FCC REPORT

Applicant:	Trane US, Inc.
Address of Applicant:	6200 Troup Highway, TYLER, Texas 75707, United States
Manufacturer:	COMPUTIME ELECTRONICS(SHENZHEN) CO.,LTD.
Address of Manufacturer:	Computime Technology Pk, Dan Zhu Tou Cun Buji, Longgang Region Shenzhen China

Equipment Under Test (EUT)

Product Name:	Color WIFI/ Z-wave thermostat
Model No.:	TCONT850AC52UBA, ACONT850AC52UBA
FCC ID:	XVR-CONT8505
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	June 25, 2018
Date of Test:	June 26-August 13, 2018
Date of report issued:	August 13, 2018
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*August 13, 2018*	*Original*

Prepared By: *Tiger Chen* ***Date:*** *August 13, 2018*

Project Engineer

Check By: *Andy Wu* ***Date:*** *August 13, 2018*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	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	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(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:	Color WIFI/ Z-wave thermostat
Model No.:	TCONT850AC52UBA, ACONT850AC52UBA
Test Model No:	TCONT850AC52UBA
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.	
Serial No.:	1820C1ABNX
Test sample(s) ID:	GTS201807000173-1
Sample(s) Status:	Engineer sample
Hardware version:	0x1
Software version:	5.2.5
Operation Frequency:	908.42MHz, 916MHz
Modulation type:	Z-wave
Antenna Type:	Integral antenna
Antenna gain:	2.0dBi(declare by manufacturer)
Power supply:	AC 24V

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.

Remark: During the test, the dutycycle >98%, 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.

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:

908.42MHz:

Axis	X	Y	Z
Field Strength(dBuV/m)	88.12	89.23	86.34

916MHz:

Axis	X	Y	Z
Field Strength(dBuV/m)	87.09	90.08	86.34

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
Computime	AC-AC adaptor	KJS-66	N/A	N/A
Lenovo	Notebook PC	E40	N/A	N/A

5.4 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, January 08, 2018.

- **Industry Canada (IC) —Registration No.: 9079A-2**

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-2, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

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. 03 2015	July. 02 2020
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. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS588	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019

Conducted:						
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. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	June 27 2018	June 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement:

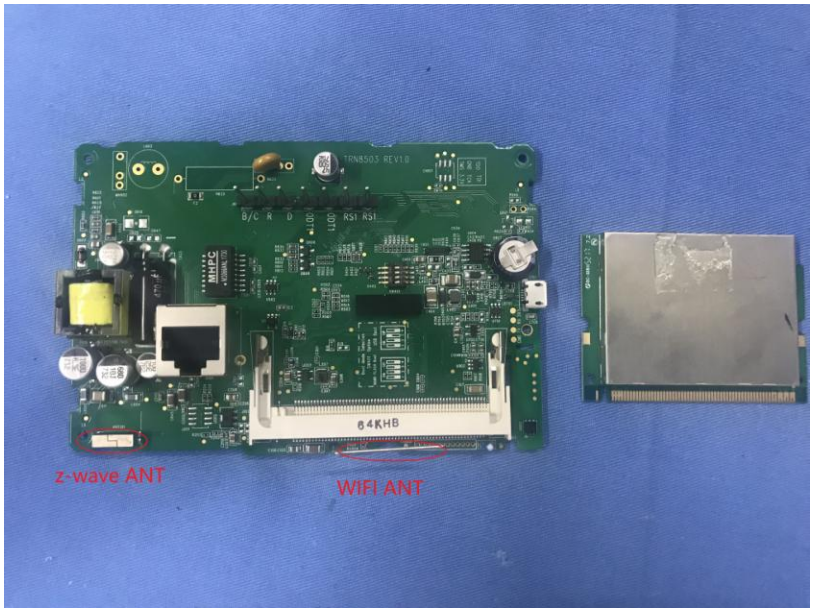
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

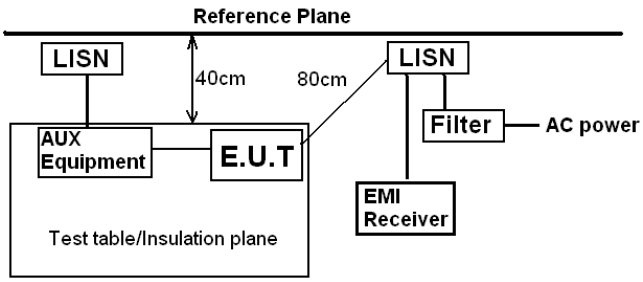
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integral antenna, the best case gain of the antenna is 2.0dBi.

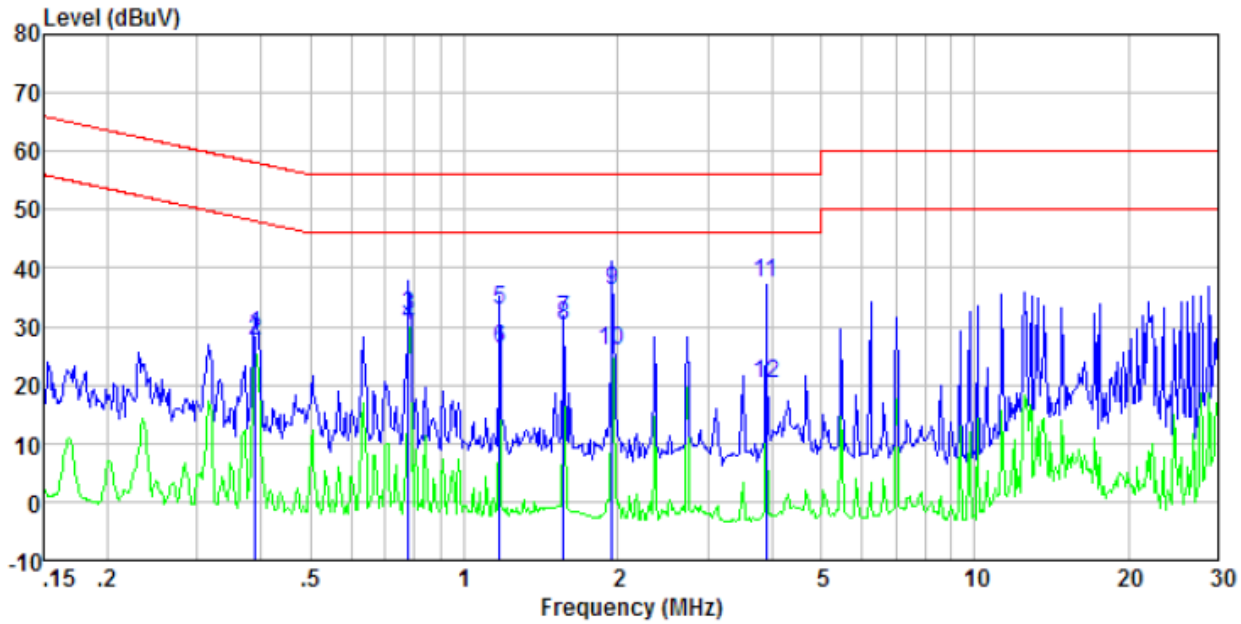


7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
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 EUT 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 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

