



FCC TEST REPORT

Report No: STS1608170F01

Issued for
RISCO LTD.

14 Hachoma Street, Rishon Lezion, 75655, Israel

Product Name:	WiComm Main, 3G+IP, Ex.PS, 915
Brand Name:	RISCO
Model Name:	RW232M
Series Model:	N/A
FCC ID:	JE4RW232M915
Contains FCC ID	QIPEHS6
Test Standard:	FCC Part 15.249

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**TEST RESULT CERTIFICATION**

Applicant's name : RISCO LTD.
Address : 14 Hachoma Street, Rishon Lezion, 75655, Israel
Manufacture's Name : RISCO LTD.
Address : Sderot Yahalom 6 Kiryat Gat, Israel

Product description

Product name : WiComm Main, 3G+IP, Ex.PS, 915
Brand name : RISCO
Model and/or type reference : RW232M

Standards : FCC Part15.249
Test procedure : ANSI C63.10-2013

This device described above has been tested by STS, 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 of performance of tests : 22 Aug. 2016 ~24 Aug. 2016
Date of Issue : 25 Aug. 2016
Test Result : **Pass**

Testing Engineer :

(Tony Liu)

Technical Manager :

(Vita Li)

Authorized Signatory :

(Bovey Yang)





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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	25 Aug. 2016	STS1608170F01	ALL	Initial Issue





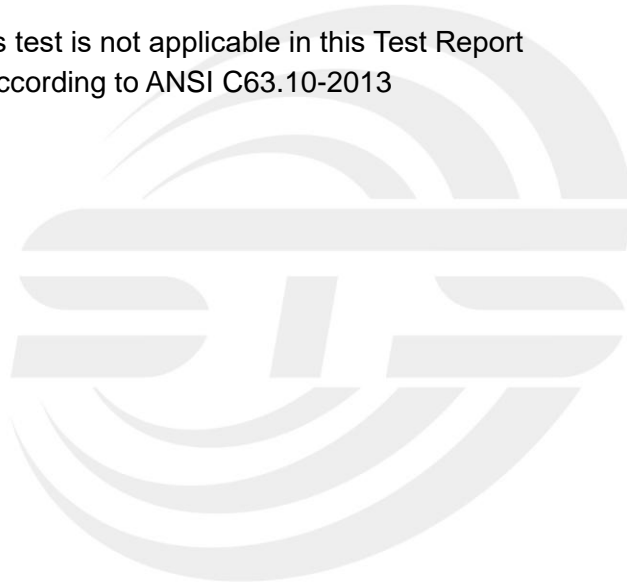
1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 15.249,Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	Pass	
15.203	Antenna Requirement	Pass	
15.249	Radiated Spurious Emission	Pass	
15.249	20dB Bandwidth	Pass	

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) All tests are according to ANSI C63.10-2013





1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.

Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

CNAS Registration No.: L7649;

FCC Registration No.: 842334; IC Registration No.: 12108A-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 %**.

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	$\pm 2.88\text{Db}$
2	Conducted Emission (150KHz-30MHz)	$\pm 2.67\text{Db}$
3	RF power,conducted	$\pm 0.70\text{Db}$
4	Spurious emissions,conducted	$\pm 1.19\text{Db}$
5	All emissions,radiated(<1G) 30MHz-200MHz	$\pm 2.83\text{Db}$
6	All emissions,radiated(<1G) 200MHz-1000MHz	$\pm 2.94\text{Db}$
7	All emissions,radiated(>1G)	$\pm 3.03\text{Db}$
8	Temperature	$\pm 0.5^{\circ}\text{C}$
9	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WiComm Main, 3G+IP, Ex.PS, 915
Trade Name	RISCO
Model Name	RW232M
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a WiComm Main, 3G+IP, Ex.PS, 915
	Operation Frequency: 915MHz,916MHz
	Modulation Type: 915MHz:OOK, 916MHz:GFSK
	Antenna Designation: Spring Antenna
	Antenna Gain(Peak) 3 dBi
	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	Input: AC 100-240V,600mA,50/60Hz Output:DC 14.4V,1500mA

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	915	02	916

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	RISCO	RW232M	Spring	NA	3	Antenna

The EUT antenna is Spring Antenna. No antenna other than that furnished by the responsible party shall be used with the device.

2.2 DESCRIPTION OF TEST MODES

For conducted test items and radiated spurious emissions
Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively..

Worst Mode	Description	Data/Modulation
Mode 1	TX CH01	1 MHz/OOK
Mode 2	TX CH02	1 MHz/GFSK

Note:

- (1) All above mode have been measurement, only worst data was reported.
- (2) New Battery is used during all test.
- (3) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

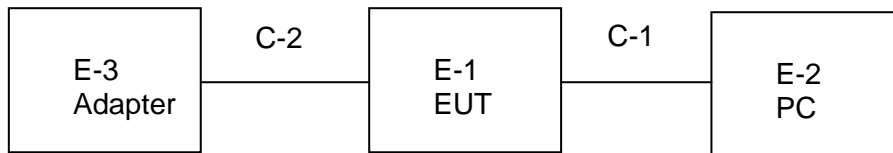
For AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 1 , Mode 2

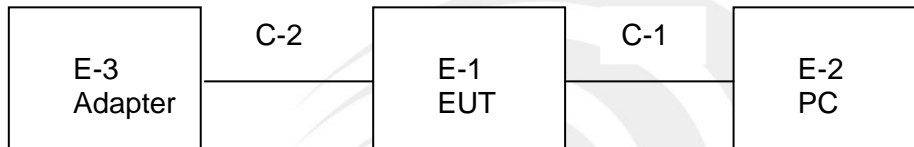
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

Radiated Spurious Emission Test



Conducted Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS

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.	Serial No.	Note
E-1	WiComm Main, 3G+IP, Ex.PS, 915	RISCO	RW232M	N/A	EUT
E-2	PC	4CV428DQXR	500-320cx	4CV428DQYN	N/A
E-3	Adapter		RSS1006-216144-T2	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	Unshielded	NO	100cm	/
C-2	Unshielded	NO	110cm	/

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.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2015.10.25	2016.10.24
Test Receiver	R&S	ESCI	101427	2015.10.25	2016.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2015.11.25	2016.11.24
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	9120D-1343	2016.03.06	2017.03.05
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.03.06	2017.03.05
PreAmplifier	Agilent	8449B	60538	2015.10.25	2016.10.24
Loop Antenna	ARA	PLA-1030/B	1029	2016.03.06	2017.03.05
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2015.10.25	2016.10.24
Semi-anechoic chamber	Changling	966	N/A	2015.10.25	2016.10.24

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	102086	2015.11.20	2016.11.19
LISN	R&S	ENV216	101242	2015.10.25	2016.10.24
LISN	EMCO	3810/2NM	000-23625	2015.10.25	2016.10.24
Shielding Room	Changling	854	N/A	2015.10.25	2016.10.24

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.207(a) limit in the table below has to be followed.

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

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.

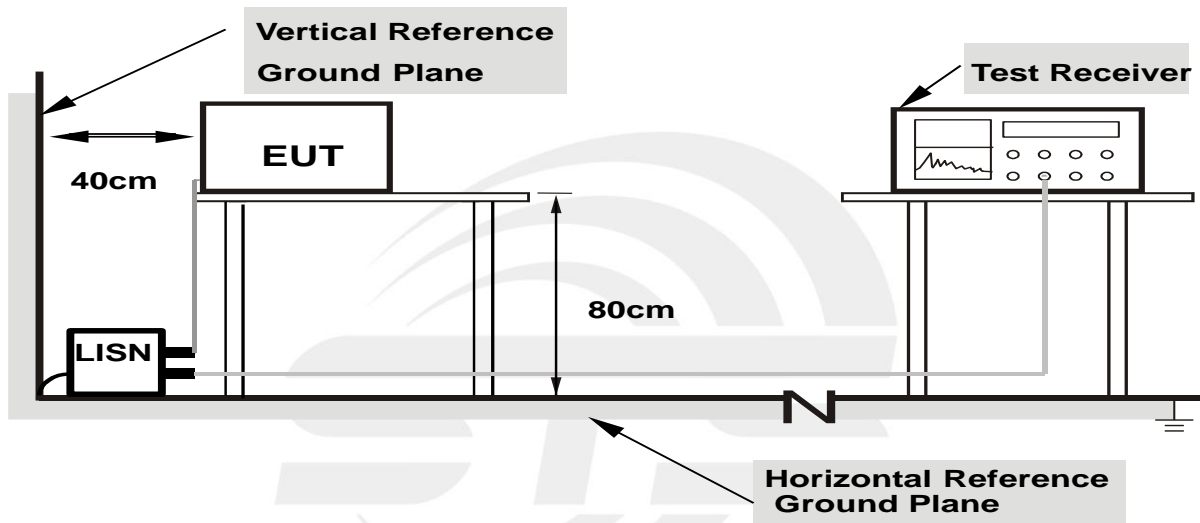
The following table is the setting of the receiver

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 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



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

3.1.4 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.



