



# **FCC RADIO TEST REPORT-BT 3.0**

## **FCC ID: 2ABGW-AM2308G**

**Product :** MID

**Trade Name :** ARTAB

**Model Name :** AM2308G

**Serial Model :** AM7001G

**Report No. :** NTEK-2014NT12022115F2

### **Prepared for**

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## TEST RESULT CERTIFICATION

**Applicant's name** ..... Hong Kong Topsky Technology Limited.  
**Address** ..... Unit 5, 27/F., Richmond Commercial Building, 109 Argyle Street,  
Mongkok, Kowloon, Hong Kong

**Manufacture's Name** ..... Hong Kong Topsky Technology Limited.  
**Address** ..... Unit 5, 27/F., Richmond Commercial Building, 109 Argyle Street,  
Mongkok, Kowloon, Hong Kong

### Product description

**Product name** ..... MID  
**Model and/or type reference** ..... AM2308G  
**Serial Model :** AM7001G

**Standards** ..... FCC Part15.247: 01 Oct. 2014

**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.

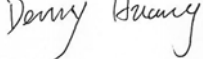
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**Date of Test** .....


**Date (s) of performance of tests** ..... 02 Dec. 2014 ~11 Dec. 2014

**Date of Issue** ..... 11 Dec. 2014

**Test Result** ..... **Pass**

**Testing Engineer** :   
Denny Huang

**Technical Manager** :   
(Brown Lu)

**Authorized Signatory** :   
(Bill Yao)

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## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247(c)	Radiated Spurious Emission	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

Note : This C2PC testing , the changed is: Only change the shape of the Mainboard and layout of board, Circuit and RF module are the same.

## 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 No.:238937; IC Registration No.:9270A-1

CNAS Registration No.:L5516

## 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 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	MID	
Trade Name	ARTAB	
Model Name	AM2308G	
Serial Model	AM7001G	
Model Difference	All the model are the same circuit and RF module, except the model name and colour.	
Product Description	The EUT is a MID	
	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
	Number Of Channel	79 CH
	Antenna Designation:	Please see Note 3.
	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.	
Channel List	Please refer to the Note 2.	
Adapter	Mode: FJ-SW0501500UU Input: 100-240V~,50/60Hz,0.35AMAX Output: 5.0V---, 1500mAh	
Battery	DC 3.7V, 2800mAh	
Connecting I/O Port(s)	Please refer to the User's Manual	

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)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	FPCB Antenna	N/A	1.0	BT Antenna

## 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	CH00
Mode 2	CH39
Mode 3	CH78
Mode 4	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 4	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The EUT use new battery.
- (3)The data rate was set in 1Mbps for radiated emission due to the highest RF output power.

## 2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

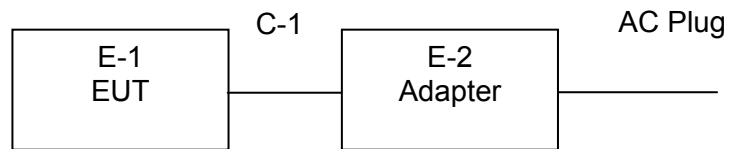
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software Version	Test program: Broadcom		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters(1/2/3Mbps)	DEF	DEF	DEF

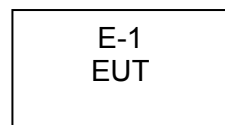


## 2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

### Conducted Emission Test



### Radiated Spurious Emission Test



## 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	Brand	Model/Type No.	Series No.	Note
E-1	MID	ARTAB	AM2308G	N/A	EUT
E-2	Adapter	N/A	FJ-SW0501500UU		

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.8m	

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”.

## 2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2014.07.06	2015.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2014.06.07	2015.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2014.07.06	2015.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.07	2015.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2014.06.07	2015.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2014.07.06	2015.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2014.07.06	2015.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2014.07.06	2015.07.05	1 year
12	Test Cable	N/A	R-01	N/A	2014.07.06	2015.07.05	1 year
13	Test Cable	N/A	R-02	N/A	2014.07.06	2015.07.05	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	2014.06.06	2015.06.05	1 year
2	LISN	R&S	ENV216	101313	2014.08.24	2015.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2014.08.24	2015.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.07	2015.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.07	2015.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2014.06.08	2015.06.07	1 year
7	Test Cable	N/A	C01	N/A	2014.06.08	2015.06.07	1 year
8	Test Cable	N/A	C02	N/A	2014.06.08	2015.06.07	1 year
9	Test Cable	N/A	C03	N/A	2014.06.08	2015.06.07	1 year

