

13. RESTRICTED BANDS OF OPERATION

13.1 LIMITS

Section 15.247(d) In addition, Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

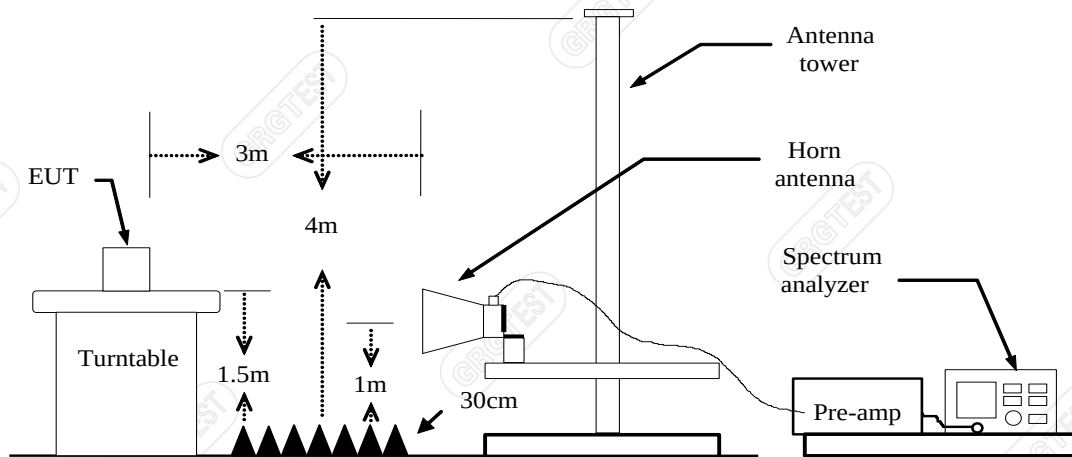
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

Frequency (MHz)	Quasi-peak(μ V/m)	Measurement distance(m)	Quasi-peak(dB μ V/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

13.2 TEST PROCEDURES

- 1) The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4) Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - a) PEAK: RBW=1MHz / VBW=1MHz / Sweep=AUTO.
 - b) AVERAGE: RBW=1MHz / VBW=1/T / Sweep=AUTO. Where T is defined in section 2.7.
- 5) Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

13.3 TEST SETUP



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13.4 TEST RESULTS

Product	Donner OURA Piano	Model No.	R300
Test Voltage:	AC 120V/60Hz	Test Engineer:	Jiang tao
Test Date	2024-10-26	Environmental Conditions	25.3℃/54%RH/101.0kPa
Sample No:	E20240827121501-0002	/	/

Note: Pre-scan all modes, only the worst case(DH5 & 3DH5) test results were recorded in this report.

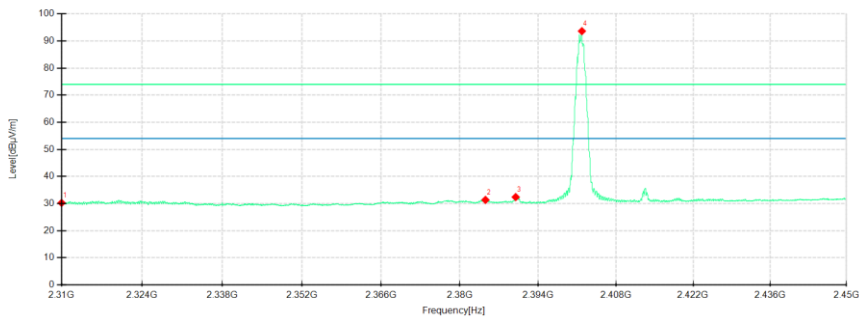
DH5

Lowest Channel

Frequency 2402MHz

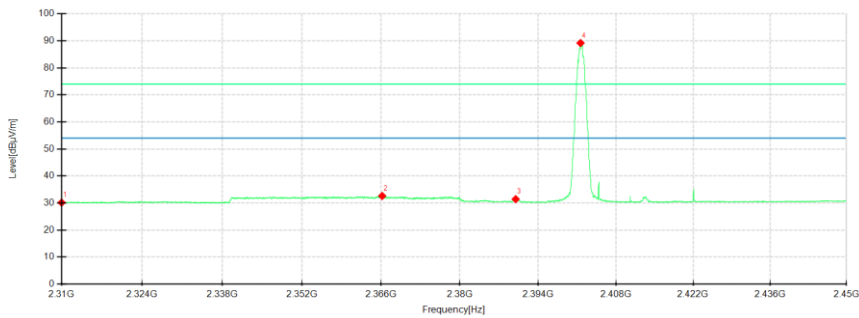
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



