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TEST REPORT

Application No.:	SZEM2102001727CR
Applicant:	DT Research, Inc.
Address of Applicant:	3RD FL NO 36 WUQUAN 7TH RD WUGU DISTRICT, NEW TAIPEI, Taiwan
Manufacturer:	DT Research, Inc.
Address of Manufacturer:	2000 Concourse Drive, San Jose, CA 95131, USA
Factory:	DT Research, Inc. Taiwan Branch
Address of Factory:	6F., No.36 Wuquan 7 th Rd., Wugu Dist. New Taipei City 248 Taiwan
Equipment Under Test (EUT):	
EUT Name:	Battery-Powered all-in-one computer
Model No.:	584XXX-XXX (X=blank, A-Z or 0-9) ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	DT Research
FCC ID:	YE3600-AX200NG
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2021-02-07
Date of Test:	2021-02-14 to 2021-03-10
Date of Issue:	2021-03-12
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2021-03-12		Original

Authorized for issue by:				
		Edison Li/Project Engineer		
		Eric Fu/Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass

Remark:

Model No.: 584XXX-XXX (X=blank, A-Z or 0-9)

Only the model 584T was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on model No. and External ports(with DC OUT Port or without DC OUT Port).

This report is prepared for FCC class II permissive change.

The modular approval by TCB, FCC ID: YE3600-AX200NG, Granted on 05/25/2020.

The module installed into host platform mentioned above is electronically and mechanically identical to the original certified module. The Original FCC testing on module under FCC ID: YE3600-AX200NG was performed with an antenna of higher gain, and the antenna was connected to the module in an open environment. The current host platform under application uses a new antenna of the different type, Lower gain and is installed inside the host platform enclosure.

Therefore in this report Conducted Emissions at AC Power Line (150kHz-30MHz), Radiated Emissions which fall in the restricted bands and Radiated Spurious Emissions were fully retested on model 584T and shown the data in this report.

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3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	AC Adapter Model: EM11011M-190 Input: AC 100-240V, 2.0~1.0A, 50/60Hz Output: DC 19V, 6.31A, 120W Li-ion Rechargeable Battery Pack Model: ACC-006-591 3INR19/66-3 DC:10.9V 8250mAh/90Wh Rated Capacity: 8250mAh Charge Current: 3.0A Max Nominal Voltage: 10.9V Charge Voltage: 12.3V Max
Test voltage:	AC 120V, 60Hz or AC 230V, 50Hz Note: Both nominal AC 120V, 60Hz and AC 240 V, 50Hz are required for testing in accordance with FCC KDB174176, this report only shows the results of the worst test result(AC 120V, 60Hz);
Port:	DC-out(Optional) ports, Audio jack ports, DC-in ports, Ethernet ports, COM ports, HDMI ports, USB ports, Power buttons, Function buttons, LED reading light, Battery packs(Optional)
Cable(s):	DC cable:114cm with a ferrite core
Internal Source:	More than 108MHz
Sample Type:	Fixed device
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Antenna Type:	PIFA Antenna
Antenna Gain:	3.0dBi

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	± 3.0dB (150kHz to 30MHz)
Radiated Emissions which fall in the restricted bands	± 4.5dB (Below 1GHz);± 4.8dB (Above 1GHz)
Radiated Spurious Emissions	± 4.5dB (Below 1GHz);± 4.8dB (Above 1GHz)

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2019-06-13	2022-06-12
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2020-03-24	2021-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2020-07-10	2021-07-09
LISN	Rohde&Schwarz	ENV216	SEM007-01	2020-09-23	2021-09-22
LISN	ETS-LINDGREN	3816/2	SEM007-02	2020-04-01	2021-03-31

RE in Chamber					
Test Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date**	**Cal. Due date**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI receiver(3Hz-3.6GHz)	KEYSIGHT	N9038A	SEM004-15	2020-11-02	2021-11-01
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2020-04-01	2021-03-31
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

Radiated Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2020-04-09	2021-04-08
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09
Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2020-11-14	2023-11-13
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2020-04-01	2021-03-31

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Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2020-04-09	2021-04-08
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09
Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2020-11-14	2023-11-13
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2020-04-01	2021-03-31

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-15	2021-09-14
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-15	2021-09-14
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2020-04-07	2021-04-06

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

Limit:

Standard 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.6dBi.

Antenna location: Refer to Internal photos.

7 Radio Spectrum Matter Test Results

7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.1.1 E.U.T. Operation

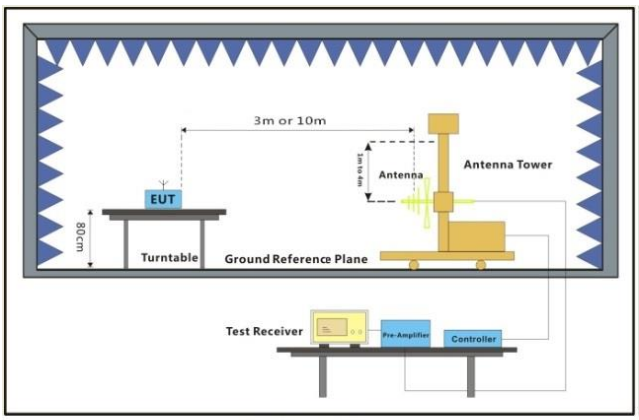
Operating Environment:

Temperature: 22.6 °C Humidity: 52.8 % RH Atmospheric Pressure: 1010 mbar

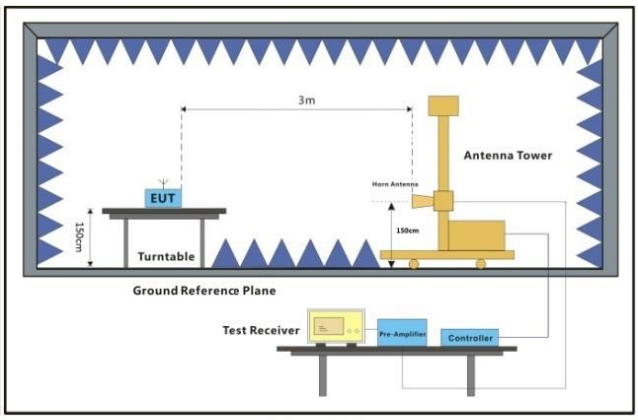
7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.
Final test	17	Charge + TX mode_Keep the EUT in charging and continuously transmitting mode with GFSK modulation.

