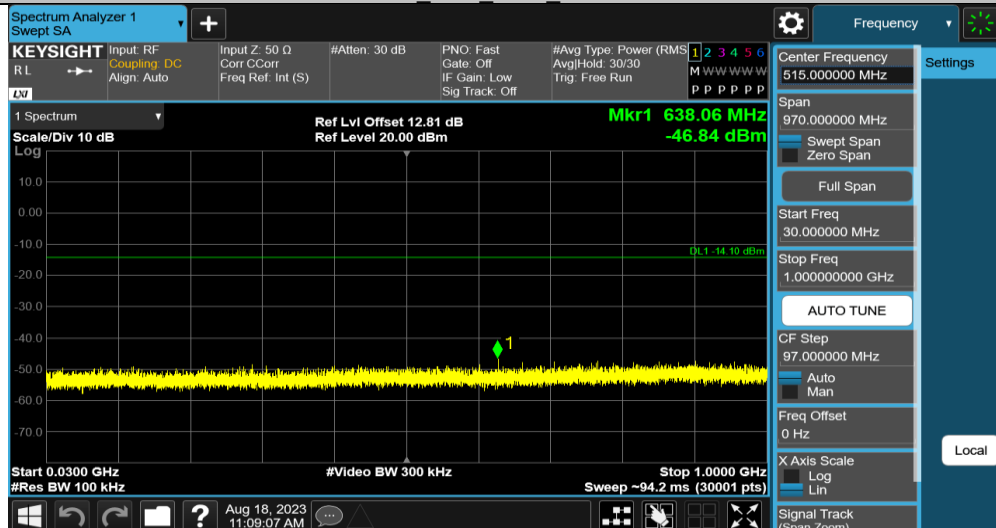
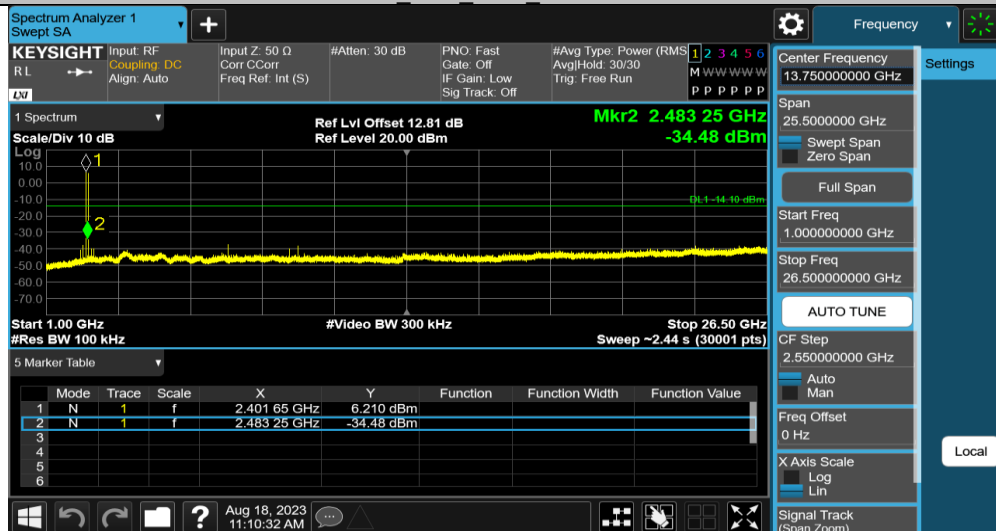




