TEST REPORT

Product	:	Single mode Bluetooth(5.0) Module
Trade mark	:	Richmat
Model/Type reference	:	HJ8258
Serial Model	:	/
Report Number	:	EED39O81980701
FCC ID	:	2AJJGHJ8258
Date of Issue	:	December 21, 2022

Test Standards	Result
☒ 47 CFR Part 15 Subpart C	PASS

Prepared for:

Qingdao Richmat Intelligence Technology Inc
NO. 78 Kongquehe 4th Road Qingdao Clothing Industry park Jimo, Qingdao, Shandong Province 266000, China

Prepared by:

Centre Testing International (Suzhou) CO., LTD.
Building 18, Zhihui New Town Ecological Industrial Park, No. 1206, Jinyang East Road, Lujia Town, Kunshan, Jiangsu, China
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Compiled by: Jenny. Yu Reviewed by: Lily. Wang

Approved by: Jeff Fang Date: December 21, 2022

Jeff Fang
Authorized Signatory

Scan to check the authenticity
Check No.: 3842091222

Modification Record

No.	Last Report No.	Modification Description
1	EED39O81980701	First report

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1. Test Summary

Test item	Test Requirement	Test method	Result
Antenna Requirement*	47 CFR Part 15Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission*	47 CFR Part 15Subpart C Section 15.207	ANSI C63.10-2013	N/A
Maximum conducted output power*	47 CFR Part 15Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
DTS Bandwidth*	47 CFR Part 15Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Maximum Power Spectral Density*	47 CFR Part 15Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions*	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions*	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

1. The product is supplied by DC power.
2. Test according to ANSI C63.4-2014 & ANSI C63.10-2013.
3. Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
4. "* " Detailed test results, please reference reported EED32M00310701

2. Test Requirement

2.1. Test Environment

Operating Environment:	
Temperature:	20.3°C
Humidity:	31.6% RH
Atmospheric Pressure:	1027mbar

2.2. Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GFSK	2402MHz ~2480 MHz	Channel 1	Channel 20	Channel 40
		2402MHz	2440MHz	2480MHz
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			

3. General Information

3.1. Client Information

Applicant:	Qingdao Richmat Intelligence Technology Inc
Address of Applicant:	NO. 78 Kongquehe 4th Road Qingdao Clothing Industry park Jimo, Qingdao, Shandong Province 266000, China
Manufacturer:	Qingdao Richmat Intelligence Technology Inc
Address of Manufacturer:	NO. 78 Kongquehe 4th Road Qingdao Clothing Industry park Jimo, Qingdao, Shandong Province 266000, China
Factory:	Qingdao Richmat Intelligence Technology Inc
Address of Factory:	NO. 78 Kongquehe 4th Road Qingdao Clothing Industry park Jimo, Qingdao, Shandong Province 266000, China

3.2. General Description of EUT

Product Name:	Single mode Bluetooth(5.0) Module
Model No.(EUT)*:	HJ8258
Trade Mark:	Richmat
EUT Supports Radios application:	Bluetooth V5.0 BLE
Power Supply:	Model No: ZB-H290020-B Input: AC100-240V 1.6A, 50/60Hz Output: DC 29.0V 2.0A 58W
Sample Received Date:	Dec 12, 2022
Sample Tested Date:	Dec 15, 2022

3.3. Product Specification subjective to this standard

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	BLE 5.0
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	Mobile production
Test Software of EUT:	EMI_Tool (manufacturer declare)
Antenna Type:	PCB Antenna

Antenna Gain①:	5.3dBi
Test Voltage:	AC 120V/60Hz

Note: 1 The antenna gain is provided by the client and we Centre Testing International (Suzhou) CO., LTD. test lab is not responsible for the accuracy of the antenna gain information.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
3	2406MHz	13	2426MHz	23	2446MHz	33	2466MHz
4	2408MHz	14	2428MHz	24	2448MHz	34	2468MHz
5	2410MHz	15	2430MHz	25	2450MHz	35	2470MHz
6	2412MHz	16	2432MHz	26	2452MHz	36	2472MHz
7	2414MHz	17	2434MHz	27	2454MHz	37	2474MHz
8	2416MHz	18	2436MHz	28	2456MHz	38	2476MHz
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

3.4. Tested System Details

Product	Manufacturer	Model No.
handset	Richmat	Model Name.: HJH92B Ble /HJH92E Ble /HJH92S Ble
They all use the same PCB. The circuit design, layout, components and wiring are identical, but the number of backlights used is different.		

3.5. Description of Support Units

The EUT has been tested with associated equipment below.

1）support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
NB	ThinkPad	E490	FCC ID and DOC	CTI

3.6. Test Location

All test facilities used to collect the test data are located at Building 18, Zhihui New Town Ecological Industrial Park, No. 1206, Jinyang East Road, Lujia Town, Kunshan, Jiangsu, China.

3.7. Test Facility

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

A2LA-Lab Cert. No. 5734.01

Centre Testing International (Suzhou) CO., LTD. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration. Laboratories and any additional program requirements in the identified field of testing.

FCC-Designation No.:CN1290

Centre Testing International Group Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The American association for Centre Testing International Group Co., Ltd. EMC laboratory accreditation Designation No.:CN1290

3.8. Deviation from Standards

None.

3.9. Abnormalities from Standard Conditions

None.

3.10. Other Information Requested by the Customer

None.

3.11. Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Occupied Bandwidth	0.56%
2	RF Power conducted	0.59 dB
3	Power Spectral Density, conducted	2.37 dB
4	Unwanted Emission, conducted	2.68 dB
5	All Emission, radiated	4.41 dB(30MHz-1GHz)
		4.99 dB(1GHz-18GHz)
		5.307 dB(18GHz-40GHz)
6	Temperature test	0.54°C
7	Humidity test	1.62%
8	DC and low frequency voltages test	1.14%

4. Equipment List

966 Semi-anechoic Chamber					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
Receiver	R&S	ESU8	100537	2022-12-05	2023-12-04
Spectrum analyzer	R&S	FSV40	101185	2022-12-05	2023-12-04
Preamplifier (30MHz~1GHz)	R&S	SCU-08	100748	2022-05-24	2023-05-23
Preamplifier (1GHz~18GHz)	R&S	SCU-18D	1987397	2022-12-08	2023-12-07
Preamplifier (18GHz~40GHz)	/	MTLNA18040030235	12009007	2022-10-14	2023-10-13
Loop Antenna (9kHz~30MHz)	TESEQ	HLA6121	54575	2022-02-26	2023-02-25
Antenna (30MHz~1GHz)	SCHWARZBECK	VULB9163	9163-965	2022-10-22	2023-10-21
Antenna (1GHz~18GHz)	R&S	HF907	102524	2022-12-13	2023-12-12
Antenna (18GHz~40GHz)	R&S	BBHA9170	1032	2022-10-16	2023-10-15
Band rejection filter	Xi'an xingbo	XBLBQ-DZA81	200827-1-02	/	/

5. Radio Technical Requirements Specification

5.1. Reference Documents for Testing

No.	Identity	Document Title
1	FCC Part15C	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

5.2. Test Results List

Test requirement	Test method	Test item	Verdict	Note
Part15C Section 15.205/15.209	ANSI C63.10 Section 6.10.5	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix A)
Part15C Section 15.205/15.209	ANSI C63.10 Section 6.4,6.5,6.6	Radiated Spurious Emissions	PASS	Appendix B)

Appendix A): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	1/T	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

a. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
b. Test the EUT in the lowest channel , the Highest channel
c. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
d. Repeat above procedures until all frequencies measured was complete.

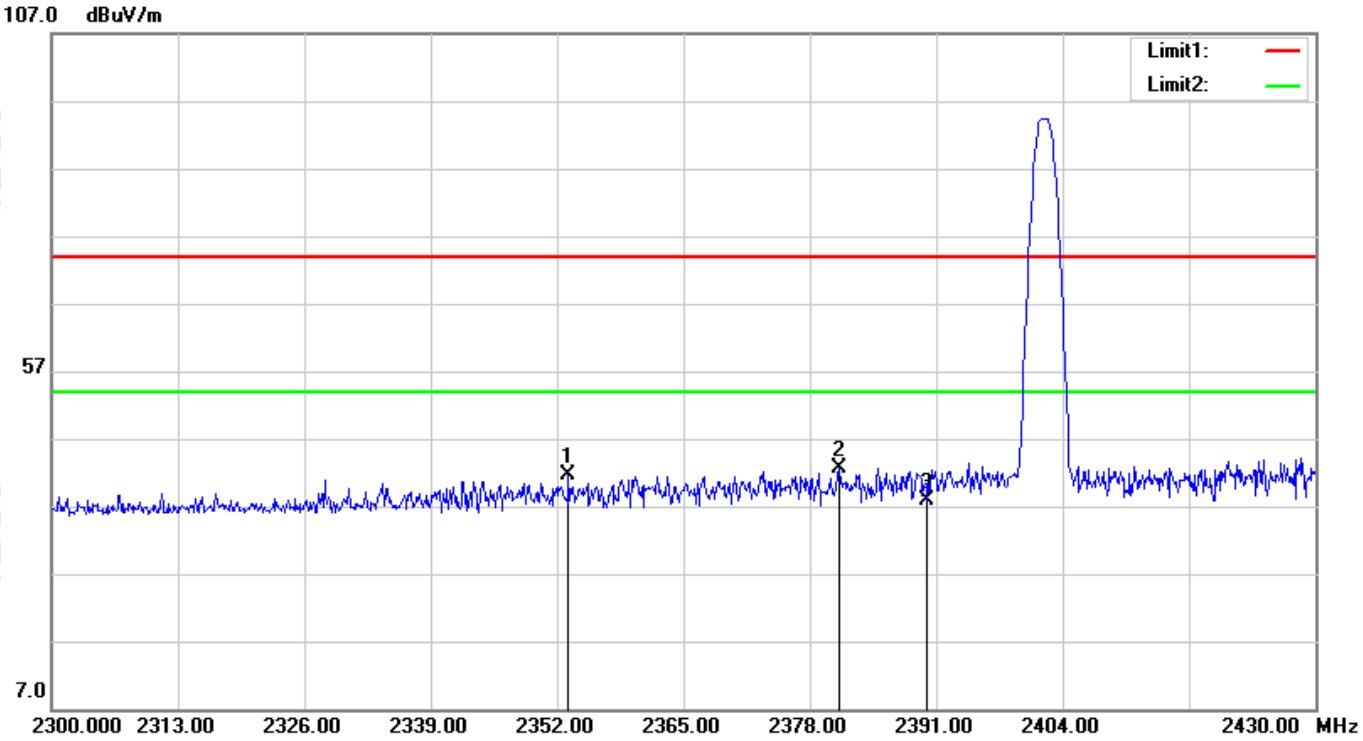
Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test plot as follows:

Mode:	BLE_1M	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92B Ble

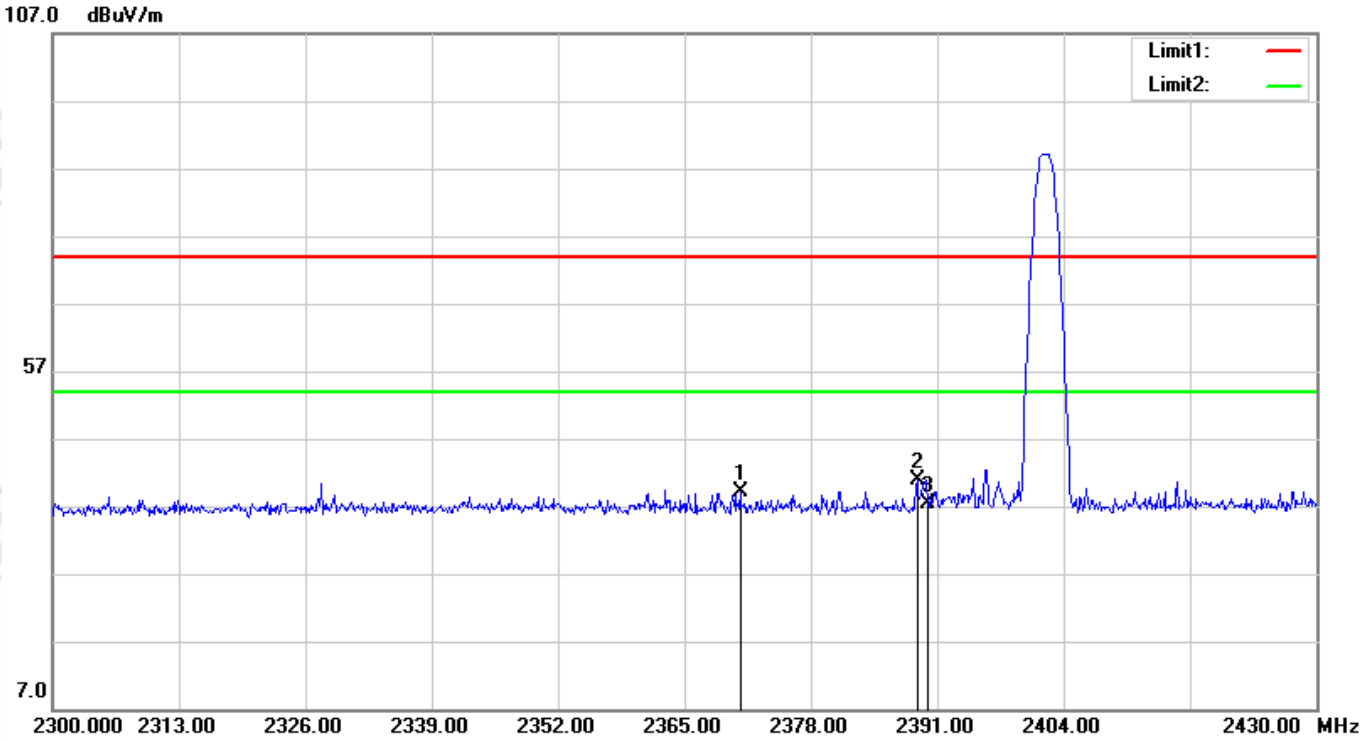
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2353.170	39.02	2.61	41.63	74.00	-32.37	200	307	peak
2	2380.990	39.91	2.69	42.60	74.00	-31.40	200	118	peak
3	2390.000	35.20	2.71	37.91	74.00	-36.09	100	38	peak

Mode:	BLE_1M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92B Ble

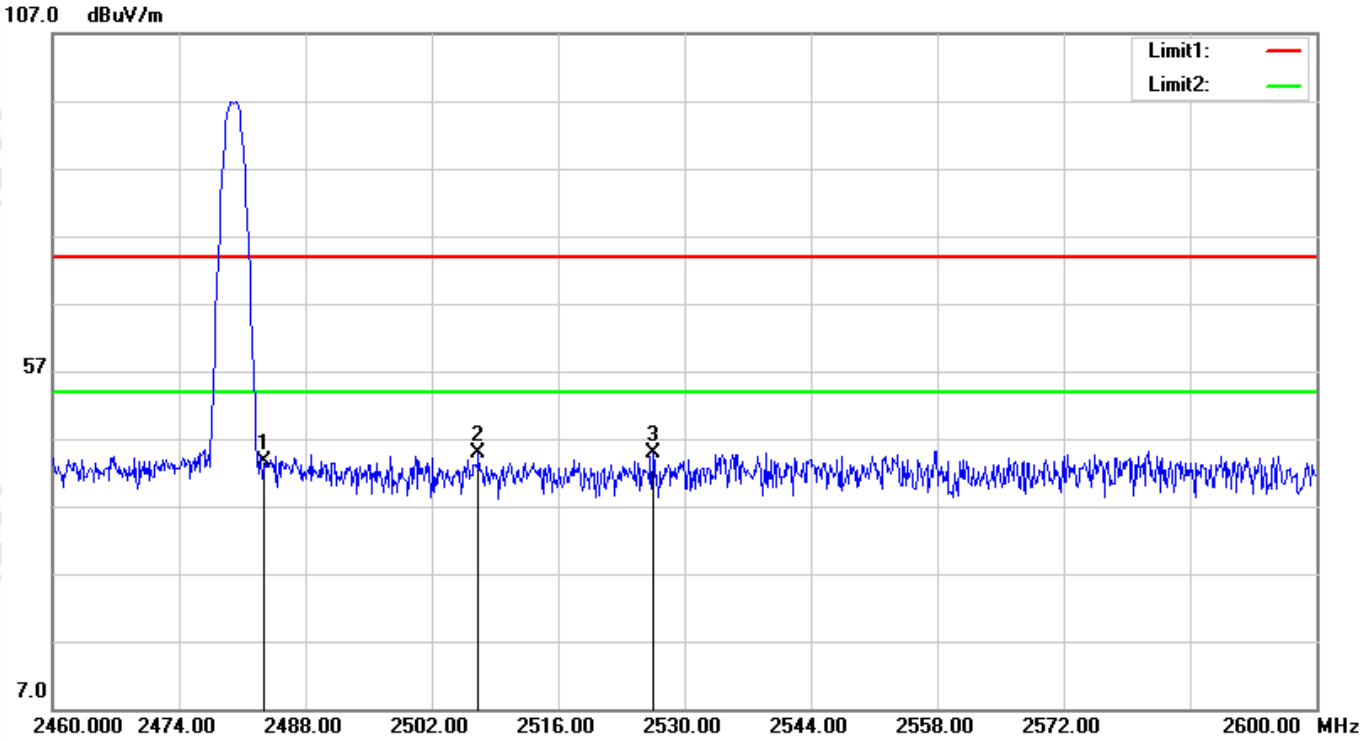
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2370.720	36.43	2.66	39.09	74.00	-34.91	200	290	peak
2	2388.920	38.18	2.71	40.89	74.00	-33.11	200	360	peak
3	2390.000	34.79	2.71	37.50	74.00	-36.50	200	274	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92B Ble

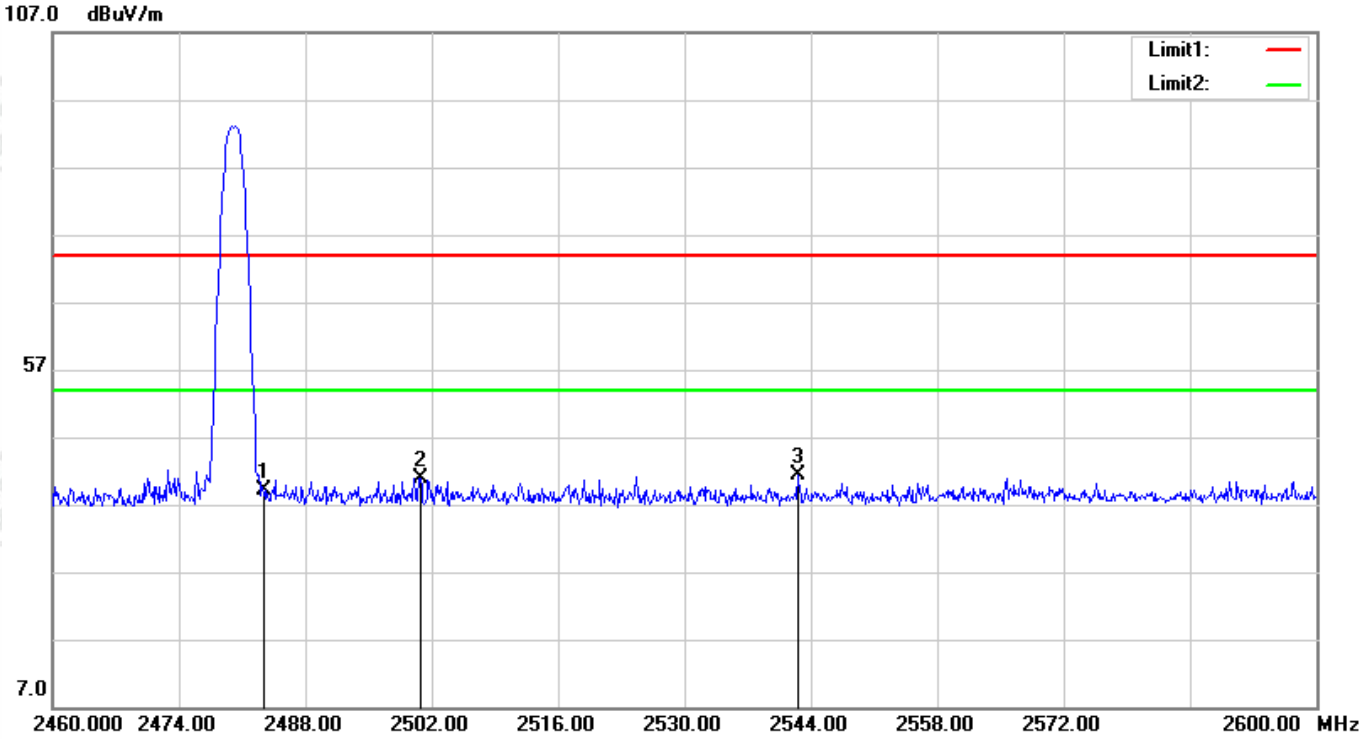
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	40.78	2.92	43.70	74.00	-30.30	100	109	peak
2	2507.180	41.86	2.97	44.83	74.00	-29.17	200	104	peak
3	2526.500	41.94	3.01	44.95	74.00	-29.05	200	20	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92B Ble

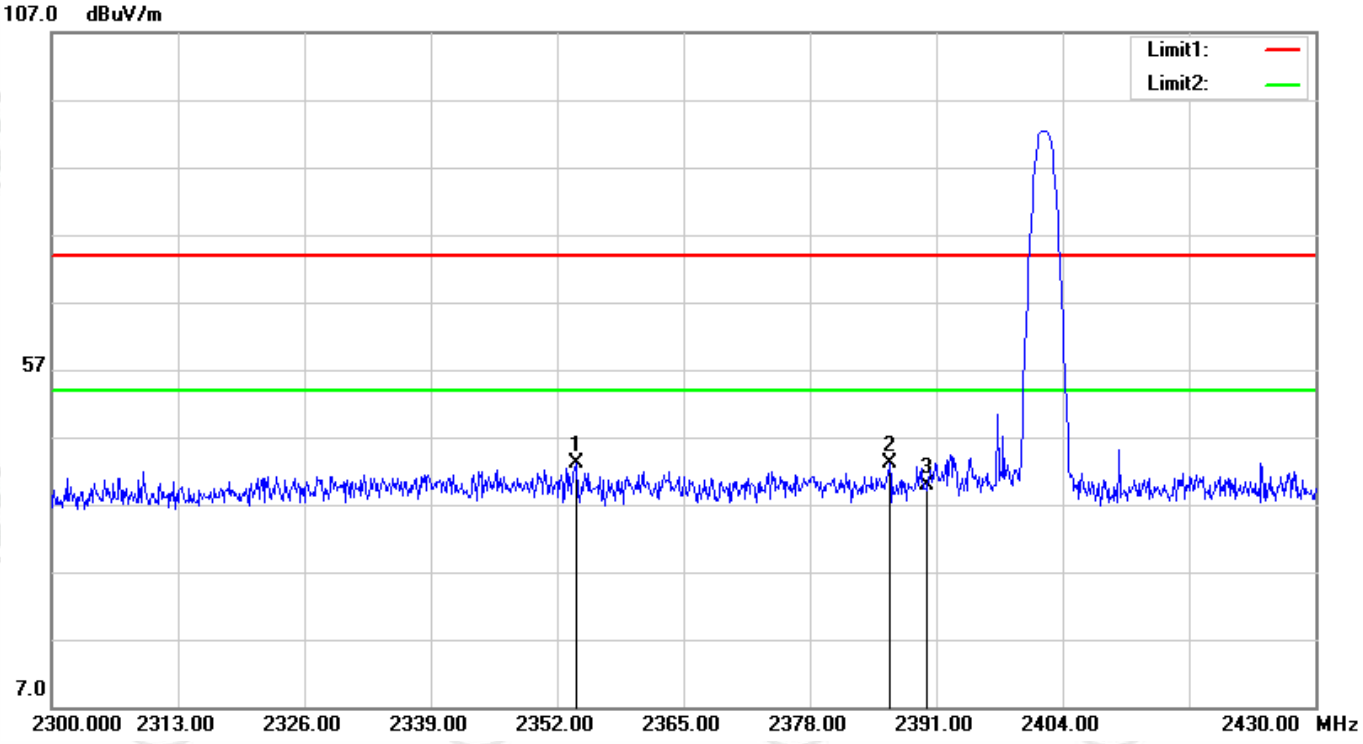
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	36.21	2.92	39.13	74.00	-34.87	200	55	peak
2	2500.740	38.03	2.95	40.98	74.00	-33.02	200	81	peak
3	2542.600	38.39	3.04	41.43	74.00	-32.57	200	65	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92B Ble

