



FCC 47 CFR PART 15 SUBPART C 15.249
TEST REPORT
FOR
PW Smart Timing Mat

Model : PW Smart Mat-6m, PW Smart Mat-3m

Trade Name : N/A

Issued to

BEEDANCING (CHINA) LIMITED

No.43,Lane 505,Luoying Rd.,Luodian Town,Baoshan District,Shanghai
City,China

Issued by

WH Technology Corp.



Open Site		No.120, Ln. 5, Hudong St., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
EMC Test Site	Xizhi Office and Lab	7F., No.262, Sec. 3, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
Tel.: +886-2-7729-7707 Fax: +886-2- 8648-1311		
Test Firm Registration: 749714		

Note: This test refers exclusively to the test presented test model and sample. This report shall not be reproduced except in full, without the written approval of WH Technology Corp. This document may be altered or revised by WH Technology Corp. Personnel only, and shall be noted in the revision section of the document.



Contents

1. General Information	3
2. Report of Measurements and Examinations	4
2.1 List of Measurements and Examinations	4
3. Test Configuration of Equipment under Test.....	5
3.1 Description of the tested samples.....	5
3.2 Carrier Frequency of Channels.....	6
3.3 Test Mode and Test Software.....	7
3.4 TEST Methodology & General Test Procedures	8
3.5 Measurement Uncertainty	9
3.6 Description of the Support Equipments.....	9
4. Test and measurement equipment.....	10
4.1 calibration	10
4.2 equipment	10
5. Antenna Requirements.....	13
5.1 Standard Applicable	13
5.2 Antenna Construction and Directional Gain.....	13
6. Test of Conducted Emission.....	14
6.1 Test Limit	14
6.2 Test Procedures	14
6.3 Typical Test Setup	15
6.4 Test Result and Data.....	16
7. Test of Radiated Emission	18
7.1 Test Limit	18
7.2 Test Procedures	20
7.3 Typical Test Setup	21
7.4 Test Result and Data (9kHz ~ 30MHz).....	23
7.5 Test Result and Data (30MHz ~ 1GHz, worst emissions found).....	23
7.6 Test Result and Data (Above 1GHz).....	25
7.7 Restrict Outside of Band Emission Measurement Data.....	28
8. Bandwidth Measurement Data.....	32
8.1 Test Limit	32
8.2 Test Procedures	32
8.3 Test Setup Layout	32
8.4 Test Result and Data.....	33

APPENDIX 1 PHOTOS OF TEST CONFIGURATION

PHOTOS OF EUT



1. General Information

Applicant : BEEDANCING (CHINA) LIMITED

Address : No.43,Lane 505,Luoying Rd.,Luodian Town,Baoshan District,Shanghai City,China

Manufacturer : BEEDANCING (CHINA) LIMITED

Address : No.43,Lane 505,Luoying Rd.,Luodian Town,Baoshan District,Shanghai City,China

EUT : PW Smart Timing Mat

Model Name : PW Smart Mat-6m, PW Smart Mat-3m

Model Differences : All the same except model name and DC cable length (6m or 3m) , According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the model name. Therefore only one model PW Smart Mat-6m was tested in this report.

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C:2016 and the measurement procedures were according to ANSI C63.10-2013. The said equipment in the configuration described in this report shows the maximum emission levels emanating

FCC part 15 subpart C

Receipt Date : 12/29/2017

Final Test Date : 02/19/2018

Tested By:

Feb. 22, 2018

Date

Bing Chang/ Engineer

Reviewed by:

Feb. 22, 2018

Date

Bell Wei / Manager
Designation Number: TW2954



2. Report of Measurements and Examinations

2.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
20dB Bandwidth	FCC Part 15: 15.215 ANSI C63.10 :2013	Pass
Radiated Emission	FCC Part 15: 15.209, FCC Part 15: 15.249(a), ANSI C63.10 :2013	Pass
Band Edge Compliance	FCC Part 15: 15.249(d), ANSI C63.10 :2013	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207, ANSI C63.10 :2013	Pass
Antenna requirement	FCC Part 15: 15.203	Pass



3. Test Configuration of Equipment under Test

3.1 Description of the tested samples

EUT Name : PW Smart Timing Mat

Model Number : PW Smart Mat-6m

FCCID : 2AOIRPWSMARTMAT6M

Receipt Date : 12/29/2017

Power From : Inside Outside
 Adaptor Battery AC Power Source
 DC Power Source Support Unit PC or NB

Operate Frequency : Refer to the channel list as described below (903 – 927 MHz)

Modulation Technique : GFSK

Number of Channels : 50

Channel spacing : N/A 0.5 MHz

Operating Mode : Simplex Half Duplex

Antenna Type : Right-handed circular polarization

Antenna gain : 5 dBi



3.2 Carrier Frequency of Channels

Channel	Frequency	Channel	Frequency	Channel	Frequency
	(MHz)		(MHz)		(MHz)
1	903.0	18	911.5	35	920.0
2	903.5	19	912.0	36	920.5
3	904.0	20	912.5	37	921.0
4	904.5	21	913.0	38	921.5
5	905.0	22	913.5	39	922.0
6	905.5	23	914.0	40	922.5
7	906.0	24	914.5	41	923.0
8	906.5	25	915.0	42	923.5
9	907.0	26	915.5	43	924.0
10	907.5	27	916.0	44	924.5
11	908.0	28	916.5	45	925.0
12	908.5	29	917.0	46	925.5
13	909.0	30	917.5	47	926.0
14	909.5	31	918.0	48	926.5
15	910.0	32	918.5	49	927.0
16	910.5	33	919.0	--	--
17	911.0	34	919.5	--	--



3.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- b. The complete test system included Notebook and EUT for RF test.
- c. Test Software: Demo_V3.62 and USR-VCOM_V3.7.1.520.
- d. New Battery was used for all testing and the worst radiated emission case from X,Y and Z axis evaluation was selected for testing.
- e. For battery operated equipment, the equipment tests shall be performed using a new battery.
- f. The following test modes were performed for test:
CH01: 903MHz, CH25: 915MHz, CH50: 927MHz



3.4 TEST Methodology & General Test Procedures

All testing as described bellowed were performed in accordance with ANSI C63.10:2013.

Conducted Emissions

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.10:2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

Radiated Emissions

The EUT is a placed on a turn table, which is 0.8 m or 1.5m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

- 1) Putting the EUT on the platform and turning on the EUT (on/off button on the bottom of the EUT).
- 2) Setting test channel described as “Channel setting and operating condition”, and testing channel by channel.
- 3) For the spurious emission test based on ANSI C63.10, at the frequency where below 1GHz used quasi-peak detector mode; where above 1GHz used the peak and average detector mode. IF the peak value may be under average limit, the average mode will not be performed.



3.5 Measurement Uncertainty

Measurement Item	Uncertainty
Radiated emission(1G-25GHz)	±5.00dB
Radiated emission(0.009M-1GHz)	±3.89dB
Conducted emission	±1.81dB

3.6 Description of the Support Equipments

Setup Diagram

See test photographs attached in appendix 1 for the actual connections between EUT and support equipment.

Support Equipment

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	Lap top	14q-by001AX	N/A	FCC DOC	HP	N/A	N/A
2.	Adapter	QX6.5W751 00FG	N/A	VOC	Stos	N/A	N/A
INSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

Grounding: Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.



4. Test and measurement equipment

4.1 calibration

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2 equipment

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.