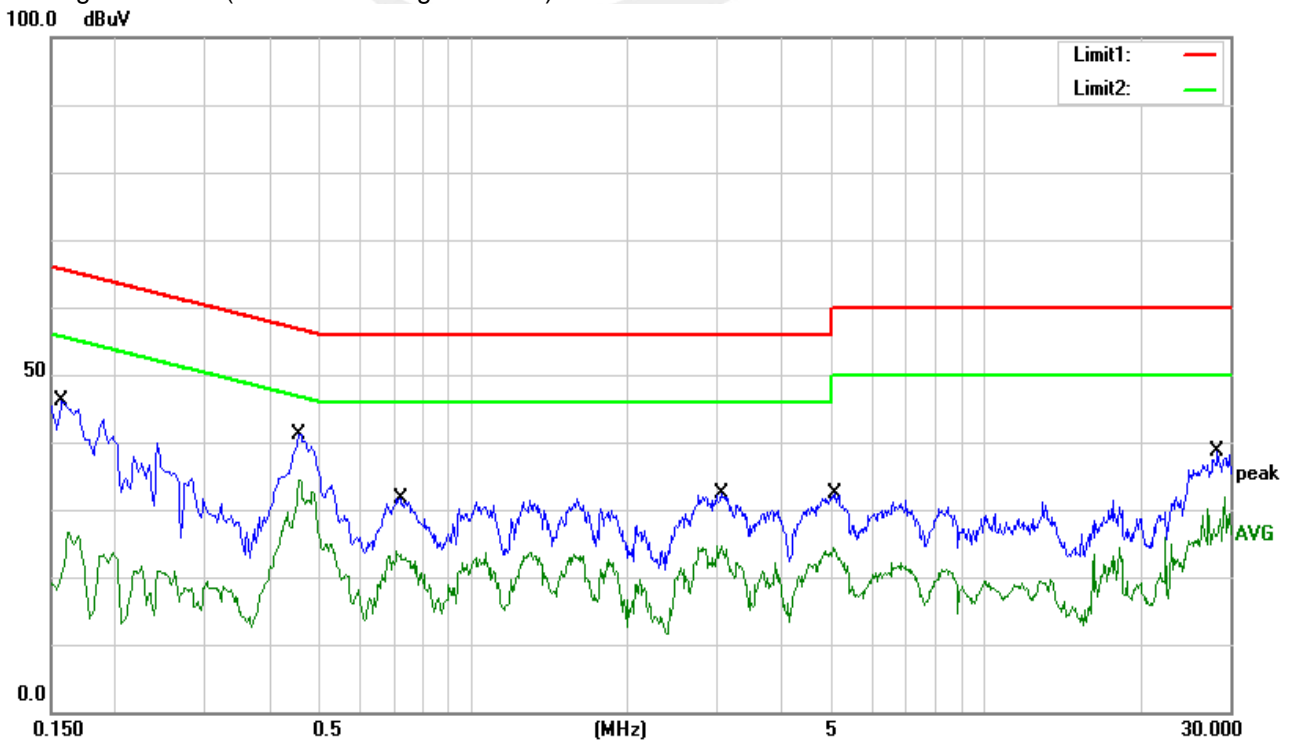
3.1.5 TEST RESULTS

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	L
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1
Frequence:	915MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	36.98	9.23	46.21	65.57	-19.36	QP
2	0.1580	11.76	9.23	20.99	55.57	-34.58	AVG
3	0.4580	31.79	9.27	41.06	56.73	-15.67	QP
4	0.4580	25.18	9.27	34.45	46.73	-12.28	AVG
5	0.7220	22.50	9.23	31.73	56.00	-24.27	QP
6	0.7220	13.49	9.23	22.72	46.00	-23.28	AVG
7	3.0500	23.02	9.26	32.28	56.00	-23.72	QP
8	3.0500	15.19	9.26	24.45	46.00	-21.55	AVG
9	5.1020	23.16	9.27	32.43	60.00	-27.57	QP
10	5.1020	14.16	9.27	23.43	50.00	-26.57	AVG
11	28.3220	28.76	9.91	38.67	60.00	-21.33	QP
12	28.3220	16.62	9.91	26.53	50.00	-23.47	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) – Limit



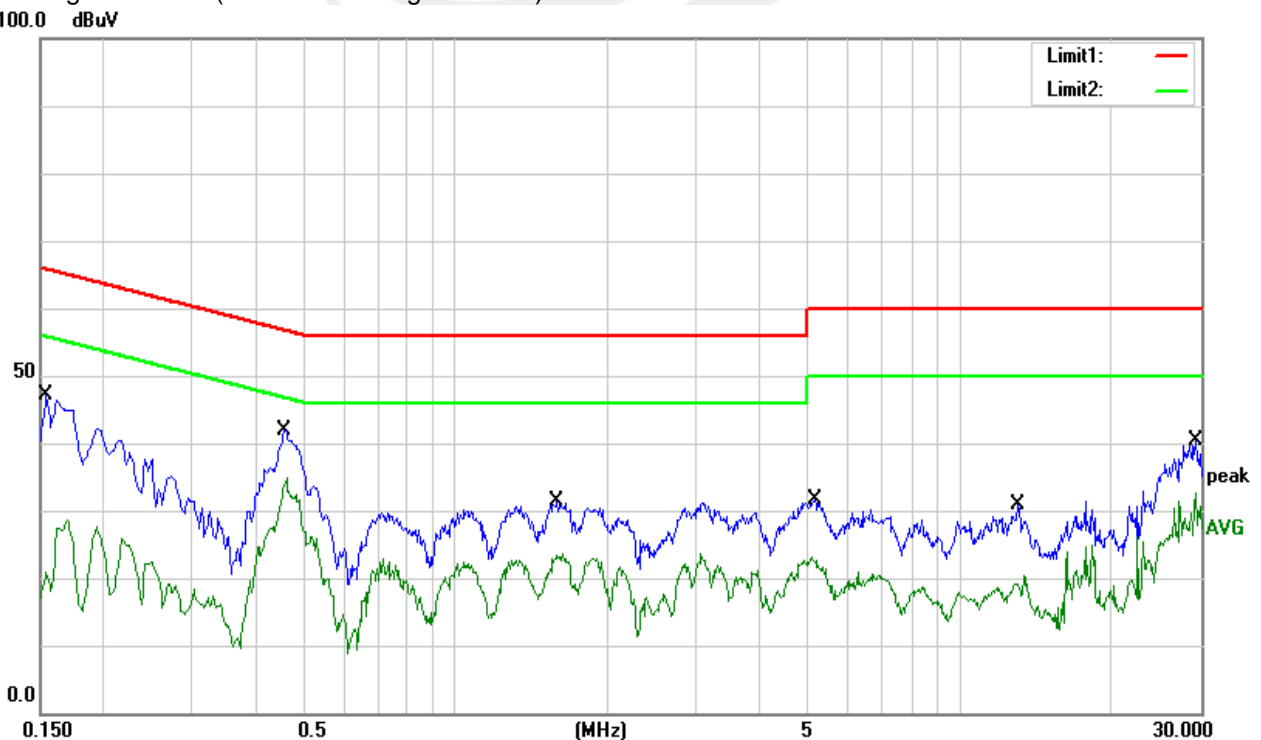


Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	N
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1
Frequence:	915MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	38.00	9.23	47.23	65.78	-18.55	QP
2	0.1540	11.70	9.23	20.93	55.78	-34.85	AVG
3	0.4580	32.74	9.18	41.92	56.73	-14.81	QP
4	0.4580	24.82	9.18	34.00	46.73	-12.73	AVG
5	1.5900	22.02	9.25	31.27	56.00	-24.73	QP
6	1.5900	13.91	9.25	23.16	46.00	-22.84	AVG
7	5.1660	22.27	9.27	31.54	60.00	-28.46	QP
8	5.1660	12.20	9.27	21.47	50.00	-28.53	AVG
9	13.0300	21.43	9.42	30.85	60.00	-29.15	QP
10	13.0300	9.76	9.42	19.18	50.00	-30.82	AVG
11	29.2340	30.33	10.09	40.42	60.00	-19.58	QP
12	29.2340	18.61	10.09	28.70	50.00	-21.30	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