7.1.3 Test Setup Diagram



30MHz-1GHz



Above 1GHz

7.1.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

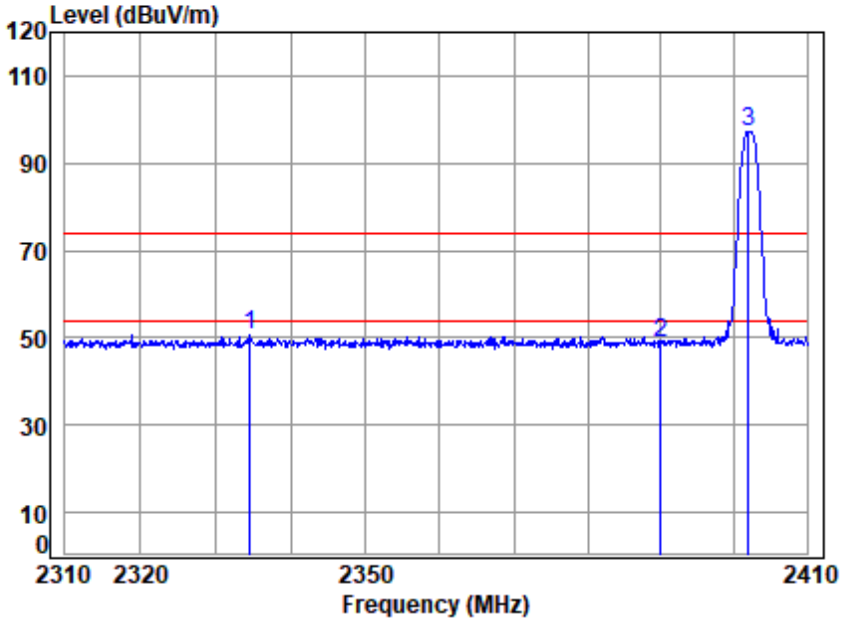
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

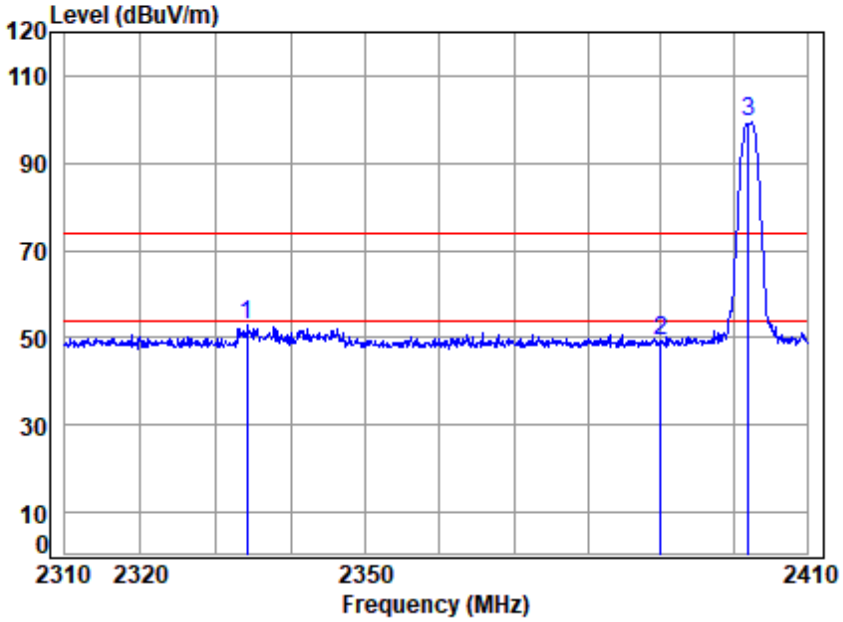
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 01727CR
Mode : 2402 Band edge
Note : BLE 1M

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2334.505	4.25	28.42	40.39	58.50	50.78	74.00	-23.22	peak
2	2390.000	4.34	28.52	40.42	56.50	48.94	74.00	-25.06	peak
3 *	2402.000	4.36	28.54	40.43	104.60	97.07	74.00	23.07	peak

