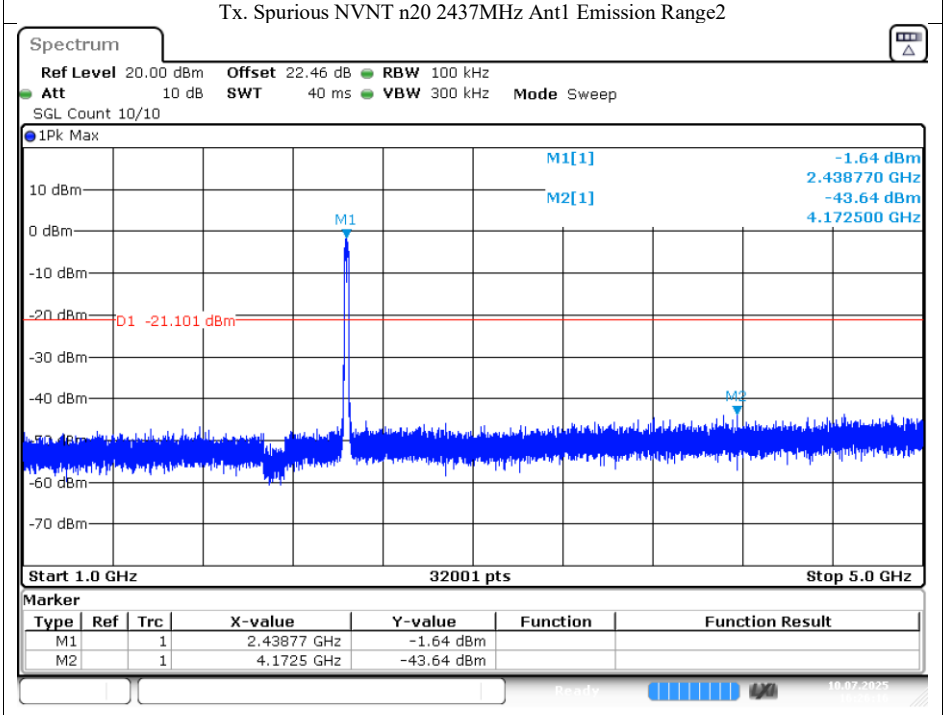
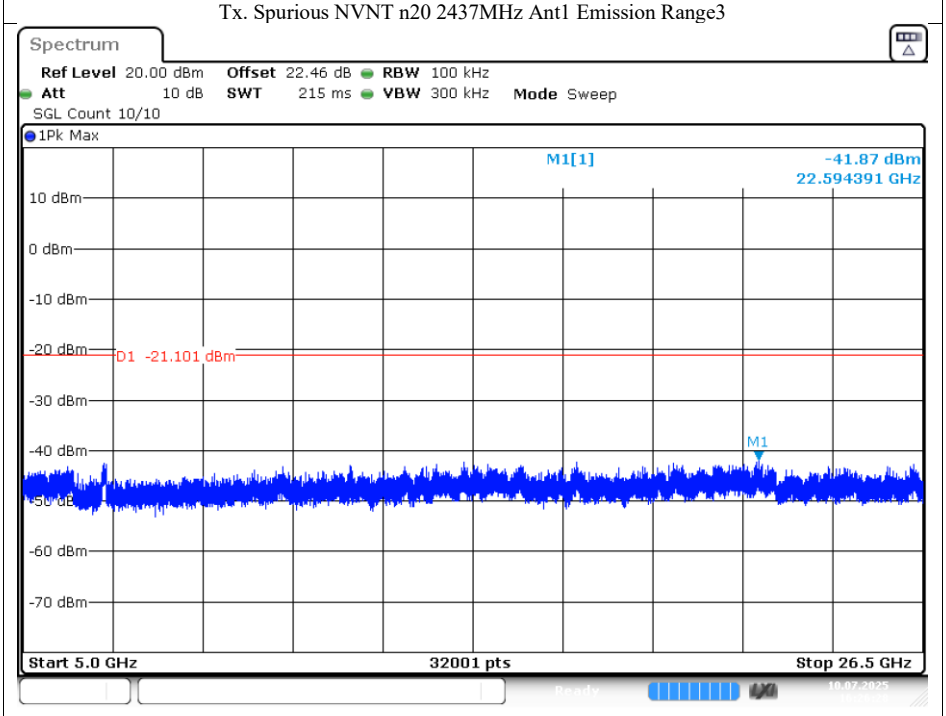
Tx. Spurious NVNT n20 2437MHz Ant1 Emission Range2



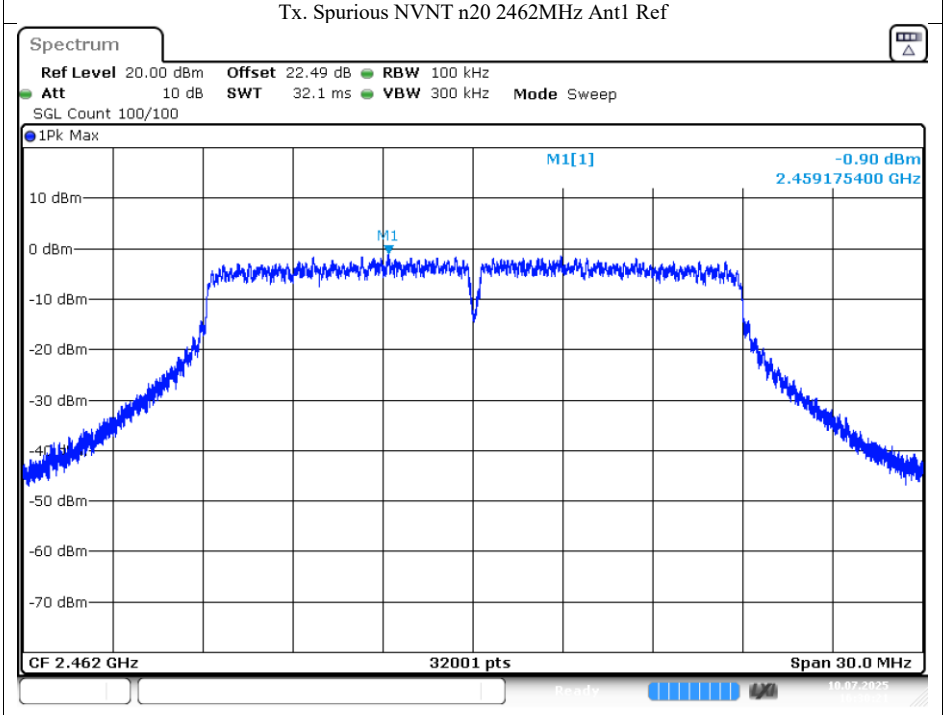
Date: 10.JUL.2025 16:26:16

Tx. Spurious NVNT n20 2437MHz Ant1 Emission Range3

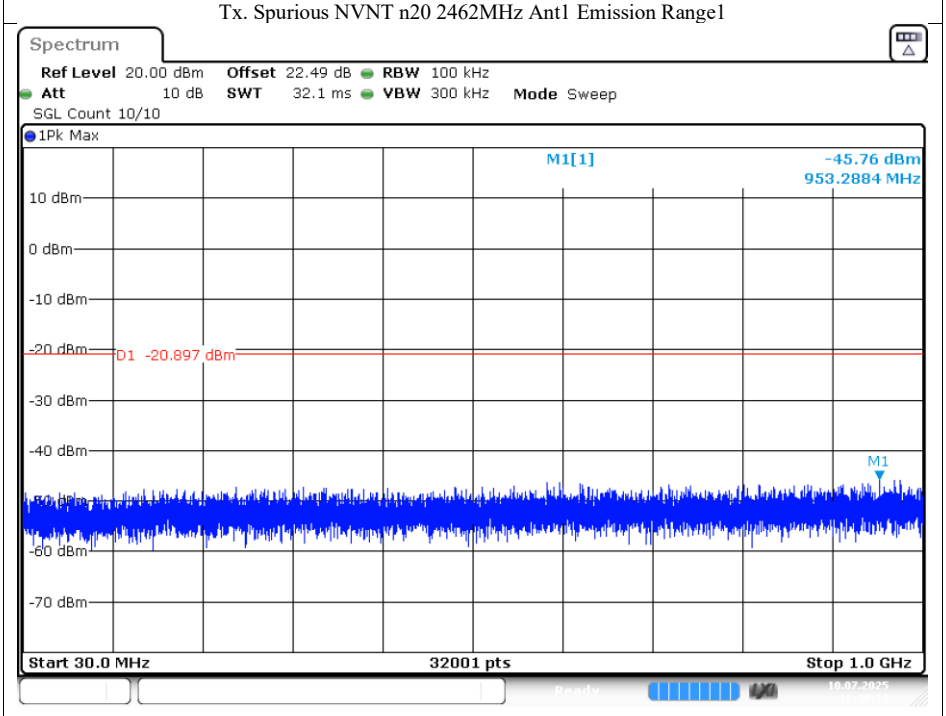


Date: 10.JUL.2025 16:26:28

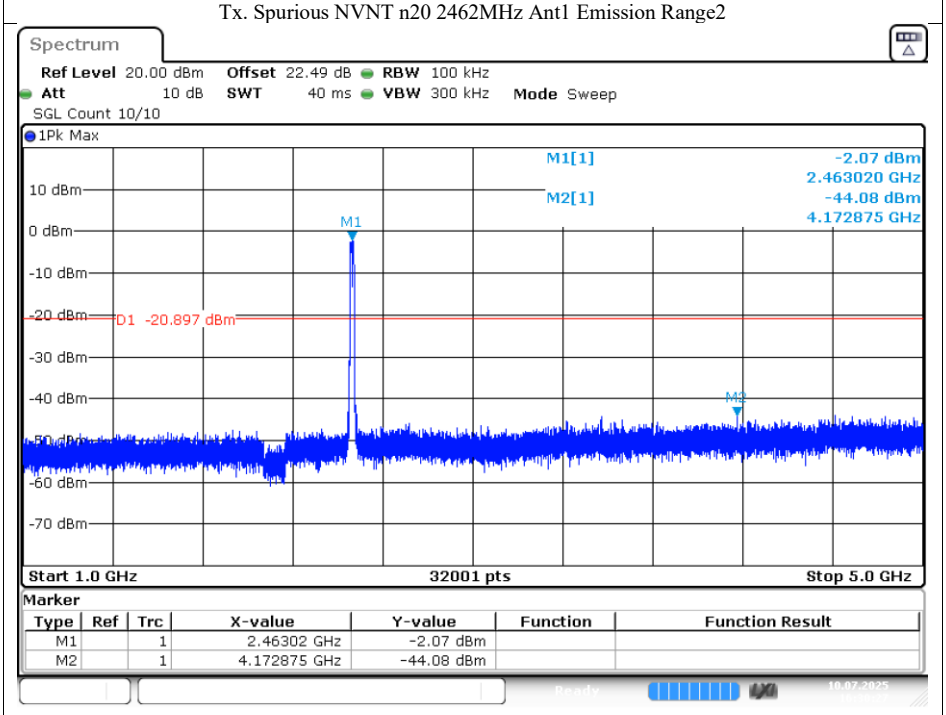
Tx. Spurious NVNT n20 2462MHz Ant1 Ref



Tx. Spurious NVNT n20 2462MHz Ant1 Emission Range1

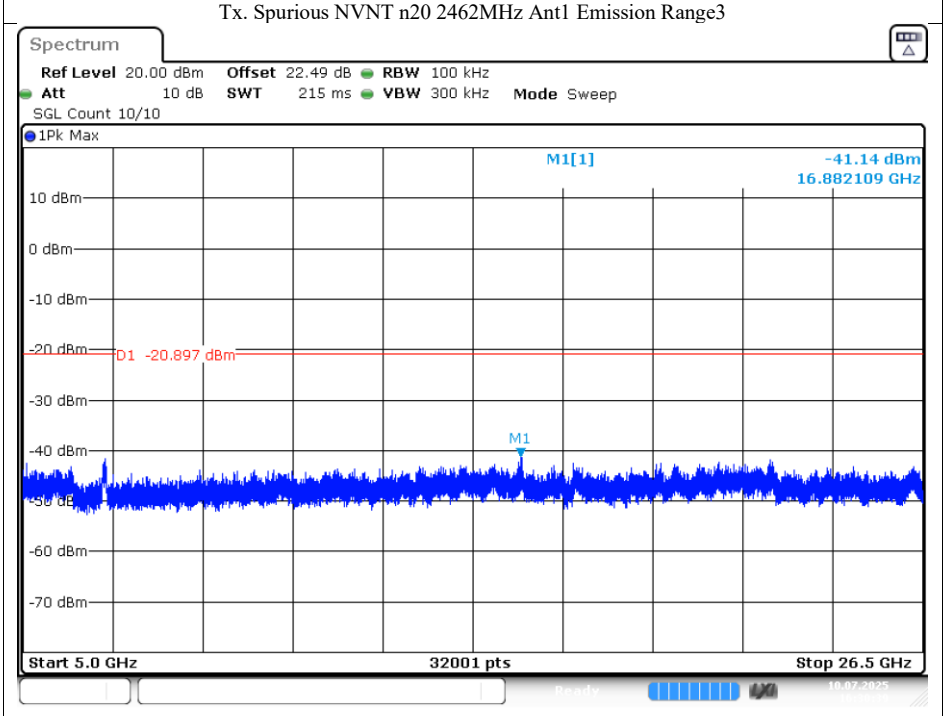


Tx. Spurious NVNT n20 2462MHz Ant1 Emission Range2



Date: 10.JUL.2025 16:30:28

Tx. Spurious NVNT n20 2462MHz Ant1 Emission Range3



Date: 10.JUL.2025 16:30:40

9.6 Band edge

Test Method

1 Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold.
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
3 The level displayed must comply with the limit specified in this Section.

