

FCC - TEST REPORTReport Number : **60.790.17.024.01R01** Date of Issue : September 20, 2017Model : BT LED DisplayProduct Type : BT LED DisplayApplicant : Guillemot Corp S.A.Address : Place du Granier, B.P 97143, Chantepie, France, 35171Production Facility : Guillemot Corp S.A.Address : Place du Granier, B.P 97143, Chantepie, France, 35171Test Result : Positive NegativeTotal pages including Appendices : 44

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2 Description of Equipment Under Test

Description of the Equipment Under Test

Product:	BT LED Display
Model no.:	BT LED Display
FCC ID:	NAM4169091
Rating:	1) 3.8VDC (1 x 3.8VDC Rechargeable battery) 2) 5.0VDC (USB port)
Frequency:	2402MHz-2480MHz
Antenna gain:	0 dBi
Number of operated channel:	40
Modulation:	GFSK



3 Summary of Test Standards

Test Standards

FCC Part 15 Subpart C 10-1-16 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C — Unintentional Radiators

4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
 3/F, West Wing, Lakeside 2,
 10 Science Park West Avenue,
 Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
 Building 12&13 Zhiheng Wisdomland Business Park,
 Nantou Checkpoint Road 2,
 Shenzhen 518052, P.R.China
 FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	Site 2
FCC Title 47 Part 15.207 Conducted Emission	Site 2
FCC Title 47 Part 15.247(a)(1) 6dB & 99% Bandwidth	Site 2
FCC Title 47 Part 15.247(b) Peak Output Power	Site 2
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	Site 2
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	Site 2
FCC Title 47 Part 15.247(e) Power Spectral Density	Site 2
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	Site 2

4.1 Test Equipment Site List

Radiated emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2018-7-14
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2018-7-14
Horn Antenna	Rohde & Schwarz	HF907	102294	2018-7-14
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100398	2018-7-14
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2018-7-14
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2018-7-7
Attenuator	Agilent	8491A	MY39264334	2018-7-7
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2018-7-14
LISN	Rohde & Schwarz	ENV4200	100249	2018-7-14
LISN	Rohde & Schwarz	ENV432	101318	2018-7-14
LISN	Rohde & Schwarz	ENV216	100326	2018-7-14
ISN	Rohde & Schwarz	ENY81	100177	2018-7-14
ISN	Rohde & Schwarz	ENY81-CA6	101664	2018-7-14
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2018-7-14
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2018-7-14
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2018-7-7
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

20dB & 99% Bandwidth, Peak Output Power, Spurious Emissions at Antenna Terminals, 100kHz Bandwidth of band edges, Power Spectral Density – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	108272	2018-7-7
Signal Analyzer	Rohde & Schwarz	FSV40	101030	2018-7-7
Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2018-7-7
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2018-7-7

4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted Emission 150kHz-30MHz	3.50dB

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	10-15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.207 Conduct Emission	16-17	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.247(a)(2) 6dB & 99% Bandwidth	18-20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.247(b) Peak Output Power	21-24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	25-26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	27-30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.247(e) Power Spectral Density	31-33	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	34	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 General Remarks

Remarks

NIL

SUMMARY:

- All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

- The Equipment Under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: April 19, 2017

Testing Start Date: April 20, 2017

Testing End Date: August 31, 2017

- TÜV SÜD HONG KONG LTD. -

Reviewed by:



CHAN Kwong Ngai
EMC Test Engineer



Prepared by:



Alex CHAN
EMC Project Engineer

7 Emission Test Results

7.1 Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
45.358	23.07	40	-16.93	Quasi Peak
271.261	17.06	46	-28.94	Quasi Peak
423.982	20.75	46	-25.25	Quasi Peak
871.155	31.53	46	-14.47	Quasi Peak
1592.125	32.71	74	-41.29	Peak
1592.125	27.42	54	-26.58	Average
2506.000	47.49	74	-26.51	Peak
2506.000	41.86	54	-12.14	Average
3327.656	50.61	74	-23.39	Peak
3327.656	46.72	54	-7.28	Average
4803.750	38.55	74	-35.45	Peak
4803.750	32.85	54	-21.15	Average
7206.094	42.83	74	-13.83	Peak
7206.094	39.07	54	-14.93	Average

Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
31.940	17.76	40	-22.24	Quasi Peak
45.250	22.42	40	-17.58	Quasi Peak
60.662	17.81	40	-22.19	Quasi Peak
871.155	32.97	46	-13.03	Quasi Peak
1594.687	36.39	74	-37.61	Peak
1594.687	31.22	54	-22.78	Average
2505.937	44.55	74	-29.45	Peak
2505.937	40.09	54	-13.91	Average
3327.656	48.61	74	-25.39	Peak
3327.656	42.92	54	-11.08	Average
4803.750	40.58	74	-33.42	Peak
4803.750	35.71	54	-18.29	Average
14937.656	47.01	74	-13.83	Peak
14937.656	42.24	54	-11.76	Average

Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
45.358	22.17	40	-17.83	Quasi Peak
108.300	12.65	43.5	-30.85	Quasi Peak
271.439	19.42	46	-26.58	Quasi Peak
423.918	23.67	46	-22.33	Quasi Peak
1592.187	35.23	74	-38.77	Peak
1592.187	29.95	54	-24.05	Average
2233.125	37.67	74	-36.33	Peak
2233.125	32.71	54	-21.29	Average
3327.656	49.92	74	-24.08	Peak
3327.656	45.17	54	-8.83	Average
4881.562	39.39	74	-34.61	Peak
4881.562	32.71	54	-21.29	Average
7322.343	45.06	74	-13.83	Peak
7322.343	41.06	54	-12.94	Average

Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
45.448	20.55	40	-19.45	Quasi Peak
108.605	15.15	43.5	-28.35	Quasi Peak
271.636	19.84	46	-26.16	Quasi Peak
425.051	22.37	46	-23.63	Quasi Peak
1115.625	32.51	74	-41.49	Peak
1115.625	28.14	54	-25.86	Average
1599.687	31.08	74	-42.92	Peak
1599.687	27.63	54	-26.37	Average
3327.656	48.87	74	-25.13	Peak
3327.656	43.41	54	-10.59	Average
4881.562	40.89	74	-33.11	Peak
4881.562	35.62	54	-18.38	Average
11766.562	43.33	74	-13.83	Peak
11766.562	38.23	54	-15.77	Average

Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
45.350	21.65	40	-18.35	Quasi Peak
108.553	14.21	43.5	-29.29	Quasi Peak
271.925	20.03	46	-25.97	Quasi Peak
425.008	22.59	46	-23.41	Quasi Peak
1115.687	32.24	74	-41.76	Peak
1115.687	27.68	54	-26.32	Average
1592.062	35.62	74	-38.38	Peak
1592.062	30.23	54	-23.77	Average
3327.656	50.63	74	-23.37	Peak
3327.656	45.81	54	-8.19	Average
4959.375	35.56	74	-38.44	Peak
4959.375	31.07	54	-22.93	Average
15017.343	47.12	74	-13.83	Peak
15017.343	42.65	54	-11.35	Average

Spurious Radiated Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
 Comment: 3.8VDC
 Remark: 9kHz to 25GHz

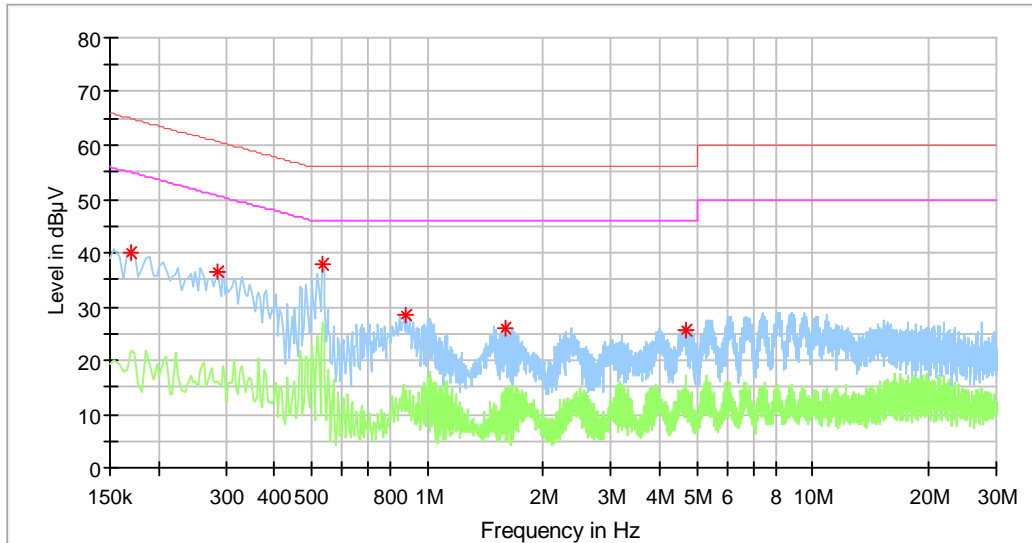
Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
45.440	20.83	40	-19.17	Quasi Peak
108.110	15.07	43.5	-28.43	Quasi Peak
271.836	21.06	46	-24.94	Quasi Peak
425.156	21.94	46	-24.06	Quasi Peak
1066.500	28.52	74	-45.48	Peak
1066.500	23.71	54	-30.29	Average
1599.312	39.24	74	-34.76	Peak
1599.312	34.63	54	-19.37	Average
3327.656	48.53	74	-25.47	Peak
3327.656	43.29	54	-10.71	Average
4959.843	40.71	74	-33.29	Peak
4959.843	36.21	54	-17.79	Average
14975.625	47.19	74	-13.83	Peak
14975.625	42.82	54	-11.18	Average

