Report No.: ET-24020097E03

TEST REPORT

Applicant:	DONGGUAN Shine Well Intelligent Equipment Co.,Ltd
Address of Applicant:	Room 301, No. 393, Chang 'an Section, Tai 'an Road, Chang 'an Town, Dongguan City, Guangdong Province
Manufacturer/Factory:	DONGGUAN Shine Well Intelligent Equipment Co.,Ltd
Address of Manufacturer/Factory:	Room 301, No. 393, Chang 'an Section, Tai 'an Road, Chang 'an Town, Dongguan City, Guangdong Province
Product Name:	10" Bedside Terminal+ Button
Model No.:	LED-B10S,LED-B10S-CNW,LED-B10S-C,LED-B10S-CN,LED-B10S-CNW,LED-B10S-CW,LED-B10S-NW,LED-B10S-N,LED-B10S-W
Trade Mark:	N/A
FCC ID:	2BE22-LEDB10S
Applicable standards:	FCC Part 15.225
Test procedure	ANSI C63.10-2013
Date of Test:	Feb.02, 2024- Feb.23, 2024
Date of report issued:	Mar.06, 2024
Test Result :	PASS*

Remark:

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

The 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

Prepared By

Shenzhen ETR Standard Technology Co., Ltd.

Address: No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Compiled by:	Reviewed by:	Approved by:
Project Engineer	Project Manager	Authorized Signature

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Report Revision History		
Report No.	Description	Issue Date
ET-24020097E03	Original	Mar.06, 2024

Contents

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1 Test Summary

Test Item	Section in CFR 47	Result	Test by
Antenna requirement	15.203	Pass	/
Conducted emission	15.207	Pass	Qiao Li
Transmitter field strength	15.225(a)(b)(c)	Pass	Yvan
Radiated emission and Restricted band	15.205 and 15.209	Pass	Yvan
Occupied Bandwidth	15.215(c)	Pass	Yvan
Frequency Stability	15.225(e)	Pass	Yvan

Remarks:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *Test according to ANSI C63.10:2013*

Measurement Uncertainty

Test Item	Uncertainty Criterion	Measurement Uncertainty	Notes
Occupied Channel Bandwidth	±5%	±0.55%	(1)
RF output power, conducted	±1.5dB	±0.99dB	(1)
Power Spectral Density, conducted	±3dB	±0.61dB	(1)
Unwanted Emissions, conducted	±3dB	±0.64dB	(1)
AC Power Line Conducted Emission	±6dB	± 3.02 dB	(1)
Radiated emissions Below 1GHz	±6dB	±4.30 dB	(1)
Radiated emissions Above 1GHz	±6dB	±4.35 dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

2 General Information

2.1 General Description of EUT

Product Name:	10" Bedside Terminal+ Button
Model No.:	LED-B10S,LED-B10S-CNW,LED-B10S-C,LED-B10S-CN,LED-B10S-CNW,LED-B10S-CW,LED-B10S-NW,LED-B10S-N,LED-B10S-W
Model of difference:	All the model are the same circuit and RF module, except the model names
Sample(s) Status:	Engineer sample
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	13.56MHz
Channel numbers:	1
Channel separation:	N/A
Modulation type:	ASK
Antenna Type:	FPC Antenna
Antenna gain:	0dBi Max (Declare by applicant)
Power supply:	DC 12V
Adapter Model:	Model：POE-AF-H(IEEE802.3af) Input：DC 44V-57V Output: DC 12V 1A Data speed:10/100Mpbs
Connecting I/O port(s)	Please refer to User's Manual

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

2.2 Test mode

Test mode	Description
Mode 1	Keep the EUT in continuously transmitting mode.(TX 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..	

