TEST REPORT

Applicant:	FCC: SALUS North America, Inc. IC: SALUS North America, Inc.,
Address of Applicant:	FCC: 4700 Duke Drive Suite 200, Mason, Ohio 45040, United States IC: 4700 Duke Drive, Suite 200 Mason OH 45040 United States Of America
Manufacturer:	FCC: SALUS North America, Inc. IC: SALUS North America, Inc.,
Address of Manufacturer:	FCC: 4700 Duke Drive Suite 200, Mason, Ohio 45040, United States IC: 4700 Duke Drive, Suite 200 Mason OH 45040 United States Of America
Factory:	1. Computime Electronics (Shenzhen) Company Limited 2. Computime (Malaysia) Sdn Bhd
Address of Factory:	1. Yuekenguangyu Industrial Park,Kangqiao Road 88#, Danzhutou Community, Nanwan Street office,Longgang District, Shenzhen, China. 2. 3065, Tingkat Perusahaan 4A, Kawasan Perusahaan Bebas Prai, 13600 Prai, Penang, Malaysia

Equipment Under Test (EUT)

Product Name:	Z-wave Smart Plug
FCC Model No.:	SZA2AP1AC, SC428ZW
IC Model No.:	SC428ZW
Trade Mark:	Salus
FCC ID:	2AG86-SC428ZW
IC:	21063-SC428ZW
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249 RSS-Gen Issue 5 RSS-210 Issue 10
Date of sample receipt:	October 12, 2020
Date of Test:	October 13-26, 2020
Date of report issued:	October 26, 2020
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Luo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*October 26, 2020*	*Original*

Prepared By:	Tiger. Chen	***Date:***	*October 26, 2020*
	Project Engineer		
Check By:	Robinson Luo	***Date:***	*October 26, 2020*
	Reviewer		

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4 Test Summary

Test Item	Section	Result
Antenna requirement	RSS-Gen Section 6.8	Pass
AC Power Line Conducted Emission	15.207 RSS-Gen Section 8.8	Pass
Field strength of the fundamental signal	15.249 (a) RSS-210 B10(a)	Pass
Spurious emissions	15.249 (a) (d)/15.209 RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10	Pass
Band edge	15.249 (d)/15.205 RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10	Pass
20dB Occupied Bandwidth and 99% Occupied Bandwidth	15.215 (c) RSS-Gen 6.7	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.10: 2013 and ANSI C63.4: 2014.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	Z-wave Smart Plug
FCC Model No.:	SZA2AP1AC, SC428ZW
IC Model No.:	SC428ZW
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.	
Serial No.:	10365-14201-17494-16521-21567-47069-56847-02080
Hardware Version:	SBR2
Software Version:	SZA2AP1AC_V1.04_20201009
Test sample(s) ID:	GTS202010000025-1
Sample(s) Status:	Engineer sample
Operation Frequency:	908.4MHz~916MHz
Modulation type:	FSK, GFSK
Antenna Type:	Integral Antenna
Antenna gain:	0dBi(declare by applicant)
Power supply:	AC 120V, 60Hz, max.15A

Operation Frequency each of channel	
Channel	Frequency
The lowest channel	908.4MHz
The middle channel	908.42MHz
The Highest channel	916MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. All modulation have been tested, only worse case GFSK is reported .

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	90.84	93.61	92.42

5.3 Description of Support Units

N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

- **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0.

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.8 Additional Instructions

EUT Software Settings:

Mode	Special test firmware was pre built in by manufacturer, power set default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:
FCC part 15.203 requirement: 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 or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
RSS-Gen 6.8: The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list. For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).
EUT Antenna:
The antenna is Integral antenna, the best case gain of the antenna is 0 dBi, reference to the appendix II for details

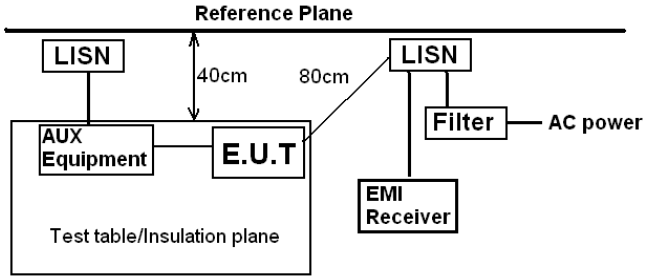
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207 RSS-Gen Section 8.8
Test Method:	ANSI C63.10:2013 and RSS-Gen
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test setup:



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

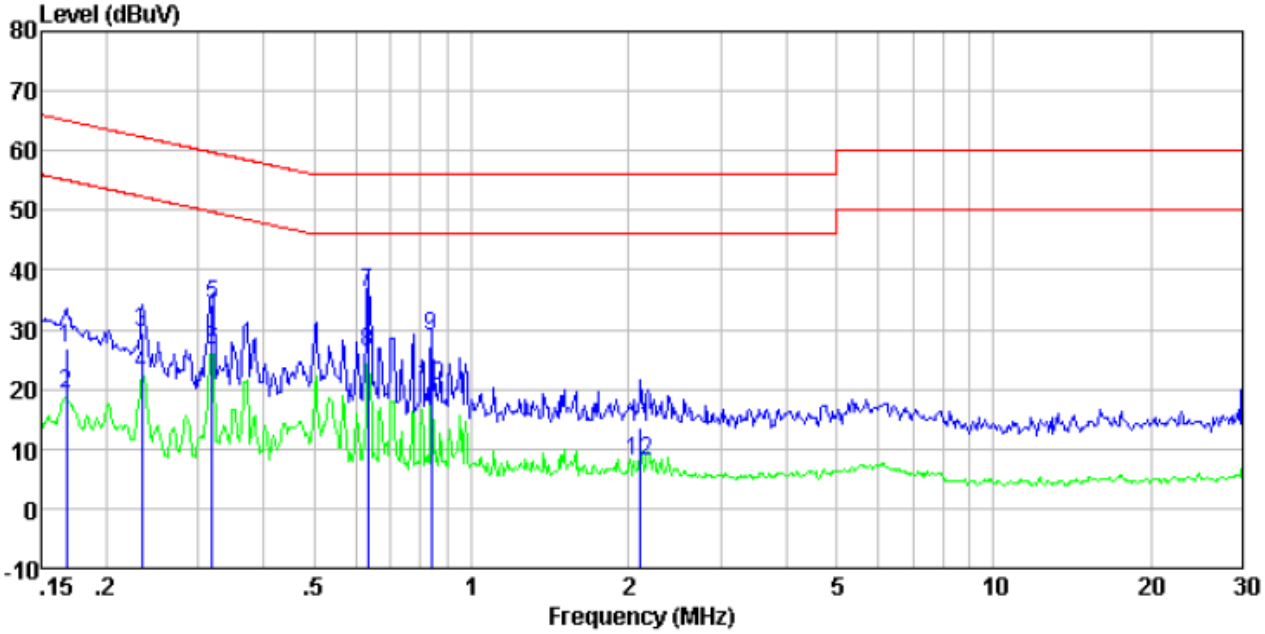
Test procedure:

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.

Test Instruments:	Refer to section 6.0 for details
Test mode:	AC 120V 60Hz
Test results:	Pass

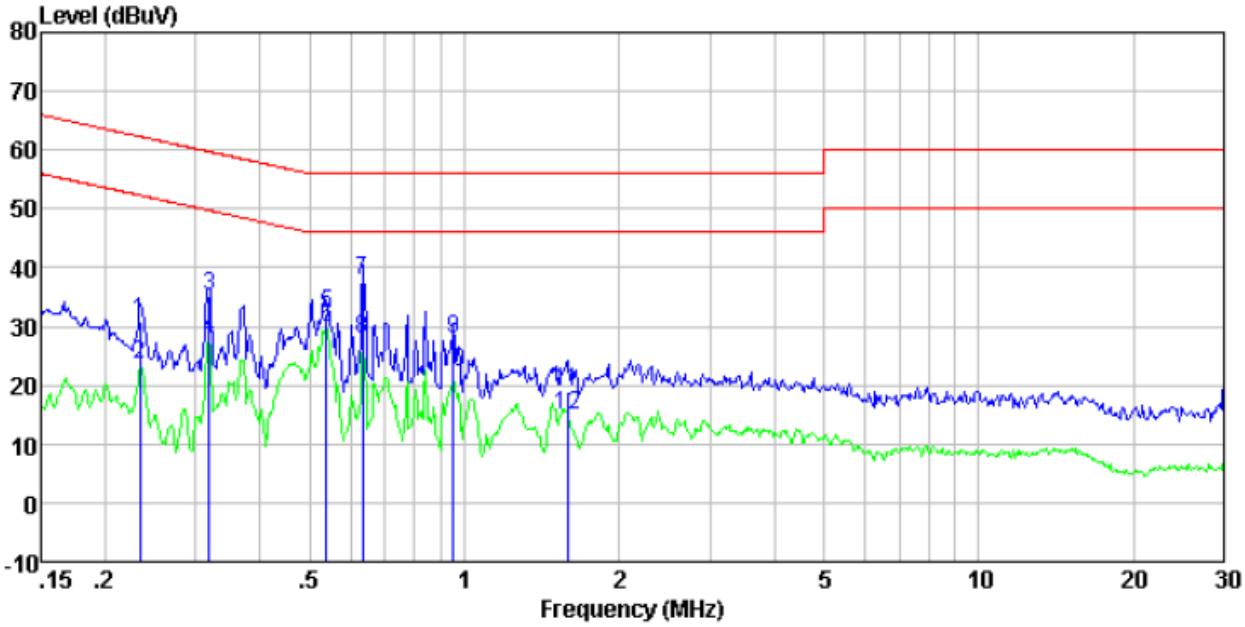
Measurement data:

Line:



Freq MHz	Reading level dBpW	LISN/ISN factor dB	Cable loss dB	Level dBpW	Limit level dBpW	Over limit dB	Remark
0.17	6.31	20.40	0.09	26.80	65.08	-38.28	QP
0.17	-1.33	20.40	0.09	19.16	55.08	-35.92	Average
0.23	9.07	20.40	0.11	29.58	62.30	-32.72	QP
0.23	1.93	20.40	0.11	22.44	52.30	-29.86	Average
0.32	13.79	20.39	0.10	34.28	59.75	-25.47	QP
0.32	6.05	20.39	0.10	26.54	49.75	-23.21	Average
0.63	15.80	20.28	0.12	36.20	56.00	-19.80	QP
0.63	5.82	20.28	0.12	26.22	46.00	-19.78	Average
0.84	8.51	20.23	0.14	28.88	56.00	-27.12	QP
0.84	0.17	20.23	0.14	20.54	46.00	-25.46	Average
2.11	-6.92	20.20	0.18	13.46	56.00	-42.54	QP
2.11	-12.52	20.20	0.18	7.86	46.00	-38.14	Average

Neutral:



Freq MHz	Reading level dBpW	LISN/ISN factor dB	Cable loss dB	Level dBpW	Limit level dBpW	Over limit dB	Remark
0.23	10.20	20.40	0.11	30.71	62.30	-31.59	QP
0.23	3.06	20.40	0.11	23.57	52.30	-28.73	Average
0.32	14.80	20.39	0.10	35.29	59.75	-24.46	QP
0.32	7.23	20.39	0.10	27.72	49.75	-22.03	Average
0.54	11.83	20.30	0.11	32.24	56.00	-23.76	QP
0.54	9.59	20.30	0.11	30.00	46.00	-16.00	Average
0.63	17.27	20.28	0.12	37.67	56.00	-18.33	QP
0.63	7.40	20.28	0.12	27.80	46.00	-18.20	Average
0.95	7.44	20.21	0.15	27.80	56.00	-28.20	QP
0.95	1.69	20.21	0.15	22.05	46.00	-23.95	Average
1.59	-1.39	20.20	0.17	18.98	56.00	-37.02	QP
1.59	-5.30	20.20	0.17	15.07	46.00	-30.93	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 RSS-210 B10(a)& RSS-210 B10(b)& RSS-Gen Clause 8.9&8.10
Test Method:	ANSI C63.10:2013 and RSS-Gen
Test Frequency Range:	9kHz to 10GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:
(Field strength of the fundamental signal)