7.2 Conducted Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, Normal Link
 Test Specification: FCC 15.207 Conduct Emission, L Line
 Comment: 120VAC, 60Hz (For external adaptor)

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

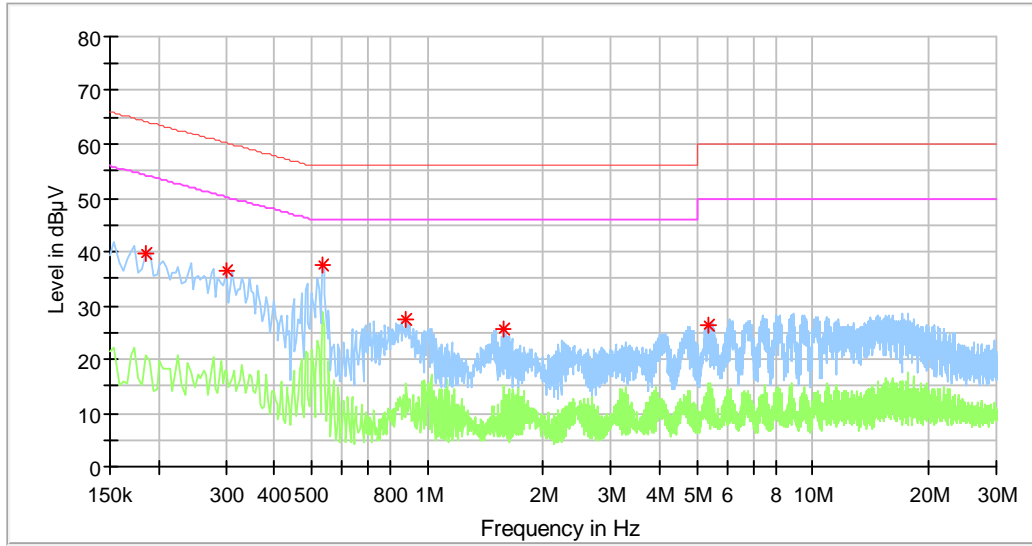


Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)
0.170000	39.95	---	-64.96
0.286000	36.51	---	-60.64
0.534000	38.03	---	-56.00
0.882000	28.47	---	-56.00
1.590000	26.09	---	-56.00
4.714000	25.74	---	-56.00

Conducted Emission

EUT: BT LED DISPLAY
 Op Condition: Operated, Normal Link
 Test Specification: FCC 15.207 Conduct Emission, N Line
 Comment: 120VAC, 60Hz (For external adaptor)

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

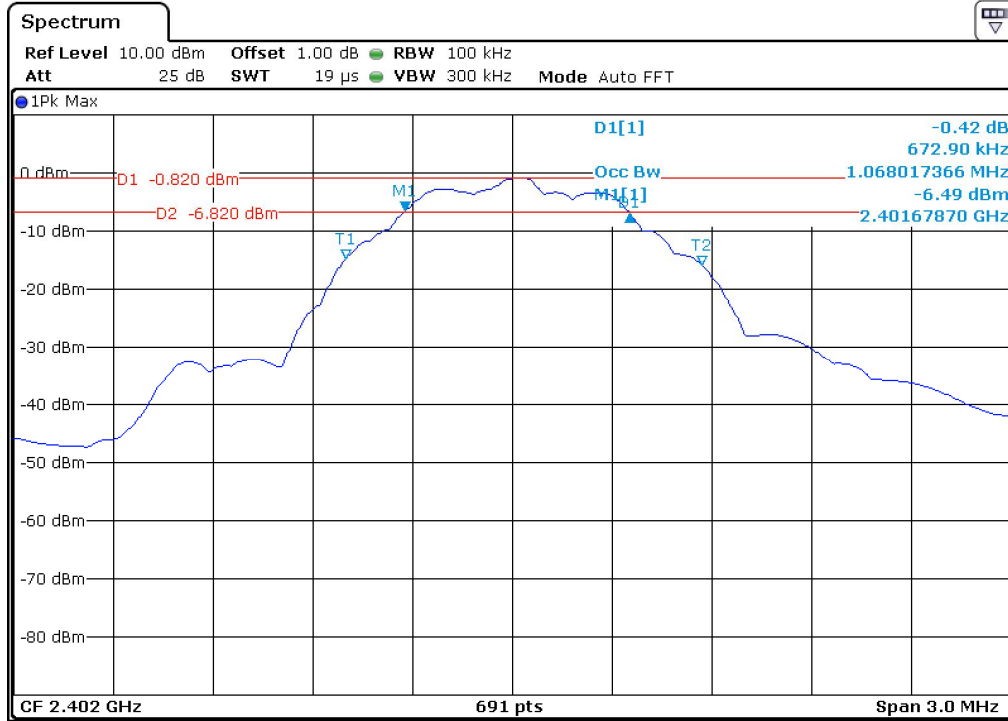


Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)
0.186000	39.53	---	64.21	24.69
0.302000	36.33	---	60.19	23.85
0.534000	37.56	---	56.00	18.44
0.882000	27.52	---	56.00	28.48
1.574000	25.50	---	56.00	30.50
5.338000	26.18	---	60.00	33.82

7.3 6dB & 99% Bandwidth

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



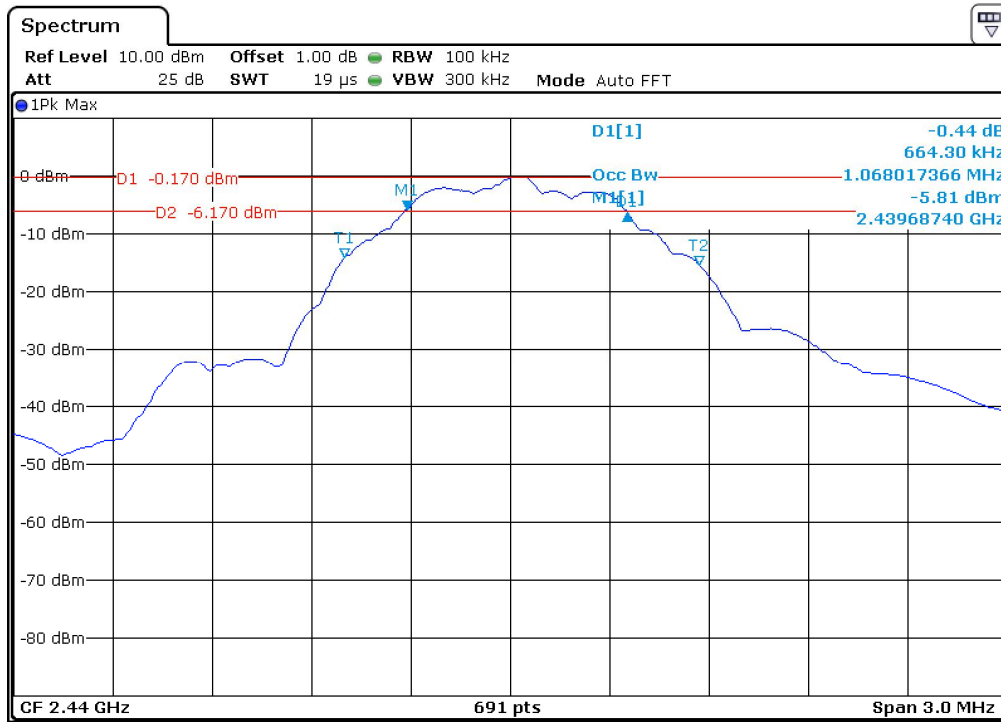
6dB bandwidth	Limit
672.900 kHz	>500 kHz

