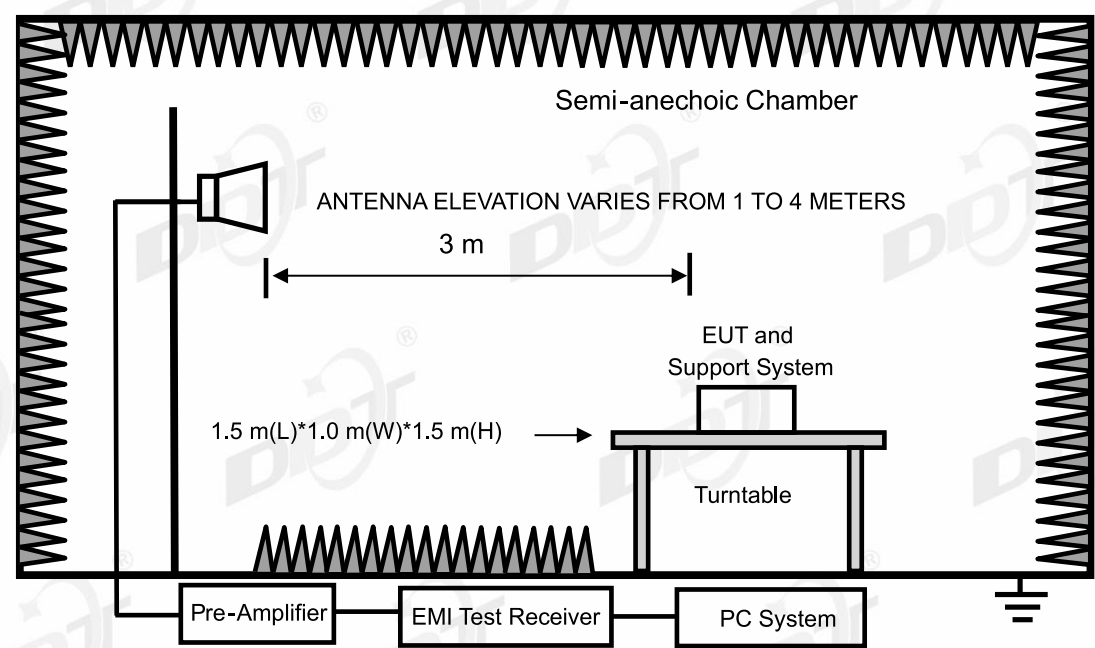


15.Band Edge Compliance

15.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
ELECTRIC AND MAGNETIC FIELD ANALYZER	Narda	EHP-200A	DDT-ZC01401	2024/09/20
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/07/08
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
Hochgewinn-Hornantenne	SCHWARZBEC K	BBHA 9120 D	DDT-ZC02129	2025/09/18
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31

15.2. Block diagram of test setup



15.3. 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.

15.4. Assistant equipment used for test

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

15.5. 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.

15.6. Test result

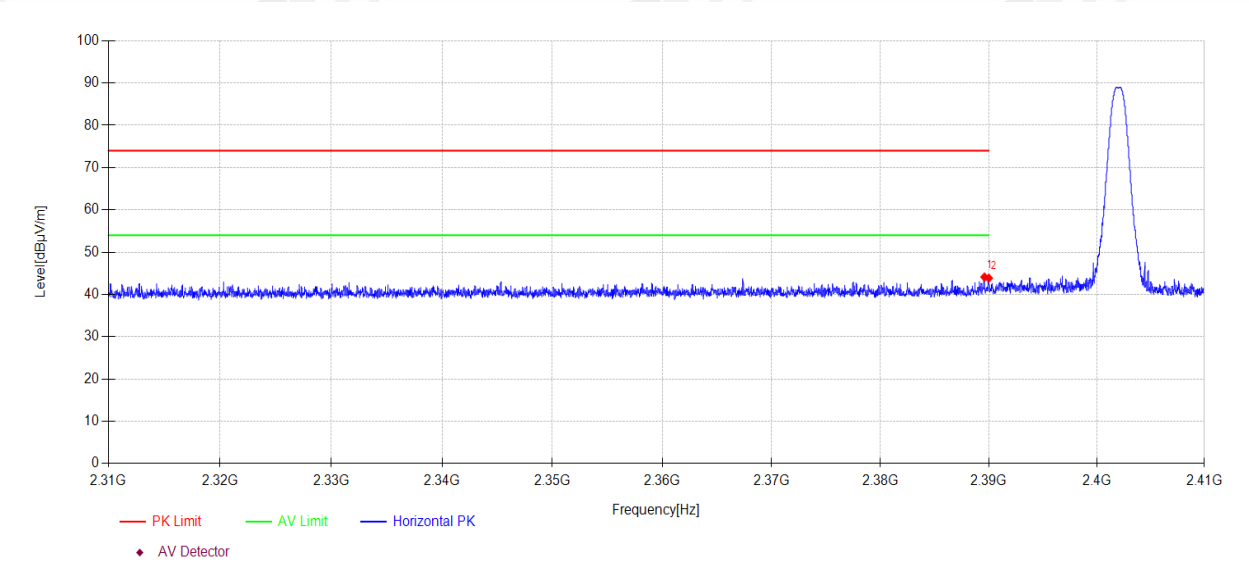
PASS. (See below detailed test result)

15.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-06-25	Tested By:	Genliu
EUT:	Hardhat Bluetooth Speaker	Model Number:	AEPHS1
Test Mode:	DH5 TX 2402MHz	Power Supply:	Battery
Condition:	Temp:22.4°C;Humi:70.9%	Test Site:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24053007-1E\FCC ABOVE 1G\17		
Memo:	R Sample Number:S24053007-005 Power Setting:1		

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.600	13.29	27.26	3.57	0.00	44.12	74.00	29.88	PK	Horizontal
2	2390.000	13.02	27.26	3.57	0.00	43.85	74.00	30.15	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

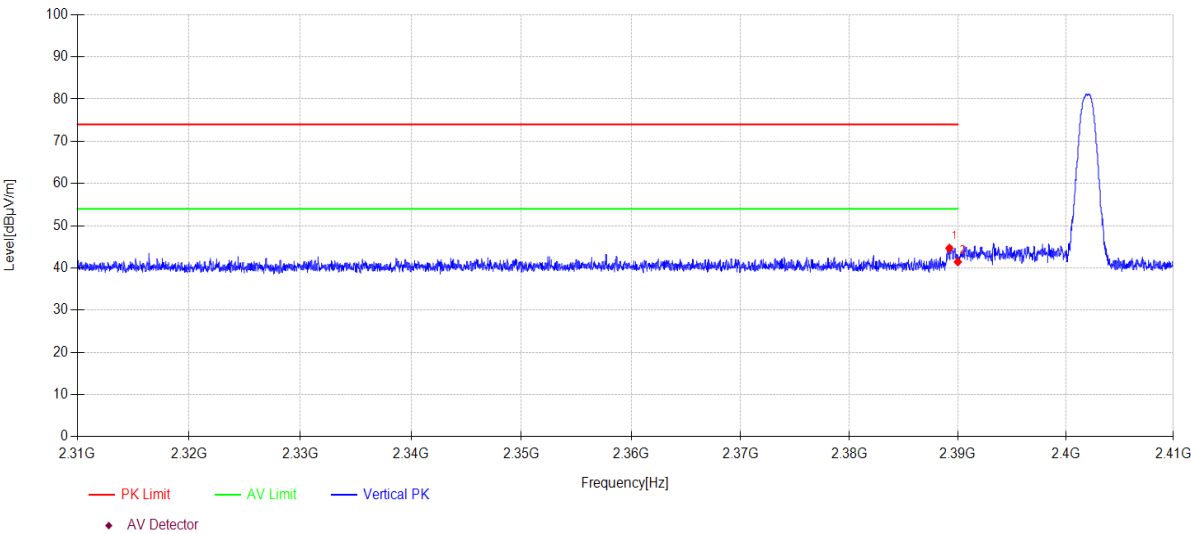
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.220	13.84	27.26	3.57	0.00	44.67	74.00	29.33	PK	Vertical
2	2390.000	10.61	27.26	3.57	0.00	41.44	74.00	32.56	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