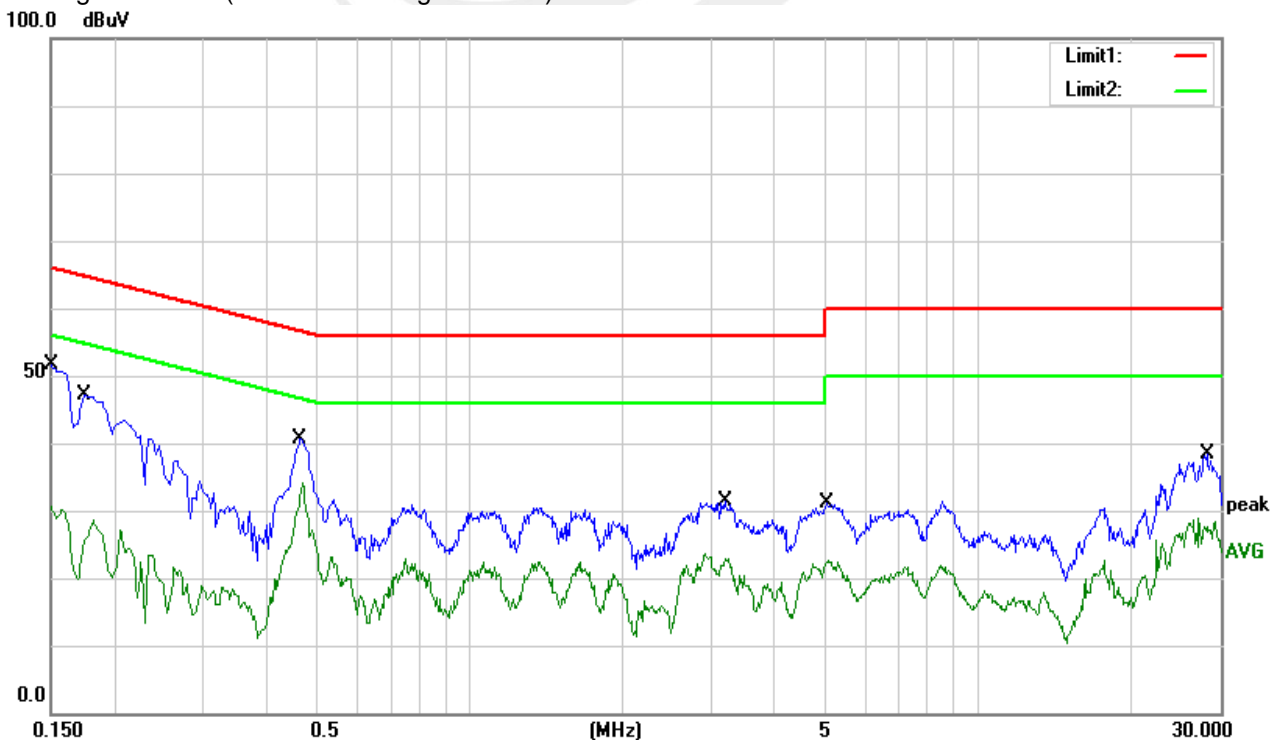


Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	L
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1
Frequence:	916MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	42.29	9.23	51.52	66.00	-14.48	QP
2	0.1500	21.40	9.23	30.63	56.00	-25.37	AVG
3	0.1740	38.01	9.23	47.24	54.77	-7.53	QP
4	0.1740	18.06	9.23	27.29	54.77	-27.48	AVG
5	0.4660	31.47	9.24	40.71	56.58	-15.87	QP
6	0.4660	23.26	9.24	32.50	46.58	-14.08	AVG
7	3.1780	22.04	9.26	31.30	56.00	-24.70	QP
8	3.1780	13.42	9.26	22.68	46.00	-23.32	AVG
9	5.0460	21.75	9.27	31.02	60.00	-28.98	QP
10	5.0460	13.19	9.27	22.46	50.00	-27.54	AVG
11	28.1540	28.52	9.90	38.42	60.00	-21.58	QP
12	28.1540	17.19	9.90	27.09	50.00	-22.91	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit





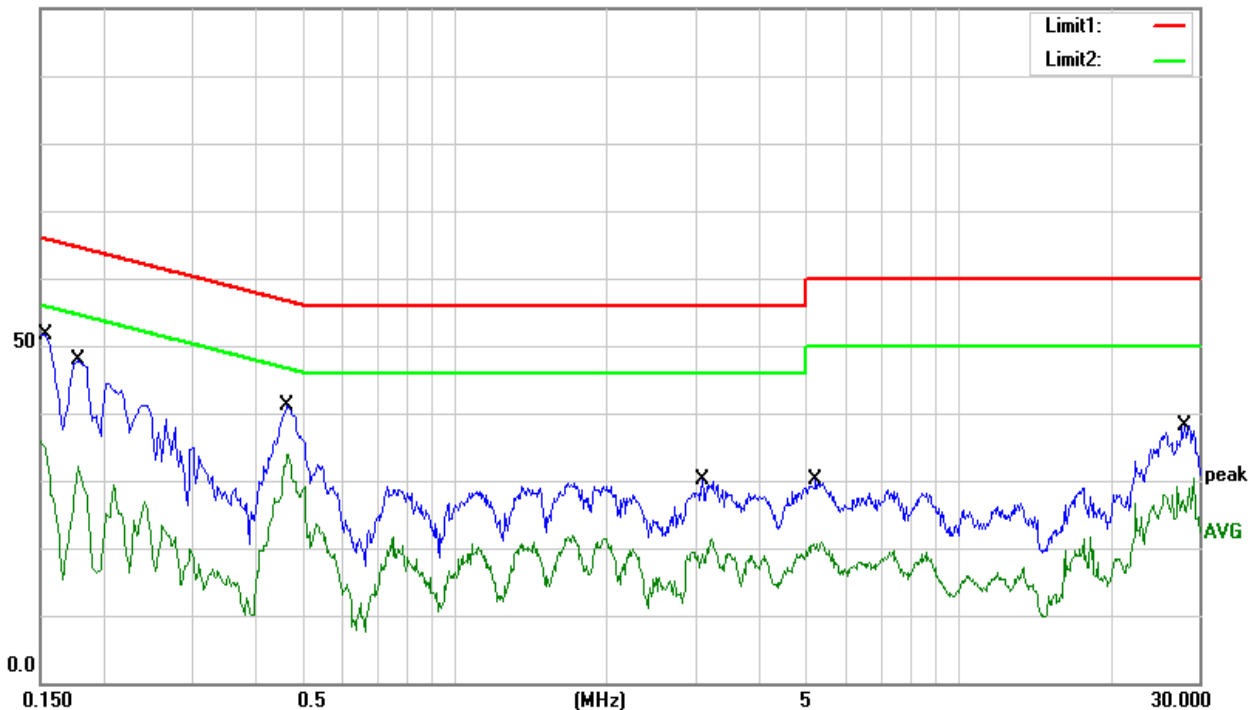
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	N
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1
Frequency:	916MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	42.51	9.23	51.74	65.78	-14.04	QP
2	0.1540	25.31	9.23	34.54	55.78	-21.24	AVG
3	0.1796	38.36	9.23	47.59	64.50	-16.91	QP
4	0.1796	21.96	9.23	31.19	54.50	-23.31	AVG
5	0.4660	31.93	9.17	41.10	56.58	-15.48	QP
6	0.4660	24.64	9.17	33.81	46.58	-12.77	AVG
7	3.0940	20.97	9.26	30.23	56.00	-25.77	QP
8	3.0940	10.54	9.26	19.80	46.00	-26.20	AVG
9	5.1980	20.86	9.27	30.13	60.00	-29.87	QP
10	5.1980	11.45	9.27	20.72	50.00	-29.28	AVG
11	28.0180	28.16	10.03	38.19	60.00	-21.81	QP
12	28.0180	16.63	10.03	26.66	50.00	-23.34	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit

100.0 dBuV





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.249 and the Part 15.209(a) limit in the table below has to be followed.