99% bandwidth
1068.017 kHz

20dB & 99% Bandwidth

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.247(a)(2), 20dB Bandwidth & 99% Bandwidth
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



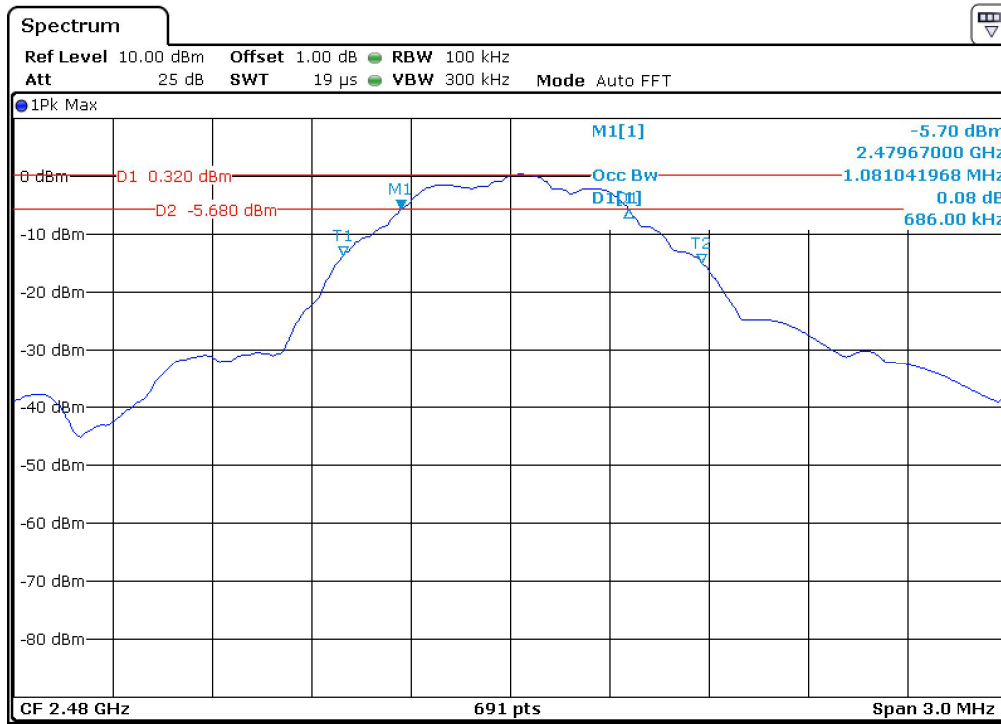
6dB bandwidth	Limit
664.300 kHz	>500 kHz

99% bandwidth
1068.017 kHz

20dB & 99% Bandwidth

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



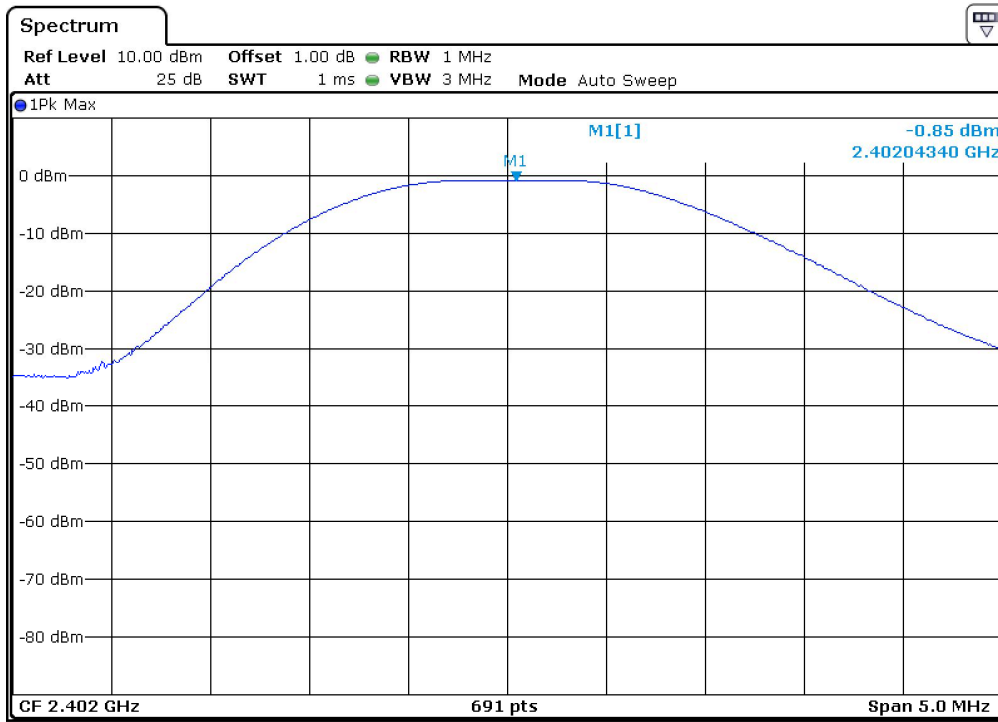
6dB bandwidth	Limit
686.000 kHz	>500 kHz

99% bandwidth
1081.041 kHz

7.4 Peak Output Power

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(b)
 Comment: 3.8VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

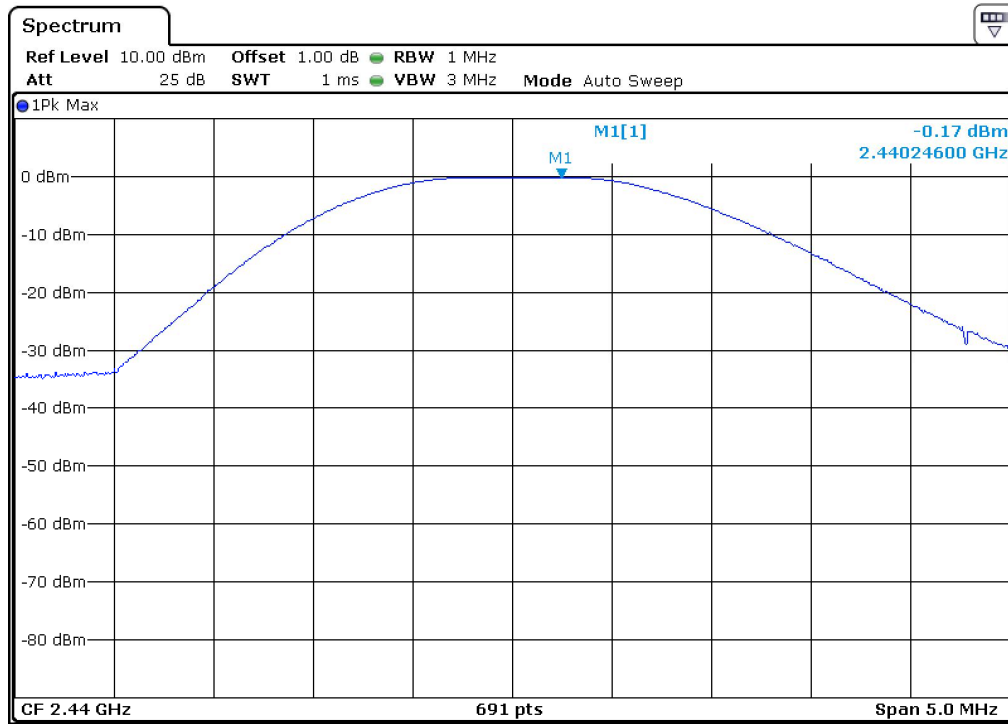


Conducted Output Power	Limit
-0.05dBm	30dBm

Peak Output Power

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.247(b)
 Comment: 3.8VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