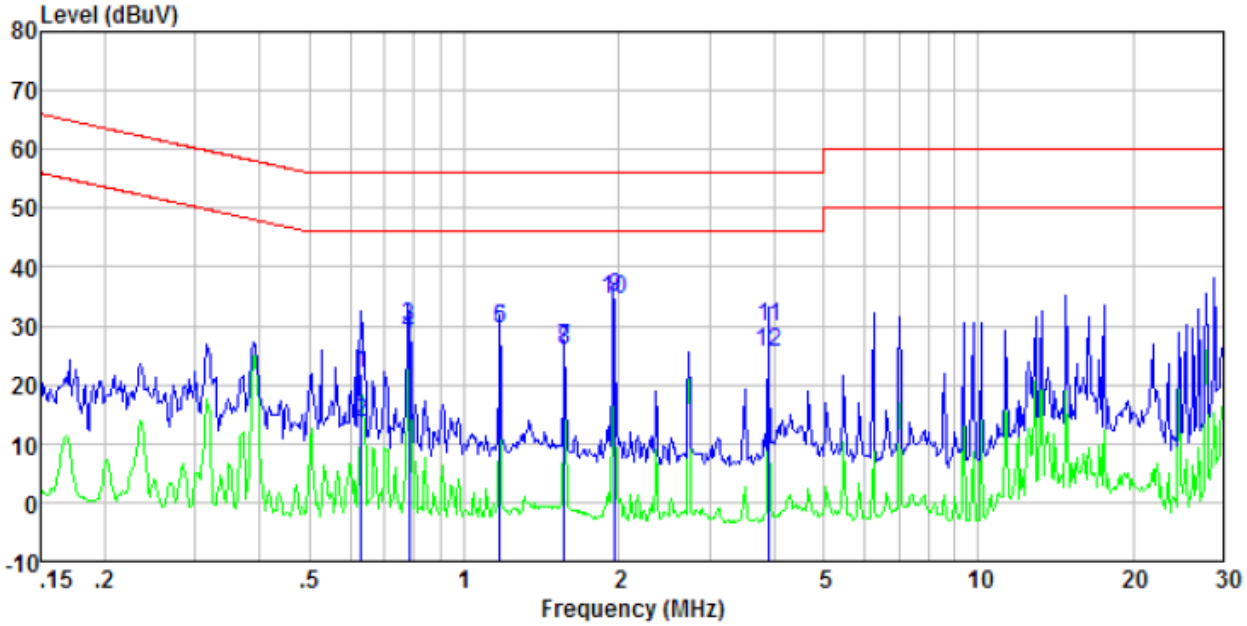
Measurement data:

Test mode:	transmitting mode (916MHz)	Phase Polarity:	Line



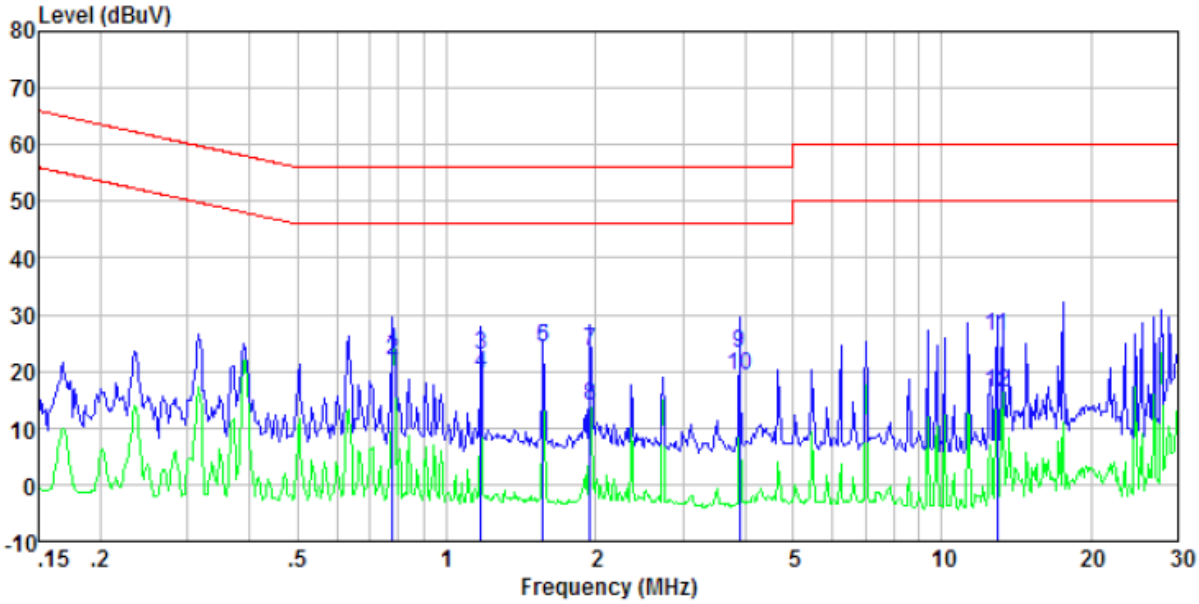
Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.39	28.05	0.36	0.11	28.52	58.08	-29.56	QP
0.39	27.10	0.36	0.11	27.57	48.08	-20.51	Average
0.78	31.52	0.24	0.14	31.90	56.00	-24.10	QP
0.78	29.67	0.24	0.14	30.05	46.00	-15.95	Average
1.17	32.51	0.20	0.16	32.87	56.00	-23.13	QP
1.17	25.99	0.20	0.16	26.35	46.00	-19.65	Average
1.57	30.68	0.20	0.17	31.05	56.00	-24.95	QP
1.57	29.96	0.20	0.17	30.33	46.00	-15.67	Average
1.95	35.81	0.20	0.17	36.18	56.00	-19.82	QP
1.95	25.60	0.20	0.17	25.97	46.00	-20.03	Average
3.90	37.16	0.20	0.18	37.54	56.00	-18.46	QP
3.90	19.72	0.20	0.18	20.10	46.00	-25.90	Average