TABLELIST OF TEST AND MEASUREMENT EQUIPMENT

Test Site	Instrument	Manufacturer	Model No.	S/N	Next Cal. Date
Conduction	Spectrum (9K--3GHz)	R&S	FSP3	833387/010	2018/09/20
	EMI Receiver	R&S	ESHS10	830223/008	2018/05/22
	LISN	Rolf Heine Hochfrequenztechnik	NNB-2/16z	98062	2018/05/25
	ISN	Schwarzbeck	8-Wire ISN CAT5	CAT5-8158-0094	2018/09/21
	RF Cable	N/A	N/A	EMI-3	2018/10/19
Radiation	Bilog antenna(30M -1G)	ETC	MCTD2786B	BLB16M04004/J B-5-004	2018/05/03
	Double Ridged Guide Horn antenna(1G-18G)	ETC	MCTD 1209	DRH15N0 2009	2018/11/23
	Horn antenna (18G-26G)	com-power	AH-826	81000	2018/08/15
	LOOP Antenna (Below 30M)	com-power	AL-130	17117	2018/10/04
	Pre amplifier (30M-1G)	EMC INSTRUMENT	EMC9135	980334	2018/05/04
	Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC051845	980108&AT -18001	2018/10/23
	Pre amplifier (18G~26G)	MITEQ	JS4-18002600-3 0-5A	808329	2018/08/10
	EMI Test	R&S	ESVS30	826006/002	2018/11/28



	Receiver		(20M-1000MHz)		
	RF Cable (open site)	EMCI	N male on end of both sides (EMI4)	30m	2018/10/19
	RF CABLE (1~26.5G)	HARBOUR INDUSTRIES	LL142MI(4M+4M)	NA	2018/03/08
	RF CABLE (1~26.5G)	HARBOUR INDUSTRIES	LL142MI(7M)	NA	2018/08/11
	Spectrum(9K -26.5GHz)	R&S	FSEM	830180/006	2018/03/25
	Spectrum (9K--40GHz)	AGILENT	8564EC	4046A0032	2018/03/01
Software	e3	AUDIX	N/A	N/A	N/A

***CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR**



5. Antenna Requirements

5.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.249 (b3), Antenna gain must be at least 33 dBi. Alternatively, the main lobe beamwidth must not exceed 3.5 degrees. The beamwidth limit shall apply to both the azimuth and elevation planes. At antenna gains over 33 dBi or beamwidths narrower than 3.5 degrees, power must be reduced to ensure that the field strength does not exceed 2500 millivolts/meter.

5.2 Antenna Construction and Directional Gain

Antenna Type: Integral Antenna

Antenna Gain: 5.0 dBi



6. Test of Conducted Emission

6.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 110 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2014 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

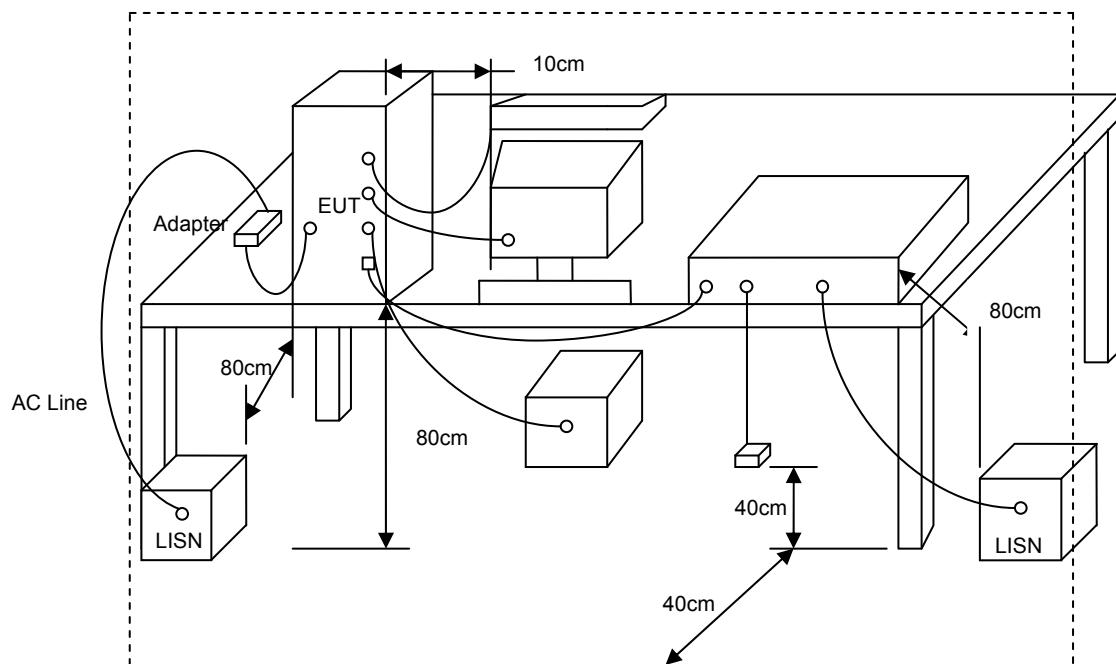
*Decreases with the logarithm of the frequency.

6.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



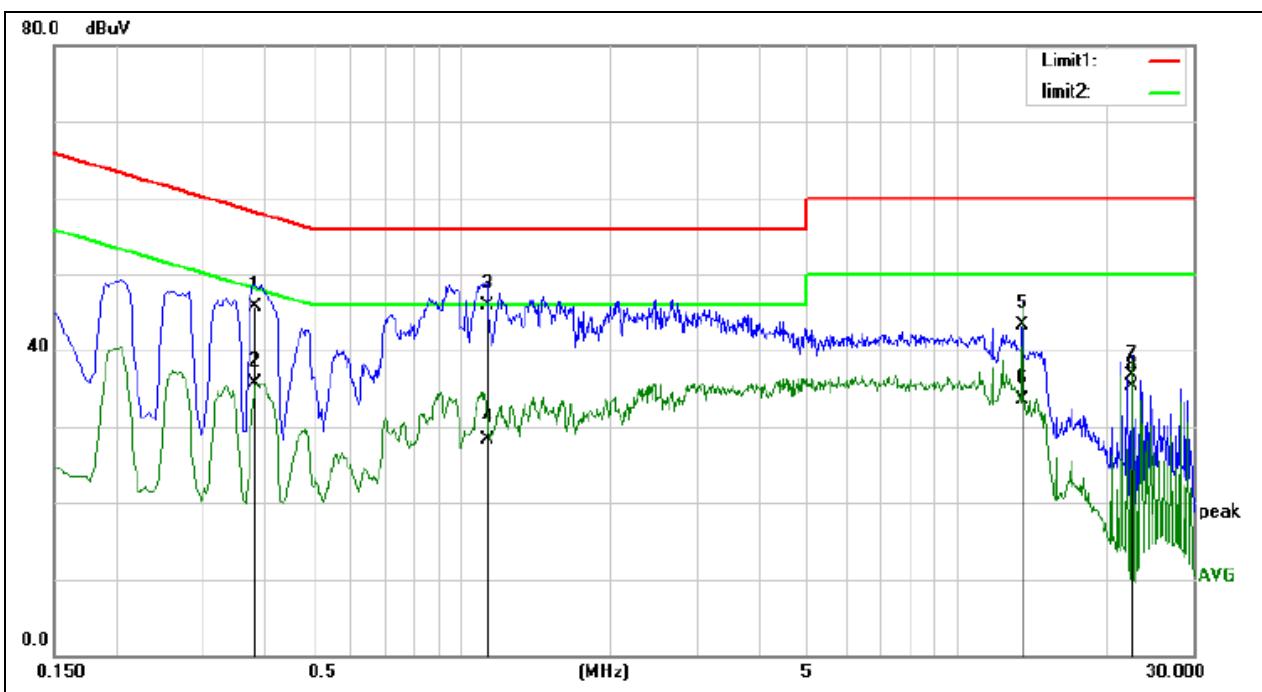
6.3 Typical Test Setup





6.4 Test Result and Data

Power	:	120V/60Hz	Pol/Phase	:	LINE
Test Mode 1	:	TX CH01 (worst case)	Temperature	:	24.6 °C
Memo	:		Humidity	:	57 %

