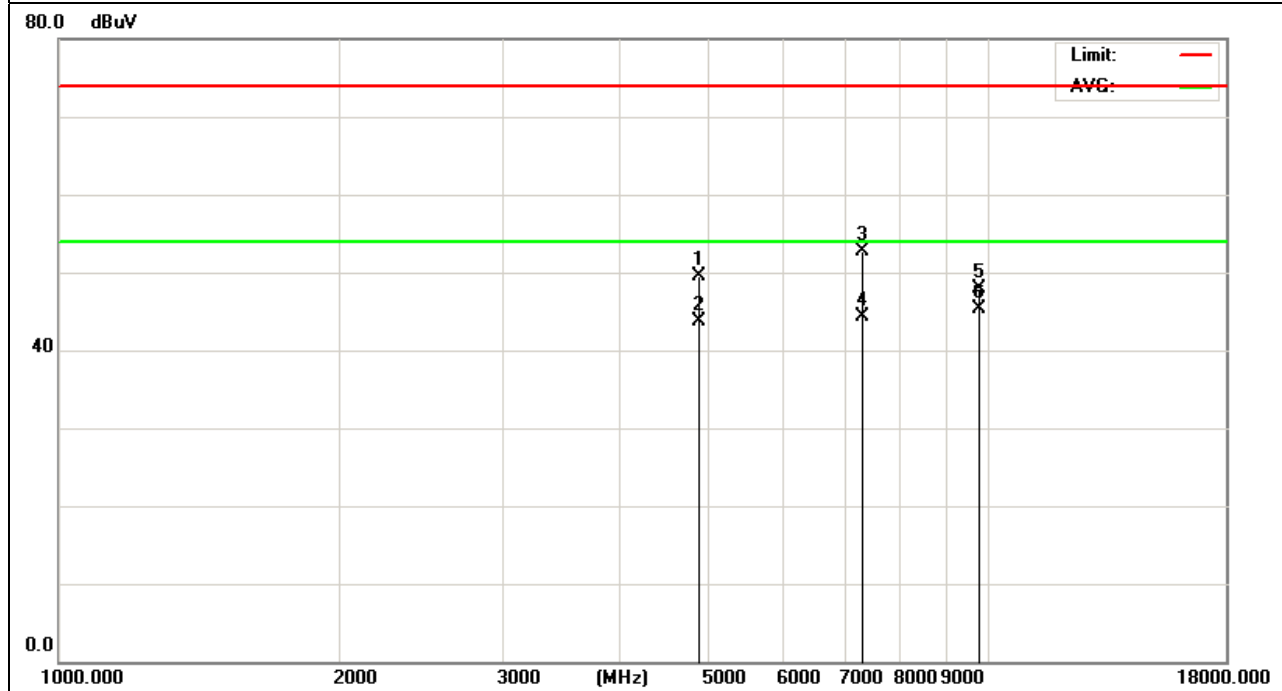


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	RX	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.00	45.18	4.25	49.43	74.00	-24.57	peak
4882.00	39.50	4.25	43.75	54.00	-10.25	AVG
7323.00	40.78	11.96	52.74	74.00	-21.26	peak
7323.00	32.39	11.96	44.35	54.00	-9.65	AVG
9764.00	29.71	18.14	47.85	74.00	-26.15	peak
9764.00	27.20	18.14	45.34	54.00	-8.66	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz

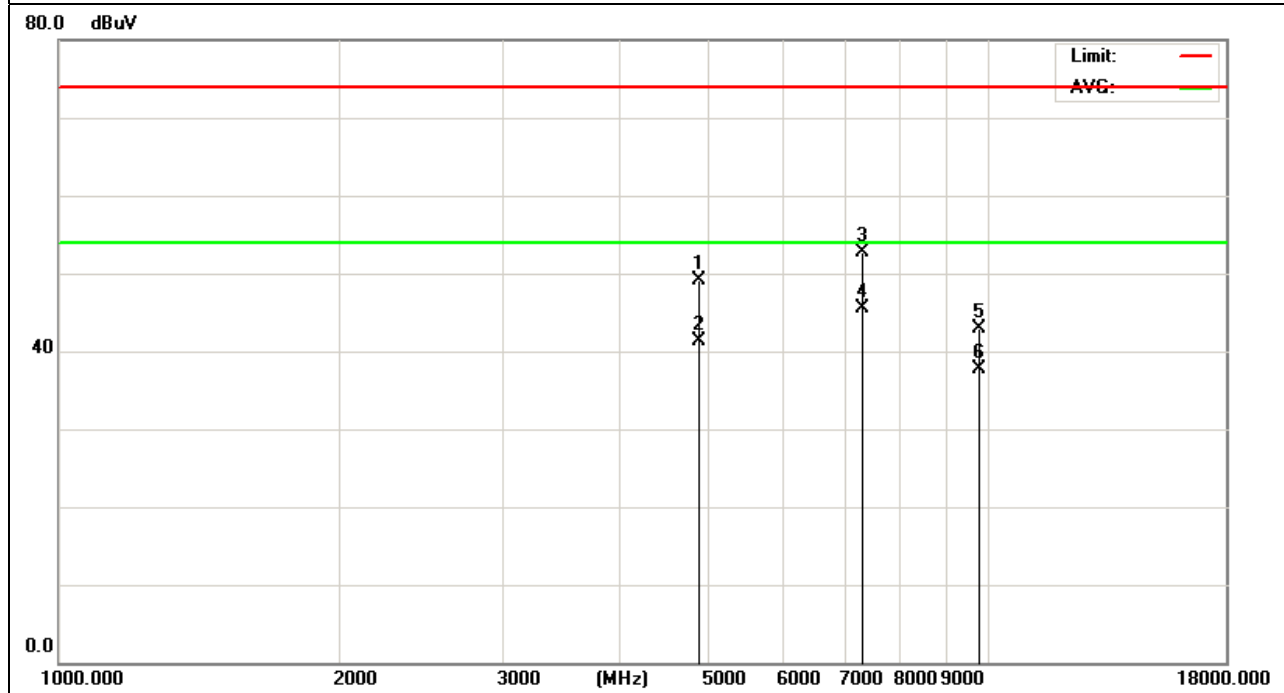


EUT :	Android tablet	Model Name :	MID988
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V
Test Mode :	RX	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.00	44.78	4.25	49.03	74.00	-24.97	peak
4882.00	37.12	4.25	41.37	54.00	-12.63	AVG
7323.00	40.78	11.96	52.74	74.00	-21.26	peak
7323.00	33.57	11.96	45.53	54.00	-8.47	AVG
9764.00	24.76	18.14	42.90	74.00	-31.10	peak
9764.00	19.47	18.14	37.61	54.00	-16.39	AVG