1	Attenuation	MCE	24-10-34	BN9258	2014.06.08	2015.06.07	1 year
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### 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 " \* " 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

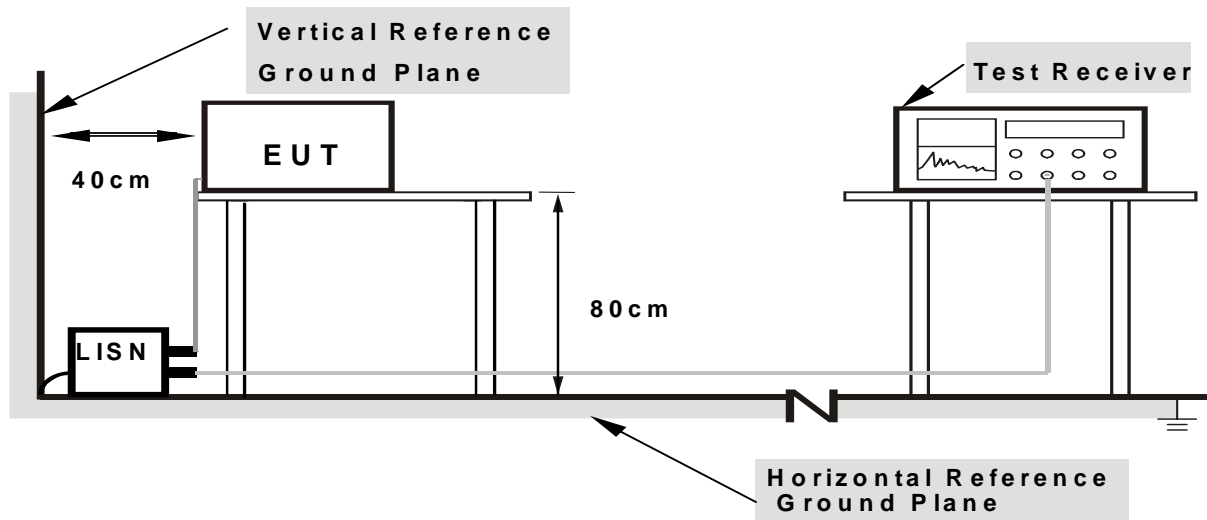
### 3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 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 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.