Limit

According to §15.247(d) and RSS-247 5.5, in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) and RSS-Gen 8.10, must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)) and RSS-Gen.

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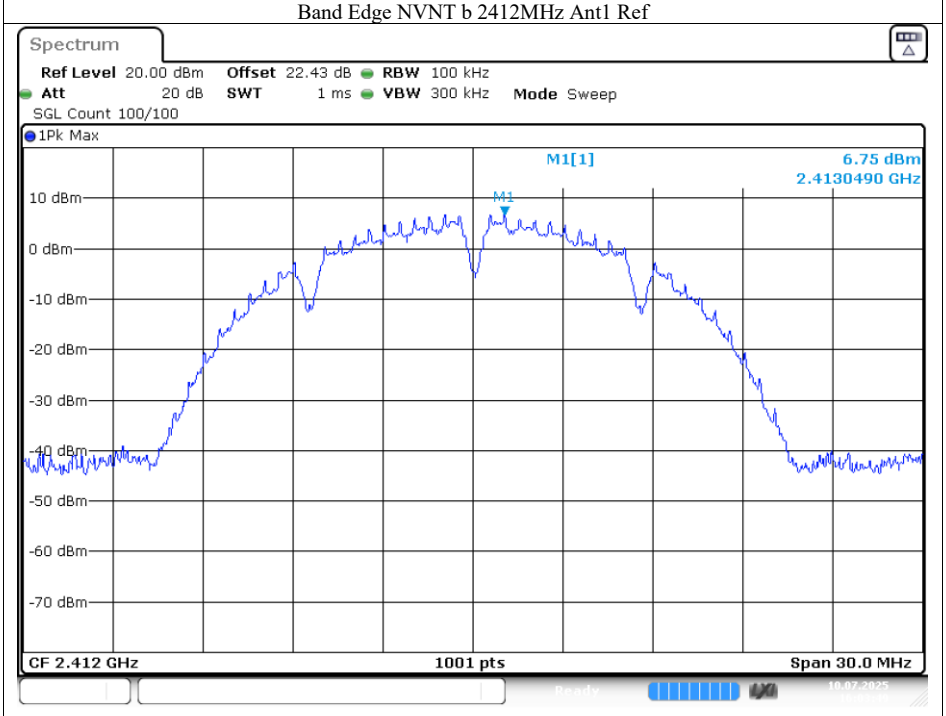
Test result

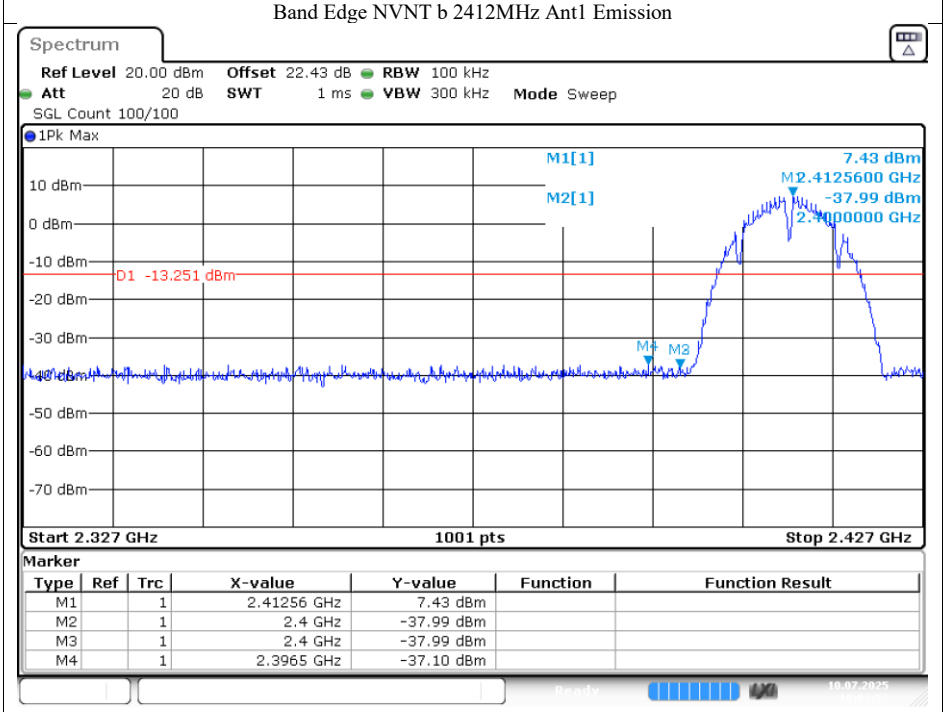
Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



Date: 10.JUL.2025 16:03:50

Band Edge NVNT b 2412MHz Ant1 Emission

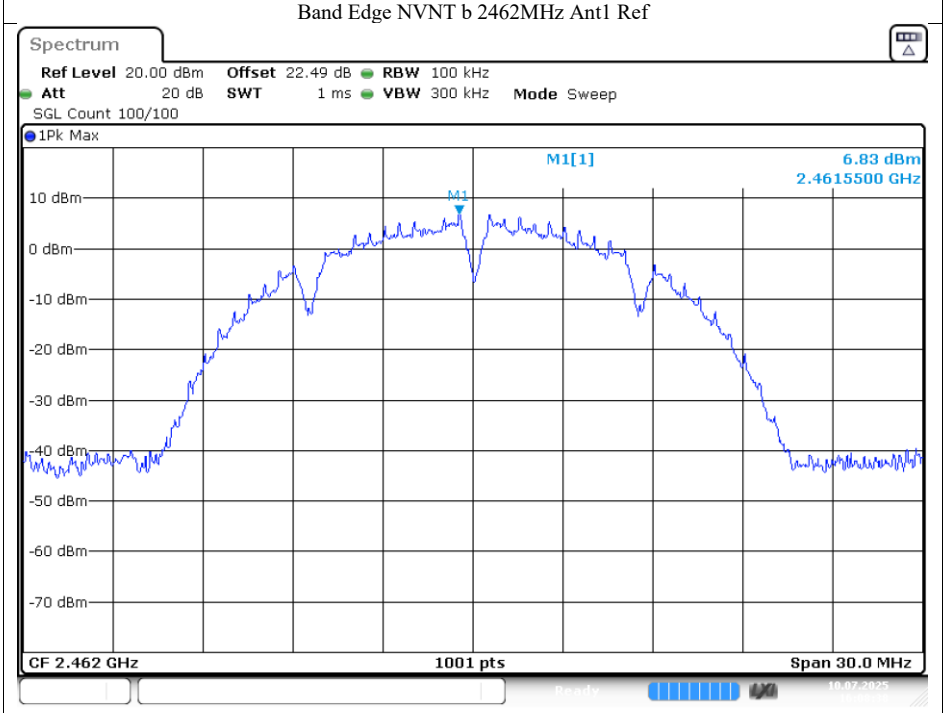


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41256 GHz	7.43 dBm		
M2		1	2.4 GHz	-37.99 dBm		
M3		1	2.4 GHz	-37.99 dBm		
M4		1	2.3965 GHz	-37.10 dBm		

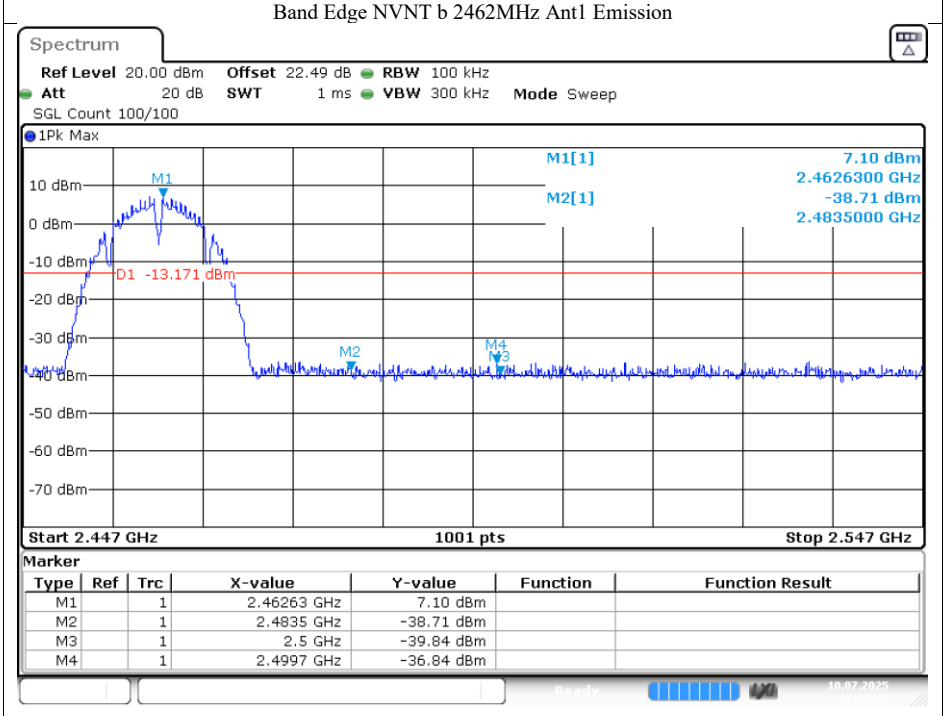
Date: 10.JUL.2025 16:03:52

Band Edge NVNT b 2462MHz Ant1 Ref



Date: 10.JUL.2025 16:08:39

Band Edge NVNT b 2462MHz Ant1 Emission

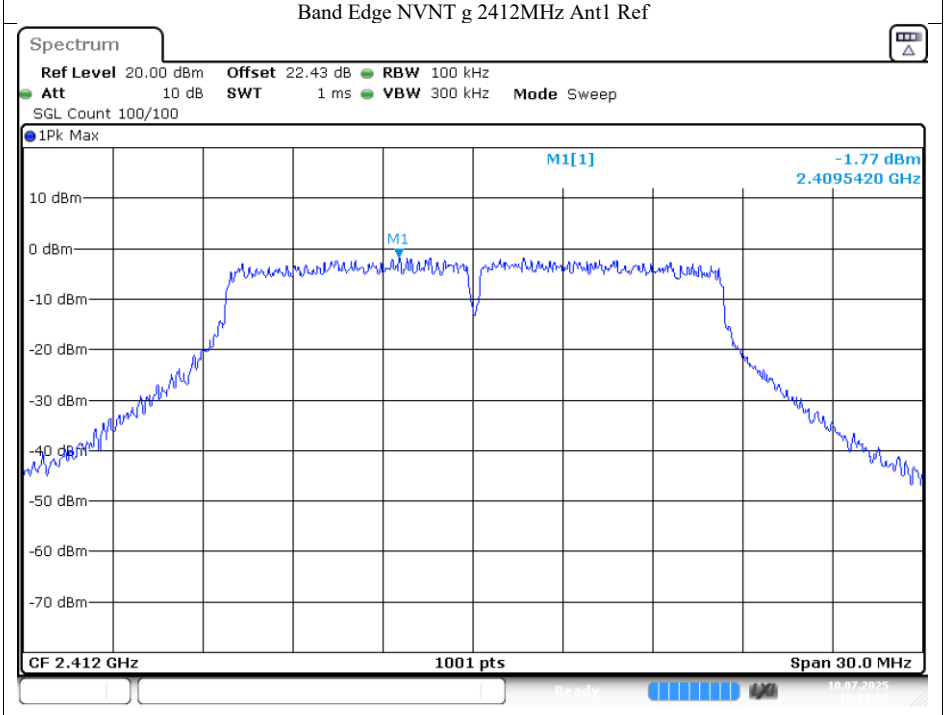


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46263 GHz	7.10 dBm		
M2		1	2.4835 GHz	-38.71 dBm		
M3		1	2.5 GHz	-39.84 dBm		
M4		1	2.4997 GHz	-36.84 dBm		