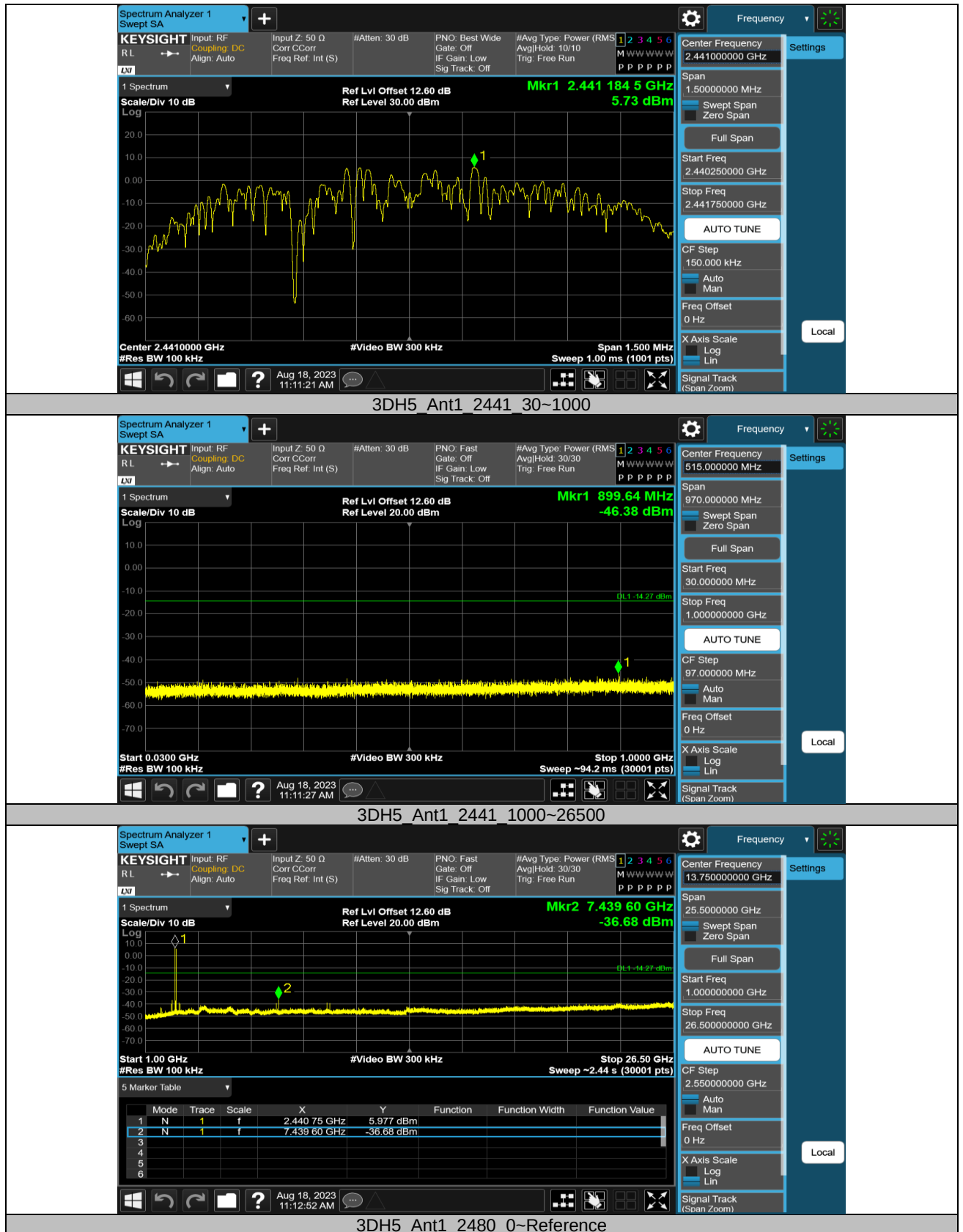
3DH5_Ant1_2402_30~1000



3DH5_Ant1_2402_1000~26500



3DH5_Ant1_2441_0~Reference





Appendix A.7: Test Results of Radiated Spurious Emissions

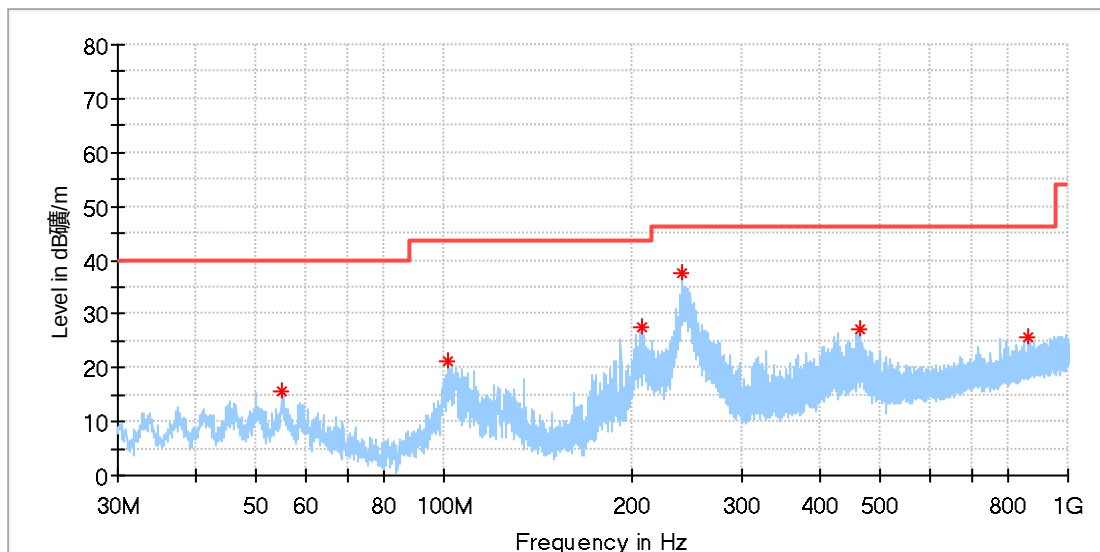
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

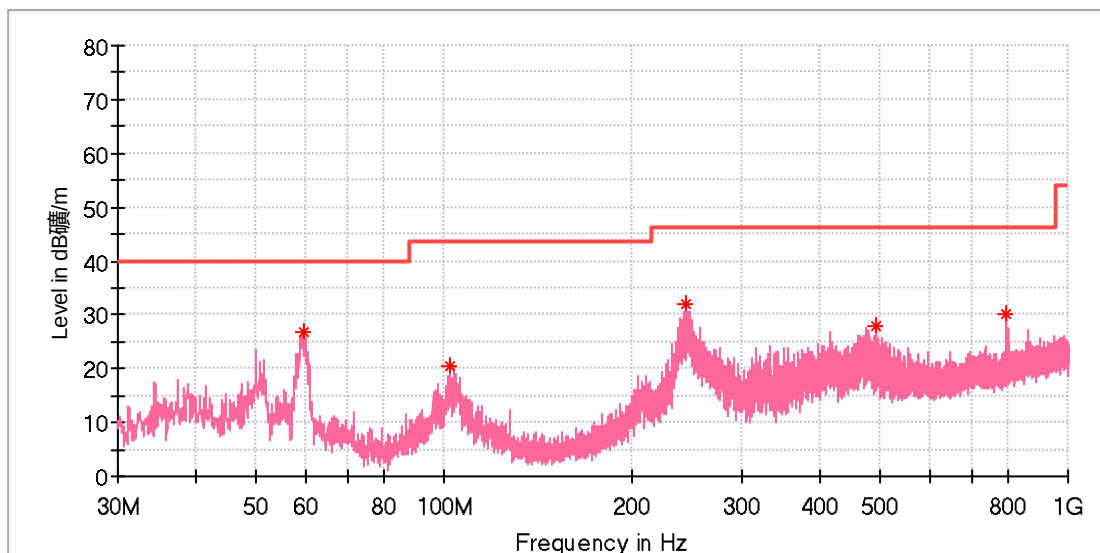
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
55.145385	15.62	40.00	24.38	100.0	H	38.0	-18.7
101.593462	21.03	43.50	22.47	100.0	H	252.0	-19.2
207.510000	27.51	43.50	15.99	100.0	H	271.0	-19.2
240.751154	37.54	46.00	8.46	100.0	H	91.0	-18.0
463.291539	27.27	46.00	18.73	100.0	H	227.0	-13.0
864.013462	25.71	46.00	20.29	100.0	H	138.0	-5.7

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.473077	26.78	40.00	13.22	100.0	V	89.0	-19.2
102.115769	20.51	43.50	22.99	100.0	V	4.0	-19.2
243.996923	31.84	46.00	14.16	100.0	V	0.0	-17.9
493.921154	28.06	46.00	17.94	100.0	V	187.0	-12.3
797.605769	30.25	46.00	15.75	100.0	V	227.0	-6.8