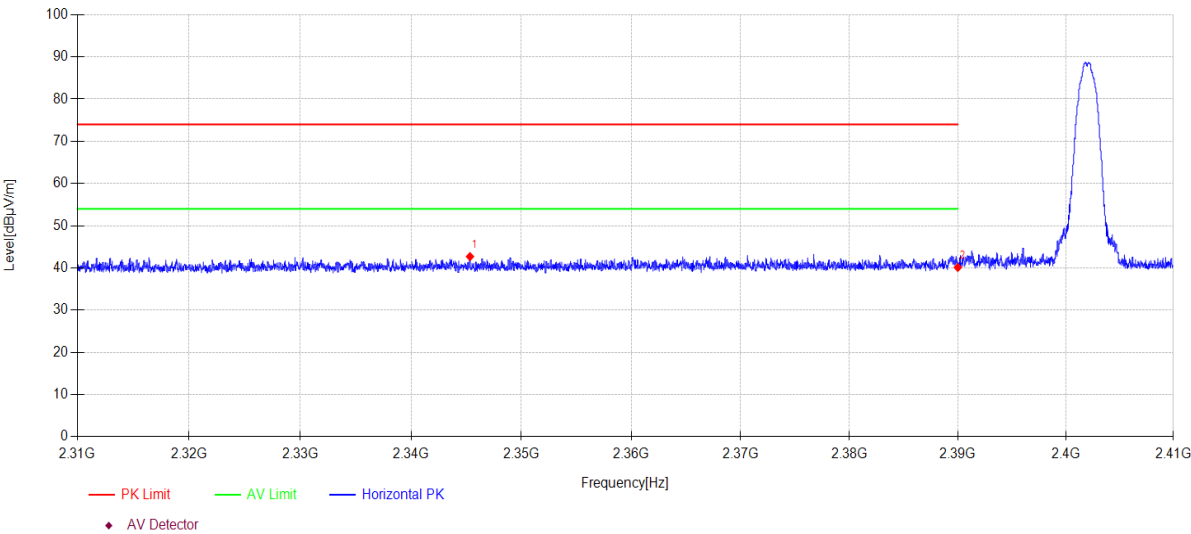
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2345.340	12.09	27.07	3.54	0.00	42.70	74.00	31.30	PK	Horizontal
2	2390.000	9.29	27.26	3.57	0.00	40.12	74.00	33.88	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

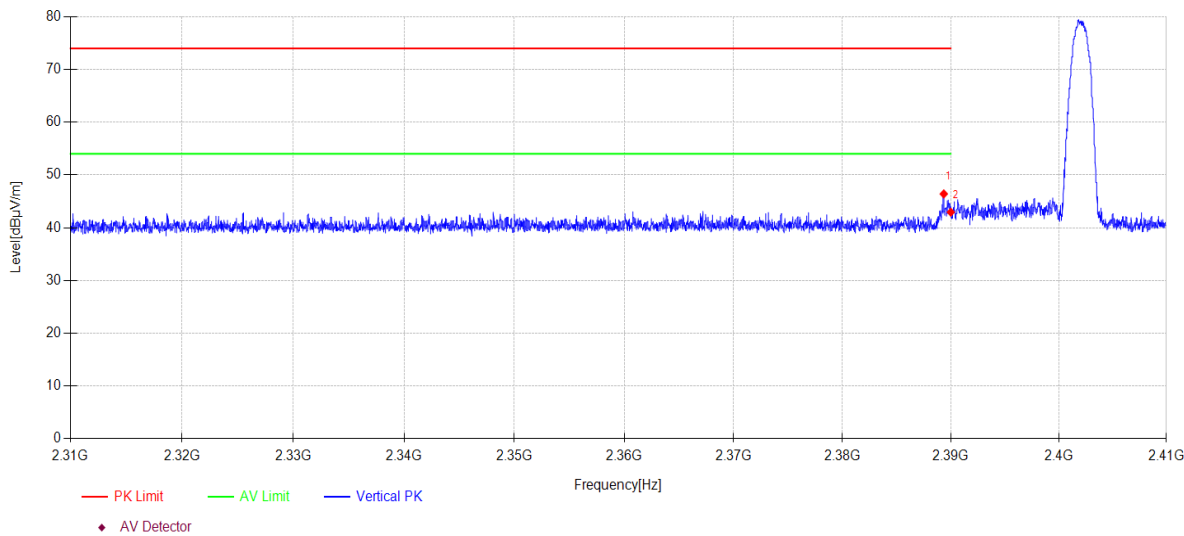
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.350	15.58	27.26	3.57	0.00	46.41	74.00	27.59	PK	Vertical
2	2390.000	12.12	27.26	3.57	0.00	42.95	74.00	31.05	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

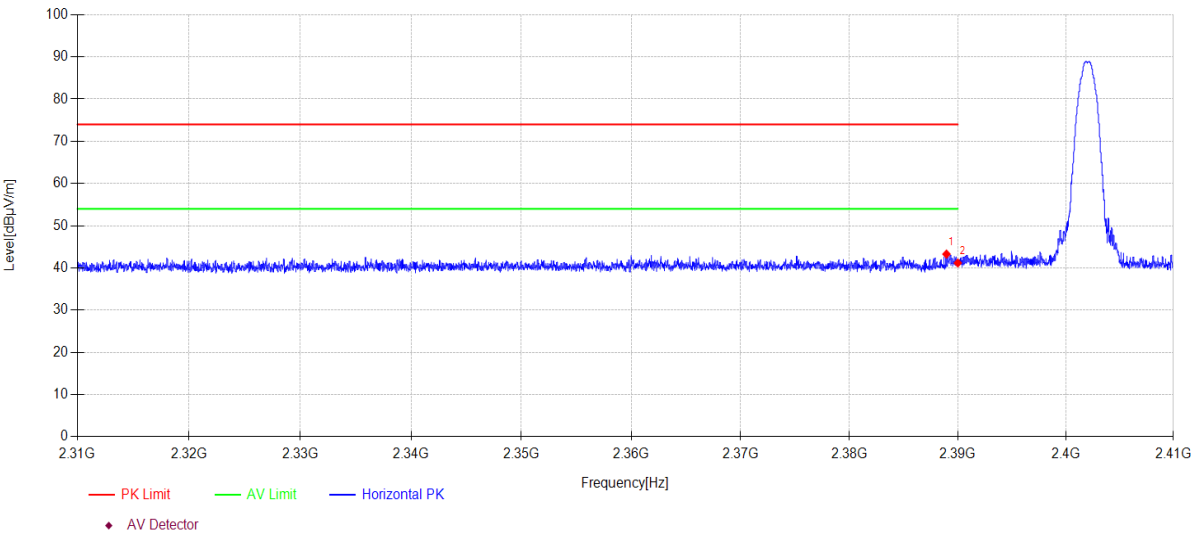
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2388.950	12.45	27.26	3.57	0.00	43.28	74.00	30.72	PK	Horizontal
2	2390.000	10.34	27.26	3.57	0.00	41.17	74.00	32.83	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

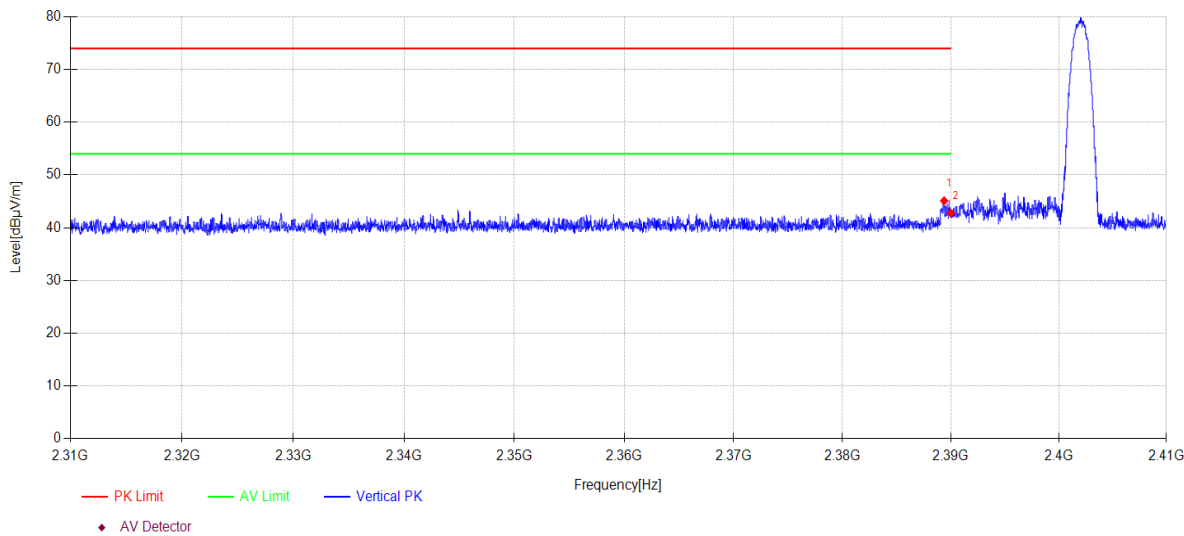
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.380	14.27	27.26	3.57	0.00	45.10	74.00	28.90	PK	Vertical
2	2390.000	11.94	27.26	3.57	0.00	42.77	74.00	31.23	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.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

