

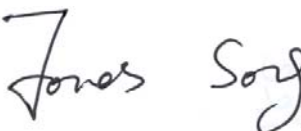
FCC TEST REPORT

Prepared For	OTG CO. LIMITED.
Product Name:	Mobile Internet Device
Trade Name:	
Model Name :	M70T02, M70T01,M70T02,M70T04, M70T08, M70T10, M70T12, M70T14, M70T16,M80T06,M80T08
FCC ID:	Q7POTG70T001
Prepared By	DongGuan Precise Testing Service Co.,Ltd.
	F616A Room, 6th Floor, Meixin Business Center, Dongcheng Middle Road, Dongguan, Guangdong, China
Report No.	PTS2012092254F3
Test Date:	Sep 10 ~ Sep 30, 2012
Date of Report :	Sep 30, 2012

VERIFICATION OF COMPLIANCE

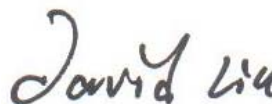
Applicant:	OTG CO. LIMITED
Address	RM.B. 8/F., CAPITAL COMM. BLDG., 446-448 SHANGHAI ST., MONGKOK. KLN HONG KONG
Manufacturer Name:	OTG CO. LIMITED
Address:	RM.B. 8/F., CAPITAL COMM. BLDG., 446-448 SHANGHAI ST., MONGKOK. KLN HONG KONG
Product Description:	Mobile Internet Device
Brand Name:	
Model Name:	M70T01,M70T02,M70T04, M70T08, M70T10, M70T12, M70T14, M70T16,M80T06,M80T08
Model difference:	Only model names are different.
Test procedure	ANSI C63.4
Standards	FCC Part15B:2011

Prepared by :



Assistant

Reviewer :



Supervisor

Approved & Authorized Signer :



Jack Ou / Manager

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B:2011 ANSI C63.4: 2009	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

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

1.2 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
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	Mobile Internet Device	
Brand Name	N/A	
Model Name.	M70T02	
Serial No	M70T01,M70T02,M70T04, M70T08, M70T10, M70T12, M70T14, M70T16,M80T06,M80T08	
Model Difference	Only model names are different.	
Product Description	The EUT is a Mobile Internet Device ..	
	Operating frequency:	OSC 24MHz ,32.768KHz,40MHz
	Connecting I/O port:	USB Port
	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.	
Power Source	DC 3.7V by battery or AC120V/60Hz by adapter	
Battery	Rated Voltage: 3.7V	
Adapter :	Model No.: SK02G-0520200U Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5.2V, 2A	

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.

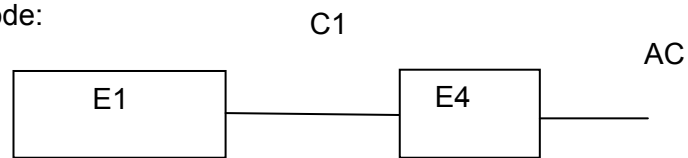
Pretest Mode	Description
Mode 1	Charging Mode
Mode 2	USB Mode
Mode 3	HDMI Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging Mode
Mode 2	USB Mode
Mode 3	HDMI Mode

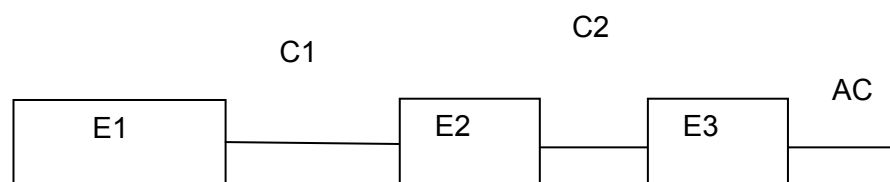
For Radiated Test	
Final Test Mode	Description
Mode 1	Charging Mode
Mode 2	USB Mode
Mode 3	HDMI Mode

2.3 DESCRIPTION OF TEST SETUP

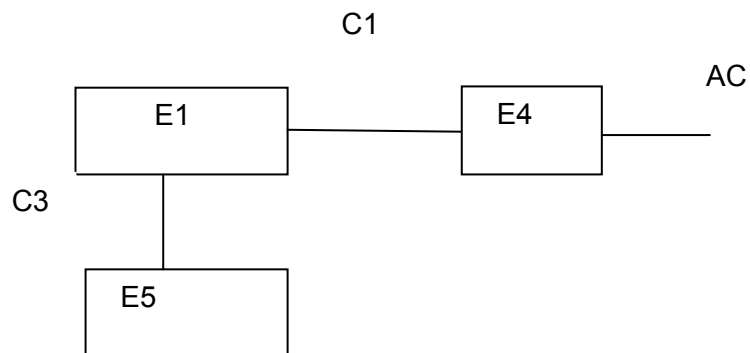
Charging Mode:



USB Mode:



HDMI mode:



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
E1	Mobile Internet Device	N/A	M70T02	--	--
E2	PC	IBM	2366		
E3	Adapter(PC)	IBM	08K8202		
E4	Adapter	--	SK02G-0520200U		
E5	Monitor	DELL	IN2020MB		

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	1.5M	
C2	No	No	1.0M	

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” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 CONDUCTED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101313	Jul. 06, 2013
2	LISN	EMCO	3816/2	00042990	Jul. 06, 2013
3	50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2013
4	Test Cable	N/A	C01	N/A	Jul. 06, 2013
5	Test Cable	N/A	C02	N/A	Jul. 06, 2013
6	Test Cable	N/A	C03	N/A	Jul. 06, 2013
7	EMI Test Receiver	R&S	ESCI	101160	Jul. 06, 2013
8	Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2013
9	Triple-Loop Antenna	EVERFINE	LIA-2	11020003	Jul. 06, 2013
10	Absorbing Clamp	R&S	MDS-21	100423	Jul. 06, 2013

2.5.2 RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Bilog Antenna	TESEQ	CBL6111D	31216	Jul. 06, 2013
2	Test Cable	N/A	R-01	N/A	Jul. 06, 2013
3	Test Cable	N/A	R-02	N/A	Jul. 06, 2013
4	EMI Test Receiver	R&S	ESCI-7	101318	Jul. 06, 2013
5	Antenna Mast	EM	SC100_1	N/A	N/A
6	Turn Table	EM	SC100	060531	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2013
8	Spectrum Analyzer	Aglient	E4407B	MY45108040	Jul. 06, 2013
9	Horn Antenna	EM	EM-AH-1018 0	2011071402	Jul. 06, 2013
10	Amplifier	EM	EM-30180	060538	Jul. 06, 2013

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.