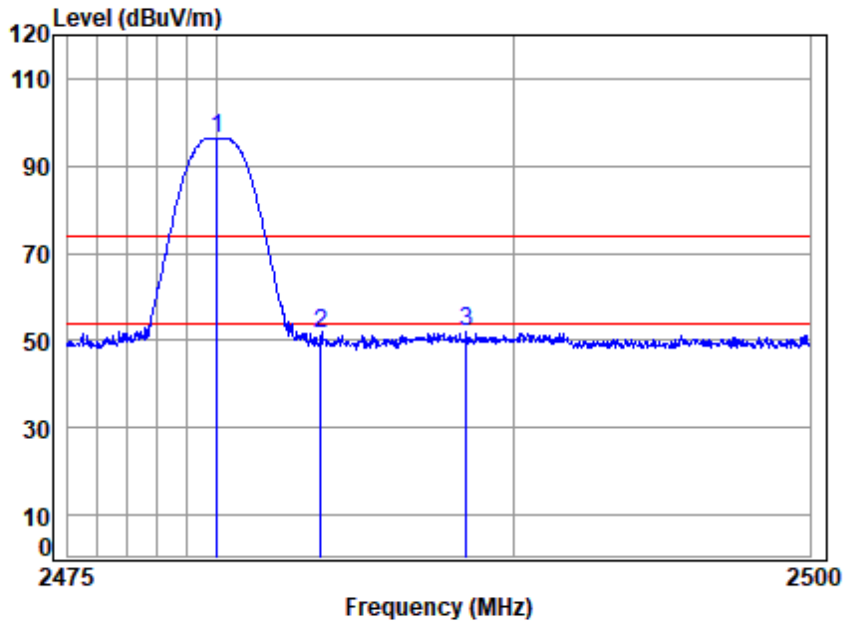
Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 01727CR
Mode : 2402 Band edge
Note : BLE 1M

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2334.208	4.25	28.42	40.39	60.48	52.76	74.00	-21.24	peak
2	2390.000	4.34	28.52	40.42	56.92	49.36	74.00	-24.64	peak
3 *	2402.000	4.36	28.54	40.43	106.77	99.24	74.00	25.24	peak

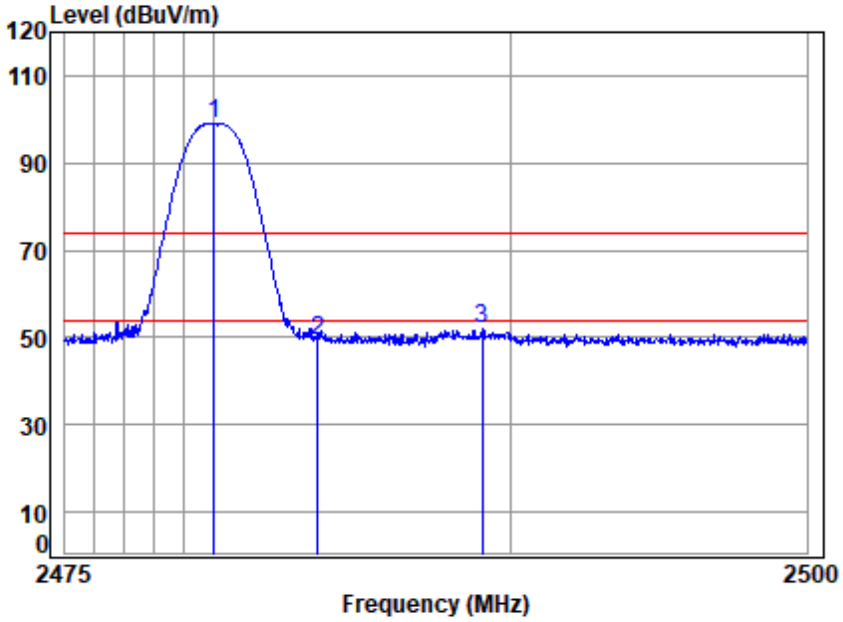
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 01872CR
Mode : 2480 Band edge
Note : BLE 1M

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 *	2480.000	4.49	28.67	40.47	103.58	96.27	74.00	22.27	peak
2	2483.500	4.49	28.67	40.47	58.93	51.62	74.00	-22.38	peak
3	2488.394	4.50	28.68	40.47	59.17	51.88	74.00	-22.12	Peak

Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 01782CR
Mode : 2480 Band edge
Note : BLE 1M

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 *	2480.000	4.49	28.67	40.47	106.10	98.79	74.00	24.79	peak
2	2483.500	4.49	28.67	40.47	56.43	49.12	74.00	-24.88	peak
3	2489.019	4.50	28.68	40.47	59.20	51.91	74.00	-22.09	Peak

7.2 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.2.1 E.U.T. Operation

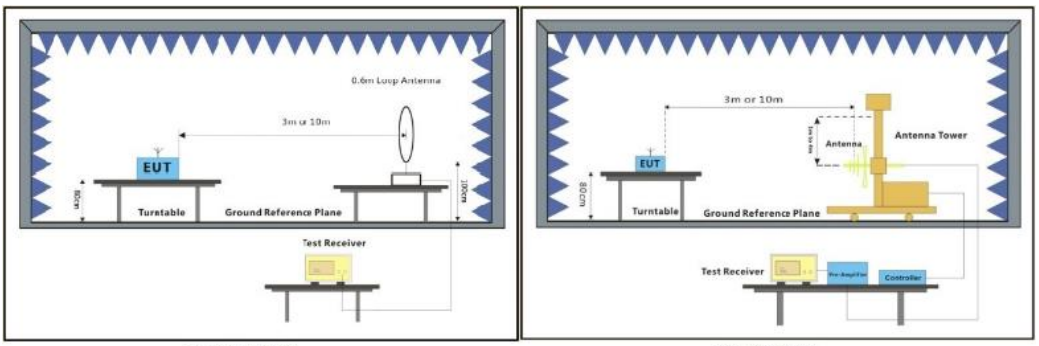
Operating Environment:

Temperature: 22.6 °C Humidity: 52.8 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

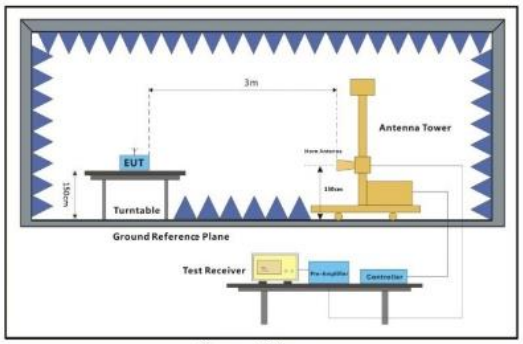
Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.
Final test	17	Charge + TX mode_Keep the EUT in charging and continuously transmitting mode with GFSK modulation.