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- No emission detected above 18GHz



4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C & RSS-210 Annex 8				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (d) & A8.2	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	500s

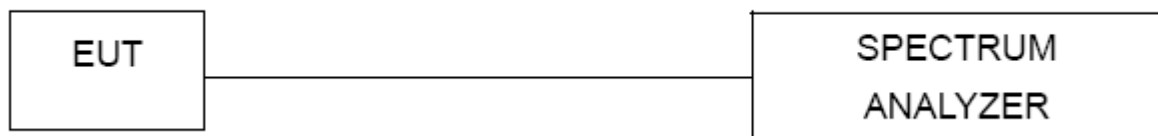
4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 3KHz, VBW=30KHz, Sweep time = 500s.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

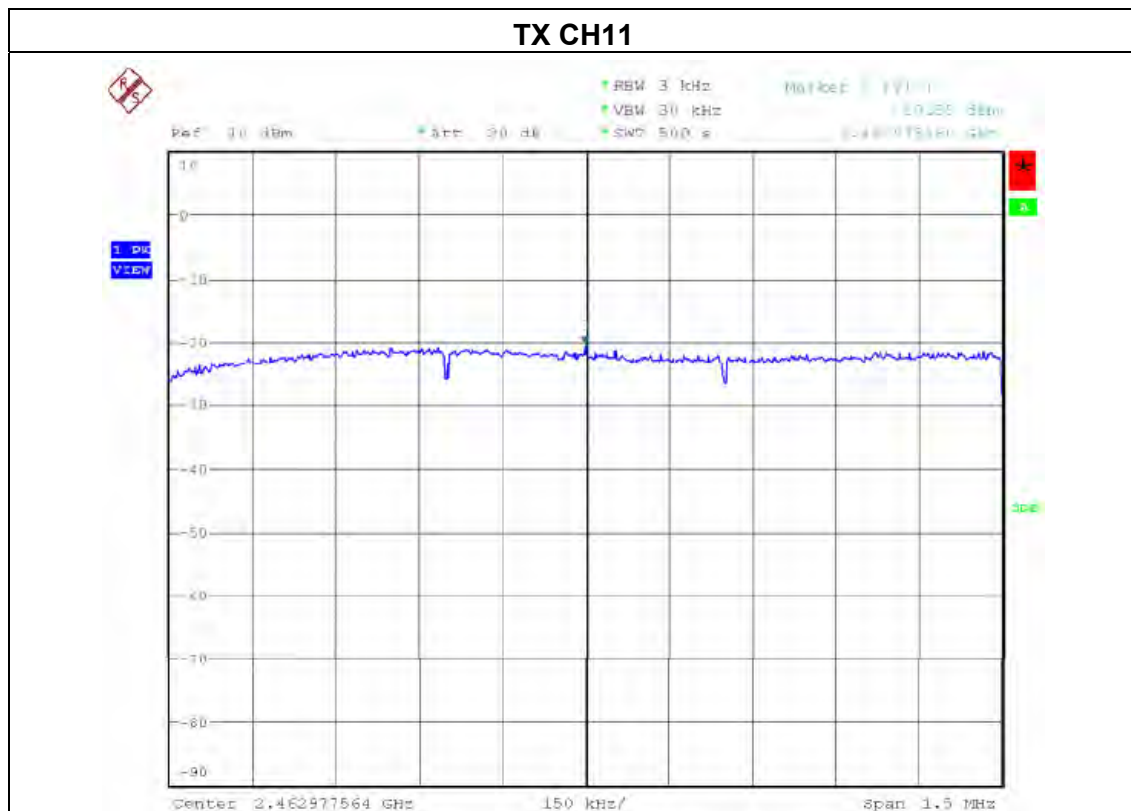
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V
Test Mode :	TX B MODE /CH01, CH06, CH11		

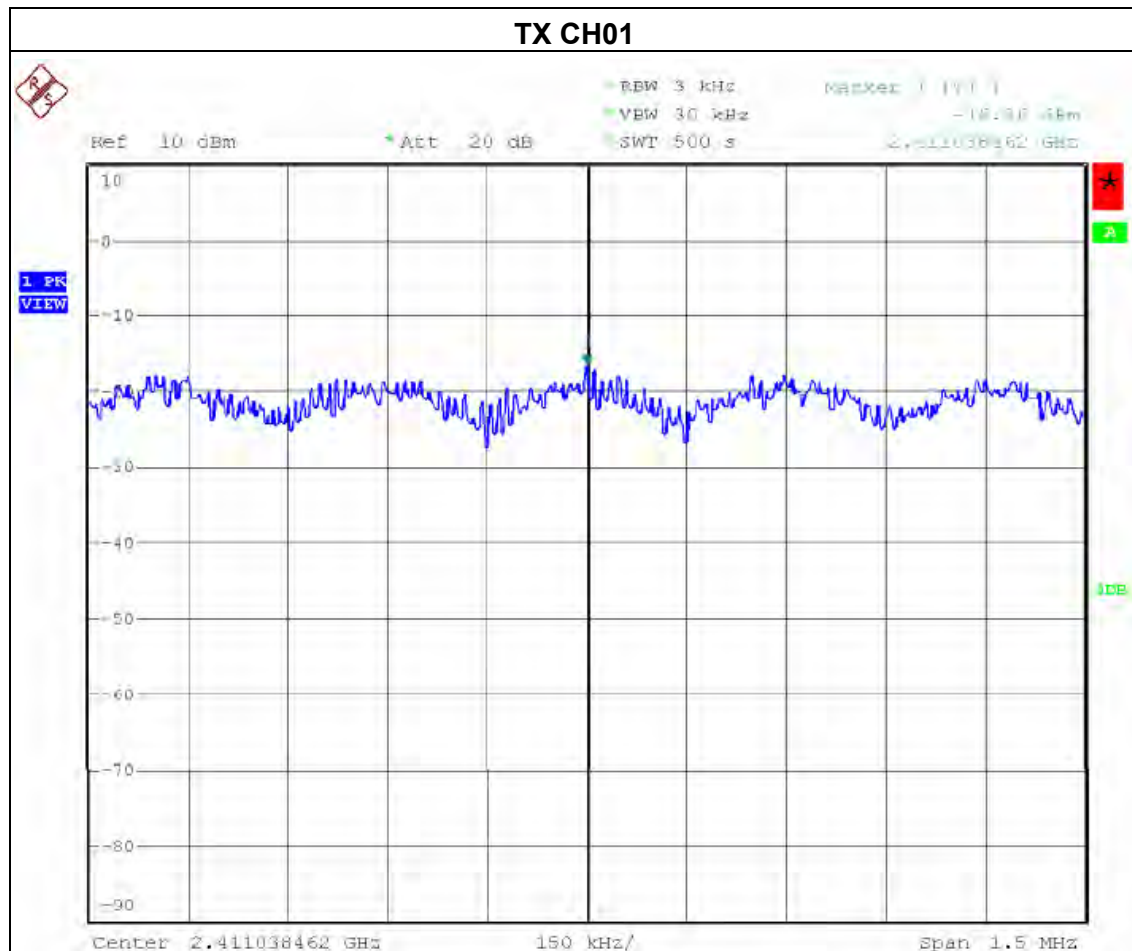
Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-24.94	8	PASS
2437 MHz	-23.26	8	PASS
2462 MHz	-20.55	8	PASS