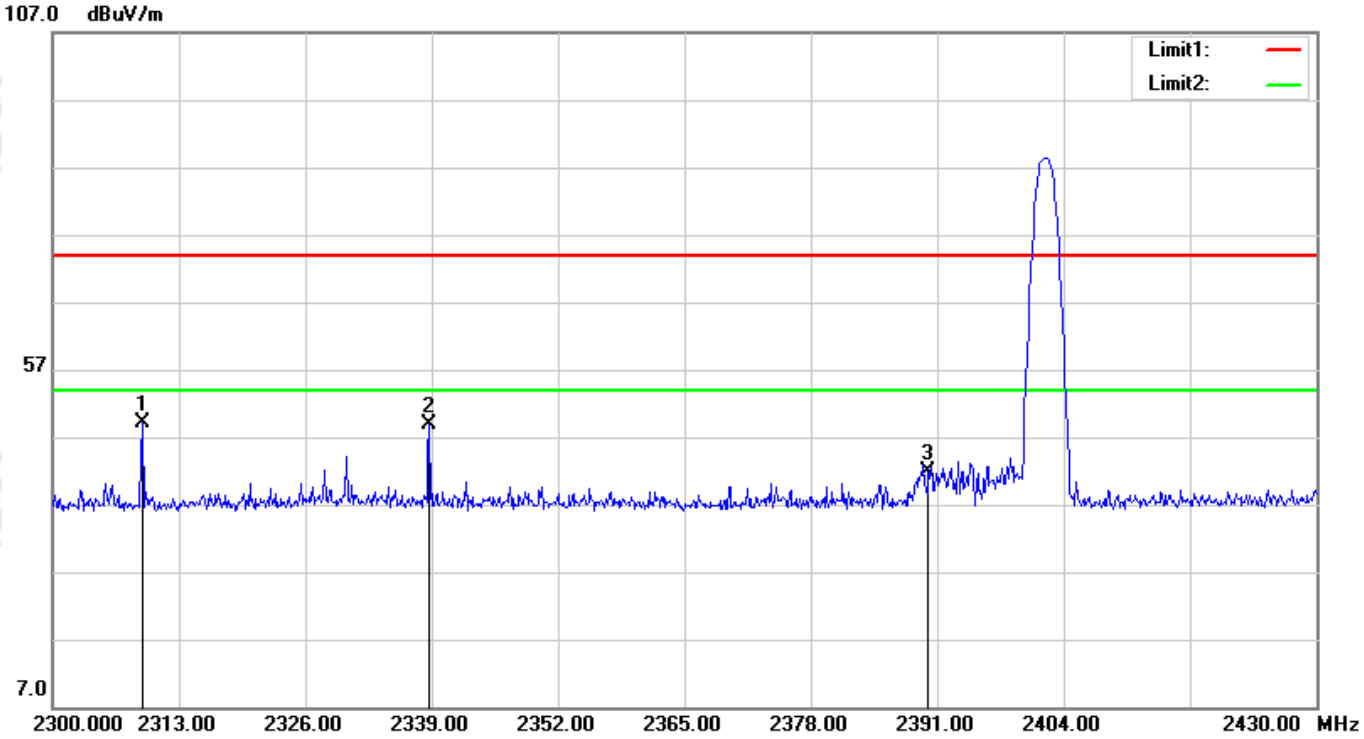
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2353.950	40.46	2.62	43.08	74.00	-30.92	200	304	peak
2	2386.190	40.55	2.70	43.25	74.00	-30.75	100	267	peak
3	2390.000	37.19	2.71	39.90	74.00	-34.10	100	316	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92B Ble

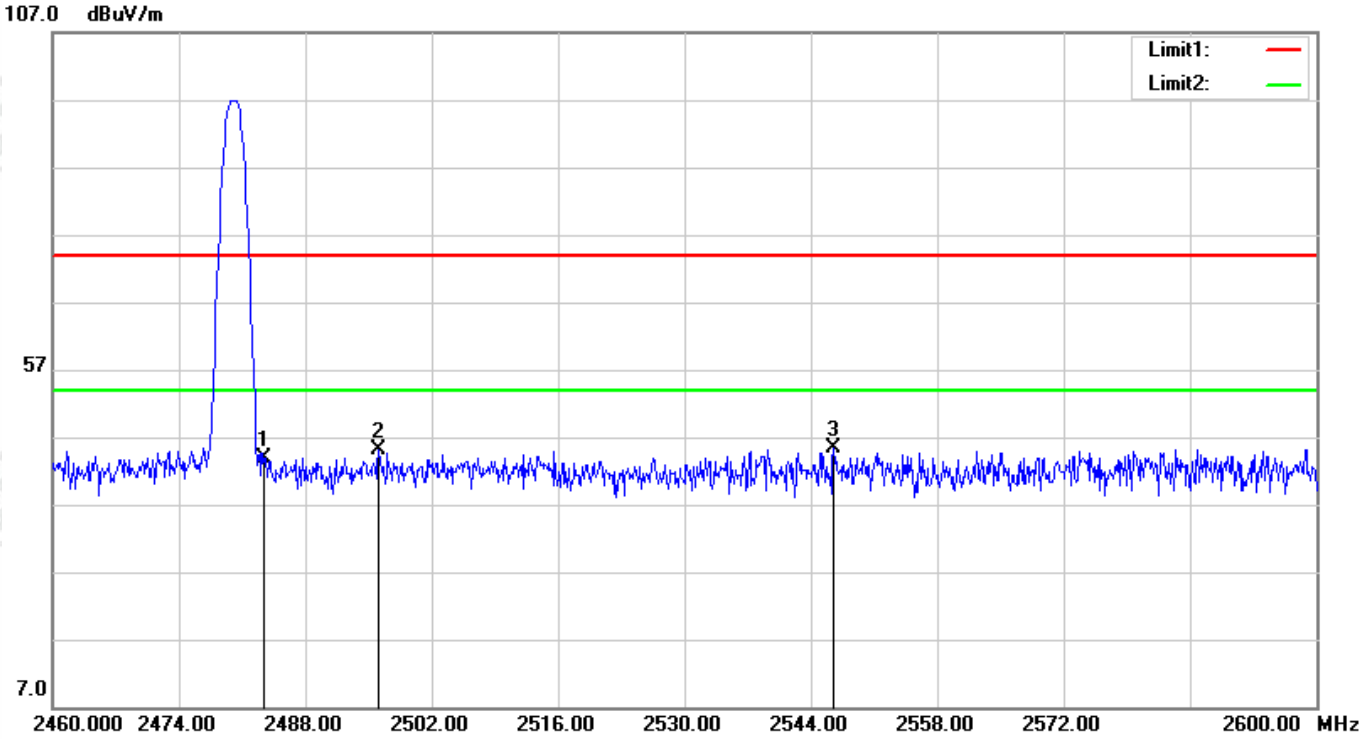
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2309.230	46.61	2.49	49.10	74.00	-24.90	100	287	peak
2	2338.740	46.33	2.57	48.90	74.00	-25.10	200	73	peak
3	2390.000	39.22	2.71	41.93	74.00	-32.07	195	0	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92B Ble

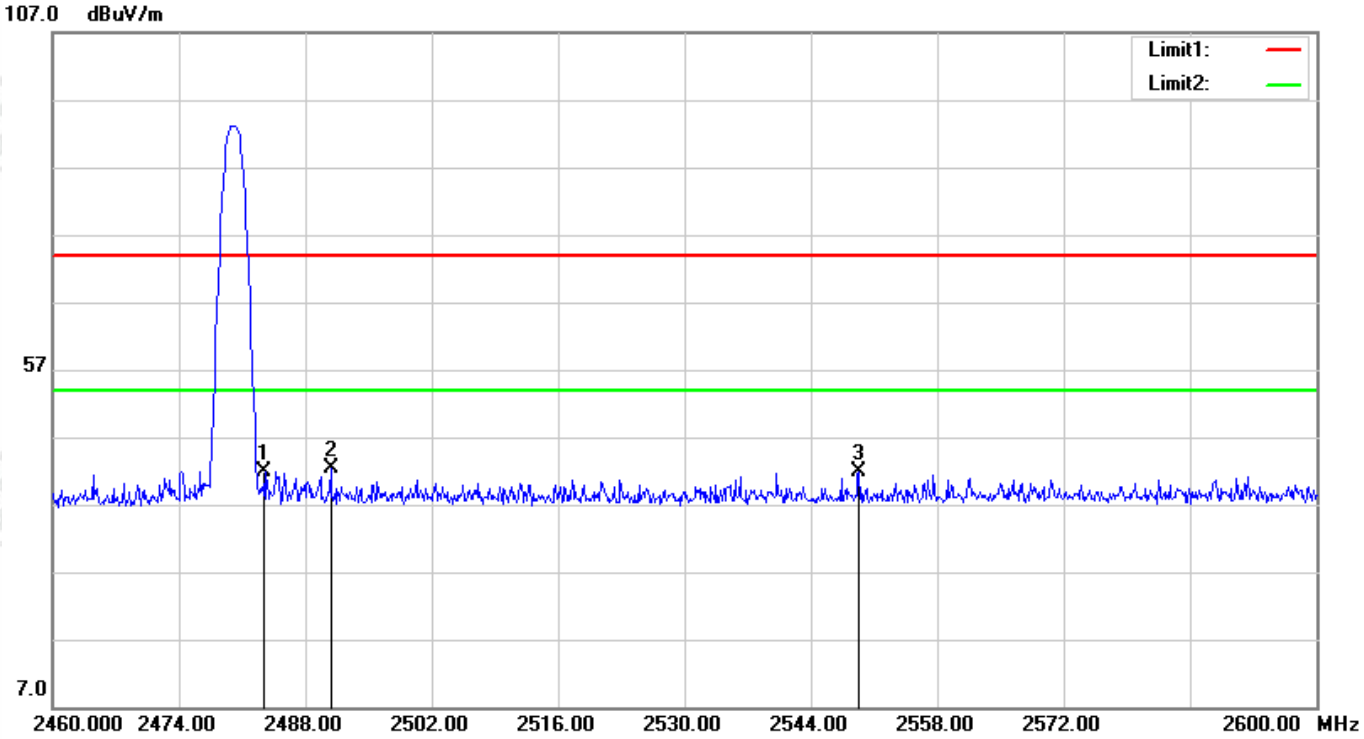
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	40.96	2.92	43.88	74.00	-30.12	200	29	peak
2	2496.120	42.29	2.94	45.23	74.00	-28.77	200	101	peak
3	2546.520	42.41	3.05	45.46	74.00	-28.54	200	37	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92B Ble

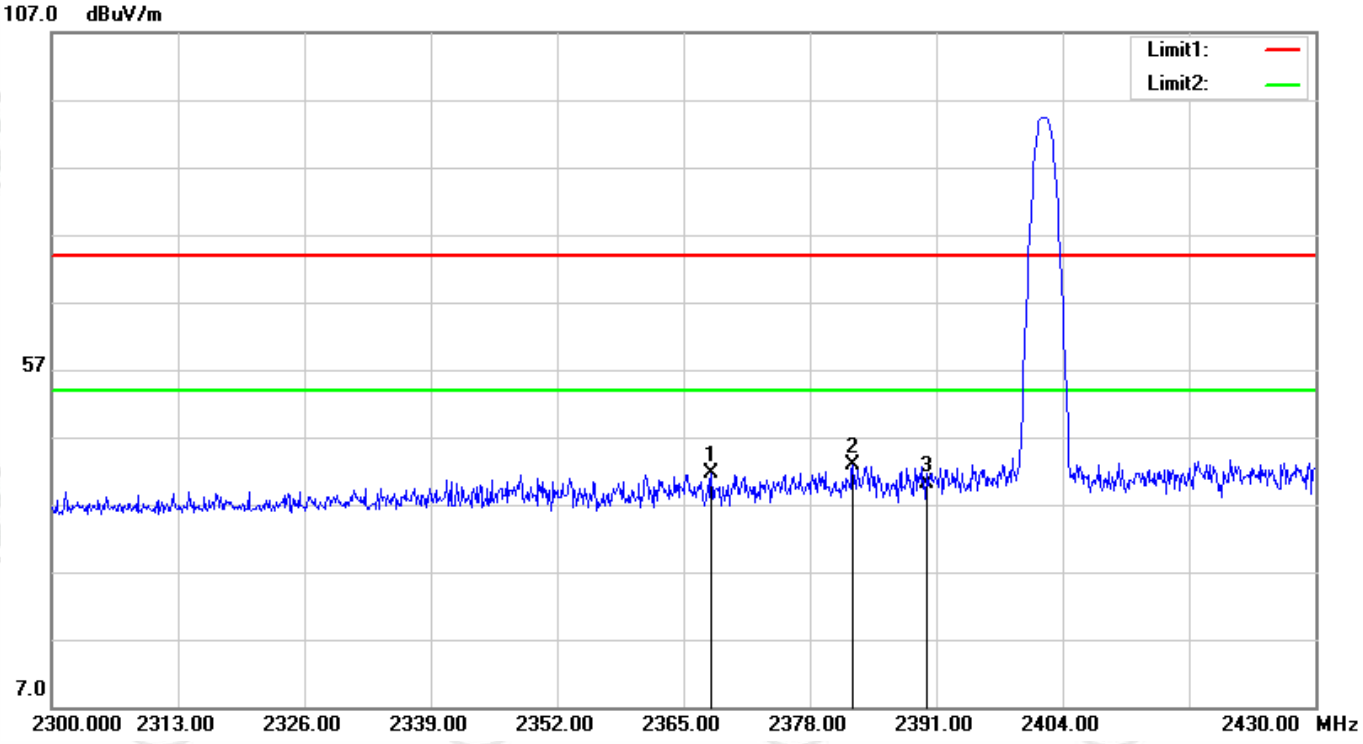
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	38.97	2.92	41.89	74.00	-32.11	200	58	peak
2	2490.800	39.54	2.93	42.47	74.00	-31.53	200	60	peak
3	2549.320	38.77	3.05	41.82	74.00	-32.18	200	65	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92B Ble

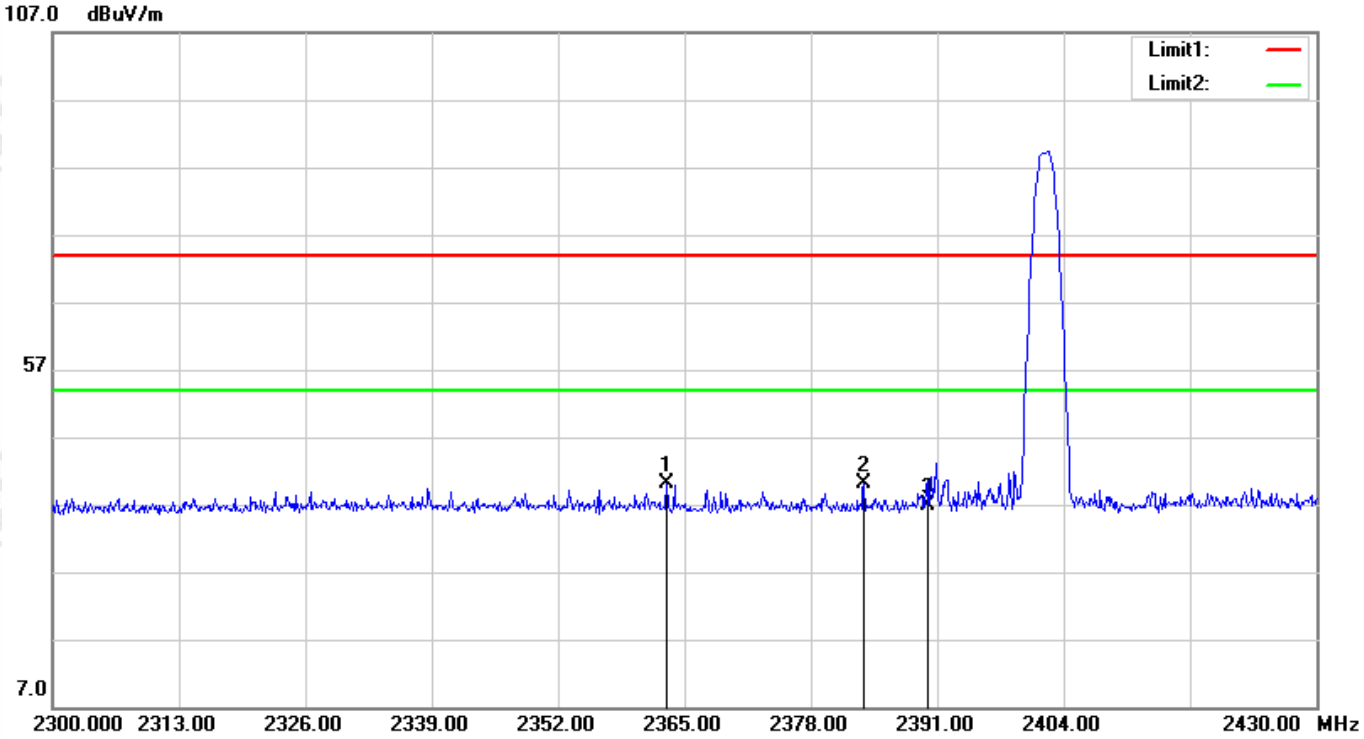
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2367.860	39.04	2.65	41.69	74.00	-32.31	100	316	peak
2	2382.420	40.07	2.69	42.76	74.00	-31.24	200	118	peak
3	2390.000	37.54	2.71	40.25	74.00	-33.75	100	118	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92B Ble

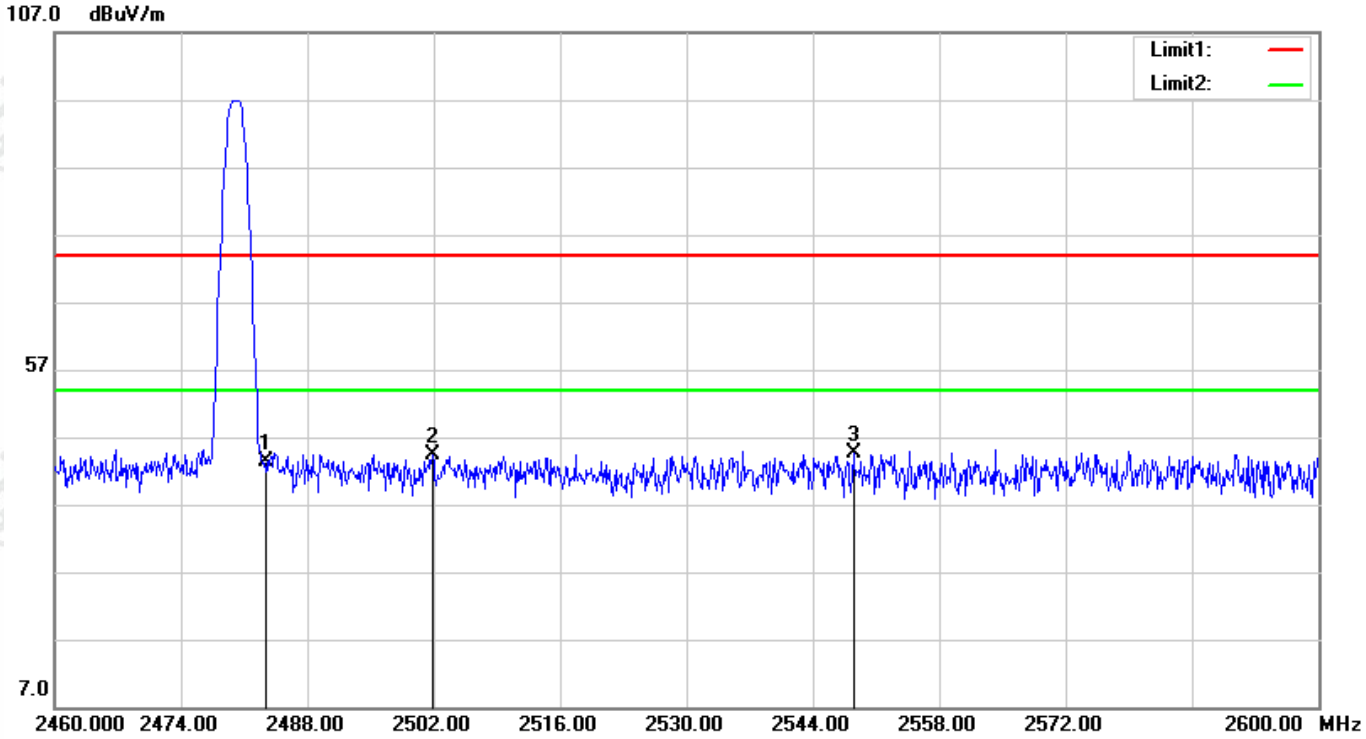
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2363.180	37.41	2.64	40.05	74.00	-33.95	200	293	peak
2	2383.460	37.31	2.70	40.01	74.00	-33.99	200	273	peak
3	2390.000	34.09	2.71	36.80	74.00	-37.20	200	349	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92B Ble

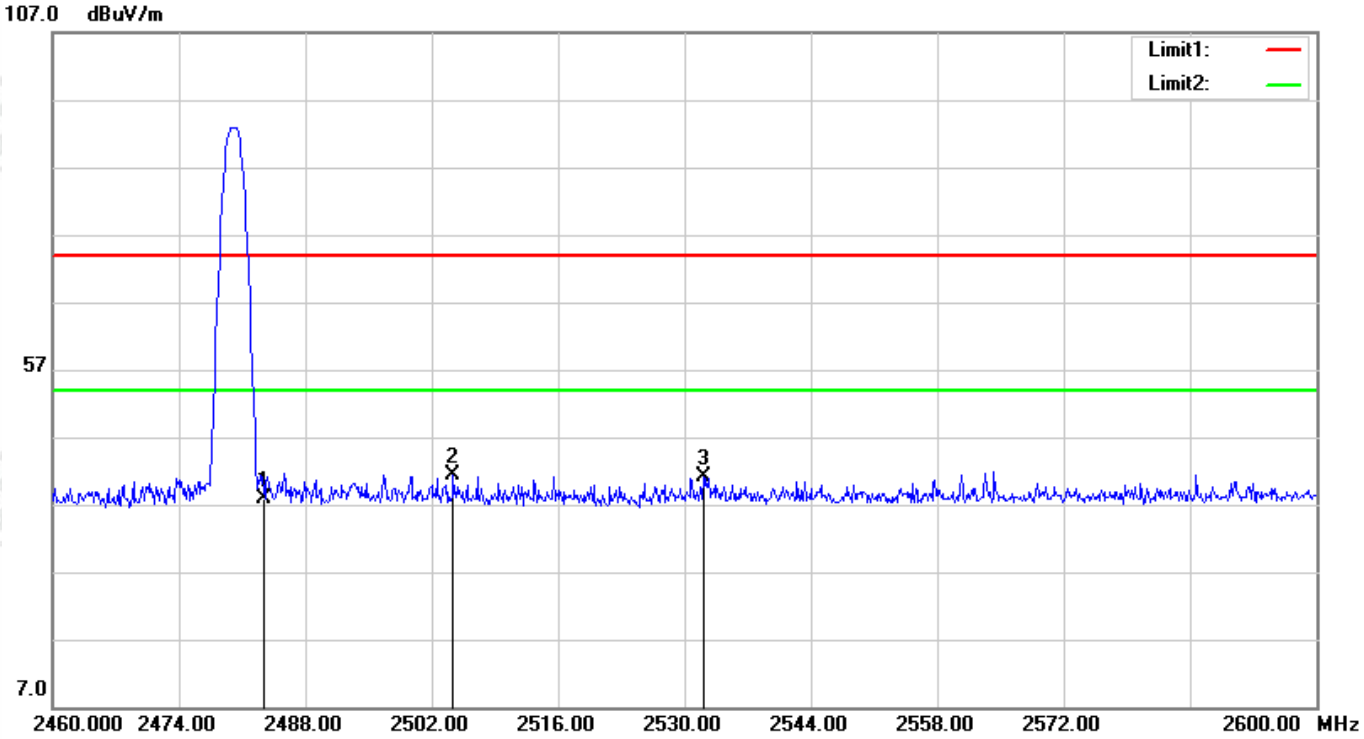
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	40.42	2.92	43.34	74.00	-30.66	200	121	peak
2	2501.860	41.36	2.95	44.31	74.00	-29.69	100	103	peak
3	2548.480	41.55	3.05	44.60	74.00	-29.40	100	33	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92B Ble

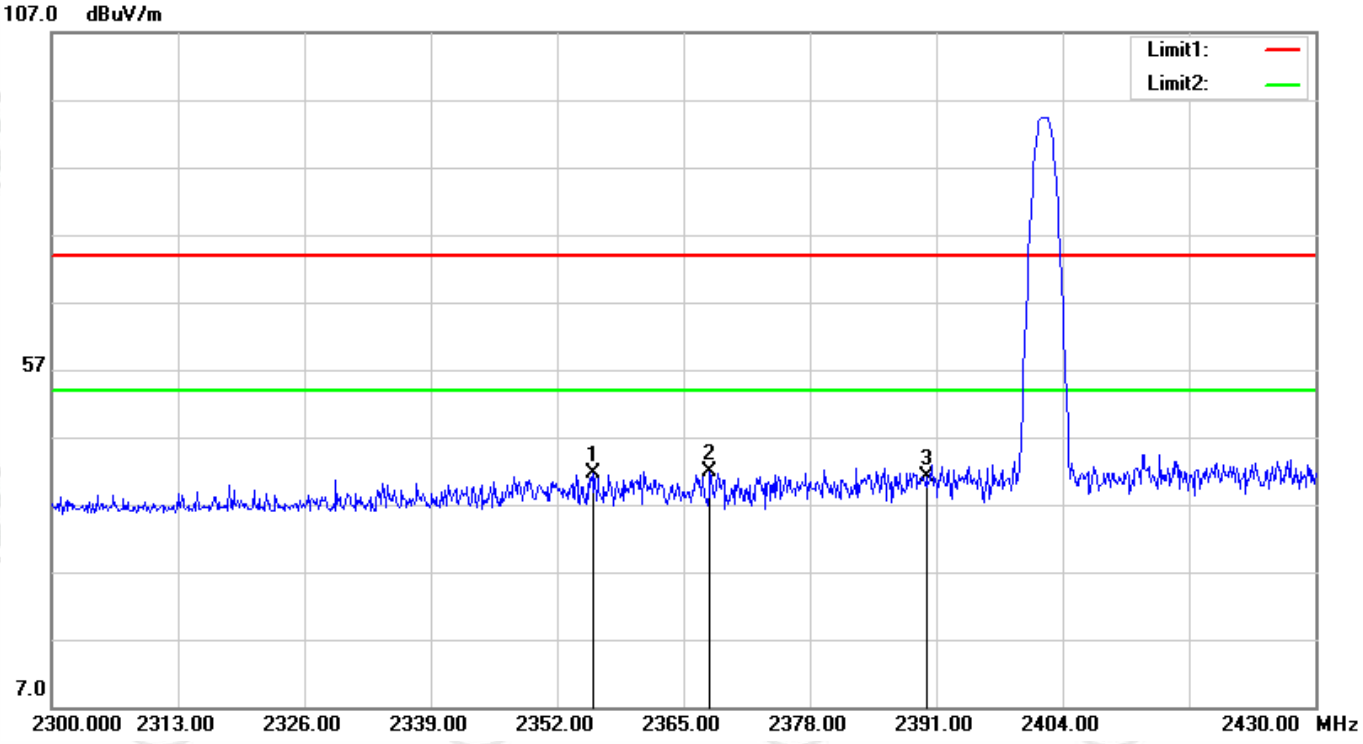
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.85	2.92	37.77	74.00	-36.23	139	0	peak
2	2504.380	38.45	2.96	41.41	74.00	-32.59	100	52	peak
3	2532.100	37.99	3.02	41.01	74.00	-32.99	100	77	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92B Ble