Standard FCC 15.209

Frequencies (MHz)	Field Strength (micovolts/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
960~1000	500	3
Above 1000	Other:74.0 dB(μ V)/m (Peak) 54.0 dB(μ V)/m (Average)	3

Standard FCC 15.249

Frequency of Emission (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
900~928	50	500
2400~2483.5	50	500
5725~5875	50	500
24000~242500	250	2500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Spectrum Parameter	Setting
Detector	Peak
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 3 MHz



Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
	150kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 100kHz for PK
	Above 1GHz / RB 1MHz VB 1M for PK

3.2.2 TEST PROCEDURE

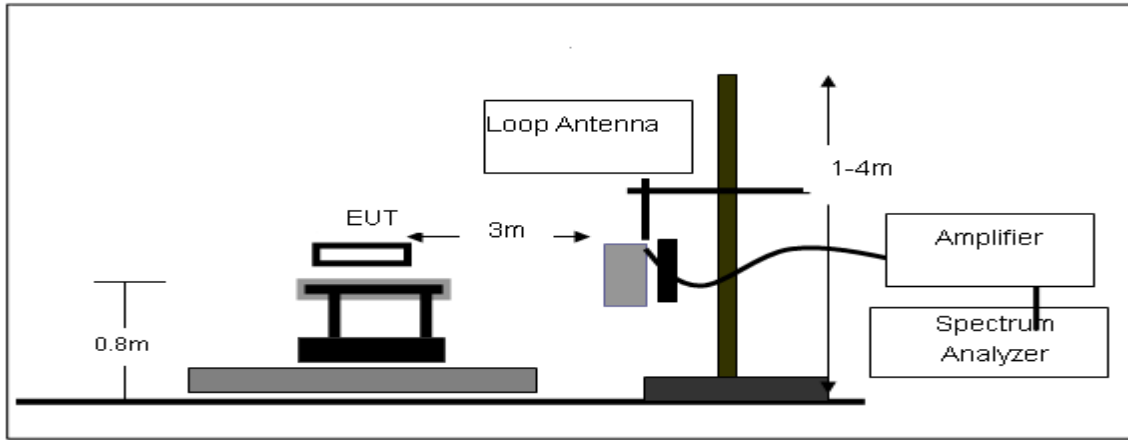
- a. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation (Below 1GHz)
- b. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation (Above 1GHz)
- c. The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading complies with the QP limits and then QP Mode measurement didn't perform (Below 1GHz)
- f. All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value complies with the Peak limits and lower than AVG Limits, the EUT shall be deemed to meet Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform. (Above 1GHz)
- g. 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 axes. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

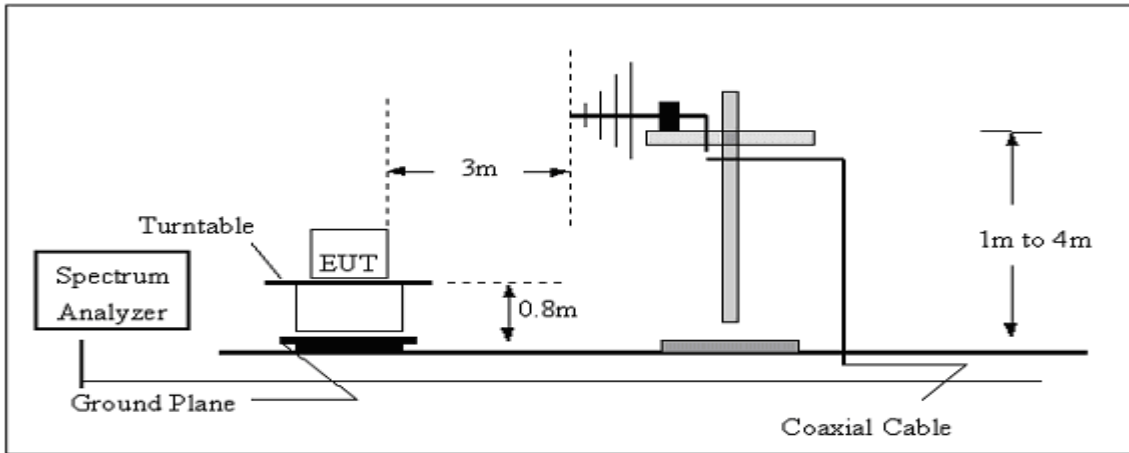
No deviation

3.2.4 TEST SETUP

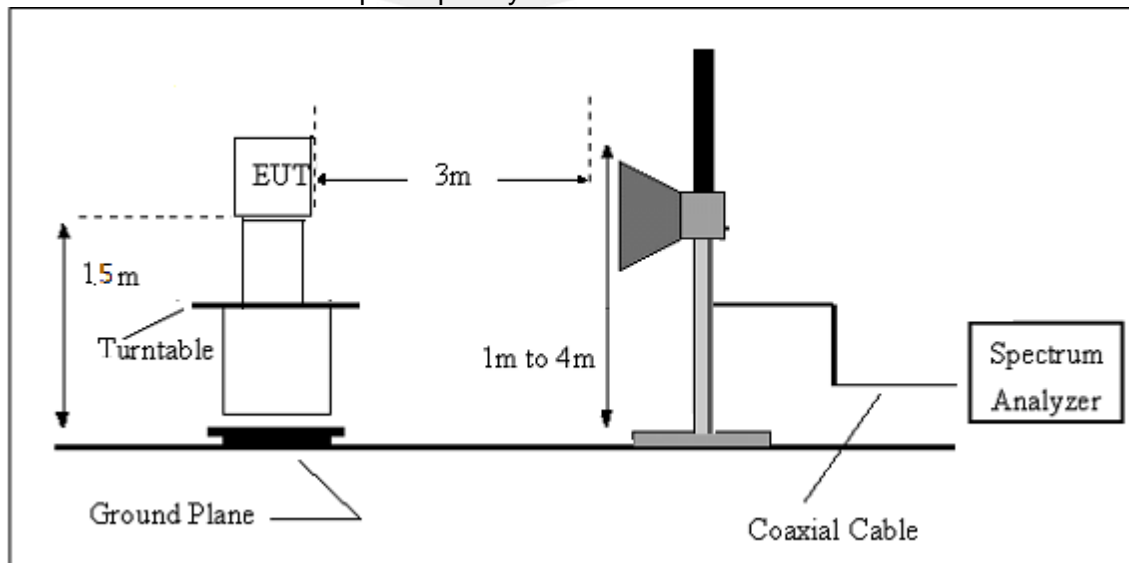
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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.



Below 30 MHz

Temperature :	23 °C	Relative Humidity :	50%
Pressure :	1010 hPa	Polarization :	---
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX Mode		

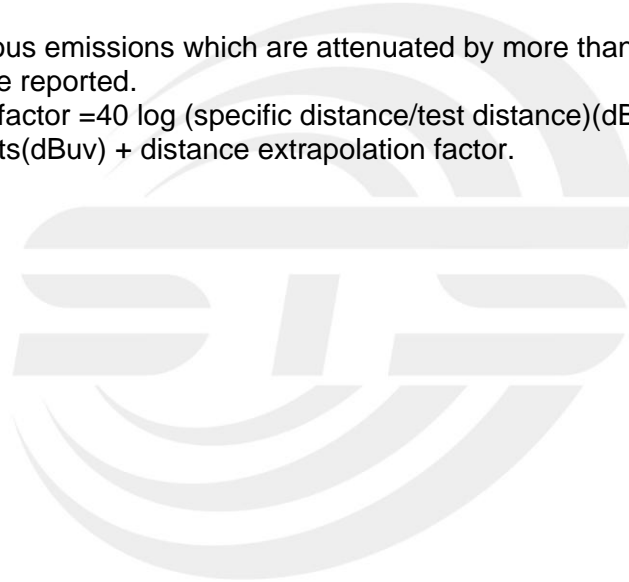
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

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(dBuv) + distance extrapolation factor.