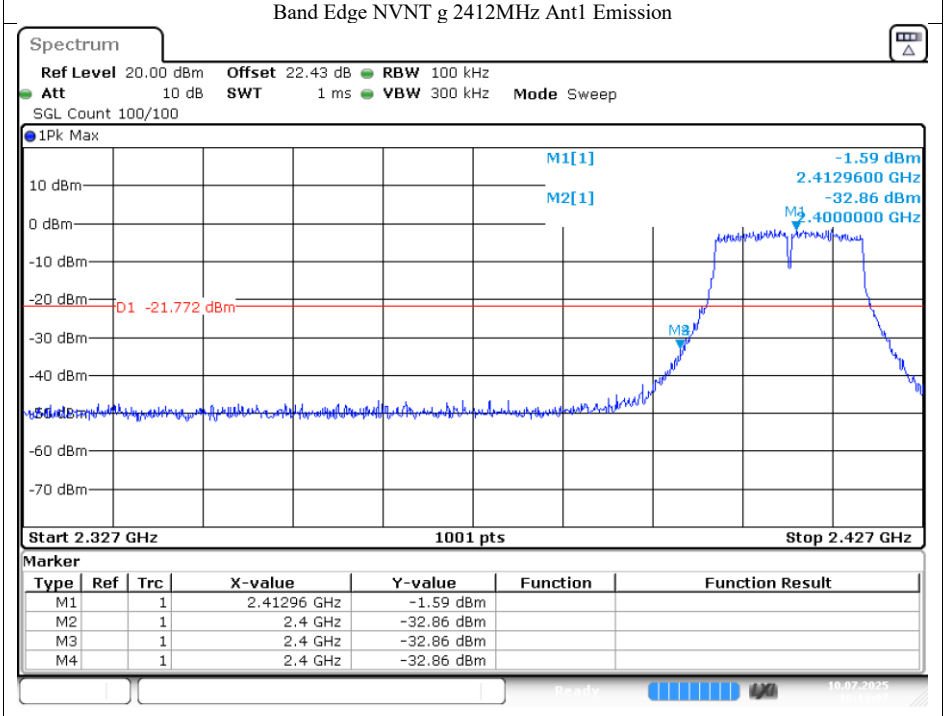
Date: 10.JUL.2025 16:08:40

Band Edge NVNT g 2412MHz Ant1 Ref



Date: 10.JUL.2025 16:13:05

Band Edge NVNT g 2412MHz Ant1 Emission

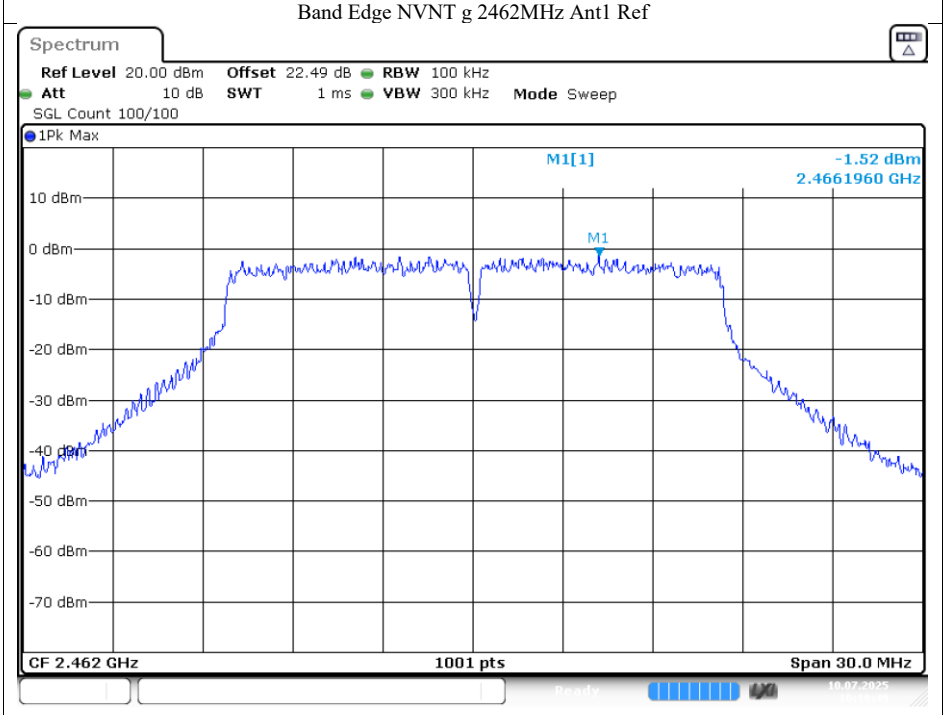


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41296 GHz	-1.59 dBm		
M2		1	2.4 GHz	-32.86 dBm		
M3		1	2.4 GHz	-32.86 dBm		
M4		1	2.4 GHz	-32.86 dBm		

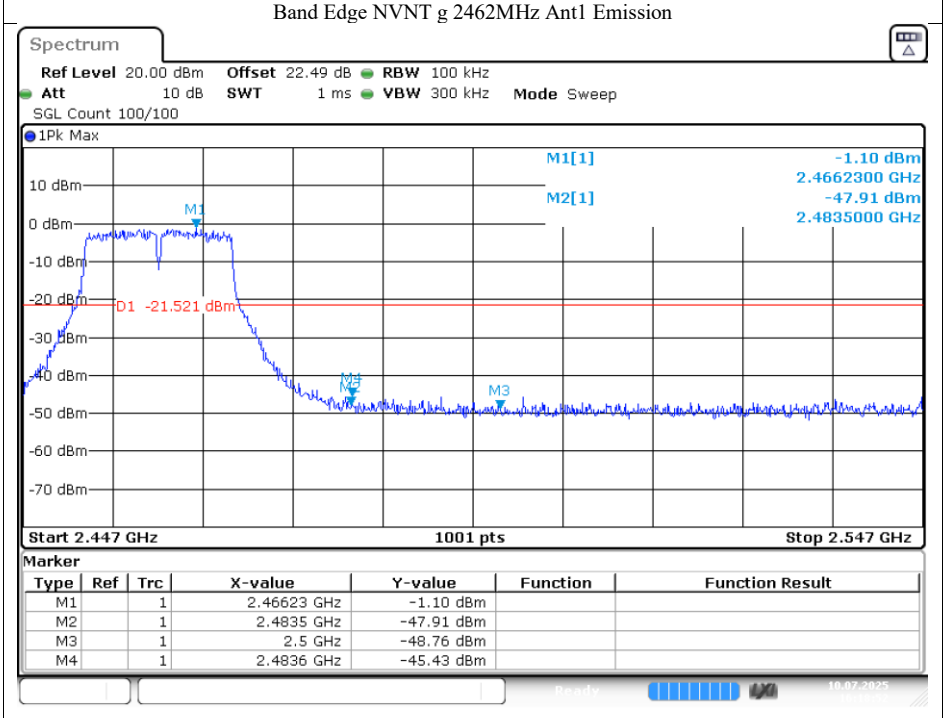
Date: 10.JUL.2025 16:13:07

Band Edge NVNT g 2462MHz Ant1 Ref



Date: 10.JUL.2025 16:18:50

Band Edge NVNT g 2462MHz Ant1 Emission

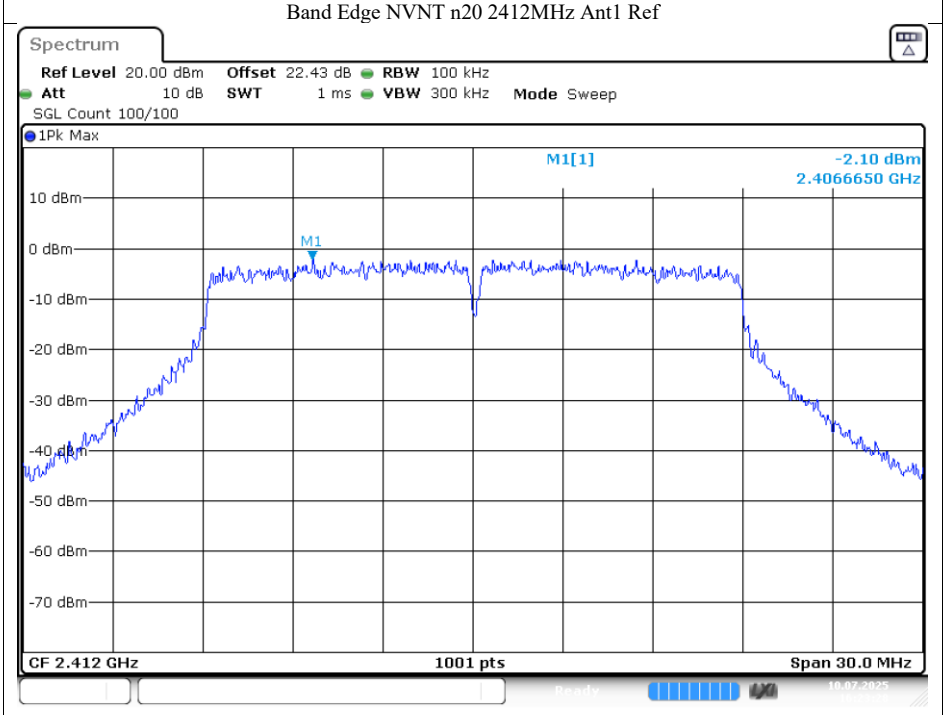


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46623 GHz	-1.10 dBm		
M2		1	2.4835 GHz	-47.91 dBm		
M3		1	2.5 GHz	-48.76 dBm		
M4		1	2.4836 GHz	-45.43 dBm		

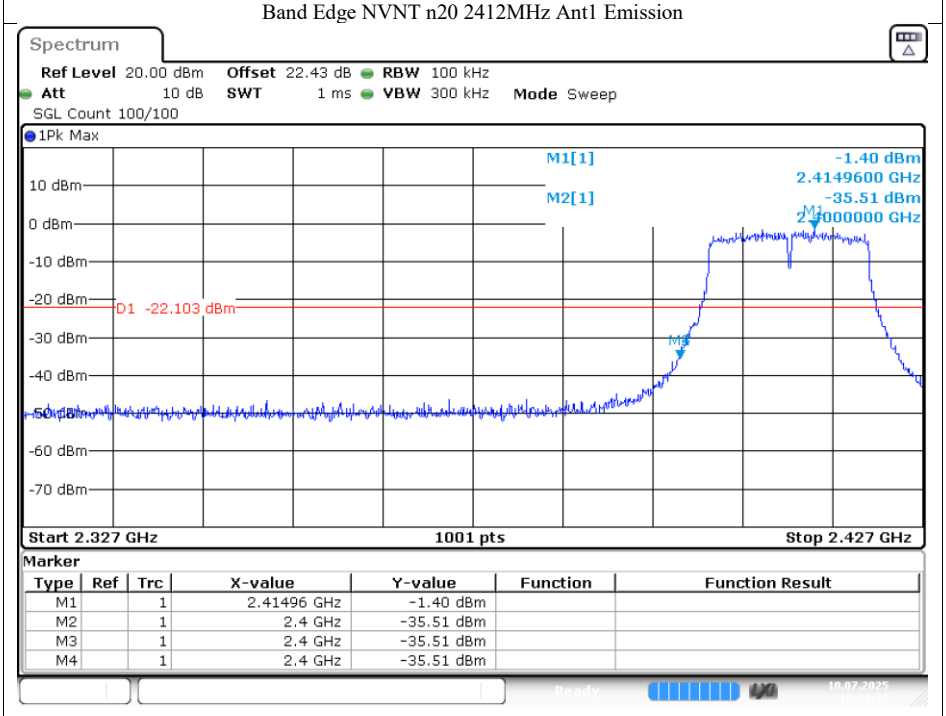
Date: 10.JUL.2025 16:18:52

Band Edge NVNT n20 2412MHz Ant1 Ref



Date: 10.JUL.2025 16:23:29

Band Edge NVNT n20 2412MHz Ant1 Emission

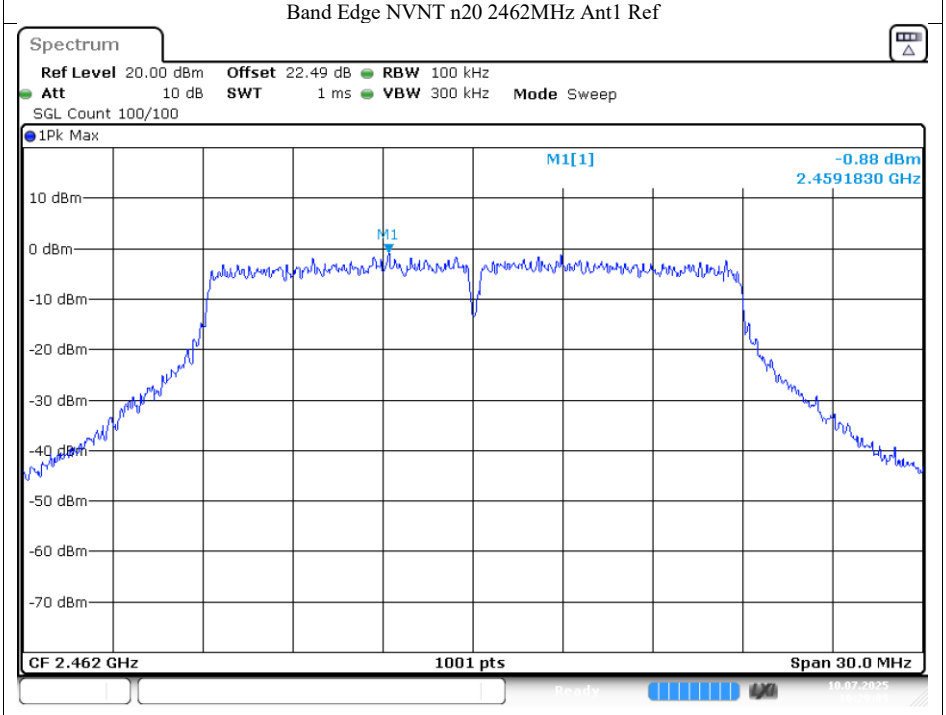


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41496 GHz	-1.40 dBm		
M2		1	2.4 GHz	-35.51 dBm		
M3		1	2.4 GHz	-35.51 dBm		
M4		1	2.4 GHz	-35.51 dBm		

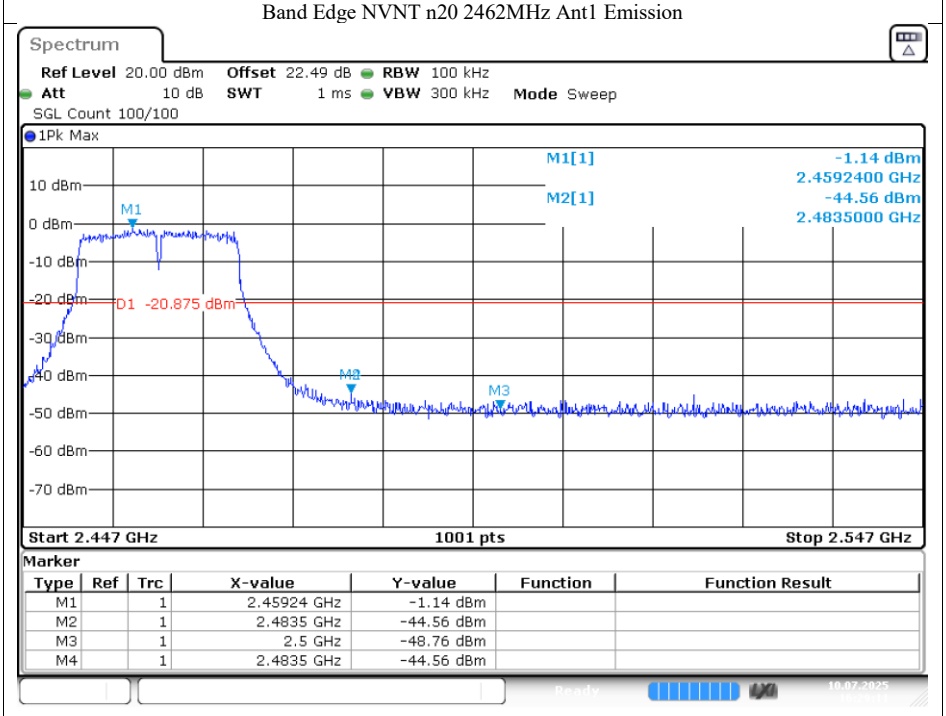
Date: 10.JUL.2025 16:23:31

Band Edge NVNT n20 2462MHz Ant1 Ref



Date: 10.JUL.2025 16:29:09

Band Edge NVNT n20 2462MHz Ant1 Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45924 GHz	-1.14 dBm		
M2		1	2.4835 GHz	-44.56 dBm		
M3		1	2.5 GHz	-48.76 dBm		
M4		1	2.4835 GHz	-44.56 dBm		

Date: 10.JUL.2025 16:29:11

9.7 Spurious radiated emissions for transmitter

Test Method

1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna 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.
4. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10:

For Below 1GHz

Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 kHz to 120 kHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Procedures for average unwanted emissions measurements above 1000 MHz

a) RBW = 1MHz.
b) VBW ≥ [3 × RBW].
c) Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
e) Sweep time = auto.
f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)
g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under § 15.247(b)(3) and RSS 247 section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in § 15.209(a) and RSS-Gen is not required. In addition, radiated emissions which fall in the restricted bands, as defined in§ 15.205(a) and RSS-Gen scetion8.9, must also comply with the radiated emission limits specified in § 15.209(a) and RSS-Gen section 8.10.

