TEST REPORT

of

FCC CFR Title 47 Part 15 Subpart C

Product:	**VOICE TRACKING SOUNDS AMPLIFYING AND BT SYSTEM**
Brand:	**ALAN**
Main Model:	**KP362**
Series Model:	**NA**
Model Difference:	**NA**
FCC ID:	**2BK98KP362**
FCC Rule Part:	**§15.247, Cat: DSS**
Reference:	**ANSI C63.10: 2013** **KDB 558074 D01 v05r02**
Applicant:	**ALAN SAFETY COMPANY LIMITED**
Address	**No.36, Alley 38, Lane 288, Heshun Rd. Sec.1 Guiren Dist., Tainan City, 71145, Taiwan(R.O.C.)**

Test Performed by:

International Standards Laboratory Corp. LT Lab.
TEL: +886-3-263-8888 FAX: +886-3-263-8899
No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist., Tao Yuan City 325, Taiwan

Report No.: **ISL-24LR0127FCDSS**
Issue Date : **September 18, 2024**

Testing Laboratory
0997
FCC Registration Number: 487532

Test results given in this report apply only to the specific sample(s) tested and are traceable to national or international standard through calibration of the equipment and evaluating measurement uncertainty herein. According to customer agreement, the laboratory issues test reports based on the regulations or standards specifications, the measurement uncertainty is not considered in conformity decision rules.
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VERIFICATION OF COMPLIANCE

Applicant:	ALAN SAFETY COMPANY LIMITED
Equipment Under Test:	VOICE TRACKING SOUNDS AMPLIFYING AND BT SYSTEM
Brand:	ALAN
Main Model:	KP362
Series Model:	NA
Model Difference:	NA
FCC ID:	2BK98KP362
Date of Test:	August 29, 2024 ~ September 18, 2024
Date of EUT Received:	August 29, 2024

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC Part 15.247	Complied

We hereby certify that:
All the tests in this report have been performed and recorded in accordance with the standards de-scribed above and performed by an independent electromagnetic compatibility consultant, International Standards Laboratory Corp.
The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test. The sample equipment tested as described in this report is in compliance with the limits of above standards.

Prepared By: Gigi Yeh / Senior Engineer

Test By: Kevin Yao / Senior Engineer

Approved By: Jerry Liu / Manager

Version

Version No.	Date	Description
00	September 18, 2024	Initial creation of document

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1. General

1.1 Description of EUT

General Information		
Product Name:	VOICE TRACKING SOUNDS AMPLIFYING AND BT SYSTEM	
Brand Name:	ALAN	
Model Name:	KP362	
Model Difference:	N/A	
Temperature Range	0°C to +45°C	
Power Supply:	3.7VdC from Battery	
	Battery:	Model: 602540 Supplier: ALAN-SAFETY CO., LTD
Bluetooth Information		
Bluetooth Modular:	BTM0212	
Bluetooth Version:	V5.0	
Frequency Range:	2402– 2480MHz	
Max Output Power:	8.27dBm	
Channel number:	79 Channels	
Modulation type:	FHSS	
Product HW Version:	N/A	
Product SW Version:	N/A	
Product FW Version:	N/A	
Test SW Version:	N/A	
RFpower setting:	default	
Worst Case:	BR	

	Antenna Type	Brand	Model	Peak Gain(dBi)	Frequency Range(MHz)	Connector Type
1	Monopole	ALAN-SAFETY CO., LTD	KP362-ANT	-3.77	2400-2500	------

1.2 Special Accessories

Not available for this EUT intended for grant.

1.3 Equipment Modifications

Not available for this EUT intended for grant.

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 AC Line Conducted Emissions

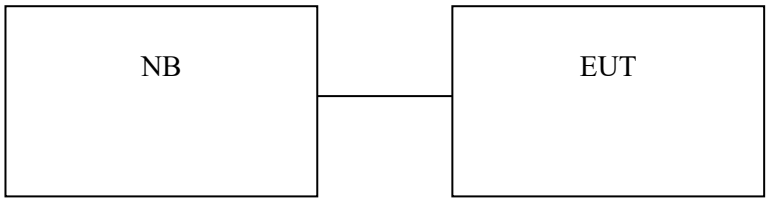
The EUT is a placed on as turn table which is 0.8 m above ground plane. According to ANSI C63.10. AC Line Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR 16-1-1 Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m/1.5m (Frequency above 1GHz) above ground plane. The turn table shall rotate 360 degrees to determine the position of maxi-mum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to ANSI C63.10.

2.4 Configuration of Tested System

Configuration of Tested System (Fixed channel)



Equipment Used in Tested System

Item	Equipment	Brand	Model	S/N	Data Cable	Power Cord
1	Notebook	Lenovo	LC55	N/A	100cm	N/A

3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.247(b)(1)	Peak Output Power/ EIRP	Compliant
§15.247(a)(1)	20dB Bandwidth	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edges	Compliant
§15.247(d)	Spurious Emission	Compliant
§15.247(a)(1)	Frequency Separation	Compliant
§15.247(a)(1)(iii)/	Number of Hopping Frequency	Compliant
§15.247(a)(1)(ii)	Time of Occupancy	Compliant
§15.203, §15.247(c)	Antenna Requirement	Compliant

4. Description of Test Modes

Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
Channel low (2402MHz), mid (2441MHz), (2480MHz) with each modulation were chosen for full testing.
All mode has been pre-scanned, and only the cast of the worst is presented in the report.

5. AC Line Conduced Emission Test

5.1 Standard Applicable

According to §15.207, frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

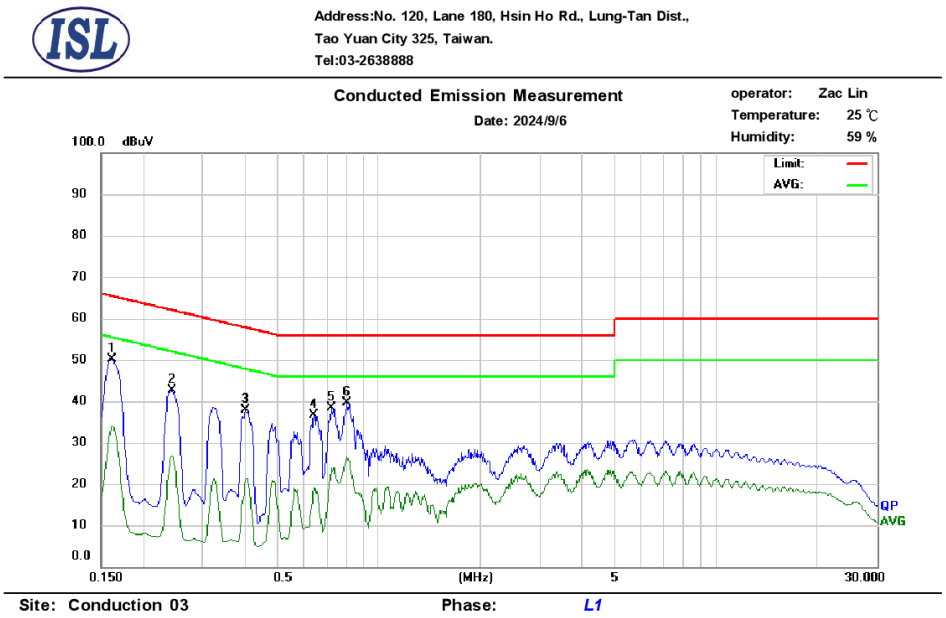
Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

5.2 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.
4. Both 120V & 240V have been verified, and 120V/60Hz was defined as the worst-case and record in the report.

5.3 Measurement Result

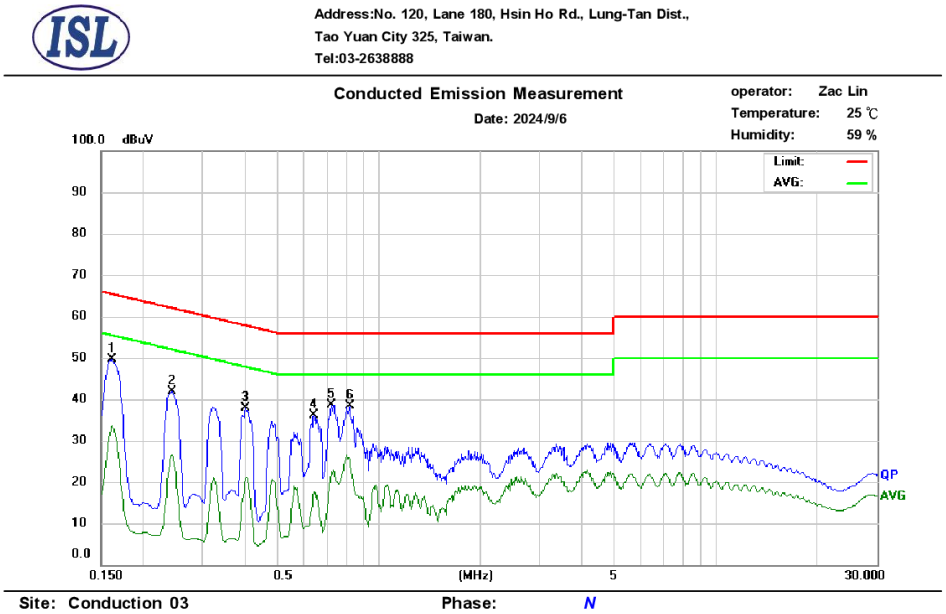
- Line



No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1*	0.161	40.54	24.39	9.70	50.24	65.40	-15.16	34.09	55.40	-21.31
2	0.242	32.87	17.23	9.69	42.56	62.02	-19.46	26.92	52.02	-25.10
3	0.402	28.22	11.23	9.70	37.92	57.81	-19.89	20.93	47.81	-26.88
4	0.643	26.81	9.30	9.71	36.52	56.00	-19.48	19.01	46.00	-26.99
5	0.726	28.63	14.13	9.71	38.34	56.00	-17.66	23.84	46.00	-22.16
6	0.805	29.82	16.95	9.71	39.53	56.00	-16.47	26.66	46.00	-19.34

Note:
Margin = QP/AVG Emission - Limit
QP/AVG Emission = QP_R/AVG_R + Correct Factor
Correct Factor = LISN Loss + Cable Loss
The frequency spectrum graph is for final peak graph, and the attached table is for QP/AVG test result.
If peak data can pass, it will be shown in “QP/AVG Correct” column, if not, QP/AVG data will instead.

- Neutral



No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1*	0.161	39.89	23.85	9.71	49.60	65.40	-15.80	33.56	55.40	-21.84
2	0.242	32.05	16.85	9.70	41.75	62.02	-20.27	26.55	52.02	-25.47
3	0.402	28.07	10.91	9.70	37.77	57.81	-20.04	20.61	47.81	-27.20
4	0.643	26.45	7.95	9.71	36.16	56.00	-19.84	17.66	46.00	-28.34
5	0.724	28.95	12.85	9.72	38.67	56.00	-17.33	22.57	46.00	-23.43
6	0.818	28.72	15.99	9.72	38.44	56.00	-17.56	25.71	46.00	-20.29

Note:
Margin = QP/AVG Emission - Limit
QP/AVG Emission = QP_R/AVG_R + Correct Factor
Correct Factor = LISN Loss + Cable Loss
The frequency spectrum graph is for final peak graph, and the attached table is for QP/AVG test result.
If peak data can pass, it will be shown in “QP/AVG Correct” column, if not, QP/AVG data will instead.

6. Peak Output Power Measurement

6.1 Standard Applicable

According to §15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850MHz band: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: 0.125 Watts.

According to RSS-247 issue 2, §5.4(b), For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

6.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

6.3 Measurement Result

BR Mode

Frequency (MHz)	Peak Reading Power (dBm)	Limit (dBm)
Low	7.419	30
Mid	8.235	30
High	8.273	30

EDR1 Mode

Frequency (MHz)	Peak Reading Power (dBm)	Limit (dBm)
Low	6.382	21
Mid	6.959	21
High	6.869	21

EDR2 Mode

Frequency (MHz)	Peak Reading Power (dBm)	Limit (dBm)
Low	6.342	21
Mid	6.915	21
High	6.911	21

7. Radiated Spurious Emission Test

7.1 Standard Applicable

According to §15.247(d), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). And according to §15.33(a)(1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

According to RSS-247 issue 2, §5.5
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB be-low that in the 100 kHz bandwidth within the band that contains the highest level of the de-sired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

7.2 Measurement Procedure

1. According 414788 section 2, Either OATS or chamber for radiated emission below 30MHz, the test was done at 966 chamber, the test site was evaluated with OATS and the Chamber has test signals level greater than OATS's.
2. The EUT was placed on a turn table which is 0.8m/1.5m above ground plane in 966 chamber.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
6. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
7. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
8. Repeat above procedures until all frequency measured were complete

Test receiver setting	:	Blew 1GHz
Detector	:	Average (9kHz – 90kHz, 110kHz – 90kHz), Quasi-Peak
Bandwidth	:	200Hz, 120kHz
Test spectrum setting	:	Above 1GHz
Peak	:	RBW=1MHz, VBW≥3*RBW, Sweep=auto
Average	:	RBW=1MHz, VBW≥ $1/T_{on}$, Sweep=auto

7.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

Remark:
<1GHz
1. No further spurious emissions detected from the lowest internal frequency and 30MHz.
2. Measuring frequencies from the lowest internal frequency to the 1GHz.
3. Radiated emissions measured in frequency range from 9kHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP
4. Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

>1GHz
5 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency
6 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
7 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

7.4 Measurement Result

7.4.1 Radiated Spurious Emission Measurement Result (below 1GHz)

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International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
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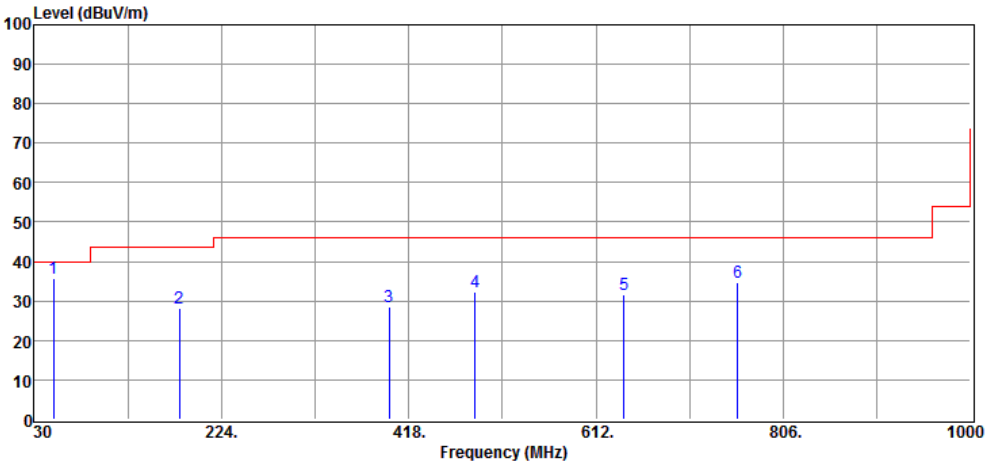
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX Low CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	50.37	44.25	-8.41	35.84	40.00	-4.16	Peak	VERTICAL
2	180.35	38.29	-10.03	28.26	43.50	-15.24	Peak	VERTICAL
3	397.63	33.56	-5.08	28.48	46.00	-17.52	Peak	VERTICAL
4	486.87	35.43	-2.96	32.47	46.00	-13.53	Peak	VERTICAL
5	641.10	30.93	0.60	31.53	46.00	-14.47	Peak	VERTICAL
6	758.47	32.00	2.87	34.87	46.00	-11.13	Peak	VERTICAL

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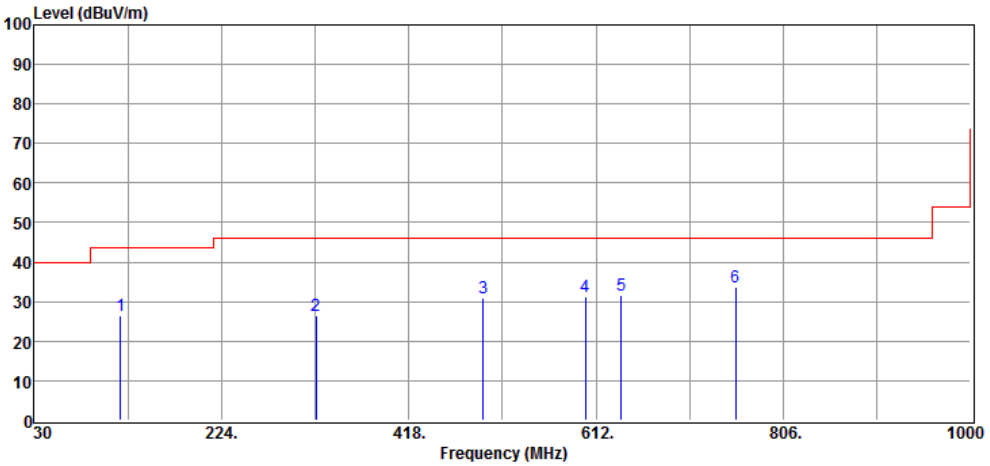

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	119.24	37.75	-11.26	26.49	43.50	-17.01	Peak	HORIZONTAL
2	321.97	33.38	-6.95	26.43	46.00	-19.57	Peak	HORIZONTAL
3	495.60	33.84	-2.79	31.05	46.00	-14.95	Peak	HORIZONTAL
4	601.33	31.53	-0.26	31.27	46.00	-14.73	Peak	HORIZONTAL
5	638.19	31.25	0.53	31.78	46.00	-14.22	Peak	HORIZONTAL
6	756.53	31.01	2.83	33.84	46.00	-12.16	Peak	HORIZONTAL

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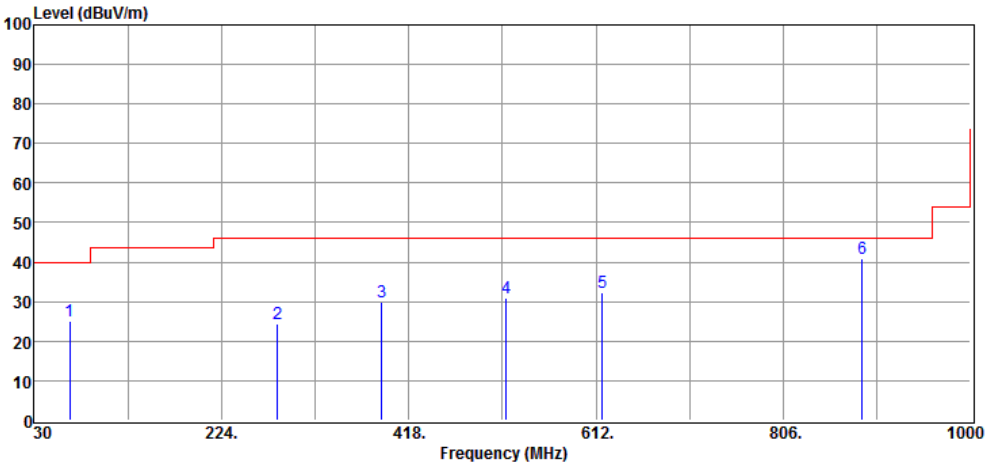

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	66.86	35.63	-10.52	25.11	40.00	-14.89	Peak	VERTICAL
2	282.20	32.47	-8.19	24.28	46.00	-21.72	Peak	VERTICAL
3	389.87	35.15	-5.11	30.04	46.00	-15.96	Peak	VERTICAL
4	518.88	33.07	-2.12	30.95	46.00	-15.05	Peak	VERTICAL
5	618.79	32.19	0.19	32.38	46.00	-13.62	Peak	VERTICAL
6	887.48	36.83	4.05	40.88	46.00	-5.12	Peak	VERTICAL

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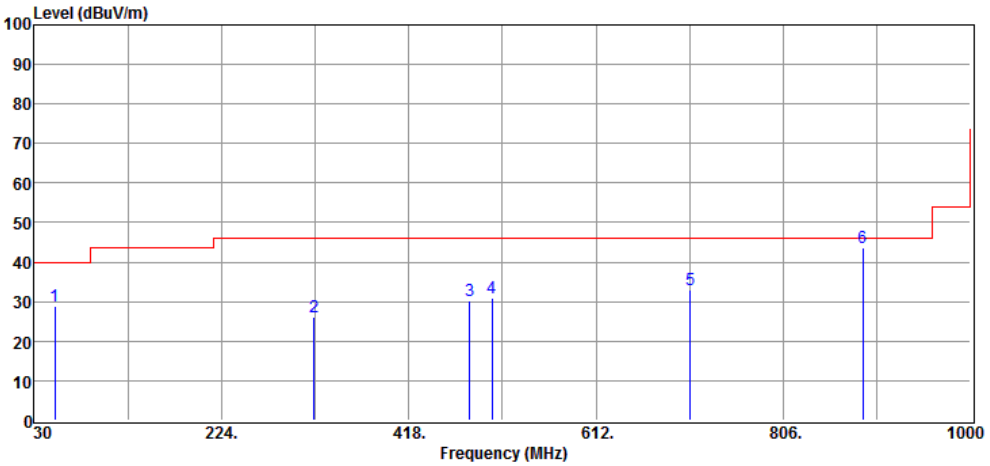

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	37.13	-8.37	28.76	40.00	-11.24	Peak	HORIZONTAL
2	320.03	33.21	-7.01	26.20	46.00	-19.80	Peak	HORIZONTAL
3	481.05	33.14	-3.05	30.09	46.00	-15.91	Peak	HORIZONTAL
4	504.33	33.60	-2.59	31.01	46.00	-14.99	Peak	HORIZONTAL
5	709.97	31.37	1.54	32.91	46.00	-13.09	Peak	HORIZONTAL
6	888.45	39.52	4.10	43.62	46.00	-2.38	Peak	HORIZONTAL

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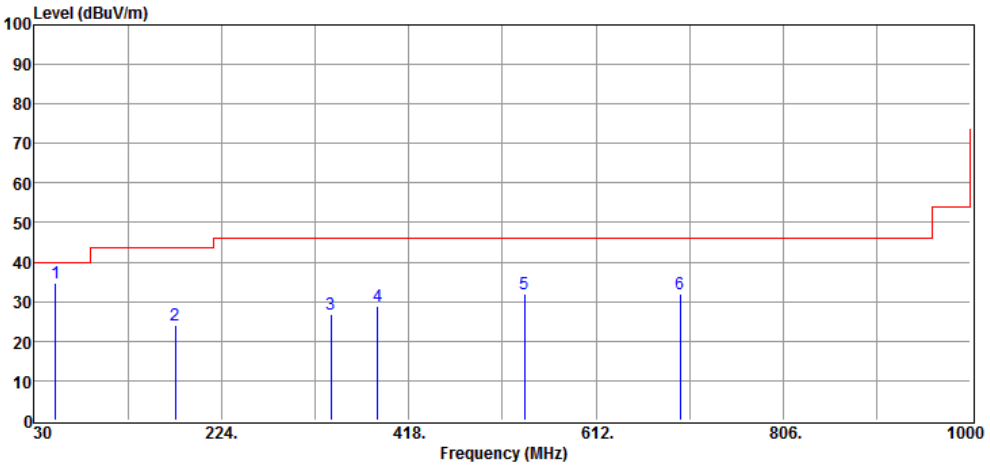

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	52.31	43.28	-8.40	34.88	40.00	-5.12	Peak	VERTICAL
2	176.47	33.66	-9.56	24.10	43.50	-19.40	Peak	VERTICAL
3	337.49	33.29	-6.62	26.67	46.00	-19.33	Peak	VERTICAL
4	385.99	34.02	-5.20	28.82	46.00	-17.18	Peak	VERTICAL
5	538.28	34.05	-2.02	32.03	46.00	-13.97	Peak	VERTICAL
6	699.30	30.38	1.49	31.87	46.00	-14.13	Peak	VERTICAL

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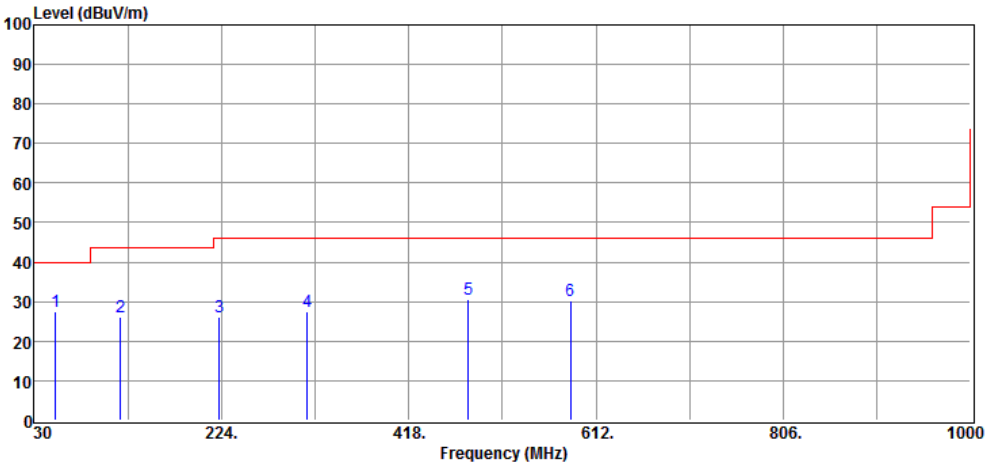
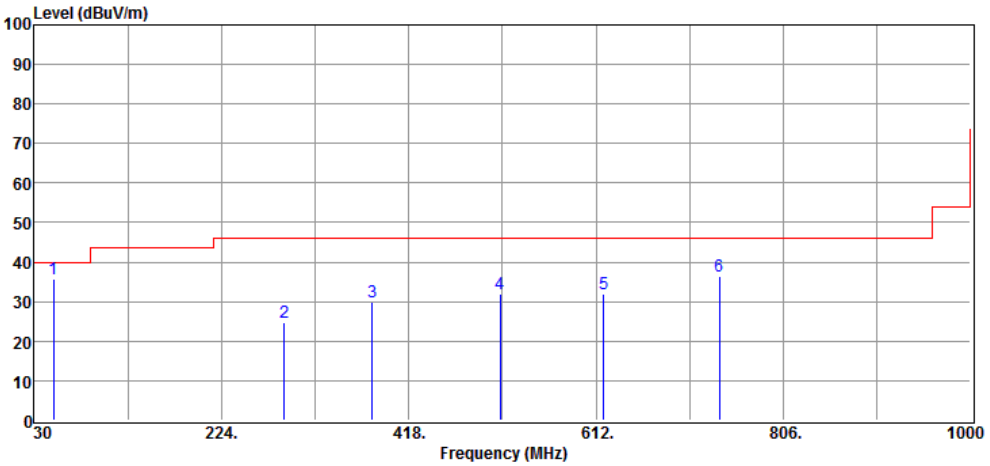


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	52.31	36.01	-8.40	27.61	40.00	-12.39	Peak	HORIZONTAL
2	119.24	37.48	-11.26	26.22	43.50	-17.28	Peak	HORIZONTAL
3	222.06	37.67	-11.57	26.10	46.00	-19.90	Peak	HORIZONTAL
4	313.24	34.65	-7.10	27.55	46.00	-18.45	Peak	HORIZONTAL
5	480.08	33.64	-3.05	30.59	46.00	-15.41	Peak	HORIZONTAL
6	585.81	30.82	-0.62	30.20	46.00	-15.80	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Low CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	50.37	44.18	-8.41	35.77	40.00	-4.23	Peak	VERTICAL
2	288.99	32.56	-7.97	24.59	46.00	-21.41	Peak	VERTICAL
3	380.17	35.17	-5.35	29.82	46.00	-16.18	Peak	VERTICAL
4	513.06	34.17	-2.30	31.87	46.00	-14.13	Peak	VERTICAL
5	619.76	31.77	0.19	31.96	46.00	-14.04	Peak	VERTICAL
6	740.04	34.34	2.24	36.58	46.00	-9.42	Peak	VERTICAL