Frequency	Limit (dBuV/m @3m)	Remark
902-928MHz	94.00	Average Value
	114.00	Peak Value

Limit:
(Spurious Emissions)

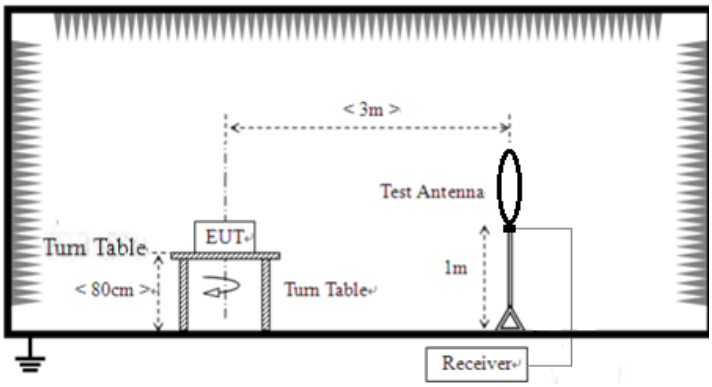
Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	30m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

Limit:
(band edge)

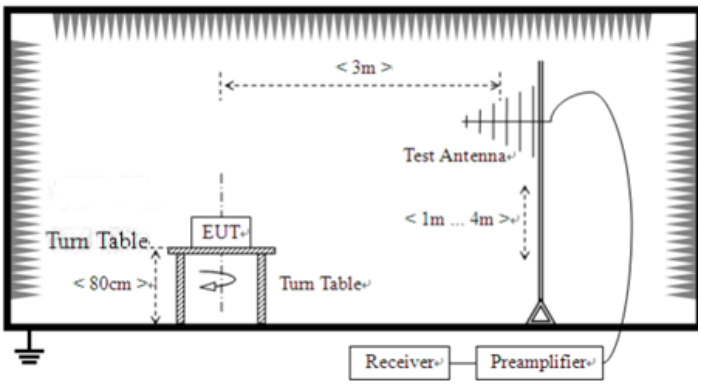
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

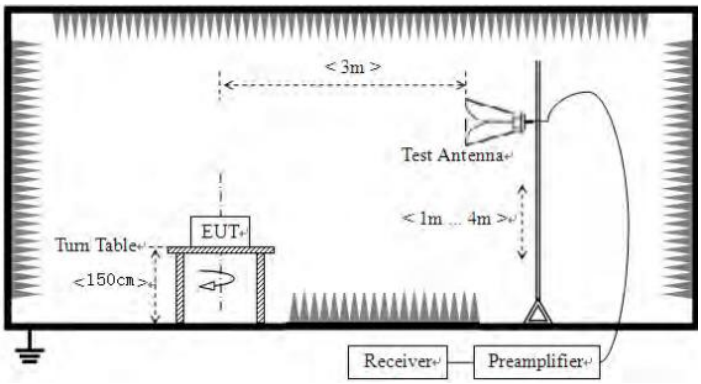
Below 30MHz



Below 1GHz



Above 1GHz



Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Test Instruments:	Refer to section 6.0 for details					

Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

7.3.1 Field Strength of The Fundamental Signal and spurious emissions

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.4	103.58	22.34	4.88	37.59	93.21	94	-0.79	Vertical
908.4	103.98	22.34	4.88	37.59	93.61	94	-0.39	Horizontal
908.42	103.57	22.34	4.88	37.59	93.2	94	-0.8	Vertical
908.42	103.19	22.34	4.88	37.59	92.82	94	-1.18	Horizontal
916	103.54	22.35	4.91	37.58	93.22	94	-0.78	Vertical
916	103.23	22.35	4.91	37.58	92.91	94	-1.09	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.4	102.24	22.34	4.88	37.59	91.87	94	-2.13	Vertical
908.4	102.33	22.34	4.88	37.59	91.96	94	-2.04	Horizontal
908.42	102.11	22.34	4.88	37.59	91.74	94	-2.26	Vertical
908.42	102.48	22.34	4.88	37.59	92.11	94	-1.89	Horizontal
916	102.7	22.35	4.91	37.58	92.38	94	-1.62	Vertical
916	101.54	22.35	4.91	37.58	91.22	94	-2.78	Horizontal

