RADIO TEST REPORT

Report No: STS1910031W01

Issued for

UBITECH LIMITED

Unit 12, 7F Block A, Hi-Tech Industrial Centre 5-21 Pak Tin Par Street, Tsuen Wan, NT, Hong Kong

Product Name:	Wireless Ball Valve Servo
Brand Name:	Custos
Model Name:	BVSLWU
Series Model:	BVSULU
FCC ID:	2AUZXBVSLWU
Test Standard:	FCC Part 15.247

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

TEST RESULT CERTIFICATION

Applicant's Name .....:	UBITECH LIMITED
Address.....:	Unit 12, 7F Block A, Hi-Tech Industrial Centre 5-21 Pak Tin Par Street, Tsuen Wan, NT, Hong Kong
Manufacture's Name .....:	Yong Chao Plastic Technology Co., LTD
Address.....:	No.8, Mingzhu 2 Road, shebei Village, Huangjiang Town, Dongguan City, Guangdong Province, P.R. China

Product Description

Product Name .....:	Wireless Ball Valve Servo
Brand Name .....:	Custos
Model Name.....:	BVSLWU
Series Model .....:	BVSULU
Test Standards .....:	FCC Part15.247
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 requirements. And it is applicable only to the tested sample identified in the report.
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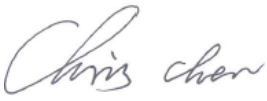
Date of Test.....:	
Date of receipt of test item .....:	16 Oct. 2019
Date (s) of performance of tests :	16 Oct. 2019 ~ 02 June 2020
Date of Issue .....:	02 June 2020
Test Result .....:	Pass

Testing Engineer : 

(Chris Chen)

Technical Manager : 

(Sunday Hu)

Authorized Signatory : 

(Vita Li)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	02 June 2020	STS1910031W01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247,Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247(a)(1)	Hopping Channel Separation	PASS	--
15.247(b)(2)	Output Power	PASS	--
15.209	Radiated Spurious Emission	PASS	--
15.247(d)	Conducted Spurious & Band Edge Emission	PASS	--
15.247(a)(1)(i)	Number of Hopping Frequency	PASS	--
15.247(a)(1)(i)	Dwell Time	PASS	--
15.247(a)(1)	Bandwidth	PASS	--
15.205	Restricted bands of operation	PASS	--
Part 15.247(d)/part 15.209(a)	Band Edge Emission	PASS	--
15.203	Antenna Requirement	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	±0.68dB
2	Unwanted Emissions, conducted	±2.988dB
3	All emissions, radiated 30-1GHz	±6.7dB
4	All emissions, radiated 1G-6GHz	±5.5dB
5	All emissions, radiated>6G	±5.8dB
6	Conducted Emission (9KHz-150KHz)	±4.43dB
7	Conducted Emission (150KHz-30MHz)	±5dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Wireless Ball Valve Servo
Trade Name	Custos
Model Name	BVSLWU
Series Model	BVSULU
Model Difference	Only different in model name.
Channel List	Please refer to the Note 2.
Frequency	902.3-914.9 MHz
Modulation	Lora
Adapter	Input: 100-240VAC, 50/60Hz, 0.8A Output: 12VDC, 2A
Hardware version number	N/A
Software version number	N/A
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

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

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	902.3	22	906.7	44	911.1
01	902.5	23	906.9	45	911.3
02	902.7	24	907.1	46	911.5
03	902.9	25	907.3	47	911.7
04	903.1	26	907.5	48	911.9
05	903.3	27	907.7	49	912.1
06	903.5	28	907.9	50	912.3
07	903.7	29	908.1	51	912.5
08	903.9	30	908.3	52	912.7
09	904.1	31	908.5	53	912.9
10	904.3	32	908.7	54	913.1
11	904.5	33	908.9	55	913.3
12	904.7	34	909.1	56	913.5
13	904.9	35	909.3	57	913.7
14	905.1	36	909.5	58	913.9
15	905.3	37	909.7	59	914.1
16	905.5	38	909.9	60	914.3
17	905.7	39	910.1	61	914.5
18	905.9	40	910.3	62	914.7
19	906.1	41	910.5	63	914.9
20	906.3	42	910.7		
21	906.5	43	910.9		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	Custos	BVSLWU	Spring	N/A	-2	BT Antenna

2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Modulation
Mode 1	TX CH00	LORA
Mode 2	TX CH32	LORA
Mode 3	TX CH63	LORA

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

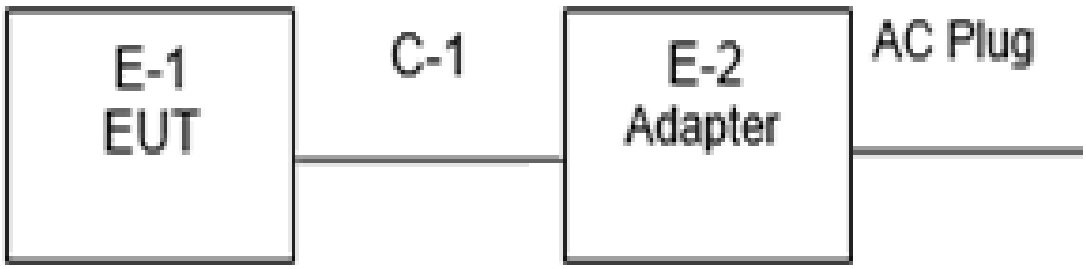
(2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/ 60Hz is shown in the report.

For AC Conducted Emission

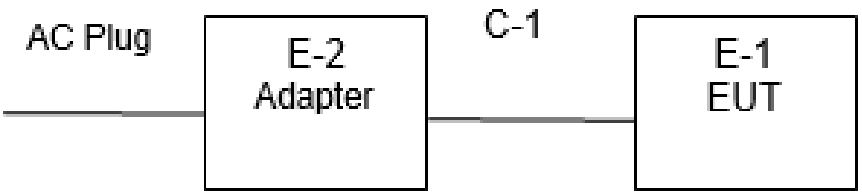
Test Case	
AC Conducted Emission	Mode 4 : Keeping EUT TX

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted 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.	Serial No.	Note
E-2	Adapter	N/A	ASSA67A-120200	N/A	N/A
C-1	DC Cable	N/A	100cm	N/A	N/A

Support units

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

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

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2019.07.29	2020.07.28
Signal Analyzer	Agilent	N9020A	MY51110105	2020.03.05	2021.03.04
Active loop Antenna	ZHINAN	ZN30900C	16035	2018.03.11	2021.03.10
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.01
Horn Antenna	SCHWARZBECK	BBHA 9120D(1201)	9120D-1343	2018.10.19	2021.10.18
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2018.03.11	2021.03.10
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2019.10.09	2020.10.08
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2019.10.12	2020.10.11
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
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	2019.7.29	2020.7.28
LISN	R&S	ENV216	101242	2019.10.09	2020.10.08
LISN	EMCO	3810/2NM	23625	2019.10.09	2020.10.08
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2019.10.09	2020.10.08
Signal Analyzer	Agilent	N9020A	MY49100060	2019.10.09	2020.10.08
Temperature & Humidity	HH660	Mieo	N/A	2019.10.12	2020.10.11
Test SW	FARAD	LZ-RF /LzRf-3A3			

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 207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Conducted Emissionlimit (dBuV)	
	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.

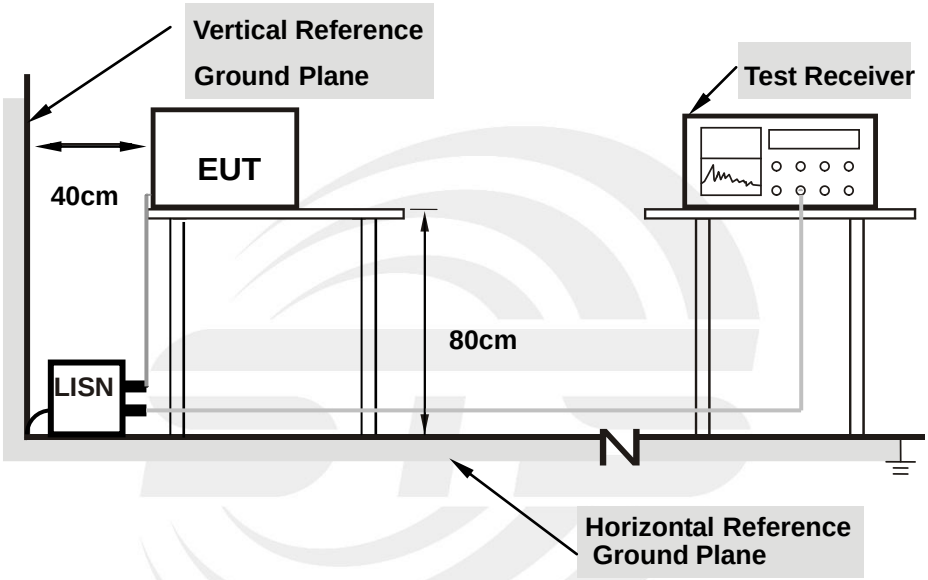
The following table is the setting of the receiver

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

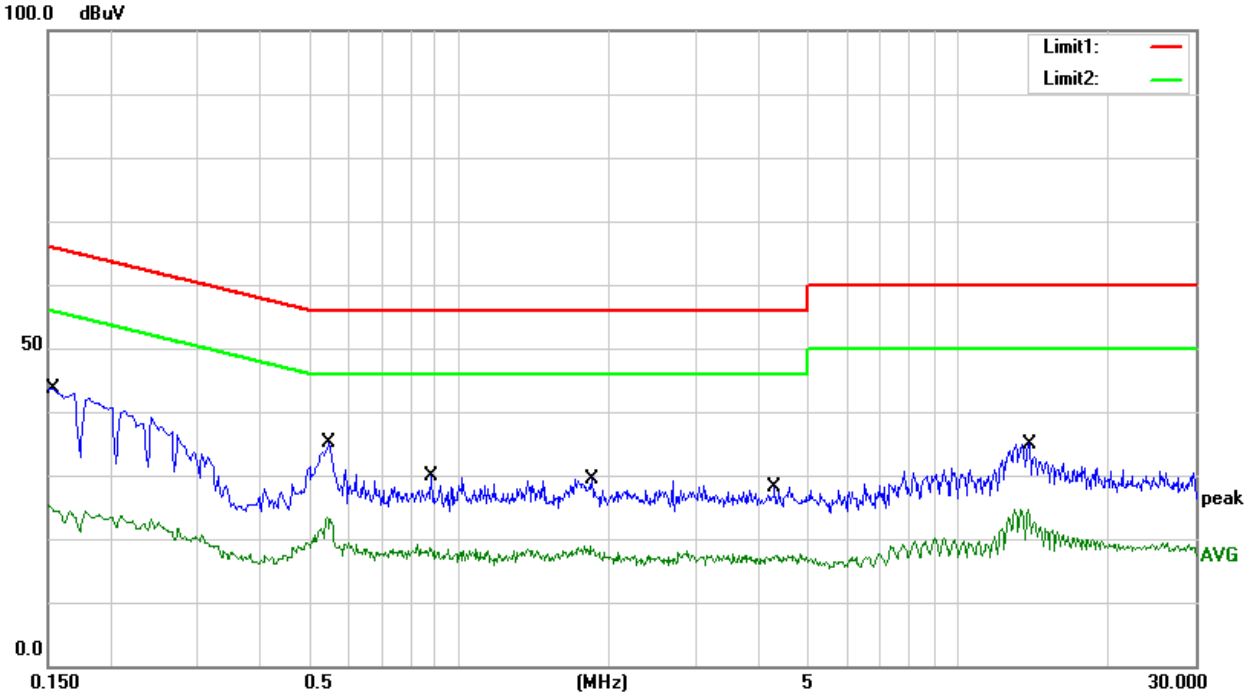
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULT

Temperature:	26(C)	Relative Humidity:	60%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 4		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1540	23.56	20.03	43.59	65.78	-22.19	QP
2	0.1540	5.36	20.03	25.39	55.78	-30.39	AVG
3	0.5500	15.03	20.09	35.12	56.00	-20.88	QP
4	0.5500	3.19	20.09	23.28	46.00	-22.72	AVG
5	0.8820	9.85	20.09	29.94	56.00	-26.06	QP
6	0.8820	-1.07	20.09	19.02	46.00	-26.98	AVG
7	1.8500	9.28	20.10	29.38	56.00	-26.62	QP
8	1.8500	-1.14	20.10	18.96	46.00	-27.04	AVG
9	4.2980	8.27	19.94	28.21	56.00	-27.79	QP
10	4.2980	-2.27	19.94	17.67	46.00	-28.33	AVG
11	13.9180	14.93	19.98	34.91	60.00	-25.09	QP
12	13.9180	4.60	19.98	24.58	50.00	-25.42	AVG

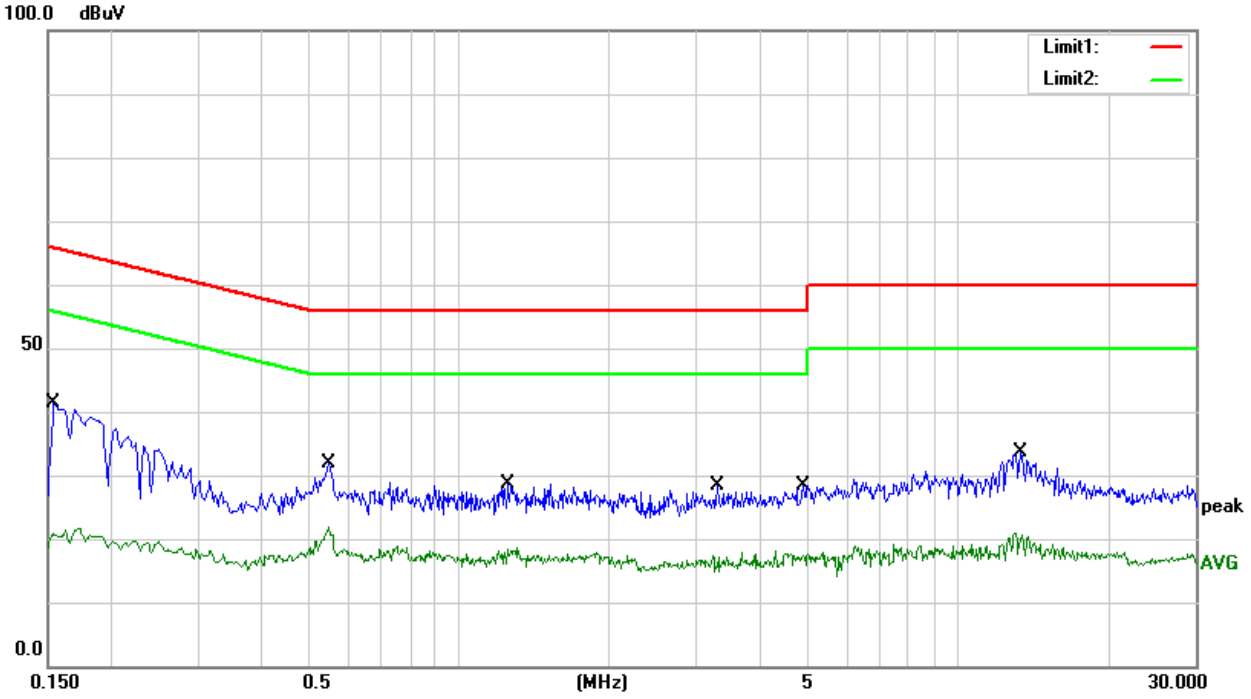
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter（10dB）



Temperature:	26(C)	Relative Humidity:	60%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 4		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1540	21.26	20.03	41.29	65.78	-24.49	QP
2	0.1540	1.58	20.03	21.61	55.78	-34.17	AVG
3	0.5500	11.88	20.09	31.97	56.00	-24.03	QP
4	0.5500	1.78	20.09	21.87	46.00	-24.13	AVG
5	1.2620	8.53	20.10	28.63	56.00	-27.37	QP
6	1.2620	-1.42	20.10	18.68	46.00	-27.32	AVG
7	3.2980	8.24	20.01	28.25	56.00	-27.75	QP
8	3.2980	-2.57	20.01	17.44	46.00	-28.56	AVG
9	4.9220	8.52	19.93	28.45	56.00	-27.55	QP
10	4.9220	-1.69	19.93	18.24	46.00	-27.76	AVG
11	13.3540	13.57	19.98	33.55	60.00	-26.45	QP
12	13.3540	0.98	19.98	20.96	50.00	-29.04	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter（10dB）



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

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 (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

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

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
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	Above 38.6
13.36-13.41			

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 KHz / 300 KHz

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

For Band Edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 890 to 905 MHz Upper Band Edge: 913 to 930 MHz
RB / VB	100 KHz / 300 KHz

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

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz,and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 meters (above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. horizontal and vertical polarizations of the antenna are set to make the measurement.
d. 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 QuasiPeak detector mode re-measured.
e. 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.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

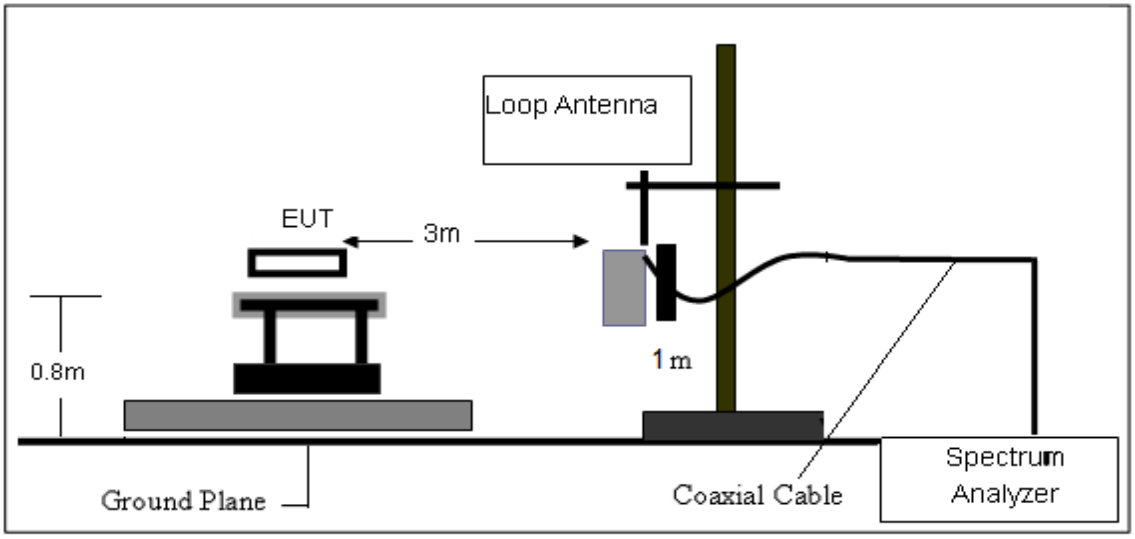
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 DEVIATION FROM TEST STANDARD

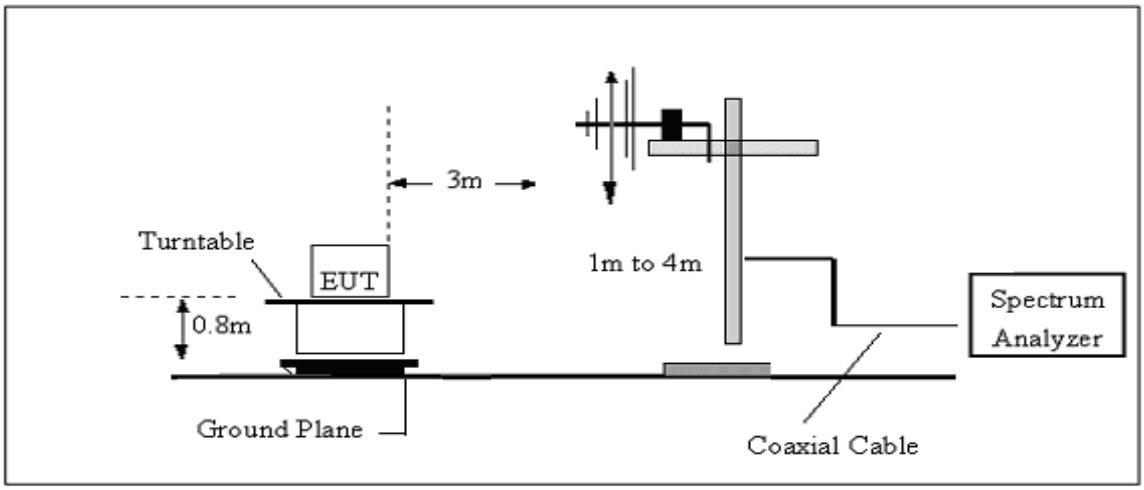
No deviation.

3.2.4 TESTSETUP

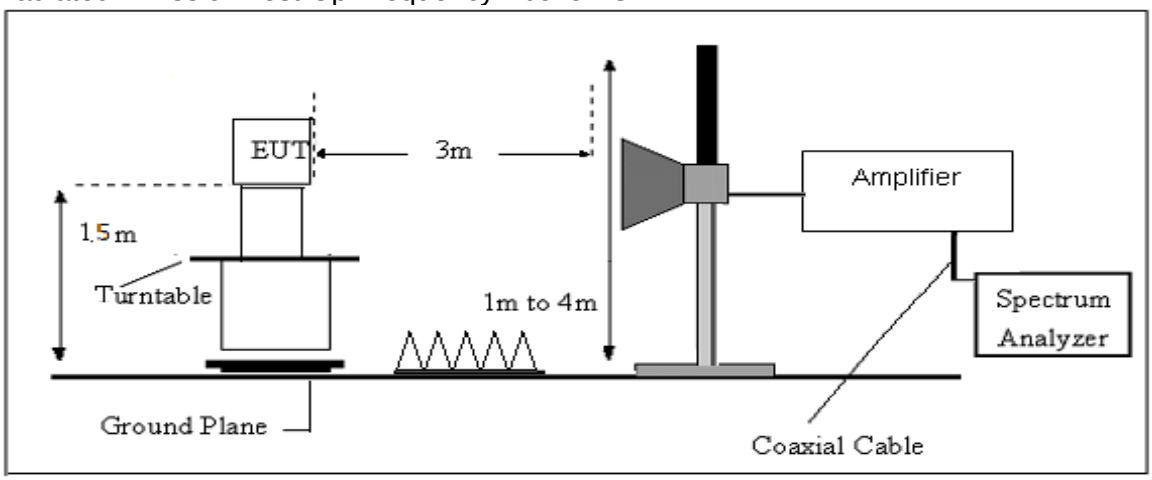
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