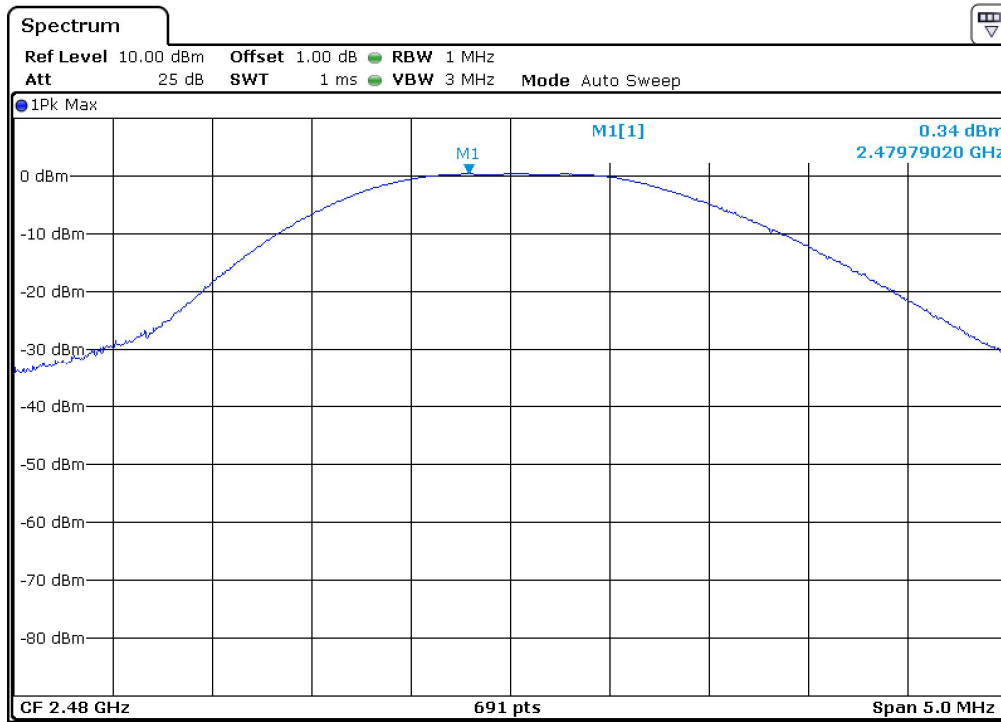


Conducted Output Power	Limit
-0.17dBm	30dBm

Peak Output Power

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(b)
 Comment: 3.8VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

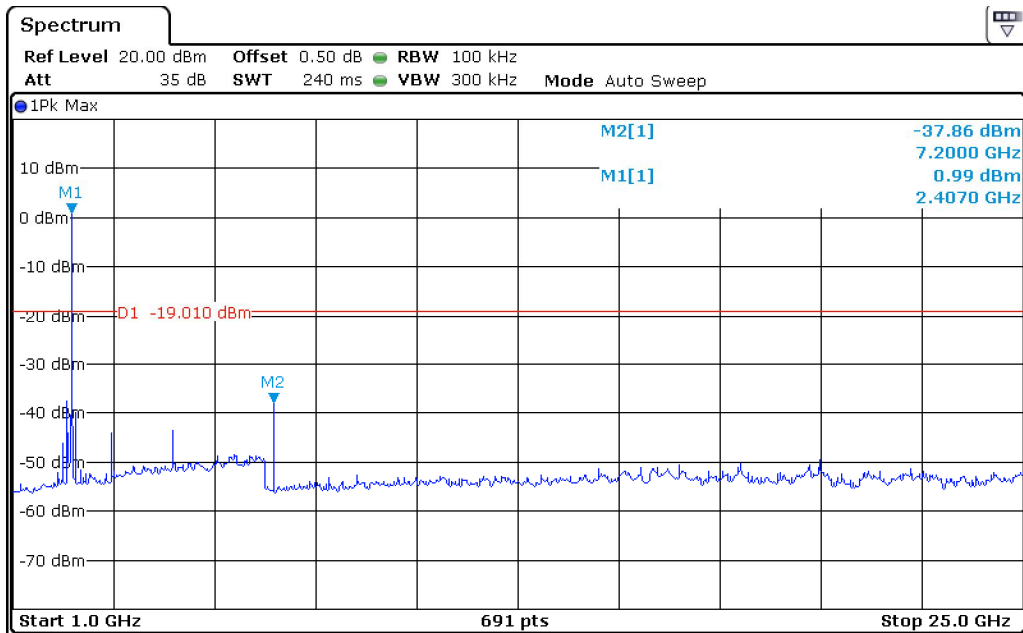
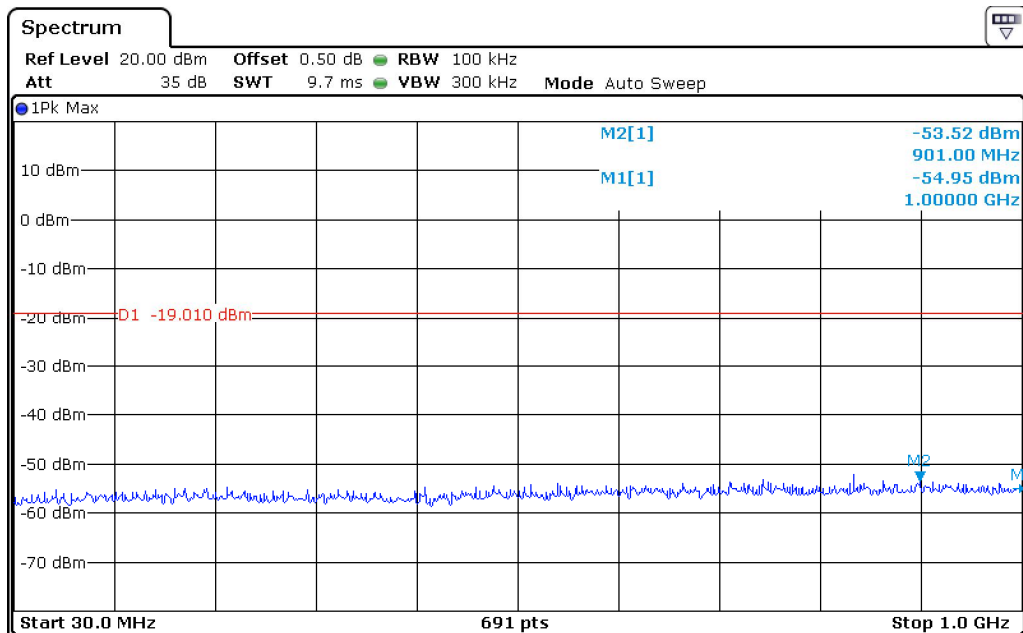


Conducted Output Power	Limit
0.34dBm	30dBm

7.5 Spurious Emissions at Antenna Terminals

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

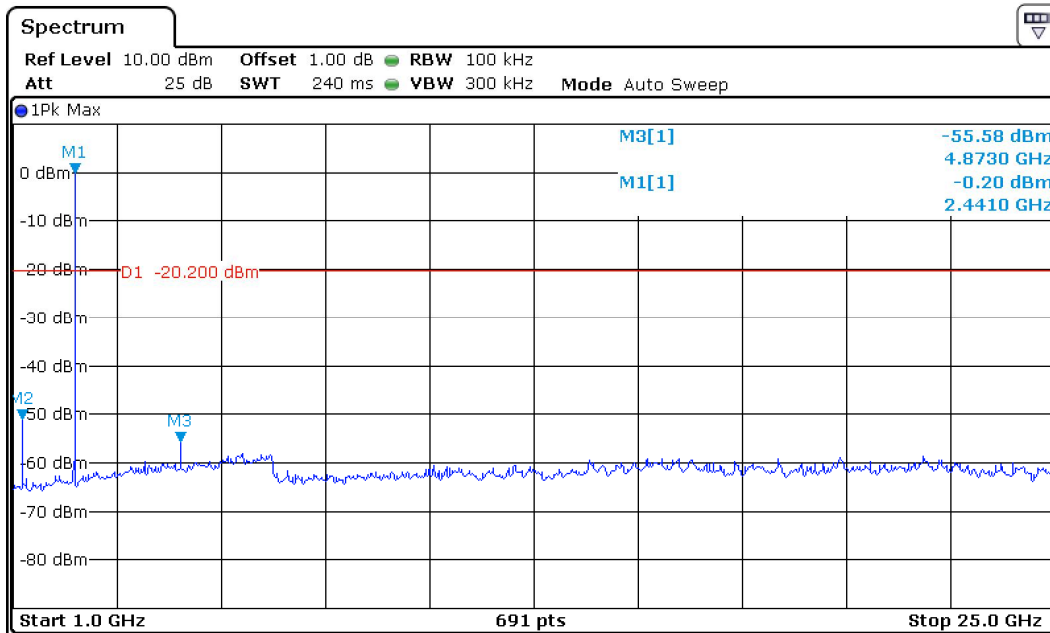
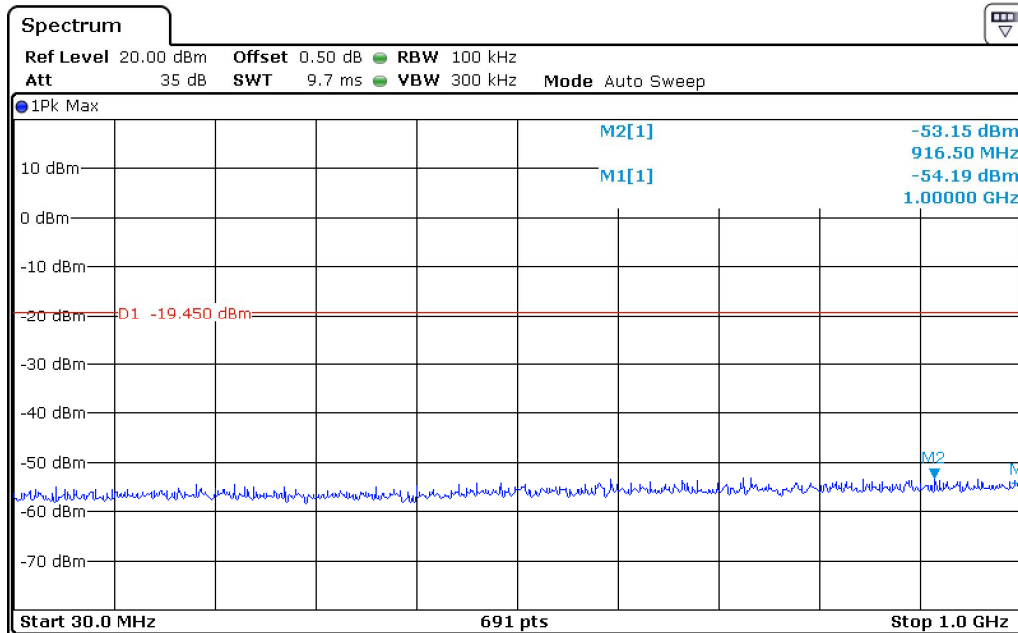