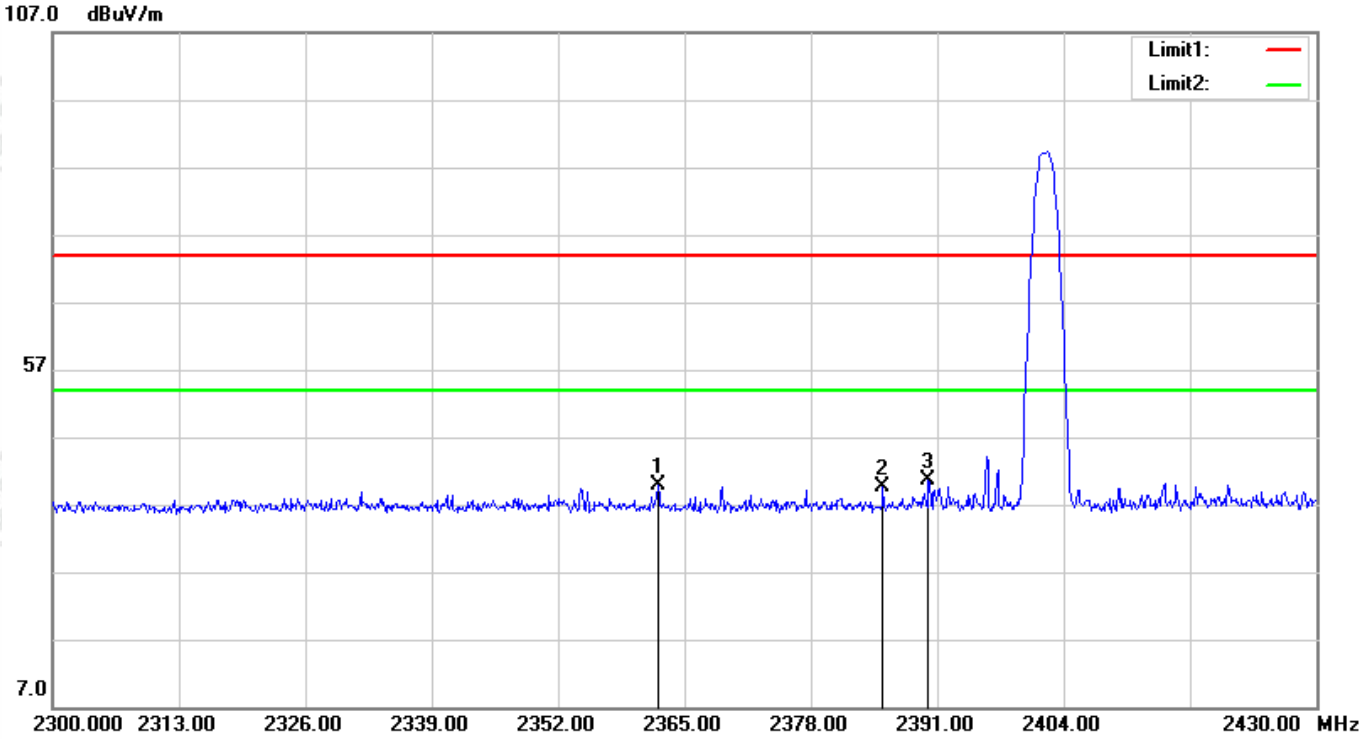
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2355.640	39.08	2.62	41.70	74.00	-32.30	100	311	peak
2	2367.730	39.21	2.65	41.86	74.00	-32.14	100	325	peak
3	2390.000	38.33	2.71	41.04	74.00	-32.96	200	116	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92B Ble

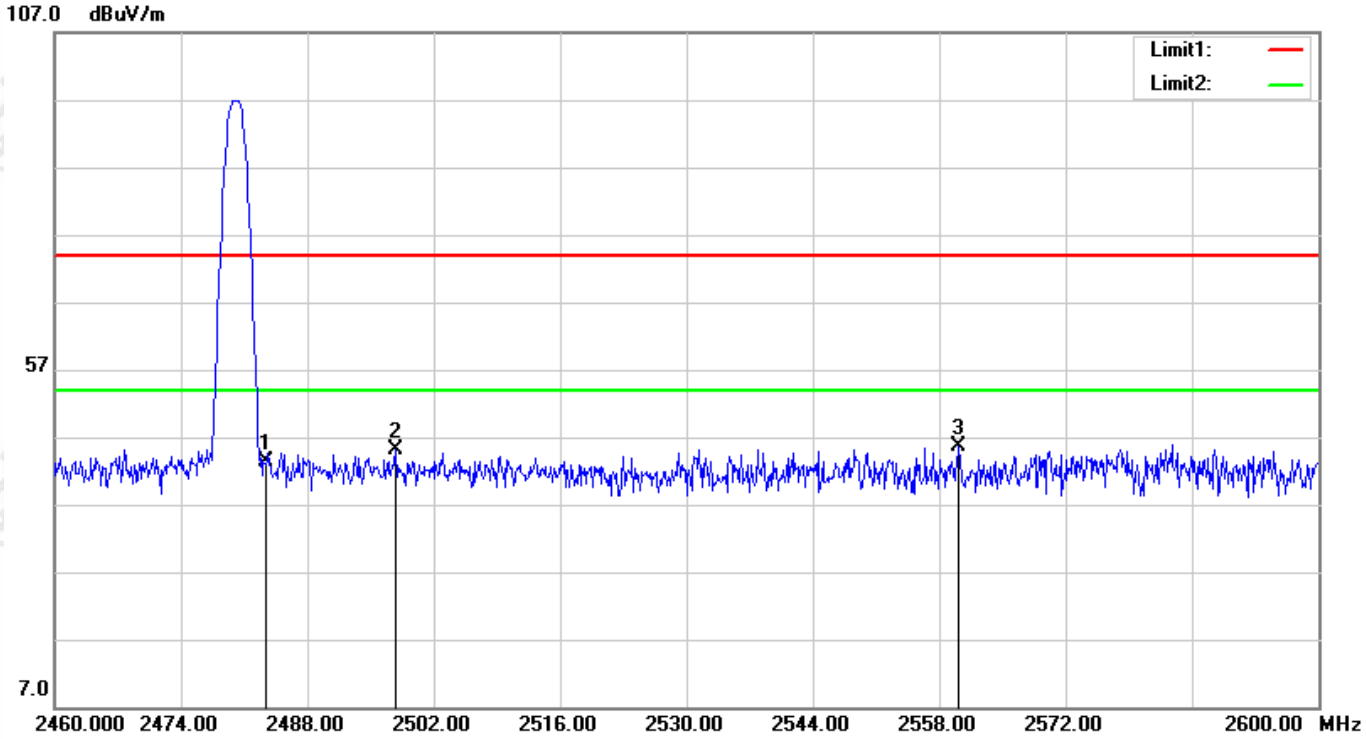
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2362.270	37.26	2.64	39.90	74.00	-34.10	200	285	peak
2	2385.410	37.00	2.70	39.70	74.00	-34.30	200	294	peak
3	2390.000	37.80	2.71	40.51	74.00	-33.49	200	55	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92B Ble

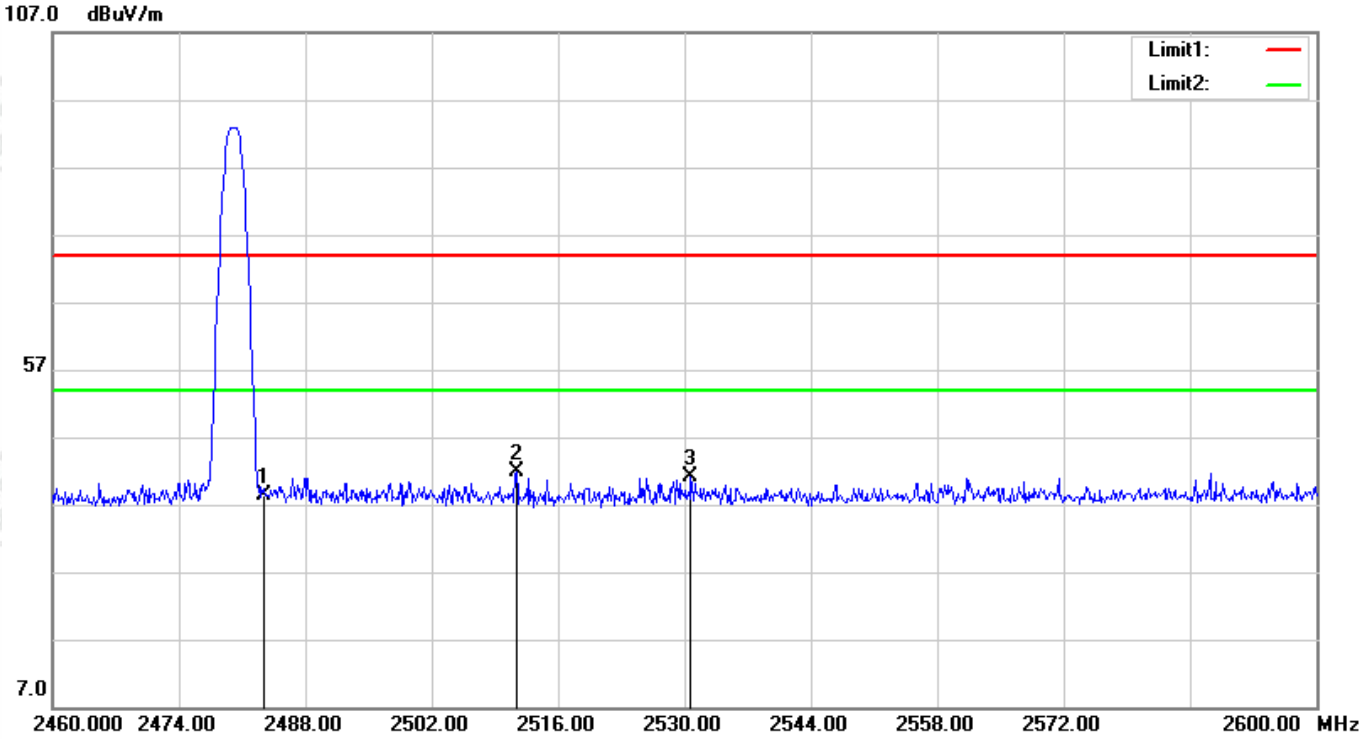
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	40.58	2.92	43.50	74.00	-30.50	100	34	peak
2	2497.800	42.08	2.95	45.03	74.00	-28.97	200	22	peak
3	2560.100	42.43	3.08	45.51	74.00	-28.49	200	38	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92B Ble

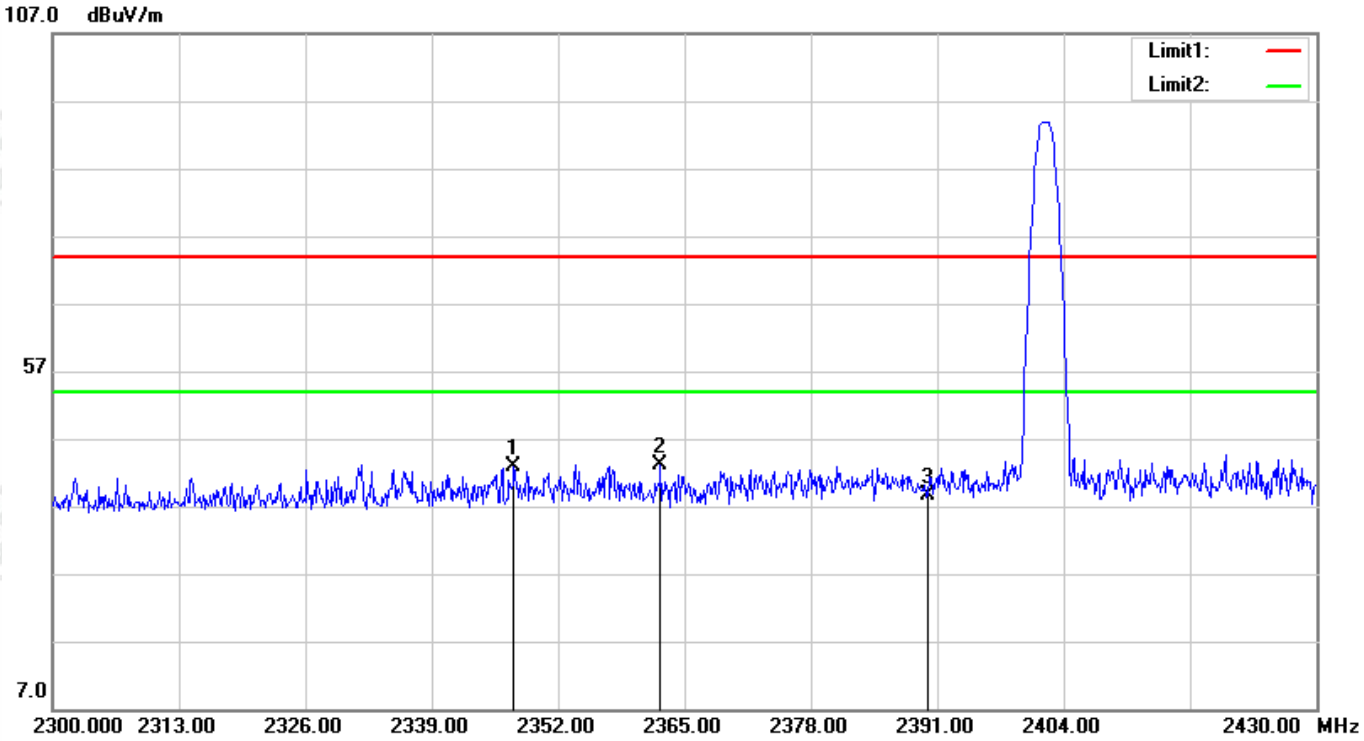
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	35.37	2.92	38.29	74.00	-35.71	200	53	peak
2	2511.380	39.02	2.97	41.99	74.00	-32.01	200	62	peak
3	2530.700	38.07	3.01	41.08	74.00	-32.92	200	65	peak

Mode:	BLE_1M	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92E Ble

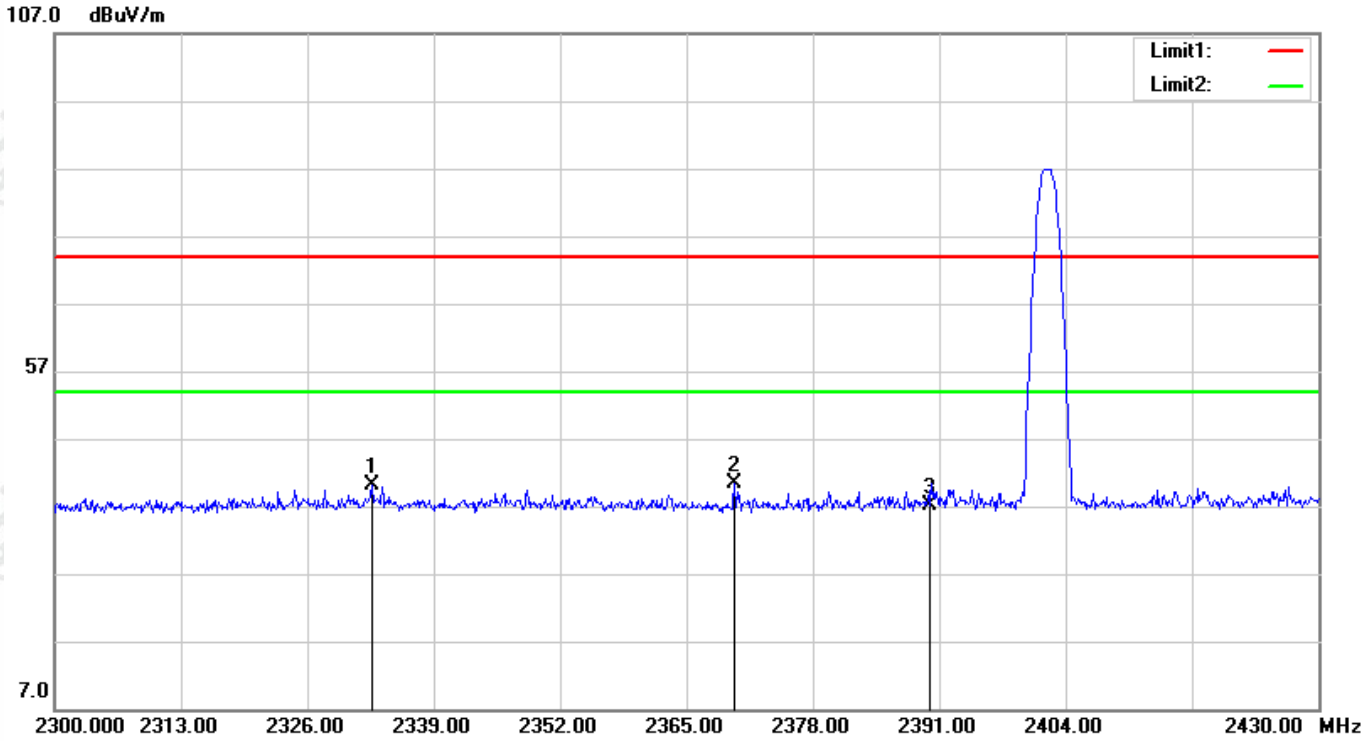
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2347.450	40.16	2.60	42.76	74.00	-31.24	100	293	peak
2	2362.530	40.44	2.64	43.08	74.00	-30.92	100	287	peak
3	2390.000	36.00	2.71	38.71	74.00	-35.29	200	31	peak

Mode:	BLE_1M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92E Ble

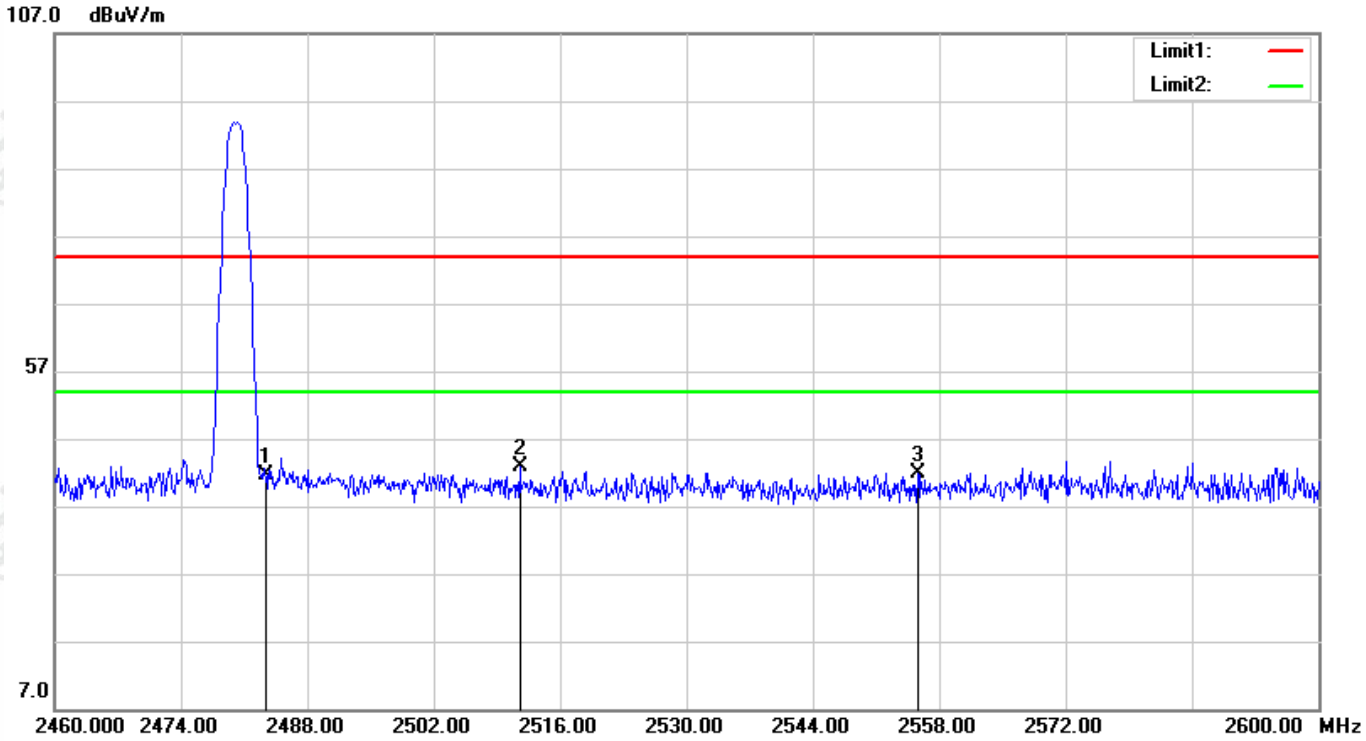
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2332.630	37.68	2.56	40.24	74.00	-33.76	104	0	peak
2	2369.940	37.65	2.66	40.31	74.00	-33.69	200	232	peak
3	2390.000	34.38	2.71	37.09	74.00	-36.91	100	32	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92E Ble

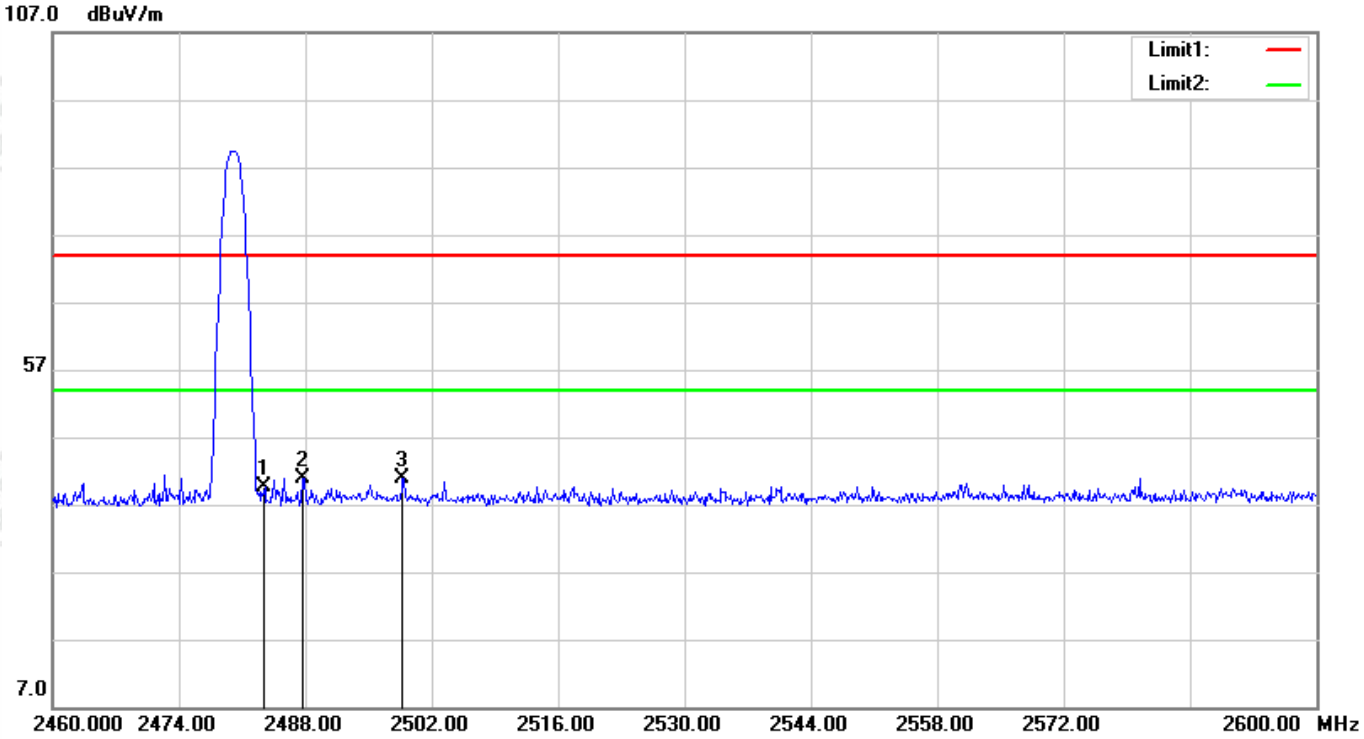
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	38.62	2.92	41.54	74.00	-32.46	100	111	peak
2	2511.520	39.87	2.97	42.84	74.00	-31.16	100	35	peak
3	2555.620	38.89	3.07	41.96	74.00	-32.04	200	0	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92E Ble