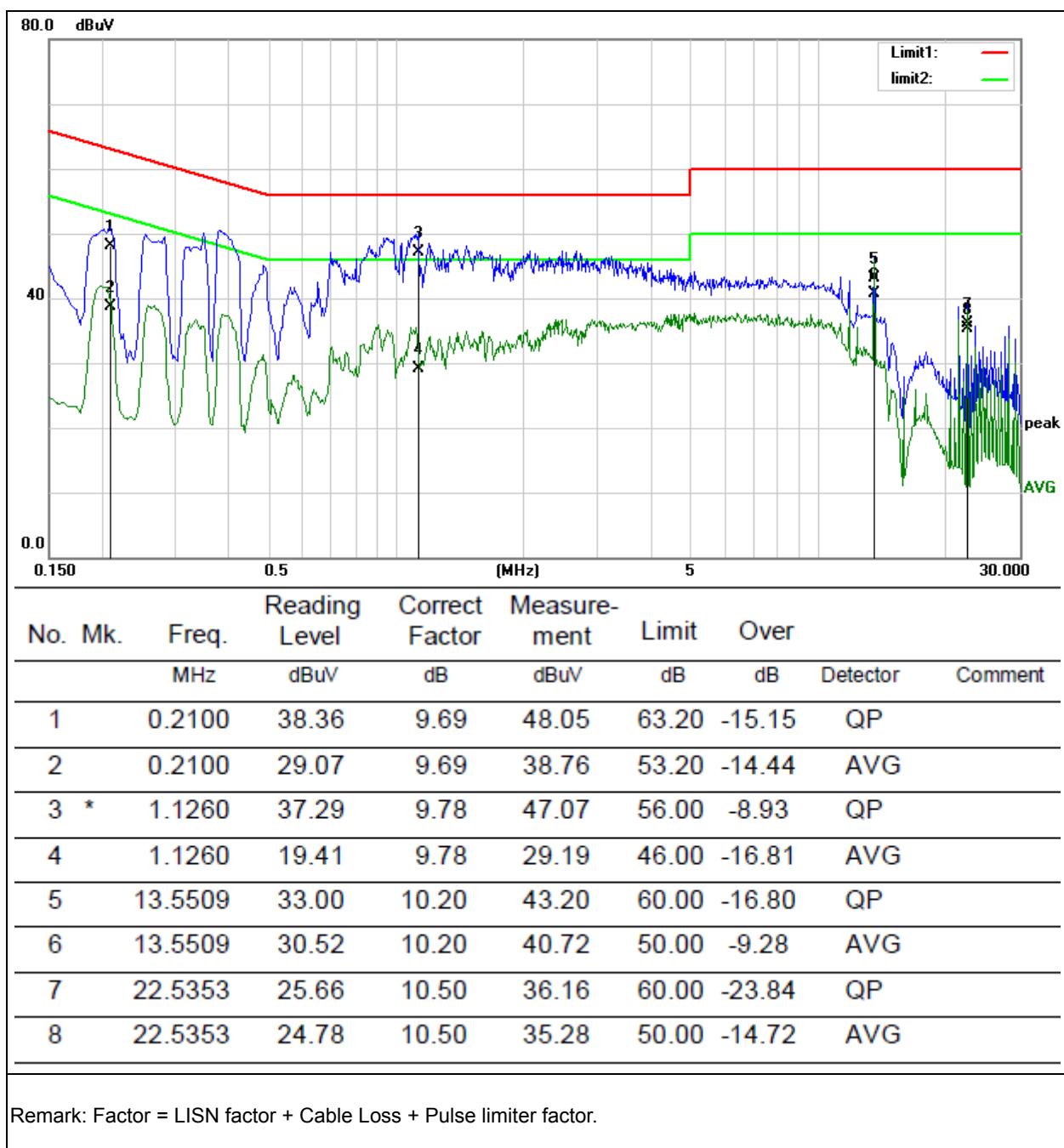


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.3820	35.91	9.71	45.62	58.23	-12.61	QP	
2		0.3820	26.08	9.71	35.79	48.23	-12.44	AVG	
3 *		1.1260	36.18	9.78	45.96	56.00	-10.04	QP	
4		1.1260	18.49	9.78	28.27	46.00	-17.73	AVG	
5		13.5509	33.11	10.20	43.31	60.00	-16.69	QP	
6		13.5509	23.33	10.20	33.53	50.00	-16.47	AVG	
7		22.6060	26.17	10.50	36.67	60.00	-23.33	QP	
8		22.6060	24.83	10.50	35.33	50.00	-14.67	AVG	

Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.



Power	:	120V/60Hz	Pol/Phase	:	NEUTRAL
Test Mode 1	:	TX CH01 (worst case)	Temperature	:	24.6 °C
Memo	:		Humidity	:	57 %





7. Test of Radiated Emission

7.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

Frequency (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



15.205 Restricted frequency band:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

15.249 Limit:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500



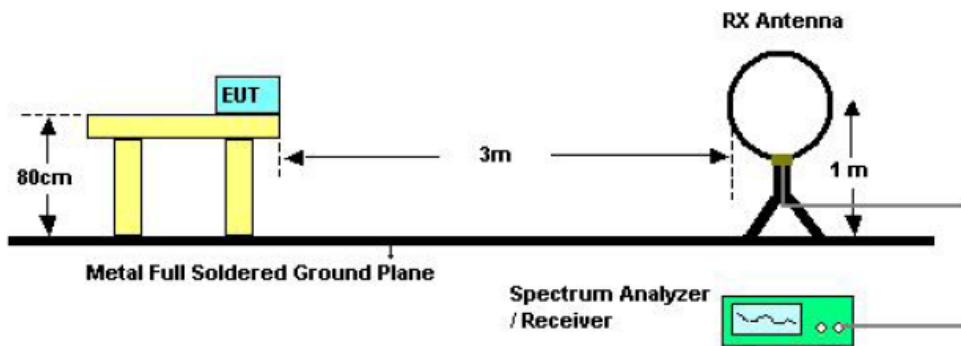
7.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter for below 1GHz and 1.5 meter for above 1GHz.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- i. "Cone of radiation" has been considered to be 3dB bandwidth of the measurement antenna.

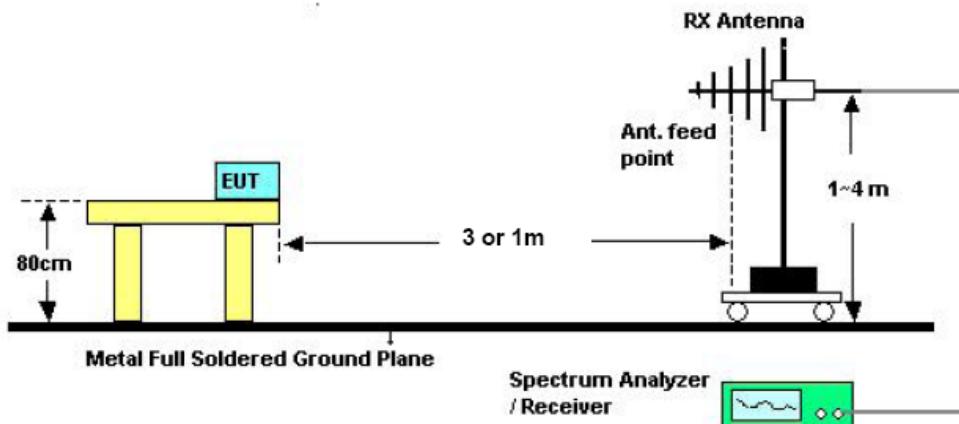


7.3 Typical Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz

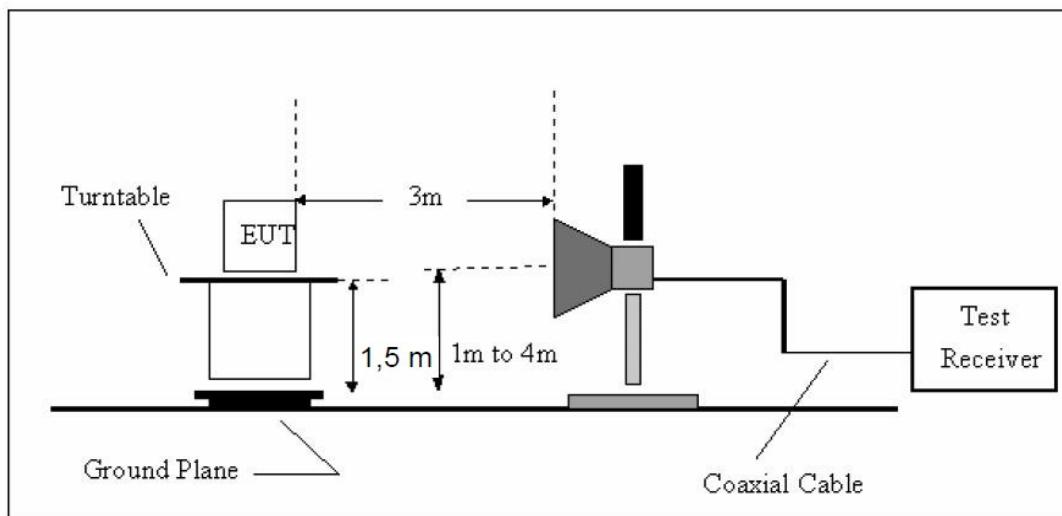


Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].



