



FCC RADIO TEST REPORT

FCC ID: QAPMW1031-3G

Product : AOC Tablet

Trade Name : AOC

Model Name : MW1031-3G

Serial Model : N/A

Report No. : NTEK- 2013NT070820F4

Prepared for

Fuzhou Smart Digital Science & Technology Co., Ltd
No.8 Building, Honshan Science & Technology Zone, Gulou District,
Fuzhou,Fujian,China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name : Fuzhou Smart Digital Science & Technology Co., Ltd

Address : No.8 Building, Honshan Science & Technology Zone,
Gulou District, Fuzhou, Fujian, China

Manufacture's Name : Fuzhou Smart Digital Science & Technology Co., Ltd

Address : No.8 Building, Honshan Science & Technology Zone,
Gulou District, Fuzhou, Fujian, China

Product description

Product name : AOC Tablet

Model and/or type reference : MW1031-3G

Serial Model : N/A

Standards : FCC Part15B:2012

Test procedure ANSI C63.4-2003

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test :

Date (s) of performance of tests : 09 July. 2013 ~18 July. 2013

Date of Issue : 18 July. 2013

Test Result : **Pass**

Testing Engineer : Apple Huang
(Apple Huang)

Technical Manager : Tom Zhang
(Tom Zhang)

Authorized Signatory : Bovey Yang
(Bovey Yang)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B:2012 ANSI C63.4: 2009	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration Number:238937; IC Registration Number:9270A-1

CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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 %**.

5. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~6GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	AOC Tablet	
Model Name	MW1031-3G	
Product Description	Operating frequency:	N/A
	Connecting I/O port:	USB
	Other radio	BT,WIFI,WCDMA,GSM
	BT Operation Frequency:	2402~2480 MHz
	Modulation Type:	BT(1Mbps): GFSK BT EDR(2Mbps): $\pi/4$ -DQPSK BT EDR(3Mbps): 8-DPSK
	Bit Rate of Transmitter	1Mbps/2Mbps/3Mbps
	Output Power(Conducted):	BT(1Mbps): 4.418 dBm BT EDR(2Mbps):2.967 dBm BT EDR(3Mbps):2.416 dBm
	WIFI Operation Frequency:	2412~2462 MHz
	Modulation Type:	CCK/OFDM/DBPSK/DAPSK
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n(20): 78/52/6.5 Mbps
	Output Power(Conducted):	802.11b: 16.76 dBm (Max.) 802.11g: 15.73 dBm (Max.) 802.11n(20): 13.95 dBm (Max.)
	Frequency Bands:	☒ GSM 850 ☒ PCS 1900 (U.S. Bands) ☐ GSM 900 ☐ DCS 1800 (Non-U.S. Bands) U.S. Bands: ☒ UMTS FDD Band II ☒ UMTS FDD Band V Non-U.S. Bands: ☐ UMTS FDD Band I ☐ UMTS FDD Band VIII
	More details of EUT technical specification, please refer to the User's Manual.	
Power Source	DC Voltage	
Power Rating	DC 5V from adapter 120V/60Hz	
Adapter	Model: DSA-15P-05 US 050125 INPUT:100~240V, 50/60Hz, 0.5A OUTPUT:DC 5V,2.5A	

2.2 DESCRIPTION OF TEST MODES

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

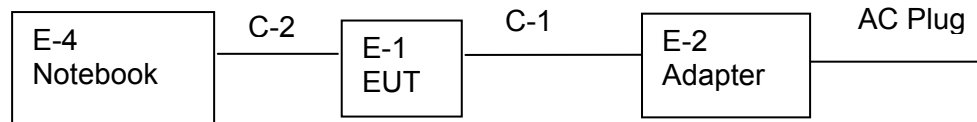
Pretest Mode	Description
Mode 1	USB Mode
Mode 2	USB HOST Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	USB Mode
Mode 2	USB HOST Mode

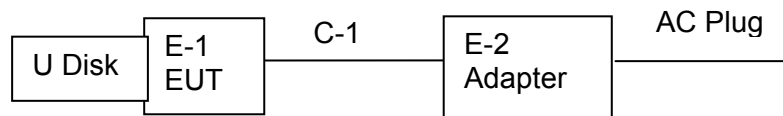
For Radiated Test	
Final Test Mode	Description
Mode 1	USB Mode
Mode 2	USB HOST Mode

2.3 DESCRIPTION OF TEST SETUP

Mode 1:



Mode 2:



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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.	Series No.	Note
E-1	AOC Tablet	N/A	MW1031-3G	N/A	EUT
E-2	Adapter	N/A	DSA-15P-05 US 050125		
E-4	Notebook Computer	IBM	2366		

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	120cm	
C-2	NO	NO	100cm	

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.
- (3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".

2.5 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2013.07.06	2014.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2013.06.07	2014.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2013.07.06	2014.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2013.06.07	2014.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2013.06.07	2014.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2013.07.06	2014.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2013.07.06	2014.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2013.06.08	2014.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2013.07.06	2014.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2013.07.06	2014.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2013.06.06	2014.06.05	1 year
2	LISN	R&S	ENV216	101313	2012.08.24	2013.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2012.08.24	2013.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2013.06.07	2014.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2013.06.07	2014.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2013.06.08	2014.06.07	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

