RADIO TEST REPORT

Report No.: STS2202130W02

Issued for

Shenzhen Kaadas Intelligent Technology co.,Ltd.

Floor 9,Building B,Tsinghua HiTech Park,Nanshan District,Shenzhen,Guangdong,China

Product Name:	Smart Lock
Brand Name:	Hugolog
Model Name:	HCD01
Series Model:	N/A
FCC ID:	2AQY4-HCD01
IC:	24242-HCD01
Test Standard:	FCC Part 15.249
	RSS 210 Issue 10, Amendment, 2020

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ
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TEST RESULT CERTIFICATION

Applicant's Name ..... :	Shenzhen Kaadas Intelligent Technology co.,Ltd.
Address ..... :	Floor 9,Building B,Tsinghua HiTech Park,Nanshan District,Shenzhen,Guangdong,China
Manufacture's Name ..... :	Shenzhen Kaadas Intelligent Technology co.,Ltd.
Address ..... :	Floor 9,Building B,Tsinghua HiTech Park,Nanshan District,Shenzhen,Guangdong,China

Product Description

Product Name ..... :	Smart Lock
Brand Name ..... :	Hugolog
Model Name ..... :	HCD01
Series Model ..... :	N/A
Test Standards..... :	FCC Part15.249 RSS 210 Issue 10, Amendment, 2020
Test Procedure ..... :	ANSI C63.10-2013

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC/IC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test ..... :	
Date of receipt of test item ..... :	24 Feb. 2022
Date of performance of tests .. :	24 Feb. 2022 ~ 31 Mar. 2022
Date of Issue ..... :	31 Mar. 2022
Test Result..... :	**Pass**

Testing Engineer : Chris Chen
(Chris Chen)

Technical Manager : Sean She
(Sean she)

Authorized Signatory : Bovey Yang
(Bovey Yang)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	31 Mar. 2022	STS2202130W02	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 15.249 , Subpart C RSS 210 Issue 10			
Standard Section	Test Item	Judgment	Remark
15.207 RSS-Gen Issue 5	Conducted Emission	N/A	
15.203 RSS-Gen Issue 5	Antenna Requirement	Pass	
15.249 RSS 210 Issue 10	Radiated Spurious Emission	Pass	
15.249 RSS 210 Issue 10	Radiated Band Edge Emission	Pass	
15.249 RSS 210 Issue 10	Field Strength of fundamental	Pass	
15.215(c) RSS-Gen Issue 5	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. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
FCC test Firm Registration Number: 625569
IC test Firm Registration Number: 12108A
A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **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	RF output power, conducted	±0.87dB
2	Unwanted Emissions, conducted	±2.895dB
3	All emissions, radiated 9K-30MHz	±3.80dB
4	All emissions, radiated 30M-1GHz	±4.09dB
5	All emissions, radiated 1G-6GHz	±4.92dB
6	All emissions, radiated>6G	±5.49dB
7	Conducted Emission (9KHz-30MHz)	±2.73dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name/PMN	Smart Lock
Trade Name	Hugolog
Model Name/HVIN	HCD01
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a Smart Lock Operation Frequency: 908.4MHz-916MHz Modulation Type: 908.4/908.42MHz: FSK; 916MHz: GFSK Antenna Designation: Please refer to the Note 3. Antenna Gain(Peak): 0dBi Based on the application, features, or specification exhibited in User Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User Manual.
Channel List	Please refer to the Note 2.
Rating	Input: DC 6V
Hardware version number	MB98-G
Software version number/FVIN	V2.10.001
Serial Numbers	H211030S00037
Connecting I/O Port(s)	Please refer to the Note 1.

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	908.4	02	908.42	03	916

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	Hugolog	HCD01	PIFA	N/A	0dBi	Antenna

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

2.2 DESCRIPTION OF THE 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.

Pretest Mode	Description	Data/Modulation
Mode 1	TX Low channel	FSK
Mode 2	TX Mid channel	FSK
Mode 3	TX High channel	GFSK

Note:
(1) All above mode have been measurement, only worst data was reported.

2.3 TEST SOFTWARE AND POWER LEVEL

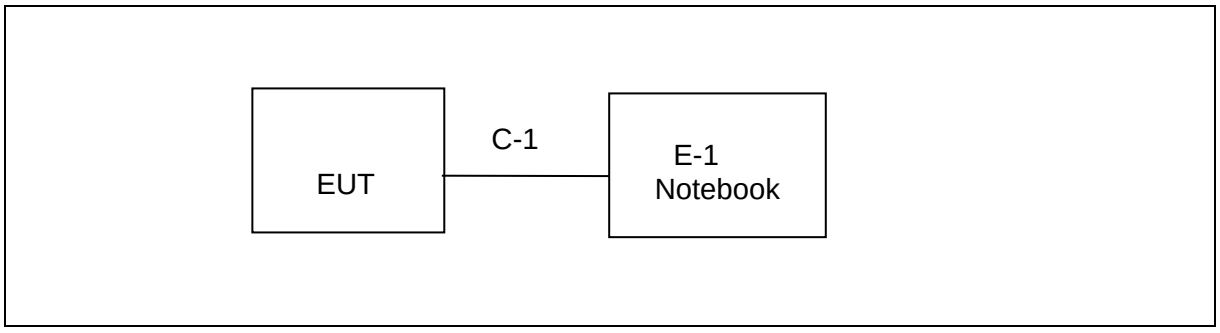
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Operation Frequency	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
Other SRD	908.4MHz-916MHz	FSK/GFSK	0	Default	SecureCRT

2.4 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



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-1	Notebook	LENOVO	Think Pad E470	N/A	N/A
C-1	USB Cable	N/A	N/A	150cm	NO

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.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Active loop Antenna	ZHINAN	ZN30900C	16035	2021.04.11	2023.04.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier(0.1M-3 GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
LISN	R&S	ENV216	101242	2021.09.30	2022.09.29
LISN	EMCO	3810/2NM	23625	2021.09.30	2022.09.29
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Power Sensor	Keysight	U2021XA	MY55520005	2021.09.30	2022.09.29
			MY55520006	2021.09.30	2022.09.29
			MY56120038	2021.04.11	2023.04.10
			MY56280002	2020.10.12	2022.10.11
Signal Analyzer	Agilent	N9020A	MY51110105	2021.10.11	2023.10.10
Temperature & Humidity	HH660	Mieo	N/A	2020.10.12	2022.10.11
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

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 15.249 limit in the table below has to be followed.

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

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

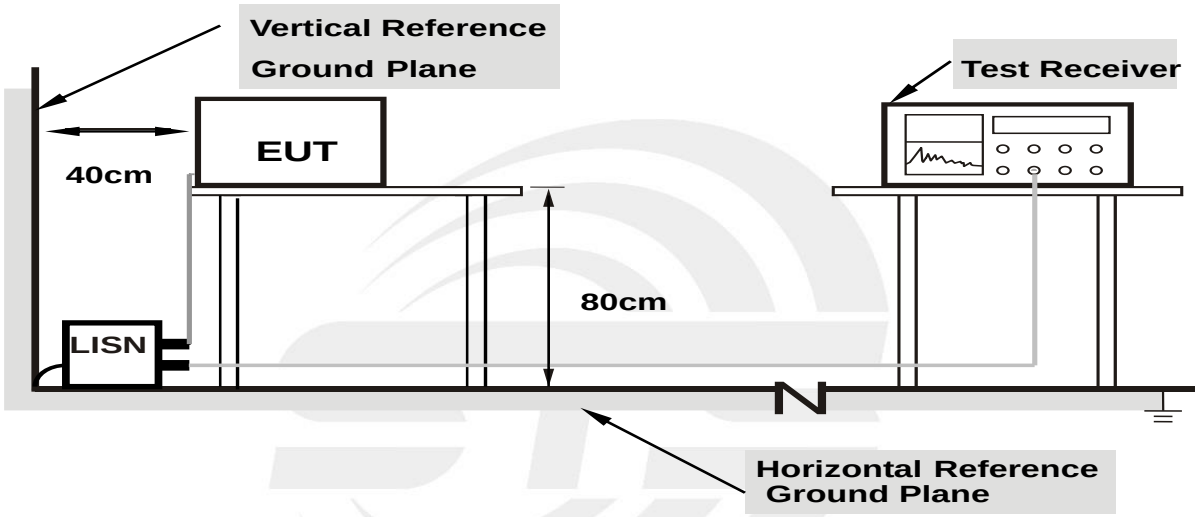
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical 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 RESULT

Temperature:	N/A	Relative Humidity:	N/A
Test Voltage:	N/A	Phase:	L/N
Test Mode:	N/A		

Note: EUT is only power by DC Power, So it is not applicable for this test.