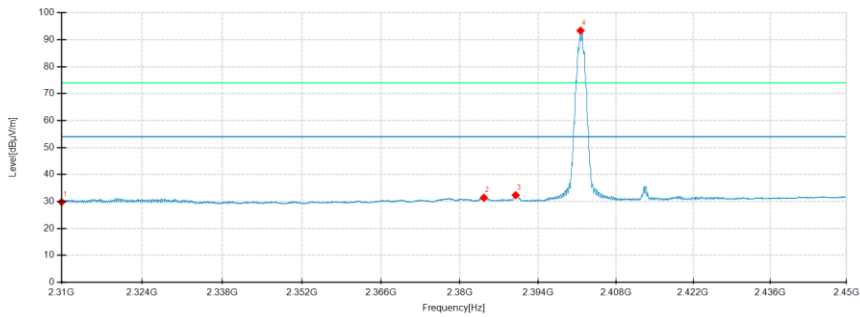
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	36.14	30.24	-5.90	74.00	43.76	200	28	Horizontal	/
2	2384.5850	37.16	31.34	-5.82	74.00	42.66	200	293	Horizontal	/
3	2390.0000	38.11	32.38	-5.73	74.00	41.62	200	284	Horizontal	/
4	2401.8925	99.13	93.61	-5.52	74.00	-19.61	200	85	Horizontal	No limit
1	2310.0000	35.45	30.15	-5.30	74.00	43.85	100	251	Vertical	/
2	2366.1925	38.01	32.61	-5.40	74.00	41.39	100	140	Vertical	/
3	2390.0000	36.88	31.43	-5.45	74.00	42.57	100	140	Vertical	/
4	2401.6475	94.63	89.16	-5.47	74.00	-15.16	100	251	Vertical	No limit

Lowest Channel

Frequency 2402MHz

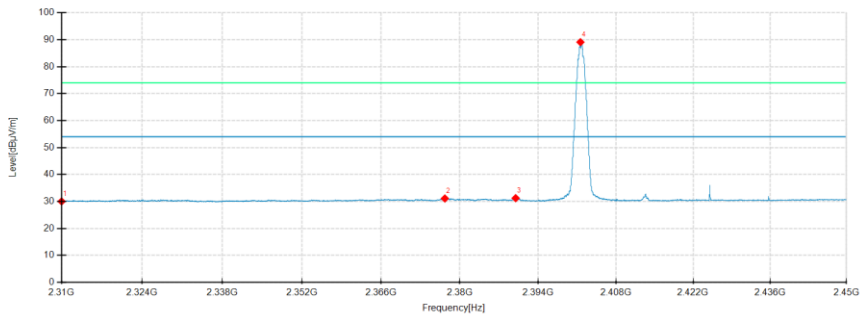
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