International Standard Laboratory Corp.
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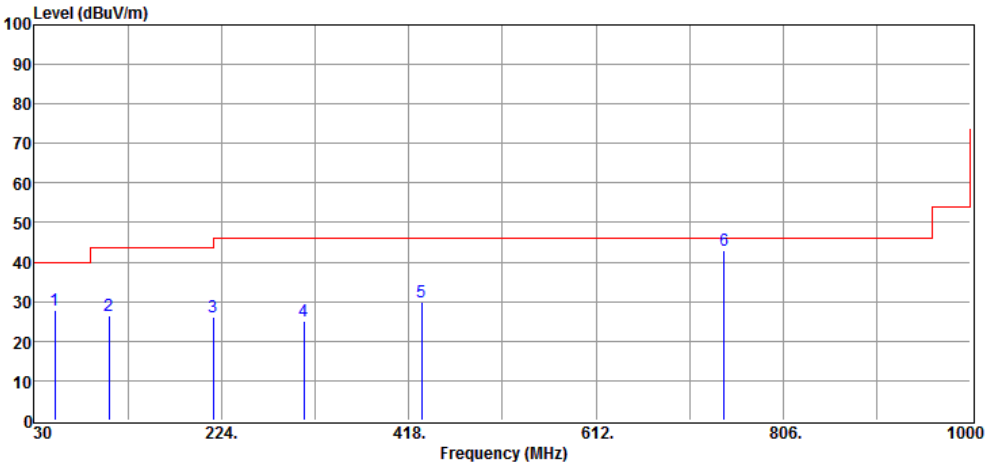
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Low CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	36.06	-8.37	27.69	40.00	-12.31	Peak	HORIZONTAL
2	107.60	38.66	-12.20	26.46	43.50	-17.04	Peak	HORIZONTAL
3	215.27	37.72	-11.49	26.23	43.50	-17.27	Peak	HORIZONTAL
4	309.36	32.38	-7.30	25.08	46.00	-20.92	Peak	HORIZONTAL
5	431.58	33.96	-3.98	29.98	46.00	-16.02	Peak	HORIZONTAL
6	744.89	40.59	2.46	43.05	46.00	-2.95	Peak	HORIZONTAL

International Standard Laboratory Corp.
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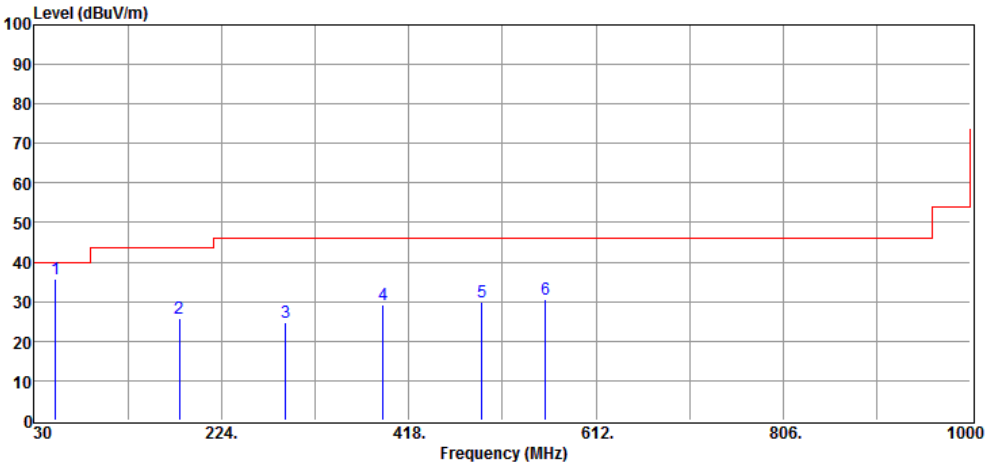
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Mid CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	52.31	44.18	-8.40	35.78	40.00	-4.22	Peak	VERTICAL
2	180.35	35.77	-10.03	25.74	43.50	-17.76	Peak	VERTICAL
3	290.93	32.57	-7.94	24.63	46.00	-21.37	Peak	VERTICAL
4	391.81	34.35	-5.10	29.25	46.00	-16.75	Peak	VERTICAL
5	493.66	32.82	-2.81	30.01	46.00	-15.99	Peak	VERTICAL
6	559.62	32.18	-1.65	30.53	46.00	-15.47	Peak	VERTICAL

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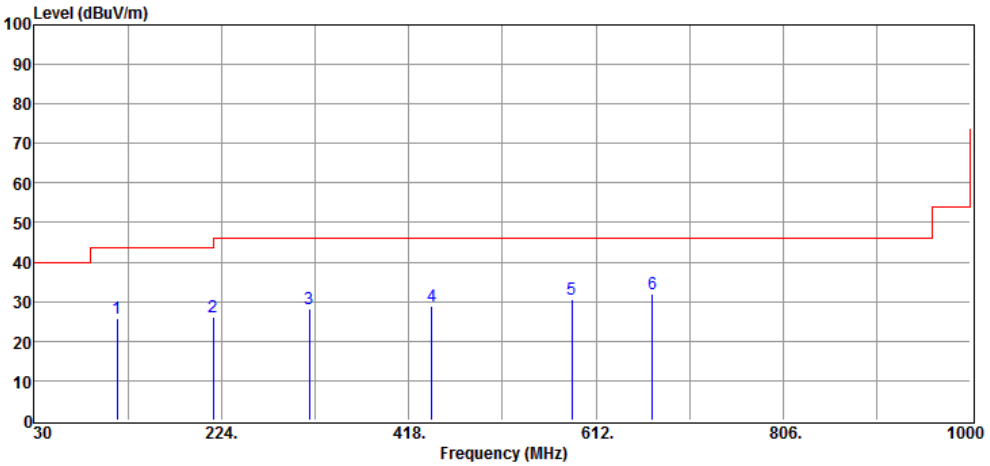
Test Mode : BT EDR1 TX Mid CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	116.33	37.47	-11.53	25.94	43.50	-17.56	Peak	HORIZONTAL
2	215.27	37.44	-11.49	25.95	43.50	-17.55	Peak	HORIZONTAL
3	315.18	35.33	-7.03	28.30	46.00	-17.70	Peak	HORIZONTAL
4	442.25	32.59	-3.66	28.93	46.00	-17.07	Peak	HORIZONTAL
5	586.78	31.16	-0.60	30.56	46.00	-15.44	Peak	HORIZONTAL
6	670.20	31.12	0.89	32.01	46.00	-13.99	Peak	HORIZONTAL

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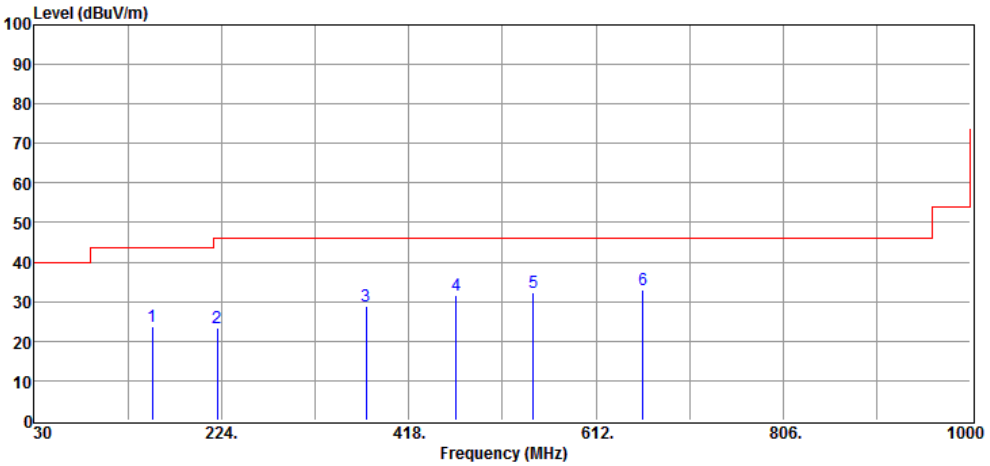
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX High CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	152.22	32.28	-8.52	23.76	43.50	-19.74	Peak	VERTICAL
2	220.12	34.73	-11.48	23.25	46.00	-22.75	Peak	VERTICAL
3	374.35	34.20	-5.50	28.70	46.00	-17.30	Peak	VERTICAL
4	467.47	34.61	-3.10	31.51	46.00	-14.49	Peak	VERTICAL
5	547.01	34.30	-1.89	32.41	46.00	-13.59	Peak	VERTICAL
6	660.50	32.35	0.59	32.94	46.00	-13.06	Peak	VERTICAL

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Date: 2024-09-05

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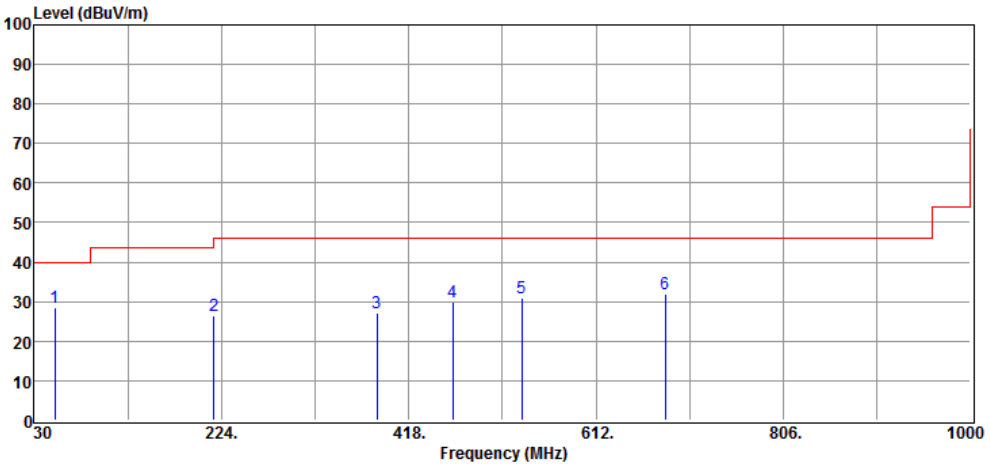
Test Mode : BT EDR1 TX High CH Tested by : Kevin Yao

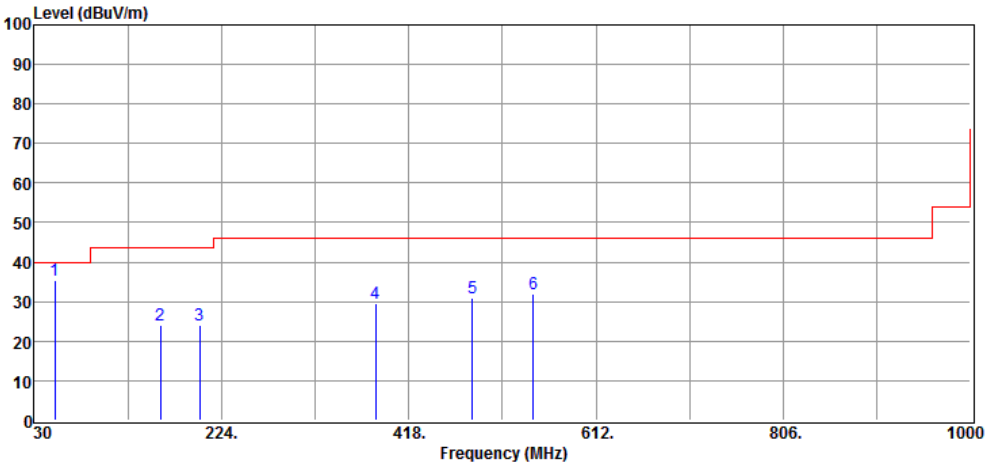


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	36.97	-8.37	28.60	40.00	-11.40	Peak	HORIZONTAL
2	216.24	38.12	-11.49	26.63	46.00	-19.37	Peak	HORIZONTAL
3	385.02	32.34	-5.22	27.12	46.00	-18.88	Peak	HORIZONTAL
4	463.59	33.11	-3.14	29.97	46.00	-16.03	Peak	HORIZONTAL
5	535.37	33.08	-2.03	31.05	46.00	-14.95	Peak	HORIZONTAL
6	683.78	30.89	1.19	32.08	46.00	-13.92	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Low CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	43.81	-8.37	35.44	40.00	-4.56	Peak	VERTICAL
2	160.95	32.53	-8.45	24.08	43.50	-19.42	Peak	VERTICAL
3	201.69	35.62	-11.57	24.05	43.50	-19.45	Peak	VERTICAL
4	384.05	34.69	-5.26	29.43	46.00	-16.57	Peak	VERTICAL
5	483.96	33.90	-3.03	30.87	46.00	-15.13	Peak	VERTICAL
6	547.01	33.95	-1.89	32.06	46.00	-13.94	Peak	VERTICAL

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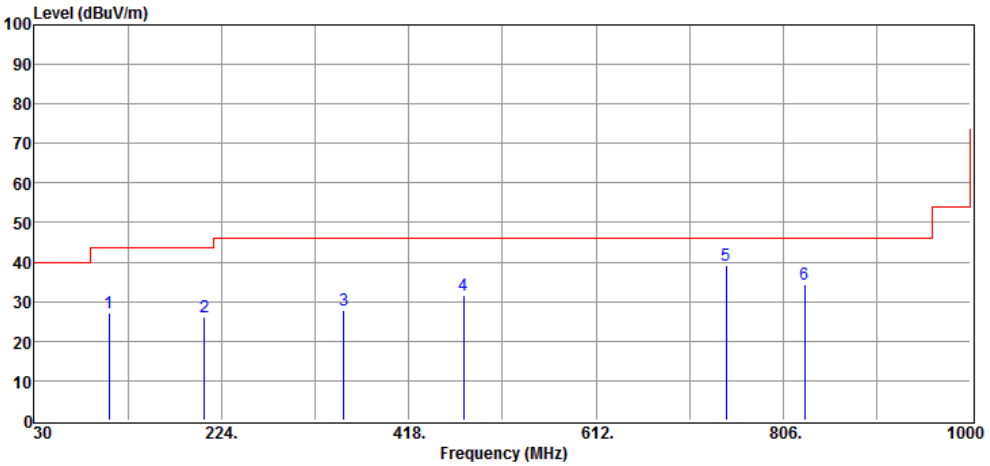
Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Low CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	107.60	39.36	-12.20	27.16	43.50	-16.34	Peak	HORIZONTAL
2	206.54	37.60	-11.54	26.06	43.50	-17.44	Peak	HORIZONTAL
3	351.07	34.37	-6.45	27.92	46.00	-18.08	Peak	HORIZONTAL
4	475.23	34.63	-3.07	31.56	46.00	-14.44	Peak	HORIZONTAL
5	746.83	36.77	2.51	39.28	46.00	-6.72	Peak	HORIZONTAL
6	828.31	30.87	3.35	34.22	46.00	-11.78	Peak	HORIZONTAL

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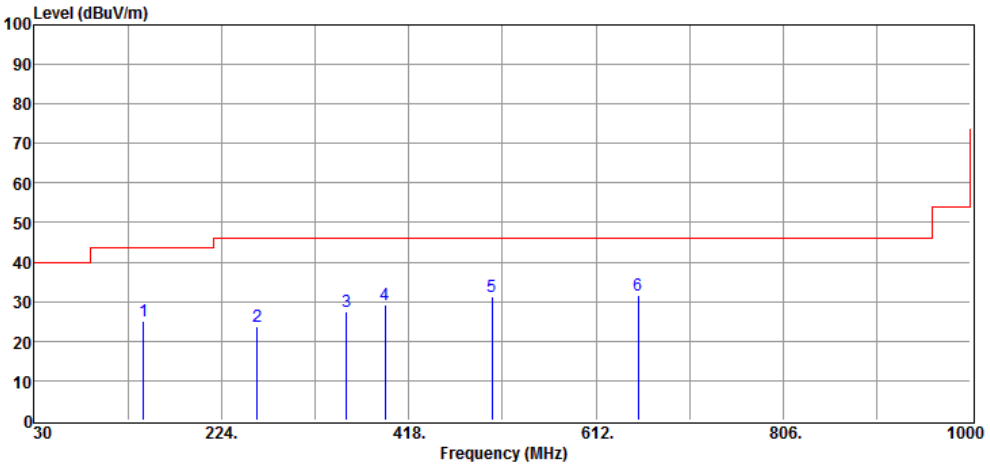
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Mid CH Tested by : Kevin Yao

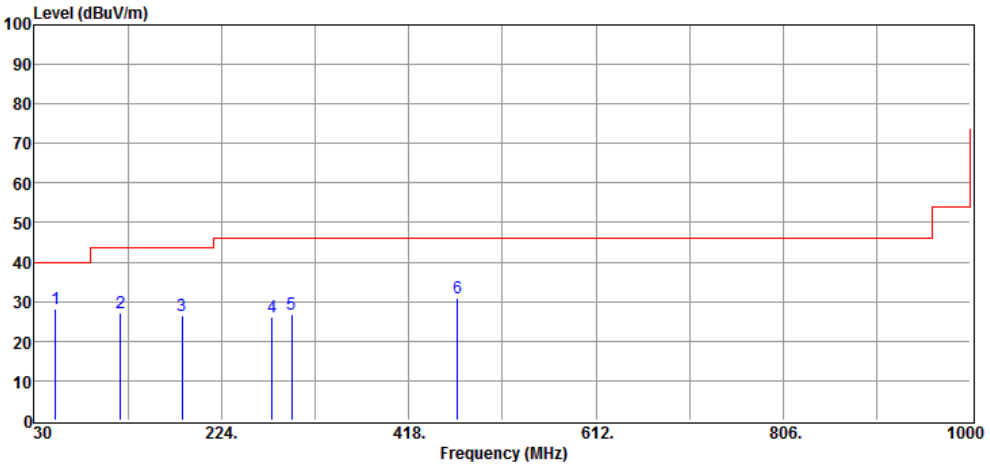


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	143.49	34.02	-8.79	25.23	43.50	-18.27	Peak	VERTICAL
2	260.86	32.82	-9.23	23.59	46.00	-22.41	Peak	VERTICAL
3	353.98	34.02	-6.38	27.64	46.00	-18.36	Peak	VERTICAL
4	393.75	34.19	-5.10	29.09	46.00	-16.91	Peak	VERTICAL
5	504.33	33.99	-2.59	31.40	46.00	-14.60	Peak	VERTICAL
6	655.65	30.69	0.79	31.48	46.00	-14.52	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Mid CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	52.31	36.70	-8.40	28.30	40.00	-11.70	Peak	HORIZONTAL
2	119.24	38.54	-11.26	27.28	43.50	-16.22	Peak	HORIZONTAL
3	183.26	36.79	-10.30	26.49	43.50	-17.01	Peak	HORIZONTAL
4	276.38	34.61	-8.37	26.24	46.00	-19.76	Peak	HORIZONTAL
5	296.75	34.55	-7.84	26.71	46.00	-19.29	Peak	HORIZONTAL
6	468.44	34.19	-3.10	31.09	46.00	-14.91	Peak	HORIZONTAL

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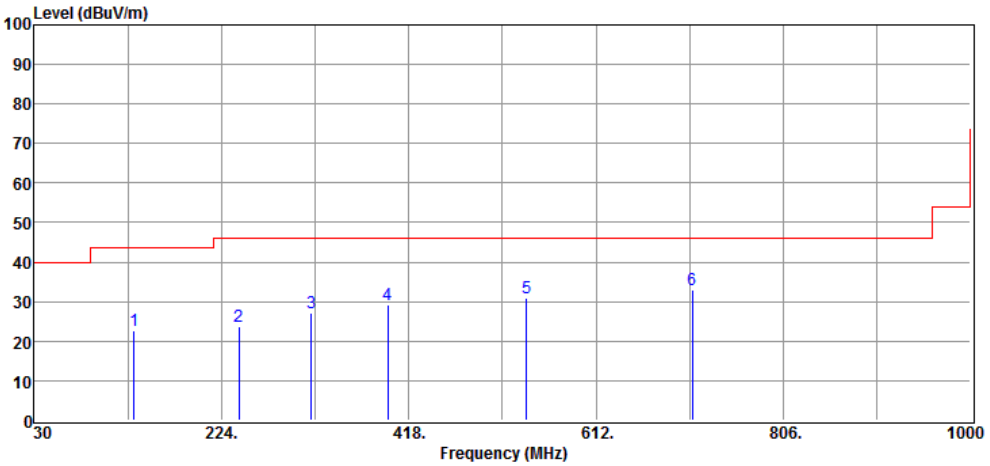
Test Mode : BT EDR2 TX High CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	133.79	32.54	-9.73	22.81	43.50	-20.69	Peak	VERTICAL
2	242.43	33.71	-9.85	23.86	46.00	-22.14	Peak	VERTICAL
3	317.12	34.33	-7.02	27.31	46.00	-18.69	Peak	VERTICAL
4	396.66	34.14	-5.08	29.06	46.00	-16.94	Peak	VERTICAL
5	540.22	32.95	-2.01	30.94	46.00	-15.06	Peak	VERTICAL
6	711.91	31.26	1.58	32.84	46.00	-13.16	Peak	VERTICAL

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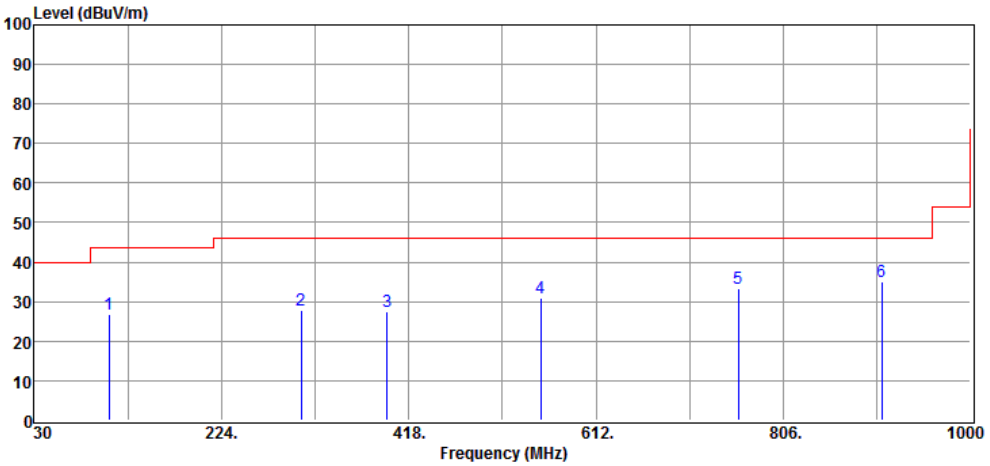
Test Mode : BT EDR2 TX High CH Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	107.60	39.03	-12.20	26.83	43.50	-16.67	Peak	HORIZONTAL
2	306.45	35.19	-7.48	27.71	46.00	-18.29	Peak	HORIZONTAL
3	395.69	32.43	-5.08	27.35	46.00	-18.65	Peak	HORIZONTAL
4	554.77	32.86	-1.76	31.10	46.00	-14.90	Peak	HORIZONTAL
5	759.44	30.58	2.90	33.48	46.00	-12.52	Peak	HORIZONTAL
6	907.85	30.29	4.59	34.88	46.00	-11.12	Peak	HORIZONTAL

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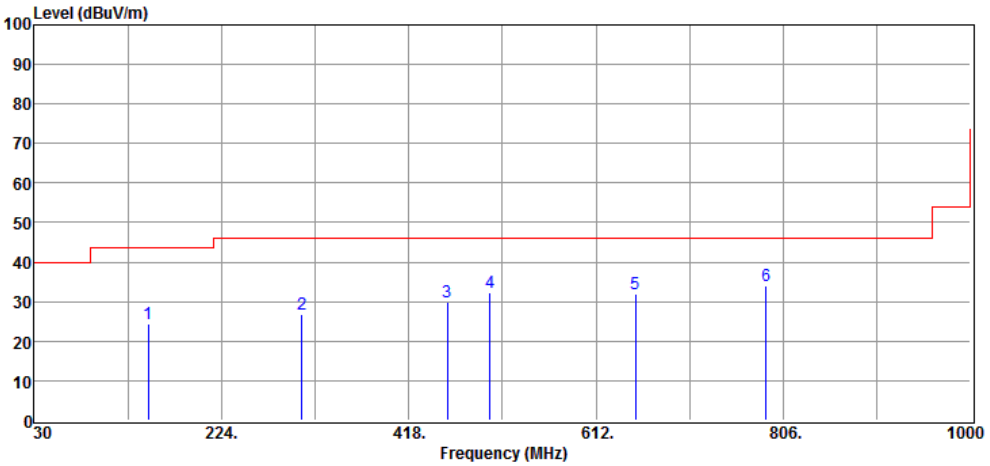
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR TX Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	148.34	33.08	-8.58	24.50	43.50	-19.00	Peak	VERTICAL
2	307.42	34.37	-7.41	26.96	46.00	-19.04	Peak	VERTICAL
3	457.77	33.02	-3.28	29.74	46.00	-16.26	Peak	VERTICAL
4	502.39	34.81	-2.67	32.14	46.00	-13.86	Peak	VERTICAL
5	652.74	31.07	0.78	31.85	46.00	-14.15	Peak	VERTICAL
6	788.54	31.14	2.97	34.11	46.00	-11.89	Peak	VERTICAL

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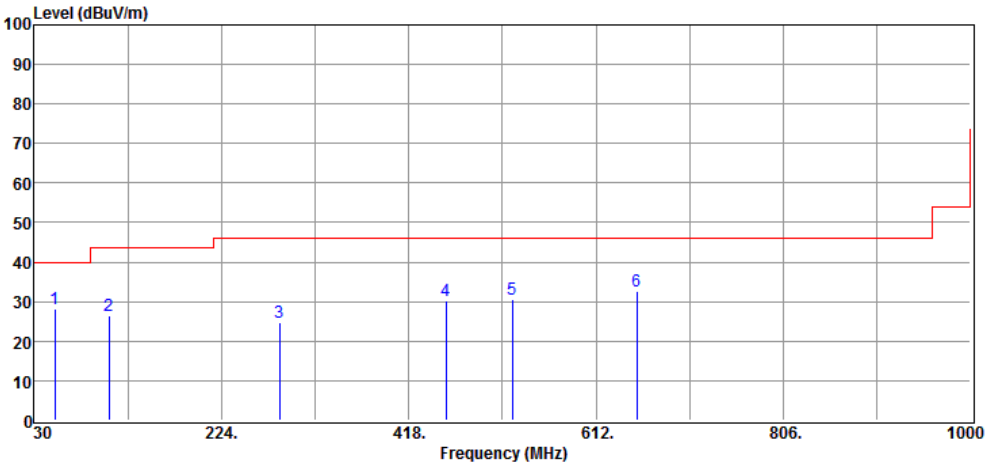

No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	36.60	-8.37	28.23	40.00	-11.77	Peak	HORIZONTAL
2	107.60	38.74	-12.20	26.54	43.50	-16.96	Peak	HORIZONTAL
3	284.14	32.71	-8.09	24.62	46.00	-21.38	Peak	HORIZONTAL
4	456.80	33.61	-3.30	30.31	46.00	-15.69	Peak	HORIZONTAL
5	525.67	32.68	-2.07	30.61	46.00	-15.39	Peak	HORIZONTAL
6	654.68	31.91	0.82	32.73	46.00	-13.27	Peak	HORIZONTAL