7.2.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz



Above 1GHz

7.2.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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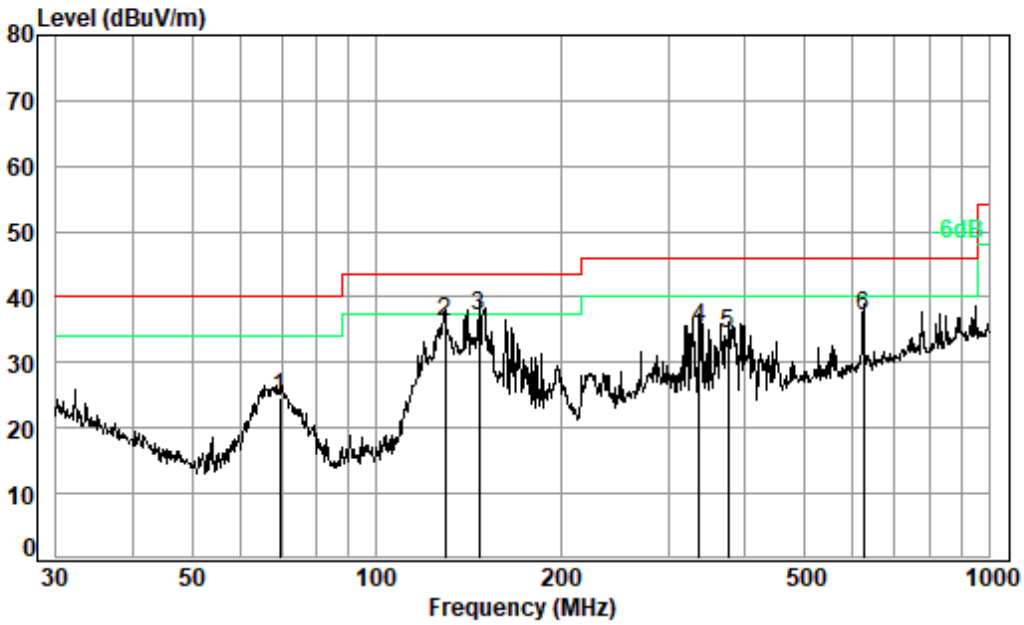
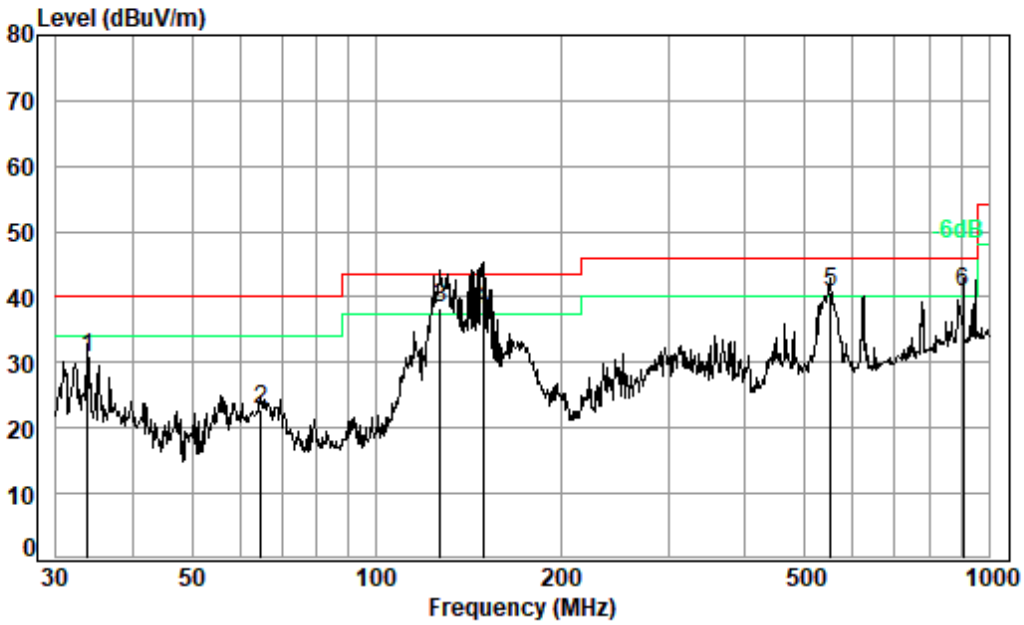
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL
Job No. : 01727CR
Test Mode: 17

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	69.60	0.80	12.68	27.65	38.67	24.50	40.00	-15.50	QP
2	129.47	1.14	12.53	27.44	49.86	36.09	43.50	-7.41	QP
3 pp	147.40	1.16	14.37	27.35	49.00	37.18	43.50	-6.32	QP
4	337.22	2.12	20.34	27.08	39.99	35.37	46.00	-10.63	QP
5	375.94	2.24	22.20	27.28	37.17	34.33	46.00	-11.67	QP
6	625.08	2.75	26.60	28.07	35.69	36.97	46.00	-9.03	QP

Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:Low



Condition: 3m VERTICAL
Job No. : 01727CR
Test Mode: 17

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	33.80	0.64	20.96	27.72	36.82	30.70	40.00	-9.30	QP
2	64.89	0.80	12.74	27.66	36.90	22.78	40.00	-17.22	QP
3	127.22	1.13	12.64	27.45	51.87	38.19	43.50	-5.31	QP
4	149.49	1.16	14.64	27.34	49.49	37.95	43.50	-5.55	QP
5 pp	550.95	2.61	25.09	27.97	41.09	40.82	46.00	-5.18	QP
6	909.67	3.51	29.05	27.11	35.34	40.79	46.00	-5.21	QP

