

0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0 dBuV/m (Peak) 54.0 dBuV/m (Average)	

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz, radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30 MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dBuV/m}) = \text{Limit}_{30\text{m}}(\text{dBuV/m}) + 40\text{Log}(30\text{m}/3\text{m})$$

(3) Limit for this EUT

The emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, and the emissions appearing within RSS-Gen section 8.10 Restricted frequency bands shall not exceed the limits shown in RSS-Gen section 8.9, all the other emissions shall be at least 20 dB below the fundamental emissions or comply with 15.209 limits and RSS-Gen section 8.9 limits.

12.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

12.5. Test procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1G and 150 cm above the ground plane inside a fully-anechoic chamber for above 1G.
- (2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m
1 GHz - 18 GHz	Double Ridged Horn Antenna(1 GHz-18 GHz)	3 m
18 GHz - 40 GHz	Horn Antenna(18 GHz-40 GHz)	1 m

According ANSI C63.10:2013 clause 6.4.6 and 6.5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be

rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18 GHz to 25 GHz, so below final test was performed with frequency range from 9 kHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz, 110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9 kHz - 150 kHz	200 Hz
150 kHz - 30 MHz	9 kHz
30 MHz - 1 GHz	120 kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

(8) For portable device, X axis, Y axis, Z axis are tested, and worse setup is reported.

(9) According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 25 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

(10) For 30 MHz ~ 25 GHz: (Scan with all mode, the worst case is reported)

(11) For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in worst mode.

12.6. Test result

PASS. (See below detailed test result)

12.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-11-26

Tested By: Gen Liu

EUT: BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number: TOTAL PA™ APEX

Test Mode: BLE1M TX Mode(ANT1)

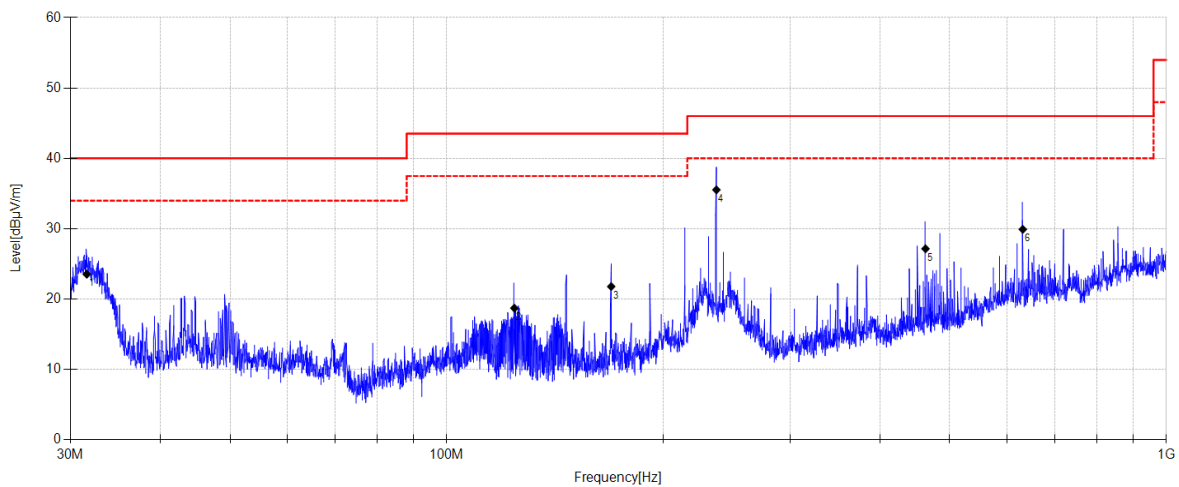
Power Supply: Battery

Condition: Temp:23.5°C;Humi:65.2%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24092711-1E\FCC BELOW1G\20241126-211020_H

Memo: Sample Number:S24092711-003 Power Setting:NA 18650-11.1V-6000mAh-3S3P



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	31.620	40.65	10.21	3.77	23.53	40.00	16.47	QP	Horizontal
2	124.185	36.42	9.06	4.35	18.71	43.50	24.79	QP	Horizontal
3	169.303	39.23	9.13	4.59	21.78	43.50	21.72	QP	Horizontal
4	237.045	50.31	11.56	4.93	35.53	46.00	10.47	QP	Horizontal
5	462.741	36.87	15.90	5.86	27.15	46.00	18.85	QP	Horizontal
6	631.746	36.47	18.47	6.47	29.91	46.00	16.09	QP	Horizontal

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-26

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

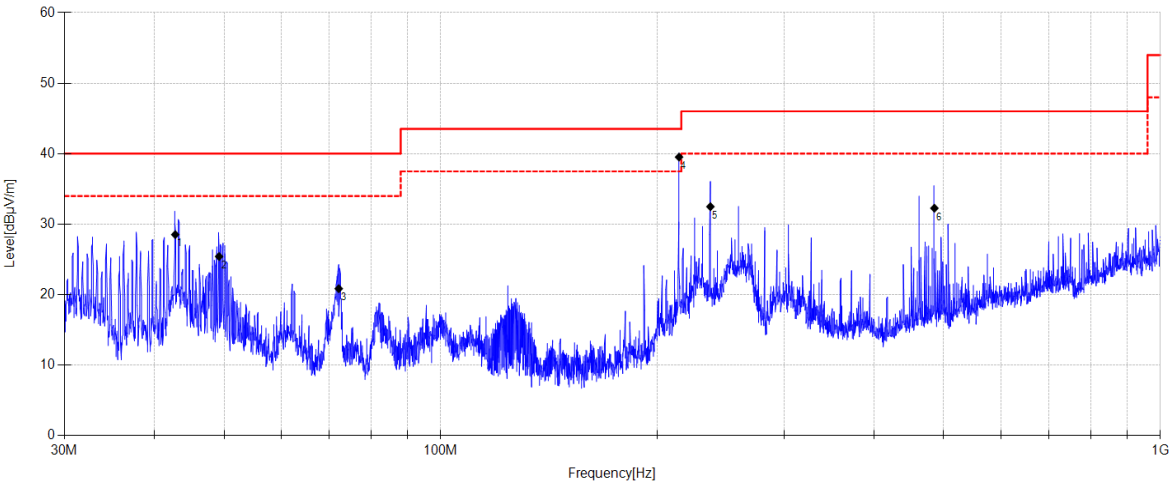
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\FCC BELOW1G\20241126-211044_V

Memo:

Sample Number:S24092711-003 Power Setting:NA 18650-11.1V-6000mAh-3S3P



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	42.777	42.91	12.87	3.84	28.52	40.00	11.48	QP	Vertical
2	49.216	39.87	12.76	3.88	25.41	40.00	14.59	QP	Vertical
3	72.173	38.38	9.53	4.04	20.85	40.00	19.15	QP	Vertical
4	214.430	55.24	10.68	4.83	39.52	43.50	3.98	QP	Vertical
5	237.045	47.26	11.56	4.93	32.48	46.00	13.52	QP	Vertical
6	485.339	41.33	16.48	5.94	32.26	46.00	13.74	QP	Vertical

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-26

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

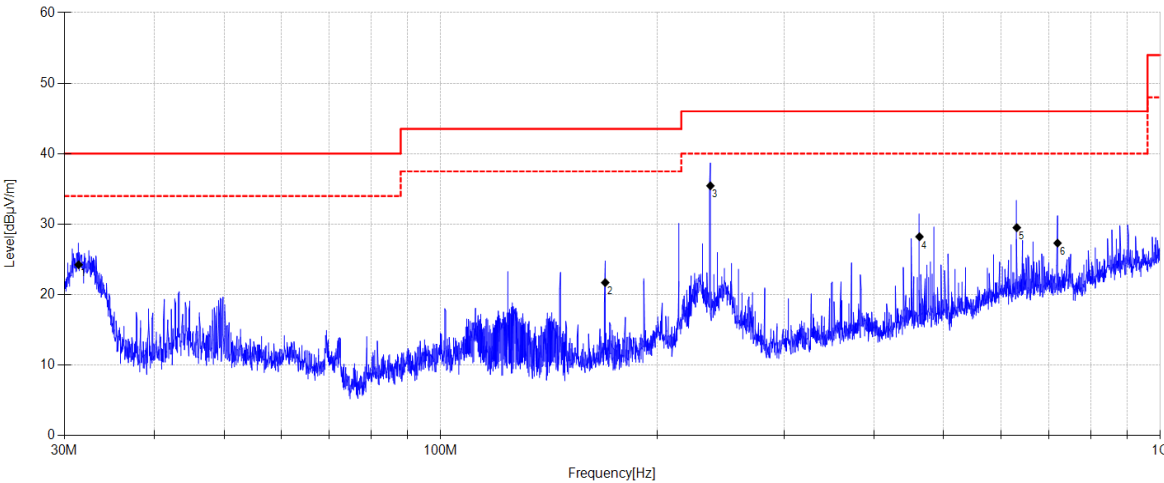
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\FCC BELOW1G\20241126-210900_H

Memo:

Sample Number:S24092711-003 Power Setting:NA 18650-11.1V-6000mAh-3S3P



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	31.399	41.29	10.28	3.77	24.24	40.00	15.76	QP	Horizontal
2	169.303	39.15	9.13	4.59	21.70	43.50	21.80	QP	Horizontal
3	237.045	50.22	11.56	4.93	35.44	46.00	10.56	QP	Horizontal
4	462.741	37.94	15.90	5.86	28.22	46.00	17.78	QP	Horizontal
5	631.746	36.06	18.47	6.47	29.50	46.00	16.50	QP	Horizontal
6	719.751	32.78	19.20	6.74	27.31	46.00	18.69	QP	Horizontal

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-26

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

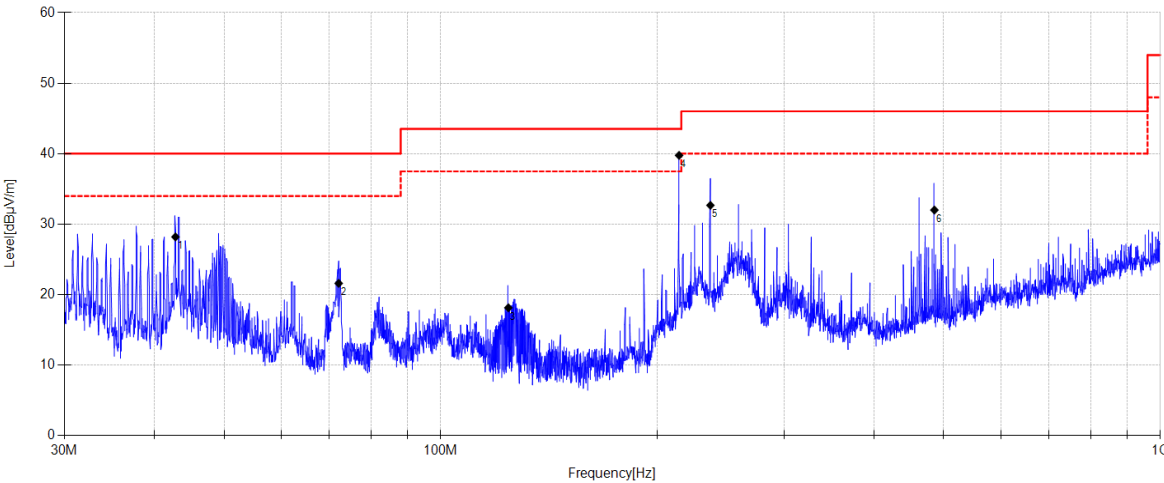
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\FCC BELOW1G\20241126-210933_V

Memo:

Sample Number:S24092711-003 Power Setting:NA 18650-11.1V-6000mAh-3S3P



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	42.807	42.59	12.86	3.84	28.19	40.00	11.81	QP	Vertical
2	72.173	39.13	9.53	4.04	21.60	40.00	18.40	QP	Vertical
3	124.185	35.85	9.06	4.35	18.14	43.50	25.36	QP	Vertical
4	214.430	55.48	10.68	4.83	39.76	43.50	3.74	QP	Vertical
5	237.045	47.45	11.56	4.93	32.67	46.00	13.33	QP	Vertical
6	485.339	41.07	16.48	5.94	32.00	46.00	14.00	QP	Vertical

Note:

- Result Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

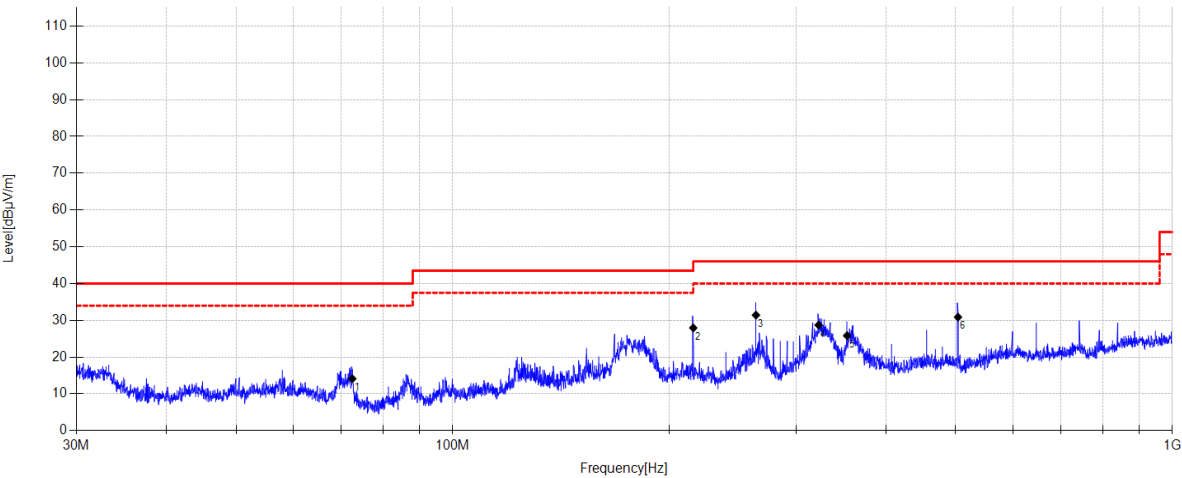
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-164620_H

Memo:

Sample Number:S24092711-003 WLY 18650-3S3P



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	72.528	31.78	9.39	4.04	14.11	40.00	25.89	QP	Horizontal
2	215.939	43.57	10.76	4.83	27.93	43.50	15.57	QP	Horizontal
3	263.889	46.03	11.66	5.05	31.41	46.00	14.59	QP	Horizontal
4	322.488	41.04	13.75	5.31	28.69	46.00	17.31	QP	Horizontal
5	353.264	36.67	15.15	5.43	25.82	46.00	20.18	QP	Horizontal
6	503.715	39.55	16.80	6.01	30.86	46.00	15.14	QP	Horizontal

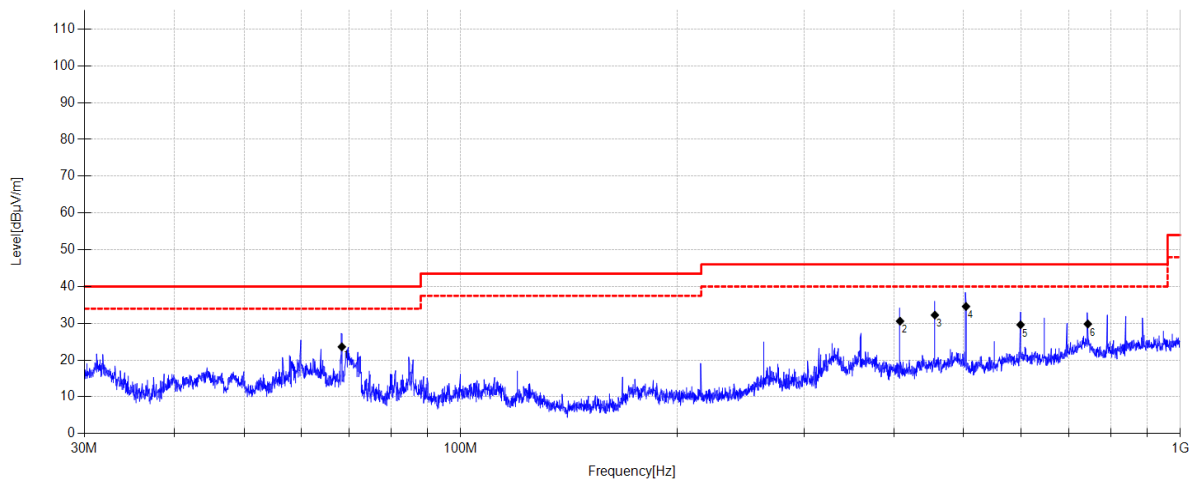
Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-01-16**Tested By:** Gen Liu**EUT:** BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS**Model Number:** TOTAL PA™ APEX**Test Mode:** BLE1M TX Mode**Power Supply:** Battery**Condition:** Temp:23.5°C;Humi:65.2%**Test Site:** DDT 3# Chamber**File Path:** d:\ts\2024 report data\Q24092711-1E\0116\20250116-164640_V**Memo:** Sample Number:S24092711-003 WLY 18650-3S3P

Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	68.380	40.37	10.31	4.01	23.59	40.00	16.41	QP	Vertical
2	407.874	41.43	14.94	5.65	30.57	46.00	15.43	QP	Vertical
3	455.977	41.9	15.98	5.83	32.23	46.00	13.77	QP	Vertical
4	503.715	43.27	16.80	6.01	34.58	46.00	11.42	QP	Vertical
5	599.803	35.55	19.18	6.37	29.60	46.00	16.40	QP	Vertical
6	743.866	34.36	19.95	6.80	29.81	46.00	16.19	QP	Vertical

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

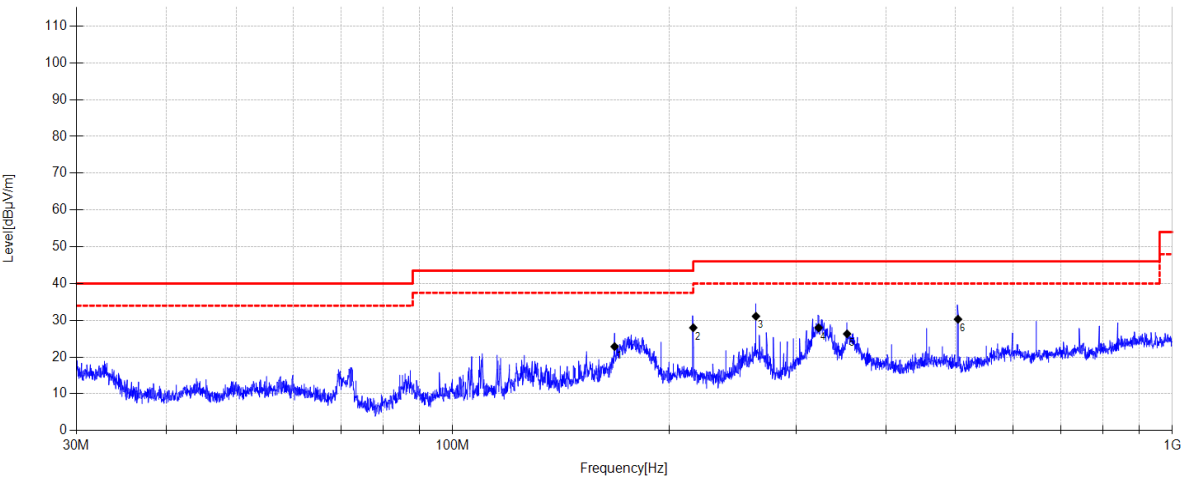
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-164921_H

Memo:

Sample Number:S24092711-003 B18650-201C-91



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	167.884	40.54	8.89	4.59	22.85	43.50	20.65	QP	Horizontal
2	215.939	43.61	10.76	4.83	27.97	43.50	15.53	QP	Horizontal
3	263.889	45.71	11.66	5.05	31.09	46.00	14.91	QP	Horizontal
4	322.488	40.32	13.75	5.31	27.97	46.00	18.03	QP	Horizontal
5	353.264	37.15	15.15	5.43	26.30	46.00	19.70	QP	Horizontal
6	503.715	38.98	16.80	6.01	30.29	46.00	15.71	QP	Horizontal

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

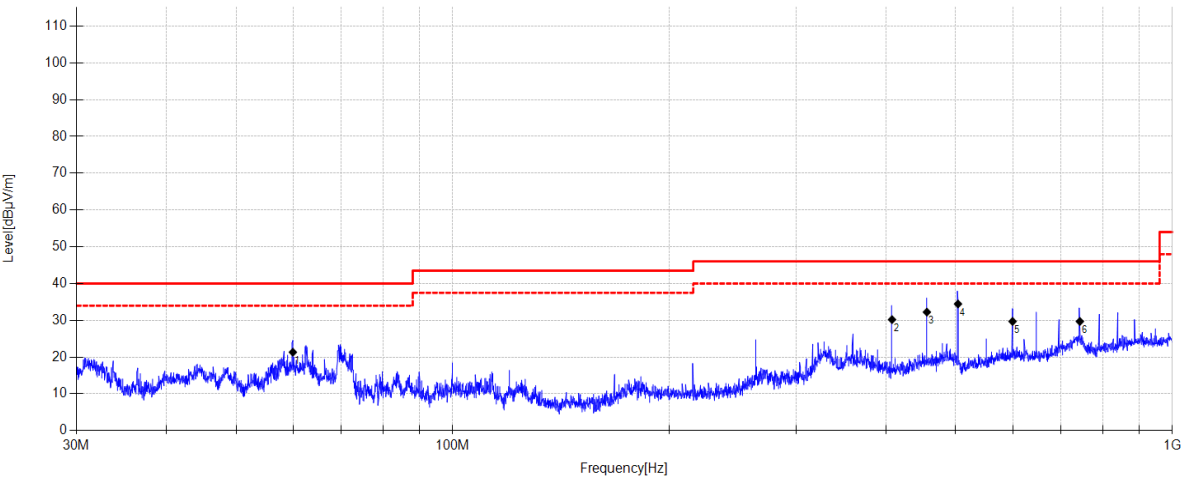
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-164941_V

Memo:

Sample Number:S24092711-003 B18650-201C-91



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	59.977	35.67	12.79	3.96	21.32	40.00	18.68	QP	Vertical
2	407.874	41.05	14.94	5.65	30.19	46.00	15.81	QP	Vertical
3	455.977	41.9	15.98	5.83	32.23	46.00	13.77	QP	Vertical
4	503.715	43.13	16.80	6.01	34.44	46.00	11.56	QP	Vertical
5	599.803	35.63	19.18	6.37	29.68	46.00	16.32	QP	Vertical
6	743.866	34.23	19.95	6.80	29.68	46.00	16.32	QP	Vertical

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

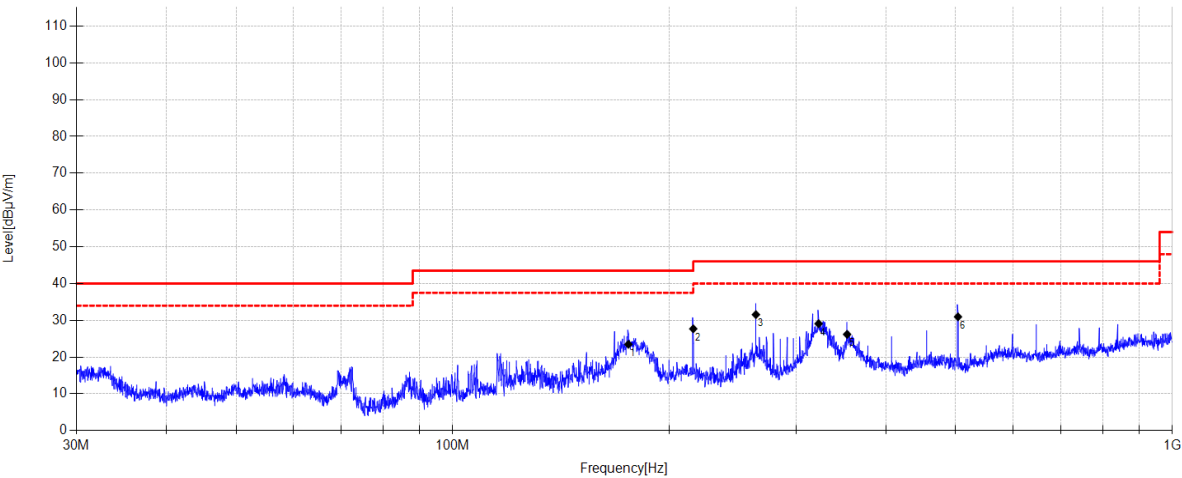
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-165024_H

Memo:

Sample Number:S24092711-003 PQ3220-2409192WK



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	175.466	40.54	9.48	4.63	23.47	43.50	20.03	QP	Horizontal
2	215.939	43.32	10.76	4.83	27.68	43.50	15.82	QP	Horizontal
3	263.889	46.16	11.66	5.05	31.54	46.00	14.46	QP	Horizontal
4	322.488	41.43	13.75	5.31	29.08	46.00	16.92	QP	Horizontal
5	353.264	37.02	15.15	5.43	26.17	46.00	19.83	QP	Horizontal
6	503.715	39.63	16.80	6.01	30.94	46.00	15.06	QP	Horizontal

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

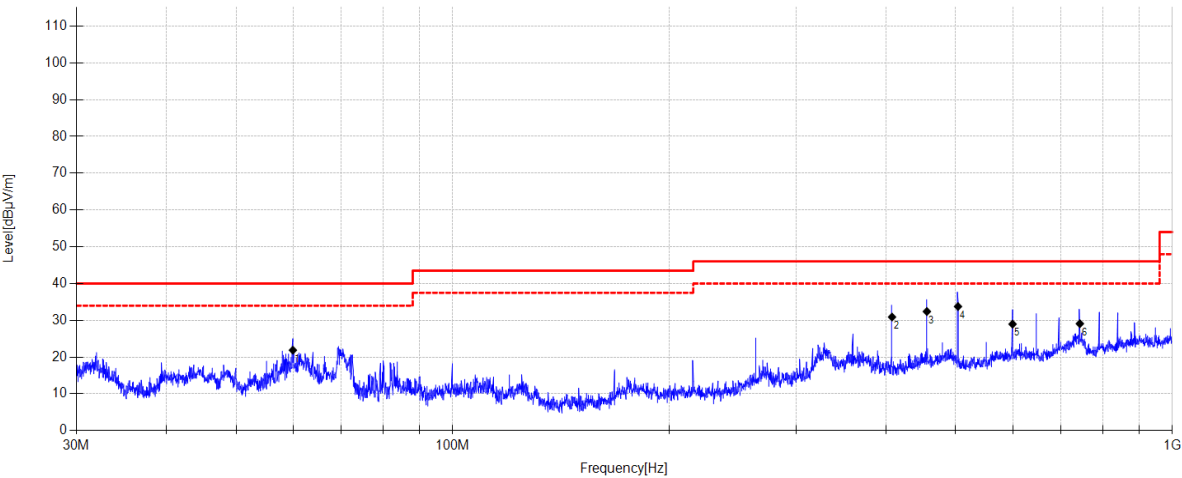
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-165042_V

Memo:

Sample Number:S24092711-003 PQ3220-2409192WK



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	59.977	36.22	12.79	3.96	21.87	40.00	18.13	QP	Vertical
2	407.874	41.74	14.94	5.65	30.88	46.00	15.12	QP	Vertical
3	455.977	42.05	15.98	5.83	32.38	46.00	13.62	QP	Vertical
4	503.715	42.43	16.80	6.01	33.74	46.00	12.26	QP	Vertical
5	599.803	34.91	19.18	6.37	28.96	46.00	17.04	QP	Vertical
6	743.866	33.62	19.95	6.80	29.07	46.00	16.93	QP	Vertical