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 (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
960~1000	500	3
Above 1000	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/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.

In case the emission fall within the restricted band specified on RSS-Gen limit in the followed

. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
(a) If the equipment operates below 10 GHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
Particular attention should be paid to harmonics and sub-harmonics of the carrier frequency, as well as to those frequencies removed from the carrier by multiples of the oscillator frequency.
Radiation at the frequencies of multiplier stages should also be checked.
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value need not be reported.
When limits are expressed in absolute terms, compliance with the emission limits below 1000 MHz shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth. As an alternative to CISPR quasi-peak measurement, compliance with the emission limits can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization as required, with an equal or greater measurement bandwidth relative to the applicable CISPR quasi-peak bandwidth.
Above 1000 MHz, compliance with the emission limits shall be demonstrated using an average detector with a minimum resolution bandwidth of 1 MHz.

In case the emission fall within the restricted band specified on RSS 210 Issue 9 (B.10) limit in the followed
1. The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively.
The field strength limits shall be measured using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using an International Special Committee on Radio Interference (CISPR) quasi-peak detector.
2. Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen, whichever is less stringent.

NOTE:
(1)The limit for radiated test was performed according to RSS 210.
(2)Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Detector	Peak/AV
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB (emission in restricted band)	>20BW
VB (emission in restricted band)	=3xRB

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
	90kHz~110kHz / RB 200Hz for QP
	110kHz~490kHz / RB 200Hz for PK & AV
	490kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of arotating 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 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 compliance 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 compliance 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)

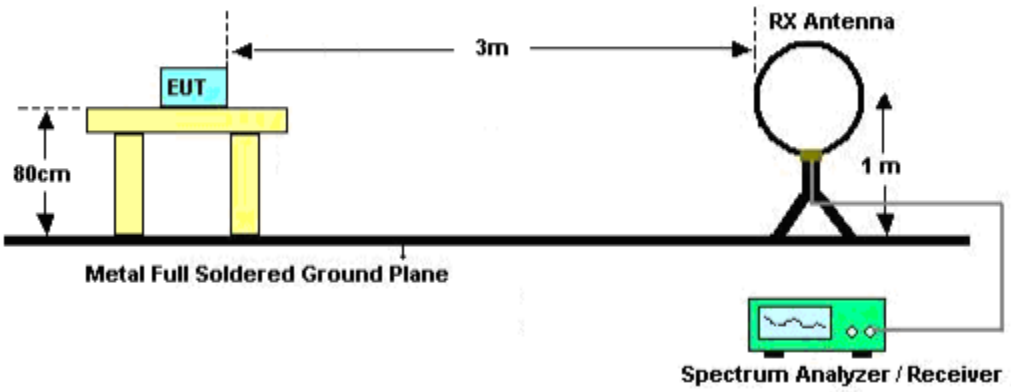
g. For the actual test configuration, please refer to the related Item –EUT Test Photos.
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 DEVIATION FROM TEST STANDARD

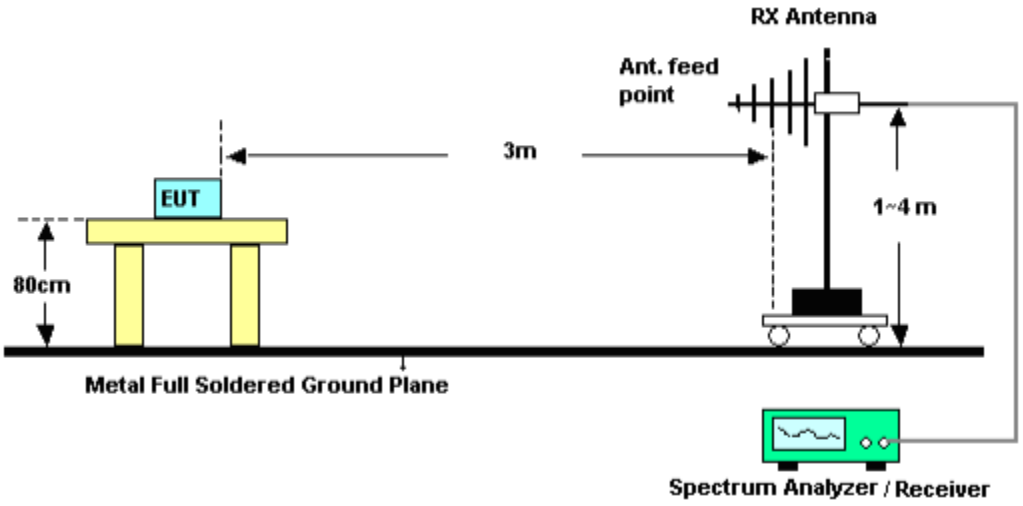
No deviation

3.2.4 TEST SETUP

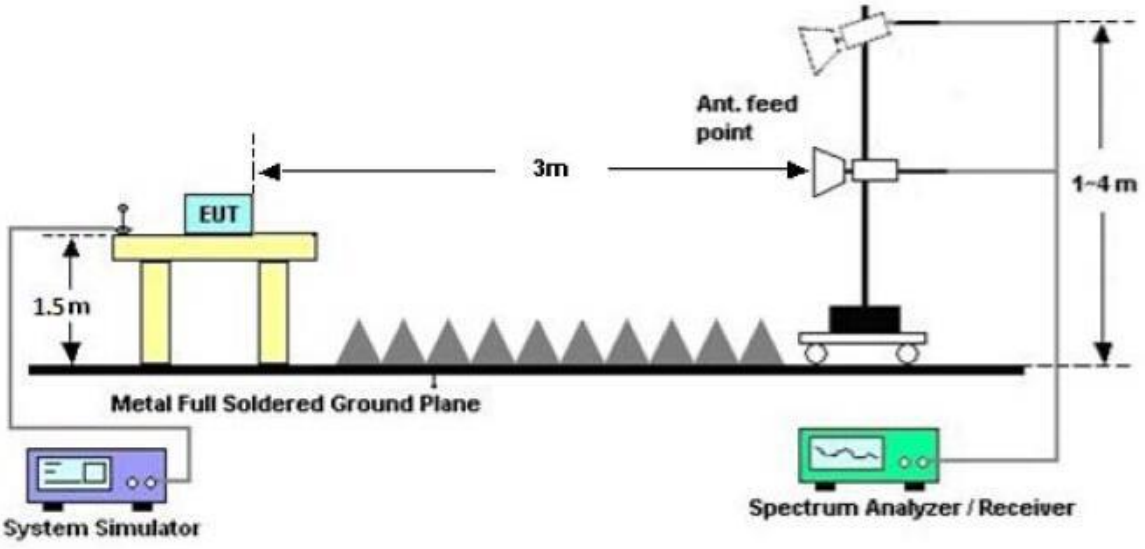
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:
Margin=PL-PK L or AL- AV L; Margin only shown the worst case.
Where
PR = Peak Reading
AR = Average Reading
PL = Peak Level
AL = Average Level
AF = Antenna Factor
PK L = Peak Limit
AV L = AV Limit
For example

Frequency	PR	AR	AF	PL	AL	PK L	AV L	Margin
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
2178	40.23	30.31	9.83	50.06	40.14	74.00	54.00	-13.86

3.2.6 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:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Polarization:	---
Test Mode:	TX Mode		

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

NOTE:

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

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

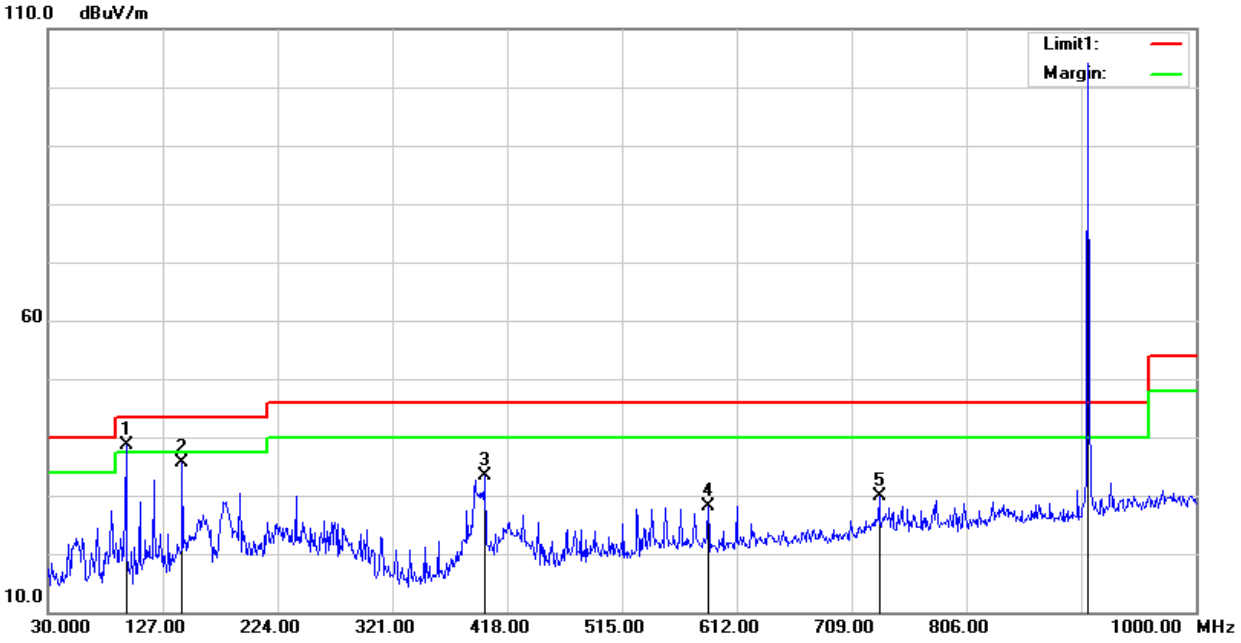
Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1000 MHz Radiation Spurious

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Horizontal
Test Mode:	Mode 1		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	59.26	-20.67	38.59	43.50	-4.91	peak
2	143.4900	53.79	-18.23	35.56	43.50	-7.94	peak
3	399.5700	44.50	-11.16	33.34	46.00	-12.66	peak
4	587.7500	33.98	-5.81	28.17	46.00	-17.83	peak
5	732.2800	32.30	-2.39	29.91	46.00	-16.09	peak
6	908.4000	104.45	-0.23	104.22	N/A	N/A	Fundamental

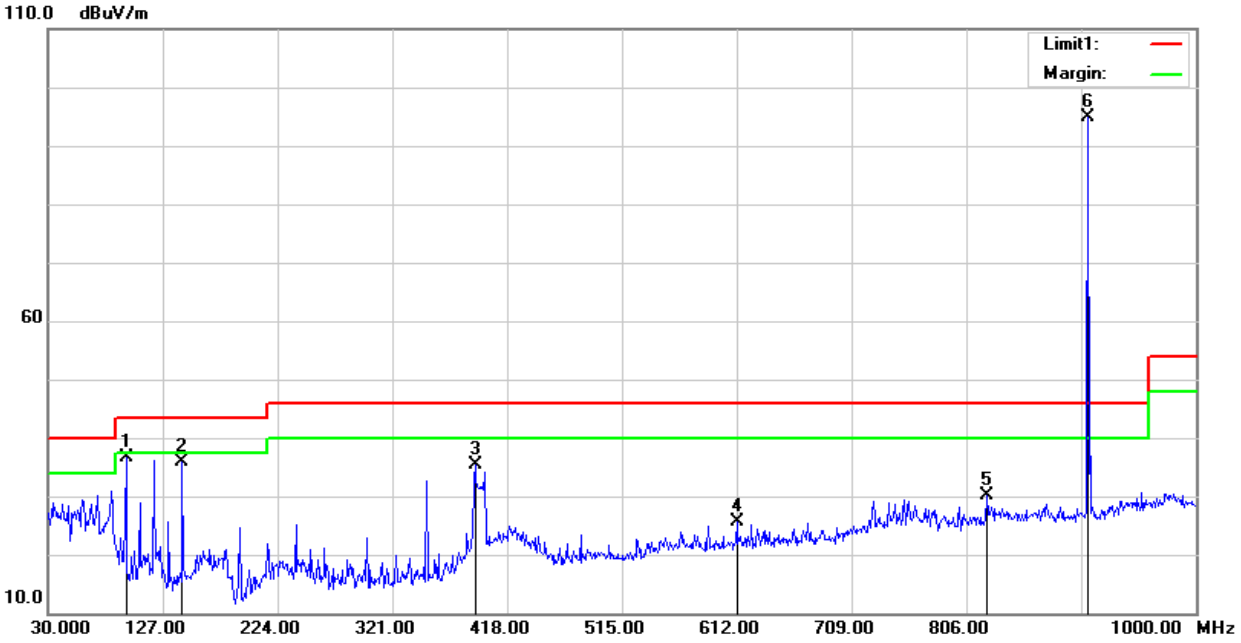
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Vertical
Test Mode:	Mode 1		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	57.40	-20.67	36.73	43.50	-6.77	peak
2	143.4900	53.99	-18.23	35.76	43.50	-7.74	peak
3	390.8400	46.92	-11.54	35.38	46.00	-10.62	peak
4	612.0000	31.18	-5.50	25.68	46.00	-20.32	peak
5	823.4600	31.60	-1.54	30.06	46.00	-15.94	peak
6	908.4000	95.02	-0.23	94.79	N/A	N/A	Fundamental

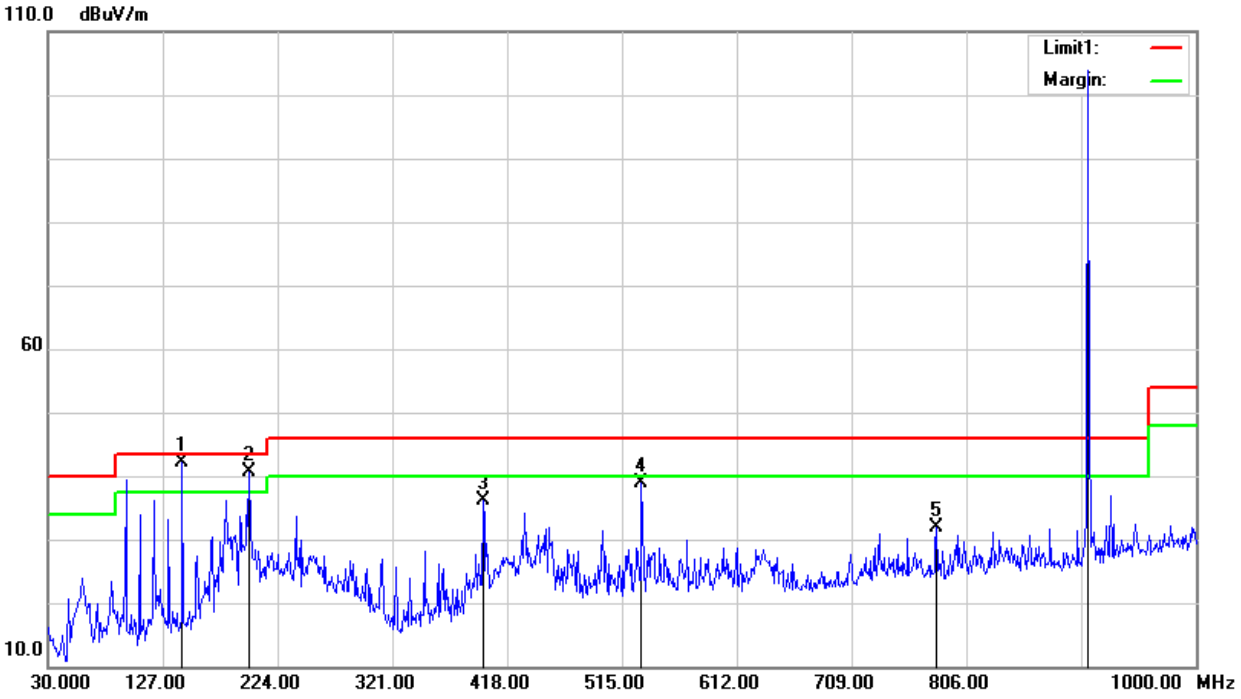
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Horizontal
Test Mode:	Mode 2		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	143.4900	60.45	-18.23	42.22	43.50	-1.28	peak
2	199.7500	61.67	-21.11	40.56	43.50	-2.94	peak
3	397.6300	47.32	-11.24	36.08	46.00	-9.92	peak
4	531.4900	46.13	-7.37	38.76	46.00	-7.24	peak
5	780.7800	34.12	-2.20	31.92	46.00	-14.08	peak
6	908.4200	104.01	-0.22	103.79	N/A	N/A	Fundamental