Limit: 20dB below the highest level of the desired power in the passband

Spurious Emissions at Antenna Terminals

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

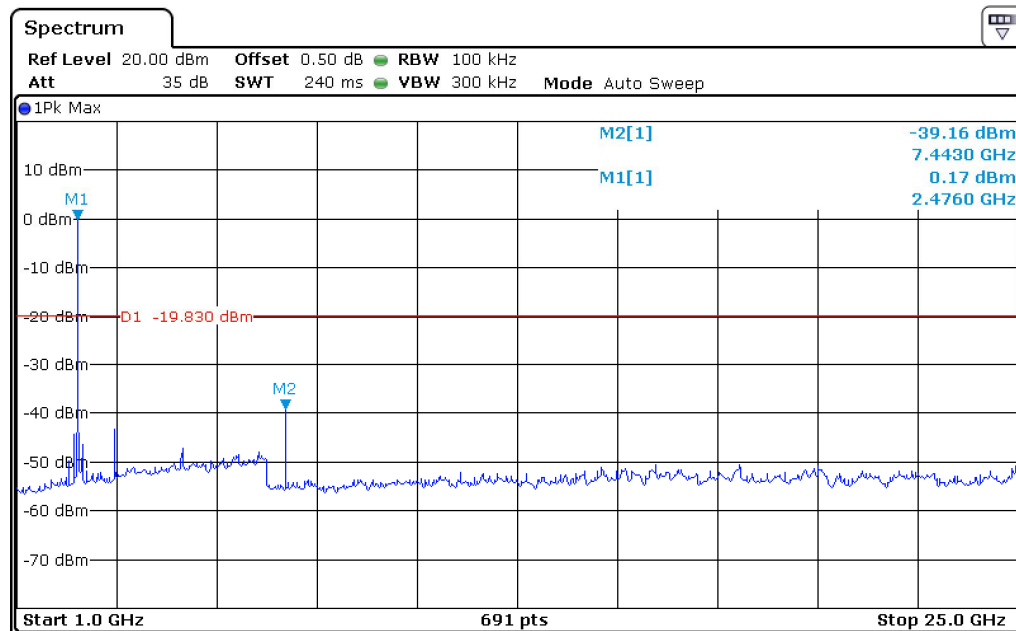
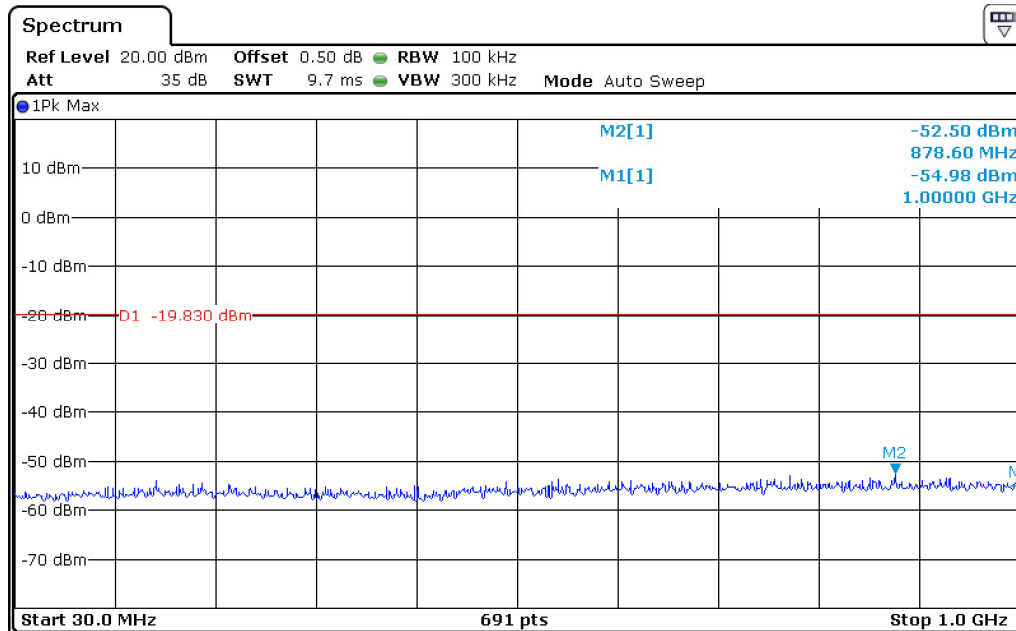


Limit: 20dB below the highest level of the desired power in the passband

Spurious Emissions at Antenna Terminals

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

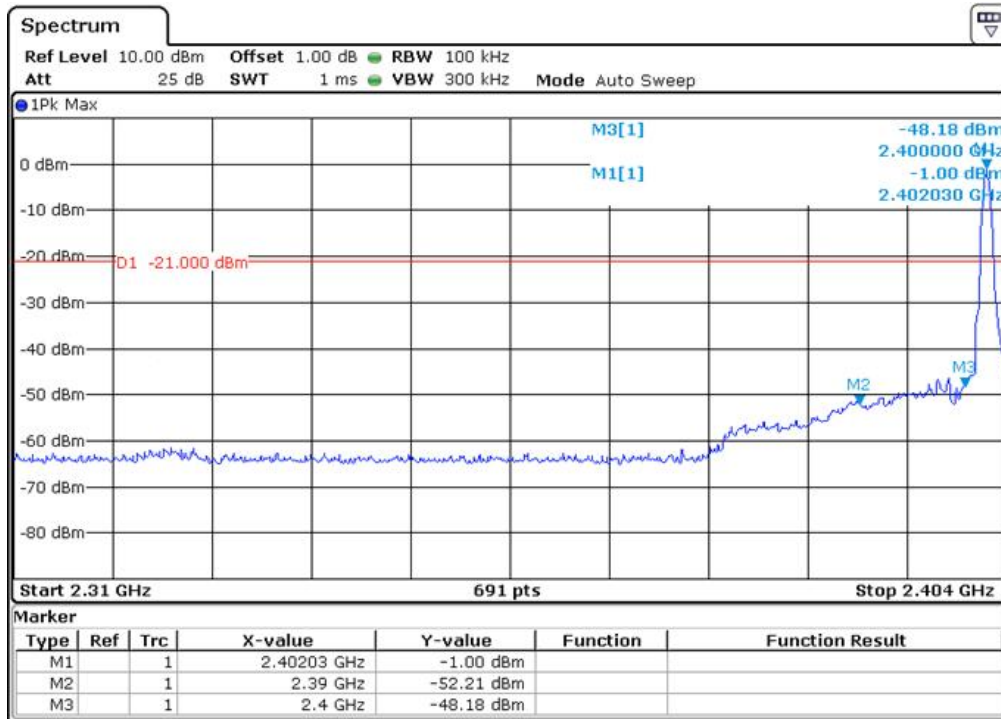


Limit: 20dB below the highest level of the desired power in the passband

7.6 100kHz Bandwidth of band edges

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(d), Conducted
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Band edges	Limit
47.18 dB	> 20dB

100kHz Bandwidth of band edges

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(d), Radiated
 Comment: 3.8VDC