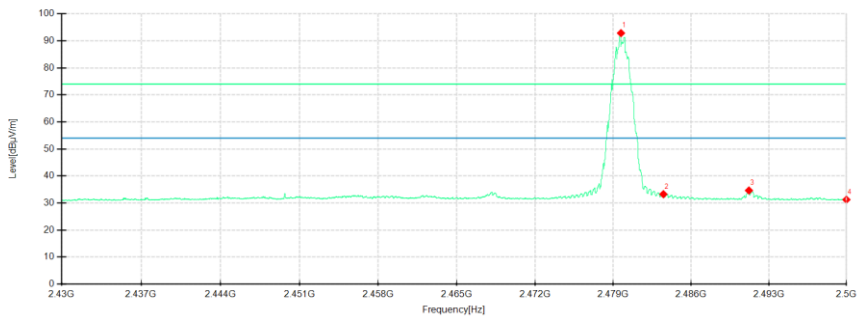
Polarity: Vertical



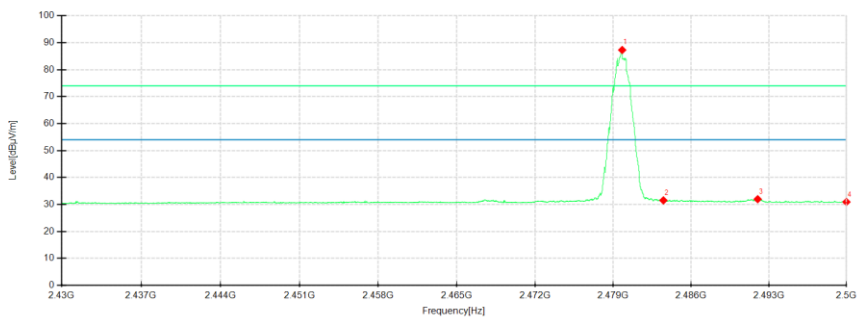
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.69	29.79	-5.90	54.00	24.21	200	191	Horizontal	/
2	2384.3050	37.21	31.39	-5.82	54.00	22.61	200	205	Horizontal	/
3	2390.0000	38.05	32.32	-5.73	54.00	21.68	200	205	Horizontal	/
4	2401.6475	98.90	93.36	-5.54	54.00	-39.36	200	205	Horizontal	No limit
1	2310.0000	35.31	30.01	-5.30	54.00	23.99	100	204	Vertical	/
2	2377.3400	36.52	31.10	-5.42	54.00	22.90	100	141	Vertical	/
3	2390.0000	36.67	31.22	-5.45	54.00	22.78	100	253	Vertical	/
4	2401.6300	94.55	89.08	-5.47	54.00	-35.08	100	253	Vertical	No limit

DH5
Highest Channel
Frequency 2480MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak Polarity: Vertical



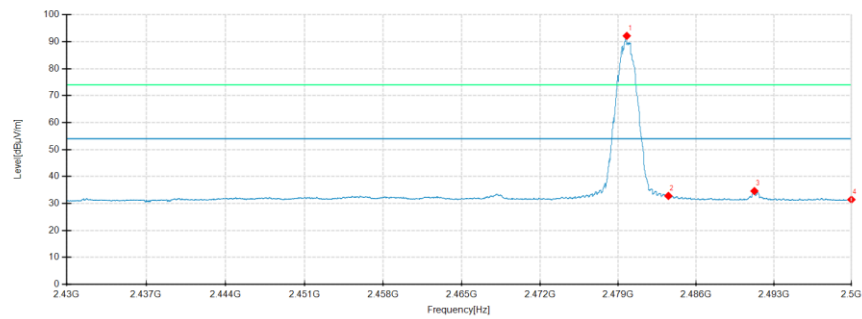
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.6913	97.49	92.84	-4.65	74.00	-18.84	200	198	Horizontal	No limit
2	2483.5000	37.93	33.26	-4.67	74.00	40.74	200	212	Horizontal	/
3	2491.1975	39.37	34.64	-4.73	74.00	39.36	200	212	Horizontal	/
4	2500.0000	36.02	31.23	-4.79	74.00	42.77	200	212	Horizontal	/
1	2479.7963	92.43	87.28	-5.15	74.00	-13.28	100	260	Vertical	No limit
2	2483.5000	36.64	31.51	-5.13	74.00	42.49	100	260	Vertical	/
3	2491.9850	37.08	31.96	-5.12	74.00	42.04	200	211	Vertical	/
4	2500.0000	36.01	30.92	-5.09	74.00	43.08	100	45	Vertical	/

Highest Channel

Frequency 2480MHz

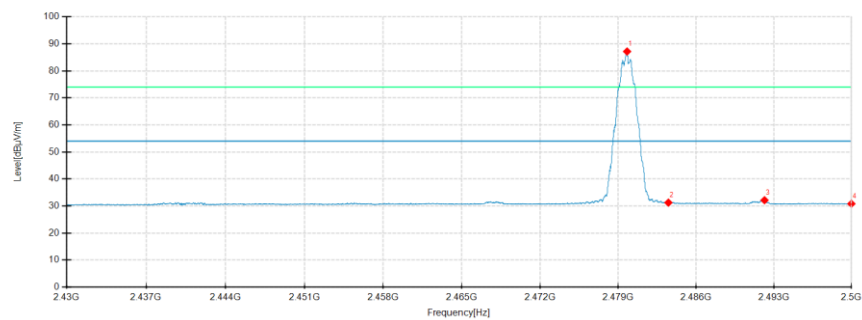
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

