

TEST REPORT

Report No.: BCTC2202016090-4E

Applicant: Summit Electronics LLC

Product Name: Carplay

Model/Type reference: CAD-DU1000

Tested Date: 2022-02-16 to 2022-03-09

Issued Date: 2022-03-21

Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2AMSOCAD-DU2000

Product Name: Carplay

Trademark:



Model/Type reference: CAD-DU1000

CAD-DU900, CAD-DU950S, CAD-DU1000, CAD-DU2000, CAD-DU2000S, CAD-DU2222, CAD-DU3000, CAD-DU3333, CAD-DU4000, CAD-DU4444

Prepared For: Summit Electronics LLC

Address: 1 Rewe Street, Brooklyn, NY 11211, USA

Manufacturer: Summit Electronics LLC

Address: 1 Rewe Street, Brooklyn, NY 11211, USA

Prepared By: Shenzhen BCTC Testing Co., Ltd.

Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Sample Received Date: 2022-02-16

Sample tested Date: 2022-02-16 to 2022-03-09

Issue Date: 2022-03-21

Report No.: BCTC2202016090-4E

Test Standards FCC Part15.239
ANSI C63.10:2013

Test Results PASS

Tested by:



Eric Yang/Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	
1.1 TEST FACILITY	
1.2 MEASUREMENT UNCERTAINTY	
2 . GENERAL INFORMATION	
2.1 GENERAL DESCRIPTION OF EUT	
2.2 DESCRIPTION OF TEST MODES	
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	
3 . EMC EMISSION TEST	
3.1 CONDUCTED EMISSION MEASUREMENT	
3.1.1 POWER LINE CONDUCTED EMISSION Limits	
3.1.2 TEST PROCEDURE	
3.1.3 DEVIATION FROM TEST STANDARD	
3.1.4 TEST SETUP	
3.1.5 EUT OPERATING CONDITIONS	
3.1.6 TEST RESULTS	
3.2 RADIATED EMISSION MEASUREMENT	
3.2.1 Radiated Emission Limits	
3.2.2 TEST PROCEDURE	
3.2.3 TEST SETUP	
3.2.4 EUT OPERATING CONDITIONS	
3.2.5 TEST RESULTS	
3.2.6 TEST RESULTS (1ghz~6ghz)	
4 . BANDWIDTH TEST	
4.1 Applied procedures / limit	
4.1.1 TEST PROCEDURE	
4.1.2 DEVIATION FROM STANDARD	
4.1.3 TEST SETUP	
4.1.4 EUT OPERATION CONDITIONS	
4.1.5 TEST RESULTS	

Table of Contents**Page****5 . ANTENNA REQUIREMENT**

5.1 STANDARD REQUIREMENT

5.2 EUT ANTENNA

6. EUT Photographs**7. EUT TEST PHOTO**

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.239) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.209&15.239	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.239a	Occupy Bandwidth	PASS	
15.203	Antenna Requirement	PASS	
15.239a	Band Edge Measurement	PASS	

NOTE:

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

1.1 TEST FACILITY

Shenzhen BCTC Testing Co., Ltd.

Address: BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

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 %** .

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	$U=4.3\text{dB}$
2	3m chamber Radiated spurious emission(1GHz-18GHz)	$U=4.5\text{dB}$
3	3m chamber Radiated spurious emission(18GHz-40GHz)	$U=3.34\text{dB}$
4	Conducted Adjacent channel power	$U=1.38\text{dB}$
5	Conducted output power uncertainty Above 1G	$U=1.576\text{dB}$
6	Conducted output power uncertainty below 1G	$U=1.28\text{dB}$
7	humidity uncertainty	$U=5.3\%$
8	Temperature uncertainty	$U=0.59^\circ\text{C}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Carplay
Trade Name	Vizualogic
Model Name	CAD-DU1000 CAD-DU900, CAD-DU950S, CAD-DU1000, CAD-DU2000, CAD-DU2000S, CAD-DU2222, CAD-DU3000, CAD-DU3333, CAD-DU4000, CAD-DU4444
Model Difference	All the model are the same circuit and RF module, except model names.
Product Description	Operation Frequency: 88.1 MHz ~107.9MHz Modulation Type: FM Antenna Type: FPC antenna Antenna Gain: 0dBi
Ratings	DC12 From Car charger(DC12-24V)

2.2 DESCRIPTION OF TEST MODES

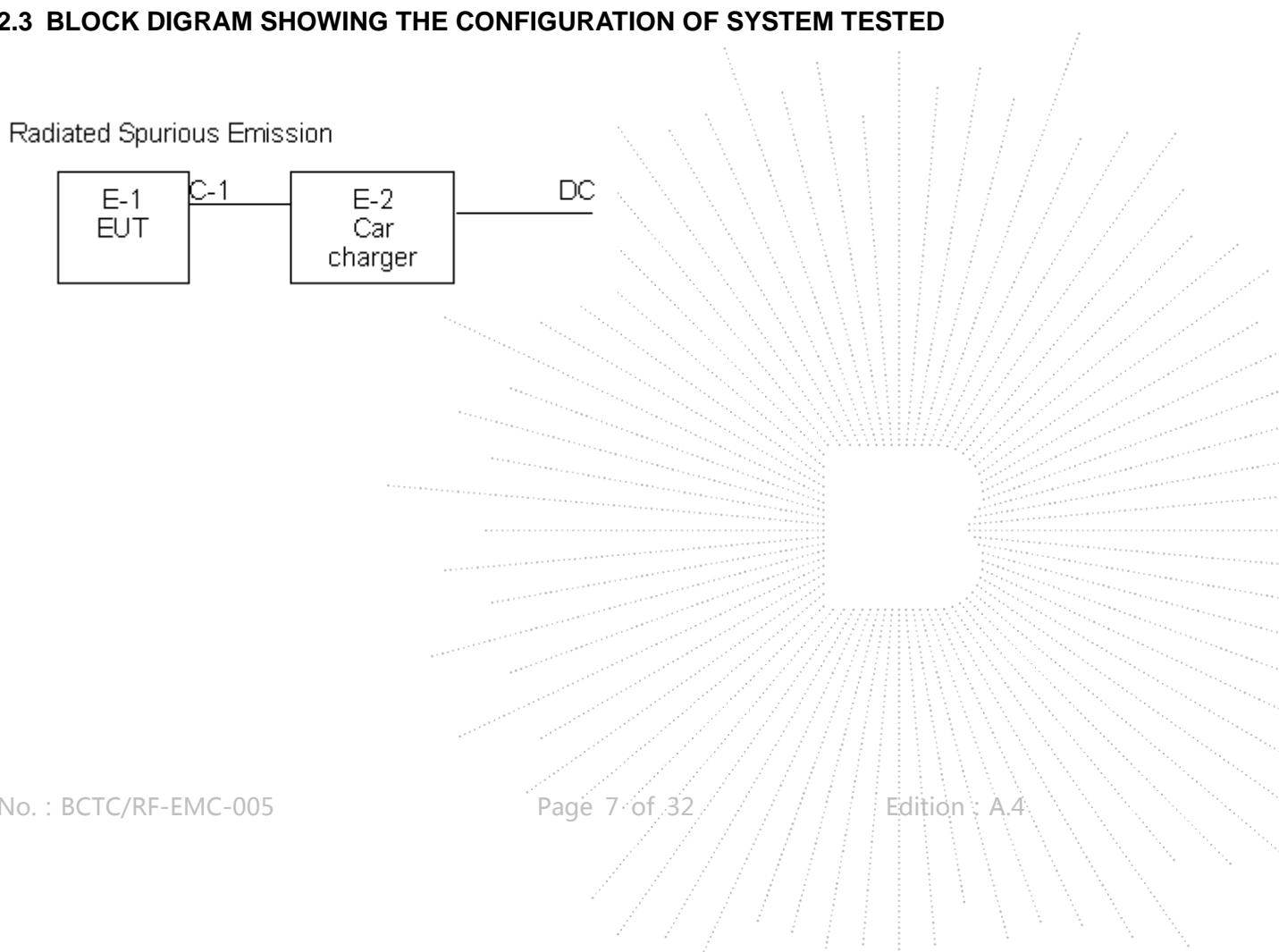
For All Emission	
Final Test Mode	Description
Mode 1	CH00
Mode 2	CH98
Mode 3	CH198

Channel	Frequency (MHz)
00	88.1
01	88.2
02	88.3
~	~
98	97.9
99	98.0
100	98.1
~	~
198	107.9

Note:

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

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 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.