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

3.2.6 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:

FS = RA + AF + CL - AG

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.7 TEST RESULTS

(9KHz-30MHz)

Temperature:	25.8(C)	Relative Humidity:	61%RH
Test Voltage:	AC 120V/60Hz	Test Mode:	TX Mode

Freq.	Reading	Limit	Margin	State	Test Result
(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);

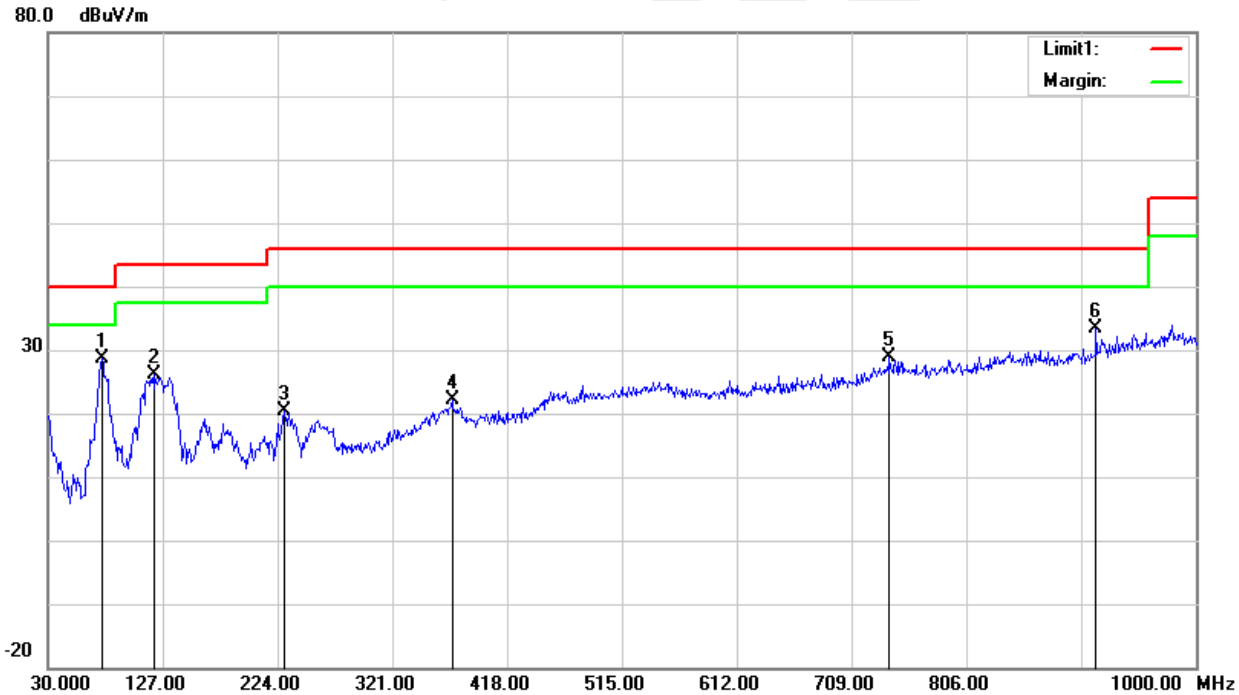
Limit line = specific limits (dBuv) + distance extrapolation factor.

(30MHz-1000MHz)

Temperature:	25.8(C)	Relative Humidity:	61%RH
Test Voltage:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	Mode 1/2/3(Mode 1 worst case)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	75.5900	52.45	-23.78	28.67	40.00	-11.33	QP
2	120.2100	44.55	-18.35	26.20	43.50	-17.30	QP
3	229.8200	39.56	-19.12	20.44	46.00	-25.56	QP
4	371.4400	34.54	-12.46	22.08	46.00	-23.92	QP
5	741.0100	30.88	-2.11	28.77	46.00	-17.23	QP
6	915.6100	33.53	-0.09	33.44	46.00	-12.56	QP

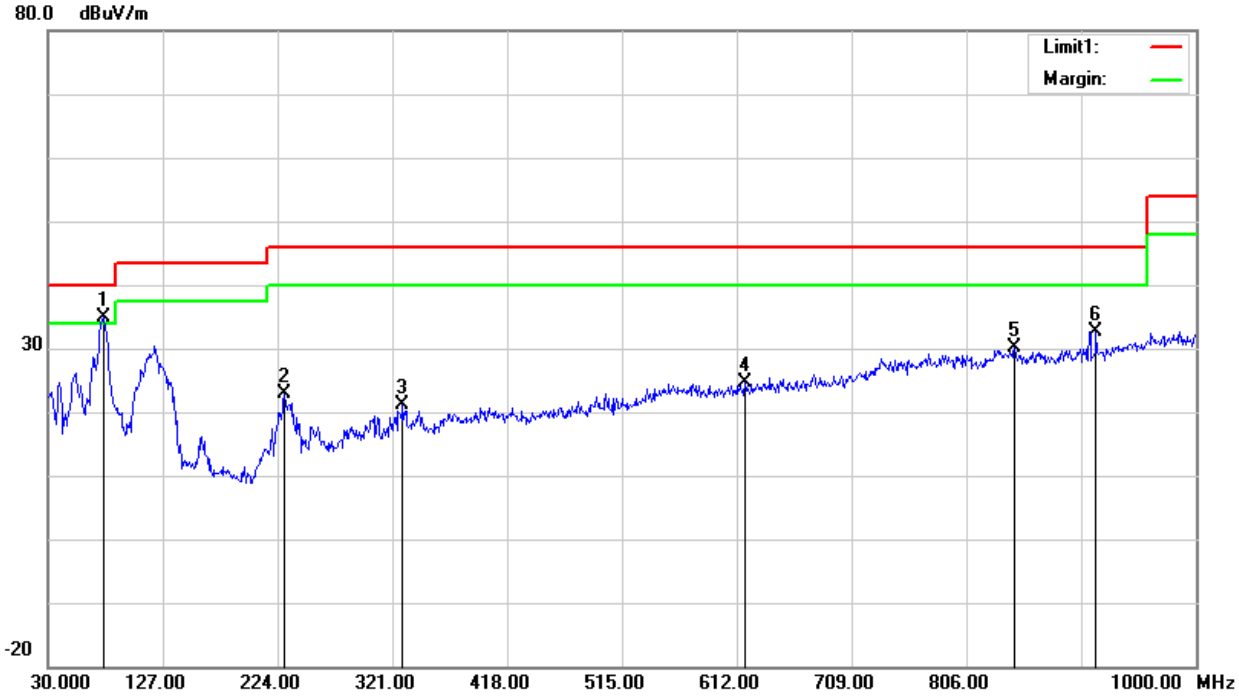
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.8(C)	Relative Humidity:	61%RH
Test Voltage:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	Mode 1/2/3(Mode 1 worst case)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	76.5600	58.61	-23.61	35.00	40.00	-5.00	QP
2	229.8200	42.04	-19.12	22.92	46.00	-23.08	QP
3	329.7300	34.89	-13.71	21.18	46.00	-24.82	QP
4	618.7900	30.04	-5.49	24.55	46.00	-21.45	QP
5	846.7400	30.64	-0.62	30.02	46.00	-15.98	QP
6	915.6100	32.82	-0.09	32.73	46.00	-13.27	QP

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



(1GHz~25GHz) Spurious emission Requirements

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	
Low Channel (902.3 MHz)										
1225.98	61.09	44.70	6.70	28.20	-9.80	51.29	74.00	-22.71	PK	Vertical
1225.98	50.21	44.70	6.70	28.20	-9.80	40.41	54.00	-13.59	AV	Vertical
1225.95	60.79	44.70	6.70	28.20	-9.80	50.99	74.00	-23.01	PK	Horizontal
1225.95	51.26	44.70	6.70	28.20	-9.80	41.46	54.00	-12.54	AV	Horizontal
1804.18	59.27	44.20	9.04	31.60	-3.56	55.71	74.00	-18.29	PK	Vertical
1804.18	49.35	44.20	9.04	31.60	-3.56	45.79	54.00	-8.21	AV	Vertical
1804.15	59.17	44.20	9.04	31.60	-3.56	55.61	74.00	-18.39	PK	Horizontal
1804.15	49.96	44.20	9.04	31.60	-3.56	46.40	54.00	-7.60	AV	Horizontal
2012.74	49.06	44.20	9.86	32.00	-2.34	46.72	74.00	-27.28	PK	Vertical
2012.74	39.63	44.20	9.86	32.00	-2.34	37.29	54.00	-16.71	AV	Vertical
2012.63	48.00	44.20	9.86	32.00	-2.34	45.66	74.00	-28.34	PK	Horizontal
2012.63	39.46	44.20	9.86	32.00	-2.34	37.12	54.00	-16.88	AV	Horizontal
2705.96	53.96	43.50	11.40	35.50	3.40	57.36	74.00	-16.64	PK	Vertical
2705.96	43.67	43.50	11.40	35.50	3.40	47.07	54.00	-6.93	AV	Vertical
2705.90	54.38	43.50	11.40	35.50	3.40	57.78	74.00	-16.22	PK	Horizontal
2705.90	44.08	43.50	11.40	35.50	3.40	47.48	54.00	-6.52	AV	Horizontal
Middle Channel (908.7 MHz)										
1215.34	60.85	44.70	6.70	28.20	-9.80	51.05	74.00	-22.95	PK	Vertical
1215.34	51.33	44.70	6.70	28.20	-9.80	41.53	54.00	-12.47	AV	Vertical
1215.32	61.50	44.70	6.70	28.20	-9.80	51.70	74.00	-22.30	PK	Horizontal
1215.32	50.71	44.70	6.70	28.20	-9.80	40.91	54.00	-13.09	AV	Horizontal
1817.61	59.30	44.20	9.04	31.60	-3.56	55.74	74.00	-18.26	PK	Vertical
1817.61	49.60	44.20	9.04	31.60	-3.56	46.04	54.00	-7.96	AV	Vertical
1817.57	58.98	44.20	9.04	31.60	-3.56	55.42	74.00	-18.58	PK	Horizontal
1817.57	49.63	44.20	9.04	31.60	-3.56	46.07	54.00	-7.93	AV	Horizontal
1995.27	48.62	44.20	9.86	32.00	-2.34	46.28	74.00	-27.72	PK	Vertical
1995.27	39.92	44.20	9.86	32.00	-2.34	37.58	54.00	-16.42	AV	Vertical
1995.29	47.54	44.20	9.86	32.00	-2.34	45.20	74.00	-28.80	PK	Horizontal
1995.29	38.11	44.20	9.86	32.00	-2.34	35.77	54.00	-18.23	AV	Horizontal
2726.39	54.88	43.50	11.40	35.50	3.40	58.28	74.00	-15.72	PK	Vertical
2726.39	44.18	43.50	11.40	35.50	3.40	47.58	54.00	-6.42	AV	Vertical
2726.40	54.79	43.50	11.40	35.50	3.40	58.19	74.00	-15.81	PK	Horizontal
2726.40	43.88	43.50	11.40	35.50	3.40	47.28	54.00	-6.72	AV	Horizontal