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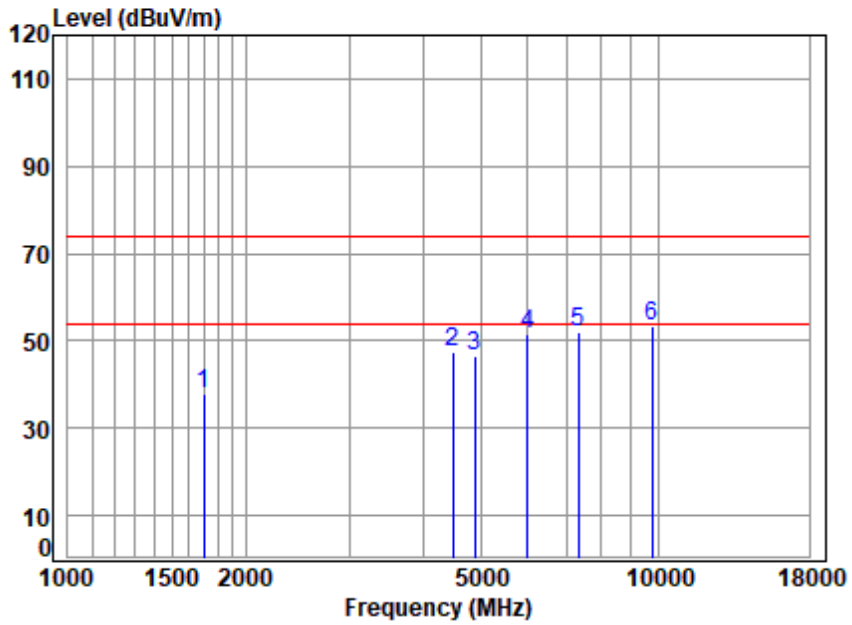
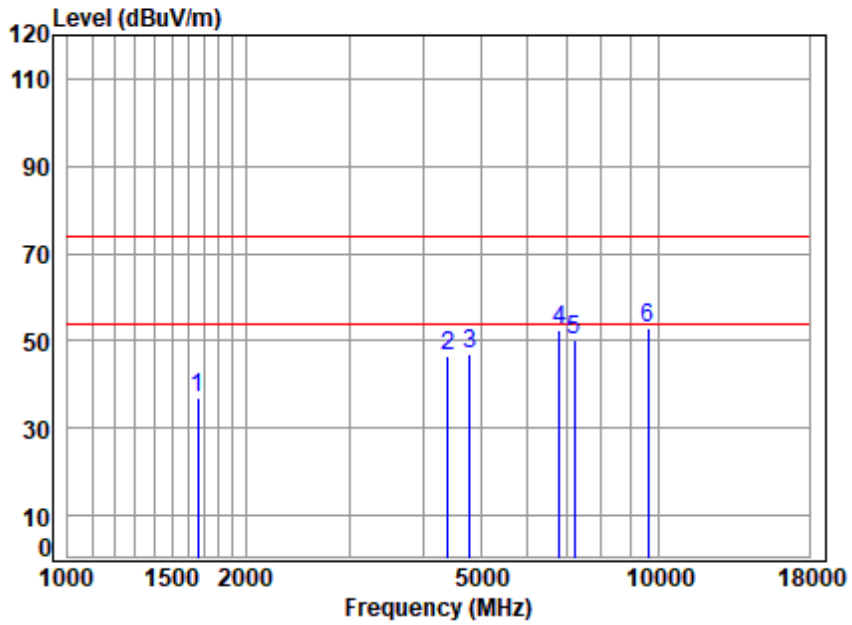
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 01727CR
Mode : 2402 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1697.129	3.43	26.66	40.06	47.94	37.97	74.00	-36.03	peak
2	4482.150	6.74	33.57	41.86	48.86	47.31	74.00	-26.69	peak
3	4880.000	7.18	34.06	42.20	47.60	46.64	74.00	-27.36	peak
4	6001.626	8.26	35.10	42.40	50.78	51.74	74.00	-22.26	peak
5	7320.000	8.84	36.16	41.40	48.55	52.15	74.00	-21.85	peak
6	9760.000	10.76	37.76	37.50	42.32	53.34	74.00	-20.66	peak

Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 01727CR
Mode : 2402 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1658.337	3.40	26.50	40.04	47.07	36.93	74.00	-37.07	peak
2	4405.090	6.67	33.44	41.79	48.15	46.47	74.00	-27.53	peak
3	4804.000	7.10	33.97	42.14	47.84	46.77	74.00	-27.23	peak
4	6795.879	8.44	35.78	41.83	49.93	52.32	74.00	-21.68	peak
5	7206.000	8.74	36.07	41.50	46.80	50.11	74.00	-23.89	peak
6	9608.000	10.81	37.67	37.76	42.29	53.01	74.00	-20.99	peak