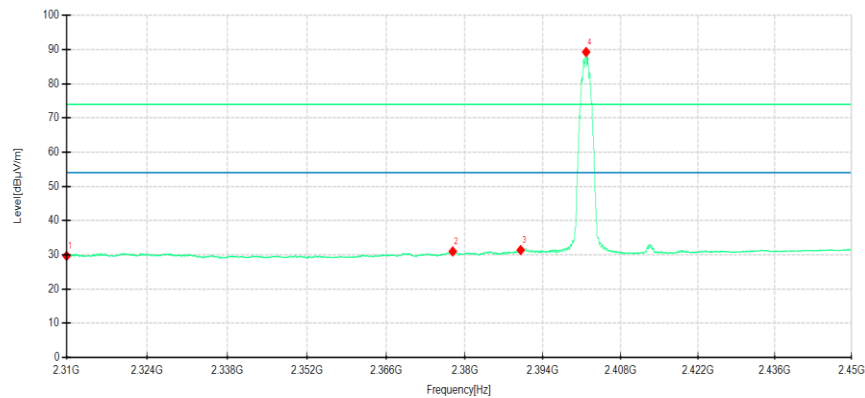
Polarity: Vertical



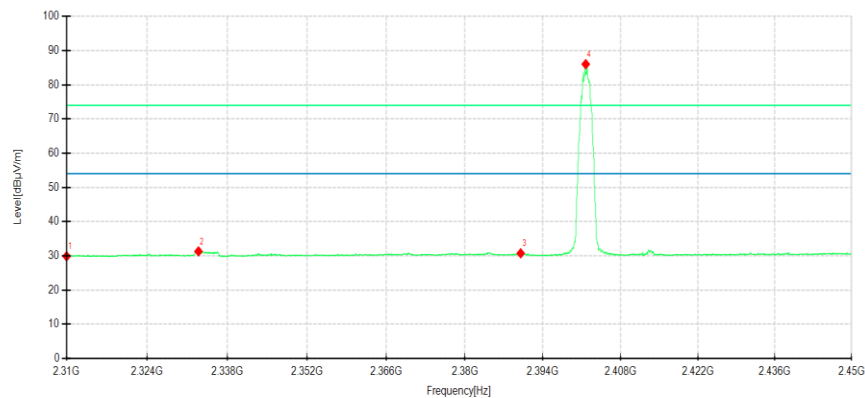
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.7613	96.80	92.15	-4.65	54.00	-38.15	200	206	Horizontal	No limit
2	2483.5000	37.47	32.80	-4.67	54.00	21.20	200	206	Horizontal	/
3	2491.2413	39.32	34.59	-4.73	54.00	19.41	200	206	Horizontal	/
4	2500.0000	36.21	31.42	-4.79	54.00	22.58	200	206	Horizontal	/
1	2479.7875	92.31	87.16	-5.15	54.00	-33.16	100	257	Vertical	No limit
2	2483.5000	36.37	31.24	-5.13	54.00	22.76	100	257	Vertical	/
3	2492.1513	37.26	32.14	-5.12	54.00	21.86	200	227	Vertical	/
4	2500.0000	35.92	30.83	-5.09	54.00	23.17	100	218	Vertical	/

3DH5
Lowest Channel
Frequency 2402MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak Polarity: Vertical



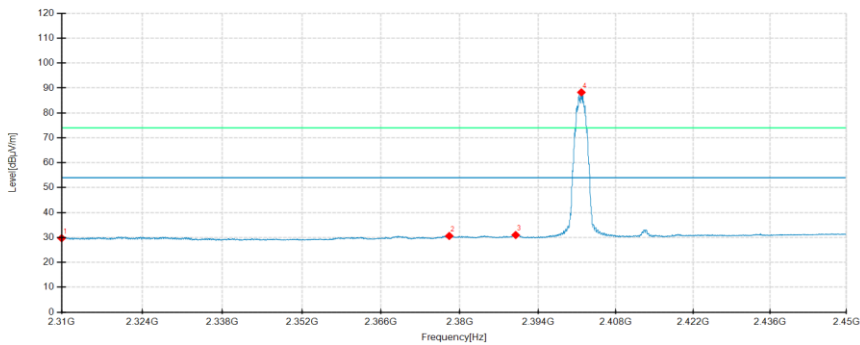
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.57	29.67	-5.90	74.00	44.33	100	240	Horizontal	/
2	2377.8650	36.90	30.98	-5.92	74.00	43.02	200	250	Horizontal	/
3	2390.0000	37.11	31.38	-5.73	74.00	42.62	200	250	Horizontal	/
4	2401.7525	94.80	89.27	-5.53	74.00	-15.27	100	201	Horizontal	No limit
1	2310.0000	35.16	29.86	-5.30	74.00	44.14	100	273	Vertical	/
2	2332.9600	36.64	31.30	-5.34	74.00	42.70	100	132	Vertical	/
3	2390.0000	36.19	30.74	-5.45	74.00	43.26	200	138	Vertical	/
4	2401.6825	91.49	86.02	-5.47	74.00	-12.02	200	138	Vertical	No limit