High Channel (914.9 MHz)										
1204.36	61.49	44.70	6.70	28.20	-9.80	51.69	74.00	-22.31	PK	Vertical
1204.36	50.32	44.70	6.70	28.20	-9.80	40.52	54.00	-13.48	AV	Vertical
1204.40	61.07	44.70	6.70	28.20	-9.80	51.27	74.00	-22.73	PK	Horizontal
1204.40	49.91	44.70	6.70	28.20	-9.80	40.11	54.00	-13.89	AV	Horizontal
1829.96	59.05	44.20	9.04	31.60	-3.56	55.49	74.00	-18.51	PK	Vertical
1829.96	49.62	44.20	9.04	31.60	-3.56	46.06	54.00	-7.94	AV	Vertical
1829.98	59.23	44.20	9.04	31.60	-3.56	55.67	74.00	-18.33	PK	Horizontal
1829.98	49.69	44.20	9.04	31.60	-3.56	46.13	54.00	-7.87	AV	Horizontal
1977.32	48.57	44.20	9.86	32.00	-2.34	46.23	74.00	-27.77	PK	Vertical
1977.32	38.96	44.20	9.86	32.00	-2.34	36.62	54.00	-17.38	AV	Vertical
1977.29	47.97	44.20	9.86	32.00	-2.34	45.63	74.00	-28.37	PK	Horizontal
1977.29	39.32	44.20	9.86	32.00	-2.34	36.98	54.00	-17.02	AV	Horizontal
2744.59	53.65	43.50	11.40	35.50	3.40	57.05	74.00	-16.95	PK	Vertical
2744.59	43.93	43.50	11.40	35.50	3.40	47.33	54.00	-6.67	AV	Vertical
2744.68	53.82	43.50	11.40	35.50	3.40	57.22	74.00	-16.78	PK	Horizontal
2744.68	43.73	43.50	11.40	35.50	3.40	47.13	54.00	-6.87	AV	Horizontal

Note:

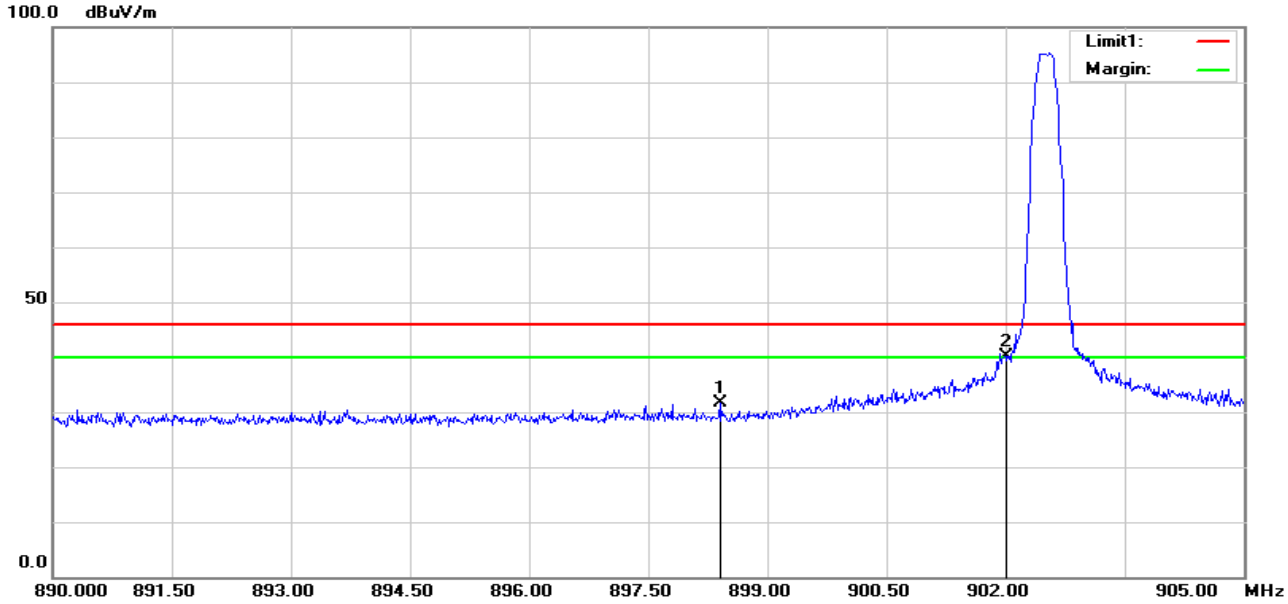
1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.

   Emission Level = Reading + Factor

2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.

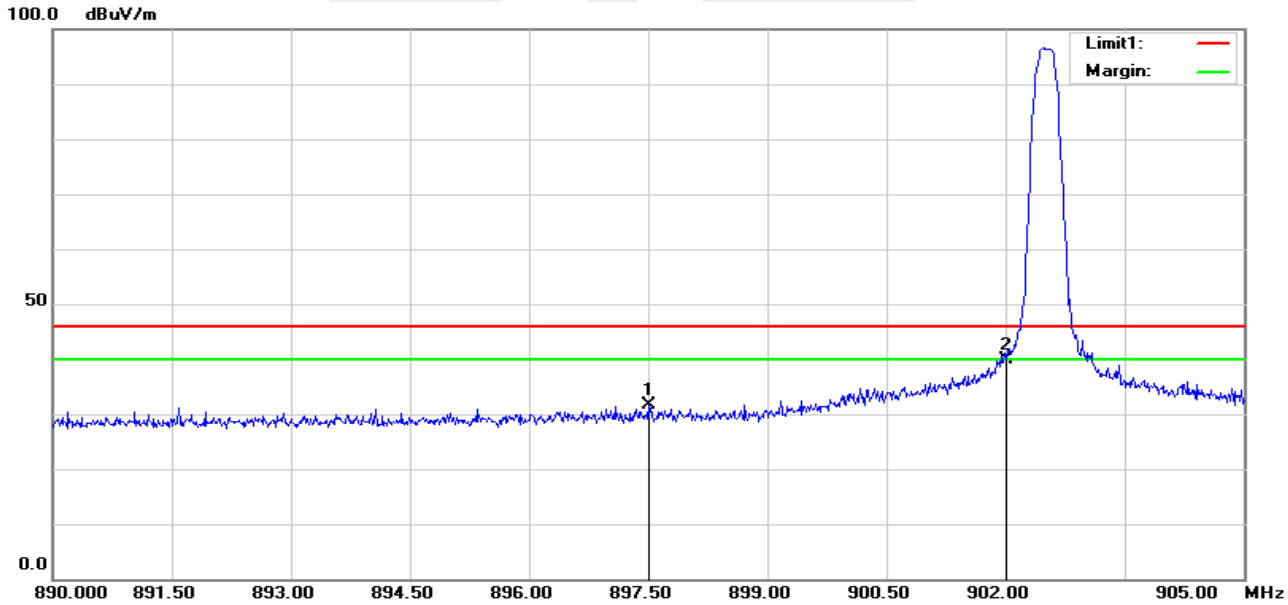
Band edge

Low channel
Horizontal



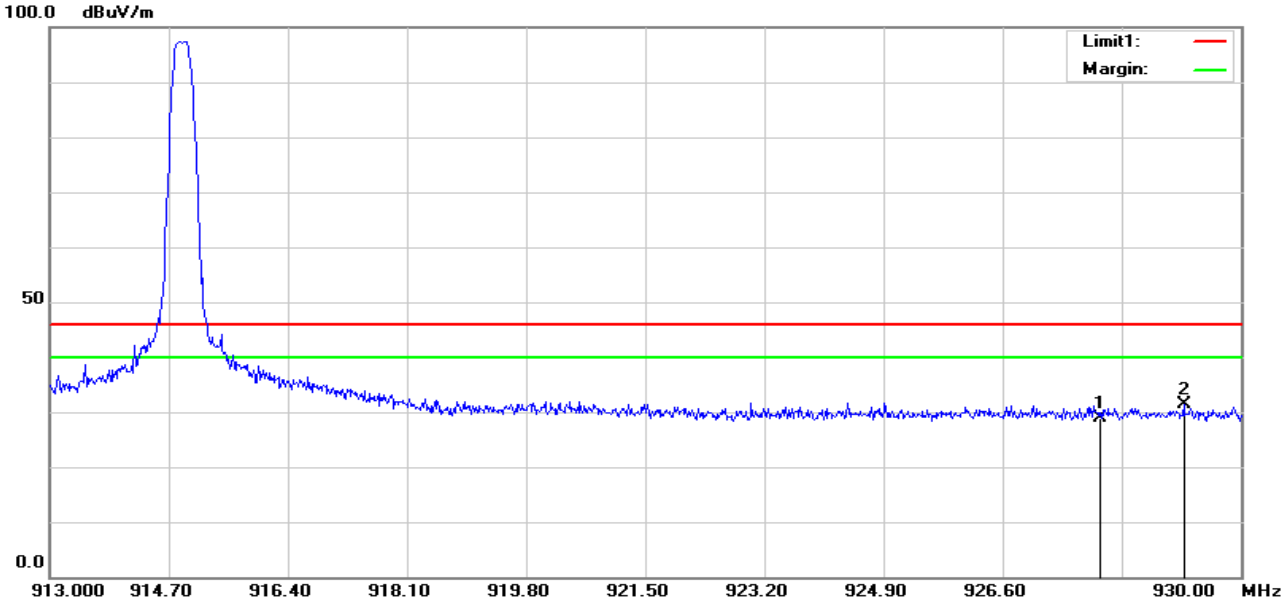
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	898.4000	32.02	-0.49	31.53	46.00	-14.47	peak
2	902.0000	40.62	-0.40	40.22	46.00	-5.78	peak

Vertical



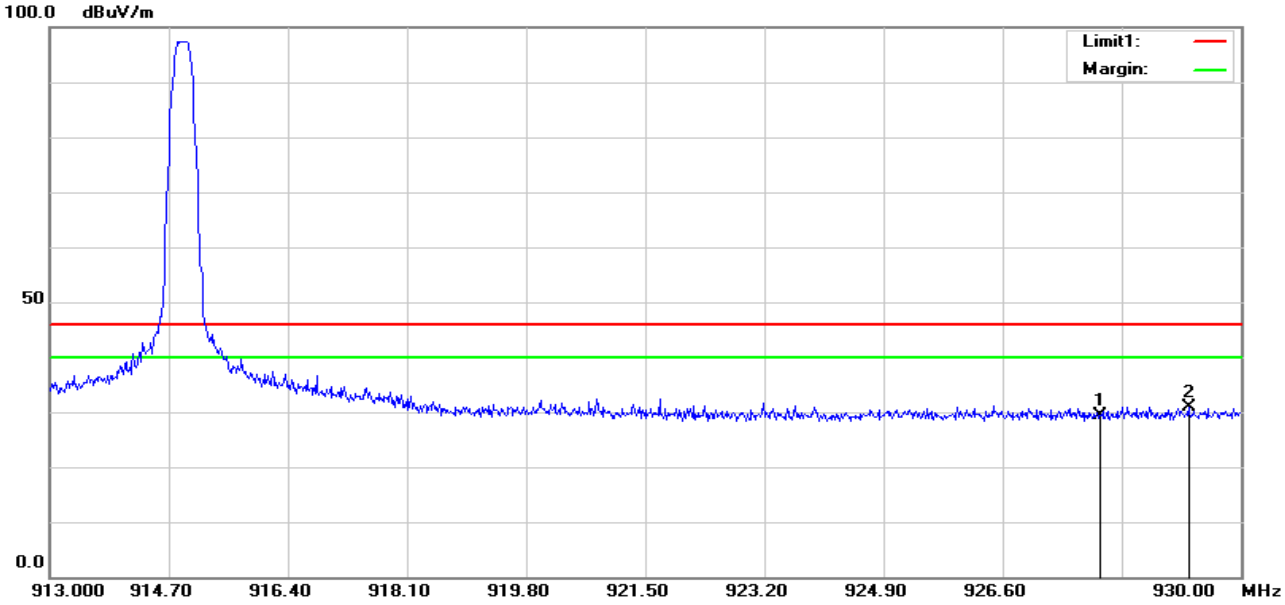
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	897.5000	32.02	-0.51	31.51	46.00	-14.49	peak
2	902.0000	40.18	-0.40	39.78	46.00	-6.22	peak

High channel
Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	928.0000	28.39	0.43	28.82	46.00	-17.18	peak
2	929.1840	30.81	0.50	31.31	46.00	-14.69	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	928.0000	29.07	0.43	29.50	46.00	-16.50	peak
2	929.2520	30.38	0.50	30.88	46.00	-15.12	peak

4. CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 LIMIT

According to FCC section 15.247(d), 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.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

.