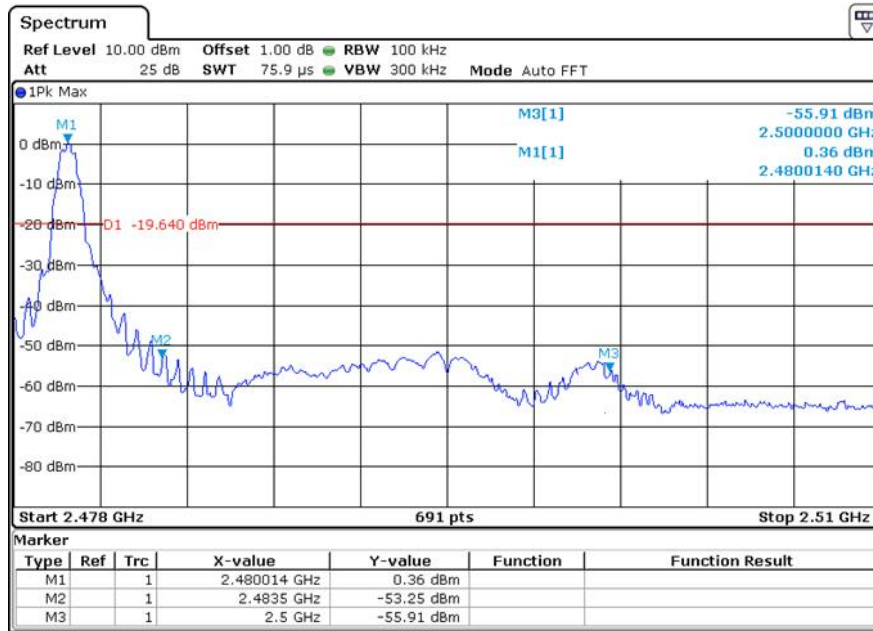
Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
2390.000	43.02	74	-30.98	Peak
2390.000	32.72	54	-21.28	Average

100kHz Bandwidth of band edges

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(d), Conducted
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Band edges	Limit
52.89 dB	> 20dB

100kHz Bandwidth of band edges

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(d), Radiated
 Comment: 3.8VDC

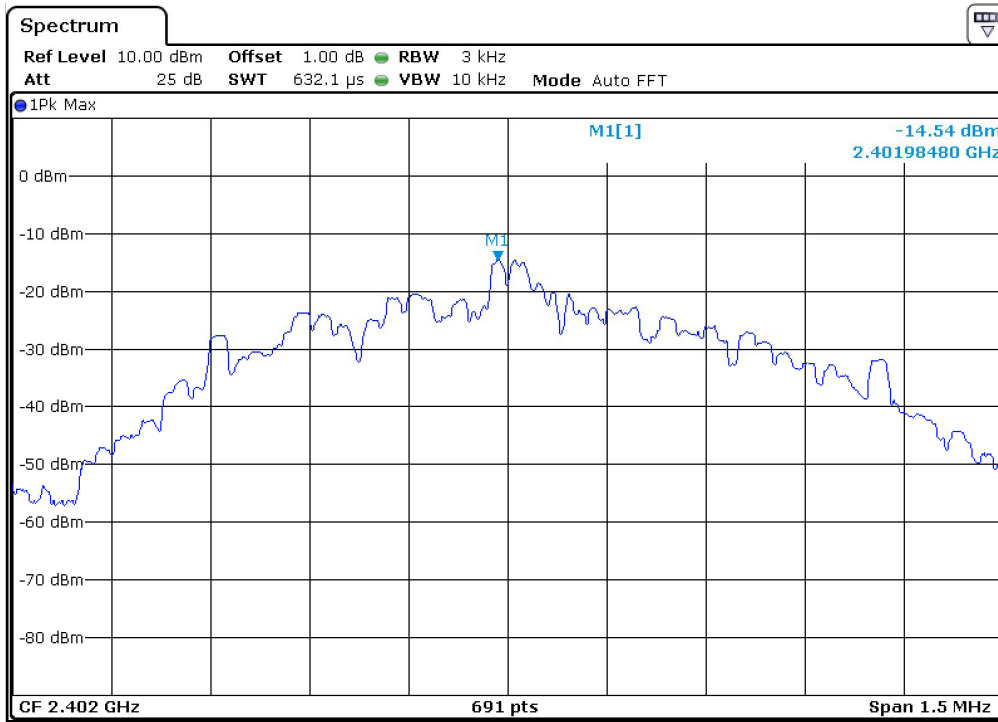
Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency MHz	Result dB μ V/m	Limit dB μ V/m	Margin dB	Detector
2483.500	41.98	74	-32.02	Peak
2483.500	30.25	54	-23.75	Average

7.7 Power Spectral Density

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2402-2480MHz)
 Test Specification: FCC15.247(e)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



PSD	Limit
-14.54 dBm	< 8 dBm

Power Special Density

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.247(e)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



PSD	Limit
-13.28 dBm	< 8 dBm

Power Special Density

EUT: BT LED DISPLAY
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.247(e)
 Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



PSD	Limit
-12.60 dBm	< 8 dBm

7.8 Antenna Requirement

EUT: BT LED DISPLAY
Op Condition: Operated, TX Mode
Test Specification: FCC15.203 & 15.247(b)
Comment: 3.8VDC

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Limit

For intentional device, according to FCC Title 47 Part 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. And according to FCC Title 47 Part 15.247(b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

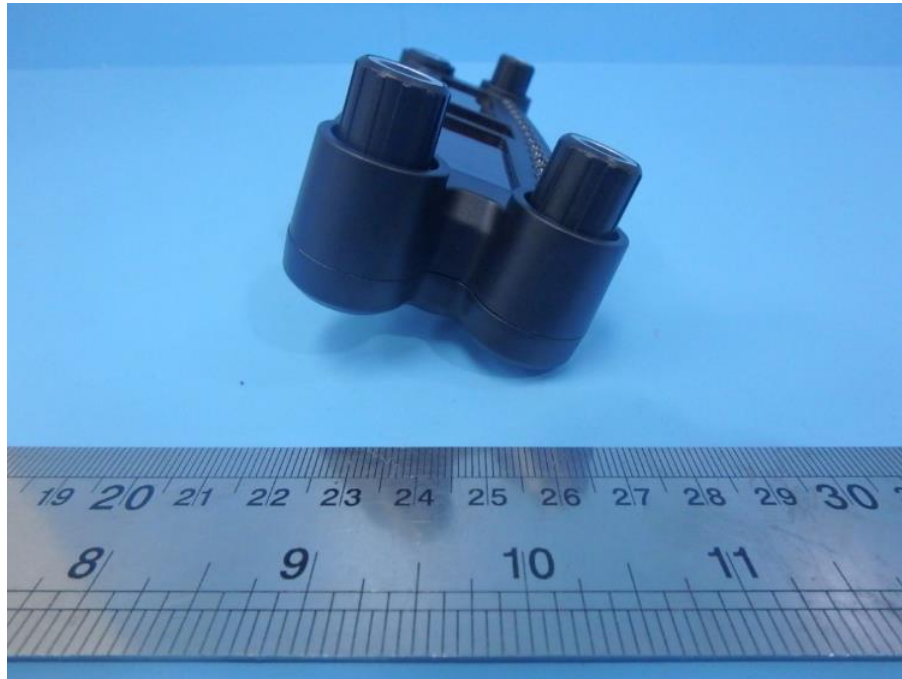
Antenna Connector Construction

The antenna used in this product is PCB antenna, and the maximum gain of this antenna is 0.0 dBi.