Below 30MHz
§15.247(d) & §15.209 & §15.205

Frequency MHz	Field Strength uV/m	Detector	Measured Distance Meters
0.009~0.090	2400/F (kHz)	AV	300
0.090~0.110	2400/F (kHz)	QP	300
0.110~0.490	2400/F (kHz)	AV	300
0.490~1.705	24000/F (kHz)	QP	30
1.705~30	30	QP	30

RSS-247 5.5 & RSS-Gen 6.13

Frequency MHz	Field Strength uA/m	Detector	Measured Distance Meters
0.009~0.090	6.37/F (kHz)	AV	300
0.090~0.110	6.37/F (kHz)	QP	300
0.110~0.490	6.37/F (kHz)	AV	300
0.490~1.705	63.7/F (kHz)	QP	30
1.705~30	0.08	QP	30

Note 1: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+40Log(300m/3m) (Below 30MHz)
Note 2: Limit 3m(dBμV/m)=Limit 30m(dBμV/m)+40Log(30m/3m) (Below 30MHz)

Above 30MHz

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector	Measured Distance Meters
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.The only worse case test result is listed in the report.
For test data in 1-18GHz, the highest emission (over limit) is the Intentional signal which need to be ignored

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Test result
worst case listed as below:9KHz-30MHz
for IC

9k-30MHz Radiated Emission Test

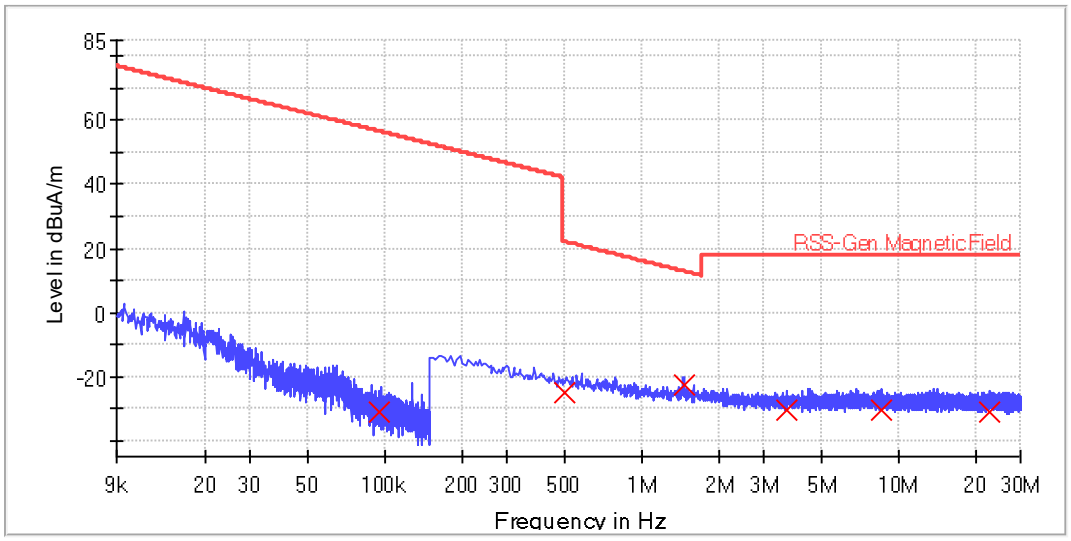
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	RSS-GEN 8.9
Comment:	X-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: IC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated H Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuA/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.005 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuA/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuA/m)
0.095000	-30.9	1000.0	0.200	100.0	153.0	-32.1	87.5	56.5
0.498000	-24.8	1000.0	9.000	100.0	28.0	-32.2	46.9	22.2
1.458000	-22.9	1000.0	9.000	100.0	115.0	-32.3	35.7	12.9
3.698000	-30.7	1000.0	9.000	100.0	137.0	-32.6	48.7	18.0
8.686000	-30.8	1000.0	9.000	100.0	174.0	-32.7	48.8	18.0
22.758000	-31.3	1000.0	9.000	100.0	230.0	-32.6	49.3	18.0

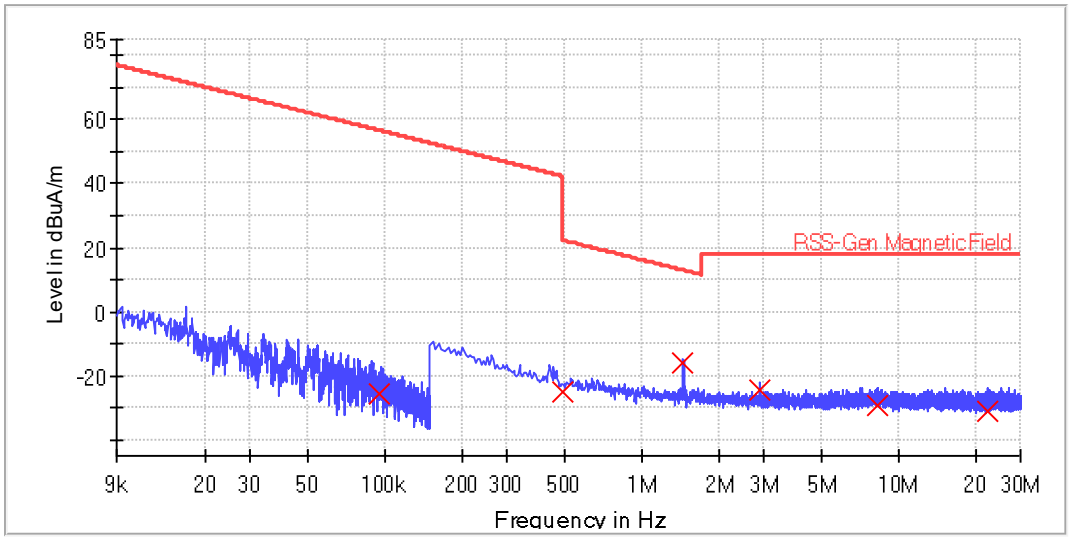
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	RSS-GEN 8.9
Comment:	Y-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: IC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated H Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuA/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.005 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuA/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuA/m)
0.095000	-25.6	1000.0	0.200	100.0	243.0	-32.1	82.2	56.5
0.494000	-25.0	1000.0	9.000	100.0	11.0	-32.2	47.3	22.2
1.454000	-16.3	1000.0	9.000	100.0	106.0	-32.3	29.1	12.9
2.914000	-24.5	1000.0	9.000	100.0	176.0	-32.5	42.5	18.0
8.326000	-29.6	1000.0	9.000	100.0	134.0	-32.7	47.6	18.0
22.274000	-31.1	1000.0	9.000	100.0	251.0	-32.7	49.1	18.0

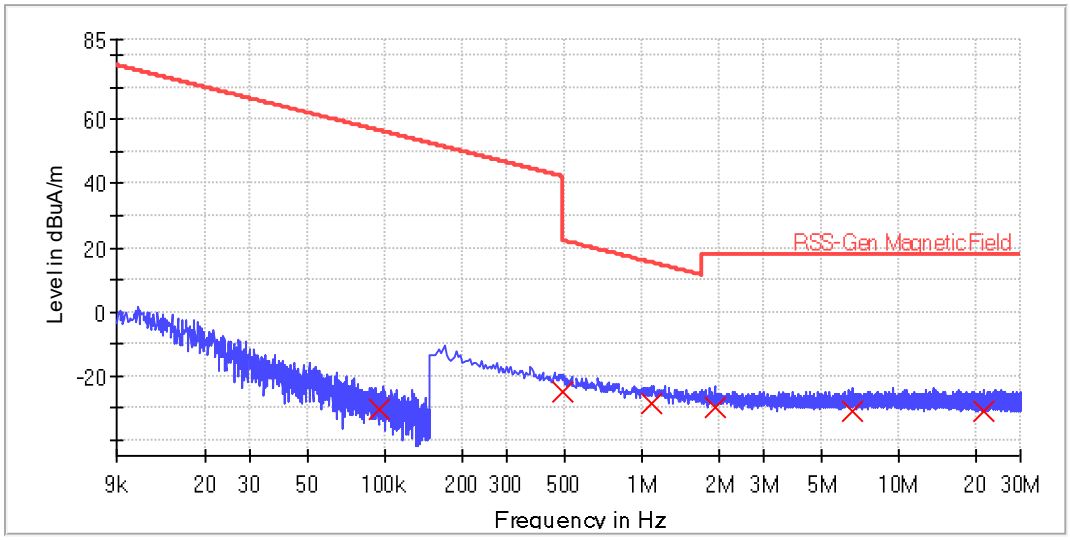
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	RSS-GEN 8.9
Comment:	Z-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: IC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated H Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuA/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.005 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuA/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuA/m)
0.095000	-30.5	1000.0	0.200	100.0	51.0	-32.1	87.0	56.5
0.494000	-25.2	1000.0	9.000	100.0	229.0	-32.2	47.4	22.2
1.098000	-28.9	1000.0	9.000	100.0	23.0	-32.2	44.2	15.3
1.926000	-30.0	1000.0	9.000	100.0	151.0	-32.4	48.0	18.0
6.642000	-30.9	1000.0	9.000	100.0	304.0	-32.7	48.9	18.0
21.466000	-31.1	1000.0	9.000	100.0	114.0	-32.7	49.1	18.0

For FCC

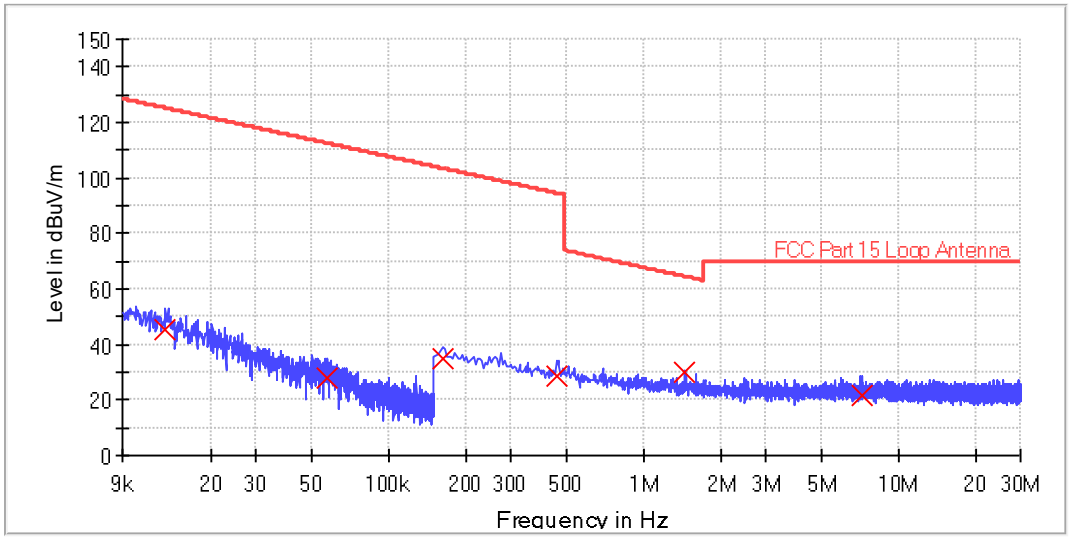
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	X-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: FCC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated E Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.001 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
0.013320	45.7	1000.0	0.200	100.0	210.0	19.9	79.4	125.1
0.057160	27.6	1000.0	0.200	100.0	106.0	19.5	84.8	112.5
0.162000	34.9	1000.0	9.000	100.0	134.0	19.3	68.5	103.4
0.454000	29.0	1000.0	9.000	100.0	120.0	19.3	65.5	94.5
1.454000	29.7	1000.0	9.000	100.0	201.0	19.3	34.7	64.4
7.186000	21.4	1000.0	9.000	100.0	226.0	19.0	48.1	69.5