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 850– 904 MHz Upper Band Edge: 914 – 930 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

Remark: Hopping on and Hopping off mode all have been tested, only worst case hopping off is reported.

4.3 TEST SETUP

The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

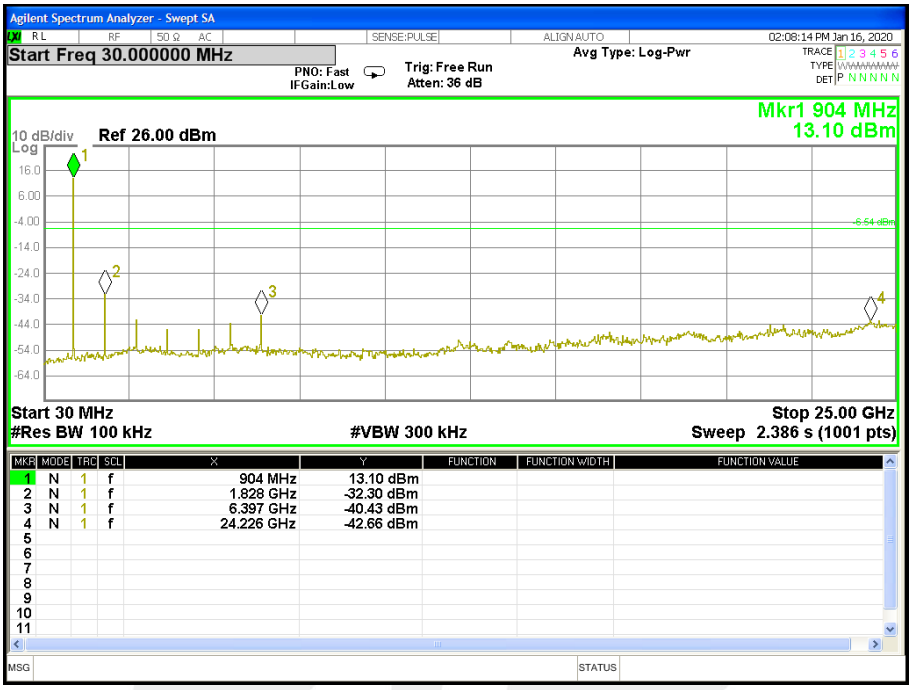
4.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

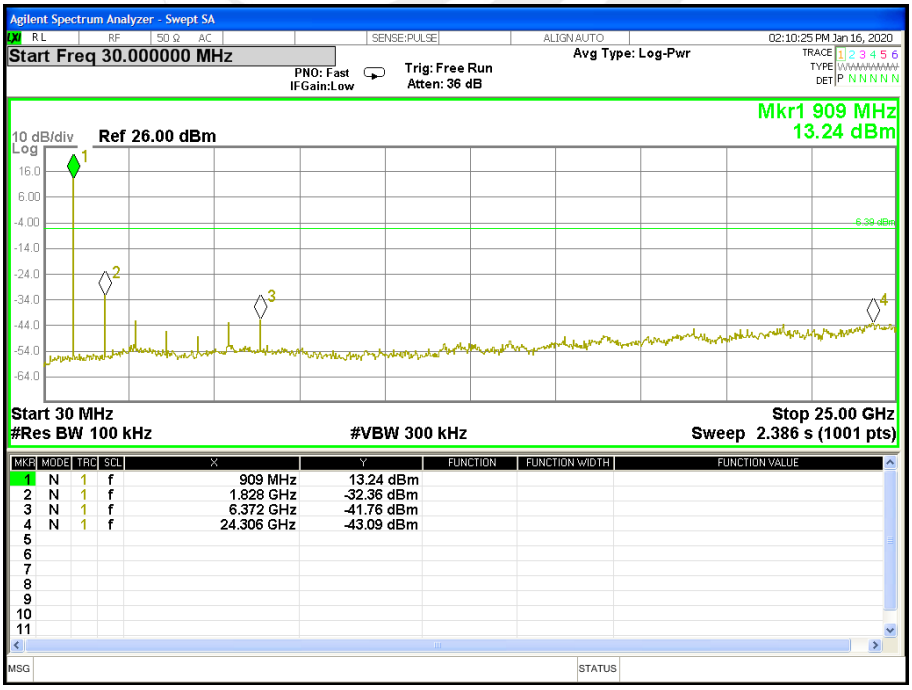
4.5 TEST RESULTS

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	LORA-00/32/63 CH	Test Voltage:	AC 120V/60Hz

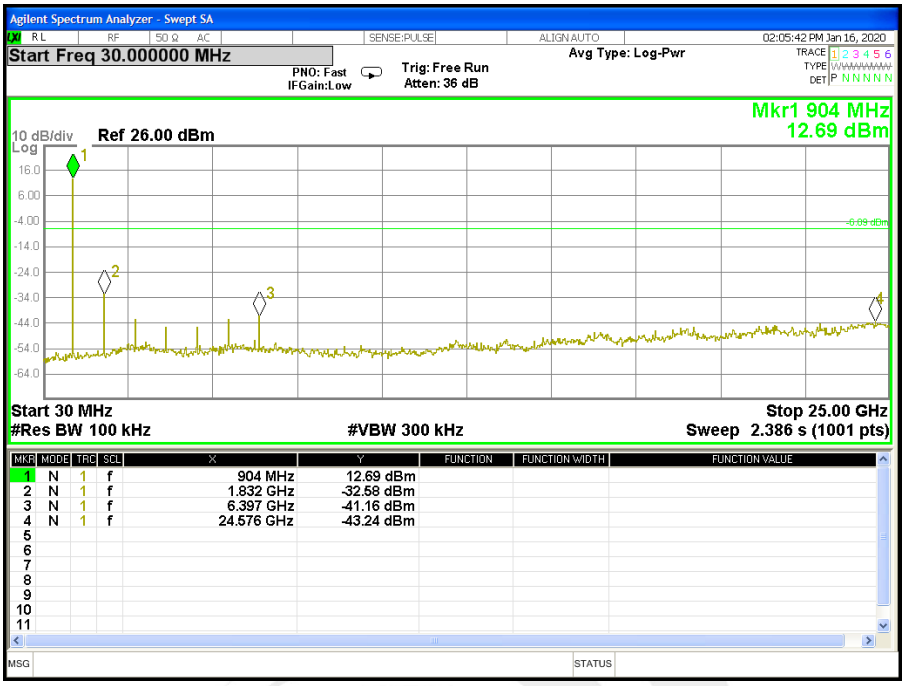
00 CH



32 CH

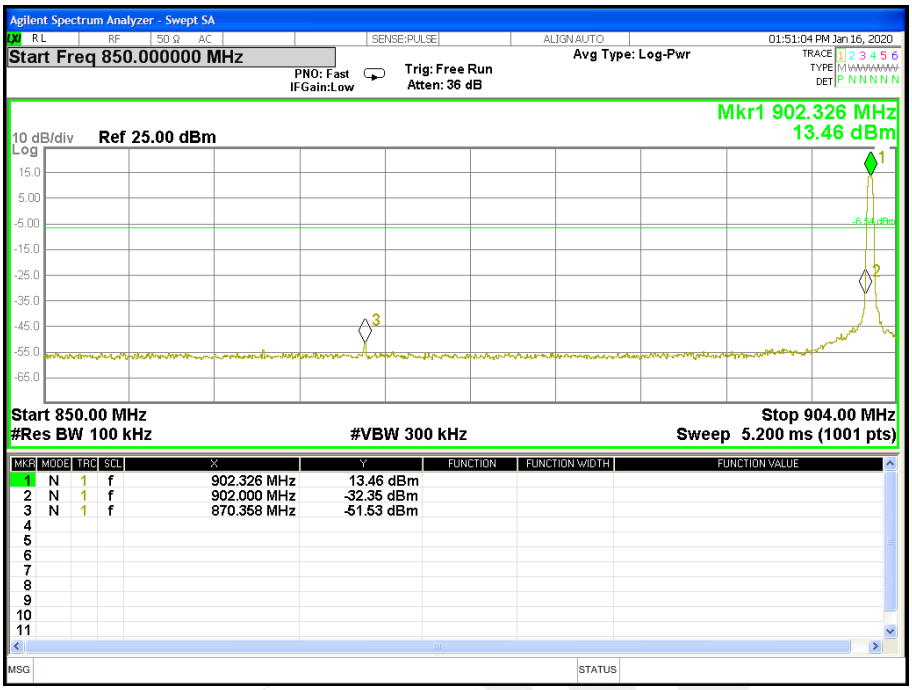


63 CH

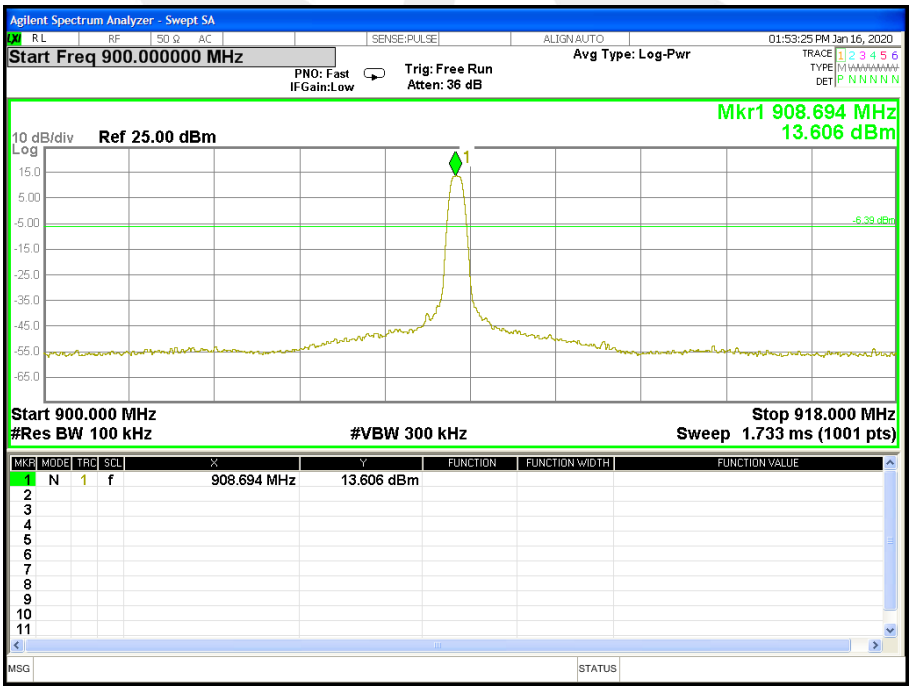

Agilent Spectrum Analyzer - Swept SA
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 36 dB
Avg Type: Log-Pwr
02:05:42 PM Jan 16, 2020
Mkr1 904 MHz
12.69 dBm
10 dB/div
Log
Ref 26.00 dBm
-6.69 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.386 s (1001 pts)
1 N 1 f 904 MHz 12.69 dBm
2 N 1 f 1.832 GHz -32.58 dBm
3 N 1 f 6.397 GHz -41.16 dBm
4 N 1 f 24.576 GHz -43.24 dBm