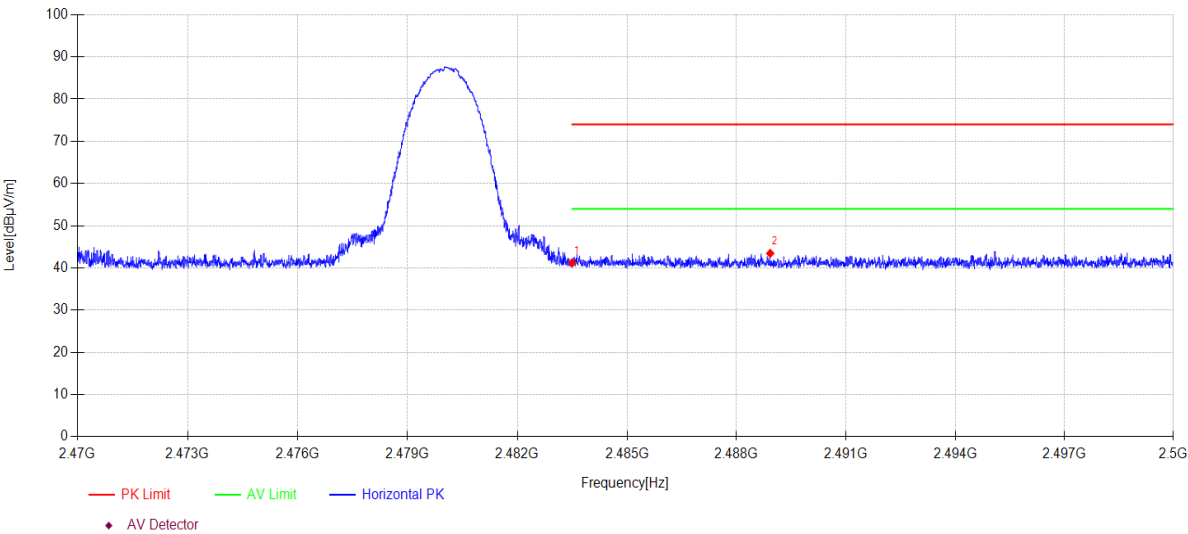
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	10.08	27.53	3.62	0.00	41.23	74.00	32.77	PK	Horizontal
2	2488.924	12.27	27.56	3.62	0.00	43.45	74.00	30.55	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

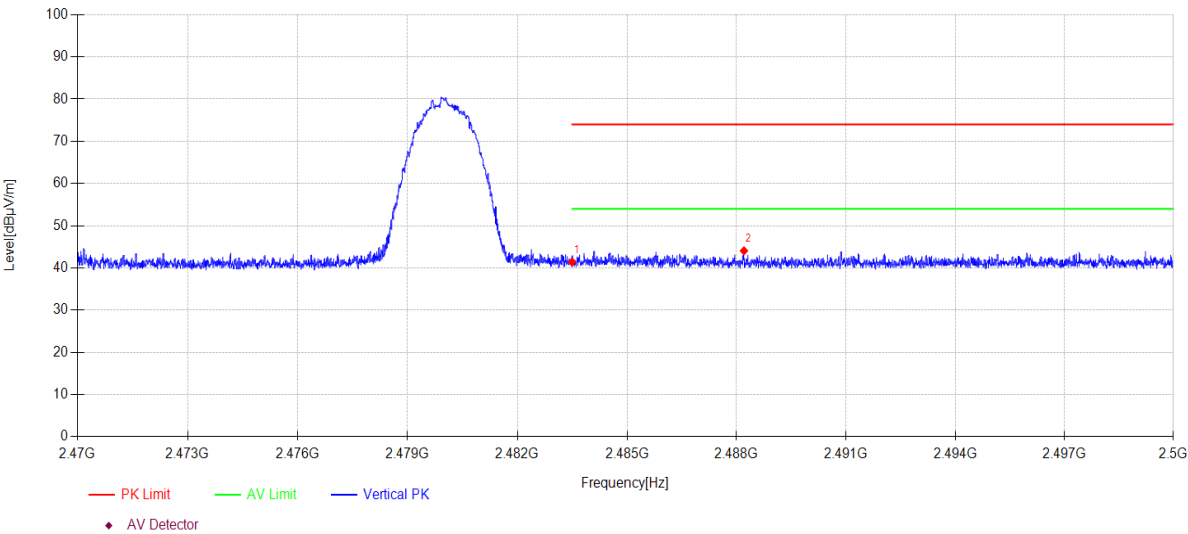
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	10.25	27.53	3.62	0.00	41.40	74.00	32.60	PK	Vertical
2	2488.204	12.88	27.55	3.62	0.00	44.05	74.00	29.95	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

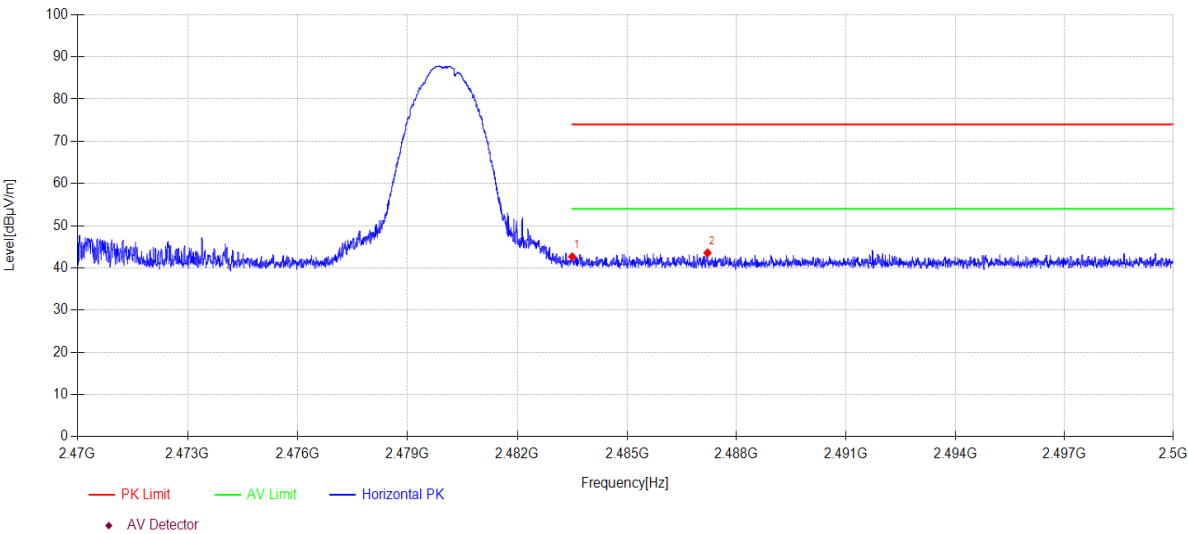
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	11.50	27.53	3.62	0.00	42.65	74.00	31.35	PK	Horizontal
2	2487.205	12.39	27.55	3.62	0.00	43.56	74.00	30.44	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

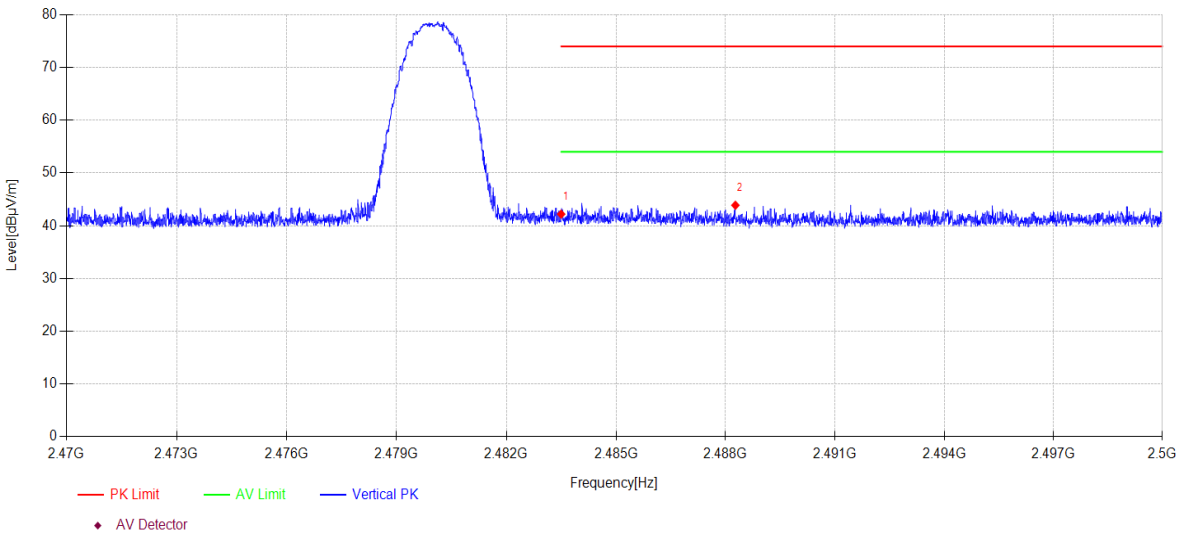
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	11.05	27.53	3.62	0.00	42.20	74.00	31.80	PK	Vertical
2	2488.270	12.71	27.55	3.62	0.00	43.88	74.00	30.12	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