2.3 Description of Support Units

Equipment	Model	S/N	Manufacturer
/	/	/	/

2.4 Test Facility

Test laboratory:	Shenzhen ETR Standard Technology Co., Ltd.
CNAS Registration Number:	L11864
A2LA Certificate Number:	6640.01
FCC Designation Number:	CN1326
FCC Test Firm Registration:	183064
IC Company Number:	28440

2.5 Test Location

All tests were performed at:	
Laboratory location:	No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	+86 755 85259392

2.6 Additional Instructions

Test Software	/
Power level setup	Default

3 Test Instruments list

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	EMI Test Receiver	Rohde&schwarz	ESCI7	100605	2023.3.02	2024.3.01
2	EMI Test Receiver	Rohde&schwarz	ESCI3	102696	2023.3.02	2024.3.01
3	Loop Antenna	schwarabeck	FMZB 1519 B	FMZB 1519 B	2022.3.11	2024.3.10
4	Broadband antenna	schwarabeck	VULB9168	1064	2022.3.11	2024.3.10
6	amplifier	EMtrace	RP01A	50117	2023.3.02	2024.3.01
7	Artificial power network	schwarabeck	NSLK8127	8127483	2023.3.02	2024.3.01
8	Artificial power network	ETS	3186/2NM	1132	2023.3.02	2024.3.01
9	10dB attenuator	HUBER+SUHNER	10dB	/	2023.3.02	2024.3.01

Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

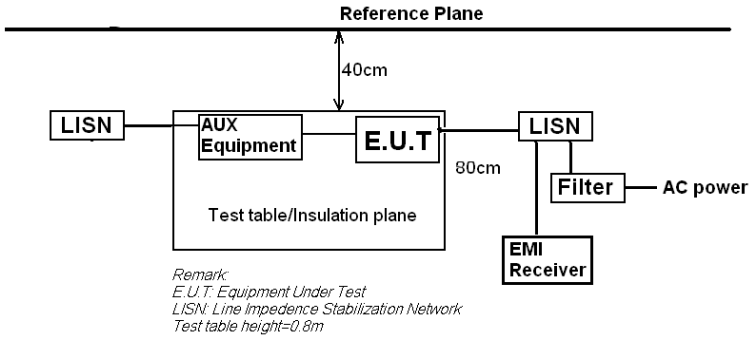
Software Name	Manufacturer	Model	Version
Conducted	Farad	EZ-EMC	Ver.EMC-CON 3A1.1
Radiated	Farad	EZ-EMC	Ver.FA-03A2 RE

4 Test results and Measurement Data

4.1 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.
EUT Antenna:
The antenna is Coil antenna, the best case gain of the antenna is 0dBi, reference to the appendix II for details

4.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td colspan="6">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="6">ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="6">150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="6">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="6">RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td colspan="6">
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test setup:</td><td colspan="6"> 
</td></tr>
<tr><td>Test procedure:</td><td colspan="6">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.</td></tr>
<tr><td>Test Instruments:</td><td colspan="6">Refer to section 3.0 for details</td></tr>
<tr><td>Test mode:</td><td colspan="6">Refer to section 2.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>/</td><td>Humid.:</td><td>/</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td colspan="6">N/A</td></tr>
<tr><td>Test results:</td><td colspan="6">Pass</td></tr>
</table>

Remark:

EUT is directly powered by DC, this project is not applicable

4.3 Field Strength of the Fundamental

Test Requirement:	FCC §15.225
Test Method:	ANSI C63.10: 2013
Test site:	Measurement Distance: 3m

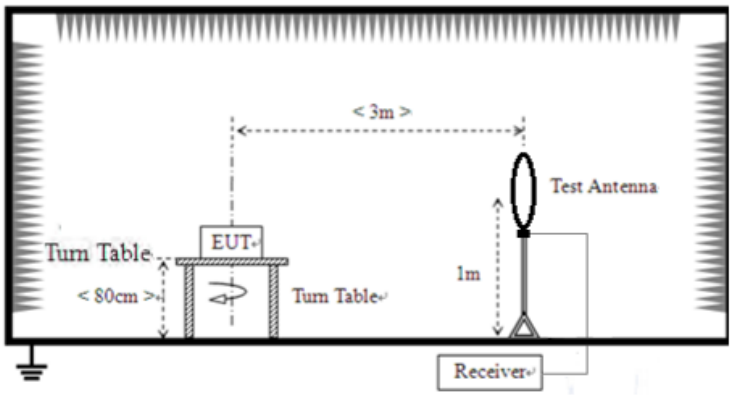
Receiver setup:

Frequency	Detector	RBW	VBW	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value

Limit:
(Field strength of the fundamental signal)

Fundamental frequency (MHz)	Field Strength (uV/m) at 30m	Field Strength (dBuV/m) at 3m
1.705~13.110	30	69.5
13.110~13.410	106	80.5
13.410~13.553	334	90.5
13.553~13.567	15848	124.0
13.567~13.710	334	90.5
13.710~14.010	106	80.5
14.010~30.000	30	69.5
Limit dBuV/m @3m =Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.		