For radiated emissions frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

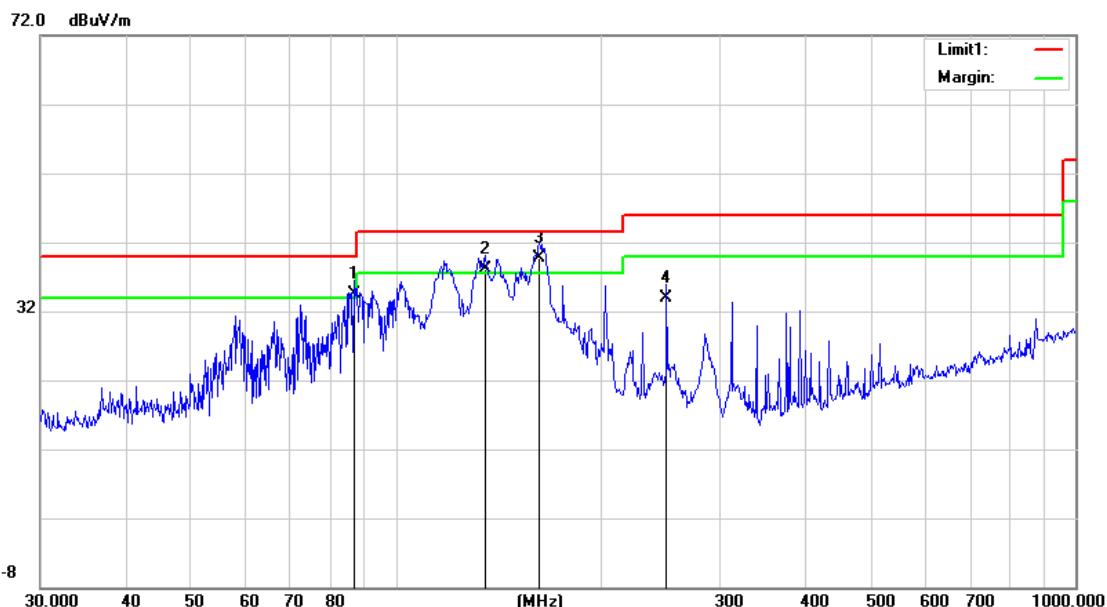


7.4 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

7.5 Test Result and Data (30MHz ~ 1GHz, worst emissions found)

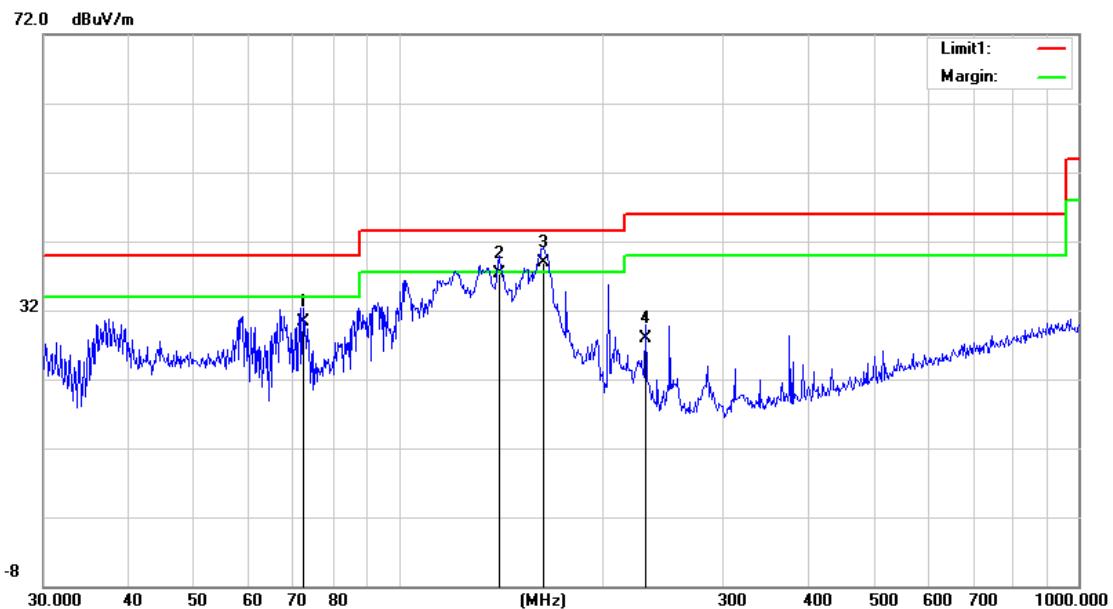
Power	:	120V/60Hz	Pol/Phase	:	HORIZONTAL
Test Mode 1	:	TX CH01 (worst case)	Temperature	:	24 °C
Memo	:		Humidity	:	59%



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dB/m	dB		
1	!	86.8067	26.17	8.24	34.41	40.00	-5.59	QP	
2	!	135.5062	26.07	12.01	38.08	43.50	-5.42	QP	
3	*	162.6106	27.22	12.44	39.66	43.50	-3.84	QP	
4		250.3009	22.37	11.51	33.88	46.00	-12.12	QP	



Power	:	120V/60Hz	Pol/Phase	:	VERTICAL
Test Mode 1	:	TX CH01 (worst case)	Temperature	:	24 °C
Memo	:		Humidity	:	59%



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
			Level	Factor	ment		dB	Detector
1		72.3375	20.14	10.17	30.31	40.00	-9.69	QP
2		140.3420	25.02	12.31	37.33	43.50	-6.17	QP
3	*	163.2668	26.52	12.37	38.89	43.50	-4.61	QP
4		230.9068	17.09	10.75	27.84	46.00	-18.16	QP



7.6 Test Result and Data (Above 1GHz)

Power	: 120V/60Hz	Pol/Phase	: H/V
Test Mode 1	: TX CH01	Temperature	: 24 °C
Memo	:	Humidity	: 59 %

(a) Antenna polarization: Horizontal

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
903.00	62.68	21.59	84.27	114.00	-29.73	peak
903.00	47.13	21.59	68.72	94.00	-25.28	AVG
1806.00	40.31	13.62	53.93	74.00	-20.07	peak
1806.00	26.45	13.62	40.07	54.00	-13.93	AVG
2709.00	38.63	15.17	53.80	74.00	-20.20	peak
2709.00	27.53	15.17	42.70	54.00	-11.30	AVG

(b) Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
903.00	71.09	21.59	92.68	114.00	-21.32	peak
903.00	53.78	21.59	75.37	94.00	-18.63	AVG
1806.00	41.67	13.62	55.29	74.00	-18.71	peak
1806.00	28.13	13.62	41.75	54.00	-12.25	AVG
2709.00	34.64	15.17	49.81	74.00	-24.19	peak
2709.00	23.78	15.17	38.95	54.00	-15.05	AVG



Power	:	120V/60Hz	Pol/Phase	:	H/V
Test Mode 1	:	TX CH25	Temperature	:	24 °C
Memo	:		Humidity	:	59 %

(a) Antenna polarization: Horizontal

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
915.00	84.06	21.81	105.87	114.00	-8.13	peak
915.00	67.21	21.81	89.02	94.00	-4.98	AVG
1830.00	49.28	13.98	63.26	74.00	-10.74	peak
1830.00	32.21	13.98	46.19	54.00	-7.81	AVG
2745.00	43.09	15.75	58.84	74.00	-15.16	peak
2745.00	27.53	15.75	43.28	54.00	-10.72	AVG