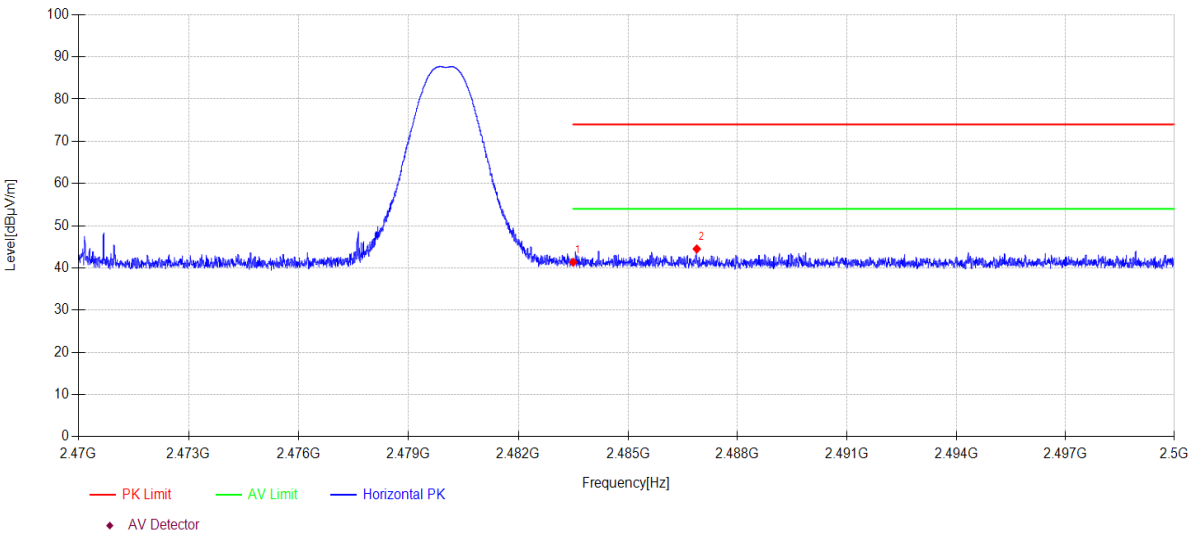
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	10.20	27.53	3.62	0.00	41.35	74.00	32.65	PK	Horizontal
2	2486.884	13.33	27.55	3.62	0.00	44.50	74.00	29.50	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

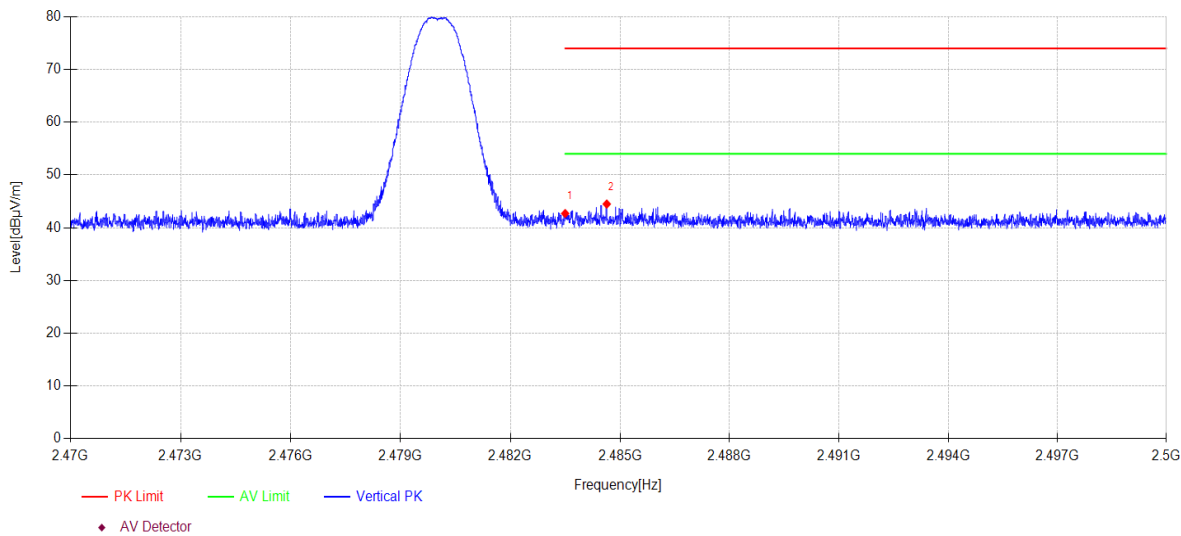
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Memo:

R Sample Number:S24053007-005 Power Setting:1

Test Graph



Data List										
N O.	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	11.55	27.53	3.62	0.00	42.70	74.00	31.30	PK	Vertical
2	2484.637	13.33	27.54	3.62	0.00	44.49	74.00	29.51	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

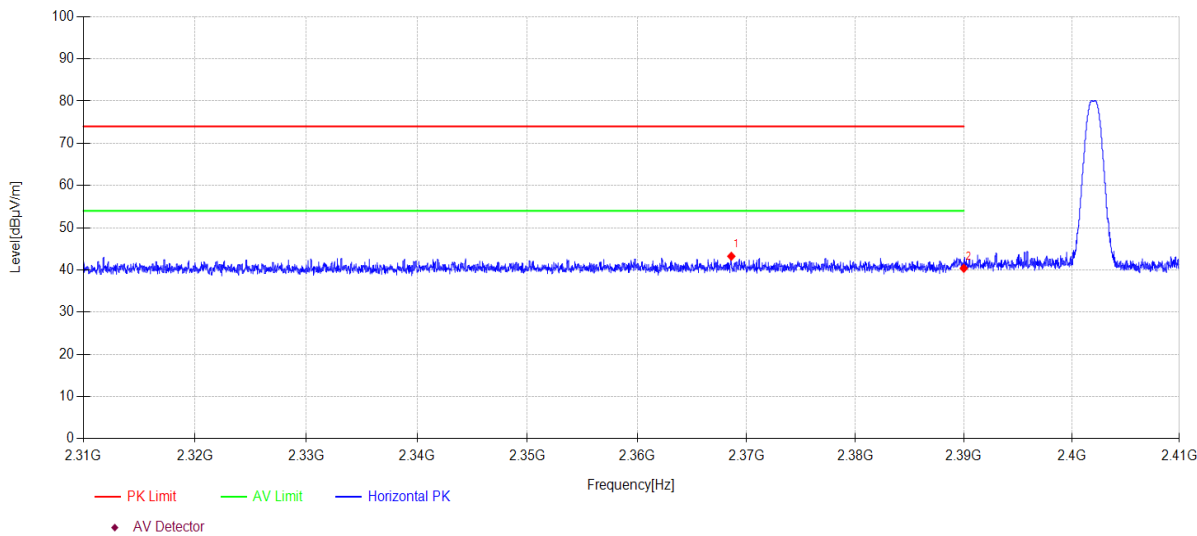
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2368.610	12.51	27.17	3.56	0.00	43.24	74.00	30.76	PK	Horizontal
2	2390.000	9.57	27.26	3.57	0.00	40.40	74.00	33.60	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