Lowest Channel

Frequency 2402MHz

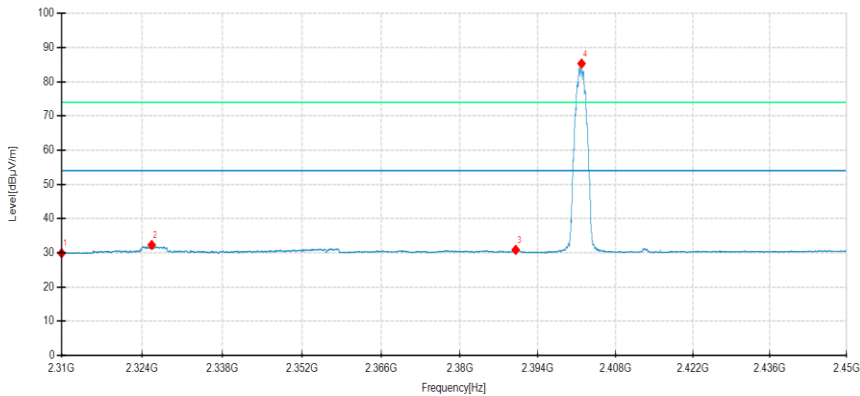
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

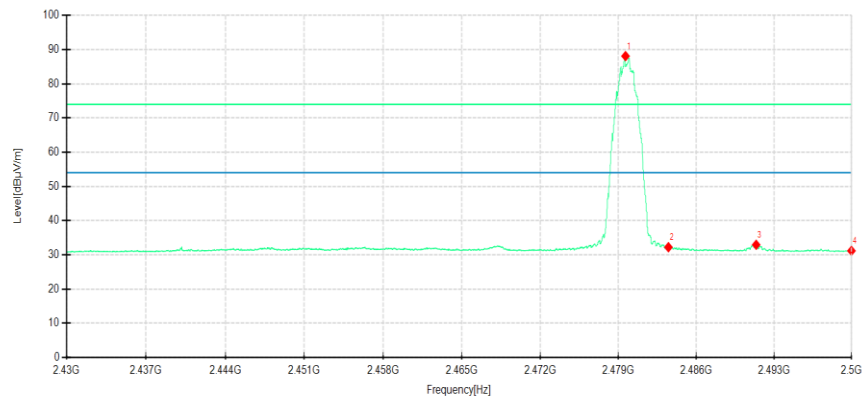
Polarity: Vertical



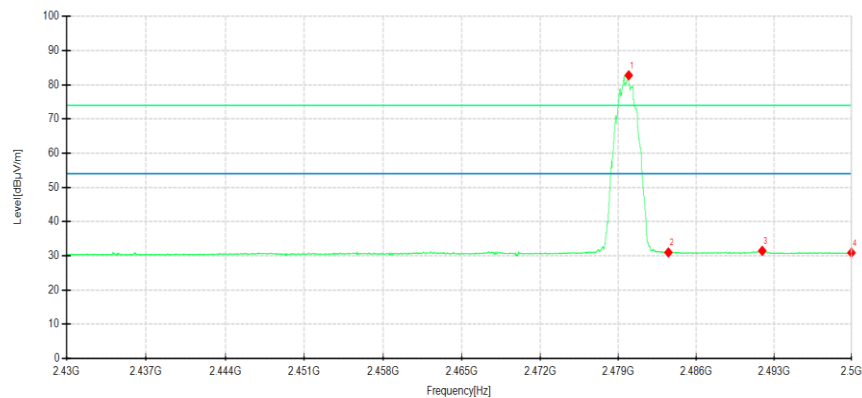
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.59	29.69	-5.90	54.00	24.31	100	226	Horizontal	/
2	2378.1275	36.52	30.60	-5.92	54.00	23.40	200	170	Horizontal	/
3	2390.0000	36.70	30.97	-5.73	54.00	23.03	100	239	Horizontal	/
4	2401.8050	93.78	88.26	-5.52	54.00	-34.26	100	200	Horizontal	No limit
1	2310.0000	35.18	29.88	-5.30	54.00	24.12	200	126	Vertical	/
2	2325.6625	37.60	32.28	-5.32	54.00	21.72	100	146	Vertical	/
3	2390.0000	36.31	30.86	-5.45	54.00	23.14	100	134	Vertical	/
4	2401.8400	90.77	85.31	-5.46	54.00	-31.31	200	126	Vertical	No limit

3DH5
Highest Channel
Frequency 2480MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak Polarity: Vertical