Test mode:	transmitting mode (916MHz)	Phase Polarity:	Neutral



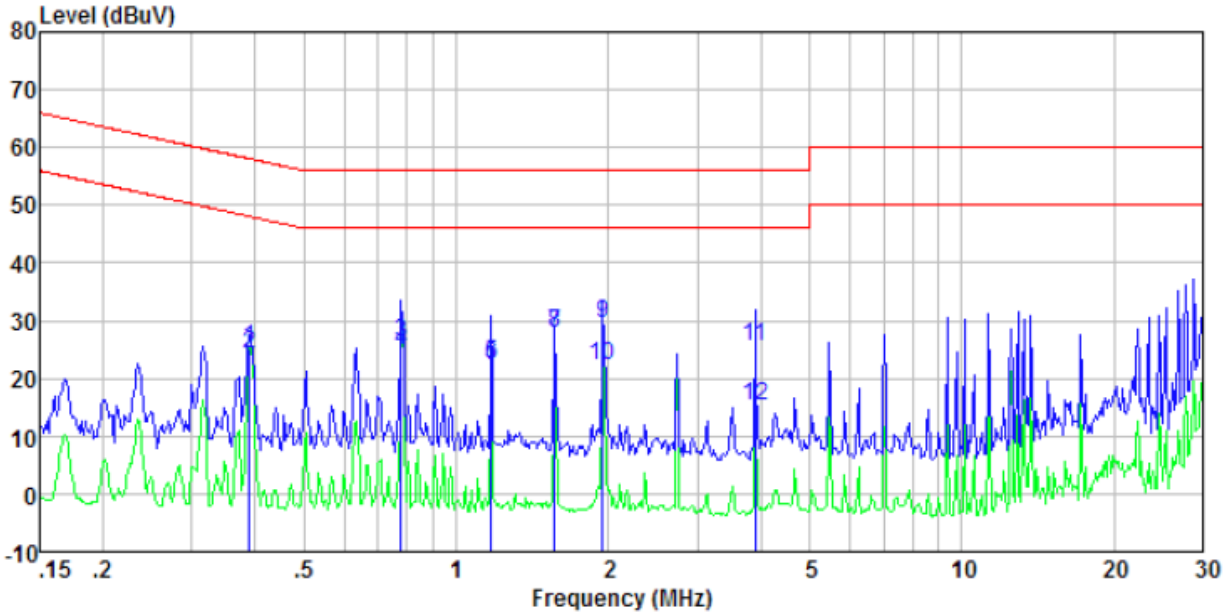
Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.63	21.33	0.28	0.12	21.73	56.00	-34.27	QP
0.63	13.30	0.28	0.12	13.70	46.00	-32.30	Average
0.78	29.44	0.24	0.14	29.82	56.00	-26.18	QP
0.78	28.30	0.24	0.14	28.68	46.00	-17.32	Average
1.18	29.31	0.20	0.16	29.67	56.00	-26.33	QP
1.18	29.17	0.20	0.16	29.53	46.00	-16.47	Average
1.57	25.85	0.20	0.17	26.22	56.00	-29.78	QP
1.57	25.57	0.20	0.17	25.94	46.00	-20.06	Average
1.96	34.53	0.20	0.17	34.90	56.00	-21.10	QP
1.96	34.27	0.20	0.17	34.64	46.00	-11.36	Average
3.92	29.39	0.20	0.18	29.77	56.00	-26.23	QP
3.92	25.24	0.20	0.18	25.62	46.00	-20.38	Average

Test mode:	transmitting mode (908.42MHz)	Phase Polarity:	Line



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dBuV	dBuV	dB	
0.78	22.51	0.24	0.14	22.89	56.00	-33.11	QP
0.78	21.50	0.24	0.14	21.88	46.00	-24.12	Average
1.17	22.58	0.20	0.16	22.94	56.00	-33.06	QP
1.17	19.24	0.20	0.16	19.60	46.00	-26.40	Average
1.57	23.71	0.20	0.17	24.08	56.00	-31.92	QP
1.57	23.67	0.20	0.17	24.04	46.00	-21.96	Average
1.95	23.21	0.20	0.17	23.58	56.00	-32.42	QP
1.95	13.52	0.20	0.17	13.89	46.00	-32.11	Average
3.90	22.97	0.20	0.18	23.35	56.00	-32.65	QP
3.90	18.75	0.20	0.18	19.13	46.00	-26.87	Average
12.92	25.62	0.20	0.21	26.03	60.00	-33.97	QP
12.92	15.84	0.20	0.21	16.25	50.00	-33.75	Average

Test mode:	transmitting mode (908.42MHz)	Phase Polarity:	Neutral

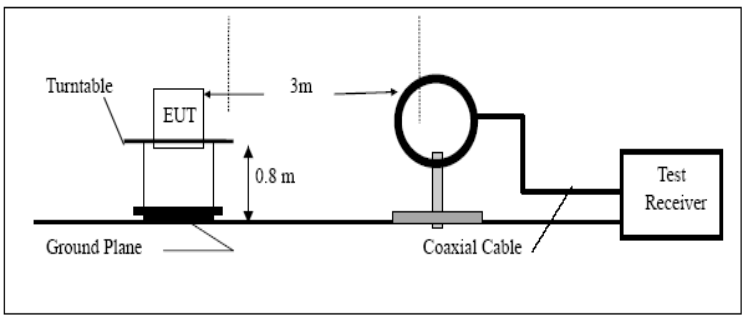


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.39	24.61	0.36	0.11	25.08	58.08	-33.00	QP
0.39	23.67	0.36	0.11	24.14	48.08	-23.94	Average
0.78	25.86	0.24	0.14	26.24	56.00	-29.76	QP
0.78	24.64	0.24	0.14	25.02	46.00	-20.98	Average
1.17	22.04	0.20	0.16	22.40	56.00	-33.60	QP
1.17	21.71	0.20	0.16	22.07	46.00	-23.93	Average
1.57	27.42	0.20	0.17	27.79	56.00	-28.21	QP
1.57	27.57	0.20	0.17	27.94	46.00	-18.06	Average
1.95	29.23	0.20	0.17	29.60	56.00	-26.40	QP
1.95	21.91	0.20	0.17	22.28	46.00	-23.72	Average
3.90	25.19	0.20	0.18	25.57	56.00	-30.43	QP
3.90	14.91	0.20	0.18	15.29	46.00	-30.71	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
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 6GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>600Hz</td><td>Quasi-peak</td></tr>
<tr><td>150KHz-30MHz</td><td>Quasi-peak</td><td>9KHz</td><td>30KHz</td><td>Quasi-peak</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">902-928MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="6">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>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.</td></tr>
<tr><td>Test setup:</td><td>Below 30MHz
 