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

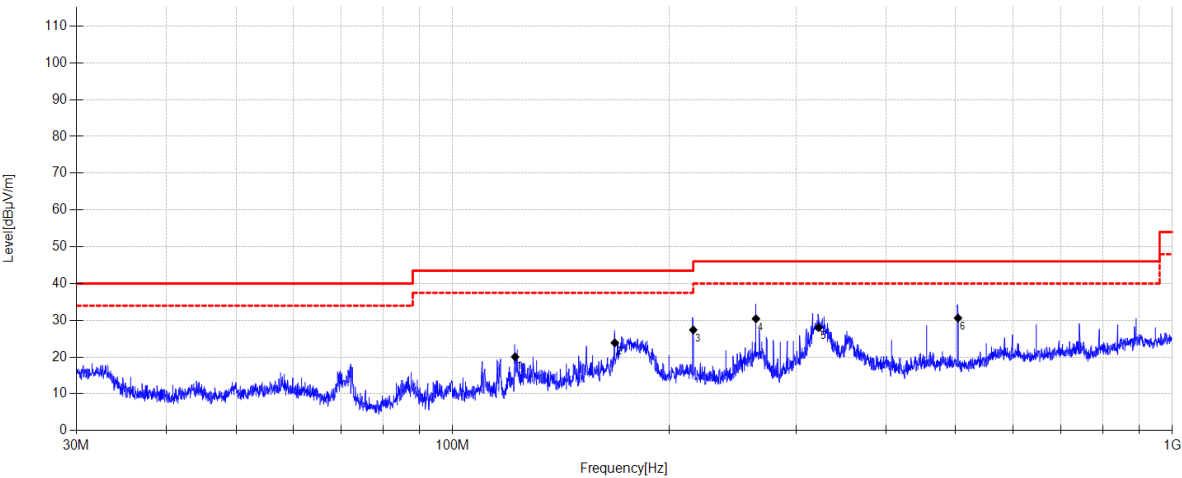
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-165315_H

Memo:

Sample Number:S24092711-003 PSM-0100-022U



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	122.112	37.44	9.39	4.34	20.05	43.50	23.45	QP	Horizontal
2	168.002	41.55	8.90	4.59	23.87	43.50	19.63	QP	Horizontal
3	215.939	43.02	10.76	4.83	27.38	43.50	16.12	QP	Horizontal
4	263.889	45.04	11.66	5.05	30.42	46.00	15.58	QP	Horizontal
5	322.488	40.36	13.75	5.31	28.01	46.00	17.99	QP	Horizontal
6	503.715	39.29	16.80	6.01	30.60	46.00	15.40	QP	Horizontal

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2025-01-16

Tested By:

Gen Liu

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE AND
DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX Mode

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

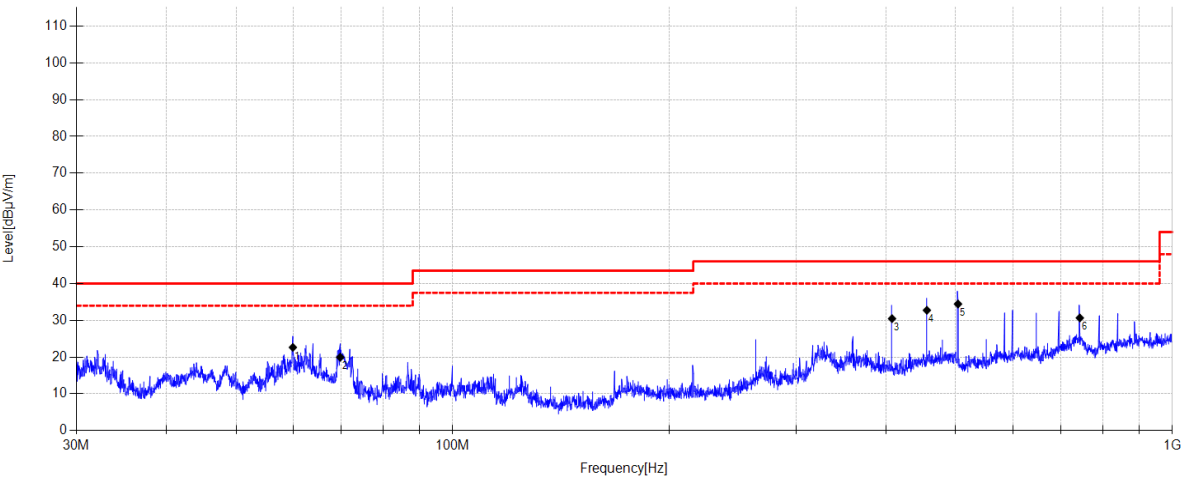
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24092711-1E\0116\20250116-165334_V

Memo:

Sample Number:S24092711-003 PSM-0100-022U



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	59.977	36.98	12.79	3.96	22.63	40.00	17.37	QP	Vertical
2	69.784	37.08	9.95	4.02	19.95	40.00	20.05	QP	Vertical
3	407.874	41.3	14.94	5.65	30.44	46.00	15.56	QP	Vertical
4	455.977	42.39	15.98	5.83	32.72	46.00	13.28	QP	Vertical
5	503.715	43.12	16.80	6.01	34.43	46.00	11.57	QP	Vertical
6	743.866	35.19	19.95	6.80	30.64	46.00	15.36	QP	Vertical

Note:

1. Result Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

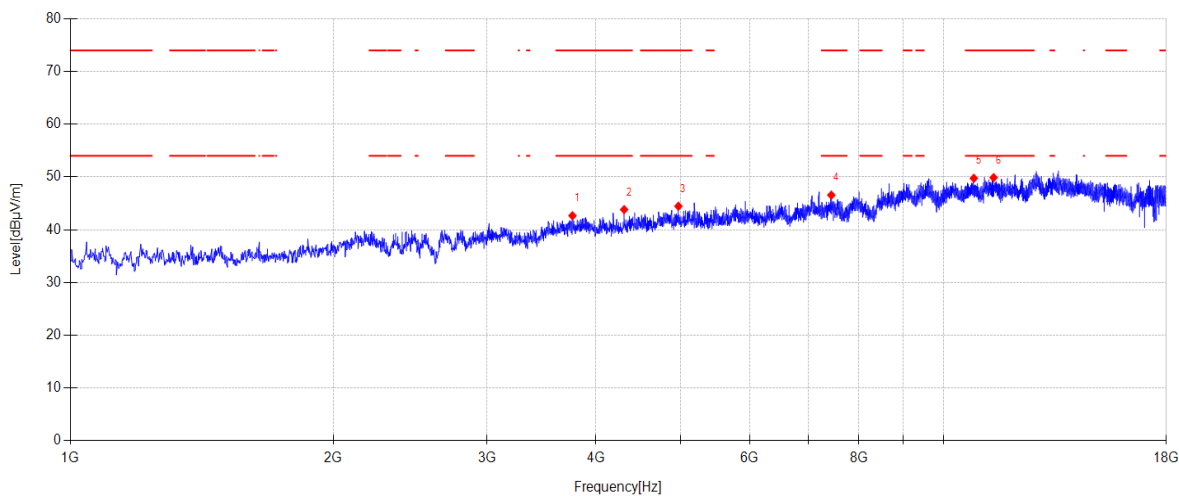
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\46

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	3759.100	46.65	30.54	5.09	-39.62	42.66	74.00	31.34	PK	Horizontal
2	4308.200	46.65	31.60	5.23	-39.66	43.82	74.00	30.18	PK	Horizontal
3	4971.200	45.29	33.14	5.63	-39.60	44.46	74.00	29.54	PK	Horizontal
4	7439.600	43.87	36.62	6.67	-40.60	46.56	74.00	27.44	PK	Horizontal
5	10834.500	41.43	39.37	8.05	-39.10	49.75	74.00	24.25	PK	Horizontal
6	11414.200	41.61	39.29	8.39	-39.41	49.88	74.00	24.12	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

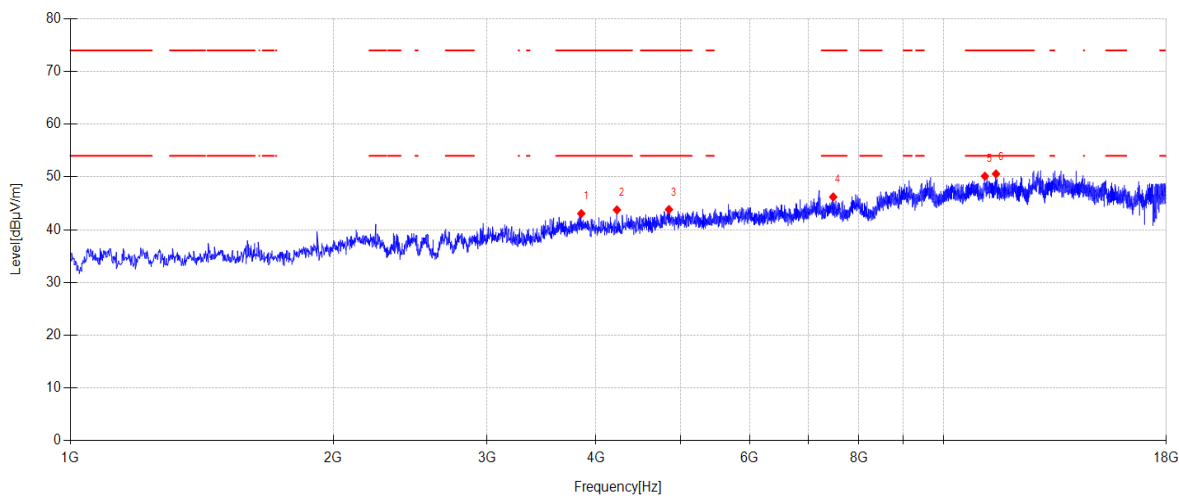
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Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	3847.500	46.73	30.89	5.08	-39.64	43.06	74.00	30.94	PK	Vertical
2	4226.600	46.92	31.31	5.19	-39.66	43.76	74.00	30.24	PK	Vertical
3	4848.800	44.11	33.77	5.56	-39.61	43.83	74.00	30.17	PK	Vertical
4	7477.000	43.54	36.55	6.69	-40.57	46.21	74.00	27.79	PK	Vertical
5	11155.800	41.84	39.24	8.23	-39.16	50.15	74.00	23.85	PK	Vertical
6	11485.600	42.43	39.21	8.44	-39.49	50.59	74.00	23.41	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2440MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

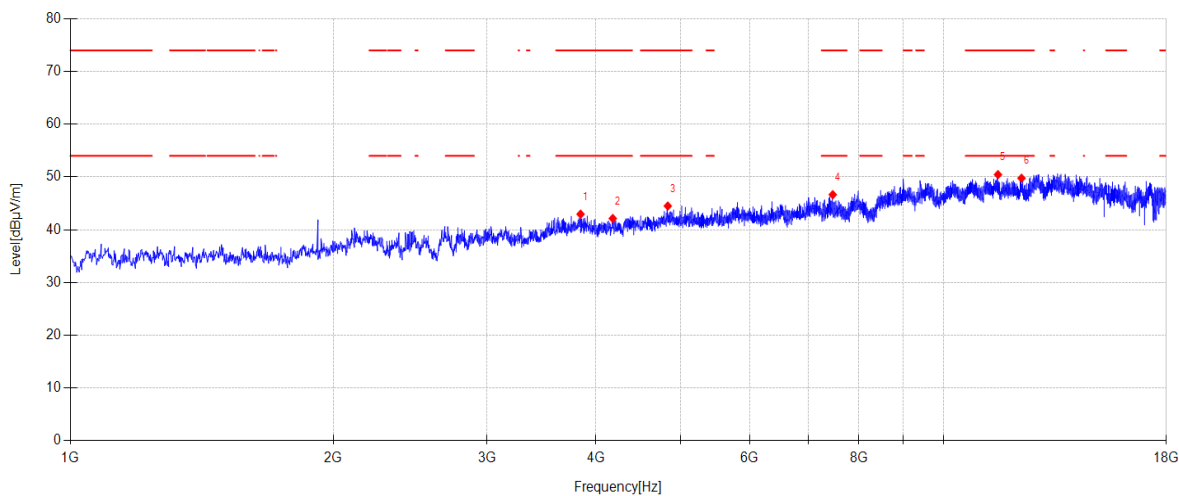
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\44

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3840.700	46.65	30.86	5.08	-39.64	42.95	74.00	31.05	PK	Horizontal
2	4180.700	45.45	31.20	5.16	-39.67	42.14	74.00	31.86	PK	Horizontal
3	4833.500	45.19	33.37	5.55	-39.61	44.50	74.00	29.50	PK	Horizontal
4	7468.500	43.98	36.56	6.69	-40.58	46.65	74.00	27.35	PK	Horizontal
5	11546.800	42.42	39.11	8.47	-39.55	50.45	74.00	23.55	PK	Horizontal
6	12286.300	41.49	39.30	8.91	-39.94	49.76	74.00	24.24	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2440MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

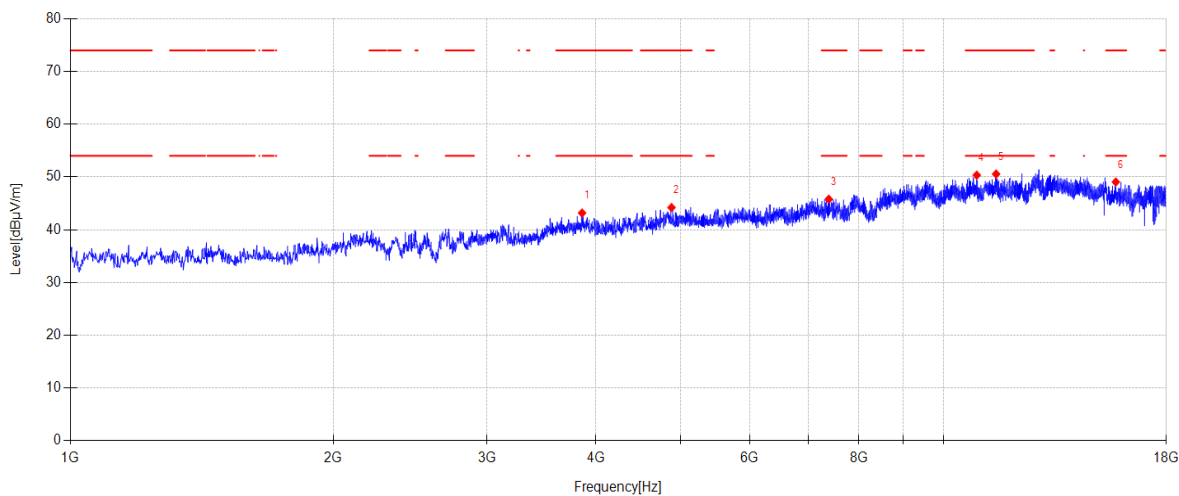
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d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\45

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	3856.000	46.81	30.94	5.07	-39.65	43.17	74.00	30.83	PK	Vertical
2	4881.100	44.94	33.30	5.58	-39.61	44.21	74.00	29.79	PK	Vertical
3	7390.300	43.07	36.72	6.65	-40.65	45.79	74.00	28.21	PK	Vertical
4	10916.100	42.00	39.30	8.09	-39.05	50.34	74.00	23.66	PK	Vertical
5	11489.000	42.39	39.21	8.44	-39.49	50.55	74.00	23.45	PK	Vertical
6	15754.300	40.07	38.39	9.99	-39.40	49.05	74.00	24.95	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