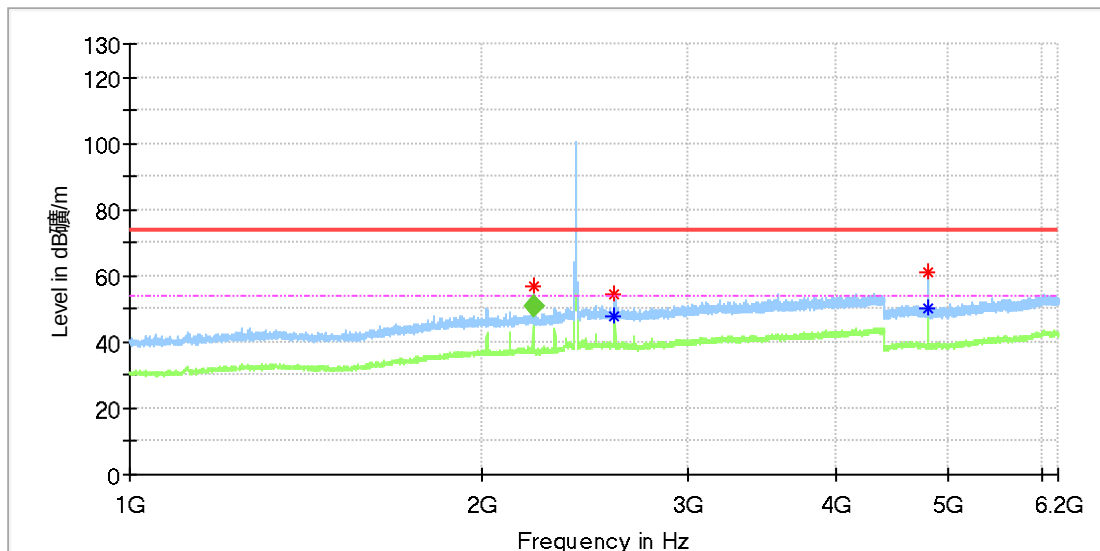
Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

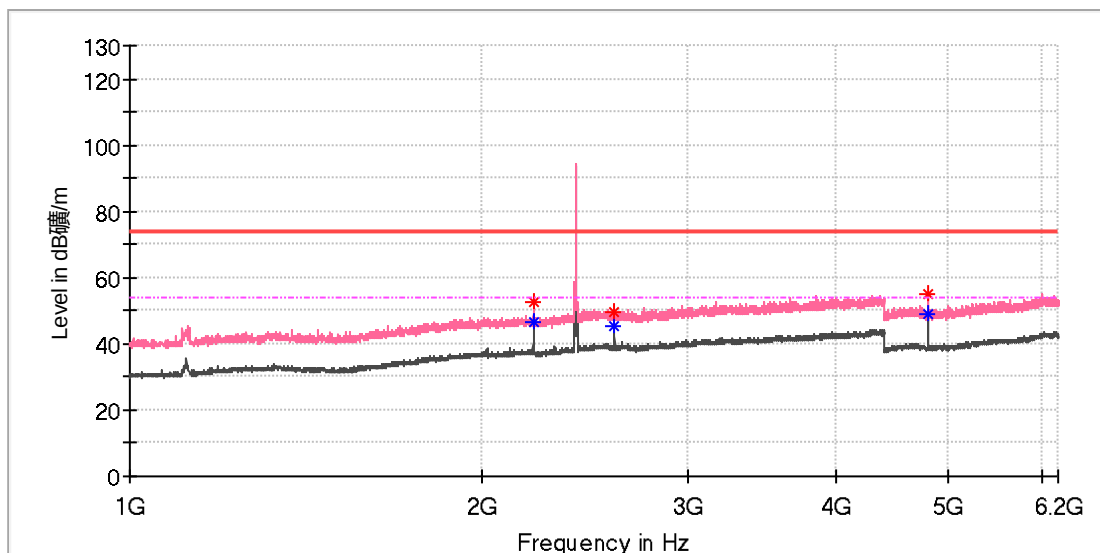
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2210.000000	57.06	---	74.00	16.94	150.0	H	233.0	6.3
2593.500000	54.22	---	74.00	19.78	150.0	H	319.0	7.4
2594.500000	---	47.99	54.00	6.01	150.0	H	265.0	7.4
4804.000000	60.83	---	74.00	13.17	150.0	H	160.0	11.8
4805.000000	---	50.25	54.00	3.75	150.0	H	160.0	11.8

Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2210.051471	50.77	54.00	3.23	145.0	H	228.0	6.3

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

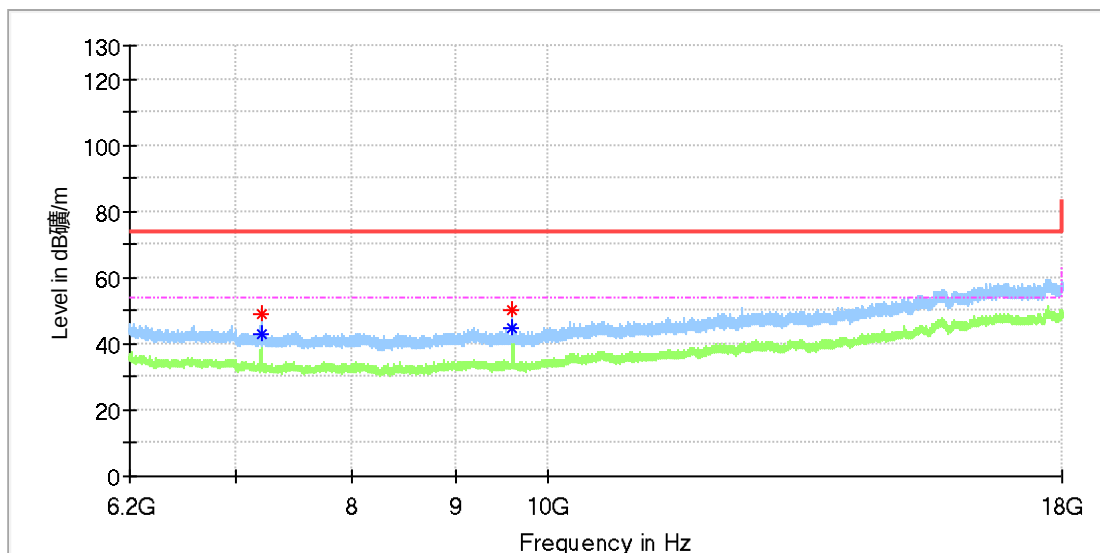
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2210.000000	52.67	---	74.00	21.33	150.0	V	297.0	6.3
2210.500000	---	46.44	54.00	7.56	150.0	V	297.0	6.3
2594.000000	49.62	---	74.00	24.38	150.0	V	290.0	7.4
2594.000000	---	45.41	54.00	8.59	150.0	V	290.0	7.4
4803.500000	54.88	---	74.00	19.12	150.0	V	316.0	11.8
4803.500000	---	49.00	54.00	5.00	150.0	V	316.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