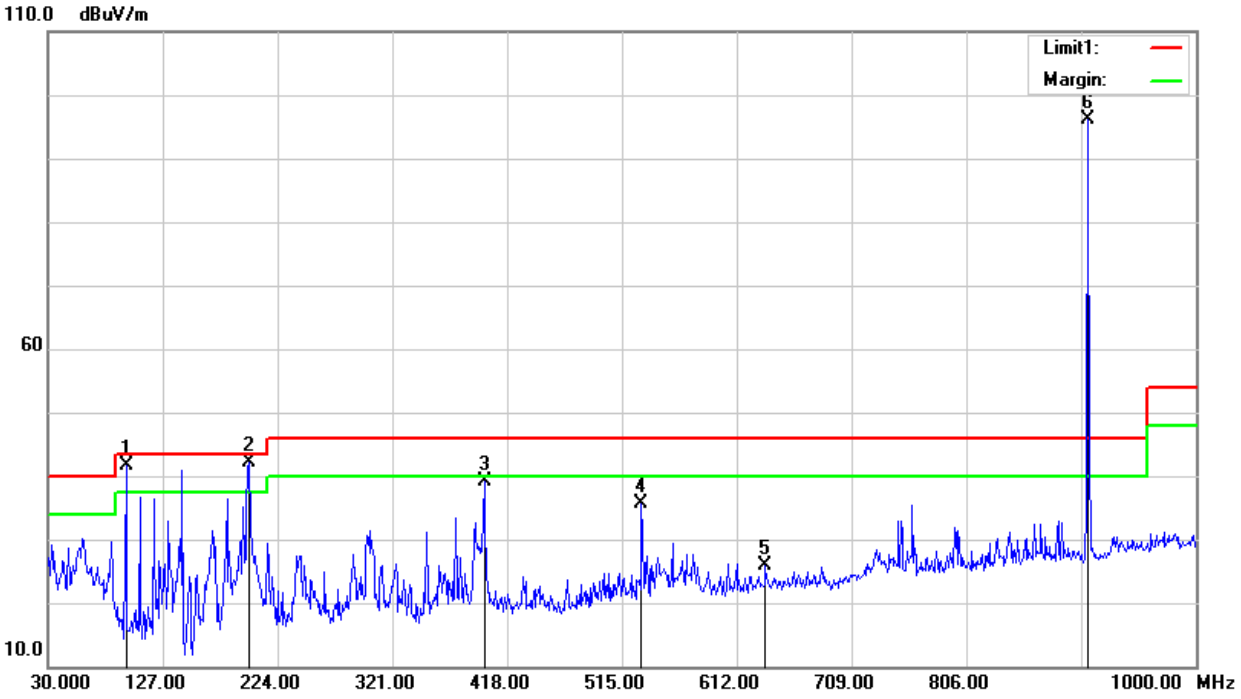
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Vertical
Test Mode:	Mode 2		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	62.18	-20.67	41.51	43.50	-1.99	peak
2	199.7500	63.32	-21.11	42.21	43.50	-1.29	peak
3	398.6000	50.31	-11.20	39.11	46.00	-6.89	peak
4	531.4900	42.99	-7.37	35.62	46.00	-10.38	peak
5	636.2500	30.76	-4.92	25.84	46.00	-20.16	peak
6	908.4200	96.26	-0.22	96.04	N/A	N/A	Fundamental

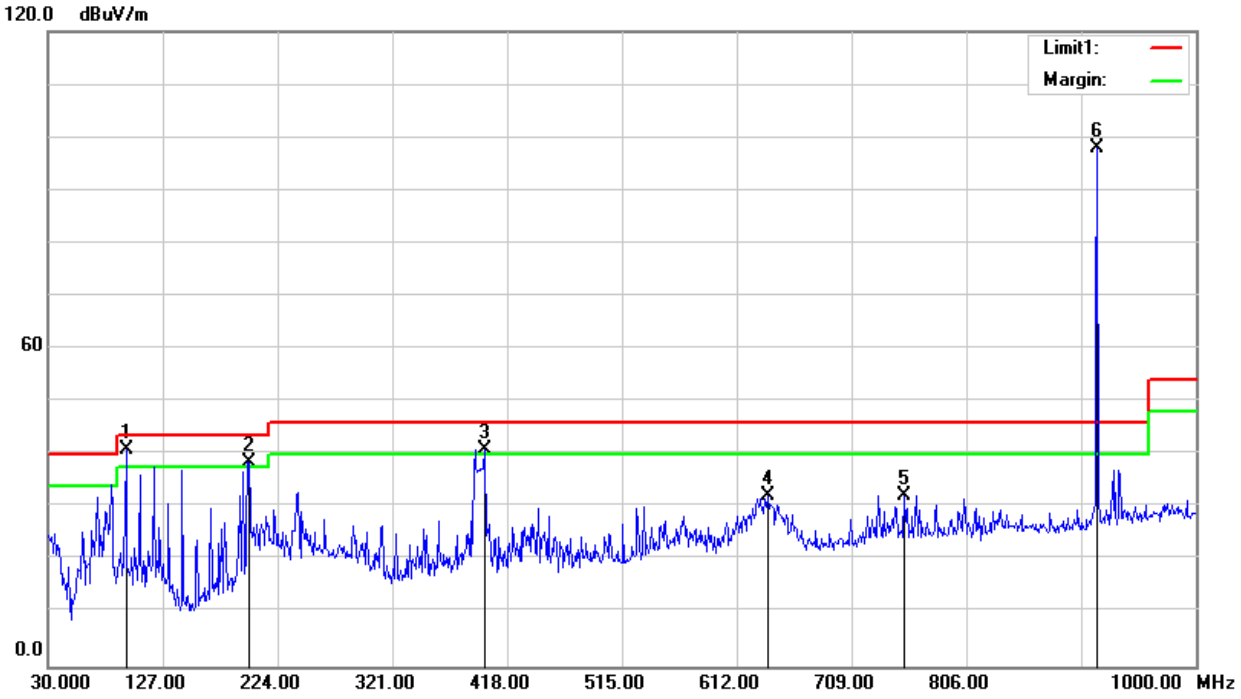
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Horizontal
Test Mode:	Mode 3		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	61.68	-20.67	41.01	43.50	-2.49	peak
2	199.7500	59.68	-21.11	38.57	43.50	-4.93	peak
3	398.6000	52.28	-11.20	41.08	46.00	-4.92	peak
4	638.1900	37.14	-4.87	32.27	46.00	-13.73	peak
5	753.6200	34.54	-2.16	32.38	46.00	-13.62	peak
6	916.0000	98.12	-0.09	98.03	N/A	N/A	Fundamental