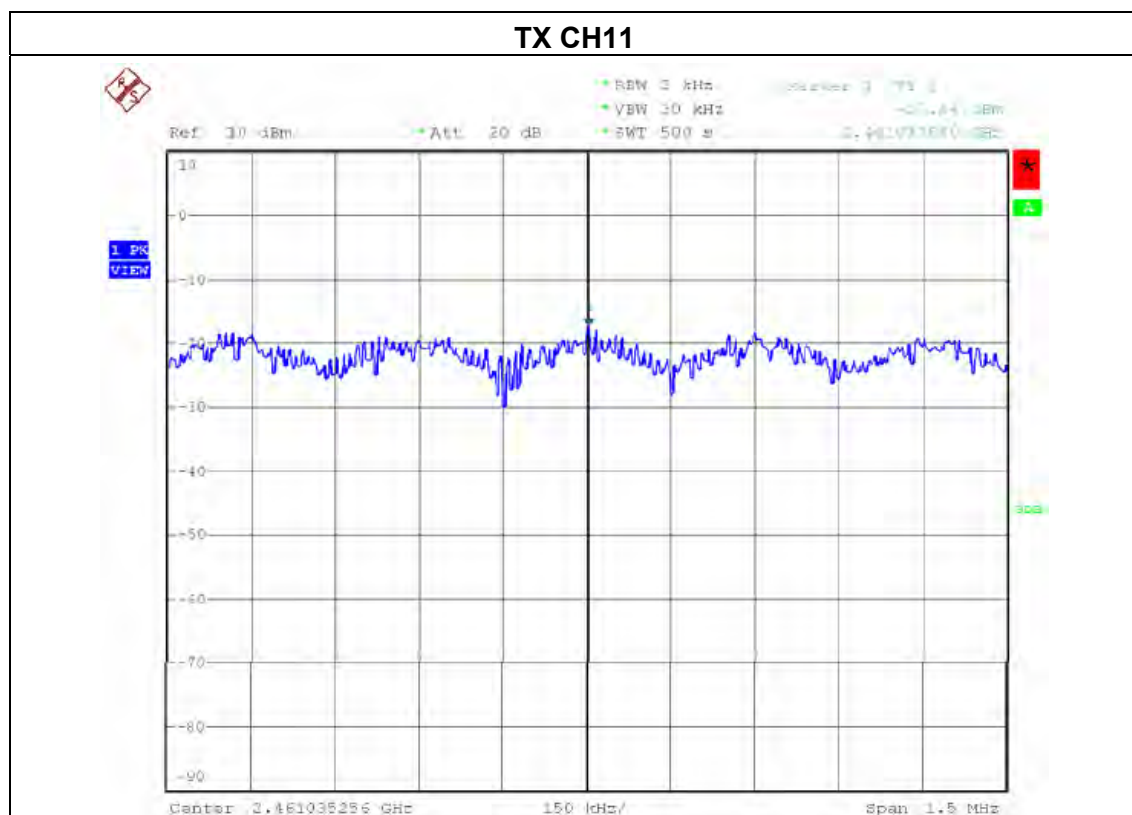
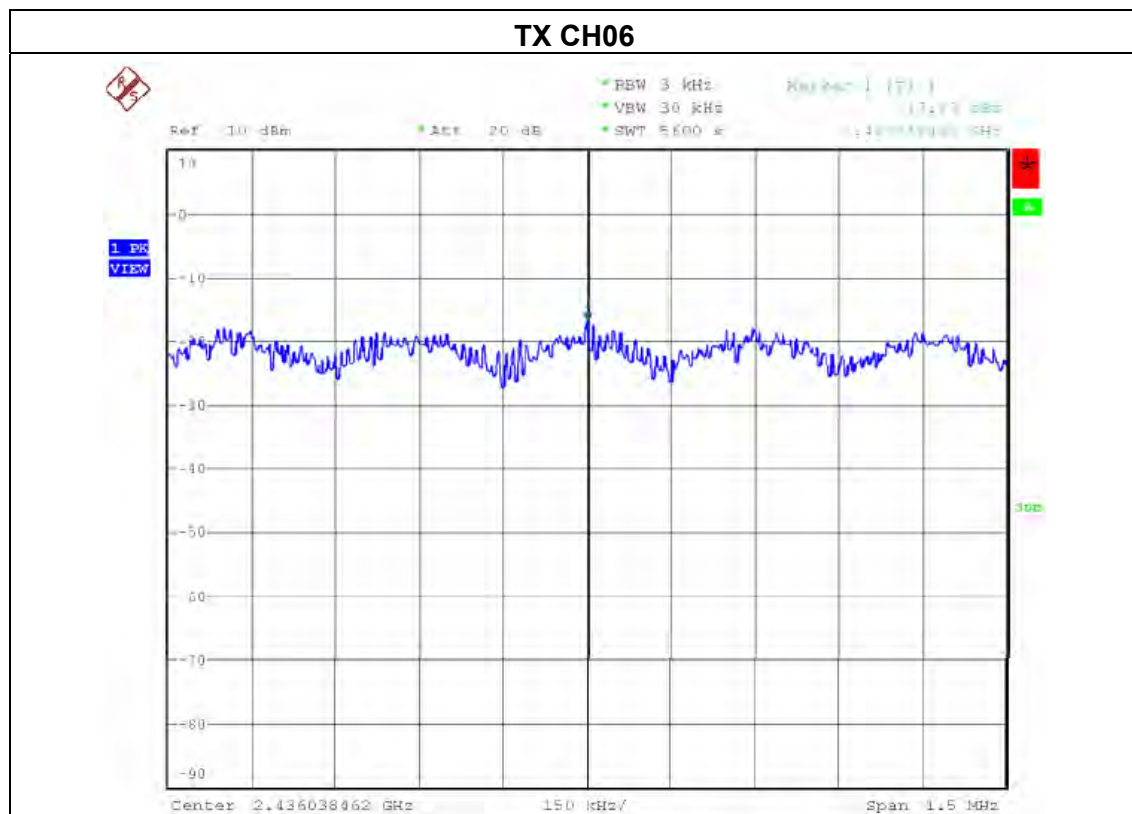




EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V
Test Mode :	TX G MODE /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-16.84	8	PASS
2437MHz	-17.23	8	PASS
2462 MHz	-17.64	8	PASS





5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C & RSS-210 Annex 8				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(2)& A8.2	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



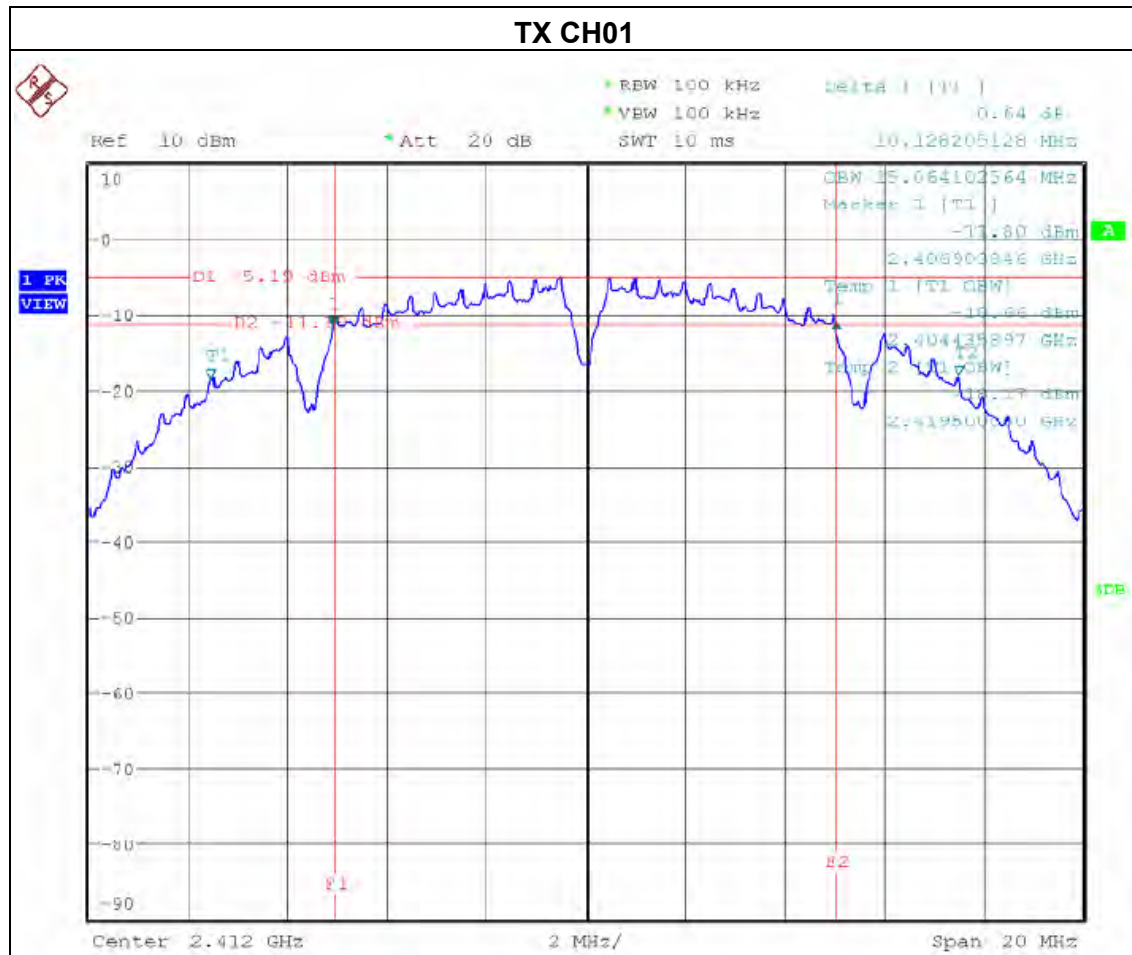
5.1.4 EUT OPERATION CONDITIONS

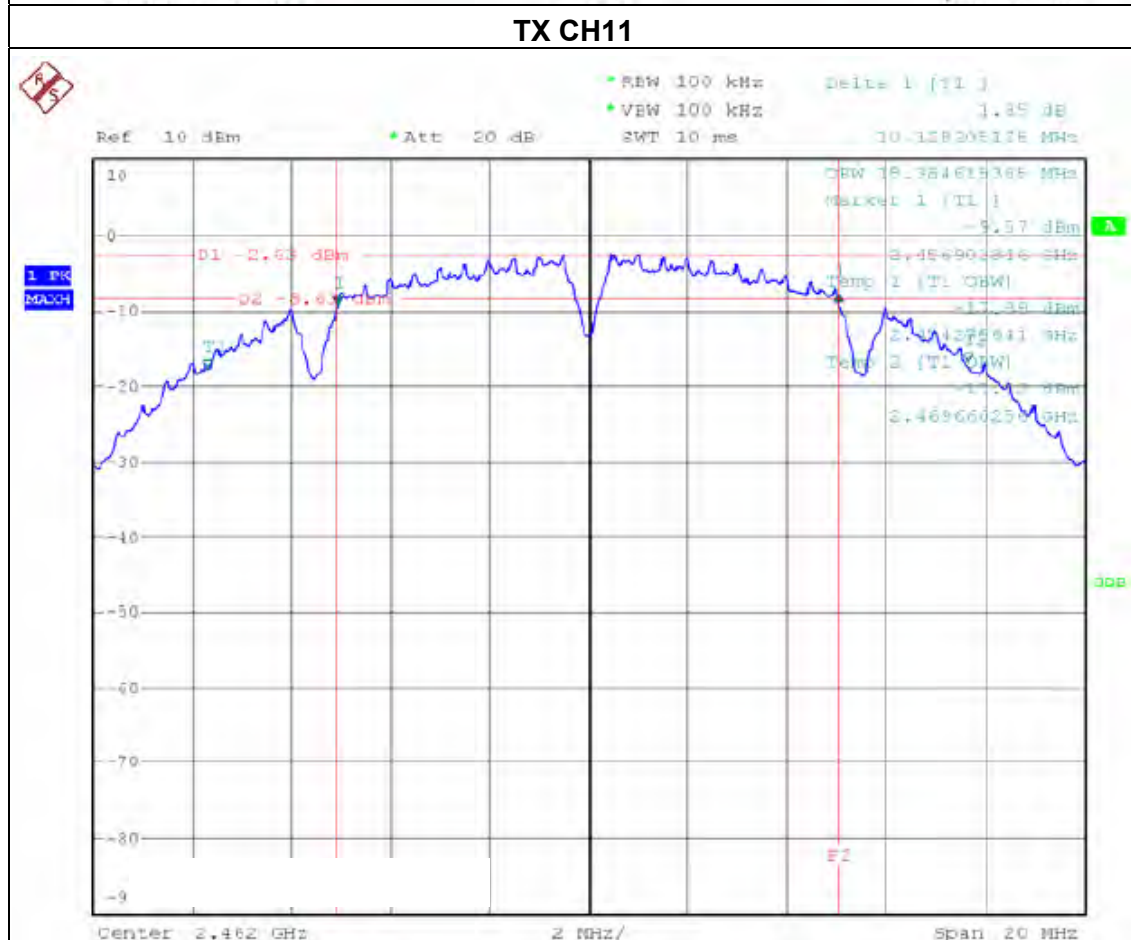
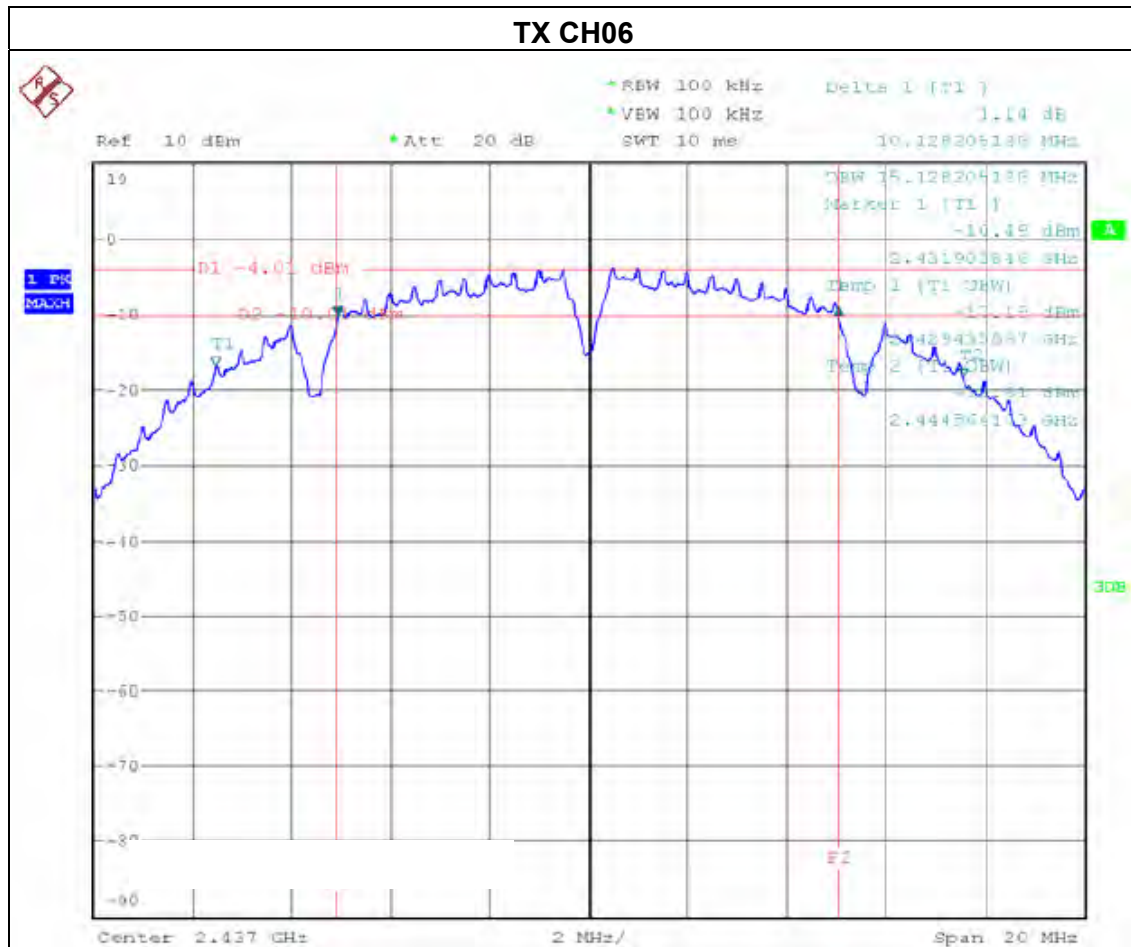
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX B MODE /CH01, CH06, CH11		