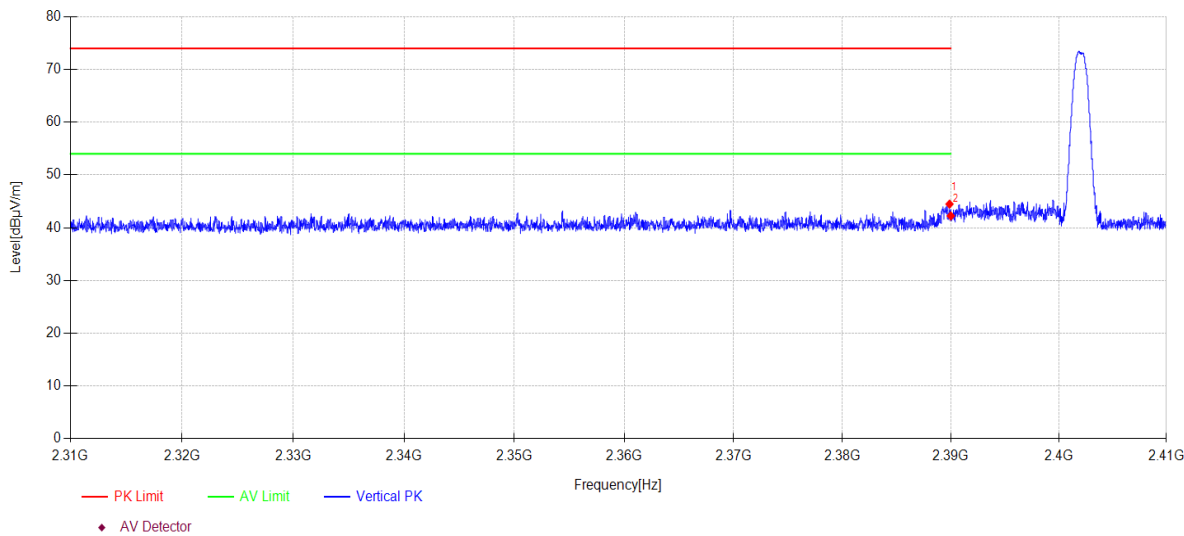
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.880	13.65	27.26	3.57	0.00	44.48	74.00	29.52	PK	Vertical
2	2390.000	11.41	27.26	3.57	0.00	42.24	74.00	31.76	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

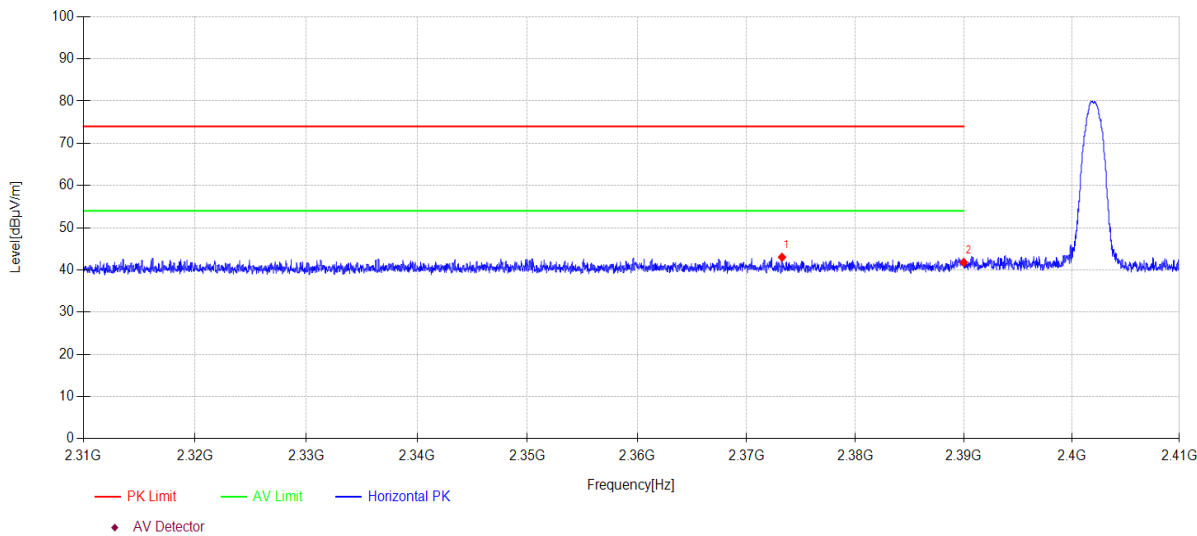
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d:\ts\2024 report data\Q24053007-1E\FCC ABOVE 1G\51

Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2373.260	12.27	27.19	3.56	0.00	43.02	74.00	30.98	PK	Horizontal
2	2390.000	10.94	27.26	3.57	0.00	41.77	74.00	32.23	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

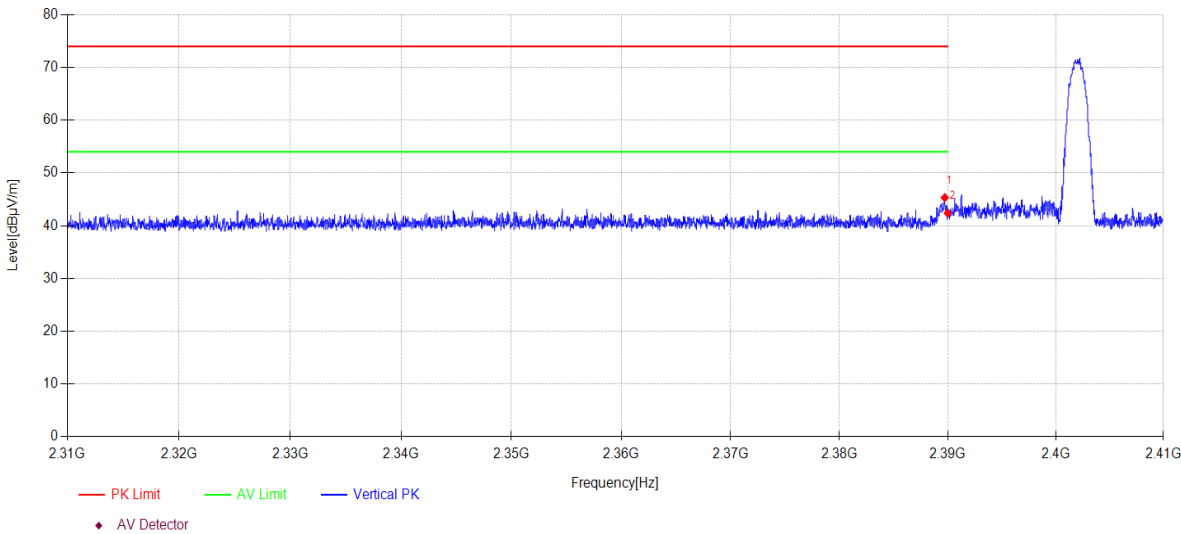
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.720	14.50	27.26	3.57	0.00	45.33	74.00	28.67	PK	Vertical
2	2390.000	11.56	27.26	3.57	0.00	42.39	74.00	31.61	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

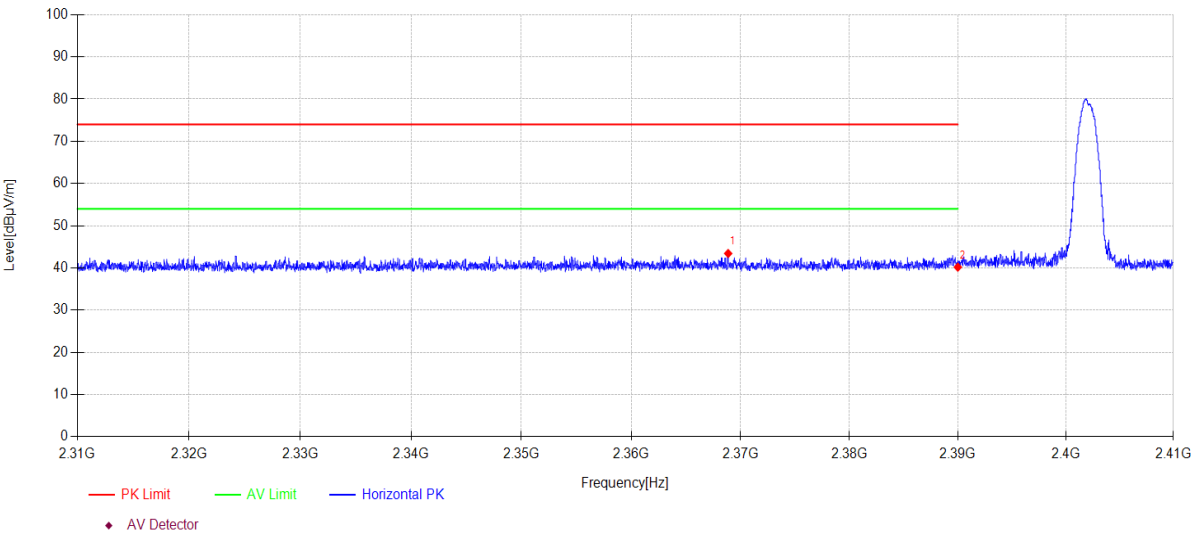
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2368.870	12.69	27.18	3.56	0.00	43.43	74.00	30.57	PK	Horizontal
2	2390.000	9.36	27.26	3.57	0.00	40.19	74.00	33.81	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:

2024-06-25

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2402MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