No.	Device Type	Brand	Model	Series No.	Data Cable
E-2	Car charger	N/A	CAD-DU1000	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	2M	DC cable unshielded

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 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	Jun. 01, 2021	May 31, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenn (18GHz-40GH z)	Schwarzbeck	BBHA9170	00822	Jun. 15, 2021	Jun. 14, 2022
Amplifier (18GHz-40GH z)	MITEQ	TTA1840-35- HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Jun. 02, 2021	Jun. 01, 2022
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	\	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	\	May 28, 2021	May 27, 2022

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQU NCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	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

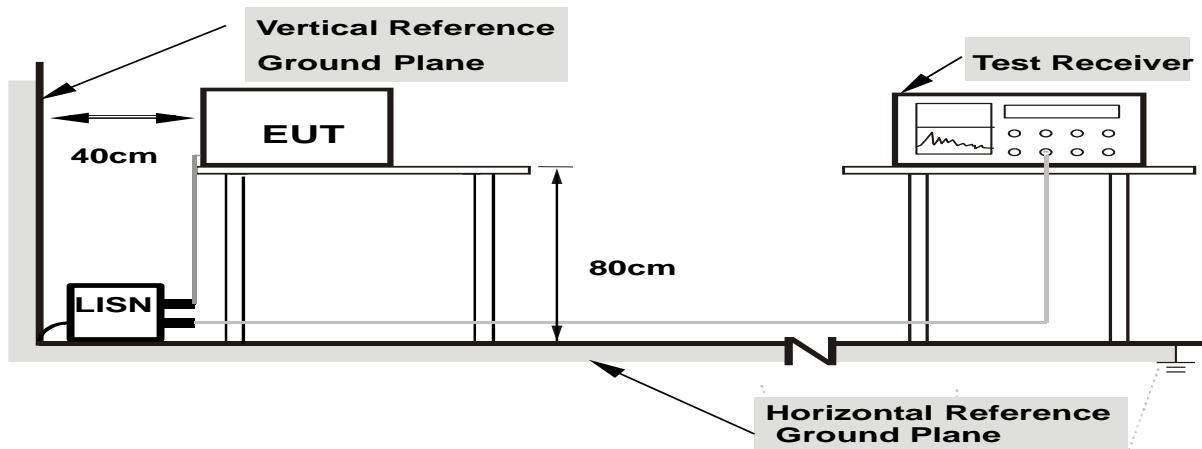
3.1.2 TEST PROCEDURE

- a. 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.
- 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 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note:

1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

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

3.1.6 TEST RESULTS

The EUT is powered by the DC only, the test item is not applicable.

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 15.209&15.239 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)	Limit (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 th 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
RBW / VBW setting	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

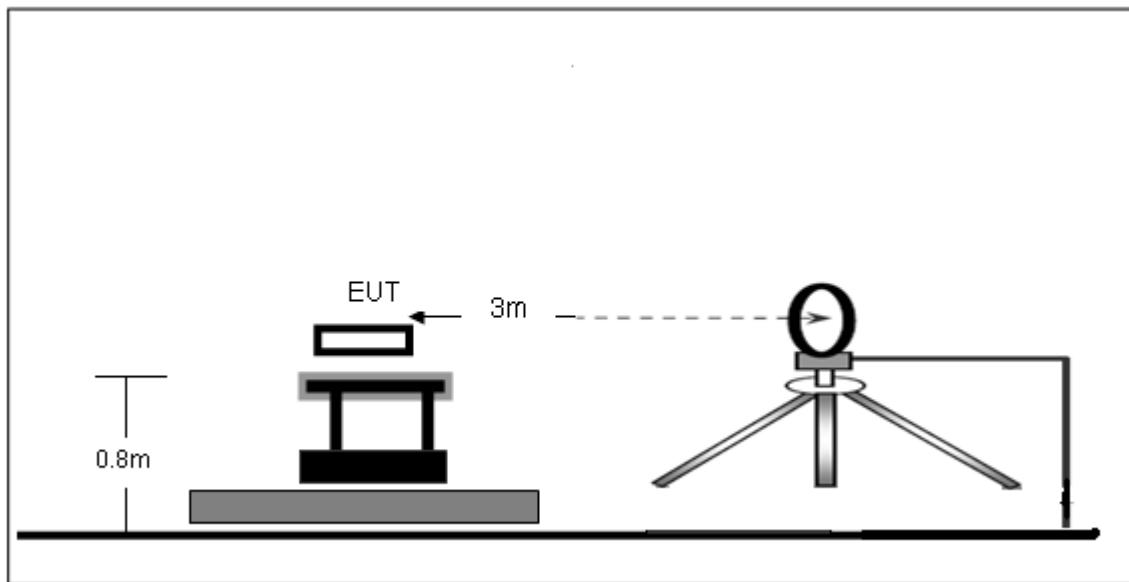
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; above 1GHz, the height was 1.5m, 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:

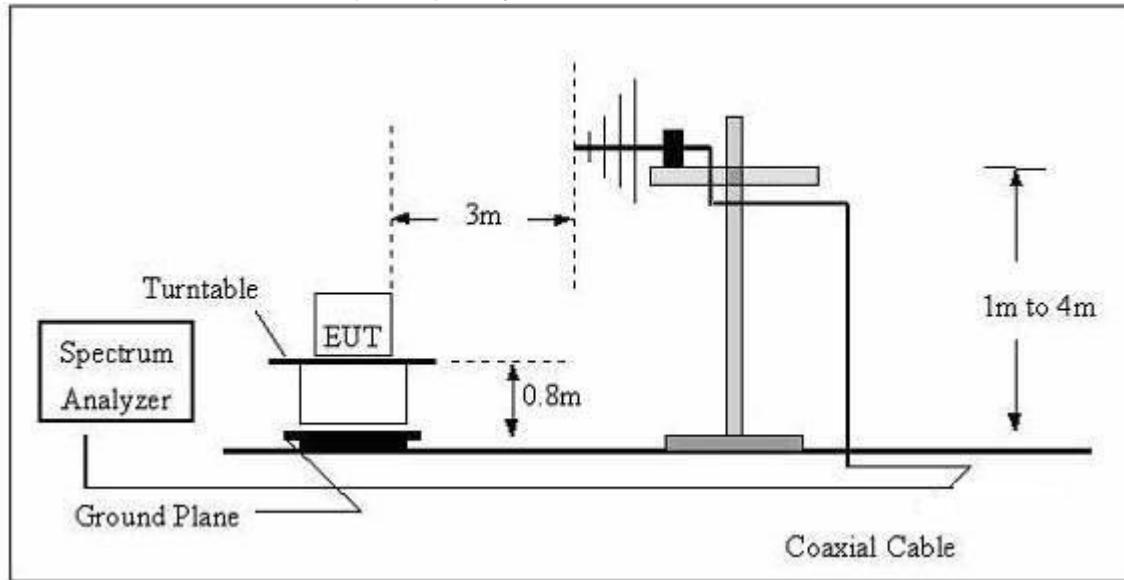
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case was X axis and the emissions were reported