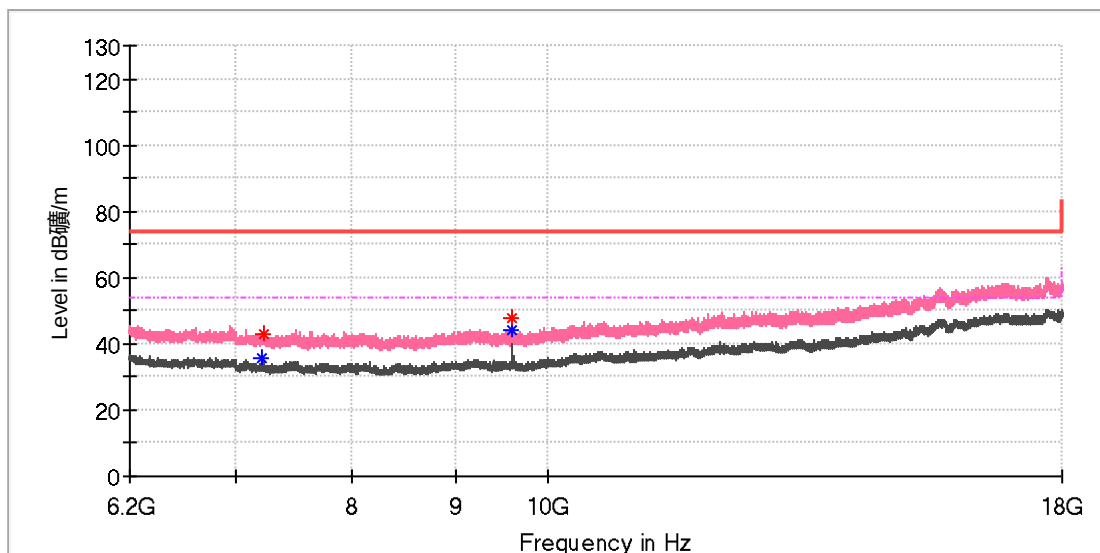
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	49.24	---	74.00	24.76	150.0	H	267.0	8.8
7206.441667	---	43.14	54.00	10.86	150.0	H	267.0	8.8
9601.350000	---	44.91	54.00	9.09	150.0	H	120.0	10.4
9601.841667	50.45	---	74.00	23.55	150.0	H	120.0	10.4

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

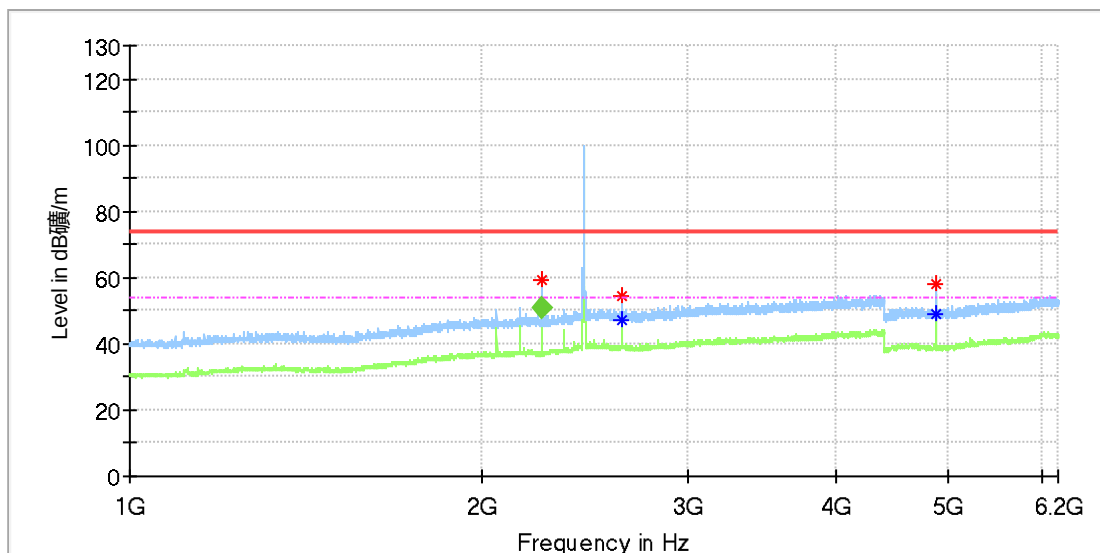
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.966667	---	35.95	54.00	18.05	150.0	V	111.0	8.8
7224.633333	43.20	---	74.00	30.80	150.0	V	49.0	8.7
9601.841667	47.67	---	74.00	26.33	150.0	V	274.0	10.4
9601.841667	---	43.95	54.00	10.05	150.0	V	274.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