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

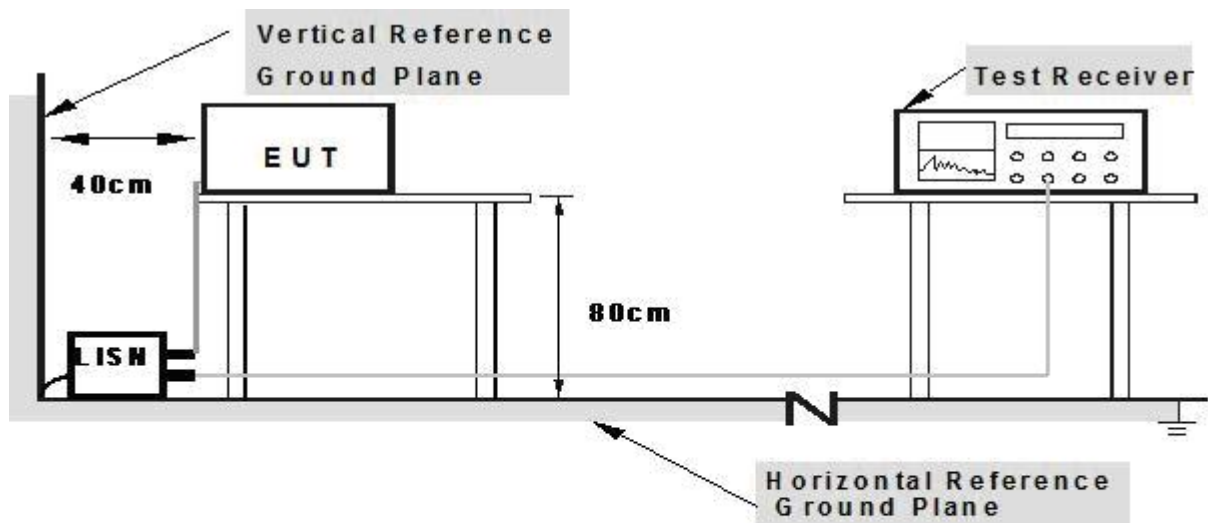
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

- a. 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.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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

3.1.4 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.

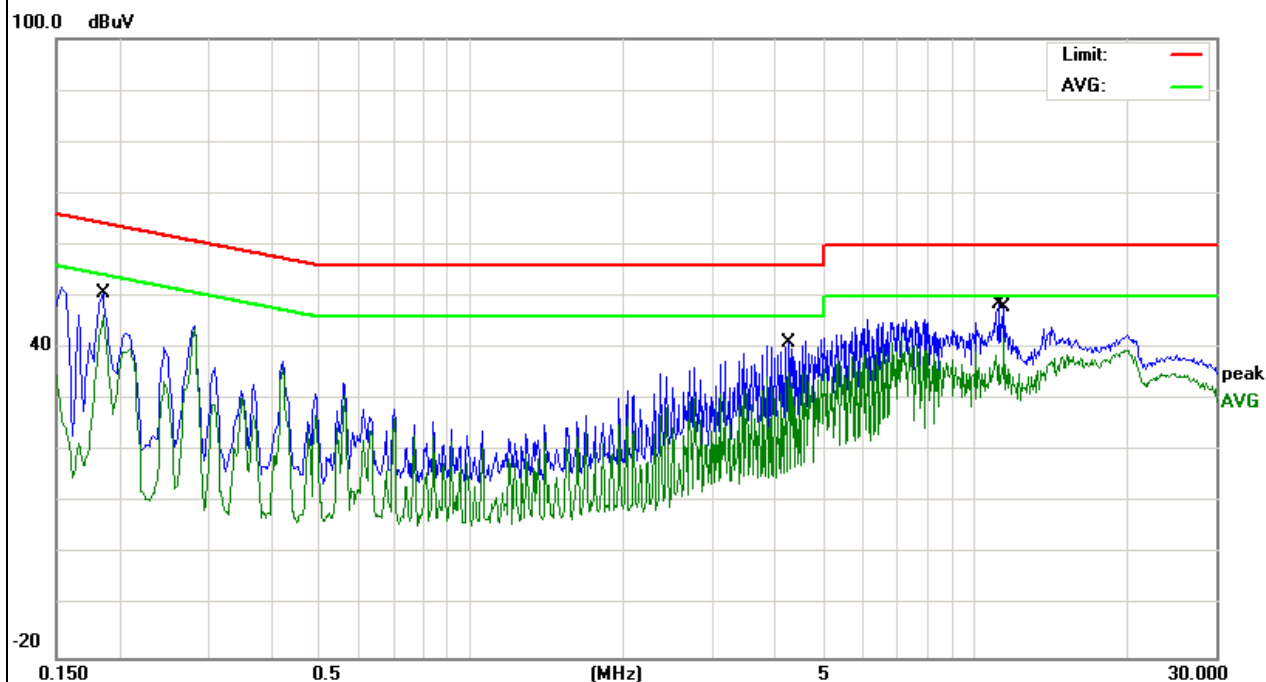
3.1.5 TEST RESULTS

EUT :	AOC Tablet	Model Name. :	MW1031-3G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode :	Mode 1	Phase :	L
Test Voltage :	DC 5V from adaper 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.186	40.18	10.44	50.62	64.21	-13.59	QP
0.186	36.03	10.44	46.47	54.21	-7.74	AVG
4.2659	30.34	10.63	40.97	56	-15.03	QP
4.2659	24.71	10.63	35.34	46	-10.66	AVG
11.1459	37.9	10.69	48.59	60	-11.41	QP
11.4259	31.24	10.69	41.93	50	-8.07	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit

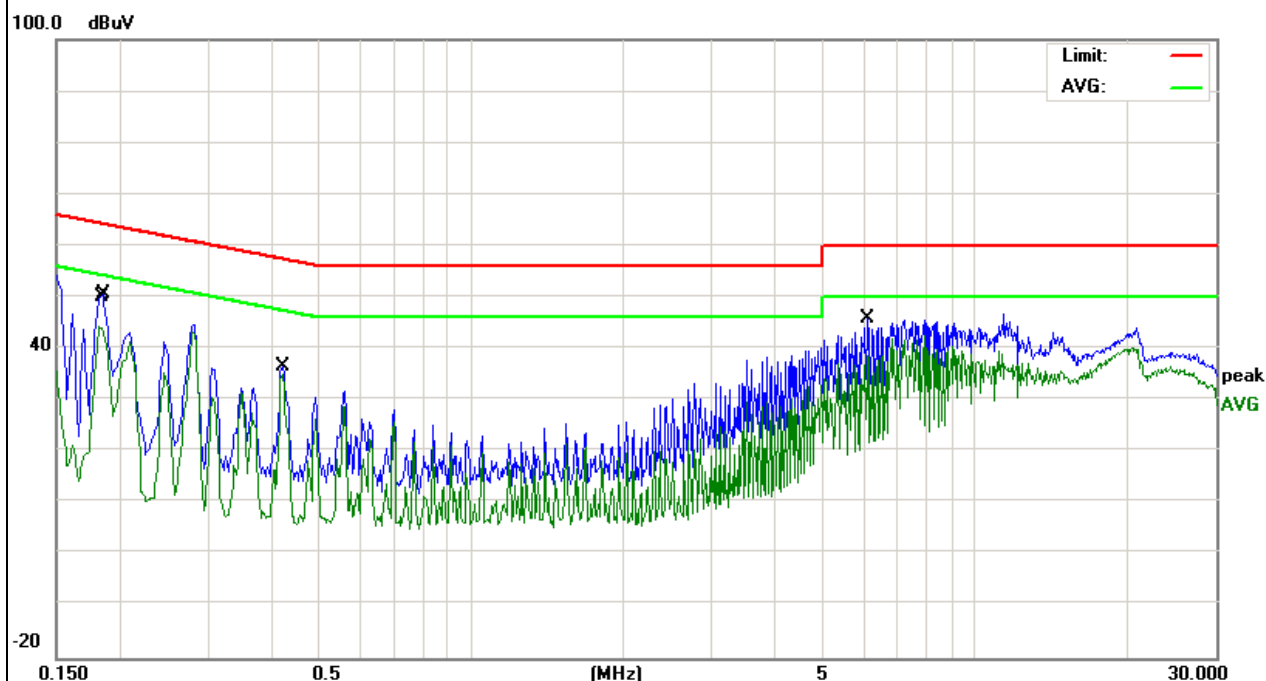


EUT :	AOC Tablet	Model Name. :	MW1031-3G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode :	Mode 1	Phase :	N
Test Voltage :	DC 5V from adaper 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.1819	34.11	10.38	44.49	54.39	-9.9	AVG
0.186	40.38	10.39	50.77	64.21	-13.44	QP
0.422	26.15	10.42	36.57	57.41	-20.84	QP
0.422	24.6	10.42	35.02	47.41	-12.39	AVG
6.0939	35.24	10.68	45.92	60	-14.08	QP
6.0939	27.9	10.68	38.58	50	-11.42	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit

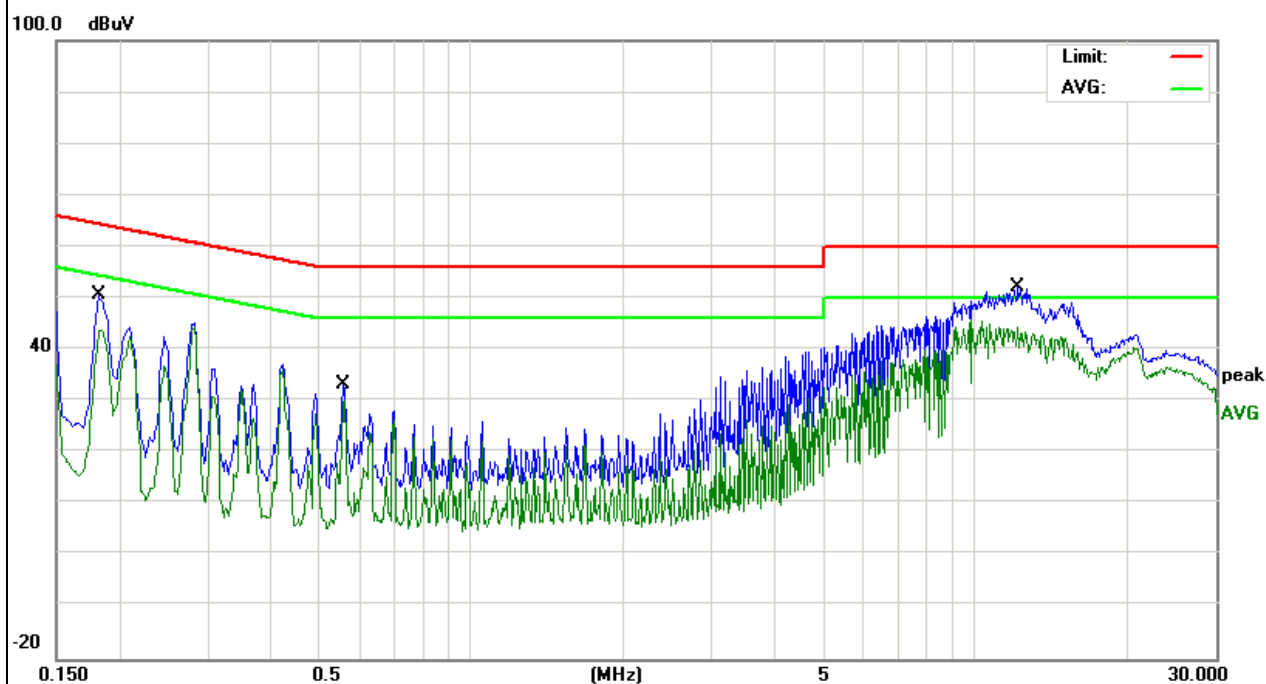


EUT :	AOC Tablet	Model Name. :	MW1031-3G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode :	Mode 2	Phase :	L
Test Voltage :	DC 5V from adaper 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.1819	40.12	10.38	50.5	64.39	-13.89	QP
0.1819	33.39	10.38	43.77	54.39	-10.62	AVG
0.558	22.9	10.41	33.31	56	-22.69	QP
0.562	19.77	10.41	30.18	46	-15.82	AVG
12.1859	41.5	10.71	52.21	60	-7.79	QP
12.1859	33.59	10.71	44.3	50	-5.7	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit

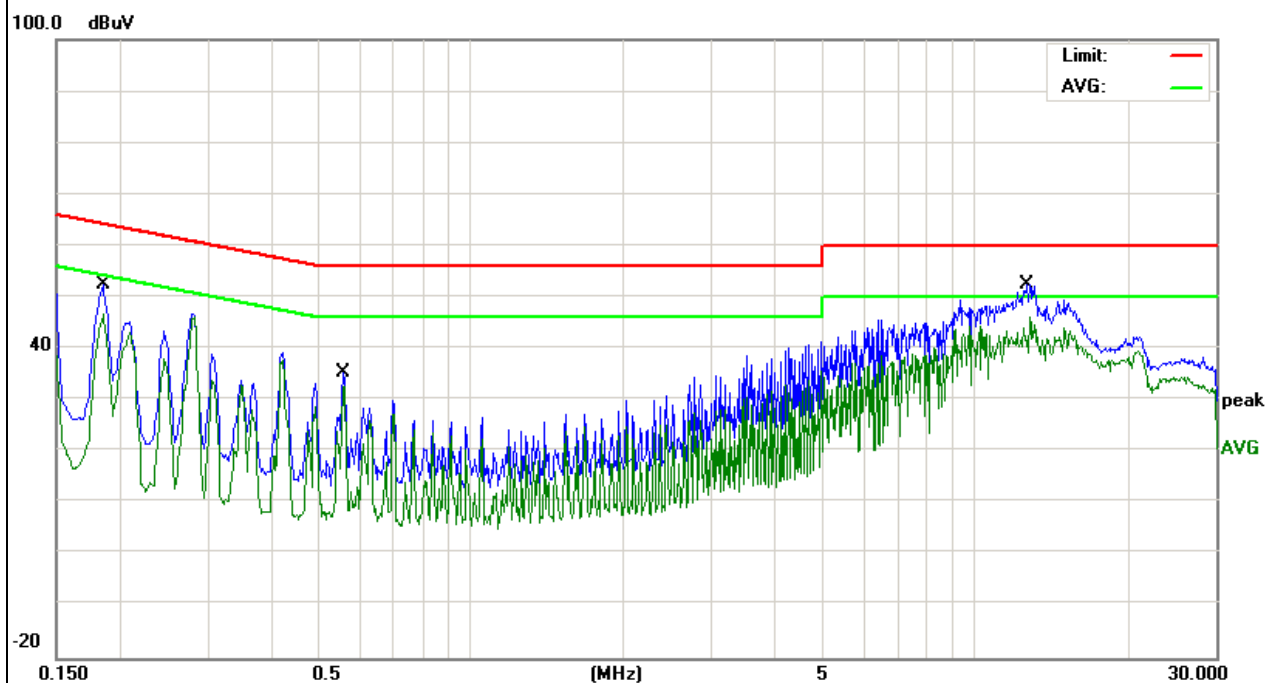


EUT :	AOC Tablet	Model Name. :	MW1031-3G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode :	Mode 2	Phase :	N
Test Voltage :	DC 5V from adapter 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.1859	41.99	10.44	52.43	64.21	-11.78	QP
0.1859	36.27	10.44	46.71	54.21	-7.5	AVG
0.558	24.82	10.4	35.22	56	-20.78	QP
0.558	22.22	10.4	32.62	46	-13.38	AVG
12.6499	41.87	10.69	52.56	60	-7.44	QP
12.7898	35.43	10.7	46.13	50	-3.87	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

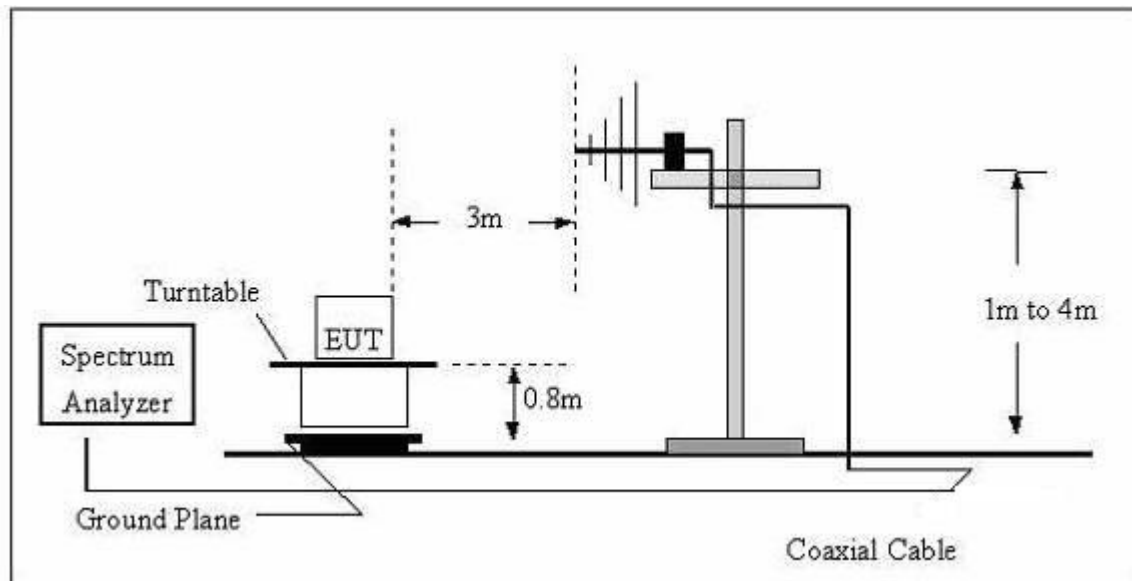
- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