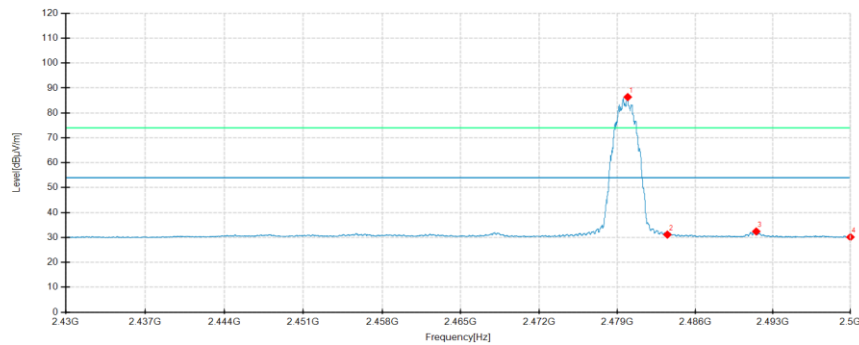
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.6475	92.73	88.08	-4.65	74.00	-14.08	200	210	Horizontal	No limit
2	2483.5000	36.89	32.22	-4.67	74.00	41.78	200	210	Horizontal	/
3	2491.3988	37.66	32.93	-4.73	74.00	41.07	200	210	Horizontal	
4	2500.0000	35.96	31.17	-4.79	74.00	42.83	200	233	Horizontal	/
1	2479.9363	87.90	82.75	-5.15	74.00	-8.75	100	261	Vertical	No limit
2	2483.5000	36.11	30.98	-5.13	74.00	43.02	100	298	Vertical	/
3	2491.9500	36.57	31.45	-5.12	74.00	42.55	200	227	Vertical	/
4	2500.0000	35.98	30.89	-5.09	74.00	43.11	100	298	Vertical	/

Highest Channel

Frequency 2480MHz

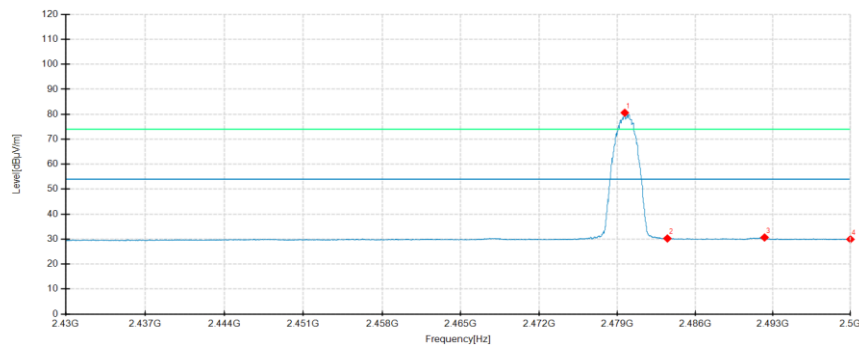
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.9363	91.03	86.38	-4.65	54.00	-32.38	200	208	Horizontal	No limit
2	2483.5000	35.81	31.14	-4.67	54.00	22.86	100	240	Horizontal	/
3	2491.4950	37.14	32.41	-4.73	54.00	21.59	200	208	Horizontal	/
4	2500.0000	34.93	30.14	-4.79	54.00	23.86	100	289	Horizontal	/
1	2479.6738	85.76	80.61	-5.15	54.00	-26.61	100	259	Vertical	No limit
2	2483.5000	35.38	30.25	-5.13	54.00	23.75	100	259	Vertical	/
3	2492.2475	35.78	30.66	-5.12	54.00	23.34	200	228	Vertical	/
4	2500.0000	35.01	29.92	-5.09	54.00	24.08	200	266	Vertical	/

Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be detected and be reported.

14. CONDUCTED EMISSION

14.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

14.2 TEST PROCEDURES

Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) Place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or

- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

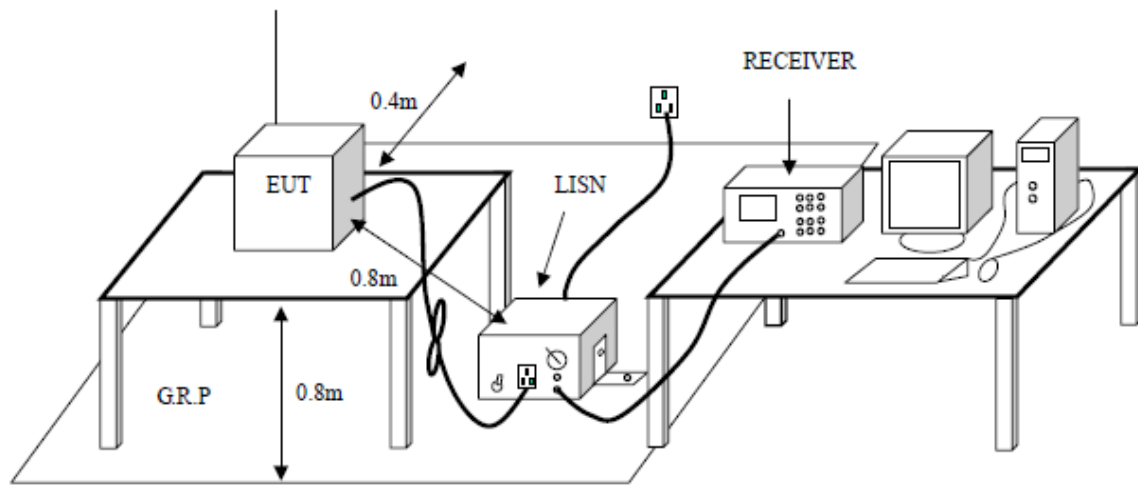
- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.5 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.5 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of 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, 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.

14.3 TEST SETUP**14.4 DATA SAMPLE**

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Reading/ Average Reading + Factor
 Limit = Limit stated in standard
 Margin = Result (dBuV) – Limit (dBuV)

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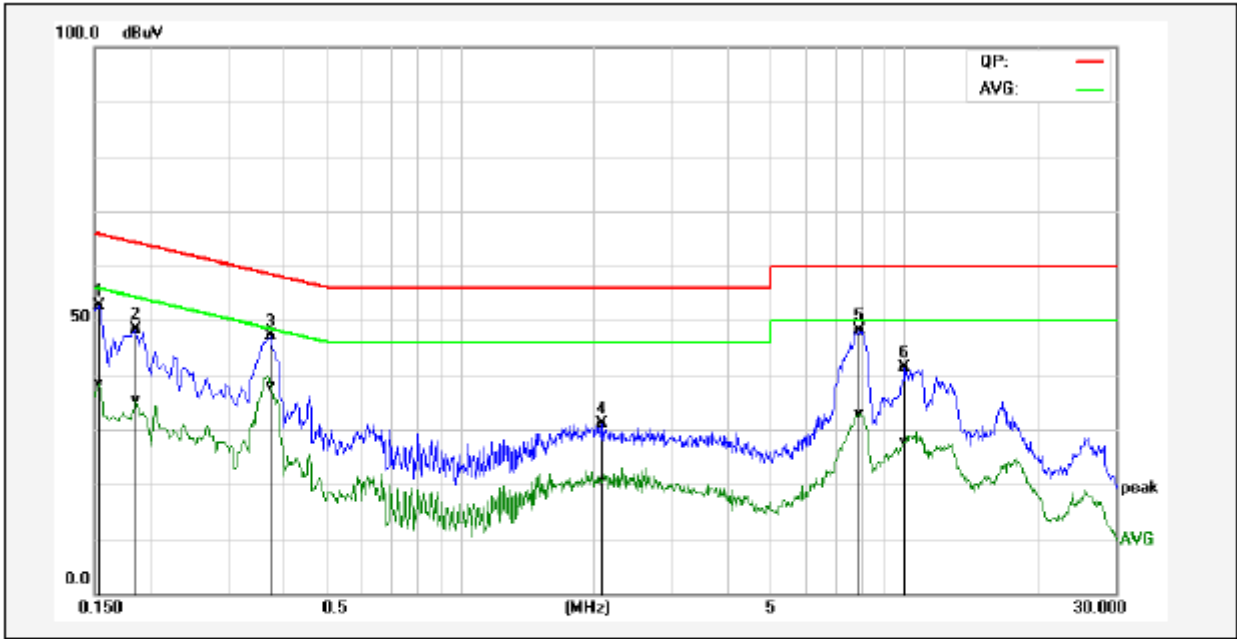
14.5 TEST RESULTS

Note: Pre-scan all test mode, recorded the worst case (TX_3DH5_2402MHz) test results in the report.

Product	Donner OURA Piano	Model No.	R300
Environmental Conditions	25.1°C/45%RH/101.0kPa	Test Voltage	AC 120V/60Hz
Tested By	Wen wenwen	Line	L
Tested Date	2024-10-11	Sample No:	E20240827121501-0002

(The chart below shows the highest readings taken from the final data.)