For Band edge(it's also the reference level for conducted spurious emission)

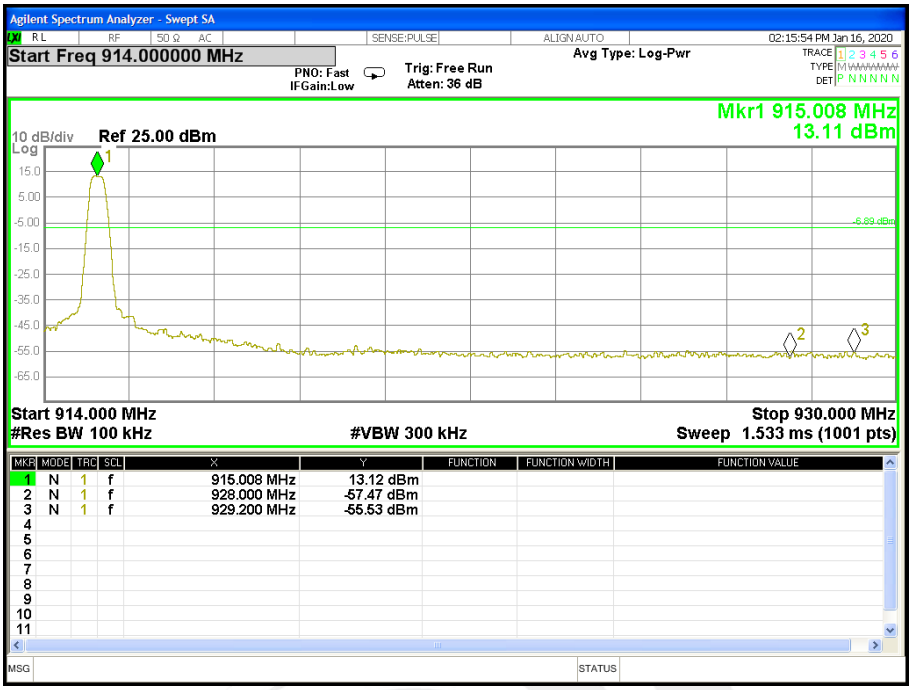
00 CH



32 CH

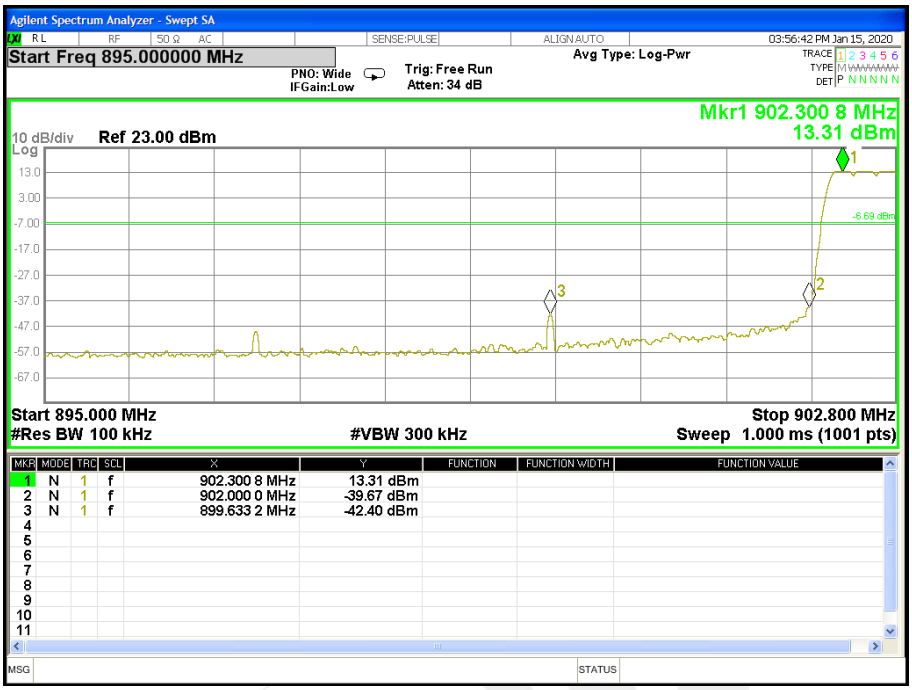


63 CH

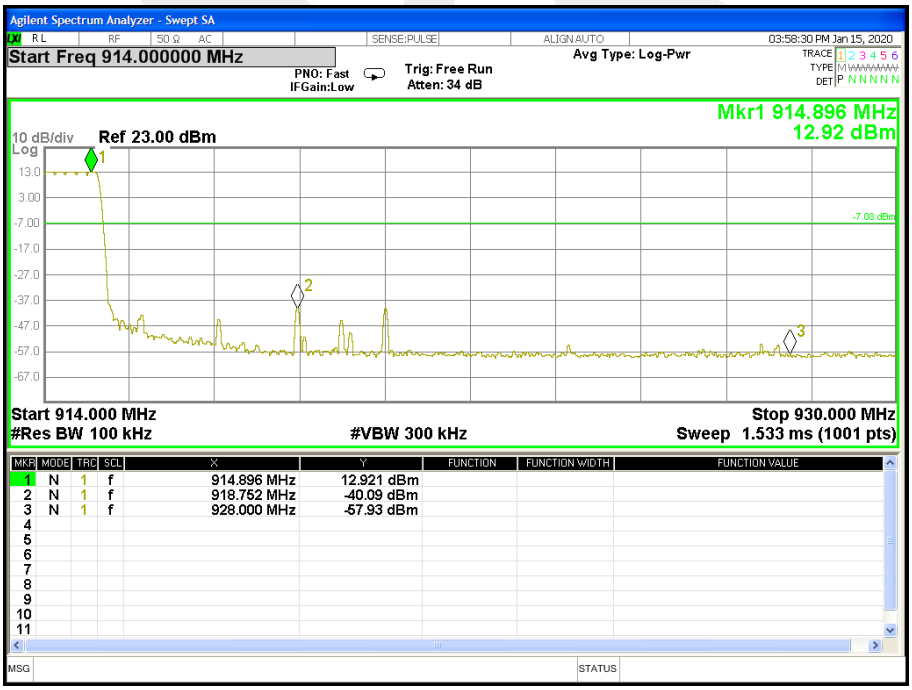

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
02:15:54 PM Jan 16, 2020
Start Freq 914.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 36 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 915.008 MHz
13.11 dBm
10 dB/div
Log
Ref 25.00 dBm
15.0
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-6.89 dBm
Start 914.000 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 930.000 MHz
Sweep 1.533 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 915.008 MHz 13.12 dBm
2 N 1 f 928.000 MHz -57.47 dBm
3 N 1 f 929.200 MHz -55.53 dBm
MSG
STATUS

For Hopping Band edge

00 CH



63 CH



5. NUMBER OF HOPPING CHANNEL

5.1 LIMIT

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

EUT 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating FrequencyRange
RB	10KHz
VB	10KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.2 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= 10KHz, VBW=10KHz, Sweep time = Auto.

5.3 TEST SETUP

5.4 EUT OPERATION CONDITIONS

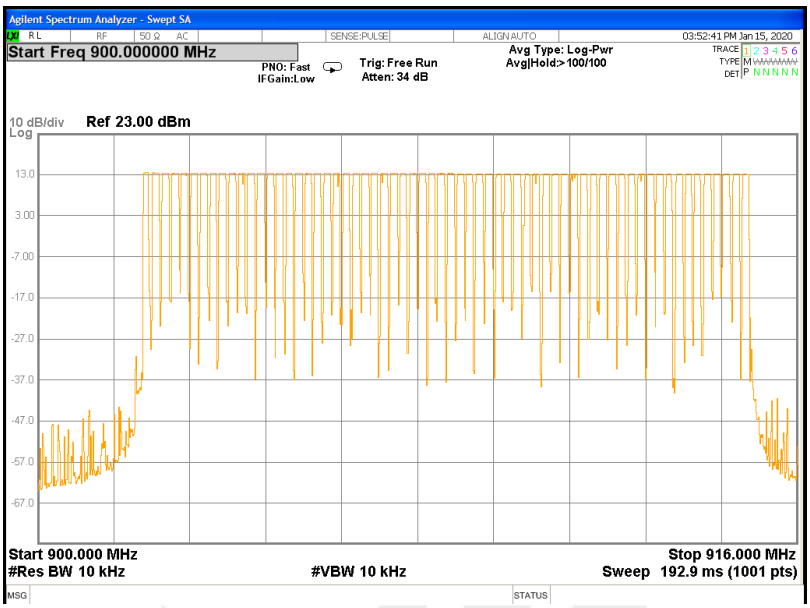
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.5 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%
Test Mode:	Hopping Mode -LORA Mode	Test Voltage:	AC 120V/60Hz

Number of Hopping Channel: 64

Hopping channel



6. AVERAGE TIME OF OCCUPANCY

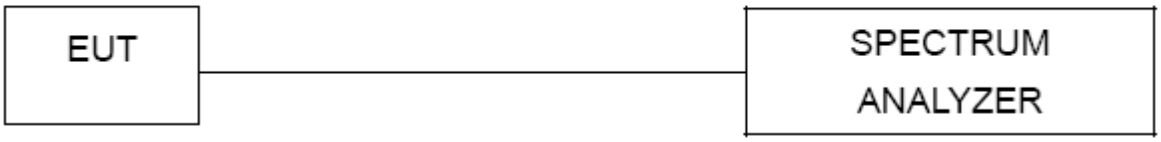
6.1 LIMIT

FCC Part 15.247,Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)(i)	Average Time of Occupancy	< 0.4sec	902-928	PASS

6.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer.
b. Set RBW =100KHz/VBW =100KHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is 20 second.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
f. Measure the maximum time duration of one single pulse.