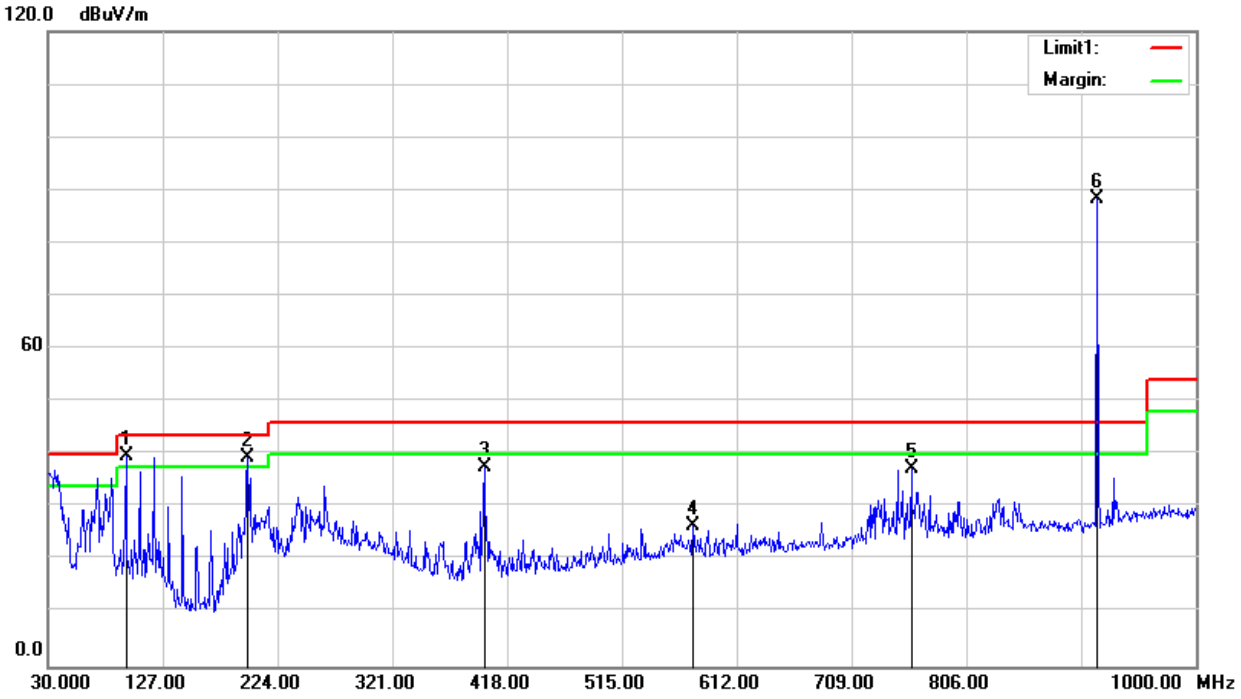
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 6V	Phase:	Vertical
Test Mode:	Mode 3		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	60.52	-20.67	39.85	43.50	-3.65	peak
2	198.7800	60.66	-21.12	39.54	43.50	-3.96	peak
3	398.6000	48.71	-11.20	37.51	46.00	-8.49	peak
4	575.1400	32.22	-5.68	26.54	46.00	-19.46	peak
5	759.4400	39.51	-2.16	37.35	46.00	-8.65	peak
6	916.0000	88.59	-0.09	88.50	N/A	N/A	Fundamental

Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Above 1G Radiation Spurious

PK

908.4MHz

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Orrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	（dB）	（dB）	（dB/m）	（dB）	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
1816.76	67.62	PK	45.10	4.91	25.00	-15.19	52.43	74	-21.57	H
1816.76	66.95	PK	45.10	4.91	25.00	-15.19	51.76	74	-22.24	V
2725.46	58.00	PK	44.10	5.03	25.80	-13.27	44.73	74	-29.27	H
2725.46	56.60	PK	44.10	5.03	25.80	-13.27	43.33	74	-30.67	V
3633.61	50.62	PK	43.80	6.72	33.40	-3.68	46.94	74	-27.06	H
3633.61	50.56	PK	43.80	6.72	33.40	-3.68	46.88	74	-27.12	V

908.42MHz

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Orrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	（dB）	（dB）	（dB/m）	（dB）	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
1816.83	66.62	PK	45.10	4.91	25.00	-15.19	51.43	74	-22.57	H
1816.83	66.89	PK	45.10	4.91	25.00	-15.19	51.70	74	-22.30	V
2725.35	65.45	PK	44.10	5.03	25.80	-13.27	52.18	74	-21.82	H
2725.35	66.41	PK	44.10	5.03	25.80	-13.27	53.14	74	-20.86	V
3633.78	50.63	PK	43.80	6.72	33.40	-3.68	46.95	74	-27.05	H
3633.78	50.57	PK	43.80	6.72	33.40	-3.68	46.89	74	-27.11	V

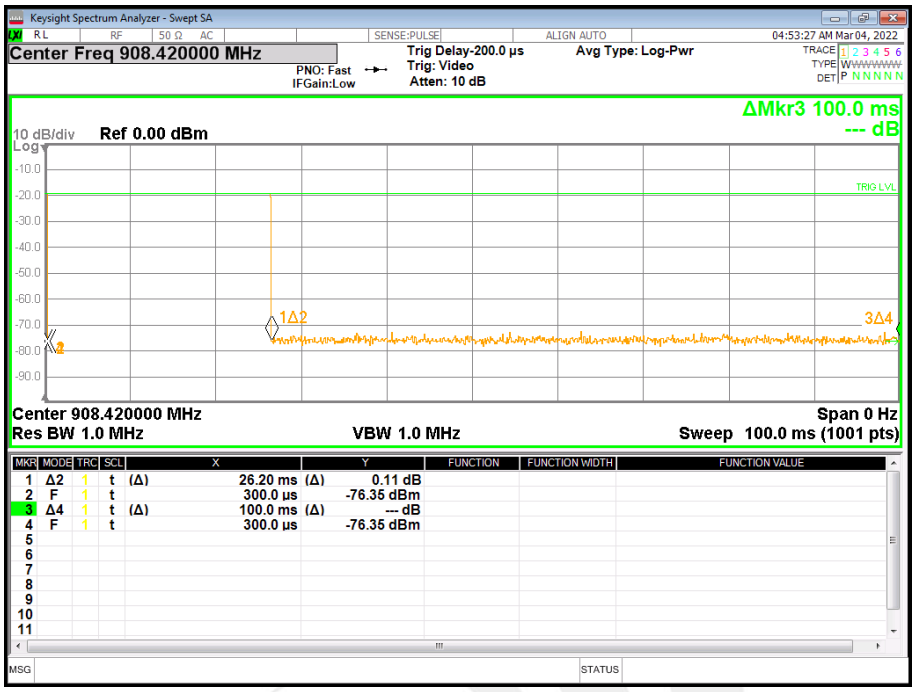
916MHz

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Orrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	（dB）	（dB）	（dB/m）	（dB）	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
1832.11	67.84	PK	45.10	4.91	25.00	-15.19	52.65	74	-21.35	H
1832.11	67.01	PK	45.10	4.91	25.00	-15.19	51.82	74	-22.18	V
2747.99	65.45	PK	44.10	5.03	25.80	-13.27	52.18	74	-21.82	H
2747.99	66.57	PK	44.10	5.03	25.80	-13.27	53.30	74	-20.70	V
3664.04	50.85	PK	43.80	6.72	33.40	-3.68	47.17	74	-26.83	H
3664.04	50.48	PK	43.80	6.72	33.40	-3.68	46.80	74	-27.20	V

Note: The PK value is lower than the AV limit, the AV data does not need to be tested.