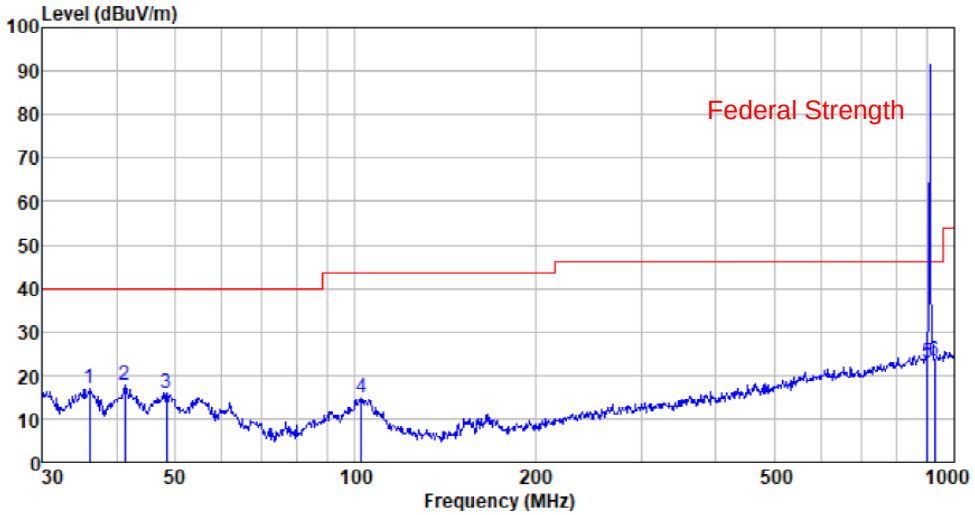
7.3.2 Spurious emissions

- Below 30MHz

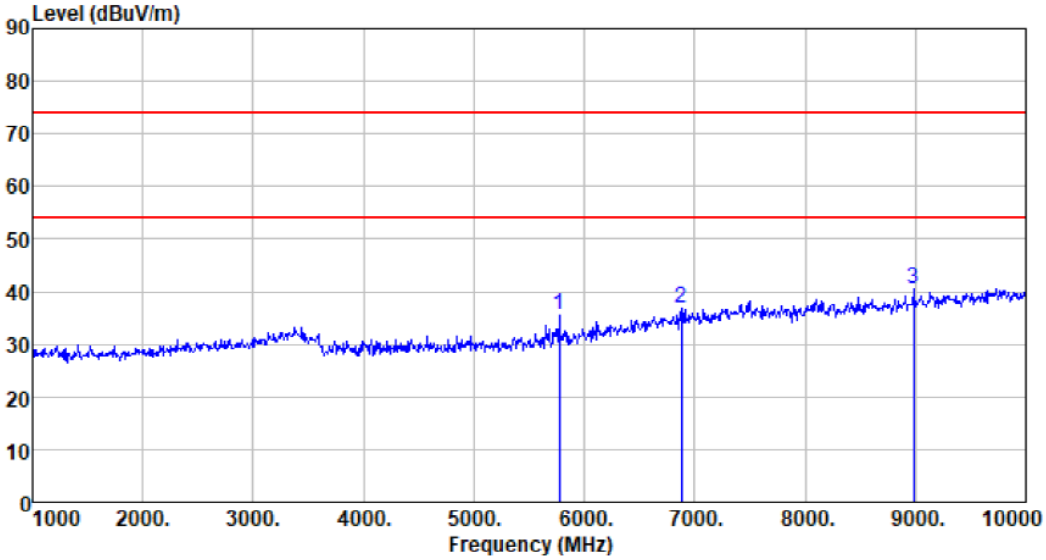
  The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

■ Above 30MHz

Test mode:	transmitting mode (908.4MHz)	Antenna Polarity:	Horizontal

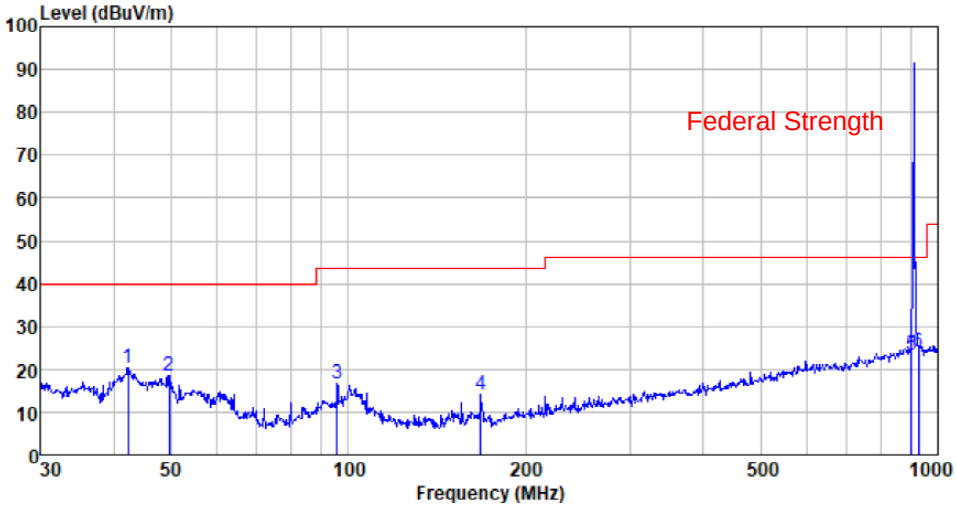


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
36.001	40.24	11.52	0.62	35.42	16.96	40.00	-23.04	QP
41.277	40.48	12.21	0.68	35.74	17.63	40.00	-22.37	QP
48.502	39.10	12.29	0.76	36.11	16.04	40.00	-23.96	QP
102.360	38.56	11.89	1.21	36.74	14.92	43.50	-28.58	QP
902.000	33.25	22.30	4.87	37.60	22.82	46.00	-23.18	QP
928.000	33.46	22.41	4.96	37.57	23.26	46.00	-22.74	QP

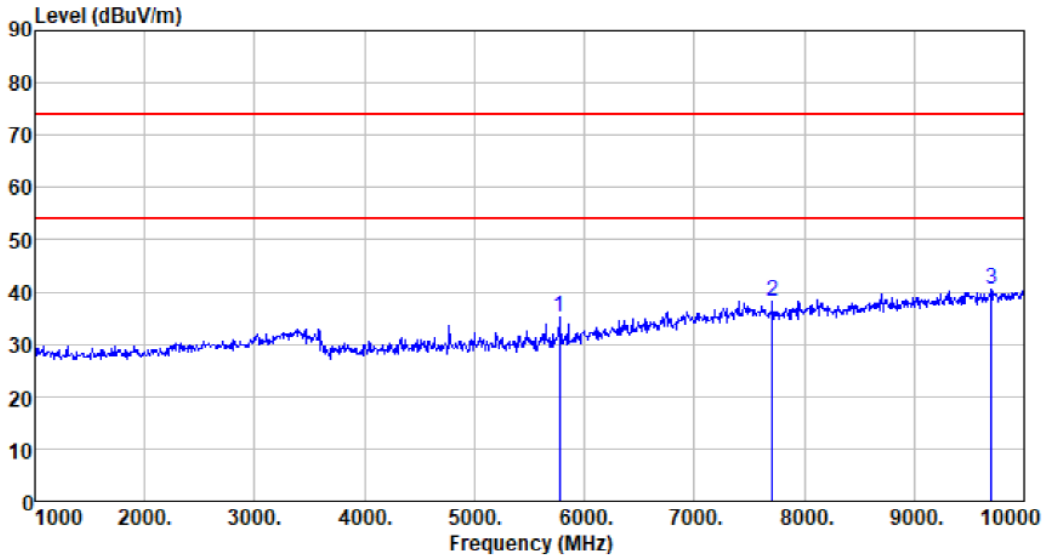


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
5770.000	34.54	32.18	5.44	36.71	35.45	74.00	-38.55	Peak
6877.000	31.17	35.39	6.14	35.78	36.92	74.00	-37.08	Peak
8983.000	30.00	37.50	7.56	34.50	40.56	74.00	-33.44	Peak