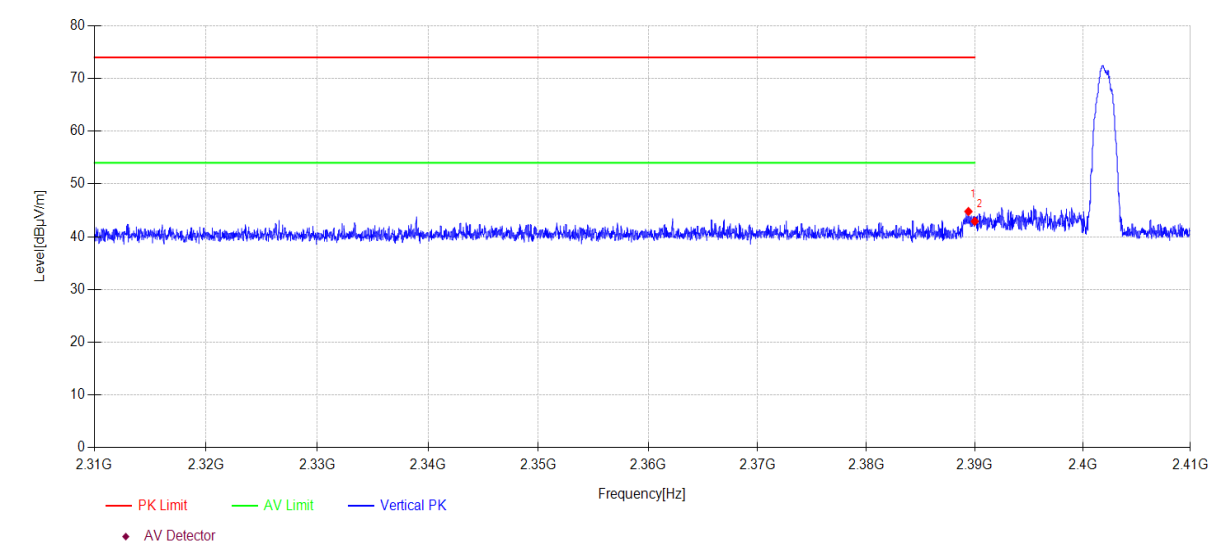
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2389.410	13.95	27.26	3.57	0.00	44.78	74.00	29.22	PK	Vertical
2	2390.000	12.09	27.26	3.57	0.00	42.92	74.00	31.08	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

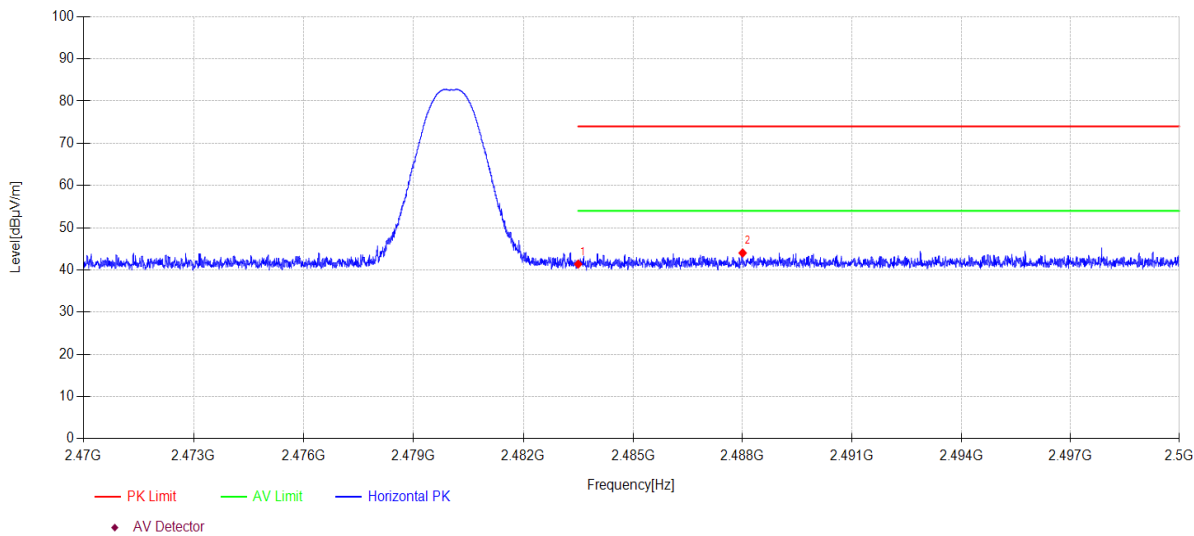
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.24	27.53	3.62	0.00	41.39	74.00	32.61	PK	Horizontal
2	2488.003	12.85	27.55	3.62	0.00	44.02	74.00	29.98	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

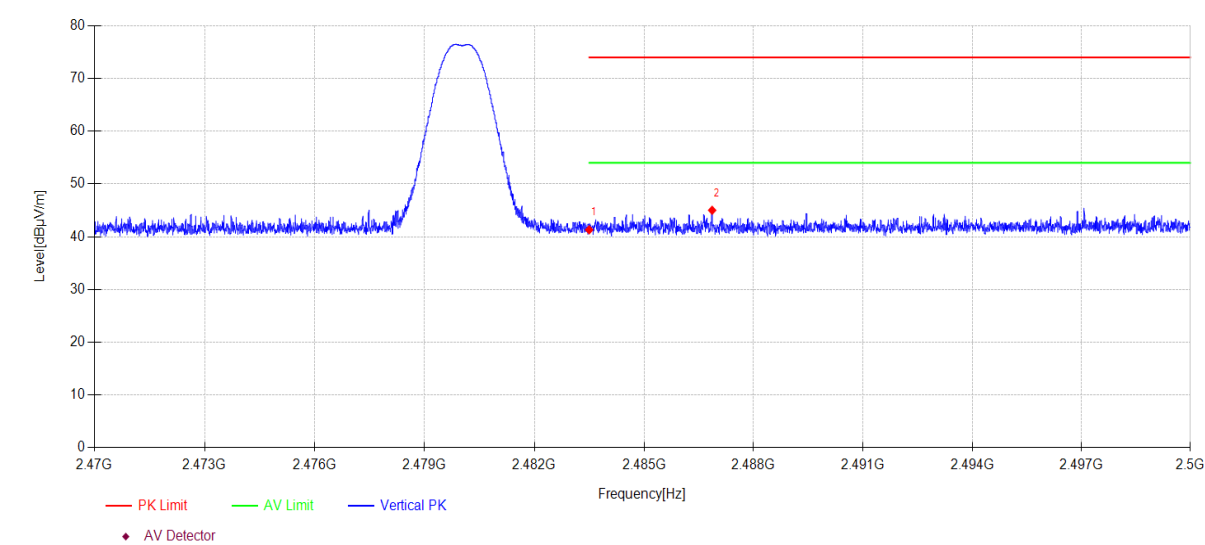
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.16	27.53	3.62	0.00	41.31	74.00	32.69	PK	Vertical
2	2486.866	13.84	27.55	3.62	0.00	45.01	74.00	28.99	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

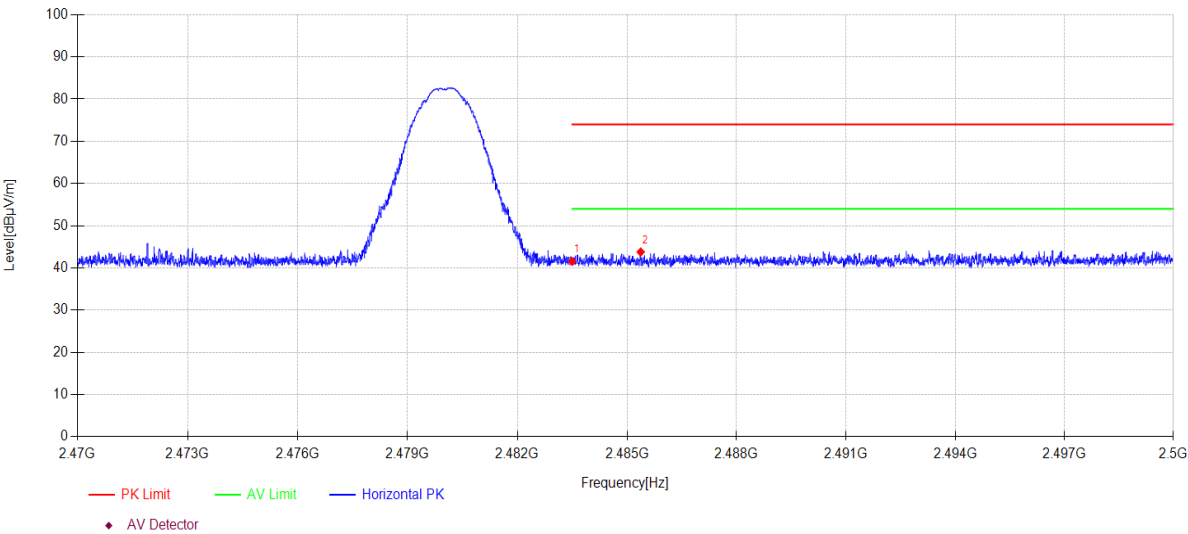
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.40	27.53	3.62	0.00	41.55	74.00	32.45	PK	Horizontal
2	2485.375	12.61	27.54	3.62	0.00	43.77	74.00	30.23	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

2DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

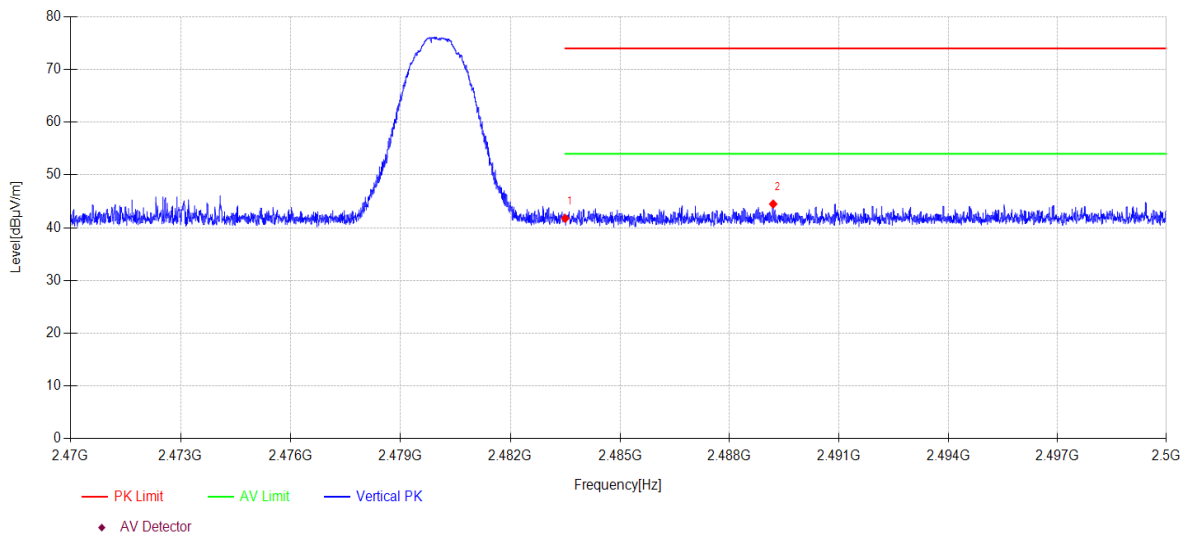
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.63	27.53	3.62	0.00	41.78	74.00	32.22	PK	Vertical
2	2489.197	13.31	27.56	3.62	0.00	44.49	74.00	29.51	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

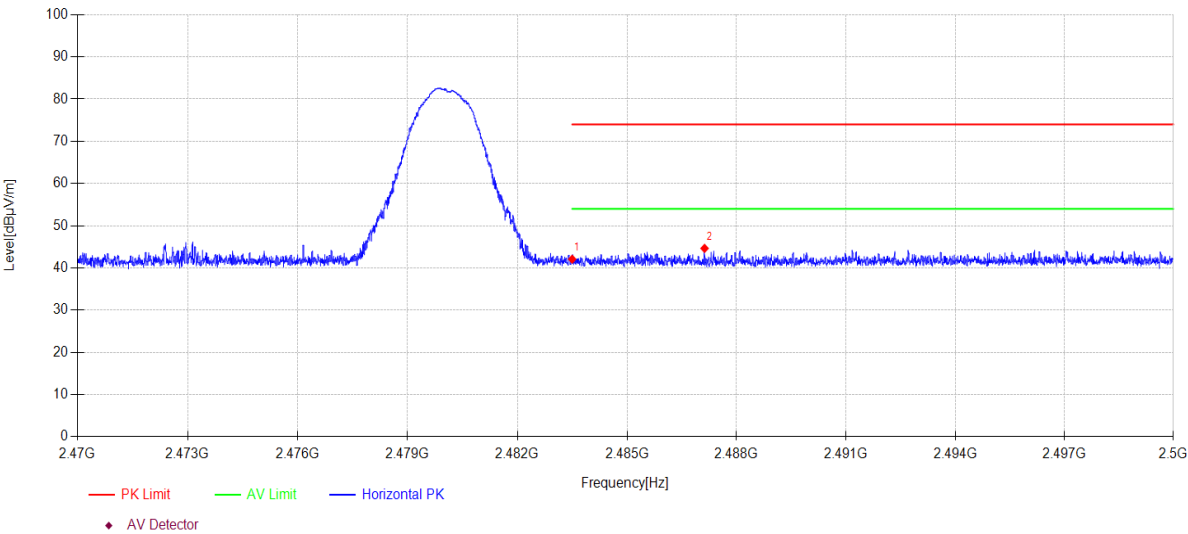
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.93	27.53	3.62	0.00	42.08	74.00	31.92	PK	Horizontal
2	2487.124	13.46	27.55	3.62	0.00	44.63	74.00	29.37	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:

2024-07-02

Tested By:

Genliu

EUT:

Hardhat Bluetooth Speaker

Model Number:

AEPHS1

Test Mode:

3DH5 TX 2480MHz

Power Supply:

Battery

Condition:

Temp:22.4°C;Humi:70.9%

Test Site:

DDT 3# Chamber

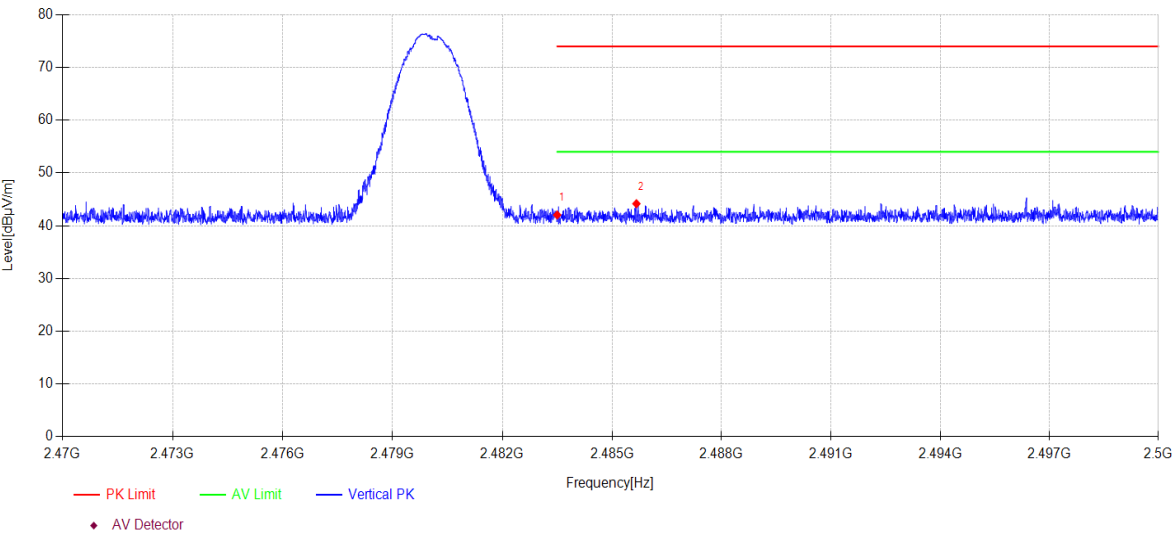
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Memo:

L Sample Number:S24053007-003 Power Setting:1

Test Graph



Data List										
N O.	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	10.89	27.53	3.62	0.00	42.04	74.00	31.96	PK	Vertical
2	2485.669	13.01	27.54	3.62	0.00	44.17	74.00	29.83	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.

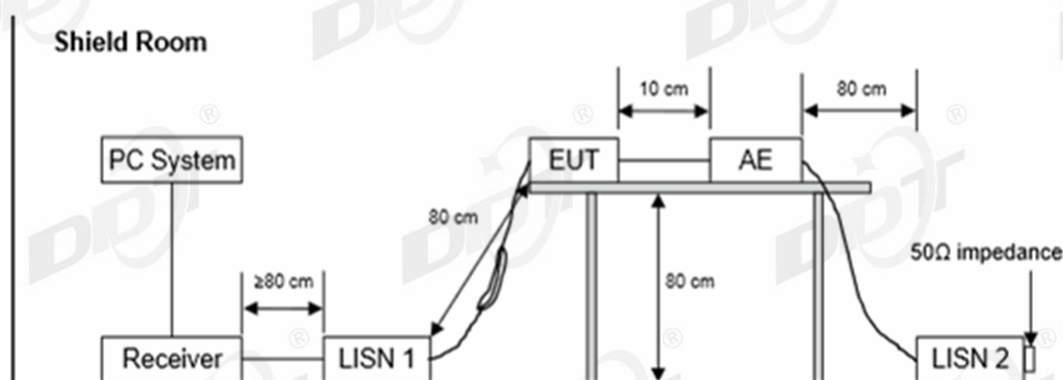
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

16.Power Line Conducted Emissions

16.1. Test equipment

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

16.2. Block diagram of test setup



16.3. Limits

Frequency	Quasi-Peak Level dB(mV)	Average Level dB(mV)
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.