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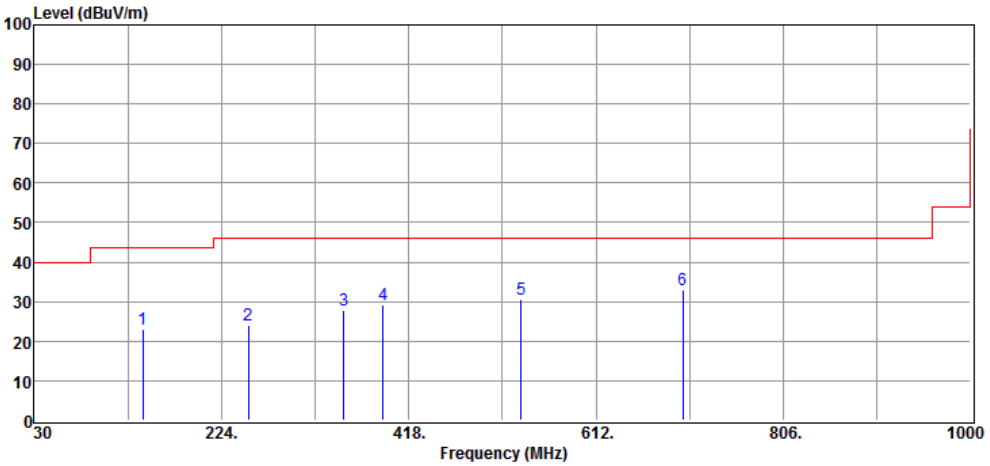
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 TX Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	142.52	31.96	-8.84	23.12	43.50	-20.38	Peak	VERTICAL
2	252.13	33.68	-9.56	24.12	46.00	-21.88	Peak	VERTICAL
3	351.07	34.25	-6.45	27.80	46.00	-18.20	Peak	VERTICAL
4	391.81	34.42	-5.10	29.32	46.00	-16.68	Peak	VERTICAL
5	534.40	32.63	-2.04	30.59	46.00	-15.41	Peak	VERTICAL
6	702.21	31.49	1.51	33.00	46.00	-13.00	Peak	VERTICAL

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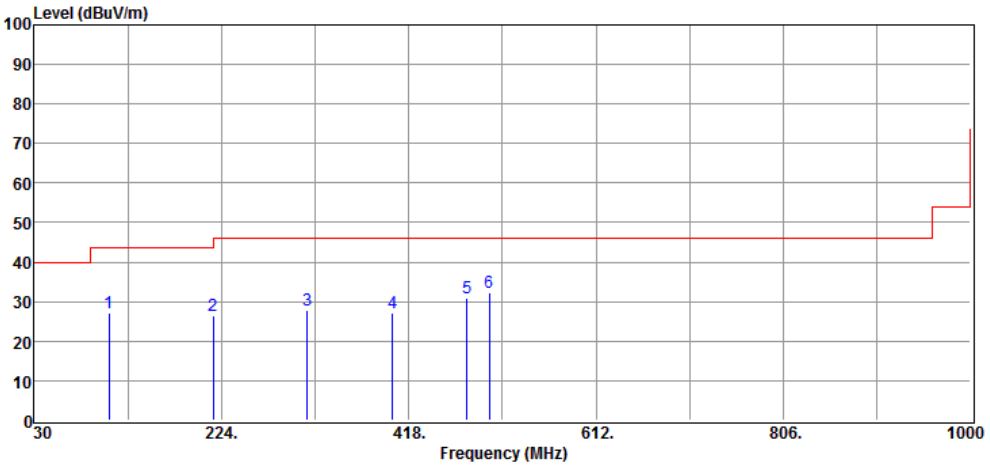
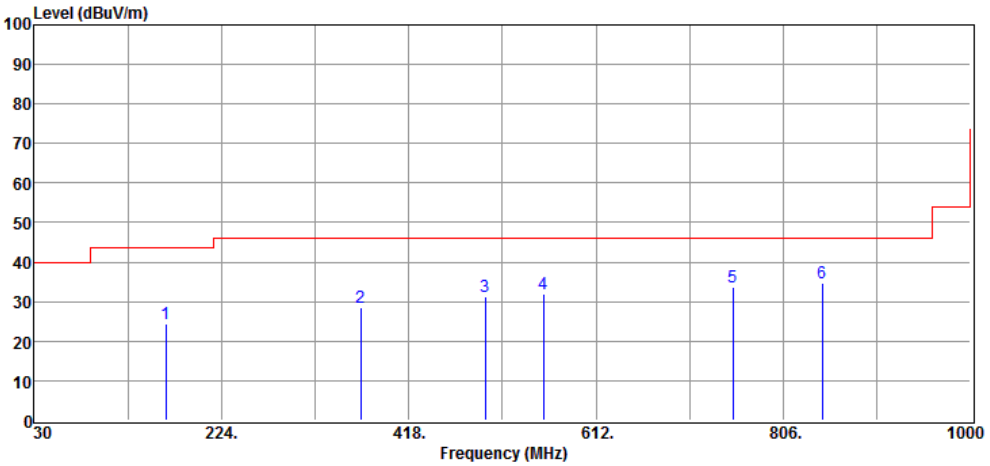


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	107.60	39.31	-12.20	27.11	43.50	-16.39	Peak	HORIZONTAL
2	215.27	37.97	-11.49	26.48	43.50	-17.02	Peak	HORIZONTAL
3	313.24	34.77	-7.10	27.67	46.00	-18.33	Peak	HORIZONTAL
4	401.51	32.34	-5.03	27.31	46.00	-18.69	Peak	HORIZONTAL
5	478.14	33.92	-3.06	30.86	46.00	-15.14	Peak	HORIZONTAL
6	501.42	35.00	-2.72	32.28	46.00	-13.72	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 TX Tested by : Kevin Yao

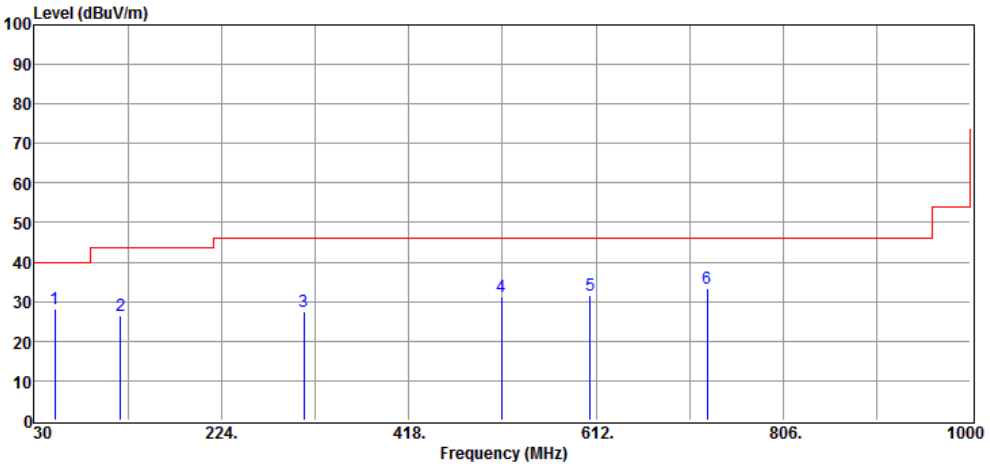


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	166.77	32.98	-8.72	24.26	43.50	-19.24	Peak	VERTICAL
2	368.53	34.15	-5.78	28.37	46.00	-17.63	Peak	VERTICAL
3	497.54	34.16	-2.79	31.37	46.00	-14.63	Peak	VERTICAL
4	557.68	33.69	-1.69	32.00	46.00	-14.00	Peak	VERTICAL
5	753.62	30.85	2.73	33.58	46.00	-12.42	Peak	VERTICAL
6	846.74	30.78	3.84	34.62	46.00	-11.38	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 TX Tested by : Kevin Yao



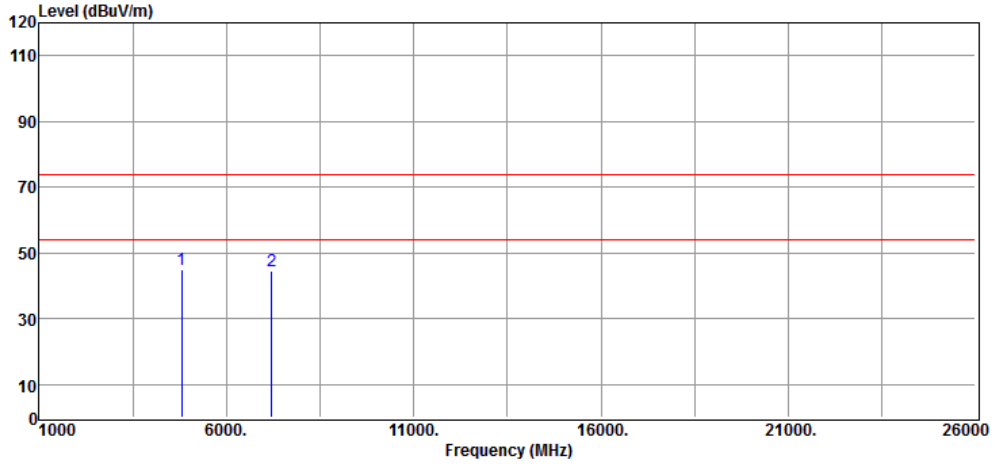
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	51.34	36.64	-8.37	28.27	40.00	-11.73	Peak	HORIZONTAL
2	119.24	37.64	-11.26	26.38	43.50	-17.12	Peak	HORIZONTAL
3	309.36	34.67	-7.30	27.37	46.00	-18.63	Peak	HORIZONTAL
4	514.03	33.39	-2.26	31.13	46.00	-14.87	Peak	HORIZONTAL
5	606.18	31.82	-0.14	31.68	46.00	-14.32	Peak	HORIZONTAL
6	727.43	31.36	1.95	33.31	46.00	-12.69	Peak	HORIZONTAL

7.4.2 Radiated Spurious Emission Measurement Result (above1GHz)

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX Low CH Tested by : Kevin Yao

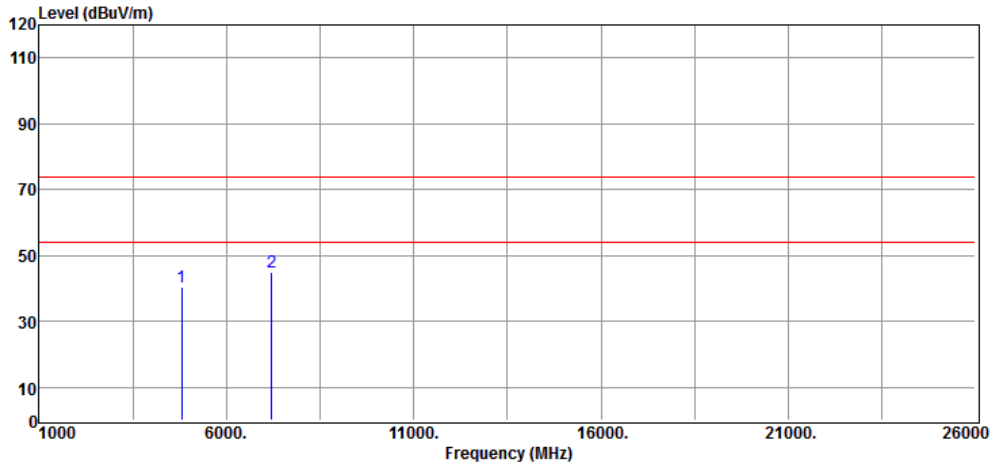


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	37.33	7.52	44.85	74.00	-29.15	Peak	VERTICAL
2	7206.00	33.93	10.62	44.55	74.00	-29.45	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX Low CH Tested by : Kevin Yao

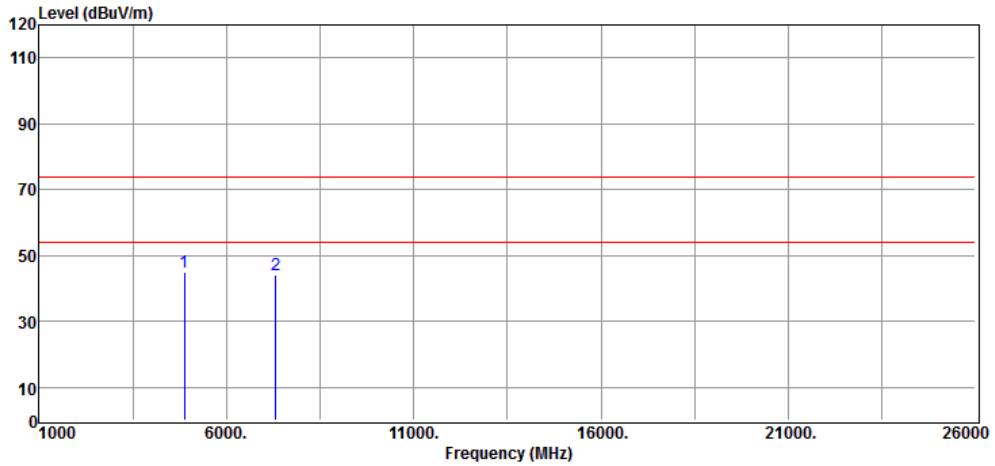


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	32.81	7.52	40.33	74.00	-33.67	Peak	HORIZONTAL
2	7206.00	34.35	10.62	44.97	74.00	-29.03	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX Mid CH Tested by : Kevin Yao

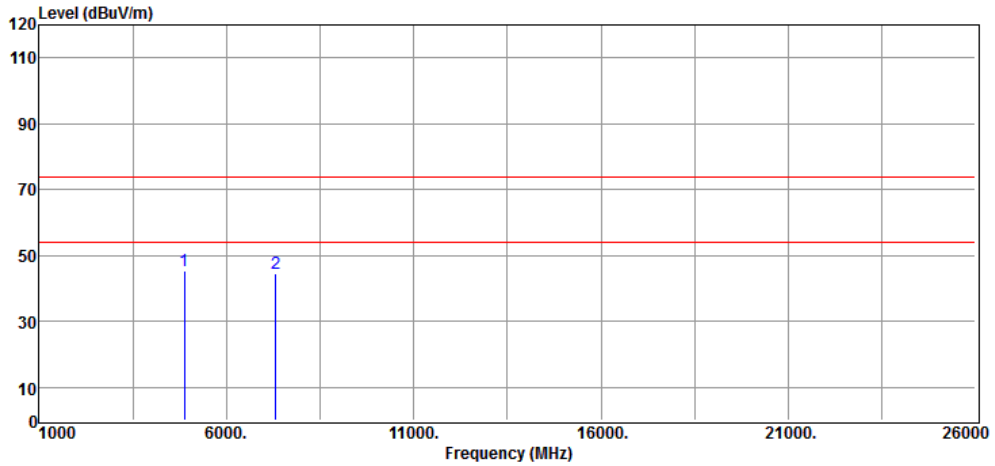


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	37.00	7.82	44.82	74.00	-29.18	Peak	VERTICAL
2	7323.00	33.59	10.60	44.19	74.00	-29.81	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX Mid CH Tested by : Kevin Yao

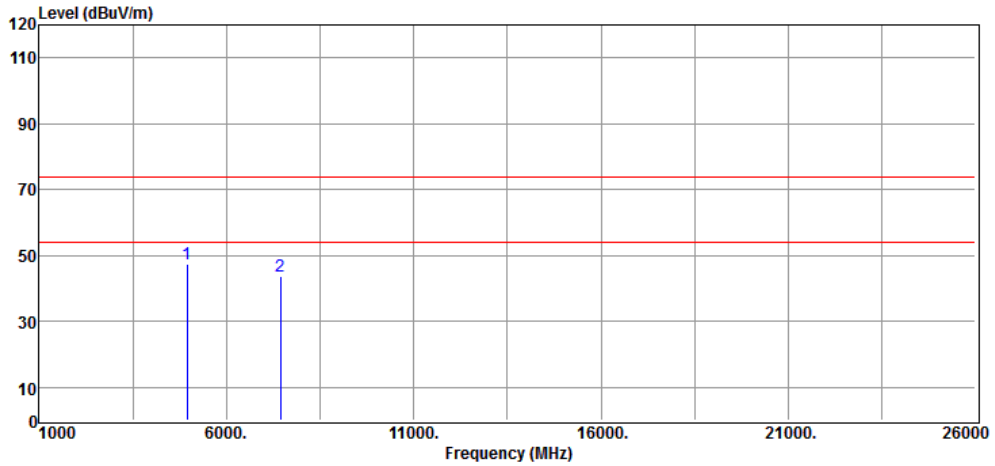


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	37.43	7.82	45.25	74.00	-28.75	Peak	HORIZONTAL
2	7323.00	33.74	10.60	44.34	74.00	-29.66	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX High CH Tested by : Kevin Yao

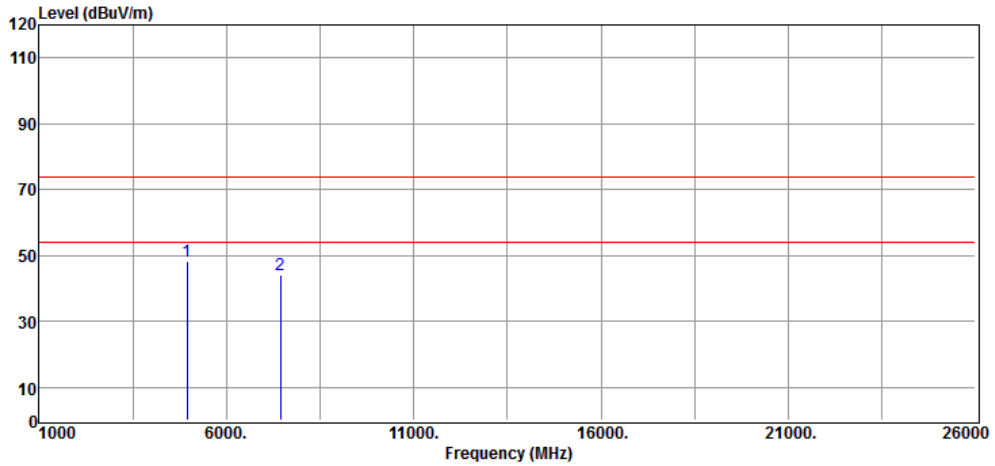


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	39.40	7.92	47.32	74.00	-26.68	Peak	VERTICAL
2	7440.00	33.05	10.68	43.73	74.00	-30.27	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR TX High CH Tested by : Kevin Yao

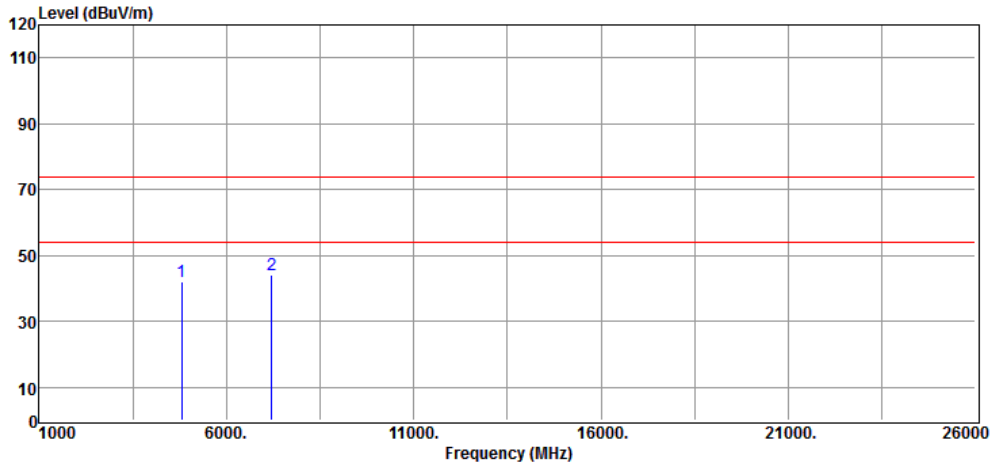


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	40.32	7.92	48.24	74.00	-25.76	Peak	HORIZONTAL
2	7440.00	33.36	10.68	44.04	74.00	-29.96	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Low CH Tested by : Kevin Yao

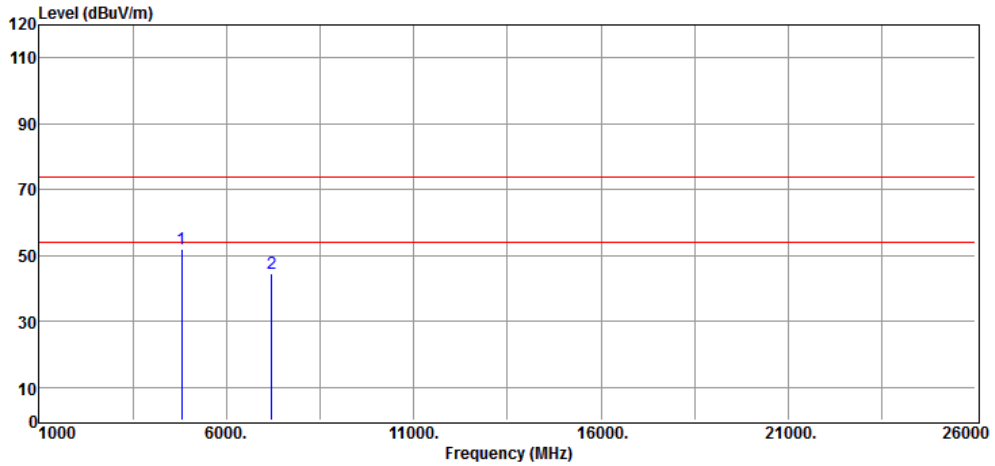


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	34.53	7.52	42.05	74.00	-31.95	Peak	VERTICAL
2	7206.00	33.63	10.62	44.25	74.00	-29.75	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Low CH Tested by : Kevin Yao

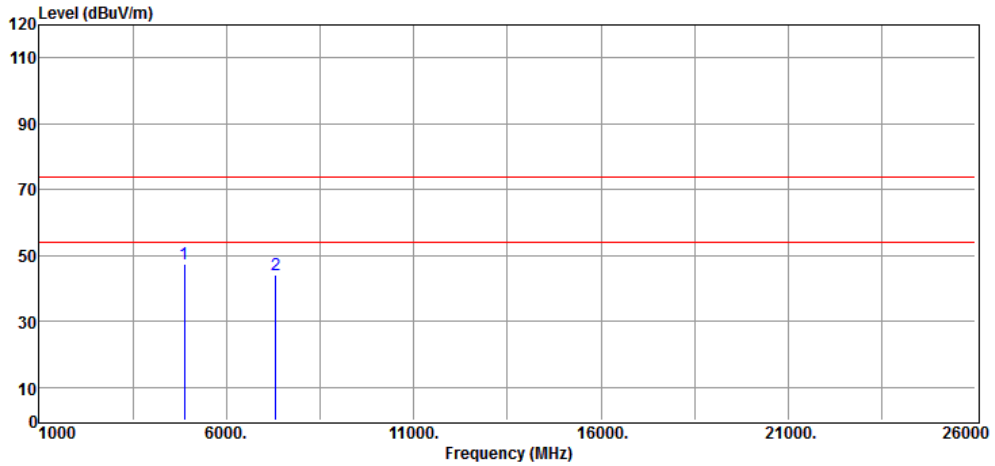


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	44.64	7.52	52.16	74.00	-21.84	Peak	HORIZONTAL
2	7206.00	33.85	10.62	44.47	74.00	-29.53	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Mid CH Tested by : Kevin Yao

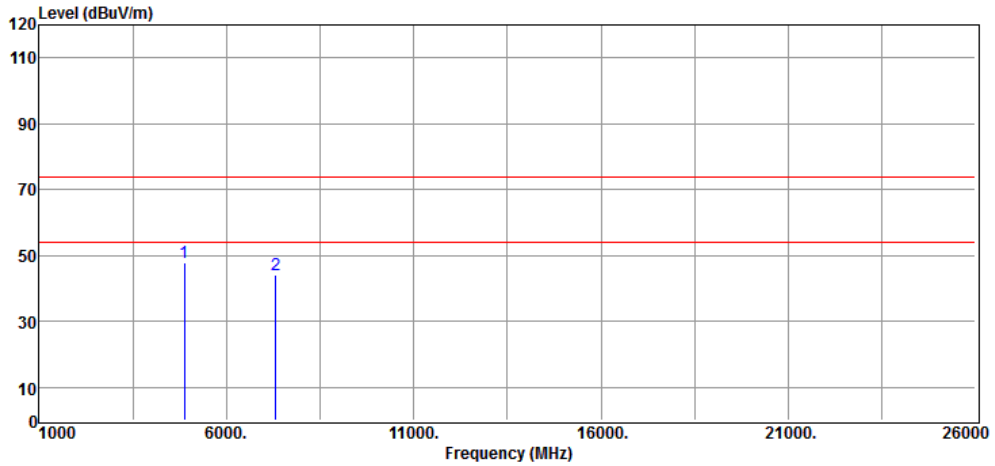


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	39.67	7.82	47.49	74.00	-26.51	Peak	VERTICAL
2	7323.00	33.72	10.60	44.32	74.00	-29.68	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX Mid CH Tested by : Kevin Yao

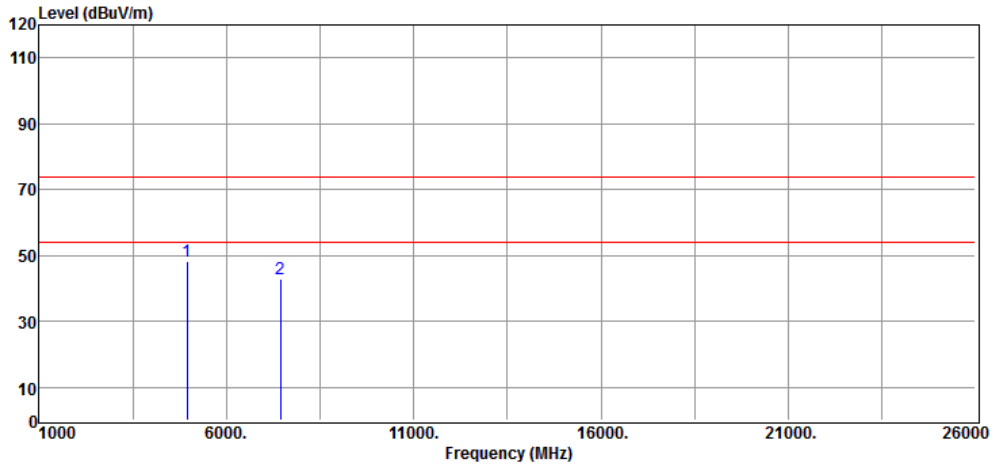


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	39.85	7.82	47.67	74.00	-26.33	Peak	HORIZONTAL
2	7323.00	33.69	10.60	44.29	74.00	-29.71	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX High CH Tested by : Kevin Yao

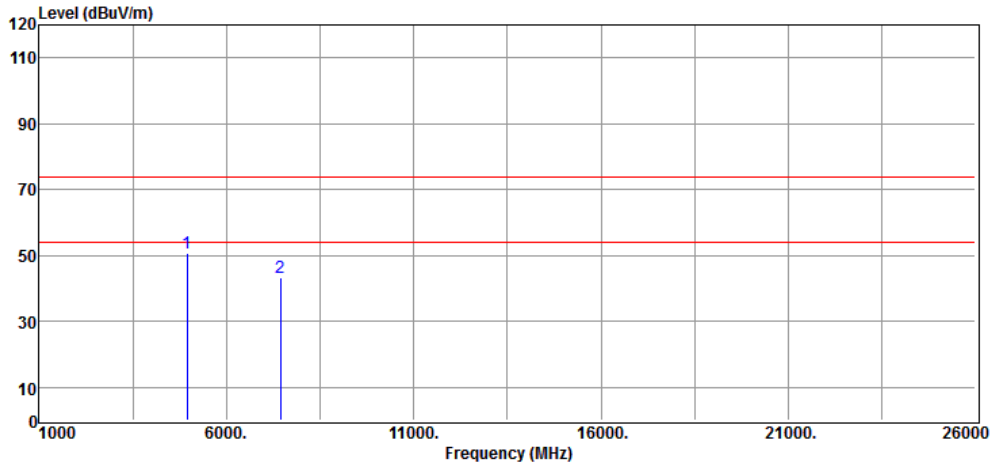


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	40.30	7.92	48.22	74.00	-25.78	Peak	VERTICAL
2	7440.00	32.36	10.68	43.04	74.00	-30.96	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 TX High CH Tested by : Kevin Yao