Test mode:	transmitting mode (908.4 MHz)	Antenna Polarity:	Vertical

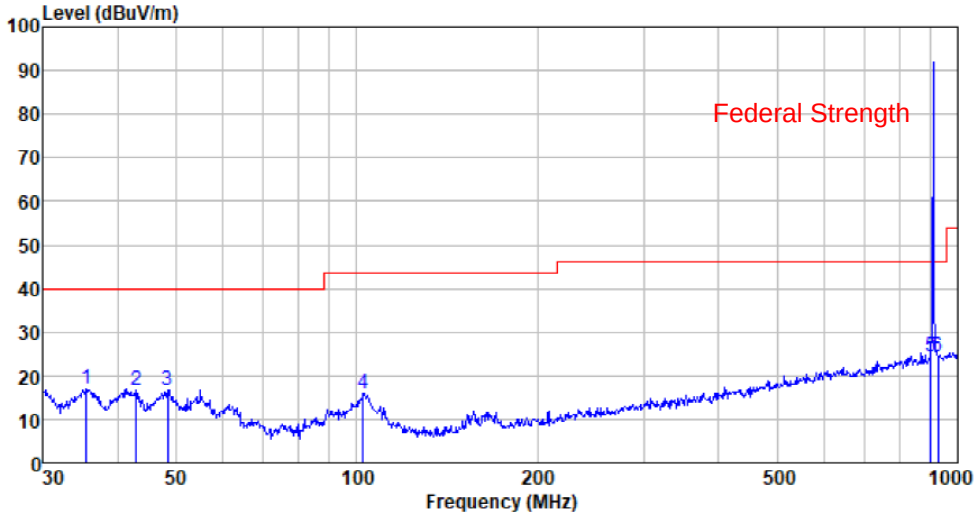


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
42.302	43.21	12.23	0.69	35.79	20.34	40.00	-19.66	QP
49.707	41.50	12.30	0.77	36.17	18.40	40.00	-21.60	QP
95.762	40.42	11.59	1.16	36.69	16.48	43.50	-27.02	QP
167.824	41.20	8.46	1.67	37.18	14.15	43.50	-29.35	QP
902.000	33.76	22.30	4.87	37.60	23.33	46.00	-22.67	QP
928.000	34.29	22.41	4.96	37.57	24.09	46.00	-21.91	QP

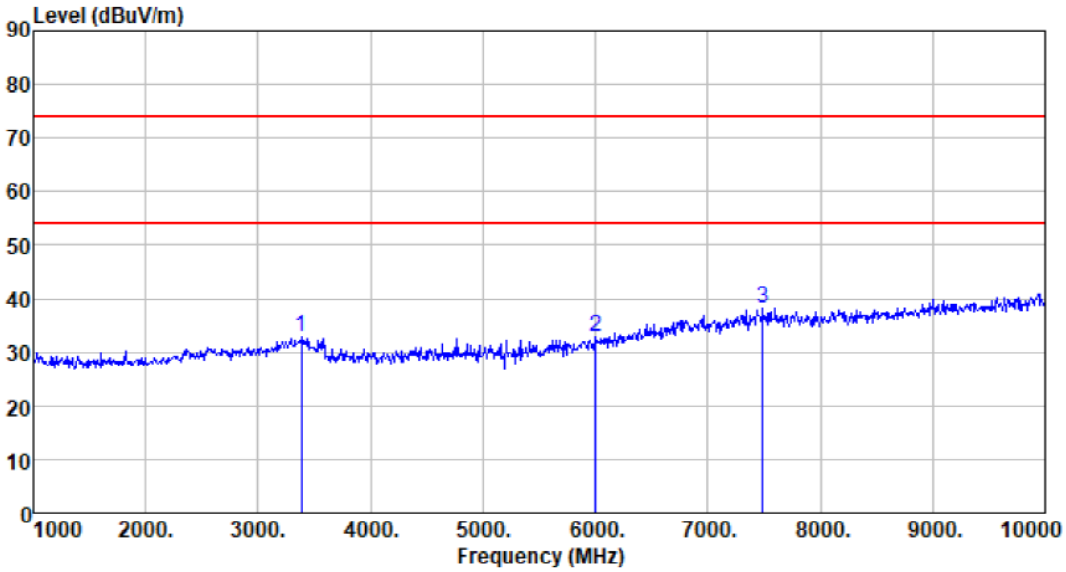


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
5770.000	34.21	32.18	5.44	36.71	35.12	74.00	-38.88	Peak
7714.000	29.96	37.07	6.79	35.48	38.34	74.00	-35.66	Peak
9703.000	29.48	38.03	8.01	34.99	40.53	74.00	-33.47	Peak