Test setup:

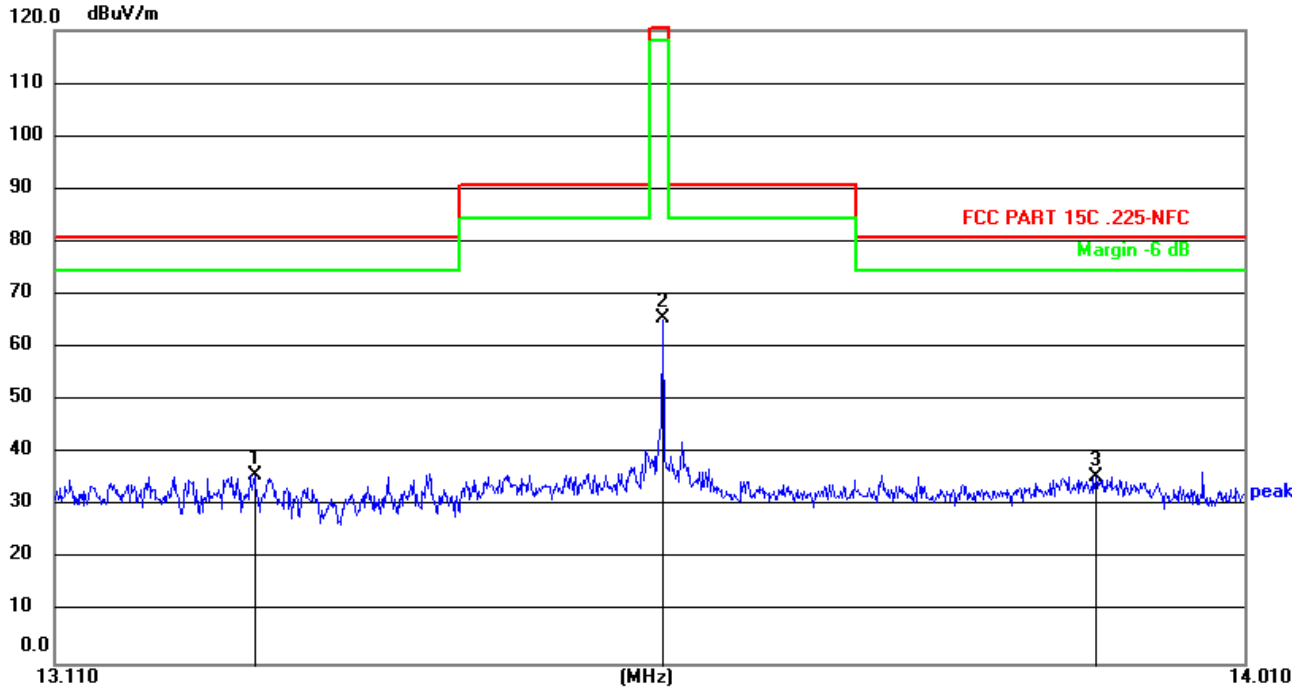


Test Procedure:

1. The EUT was setup and tested according to ANSI C63.10 requirements
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.

Test Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	24.3 °C	Humid.:	40%	Press.:	1012mbar
Test voltage:	DC 12V					
Test results:	Pass					

Measurement Data



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	13.2568	66.04	-30.16	35.88	80.50	-44.62	peak
2	13.5624	95.65	-30.25	65.40	124.00	-58.60	peak
3	13.8940	65.88	-30.34	35.54	80.50	-44.96	peak

4.4 Radiated Emission Measurement

Test Requirement:	FCC Part15 C Section 15.209 & 15.231 (b) and 15.205(a). RSS-210 D & RSS-Gen Clause 8.9&8.10
Test Method:	ANSI C63.10: 2013 & RSS-Gen
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value