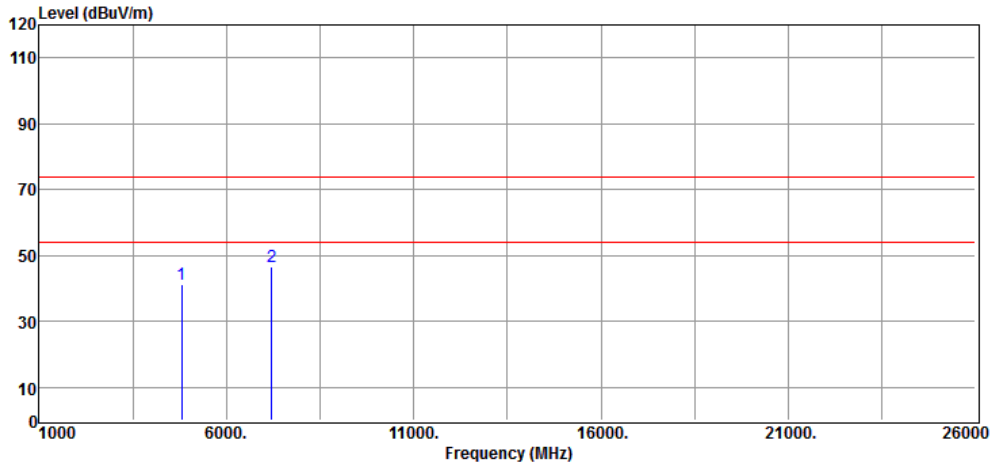


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	42.78	7.92	50.70	74.00	-23.30	Peak	HORIZONTAL
2	7440.00	32.57	10.68	43.25	74.00	-30.75	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Low CH Tested by : Kevin Yao

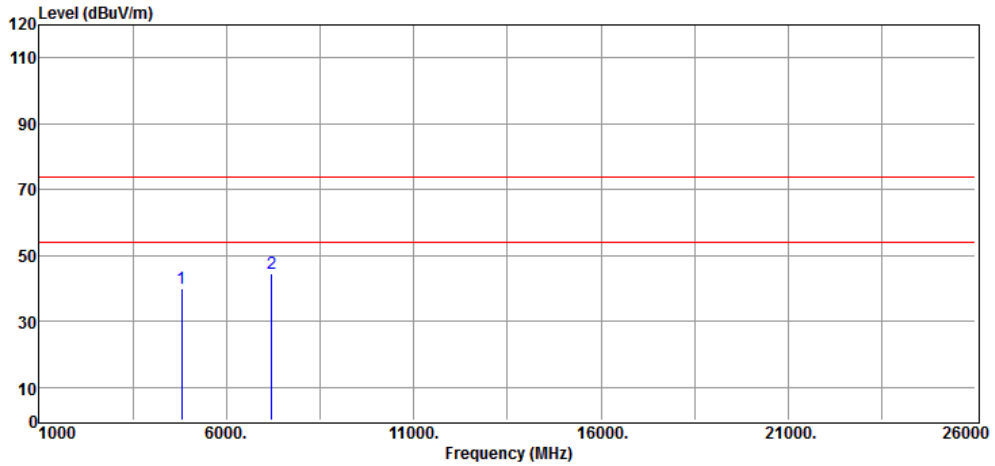


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	33.67	7.52	41.19	74.00	-32.81	Peak	VERTICAL
2	7206.00	35.83	10.62	46.45	74.00	-27.55	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Low CH Tested by : Kevin Yao

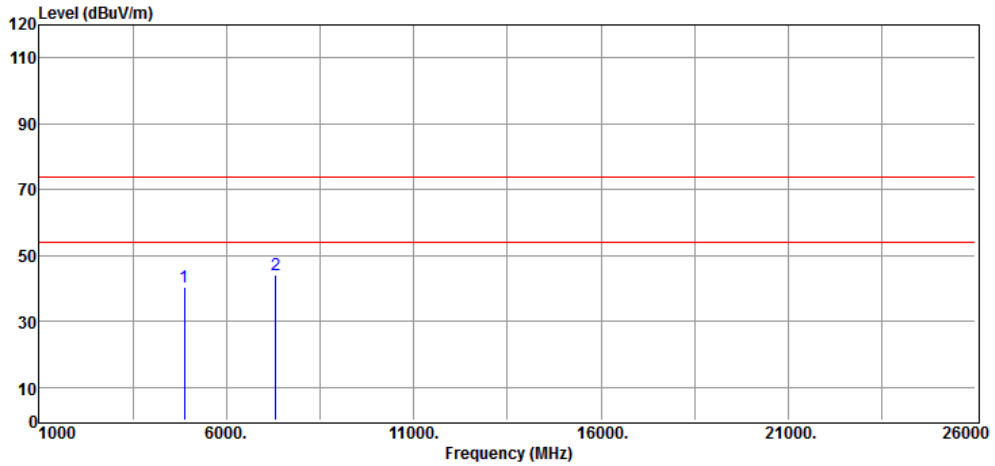


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4804.00	32.67	7.52	40.19	74.00	-33.81	Peak	HORIZONTAL
2	7206.00	33.81	10.62	44.43	74.00	-29.57	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Mid CH Tested by : Kevin Yao

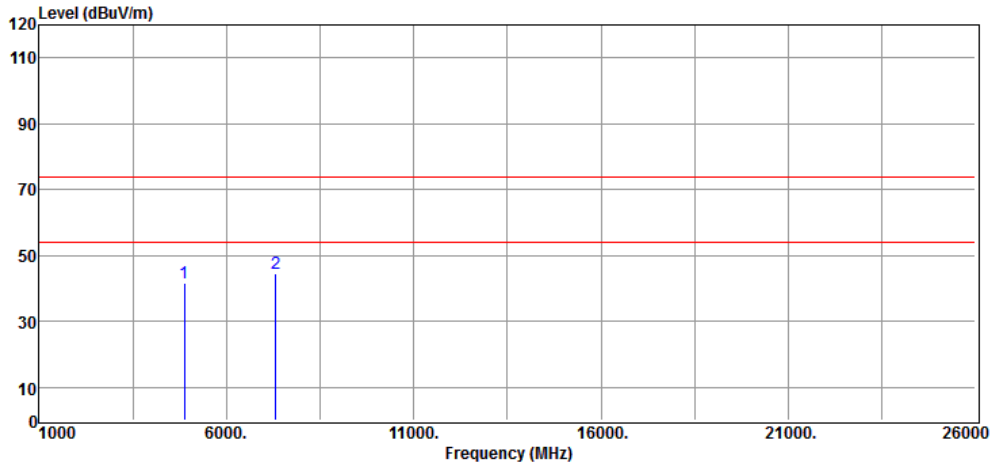


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	32.50	7.82	40.32	74.00	-33.68	Peak	VERTICAL
2	7323.00	33.69	10.60	44.29	74.00	-29.71	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX Mid CH Tested by : Kevin Yao

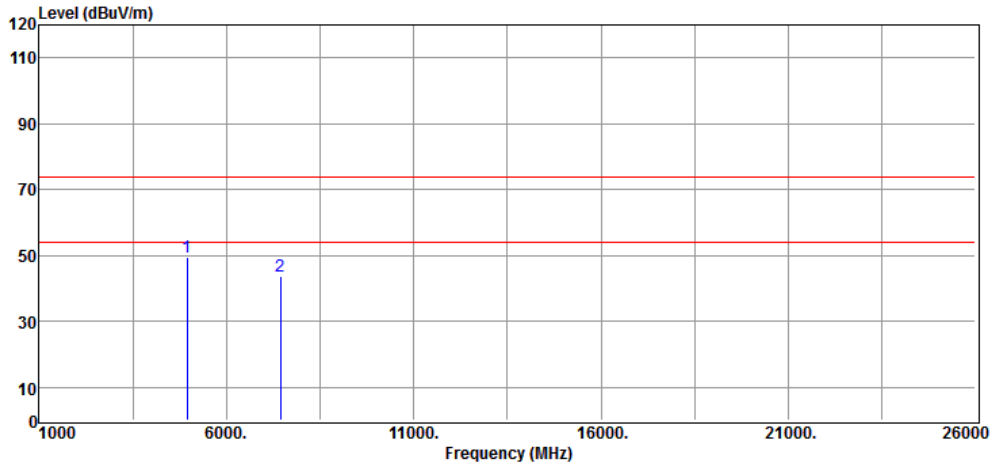


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	33.85	7.82	41.67	74.00	-32.33	Peak	HORIZONTAL
2	7323.00	34.09	10.60	44.69	74.00	-29.31	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX High CH Tested by : Kevin Yao

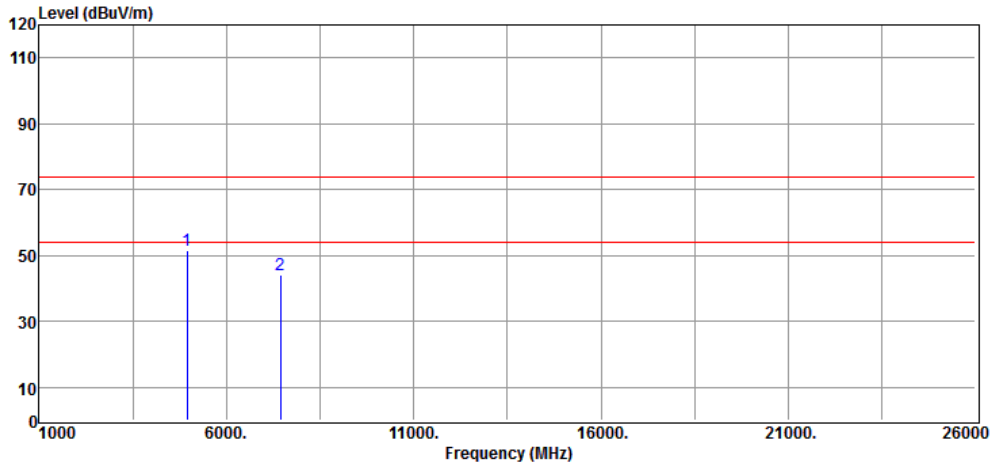


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	41.58	7.92	49.50	74.00	-24.50	Peak	VERTICAL
2	7440.00	32.85	10.68	43.53	74.00	-30.47	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 TX High CH Tested by : Kevin Yao

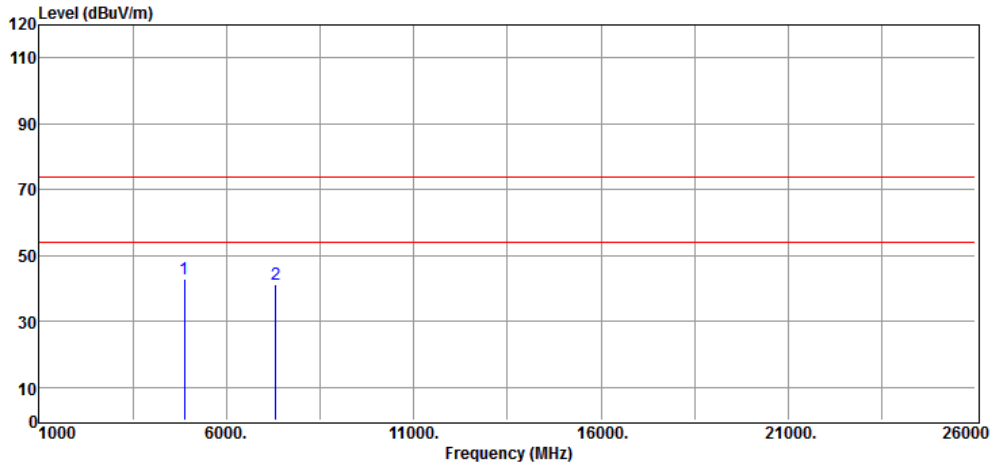


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.00	43.58	7.92	51.50	74.00	-22.50	Peak	HORIZONTAL
2	7440.00	33.32	10.68	44.00	74.00	-30.00	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR TX Tested by : Kevin Yao

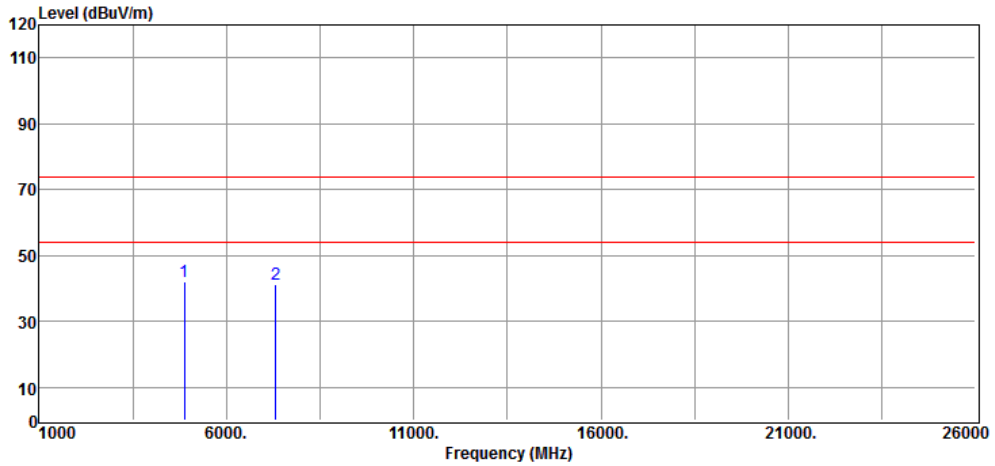


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	35.00	7.82	42.82	74.00	-31.18	Peak	VERTICAL
2	7323.00	30.59	10.60	41.19	74.00	-32.81	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR TX Tested by : Kevin Yao

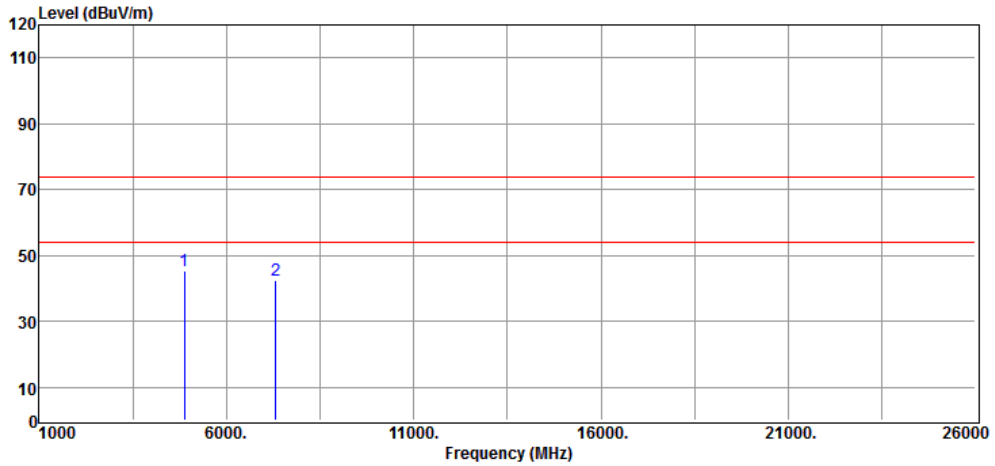


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	34.43	7.82	42.25	74.00	-31.75	Peak	HORIZONTAL
2	7323.00	30.74	10.60	41.34	74.00	-32.66	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 TX Tested by : Kevin Yao

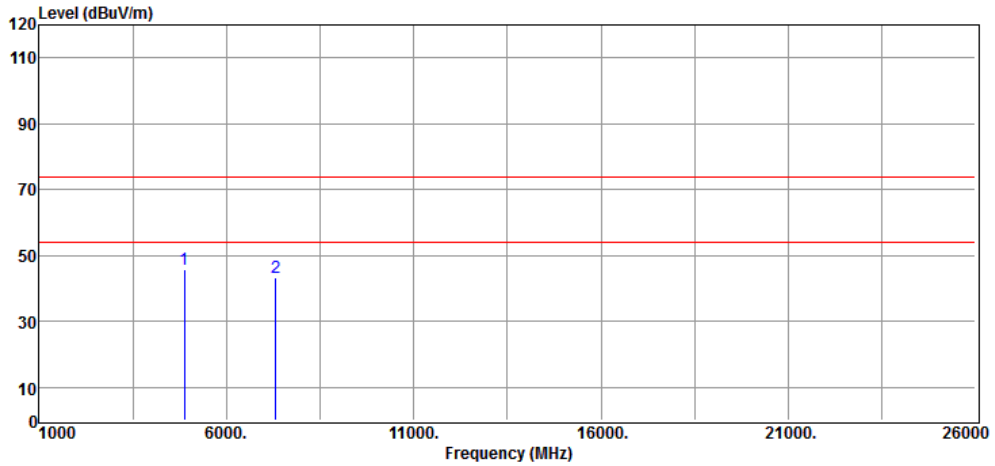


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	37.67	7.82	45.49	74.00	-28.51	Peak	VERTICAL
2	7323.00	31.72	10.60	42.32	74.00	-31.68	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 TX Tested by : Kevin Yao

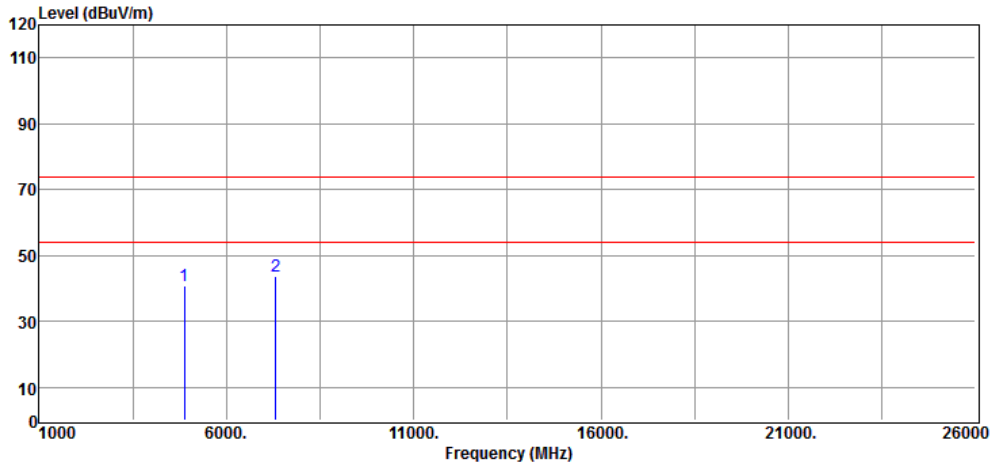


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	37.85	7.82	45.67	74.00	-28.33	Peak	HORIZONTAL
2	7323.00	32.69	10.60	43.29	74.00	-30.71	Peak	HORIZONTAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 TX Tested by : Kevin Yao

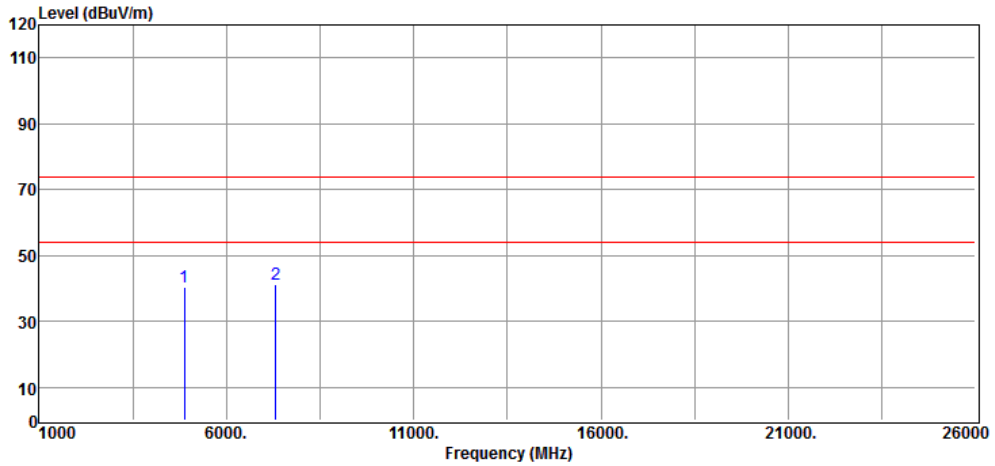


No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	33.14	7.82	40.96	74.00	-33.04	Peak	VERTICAL
2	7323.00	32.92	10.60	43.52	74.00	-30.48	Peak	VERTICAL

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 TX Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4882.00	32.60	7.82	40.42	74.00	-33.58	Peak	HORIZONTAL
2	7323.00	30.80	10.60	41.40	74.00	-32.60	Peak	HORIZONTAL

8. 100kHz Bandwidth of Band Edges Measurement

8.1 Standard Applicable

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, 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 in15.209(a).

8.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW=1MHz, VBW≥3*RBW (for Peak); VBW≥1/T_{on} (for Average), Sweep = auto.
5. Mark Peak, 2.390GHz and 2.4835GHz and record the max. level.
6. Repeat above procedures until all frequency measured were complete.

8.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

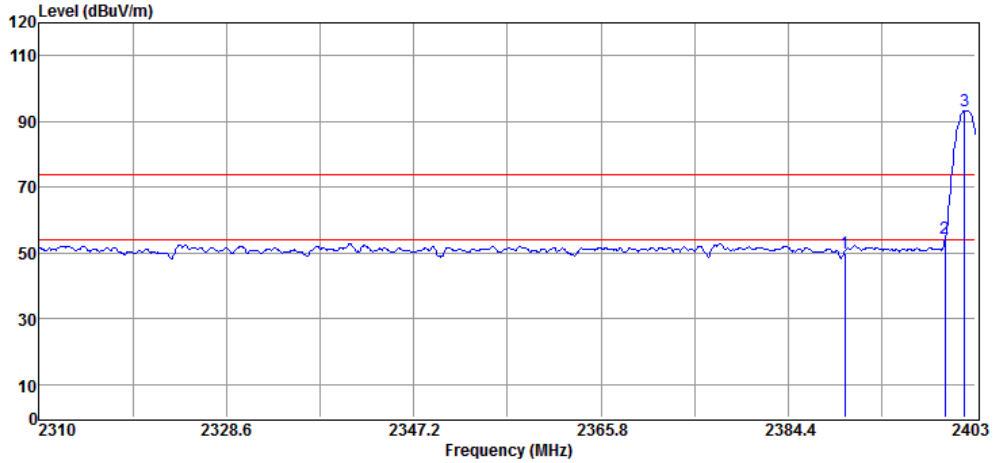
FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

8.4 Measurement Result

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan
Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR Bandedge Low CH Tested by : Kevin Yao



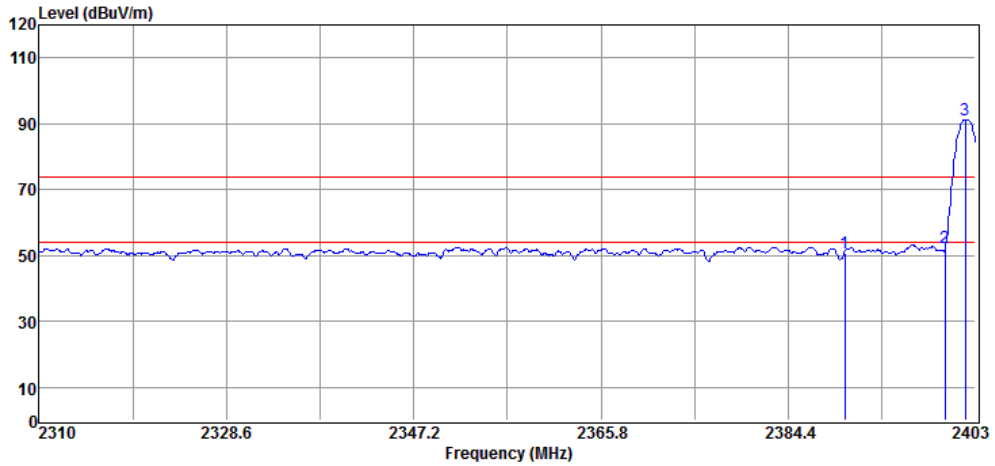
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.35	2.74	50.09	74.00	-23.91	Peak	VERTICAL
2	2400.00	51.49	2.78	54.27	73.37	-19.10	Peak	VERTICAL
3	2401.88	90.59	2.78	93.37	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR Bandedge Low CH Tested by : Kevin Yao



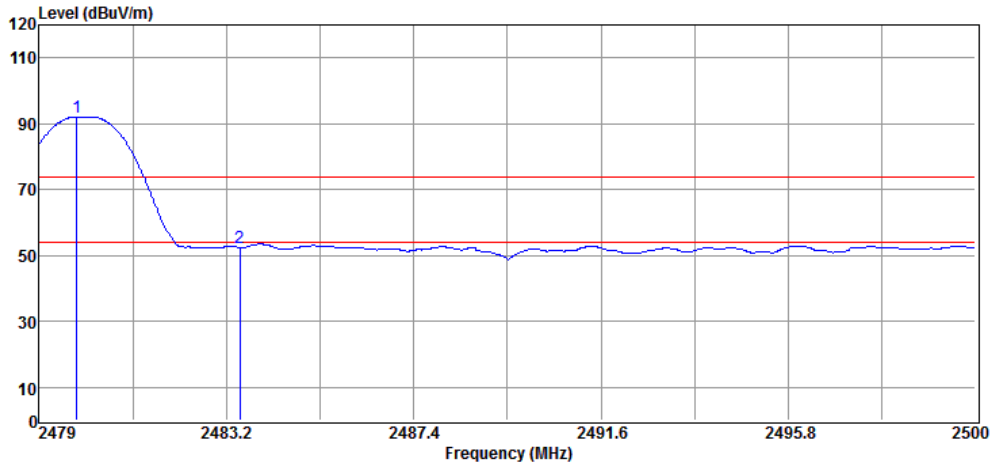
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	48.13	2.74	50.87	74.00	-23.13	Peak	HORIZONTAL
2	2400.00	49.43	2.78	52.21	71.32	-19.11	Peak	HORIZONTAL
3	2401.98	88.54	2.78	91.32	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR Bandedge High CH Tested by : Kevin Yao



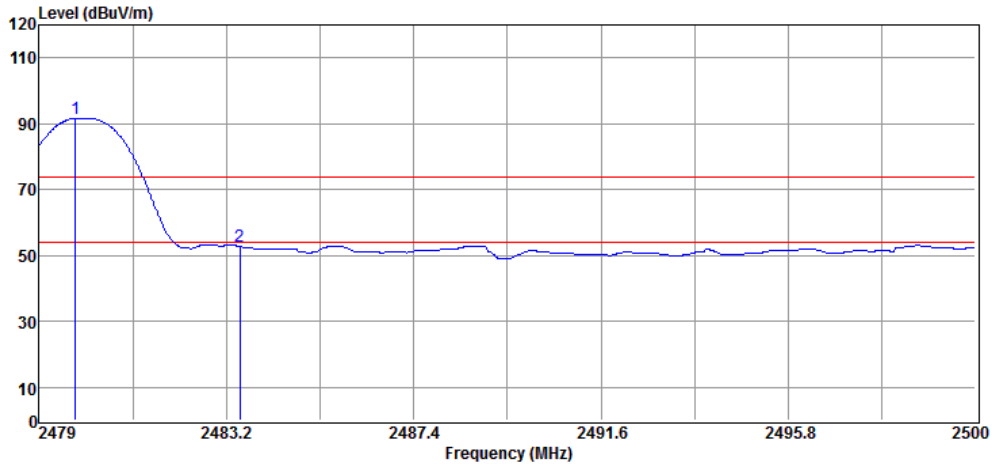
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.84	89.00	3.10	92.10	F	--	Peak	VERTICAL
2	2483.50	49.28	3.12	52.40	74.00	-21.60	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT BR Bandedge High CH Tested by : Kevin Yao