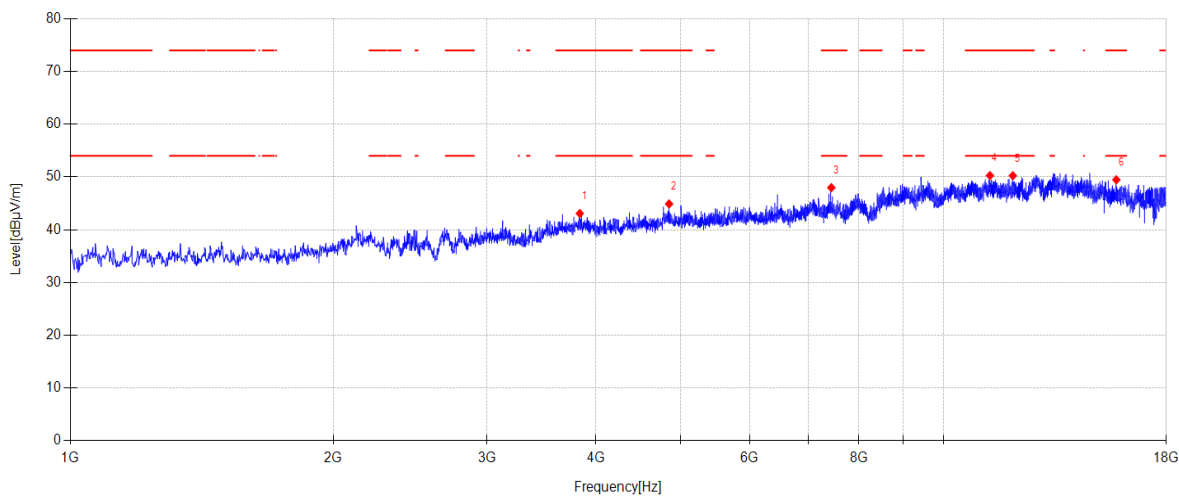
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d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\42

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	3832.200	46.82	30.83	5.08	-39.64	43.09	74.00	30.91	PK	Horizontal
2	4850.500	45.15	33.79	5.56	-39.61	44.89	74.00	29.11	PK	Horizontal
3	7439.600	45.29	36.62	6.67	-40.60	47.98	74.00	26.02	PK	Horizontal
4	11303.700	42.05	39.20	8.32	-39.30	50.27	74.00	23.73	PK	Horizontal
5	12007.500	42.27	39.21	8.76	-40.00	50.24	74.00	23.76	PK	Horizontal
6	15776.400	40.52	38.35	10.00	-39.40	49.47	74.00	24.53	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

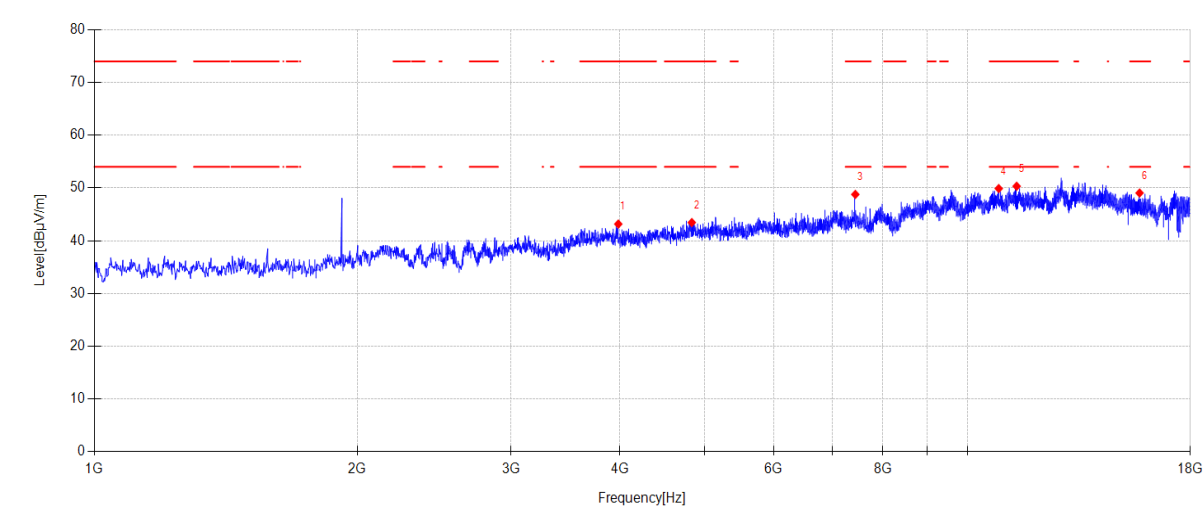
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d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\43

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	3981.800	46.82	30.97	5.05	-39.68	43.16	74.00	30.84	PK	Vertical
2	4833.500	44.14	33.37	5.55	-39.61	43.45	74.00	30.55	PK	Vertical
3	7439.600	46.09	36.62	6.67	-40.60	48.78	74.00	25.22	PK	Vertical
4	10860.000	41.57	39.34	8.06	-39.08	49.89	74.00	24.11	PK	Vertical
5	11385.300	42.06	39.29	8.37	-39.39	50.33	74.00	23.67	PK	Vertical
6	15744.100	40.06	38.41	9.98	-39.40	49.05	74.00	24.95	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

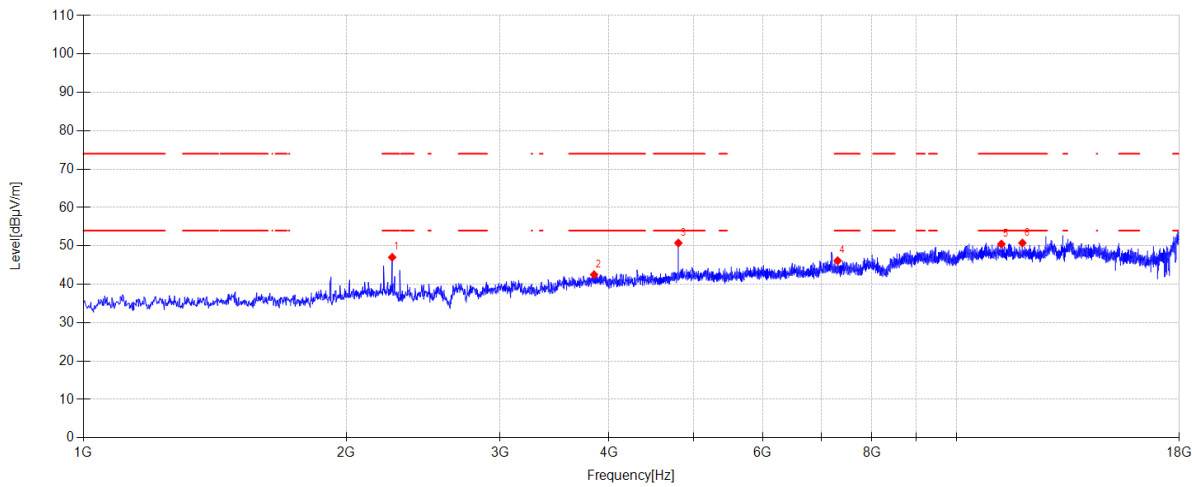
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d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\13

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2258.000	53.57	27.22	4.75	-38.51	47.03	74.00	26.97	PK	Horizontal
2	3845.800	46.20	30.88	5.08	-39.64	42.52	74.00	31.48	PK	Horizontal
3	4802.900	52.26	32.58	5.53	-39.62	50.75	74.00	23.25	PK	Horizontal
4	7310.400	43.39	36.88	6.60	-40.72	46.15	74.00	27.85	PK	Horizontal
5	11257.800	42.25	39.20	8.29	-39.26	50.48	74.00	23.52	PK	Horizontal
6	11898.700	43.07	38.90	8.70	-39.90	50.77	74.00	23.23	PK	Horizontal

Note:

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

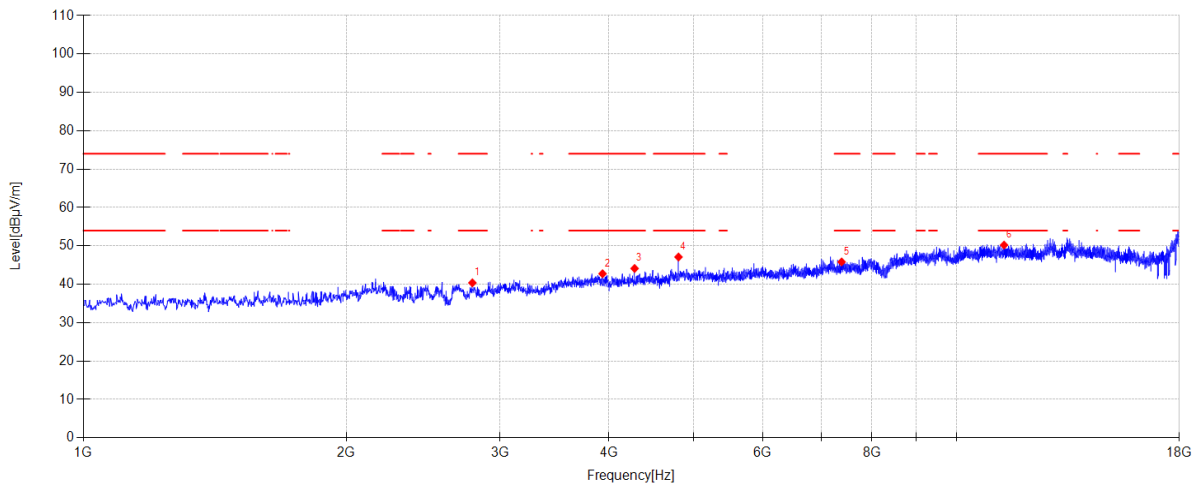
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\14

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2790.100	47.03	27.44	5.09	-39.18	40.38	74.00	33.62	PK	Vertical
2	3932.500	46.22	31.14	5.06	-39.66	42.76	74.00	31.24	PK	Vertical
3	4279.300	47.04	31.52	5.22	-39.66	44.12	74.00	29.88	PK	Vertical
4	4804.600	48.57	32.62	5.53	-39.62	47.10	74.00	26.90	PK	Vertical
5	7386.900	43.10	36.73	6.65	-40.65	45.83	74.00	28.17	PK	Vertical
6	11337.700	41.98	39.24	8.34	-39.34	50.22	74.00	23.78	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2440 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

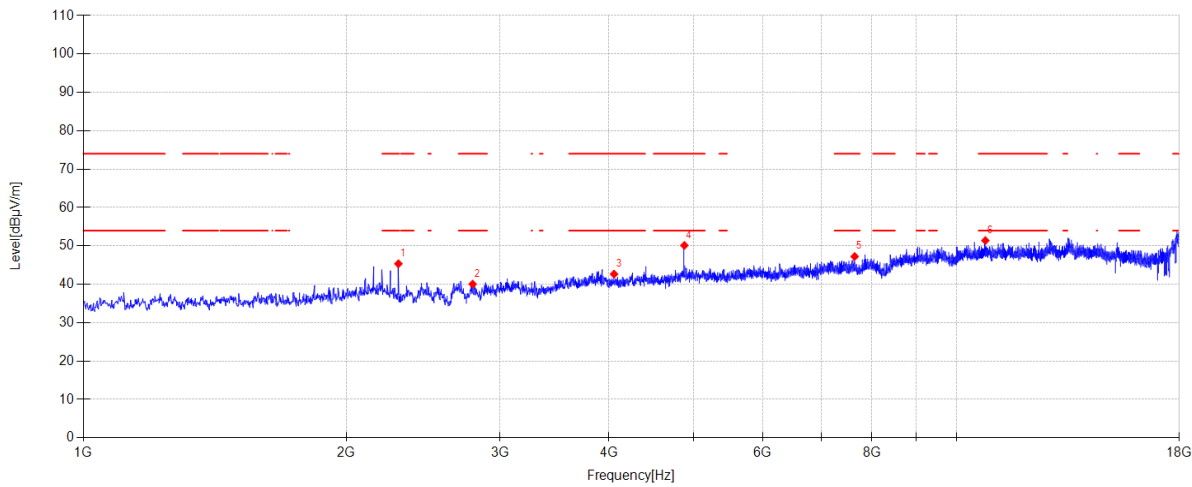
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\15

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2295.400	52.27	26.85	4.78	-38.55	45.35	74.00	28.65	PK	Horizontal
2	2791.800	46.70	27.43	5.09	-39.18	40.04	74.00	33.96	PK	Horizontal
3	4053.200	46.25	31.01	5.08	-39.68	42.66	74.00	31.34	PK	Horizontal
4	4879.400	50.83	33.33	5.58	-39.61	50.13	74.00	23.87	PK	Horizontal
5	7645.300	44.29	36.59	6.78	-40.42	47.24	74.00	26.76	PK	Horizontal
6	10792.000	43.09	39.40	8.03	-39.12	51.40	74.00	22.60	PK	Horizontal

Note:

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2440 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

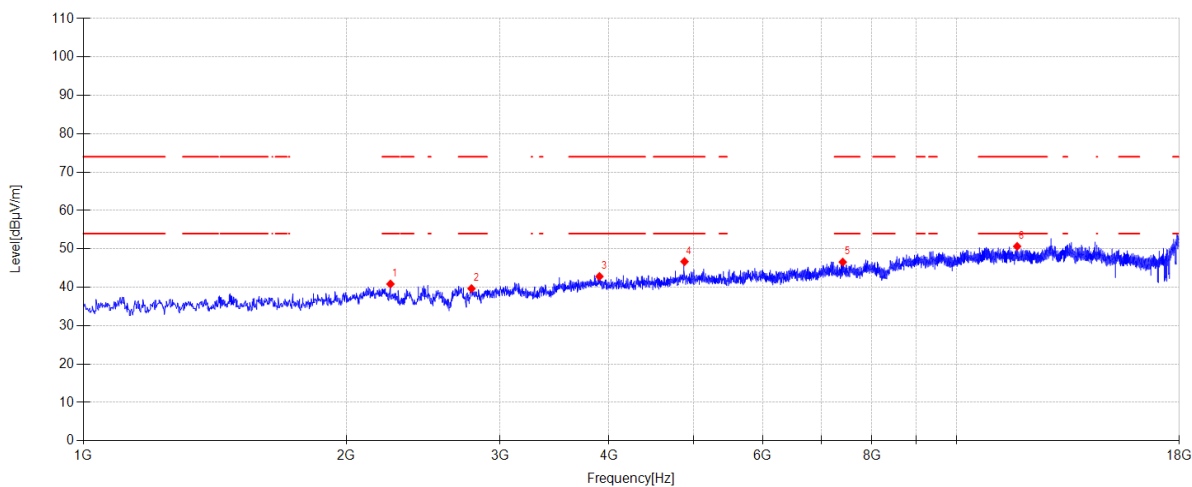
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\16