6.3 TEST SETUP



6.4 EUT OPERATION CONDITIONS

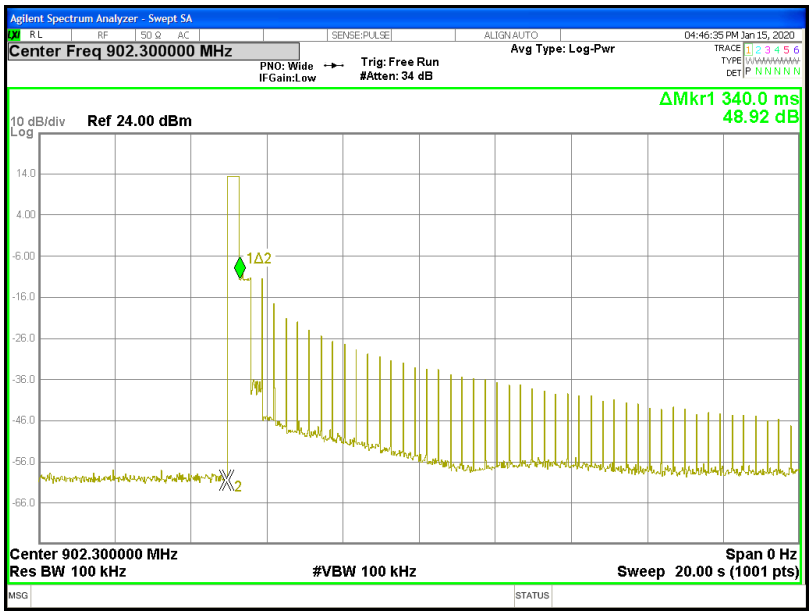
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.5 TEST RESULTS

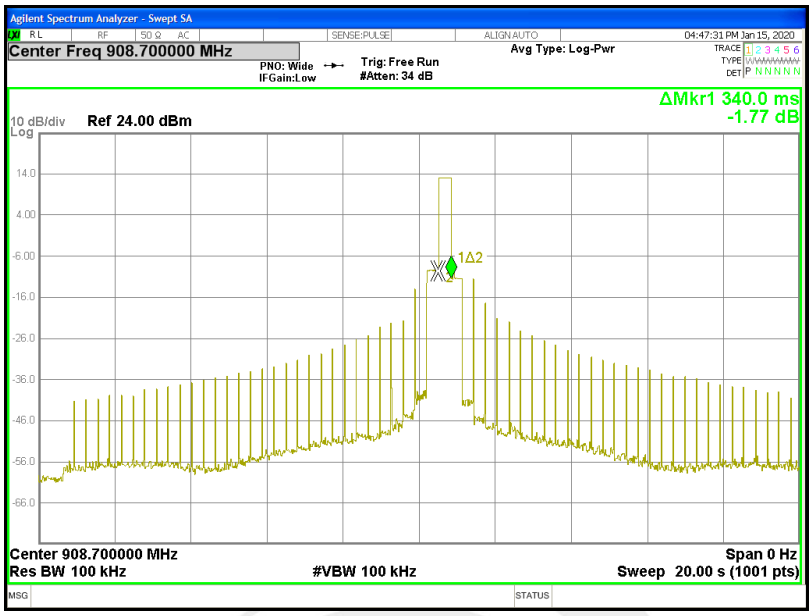
Temperature:	25℃	Relative Humidity:	50%
Test Mode:	LORA	Test Voltage:	AC 120V/60Hz

Frequency (MHz)	Channel	Pulse time(s)	Dwell Time(s)	Limits(s)	Observation period (s)	Burst Number	Verdict
902.3	lower	0.340	0.340	0.4	20.0	1	Pass
908.7	middle	0.340	0.340	0.4	20.0	1	Pass
914.9	higher	0.340	0.340	0.4	20.0	1	Pass

CH00



CH32


Agilent Spectrum Analyzer - Swept SA
Center Freq 908.700000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 34 dB
Avg Type: Log-Pwr
04:47:31 PM Jan 15, 2020
ΔMkr1 340.0 ms
-1.77 dB
10 dB/div
Log
Ref 24.00 dBm
Center 908.700000 MHz
Res BW 100 kHz
#VBW 100 kHz
Span 0 Hz
Sweep 20.00 s (1001 pts)

CH63


Agilent Spectrum Analyzer - Swept SA
Center Freq 914.900000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 34 dB
Avg Type: Log-Pwr
04:48:50 PM Jan 15, 2020
ΔMkr1 340.0 ms
-49.95 dB
10 dB/div
Log
Ref 24.00 dBm
Center 914.900000 MHz
Res BW 100 kHz
#VBW 100 kHz
Span 0 Hz
Sweep 20.00 s (1001 pts)

7. HOPPING CHANNEL SEPARATION MEASUREMEN

7.1 LIMIT

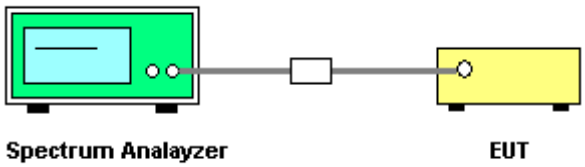
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Spectrum Parameter	Setting
Attenuation	Auto
Span	400KHz
RB	62KHz
VB	120 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
b. Spectrum Setting: RBW= 62KHz, VBW= 120KHz, Sweep time = Auto.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

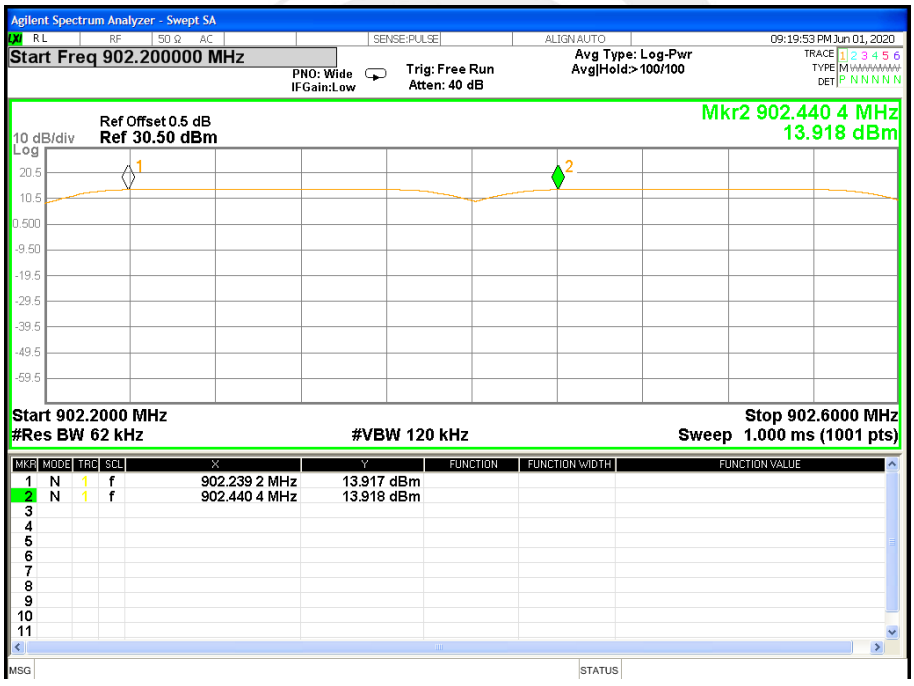
7.5 TEST RESULTS

Temperature:	25℃	Relative Humidity:	50%
Test Mode:	CH00 / CH32 / CH63	Test Voltage:	AC 120V/60Hz

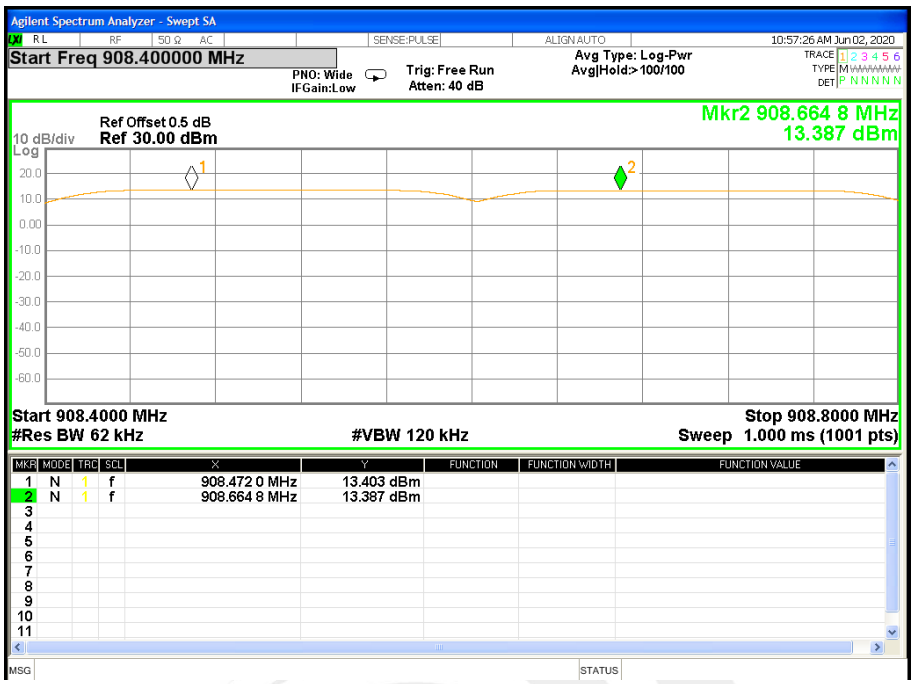
Frequency	Mark1 Frequency （MHz）	Mark2 Frequency （MHz）	Ch. Separation (MHz)	Limit (MHz)	Result
902.3 MHz	902.239	902.440	0.201	0.137	Complies
908.7 MHz	908.472	908.665	0.193	0.139	Complies
914.9 MHz	914.679	914.878	0.199	0.138	Complies

For LORA: Ch. Separation Limits: > 20dB bandwidth

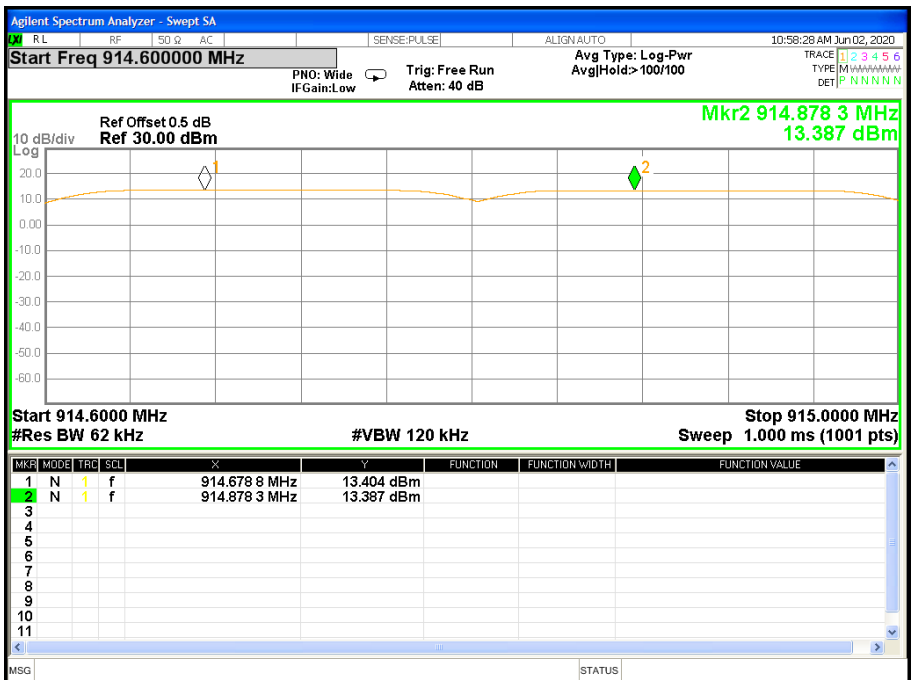
CH00



CH32


Agilent Spectrum Analyzer - Swept SA
RL RF 50 Ω AC SENSE:PULSE ALIGN AUTO 10:57:26 AM Jun 02, 2020
Start Freq 908.400000 MHz
PNO: Wide IFGain:Low Trig: Free Run Atten: 40 dB
Avg Type: Log-Pwr Avg|Hold:>100/100
TRACE 1 2 3 4 5 6 TYPE M DET P N N N N N
Ref Offset 0.5 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 908.664 8 MHz
13.387 dBm
20.0 10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0
Start 908.4000 MHz
#Res BW 62 kHz
#VBW 120 kHz
Stop 908.8000 MHz
Sweep 1.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 908.472 0 MHz 13.403 dBm
2 N 1 f 908.664 8 MHz 13.387 dBm
3 4 5 6 7 8 9 10 11
MSG STATUS