(b) Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
915.00	79.24	21.81	101.05	114.00	-12.95	peak
915.00	65.12	21.81	86.93	94.00	-7.07	AVG
1830.00	40.82	13.98	54.80	74.00	-19.20	peak
1830.00	29.47	13.98	43.45	54.00	-10.55	AVG
2745.00	39.36	15.75	55.11	74.00	-18.89	peak
2745.00	26.96	15.75	42.71	54.00	-11.29	AVG



Power	:	120V/60Hz	Pol/Phase	:	H/V
Test Mode 1	:	TX CH50	Temperature	:	24 °C
Memo	:		Humidity	:	59 %

(a) Antenna polarization: Horizontal

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
927.00	72.09	22.25	94.34	114.00	-19.66	peak
927.00	56.13	22.25	78.38	94.00	-15.62	AVG
1854.00	40.31	14.31	54.62	74.00	-19.38	peak
1854.00	29.45	14.31	43.76	54.00	-10.24	AVG
2781.00	36.63	16.18	52.81	74.00	-21.19	peak
2781.00	26.53	16.18	42.71	54.00	-11.29	AVG

(b) Antenna polarization: Vertical

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector Type
927.00	66.09	22.25	88.34	114.00	-25.66	peak
927.00	47.78	22.25	70.03	94.00	-23.97	AVG
1854.00	43.67	14.31	57.98	74.00	-16.02	peak
1854.00	32.13	14.31	46.44	54.00	-7.56	AVG
2781.00	37.64	16.18	53.82	74.00	-20.18	peak
2781.00	28.78	16.18	44.96	54.00	-9.04	AVG

Note:

Measurement Level = Reading Level + Factor

Remark: Factor = Antenna Factor + Cable Loss–Pre-amplifier



7.7 Restrict Outside of Band Emission Measurement Data

Radiated Method

Power	:	120V/60Hz	Pol/Phase	:	H/V
Test Mode	:	TX	Temperature	:	24 °C
Memo	:		Humidity	:	59 %

Channel 01							Fundamental Frequency: 903 MHz			
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
902.00	H	16.25	21.59	37.84	Peak	74.00	--	-36.16	0	1.5
902.00	H	9.54	21.59	31.13	Ave	--	54.00	-22.87	0	1.5
902.00	V	19.51	21.59	41.10	Peak	74.00	--	-32.90	360	1.5
902.00	V	8.00	21.59	29.59	Ave	--	54.00	-24.41	360	1.5
Channel 49							Fundamental Frequency: 927 MHz			
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
928.00	H	17.42	22.25	39.67	Peak	74.00	--	-34.33	0	1.5
928.00	H	11.35	22.25	33.60	Ave	--	54.00	-20.40	0	1.5
928.00	V	20.14	22.25	42.39	Peak	74.00	--	-31.61	360	1.5
928.00	V	14.31	22.25	36.56	Ave	--	54.00	-17.44	360	1.5



Note:

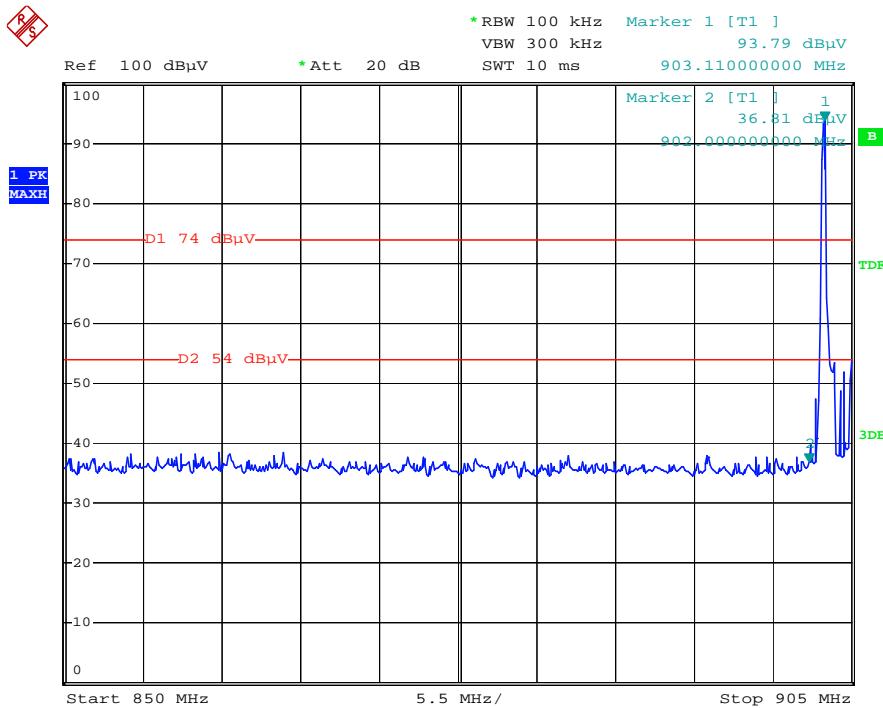
1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, Pre-Amp, etc.
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting:
1 MHz RBW with 1 MHz VBW (Peak Detector).
5. Measurements above 1000 MHz, Average detector setting:
1 MHz RBW with 10Hz VBW (RMS Detector).
6. Peak detector measurement data will represent the worst case results.

Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

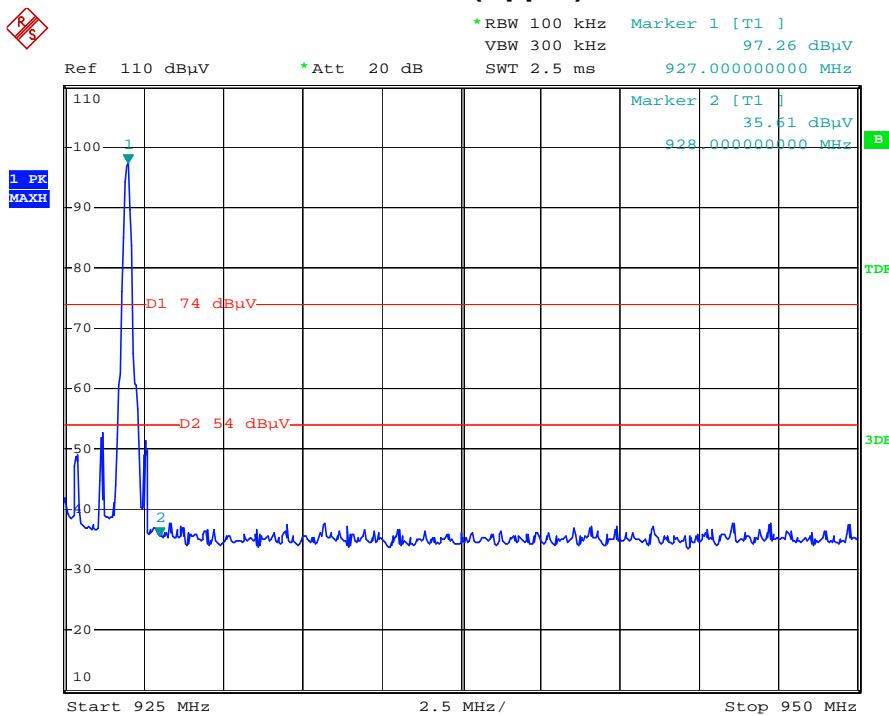


Plot of outside band:

CH 01 (Lower)