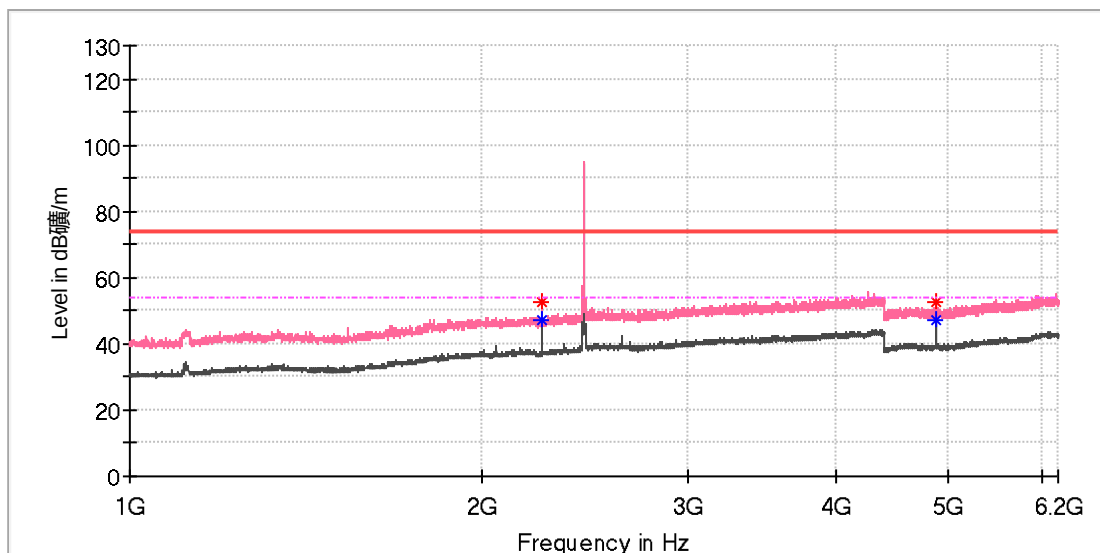
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2249.000000	58.98	---	74.00	15.02	150.0	H	230.0	6.5
2632.500000	---	47.37	54.00	6.63	150.0	H	263.0	7.5
2633.000000	54.43	---	74.00	19.57	150.0	H	263.0	7.5
4882.000000	58.18	---	74.00	15.82	150.0	H	160.0	11.8
4882.500000	---	49.14	54.00	4.86	150.0	H	160.0	11.8

Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2249.038235	50.70	54.00	3.30	145.0	H	229.0	6.5

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

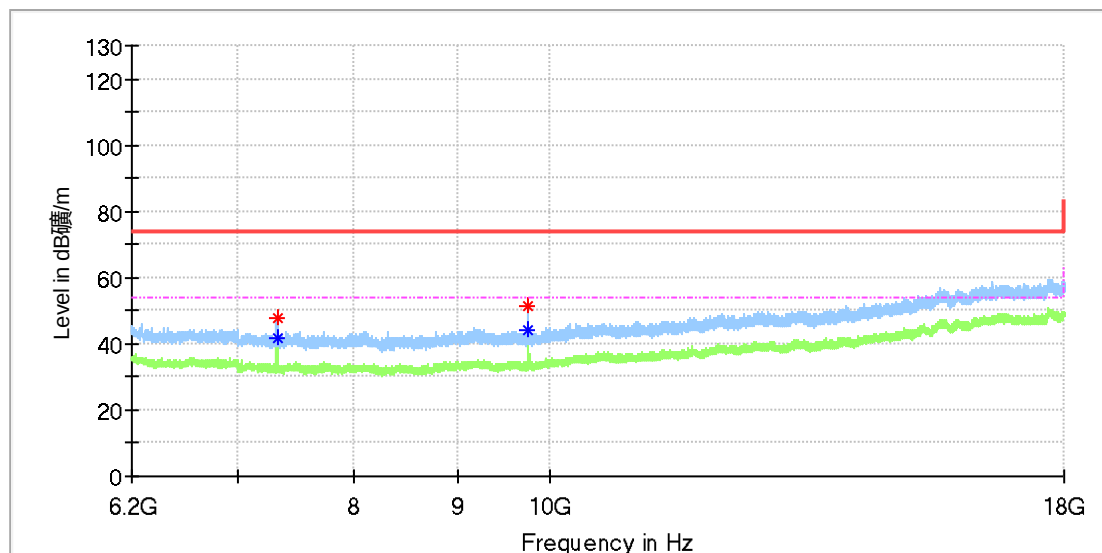
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2248.500000	---	47.11	54.00	6.89	150.0	V	303.0	6.5
2249.000000	52.83	---	74.00	21.17	150.0	V	303.0	6.5
4882.000000	52.56	---	74.00	21.44	150.0	V	279.0	11.8
4882.000000	---	47.26	54.00	6.74	150.0	V	279.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

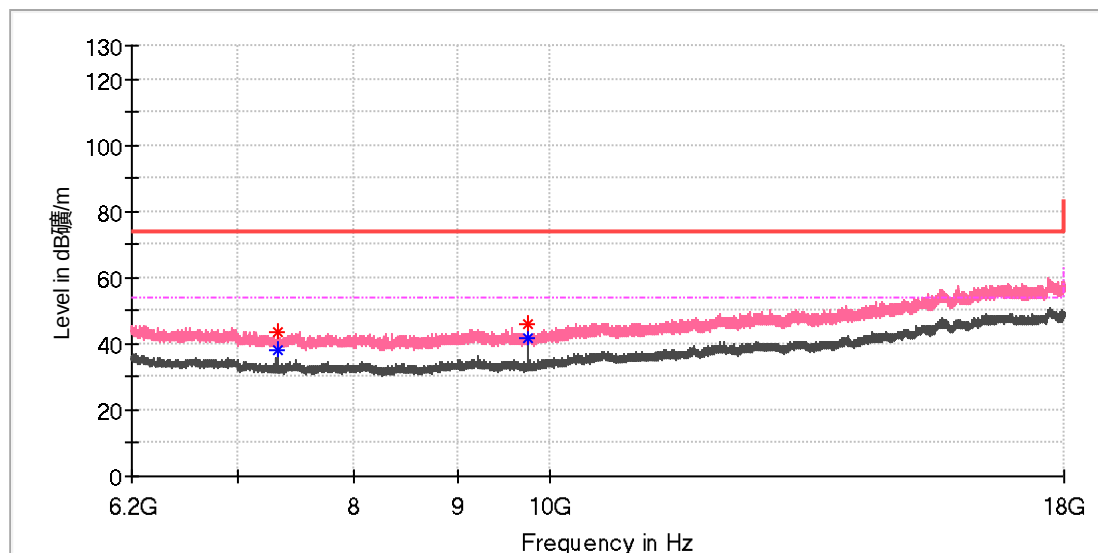
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7321.983333	---	41.80	54.00	12.20	150.0	H	263.0	8.2
7321.983333	48.03	---	74.00	25.97	150.0	H	263.0	8.2
9757.700000	51.20	---	74.00	22.80	150.0	H	106.0	10.4
9758.683333	---	44.13	54.00	9.87	150.0	H	106.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