Limit:
(Field strength of the fundamental signal)

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2.250	225
70-130	1.250	125
130-174	11250 to 3750	1125 to 375
174-260	3.750	375
260-470	13750 to 12500	1375 to 1250
Above 470	12500	1250

Limit:
(Spurious Emissions)

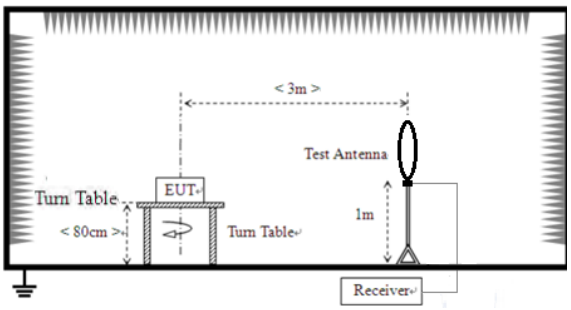
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz	500 @3m	Quasi-peak Value

Limit:
(band edge)

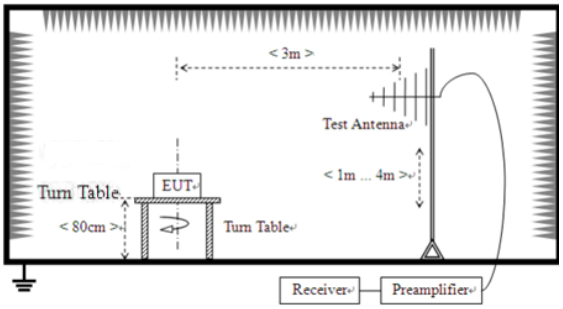
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz

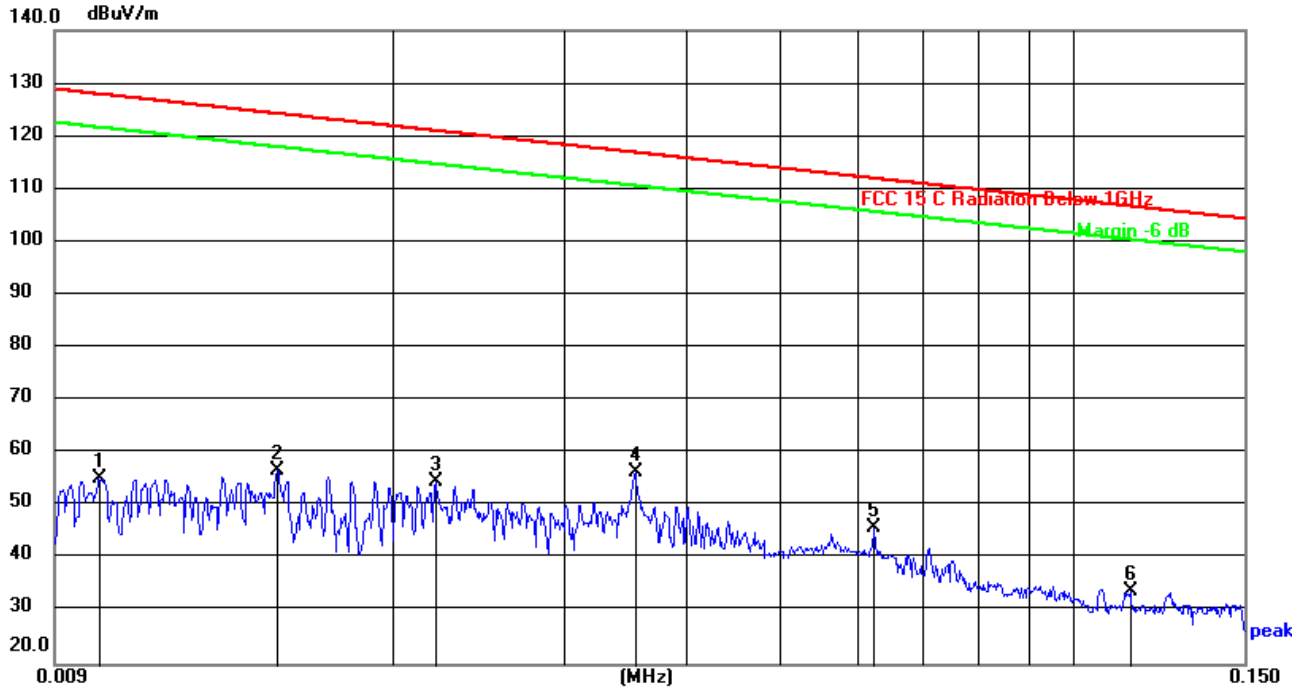


Test Procedure:	5. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 6. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 7. 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. 8. 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. 9. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 10. 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 Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	24.3 °C	Humid.:	40%	Press.:	1012mbar
Test voltage:	DC 12V					
Test results:	Pass					

Measurement Data see next page

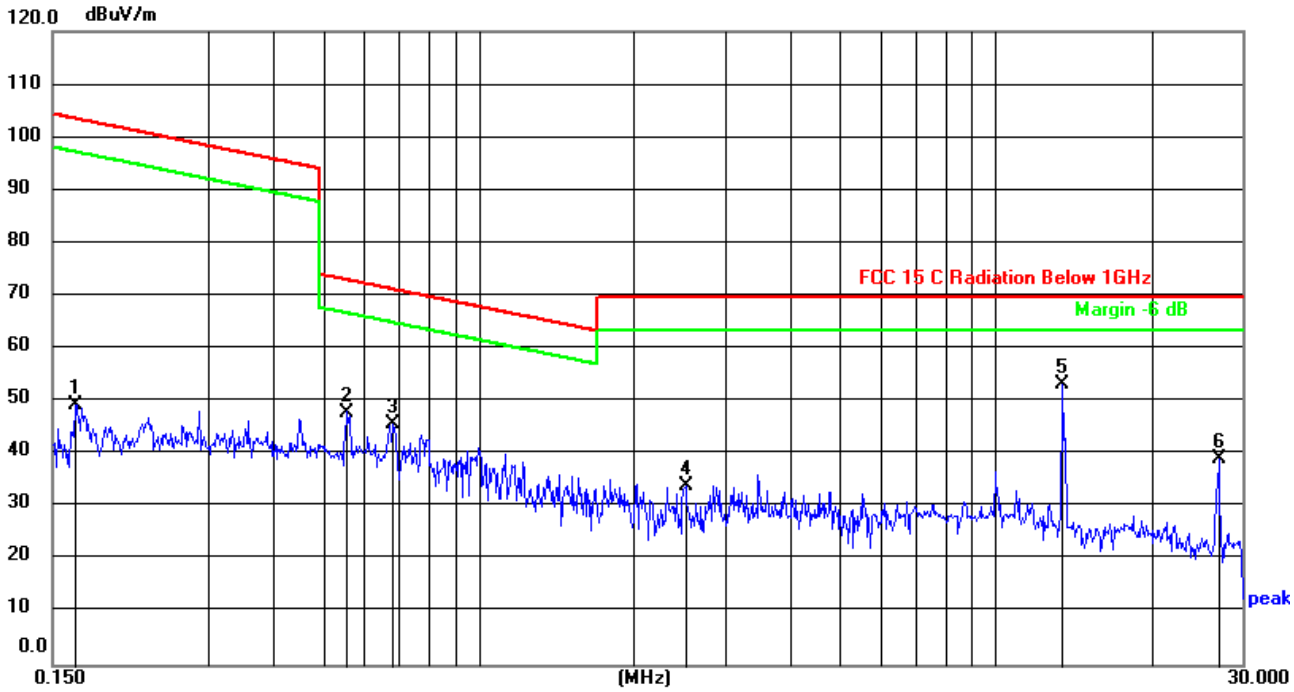
Radiated Emission <30MHz (9KHz-30MHz)

9KHz-150KHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0100	81.08	-25.86	55.22	127.60	-72.38	peak
2	0.0152	82.49	-25.86	56.63	123.97	-67.34	peak
3	0.0221	80.43	-25.85	54.58	120.72	-66.14	peak
4	0.0355	82.22	-25.85	56.37	116.60	-60.23	peak
5	0.0625	71.74	-25.84	45.90	111.69	-65.79	peak
6	0.1145	59.77	-25.85	33.92	106.43	-72.51	peak