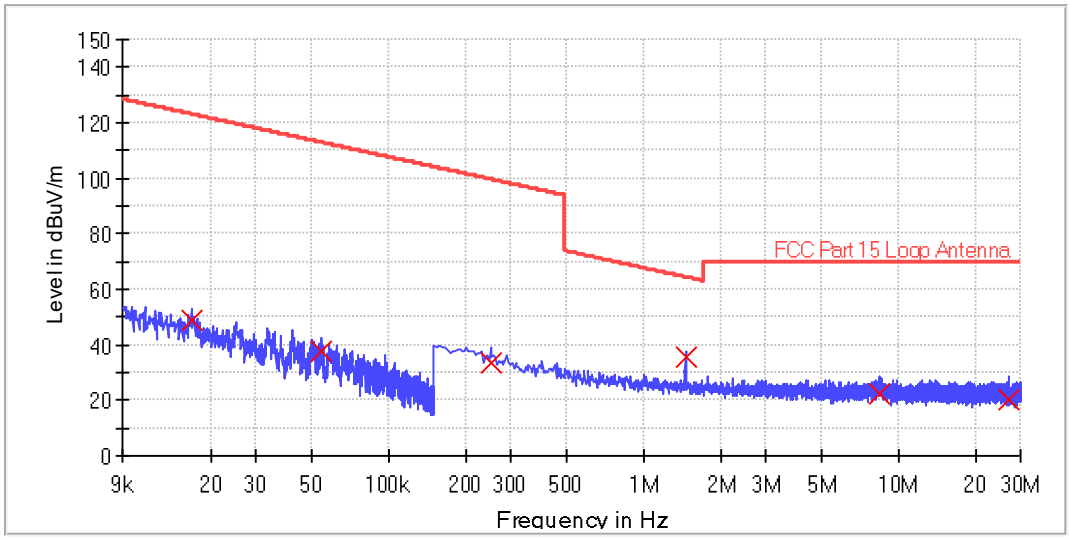
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Y-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: FCC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated E Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.001 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
0.016760	48.9	1000.0	0.200	100.0	170.0	19.8	74.2	123.1
0.054360	37.8	1000.0	9.000	100.0	220.0	19.5	75.1	112.9
0.250000	33.3	1000.0	9.000	100.0	139.0	19.3	66.4	99.6
1.458000	35.4	1000.0	9.000	100.0	75.0	19.3	28.9	64.4
8.370000	22.4	1000.0	9.000	100.0	302.0	18.9	47.2	69.5
26.930000	20.3	1000.0	9.000	100.0	121.0	18.8	49.3	69.5

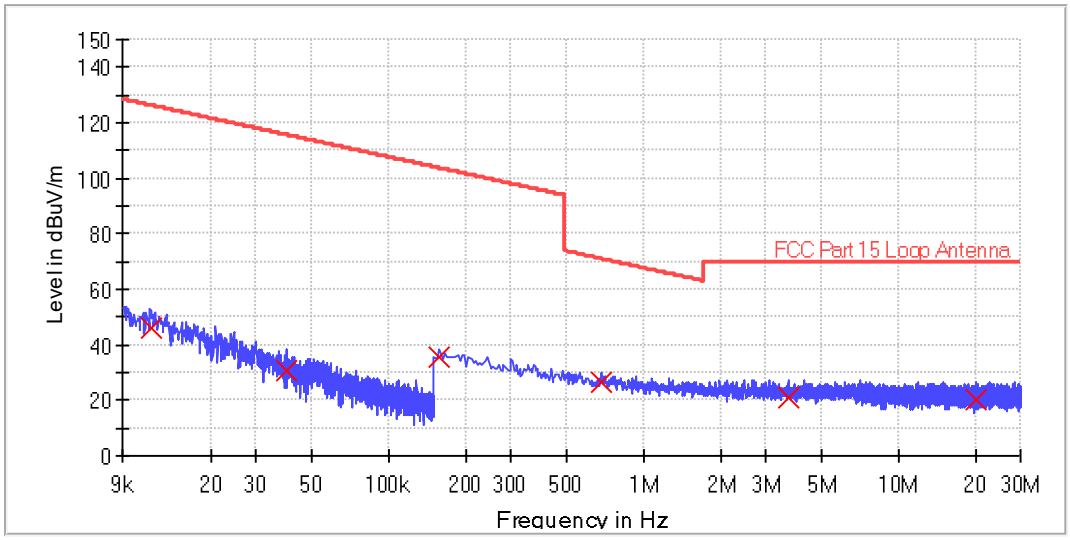
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Z-axis
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Scan Setup: FCC_RE_9K-30M_Max_3m [EMI radiated]

Hardware Setup:	Radiated E Field 9K-30MHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	80 Hz	PK+	200 Hz	0.01 s	20 dB
150 kHz - 30 MHz	4 kHz	PK+	9 kHz	0.001 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
0.011640	45.8	1000.0	0.200	100.0	107.0	20.0	80.5	126.3
0.039640	30.8	1000.0	0.200	100.0	194.0	19.5	84.8	115.6
0.158000	35.3	1000.0	9.000	100.0	76.0	19.3	68.3	103.6
0.682000	26.3	1000.0	9.000	100.0	142.0	19.3	44.6	70.9
3.690000	21.1	1000.0	9.000	100.0	210.0	19.2	48.4	69.5
20.098000	20.4	1000.0	9.000	100.0	127.0	18.7	49.1	69.5

30-1000MHz Radiated Emission Test

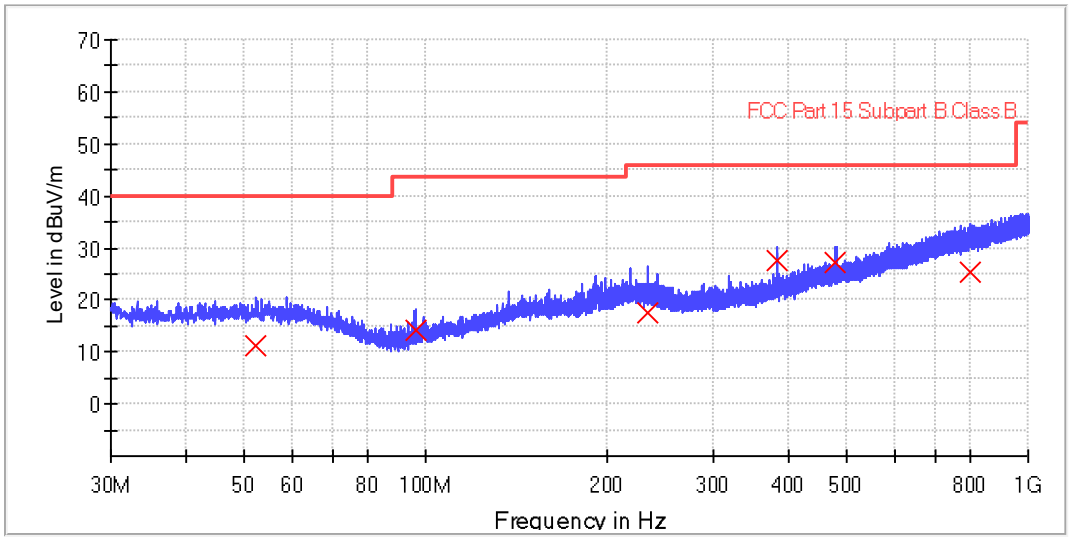
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Sweep Setup: RE_30M-1G_Sweep_3m [EMI radiated]

Hardware Setup:	Radiated E Field 30MHz-1GHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
52.320000	11.2	1000.0	120.000	200.0	273.0	20.9	28.8	40.0
95.960000	14.3	1000.0	120.000	200.0	129.0	16.1	29.2	43.5
232.960000	17.4	1000.0	120.000	200.0	53.0	19.6	28.6	46.0
384.000000	27.6	1000.0	120.000	200.0	116.0	24.8	18.4	46.0
478.640000	27.0	1000.0	120.000	200.0	182.0	27.2	19.0	46.0
798.760000	25.3	1000.0	120.000	200.0	214.0	33.4	20.8	46.0

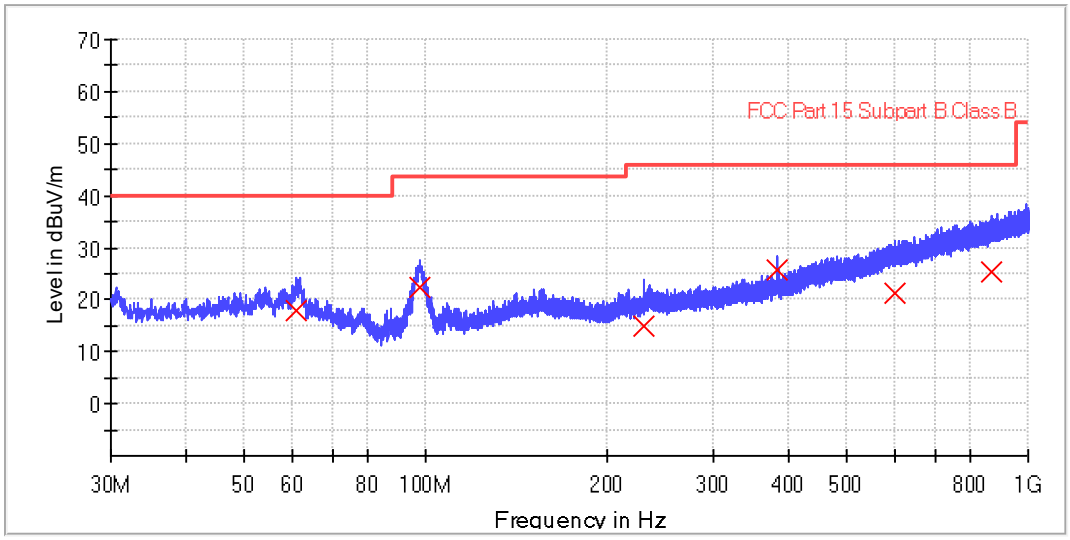
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:23.1℃,Humi.:57.6%,Atm.:1003.9hPa

Sweep Setup: RE_30M-1G_Sweep_3m [EMI radiated]

Hardware Setup:	Radiated E Field 30MHz-1GHz_3m
Receiver:	[ESR 7]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
60.800000	18.1	1000.0	120.000	100.0	144.0	20.5	21.9	40.0
98.000000	22.4	1000.0	120.000	100.0	176.0	16.3	21.1	43.5
229.400000	15.0	1000.0	120.000	100.0	70.0	19.1	31.0	46.0
384.000000	25.7	1000.0	120.000	100.0	128.0	24.8	20.3	46.0
601.520000	21.2	1000.0	120.000	100.0	278.0	30.3	24.8	46.0
866.400000	25.4	1000.0	120.000	100.0	215.0	34.2	20.6	46.0

1-18G Radiated Emission Test

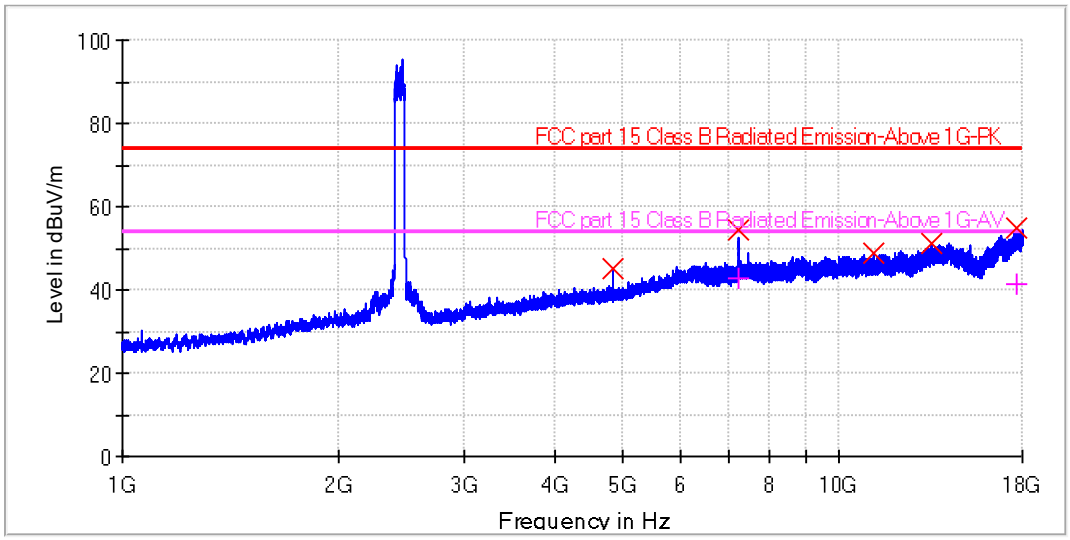
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4824.000000	45.0	---	1000.0	150.0	H	130.0	1.0	29.0	74.0	---	---
7236.000000	54.4	43.0	1000.0	150.0	H	248.0	9.9	19.6	74.0	11.0	54.0
11152.000000	48.8	---	1000.0	150.0	H	160.0	14.2	25.2	74.0	---	---
13445.500000	51.3	---	1000.0	150.0	H	171.0	18.4	22.7	74.0	---	---
17717.000000	54.7	41.5	1000.0	150.0	H	67.0	23.1	19.3	74.0	12.5	54.0