3.2.3 TEST SETUP

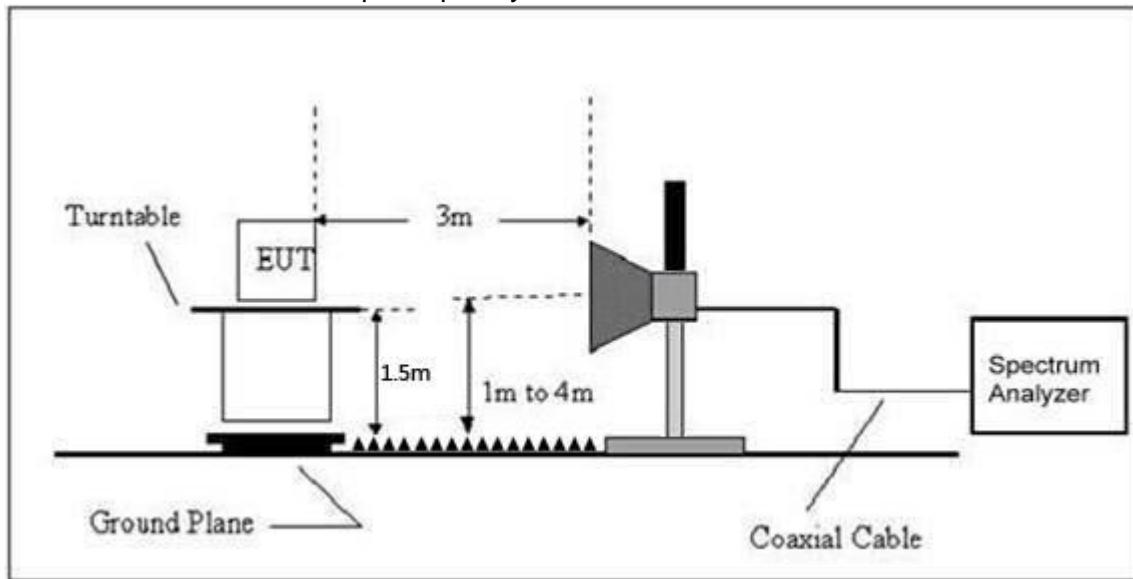
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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

**3.2.4 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.

3.2.5 TEST RESULTS

Radiated Spurious Emission (Below 9KHz – 30MHz)

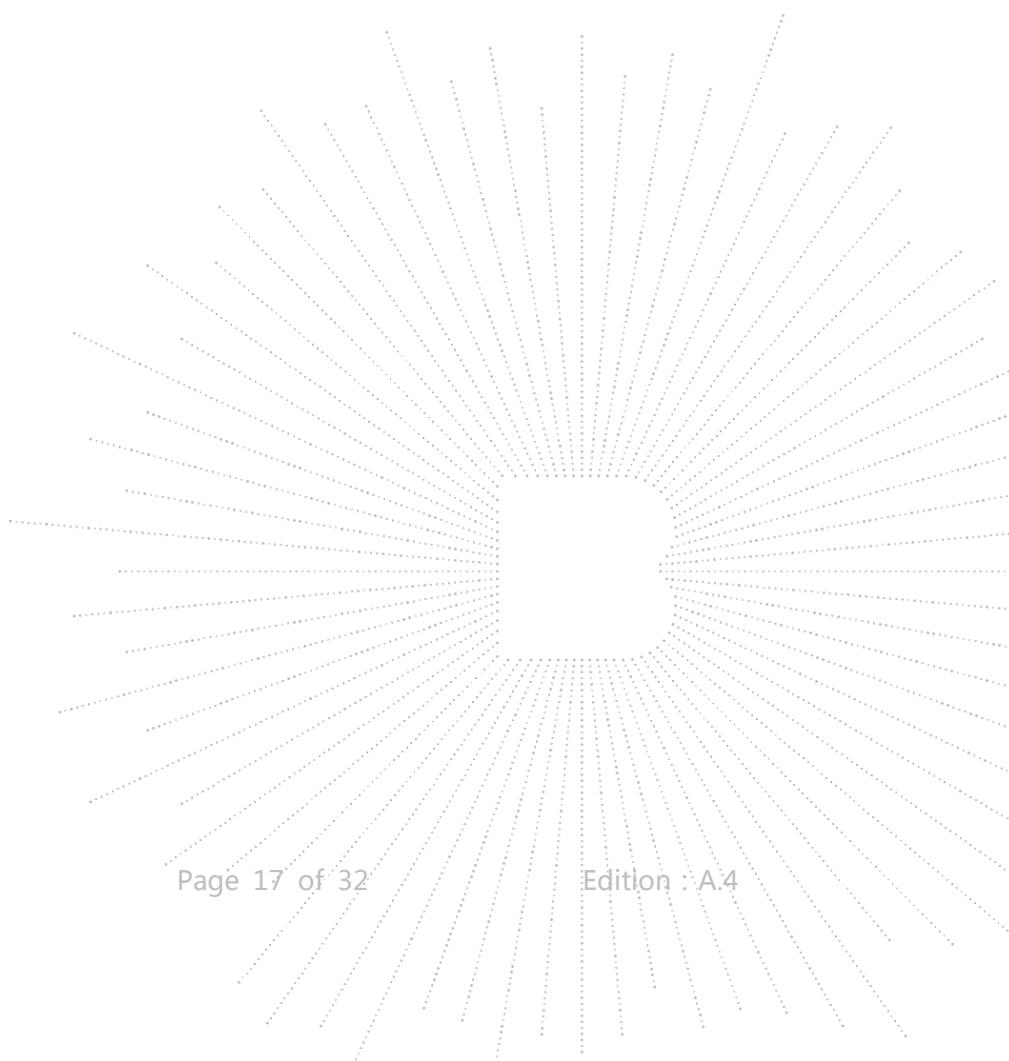
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	--
Test Voltage :	DC 12V		
Test Mode :	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dB _{UV} /m)	(dB _{UV} /m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