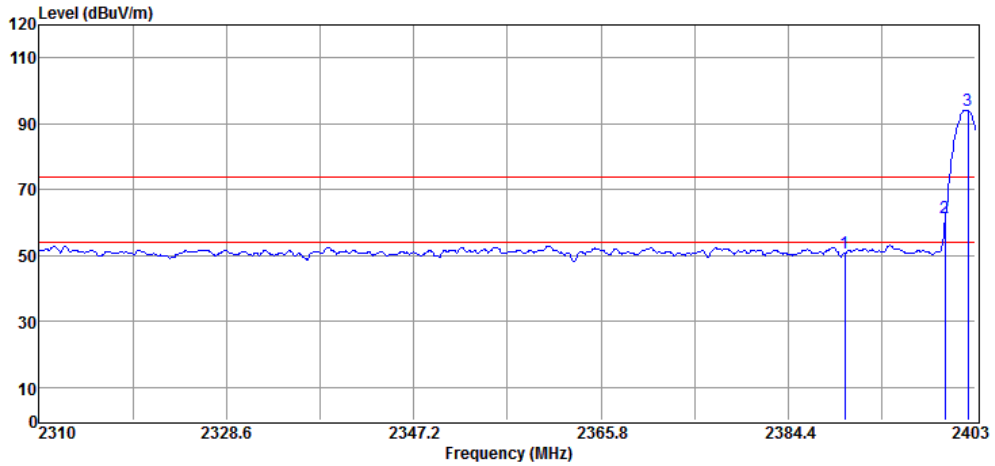
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.82	88.50	3.10	91.60	F	--	Peak	HORIZONTAL
2	2483.50	49.70	3.12	52.82	74.00	-21.18	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 Bandedge Low CH Tested by : Kevin Yao



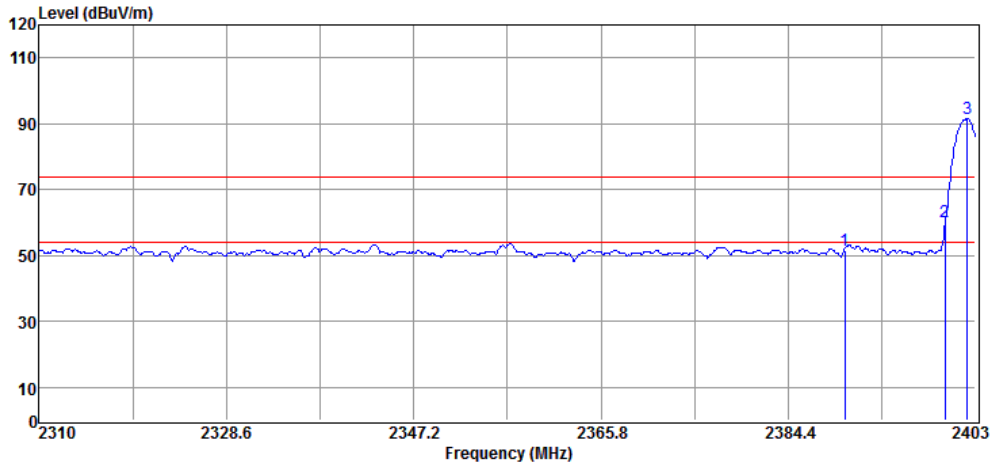
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	48.17	2.74	50.91	74.00	-23.09	Peak	VERTICAL
2	2400.00	58.66	2.78	61.44	74.08	-12.64	Peak	VERTICAL
3	2402.26	91.30	2.78	94.08	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 Bandedge Low CH Tested by : Kevin Yao



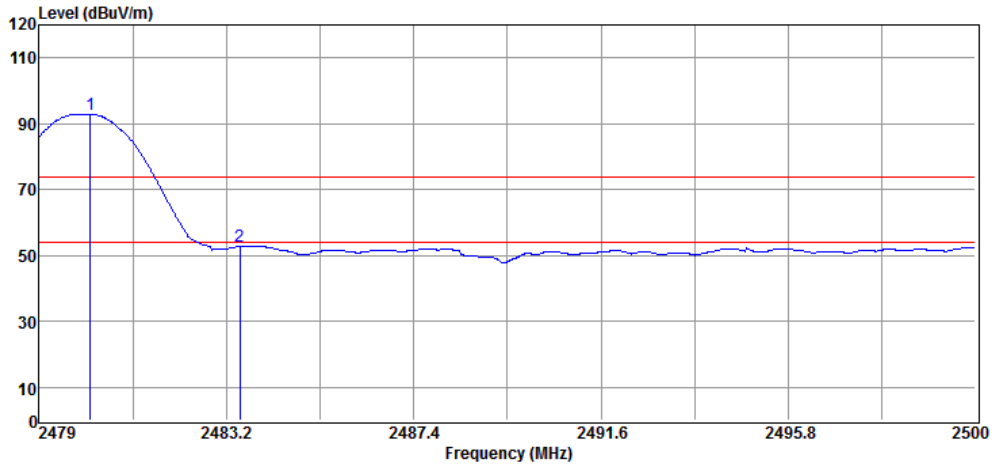
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	48.90	2.74	51.64	74.00	-22.36	Peak	HORIZONTAL
2	2400.00	57.53	2.78	60.31	71.73	-11.42	Peak	HORIZONTAL
3	2402.16	88.95	2.78	91.73	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 Bandedge High CH Tested by : Kevin Yao



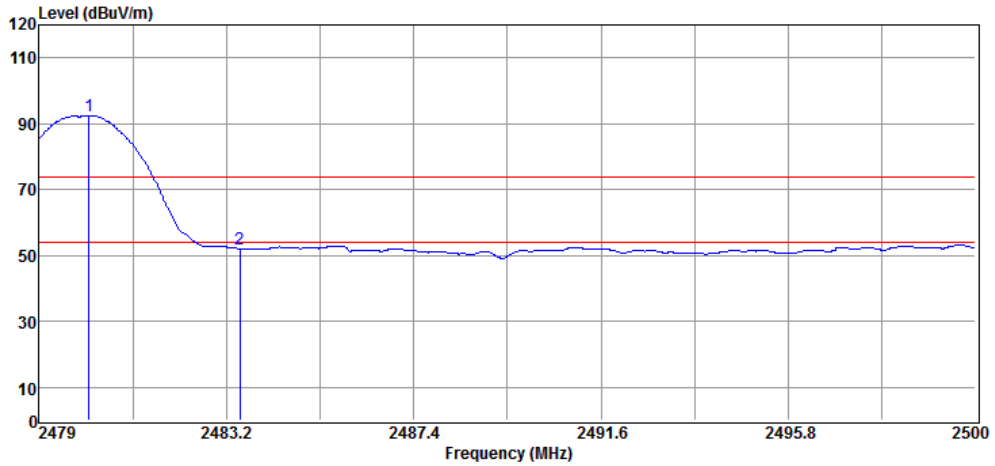
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.16	89.74	3.10	92.84	F	--	Peak	VERTICAL
2	2483.50	49.65	3.12	52.77	74.00	-21.23	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR1 Bandedge High CH Tested by : Kevin Yao



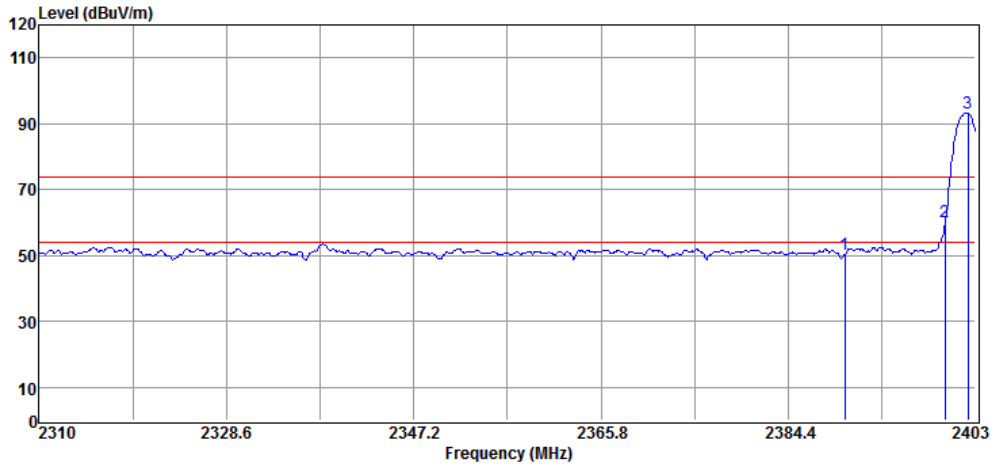
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.11	89.44	3.10	92.54	F	--	Peak	HORIZONTAL
2	2483.50	48.93	3.12	52.05	74.00	-21.95	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 Bandedge Low CH Tested by : Kevin Yao



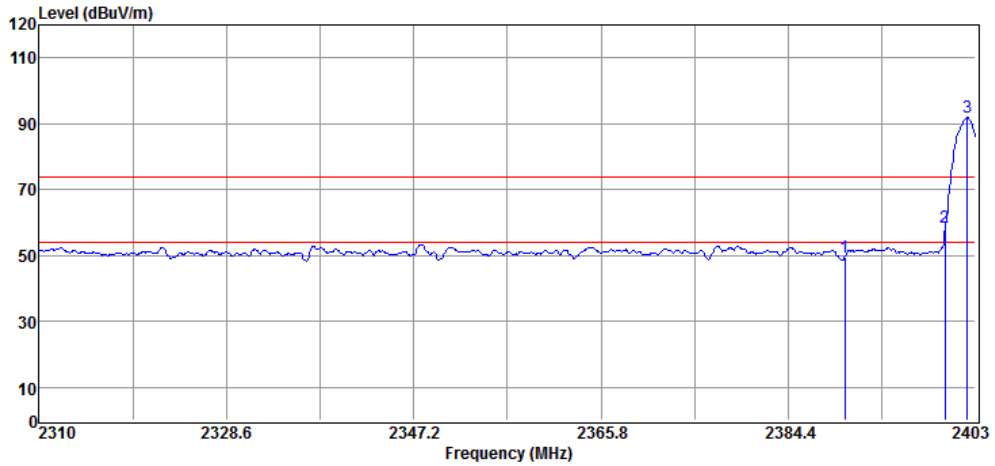
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.45	2.74	50.19	74.00	-23.81	Peak	VERTICAL
2	2400.00	57.55	2.78	60.33	73.39	-13.06	Peak	VERTICAL
3	2402.26	90.61	2.78	93.39	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 Bandedge Low CH Tested by : Kevin Yao



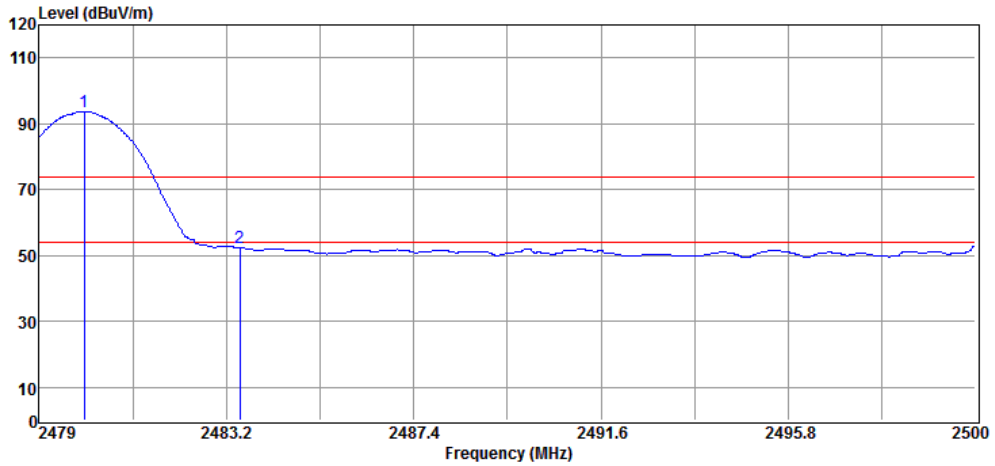
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	46.56	2.74	49.30	74.00	-24.70	Peak	HORIZONTAL
2	2400.00	55.98	2.78	58.76	71.84	-13.08	Peak	HORIZONTAL
3	2402.16	89.06	2.78	91.84	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 Bandedge High CH Tested by : Kevin Yao



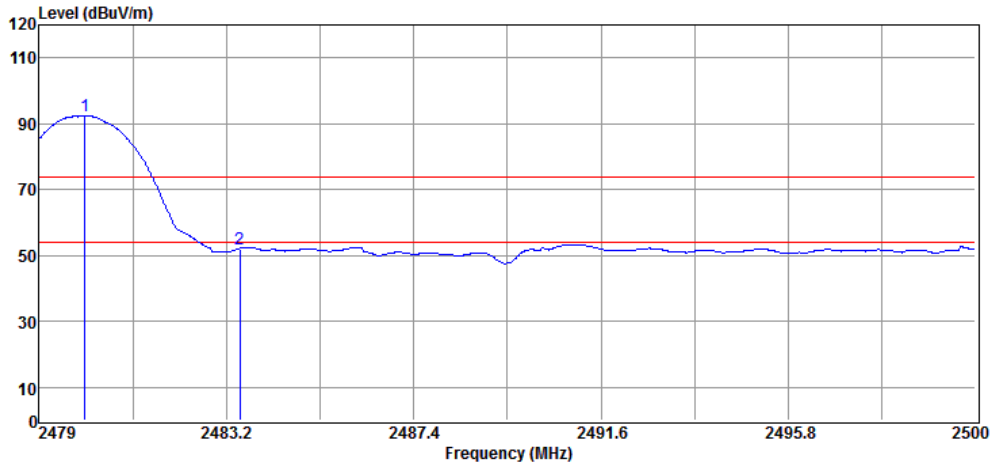
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.01	90.61	3.10	93.71	F	--	Peak	VERTICAL
2	2483.50	49.25	3.12	52.37	74.00	-21.63	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-04

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT EDR2 Bandedge High CH Tested by : Kevin Yao



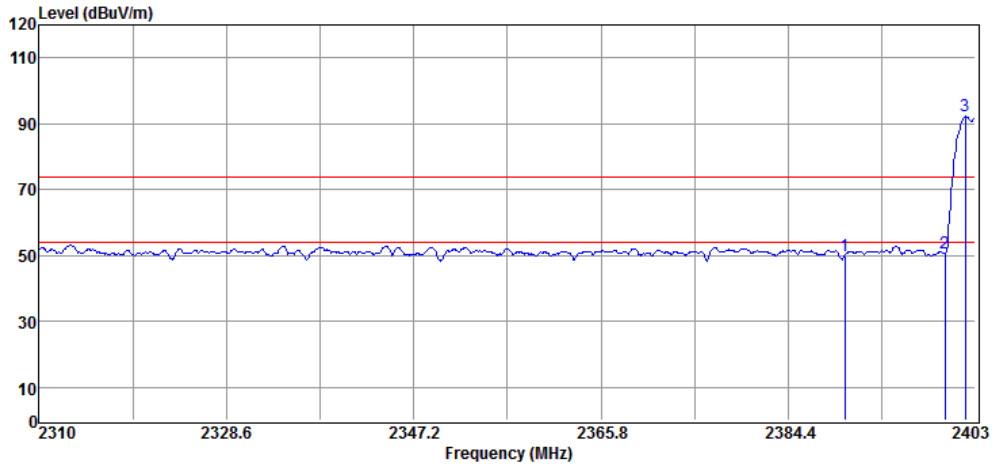
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.03	89.37	3.10	92.47	F	--	Peak	HORIZONTAL
2	2483.50	49.03	3.12	52.15	74.00	-21.85	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR Bandedge Low Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.01	2.74	49.75	74.00	-24.25	Peak	VERTICAL
2	2400.00	48.08	2.78	50.86	72.21	-21.35	Peak	VERTICAL
3	2401.98	89.43	2.78	92.21	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
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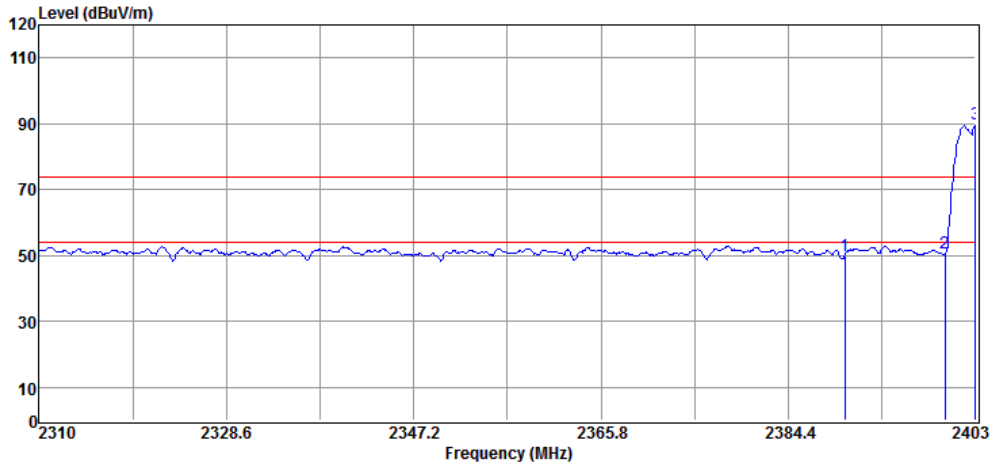
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR Bandedge Low Tested by : Kevin Yao



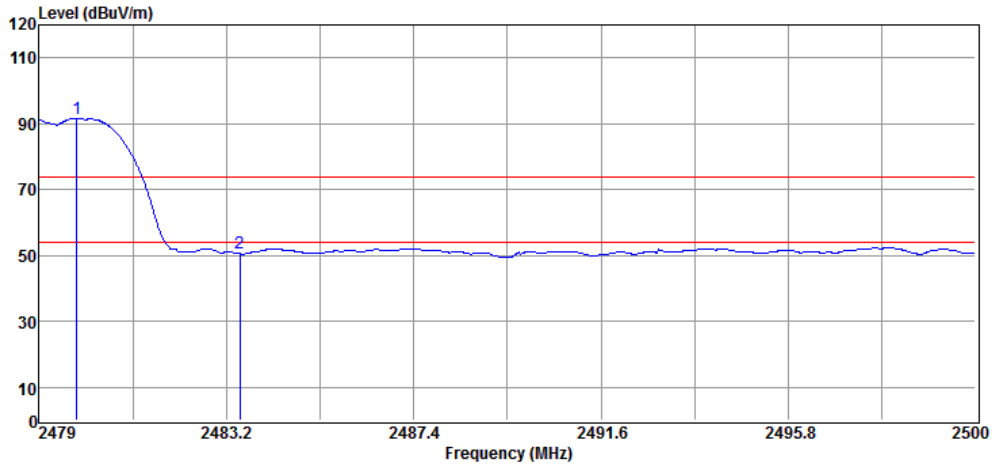
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.06	2.74	49.80	74.00	-24.20	Peak	HORIZONTAL
2	2400.00	47.82	2.78	50.60	70.04	-19.44	Peak	HORIZONTAL
3	2403.00	87.26	2.78	90.04	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR Bandedge High Tested by : Kevin Yao



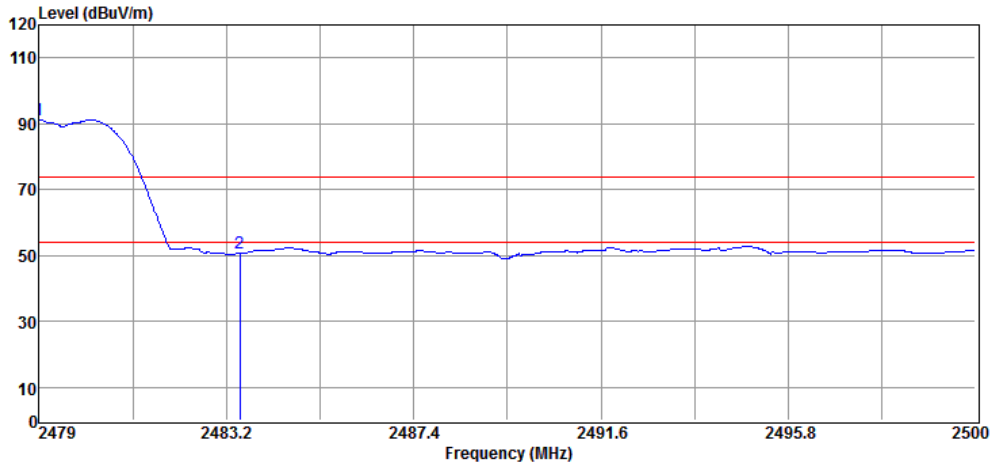
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.84	88.53	3.10	91.63	F	--	Peak	VERTICAL
2	2483.50	47.47	3.12	50.59	74.00	-23.41	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping BR Bandedge High Tested by : Kevin Yao



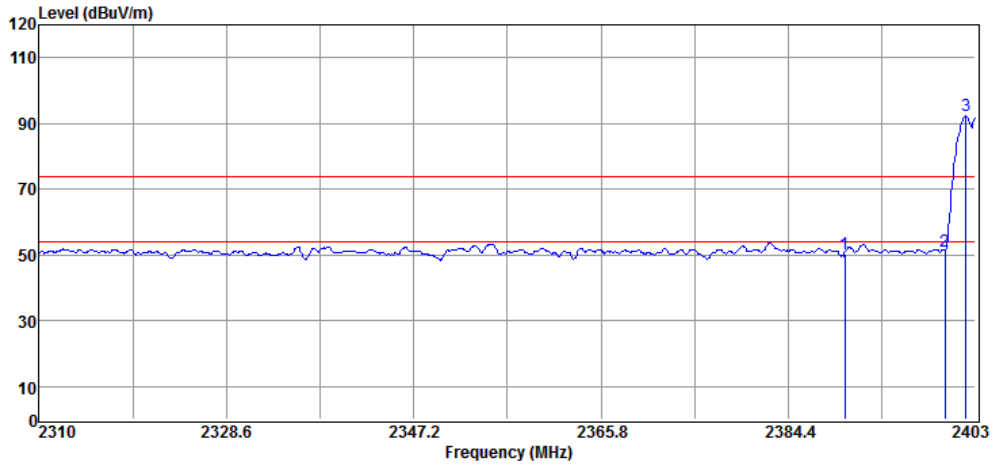
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.00	88.18	3.08	91.26	F	--	Peak	HORIZONTAL
2	2483.50	47.55	3.12	50.67	74.00	-23.33	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 Bandedge Low Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.48	2.74	50.22	74.00	-23.78	Peak	VERTICAL
2	2400.00	48.45	2.78	51.23	72.18	-20.95	Peak	VERTICAL
3	2402.07	89.40	2.78	92.18	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

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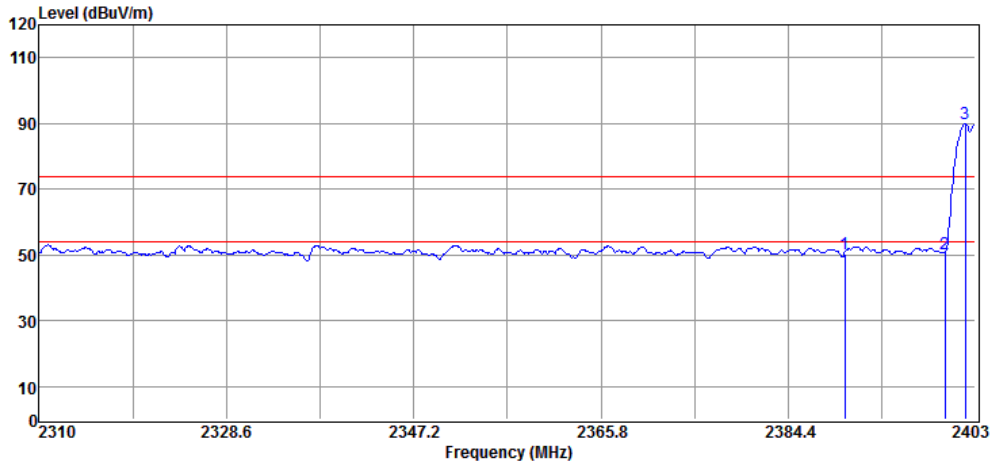
Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 Bandedge Low Tested by : Kevin Yao



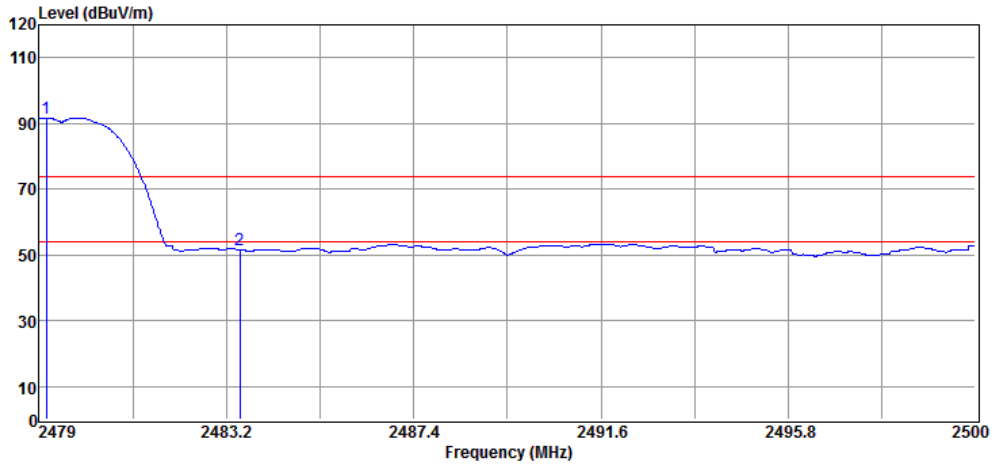
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.65	2.74	50.39	74.00	-23.61	Peak	HORIZONTAL
2	2400.00	47.46	2.78	50.24	69.83	-19.59	Peak	HORIZONTAL
3	2401.98	87.05	2.78	89.83	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 Bandedge High Tested by : Kevin Yao



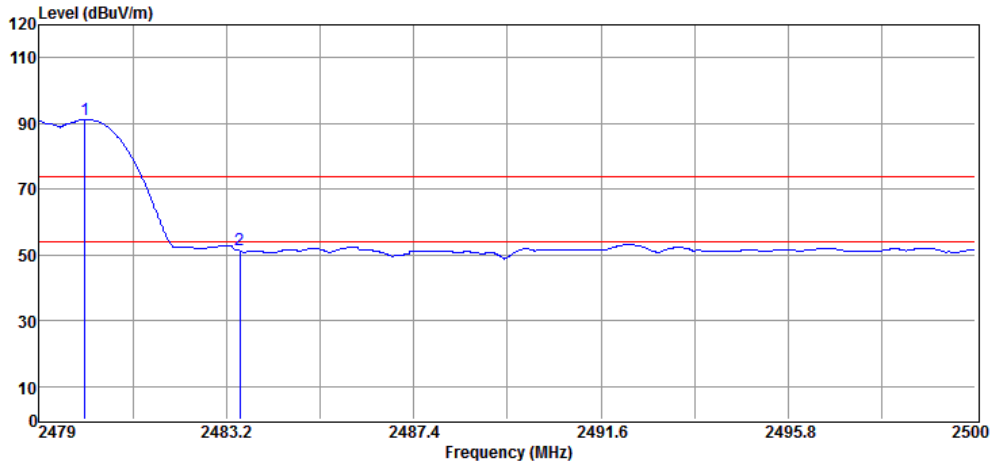
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.17	88.54	3.09	91.63	F	--	Peak	VERTICAL
2	2483.50	48.50	3.12	51.62	74.00	-22.38	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR1 Bandedge High Tested by : Kevin Yao



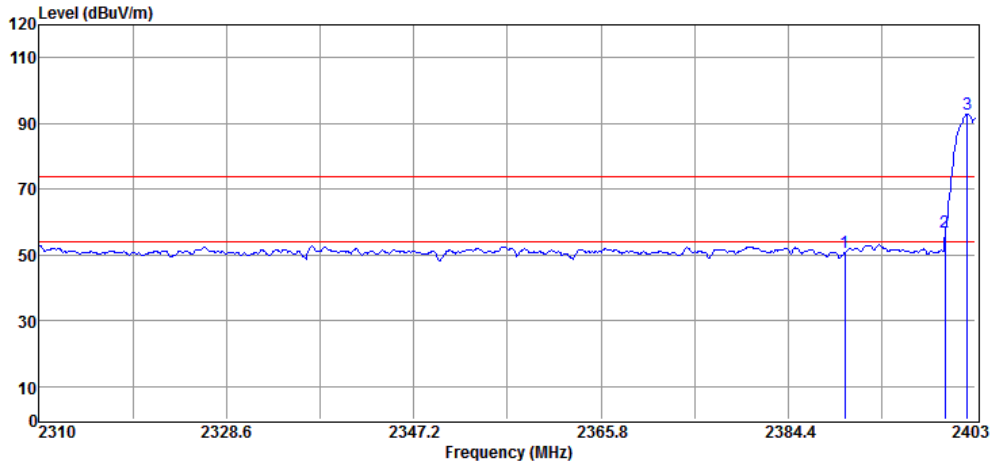
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2480.03	88.03	3.10	91.13	F	--	Peak	HORIZONTAL
2	2483.50	48.22	3.12	51.34	74.00	-22.66	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 Bandedge Low Tested by : Kevin Yao