REMARKS: L = Live Line

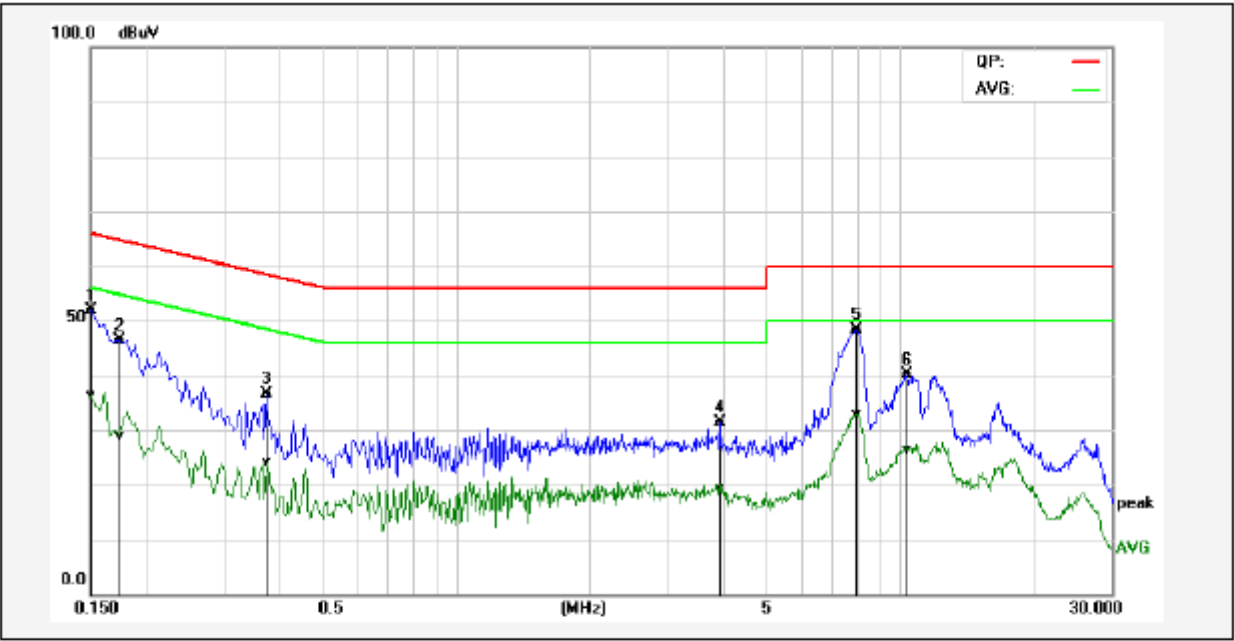


No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1539	42.92	28.63	9.79	52.71	38.42	65.78	55.79	-13.07	-17.37	Pass
2	0.1860	38.70	25.81	9.65	48.35	35.46	64.21	54.21	-15.86	-18.75	Pass
3*	0.3740	37.51	28.11	9.73	47.24	37.84	58.41	48.41	-11.17	-10.57	Pass
4	2.0940	21.27	10.81	9.80	31.07	20.61	56.00	46.00	-24.93	-25.39	Pass
5	7.9380	38.34	23.02	9.82	48.16	32.84	60.00	50.00	-11.84	-17.16	Pass
6	10.0659	31.36	17.75	9.90	41.26	27.65	60.00	50.00	-18.74	-22.35	Pass

Product	Donner OURA Piano	Model No.	R300
Environmental Conditions	25.1°C/45%RH/101.0kPa	Test Voltage	AC 120V/60Hz
Tested By	Wen wenwen	Line	N
Tested Date	2024-10-11	Sample No:	E20240827121501-0002

(The chart below shows the highest readings taken from the final data.)

REMARKS: N = Neutral Line.



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	42.10	26.68	9.71	51.81	36.39	65.99	56.00	-14.18	-19.61	Pass
2	0.1740	36.83	19.34	9.61	46.44	28.95	64.76	54.77	-18.32	-25.82	Pass
3	0.3740	26.93	14.57	9.62	36.55	24.19	58.41	48.41	-21.86	-24.22	Pass
4	3.9620	21.71	9.53	9.73	31.44	19.26	56.00	46.00	-24.56	-26.74	Pass
5*	7.9820	38.52	23.13	9.87	48.39	33.00	60.00	50.00	-11.61	-17.00	Pass
6	10.3780	30.28	16.48	9.88	40.16	26.36	60.00	50.00	-19.84	-23.64	Pass

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E20240827121501-Test Photo-FCC&IC.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E20240827121501-EUT photo.

----- End of Report -----