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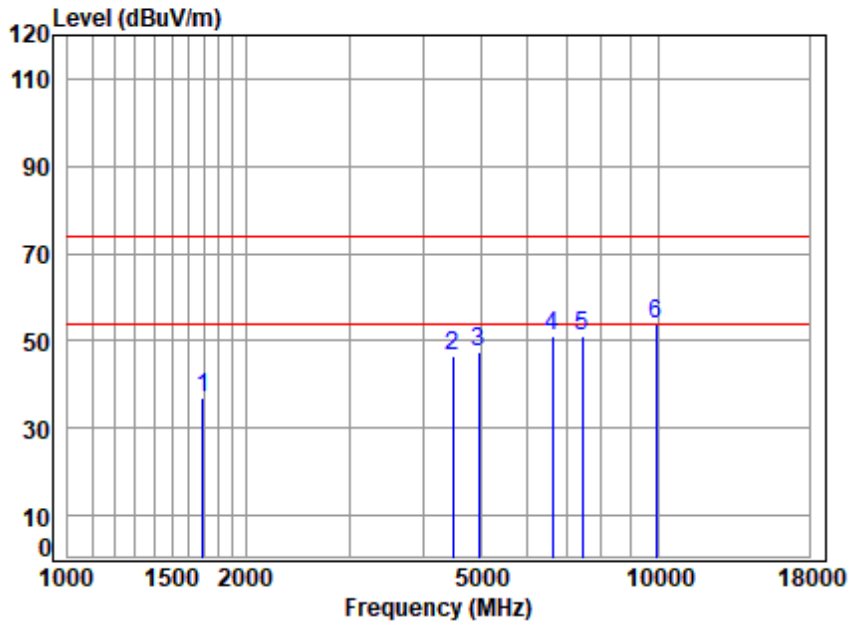
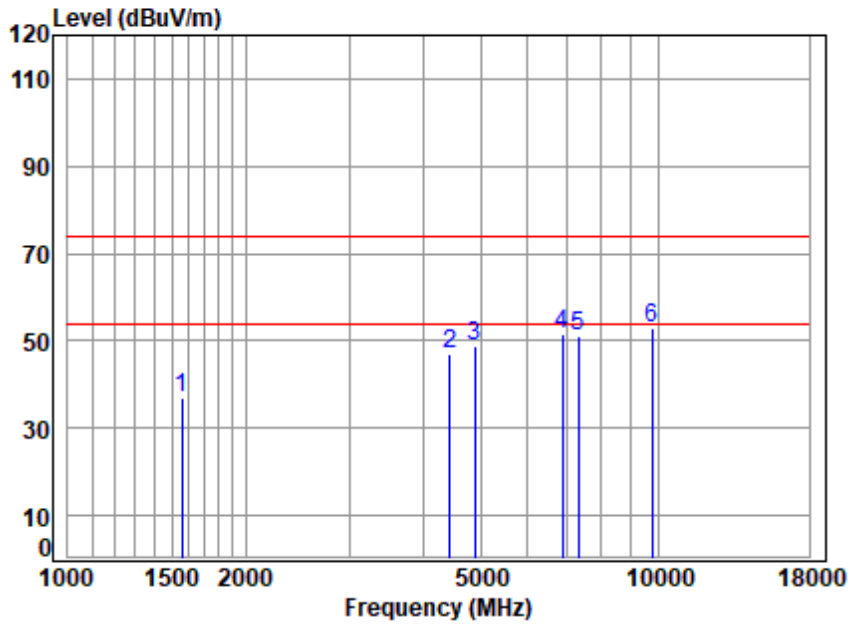
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No : 01727CR
Mode : 2440 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1692.231	3.42	26.64	40.06	47.14	37.14	74.00	-36.86	peak
2	4482.150	6.74	33.57	41.86	48.28	46.73	74.00	-27.27	peak
3	4960.000	7.26	34.15	42.27	48.40	47.54	74.00	-26.46	peak
4	6621.375	8.34	35.67	41.95	48.88	50.94	74.00	-23.06	peak
5	7440.000	8.96	36.25	41.29	47.33	51.25	74.00	-22.75	peak
6	9920.000	10.71	37.85	37.23	42.31	53.64	74.00	-20.36	peak

Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No : 01727CR
Mode : 2440 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1560.673	3.31	26.08	39.99	47.75	37.15	74.00	-36.85	peak
2	4443.453	6.71	33.50	41.82	48.55	46.94	74.00	-27.06	peak
3	4880.000	7.18	34.06	42.20	49.63	48.67	74.00	-25.33	peak
4	6874.906	8.48	35.83	41.78	48.89	51.42	74.00	-22.58	peak
5	7320.000	8.84	36.16	41.40	47.71	51.31	74.00	-22.69	peak
6	9760.000	10.76	37.76	37.50	41.77	52.79	74.00	-21.21	peak