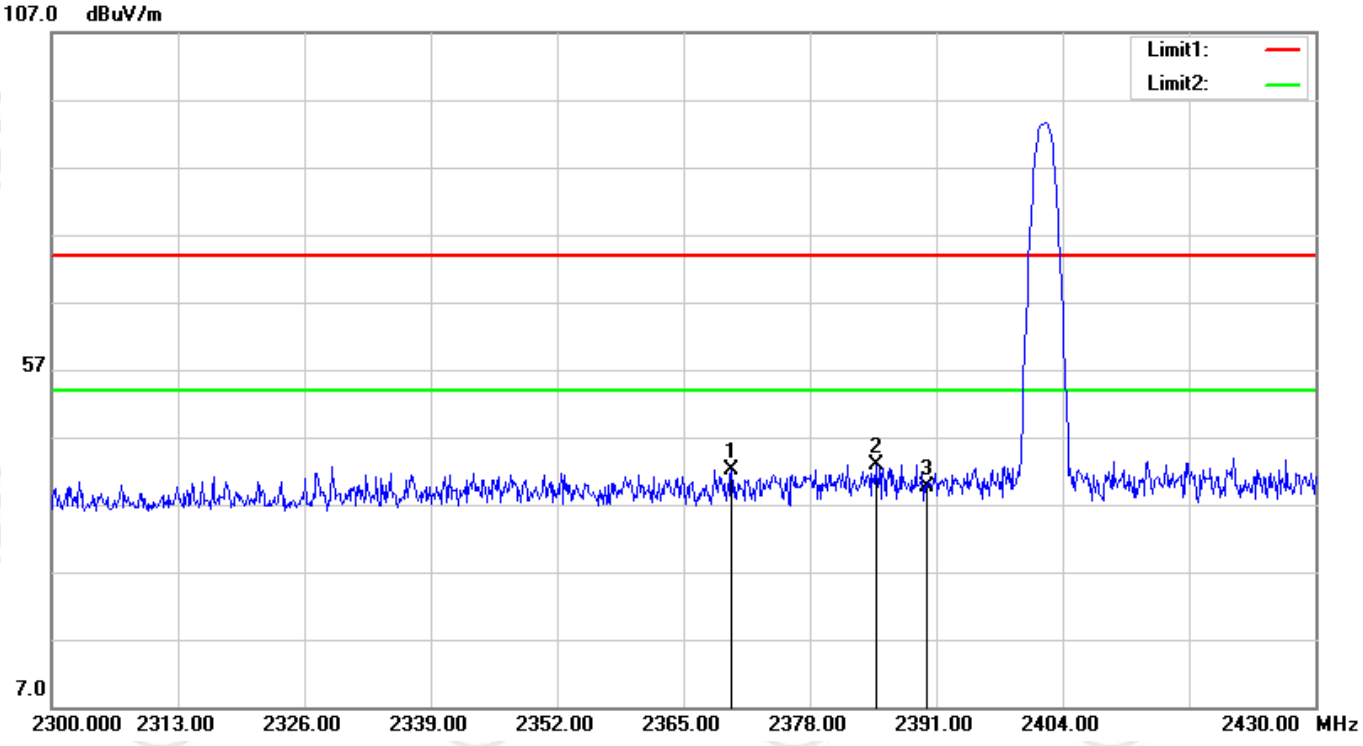
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	36.61	2.92	39.53	74.00	-34.47	200	69	peak
2	2487.720	38.01	2.92	40.93	74.00	-33.07	200	66	peak
3	2498.780	37.98	2.95	40.93	74.00	-33.07	100	96	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92E Ble

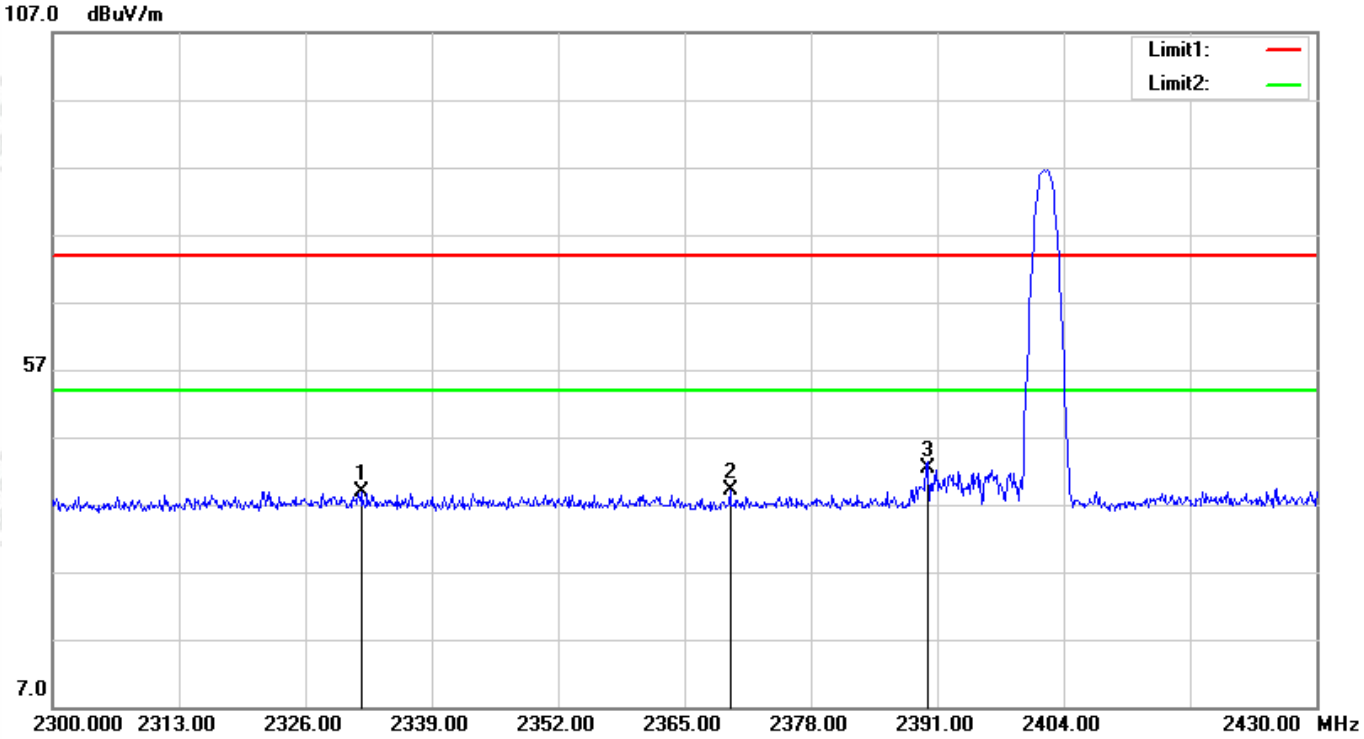
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2369.940	39.47	2.66	42.13	74.00	-31.87	200	41	peak
2	2384.760	40.08	2.70	42.78	74.00	-31.22	200	41	peak
3	2390.000	36.82	2.71	39.53	74.00	-34.47	100	24	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92E Ble

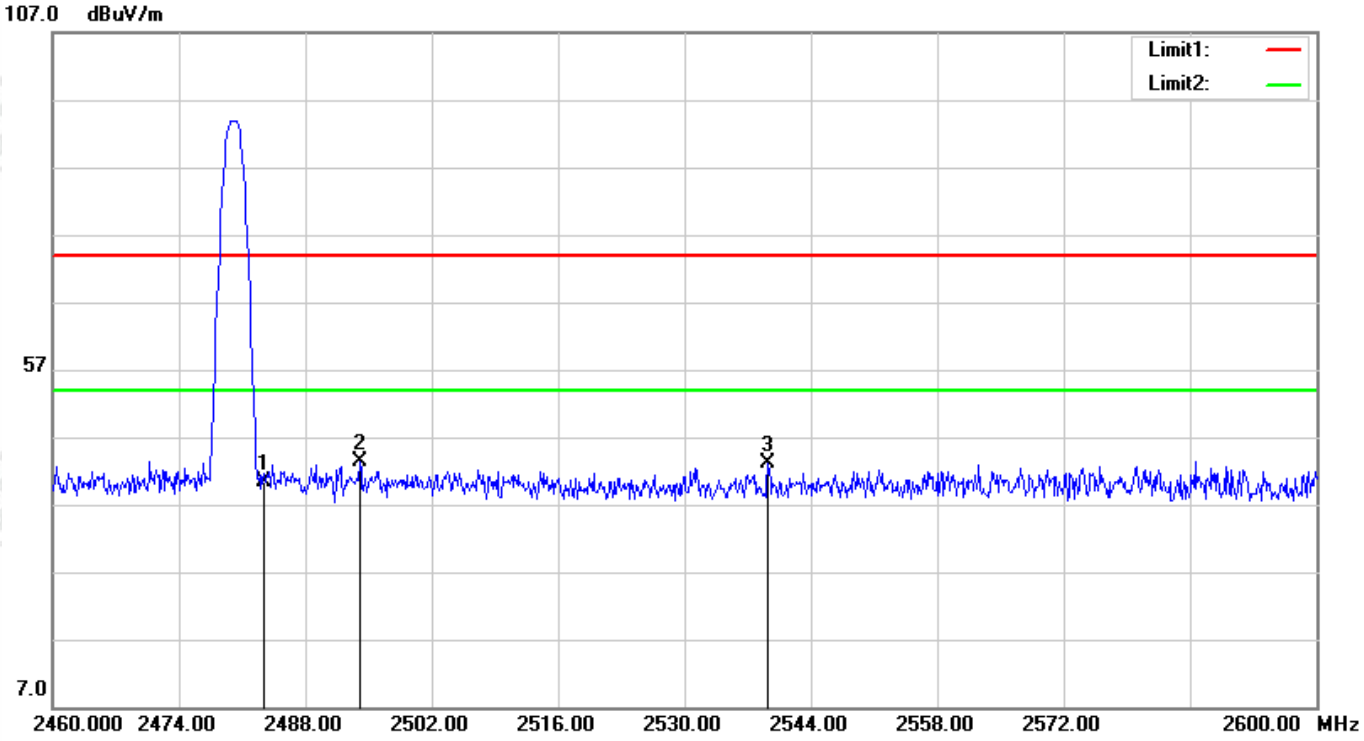
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2331.720	36.42	2.56	38.98	74.00	-35.02	200	234	peak
2	2369.680	36.59	2.66	39.25	74.00	-34.75	109	0	peak
3	2390.000	39.68	2.71	42.39	74.00	-31.61	123	0	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92E Ble

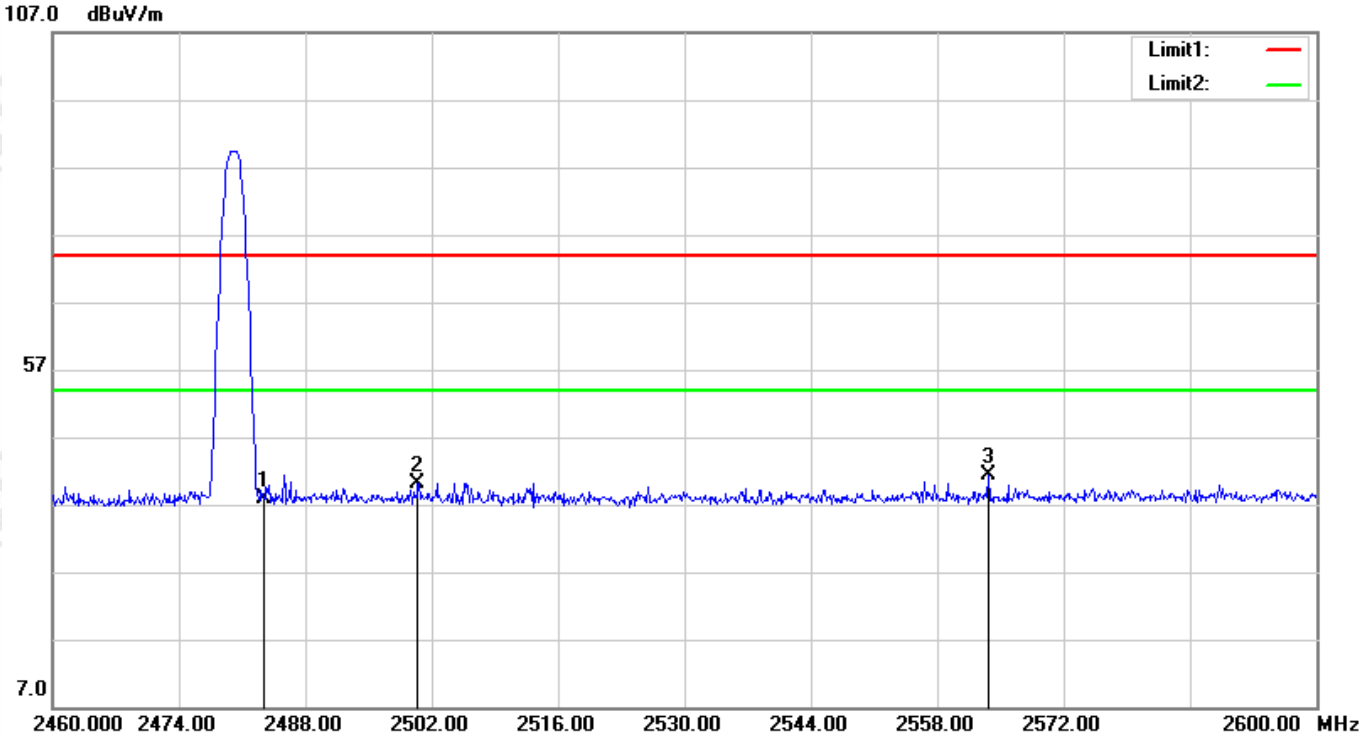
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	37.55	2.92	40.47	74.00	-33.53	100	120	peak
2	2494.020	40.45	2.94	43.39	74.00	-30.61	100	22	peak
3	2539.240	40.07	3.03	43.10	74.00	-30.90	200	65	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92E Ble

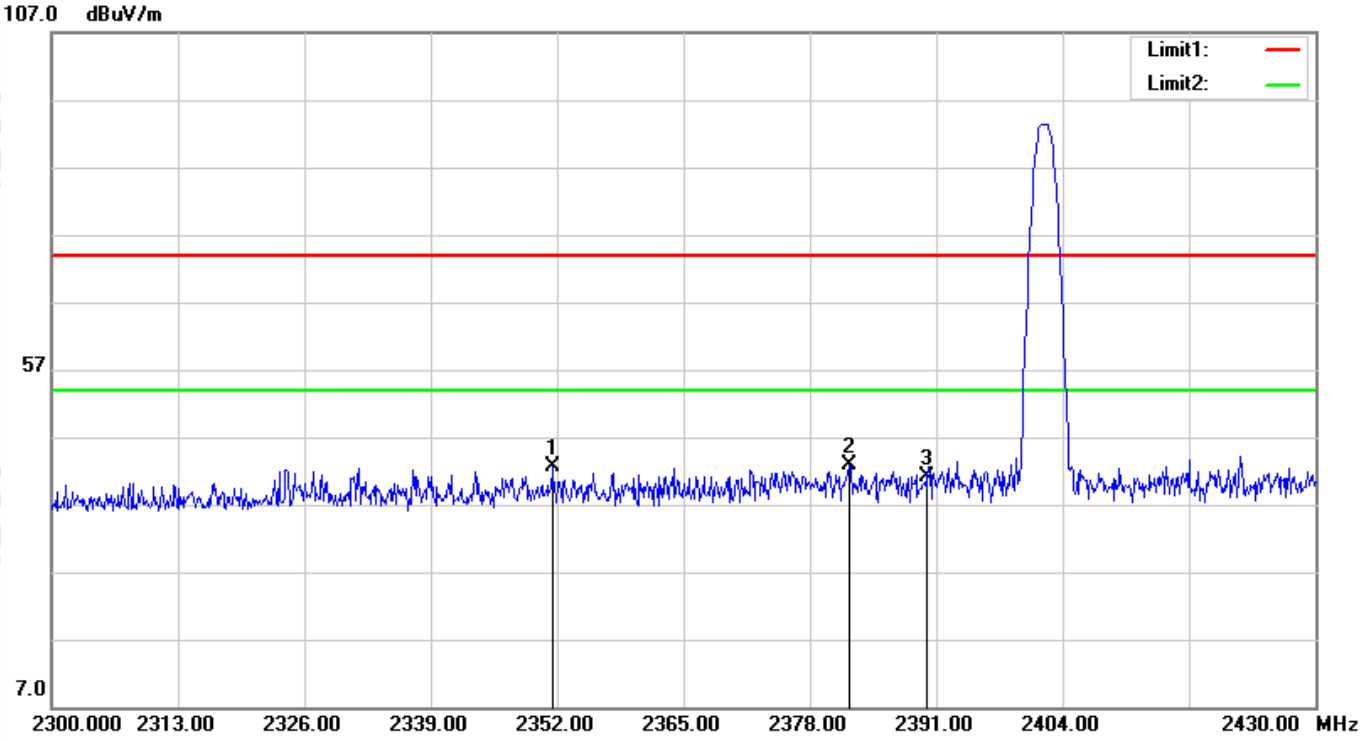
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.88	2.92	37.80	74.00	-36.20	100	169	peak
2	2500.460	37.26	2.95	40.21	74.00	-33.79	100	91	peak
3	2563.600	38.29	3.08	41.37	74.00	-32.63	100	94	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92E Ble

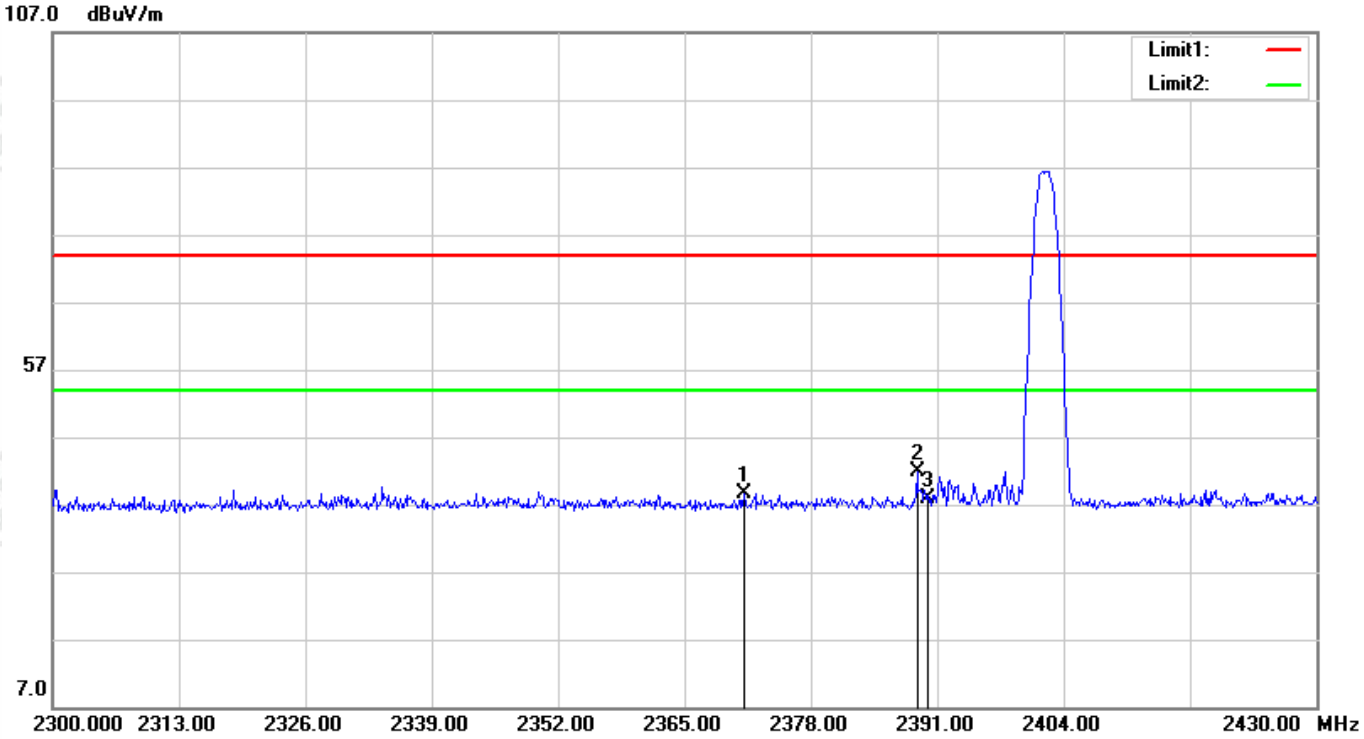
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2351.480	40.05	2.61	42.66	74.00	-31.34	200	287	peak
2	2382.030	40.24	2.69	42.93	74.00	-31.07	200	291	peak
3	2390.000	38.36	2.71	41.07	74.00	-32.93	200	40	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92E Ble

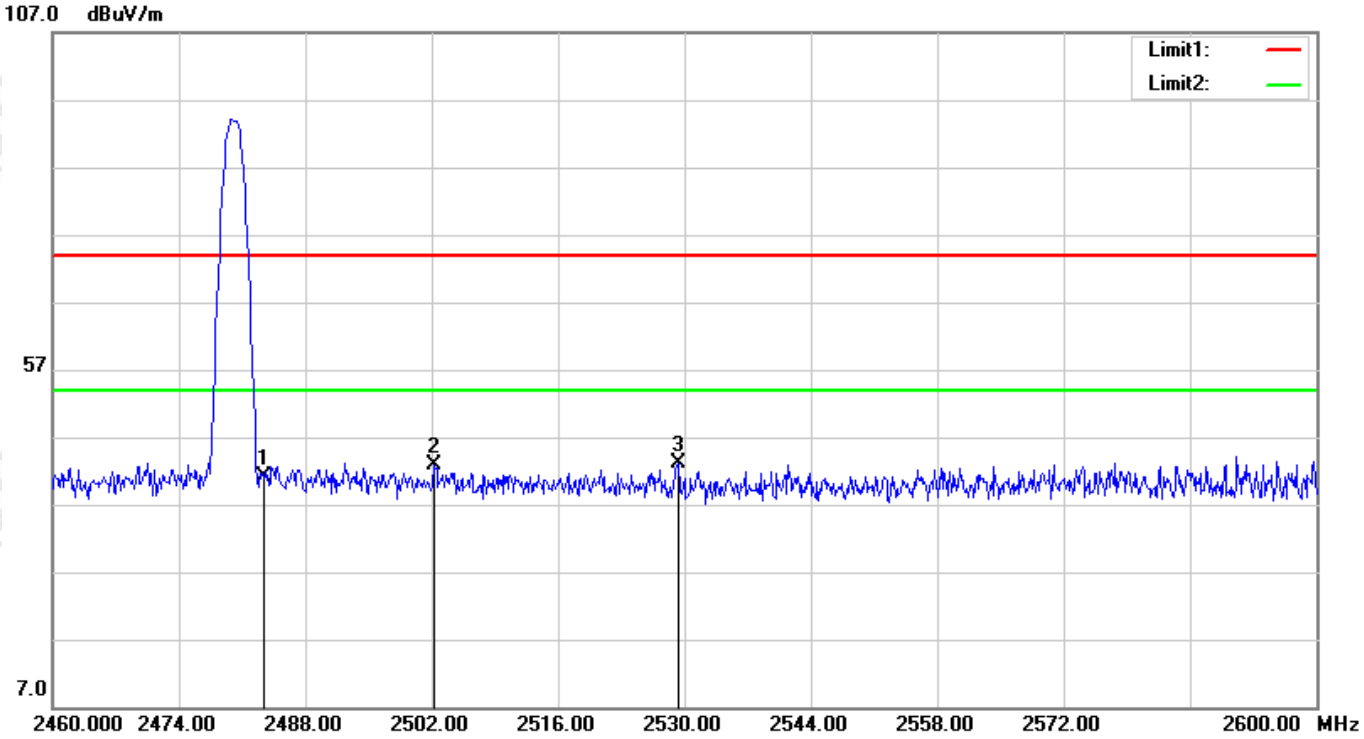
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2371.110	35.98	2.66	38.64	74.00	-35.36	200	233	peak
2	2388.920	39.13	2.71	41.84	74.00	-32.16	200	154	peak
3	2390.000	35.09	2.71	37.80	74.00	-36.20	200	277	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92E Ble