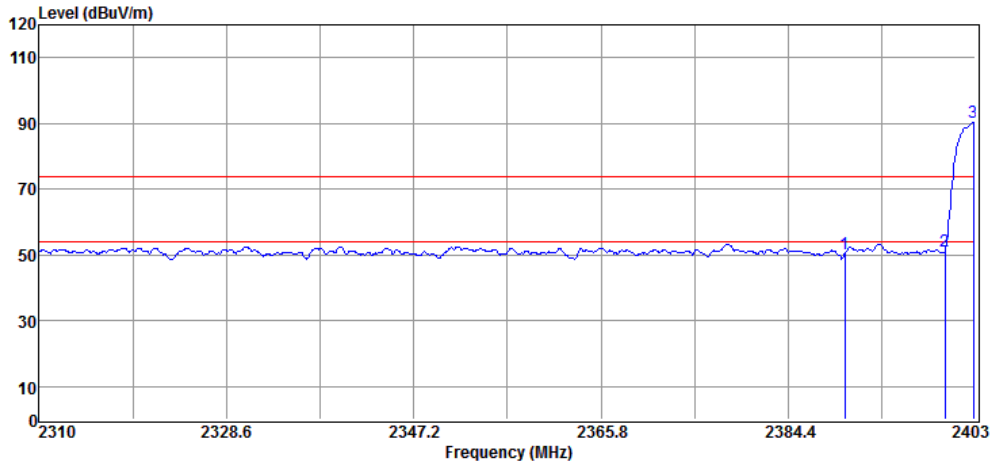
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.86	2.74	50.60	74.00	-23.40	Peak	VERTICAL
2	2400.00	53.97	2.78	56.75	72.96	-16.21	Peak	VERTICAL
3	2402.16	90.18	2.78	92.96	F	--	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 Bandedge Low Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2390.00	47.43	2.74	50.17	74.00	-23.83	Peak	HORIZONTAL
2	2400.00	48.48	2.78	51.26	70.51	-19.25	Peak	HORIZONTAL
3	2402.81	87.73	2.78	90.51	F	--	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

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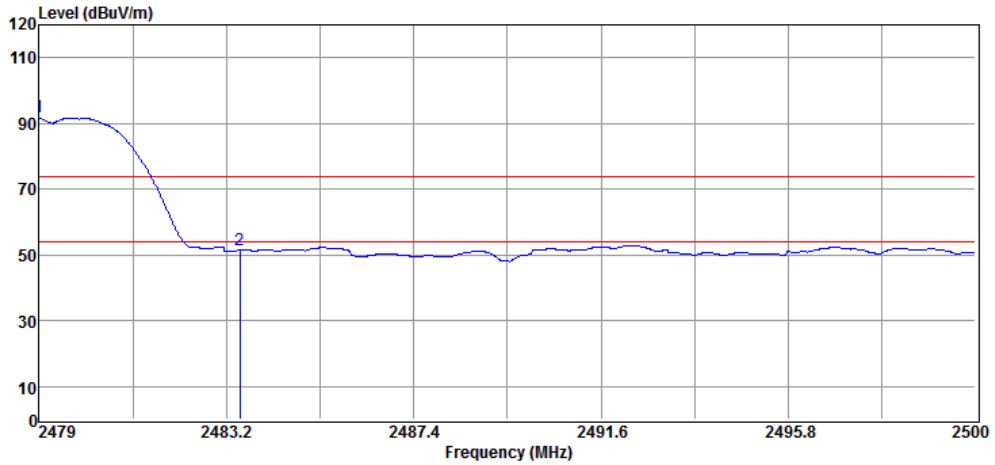
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 Bandedge High Tested by : Kevin Yao



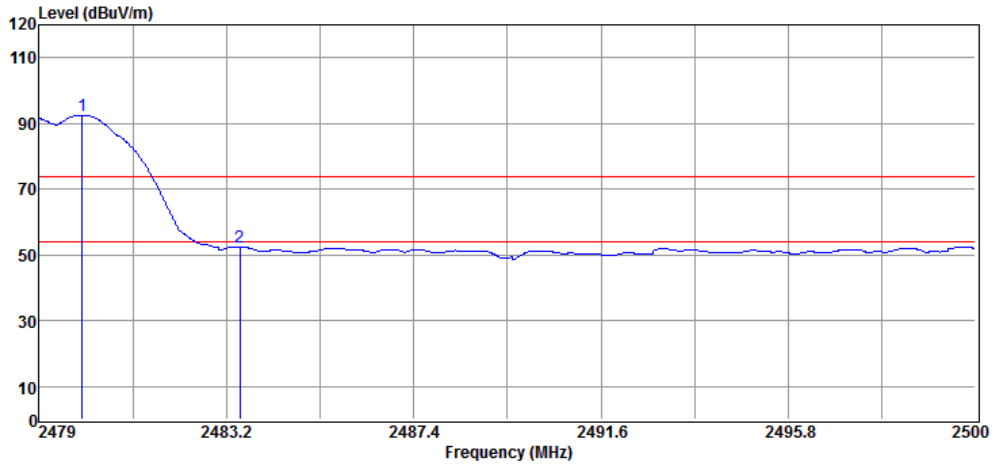
No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.00	88.71	3.08	91.79	F	--	Peak	VERTICAL
2	2483.50	48.29	3.12	51.41	74.00	-22.59	Peak	VERTICAL

Note: "F" denotes fundamental frequency.

International Standard Laboratory Corp.
Company Address:No.120,Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan

Date: 2024-09-05

Project Number. : 24LR0127 Temp.(℃)/RH(%) : 25/52
Test Mode : BT Hopping EDR2 Bandedge High Tested by : Kevin Yao



No	Freq MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	2479.97	89.47	3.10	92.57	F	--	Peak	HORIZONTAL
2	2483.50	49.39	3.12	52.51	74.00	-21.49	Peak	HORIZONTAL

Note: "F" denotes fundamental frequency.

9. 20dB Bandwidth

9.1 Standard Applicable

According to §15.247(a)(1) for frequency hopping systems operating in the 2400MHz-2483.5 MHz no limit for 20dB bandwidth.

9.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW= 1 % - 5% of Bandwidth., Span= 3MHz, Sweep=auto
4. Mark the peak frequency and –20dB (upper and lower) frequency and 99%.
5. Repeat above procedures until all frequency measured were complete.

9.3 Measurement Result

BR Mode

CH	20dB Bandwidth (MHz)
Low	0.928
Mid	0.927
High	0.926

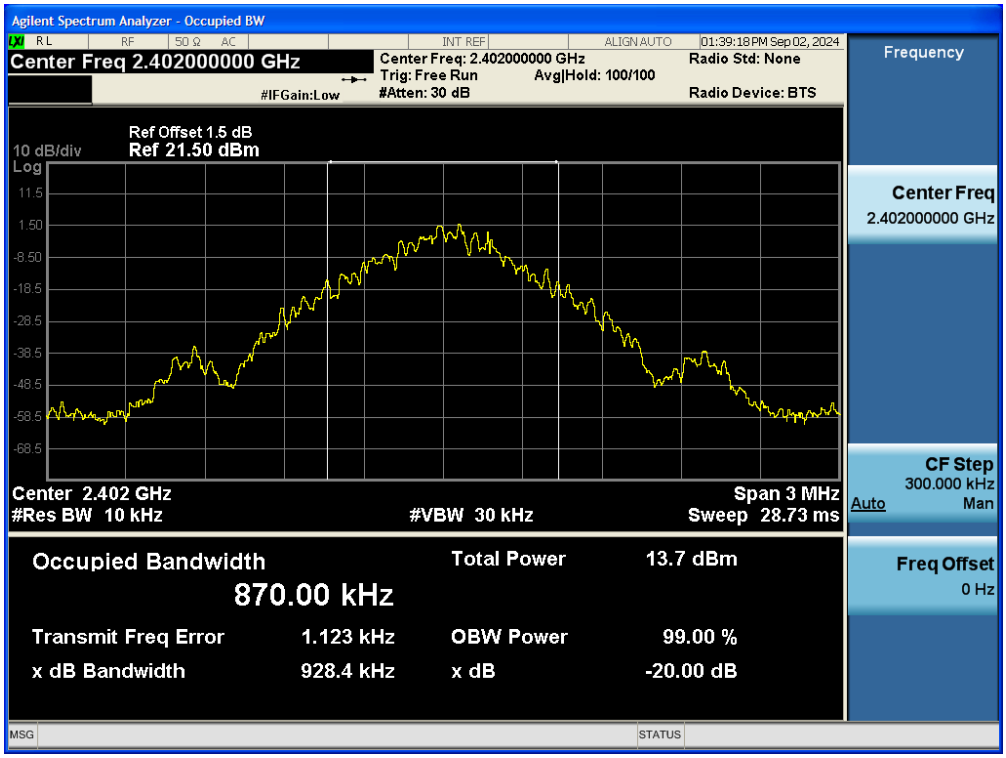
EDR1 Mode

CH	20dB Bandwidth (MHz)	2/3* 20dB Bandwidth (MHz)
Lower	1.368	0.912
Mid	1.369	0.912
Higher	1.379	0.919

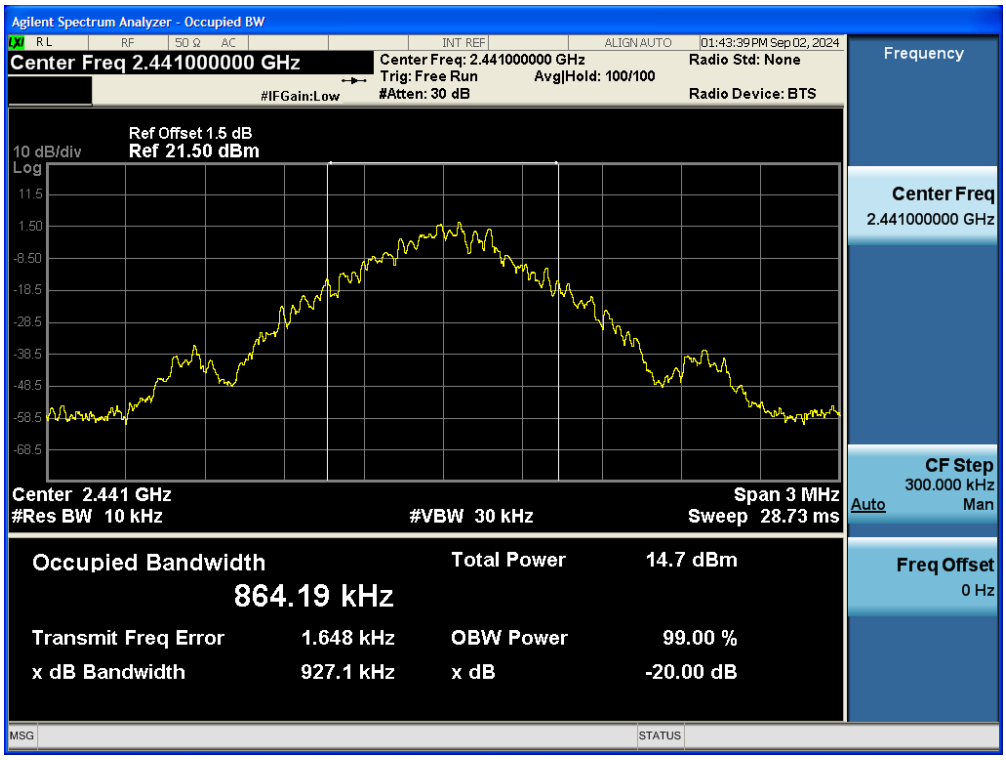
EDR2 Mode

CH	20dB Bandwidth (MHz)	2/3* 20dB Bandwidth (MHz)
Lower	1.369	0.912
Mid	1.372	0.914
Higher	1.361	0.907

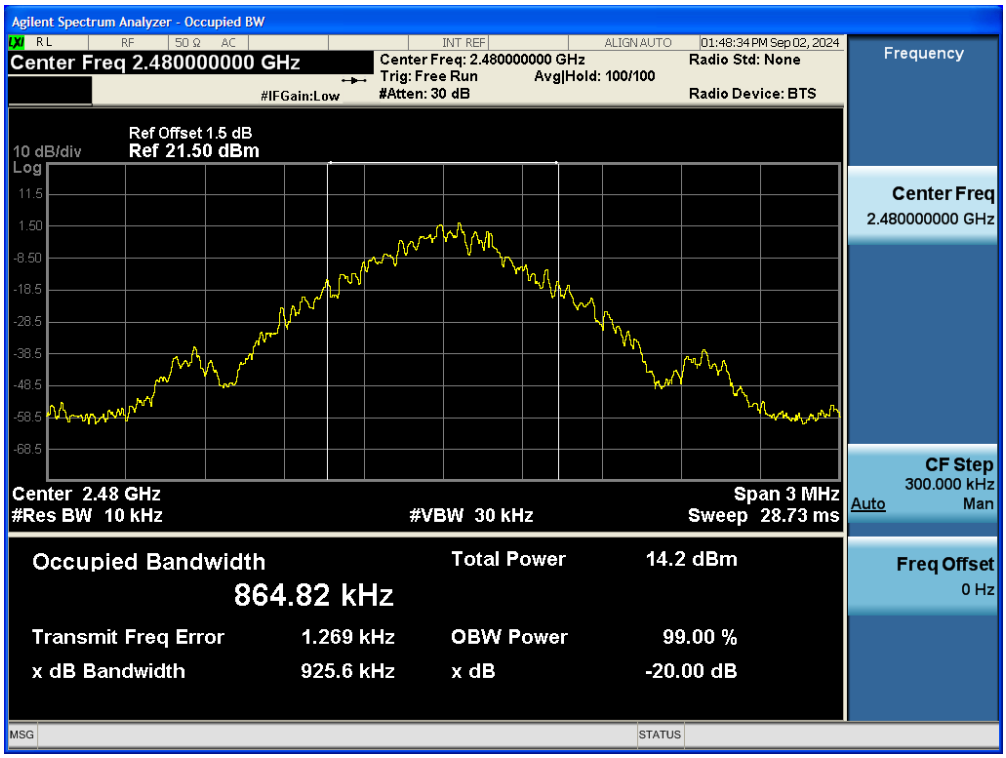
Test Data: BR\2402MHz



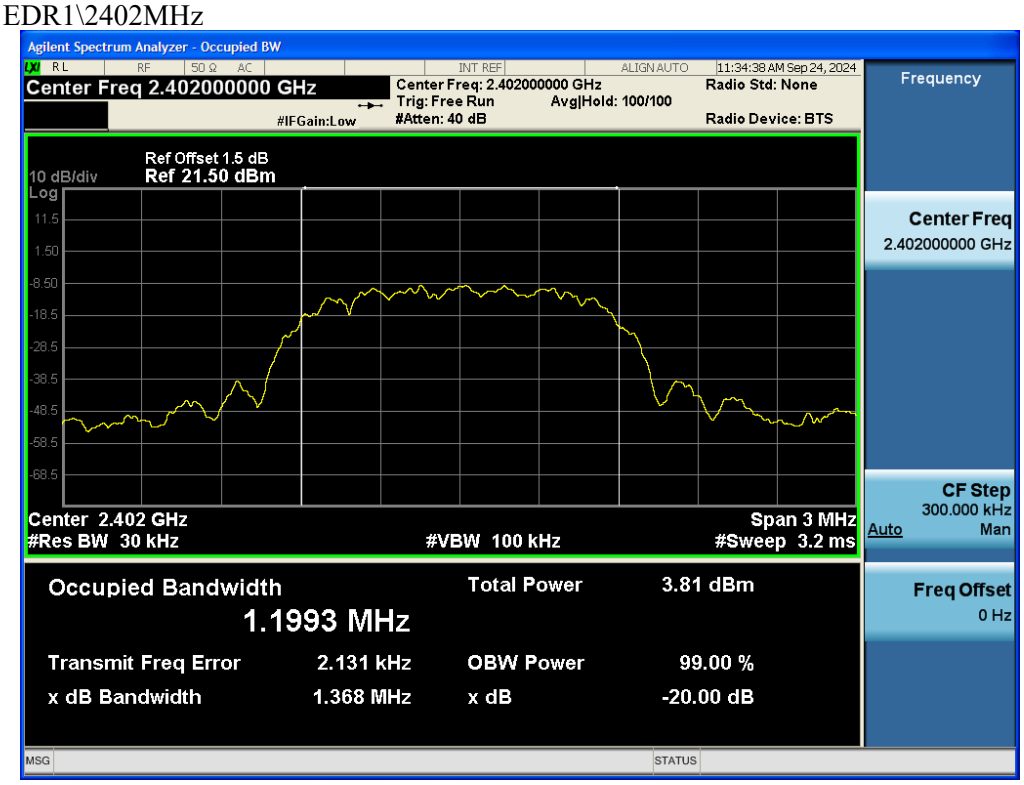
Test Data: BR\2441MHz



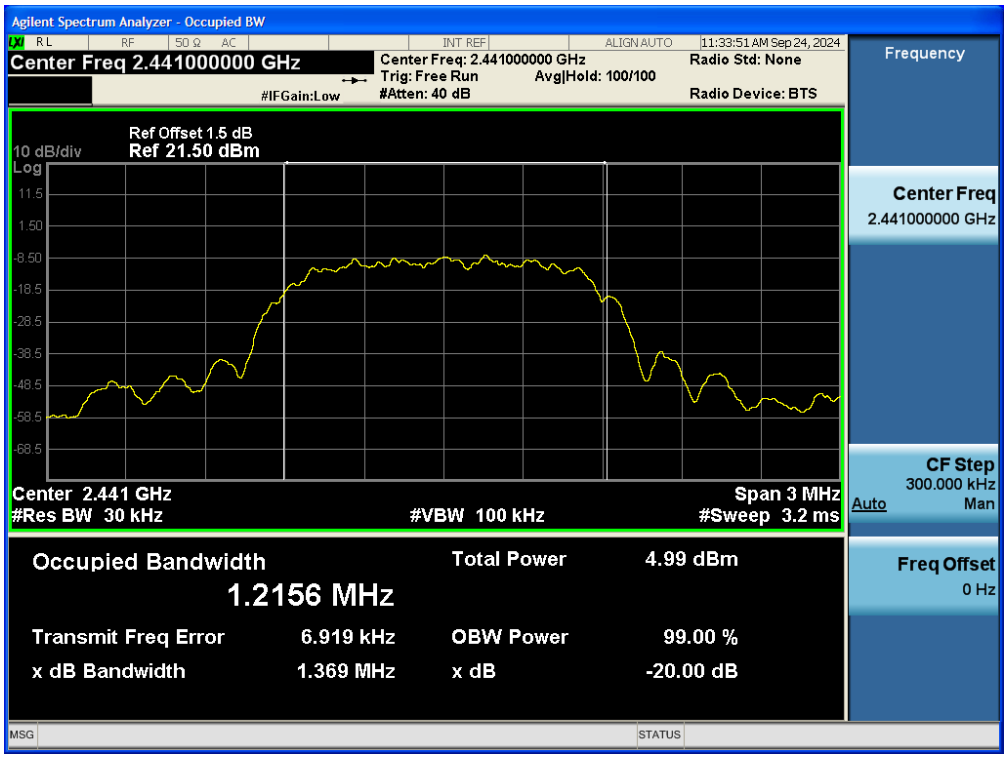
Test Data: BR\2480MHz



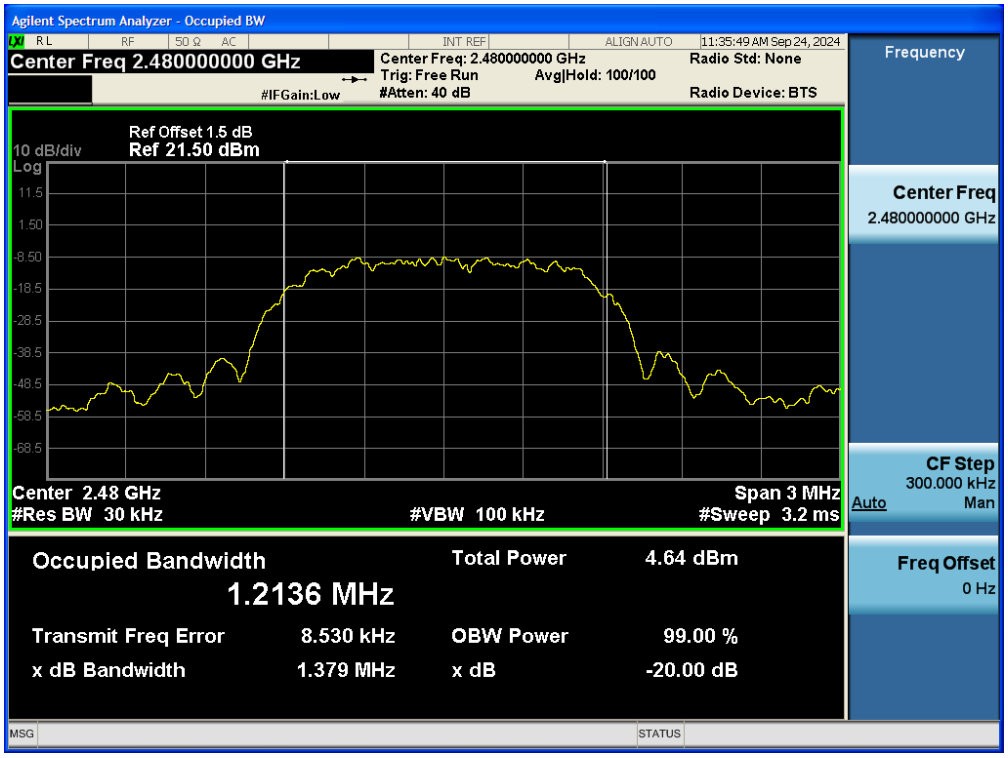
Test Data: EDR1\2402MHz



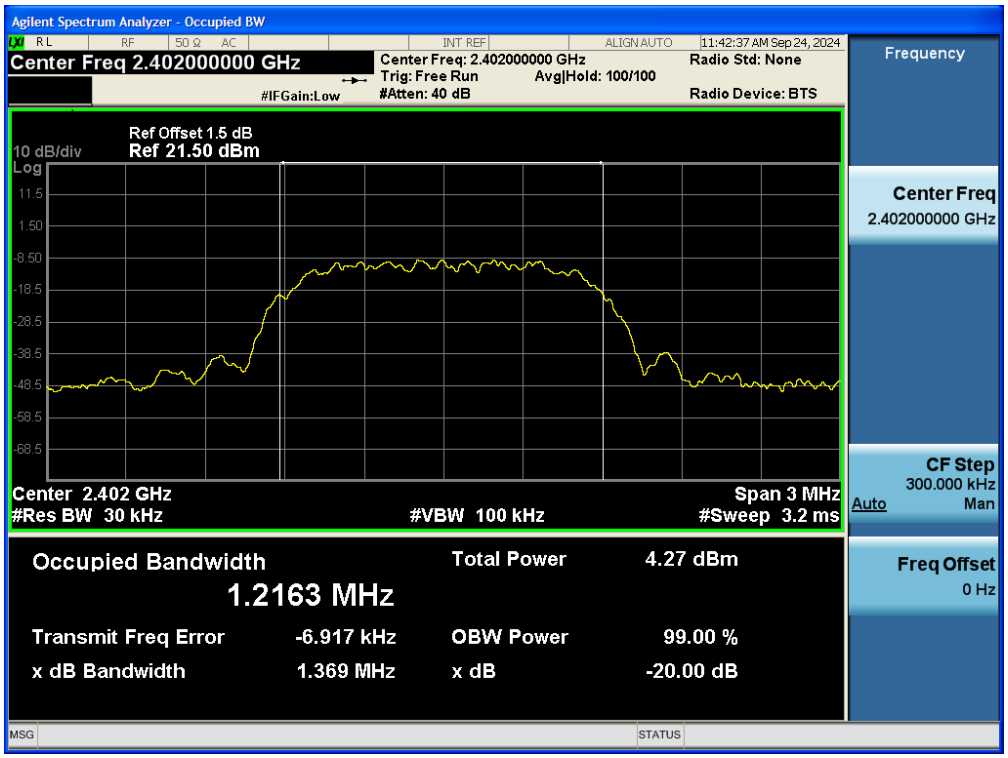
Test Data: EDR1\2441MHz



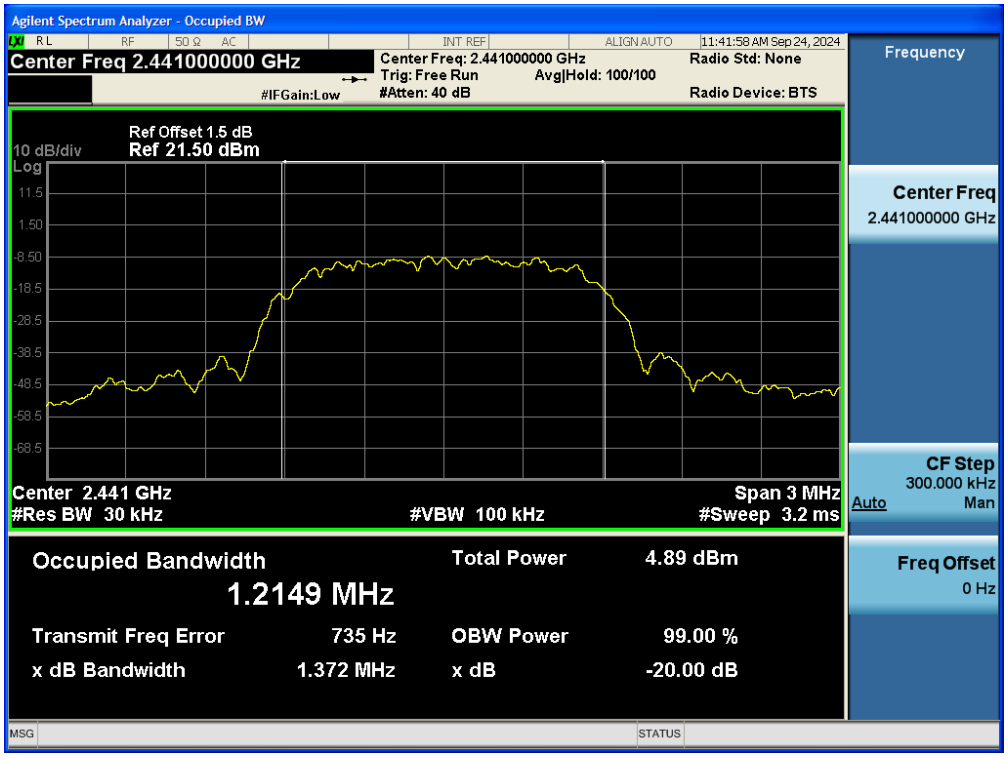
Test Data: EDR1\2480MHz



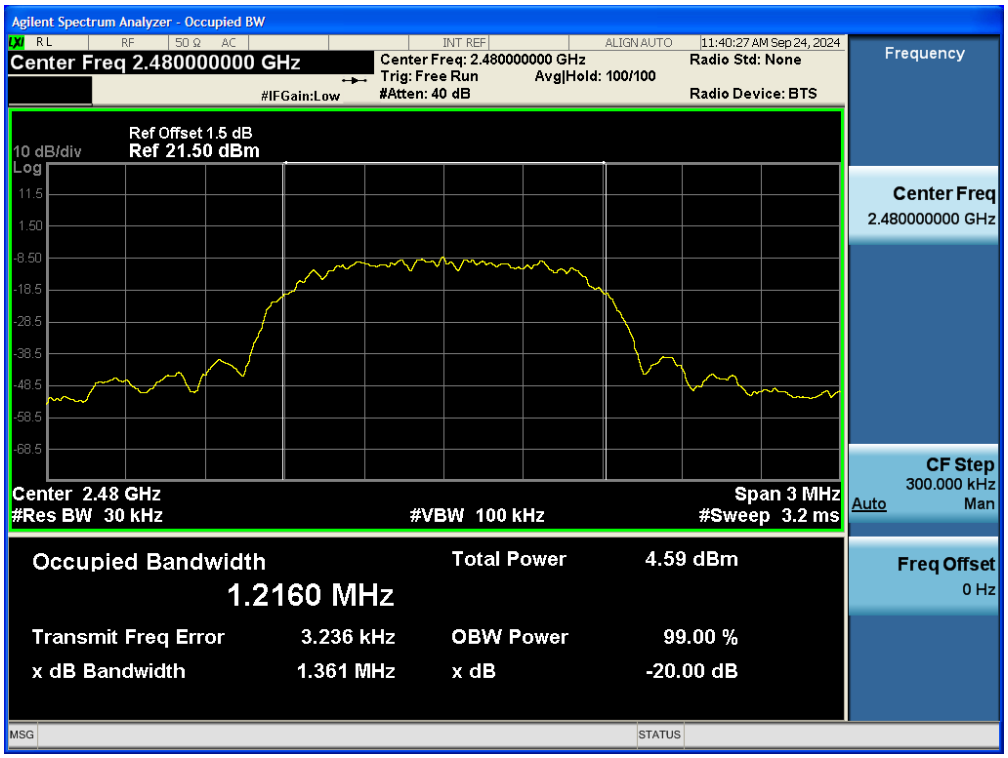
Test Data: EDR2\2402MHz



Test Data: EDR2\2441MHz



Test Data: EDR2\2480MHz



10. Frequency Separation

10.1 Standard Applicable

According to FCC 15.247 (a)(1)
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