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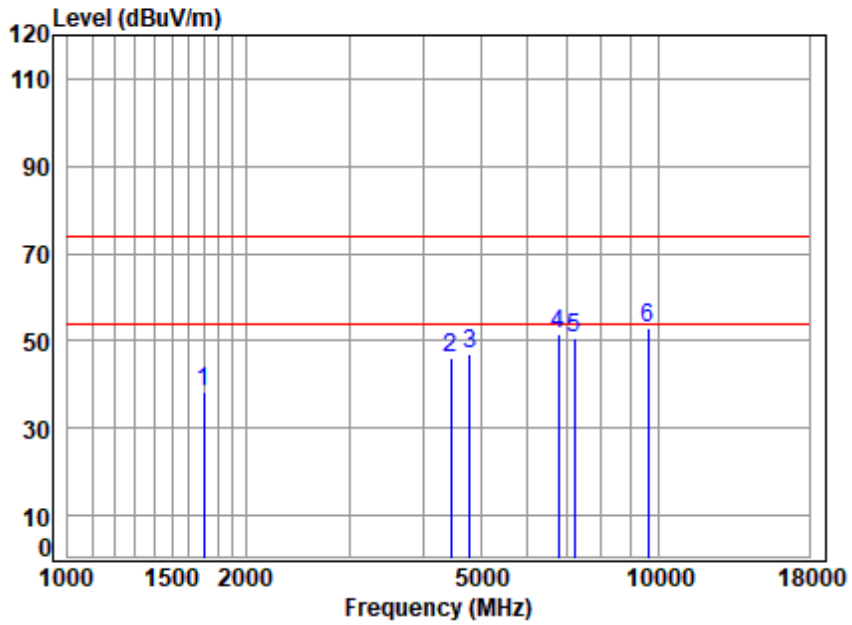
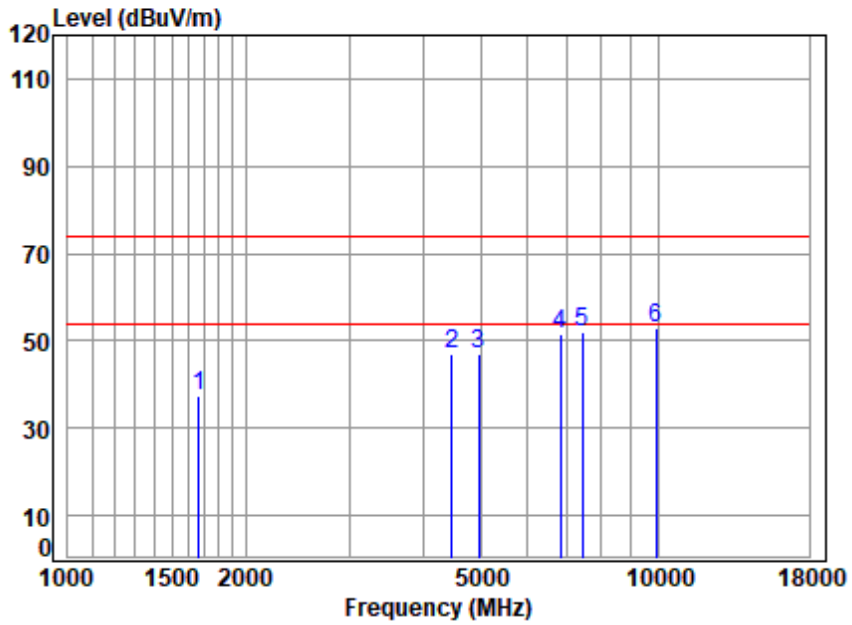
Test Mode: 17; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 01727CR
Mode : 2480 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1697.129	3.43	26.66	40.06	48.09	38.12	74.00	-35.88	peak
2	4456.315	6.72	33.53	41.84	47.79	46.20	74.00	-27.80	peak
3	4804.000	7.10	33.97	42.14	48.22	47.15	74.00	-26.85	peak
4	6776.265	8.43	35.77	41.85	49.36	51.71	74.00	-22.29	peak
5	7206.000	8.74	36.07	41.50	47.26	50.57	74.00	-23.43	peak
6	9608.000	10.81	37.67	37.76	42.22	52.94	74.00	-21.06	peak

Test Mode: 17; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 01727CR
Mode : 2480 TX SE
Note : BLE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1667.951	3.40	26.54	40.04	47.30	37.20	74.00	-36.80	peak
2	4469.214	6.73	33.55	41.85	48.38	46.81	74.00	-27.19	peak
3	4960.000	7.26	34.15	42.27	47.66	46.80	74.00	-27.20	peak
4	6835.278	8.46	35.80	41.81	49.15	51.60	74.00	-22.40	peak
5	7440.000	8.96	36.25	41.29	47.98	51.90	74.00	-22.10	peak
6	9920.000	10.71	37.85	37.23	41.77	53.10	74.00	-20.90	peak

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8 Emission Test Results

8.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart C 15.247

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

8.1.1 E.U.T. Operation

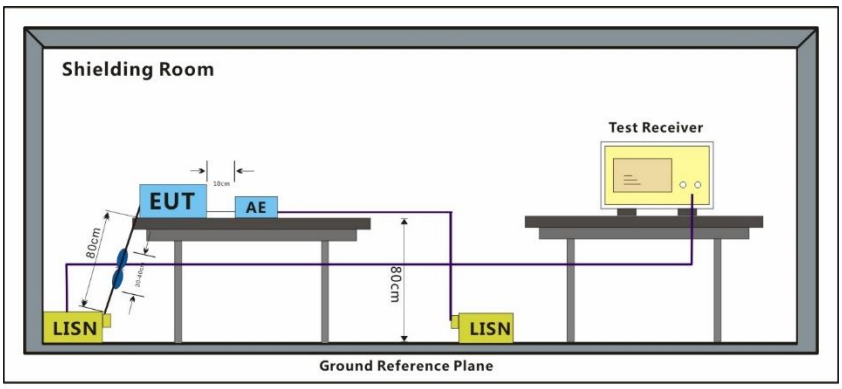
Operating Environment:

Temperature: 25 °C Humidity: 55 % RH Atmospheric Pressure: 1010 mbar

8.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	17	Charge + TX mode_Keep the EUT in charging and continuously transmitting mode with GFSK modulation.