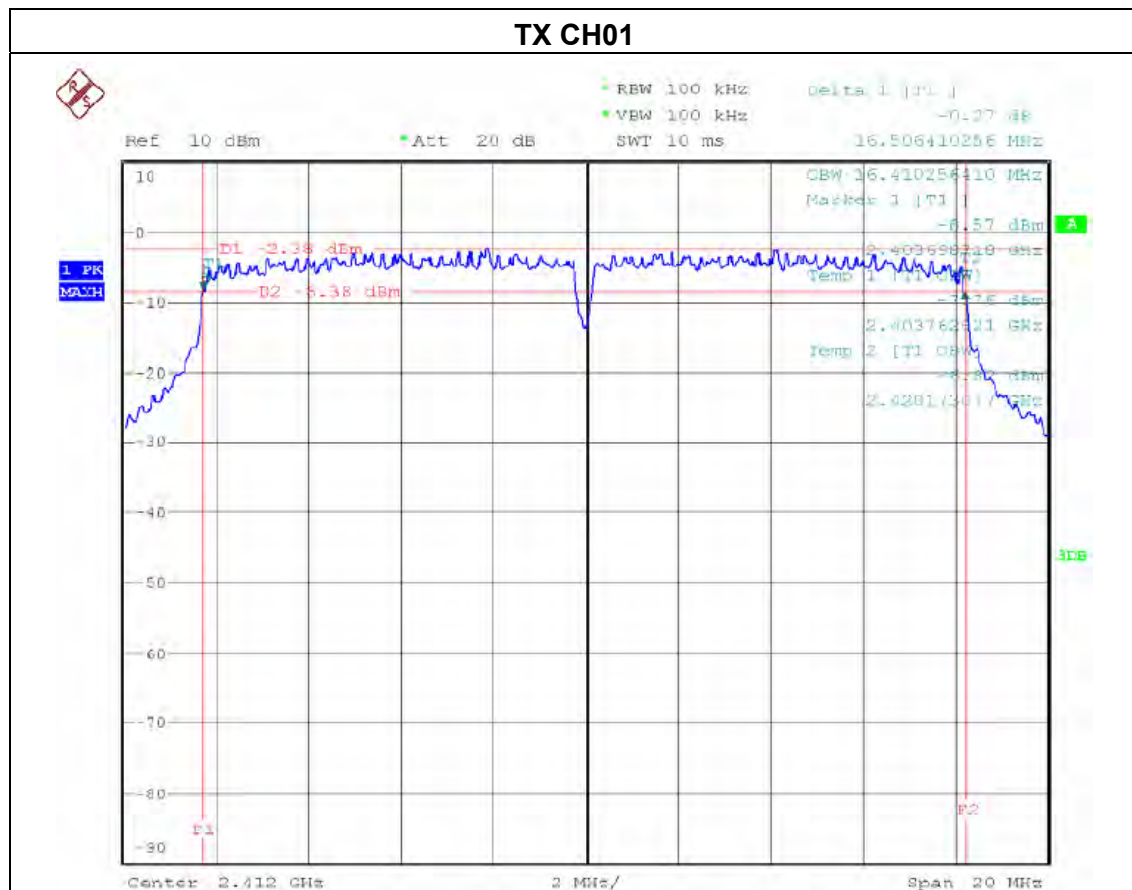
Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Channel Separation (MHz)	Result
2412 MHz	10.13	15.10	>=500KHz	PASS
2437 MHz	10.13	15.13	>=500KHz	PASS
2462 MHz	10.13	15.38	>=500KHz	PASS