10.2 Measurement Procedure

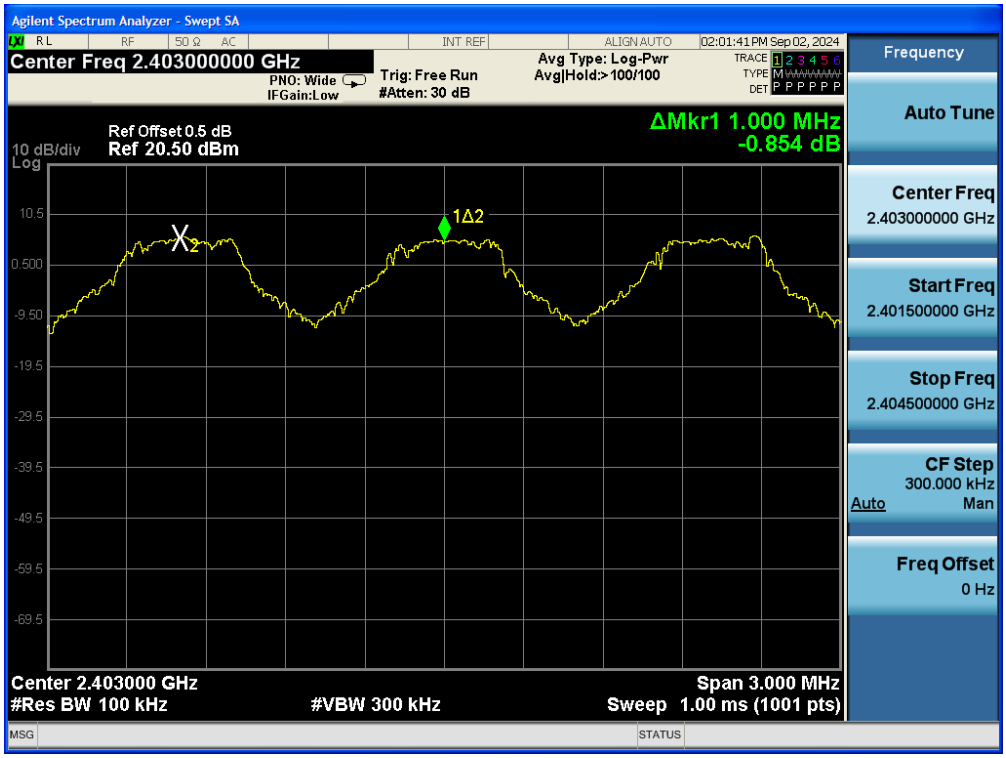
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: Wide enough to capture the peaks of two adjacent channels.
2. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
3. VBW≥RBW, Sweep: Auto.
4. Detector function: Peak.
5. Trace: Max hold.
6. Allow the trace to stabilize.
7. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

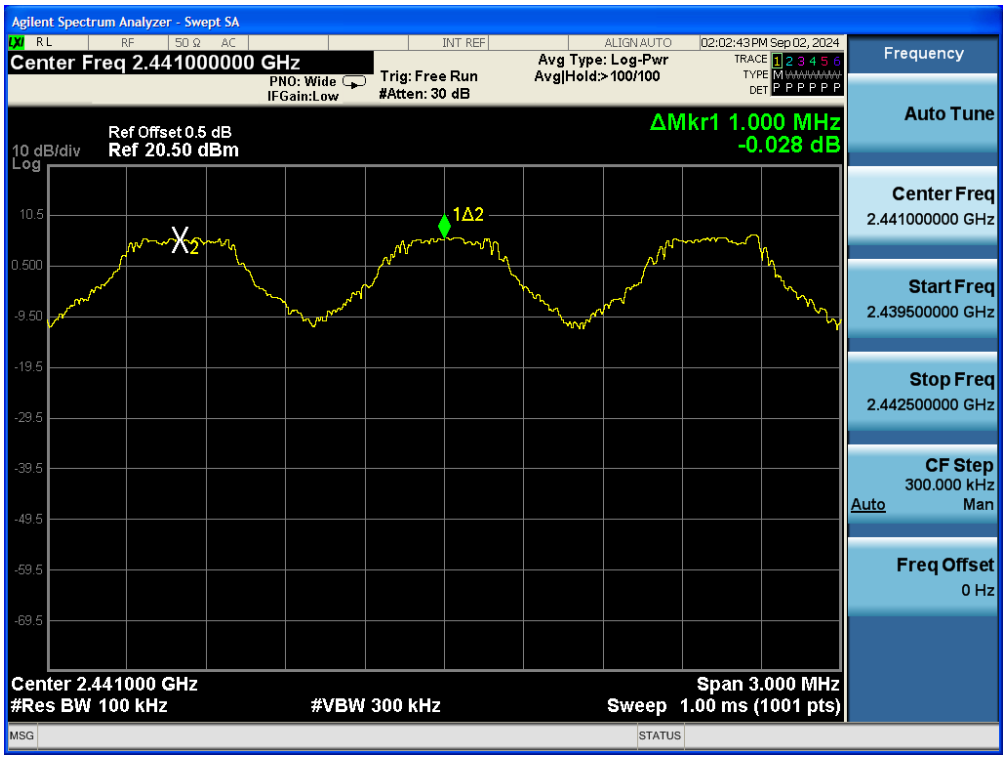
10.3 Measurement Result

Channel separation (MHz)	Limit	Result
1	≥ 25kHz or 2/3 of the 20dB bandwidth (whichever is greater)	PASS

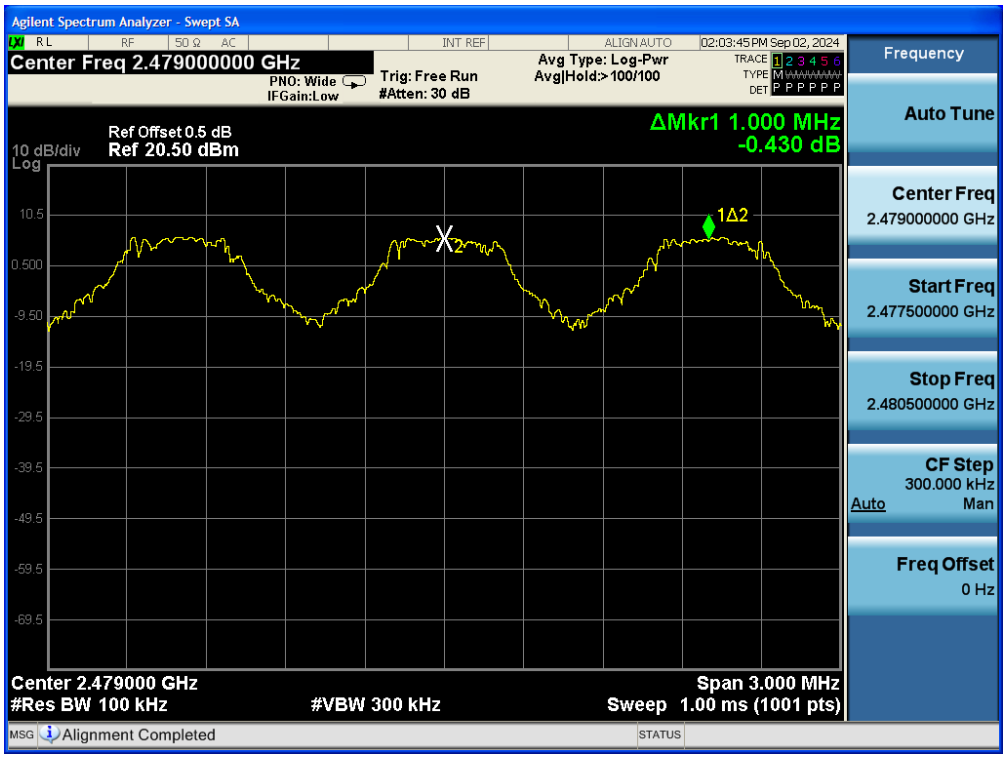
Test Data: 2402MHz



Test Data: 2441MHz



Test Data: 2480MHz



11. Number of Hopping Frequency

11.1 Standard Applicable

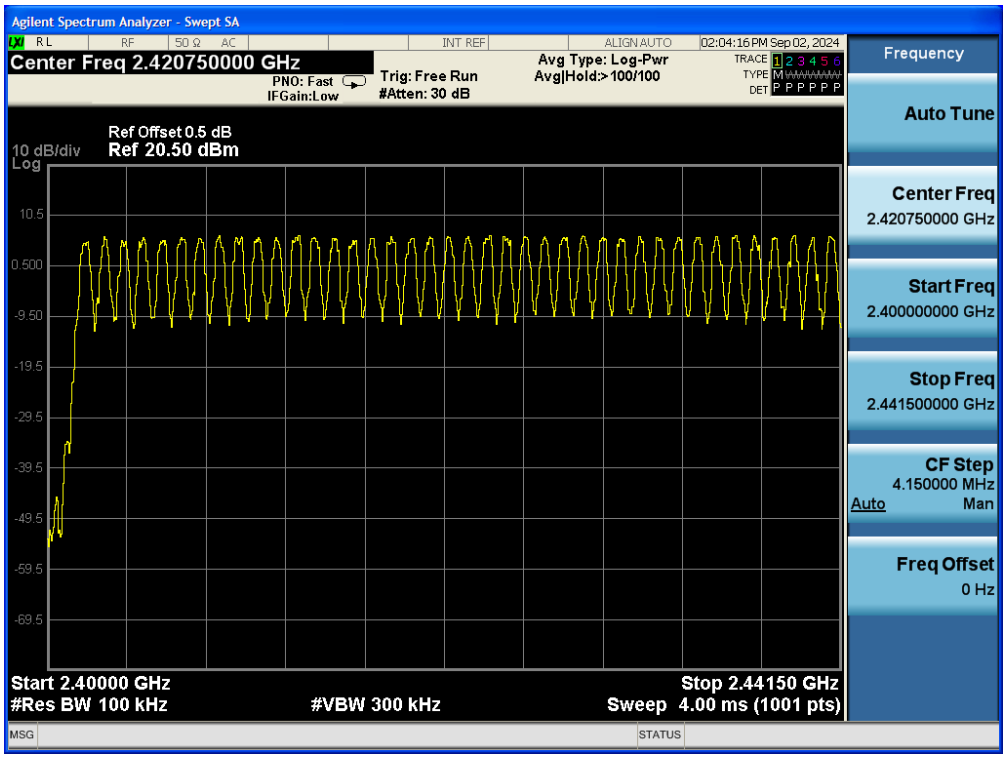
According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

11.2 Measurement Procedure

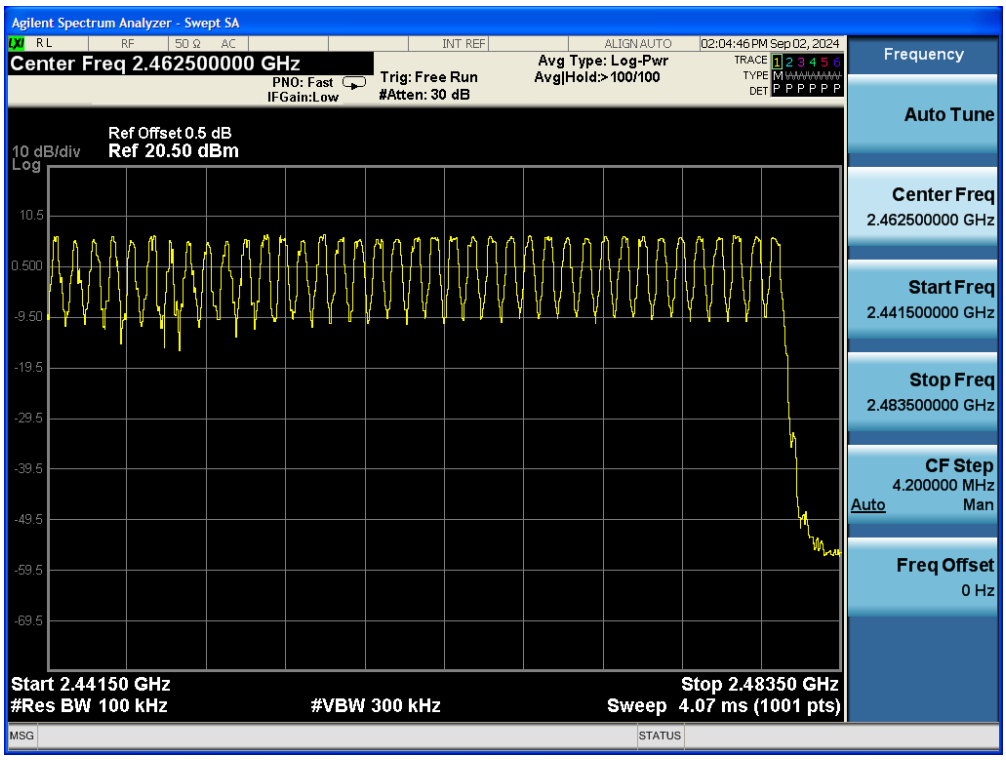
1. Set the EUT in hopping mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2441.5MHz and Start=2441.5MHz, Stop = 2483.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW=100kHz, VBW=300kHz
5. Max hold, view and count how many channels in the band.

11.3 Measurement Result

Test Data: 1



TestData: 2



12. Time of Occupancy (Dwell Time)

12.1 Standard Applicable

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz band. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channels are employed.

12.2 Measurement Procedure

1. Set the EUT in hopping mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW / VBW =1MHz, Span = 0Hz, Adjust Sweep time to capture the entire dwell time per hopping channel.
5. Use the marker-delta function to determine the transmit time per hop.

12.3 Measurement Result

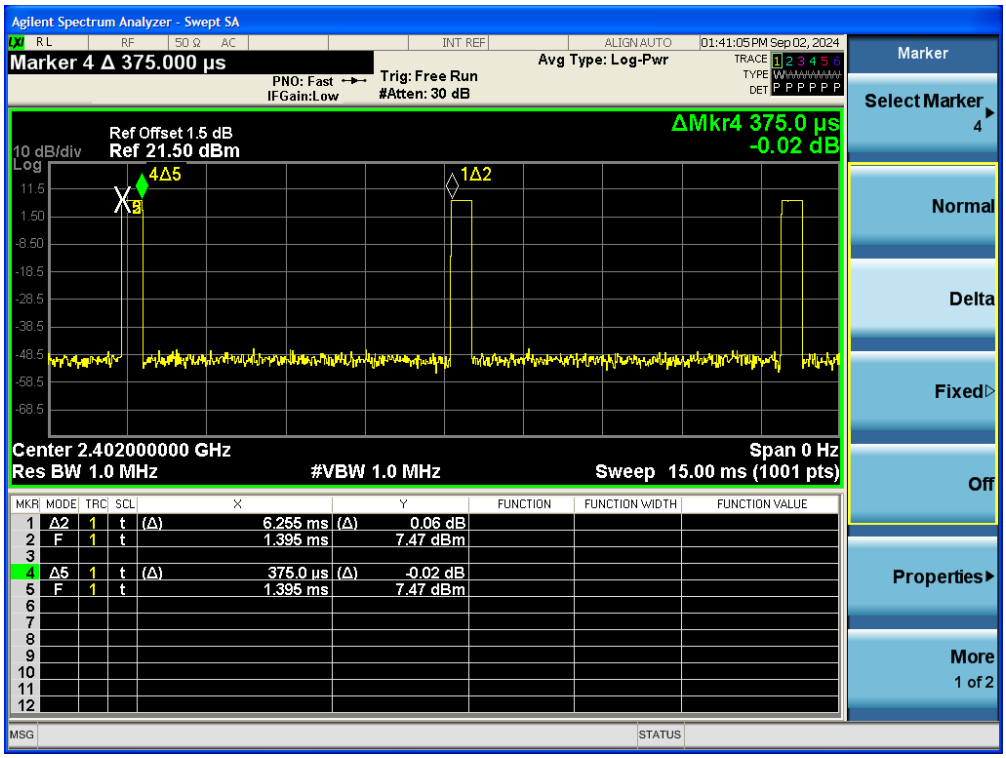
A period time = 0.4 (s) * 79 = 31.6 (s)

CH Low DH1 time slot=0.375(ms)*(1600/2/79)* 31.6 = 120(ms)
DH3 time slot=1.63(ms)*(1600/4/79)* 31.6 = 260.8(ms)
DH5 time slot=2.884(ms)*(1600/6/79)* 31.6 = 307.63(ms)

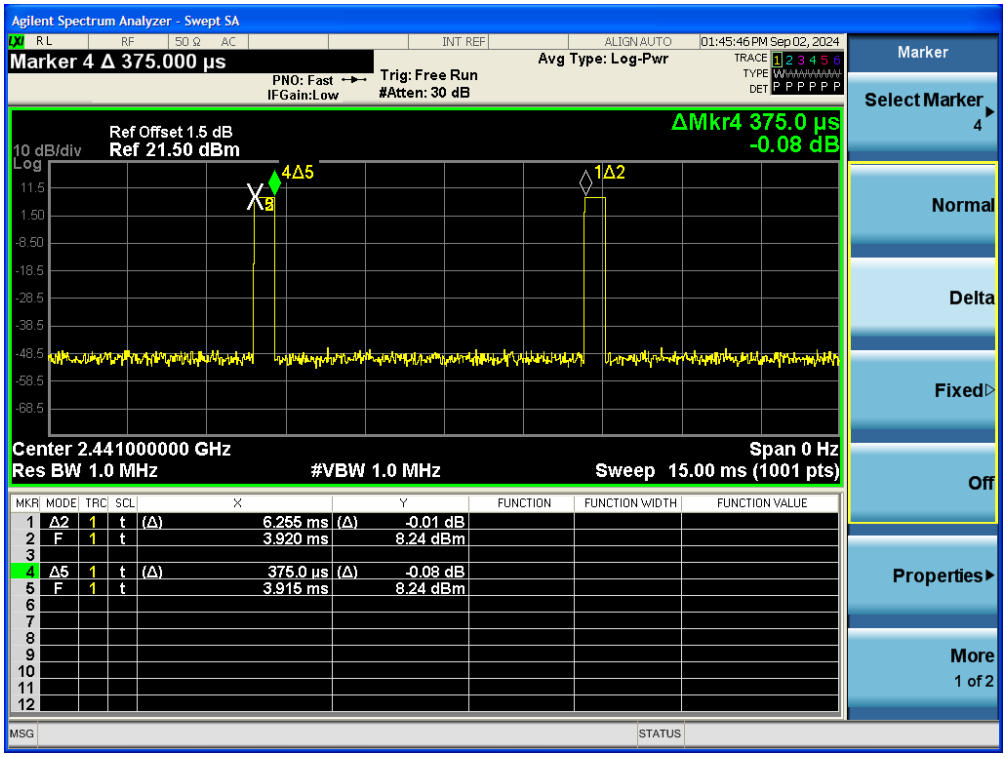
CH Mid DH1 time slot=0.375(ms)*(1600/2/79)* 31.6 = 120(ms)
DH3 time slot=1.63(ms)*(1600/4/79)* 31.6 = 260.8(ms)
DH5 time slot=2.884(ms)*(1600/6/79)* 31.6 = 307.63(ms)

CH High DH1 time slot=0.375(ms)*(1600/2/79)* 31.6 = 120(ms)
DH3 time slot=1.63(ms)*(1600/4/79)* 31.6 = 260.8(ms)
DH5 time slot=2.884(ms)*(1600/6/79)* 31.6 = 307.63(ms)