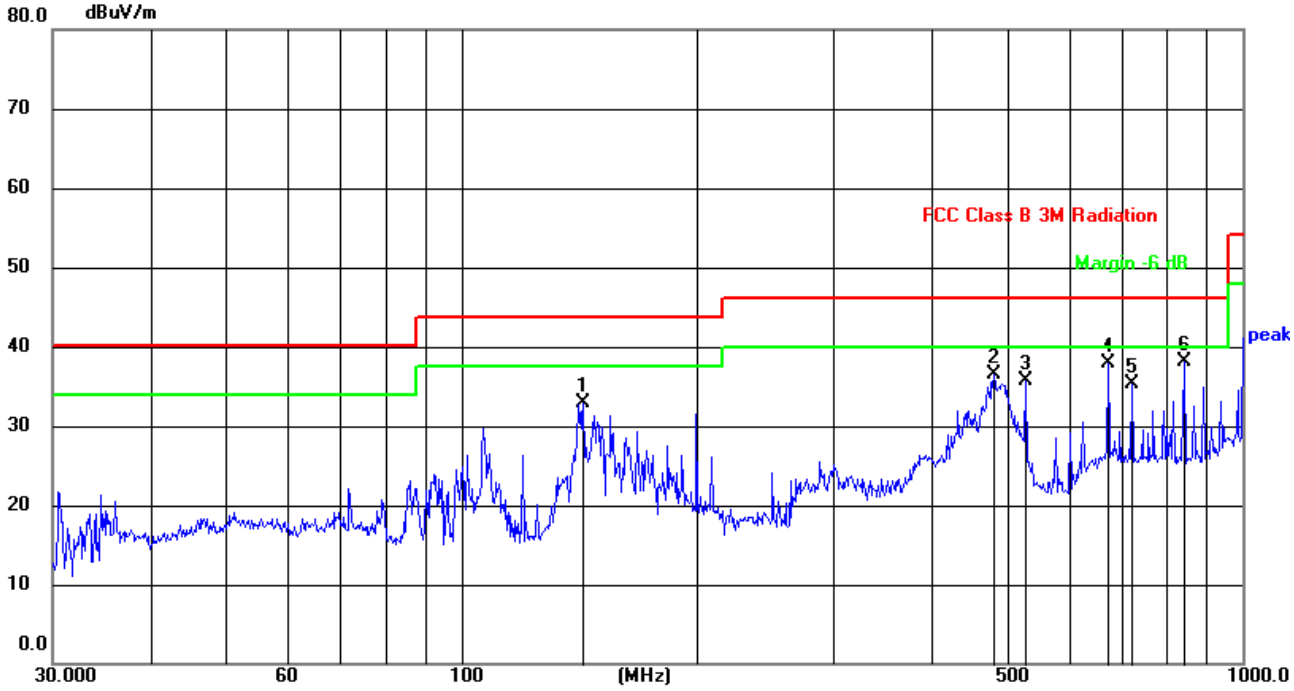
150KHz-30MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.1658	75.35	-25.91	49.44	103.21	-53.77	peak
2	0.5551	74.38	-26.38	48.00	72.72	-24.72	peak
3	0.6826	72.41	-26.53	45.88	70.93	-25.05	peak
4	2.5132	61.31	-27.29	34.02	69.50	-35.48	peak
5	13.4792	83.39	-30.22	53.17	69.50	-16.33	peak
6	26.9836	73.24	-33.94	39.30	69.50	-30.20	peak