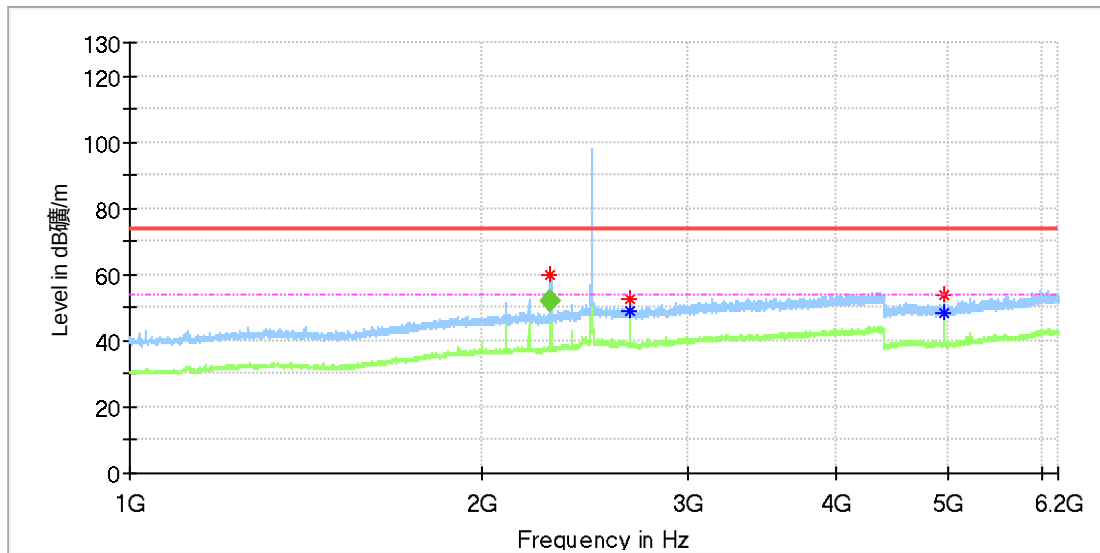
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	43.48	---	74.00	30.52	150.0	V	280.0	8.2
7322.966667	---	37.84	54.00	16.16	150.0	V	280.0	8.2
9757.700000	45.96	---	74.00	28.04	150.0	V	96.0	10.4
9758.191667	---	41.61	54.00	12.39	150.0	V	71.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

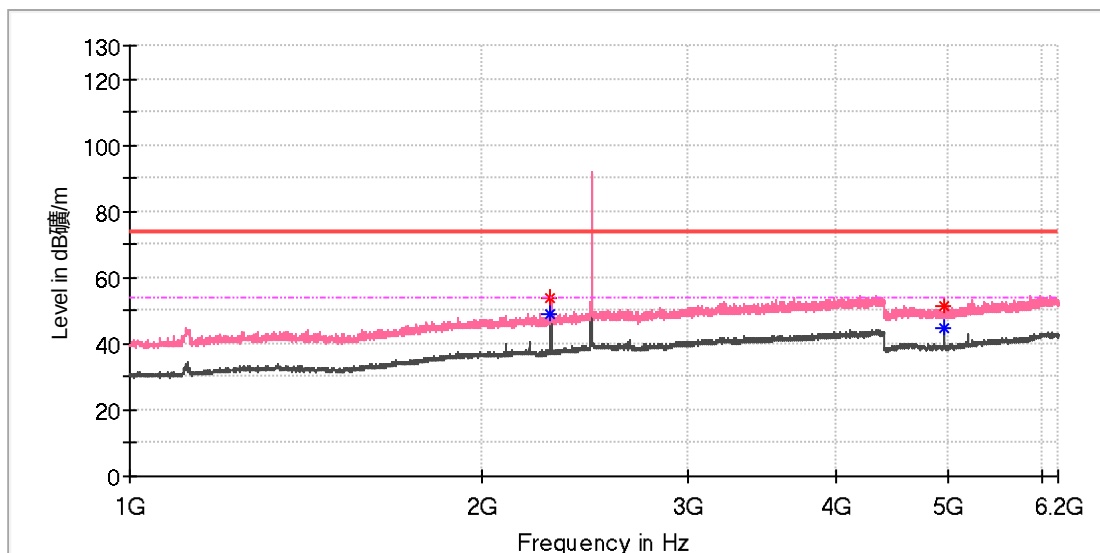
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2288.000000	59.64	---	74.00	14.36	150.0	H	190.0	6.4
2672.000000	52.44	---	74.00	21.56	150.0	H	111.0	7.5
2672.000000	---	48.84	54.00	5.16	150.0	H	111.0	7.5
4959.500000	---	48.21	54.00	5.79	150.0	H	154.0	11.8
4960.000000	53.71	---	74.00	20.29	150.0	H	245.0	11.8

Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2288.038235	51.92	54.00	2.08	149.0	H	185.0	6.4

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_High channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

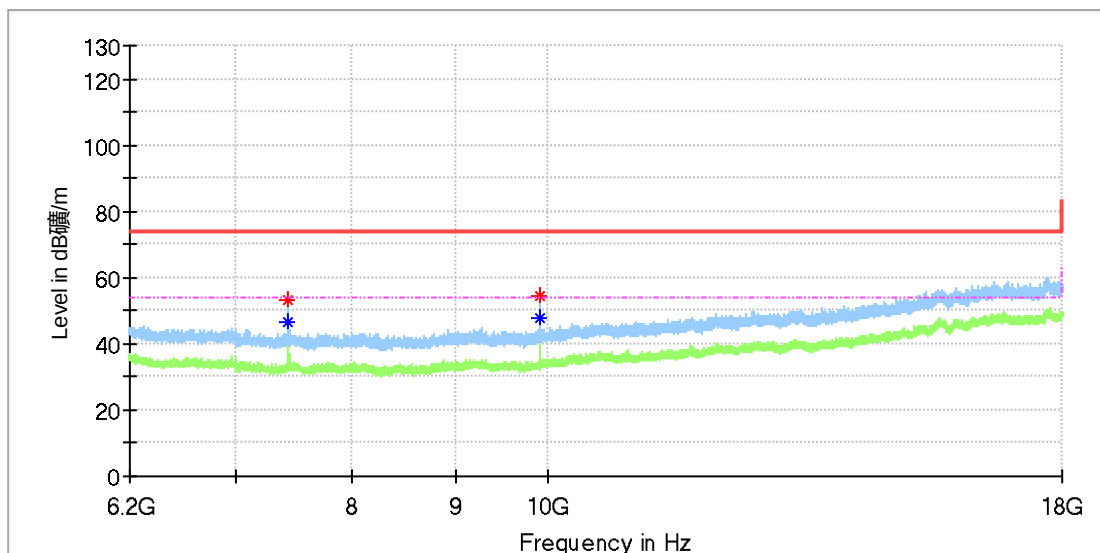
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2287.500000	54.00	---	74.00	20.00	150.0	V	1.0	6.4
2287.500000	---	48.91	54.00	5.09	150.0	V	1.0	6.4
4960.000000	51.34	---	74.00	22.66	150.0	V	278.0	11.8
4960.000000	---	44.80	54.00	9.20	150.0	V	278.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_High channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