Duty cycle

FSK



Ton	Tp	Duty cycle(%)	Duty factor(dB)
26.200	100.000	26.20%	-11.63

GFSK

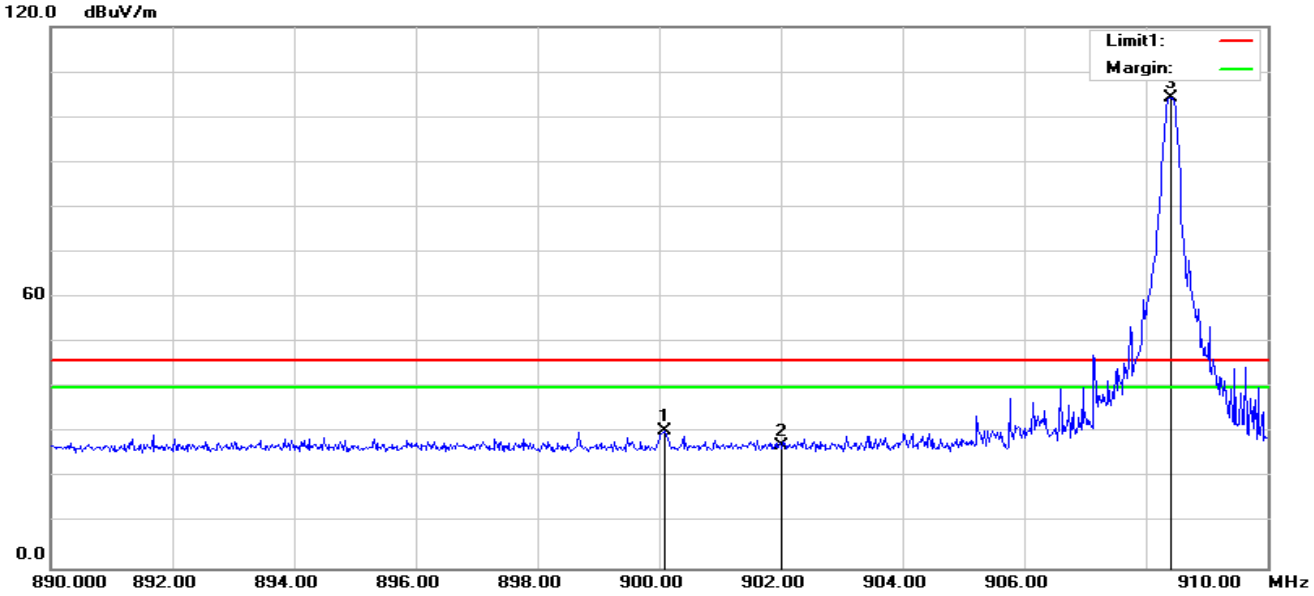
Ton	Tp	Duty cycle(%)	Duty factor(dB)
5.100	100.000	5.10%	-25.85

Note: Duty Factor=20*LOG10(1/(Ton/Tp))

(Radiation Band edge**)**

Low channel

Horizontal

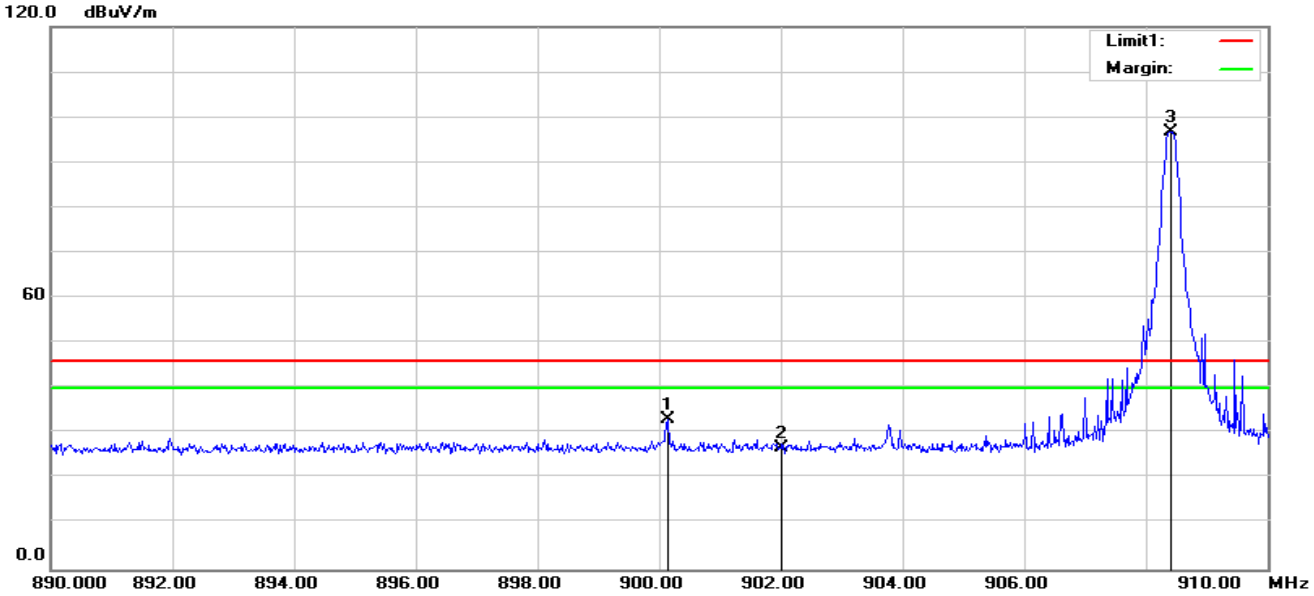


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	900.0800	30.89	-0.45	30.44	46.00	-15.56	peak
2	902.0000	27.46	-0.40	27.06	46.00	-18.94	peak

Fundamental Frequency

No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
3	908.4000	104.39	-0.23	-	104.16	114.00	-9.84	Peak
4	908.4000	104.39	-0.23	-11.63	92.53	94.00	-1.47	AVG

Vertical



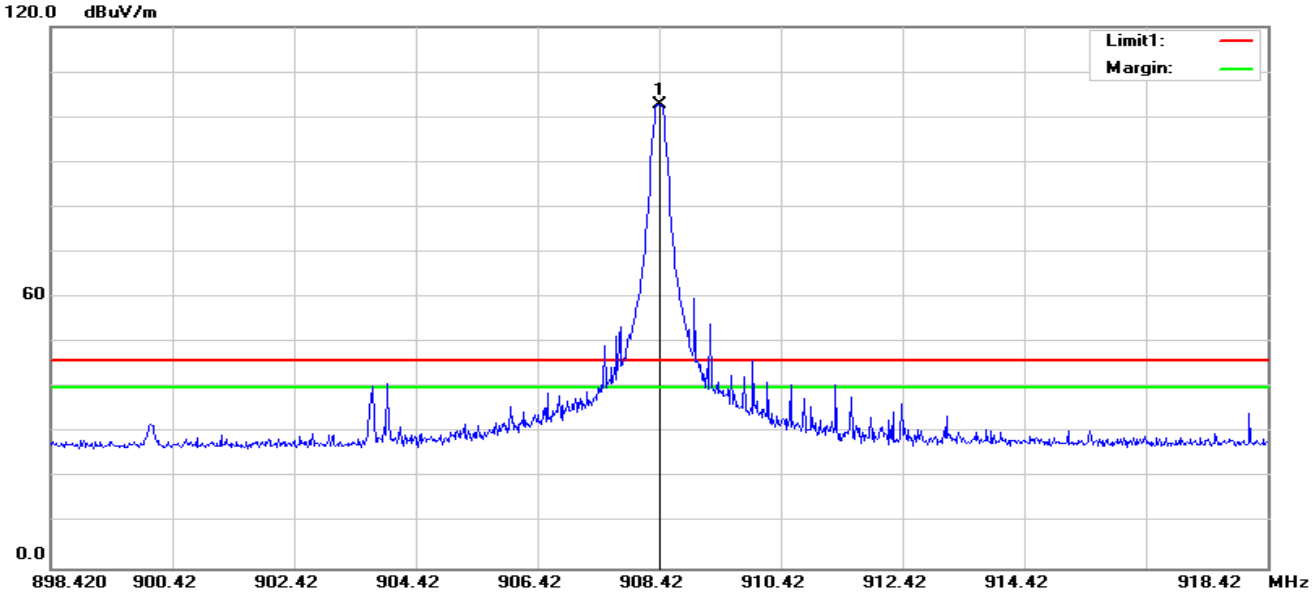
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	900.1400	33.60	-0.45	33.15	46.00	-12.85	peak
2	902.0000	27.22	-0.40	26.82	46.00	-19.18	peak

Fundamental Frequency

No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
3	908.4000	97.00	-0.23	-	96.77	114.00	-17.23	Peak
4	908.4000	97.00	-0.23	-11.63	85.14	94.00	-8.86	AVG