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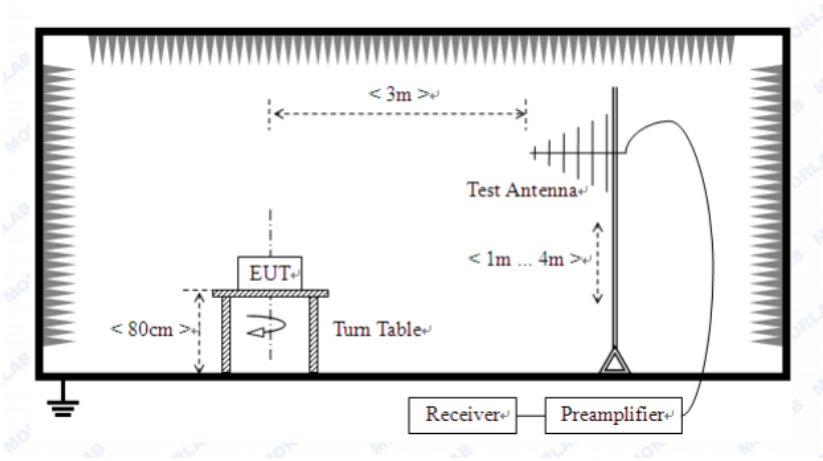
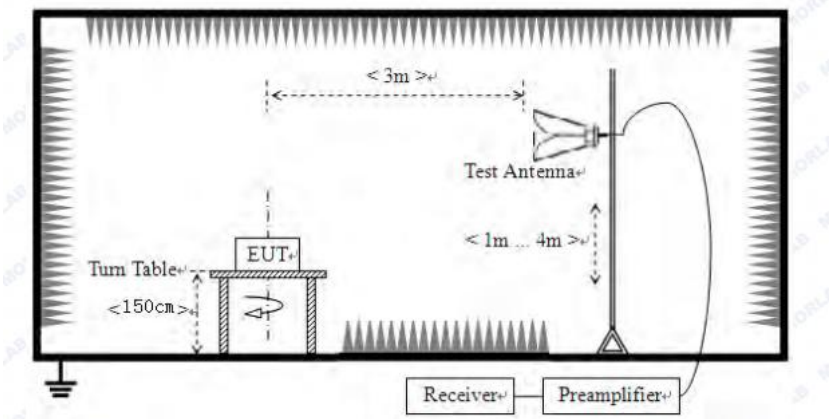
	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away 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					

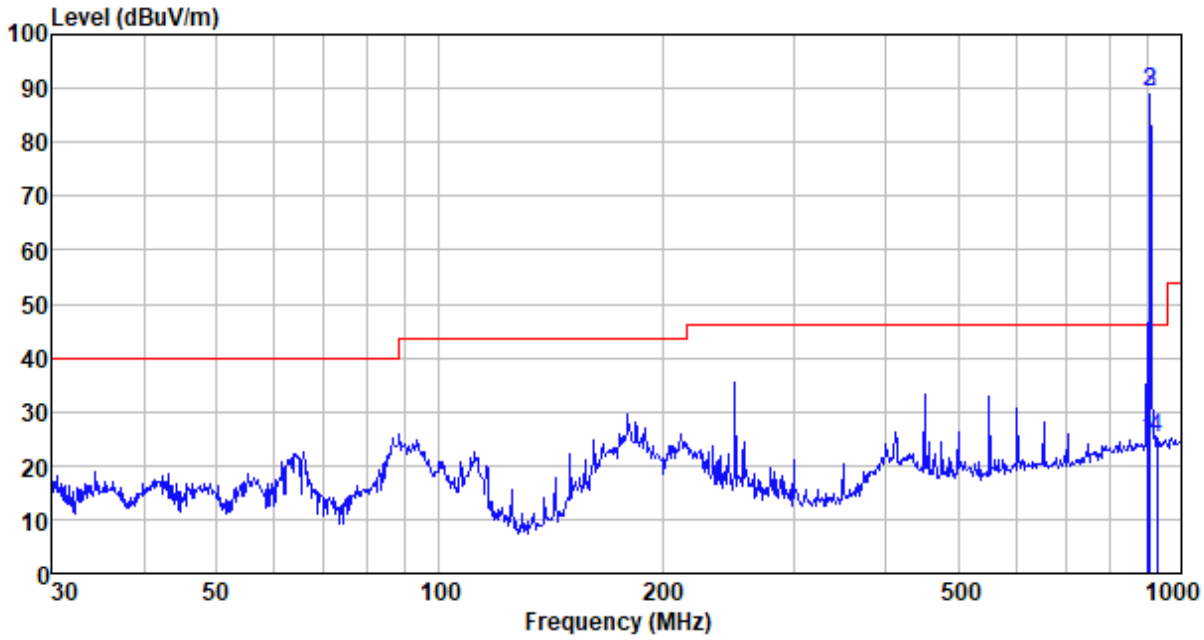
Measurement data:

■ **9 kHz ~ 30 MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

7.3.1 Field Strength of The Fundamental Signal and spurious emissions

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



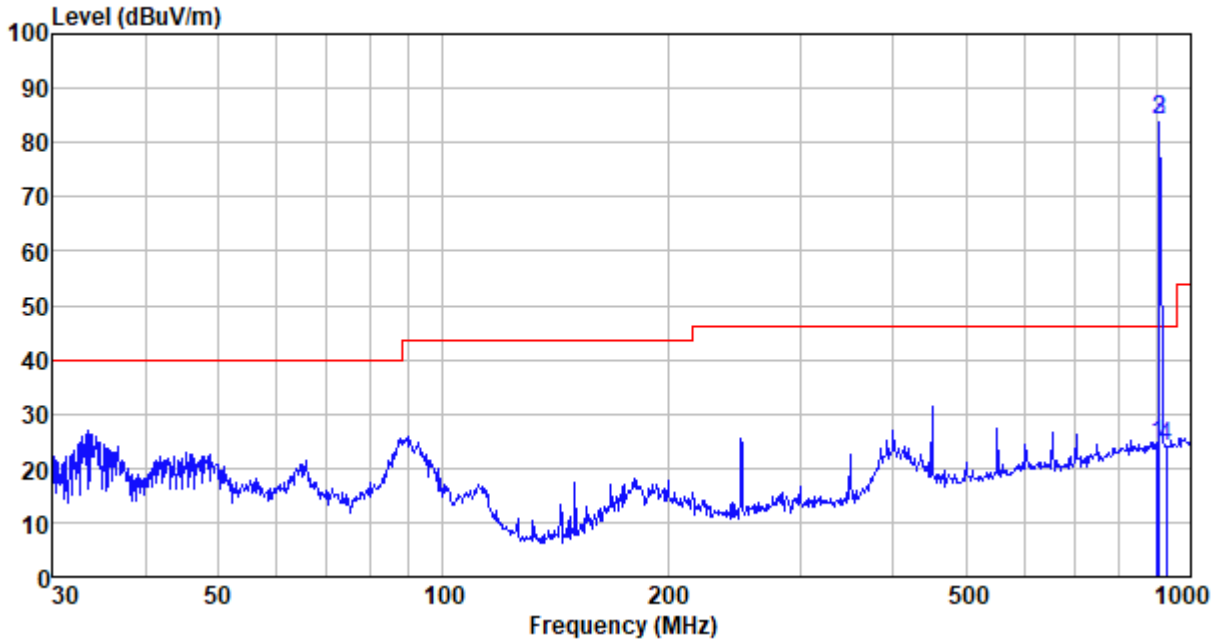
Field Strength:

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)	Polarity	Remark
908.42	99.60	22.34	4.88	37.59	89.23	94	-4.77	Horizontal	AV
908.42	99.60	22.34	4.88	37.59	89.23	114	-24.77	Horizontal	QP
908.42	99.60	22.34	4.88	37.59	89.23	114	-24.77	Horizontal	PK

Band Edge:

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)	Polarity	Remark
902	35.12	22.30	4.87	37.60	24.69	46	-21.31	Horizontal	QP
928	35.43	22.41	4.96	37.57	25.23	46	-20.77	Horizontal	QP

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



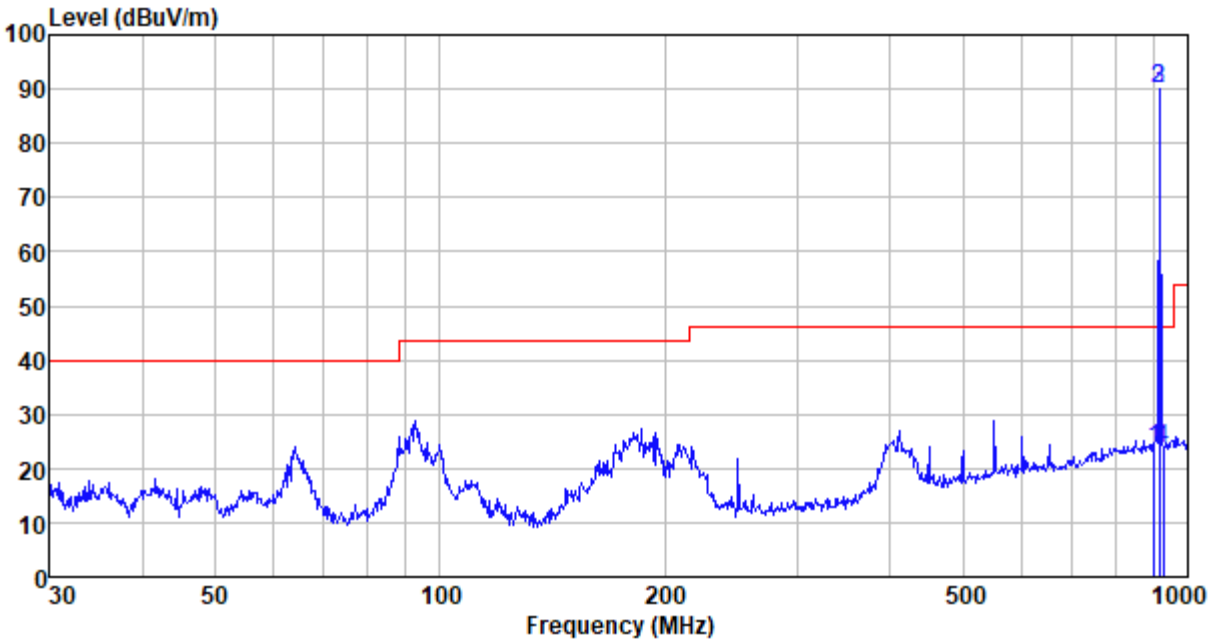
Field Strength:

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)	Polarity	Remark
908.42	94.40	22.34	4.88	37.59	84.03	94	-9.97	Vertical	AV
908.42	94.40	22.34	4.88	37.59	84.03	114	-29.97	Vertical	QP
908.42	94.50	22.34	4.88	37.59	84.13	114	-29.87	Vertical	PK

Band Edge:

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)	Polarity	Remark
902	34.90	22.30	4.87	37.60	34.47	46	-24.53	Vertical	QP
928	34.20	22.41	4.96	37.57	24.00	46	-22.00	Vertical	QP

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



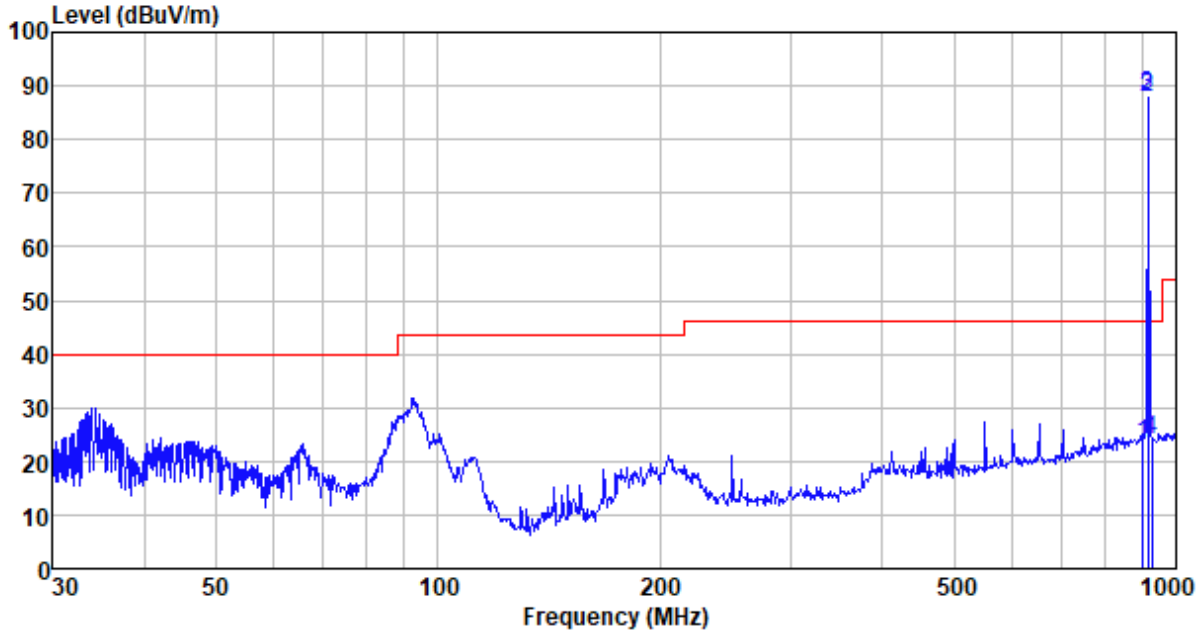
Field Strength:

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)	Polarity	Remark
916	100.20	22.35	4.91	37.58	89.88	94	-4.12	Horizontal	AV
916	100.20	22.35	4.91	37.58	89.88	114	-24.12	Horizontal	QP
916	100.40	22.35	4.91	37.58	90.08	114	-23.92	Horizontal	PK

Band Edge:

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)	Polarity	Remark
902	34.14	22.30	4.87	37.60	23.71	46	-22.29	Horizontal	QP
928	33.88	22.41	4.96	37.57	23.68	46	-22.32	Horizontal	QP

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



Field Strength:

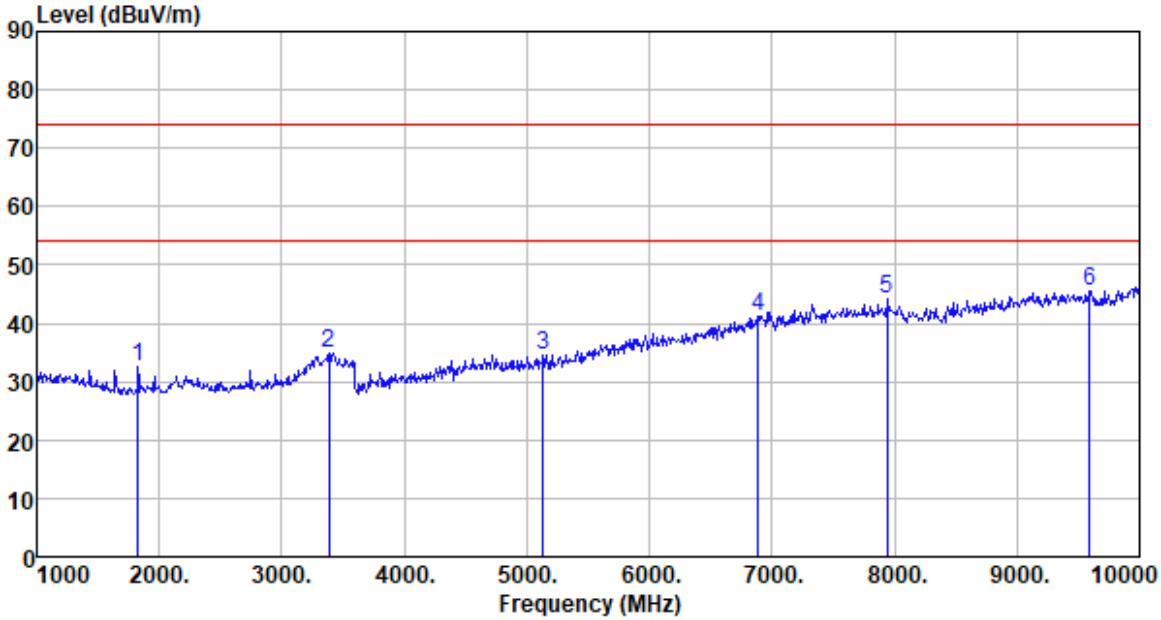
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity	Remark
916	98.30	22.35	4.91	37.58	87.98	94	-6.02	Vertical	AV
916	98.30	22.35	4.91	37.58	87.98	114	-26.02	Vertical	QP
916	98.40	22.35	4.91	37.58	88.08	114	-25.92	Vertical	PK

Band Edge:

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)	Polarity	Remark
902	33.53	22.30	4.87	37.60	23.10	46	-22.90	Vertical	QP
928	34.31	22.41	4.96	37.57	24.11	46	-21.89	Vertical	QP

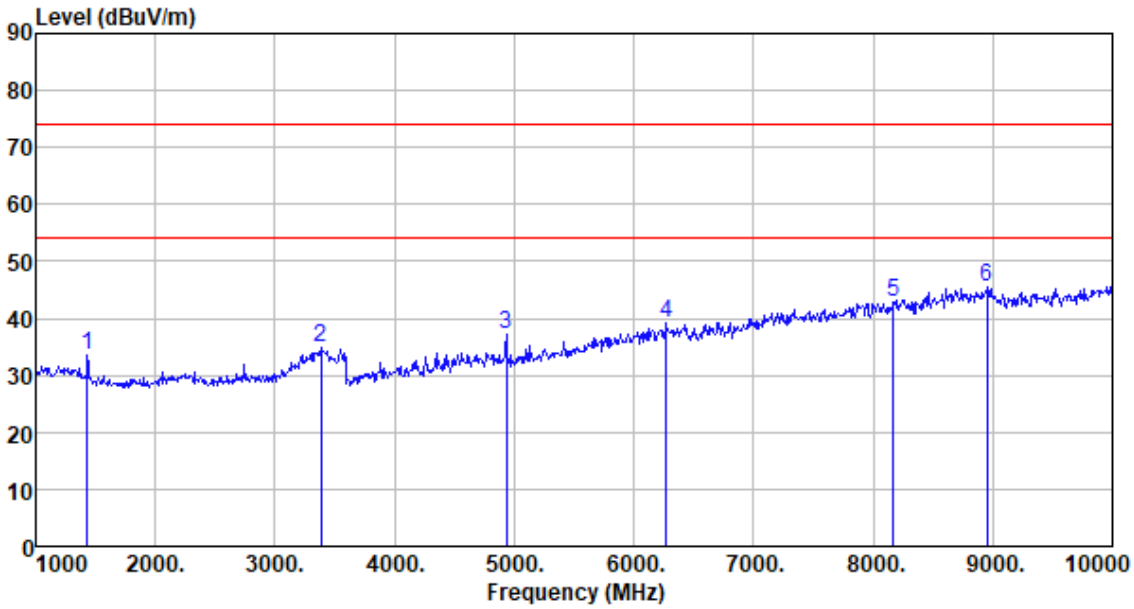
■ Above 1GHz

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



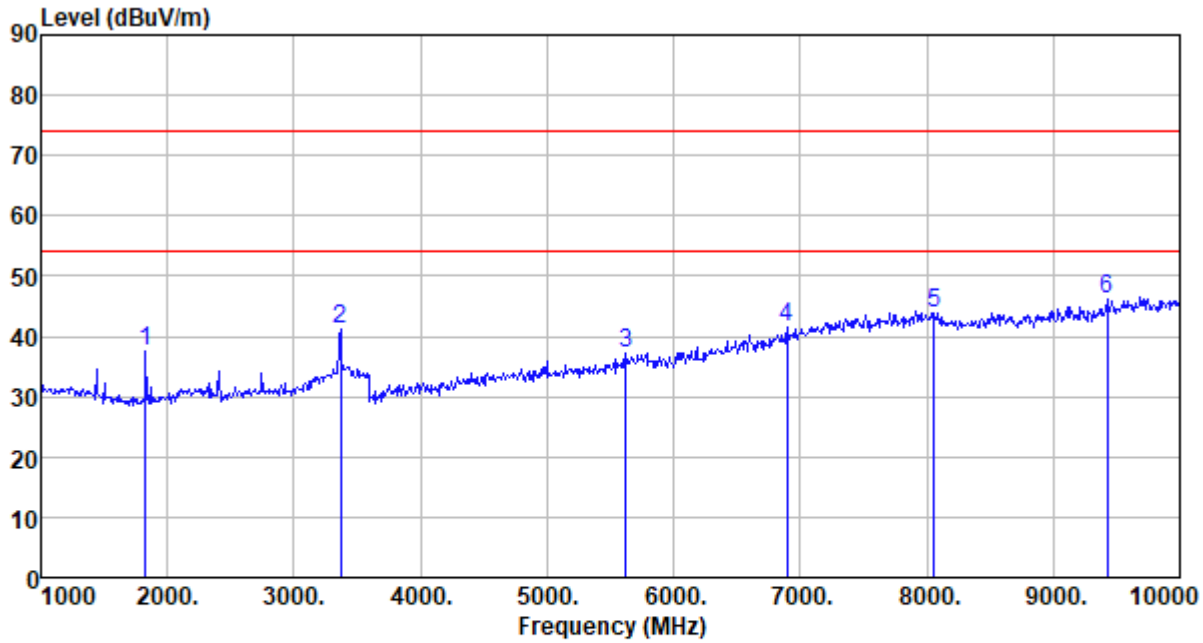
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
1828.000	38.75	25.42	4.87	36.40	32.64	74.00	-41.36	Peak
3385.000	37.03	28.57	6.74	37.34	35.00	74.00	-39.00	Peak
5131.000	31.18	32.05	8.97	37.60	34.60	74.00	-39.40	Peak
6886.000	30.66	34.90	11.40	35.77	41.19	74.00	-32.81	Peak
7939.000	30.21	37.18	12.07	35.41	44.05	74.00	-29.95	Peak
9595.000	28.32	37.95	14.12	34.92	45.47	74.00	-28.53	Peak