8 Appendix A - Photographs of EUT



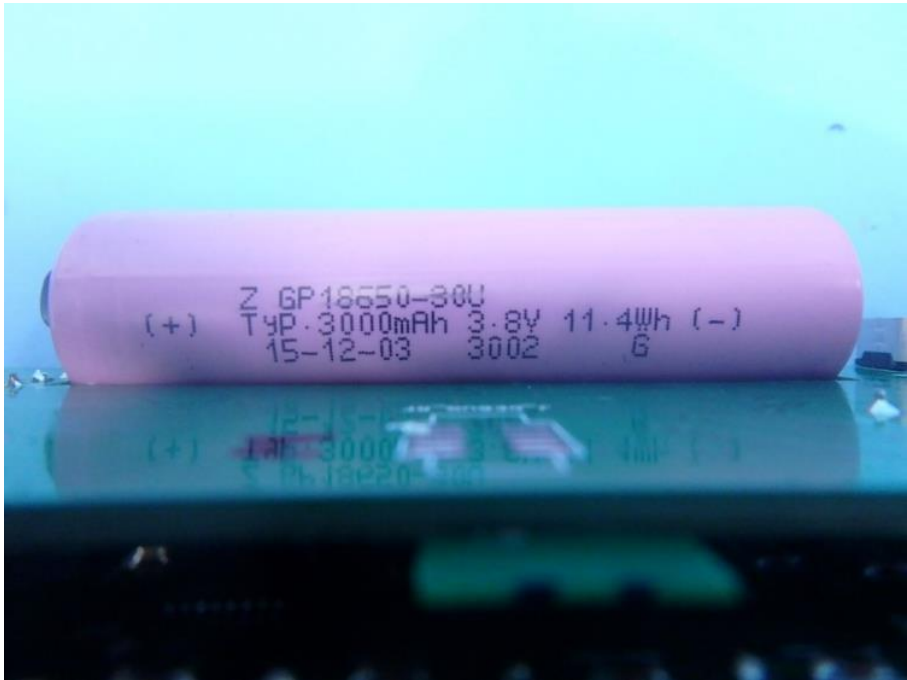
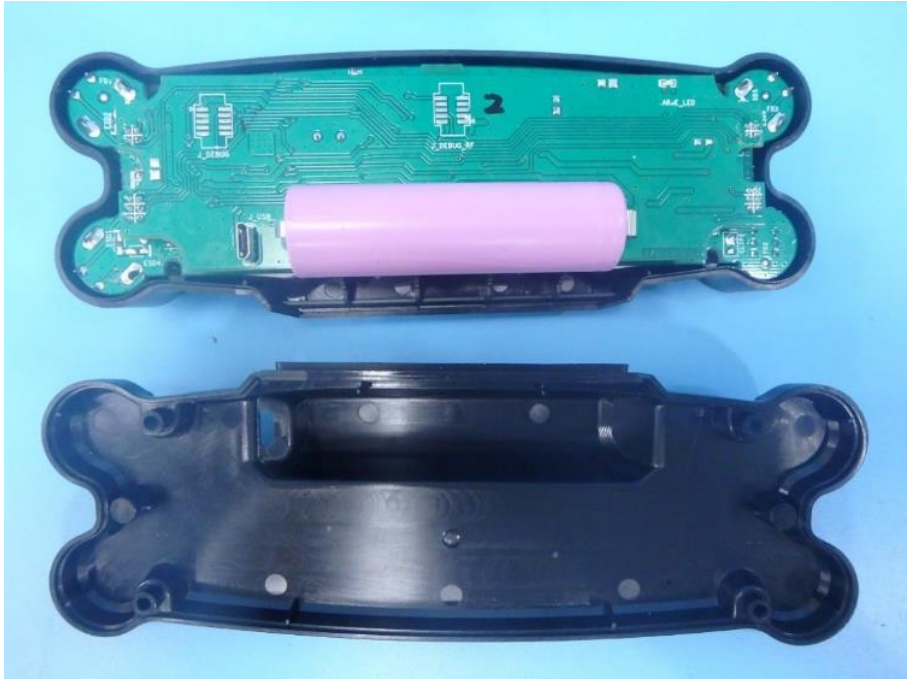
Appendix A



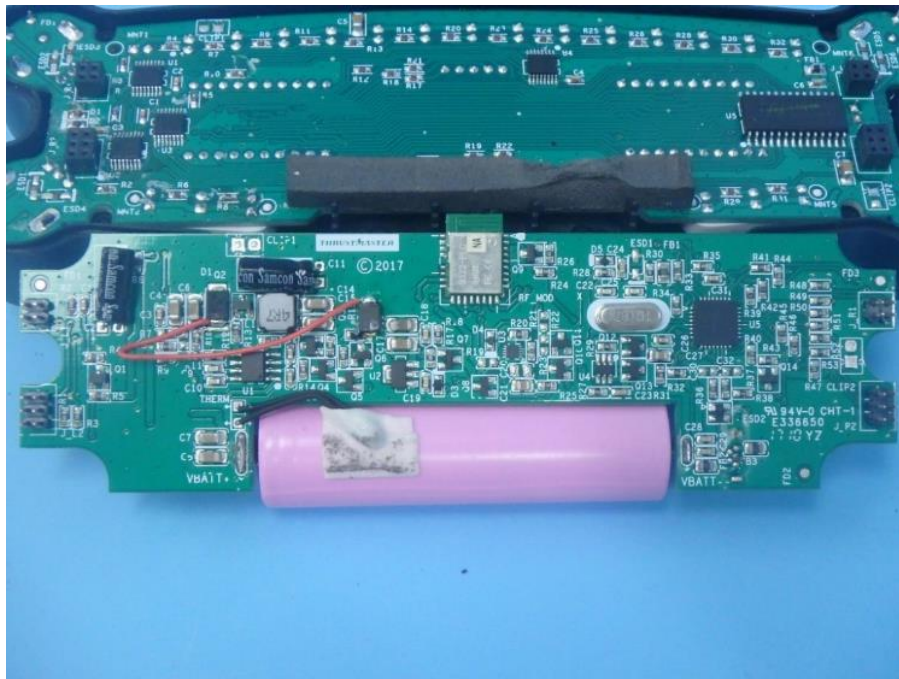
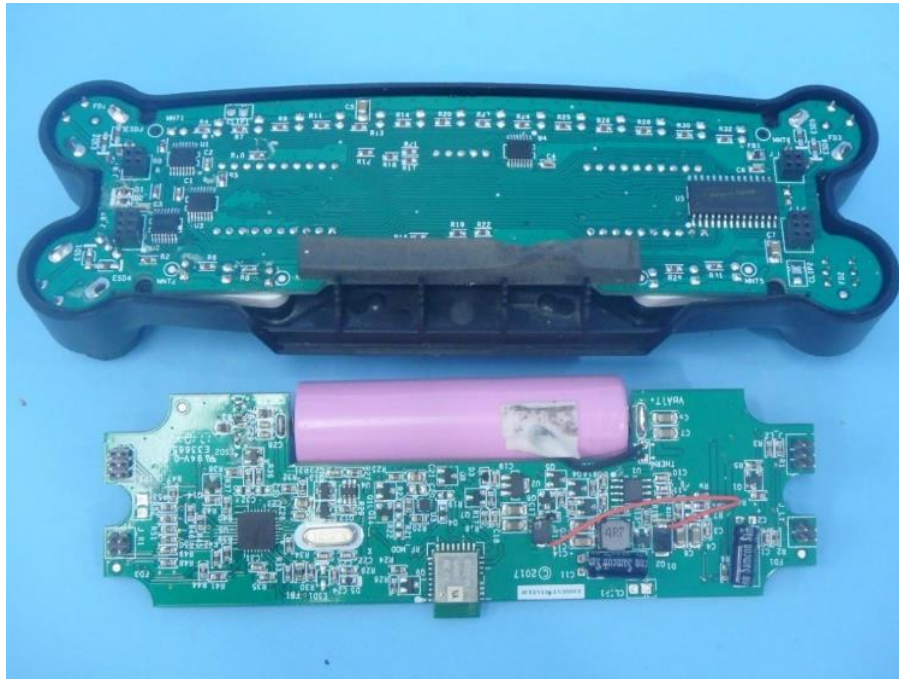
Appendix A