Test mode:	transmitting mode (908.42MHz)	Antenna Polarity:	Horizontal

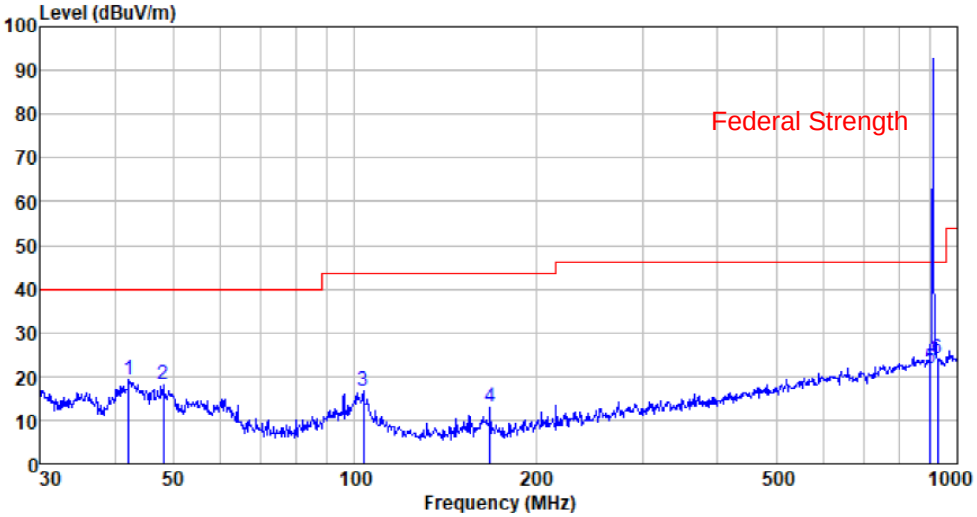


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.499	40.43	11.42	0.61	35.39	17.07	40.00	-22.93	QP
42.900	39.61	12.23	0.69	35.83	16.70	40.00	-23.30	QP
48.502	39.61	12.29	0.76	36.11	16.55	40.00	-23.45	QP
102.360	39.54	11.89	1.21	36.74	15.90	43.50	-27.60	QP
902.000	34.75	22.30	4.87	37.60	24.32	46.00	-21.68	QP
928.000	34.57	22.41	4.96	37.57	24.37	46.00	-21.63	QP

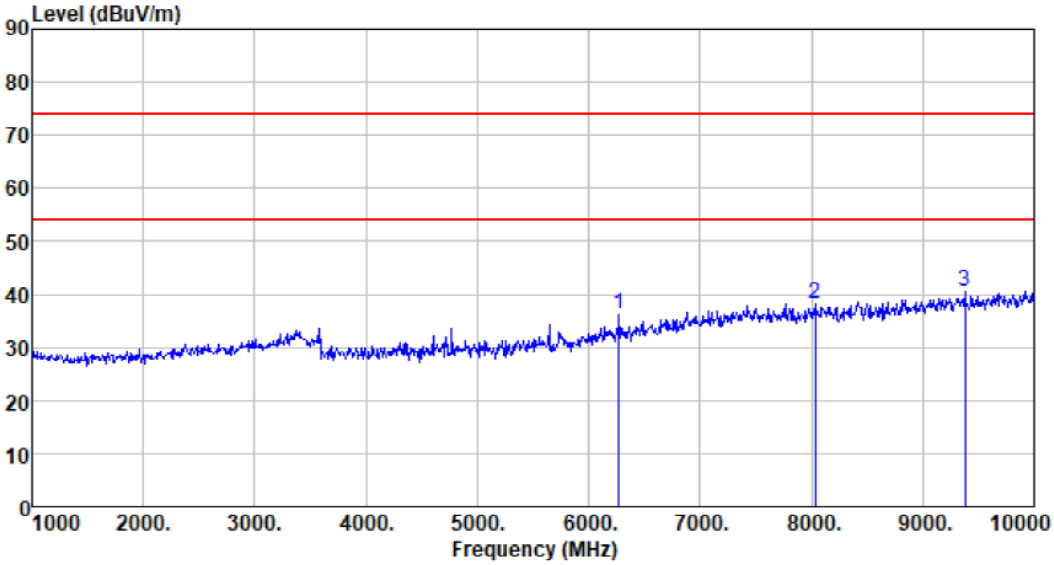


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
3385.000	38.14	28.40	3.64	37.34	32.84	74.00	-41.16	Peak
6004.000	31.18	32.60	5.61	36.40	32.99	74.00	-41.01	Peak
7489.000	30.25	36.80	6.83	35.54	38.34	74.00	-35.66	Peak

Test mode:	transmitting mode (908.42MHz)	Antenna Polarity:	Vertical

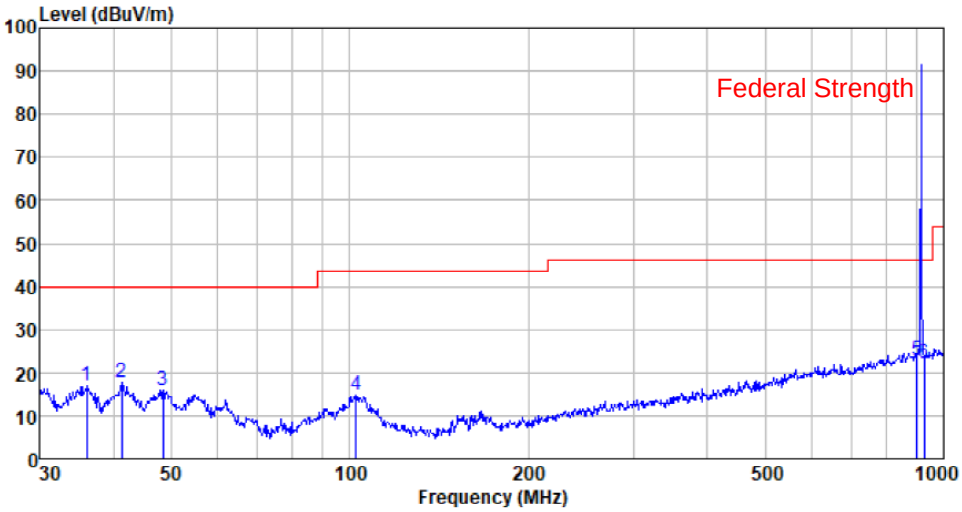


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
42.154	42.19	12.22	0.69	35.79	19.31	40.00	-20.69	QP
48.163	41.19	12.28	0.75	36.09	18.13	40.00	-21.87	QP
103.442	40.35	11.78	1.22	36.75	16.60	43.50	-26.90	QP
167.824	40.05	8.46	1.67	37.18	13.00	43.50	-30.50	QP
902.000	32.09	22.30	4.87	37.60	21.66	46.00	-24.34	QP
928.000	34.07	22.41	4.96	37.57	23.87	46.00	-22.13	QP