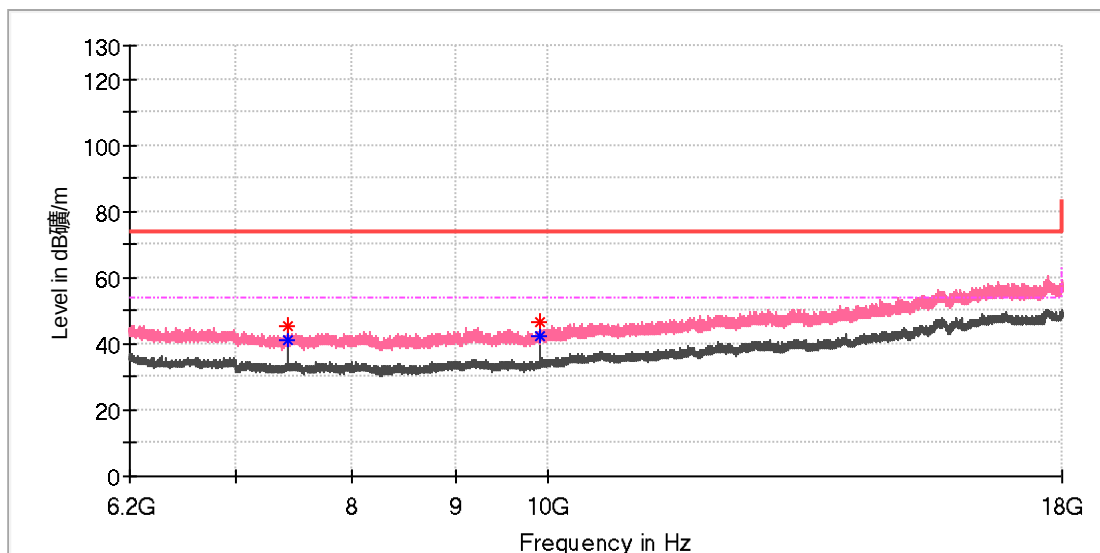
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7433.591667	53.36	---	74.00	20.64	150.0	H	262.0	8.4
7434.575000	---	46.42	54.00	7.58	150.0	H	262.0	8.4
9914.050000	54.44	---	74.00	19.56	150.0	H	106.0	10.8
9914.541667	---	47.58	54.00	6.42	150.0	H	106.0	10.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_High channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7433.591667	---	40.98	54.00	13.02	150.0	V	50.0	8.4
7434.083333	45.40	---	74.00	28.60	150.0	V	50.0	8.4
9913.558333	---	42.48	54.00	11.52	150.0	V	74.0	10.8
9914.050000	46.42	---	74.00	27.58	150.0	V	74.0	10.8

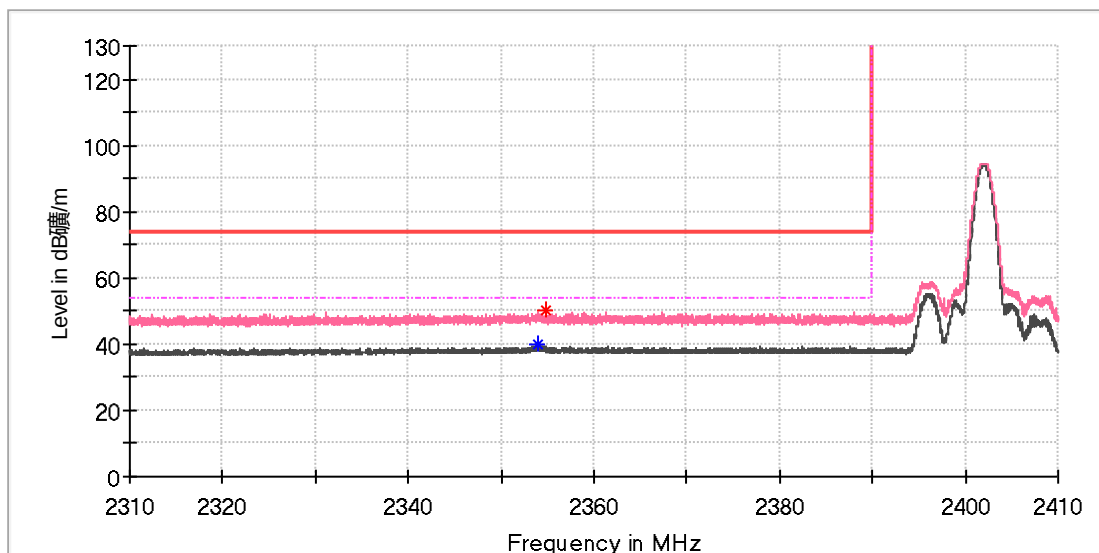
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Appendix A.8: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