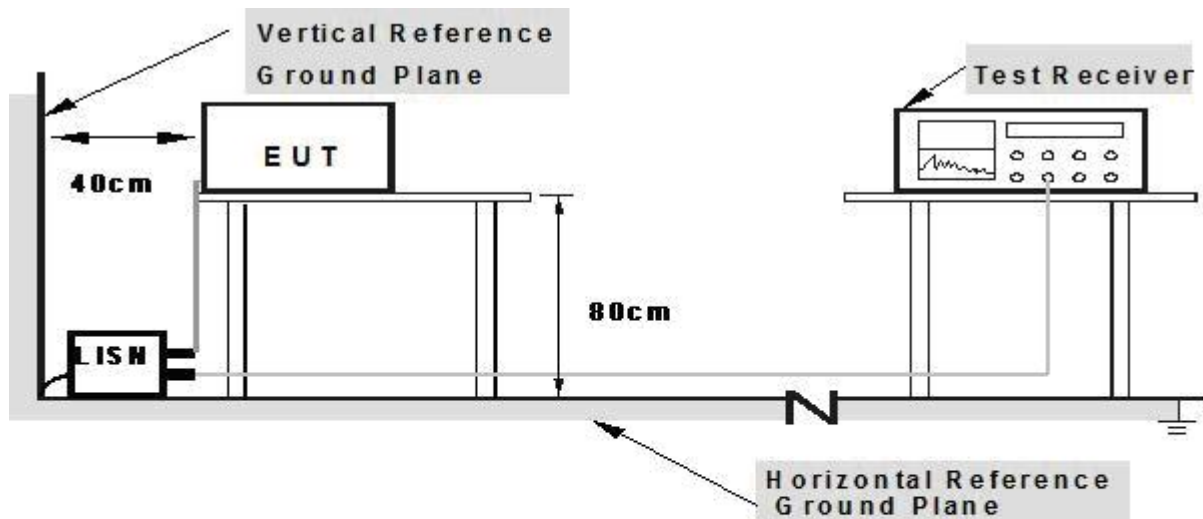
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

- 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 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.

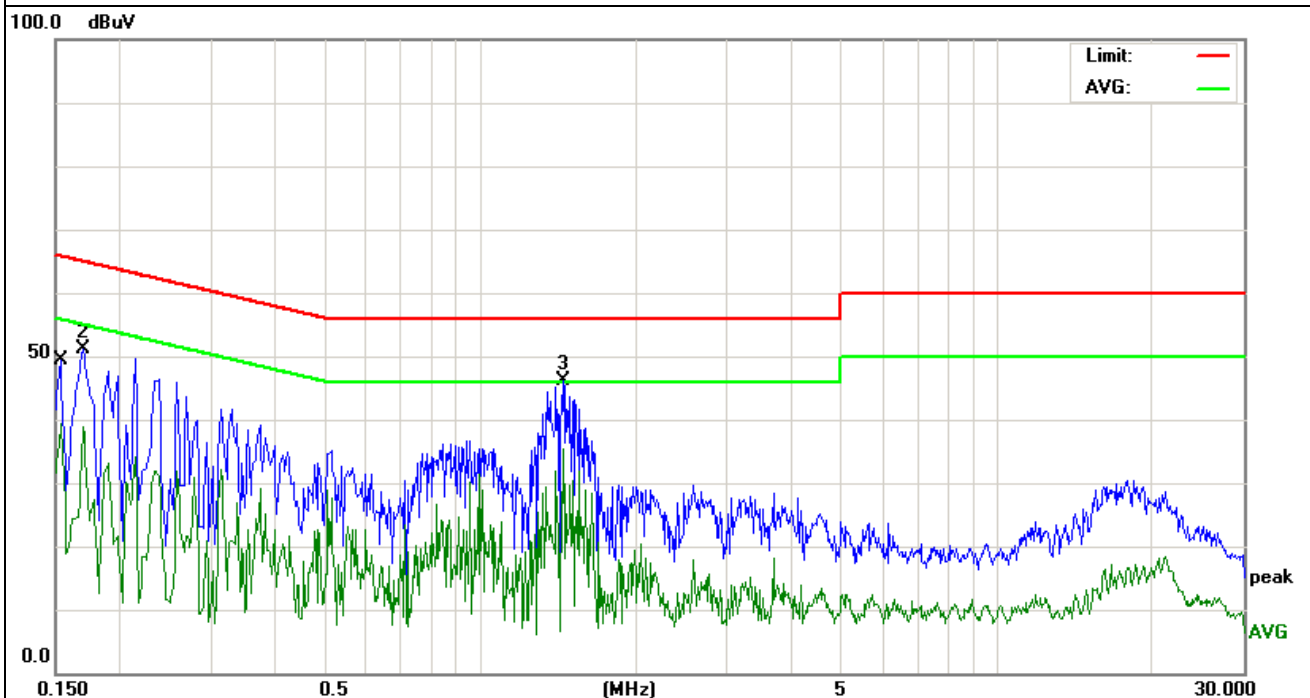
3.1.5 TEST RESULTS

EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 1

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	28.25	11.03	39.28	55.78	-16.5	AVG
0.17	40.77	10.35	51.12	64.96	-13.84	peak
1.446	35.62	10.45	46.07	56	-9.93	peak
1.446	25.01	10.45	35.46	46	-10.54	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

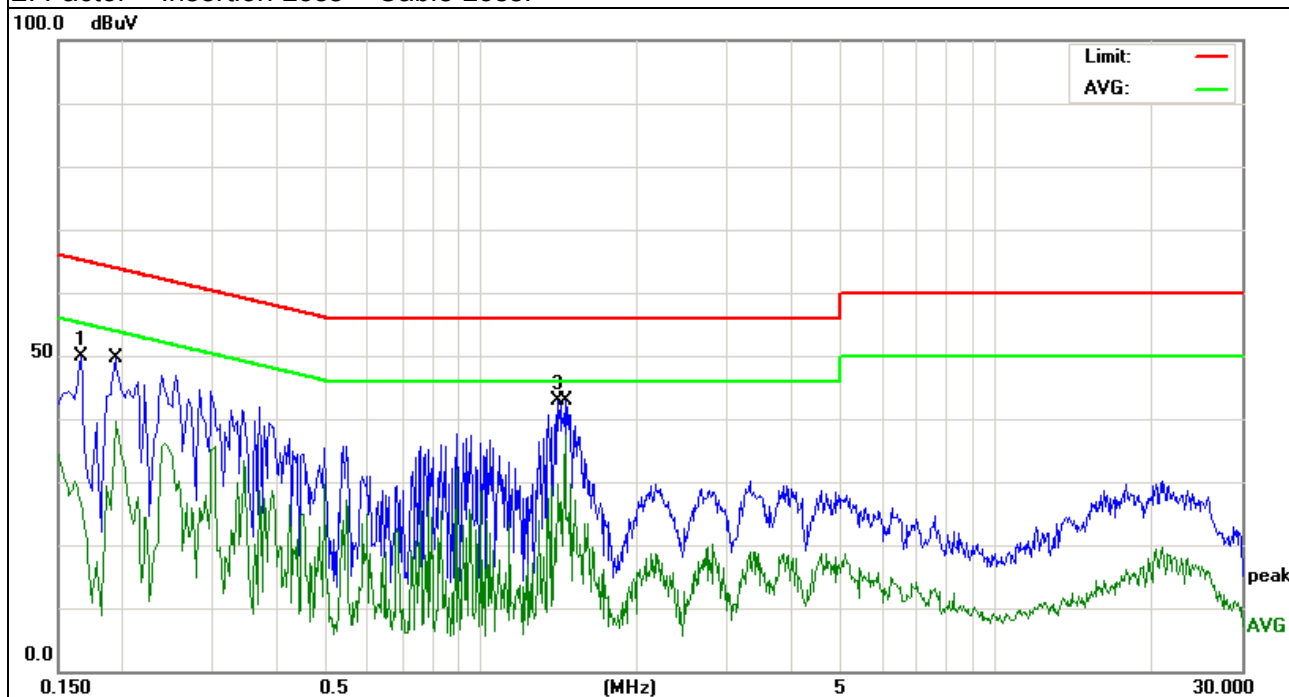


EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.166	39.39	10.45	49.84	65.15	-15.31	peak
0.194	29.18	10.44	39.62	53.86	-14.24	AVG
1.406	32.55	10.41	42.96	56	-13.04	peak
1.45	27.07	10.41	37.48	46	-8.52	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