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2247.800	47.28	27.32	4.75	-38.49	40.86	74.00	33.14	PK	Vertical
2	2783.300	46.28	27.47	5.08	-39.17	39.66	74.00	34.34	PK	Vertical
3	3900.200	46.21	31.20	5.07	-39.66	42.82	74.00	31.18	PK	Vertical
4	4881.100	47.42	33.30	5.58	-39.61	46.69	74.00	27.31	PK	Vertical
5	7409.000	43.86	36.68	6.66	-40.63	46.57	74.00	27.43	PK	Vertical
6	11735.500	42.86	38.96	8.59	-39.74	50.67	74.00	23.33	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

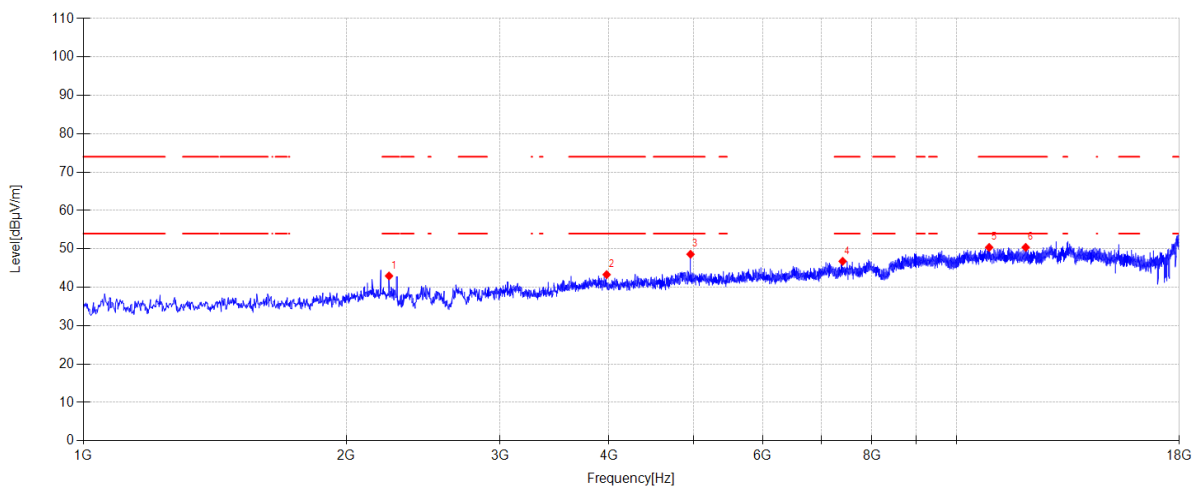
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\17

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2239.300	49.29	27.41	4.74	-38.48	42.96	74.00	31.04	PK	Horizontal
2	3975.000	46.92	31.00	5.05	-39.67	43.30	74.00	30.70	PK	Horizontal
3	4959.300	49.46	33.12	5.63	-39.60	48.61	74.00	25.39	PK	Horizontal
4	7407.300	44.06	36.69	6.66	-40.63	46.78	74.00	27.22	PK	Horizontal
5	10900.800	42.06	39.30	8.08	-39.06	50.38	74.00	23.62	PK	Horizontal
6	12004.100	42.44	39.20	8.76	-40.00	50.40	74.00	23.60	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-15

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480 MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

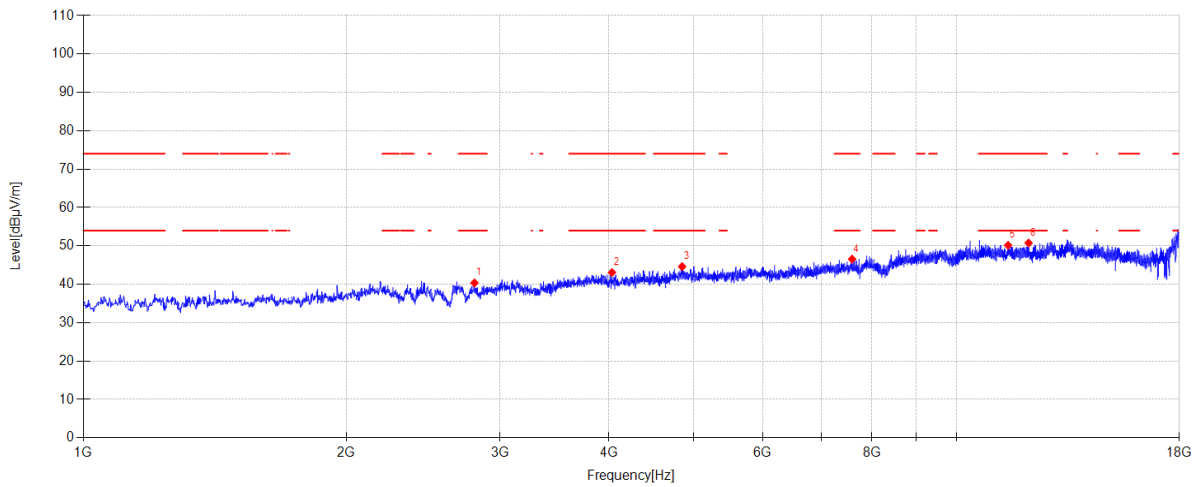
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\18

Memo:

Sample Number:S24092711-003 Power Setting:0

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2805.400	47.01	27.44	5.10	-39.19	40.36	74.00	33.64	PK	Vertical
2	4031.100	46.73	30.96	5.07	-39.68	43.08	74.00	30.92	PK	Vertical
3	4850.500	44.88	33.79	5.56	-39.61	44.62	74.00	29.38	PK	Vertical
4	7594.300	43.79	36.49	6.75	-40.47	46.56	74.00	27.44	PK	Vertical
5	11458.400	41.96	39.24	8.42	-39.46	50.16	74.00	23.84	PK	Vertical
6	12095.900	42.64	39.30	8.81	-39.98	50.77	74.00	23.23	PK	Vertical

- Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

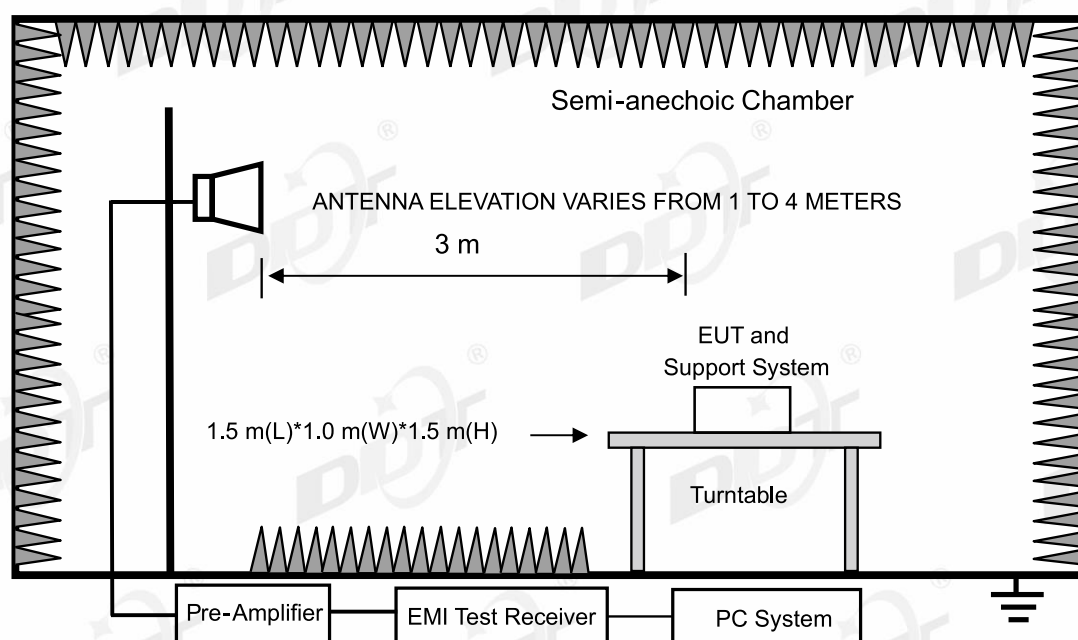
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

13.Band Edge Compliance

13.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
Hochgewinn-Hornantenne	SCHWARZBECK	BBHA 9120 D	DDT-ZC02129	2025/09/18
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31

13.2. Block diagram of test setup



13.3. Limits

All restriction band should comply with 15.209 and RSS-Gen section 8.9 limits, other emission should be at least 20 dB below the fundamental.

13.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

13.5. Test procedure

Same with Radiated Emission except change investigated frequency range.

Remark: All restriction band have been tested, and only the worst case is shown in report. According to the results of the radiated Emission test, it can be judged that the ANT1 Vertical direction is the Worst case, the ANT2 Horizontal direction is the Worst case.

13.6. Test result

PASS. (See below detailed test result)

13.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

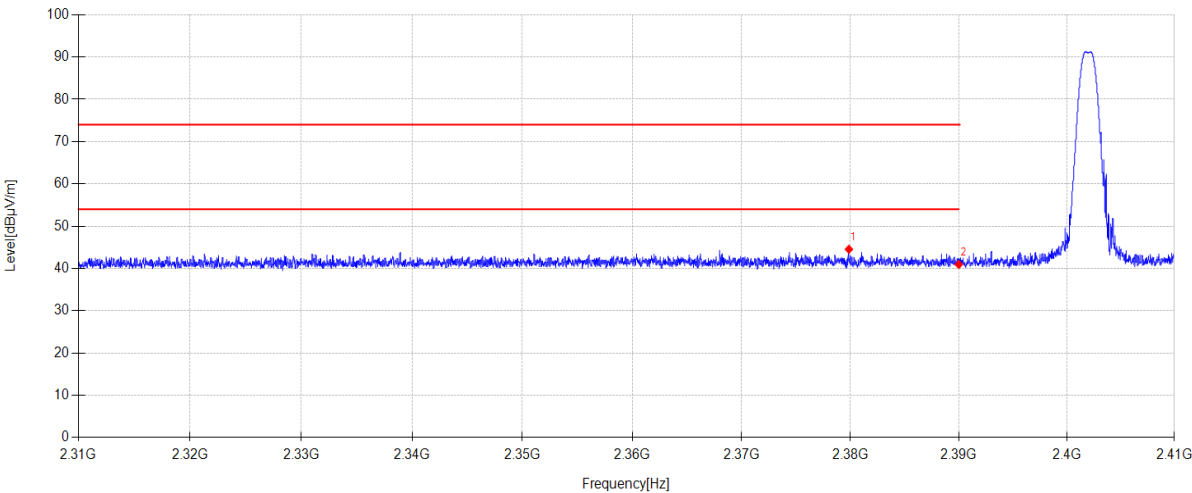
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\48

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2379.860	13.75	27.22	3.56	0.00	44.53	74.00	29.47	PK	Vertical
2	2390.000	10.12	27.26	3.57	0.00	40.95	74.00	33.05	PK	Vertical

Note:

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-10-26

Tested By:

Zhong Nan

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480MHz Mode(ANT1)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

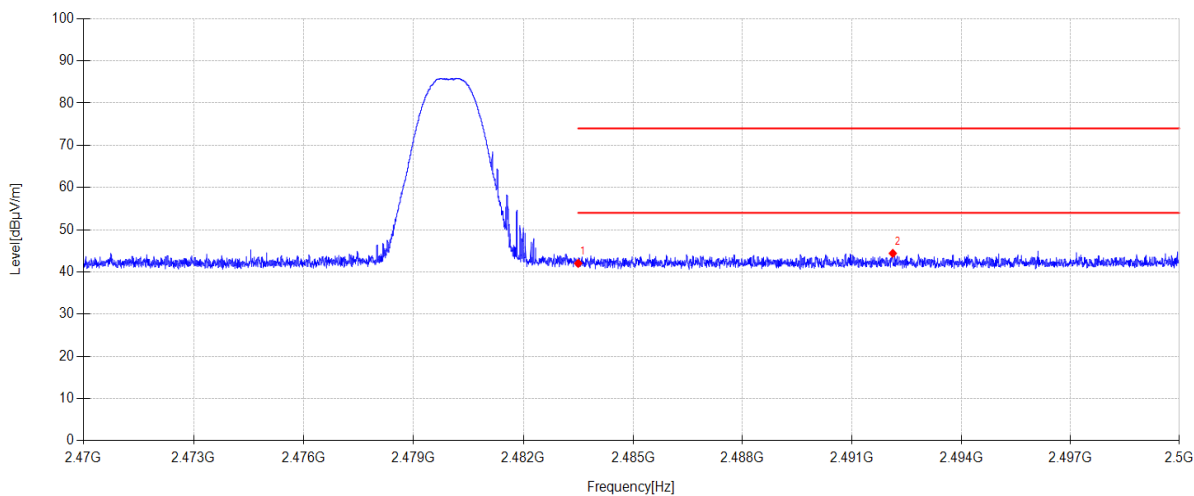
File Path:

d:\ts\2024 report data\Q24092711-1E\FCC ABOVE1G\49

Memo:

Sample Number:S24092711-003 Power Setting:NA

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2483.500	10.88	27.53	3.62	0.00	42.03	74.00	31.97	PK	Vertical
2	2492.122	13.20	27.57	3.63	0.00	44.40	74.00	29.60	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-16

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2402MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