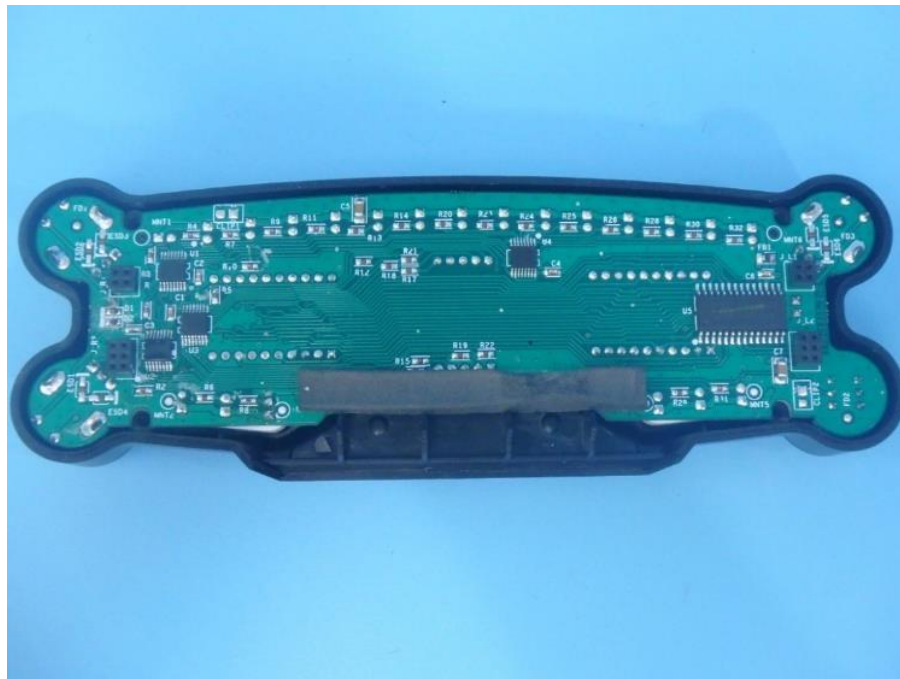
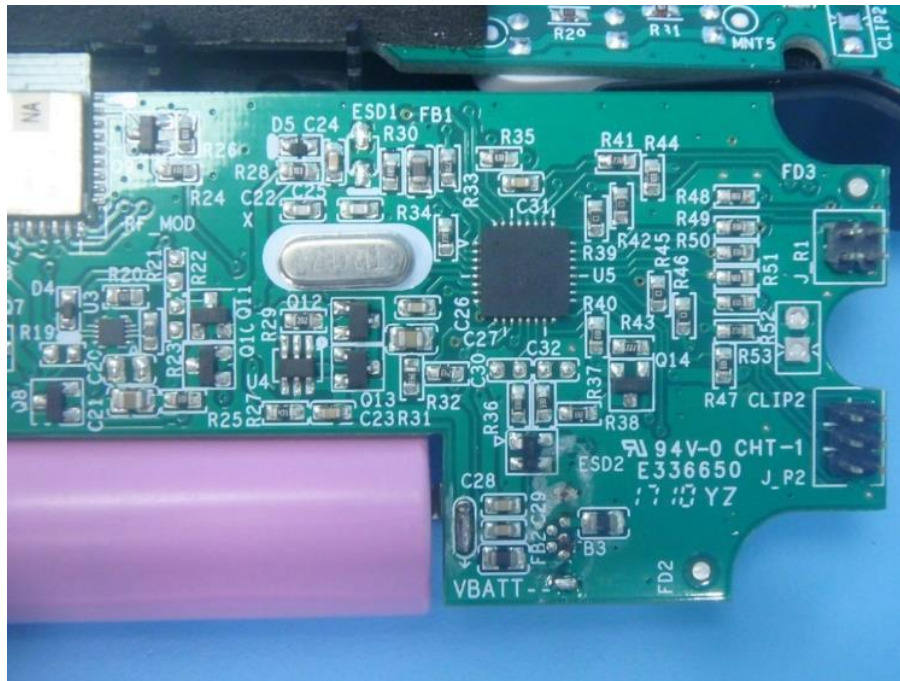
Appendix A



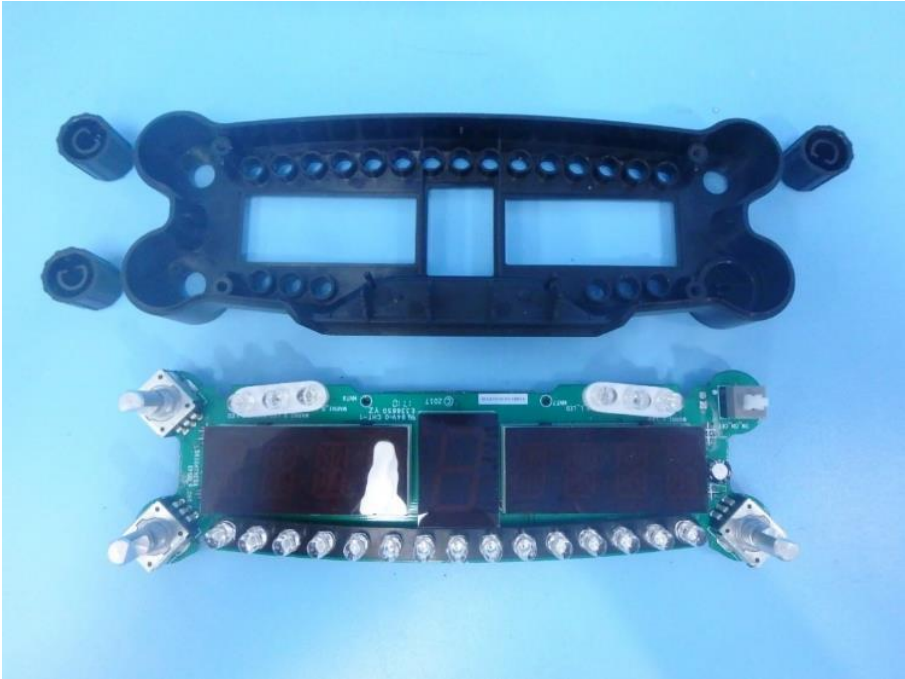
Appendix A



Appendix A



Appendix A

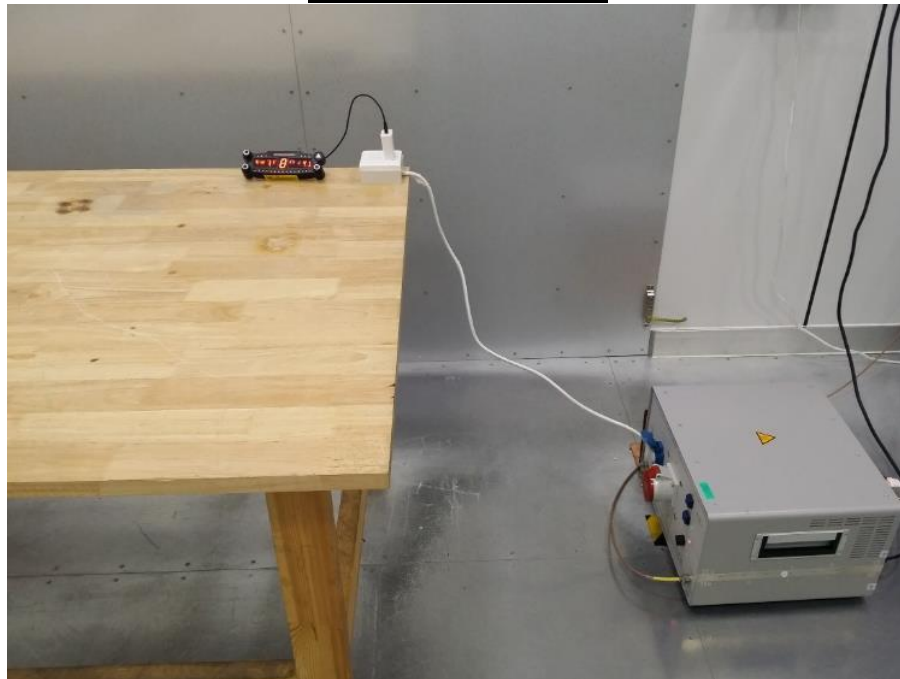


9 Appendix B - Setup Photographs of EUT

Spurious Radiated Emission



Conducted Emission



Appendix B

20dB & 99% Bandwidth, Peak Output Power,
Spurious Emissions at Antenna Terminals,
100kHz Bandwidth of band edges, Min. No. of Hopping Frequencies,
Min. Hopping Channel Carrier Frequency Separation, Average Time of Occupancy



10 Appendix C - General Product Information

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as

Step a)

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

>> The fundamental frequency of the EUT is 2402-2480MHz,
the test separation distance is ≤ 50 mm.
(Manufacturer specified the separation distance is: 5mm)

Step a)

>> Numeric threshold (2402MHz), $\text{mW} / 5\text{mm} \cdot \sqrt{2.402\text{GHz}} \leq 3.0$
Numeric threshold (2402MHz) $\leq 9.678\text{mW}$

>> Numeric threshold (2440MHz), $\text{mW} / 5\text{mm} \cdot \sqrt{2.441\text{GHz}} \leq 3.0$
Numeric threshold (2440MHz) $\leq 9.601\text{mW}$

>> Numeric threshold (2480MHz), $\text{mW} / 5\text{mm} \cdot \sqrt{2.480\text{GHz}} \leq 3.0$
Numeric threshold (2480MHz) $\leq 9.525\text{mW}$

>> The power of EUT measured (2402MHz) is: $-0.05\text{dBm} = 0.988\text{mW}$
The power of EUT measured (2440MHz) is: $-0.17\text{dBm} = 0.962\text{mW}$
The power of EUT measured (2480MHz) is: $0.34\text{dBm} = 1.081\text{mW}$

Which is smaller than the Numeric threshold.

Therefore, the device is exempt from stand-alone SAR test requirements.