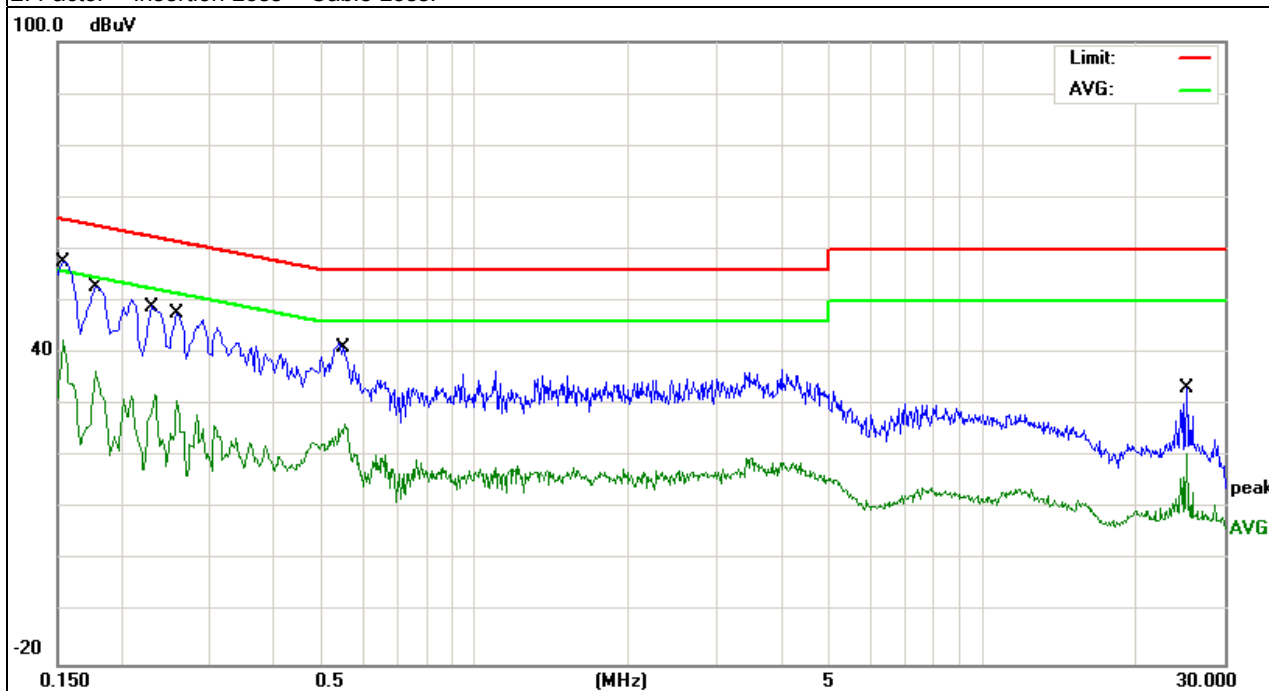
### 3.1.6 TEST RESULTS

EUT :	MID	Model Name :	AM2308G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V form Adapter AC 120V/60Hz	Test Mode :	Mode 4

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1539	47.93	9.63	57.56	65.78	-8.22	QP
0.1539	33.04	9.63	42.67	55.78	-13.11	AVG
0.1779	39.61	9.55	49.16	64.58	-15.42	QP
0.1779	27.07	9.55	36.62	54.58	-17.96	AVG
0.2340	36.77	9.46	46.23	62.30	-16.07	QP
0.2340	22.49	9.46	31.95	52.30	-20.35	AVG
0.2580	35.42	9.46	44.88	61.49	-16.61	QP
0.2580	21.49	9.46	30.95	51.49	-20.54	AVG
0.5540	32.63	9.46	42.09	56.00	-13.91	QP
0.5540	16.95	9.46	26.41	46.00	-19.59	AVG
25.2820	23.36	9.87	33.23	60.00	-26.77	QP
25.2820	10.82	9.87	20.69	50.00	-29.31	AVG

Remark:

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



EUT :	MID	Model Name :	AM2308G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V form Adapter AC 120V/60Hz	Test Mode :	Mode 4

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1620	46.88	9.60	56.48	65.36	-8.88	QP
0.1620	24.49	9.60	34.09	55.36	-21.27	AVG
0.1859	45.18	9.52	54.70	64.21	-9.51	QP
0.1859	24.74	9.52	34.26	54.21	-19.95	AVG
0.2179	42.81	9.47	52.28	62.89	-10.61	QP
0.2179	22.18	9.47	31.65	52.89	-21.24	AVG
0.2660	38.02	9.46	47.48	61.24	-13.76	QP
0.2660	22.02	9.46	31.48	51.24	-19.76	AVG
0.5580	34.23	9.46	43.69	56.00	-12.31	QP
0.5580	18.06	9.46	27.52	46.00	-18.48	AVG
25.2698	26.21	9.87	36.08	60.00	-23.92	QP
25.2698	11.79	9.87	21.66	50.00	-28.34	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 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 (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

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	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).

#### FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower



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

- 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.
- 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.
- 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.
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested

and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

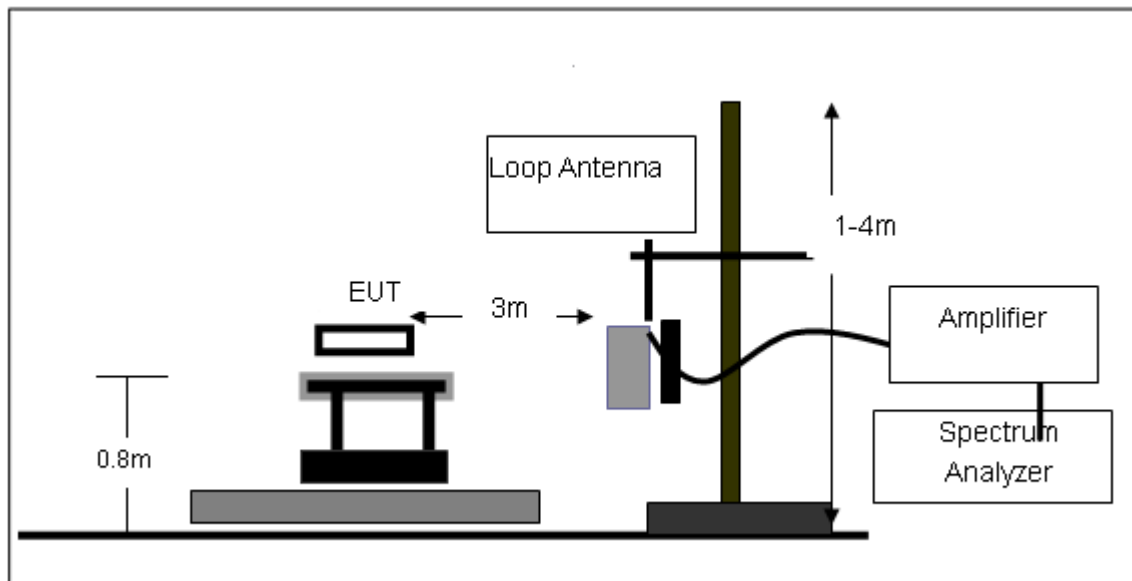
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Peak	1 MHz	10 Hz