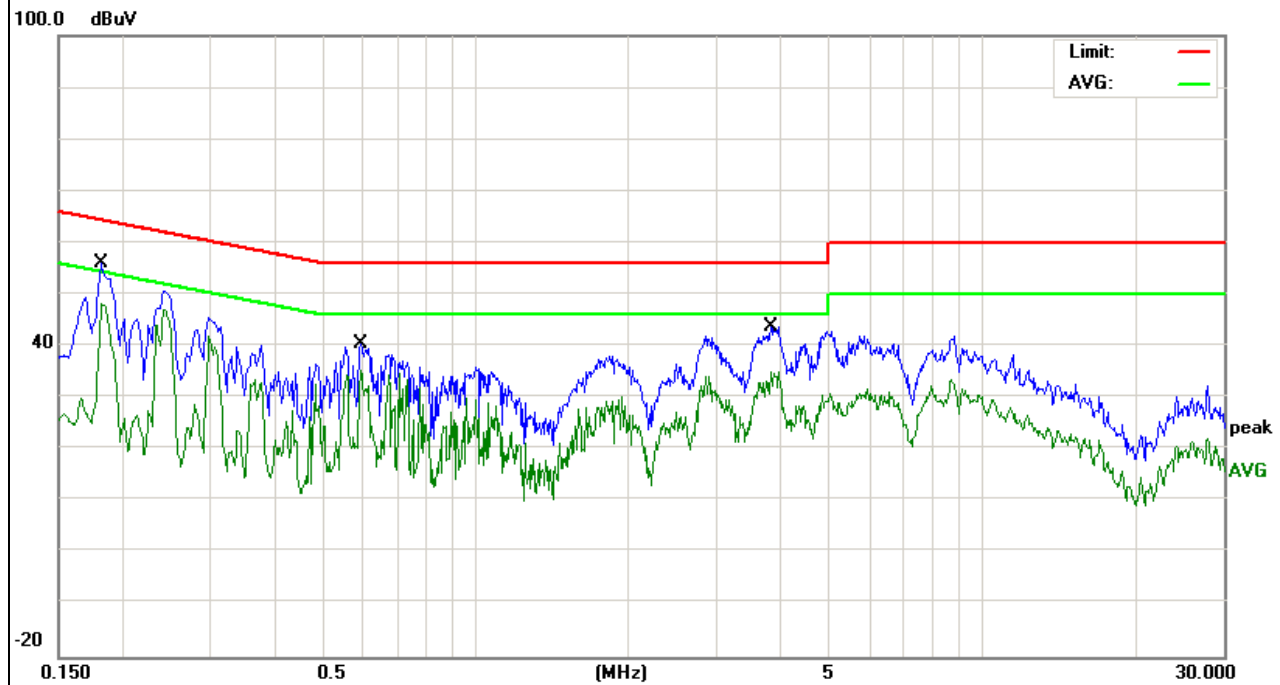


EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 2

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1819	46.36	9.65	56.01	64.39	-8.38	QP
0.1819	38.55	9.65	48.2	54.39	-6.19	AVG
0.5939	30.78	9.62	40.4	56	-15.6	QP
0.5939	25.66	9.62	35.28	46	-10.72	AVG
3.822	34.05	9.69	43.74	56	-12.26	QP
3.822	25.27	9.69	34.96	46	-11.04	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

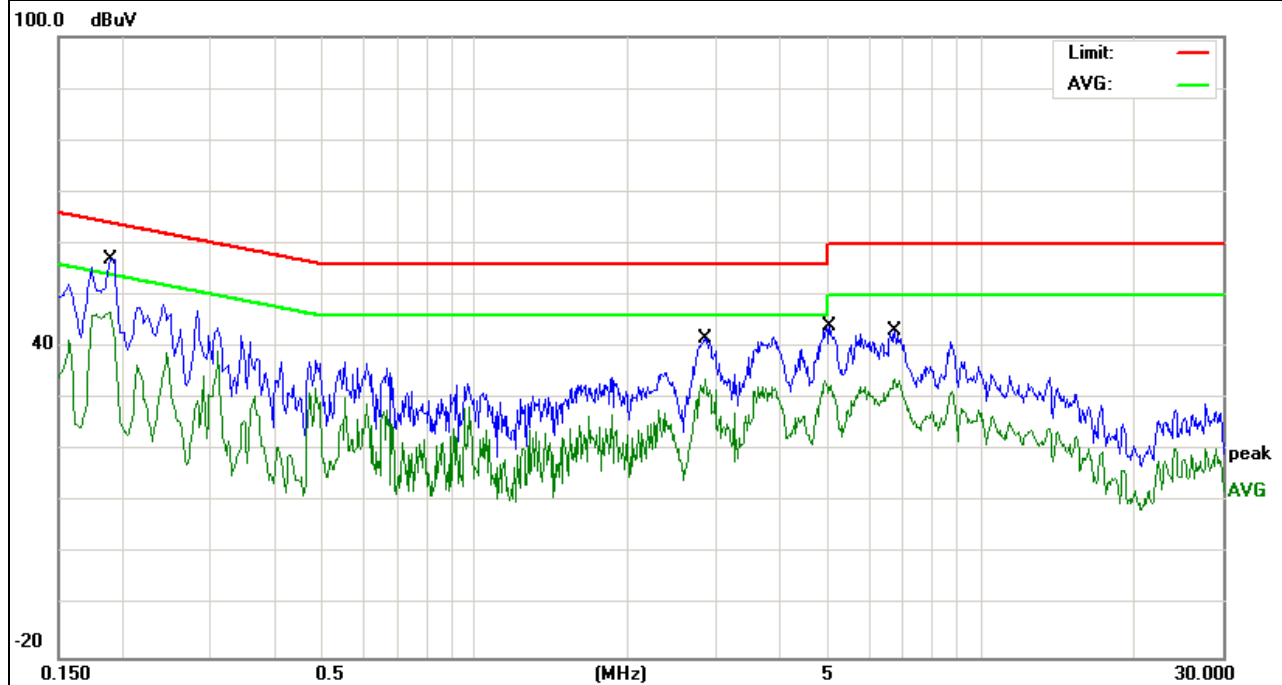


EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 2

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.19	47.39	9.64	57.03	64.03	-7	QP
0.19	37.15	9.64	46.79	54.03	-7.24	AVG
2.842	32.06	9.68	41.74	56	-14.26	QP
2.842	24.3	9.68	33.98	46	-12.02	AVG
5.0059	34.35	9.71	44.06	60	-15.94	QP
6.7539	24.05	9.74	33.79	50	-16.21	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