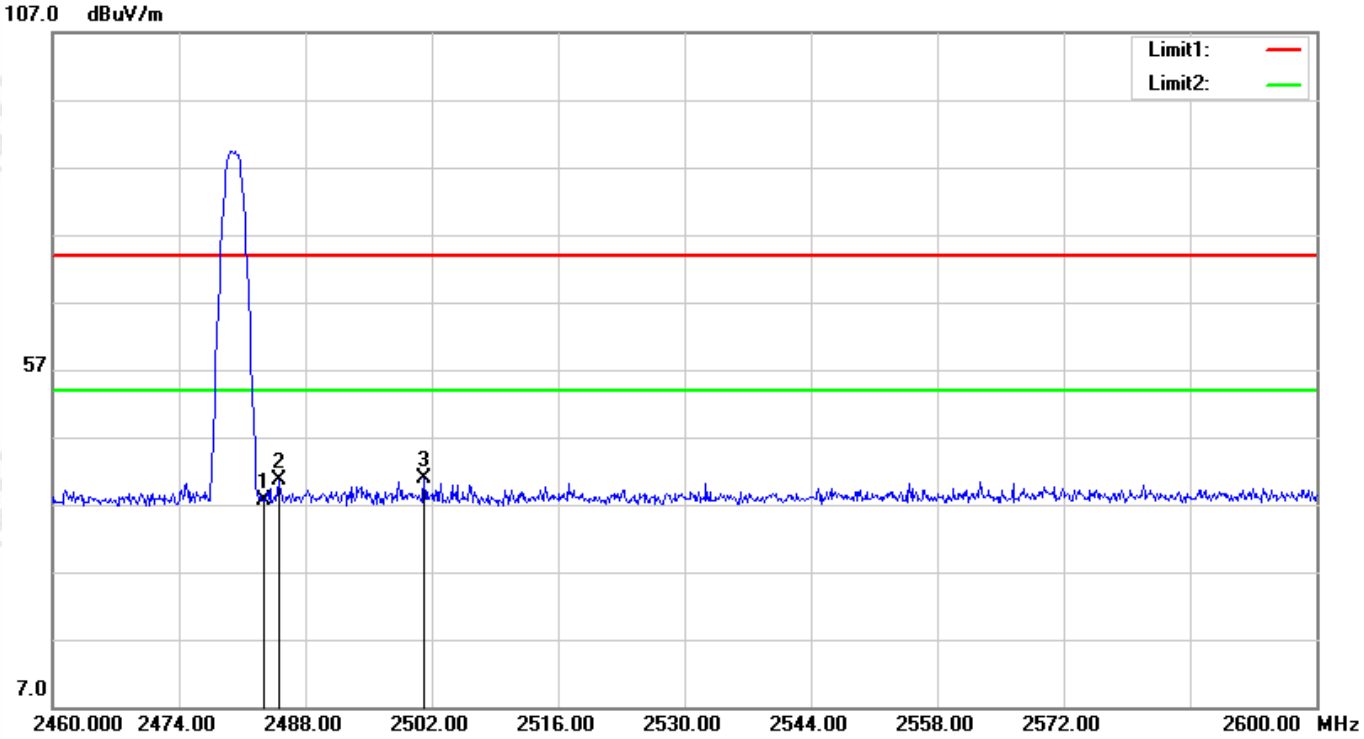
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	38.31	2.92	41.23	74.00	-32.77	200	41	peak
2	2502.280	39.82	2.95	42.77	74.00	-31.23	200	41	peak
3	2529.300	40.19	3.01	43.20	74.00	-30.80	200	46	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92E Ble

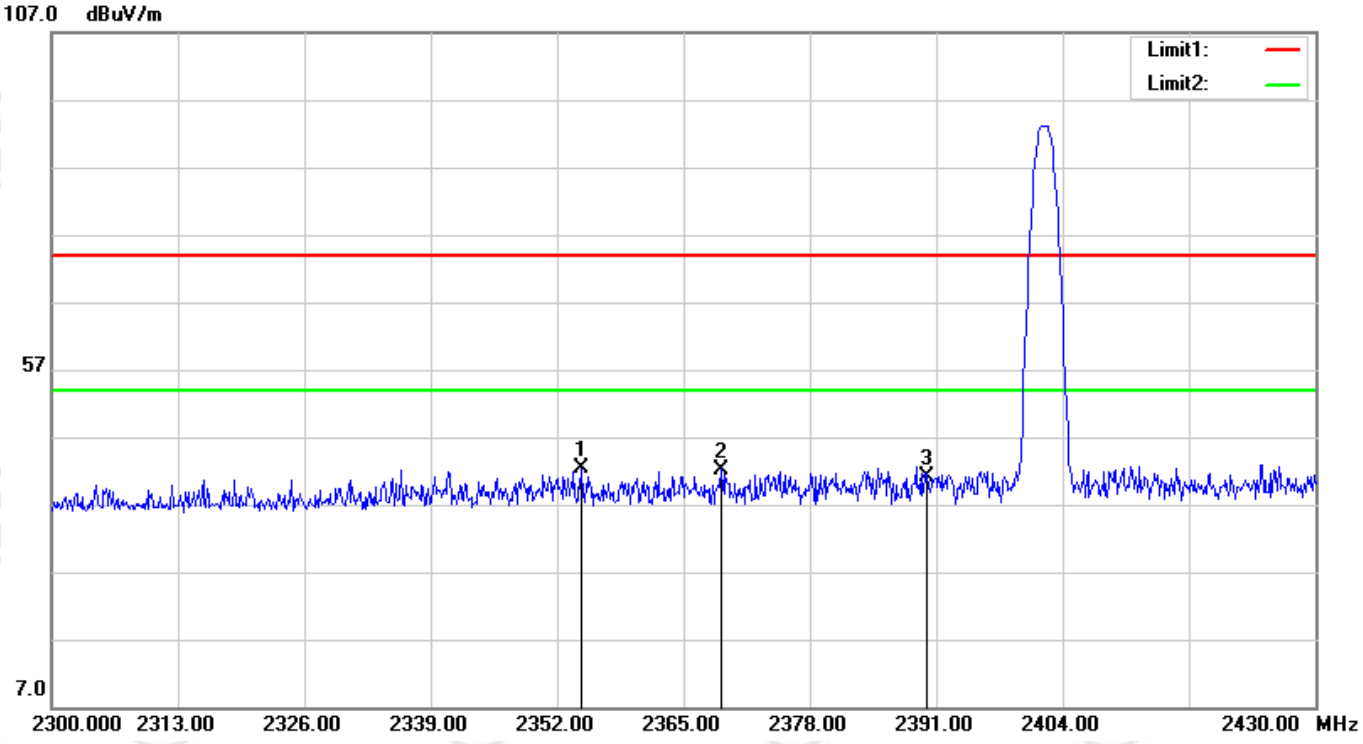
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.63	2.92	37.55	74.00	-36.45	100	99	peak
2	2485.060	37.80	2.92	40.72	74.00	-33.28	200	65	peak
3	2501.160	37.89	2.95	40.84	74.00	-33.16	100	99	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92E Ble

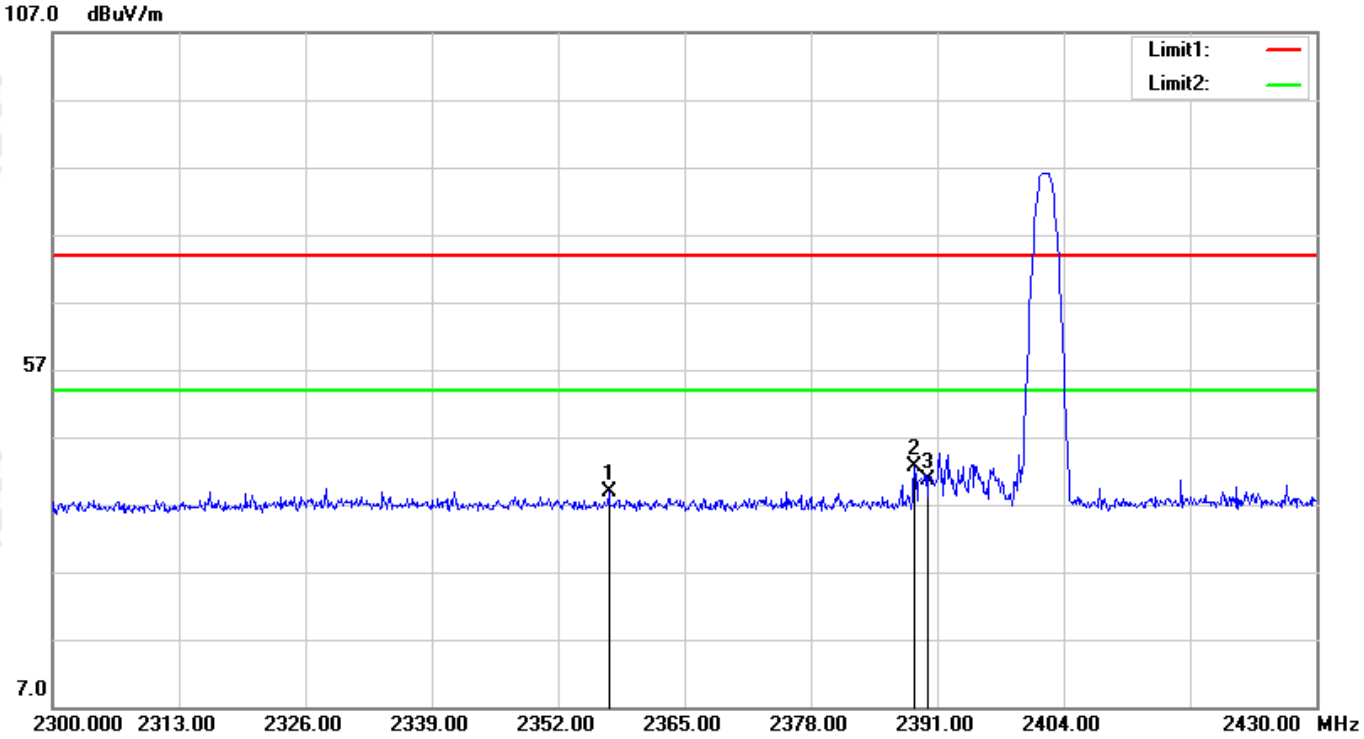
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2354.470	39.66	2.62	42.28	74.00	-31.72	100	287	peak
2	2368.900	39.59	2.66	42.25	74.00	-31.75	200	291	peak
3	2390.000	38.35	2.71	41.06	74.00	-32.94	100	108	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92E Ble

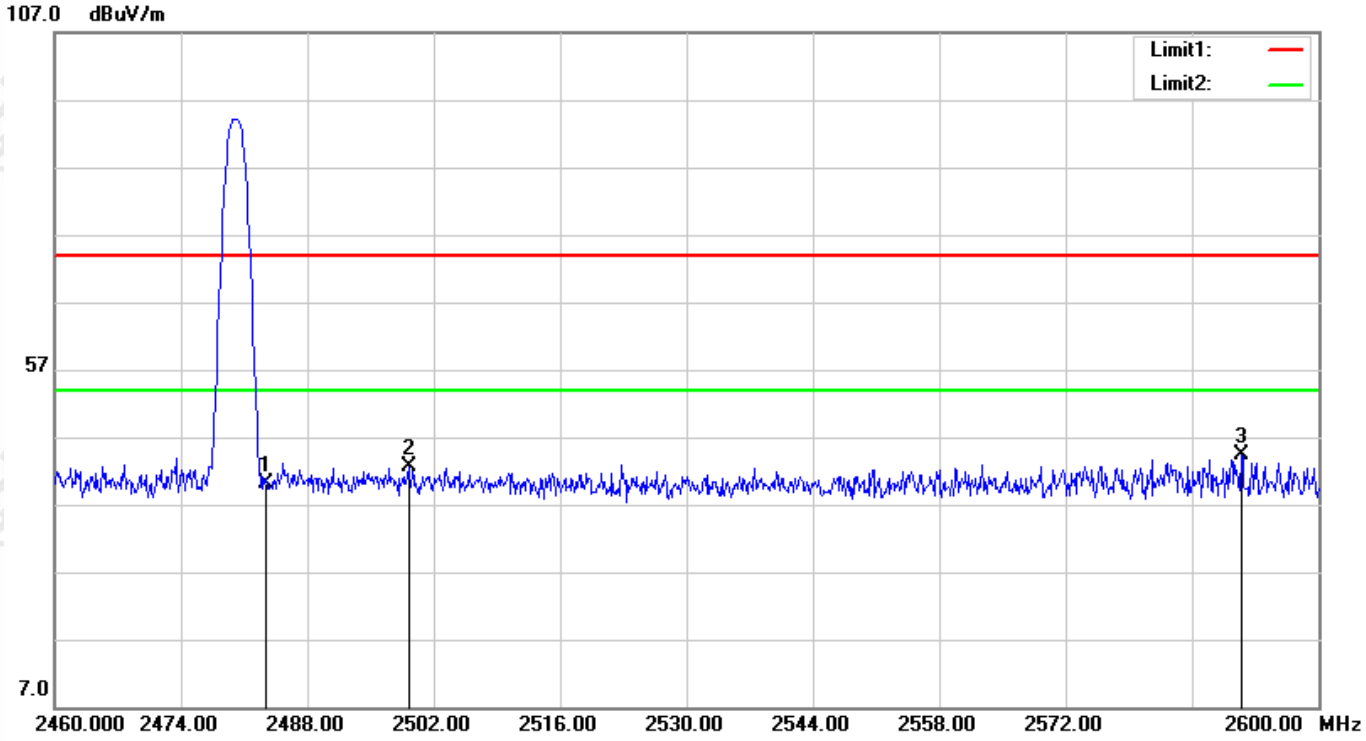
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2357.200	36.28	2.62	38.90	74.00	-35.10	100	80	peak
2	2388.660	39.83	2.71	42.54	74.00	-31.46	200	58	peak
3	2390.000	37.86	2.71	40.57	74.00	-33.43	200	58	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92E Ble

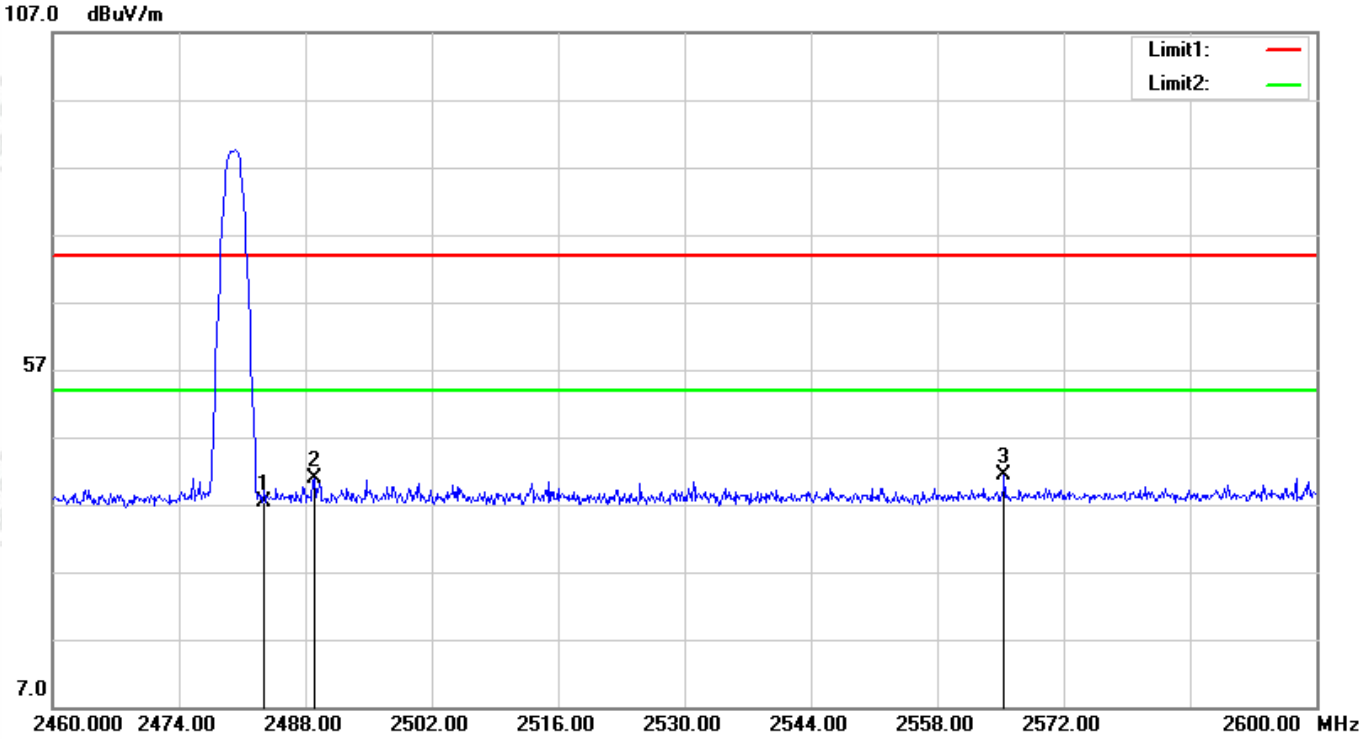
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	37.32	2.92	40.24	74.00	-33.76	200	233	peak
2	2499.200	39.80	2.95	42.75	74.00	-31.25	200	22	peak
3	2591.460	41.12	3.14	44.26	74.00	-29.74	100	230	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92E Ble

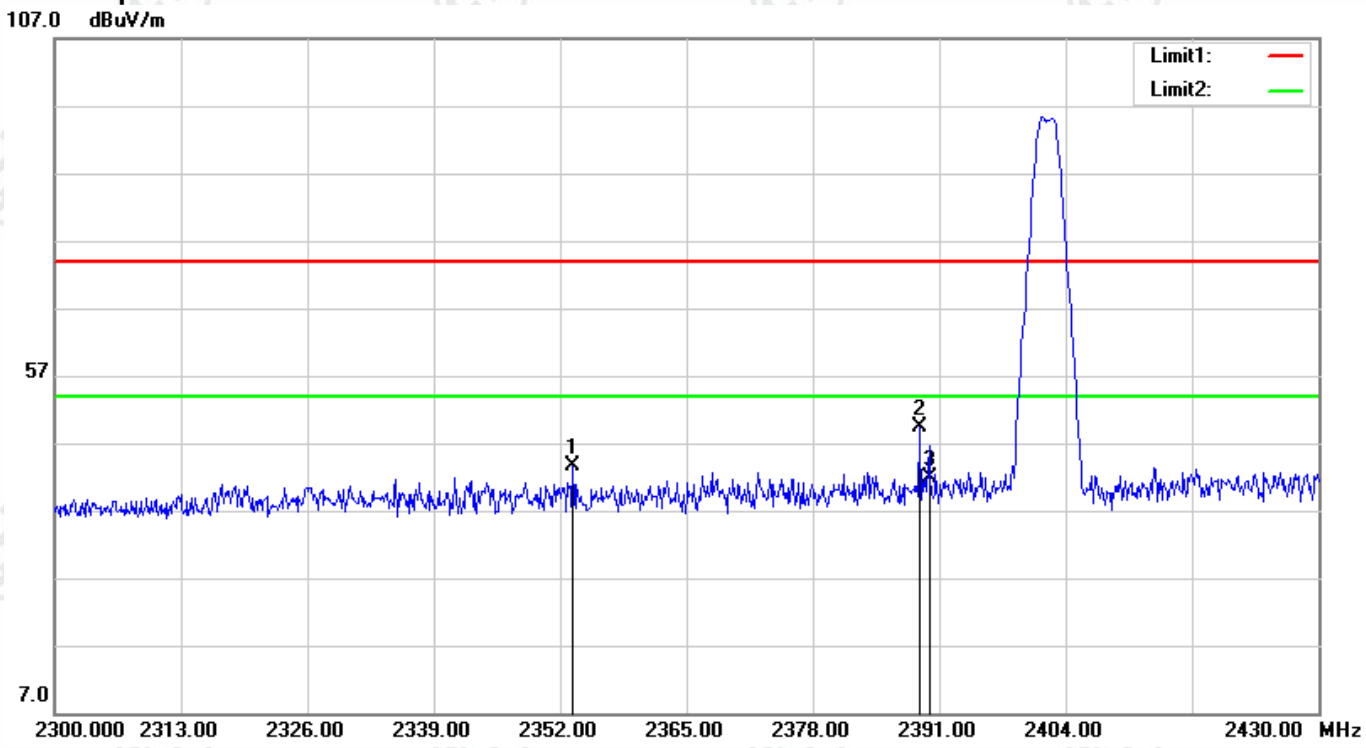
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.57	2.92	37.49	74.00	-36.51	200	62	peak
2	2488.980	37.95	2.93	40.88	74.00	-33.12	200	29	peak
3	2565.420	38.30	3.09	41.39	74.00	-32.61	100	94	peak

BLE_1M	Channel:	2402
Horizontal	Test model No.:	HJH92S Ble

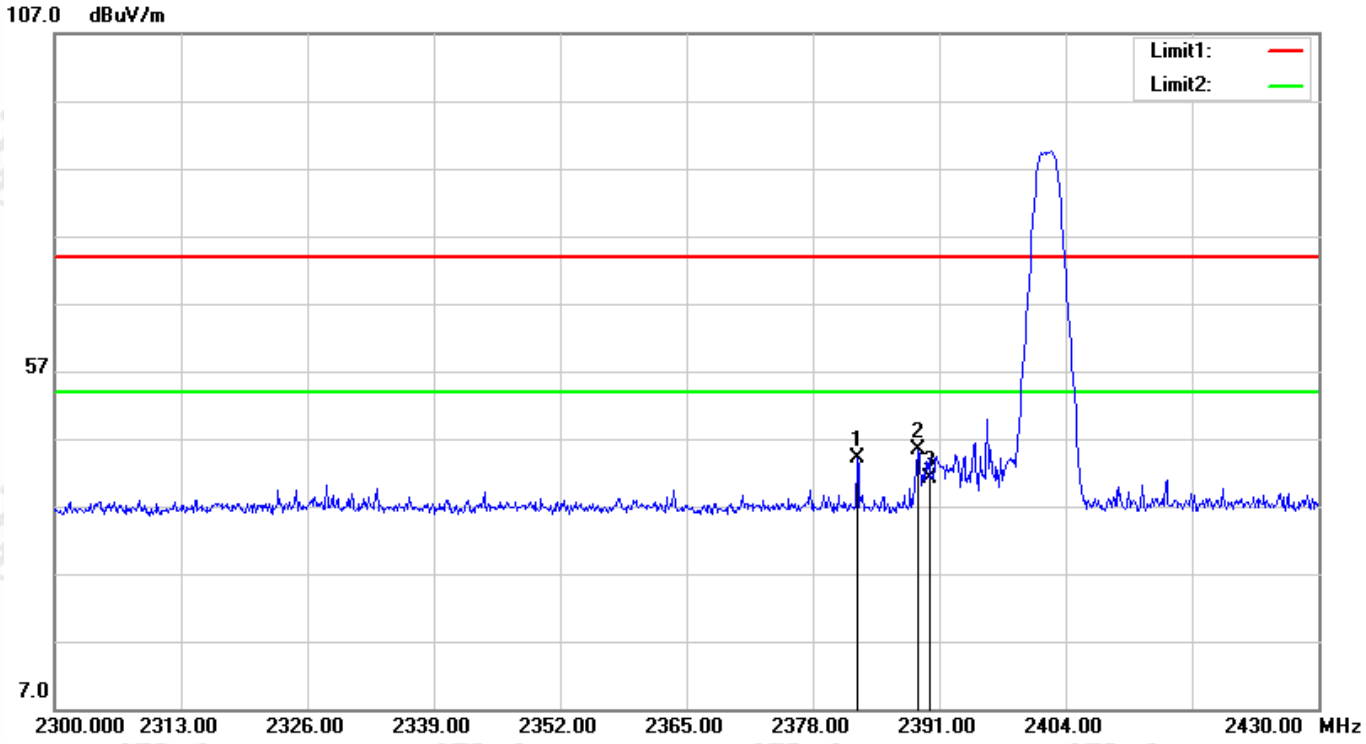
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2353.300	41.05	2.61	43.66	74.00	-30.34	100	109	peak
2	2388.920	46.63	2.71	49.34	74.00	-24.66	200	175	peak
3	2390.000	39.10	2.71	41.81	74.00	-32.19	200	172	peak

Mode:	BLE_1M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92S Ble

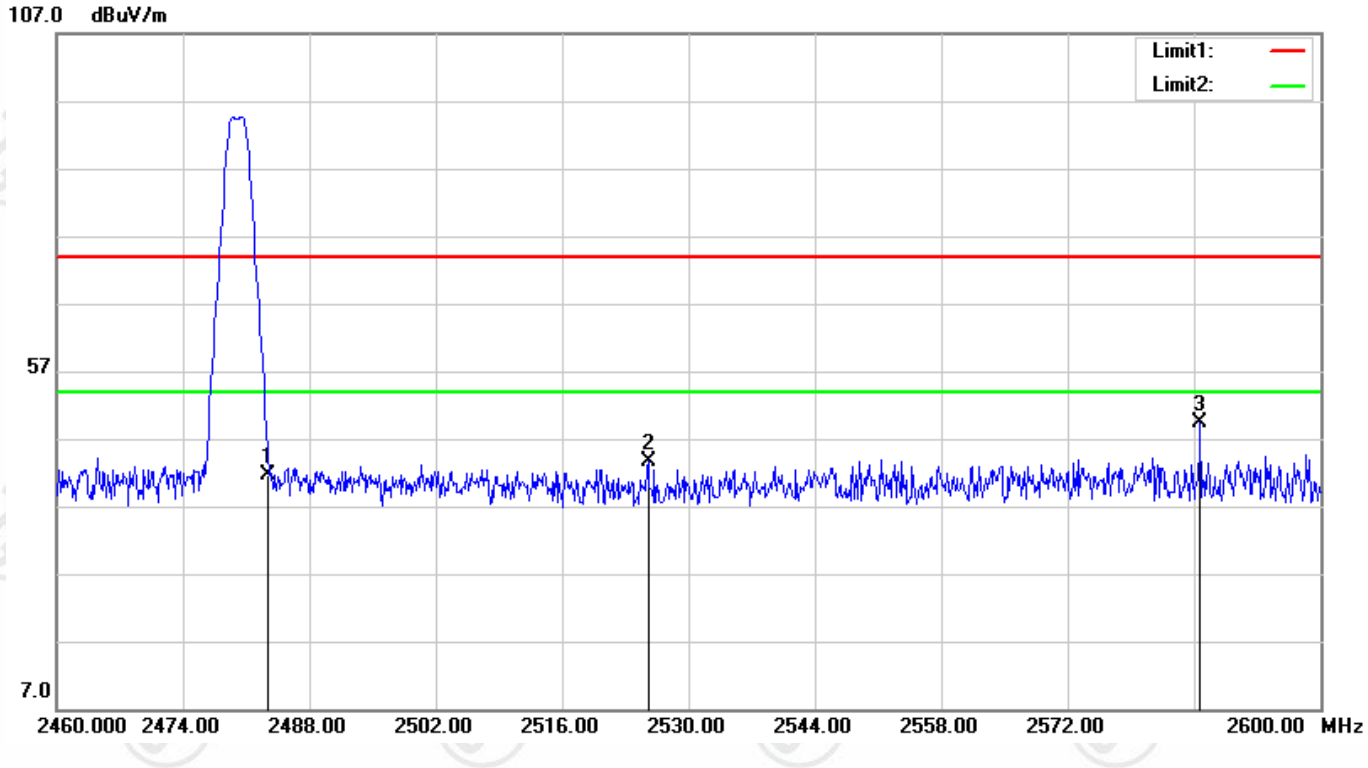
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2382.550	41.52	2.69	44.21	74.00	-29.79	100	203	peak
2	2388.790	42.72	2.71	45.43	74.00	-28.57	100	0	peak
3	2390.000	38.46	2.71	41.17	74.00	-32.83	200	38	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92S Ble