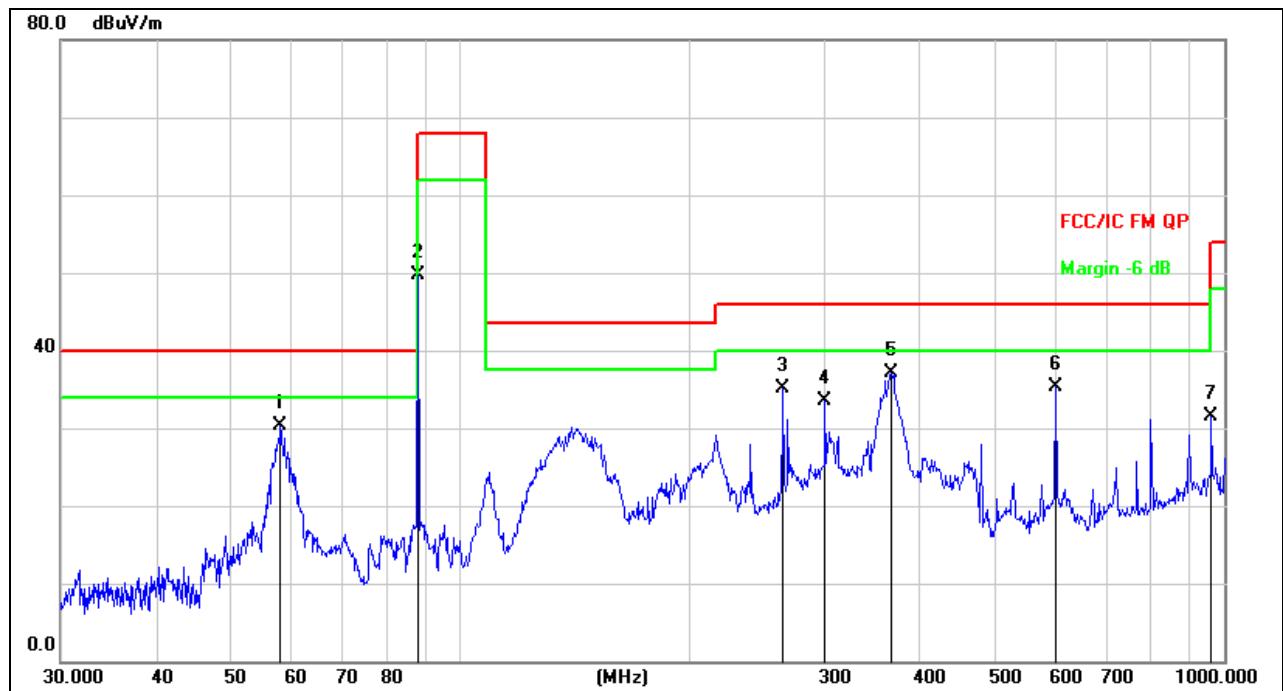
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);
 Limit line = specific limits(dB_{UV}) + distance extrapolation factor.



Radiated Spurious Emission (Between 30MHz – 1GHz)

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	H
Test Voltage :	DC 12V	Test Mode :	Mode 1(88.1MHz)

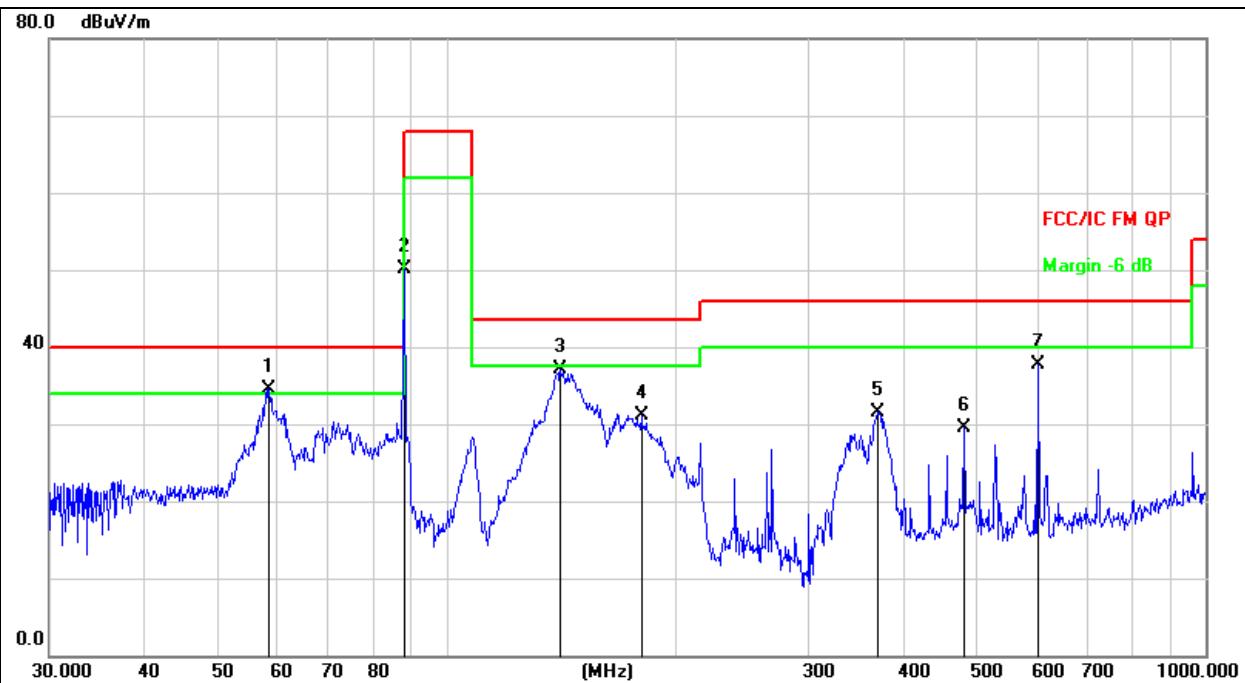


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		58.2030	46.07	-15.72	30.35	40.00	-9.65	QP
2		88.0327	68.35	-18.55	49.80	68.00	-18.20	peak
3		264.7456	49.87	-14.69	35.18	46.00	-10.82	QP
4		300.3672	47.12	-13.59	33.53	46.00	-12.47	QP
5	*	366.8231	49.01	-11.85	37.16	46.00	-8.84	QP
6		601.4265	41.91	-6.53	35.38	46.00	-10.62	QP
7		962.1621	32.45	-1.04	31.41	54.00	-22.59	QP

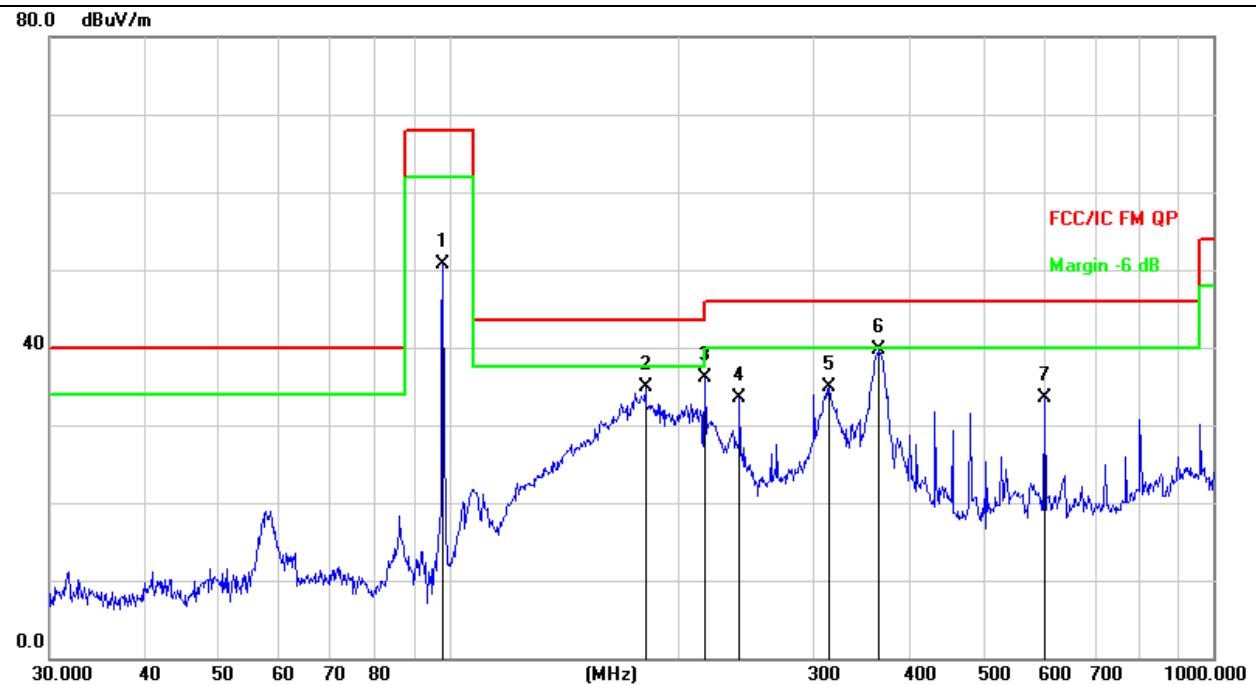
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	V
Test Voltage :	DC 12V	Test Mode :	Mode 1(88.1MHz)