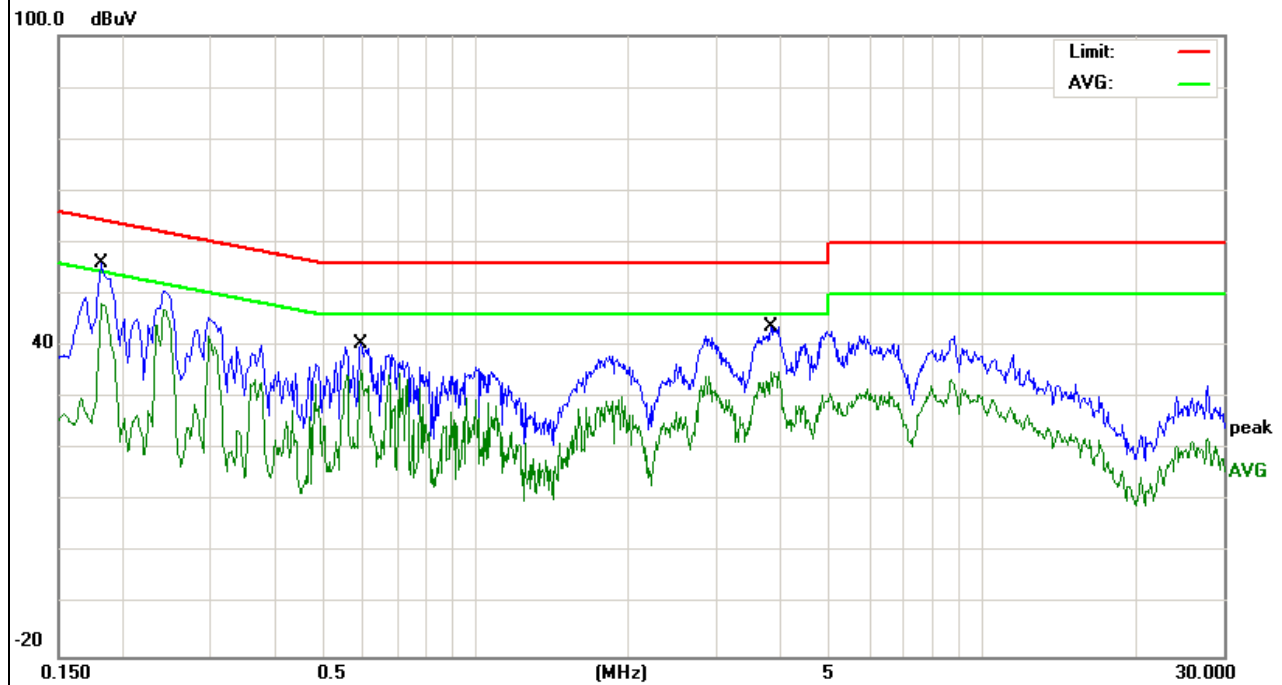


EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1819	46.36	9.65	56.01	64.39	-8.38	QP
0.1819	38.55	9.65	48.2	54.39	-6.19	AVG
0.5939	30.78	9.62	40.4	56	-15.6	QP
0.5939	25.66	9.62	35.28	46	-10.72	AVG
3.822	34.05	9.69	43.74	56	-12.26	QP
3.822	25.27	9.69	34.96	46	-11.04	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

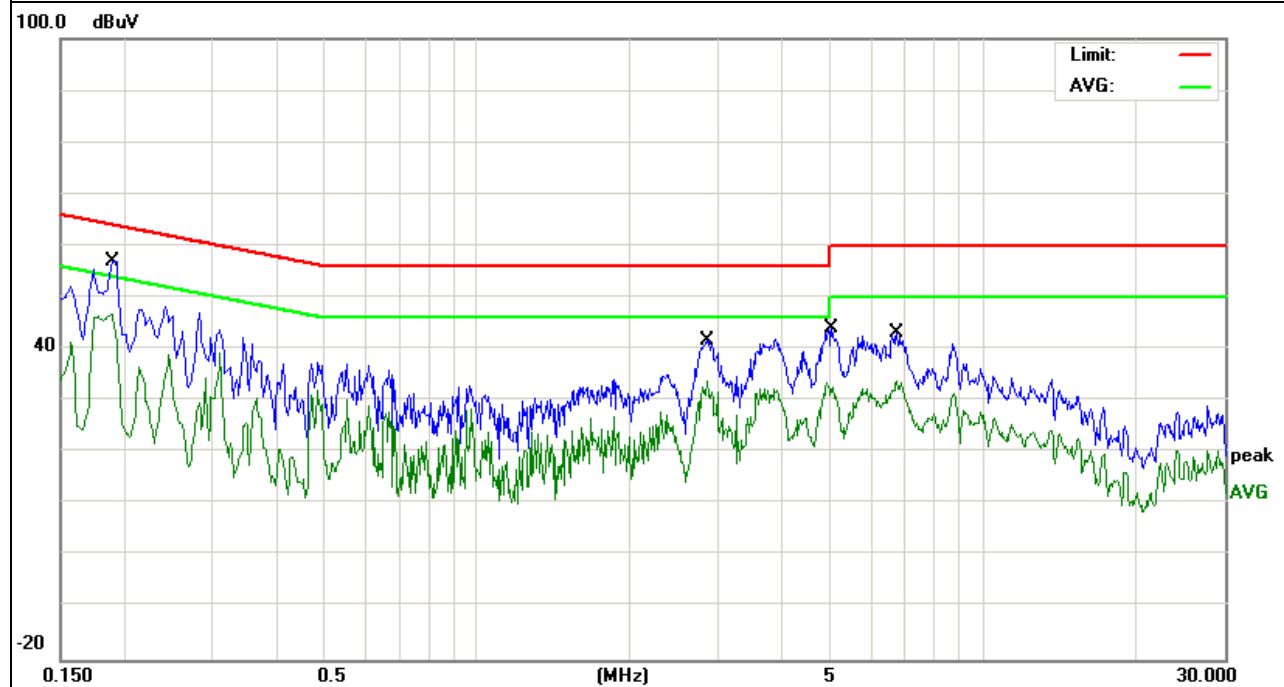


EUT :	Mobile Internet Device	Model Name. :	M70T02
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.19	47.39	9.64	57.03	64.03	-7	QP
0.19	37.15	9.64	46.79	54.03	-7.24	AVG
2.842	32.06	9.68	41.74	56	-14.26	QP
2.842	24.3	9.68	33.98	46	-12.02	AVG
5.0059	34.35	9.71	44.06	60	-15.94	QP
6.7539	24.05	9.74	33.79	50	-16.21	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