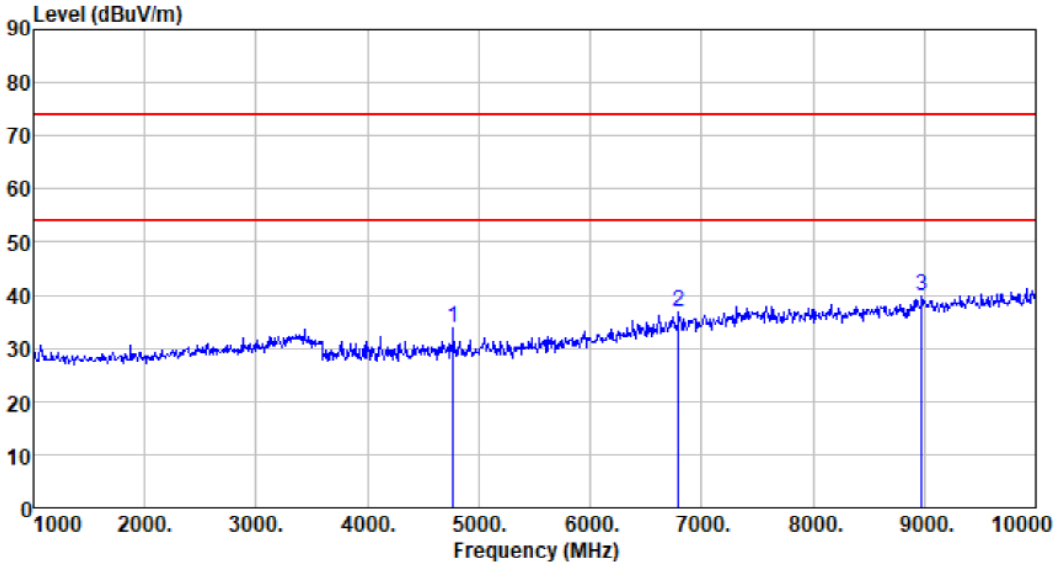


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
6274.000	33.27	33.56	5.72	36.20	36.35	74.00	-37.65	Peak
8038.000	29.47	37.39	6.76	35.36	38.26	74.00	-35.74	Peak
9379.000	29.82	37.72	7.85	34.76	40.63	74.00	-33.37	Peak

Test mode:	transmitting mode (916MHz)	Antenna Polarity:	Horizontal

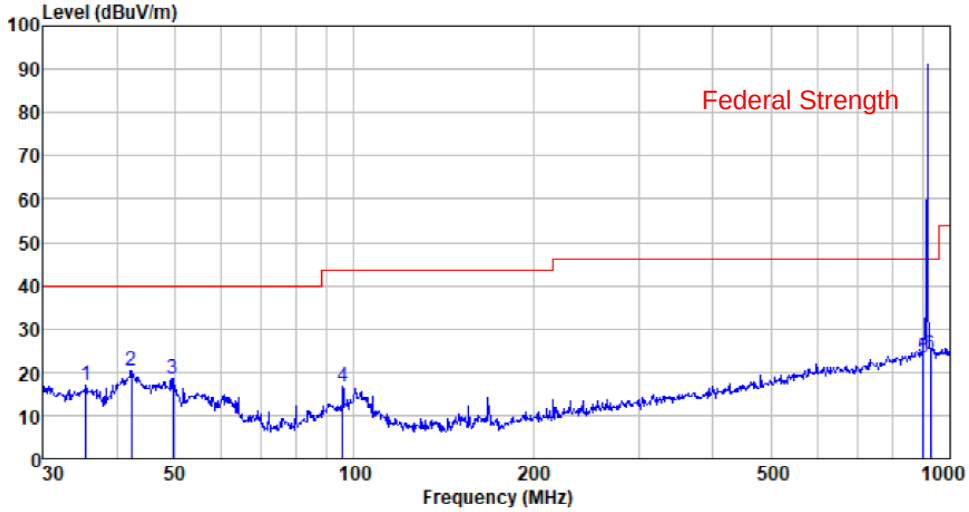


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
36.001	40.24	11.52	0.62	35.42	16.96	40.00	-23.04	QP
41.277	40.48	12.21	0.68	35.74	17.63	40.00	-22.37	QP
48.502	39.10	12.29	0.76	36.11	16.04	40.00	-23.96	QP
102.360	38.56	11.89	1.21	36.74	14.92	43.50	-28.58	QP
902.000	33.25	22.30	4.87	37.60	22.82	46.00	-23.18	QP
928.000	32.46	22.41	4.96	37.57	22.26	46.00	-23.74	QP

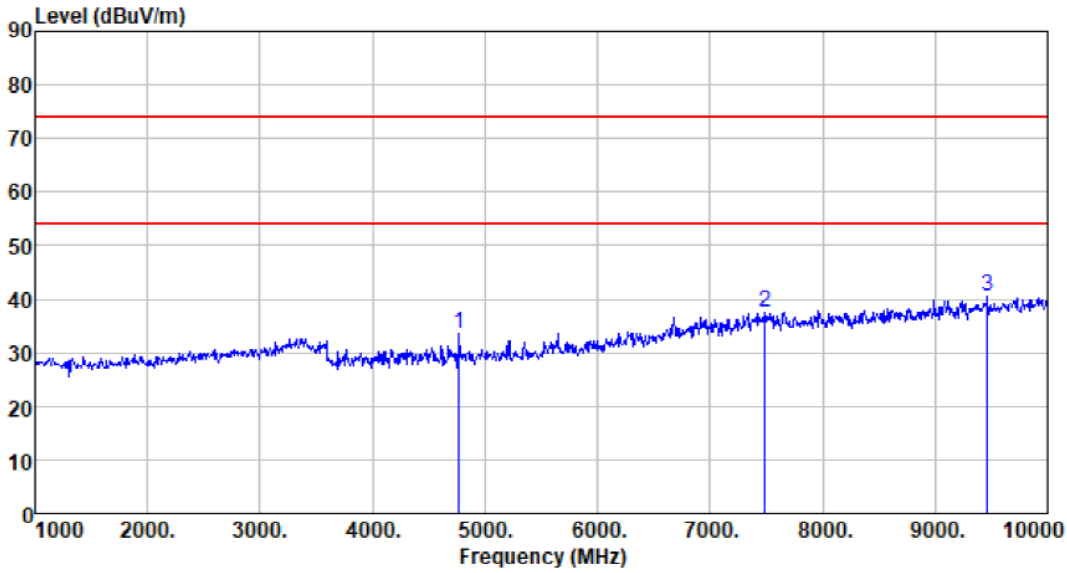


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4771.000	35.97	31.15	4.59	37.72	33.99	74.00	-40.01	Peak
6796.000	31.39	35.18	6.06	35.83	36.80	74.00	-37.20	Peak
8974.000	29.34	37.49	7.55	34.52	39.86	74.00	-34.14	Peak