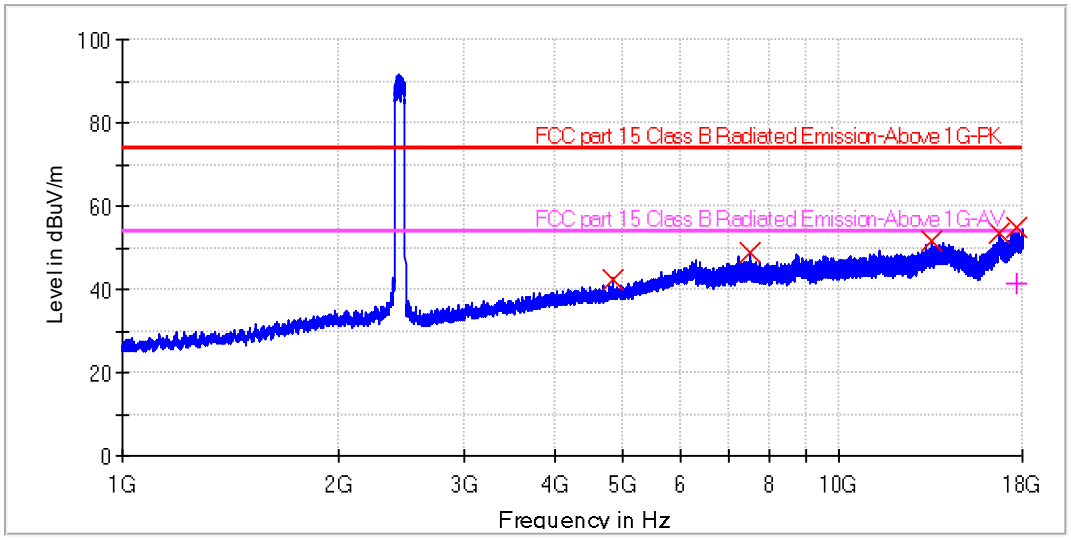
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4824.000000	42.1	---	1000.0	150.0	V	207.0	1.0	31.9	74.0	---	---
7499.500000	49.1	---	1000.0	150.0	V	229.0	10.5	25.0	74.0	---	---
13442.000000	51.7	---	1000.0	150.0	V	118.0	18.4	22.3	74.0	---	---
16718.500000	53.4	---	1000.0	150.0	V	132.0	20.2	20.6	74.0	---	---
17721.500000	55.0	41.5	1000.0	150.0	V	89.0	23.1	19.0	74.0	12.5	54.0

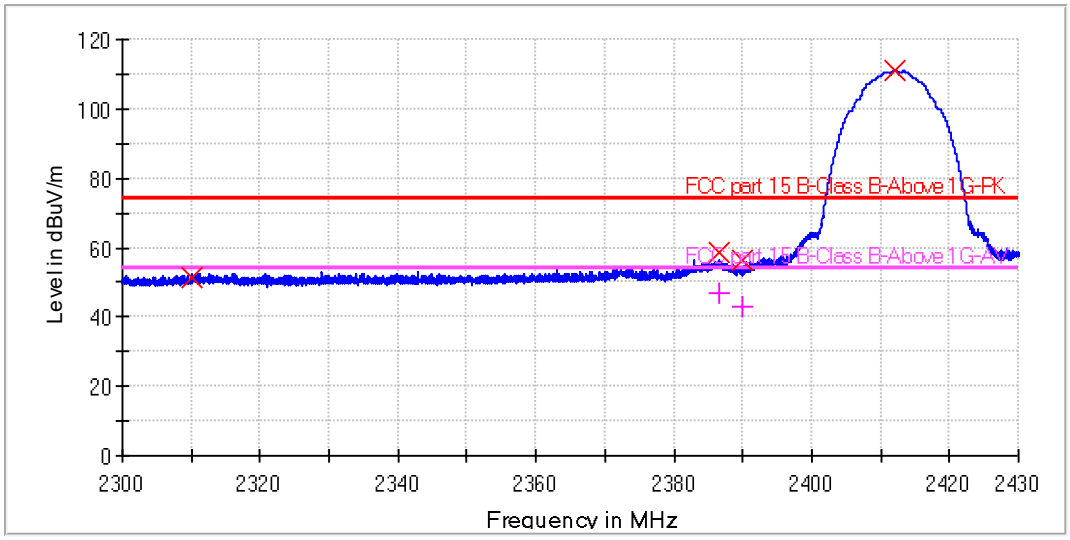
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2310.000000	51.4	---	1000.0	360.0	H	306.0	34.8	22.6	74.0	---	---
2386.500000	58.6	46.7	1000.0	150.0	H	87.0	34.8	15.4	74.0	7.3	54.0
2390.000000	56.4	43.2	1000.0	150.0	H	260.0	34.8	17.6	74.0	10.8	54.0
2412.000000	111.2	---	1000.0	360.0	H	133.0	34.9			---	---

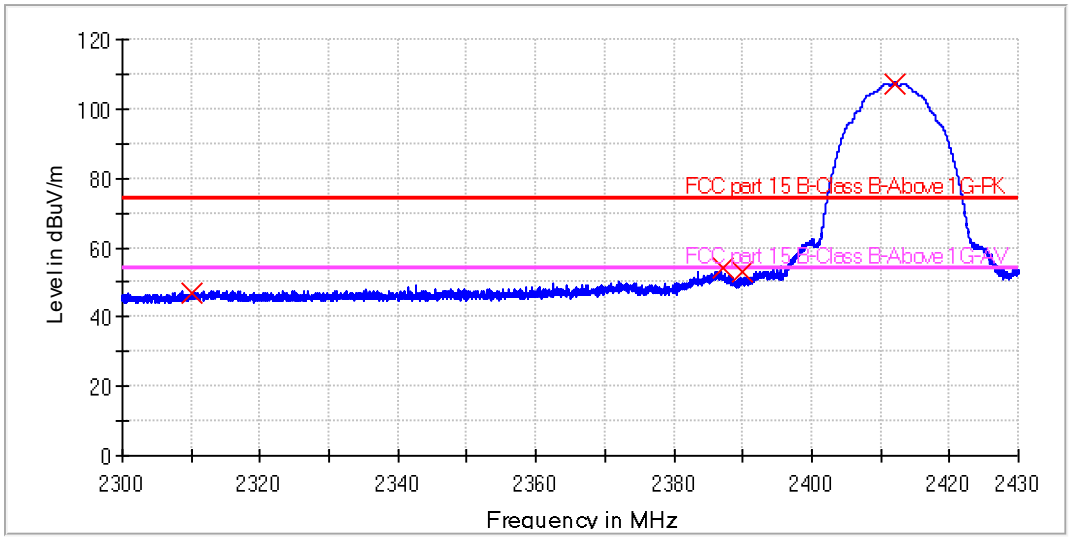
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2310.000000	46.9	1000.0	150.0	V	181.0	34.8	27.2	74.0
2387.000000	53.9	1000.0	150.0	V	115.0	34.8	20.1	74.0
2390.000000	53.1	1000.0	150.0	V	210.0	34.8	20.9	74.0
2412.000000	107.4	1000.0	150.0	V	82.0	34.9		

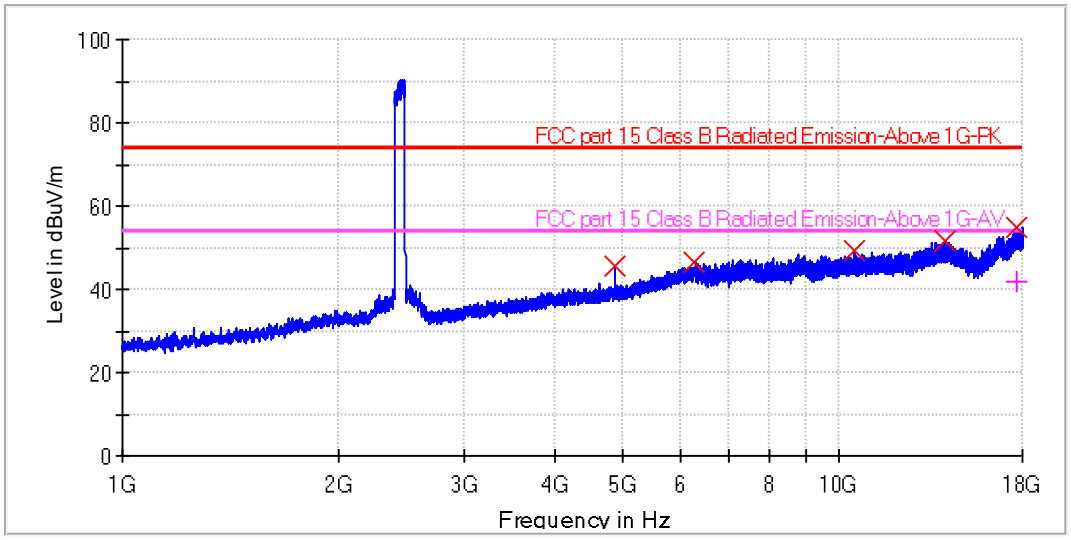
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4874.500000	45.5	---	1000.0	150.0	H	38.0	1.2	28.5	74.0	---	---
6290.500000	46.5	---	1000.0	150.0	H	235.0	8.0	27.5	74.0	---	---
10481.000000	49.4	---	1000.0	150.0	H	105.0	14.1	24.6	74.0	---	---
14024.000000	51.7	---	1000.0	150.0	H	188.0	18.7	22.3	74.0	---	---
17632.500000	54.9	41.9	1000.0	150.0	H	207.0	22.8	19.1	74.0	12.1	54.0

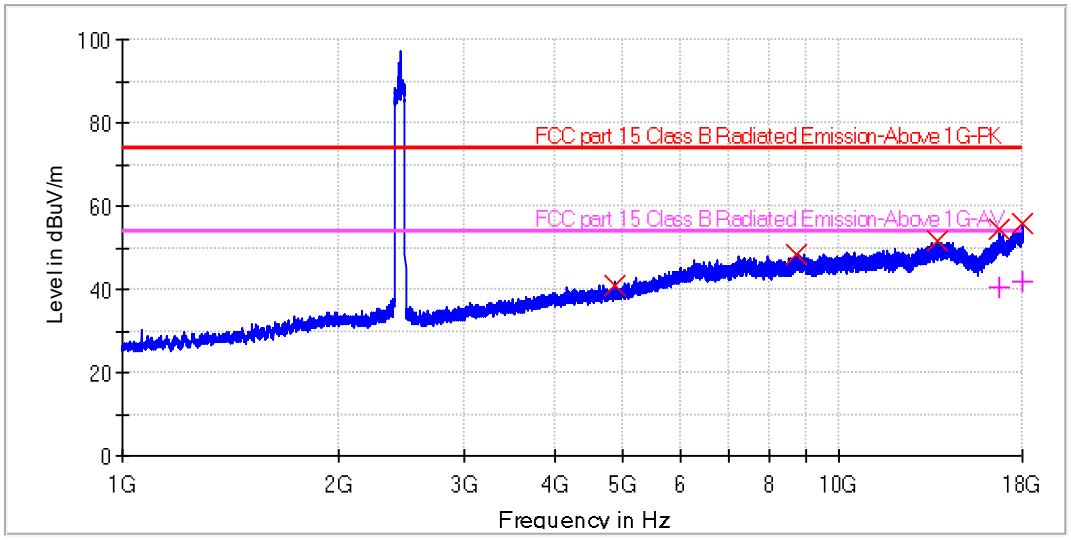
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4874.500000	41.1	---	1000.0	150.0	V	307.0	1.2	32.9	74.0	---	---
8685.500000	48.4	---	1000.0	150.0	V	106.0	12.3	25.6	74.0	---	---
13724.000000	51.7	---	1000.0	150.0	V	274.0	18.4	22.4	74.0	---	---
16723.000000	54.5	40.7	1000.0	150.0	V	141.0	20.2	19.5	74.0	13.3	54.0
17992.000000	55.6	42.0	1000.0	150.0	V	209.0	23.4	18.4	74.0	12.0	54.0

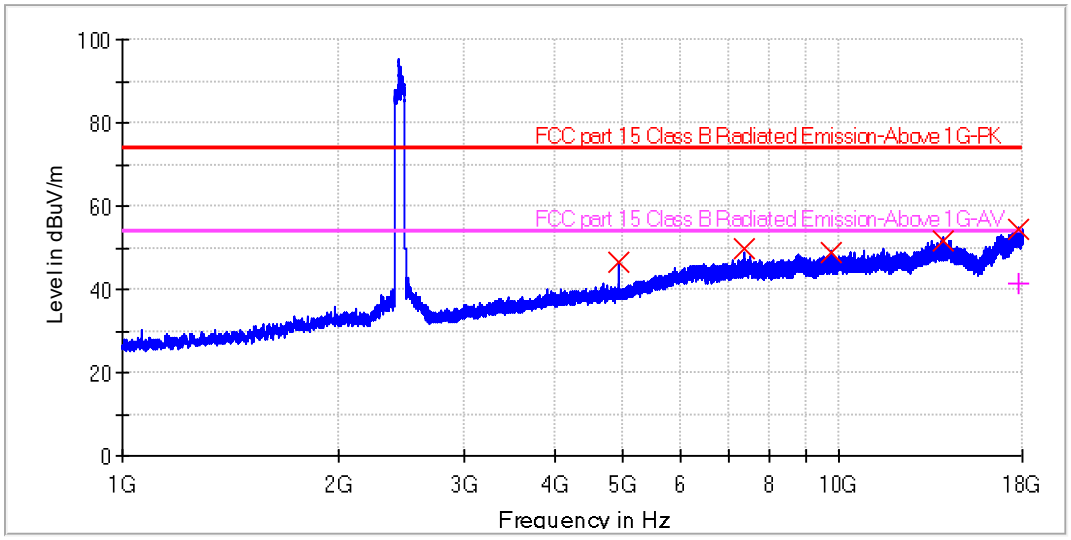
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4924.000000	46.6	---	1000.0	150.0	H	153.0	1.3	27.5	74.0	---	---
7386.500000	49.7	---	1000.0	150.0	H	240.0	10.1	24.3	74.0	---	---
9759.500000	48.7	---	1000.0	150.0	H	193.0	13.4	25.3	74.0	---	---
13970.000000	51.9	---	1000.0	150.0	H	138.0	18.8	22.2	74.0	---	---
17750.000000	54.5	41.6	1000.0	150.0	H	211.0	23.1	19.5	74.0	12.5	54.0