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:

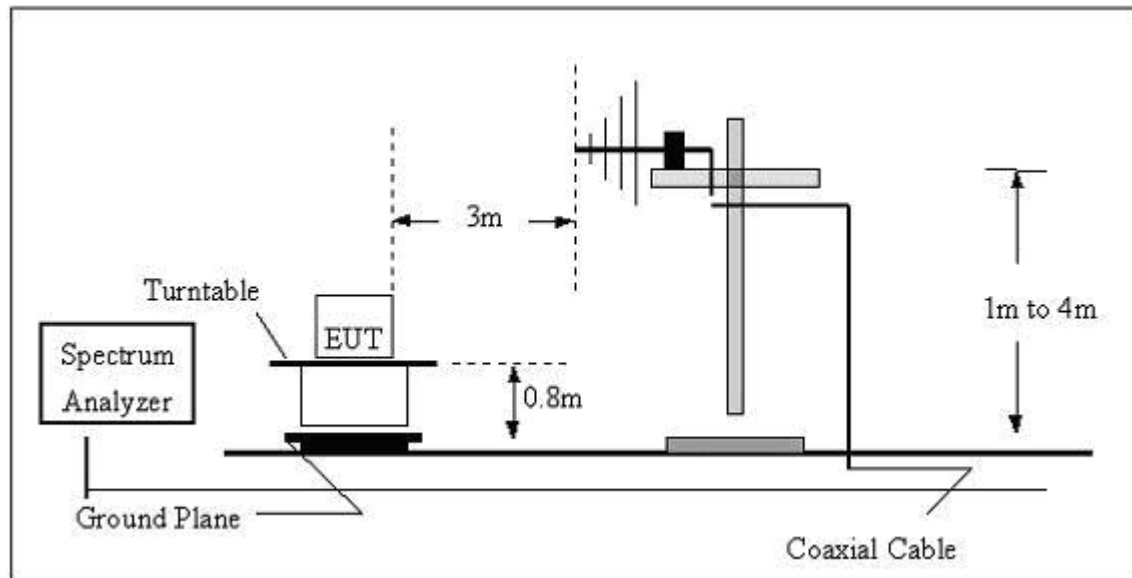
- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

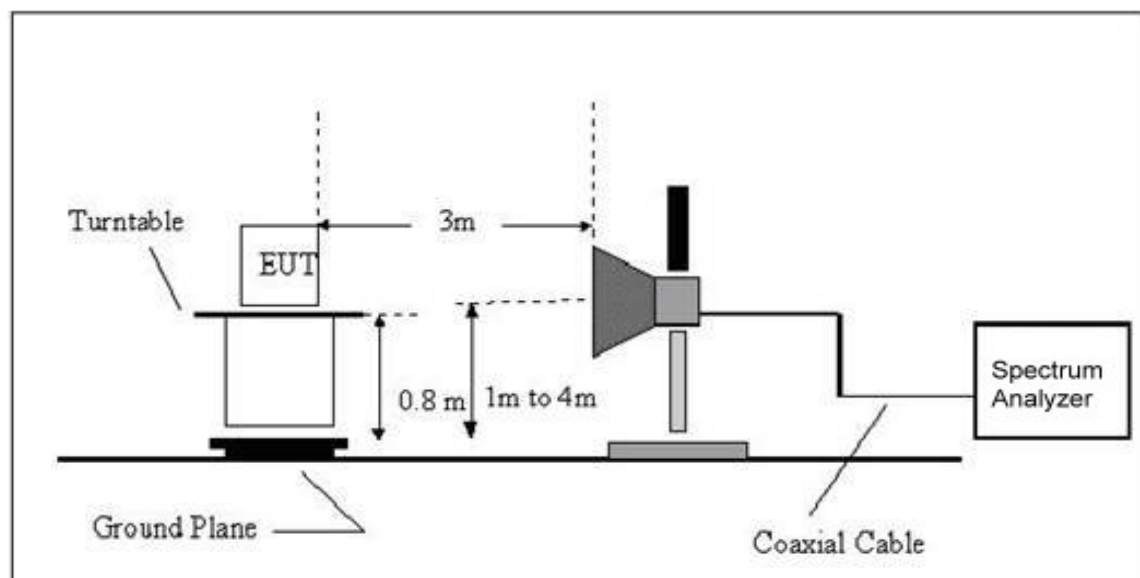
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 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(Blow 30MHZ)

EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 1/2/3	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $20 \log (\text{specific distance/test distance})(\text{dB})$;

Limit line = specific limits(dBuv) + distance extrapolation factor.

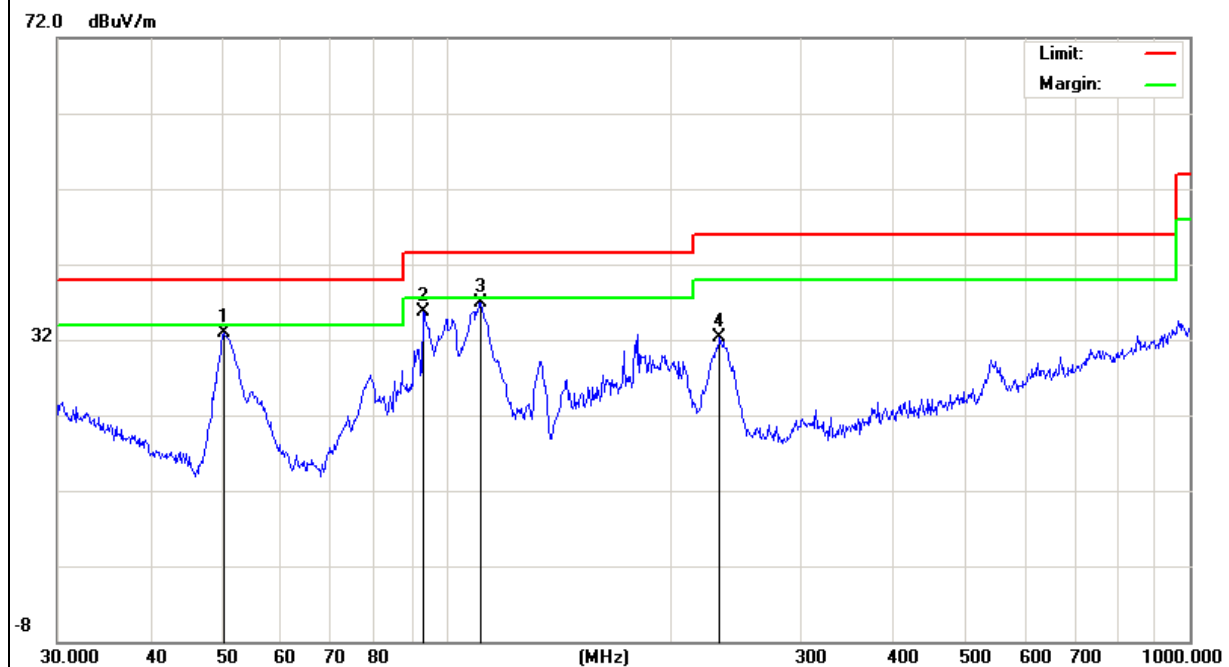
3.2.6 TEST RESULTS(30MHZ-1GHZ)

EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 1	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
50.2324	24.8	8.07	32.87	40	-7.13	QP
93.1132	25.9	9.78	35.68	43.5	-7.82	QP
111.3468	25.42	11.48	36.9	43.5	-6.6	QP
233.3487	21.62	10.63	32.25	46	-13.75	QP

Remark:

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

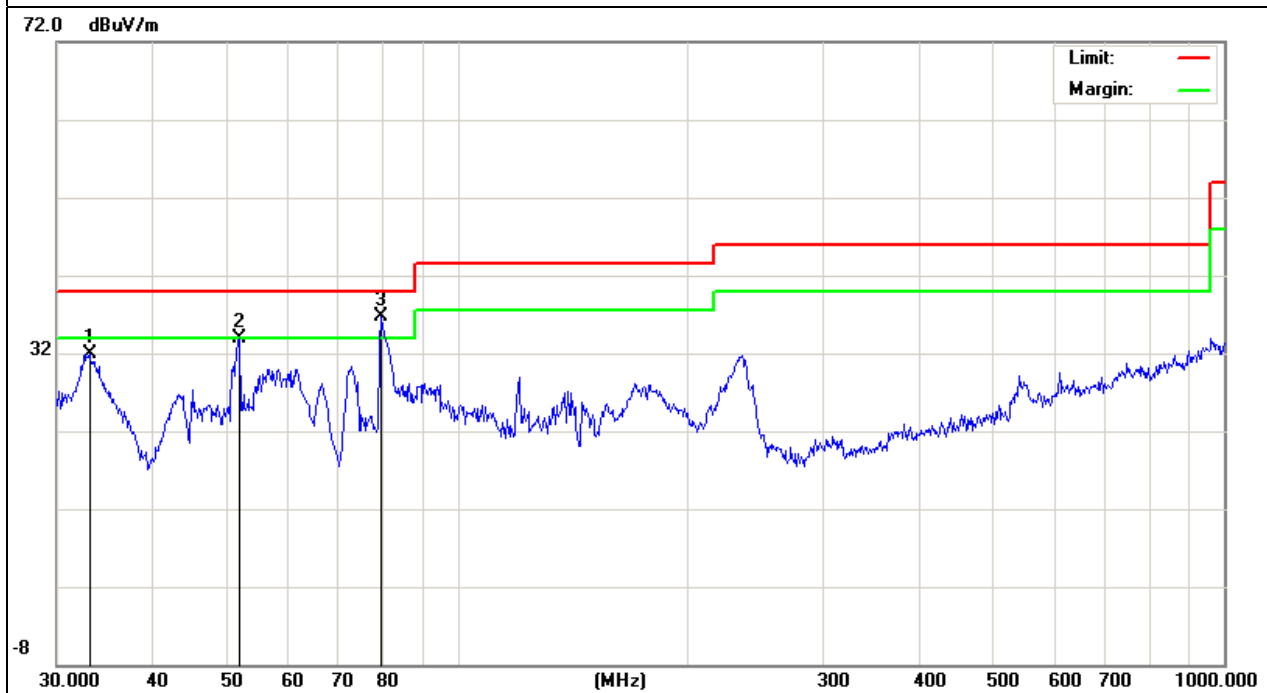


EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 1	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
33.0949	15.21	16.72	31.93	40	-8.07	QP
52.0251	26.78	7.22	34	40	-6	QP
79.5207	29.07	7.65	36.72	40	-3.28	QP

Remark:

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

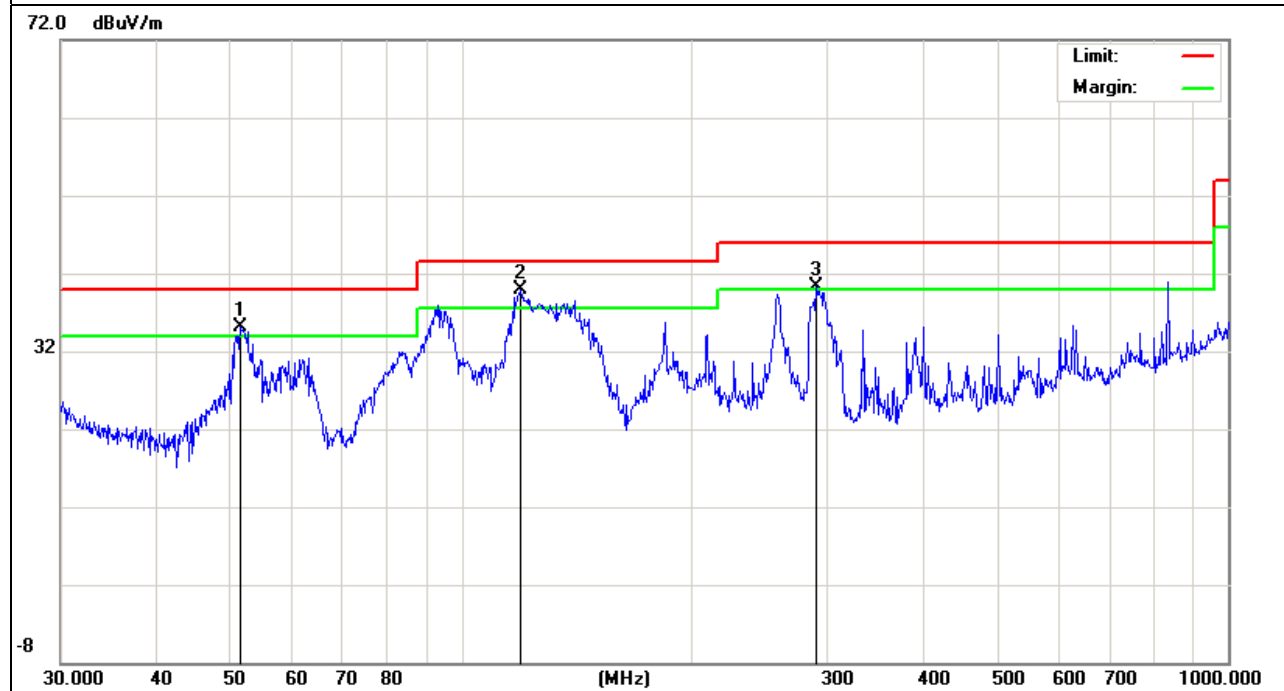


EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 2	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
51.4806	27.63	7.47	35.1	40	-4.9	QP
119.436	28.16	11.76	39.92	43.5	-3.58	QP
290.0172	26.44	13.96	40.4	46	-5.6	QP

Remark:

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

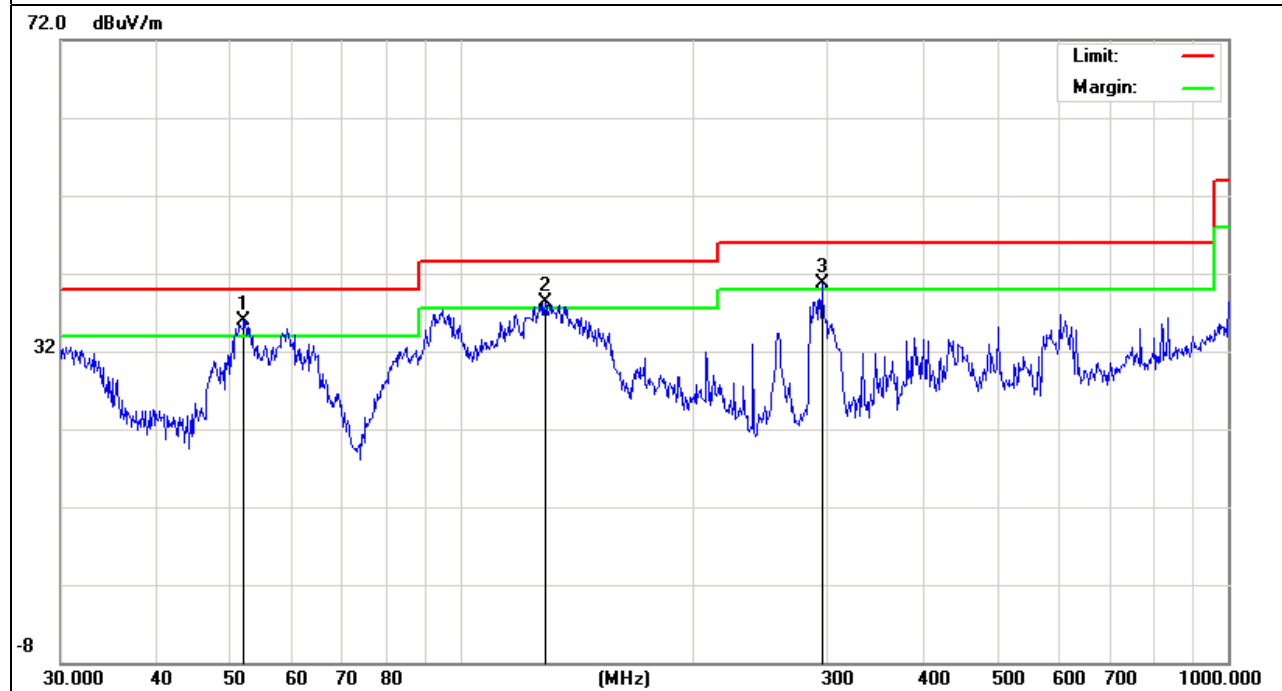


EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 2	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
52.0251	28.68	7.22	35.9	40	-4.1	QP
128.5629	26.39	11.91	38.3	43.5	-5.2	QP
295.1469	26.32	14.37	40.69	46	-5.31	QP

Remark:

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

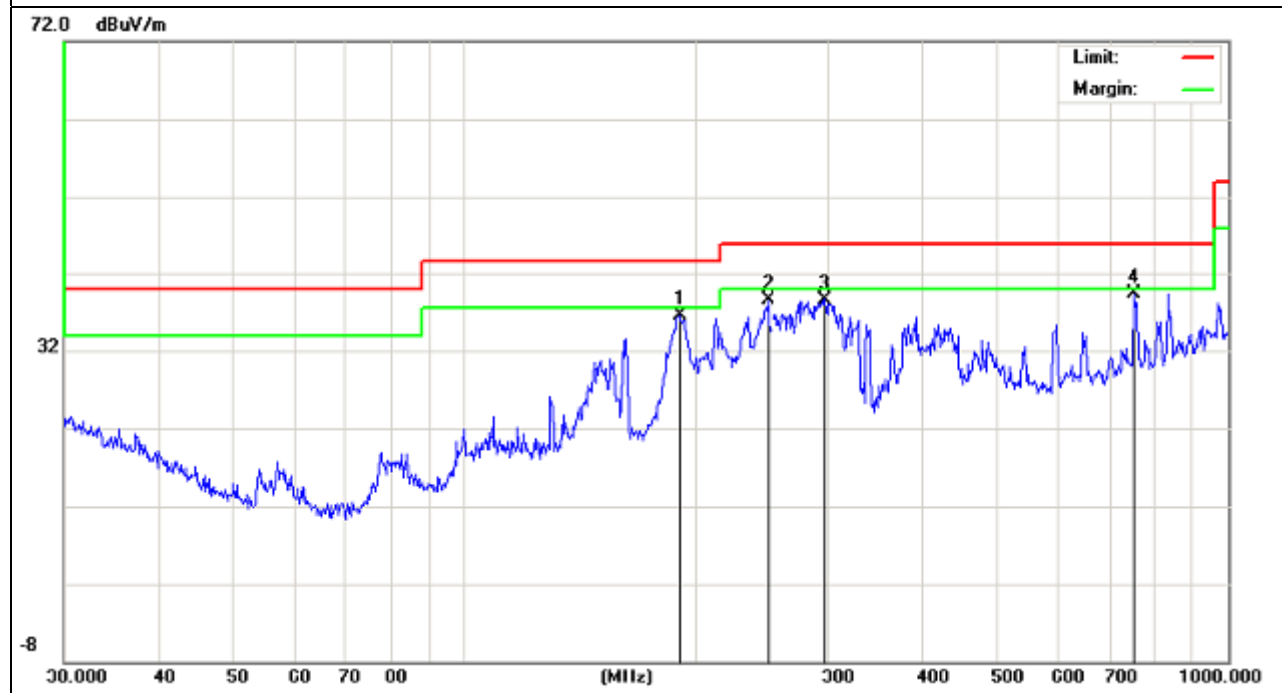


EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 3	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
191.0738	27.72	8.73	36.45	43.5	-7.05	QP
249.425	25.53	12.96	38.49	46	-7.51	QP
297.2241	24.15	14.45	38.6	46	-7.4	QP
752.7432	14.92	24.3	39.22	46	-6.78	QP

Remark:

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

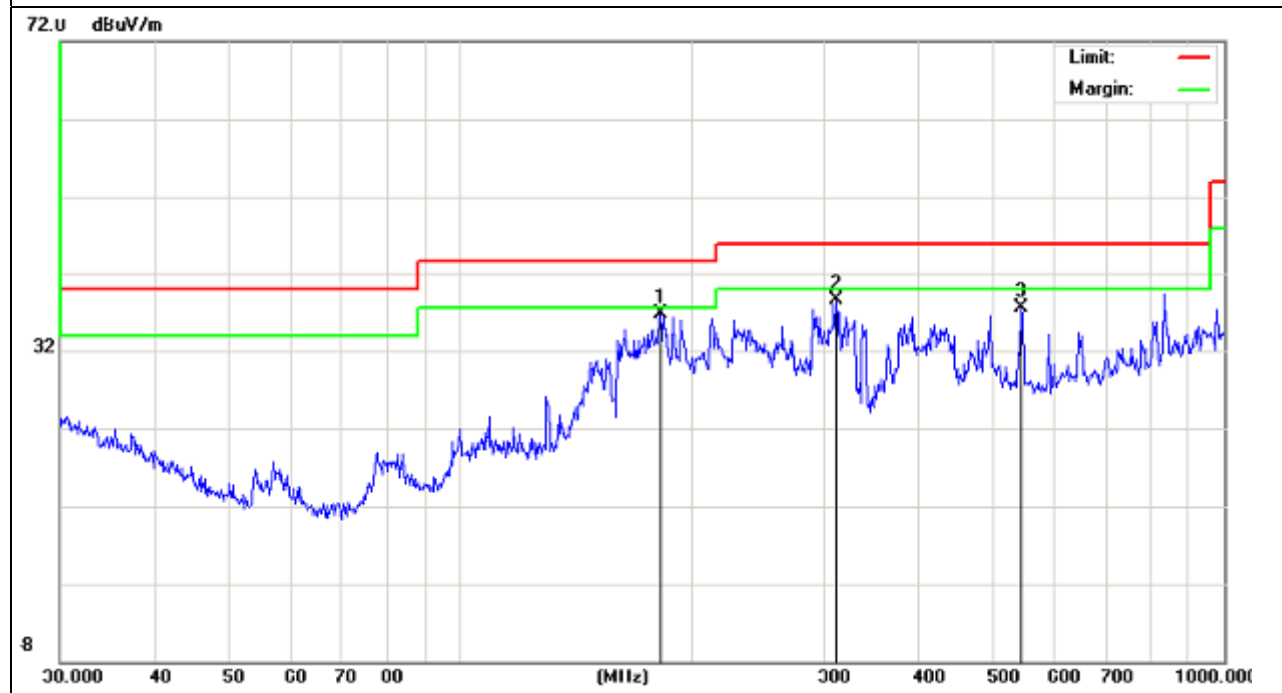


EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	Mode 3	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
99.9000	30.21	0.75	30.96	43.50	-12.54	QP
123.6900	28.34	0.60	28.94	43.50	-14.56	QP
245.1700	25.26	1.10	26.36	46.00	-19.64	QP
300.2700	27.32	1.56	28.88	46.00	-17.12	QP

Remark:

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



3.2.7 TEST RESULTS(Above 1GHz)

EUT :	Mobile Internet Device	Model Name :	M70T02
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC120V
Test Mode :	N/A	Polarization :	N/A

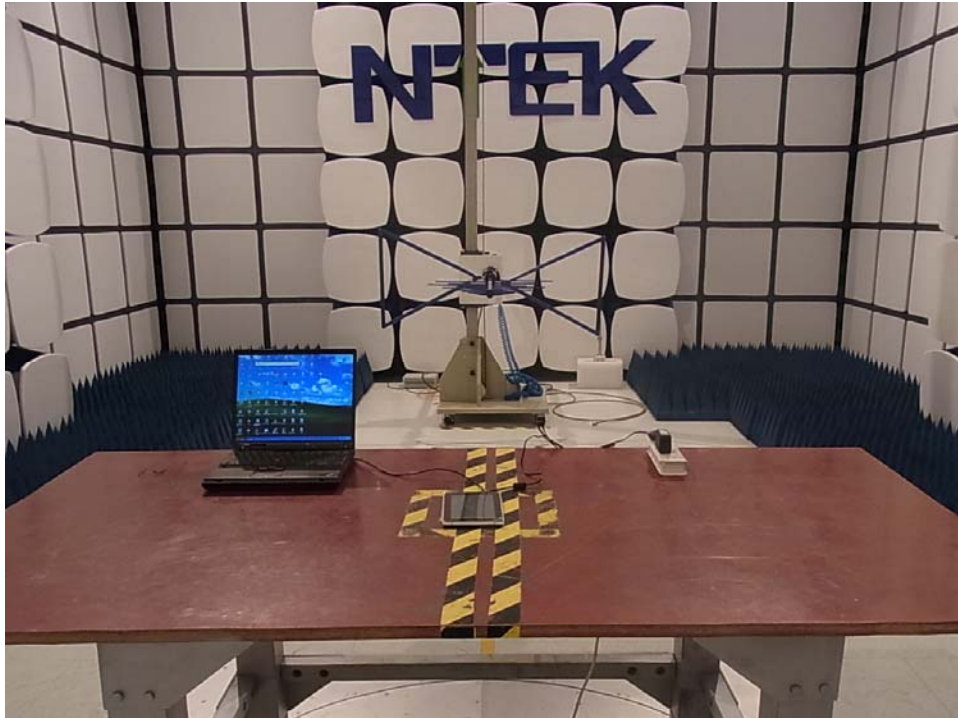
Note: No emission is detected above 1GHz

4. EUT TEST PHOTO

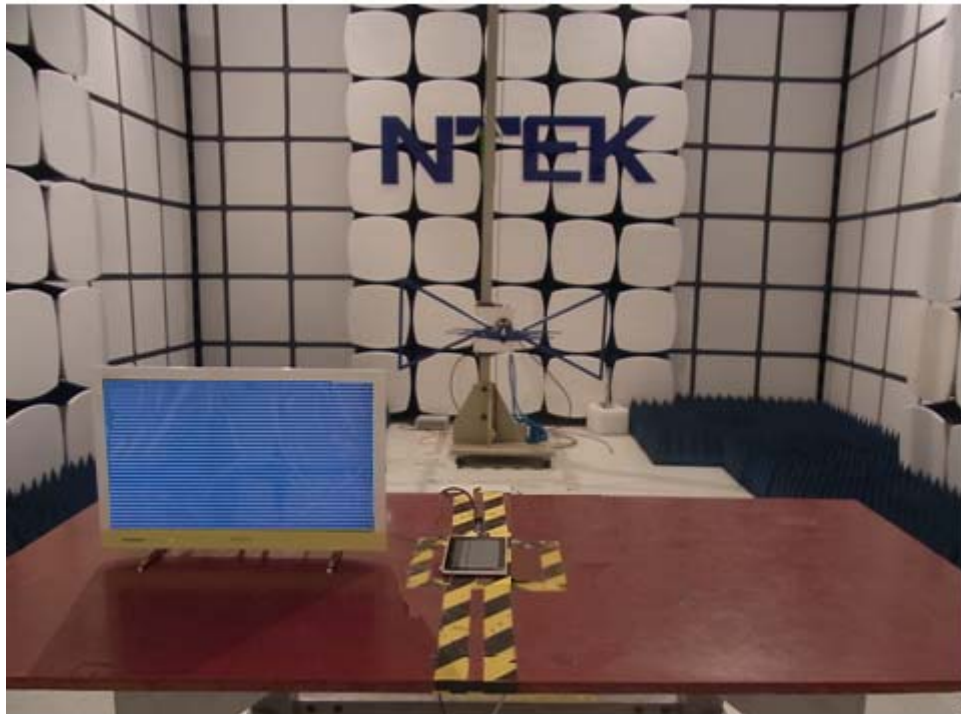
Radiated Measurement Photos 1



Radiated Measurement Photos 2



Radiated Measurement Photos 3



Conducted Emission Photos