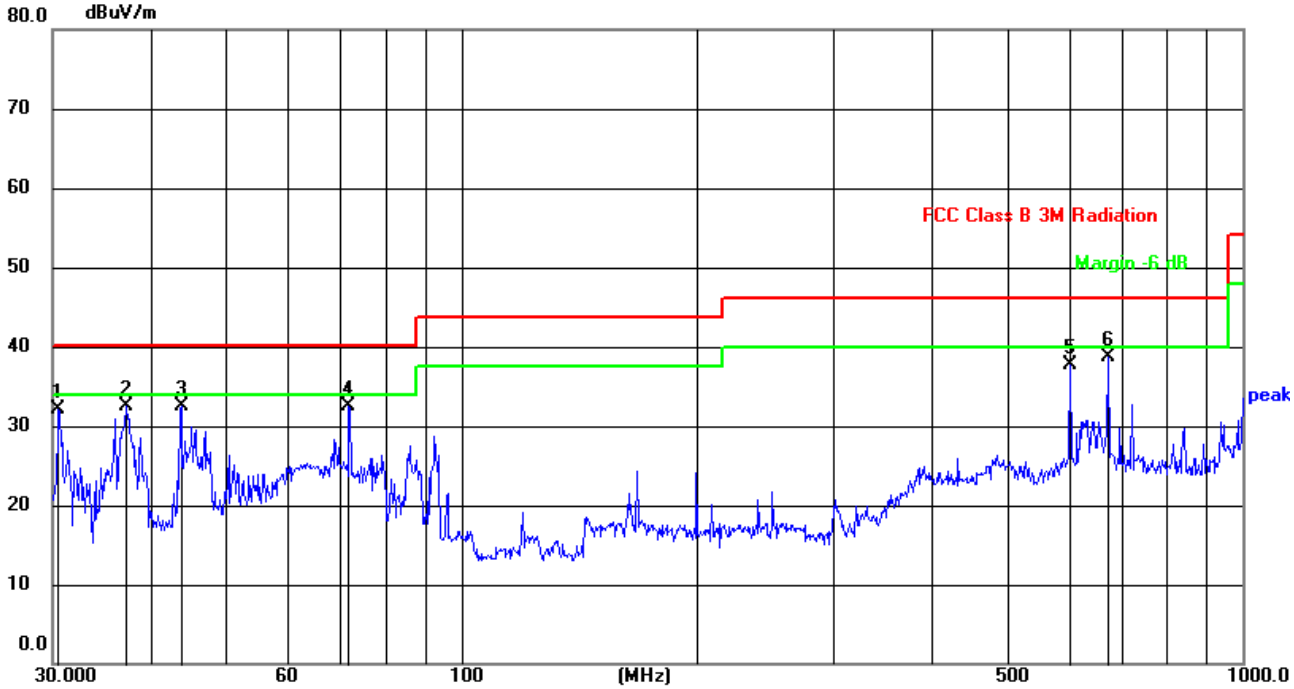
Radiated Emission >30MHz (30MHz-1GHz)

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	143.3257	54.21	-21.25	32.96	43.50	-10.54	QP
2	480.5276	51.75	-15.24	36.51	46.00	-9.49	QP
3	528.2458	49.05	-13.43	35.62	46.00	-10.38	QP
4	672.8442	47.98	-10.04	37.94	46.00	-8.06	QP
5	721.7258	44.00	-8.68	35.32	46.00	-10.68	QP
6	842.1295	44.38	-6.30	38.08	46.00	-7.92	QP

Vertical:

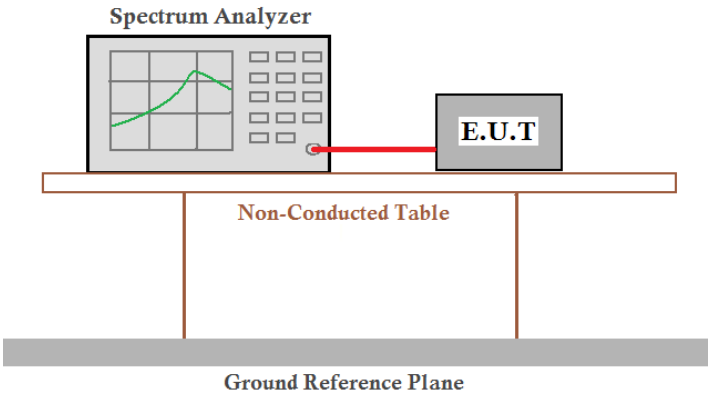


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.5304	54.67	-22.65	32.02	40.00	-7.98	QP
2	37.2854	53.89	-21.36	32.53	40.00	-7.47	QP
3	43.8119	53.70	-21.13	32.57	40.00	-7.43	QP
4	71.8319	56.95	-24.52	32.43	40.00	-7.57	QP
5	601.4265	49.46	-11.70	37.76	46.00	-8.24	QP
6	672.8442	48.71	-10.04	38.67	46.00	-7.33	QP