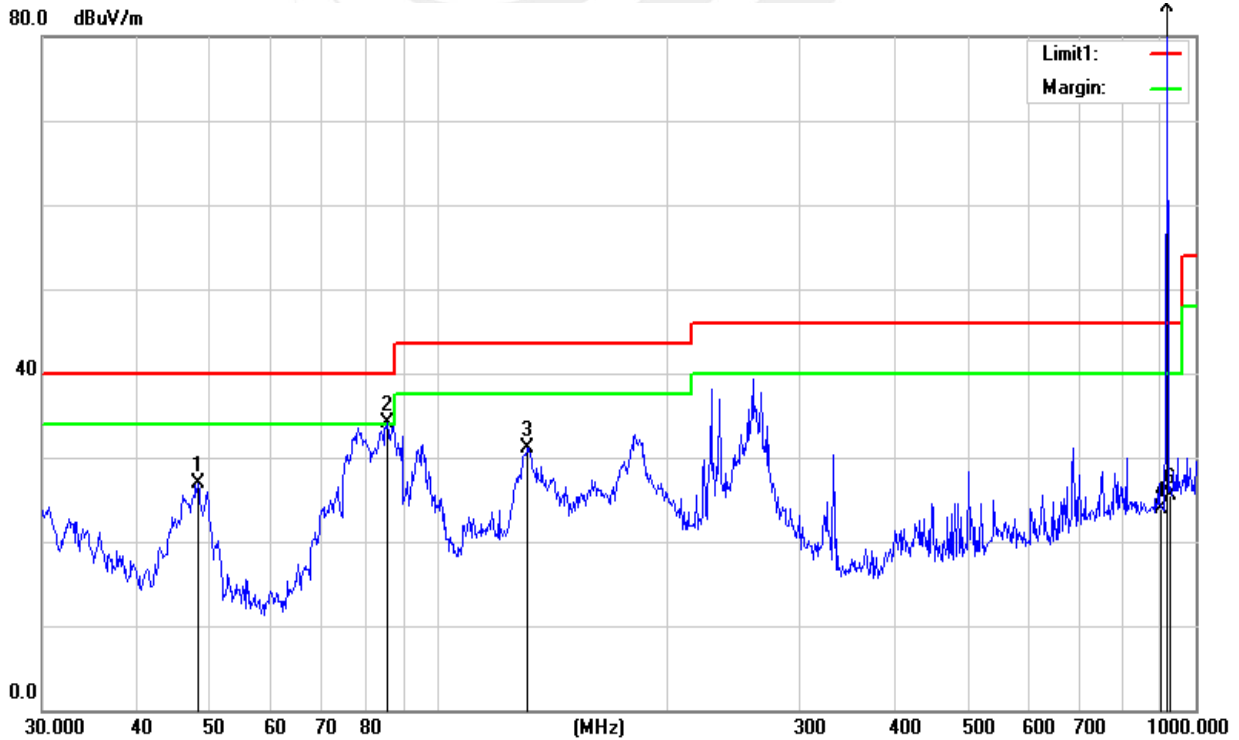
Between 30MHz – 1000 MHz Radiation Spurious

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1 (Model 1 worst)
Frequency:	915MHz		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
48.1626	47.37	-20.53	26.84	40.00	-13.16	QP
85.5977	55.44	-21.30	34.14	40.00	-5.86	QP
131.2965	48.70	-17.55	31.15	43.50	-12.35	QP
902.0000	26.16	-2.20	23.96	46.00	-22.04	QP
915.0000	85.33	-1.71	83.62	94.00	-10.38	PK
928.0000	26.66	-1.23	25.43	46.00	-20.57	QP

Remark:

1. All readings are Peak and QP.
2. Margin = Result (Result =Reading + Factor)–Limit



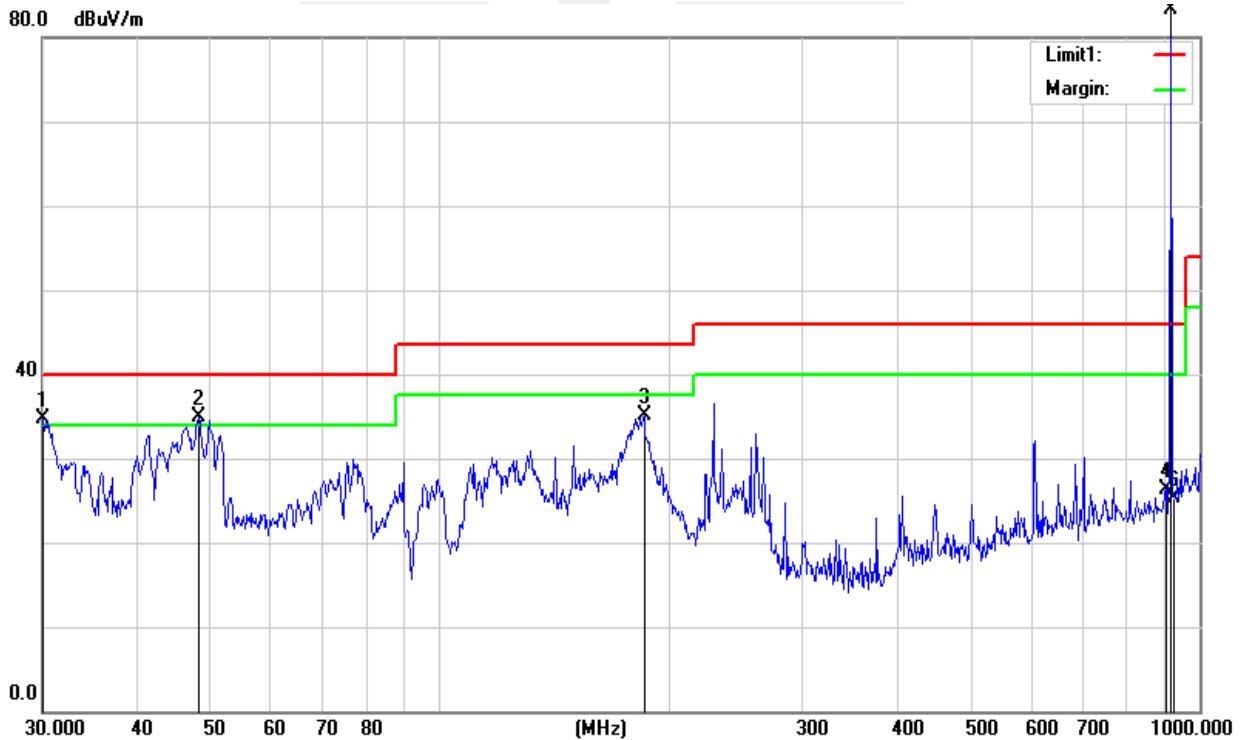


Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1 (Model 1 worst)
Frequence:	915MHz		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
30.1051	45.97	-11.24	34.73	40.00	-5.27	QP
48.1625	55.44	-20.53	34.91	40.00	-5.09	QP
185.7882	54.96	-19.91	35.05	43.50	-8.45	QP
902.0000	28.52	-2.20	26.32	46.00	-19.68	QP
915.0000	85.15	-1.71	83.44	94.00	-10.56	PK
928.0000	26.54	-1.23	25.31	46.00	-20.69	QP

Remark:

1. All readings are Peak and QP.
2. Margin = Result (Result =Reading + Factor)–Limit



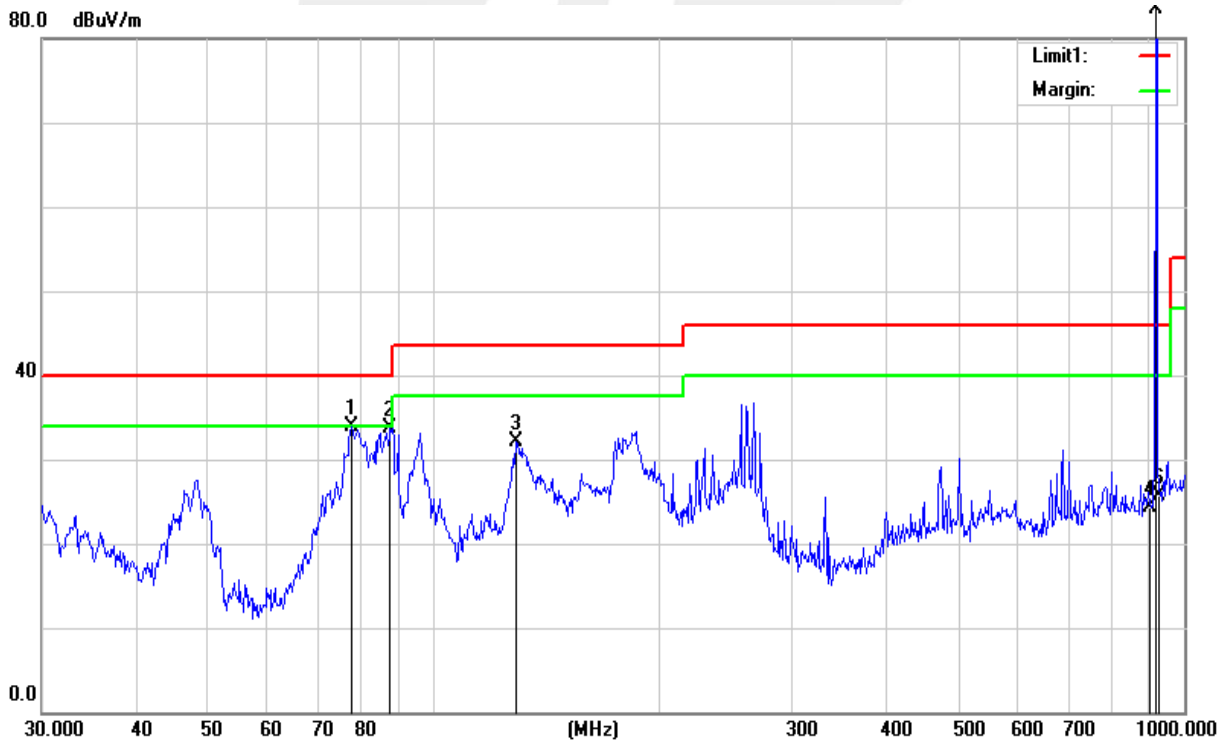


Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 2 (Model 2 worst)
Frequence:	916MHz		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
77.5928	56.84	-23.03	33.81	40.00	-6.19	QP
87.4177	54.49	-20.84	33.65	40.00	-6.35	QP
128.5630	49.71	-17.56	32.15	43.50	-11.35	QP
902.0000	26.58	-2.20	24.38	46.00	-21.62	QP
916.0000	85.37	-1.71	83.66	94.00	-10.34	PK
928.0000	26.95	-1.23	25.72	46.00	-20.28	QP

Remark:

1. All readings are Peak and QP.
2. Margin = Result (Result =Reading + Factor)–Limit



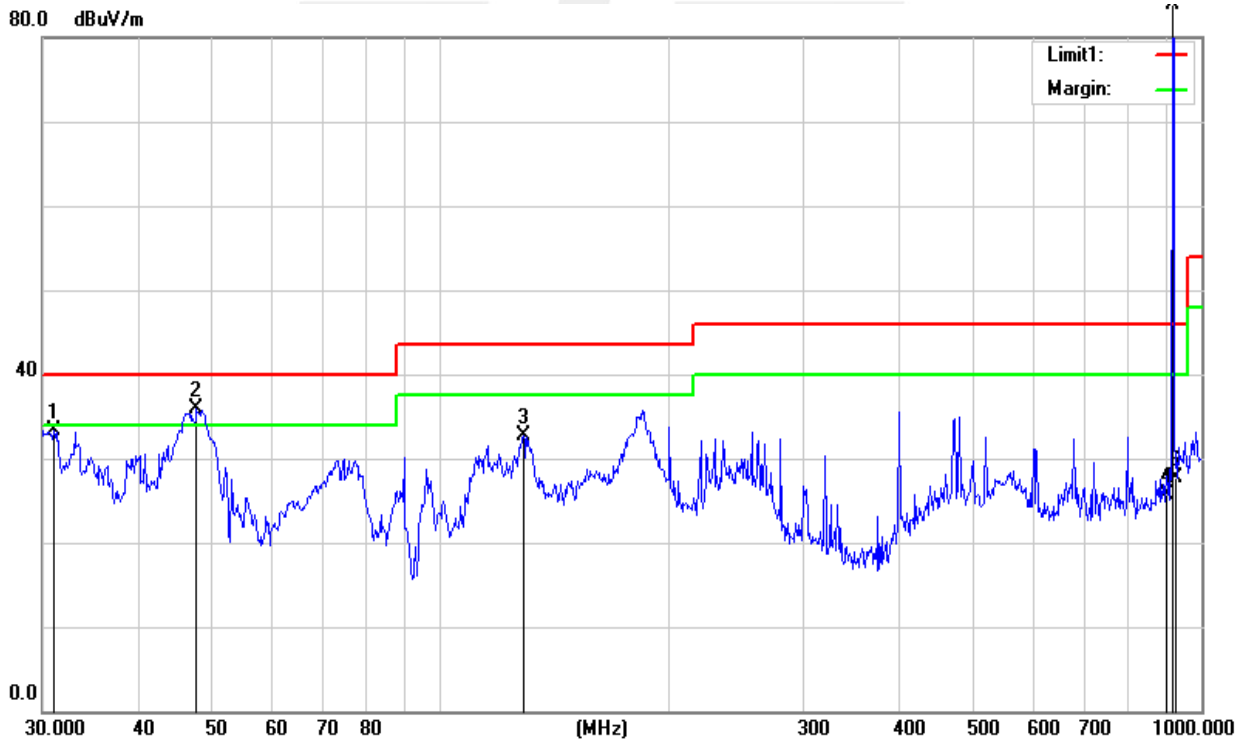


Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 2 (Model 2 worst)
Frequence:	916MHz		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
31.0701	44.99	-11.74	33.25	40.00	-6.75	QP
47.8260	56.27	-20.36	35.91	40.00	-4.09	QP
128.5630	50.24	-17.56	32.68	43.50	-10.82	QP
902.0000	27.87	-2.20	25.67	46.00	-20.33	QP
916.0000	85.79	-1.71	84.08	94.00	-9.92	PK
928.0000	28.96	-1.23	27.73	46.00	-18.27	QP

Remark:

1. All readings are Peak and QP.
2. Margin = Result (Result =Reading + Factor)–Limit





Above 1G Radiation Spurious

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Orrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
915MHz										
1100.23	69.11	46.3	3.7	24.3	-18.3	50.81	74	-23.19	PK	Vertical
1100.23	67.09	46.3	3.7	24.3	-18.3	48.79	54	-5.21	AV	Vertical
1100.54	69.08	46.3	3.7	24.3	-18.3	50.78	74	-23.22	PK	Horizontal
1100.54	67.09	46.3	3.7	24.3	-18.3	48.79	54	-5.21	AV	Horizontal
1517.21	66.85	44.9	4.19	25	-15.71	51.14	74	-22.86	PK	Vertical
1517.21	64.85	44.9	4.19	25	-15.71	49.14	54	-4.86	AV	Vertical
1517.36	66.90	44.9	4.19	25	-15.71	51.19	74	-22.81	PK	Horizontal
1517.36	64.89	44.9	4.19	25	-15.71	49.18	54	-4.82	AV	Horizontal
1830.00	75.27	44.1	5.3	25	-13.8	61.47	74	-12.53	PK	Vertical
1830.00	65.21	44.1	5.3	25	-13.8	51.41	54	-2.59	AV	Vertical
1830.00	75.26	44.1	5.3	25	-13.8	61.46	74	-12.54	PK	Horizontal
1830.00	65.20	44.1	5.3	25	-13.8	51.4	54	-2.60	AV	Horizontal
2145.21	64.19	43.8	5.4	25.9	-12.5	51.69	74	-22.31	PK	Vertical
2145.21	62.12	43.8	5.4	25.9	-12.5	49.62	54	-4.38	AV	Vertical
2145.35	64.12	43.8	5.4	25.9	-12.5	51.62	74	-22.38	PK	Horizontal
2145.35	62.11	43.8	5.4	25.9	-12.5	49.61	54	-4.39	AV	Horizontal
2745.00	75.24	44.4	6.2	27.6	-10.6	64.64	74	-9.36	PK	Vertical
2745.00	63.27	44.4	6.2	27.6	-10.6	52.67	54	-1.33	AV	Vertical
2745.00	74.56	44.4	6.2	27.6	-10.6	63.96	74	-10.04	PK	Horizontal
2745.00	62.00	44.4	6.2	27.6	-10.6	51.4	54	-2.60	AV	Horizontal
3265.32	64.24	44.7	6.7	28.2	-9.8	54.44	74	-19.56	PK	Vertical
3265.32	62.16	44.7	6.7	28.2	-9.8	52.36	54	-1.64	AV	Vertical
3265.29	64.19	44.7	6.7	28.2	-9.8	54.39	74	-19.61	PK	Horizontal
3265.29	62.18	44.7	6.7	28.2	-9.8	52.38	54	-1.62	AV	Horizontal
4000.28	69.07	44.2	7.9	29.7	-6.6	62.47	74	-11.53	PK	Vertical
4000.28	58.07	44.2	7.9	29.7	-6.6	51.47	54	-2.53	AV	Vertical
4000.27	69.11	44.2	7.9	29.7	-6.6	62.51	74	-11.49	PK	Horizontal
4000.27	58.08	44.2	7.9	29.7	-6.6	51.48	54	-2.52	AV	Horizontal
7236.36	56.84	43.5	11.4	35.5	3.4	60.24	74	-13.76	PK	Vertical
7236.36	40.86	43.5	11.4	35.5	3.4	44.26	54	-9.74	AV	Vertical
7236.40	56.89	43.5	11.4	35.5	3.4	60.29	74	-13.71	PK	Horizontal
7236.40	40.85	43.5	11.4	35.5	3.4	44.25	54	-9.75	AV	Horizontal