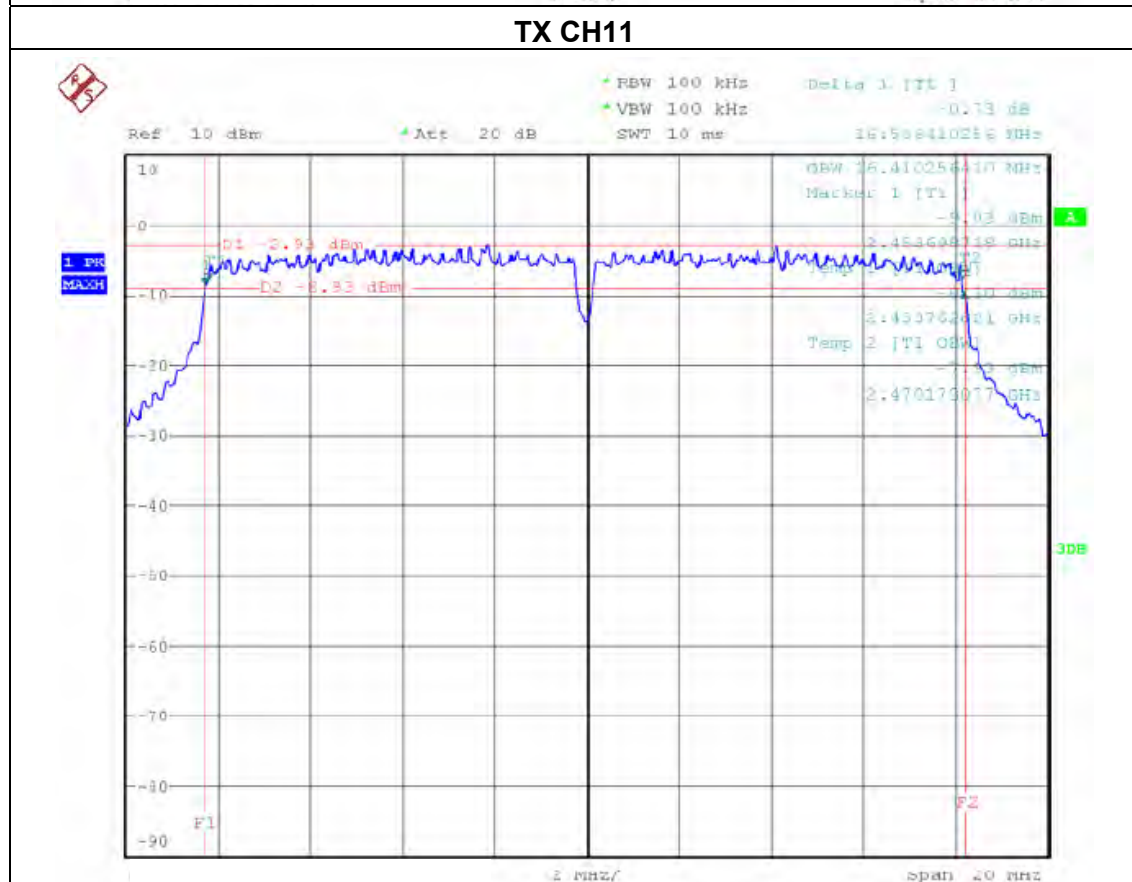
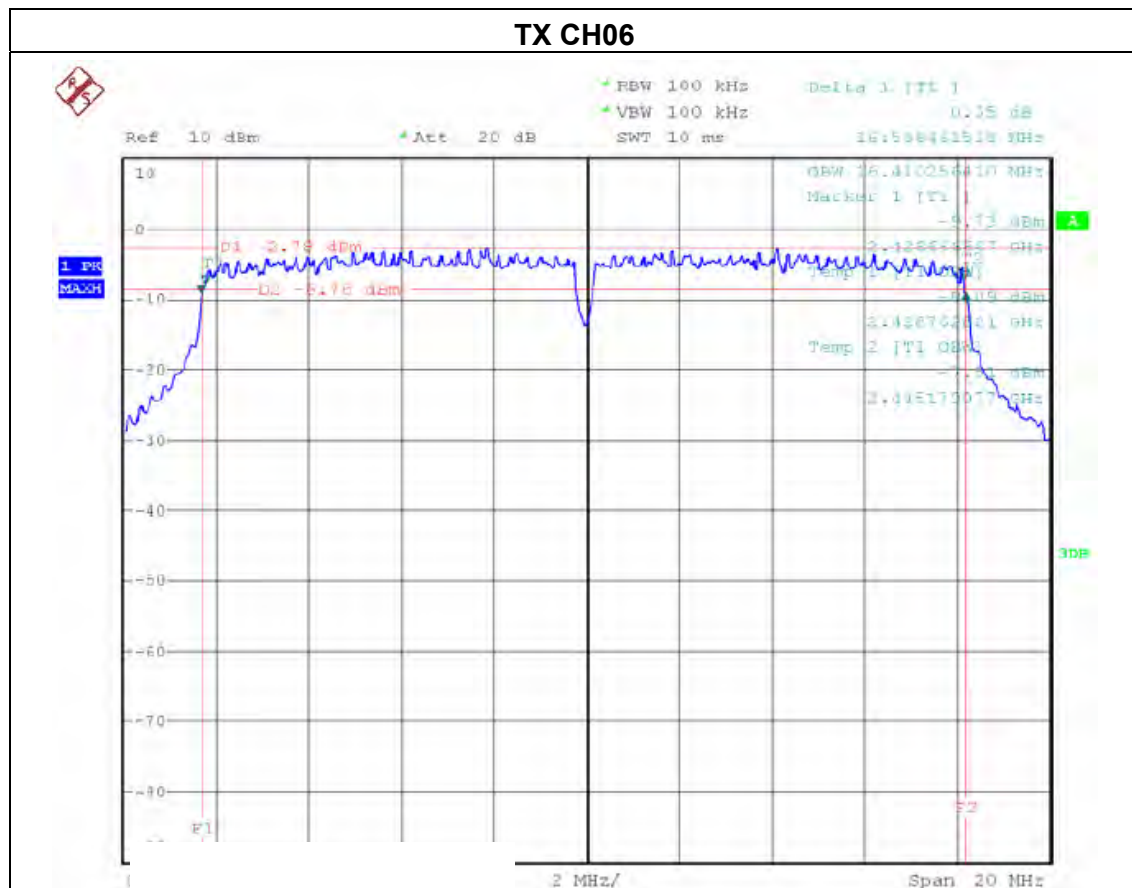




EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX G MODE /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Channel Separation (MHz)	Result
2412 MHz	16.51	16.41	>=500KHz	PASS
2437 MHz	16.54	16.41	>=500KHz	PASS
2462 MHz	16.51	16.41	>=500KHz	PASS





6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C & RSS-210 Annex 8				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (b)(1) & A8.4	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	peak output power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412	11.89	30	1
CH06	2437	11.01	30	1
CH11	2462	11.22	30	1

EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	peak output power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412	9.58	30	1
CH06	2437	10.32	30	1
CH11	2462	10.10	30	1