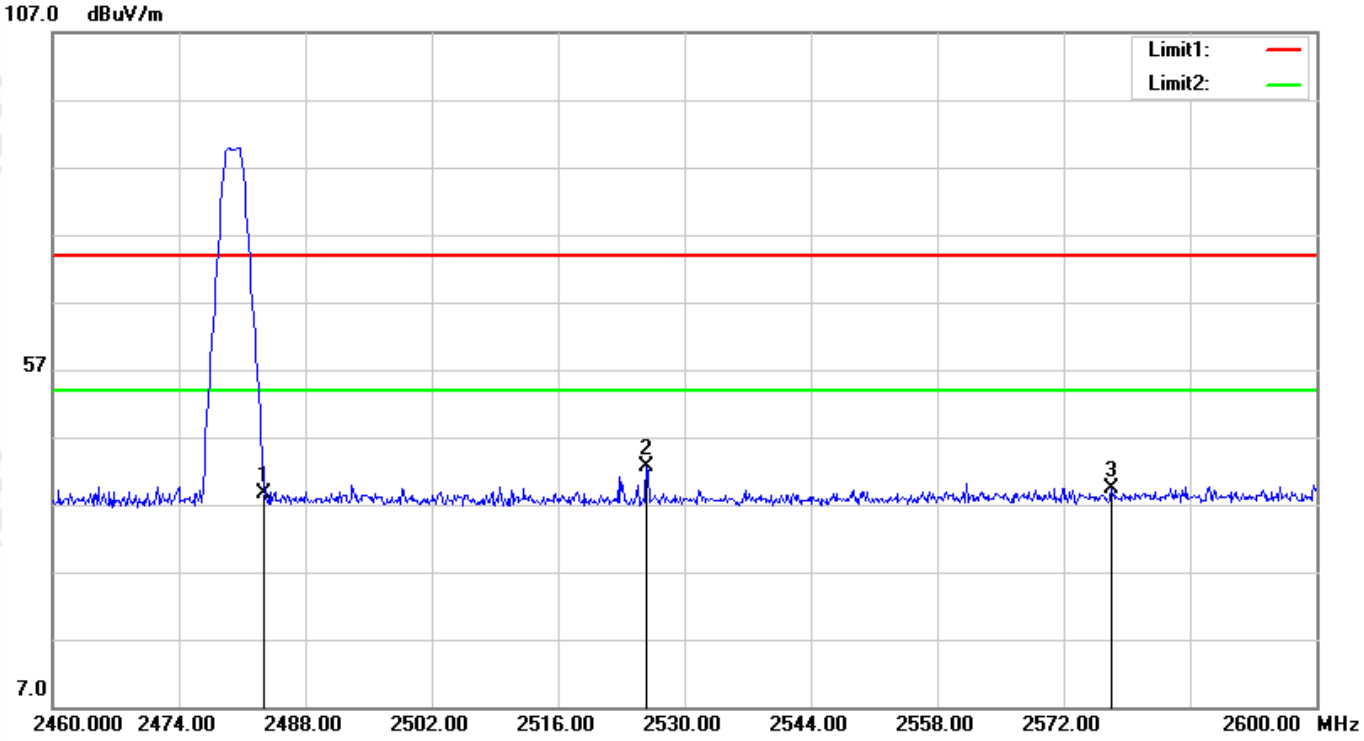
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	38.63	2.92	41.55	74.00	-32.45	100	79	peak
2	2525.520	40.55	3.00	43.55	74.00	-30.45	100	129	peak
3	2586.700	46.29	3.13	49.42	74.00	-24.58	200	255	peak

Mode:	BLE_1M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92S Ble

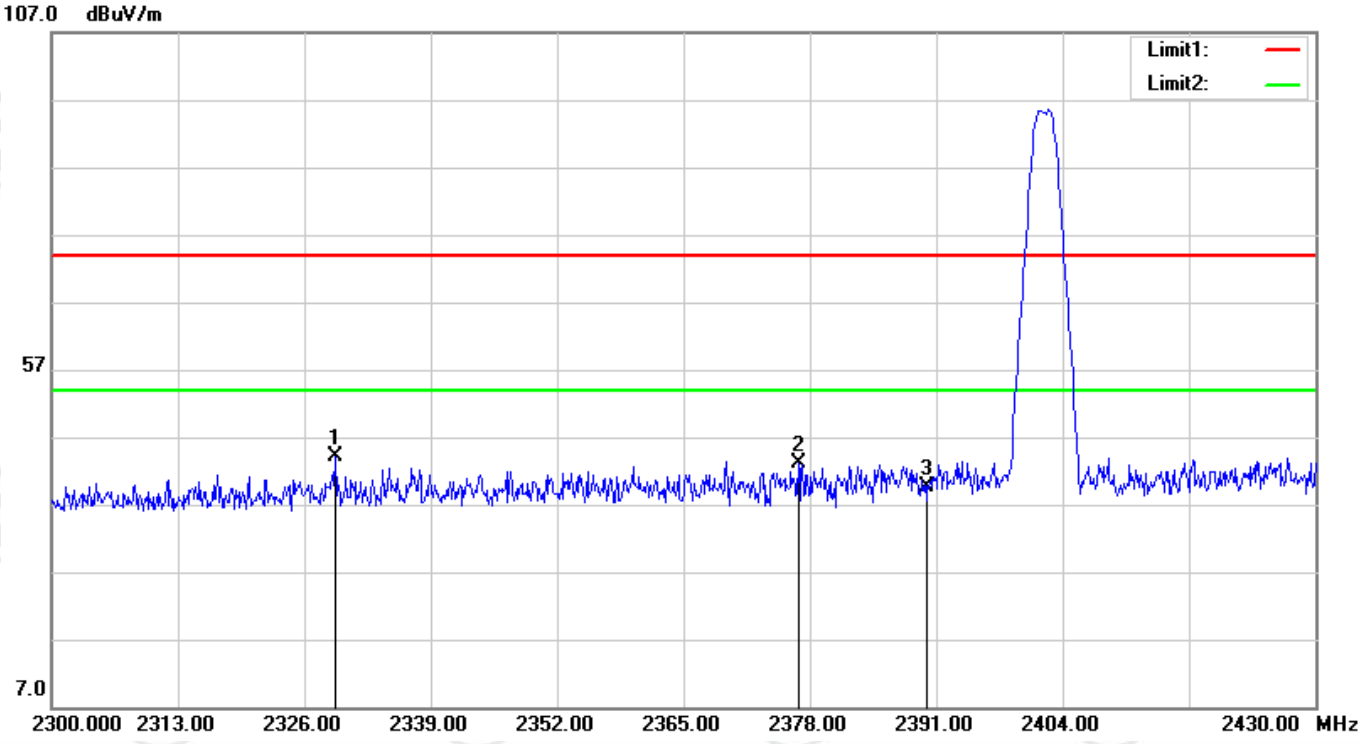
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	35.65	2.92	38.57	74.00	-35.43	200	75	peak
2	2525.800	39.55	3.00	42.55	74.00	-31.45	199	0	peak
3	2577.320	36.38	3.11	39.49	74.00	-34.51	100	74	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92S Ble

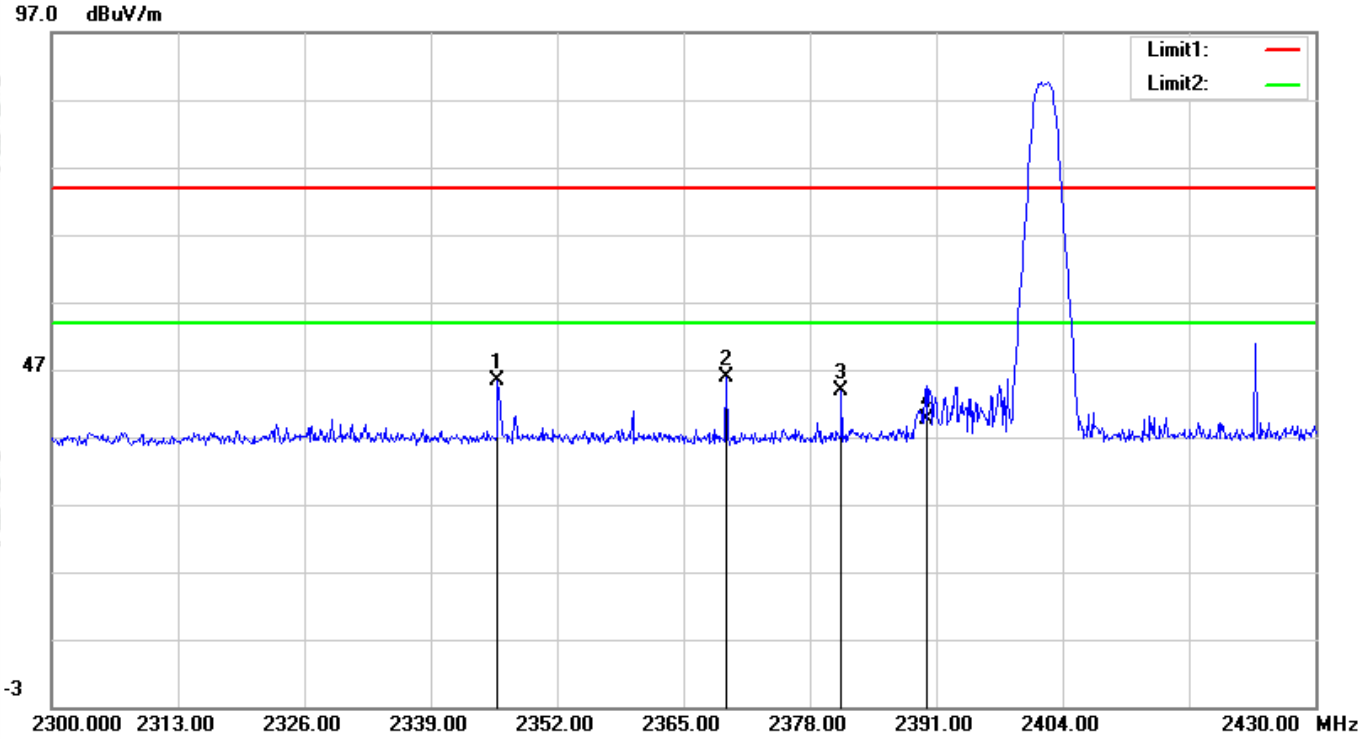
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2329.120	41.68	2.55	44.23	74.00	-29.77	100	67	peak
2	2376.830	40.52	2.68	43.20	74.00	-30.80	100	106	peak
3	2390.000	36.91	2.71	39.62	74.00	-34.38	200	108	peak

Mode:	BLE_2M	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92S Ble

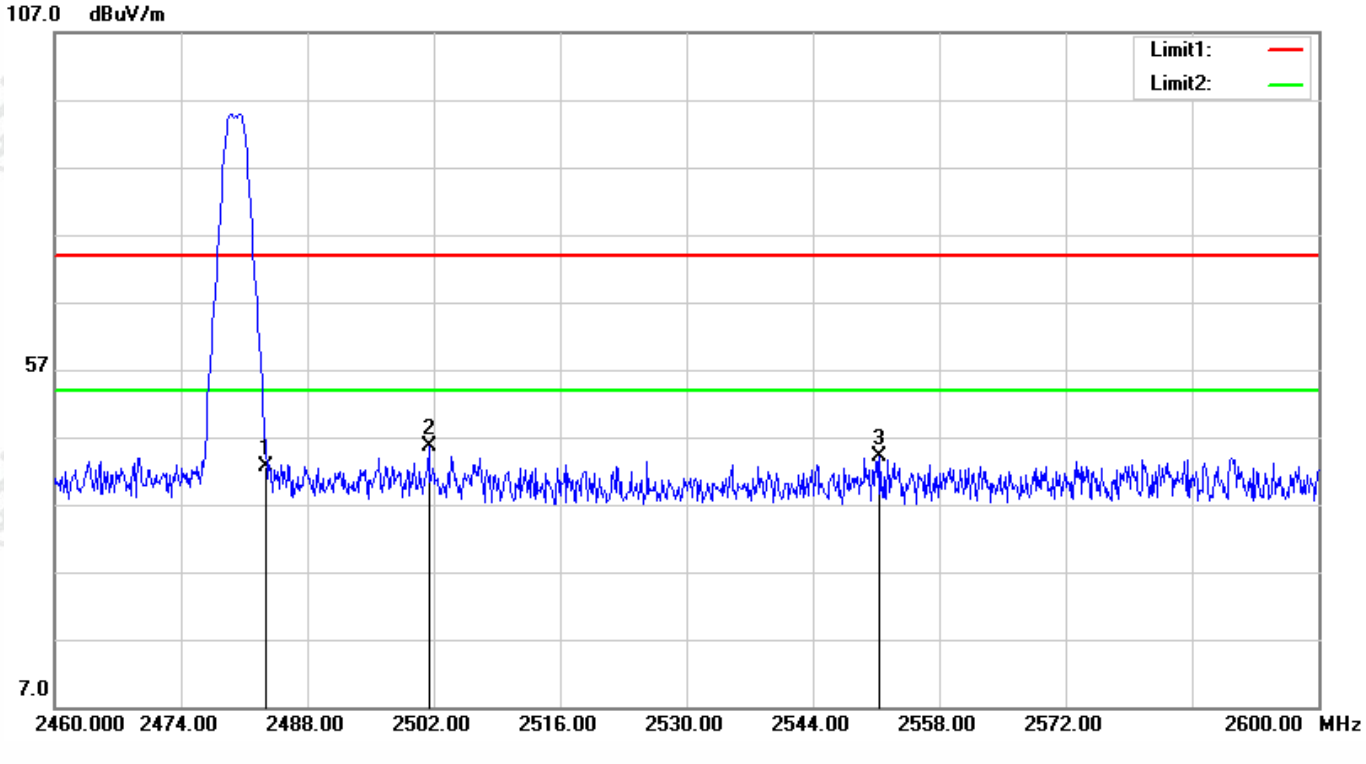
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2345.890	42.72	2.59	45.31	74.00	-28.69	100	201	peak
2	2369.420	43.12	2.66	45.78	74.00	-28.22	200	79	peak
3	2381.250	41.30	2.69	43.99	74.00	-30.01	100	201	peak
4	2390.000	36.82	2.71	39.53	74.00	-34.47	100	21	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92S Ble

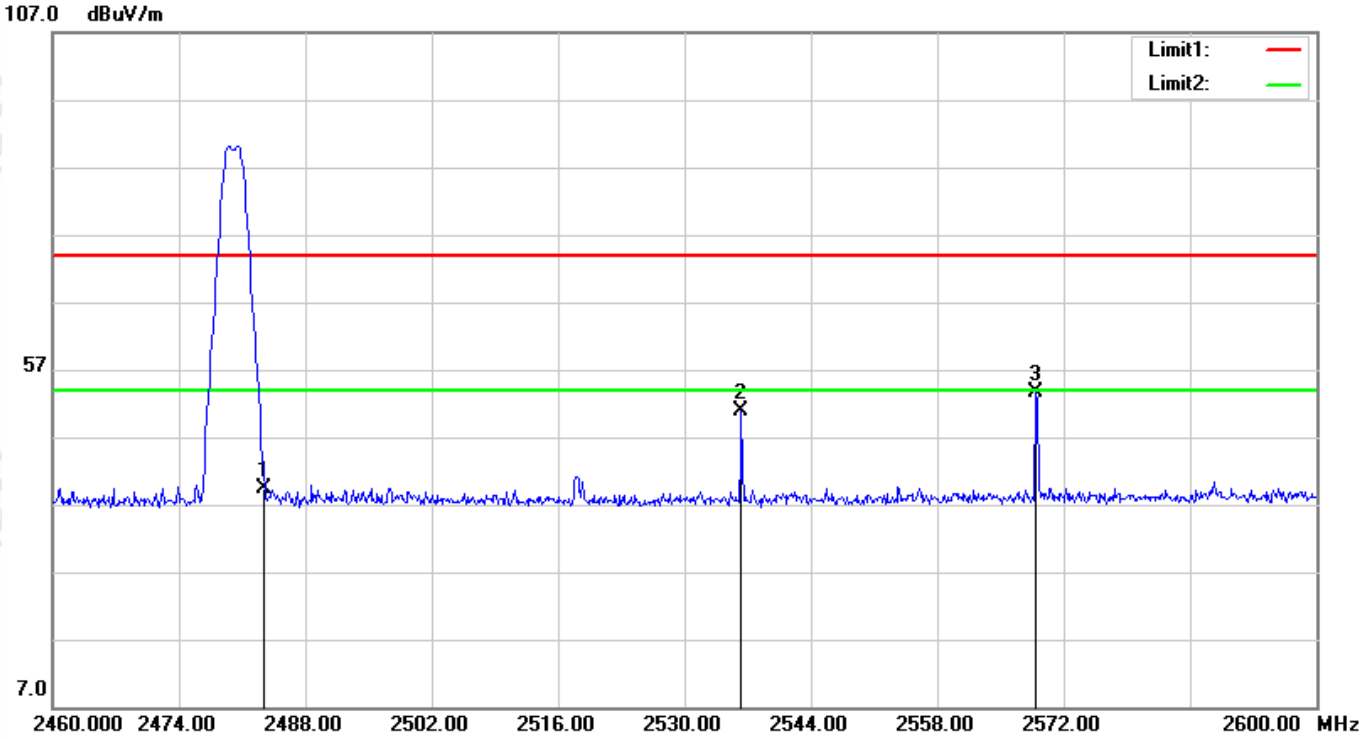
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	39.75	2.92	42.67	74.00	-31.33	100	120	peak
2	2501.440	42.75	2.95	45.70	74.00	-28.30	100	123	peak
3	2551.420	41.06	3.06	44.12	74.00	-29.88	100	126	peak

Mode:	BLE_2M	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92S Ble

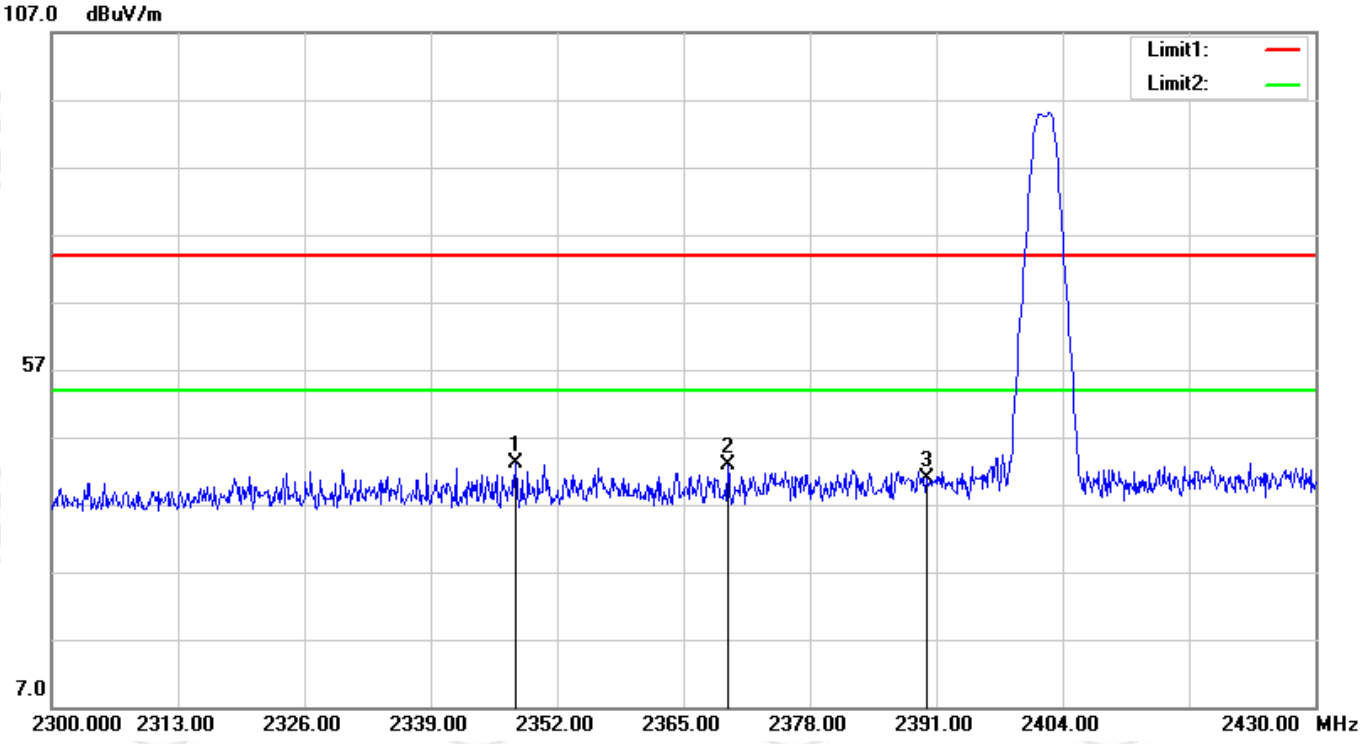
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	36.43	2.92	39.35	74.00	-34.65	200	87	peak
2	2536.300	47.76	3.03	50.79	74.00	-23.21	100	309	peak
3	2568.920	50.60	3.09	53.69	74.00	-20.31	100	309	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92S Ble

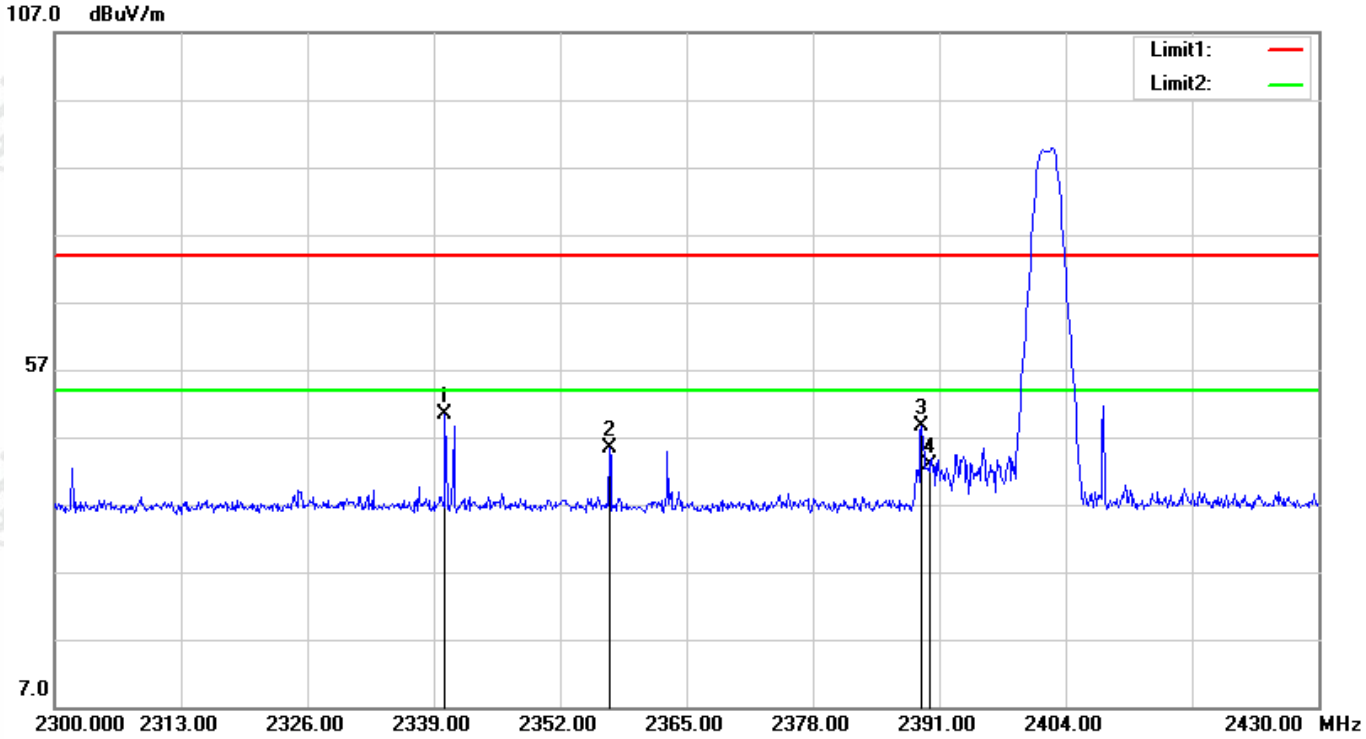
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2347.710	40.42	2.60	43.02	74.00	-30.98	100	112	peak
2	2369.550	40.18	2.66	42.84	74.00	-31.16	100	299	peak
3	2390.000	38.16	2.71	40.87	74.00	-33.13	200	132	peak