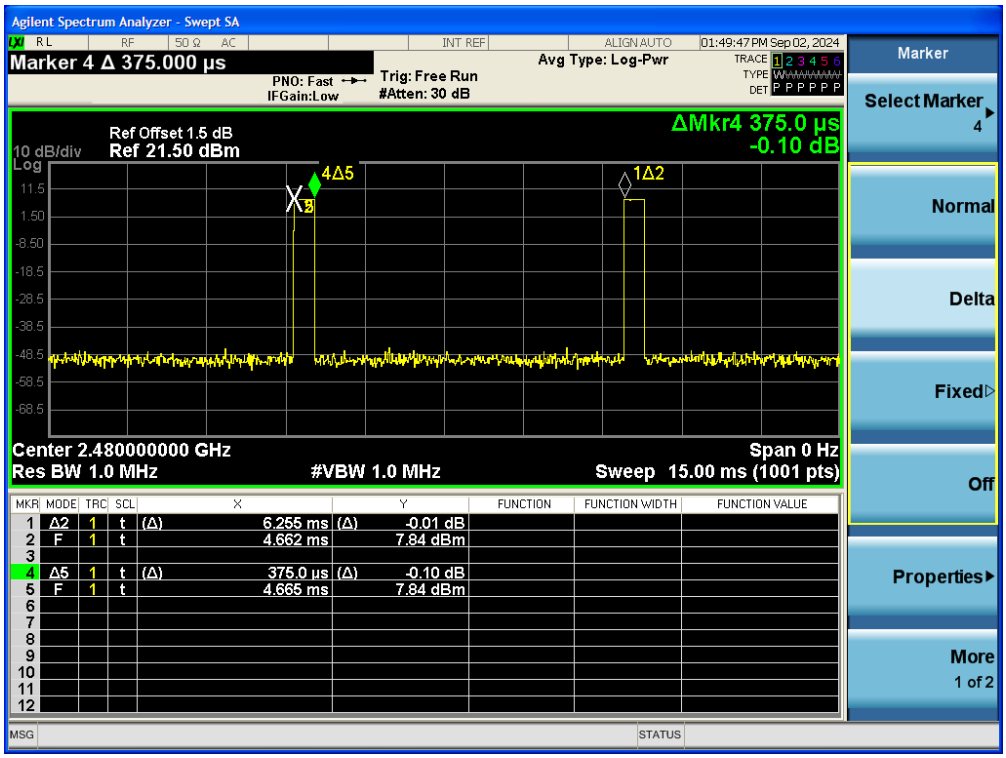
Test Data: DH1\2402MHz



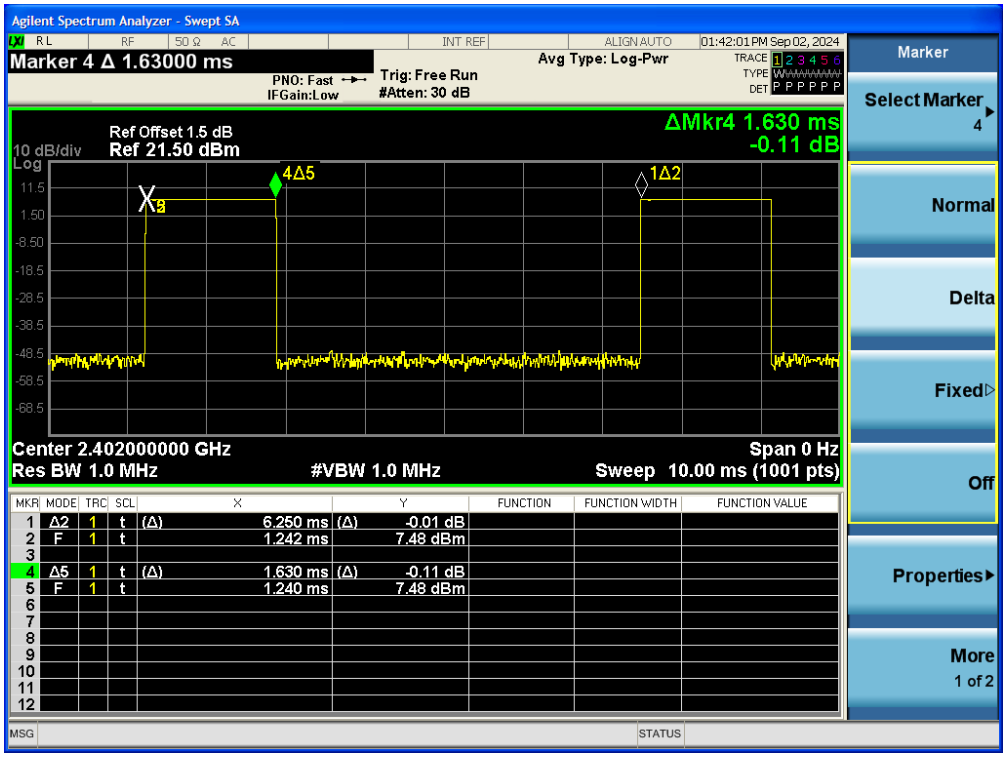
Test Data: DH1\2441MHz



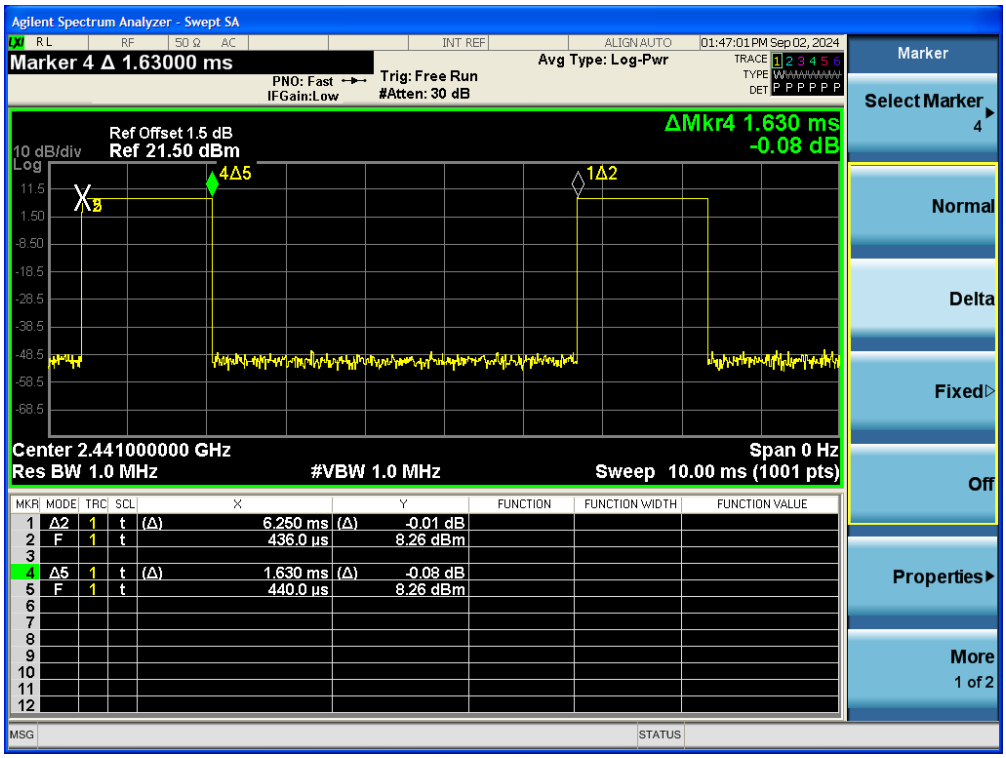
Test Data: DH1\2480MHz



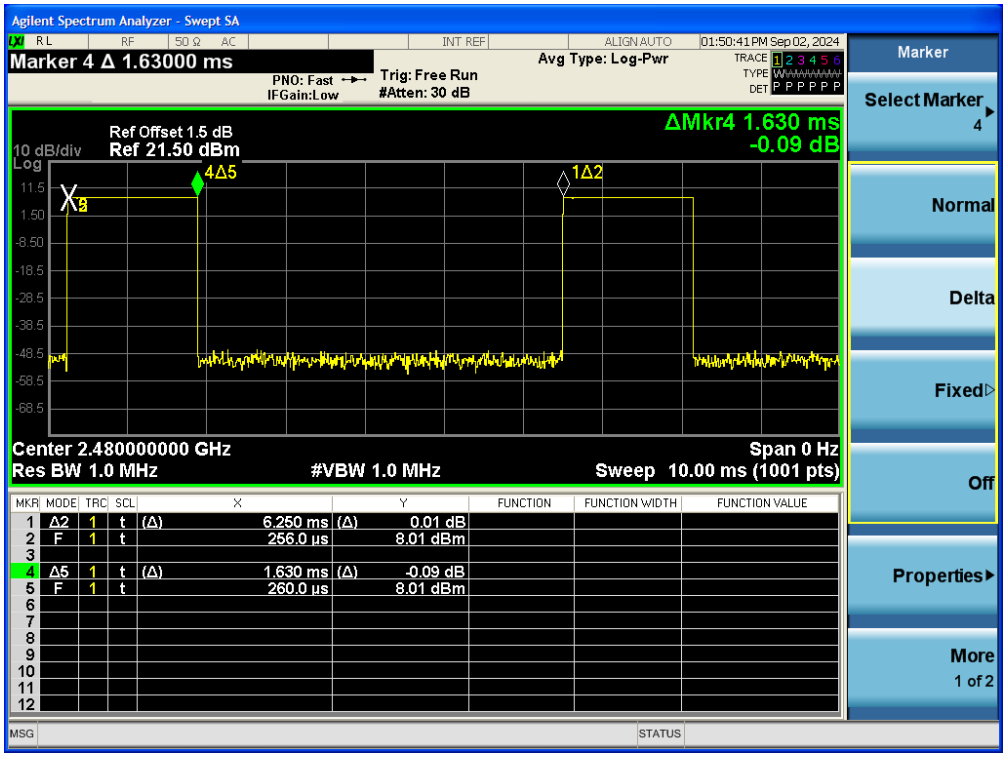
Test Data: DH3\2402MHz



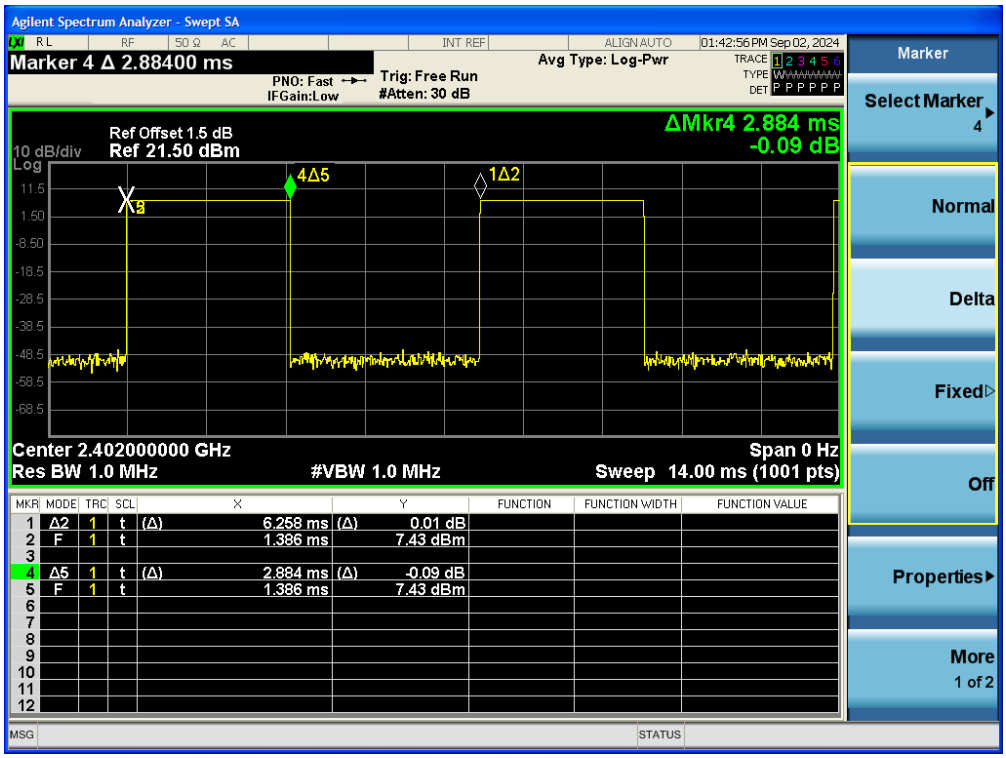
Test Data: DH3\2441MHz



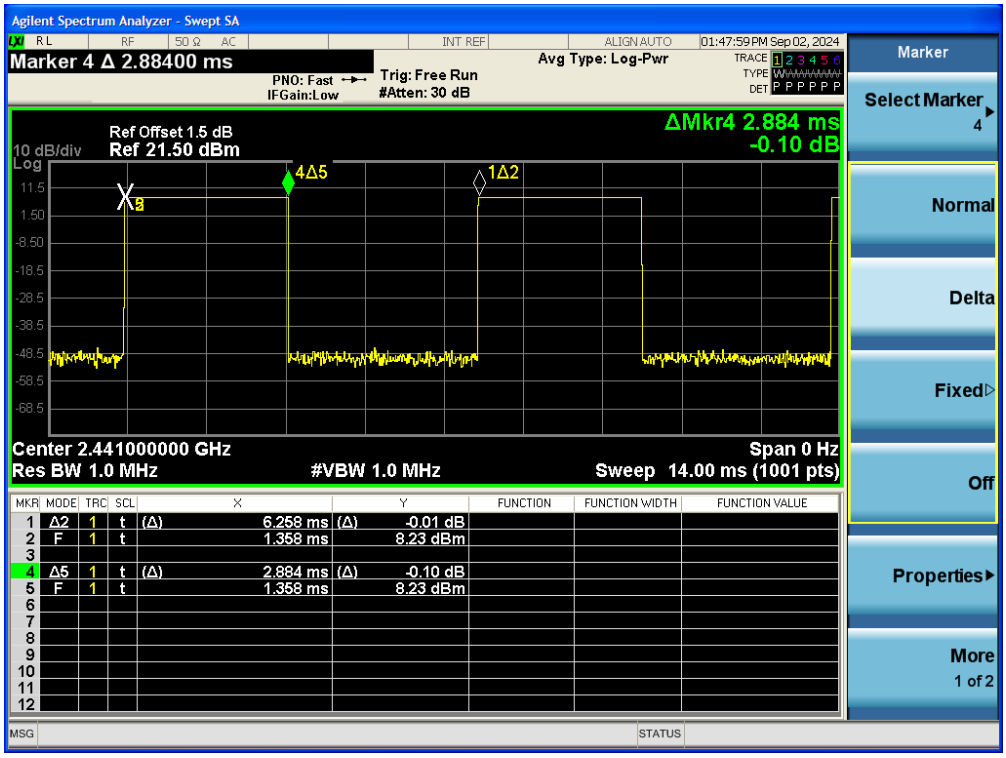
Test Data: DH3\2480MHz



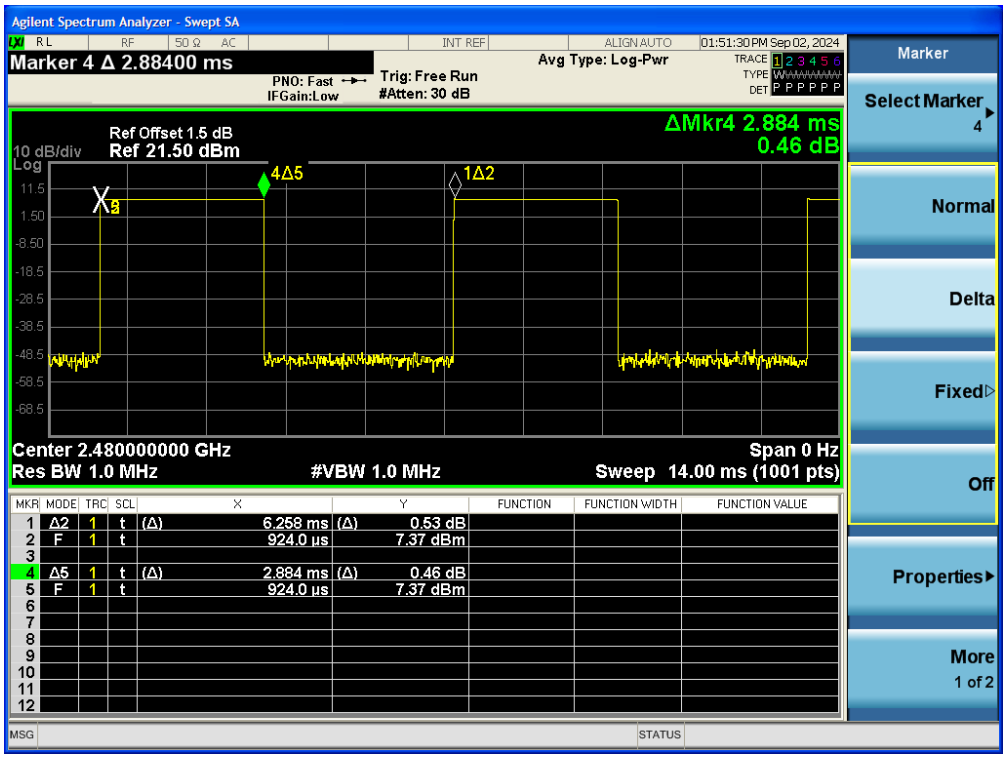
Test Data: DH5\2402MHz



Test Data: DH5\2441MHz



Test Data: DH5\2480MHz



13. Appendix

13.1 Appendix A: Equipment List

Location	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conduction 03	EMI Receiver_19	R&S	ESR3	102460	04/24/2024	04/24/2025
Conduction 03	Chamber05_01 Cable	WOKEN	CFD 300-NL	Chamber05-1 Cable	08/02/2024	08/02/2025
Conduction 03	LISN_19	R&S	ENV216	101425	11/23/2023	11/23/2024
Conduction 03	LISN_22	ROHDE & SCHWARZ	ENV216	101478	11/01/2023	11/01/2024
Conduction 03	ISN T8 CAT6A_03	SCHWARZBECK	NTFM 8158	NTFM 8158-00367	06/20/2024	06/20/2025
Conduction 03	ISN T4_06	TESEQ	ISN T400A	28574	10/12/2023	10/12/2024
Conduction 03	ISN T8_09	TESEQ	ISN T800	36190	09/26/2023	09/26/2024
Conduction 03	CDN ISN ST08A_01	TESEQ	CDN ISN ST08A	43352	09/27/2023	09/27/2024
Conduction 03	Capacitive Voltage Probe_01	SCHAFFNER	CVP 2200A	18711	02/05/2024	02/05/2025
Conduction 03	Current Probe_01	SCHAFFNER	SMZ 11	18030	01/30/2024	01/30/2025
Conduction 03 (>16A)	LISN_25	SCHWARZBECK	NNLK 8121	8121-807	06/21/2024	06/21/2025

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Chamber 19	Spectrum analyzer	R&S	FSV40	101919	07/13/2024	07/13/2025
Chamber 19	EMI Receiver	R&S	ESR3	102461	05/08/2024	05/08/2025
Chamber 19	Loop Antenna	EM	EM-6879	271	10/02/2023	10/02/2024
Chamber 19	Bilog Antenna (30MHz-1GHz)	Schwarzbeck	VULB9168 w 6dB Att.	9168-736	03/08/2024	03/08/2025
Chamber 19	Horn antenna (1GHz-18GHz)	ETS・LINDGREN	3117	00218718	10/04/2023	10/04/2024
Chamber 19	Horn antenna (18GHz-26GHz)	Com-power	AH-826	081001	11/24/2023	11/24/2024
Chamber 19	Horn antenna (26GHz-40GHz)	Com-power	AH-640	100A	03/19/2024	03/19/2025
Chamber 19	Preamplifier (9kHz-3GHz)	EM	EM330	060822	01/08/2024	01/08/2025
Chamber 19	Preamplifier (1GHz-26GHz)	HP	8449B	3008A02471	10/25/2023	10/25/2024
Chamber 19	Preamplifier (26GHz-40GHz)	MITEQ	JS4-26004000-27-5A	818471	05/13/2024	05/13/2025
Chamber 19	RF Cable (9kHz-26.5GHz)	Huber Suhner	Sucoflex 104A	MY1394/4A & 50886/4A	07/15/2024	07/15/2025
Chamber 19	RF Cable (18GHz-40GHz)	HUBER SUHNER	Sucoflex 102	27963/2&37421/2	11/22/2023	11/22/2024
Chamber 19	MXG Vector Signal Generator	Keysight	N5182B	MY53052399	12/26/2023	12/26/2024
Chamber 19	Test Software	Audix	E3 Ver:6.120203b	N/A	N/A	N/A

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conducted	Power Meter	Anritsu	ML2495A	1116010	09/27/2023	09/27/2024
Conducted	Power Sensor	Anritsu	MA2411B	34NKF50	09/27/2023	09/27/2024
Conducted	Temperature Chamber	KSON	THS-B4H100	2287	05/10/2024	05/09/2025
Conducted	DC Power supply	ABM	8185D	N/A	01/03/2024	01/03/2025
Conducted	AC Power supply	EXTECH	CFC105W	NA	N/A	N/A
Conducted	Spectrum analyzer	Keysight	N9010A	MY56070257	09/26/2023	09/26/2024
Conducted	Test Software	DARE	Radiation Ver:2013.1.23	NA	NA	NA
Conducted	Test Software	R&S	CMUGO Ver:2.0.0	N/A	N/A	N/A
Conducted	Wideband Radio Comm. Tester	R&S	CMW500	1201.002K50108793-JG	10/26/2023	10/26/2024
Conducted	Radio Communication Test Station	Anritsu	MT8000A	6272539604	08/29/2024	08/29/2025
Conducted	MT8000A Test Software	Anritsu	MX800000A Application Launcher V10.10.34.0	NA	NA	NA
Conducted	BT Simulator	Agilent	N4010A	MY48100200	NA	NA
Conducted	MXG Vector Signal Generator	Keysight	N5182B	MY53052399	12/26/2023	12/26/2024
Conducted (TS8997)	Wideband Radio Comm. Tester	R&S	CMW500	168811	09/13/2023	09/13/2024
Conducted (TS8997)	UP/DOWN converter	R&S	CMW-Z800A	100566	09/13/2023	09/13/2024
Conducted (TS8997)	Signal Generator	R&S	SMB100A	183701	09/14/2023	09/14/2024
Conducted (TS8997)	Vector Signal Generator	R&S	SMM100A	101908	09/13/2023	09/13/2024
Conducted (TS8997)	Signal analyzer 40GHz	R&S	FSV40	101884	09/13/2023	09/13/2024
Conducted (TS8997)	OSP150 extension unit CAM-BUS	R&S	OSP150	101107	09/15/2023	09/15/2024
Conducted (TS8997)	Test Software	R&S	EMC32 Ver: 12.00.00	NA	NA	NA

13.2 Appendix B: Uncertainty of Measurement

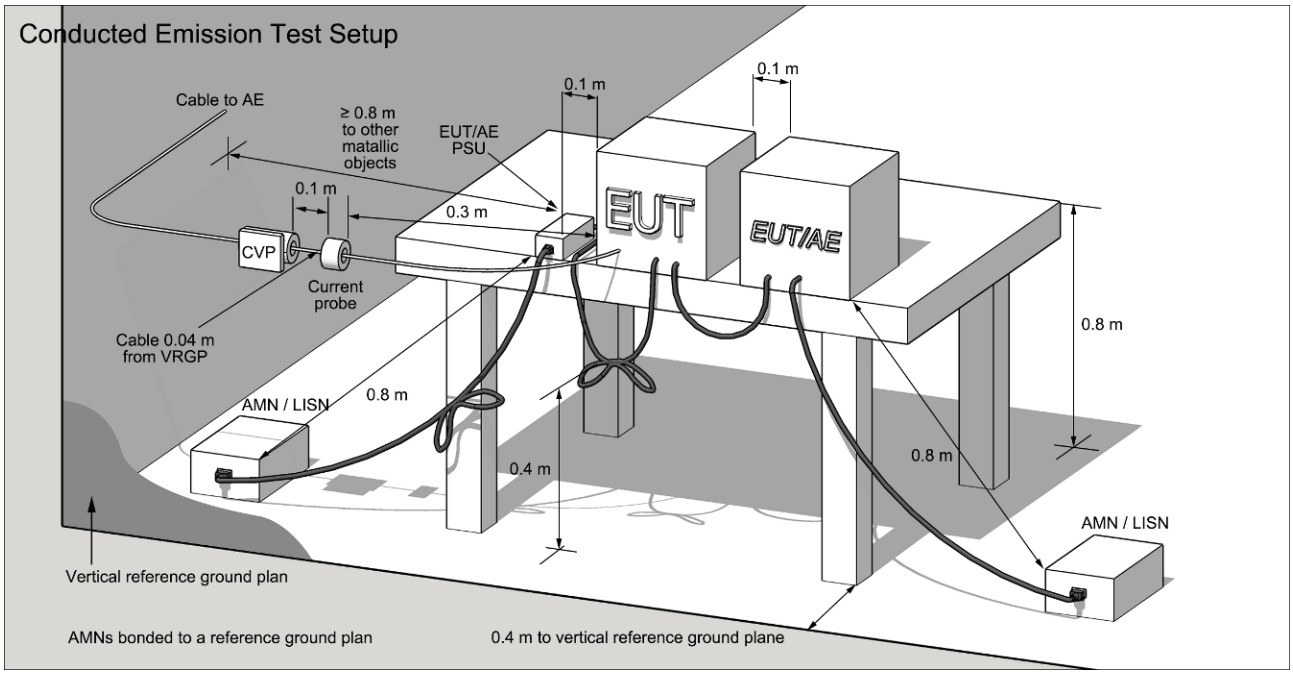
ISO/IEC 17025 requires that an estimate of measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Parameters	Uncertainty (k=2)
Conducted Emission (AC power line)	±0.64 dB
Spurious emissions, radiated	±3.5 dB
RF power, conducted	±1.6 dB
Power Density	±1.7 dB
RF Frequency	±0.0041%
Time	±0.01%
DC Voltage	±0.03%

13.3 Appendix C: Test Setup

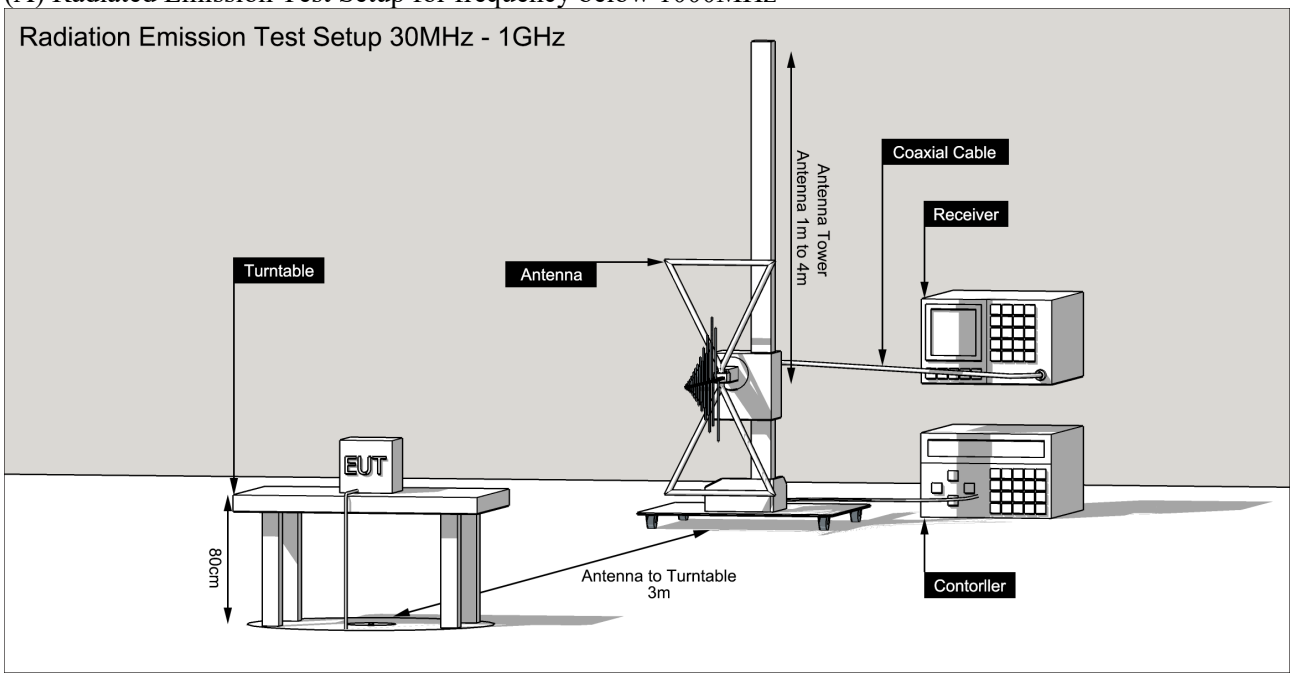
AC Line Conduced Emission Test Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10-2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

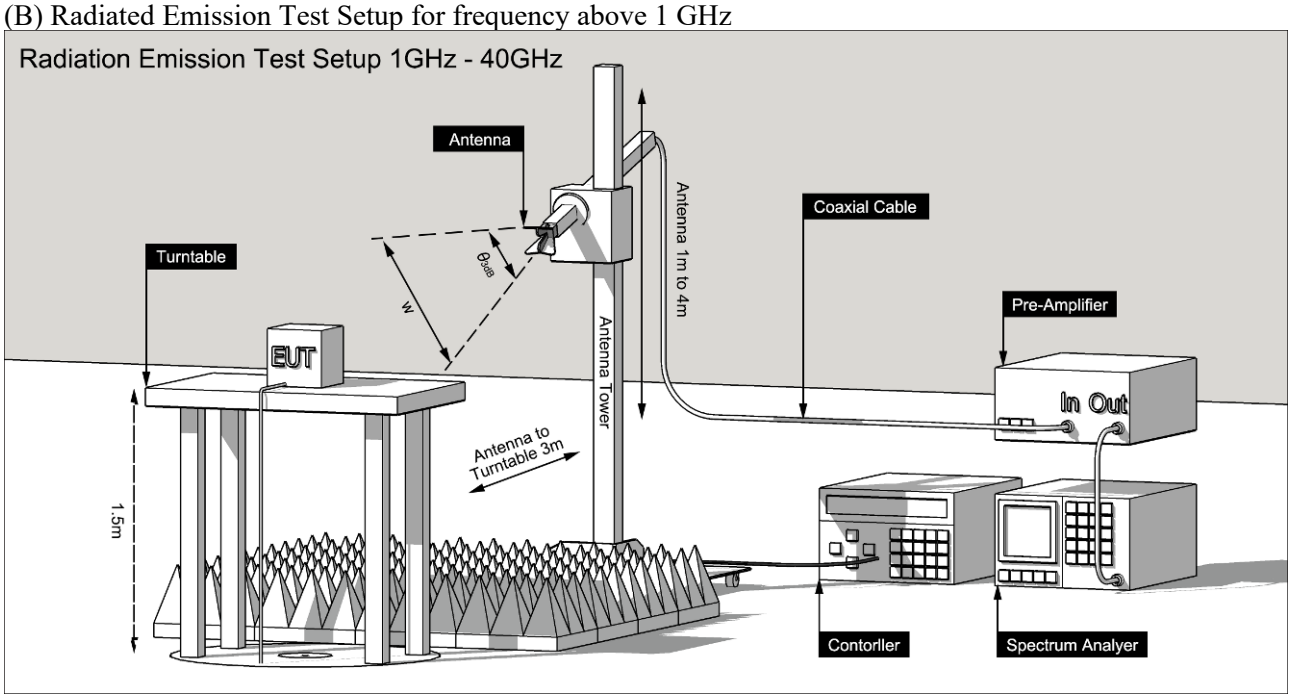
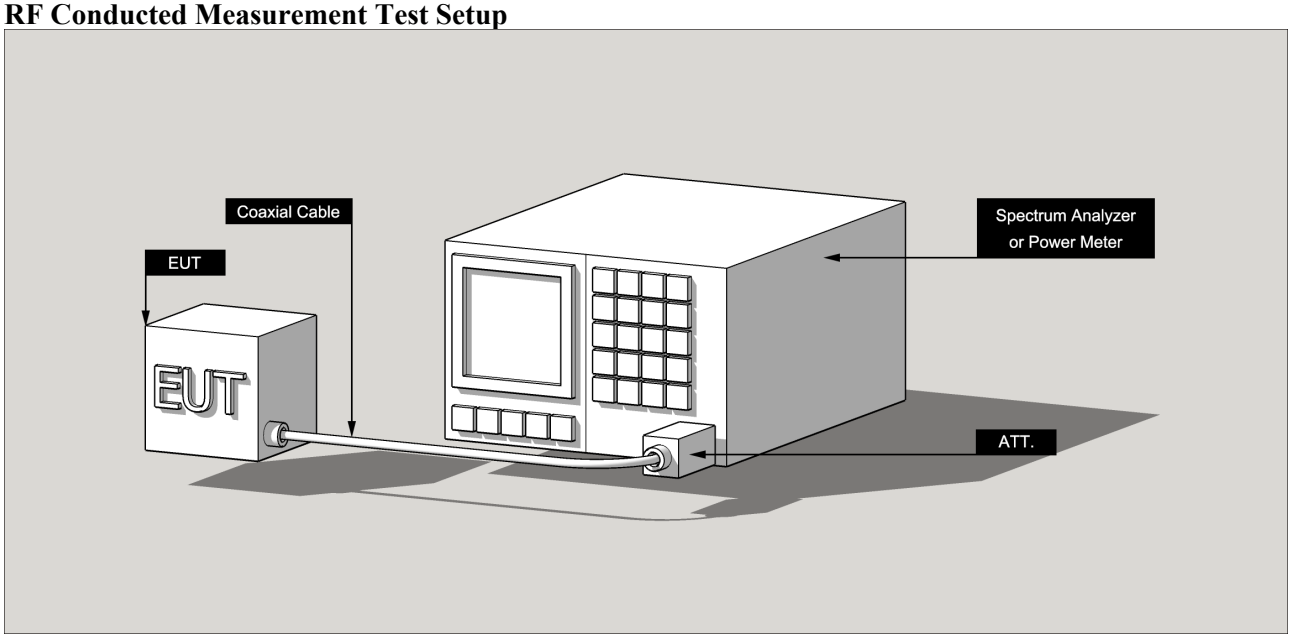


Radiated Spurious Emission Test & 100kHz Bandwidth of Band Edges Measurement Test Setup

(A) Radiated Emission Test Setup for frequency below 1000MHz



(B) Radiated Emission Test Setup for frequency above 1 GHz



RF Conducted Measurement Test Setup