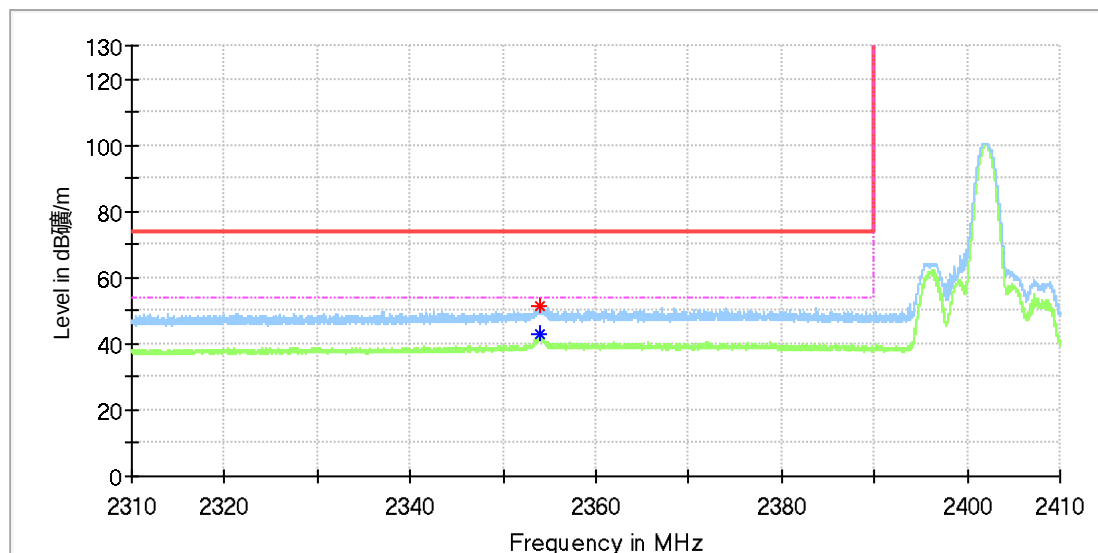
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2353.911765	---	40.16	54.00	13.84	150.0	V	257.0	6.9
2354.808824	50.07	---	74.00	23.93	150.0	V	208.0	6.9

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

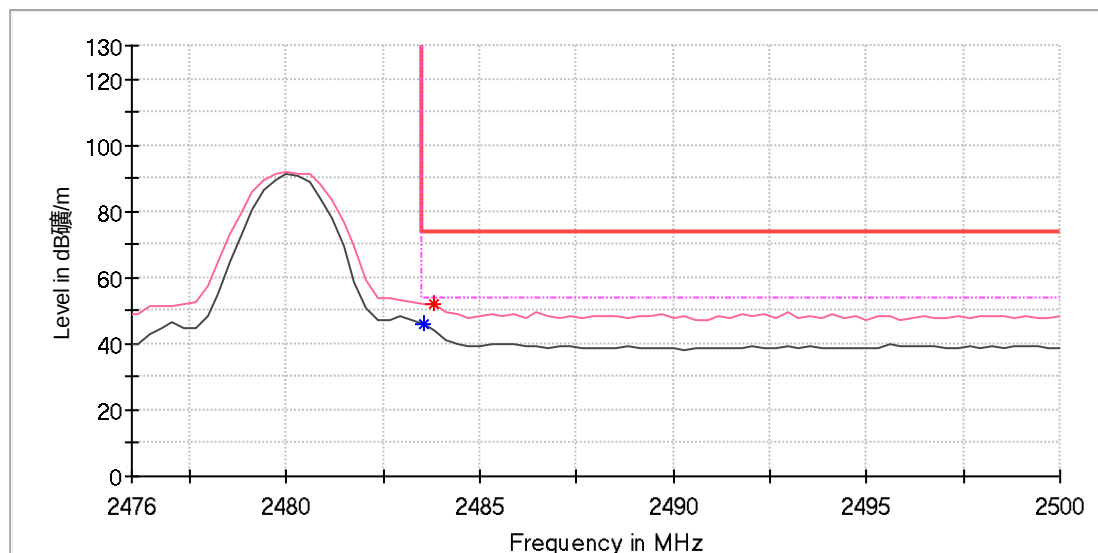
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2353.955882	51.42	---	74.00	22.58	150.0	H	240.0	6.9
2353.955882	---	42.70	54.00	11.30	150.0	H	240.0	6.9

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	Bluetooth Module
Model:	HJ-7188
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168439516/A003537498-002
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

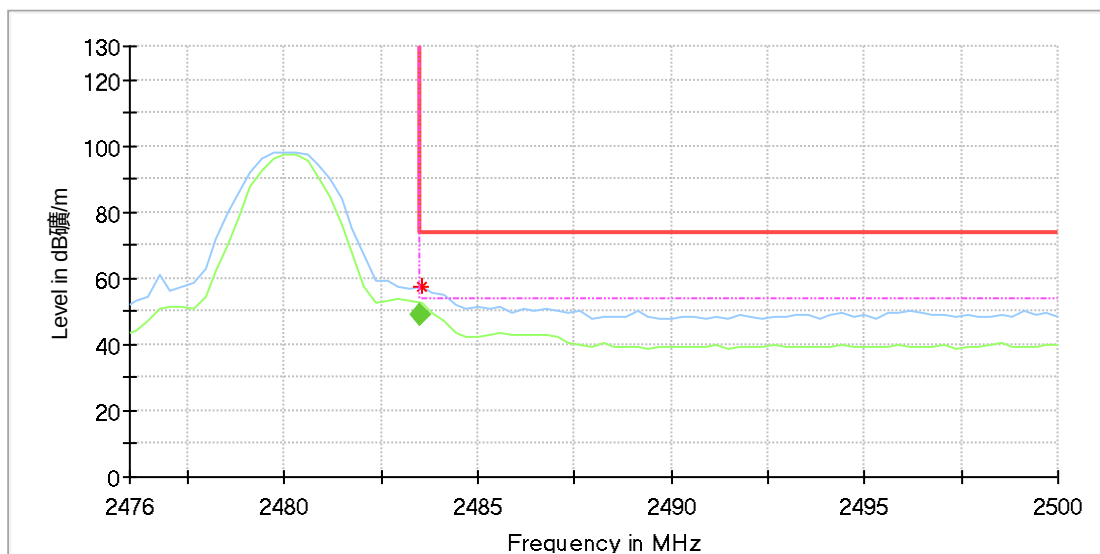
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.529412	---	46.02	54.00	7.98	150.0	V	253.0	7.4
2483.823529	52.12	---	74.00	21.88	150.0	V	253.0	7.4

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name: Bluetooth Module
Model: HJ-7188
Test Mode: BR_DH5_High channel
Order No/Sample No: 168439516/A003537498-002
Test Voltage:: DC 3.3V
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.529412	57.25	---	74.00	16.75	150.0	H	233.0	7.4

Final_Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.522353	48.99	54.00	5.01	145.0	H	123.0	7.4