8124.49	55.35	44.2	12	37	4.8	60.15	74	-13.85	PK	Vertical
8124.49	45.35	44.2	12	37	4.8	50.15	54	-3.85	AV	Vertical
8124.48	55.32	44.2	12	37	4.8	60.12	74	-13.88	PK	Horizontal
8124.48	45.34	44.2	12	37	4.8	50.14	54	-3.86	AV	Horizontal
9105.18	54.18	45	12.57	37.4	4.97	59.15	74	-14.85	PK	Vertical
9105.18	42.18	45	12.57	37.4	4.97	47.15	54	-6.85	AV	Vertical
9105.20	54.16	45	12.57	37.4	4.97	59.13	74	-14.87	PK	Horizontal
9105.20	42.11	45	12.57	37.4	4.97	47.08	54	-6.92	AV	Horizontal
11036.43	53.14	43.6	14.33	39.5	10.2	63.34	74	-10.66	PK	Vertical
11036.43	41.13	43.6	14.33	39.5	10.2	51.33	54	-2.67	AV	Vertical
11036.44	53.1	43.6	14.33	39.5	10.2	63.3	74	-10.7	PK	Horizontal
11036.44	41.11	43.6	14.33	39.5	10.2	51.31	54	-2.69	AV	Horizontal





Above 1G Radiation Spurious

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
916MHz										
1100.23	69.1	46.3	3.7	24.3	-18.3	50.8	74	-23.20	PK	Vertical
1100.23	67.09	46.3	3.7	24.3	-18.3	48.79	54	-5.21	AV	Vertical
1100.54	69.08	46.3	3.7	24.3	-18.3	50.78	74	-23.22	PK	Horizontal
1100.54	67.09	46.3	3.7	24.3	-18.3	48.79	54	-5.21	AV	Horizontal
1517.21	66.85	44.9	4.19	25	-15.71	51.14	74	-22.86	PK	Vertical
1517.21	64.85	44.9	4.19	25	-15.71	49.14	54	-4.86	AV	Vertical
1517.36	66.9	44.9	4.19	25	-15.71	51.19	74	-22.81	PK	Horizontal
1517.36	64.9	44.9	4.19	25	-15.71	49.19	54	-4.81	AV	Horizontal
1832.00	78.26	44.1	5.3	25	-13.8	64.46	74	-9.54	PK	Vertical
1832.00	65.2	44.1	5.3	25	-13.8	51.4	54	-2.60	AV	Vertical
1832.00	78.26	44.1	5.3	25	-13.8	64.46	74	-9.54	PK	Horizontal
1832.00	65.16	44.1	5.3	25	-13.8	51.36	54	-2.64	AV	Horizontal
2145.21	64.19	43.8	5.4	25.9	-12.5	51.69	74	-22.31	PK	Vertical
2145.21	62.12	43.8	5.4	25.9	-12.5	49.62	54	-4.38	AV	Vertical
2145.35	64.13	43.8	5.4	25.9	-12.5	51.63	74	-22.37	PK	Horizontal
2145.35	62.11	43.8	5.4	25.9	-12.5	49.61	54	-4.39	AV	Horizontal
2725.00	78.24	44.4	6.2	27.6	-10.6	67.64	74	-6.36	PK	Vertical
2725.00	60.27	44.4	6.2	27.6	-10.6	49.67	54	-4.33	AV	Vertical
2725.00	78.55	44.4	6.2	27.6	-10.6	67.95	74	-6.05	PK	Horizontal
2725.00	60.09	44.4	6.2	27.6	-10.6	49.49	54	-4.51	AV	Horizontal
3265.32	64.24	44.7	6.7	28.2	-9.8	54.44	74	-19.56	PK	Vertical
3265.32	50.16	44.7	6.7	28.2	-9.8	40.36	54	-13.64	AV	Vertical
3265.29	64.19	44.7	6.7	28.2	-9.8	54.39	74	-19.61	PK	Horizontal
3265.29	52.17	44.7	6.7	28.2	-9.8	42.37	54	-11.63	AV	Horizontal
4000.28	69.07	44.2	7.9	29.7	-6.6	62.47	74	-11.53	PK	Vertical
4000.28	57.08	44.2	7.9	29.7	-6.6	50.48	54	-3.52	AV	Vertical
4000.27	69.11	44.2	7.9	29.7	-6.6	62.51	74	-11.49	PK	Horizontal
4000.27	57.08	44.2	7.9	29.7	-6.6	50.48	54	-3.52	AV	Horizontal
7236.36	56.84	43.5	11.4	35.5	3.4	60.24	74	-13.76	PK	Vertical
7236.36	47.85	43.5	11.4	35.5	3.4	51.25	54	-2.75	AV	Vertical
7236.40	56.88	43.5	11.4	35.5	3.4	60.28	74	-13.72	PK	Horizontal
7236.40	47.84	43.5	11.4	35.5	3.4	51.24	54	-2.76	AV	Horizontal



8124.49	55.35	44.2	12	37	4.8	60.15	74	-13.85	PK	Vertical
8124.49	40.35	44.2	12	37	4.8	45.15	54	-8.85	AV	Vertical
8124.48	55.32	44.2	12	37	4.8	60.12	74	-13.88	PK	Horizontal
8124.48	40.34	44.2	12	37	4.8	45.14	54	-8.86	AV	Horizontal
9105.18	54.17	45	12.57	37.4	4.97	59.14	74	-14.86	PK	Vertical
9105.18	42.18	45	12.57	37.4	4.97	47.15	54	-6.85	AV	Vertical
9105.20	54.16	45	12.57	37.4	4.97	59.13	74	-14.87	PK	Horizontal
9105.20	42.12	45	12.57	37.4	4.97	47.09	54	-6.91	AV	Horizontal
11036.43	55.14	43.6	14.33	39.5	10.2	65.34	74	-8.66	PK	Vertical
11036.43	40.13	43.6	14.33	39.5	10.2	50.33	54	-3.67	AV	Vertical
11036.44	55.11	43.6	14.33	39.5	10.2	65.31	74	-8.69	PK	Horizontal
11036.44	40.12	43.6	14.33	39.5	10.2	50.32	54	-3.68	AV	Horizontal





4. BANDWIDTH TEST

4.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 100KHz, VBW \geq RBW, Sweep time = Auto.

4.2 TEST SETUP



4.3 EUT OPERATION CONDITIONS

TX mode.