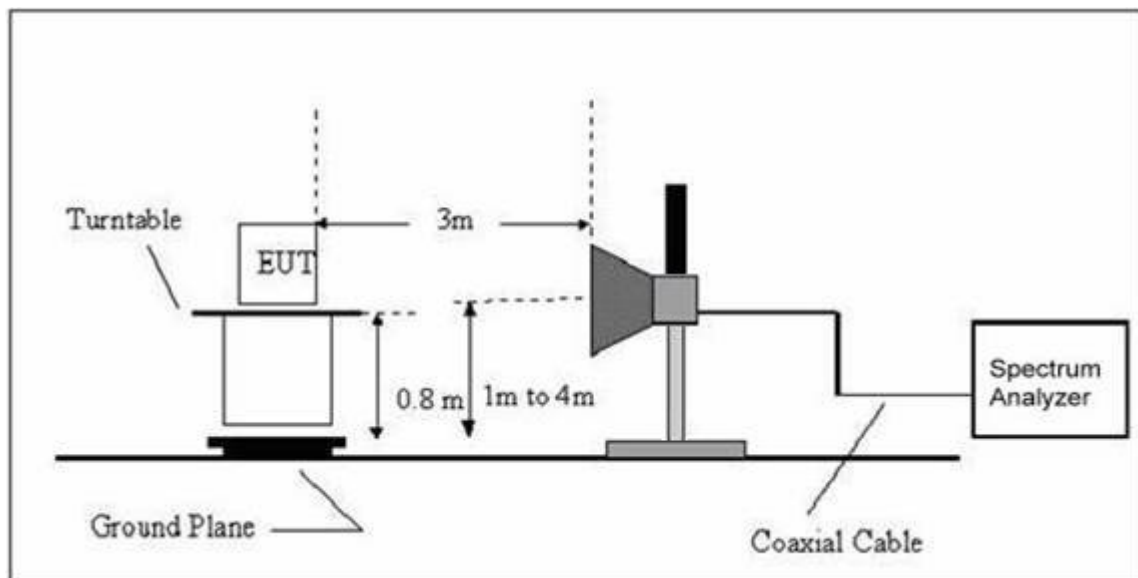
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 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, above 1G Average detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) 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 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



3.2.4 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.

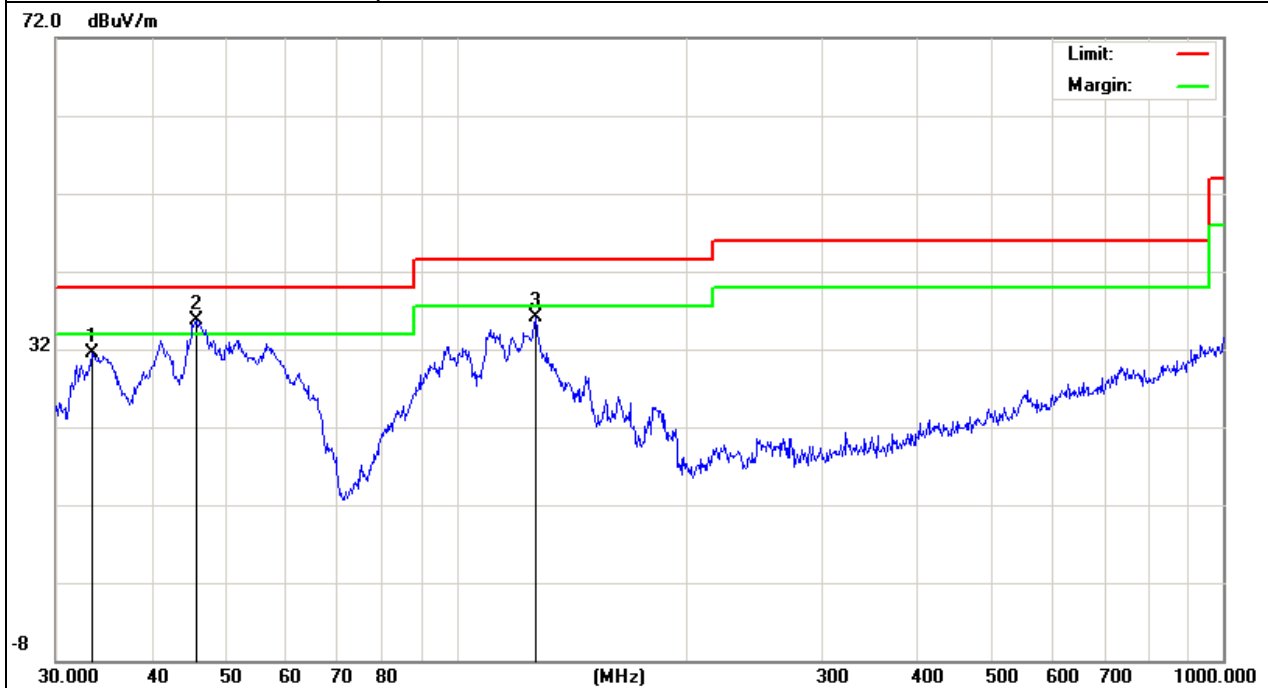
3.2.5 TEST RESULTS

EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2013-07-11
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 5V from adapter 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
33.4448	15.29	16.21	31.5	40	-8.5	QP
45.8551	25.91	9.78	35.69	40	-4.31	QP
126.7723	24.72	11.29	36.01	43.5	-7.49	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit

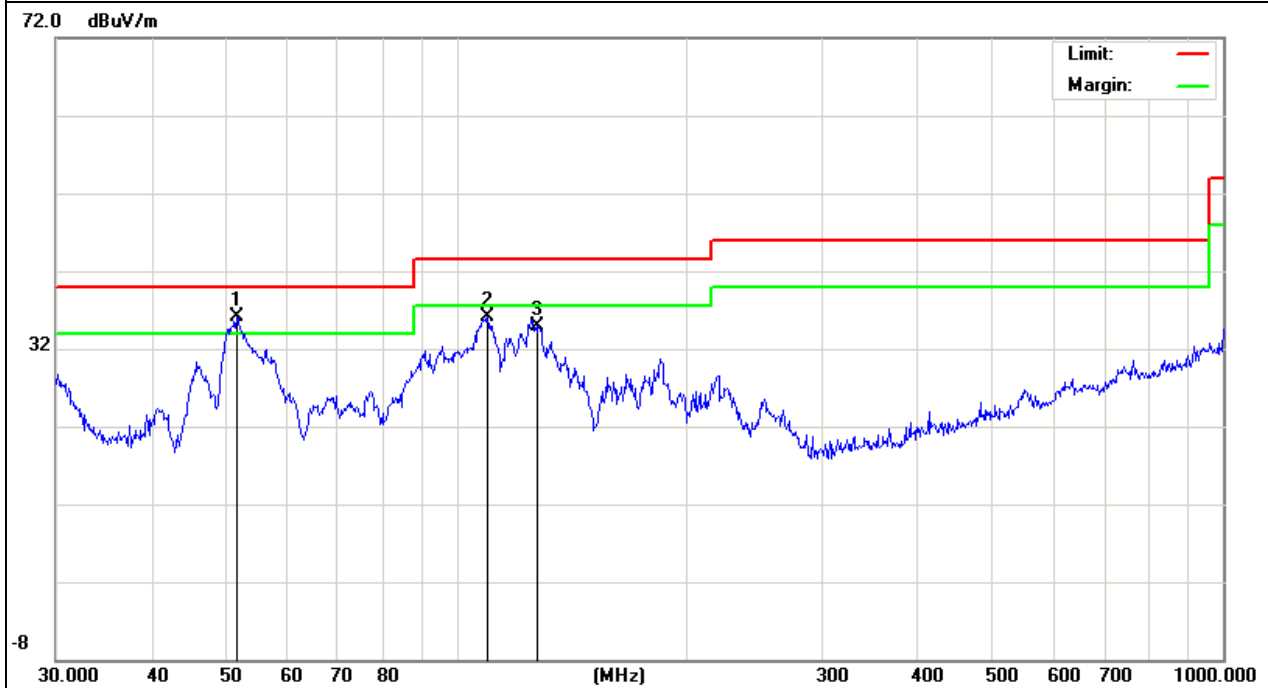


EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2013-07-11
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 5V from adapter 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
51.6616	29.08	6.95	36.03	40	-3.97	QP
109.796	25.3	10.78	36.08	43.5	-7.42	QP
127.2176	23.64	11.29	34.93	43.5	-8.57	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit

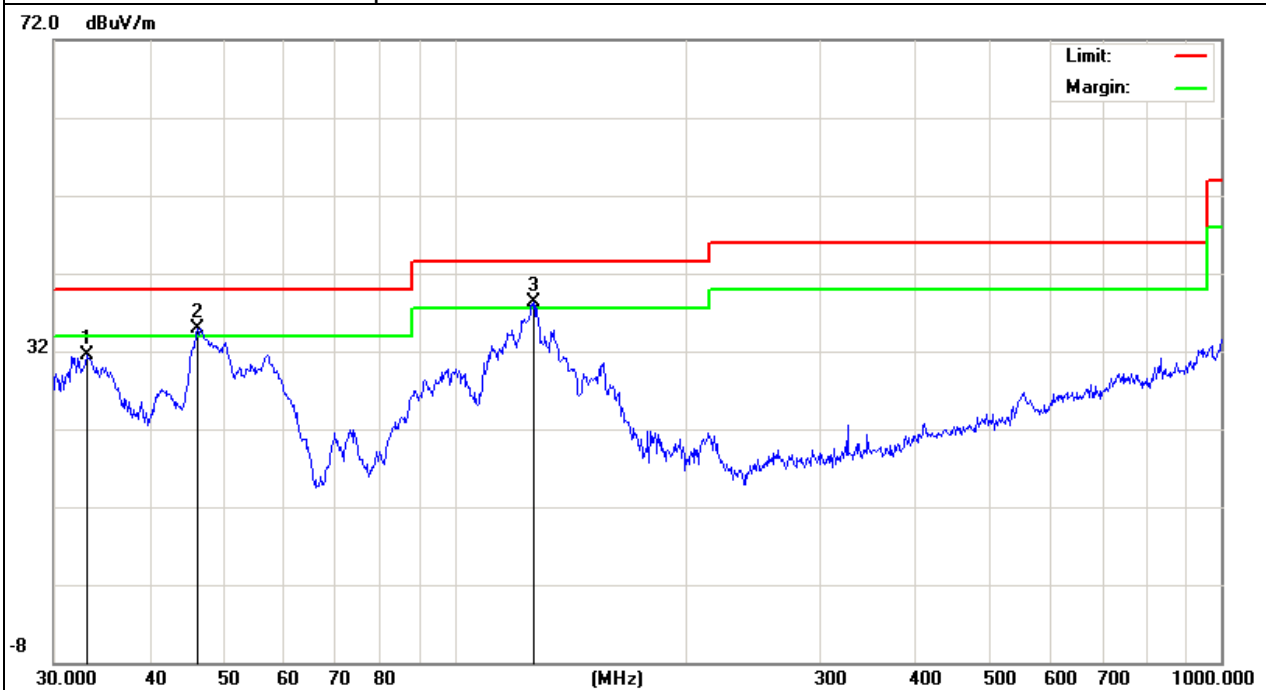


EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2013-07-11
Test Mode :	Mode 2	Polarization :	Horizontal
Test Power :	DC 5V from adapter 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
33.0949	15.13	16.4	31.53	40	-8.47	QP
46.1779	25.22	9.61	34.83	40	-5.17	QP
126.7723	27.08	11.29	38.37	43.5	-5.13	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit

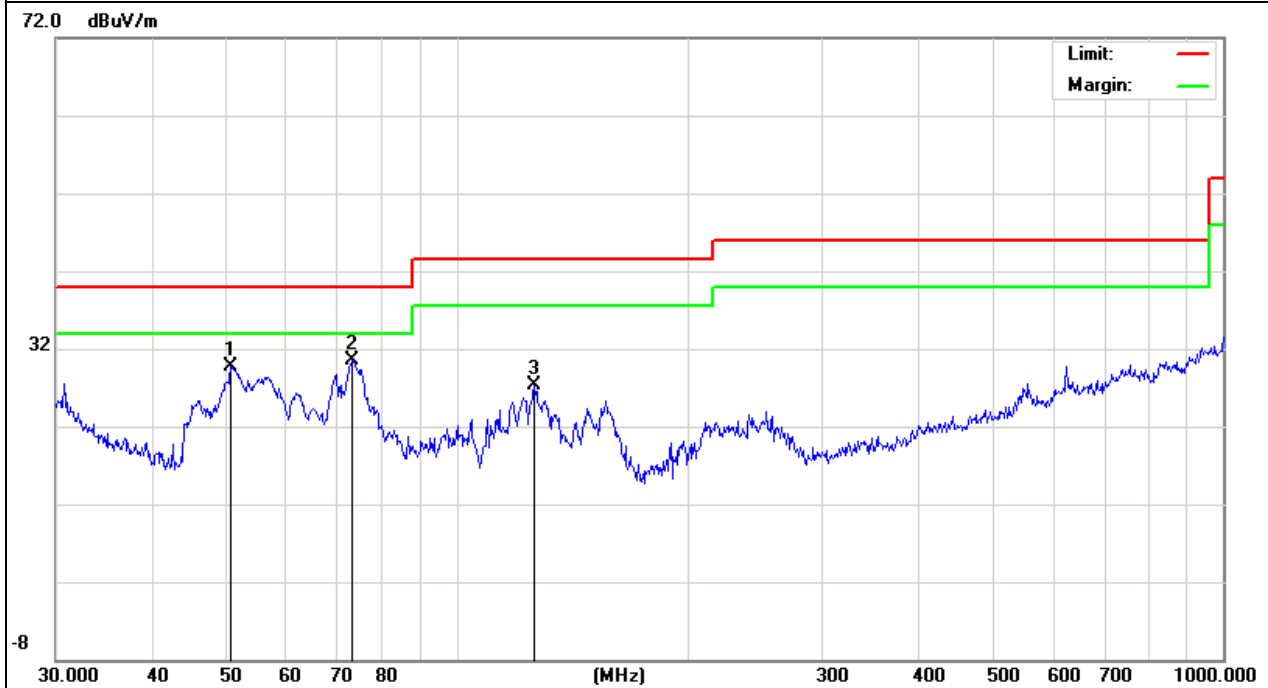


EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2013-07-11
Test Mode :	Mode 2	Polarization :	Vertical
Test Power :	DC 5V from adapter 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
50.7637	22.26	7.36	29.62	40	-10.38	QP
73.1025	24.72	5.87	30.59	40	-9.41	QP
126.3286	15.96	11.29	27.25	43.5	-16.25	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



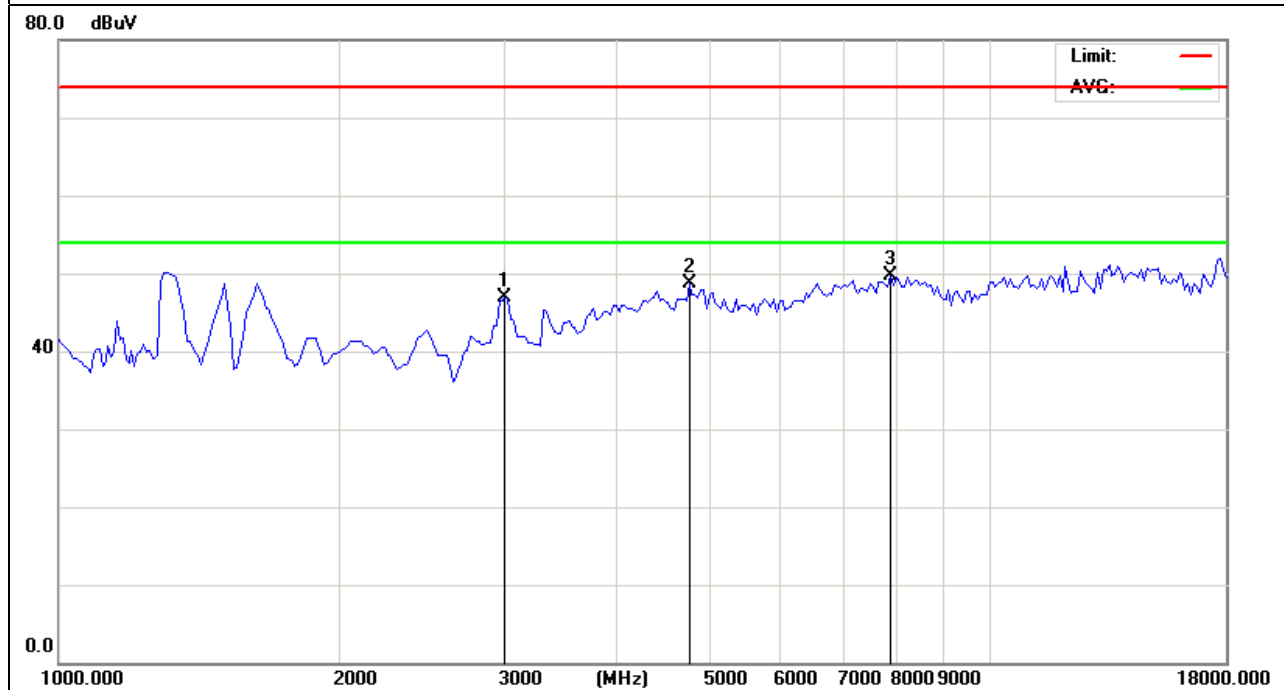
3.2.6 TEST RESULTS(Above 1GHz)

EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 1	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3040	58.6	-11.63	46.97	74	-27.03	peak
4782.5	52.64	-3.91	48.73	74	-25.27	peak
7842.5	49.33	0.44	49.77	74	-24.23	peak

Remark:

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

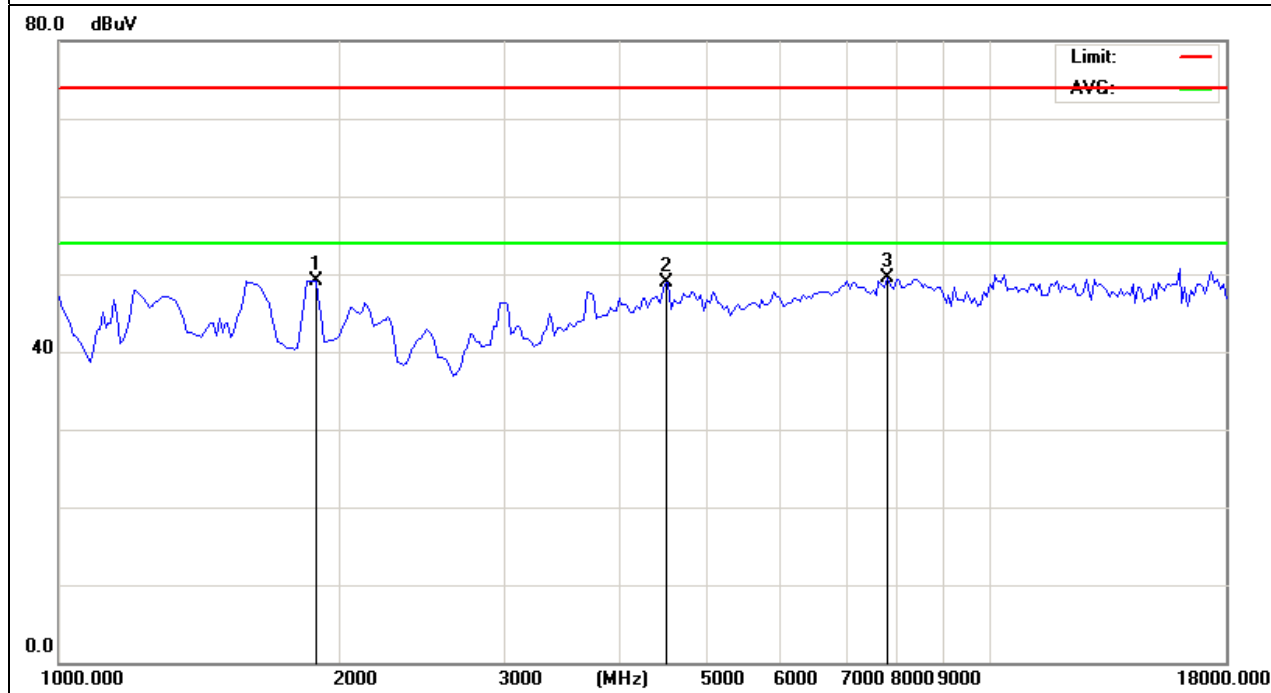


EUT :	AOC Tablet	Model Name :	MW1031-3G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode1	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1892.5	63.44	-14.28	49.16	74	-24.84	peak
4527.5	54.53	-5.59	48.94	74	-25.06	peak
7800	48.99	0.55	49.54	74	-24.46	peak

Remark:

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

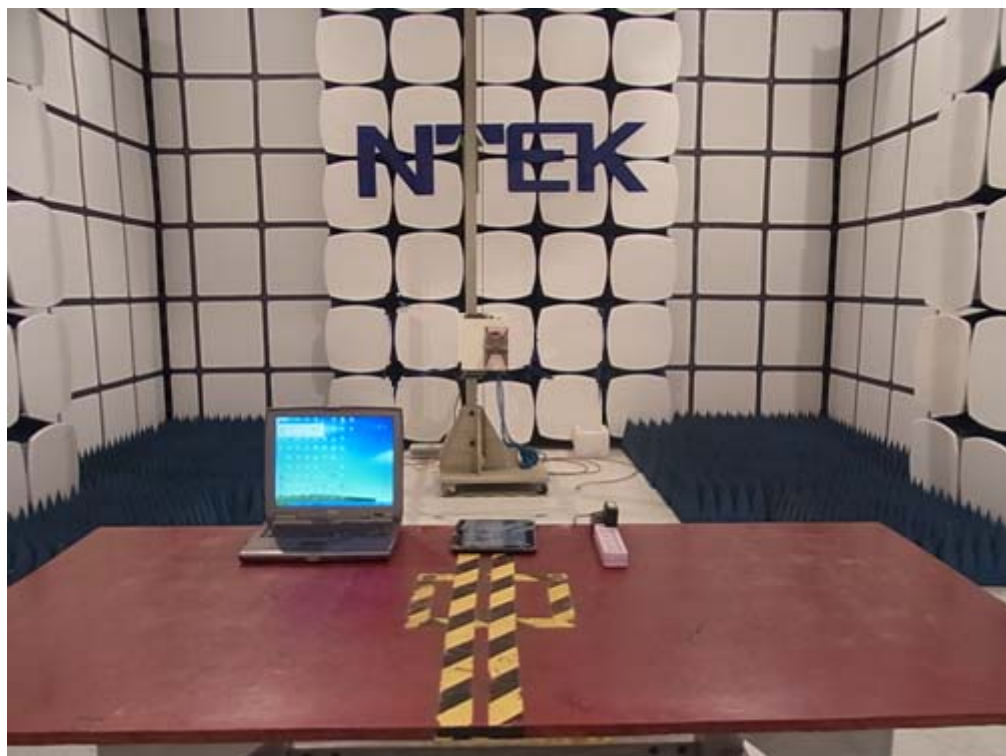


NOTE: 2 Modes were tested for above 1GHz emission.

Mode 1 is the worst data, and was shown.

4. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