Test mode:	transmitting mode (916MHz)	Antenna Polarity:	Vertical

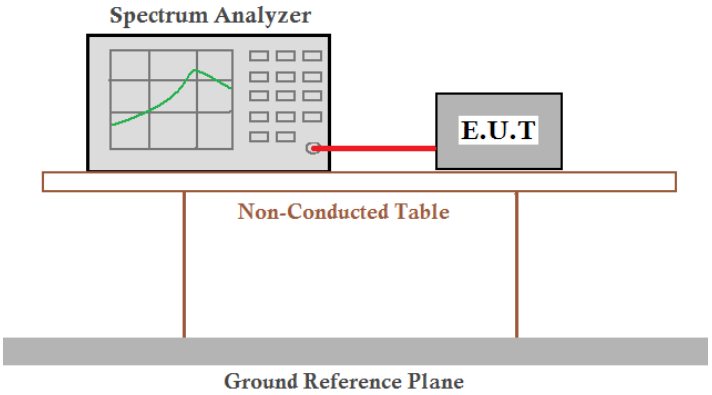


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.499	40.26	11.42	0.61	35.39	16.90	40.00	-23.10	QP
42.302	43.21	12.23	0.69	35.79	20.34	40.00	-19.66	QP
49.707	41.50	12.30	0.77	36.17	18.40	40.00	-21.60	QP
95.762	40.42	11.59	1.16	36.69	16.48	43.50	-27.02	QP
902.000	33.76	22.30	4.87	37.60	23.33	46.00	-22.67	QP
928.000	34.29	22.41	4.96	37.57	24.09	46.00	-21.91	QP



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4771.000	35.45	31.15	4.59	37.72	33.47	74.00	-40.53	Peak
7489.000	29.28	36.80	6.83	35.54	37.37	74.00	-36.63	Peak
9469.000	29.56	37.78	7.91	34.84	40.41	74.00	-33.59	Peak

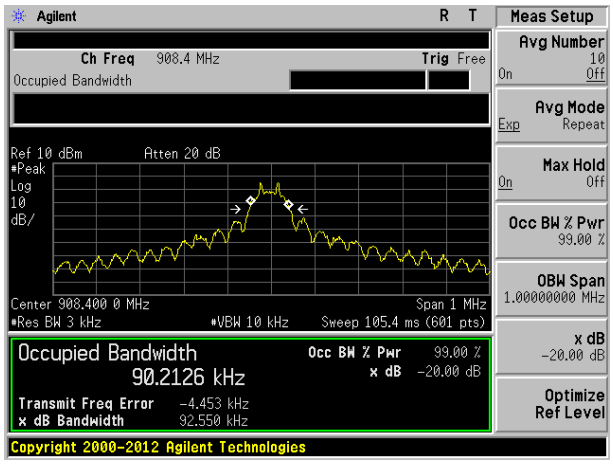
7.4 20dB Occupy Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215 RSS-Gen Section 6.7
Test Method:	ANSI C63.10:2013 and RSS-Gen
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

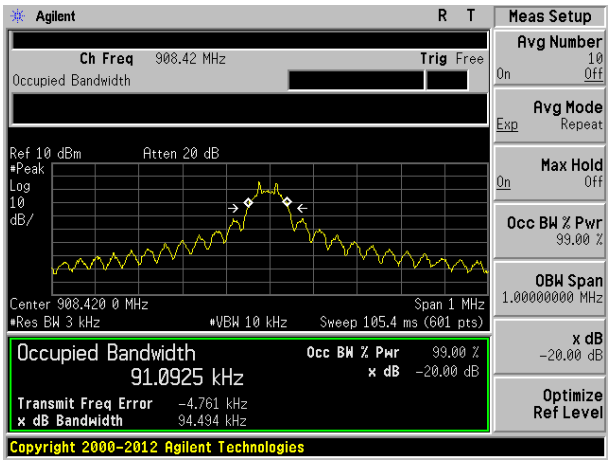
Measurement Data

Operation Frequency	20dB bandwidth(kHz)	99% Occupied bandwidth(kHz)	Result
908.4MHz	92.550	90.2126	Pass
908.42MHz	94.494	91.0925	
916MHz	90.072	85.7355	

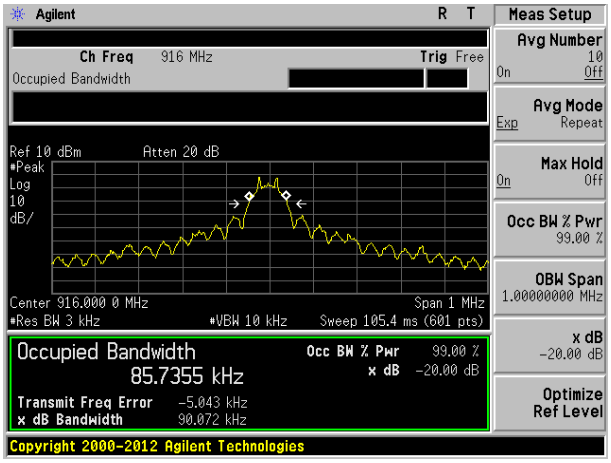
Test plot as follows:



908.4MHz



908.42MHz



916MHz

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details

------End------