Remark:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dBuV	dB	dBuV/m	dB/m	dB
1	*	58.4074	50.28	-15.74	34.54	40.00	-5.46 QP
2		88.0327	68.61	-18.55	50.06	68.00	-17.94 peak
3		141.3298	56.03	-18.94	37.09	43.50	-6.41 QP
4		180.6484	48.55	-17.54	31.01	43.50	-12.49 QP
5		370.7022	43.33	-11.76	31.57	46.00	-14.43 QP
6		480.5276	38.81	-9.34	29.47	46.00	-16.53 QP
7		601.4265	44.14	-6.53	37.61	46.00	-8.39 QP

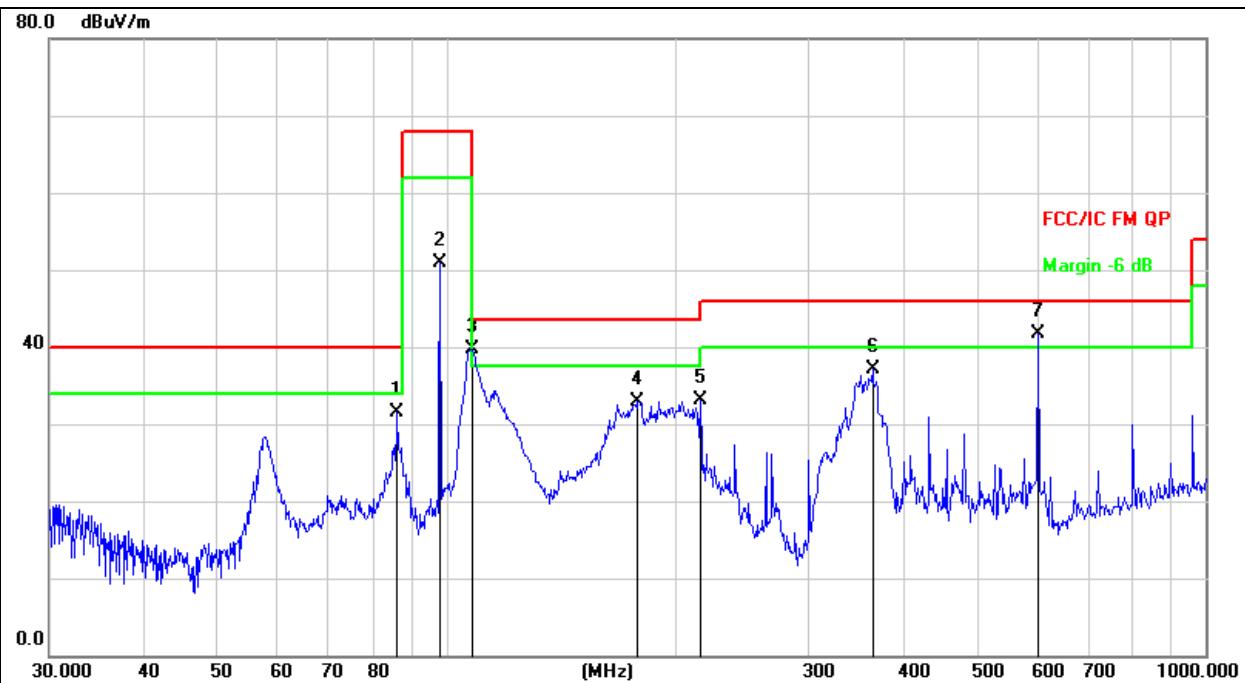
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	H
Test Voltage :	DC 12V	Test Mode :	Mode 2(98MHz)


Remark:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1	98.0419	67.23	-16.62	50.61	68.00	-17.39	peak	
2	180.6484	52.44	-17.54	34.90	43.50	-8.60	QP	
3	216.0240	52.04	-15.93	36.11	46.00	-9.89	QP	
4	239.9874	48.82	-15.38	33.44	46.00	-12.56	QP	
5	314.3765	48.18	-13.21	34.97	46.00	-11.03	QP	
6	*	365.5391	51.50	-11.88	39.62	46.00	-6.38	QP
7		601.4265	39.99	-6.53	33.46	46.00	-12.54	QP

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	V
Test Voltage :	DC 12V	Test Mode :	Mode 2(98MHz)

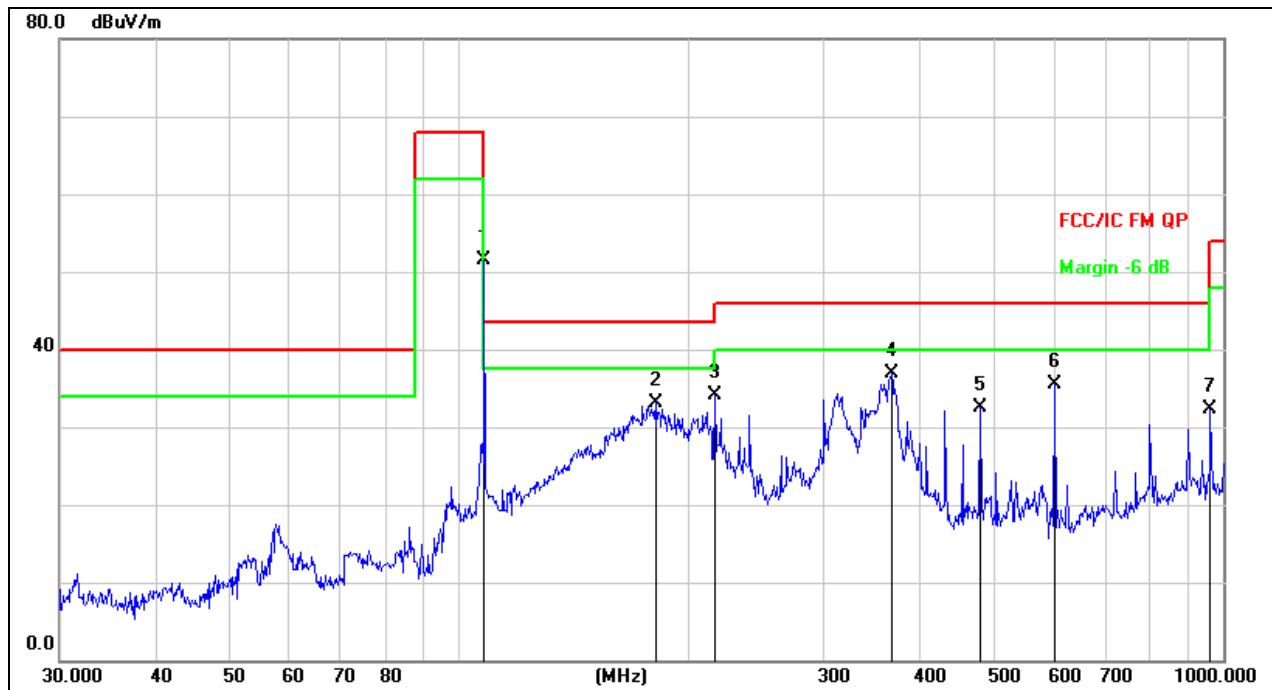


Remark:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dBuV	dB	dBuV/m	dB/m	dB
1		86.2001	50.54	-18.98	31.56	40.00	-8.44 QP
2		98.0419	67.46	-16.62	50.84	68.00	-17.16 peak
3	*	108.2667	56.51	-16.81	39.70	43.50	-3.80 QP
4		178.7581	50.62	-17.66	32.96	43.50	-10.54 QP
5		216.0240	49.13	-15.93	33.20	46.00	-12.80 QP
6		364.2595	48.93	-11.90	37.03	46.00	-8.97 QP
7	!	601.4265	48.31	-6.53	41.78	46.00	-4.22 QP