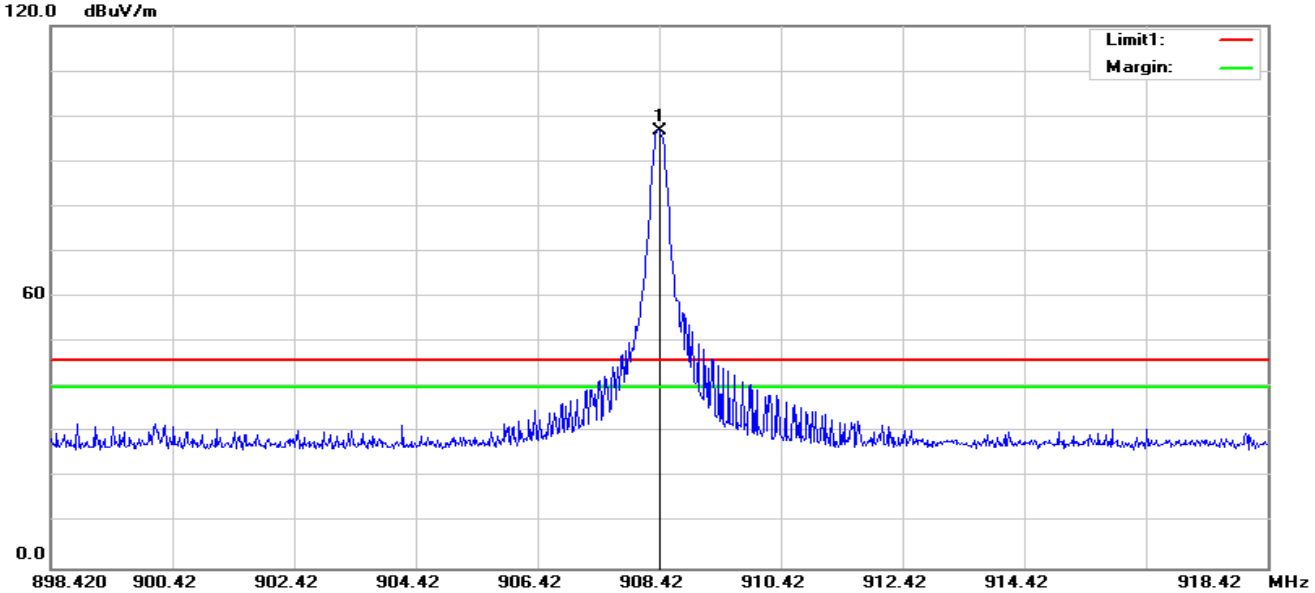
Mid channel

Horizontal



No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	908.4200	103.01	-0.22	-	102.79	114.00	-11.21	Peak
2	908.4200	103.01	-0.22	-11.63	91.16	94.00	-2.84	AVG

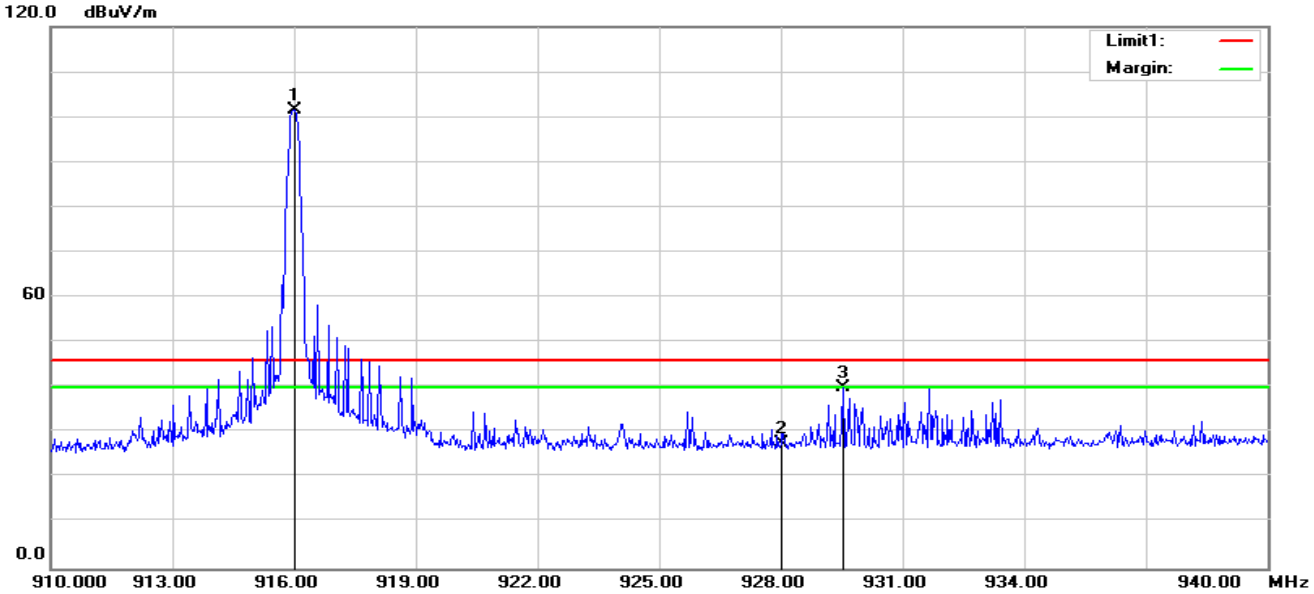
Vertical



No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	908.4200	97.08	-0.22	-	96.86	114.00	-17.14	Peak
2	908.4200	97.08	-0.22	-11.63	85.23	94.00	-8.77	AVG

High channel

Horizontal

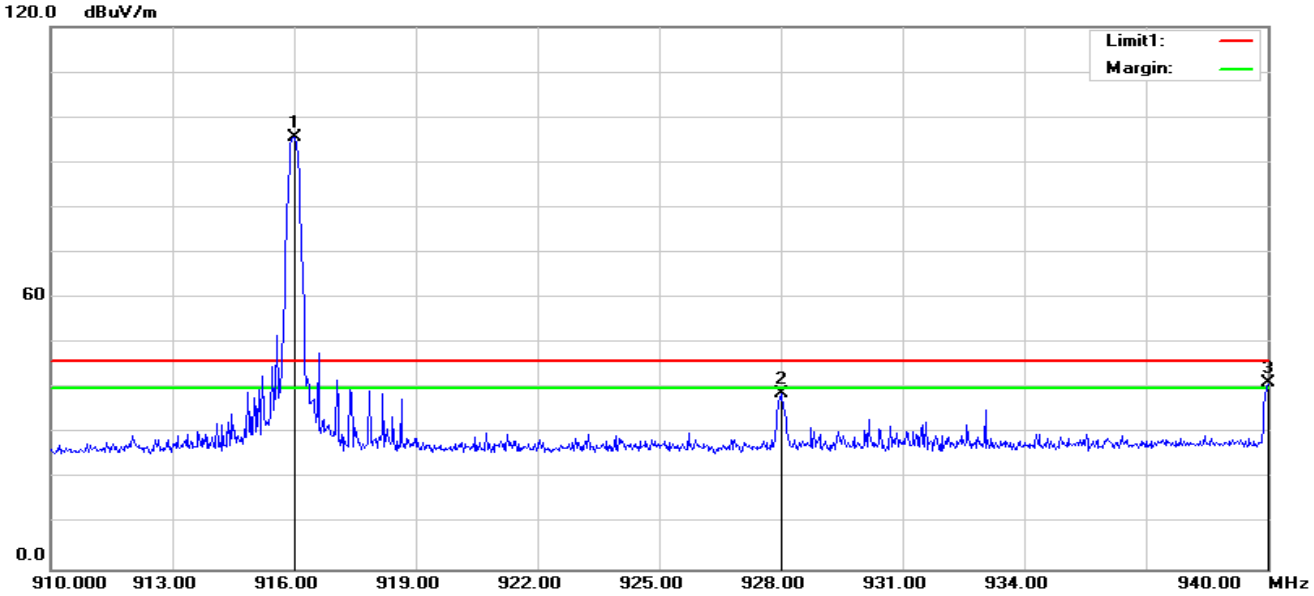


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
2	928.0000	27.31	0.43	27.74	46.00	-18.26	peak
3	929.5300	39.60	0.52	40.12	46.00	-5.88	peak

Fundamental Frequency

No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	916.0000	101.64	-0.09	-	101.55	114.00	-12.45	Peak
4	916.0000	101.64	-0.09	-25.85	75.70	94.00	-18.3	AVG

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
2	928.0000	38.49	0.43	38.92	46.00	-7.08	peak
3	940.0000	39.84	1.38	41.22	46.00	-4.78	peak

Fundamental Frequency

No.	Frequency	Reading	Correct	Duty cycle	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	916.0000	95.58	-0.09	-	95.49	114.00	-18.51	Peak
4	916.0000	95.58	-0.09	-25.85	69.64	94.00	-24.36	AVG

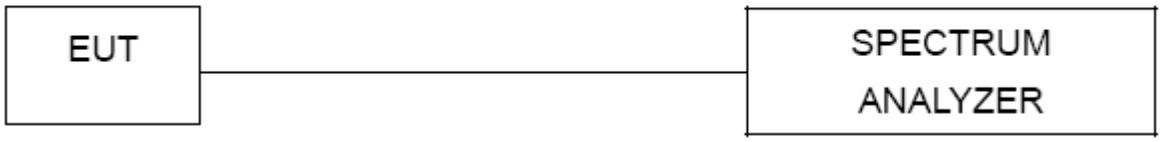
4. BANDWIDTH TEST

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= 1% to 5% OBW, VBW≧RBW, Sweep time = Auto.