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 KHz /100 KHz for Peak

7.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP

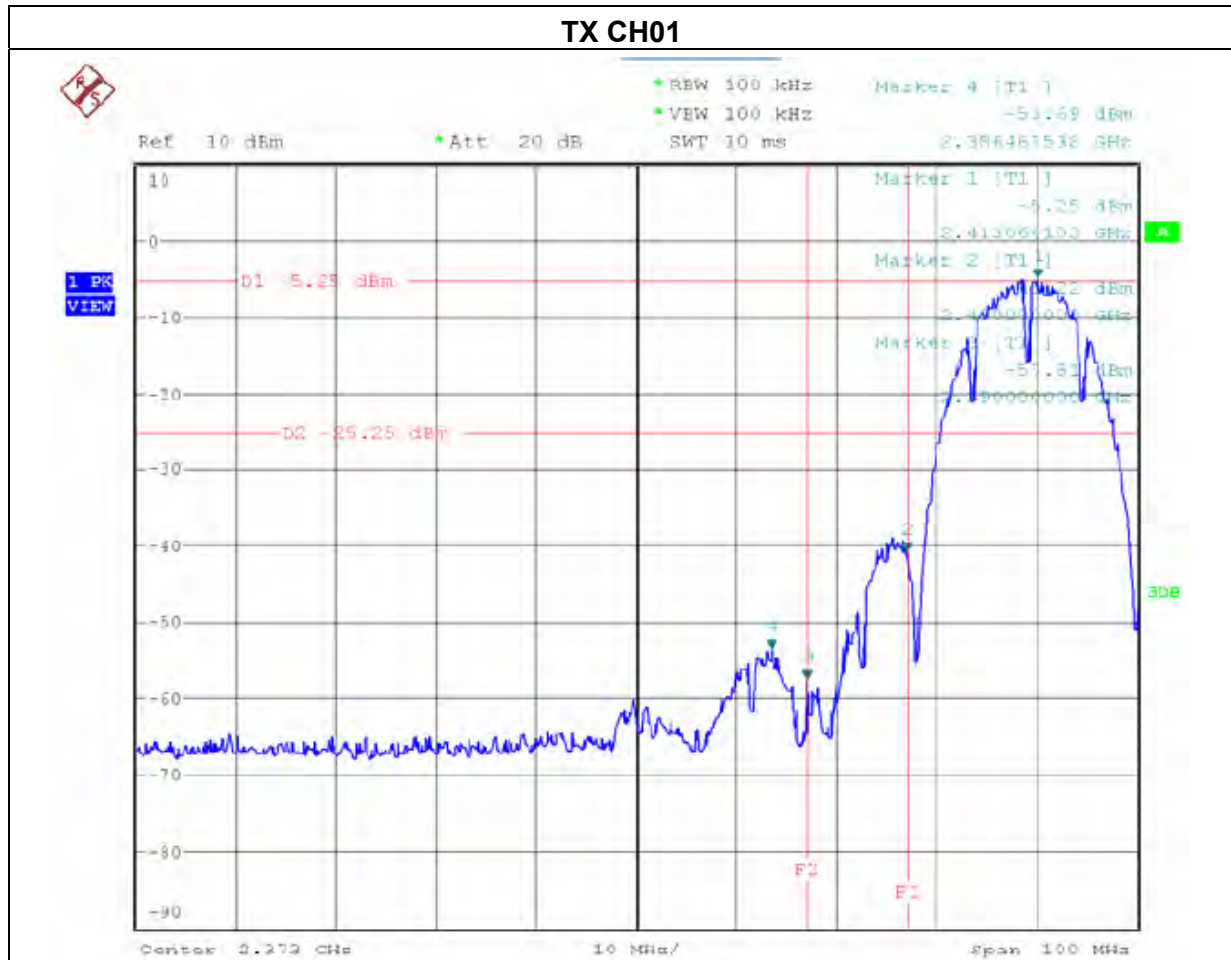


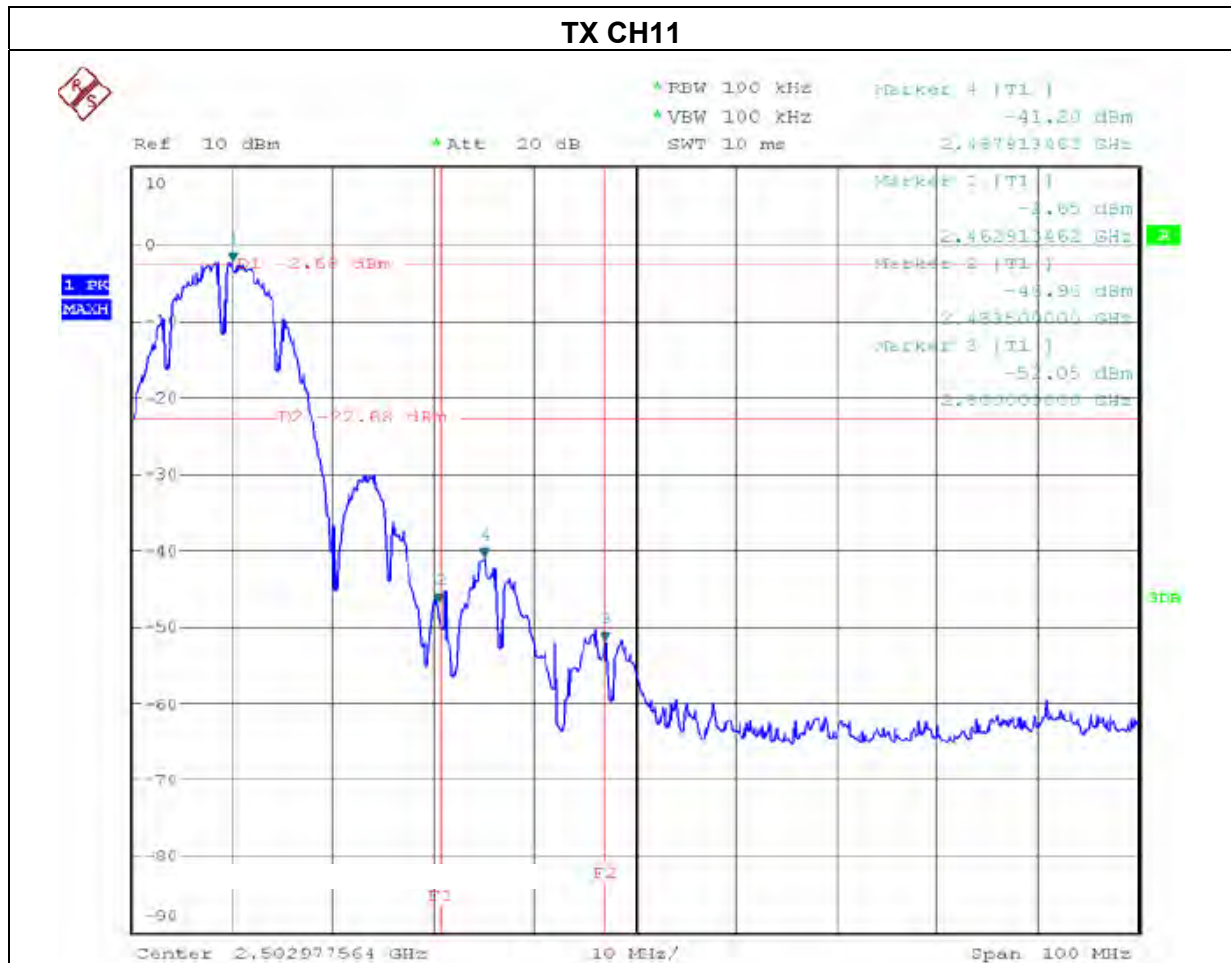
7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX B MODE /CH01, CH11		





EUT :	Android tablet	Model Name :	MID988
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V
Test Mode :	TX G MODE /CH01, CH11		