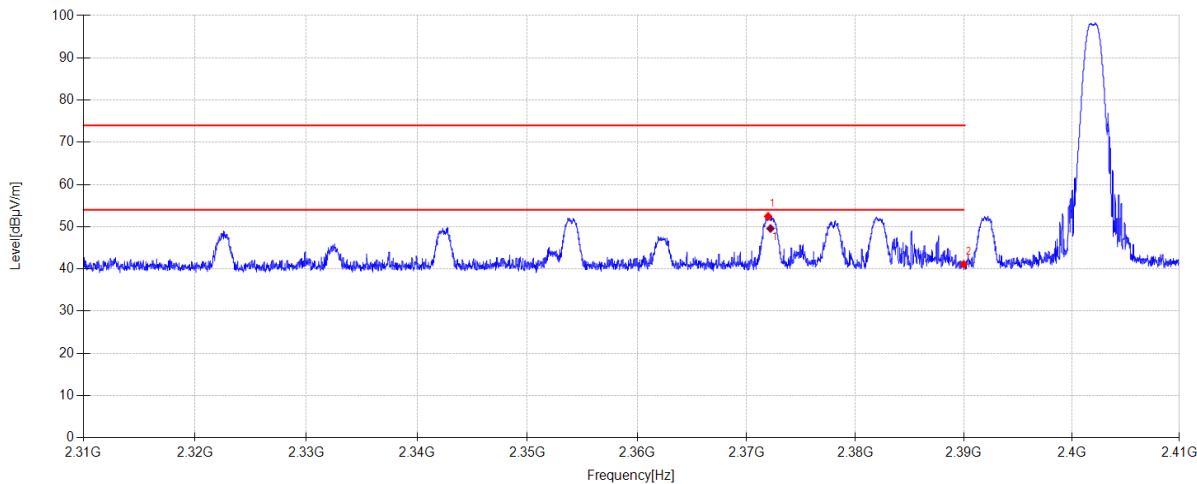
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d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\21

Memo:

Sample Number:S24092711-003 Power Setting:-2

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2371.980	21.71	27.19	3.56	0.00	52.46	74.00	21.54	PK	Horizontal
2	2390.000	10.27	27.26	3.57	0.00	41.10	74.00	32.90	PK	Horizontal

Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity	
1	2372.203	18.83	27.19	3.56	49.58	54.00	4.42	AV	Horizontal	

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-11-16

Tested By:

Guoyuan Lin

EUT:

BATTERY-POWERED PA SPEAKER
WITH WIRELESS MICROPHONE
AND DYNAMIC LIGHTS

Model Number:

TOTAL PA™ APEX

Test Mode:

BLE1M TX 2480MHz Mode(ANT2)

Power Supply:

Battery

Condition:

Temp:23.5°C;Humi:65.2%

Test Site:

DDT 3# Chamber

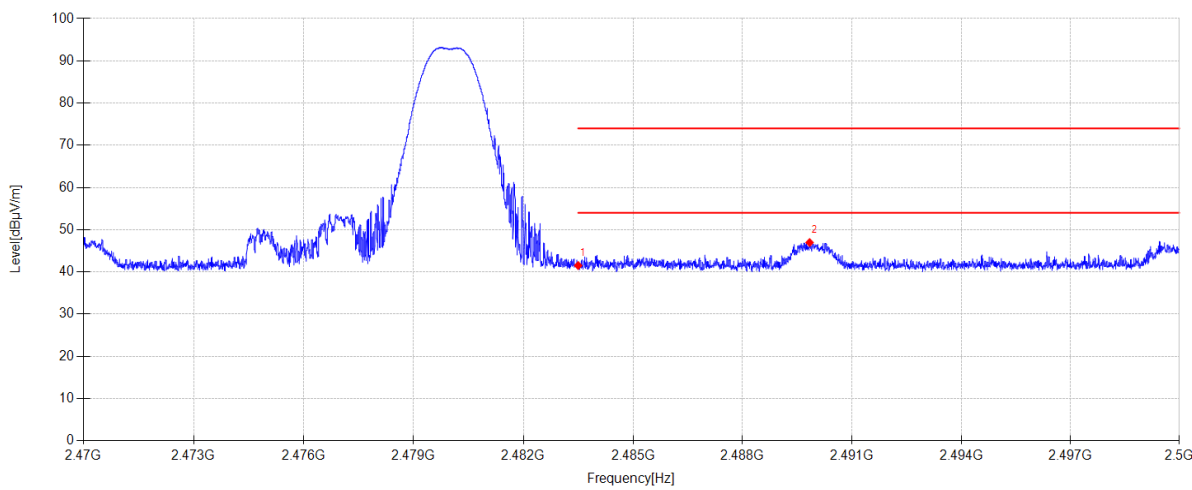
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d:\ts\2024 report data\Q24092711-1E\FCC Above 1G ANT2\22

Memo:

Sample Number:S24092711-003 Power Setting:-2

Test Graph



Data List										
NO	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2483.500	10.37	27.53	3.62	0.00	41.52	74.00	32.48	PK	Horizontal
2	2489.839	15.79	27.56	3.62	0.00	46.97	74.00	27.03	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

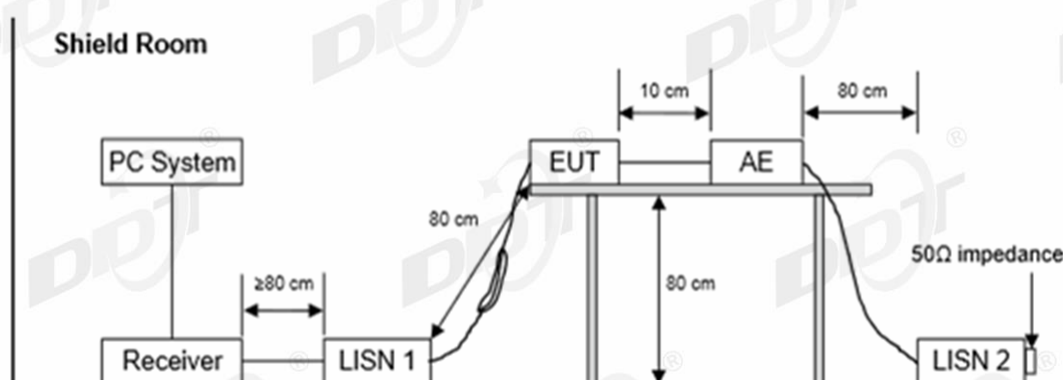
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

14.Power Line Conducted Emissions

14.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
RF Cable	Yuhu Technology	Z806-NJ-NJ-6M	DDT-ZC02004	2025/07/08
Δ-shaped artificial power network	SCHWARZBEC K	PVDC 8301	DDT-ZC03939	2025/03/31
EMI Test Receiver	R&S	ESCI/E3	DDT-ZC01297	2025/07/08
Pulse Limiter	SCHWARZBEC K	VTSD 9561	DDT-ZC02128	2025/07/08
Three-phase artificial power network	SCHWARZBEC K	NSLK 8163	DDT-ZC01572	2025/07/08
Conducted Radiated Software	Audix	E3	DDT-ZC00562	/
Two Line V-Network	R&S	ENV216	DDT-ZC02059	2025/07/08
Two Line V-Network	R&S	ENV216	DDT-ZC02056	2025/07/08

14.2. Block diagram of test setup



14.3. Limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz~500 kHz	66 ~ 56*	56 ~ 46*
500 kHz~5 MHz	56	46
5 MHz~30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

14.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

14.5. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

14.6. Test result

PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: “----” means Peak detection; “----” means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded the worst case.

14.7. Test data

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 6# Shield Room

D:\2024 Report Date\Q24092711-2E\1104 CE.EM6

Test Date : 2024-11-04

Tested By : Genliu

EUT : BATTERY-POWERED PA SPEAKER WITH
WIRELESS MICROPHONE AND DYNAMIC

Model Number : TOTAL PA™ APEX

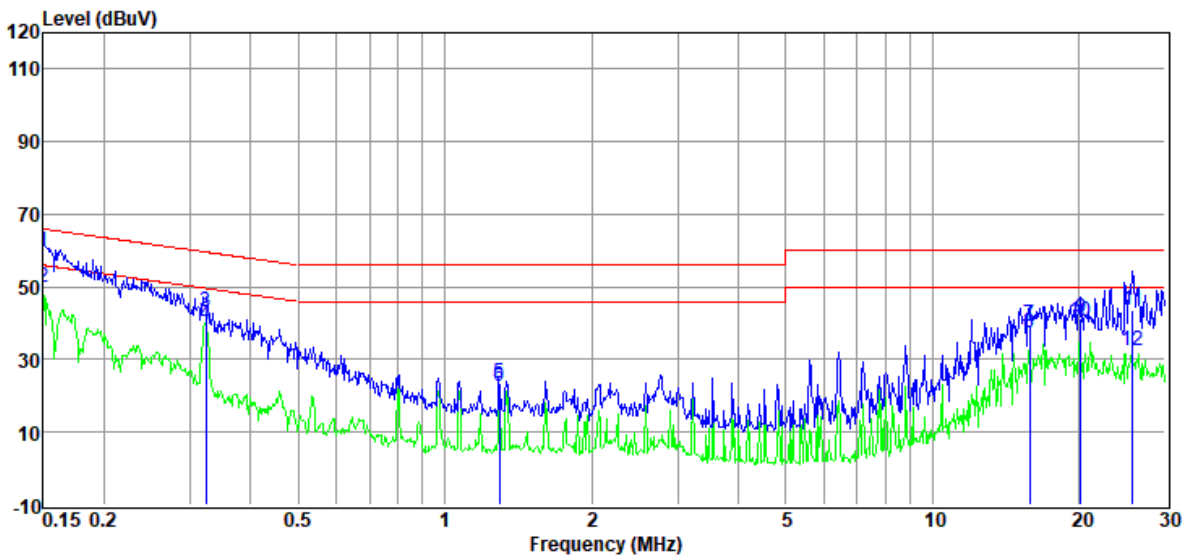
Power Supply : AC 120V/60Hz

Test Mode : BLE1M mode

Condition : Temp:21.8°C,Humi:52.9%

LISN : 2024 ENV216 3#/LINE

Memo : 18650-11.1V-6000mAh-3S3P



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.15	39.88	9.78	0.07	9.83	59.56	66.00	-6.44	QP	LINE
2	0.15	30.09	9.78	0.07	9.83	49.77	56.00	-6.23	Average	LINE
3	0.32	23.64	9.77	0.07	9.83	43.31	59.62	-16.31	QP	LINE
4	0.32	20.06	9.77	0.07	9.83	39.73	49.62	-9.89	Average	LINE
5	1.29	3.79	9.74	0.12	9.84	23.49	56.00	-32.51	QP	LINE
6	1.29	3.08	9.74	0.12	9.84	22.78	46.00	-23.22	Average	LINE
7	15.80	19.58	9.91	0.24	9.92	39.65	60.00	-20.35	QP	LINE
8	15.80	17.46	9.91	0.24	9.92	37.53	50.00	-12.47	Average	LINE
9	20.10	21.14	9.95	0.26	9.94	41.29	60.00	-18.71	QP	LINE
10	20.10	20.31	9.95	0.26	9.94	40.46	50.00	-9.54	Average	LINE
11	25.73	23.03	10.14	0.30	9.96	43.43	60.00	-16.57	QP	LINE
12	25.73	12.18	10.14	0.30	9.96	32.58	50.00	-17.42	Average	LINE

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).

4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 6# Shield Room

Test Date : 2024-11-04

EUT : BATTERY-POWERED PA SPEAKER WITH WIRELESS MICROPHONE AND DYNAMIC

Power Supply : AC 120V/60Hz

Condition : Temp:21.8°C,Humi:52.9%

Memo : 18650-11.1V-6000mAh-3S3P

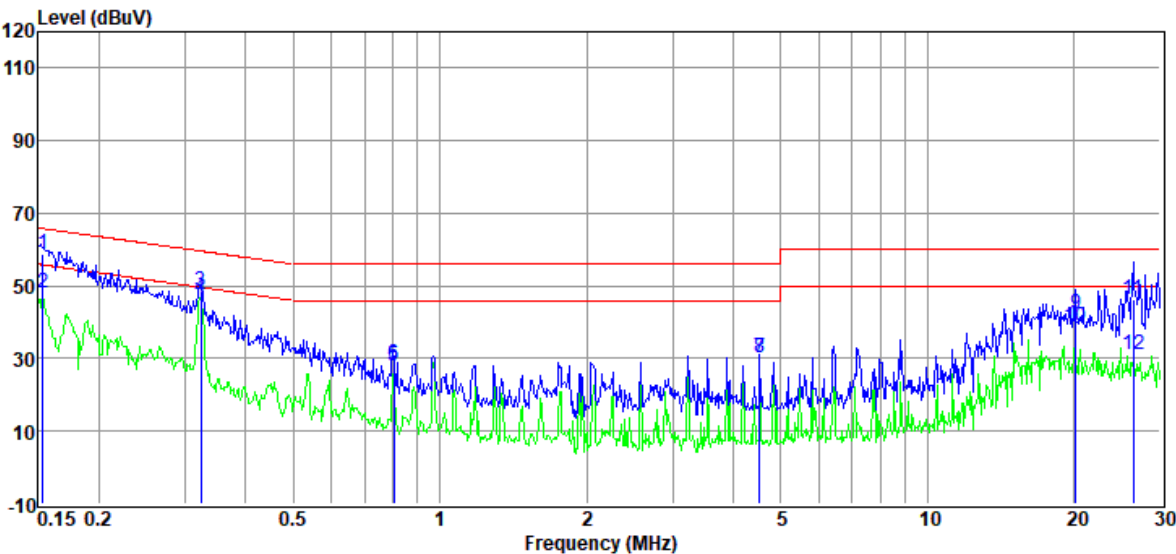
D:\2024 Report Date\Q24092711-2E\1104 CE.EM6