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	H
Test Voltage :	DC 12V	Test Mode :	Mode 3(107.9MHz)

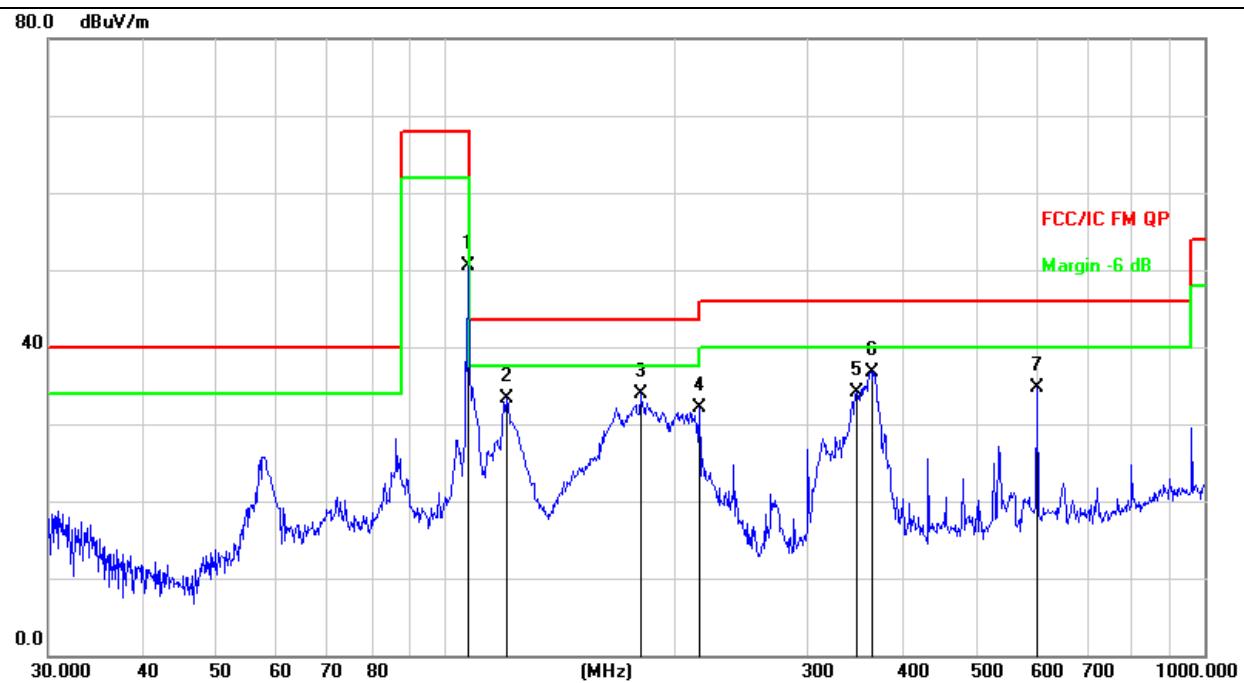


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1		107.8876	68.30	-16.79	51.51	68.00	-16.49	peak
2		180.6484	50.74	-17.54	33.20	43.50	-10.30	QP
3		216.0240	49.95	-15.93	34.02	46.00	-11.98	QP
4	*	368.1116	48.68	-11.82	36.86	46.00	-9.14	QP
5		480.5276	41.76	-9.34	32.42	46.00	-13.58	QP
6		601.4265	41.94	-6.53	35.41	46.00	-10.59	QP
7		962.1621	33.42	-1.04	32.38	54.00	-21.62	QP

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	V
Test Voltage :	DC 12V	Test Mode :	Mode 3(107.9MHz)


Remark:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dBuV	dB	dBuV/m	dB/m	dB
1		107.8876	67.16	-16.74	50.42	68.00	-17.58
2		120.2766	50.81	-17.59	33.22	43.50	-10.28
3		180.6484	51.39	-17.54	33.85	43.50	-9.65
4		216.0240	47.98	-15.93	32.05	46.00	-13.95
5		348.0274	46.33	-12.28	34.05	46.00	-11.95
6	*	364.2595	48.60	-11.90	36.70	46.00	-9.30
7		601.4265	41.28	-6.53	34.75	46.00	-11.25

3.2.6 TEST RESULTS (1ghz~6ghz)

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	1057.2	52.17	39.55	7.77	25.66	46.05	74	-27.95	PK
V	1057.2	44.15	39.55	7.77	25.66	38.03	54	-15.97	AV
V	1174.8	51.06	38.33	7.3	24.55	44.58	74	-29.42	PK
V	1174.8	44.58	38.33	7.3	24.55	38.1	54	-15.9	AV
V	1292.4	52.67	38.33	7.6	24.55	46.49	74	-27.51	PK
V	1292.4	50.14	35.23	7.6	26.59	49.1	54	-4.9	AV
H	1145.3	52.14	39.55	7.77	25.66	46.02	74	-27.98	PK
H	1145.3	52.36	39.55	7.77	25.66	46.24	54	-7.76	AV
H	1272.7	42.36	38.33	7.3	23.55	34.88	74	-39.12	PK
H	1272.7	52.17	38.33	7.3	23.22	44.36	54	-9.64	AV
H	1400.1	52.47	38.33	7.6	24.55	46.29	74	-27.71	PK
H	1400.1	44.16	35.45	7.6	27.88	44.19	54	-9.81	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

4. BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

According to 15.209&15.239 requirement:

The bandwidth of the emission shall not exceed 200 kHz.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	10kHz
VB	\geq RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 10kHz, VBW \geq RBW, Sweep time = Auto.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