4.2 TEST SETUP



4.3 EUT OPERATION CONDITIONS

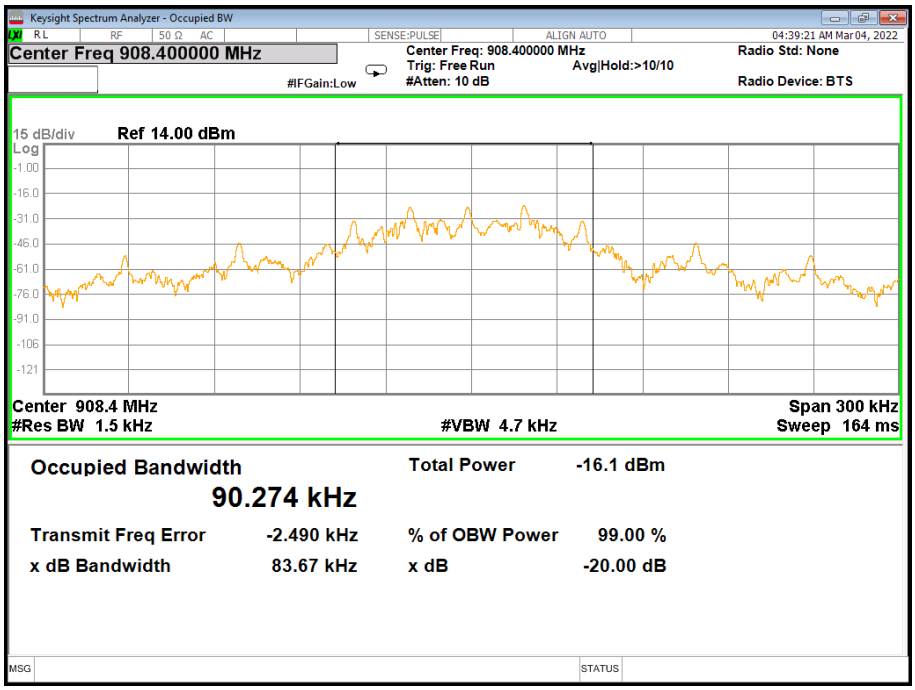
TX mode.

4.4 TEST RESULTS

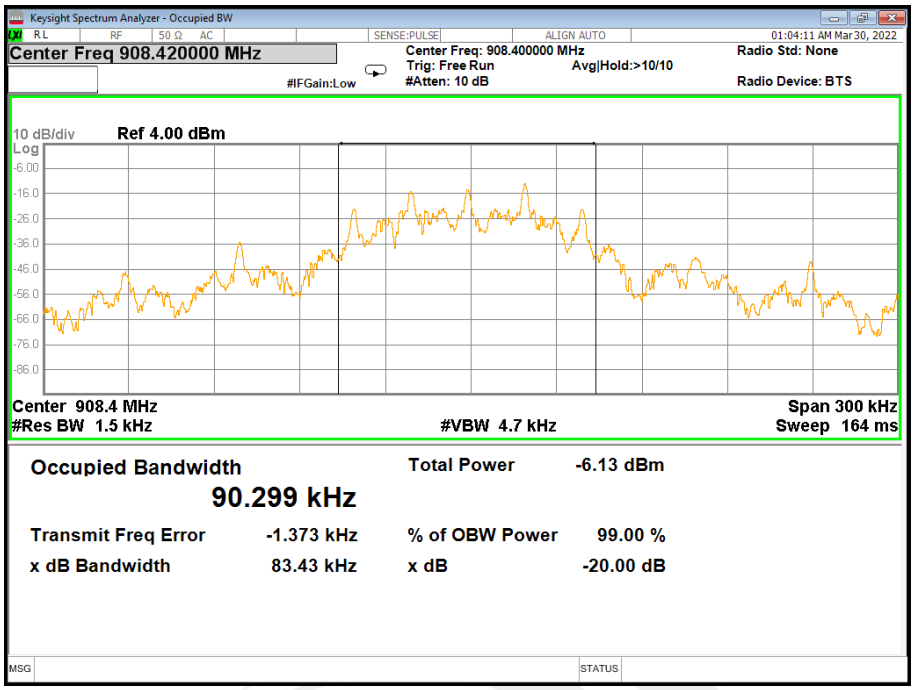
Temperature:	25 ℃	Relative Humidity:	50%
Test Voltage:	DC 6V		

Test Channel	Frequency(MHz)	20 dB Bandwidth(KHz)	99% Bandwidth(KHz)
CH01	908.40	83.67	90.274
CH02	908.42	83.43	90.299
CH03	916.00	107.8	109.34

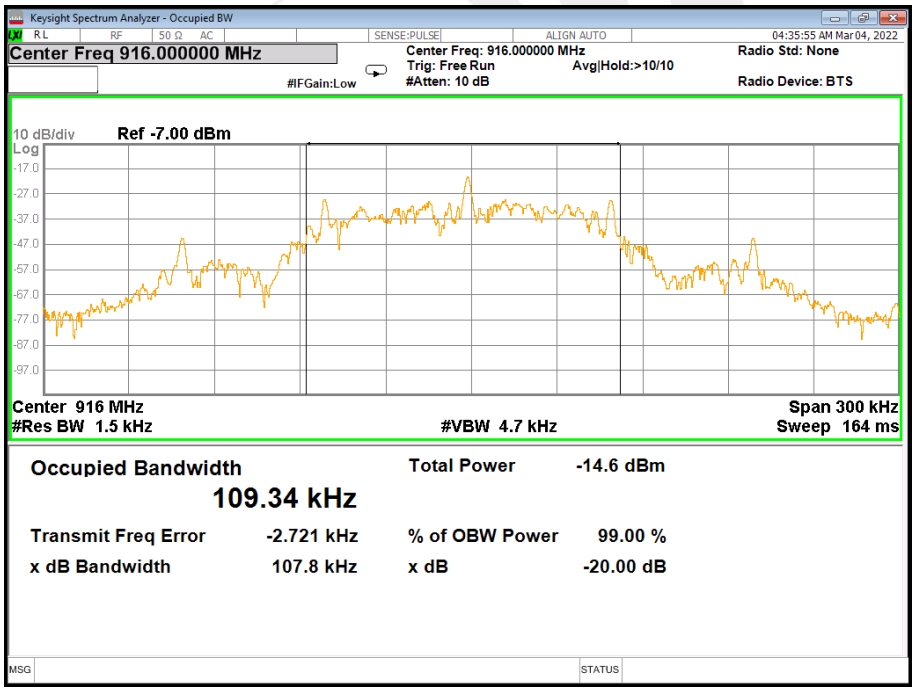
Low Channel



Mid Channel



High Channel



5. ANTENNA REQUIREMENT

5.1 STANDARD REQUIREMENT

According to the FCC Part 15 Paragraph 15.203& RSS-Gen Issue 5, 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 PIFA Antenna.It conforms to the standard requirements.

APPENDIX- PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

※※※※※END OF THE REPORT※※※※※