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



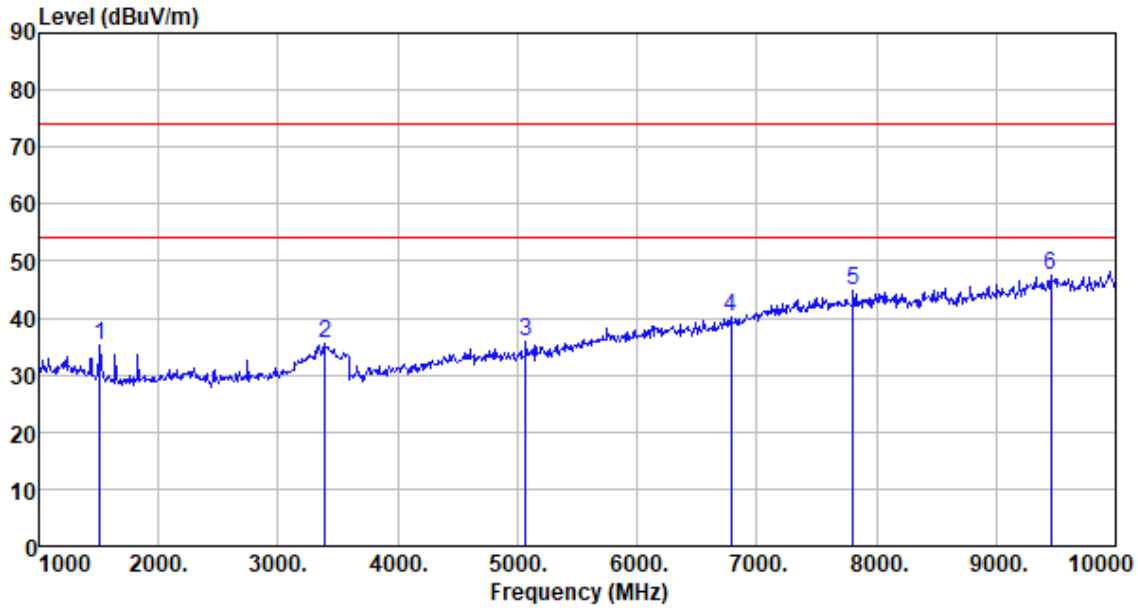
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
1432.000	39.55	25.42	4.64	36.11	33.50	74.00	-40.50	Peak
3385.000	36.91	28.57	6.74	37.34	34.88	74.00	-39.12	Peak
4933.000	34.43	31.90	8.70	37.77	37.26	74.00	-36.74	Peak
6274.000	31.73	33.24	10.58	36.20	39.35	74.00	-34.65	Peak
8173.000	28.74	36.99	12.39	35.22	42.90	74.00	-31.10	Peak
8956.000	29.24	37.10	13.57	34.54	45.37	74.00	-28.63	Peak

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



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
1828.000	43.59	25.42	4.87	36.40	37.48	74.00	-36.52	Peak
3367.000	43.38	28.51	6.70	37.34	41.25	74.00	-32.75	Peak
5626.000	32.04	32.32	9.70	36.89	37.17	74.00	-36.83	Peak
6895.000	30.78	35.02	11.40	35.77	41.43	74.00	-32.57	Peak
8056.000	29.82	37.28	12.20	35.33	43.97	74.00	-30.03	Peak
9424.000	29.43	37.66	13.99	34.80	46.28	74.00	-27.72	Peak

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

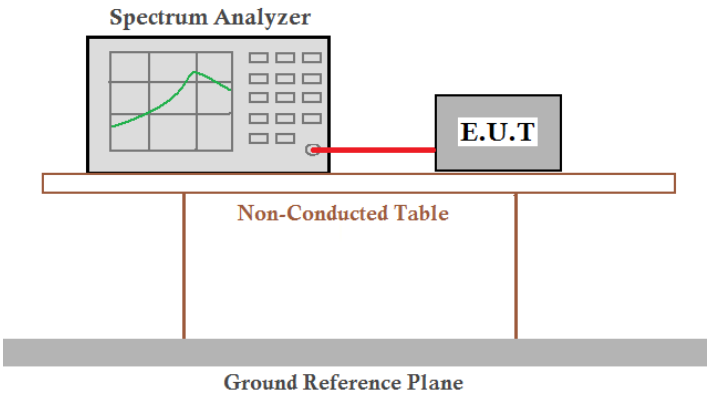


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
1513.000	41.64	25.20	4.69	36.18	35.35	74.00	-38.65	Peak
3394.000	37.52	28.60	6.76	37.34	35.54	74.00	-38.46	Peak
5068.000	32.83	32.01	8.87	37.69	36.02	74.00	-37.98	Peak
6787.000	30.41	34.45	11.28	35.83	40.31	74.00	-33.69	Peak
7804.000	31.22	37.04	11.99	35.45	44.80	74.00	-29.20	Peak
9460.000	30.58	37.71	14.01	34.82	47.48	74.00	-26.52	Peak