Mode:	BLE_125kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92S Ble

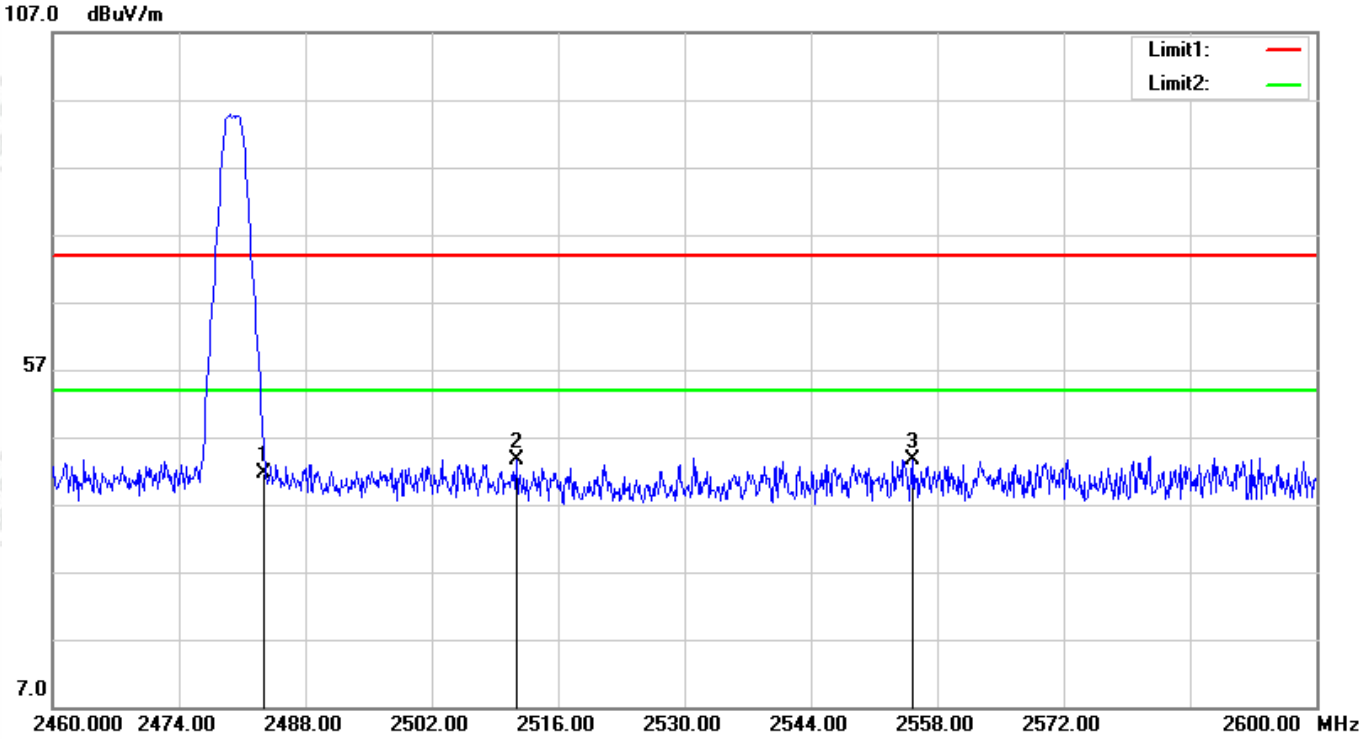
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2340.170	47.85	2.58	50.43	74.00	-23.57	100	320	peak
2	2357.070	42.79	2.62	45.41	74.00	-28.59	100	320	peak
3	2389.180	45.85	2.71	48.56	74.00	-25.44	148	0	peak
4	2390.000	40.12	2.71	42.83	74.00	-31.17	100	1	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92S Ble

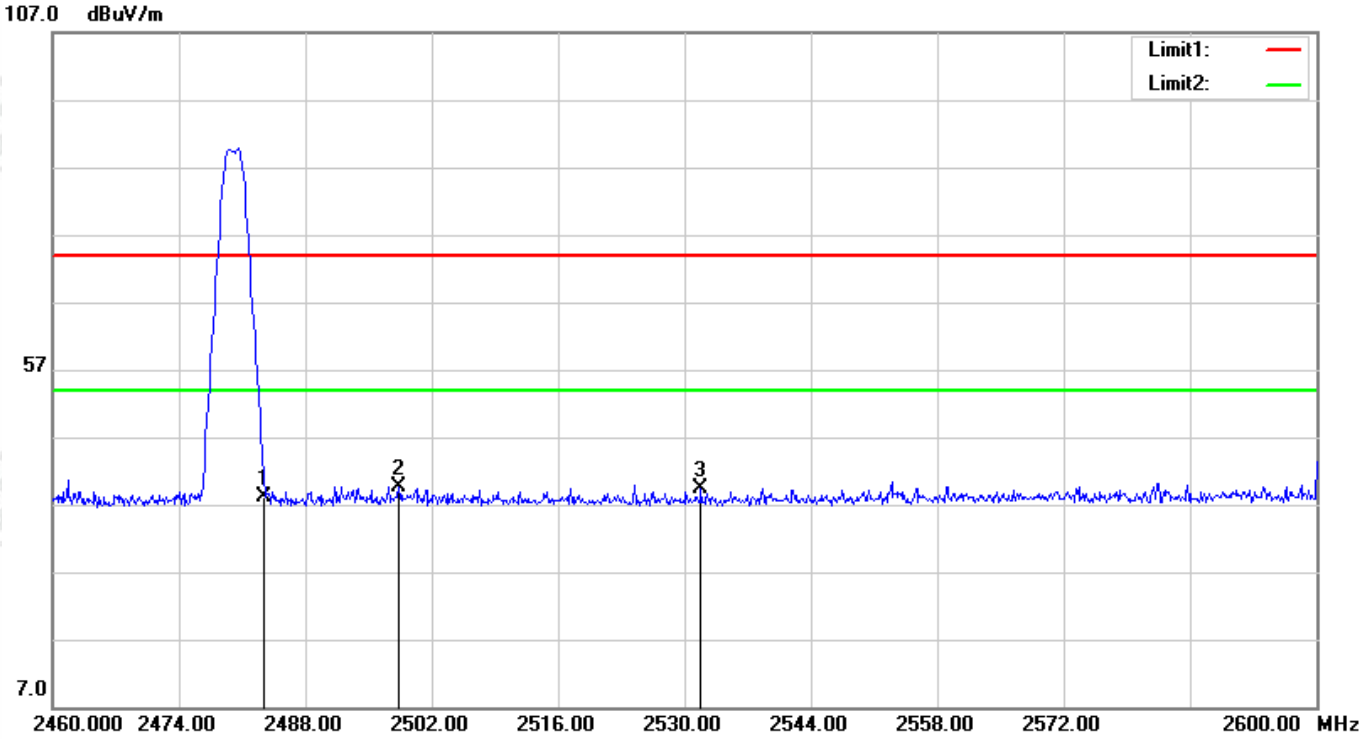
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	38.78	2.92	41.70	74.00	-32.30	100	112	peak
2	2511.380	40.76	2.97	43.73	74.00	-30.27	100	127	peak
3	2555.340	40.64	3.07	43.71	74.00	-30.29	100	118	peak

Mode:	BLE_125kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92S Ble

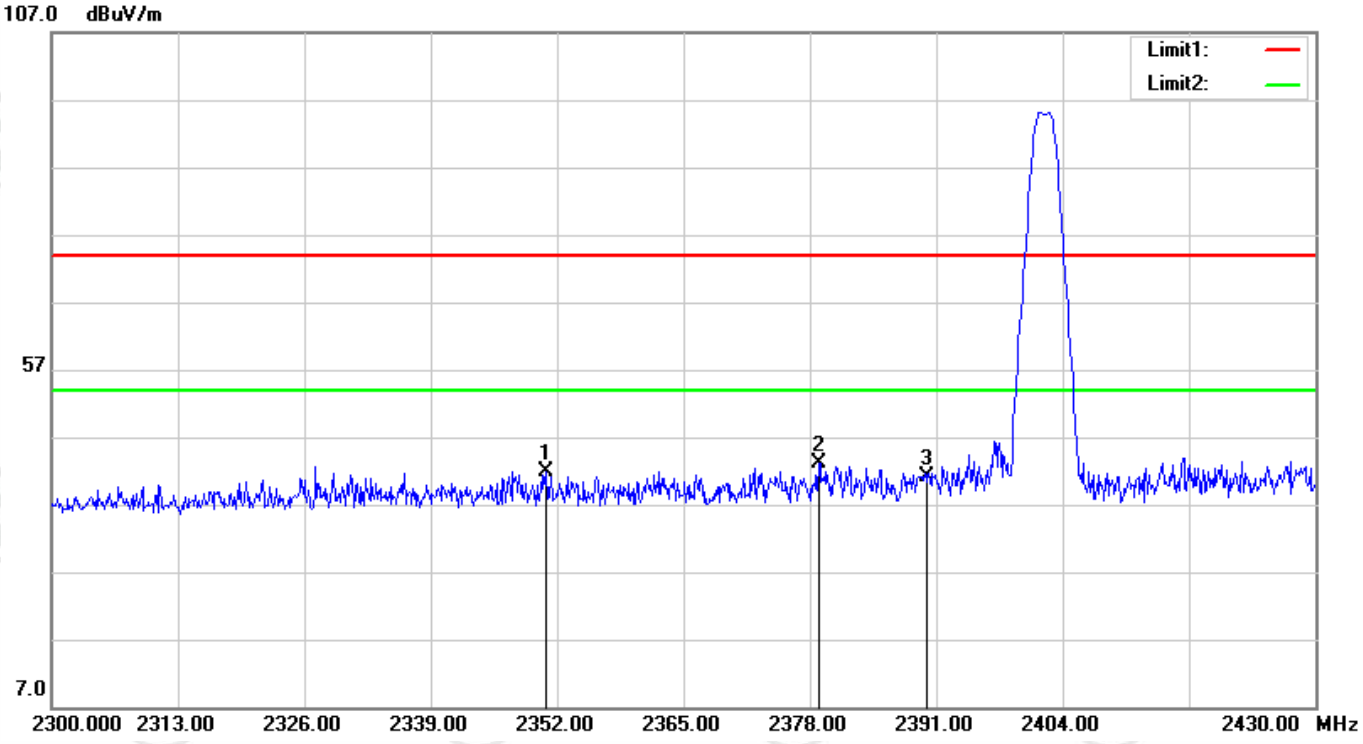
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	35.17	2.92	38.09	74.00	-35.91	200	104	peak
2	2498.360	36.68	2.95	39.63	74.00	-34.37	200	87	peak
3	2531.820	36.39	3.02	39.41	74.00	-34.59	100	284	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Horizontal	Test model No.:	HJH92S Ble

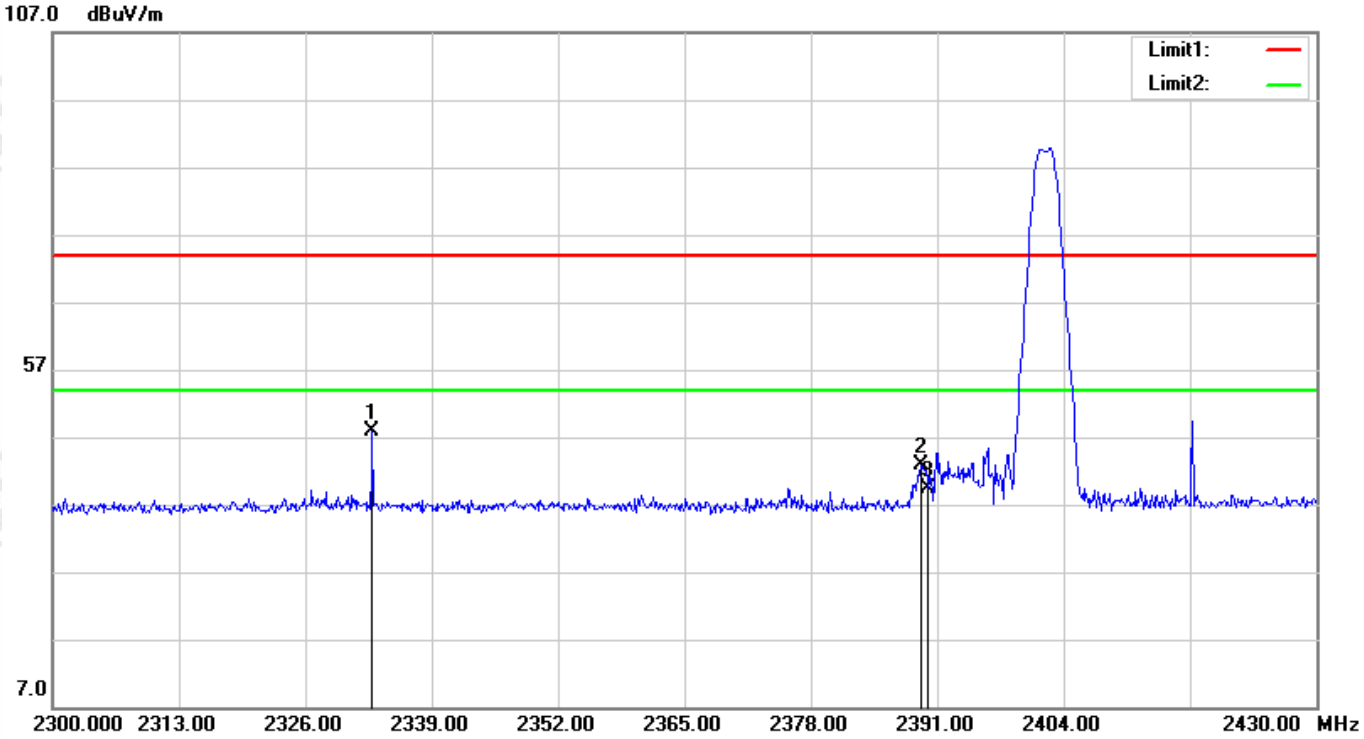
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2350.830	39.20	2.61	41.81	74.00	-32.19	100	115	peak
2	2378.910	40.37	2.68	43.05	74.00	-30.95	100	115	peak
3	2390.000	38.51	2.71	41.22	74.00	-32.78	100	107	peak

Mode:	BLE_500kbps	Channel:	2402
Remark:	Vertical	Test model No.:	HJH92S Ble

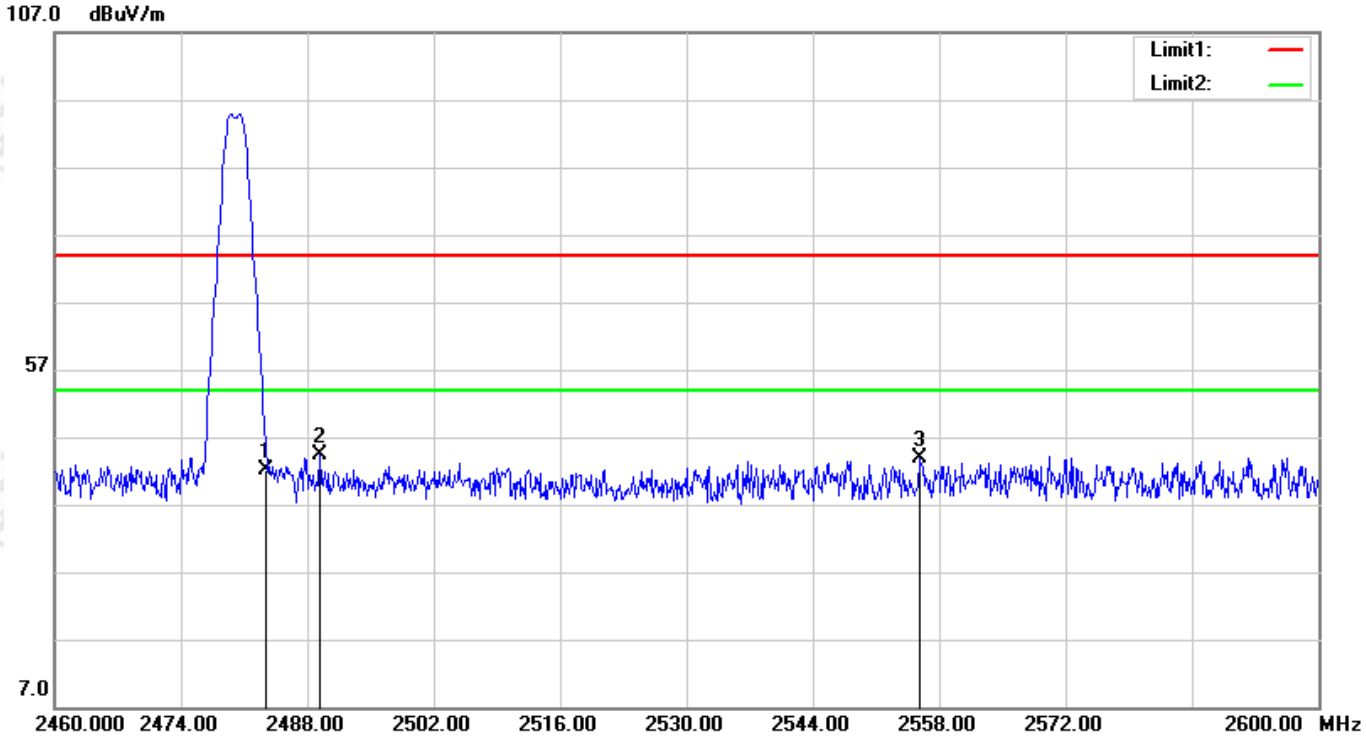
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2332.890	45.35	2.56	47.91	74.00	-26.09	100	247	peak
2	2389.310	40.19	2.71	42.90	74.00	-31.10	186	0	peak
3	2390.000	36.71	2.71	39.42	74.00	-34.58	100	0	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Horizontal	Test model No.:	HJH92S Ble

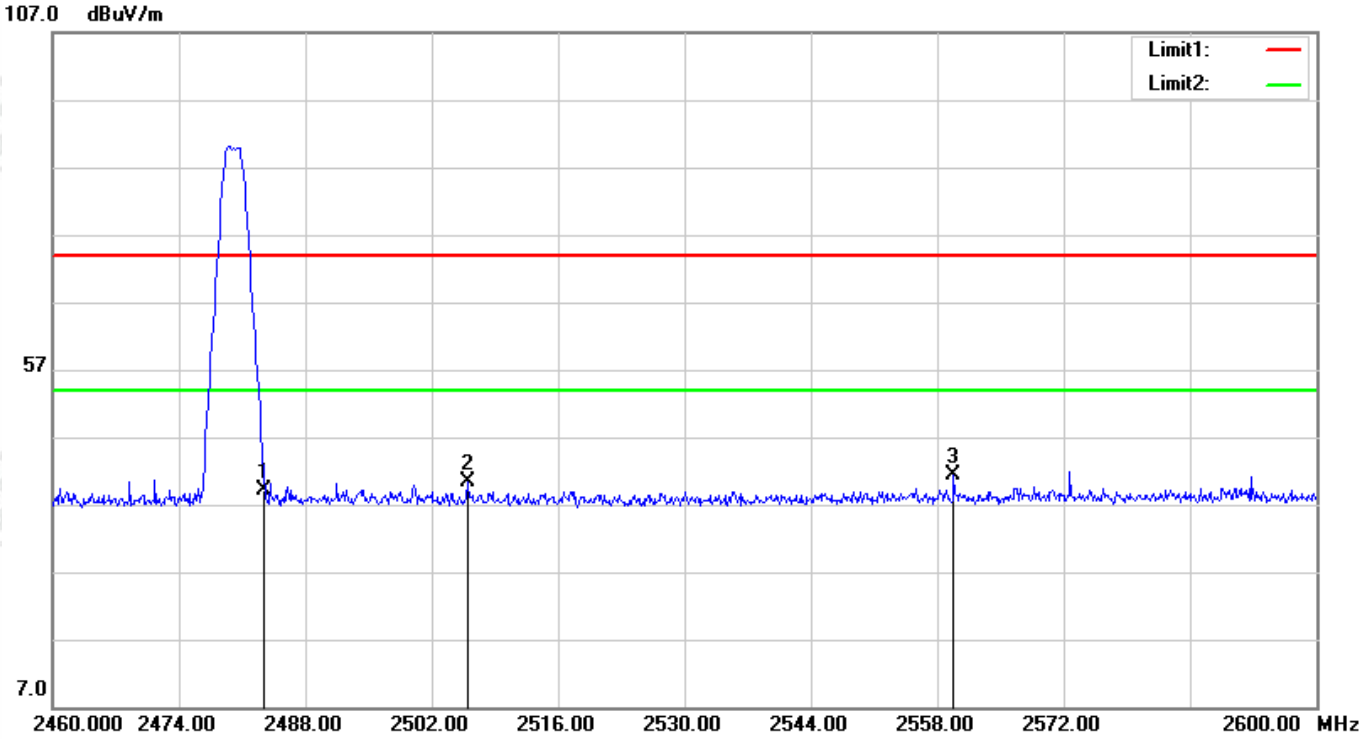
Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	39.12	2.92	42.04	74.00	-31.96	100	114	peak
2	2489.400	41.44	2.93	44.37	74.00	-29.63	100	123	peak
3	2555.760	40.69	3.07	43.76	74.00	-30.24	200	121	peak

Mode:	BLE_500kbps	Channel:	2480
Remark:	Vertical	Test model No.:	HJH92S Ble

Test Graph



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	36.22	2.92	39.14	74.00	-34.86	200	77	peak
2	2505.920	37.43	2.96	40.39	74.00	-33.61	100	125	peak
3	2559.820	38.23	3.08	41.31	74.00	-32.69	100	180	peak

Note:

1)As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation. So, only the peak values are measured:

2) The field strength is calculated by adding the correct Factor. The basic equation with a sample calculation is as follows:

Final Test Level = Reading +Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Appendix B): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	1/T	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

a. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter (Above 18GHz the distance is 1 meter and table is 1.5 meter).
b. Test the EUT in the lowest channel, the middle channel, the Highest channel
c. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
d. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz:

Mode:	BLE_2M	Channel:	2402
Test model No.:	HJH92B Ble		

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
50.3700	V	34.31	-14.28	20.03	40.00	-19.97	QP
63.9500	V	35.31	-17.02	18.29	40.00	-21.71	QP
122.1500	V	34.28	-16.17	18.11	43.50	-25.39	QP
350.1000	V	32.50	-12.86	19.64	46.00	-26.36	QP
433.5200	V	32.73	-10.72	22.01	46.00	-23.99	QP
585.8100	V	31.46	-7.00	24.46	46.00	-21.54	QP
56.1900	H	33.66	-15.46	18.20	40.00	-21.80	QP
139.6100	H	34.65	-16.20	18.45	43.50	-25.05	QP
299.6600	H	33.26	-14.15	19.11	46.00	-26.89	QP
389.8700	H	32.64	-11.84	20.80	46.00	-25.20	QP
555.7400	H	30.58	-7.70	22.88	46.00	-23.12	QP
781.7500	H	30.87	-4.70	26.17	46.00	-19.83	QP

Notes:

1) Through Pre-scan then find the BLE_2M -CH1 is the worst case mode and only the worst data was recorded.