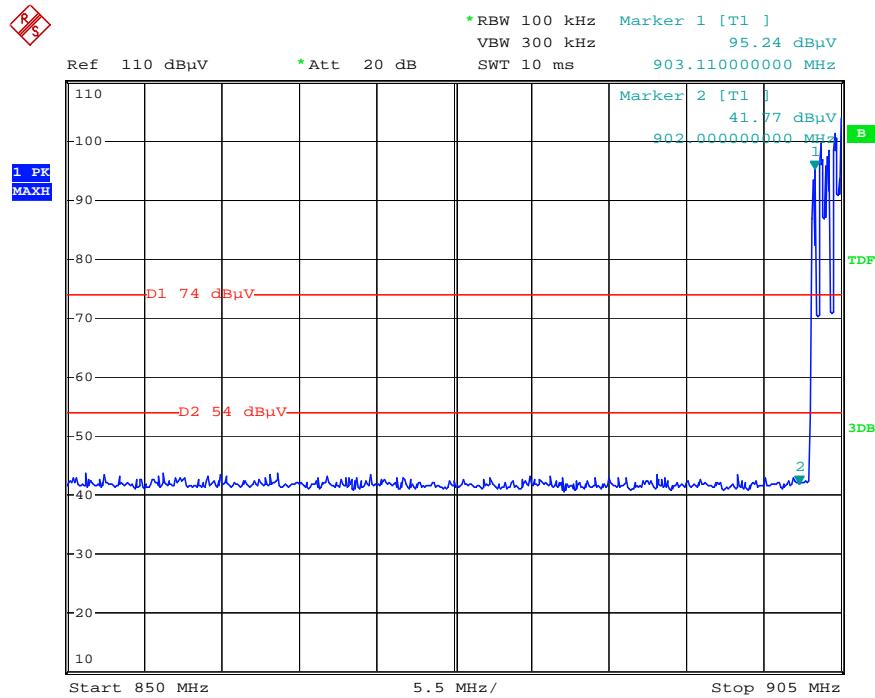


CH 49 (Upper)

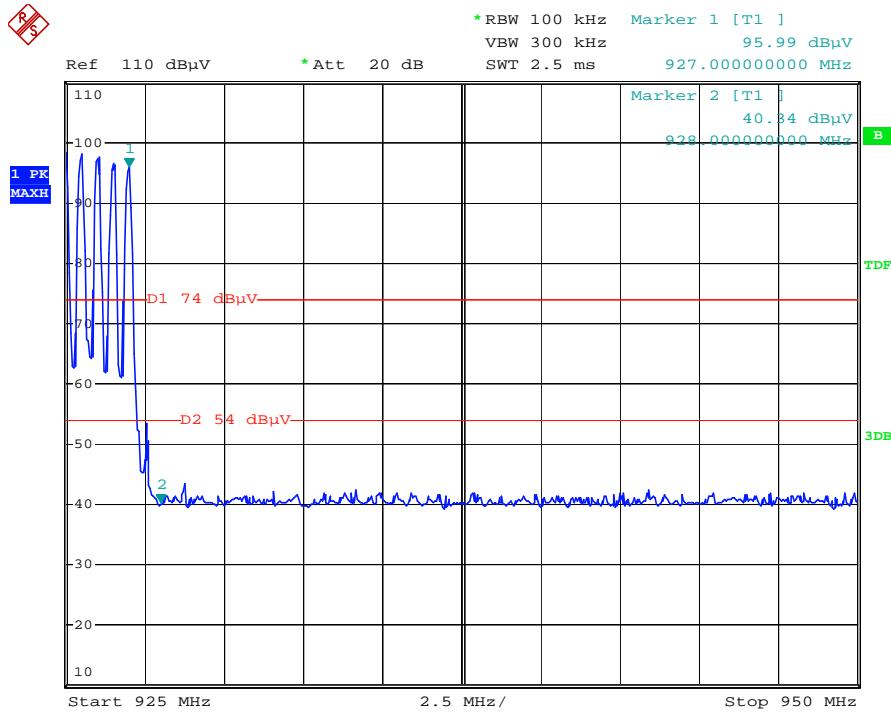




Hopping (Lower)



Hopping (Upper)





8. Bandwidth Measurement Data

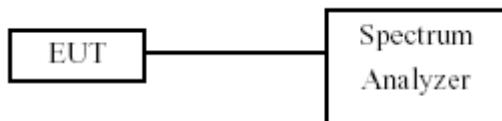
8.1 Test Limit

Please refer section 15.249.

8.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 30 KHz and VBW $\geq 3 \times$ RBW.
- c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.
- d. The 20dB Bandwidth was measured and recorded.

8.3 Test Setup Layout

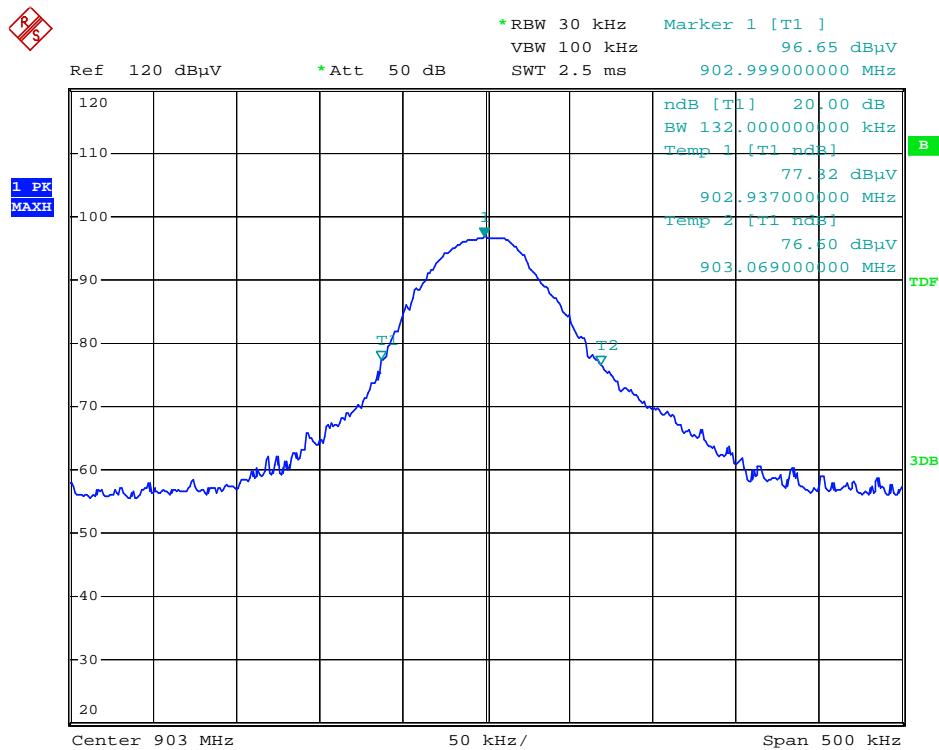




8.4 Test Result and Data

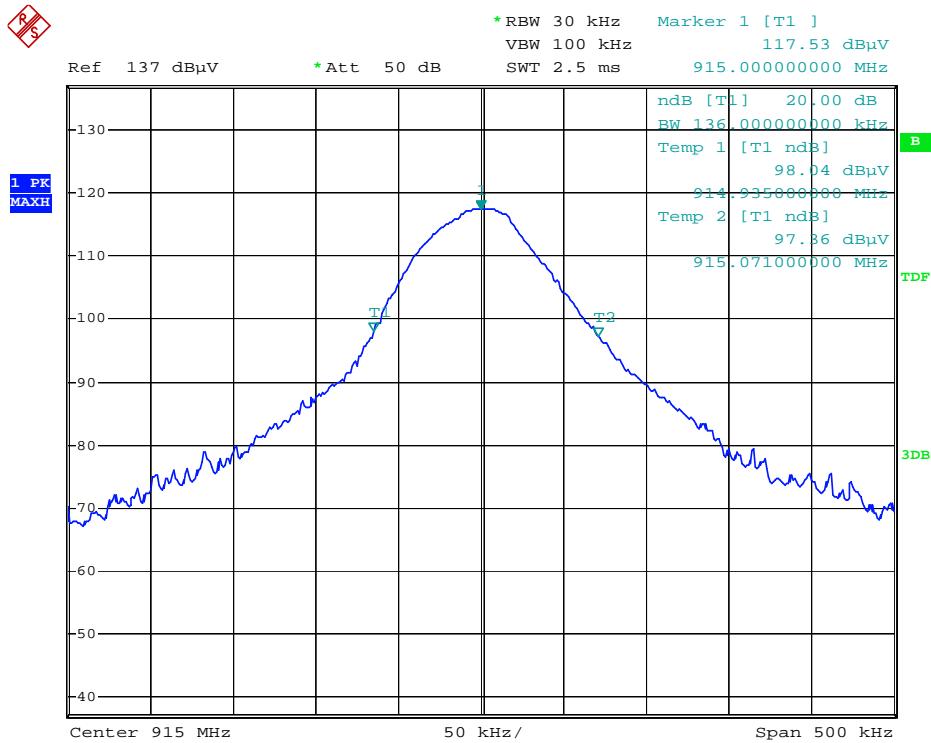
Modulation Standard	Channel	Frequency (MHz)	20dB Bandwidth (MHz)
GFSK	01	903.0	0.132
	25	915.0	0.136
	49	927.0	0.148