### 3.2.3 DEVIATION FROM TEST STANDARD

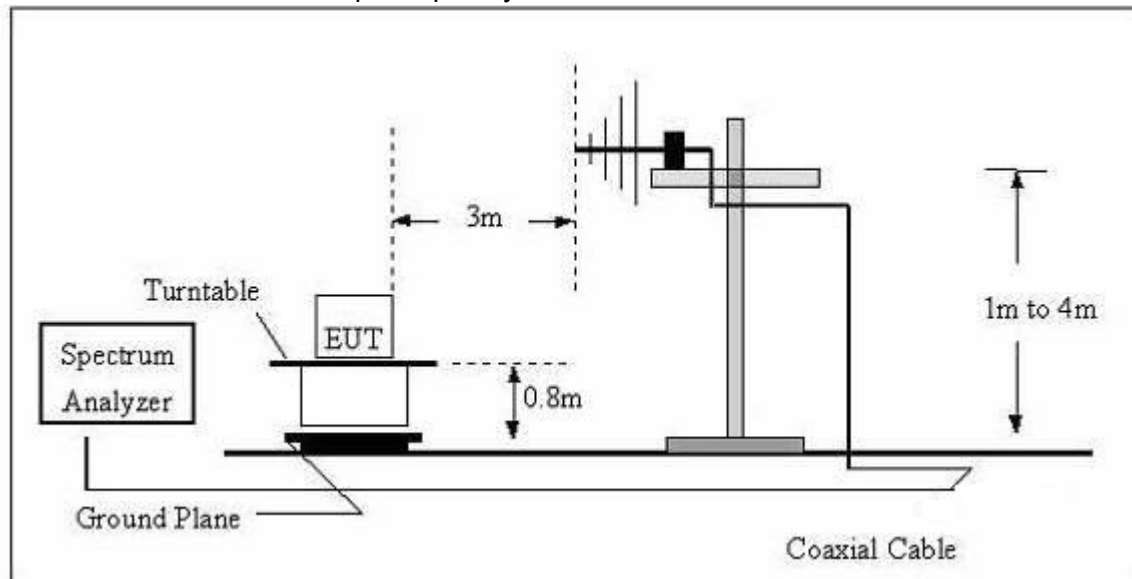
No deviation

### 3.2.4 TEST SETUP

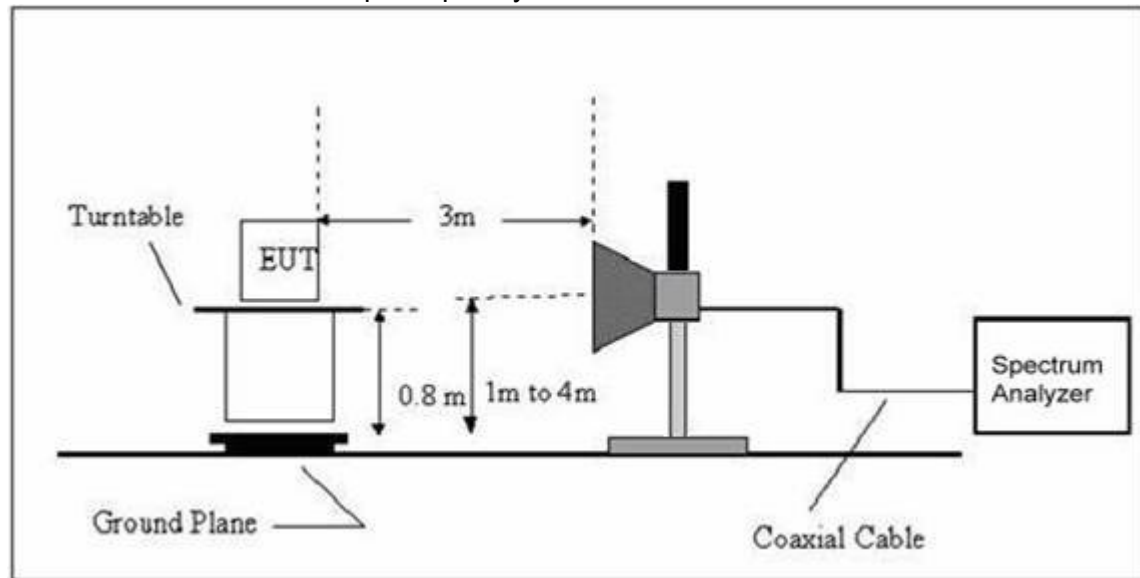
#### (A) Radiated Emission Test-Up Frequency Below 30MHz



#### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



**3.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 3.2.6 TEST RESULTS (BELOW 30 MHZ)

EUT :	MID	Model Name :	AM2308G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization :	---

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

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

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

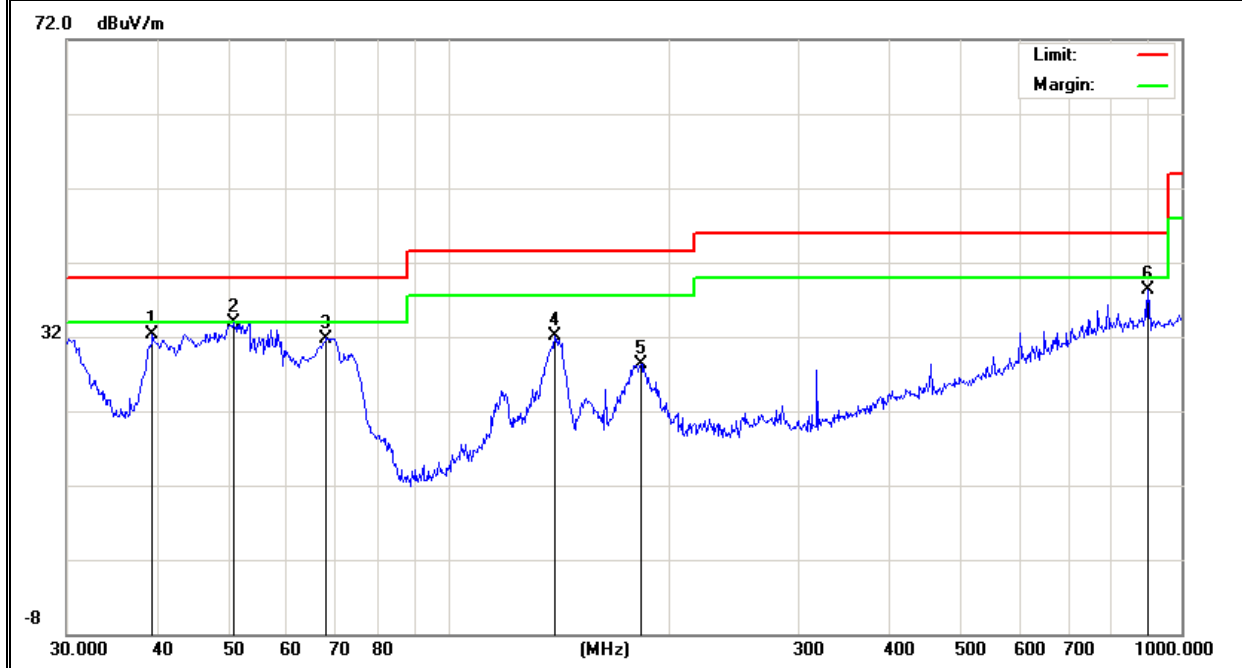
### 3.2.7 TEST RESULTS (BETWEEN 30M – 1000 MHZ)