Transmitter Emission above 1GHz:

Mode:	BLE_1M	Channel:	2402
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	36.90	9.12	46.02	74.00	-27.98	200	103	peak
2	7205.000	42.86	12.01	54.87	74.00	-19.13	200	87	peak
3	7205.000	28.14	12.01	40.15	54.00	-13.85	200	87	AVG
4	9602.000	32.77	14.87	47.64	74.00	-26.36	200	70	peak
5	12016.000	33.94	17.08	51.02	74.00	-22.98	100	292	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	42.36	9.12	51.48	74.00	-22.52	100	93	peak
2	7205.000	41.88	12.01	53.89	74.00	-20.11	100	104	peak
3	9602.000	30.91	14.87	45.78	74.00	-28.22	174	360	peak
4	12016.000	34.44	17.08	51.52	74.00	-22.48	100	338	peak

Mode:	BLE_1M	Channel:	2440
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	35.09	9.31	44.40	74.00	-29.60	200	105	peak
2	7324.000	39.93	12.20	52.13	74.00	-21.87	200	85	peak
3	9755.000	31.52	14.75	46.27	74.00	-27.73	200	349	peak
4	12203.000	30.95	17.63	48.58	74.00	-25.42	100	46	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3975.000	38.30	7.75	46.05	74.00	-27.95	100	253	peak
2	4876.000	40.60	9.31	49.91	74.00	-24.09	100	99	peak
3	7324.000	39.54	12.20	51.74	74.00	-22.26	100	110	peak
4	9755.000	33.69	14.75	48.44	74.00	-25.56	100	245	peak
5	12203.000	32.67	17.63	50.30	74.00	-23.70	123	360	peak

Mode:	BLE_1M	Channel:	2480
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	36.16	9.51	45.67	74.00	-28.33	100	331	peak
2	7443.000	34.33	12.35	46.68	74.00	-27.32	200	62	peak
3	9925.000	32.81	14.61	47.42	74.00	-26.58	200	17	peak
4	12407.000	29.69	18.11	47.80	74.00	-26.20	200	307	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3975.000	38.72	7.75	46.47	74.00	-27.53	100	225	peak
2	4961.000	40.65	9.51	50.16	74.00	-23.84	200	95	peak
3	7443.000	36.33	12.35	48.68	74.00	-25.32	200	342	peak
4	9925.000	36.26	14.61	50.87	74.00	-23.13	200	53	peak

Mode:	BLE_2M	Channel:	2402
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	36.52	9.12	45.64	74.00	-28.36	200	106	peak
2	7205.000	41.17	12.01	53.18	74.00	-20.82	200	67	peak
3	9602.000	30.05	14.87	44.92	74.00	-29.08	100	281	peak
4	12016.000	32.85	17.08	49.93	74.00	-24.07	108	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	40.97	9.16	50.13	74.00	-23.87	100	99	peak
2	7205.000	41.39	12.01	53.40	74.00	-20.60	100	107	peak
3	9602.000	33.36	14.87	48.23	74.00	-25.77	153	360	peak
4	12016.000	32.51	17.08	49.59	74.00	-24.41	100	96	peak

Mode:	BLE_2M	Channel:	2440
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	35.95	9.31	45.26	74.00	-28.74	100	339	peak
2	7324.000	41.29	12.20	53.49	74.00	-20.51	100	78	peak
3	10911.000	30.12	16.39	46.51	74.00	-27.49	200	252	peak
4	12203.000	32.58	17.63	50.21	74.00	-23.79	100	275	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	39.04	9.31	48.35	74.00	-25.65	200	88	peak
2	7324.000	38.43	12.20	50.63	74.00	-23.37	100	116	peak
3	9755.000	33.23	14.75	47.98	74.00	-26.02	200	55	peak
4	12203.000	31.75	17.63	49.38	74.00	-24.62	120	360	peak

Mode:	BLE_2M	Channel:	2480
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	35.03	9.51	44.54	74.00	-29.46	200	315	peak
2	7443.000	37.73	12.35	50.08	74.00	-23.92	200	77	peak
3	9925.000	34.36	14.61	48.97	74.00	-25.03	200	351	peak
4	10996.000	30.75	16.50	47.25	74.00	-26.75	100	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	42.32	9.51	51.83	74.00	-22.17	200	77	peak
2	7443.000	35.59	12.35	47.94	74.00	-26.06	200	58	peak
3	9925.000	39.00	14.61	53.61	74.00	-20.39	200	91	peak
4	12407.000	32.19	18.11	50.30	74.00	-23.70	100	357	peak

Mode:	BLE_125kbps	Channel:	2402
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	35.25	9.12	44.37	74.00	-29.63	200	101	peak
2	7205.000	41.81	12.01	53.82	74.00	-20.18	200	79	peak
3	10197.000	30.58	15.12	45.70	74.00	-28.30	199	360	peak
4	12016.000	32.69	17.08	49.77	74.00	-24.23	200	290	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	40.75	9.12	49.87	74.00	-24.13	100	76	peak
2	7205.000	41.35	12.01	53.36	74.00	-20.64	100	105	peak
3	9602.000	32.77	14.87	47.64	74.00	-26.36	200	84	peak
4	12016.000	33.22	17.08	50.30	74.00	-23.70	100	40	peak

Mode:	BLE_125kbps	Channel:	2440
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	35.68	9.31	44.99	74.00	-29.01	200	127	peak
2	7324.000	41.98	12.20	54.18	74.00	-19.82	200	77	peak
3	7324.000	27.95	12.20	40.15	54.00	-13.85	200	77	AVG
4	9755.000	33.09	14.75	47.84	74.00	-26.16	200	68	peak
5	12203.000	32.81	17.63	50.44	74.00	-23.56	200	295	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	42.25	9.31	51.56	74.00	-22.44	100	97	peak
2	7324.000	37.73	12.20	49.93	74.00	-24.07	200	351	peak
3	9755.000	34.78	14.75	49.53	74.00	-24.47	200	78	peak
4	12203.000	33.27	17.63	50.90	74.00	-23.10	100	279	peak

Mode:	BLE_125kbps	Channel:	2480
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	35.62	9.51	45.13	74.00	-28.87	200	335	peak
2	7443.000	36.10	12.35	48.45	74.00	-25.55	200	74	peak
3	9925.000	33.31	14.61	47.92	74.00	-26.08	100	297	peak
4	12407.000	30.45	18.11	48.56	74.00	-25.44	200	310	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3975.000	39.55	7.75	47.30	74.00	-26.70	200	248	peak
2	4961.000	41.19	9.51	50.70	74.00	-23.30	100	101	peak
3	7443.000	35.71	12.35	48.06	74.00	-25.94	100	93	peak
4	9925.000	37.40	14.61	52.01	74.00	-21.99	200	64	peak
5	12407.000	34.97	18.11	53.08	74.00	-20.92	100	352	peak

Mode:	BLE_500kbps	Channel:	2402
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	35.81	9.12	44.93	74.00	-29.07	200	91	peak
2	7205.000	39.05	12.01	51.06	74.00	-22.94	200	55	peak
3	9602.000	32.44	14.87	47.31	74.00	-26.69	100	336	peak
4	12016.000	33.22	17.08	50.30	74.00	-23.70	100	359	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	44.00	7.83	51.83	74.00	-22.17	200	337	peak
2	4808.000	41.53	9.16	50.69	74.00	-23.31	100	80	peak
3	7205.000	40.03	12.01	52.04	74.00	-21.96	200	334	peak
4	9602.000	32.25	14.87	47.12	74.00	-26.88	200	81	peak
5	12016.000	32.92	17.08	50.00	74.00	-24.00	100	352	peak

Mode:	BLE_500kbps	Channel:	2440
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	35.20	9.31	44.51	74.00	-29.49	200	14	peak
2	7324.000	39.72	12.20	51.92	74.00	-22.08	200	78	peak
3	9755.000	33.85	14.75	48.60	74.00	-25.40	200	73	peak
4	12203.000	31.44	17.63	49.07	74.00	-24.93	108	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	40.27	9.31	49.58	74.00	-24.42	200	78	peak
2	7324.000	40.31	12.20	52.51	74.00	-21.49	200	96	peak
3	9755.000	37.48	14.75	52.23	74.00	-21.77	200	82	peak
4	12203.000	34.43	17.63	52.06	74.00	-21.94	100	344	peak

Mode:	BLE_500kbps	Channel:	2480
Test model No.:	HJH92B Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	35.63	9.51	45.14	74.00	-28.86	100	319	peak
2	7443.000	35.17	12.35	47.52	74.00	-26.48	200	64	peak
3	9925.000	34.49	14.61	49.10	74.00	-24.90	200	71	peak
4	12407.000	29.48	18.11	47.59	74.00	-26.41	100	268	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	41.43	9.51	50.94	74.00	-23.06	200	100	peak
2	7443.000	36.53	12.35	48.88	74.00	-25.12	200	339	peak
3	9925.000	38.61	14.61	53.22	74.00	-20.78	200	60	peak
4	12407.000	33.14	18.11	51.25	74.00	-22.75	100	358	peak

Radiated Emission below 1GHz:

Mode:	BLE_2M	Channel:	2402
Test model No.:	HJH92E Ble		

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
63.9500	V	40.88	-17.02	23.86	40.00	-16.14	QP
104.6900	V	32.75	-16.14	16.61	43.50	-26.89	QP
350.1000	V	34.21	-12.86	21.35	46.00	-24.65	QP
594.5400	V	31.78	-6.80	24.98	46.00	-21.02	QP
778.8400	V	30.33	-4.75	25.58	46.00	-20.42	QP
867.1100	V	30.07	-3.03	27.04	46.00	-18.96	QP
51.3400	H	32.59	-14.48	18.11	40.00	-21.89	QP
63.9500	H	34.69	-17.02	17.67	40.00	-22.33	QP
134.7600	H	32.91	-16.19	16.72	43.50	-26.78	QP
349.1300	H	31.50	-12.88	18.62	46.00	-27.38	QP
537.3100	H	31.51	-8.13	23.38	46.00	-22.62	QP
792.4200	H	30.92	-4.51	26.41	46.00	-19.59	QP

Notes:

1) Through Pre-scan then find the BLE_2M -CH1 is the worst case mode and only the worst data was recorded.

Transmitter Emission above 1GHz:

Mode:	BLE_1M	Channel:	2402
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	35.77	9.12	44.89	74.00	-29.11	100	0	peak
2	7205.000	42.11	12.01	54.12	74.00	-19.88	200	83	peak
3	7205.000	28.14	12.01	40.15	54.00	-13.85	200	83	AVG
4	10197.000	31.56	15.12	46.68	74.00	-27.32	200	168	peak
5	12016.000	31.75	17.08	48.83	74.00	-25.17	100	274	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	41.38	9.16	50.54	74.00	-23.46	100	90	peak
2	7205.000	38.04	12.01	50.05	74.00	-23.95	200	105	peak
3	9602.000	31.23	14.87	46.10	74.00	-27.90	199	360	peak
4	12016.000	33.73	17.08	50.81	74.00	-23.19	100	126	peak

Mode:	BLE_1M	Channel:	2440
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	37.71	9.31	47.02	74.00	-26.98	145	360	peak
2	7324.000	39.27	12.20	51.47	74.00	-22.53	100	50	peak
3	9755.000	33.20	14.75	47.95	74.00	-26.05	197	360	peak
4	12203.000	30.80	17.63	48.43	74.00	-25.57	100	278	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	40.94	9.31	50.25	74.00	-23.75	100	79	peak
2	7324.000	38.62	12.20	50.82	74.00	-23.18	100	65	peak
3	9755.000	35.37	14.75	50.12	74.00	-23.88	200	91	peak
4	12203.000	29.95	17.63	47.58	74.00	-26.42	100	356	peak

Mode:	BLE_1M	Channel:	2480
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	38.25	9.51	47.76	74.00	-26.24	176	360	peak
2	7443.000	39.19	12.35	51.54	74.00	-22.46	200	347	peak
3	9925.000	33.36	14.61	47.97	74.00	-26.03	100	0	peak
4	12407.000	29.02	18.11	47.13	74.00	-26.87	200	288	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	41.19	9.51	50.70	74.00	-23.30	200	90	peak
2	7443.000	38.41	12.35	50.76	74.00	-23.24	200	341	peak
3	9925.000	33.67	14.61	48.28	74.00	-25.72	100	48	peak
4	12407.000	31.38	18.11	49.49	74.00	-24.51	200	82	peak

Mode:	BLE_2M	Channel:	2402
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	36.08	9.12	45.20	74.00	-28.80	164	360	peak
2	7205.000	39.40	12.01	51.41	74.00	-22.59	200	72	peak
3	10401.000	29.83	15.47	45.30	74.00	-28.70	100	256	peak
4	12016.000	31.45	17.08	48.53	74.00	-25.47	100	270	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	41.49	9.12	50.61	74.00	-23.39	100	85	peak
2	7205.000	40.71	12.01	52.72	74.00	-21.28	100	102	peak
3	10197.000	30.04	15.12	45.16	74.00	-28.84	100	76	peak
4	12016.000	32.01	17.08	49.09	74.00	-24.91	100	282	peak

Mode:	BLE_2M	Channel:	2440
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	36.20	9.31	45.51	74.00	-28.49	200	351	peak
2	7324.000	42.60	12.20	54.80	74.00	-19.20	200	76	peak
3	7324.000	27.92	12.20	40.12	54.00	-13.88	200	76	AVG
4	9755.000	31.83	14.75	46.58	74.00	-27.42	193	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	38.39	9.31	47.70	74.00	-26.30	100	57	peak
2	7324.000	37.18	12.20	49.38	74.00	-24.62	100	118	peak
3	9755.000	33.38	14.75	48.13	74.00	-25.87	200	85	peak
4	12203.000	32.90	17.63	50.53	74.00	-23.47	100	343	peak

Mode:	BLE_2M	Channel:	2480
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	37.17	9.51	46.68	74.00	-27.32	174	360	peak
2	7443.000	38.18	12.35	50.53	74.00	-23.47	200	360	peak
3	9925.000	32.98	14.61	47.59	74.00	-26.41	200	5	peak
4	11574.000	29.76	17.26	47.02	74.00	-26.98	157	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	38.84	9.51	48.35	74.00	-25.65	200	107	peak
2	7443.000	38.00	12.35	50.35	74.00	-23.65	100	104	peak
3	9925.000	34.57	14.61	49.18	74.00	-24.82	200	82	peak
4	12407.000	30.45	18.11	48.56	74.00	-25.44	100	113	peak

Mode:	BLE_125kbps	Channel:	2402
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	35.93	9.16	45.09	74.00	-28.91	100	360	peak
2	7205.000	41.21	12.01	53.22	74.00	-20.78	200	76	peak
3	9602.000	30.93	14.87	45.80	74.00	-28.20	100	272	peak
4	12016.000	31.57	17.08	48.65	74.00	-25.35	100	281	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	39.57	7.83	47.40	74.00	-26.60	200	328	peak
2	4808.000	38.25	9.16	47.41	74.00	-26.59	100	99	peak
3	7205.000	40.99	12.01	53.00	74.00	-21.00	100	102	peak
4	12016.000	31.73	17.08	48.81	74.00	-25.19	100	49	peak

Mode:	BLE_125kbps	Channel:	2440
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	37.24	9.31	46.55	74.00	-27.45	200	353	peak
2	7324.000	38.44	12.20	50.64	74.00	-23.36	182	360	peak
3	9755.000	32.27	14.75	47.02	74.00	-26.98	200	360	peak
4	12662.000	28.51	18.43	46.94	74.00	-27.06	100	52	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	40.41	9.31	49.72	74.00	-24.28	100	93	peak
2	7324.000	37.61	12.20	49.81	74.00	-24.19	100	106	peak
3	9755.000	34.33	14.75	49.08	74.00	-24.92	200	61	peak
4	12203.000	30.63	17.63	48.26	74.00	-25.74	112	360	peak

Mode:	BLE_125kbps	Channel:	2480
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	38.54	9.51	48.05	74.00	-25.95	164	360	peak
2	7443.000	38.46	12.35	50.81	74.00	-23.19	200	83	peak
3	9925.000	35.12	14.61	49.73	74.00	-24.27	100	121	peak
4	12407.000	29.30	18.11	47.41	74.00	-26.59	100	274	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	44.29	7.83	52.12	74.00	-21.88	200	332	peak
2	4961.000	40.90	9.51	50.41	74.00	-23.59	200	66	peak
3	7443.000	38.25	12.35	50.60	74.00	-23.40	100	66	peak
4	9925.000	34.65	14.61	49.26	74.00	-24.74	200	86	peak

Mode:	BLE_500kbps	Channel:	2402
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	35.19	9.12	44.31	74.00	-29.69	136	360	peak
2	7205.000	38.58	12.01	50.59	74.00	-23.41	200	58	peak
3	10571.000	29.27	15.91	45.18	74.00	-28.82	178	360	peak
4	12016.000	31.08	17.08	48.16	74.00	-25.84	100	288	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	39.33	9.12	48.45	74.00	-25.55	100	77	peak
2	7205.000	39.12	12.01	51.13	74.00	-22.87	100	68	peak
3	10197.000	31.10	15.12	46.22	74.00	-27.78	200	144	peak
4	12016.000	32.22	17.08	49.30	74.00	-24.70	100	343	peak

Mode:	BLE_500kbps	Channel:	2440
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	37.47	9.31	46.78	74.00	-27.22	137	360	peak
2	7324.000	42.33	12.20	54.53	74.00	-19.47	200	78	peak
3	7324.000	27.98	12.20	40.18	54.00	-13.82	200	78	AVG
4	9755.000	32.60	14.75	47.35	74.00	-26.65	200	3	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3975.000	41.59	7.75	49.34	74.00	-24.66	200	336	peak
2	4876.000	41.18	9.31	50.49	74.00	-23.51	100	75	peak
3	7324.000	41.76	12.20	53.96	74.00	-20.04	100	98	peak
4	9755.000	31.57	14.75	46.32	74.00	-27.68	100	233	peak

Mode:	BLE_500kbps	Channel:	2480
Test model No.:	HJH92E Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	37.75	9.51	47.26	74.00	-26.74	144	360	peak
2	7443.000	38.03	12.35	50.38	74.00	-23.62	200	58	peak
3	9925.000	32.76	14.61	47.37	74.00	-26.63	111	360	peak
4	12577.000	29.31	18.39	47.70	74.00	-26.30	200	136	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	39.50	9.51	49.01	74.00	-24.99	100	76	peak
2	7443.000	39.47	12.35	51.82	74.00	-22.18	100	104	peak
3	9925.000	33.90	14.61	48.51	74.00	-25.49	200	72	peak
4	12407.000	30.38	18.11	48.49	74.00	-25.51	200	78	peak

Radiated Emission below 1GHz:

Mode:	BLE_1M	Channel:	2402
Test model No.:	HJH92S Ble		

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
50.3700	V	33.03	-14.28	18.75	40.00	-21.25	QP
122.1500	V	34.44	-16.17	18.27	43.50	-25.23	QP
138.6400	V	33.76	-16.20	17.56	43.50	-25.94	QP
251.1600	V	32.80	-15.19	17.61	46.00	-28.39	QP
545.0700	V	31.31	-7.95	23.36	46.00	-22.64	QP
851.5900	V	29.96	-3.34	26.62	46.00	-19.38	QP
50.3700	H	33.44	-14.28	19.16	40.00	-20.84	QP
110.5100	H	33.38	-16.15	17.23	43.50	-26.27	QP
253.1000	H	32.97	-15.15	17.82	46.00	-28.18	QP
482.0200	H	32.03	-9.46	22.57	46.00	-23.43	QP
591.6300	H	31.32	-6.86	24.46	46.00	-21.54	QP
761.3800	H	31.21	-5.06	26.15	46.00	-19.85	QP

Notes:

1) Through Pre-scan then find the BLE_1M -CH1 is the worst case mode and only the worst data was recorded.

Transmitter Emission above 1GHz:

Mode:	BLE_1M	Channel:	2402
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	34.77	9.16	43.93	74.00	-30.07	182	360	peak
2	7205.000	43.88	12.01	55.89	74.00	-18.11	200	74	peak
3	7205.000	26.58	12.01	38.59	54.00	-15.41	200	74	AVG
4	12016.000	32.97	17.08	50.05	74.00	-23.95	171	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	40.70	7.83	48.53	74.00	-25.47	100	198	peak
2	4791.000	39.30	9.12	48.42	74.00	-25.58	100	81	peak
3	7205.000	41.56	12.01	53.57	74.00	-20.43	100	107	peak
4	12016.000	32.87	17.08	49.95	74.00	-24.05	100	112	peak

Mode:	BLE_1M	Channel:	2440
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	36.57	9.31	45.88	74.00	-28.12	200	99	peak
2	7324.000	42.32	12.20	54.52	74.00	-19.48	200	77	peak
3	7324.000	24.39	12.20	36.59	54.00	-17.41	200	77	AVG
4	9755.000	32.91	14.75	47.66	74.00	-26.34	167	360	peak
5	12203.000	32.35	17.63	49.98	74.00	-24.02	100	268	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	40.81	9.31	50.12	74.00	-23.88	100	70	peak
2	7324.000	39.50	12.20	51.70	74.00	-22.30	100	89	peak
3	9755.000	33.47	14.75	48.22	74.00	-25.78	200	55	peak
4	12203.000	33.85	17.63	51.48	74.00	-22.52	100	349	peak

Mode:	BLE_1M	Channel:	2480
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	35.87	9.51	45.38	74.00	-28.62	100	104	peak
2	7443.000	41.06	12.35	53.41	74.00	-20.59	200	47	peak
3	9925.000	35.87	14.61	50.48	74.00	-23.52	101	0	peak
4	13393.000	28.85	19.90	48.75	74.00	-25.25	100	184	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	42.10	9.51	51.61	74.00	-22.39	200	90	peak
2	7443.000	39.31	12.35	51.66	74.00	-22.34	200	45	peak
3	9925.000	35.46	14.61	50.07	74.00	-23.93	200	87	peak
4	12407.000	31.48	18.11	49.59	74.00	-24.41	143	0	peak

Mode:	BLE_2M	Channel:	2402
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	35.87	9.16	45.03	74.00	-28.97	192	360	peak
2	7205.000	43.65	12.01	55.66	74.00	-18.34	200	49	peak
3	7205.000	28.11	12.01	40.12	54.00	-13.88	200	49	AVG
4	12016.000	34.16	17.08	51.24	74.00	-22.76	100	273	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	40.24	9.12	49.36	74.00	-24.64	100	79	peak
2	7205.000	38.06	12.01	50.07	74.00	-23.93	100	98	peak
3	10197.000	31.11	15.12	46.23	74.00	-27.77	200	116	peak
4	12016.000	33.34	17.08	50.42	74.00	-23.58	100	112	peak

Mode:	BLE_2M	Channel:	2440
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	34.83	9.31	44.14	74.00	-29.86	200	116	peak
2	7324.000	43.35	12.20	55.55	74.00	-18.45	200	74	peak
3	7324.000	27.47	12.20	39.67	54.00	-14.33	200	74	AVG
4	9755.000	32.54	14.75	47.29	74.00	-26.71	191	360	peak
5	12203.000	31.38	17.63	49.01	74.00	-24.99	100	269	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	39.97	9.31	49.28	74.00	-24.72	100	71	peak
2	7324.000	41.97	12.20	54.17	74.00	-19.83	100	107	peak
3	7324.000	27.43	12.20	39.63	54.00	-14.37	100	107	AVG
4	9755.000	32.13	14.75	46.88	74.00	-27.12	200	88	peak
5	12203.000	32.19	17.63	49.82	74.00	-24.18	200	0	peak

Mode:	BLE_2M	Channel:	2480
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	37.22	9.51	46.73	74.00	-27.27	100	107	peak
2	6763.000	36.59	11.48	48.07	74.00	-25.93	100	359	peak
3	7443.000	40.28	12.35	52.63	74.00	-21.37	200	80	peak
4	9925.000	35.80	14.61	50.41	74.00	-23.59	100	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	41.06	9.51	50.57	74.00	-23.43	200	80	peak
2	7443.000	41.41	12.35	53.76	74.00	-20.24	100	85	peak
3	9925.000	35.16	14.61	49.77	74.00	-24.23	200	93	peak
4	12407.000	32.41	18.11	50.52	74.00	-23.48	100	350	peak

Mode:	BLE_125kbps	Channel:	2402
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	35.58	9.12	44.70	74.00	-29.30	200	358	peak
2	7205.000	40.34	12.01	52.35	74.00	-21.65	200	131	peak
3	10656.000	29.86	16.06	45.92	74.00	-28.08	200	332	peak
4	12016.000	34.60	17.08	51.68	74.00	-22.32	154	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	40.11	7.83	47.94	74.00	-26.06	200	285	peak
2	4808.000	41.28	9.16	50.44	74.00	-23.56	100	82	peak
3	7205.000	39.09	12.01	51.10	74.00	-22.90	100	63	peak
4	12016.000	33.58	17.08	50.66	74.00	-23.34	200	327	peak

Mode:	BLE_125kbps	Channel:	2440
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	36.95	9.31	46.26	74.00	-27.74	200	117	peak
2	7324.000	43.11	12.20	55.31	74.00	-18.69	200	70	peak
3	7324.000	23.78	12.20	35.98	54.00	-18.02	200	70	AVG
4	9755.000	32.78	14.75	47.53	74.00	-26.47	119	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	45.57	7.83	53.40	74.00	-20.60	200	333	peak
2	4876.000	40.07	9.31	49.38	74.00	-24.62	100	76	peak
3	7324.000	39.69	12.20	51.89	74.00	-22.11	200	103	peak
4	9755.000	34.10	14.75	48.85	74.00	-25.15	200	86	peak
5	12203.000	35.43	17.63	53.06	74.00	-20.94	100	343	peak

Mode:	BLE_125kbps	Channel:	2480
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	36.32	9.51	45.83	74.00	-28.17	100	113	peak
2	6338.000	39.71	10.77	50.48	74.00	-23.52	200	63	peak
3	7443.000	41.24	12.35	53.59	74.00	-20.41	200	71	peak
4	9925.000	35.66	14.61	50.27	74.00	-23.73	133	0	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	3992.000	40.56	7.83	48.39	74.00	-25.61	200	335	peak
2	4961.000	42.26	9.51	51.77	74.00	-22.23	200	81	peak
3	7443.000	39.95	12.35	52.30	74.00	-21.70	100	98	peak
4	9925.000	34.96	14.61	49.57	74.00	-24.43	200	92	peak

Mode:	BLE_500kbps	Channel:	2402
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4808.000	35.77	9.16	44.93	74.00	-29.07	130	360	peak
2	7205.000	39.91	12.01	51.92	74.00	-22.08	200	54	peak
3	10112.000	31.03	14.87	45.90	74.00	-28.10	200	68	peak
4	12016.000	34.54	17.08	51.62	74.00	-22.38	168	360	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	40.75	9.12	49.87	74.00	-24.13	100	92	peak
2	7205.000	38.79	12.01	50.80	74.00	-23.20	100	134	peak
3	10112.000	31.08	14.87	45.95	74.00	-28.05	195	360	peak
4	12016.000	32.90	17.08	49.98	74.00	-24.02	100	115	peak

Mode:	BLE_500kbps	Channel:	2440
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	35.69	9.31	45.00	74.00	-29.00	157	360	peak
2	7324.000	40.90	12.20	53.10	74.00	-20.90	200	74	peak
3	9755.000	32.99	14.75	47.74	74.00	-26.26	170	360	peak
4	12203.000	32.21	17.63	49.84	74.00	-24.16	200	299	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4876.000	40.82	9.31	50.13	74.00	-23.87	100	97	peak
2	7324.000	40.16	12.20	52.36	74.00	-21.64	100	109	peak
3	9755.000	34.73	14.75	49.48	74.00	-24.52	200	86	peak
4	12203.000	34.28	17.63	51.91	74.00	-22.09	100	351	peak

Mode:	BLE_500kbps	Channel:	2480
Test model No.:	HJH92S Ble		

Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	35.93	9.51	45.44	74.00	-28.56	200	111	peak
2	7443.000	40.92	12.35	53.27	74.00	-20.73	200	81	peak
3	9925.000	35.93	14.61	50.54	74.00	-23.46	198	360	peak
4	12407.000	31.74	18.11	49.85	74.00	-24.15	200	299	peak

Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4961.000	43.12	9.51	52.63	74.00	-21.37	200	91	peak
2	7443.000	39.18	12.35	51.53	74.00	-22.47	100	24	peak
3	9925.000	33.12	14.61	47.73	74.00	-26.27	200	60	peak
4	12407.000	32.81	18.11	50.92	74.00	-23.08	193	360	peak

Note:

1)As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak values are measured:

2) The field strength is calculated by adding the correct Factor. The basic equation with a sample calculation is as follows:

Final Test Level = Reading +Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

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