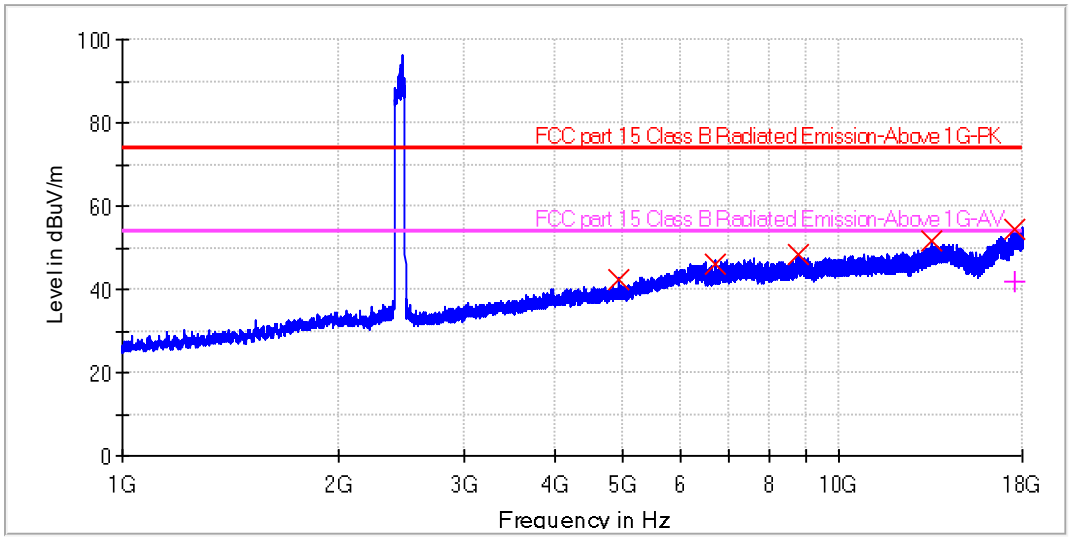
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4924.000000	**42.1**	**---**	**1000.0**	**150.0**	**V**	**180.0**	**1.3**	**31.9**	**74.0**	**---**	**---**
6706.500000	**46.2**	**---**	**1000.0**	**150.0**	**V**	**146.0**	**9.3**	**27.8**	**74.0**	**---**	**---**
8763.500000	**48.2**	**---**	**1000.0**	**150.0**	**V**	**83.0**	**12.6**	**25.8**	**74.0**	**---**	**---**
13428.000000	**51.6**	**---**	**1000.0**	**150.0**	**V**	**215.0**	**18.5**	**22.4**	**74.0**	**---**	**---**
17574.500000	**54.5**	**41.7**	**1000.0**	**150.0**	**V**	**59.0**	**22.6**	**19.5**	**74.0**	**12.3**	**54.0**

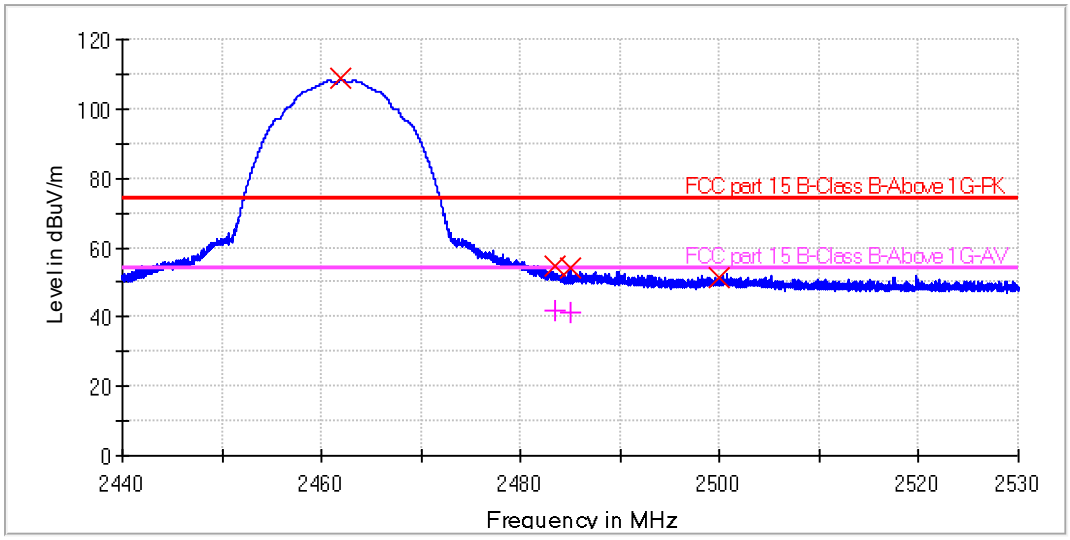
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2462.000000	108.9	---	1000.0	150.0	H	109.0	34.9			---	---
2483.500000	54.8	41.9	1000.0	150.0	H	132.0	35.0	19.2	74.0	12.1	54.0
2485.000000	54.1	41.5	1000.0	150.0	H	205.0	35.0	19.9	74.0	12.5	54.0
2500.000000	51.2	---	1000.0	150.0	H	87.0	35.0	22.8	74.0	---	---

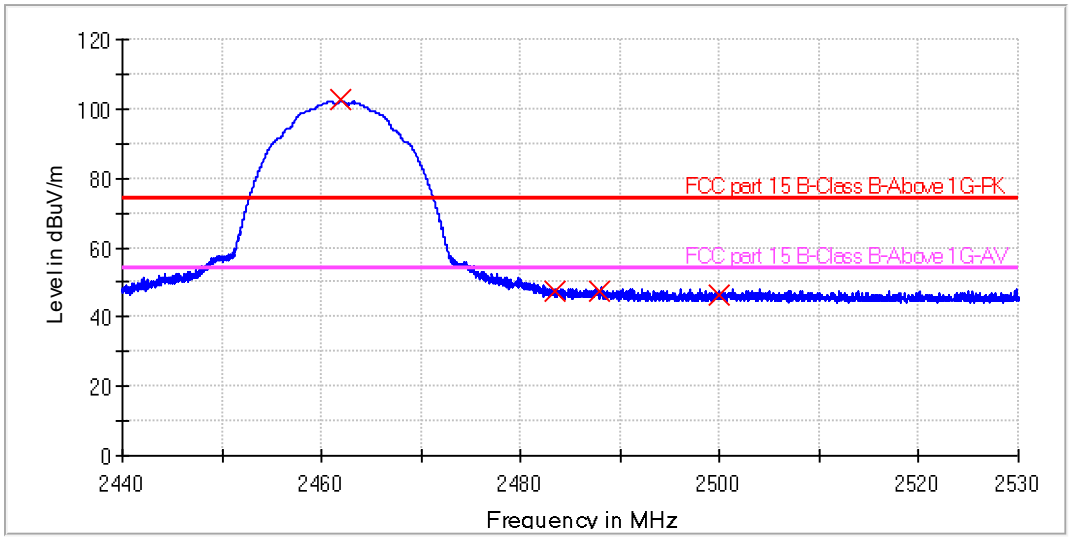
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2462.000000	103.0	1000.0	150.0	V	240.0	34.9		
2483.500000	47.2	1000.0	150.0	V	109.0	35.0	26.8	74.0
2488.000000	47.5	1000.0	150.0	V	147.0	35.0	26.5	74.0
2500.000000	46.5	1000.0	150.0	V	252.0	35.0	27.5	74.0

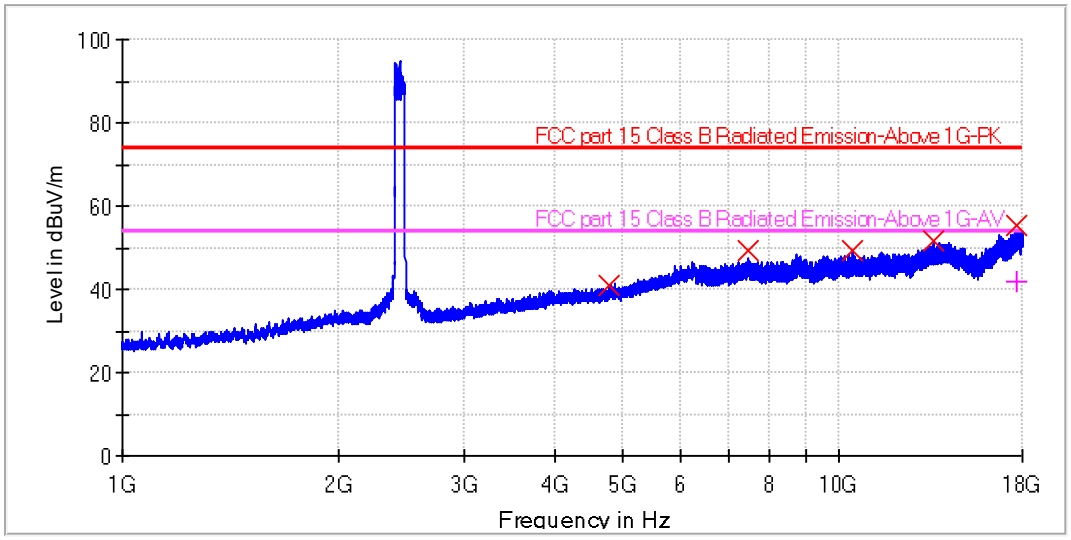
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4788.000000	41.1	---	1000.0	150.0	H	37.0	0.8	32.9	74.0	---	---
7468.000000	49.1	---	1000.0	150.0	H	218.0	10.5	24.9	74.0	---	---
10443.500000	49.2	---	1000.0	150.0	H	190.0	14.1	24.8	74.0	---	---
13571.000000	51.8	---	1000.0	150.0	H	101.0	17.6	22.2	74.0	---	---
17649.000000	55.5	41.8	1000.0	150.0	H	284.0	22.9	18.5	74.0	12.2	54.0

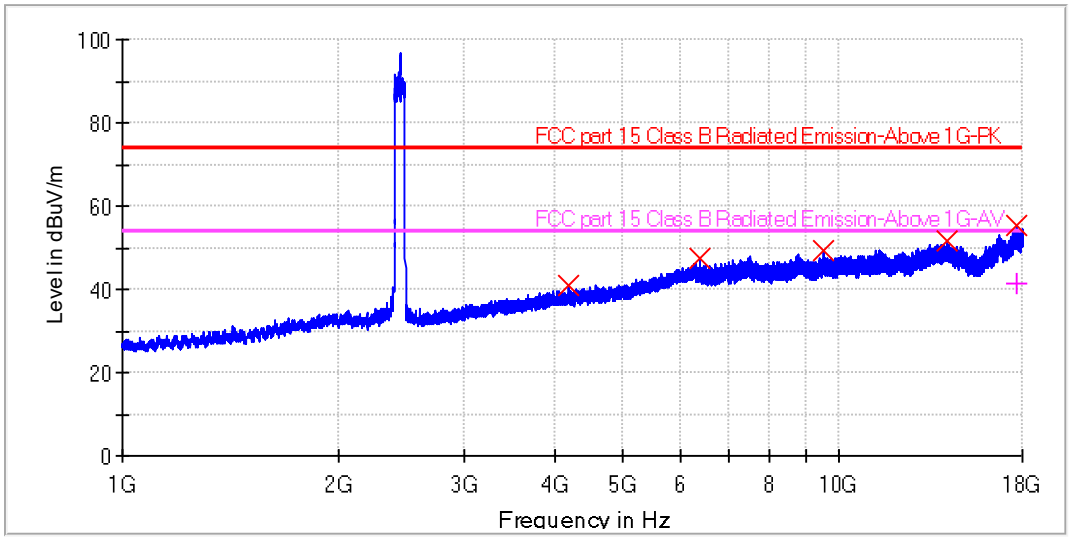
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4201.000000	40.9	---	1000.0	150.0	V	259.0	-0.4	33.1	74.0	---	---
6379.000000	47.5	---	1000.0	150.0	V	220.0	9.7	26.5	74.0	---	---
9509.500000	49.1	---	1000.0	150.0	V	88.0	13.6	24.9	74.0	---	---
14138.000000	51.5	---	1000.0	150.0	V	130.0	18.4	22.5	74.0	---	---
17693.000000	55.4	41.5	1000.0	150.0	V	109.0	23.0	18.6	74.0	12.5	54.0

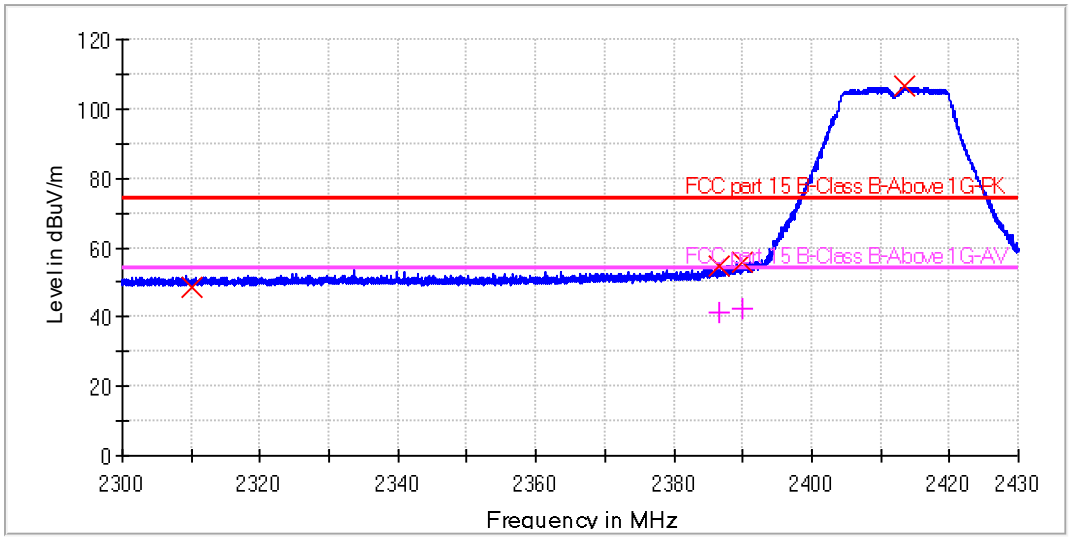
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2310.000000	48.7	---	1000.0	150.0	H	58.0	34.8	25.3	74.0	---	---
2386.500000	54.7	41.0	1000.0	150.0	H	202.0	34.8	19.3	74.0	13.0	54.0
2390.000000	55.7	42.6	1000.0	150.0	H	238.0	34.8	18.3	74.0	11.4	54.0
2413.500000	106.5	---	1000.0	150.0	H	99.0	34.9			---	---