EUT :	MID	Model Name :	AM2308G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Mode :	TX
Test Voltage :	DC3.7V		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	39.2991	18.32	13.98	32.30	40.00	-7.70	QP
V	50.7637	23.45	10.47	33.92	40.00	-6.08	QP
V	67.9128	25.76	6.04	31.80	40.00	-8.20	QP
V	139.3611	20.59	11.44	32.03	43.50	-11.47	QP
V	182.5592	17.66	10.64	28.30	43.50	-15.20	QP
V	900.1472	11.29	27.01	38.30	46.00	-7.70	QP

#### Remark:

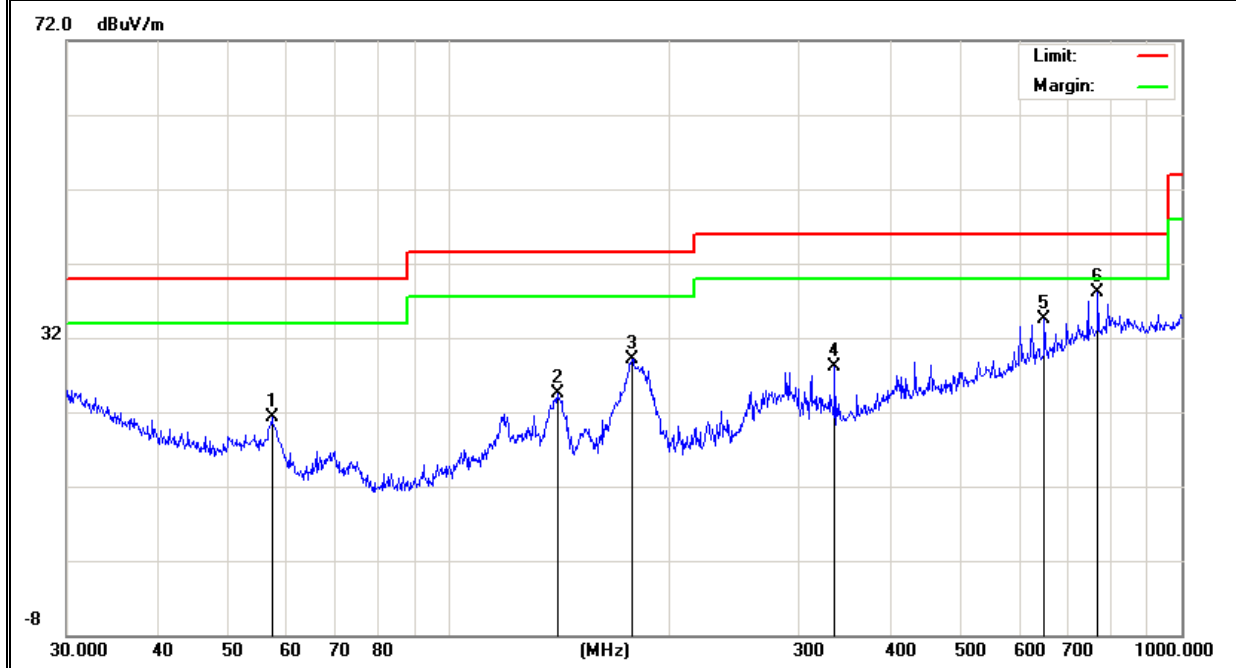
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	57.1914	12.57	8.64	21.21	40.00	-18.79	QP
H	140.3420	13.12	11.37	24.49	43.50	-19.01	QP
H	177.5091	18.52	10.61	29.13	43.50	-14.37	QP
H	336.0351	12.41	15.66	28.07	46.00	-17.93	QP
H	649.6597	11.15	23.40	34.55	46.00	-11.45	QP
H	768.7481	11.50	26.59	38.09	46.00	-7.91	QP