Tested By : Genliu

Model Number : TOTAL PA™ APEX

Test Mode : BLE1M mode

LISN : 2024 ENV216 3#/NEUTRAL



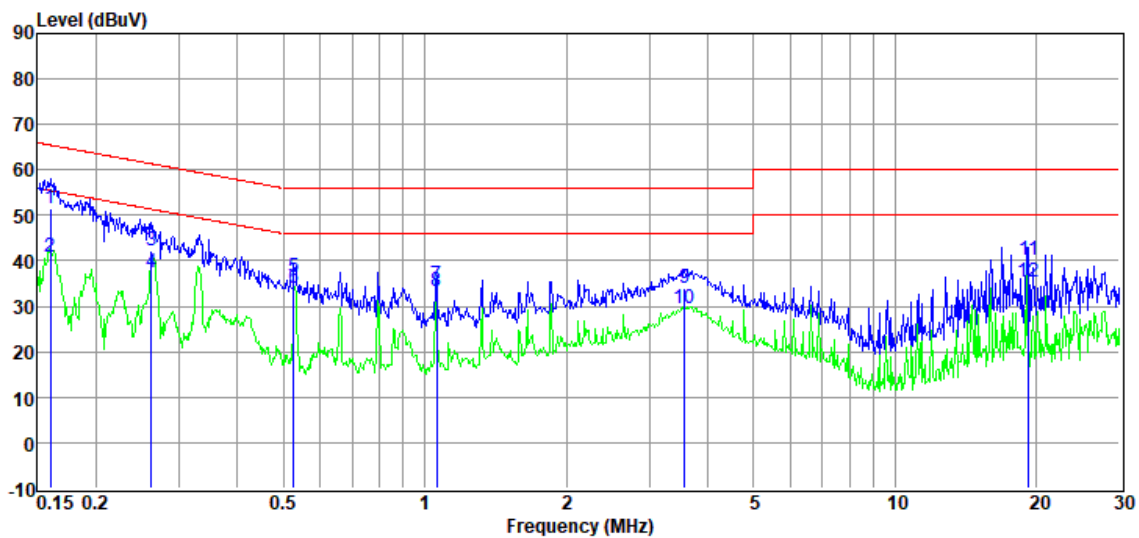
Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.15	39.17	9.78	0.07	9.83	58.85	65.82	-6.97	QP	NEUTRAL
2	0.15	28.35	9.78	0.07	9.83	48.03	55.82	-7.79	Average	NEUTRAL
3	0.32	29.02	9.76	0.07	9.83	48.68	59.62	-10.94	QP	NEUTRAL
4	0.32	26.86	9.76	0.07	9.83	46.52	49.62	-3.10	Average	NEUTRAL
5	0.81	8.23	9.75	0.05	9.84	27.87	56.00	-28.13	QP	NEUTRAL
6	0.81	8.79	9.75	0.05	9.84	28.43	46.00	-17.57	Average	NEUTRAL
7	4.52	10.51	9.79	0.10	9.85	30.25	56.00	-25.75	QP	NEUTRAL
8	4.52	10.43	9.79	0.10	9.85	30.17	46.00	-15.83	Average	NEUTRAL
9	20.10	22.24	9.97	0.26	9.94	42.41	60.00	-17.59	QP	NEUTRAL
10	20.10	18.73	9.97	0.26	9.94	38.90	50.00	-11.10	Average	NEUTRAL
11	26.42	25.86	10.20	0.30	9.96	46.32	60.00	-13.68	QP	NEUTRAL
12	26.42	10.64	10.20	0.30	9.96	31.10	50.00	-18.90	Average	NEUTRAL

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
Model Number : TOTAL PA™ APEX
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/NEUTRAL
Memo : WLY 1865-353P

Data: 6



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBUV)	(dB)	(dB)	(dB)	(dBUV)	(dBUV)	(dB)		
1	0.16	31.77	9.66	0.11	9.86	51.40	65.47	-14.07	QP	NEUTRAL
2	0.16	21.09	9.66	0.11	9.86	40.72	55.47	-14.75	Average	NEUTRAL
3	0.26	22.37	9.72	0.14	9.86	42.09	61.38	-19.29	QP	NEUTRAL
4	0.26	17.60	9.72	0.14	9.86	37.32	51.38	-14.06	Average	NEUTRAL
5	0.53	16.62	9.78	0.06	9.86	36.32	56.00	-19.68	QP	NEUTRAL
6	0.53	14.46	9.78	0.06	9.86	34.16	46.00	-11.84	Average	NEUTRAL
7	1.06	15.00	9.70	0.04	9.88	34.62	56.00	-21.38	QP	NEUTRAL
8	1.06	13.63	9.70	0.04	9.88	33.25	46.00	-12.75	Average	NEUTRAL
9	3.57	14.40	9.65	0.05	9.86	33.96	56.00	-22.04	QP	NEUTRAL
10	3.57	9.81	9.65	0.05	9.86	29.37	46.00	-16.63	Average	NEUTRAL
11	19.22	20.12	9.91	0.15	9.96	40.14	60.00	-19.86	QP	NEUTRAL
12	19.22	15.36	9.91	0.15	9.96	35.38	50.00	-14.62	Average	NEUTRAL

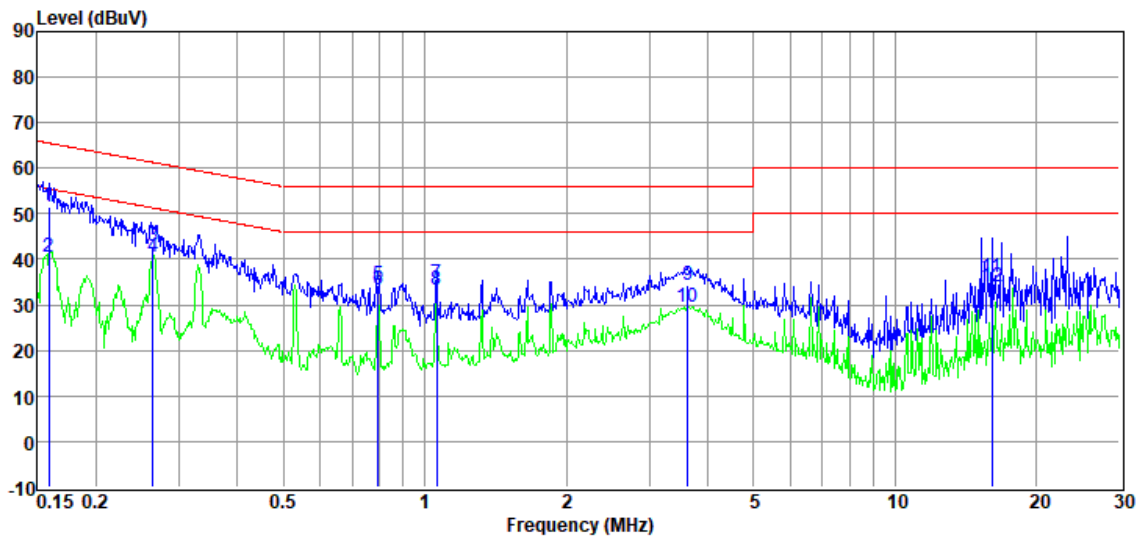
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
: WITH WIRELESS MICROPHONE AND **Model Number** : TOTAL PA™ APEX
: DYNAMIC LIGHTS
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/LINE
Memo : WLY 1865-353P

Data: 8



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	31.52	9.88	0.11	9.86	51.37	65.52	-14.15	QP	LINE
2	0.16	20.71	9.88	0.11	9.86	40.56	55.52	-14.96	Average	LINE
3	0.26	23.09	9.74	0.14	9.86	42.83	61.29	-18.46	QP	LINE
4	0.26	20.86	9.74	0.14	9.86	40.60	51.29	-10.69	Average	LINE
5	0.80	14.47	9.82	0.09	9.87	34.25	56.00	-21.75	QP	LINE
6	0.80	13.47	9.82	0.09	9.87	33.25	46.00	-12.75	Average	LINE
7	1.06	15.05	9.78	0.04	9.88	34.75	56.00	-21.25	QP	LINE
8	1.06	13.76	9.78	0.04	9.88	33.46	46.00	-12.54	Average	LINE
9	3.62	14.70	9.74	0.05	9.86	34.35	56.00	-21.65	QP	LINE
10	3.62	9.83	9.74	0.05	9.86	29.48	46.00	-16.52	Average	LINE
11	16.06	16.05	9.97	0.14	9.94	36.10	60.00	-23.90	QP	LINE
12	16.06	14.07	9.97	0.14	9.94	34.12	50.00	-15.88	Average	LINE

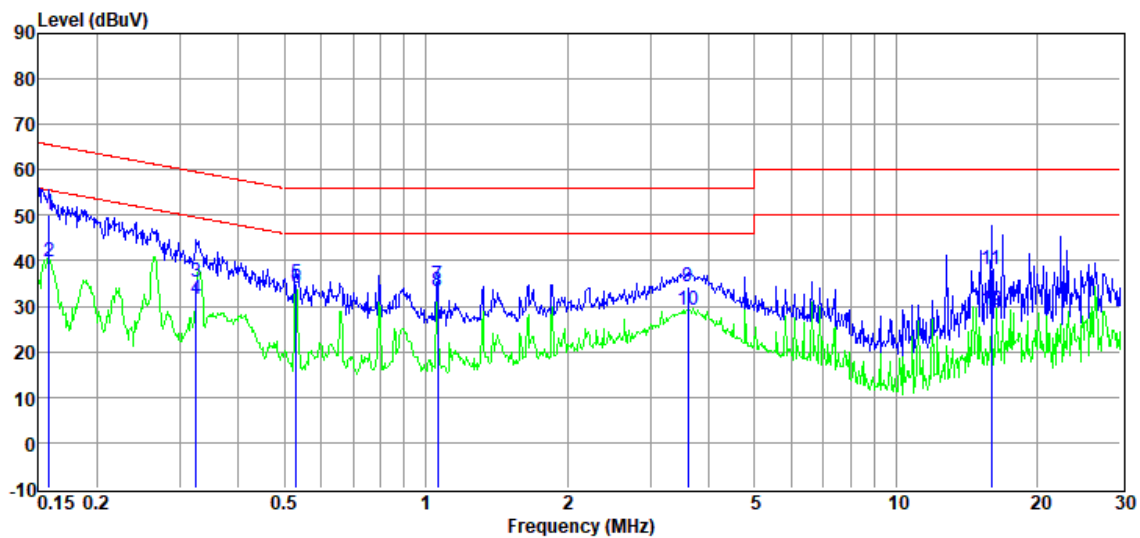
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
: WITH WIRELESS MICROPHONE AND DYNAMIC LIGHTS **Model Number** : TOTAL PA™ APEX
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/NEUTRAL
Memo : B18650-201C-91

Data: 14



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.16	30.45	9.65	0.11	9.86	50.07	65.56	-15.49	QP	NEUTRAL
2	0.16	20.07	9.65	0.11	9.86	39.69	55.56	-15.87	Average	NEUTRAL
3	0.33	15.53	9.73	0.14	9.86	35.26	59.57	-24.31	QP	NEUTRAL
4	0.33	11.95	9.73	0.14	9.86	31.68	49.57	-17.89	Average	NEUTRAL
5	0.53	15.24	9.78	0.06	9.86	34.94	56.00	-21.06	QP	NEUTRAL
6	0.53	14.23	9.78	0.06	9.86	33.93	46.00	-12.07	Average	NEUTRAL
7	1.06	14.90	9.70	0.04	9.88	34.52	56.00	-21.48	QP	NEUTRAL
8	1.06	13.82	9.70	0.04	9.88	33.44	46.00	-12.56	Average	NEUTRAL
9	3.60	14.68	9.65	0.05	9.86	34.24	56.00	-21.76	QP	NEUTRAL
10	3.60	9.77	9.65	0.05	9.86	29.33	46.00	-16.67	Average	NEUTRAL
11	15.97	18.22	9.86	0.14	9.94	38.16	60.00	-21.84	QP	NEUTRAL
12	15.97	9.30	9.86	0.14	9.94	29.24	50.00	-20.76	Average	NEUTRAL

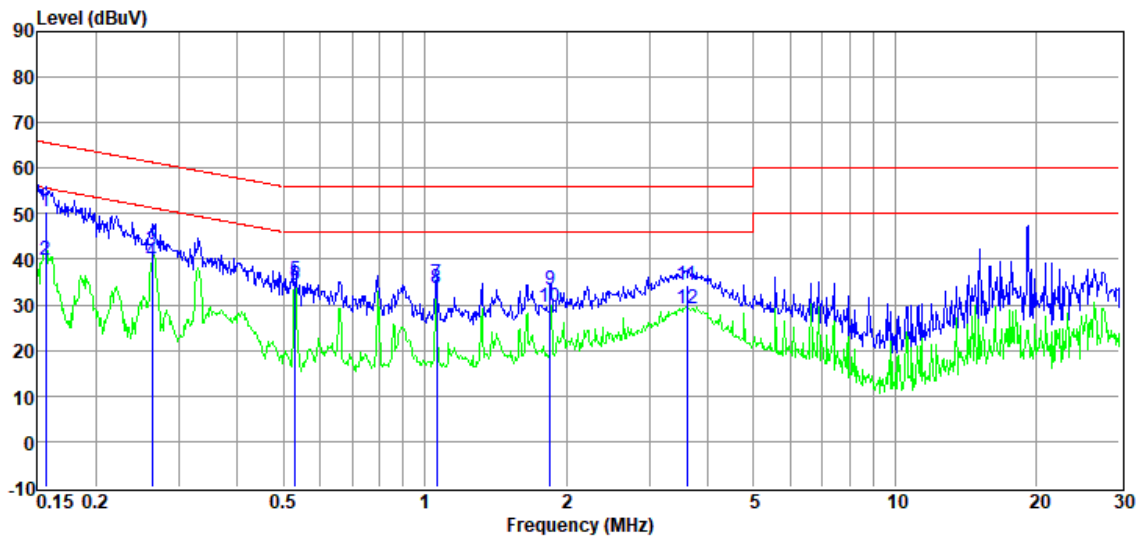
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
: WITH WIRELESS MICROPHONE AND **Model Number** : TOTAL PA™ APEX
: DYNAMIC LIGHTS
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/LINE
Memo : B18650-201C-91

Data: 16



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	30.65	9.88	0.11	9.86	50.50	65.65	-15.15	QP	LINE
2	0.16	20.12	9.88	0.11	9.86	39.97	55.65	-15.68	Average	LINE
3	0.26	22.10	9.74	0.14	9.86	41.84	61.34	-19.50	QP	LINE
4	0.26	19.81	9.74	0.14	9.86	39.55	51.34	-11.79	Average	LINE
5	0.53	15.49	9.85	0.06	9.86	35.26	56.00	-20.74	QP	LINE
6	0.53	14.51	9.85	0.06	9.86	34.28	46.00	-11.72	Average	LINE
7	1.06	15.06	9.78	0.04	9.88	34.76	56.00	-21.24	QP	LINE
8	1.06	13.91	9.78	0.04	9.88	33.61	46.00	-12.39	Average	LINE
9	1.85	13.51	9.75	0.04	9.87	33.17	56.00	-22.83	QP	LINE
10	1.85	9.76	9.75	0.04	9.87	29.42	46.00	-16.58	Average	LINE
11	3.60	14.62	9.74	0.05	9.86	34.27	56.00	-21.73	QP	LINE
12	3.60	9.68	9.74	0.05	9.86	29.33	46.00	-16.67	Average	LINE