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

7.4 20dB Occupy Bandwidth

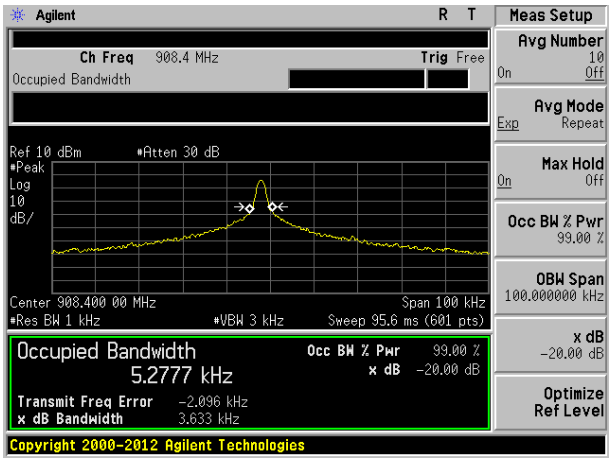
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

908.42MHz

Operation Frequency	20dB bandwidth(MHz)	Result
908.42MHz	0.003633	Pass

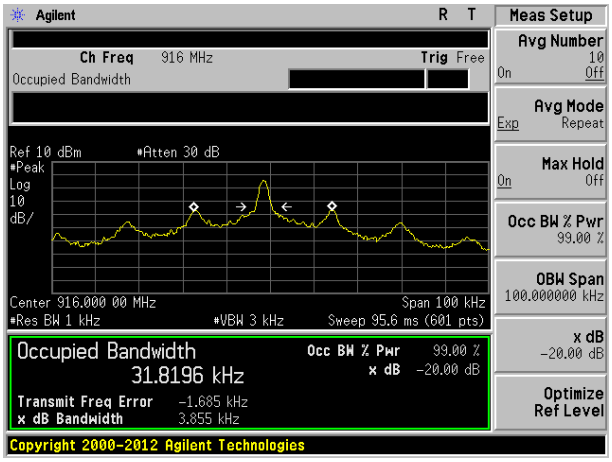
Test plot as follows:



916MHz

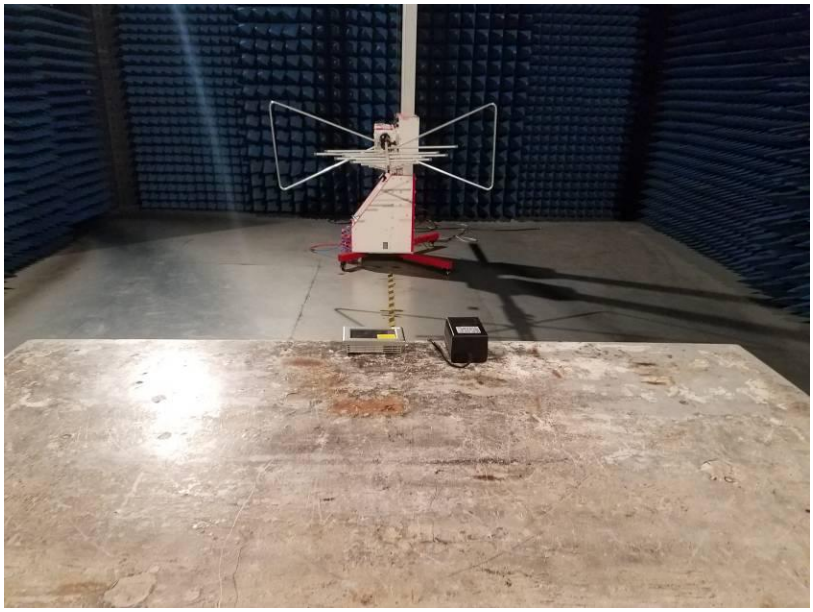
Operation Frequency	20dB bandwidth(MHz)	Result
916MHz	0.003855	Pass

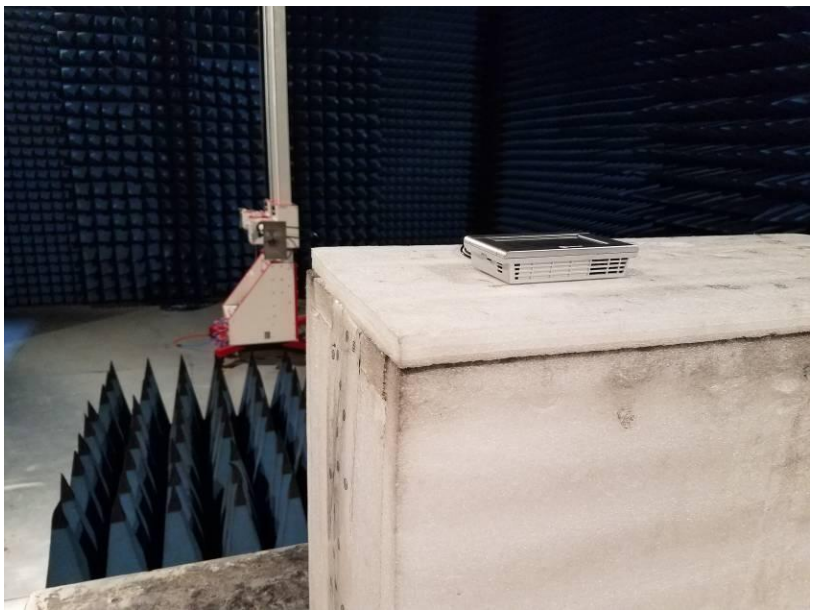
Test plot as follows:



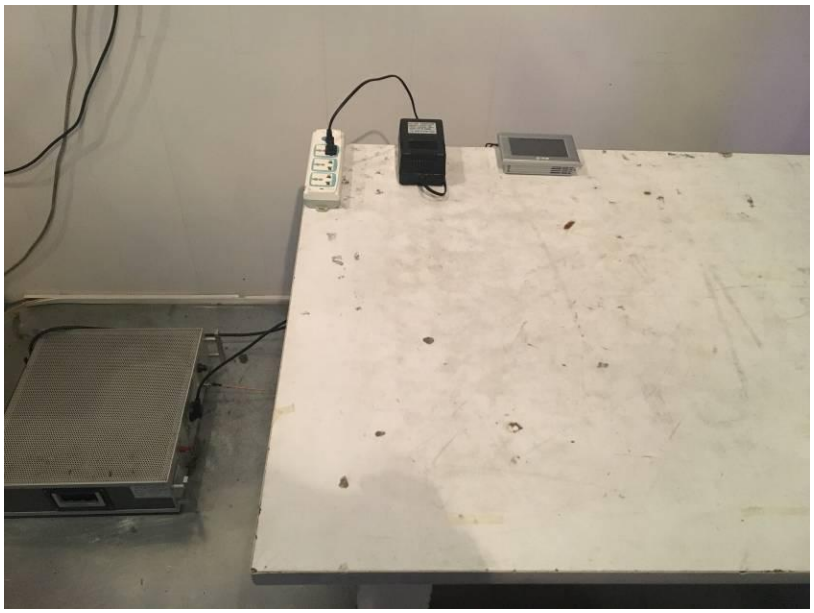
8 Test Setup Photo

Radiated Emission





Conducted Emission



9 EUT Constructional Details

Reference to the test report No. GTS201807000173F01

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