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



### 3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	MID	Model Name :	AM2308G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010hPa	Test Mode :	TX
Test Mode :	DC3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark	Comment
Low Channel (2402 MHz)-Above 1G							
4804.158	59.85	-3.64	56.21	74.00	-17.79	Pk	Vertical
4804.158	42.08	-3.64	38.44	54.00	-15.56	AV	Vertical
7206.263	52.96	-0.95	52.01	74.00	-21.99	Pk	Vertical
7206.263	38.02	-0.95	37.07	54.00	-16.93	AV	Vertical
4804.128	60.19	-3.64	56.55	74.00	-17.45	Pk	Horizontal
4804.128	42.23	-3.64	38.59	54.00	-15.41	AV	Horizontal
7206.225	54.26	-0.95	53.31	74.00	-20.69	Pk	Horizontal
7206.225	37.95	-0.95	37.00	54.00	-17.00	AV	Horizontal
Mid Channel (2441 MHz)-Above 1G							
4882.326	60.61	-3.68	56.93	74.00	-17.07	Pk	Vertical
4882.326	41.02	-3.68	37.34	54.00	-16.66	AV	Vertical
7323.289	57.08	-0.82	56.26	74.00	-17.74	Pk	Vertical
7323.289	41.89	-0.82	41.07	54.00	-12.93	AV	Vertical
4882.236	59.61	-3.68	55.93	74.00	-18.07	Pk	Horizontal
4882.236	40.75	-3.68	37.07	54.00	-16.93	AV	Horizontal
7323.148	56.98	-0.82	56.16	74.00	-17.84	Pk	Horizontal
7323.148	41.16	-0.82	40.34	54.00	-13.66	AV	Horizontal
High Channel (2480 MHz)- Above 1G							
4960.326	59.98	-3.59	56.39	74.00	-17.61	Pk	Vertical
4960.326	42.82	-3.59	39.23	54.00	-14.77	AV	Vertical
7440.248	54.45	-0.68	53.77	74.00	-20.23	Pk	Vertical
7440.248	38.69	-0.68	38.01	54.00	-15.99	AV	Vertical
4960.265	58.81	-3.59	55.22	74.00	-18.78	Pk	Horizontal
4960.265	40.98	-3.59	37.39	54.00	-16.61	AV	Horizontal
7440.088	54.32	-0.68	53.64	74.00	-20.36	Pk	Horizontal
7440.088	38.18	-0.68	37.50	54.00	-16.50	AV	Horizontal

Note: Mode 1Mbps is the worst mode.

## Radiated band edge:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
1Mbps(Non-FHSS)							
2390	58.92	-13.06	45.86	74.00	-28.14	peak	Vertical
2390	59.75	-13.06	46.69	74.00	-27.31	peak	Horizontal
2483.5	58.19	-12.78	45.41	74.00	-28.59	peak	Vertical
2483.5	59.80	-12.78	47.02	74.00	-26.98	peak	Horizontal
2Mbps(Non-FHSS)							
2390	58.81	-13.06	45.75	74.00	-28.25	peak	Vertical
2390	59.20	-13.06	46.14	74.00	-27.86	peak	Horizontal
2483.5	60.77	-12.78	47.99	74.00	-26.01	peak	Vertical
2483.5	58.83	-12.78	46.05	74.00	-27.95	peak	Horizontal
3Mbps(Non-FHSS)							
2390	59.45	-13.06	46.39	74.00	-27.61	peak	Vertical
2390	58.74	-13.06	45.68	74.00	-28.32	peak	Horizontal
2483.5	60.41	-12.78	47.63	74.00	-26.37	peak	Vertical
2483.5	58.02	-12.78	45.24	74.00	-28.76	peak	Horizontal



Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
1Mbps Non-hopping							
2390	56.11	-13.06	43.05	74.00	-30.95	peak	Vertical
2390	57.24	-13.06	44.18	74.00	-29.82	peak	Horizontal
2483.5	55.99	-12.78	43.21	74.00	-30.79	peak	Vertical
2483.5	58.35	-12.78	45.57	74.00	-28.43	peak	Horizontal
2Mbps Non-hopping							
2390	57.32	-13.06	44.26	74.00	-29.74	peak	Vertical
2390	55.33	-13.06	42.27	74.00	-31.73	peak	Horizontal
2483.5	57.86	-12.78	45.08	74.00	-28.92	peak	Vertical
2483.5	57.17	-12.78	44.39	74.00	-29.61	peak	Horizontal
3Mbps Non-hopping							
2390	57.43	-13.06	44.37	74.00	-29.63	peak	Vertical
2390	56.64	-13.06	43.58	74.00	-30.42	peak	Horizontal
2483.5	56.39	-12.78	43.61	74.00	-30.39	peak	Vertical
2483.5	57.27	-12.78	44.49	74.00	-29.51	peak	Horizontal
1Mbps hopping							
2390	57.27	-13.06	44.21	74.00	-29.79	peak	Vertical
2390	58.45	-13.06	45.39	74.00	-28.61	peak	Horizontal
2483.5	56.15	-12.78	43.37	74.00	-30.63	peak	Vertical
2483.5	58.46	-12.78	45.68	74.00	-28.32	peak	Horizontal
2Mbps hopping							
2390	56.16	-13.06	43.10	74.00	-30.90	peak	Vertical
2390	57.49	-13.06	44.43	74.00	-29.57	peak	Horizontal
2483.5	58.02	-12.78	45.24	74.00	-28.76	peak	Vertical
2483.5	56.34	-12.78	43.56	74.00	-30.44	peak	Horizontal
3Mbps hopping							
2390	56.59	-13.06	43.53	74.00	-30.47	peak	Vertical
2390	56.76	-13.06	43.70	74.00	-30.30	peak	Horizontal
2483.5	55.55	-12.78	42.77	74.00	-31.23	peak	Vertical
2483.5	58.45	-12.78	45.67	74.00	-28.33	peak	Horizontal

Note: Refer to chapter 3.2 test method, When PK value is lower than the Average value limit, average didn't record.

## **4. ANTENNA REQUIREMENT**

### **4.1 STANDARD REQUIREMENT**

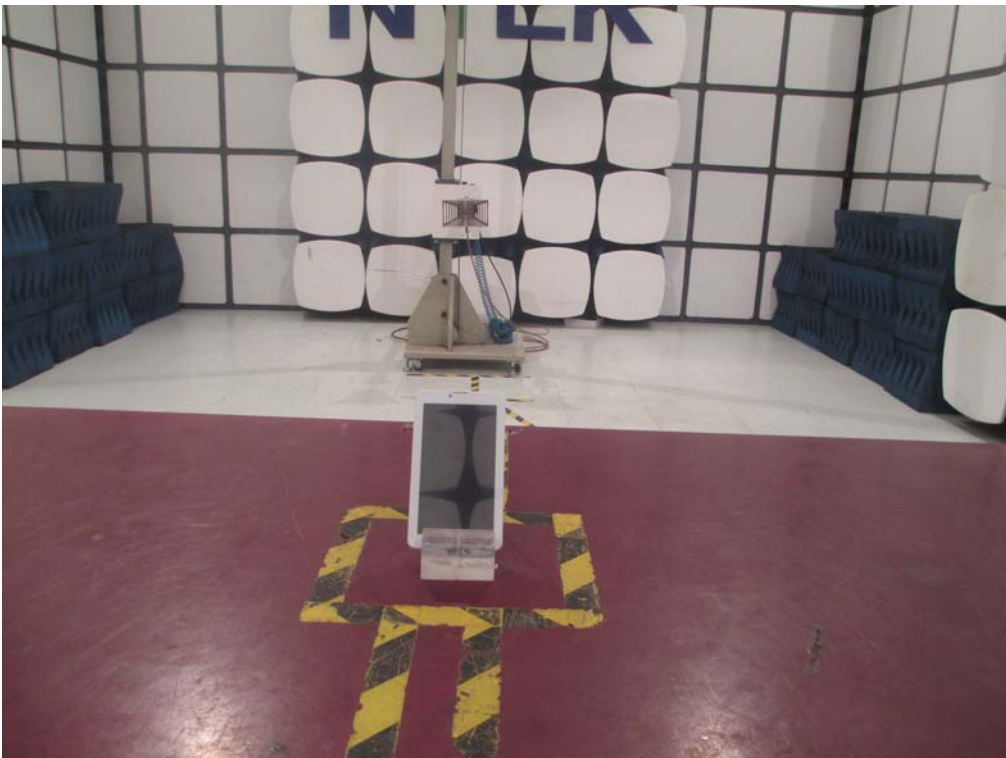
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### **4.2 EUT ANTENNA**

The EUT antenna is FPCB antenna. It comply with the standard requirement.

## 5. EUT TEST PHOTO

### Radiated Measurement Photos



**CONDUCTED EMISSION Photo**