8.1.3 Test Setup Diagram



8.1.4 Measurement Procedure and Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

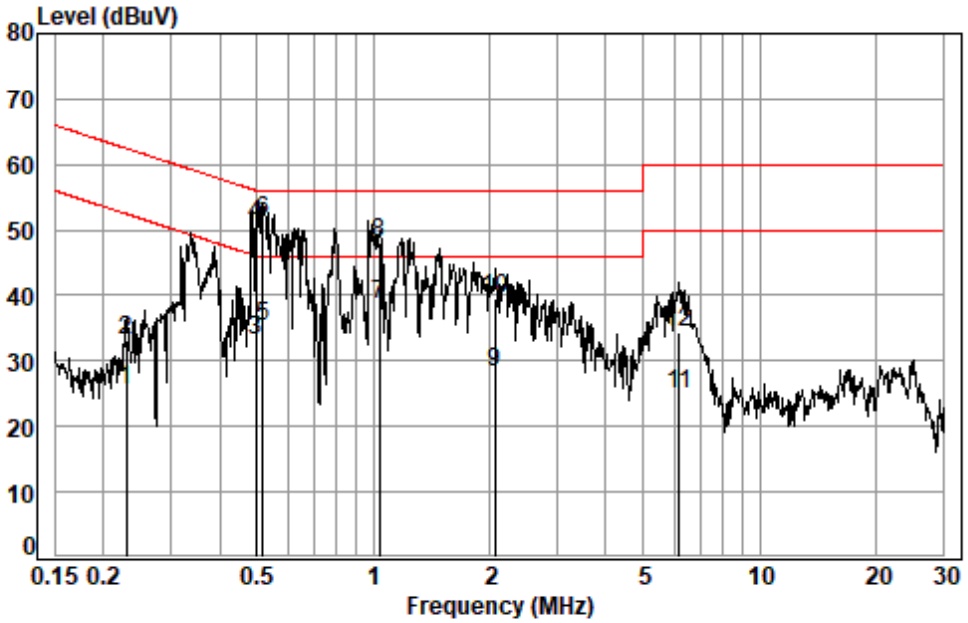
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) 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 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor

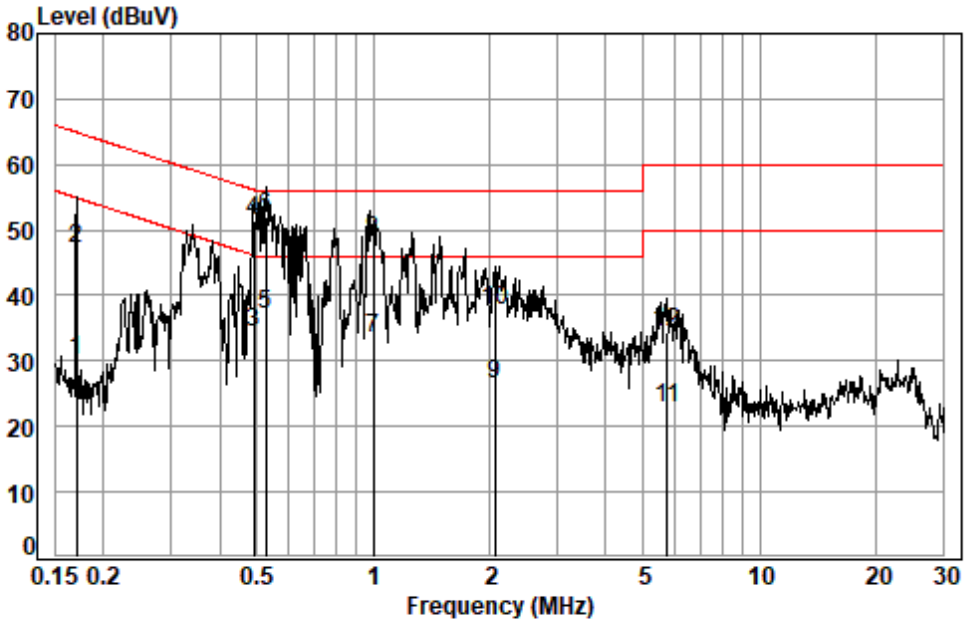
Test Mode: 17; Line: Live line



Site : Shielding Room
Condition: Line
Job No. : 01727CR
Test mode: 17

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.2292	0.04	9.65	15.94	25.63	52.48	-26.85	Average
2	0.2292	0.04	9.65	23.62	33.31	62.48	-29.17	QP
3	0.4967	0.07	9.69	23.50	33.26	46.05	-12.79	Average
4	0.4967	0.07	9.69	40.97	50.73	56.05	-5.32	QP
5	0.5182	0.07	9.69	25.54	35.30	46.00	-10.70	Average
6	0.5182	0.07	9.69	41.57	51.33	56.00	-4.67	QP
7	1.0375	0.10	9.68	28.82	38.60	46.00	-7.40	Average
8	1.0375	0.10	9.68	38.41	48.19	56.00	-7.81	QP
9	2.0659	0.13	9.70	18.39	28.22	46.00	-17.78	Average
10	2.0659	0.13	9.70	29.76	39.59	56.00	-16.41	QP
11	6.1861	0.16	9.81	15.02	24.99	50.00	-25.01	Average
12	6.1861	0.16	9.81	24.47	34.44	60.00	-25.56	QP

Test Mode: 17; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 01727CR
Test mode: 17

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1703	0.03	9.63	20.31	29.97	54.94	-24.97	Average
2	0.1703	0.03	9.63	37.50	47.16	64.94	-17.78	QP
3	0.4915	0.07	9.67	24.60	34.34	46.14	-11.80	Average
4	0.4915	0.07	9.67	41.81	51.55	56.14	-4.59	QP
5	0.5265	0.07	9.67	27.41	37.15	46.00	-8.85	Average
6	0.5265	0.07	9.67	42.40	52.14	56.00	-3.86	QP
7	0.9997	0.10	9.67	23.55	33.32	46.00	-12.68	Average
8	0.9997	0.10	9.67	38.72	48.49	56.00	-7.51	QP
9	2.0659	0.13	9.68	16.61	26.42	46.00	-19.58	Average
10	2.0659	0.13	9.68	27.83	37.64	56.00	-18.36	QP
11	5.7743	0.16	9.79	12.87	22.82	50.00	-27.18	Average
12	5.7743	0.16	9.79	24.47	34.42	60.00	-25.58	QP

9 Test Setup Photo

Please refer to setup photos.

10 EUT Constructional Details (EUT Photos)

Please Refer to external and internal photos for details.

- End of the Report -

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