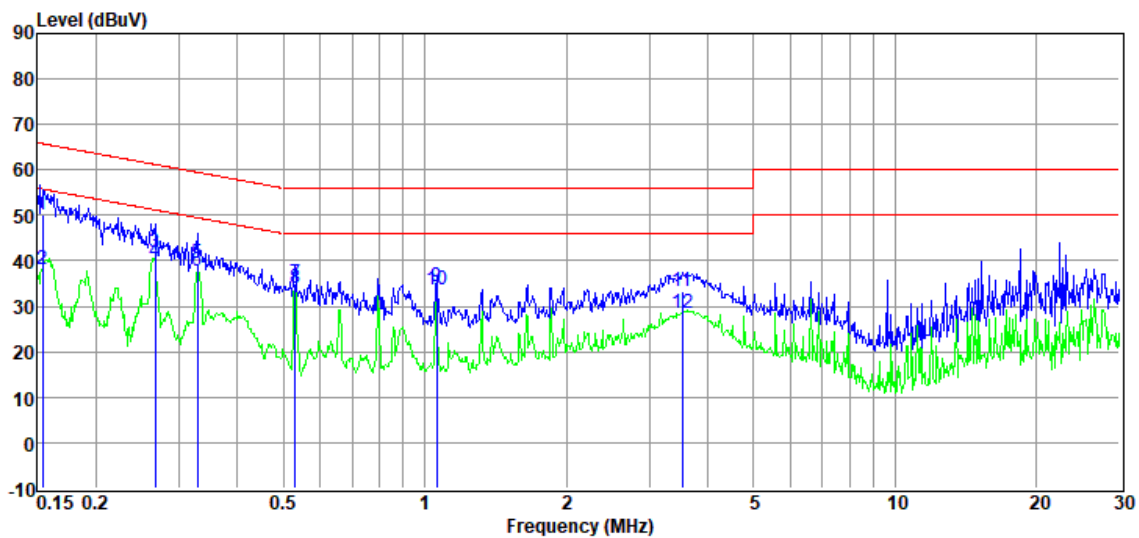
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
Model Number : TOTAL PA™ APEX
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/NEUTRAL
Memo : PQ3220-2409192WK

Data: 22



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.15	30.59	9.65	0.11	9.86	50.21	65.78	-15.57	QP	NEUTRAL
2	0.15	18.54	9.65	0.11	9.86	38.16	55.78	-17.62	Average	NEUTRAL
3	0.27	22.19	9.72	0.14	9.86	41.91	61.20	-19.29	QP	NEUTRAL
4	0.27	20.04	9.72	0.14	9.86	39.76	51.20	-11.44	Average	NEUTRAL
5	0.33	19.86	9.73	0.13	9.86	39.58	59.49	-19.91	QP	NEUTRAL
6	0.33	17.95	9.73	0.13	9.86	37.67	49.49	-11.82	Average	NEUTRAL
7	0.53	15.16	9.78	0.06	9.86	34.86	56.00	-21.14	QP	NEUTRAL
8	0.53	14.23	9.78	0.06	9.86	33.93	46.00	-12.07	Average	NEUTRAL
9	1.06	14.84	9.70	0.04	9.88	34.46	56.00	-21.54	QP	NEUTRAL
10	1.06	13.92	9.70	0.04	9.88	33.54	46.00	-12.46	Average	NEUTRAL
11	3.53	13.71	9.66	0.05	9.86	33.28	56.00	-22.72	QP	NEUTRAL
12	3.53	8.87	9.66	0.05	9.86	28.44	46.00	-17.56	Average	NEUTRAL

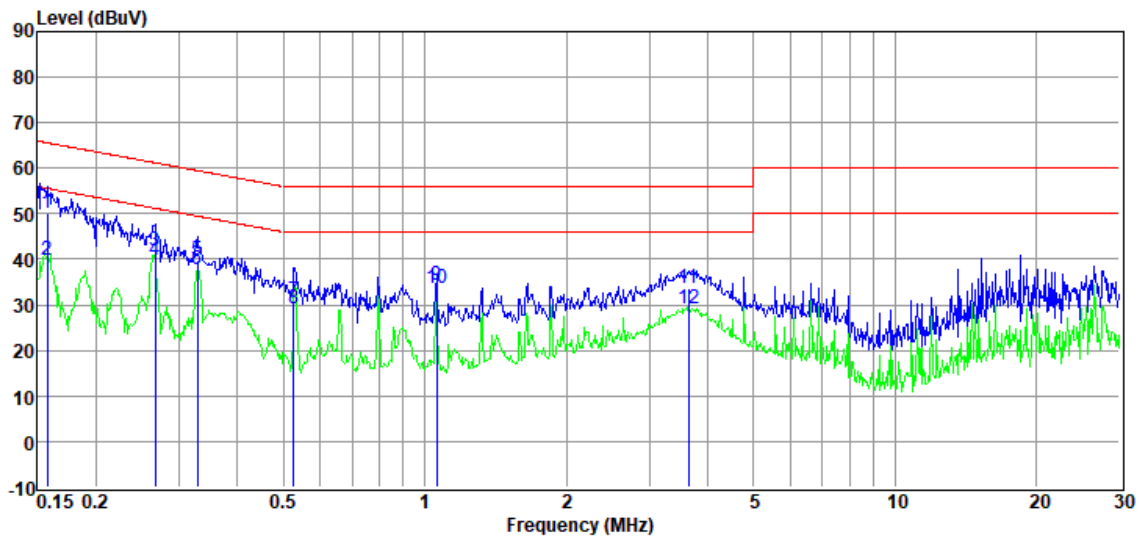
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
: WITH WIRELESS MICROPHONE AND **Model Number** : TOTAL PA™ APEX
: DYNAMIC LIGHTS
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/LINE
Memo : PQ3220-2409192WK

Data: 24



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	30.26	9.88	0.11	9.86	50.11	65.60	-15.49	QP	LINE
2	0.16	19.85	9.88	0.11	9.86	39.70	55.60	-15.90	Average	LINE
3	0.27	22.00	9.74	0.14	9.86	41.74	61.20	-19.46	QP	LINE
4	0.27	19.99	9.74	0.14	9.86	39.73	51.20	-11.47	Average	LINE
5	0.33	19.92	9.77	0.13	9.86	39.68	59.49	-19.81	QP	LINE
6	0.33	17.95	9.77	0.13	9.86	37.71	49.49	-11.78	Average	LINE
7	0.53	11.05	9.85	0.06	9.86	30.82	56.00	-25.18	QP	LINE
8	0.53	9.45	9.85	0.06	9.86	29.22	46.00	-16.78	Average	LINE
9	1.06	14.63	9.78	0.04	9.88	34.33	56.00	-21.67	QP	LINE
10	1.06	13.78	9.78	0.04	9.88	33.48	46.00	-12.52	Average	LINE
11	3.64	14.13	9.74	0.05	9.86	33.78	56.00	-22.22	QP	LINE
12	3.64	9.36	9.74	0.05	9.86	29.01	46.00	-16.99	Average	LINE

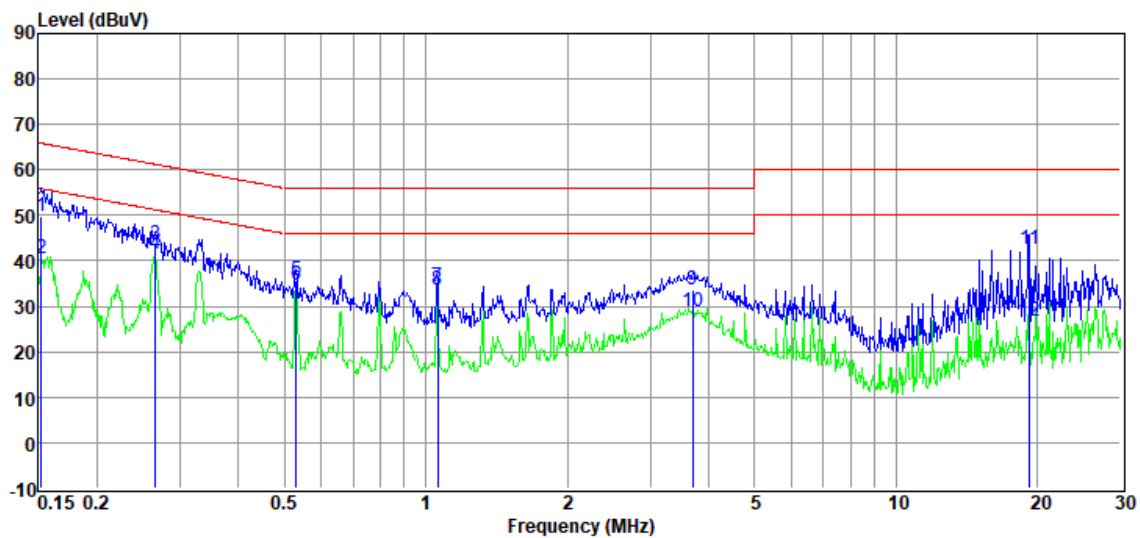
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
Model Number : TOTAL PA™ APEX
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/NEUTRAL
Memo : PSM-0100-022U

Data: 30



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.15	30.27	9.65	0.11	9.86	49.89	65.87	-15.98	QP	NEUTRAL
2	0.15	20.77	9.65	0.11	9.86	40.39	55.87	-15.48	Average	NEUTRAL
3	0.27	23.84	9.72	0.14	9.86	43.56	61.25	-17.69	QP	NEUTRAL
4	0.27	21.71	9.72	0.14	9.86	41.43	51.25	-9.82	Average	NEUTRAL
5	0.53	15.94	9.78	0.06	9.86	35.64	56.00	-20.36	QP	NEUTRAL
6	0.53	15.02	9.78	0.06	9.86	34.72	46.00	-11.28	Average	NEUTRAL
7	1.06	14.88	9.70	0.04	9.88	34.50	56.00	-21.50	QP	NEUTRAL
8	1.06	13.97	9.70	0.04	9.88	33.59	46.00	-12.41	Average	NEUTRAL
9	3.70	14.04	9.65	0.05	9.86	33.60	56.00	-22.40	QP	NEUTRAL
10	3.70	9.11	9.65	0.05	9.86	28.67	46.00	-17.33	Average	NEUTRAL
11	19.22	22.41	9.91	0.15	9.96	42.43	60.00	-17.57	QP	NEUTRAL
12	19.22	6.80	9.91	0.15	9.96	26.82	50.00	-23.18	Average	NEUTRAL

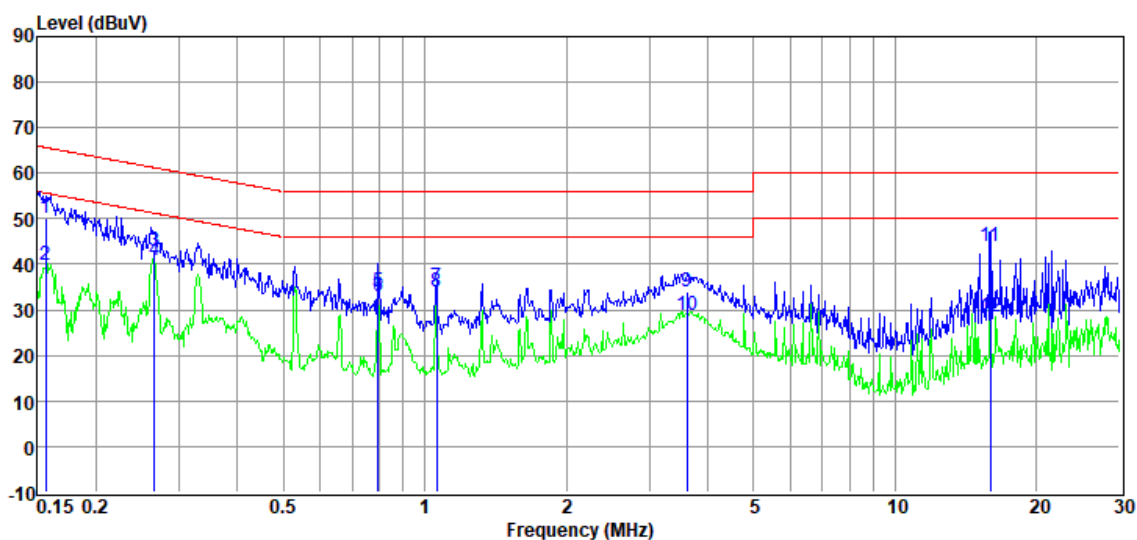
Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2025 CE report data\Q24092711-1E\CE-FCC.EM6**
Test Date : 2025-01-16 **Tested By** : Nelson Peng
EUT : BATTERY-POWERED PA SPEAKER
: WITH WIRELESS MICROPHONE AND **Model Number** : TOTAL PA™ APEX
: DYNAMIC LIGHTS
Power Supply : AC 120V/60Hz **Test Mode** : BLE1M mode
Condition : TEMP:23.4°C, RH:61.2% **LISN** : 2024 1# ENV216/LINE
Memo : PSM-0100-022U

Data: 32



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	30.18	9.88	0.11	9.86	50.03	65.65	-15.62	QP	LINE
2	0.16	20.09	9.88	0.11	9.86	39.94	55.65	-15.71	Average	LINE
3	0.27	23.05	9.74	0.14	9.86	42.79	61.25	-18.46	QP	LINE
4	0.27	21.26	9.74	0.14	9.86	41.00	51.25	-10.25	Average	LINE
5	0.80	14.28	9.82	0.09	9.87	34.06	56.00	-21.94	QP	LINE
6	0.80	13.19	9.82	0.09	9.87	32.97	46.00	-13.03	Average	LINE
7	1.06	15.17	9.78	0.04	9.88	34.87	56.00	-21.13	QP	LINE
8	1.06	14.26	9.78	0.04	9.88	33.96	46.00	-12.04	Average	LINE
9	3.60	14.38	9.74	0.05	9.86	34.03	56.00	-21.97	QP	LINE
10	3.60	9.30	9.74	0.05	9.86	28.95	46.00	-17.05	Average	LINE
11	15.97	23.91	9.97	0.14	9.94	43.96	60.00	-16.04	QP	LINE
12	15.97	8.43	9.97	0.14	9.94	28.48	50.00	-21.52	Average	LINE

Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

16. Photos of the EUT

Please refer to DDT-Q24092711-2E appendix I

-----End Report-----