CH63


Agilent Spectrum Analyzer - Swept SA
RL RF 50 Ω AC SENSE:PULSE ALIGN AUTO 10:58:28 AM Jun 02, 2020
Start Freq 914.600000 MHz
PNO: Wide IFGain:Low Trig: Free Run Atten: 40 dB
Avg Type: Log-Pwr Avg|Hold:>100/100
TRACE 1 2 3 4 5 6 TYPE M DET P N N N N N
Ref Offset 0.5 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 914.878 3 MHz
13.387 dBm
20.0 10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0
Start 914.6000 MHz
#Res BW 62 kHz
#VBW 120 kHz
Stop 915.0000 MHz
Sweep 1.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 914.678 8 MHz 13.404 dBm
2 N 1 f 914.878 3 MHz 13.387 dBm
3 4 5 6 7 8 9 10 11
MSG STATUS

8. BANDWIDTH TEST

8.1 LIMIT

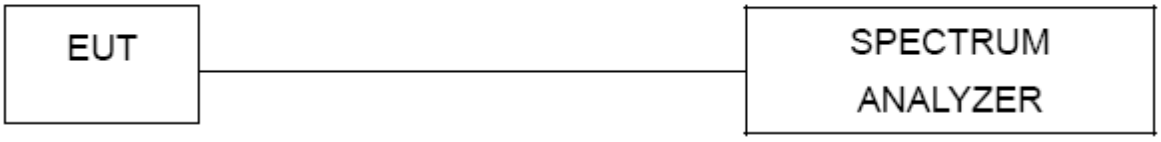
FCC Part15 15.247,Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)	Bandwidth	< 250kHz	902-928	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span	500KHz
RB	3 kHz
VB	9.1 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.2 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= 3KHz, VBW=9.1KHz, Sweep time = Auto.

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS

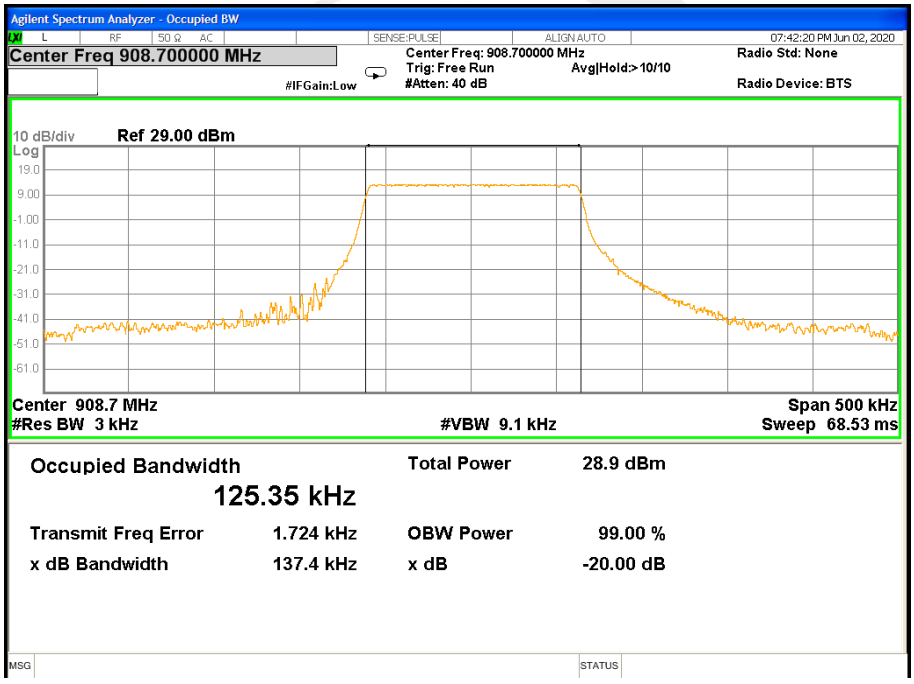
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.5 TEST RESULTS

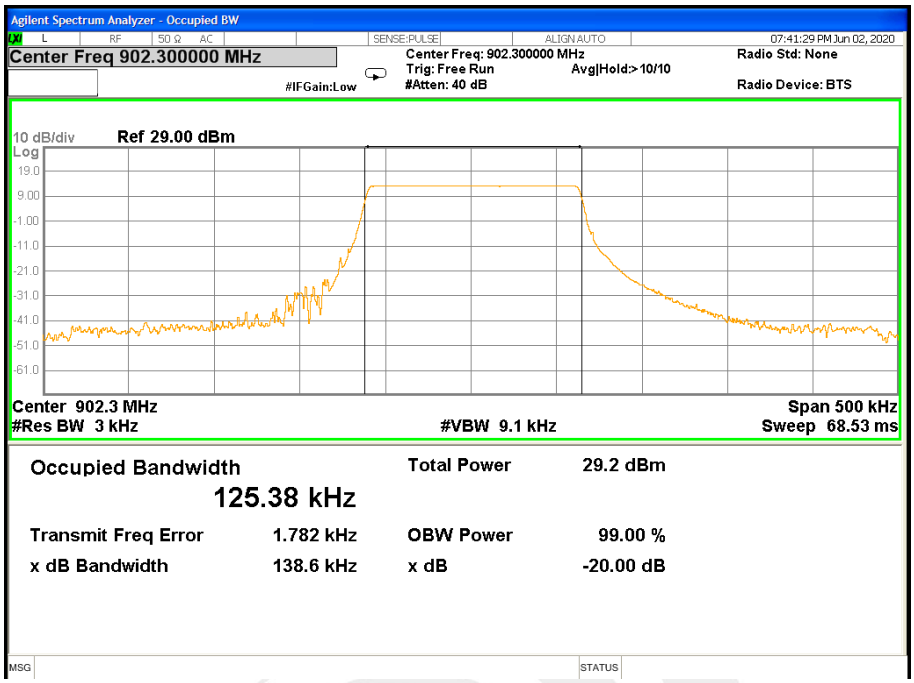
Temperature:	25℃	Relative Humidity:	50%
Test Mode:	CH00 / CH32 / C63	Test Voltage:	AC 120V/60Hz

Frequency	20dB Bandwidth (MHz)	Result
902.3 MHz	0.137	PASS
908.7 MHz	0.139	PASS
914.9 MHz	0.138	PASS

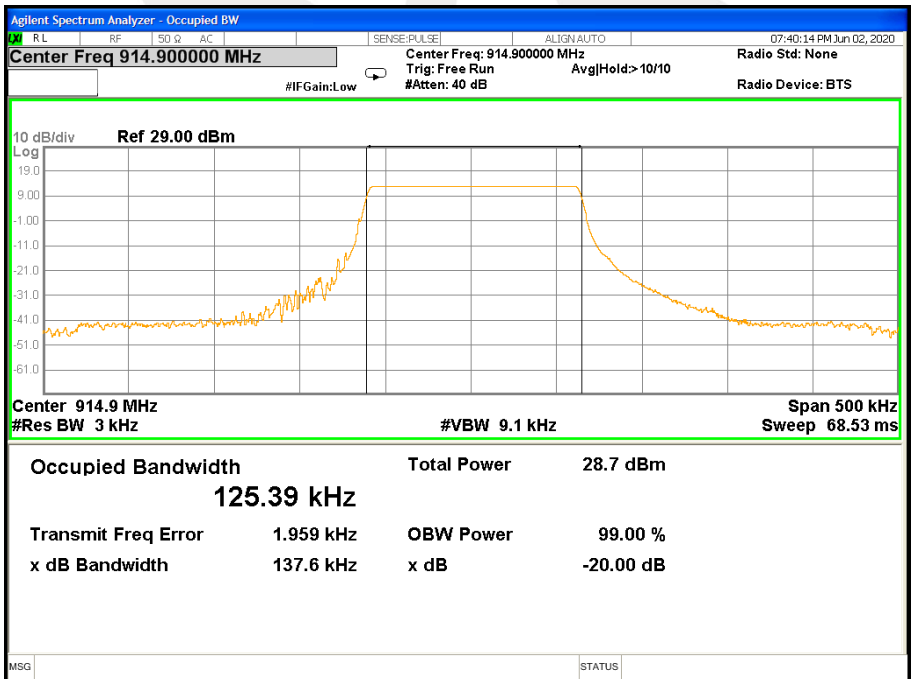
CH00



CH32


Agilent Spectrum Analyzer - Occupied BW
Center Freq 902.300000 MHz
Center Freq: 902.300000 MHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 40 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
07:41:29 PM Jun 02, 2020
10 dB/div
Ref 29.00 dBm
Log
19.0
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
Center 902.3 MHz
#Res BW 3 kHz
#VBW 9.1 kHz
Span 500 kHz
Sweep 68.53 ms
Occupied Bandwidth
125.38 kHz
Total Power 29.2 dBm
Transmit Freq Error 1.782 kHz
OBW Power 99.00 %
x dB Bandwidth 138.6 kHz
x dB -20.00 dB
MSG
STATUS

CH63


Agilent Spectrum Analyzer - Occupied BW
Center Freq 914.900000 MHz
Center Freq: 914.900000 MHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 40 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
07:40:14 PM Jun 02, 2020
10 dB/div
Ref 29.00 dBm
Log
19.0
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
Center 914.9 MHz
#Res BW 3 kHz
#VBW 9.1 kHz
Span 500 kHz
Sweep 68.53 ms
Occupied Bandwidth
125.39 kHz
Total Power 28.7 dBm
Transmit Freq Error 1.959 kHz
OBW Power 99.00 %
x dB Bandwidth 137.6 kHz
x dB -20.00 dB
MSG
STATUS

9. OUTPUT POWER TEST

9.1 LIMIT

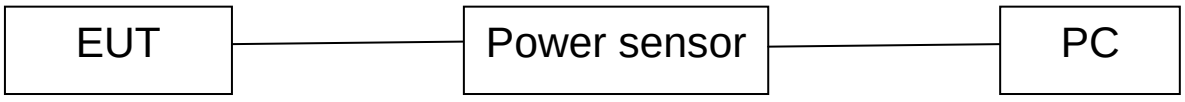
FCC Part 15.247,Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (b)(2)	Output Power	1 W	902-928	PASS

9.2 TEST PROCEDURE

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:

a) Use the following spectrum analyzer settings:
1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
2) RBW > 20 dB bandwidth of the emission being measured.
3) VBW ≥ RBW.
4) Sweep: Auto.
5) Detector function: Peak.
6) Trace: Max hold.
b) Allow trace to stabilize.
c) Use the marker-to-peak function to set the marker to the peak of the emission.
d) The indicated level is the peak output power, after any corrections for external attenuators and cables.
e) A plot of the test results and setup description shall be included in the test report.
NOTE—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.
PKPM1 Peak power meter method:
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DSS bandwidth and shall use a fast-responding diode detector.

9.3 TEST SETUP



9.4 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.

9.5 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz		

Channel Number	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)	Limit (dBm)
0	902.3	14.37	14.21	30.00
33	908.7	14.28	14.05	30.00
63	914.9	14.25	14.02	30.00

10. ANTENNA REQUIREMENT

10.1 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.

10.2 EUT ANTENNA

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

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※※※※※