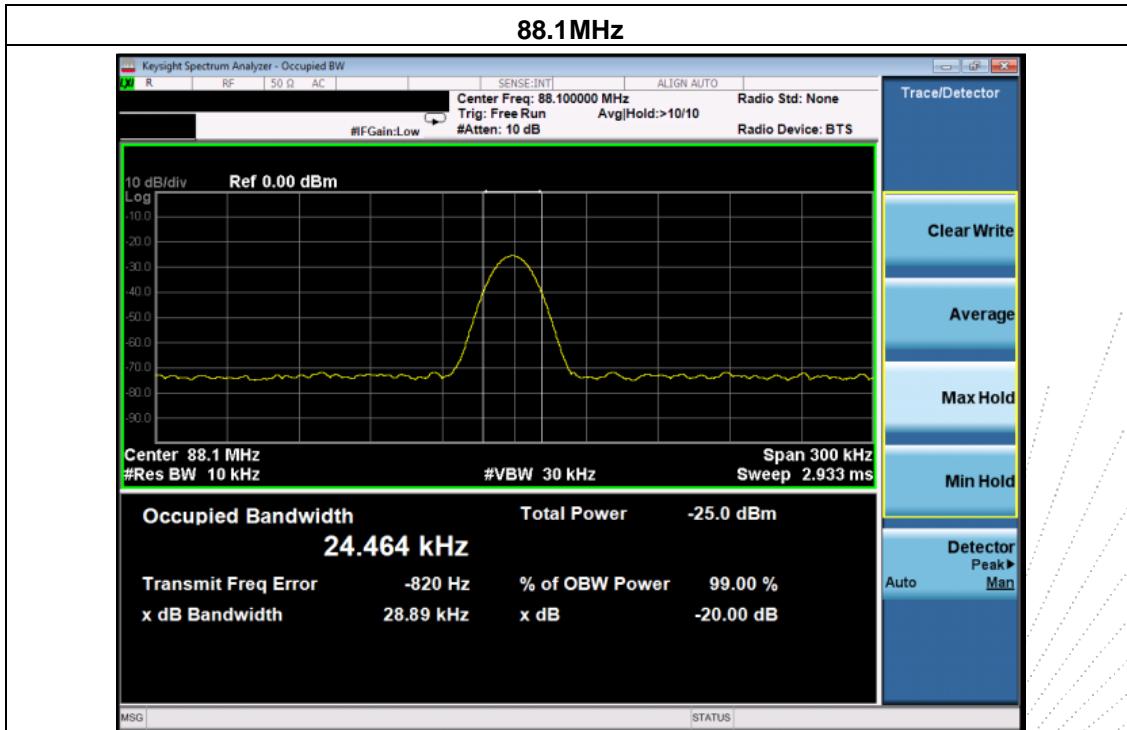
4.1.4 EUT OPERATION CONDITIONS

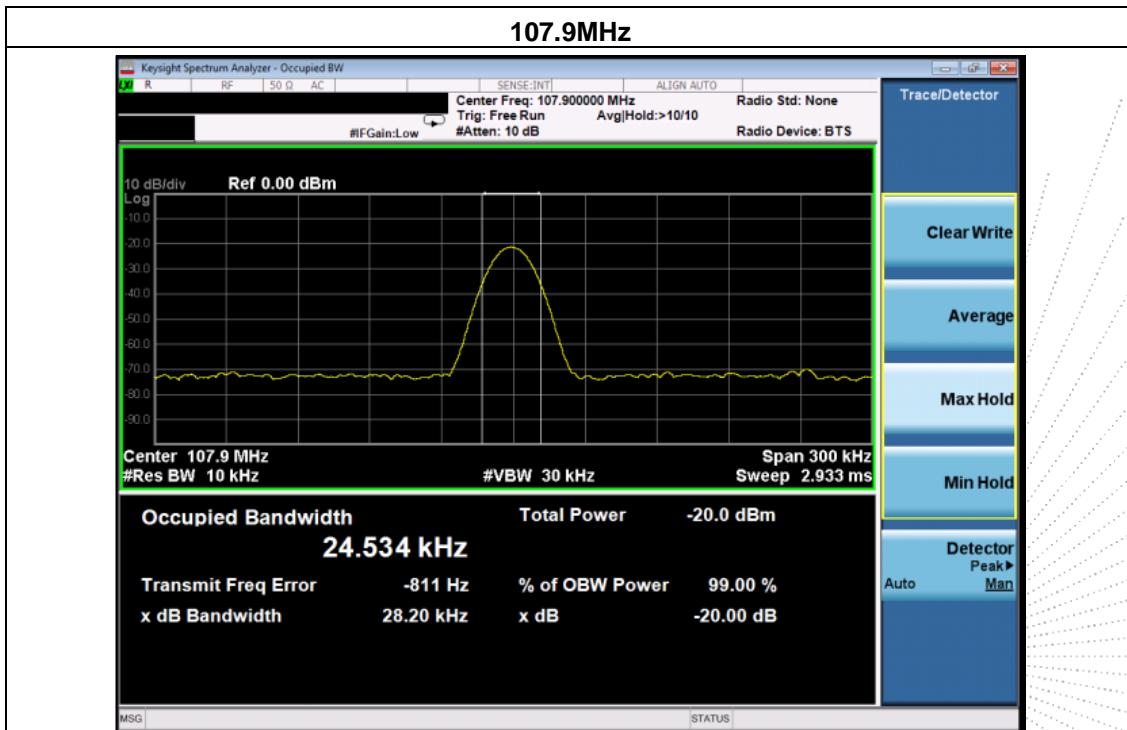
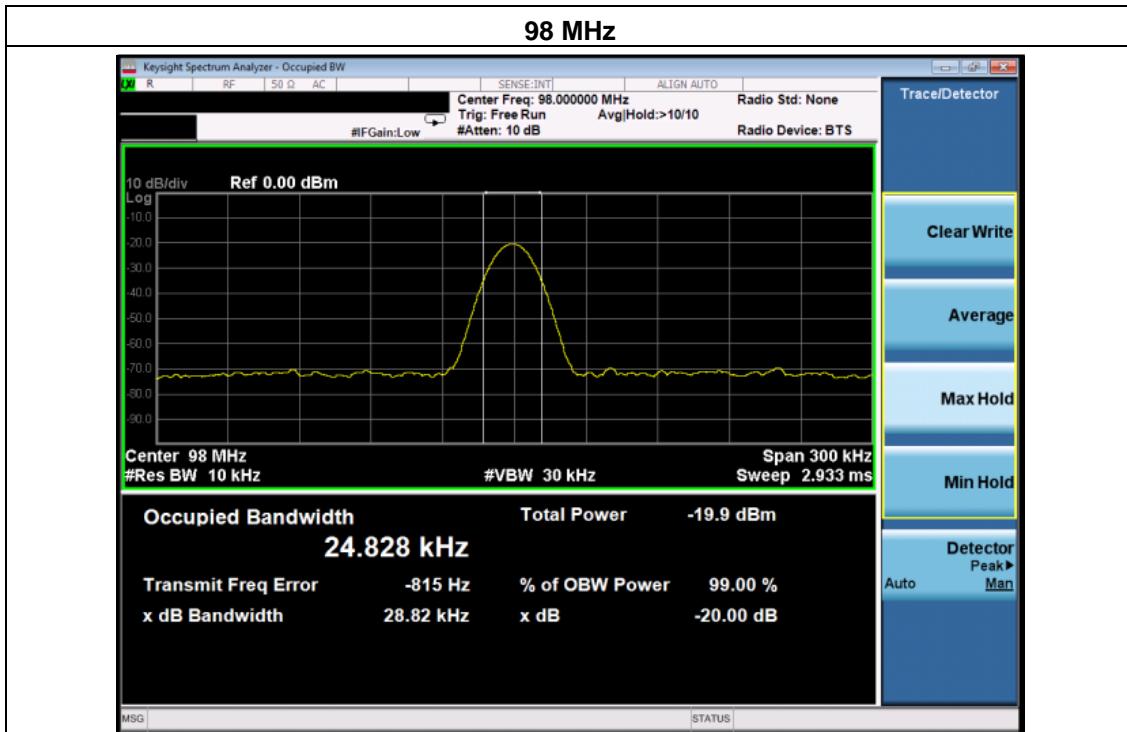
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Mode		

Frequency	20dB bandwidth (kHz)	99% bandwidth (kHz)	Limit (kHz)	Result
88.1MHz	28.89	24.464	200	PASS
98.0MHz	28.82	24.828	200	PASS
107.9MHz	28.20	24.534	200	PASS