Remark:

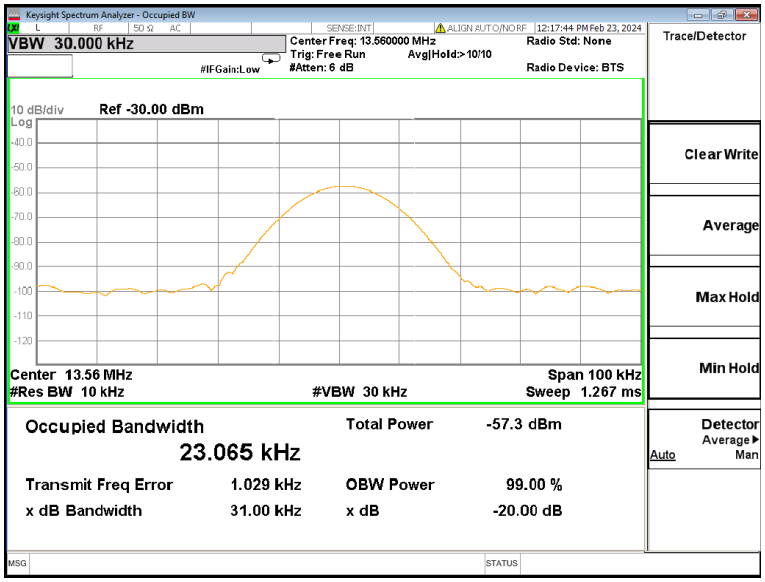
1. *Final Level =Receiver Read level +Correction Factor(Antenna Factor + Cable Loss – Preamplifier Factor)*
2. *The emission levels of other frequencies are more than 20 dB below the limit and not show in test report.*

4.5 20dB Occupy Bandwidth

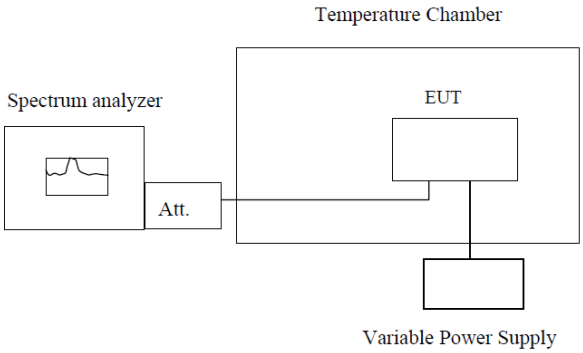
Test Requirement:	FCC Part15 C Section 15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation within the band 13.110 MHz to 14.010 MHz
Test setup:	
Test Procedure:	With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Measurement Data

Center Frequency	20dB bandwidth(kHz)	Limit(kHz)	Result
13.56MHz	31KHz	13.110 MHz to 14.010 MHz (900KHz)	Pass



4.6 Frequency Stability

Test Requirement:	FCC Part15 C Section 15.225(e)
Test Method:	ANSI C63.10:2013
Limit:	The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Procedure:	Test Procedures for Temperature Variation: 1. The EUT was set up in the thermal chamber and connected Spectrum analyzer. 2. Put the EUT in the chamber, set the temperature to be measured and record the carrier frequency error. Test Procedures for Voltage Variation: 1. The EUT was placed in a temperature chamber at 20±5℃ and connected Spectrum analyzer. 2. The voltage changes from 85% to 115% of the rated supply voltage and Record the carrier frequency error.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Test Result

Voltage (Vdc)	Temp. (℃)	Frequency (MHz)	Deviation (%)	Limit (%)
12.0	-20	13.560342	0.003	+/-0.01%
12.0	-10	13.560260	0.002	
12.0	0	13.560534	0.004	
12.0	10	13.560668	0.005	
12.0	20	13.560465	0.003	
12.0	30	13.560579	0.004	
12.0	40	13.560584	0.004	
12.0	50	13.560260	0.002	
10.8	20	13.560679	0.005	
13.2	20	13.560391	0.003	

5 Test Setup Photo

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

6 EUT Constructional Details

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

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