Channel: 01

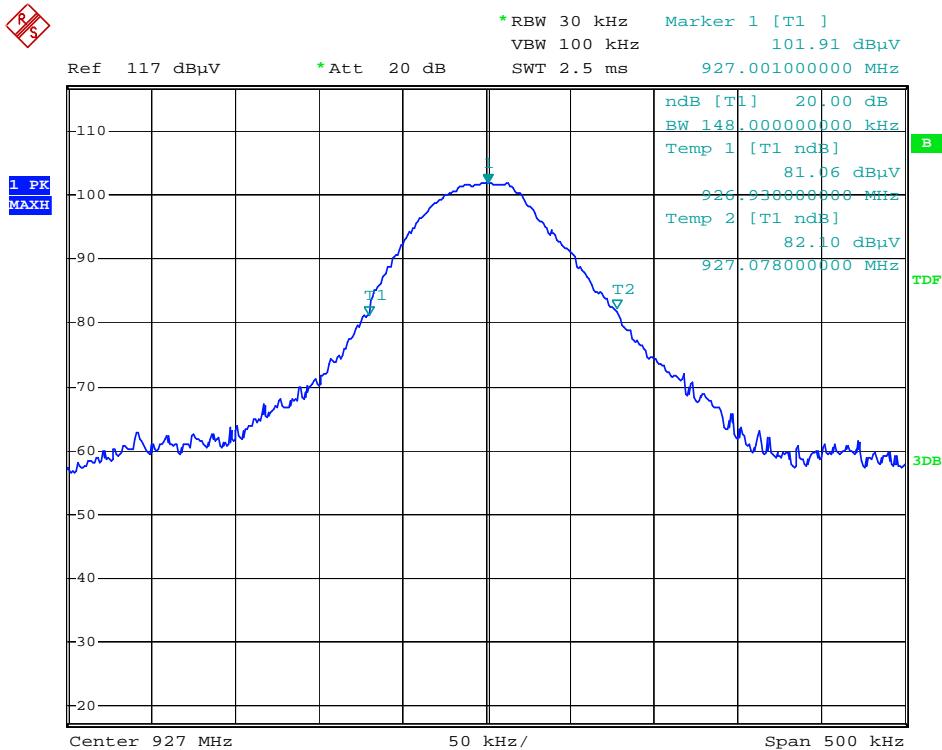




Channel: 25



Channel: 49





WH Technology Corp.

Date of Issue: Feb. 22, 2018
Report No.: WH-FCC-R18011416

APPENDIX 1 PHOTOS OF TEST CONFIGURATION

CE



WH Technology Corp.