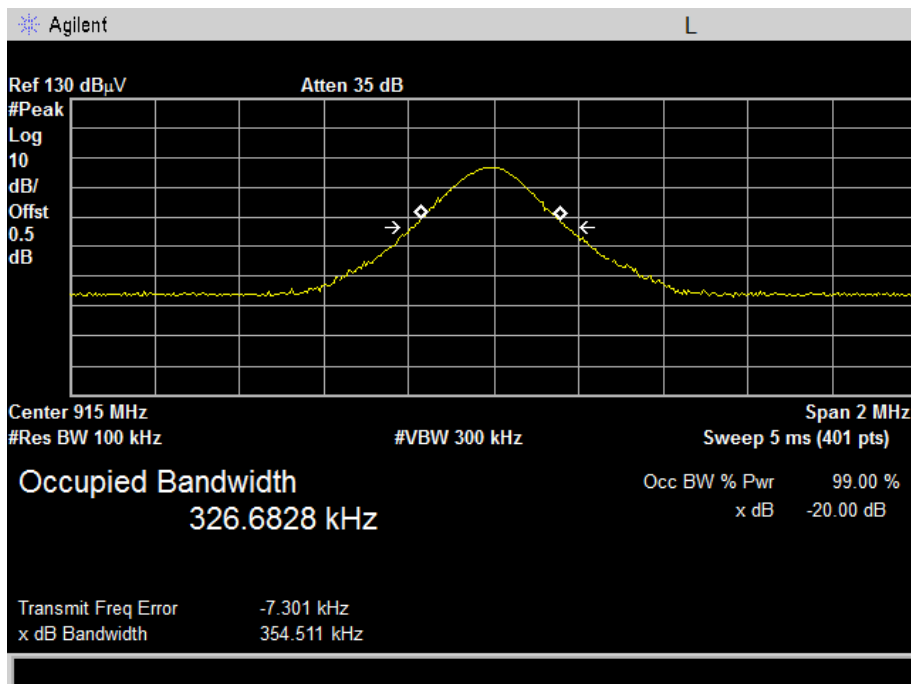




4.4 TEST RESULTS

Temperature :	25 °C	Relative Humidity :	50%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Frequency:	915MHz		

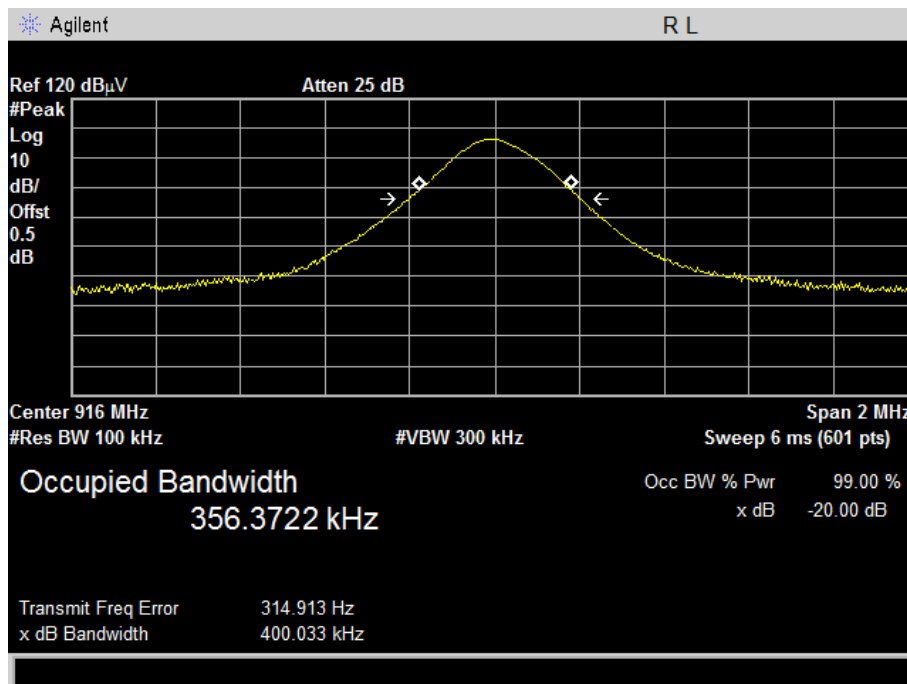
Test Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
CH01	915MHz	0.355	0.327





Temperature :	25 °C	Relative Humidity :	50%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Frequency:	916MHz		

Test Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
CH02	916MHz	0.400	0.356





5. ANTENNA REQUIREMENT

5.1 STANDARD REQUIREMENT

According to the FCC Part 15 Paragraph 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. The use of a permanently attached antenna to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

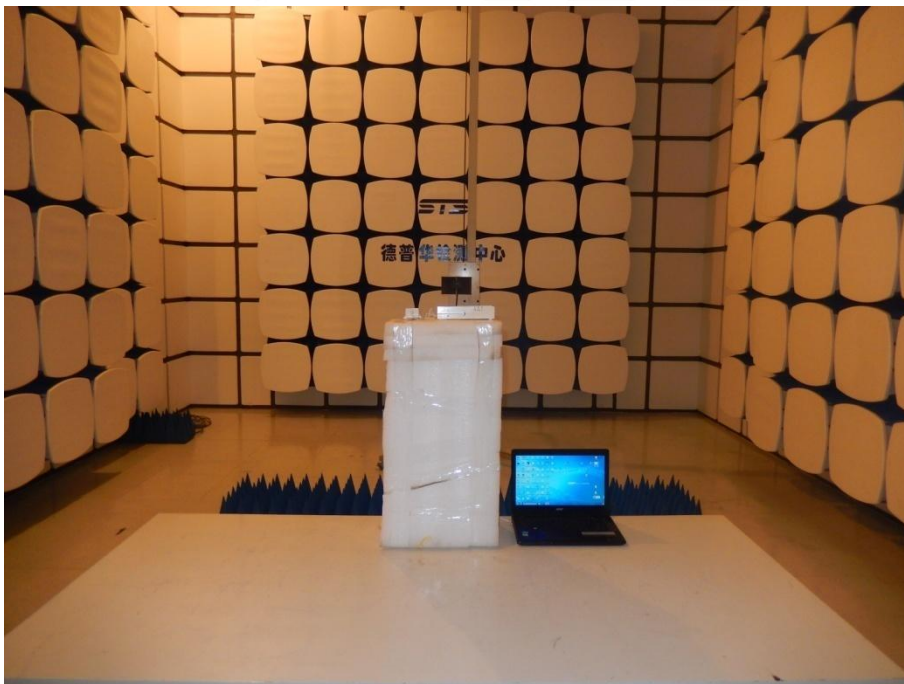
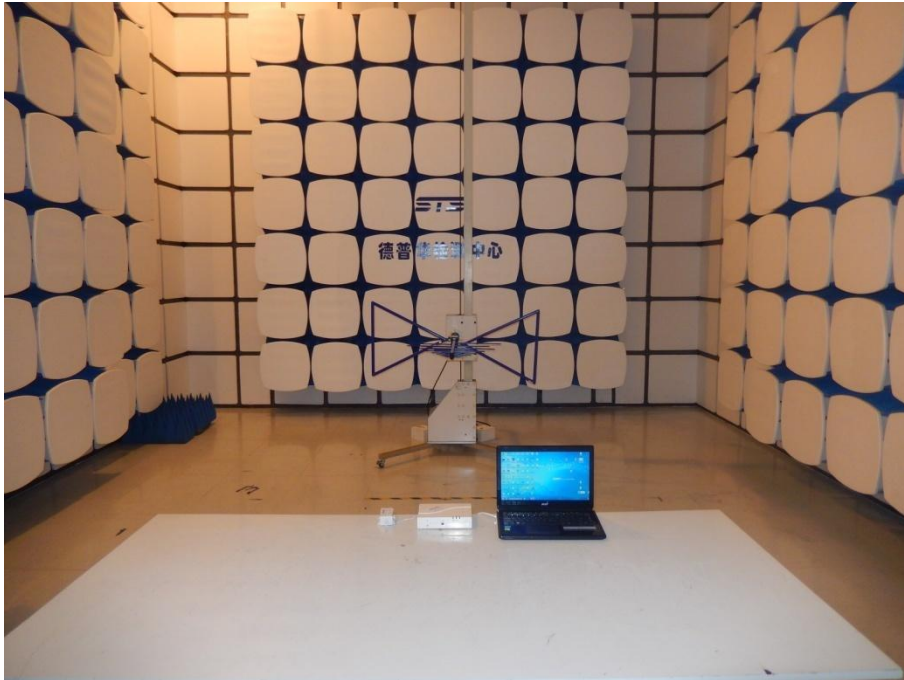
5.2 EUT ANTENNA

The EUT antenna is Spring Antenna. It conforms to the standard requirements.



APPENDIX I- PHOTOS OF TEST SETUP

Radiated Measurement Photos



Conducted Measurement Photos



※※※※※END OF THE REPORT※※※※※