16.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Adapter	HUAWEI	HW-100400C01	Huawei Fast Charge 2 #	Input: 100-240V~ 50/60Hz, Output: 5V/2A or 9V/2A or 10V/4A MAX

16.5. 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.

16.6. 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.

16.7. Test data

TR-4-E-010 Conducted Emission Test Result

Test Site

: DDT 6# Shield Room

Test Date

: 2024-07-09

EUT

: Hardhat Bluetooth Speaker

Power Supply

: AC 120V/60Hz

Condition

: Temp:21.9°C,Humi:56.2%

Memo

:

D:\2024 Report Date\Q24053007-1E\0709 CE.EM6

Tested By

: Gen Liu

Model Number

: AEPHS1

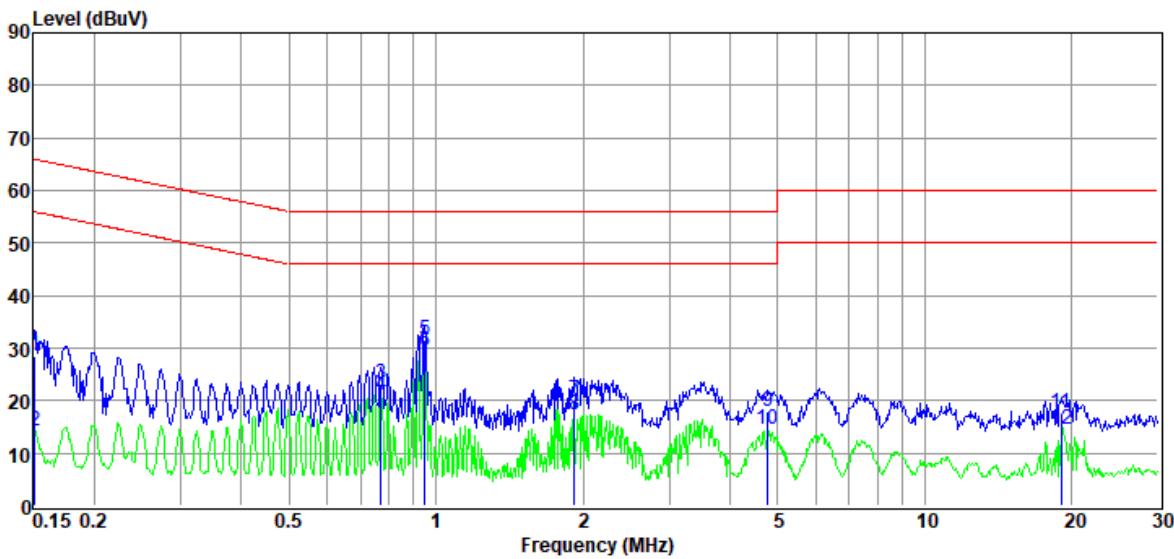
Test Mode

: BT mode

LISN

: 2023 ENV 216 3#/LINE

Data: 2



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	8.63	9.88	0.10	9.94	28.55	65.96	-37.41	QP	LINE
2	0.15	-5.66	9.88	0.10	9.94	14.26	55.96	-41.70	Average	LINE
3	0.77	3.04	9.91	0.17	9.97	23.09	56.00	-32.91	QP	LINE
4	0.77	0.88	9.91	0.17	9.97	20.93	46.00	-25.07	Average	LINE
5	0.95	11.60	9.69	0.23	9.97	31.49	56.00	-24.51	QP	LINE
6	0.95	9.60	9.69	0.23	9.97	29.49	46.00	-16.51	Average	LINE
7	1.92	0.04	9.81	0.26	9.99	20.10	56.00	-35.90	QP	LINE
8	1.92	-2.83	9.81	0.26	9.99	17.23	46.00	-28.77	Average	LINE
9	4.77	-2.32	9.83	0.27	10.02	17.80	56.00	-38.20	QP	LINE
10	4.77	-5.50	9.83	0.27	10.02	14.62	46.00	-31.38	Average	LINE
11	19.02	-2.62	9.80	0.33	10.08	17.59	60.00	-42.41	QP	LINE
12	19.02	-5.72	9.80	0.33	10.08	14.49	50.00	-35.51	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.

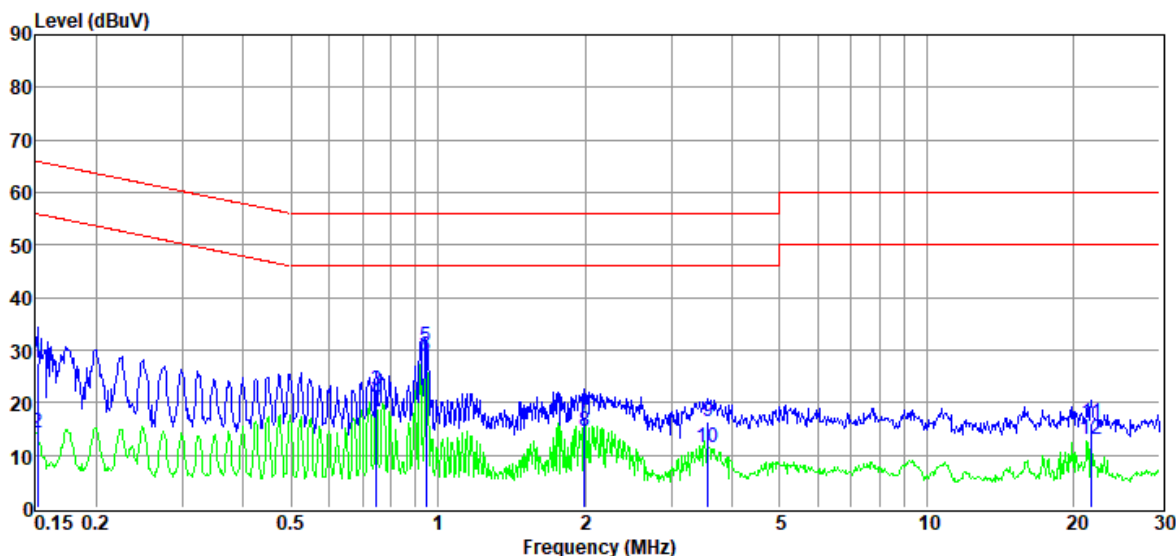
TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 6# Shield Room
Test Date : 2024-07-09
EUT : Hardhat Bluetooth Speaker
Power Supply : AC 120V/60Hz
Condition : Temp:21.9°C,Humi:56.2%

D:\2024 Report Date\Q24053007-1E\0709 CE.EM6
Tested By : Gen Liu
Model Number : AEPHS1
Test Mode : BT mode
LISN : 2023 ENV 216 3#/NEUTRAL

Memo :

Data: 4



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	7.83	9.81	0.10	9.94	27.68	65.91	-38.23	QP	NEUTRAL
2	0.15	-5.65	9.81	0.10	9.94	14.20	55.91	-41.71	Average	NEUTRAL
3	0.75	2.32	9.86	0.16	9.96	22.30	56.00	-33.70	QP	NEUTRAL
4	0.75	0.36	9.86	0.16	9.96	20.34	46.00	-25.66	Average	NEUTRAL
5	0.94	10.67	9.90	0.23	9.97	30.77	56.00	-25.23	QP	NEUTRAL
6	0.94	8.52	9.90	0.23	9.97	28.62	46.00	-17.38	Average	NEUTRAL
7	1.99	-3.32	9.99	0.26	9.99	16.92	56.00	-39.08	QP	NEUTRAL
8	1.99	-5.73	9.99	0.26	9.99	14.51	46.00	-31.49	Average	NEUTRAL
9	3.57	-3.42	9.55	0.27	10.01	16.41	56.00	-39.59	QP	NEUTRAL
10	3.57	-8.39	9.55	0.27	10.01	11.44	46.00	-34.56	Average	NEUTRAL
11	21.72	-4.31	9.92	0.34	10.09	16.04	60.00	-43.96	QP	NEUTRAL
12	21.72	-7.46	9.92	0.34	10.09	12.89	50.00	-37.11	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.

18. Photos of the EUT

Please refer to DDT-Q24053007-2E appendix I

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