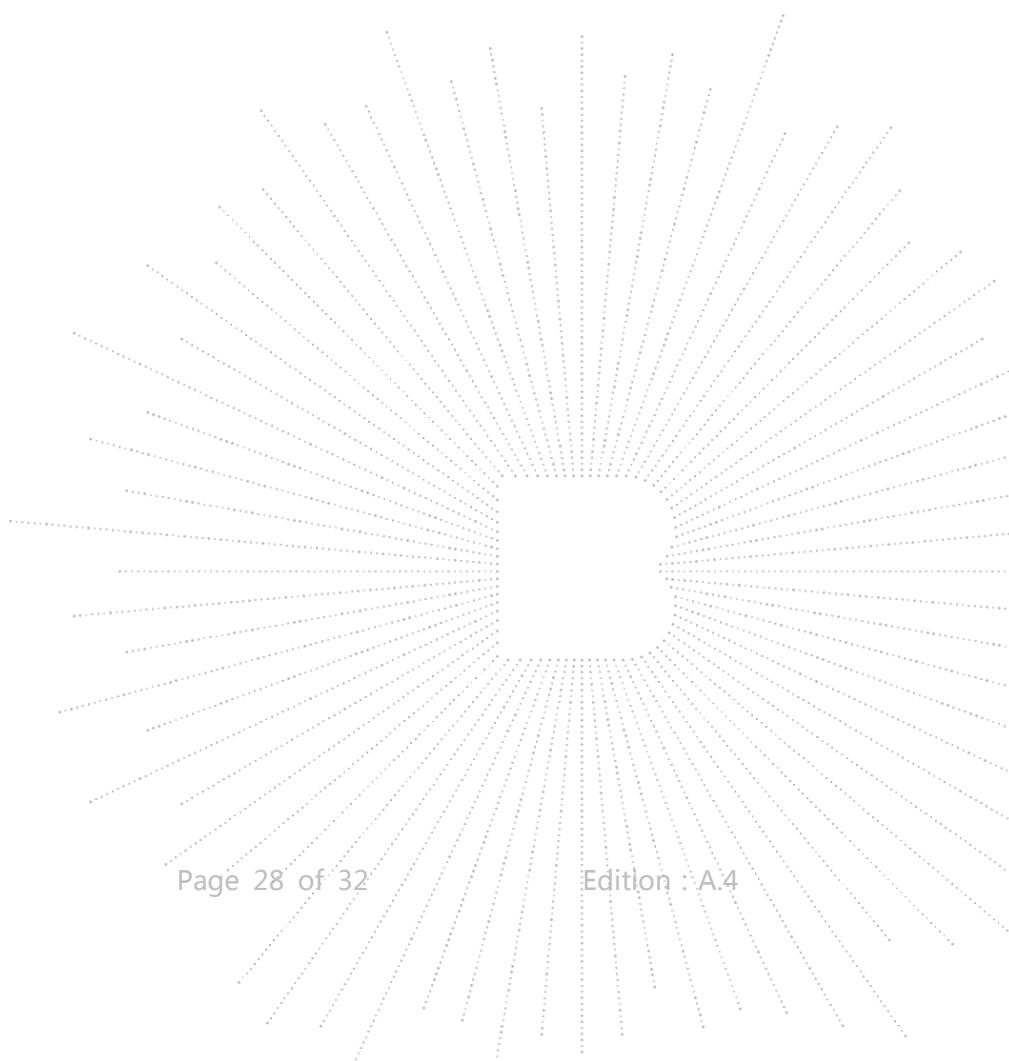
5. ANTENNA REQUIREMENT

5.1 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.

5.2 EUT ANTENNA

The EUT antenna is the FPC Antenna. It comply with the standard requirement.



6. EUT PHOTOGRAPHS

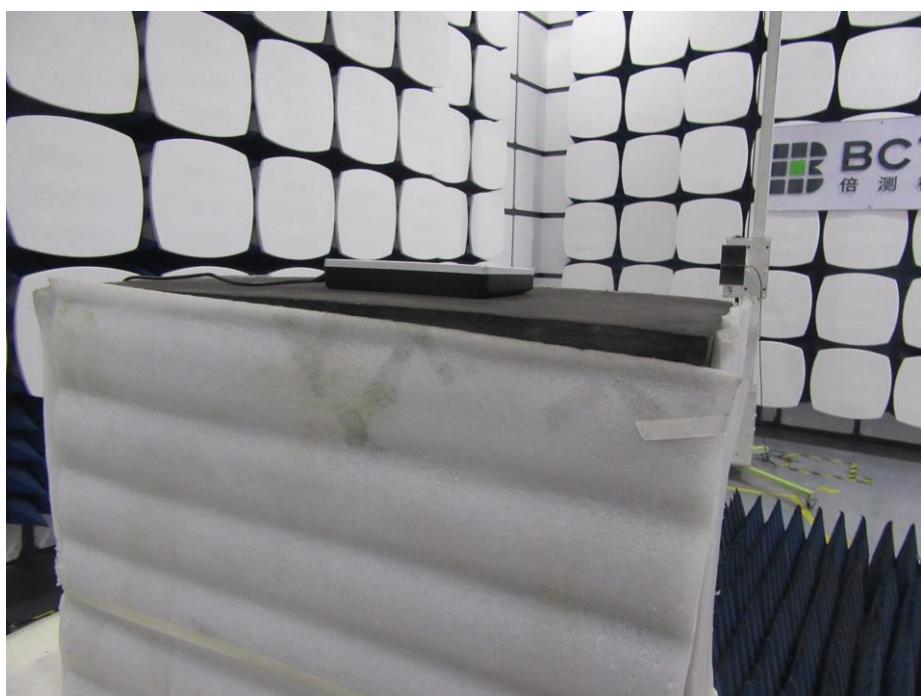
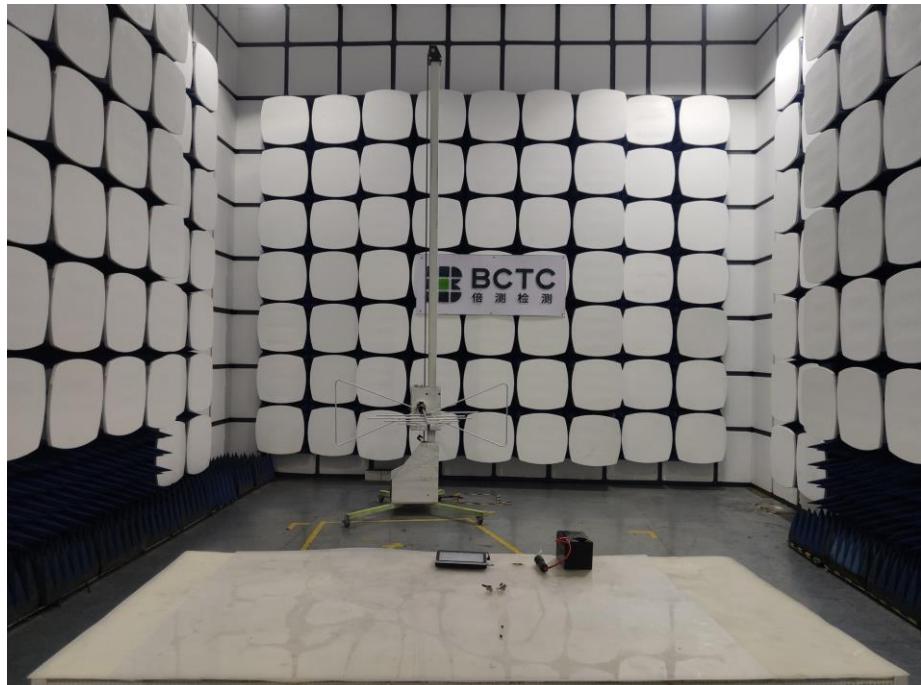
EUT Photo 1



Appendix-Photographs Of EUT Constructional Details

7. EUT TEST PHOTO

Radiated Measurement Photos



STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.

- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P. C.: 518103

FAX : 0755-33229357

Website : <http://www.chnbctc.com>

E-Mail : bctc@bctc-lab.com.cn

***** END *****