Date of Issue: Feb. 22, 2018
Report No.: WH-FCC-R18011416

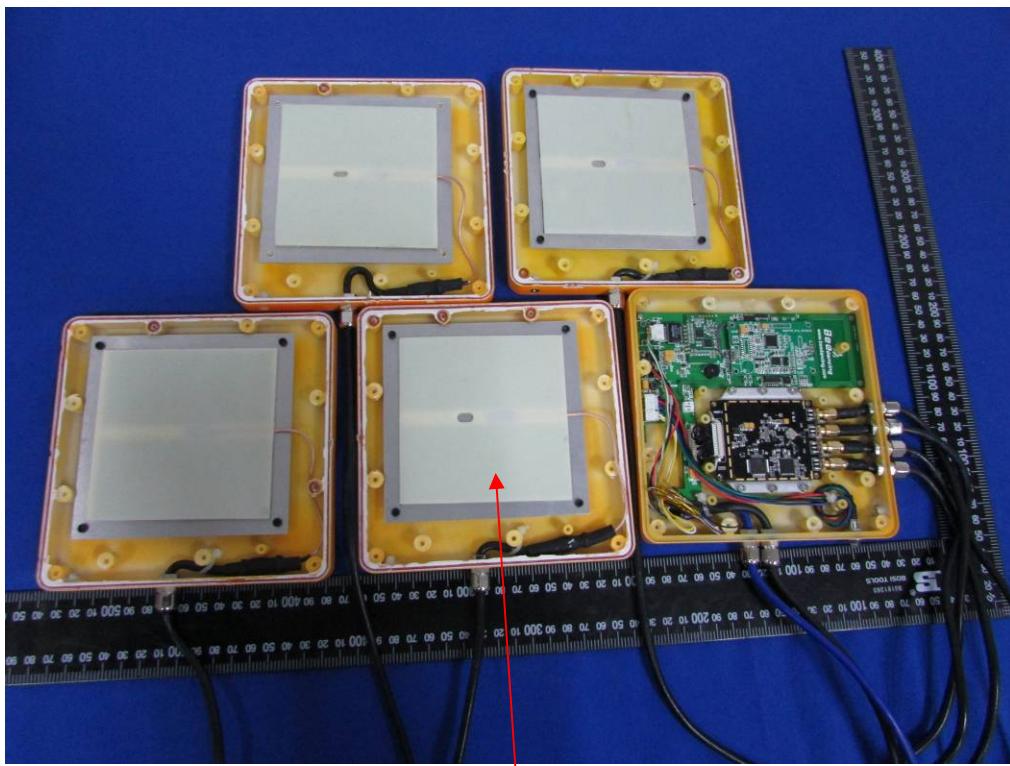
RE 1G Below

RE 1G Above

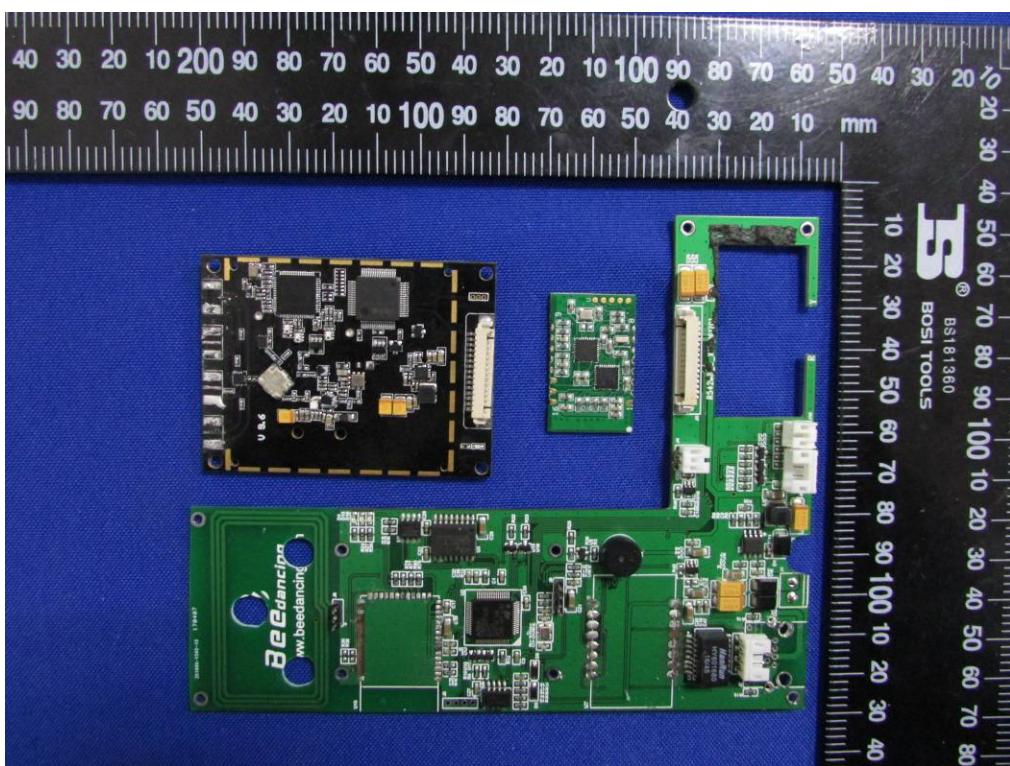


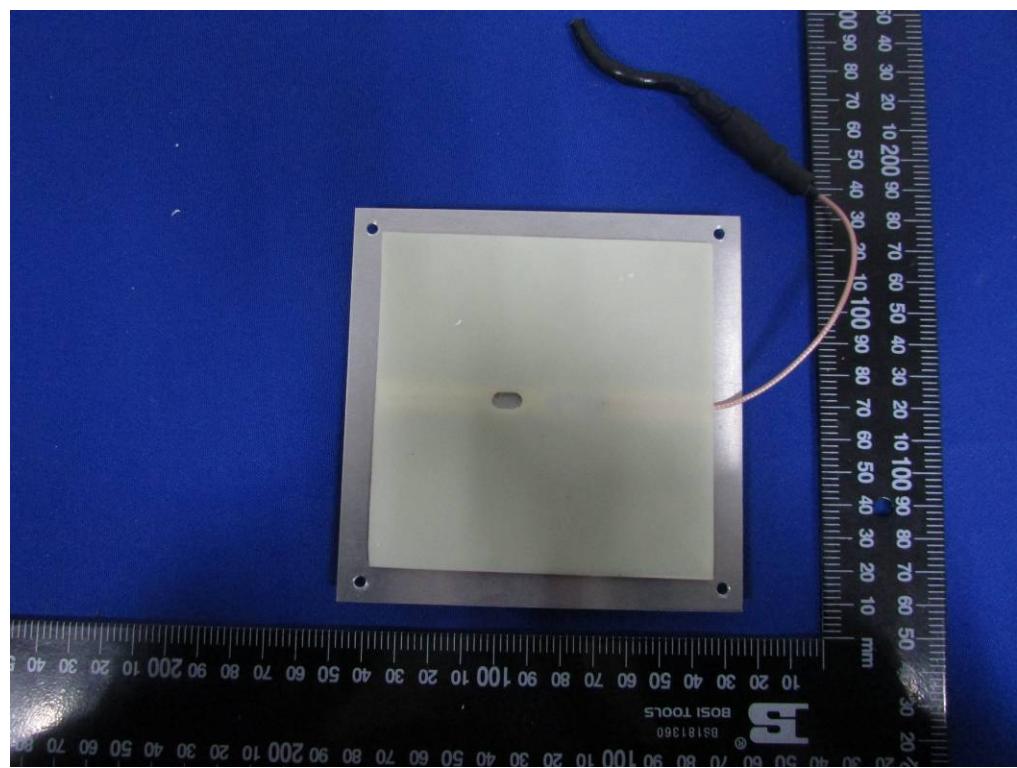
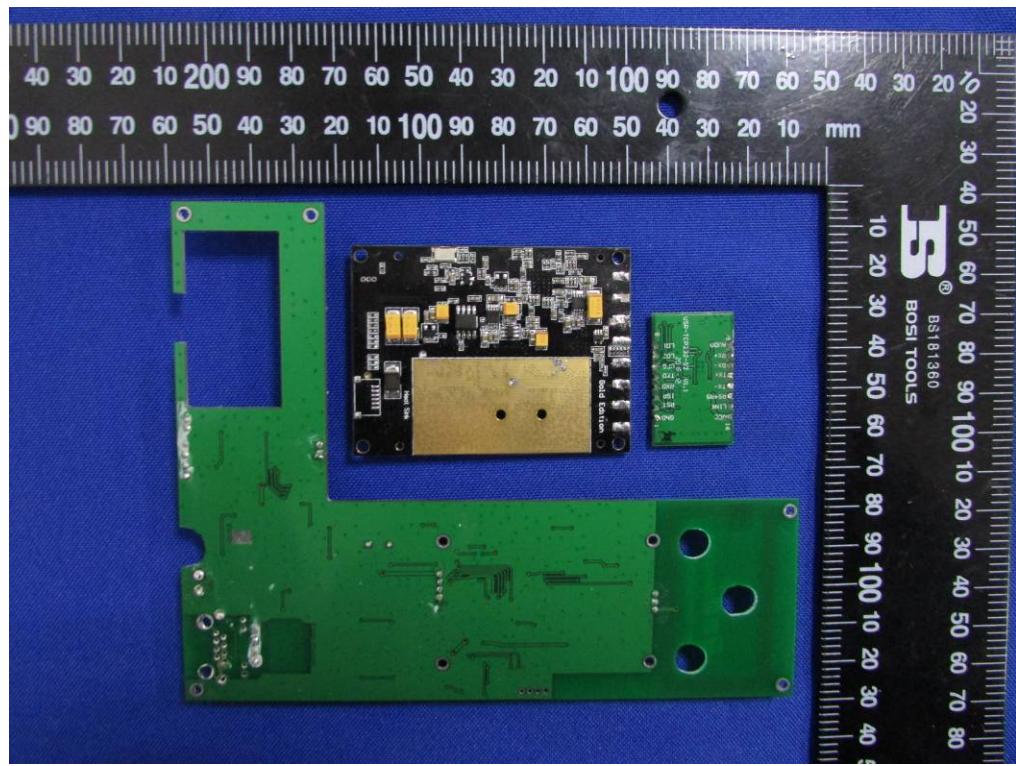
PHOTOS OF EUT

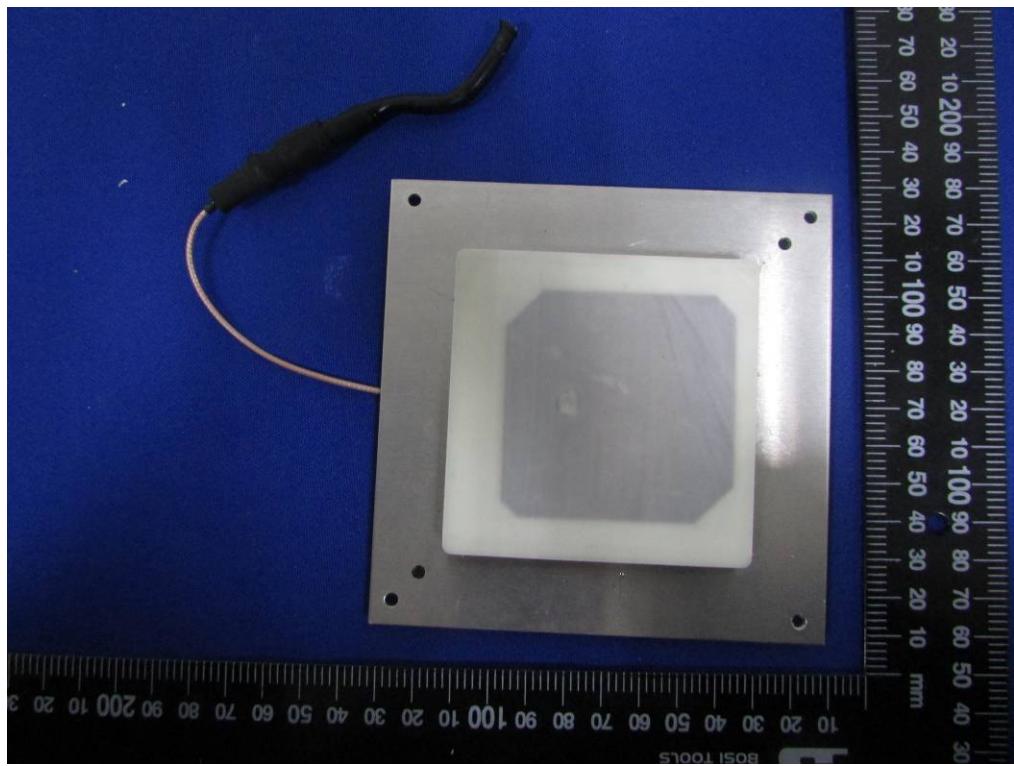




Antenna







**** End of report ****