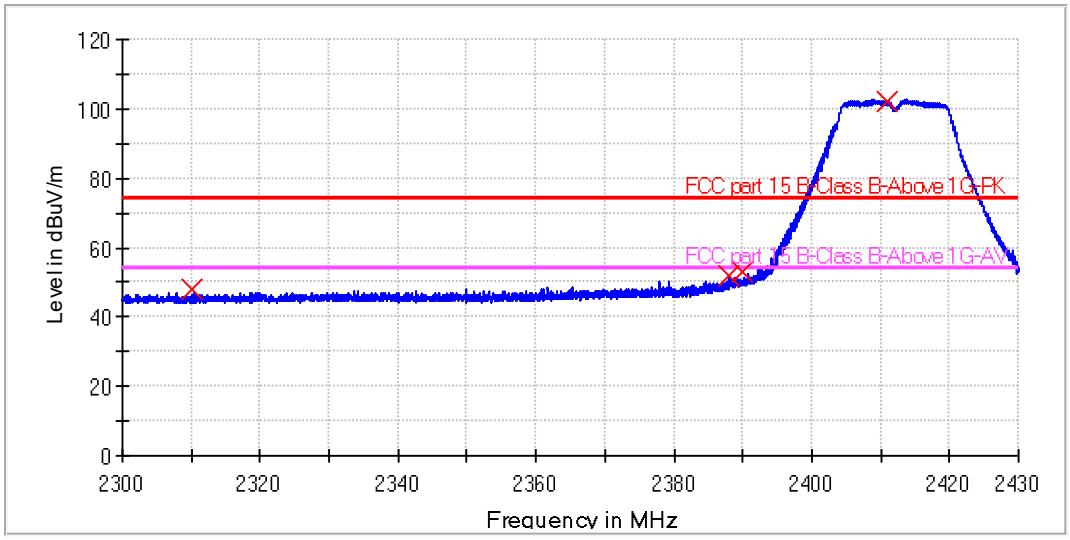
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2310.000000	48.2	1000.0	150.0	V	291.0	34.8	25.8	74.0
2388.000000	52.0	1000.0	150.0	V	93.0	34.8	22.0	74.0
2390.000000	53.1	1000.0	150.0	V	126.0	34.8	20.9	74.0
2411.000000	102.0	1000.0	150.0	V	158.0	34.9		

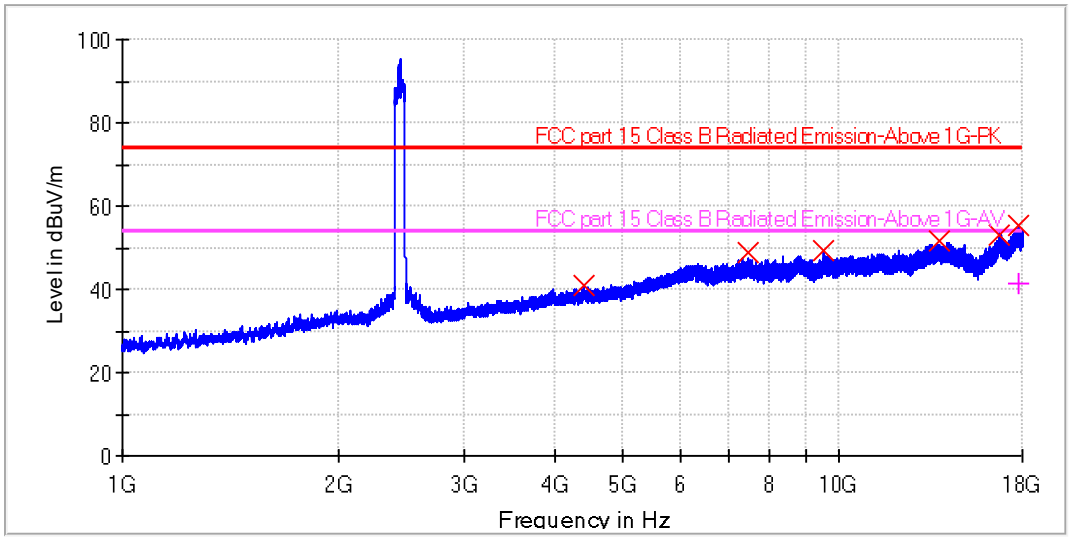
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4413.000000	40.8	---	1000.0	150.0	H	101.0	-0.1	33.2	74.0	---	---
7461.000000	48.6	---	1000.0	150.0	H	267.0	10.5	25.4	74.0	---	---
9519.000000	49.1	---	1000.0	150.0	H	90.0	13.6	24.9	74.0	---	---
13817.500000	51.7	---	1000.0	150.0	H	316.0	18.9	22.3	74.0	---	---
16703.000000	53.3	---	1000.0	150.0	H	103.0	20.1	20.8	74.0	---	---
17783.500000	55.5	41.4	1000.0	150.0	H	88.0	23.0	18.5	74.0	12.6	54.0

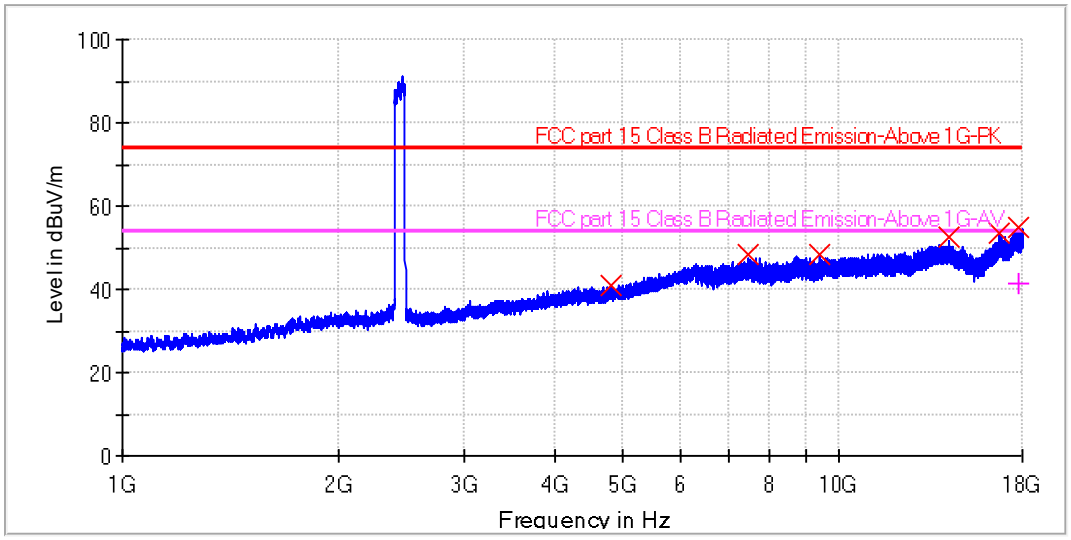
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4790.500000	40.8	---	1000.0	150.0	V	192.0	0.8	33.2	74.0	---	---
7471.500000	48.6	---	1000.0	150.0	V	184.0	10.5	25.4	74.0	---	---
9389.000000	48.5	---	1000.0	150.0	V	257.0	13.3	25.5	74.0	---	---
14209.500000	52.5	---	1000.0	150.0	V	104.0	18.6	21.5	74.0	---	---
16739.000000	53.3	---	1000.0	150.0	V	132.0	20.2	20.7	74.0	---	---
17826.500000	54.8	41.2	1000.0	150.0	V	208.0	22.9	19.2	74.0	12.8	54.0

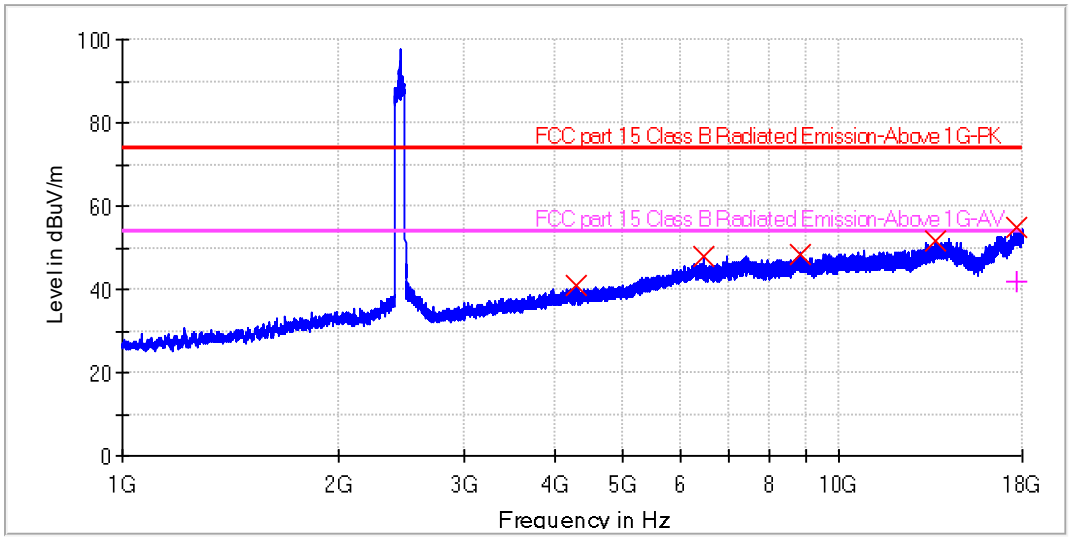
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4295.000000	40.8	---	1000.0	150.0	H	180.0	0.1	33.2	74.0	---	---
6482.500000	47.8	---	1000.0	150.0	H	108.0	9.8	26.2	74.0	---	---
8843.000000	48.3	---	1000.0	150.0	H	215.0	12.5	25.7	74.0	---	---
13628.000000	51.5	---	1000.0	150.0	H	136.0	17.9	22.5	74.0	---	---
17650.500000	55.0	41.8	1000.0	150.0	H	279.0	22.9	19.0	74.0	12.2	54.0

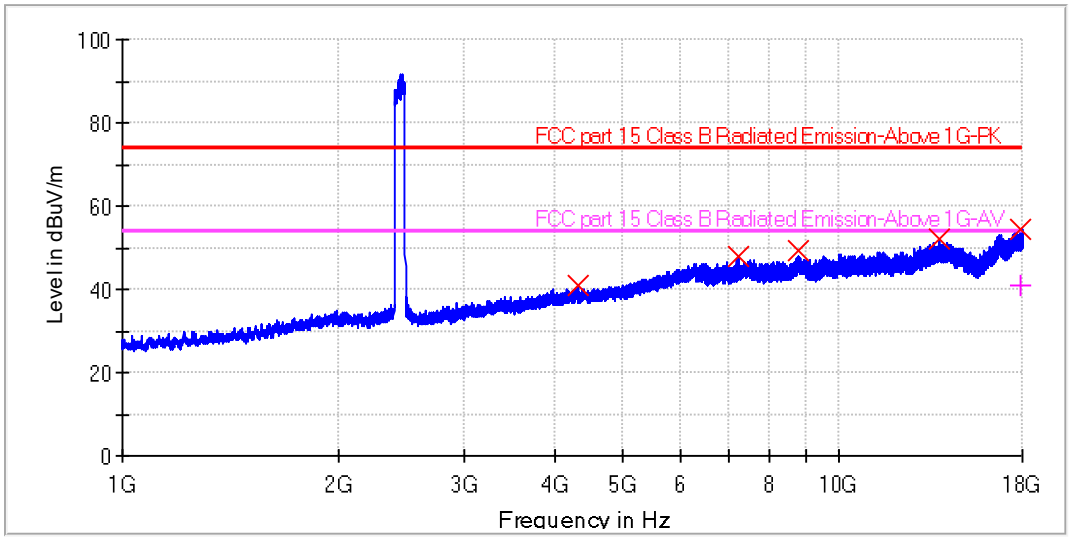
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4311.000000	**40.8**	**---**	**1000.0**	**150.0**	**V**	**125.0**	**-0.2**	**33.3**	**74.0**	**---**	**---**
7225.000000	**47.8**	**---**	**1000.0**	**150.0**	**V**	**202.0**	**10.0**	**26.2**	**74.0**	**---**	**---**
8747.000000	**49.5**	**---**	**1000.0**	**150.0**	**V**	**182.0**	**12.5**	**24.5**	**74.0**	**---**	**---**
13773.500000	**52.0**	**---**	**1000.0**	**150.0**	**V**	**45.0**	**18.7**	**22.1**	**74.0**	**---**	**---**
17942.000000	**54.5**	**41.1**	**1000.0**	**150.0**	**V**	**159.0**	**22.9**	**19.5**	**74.0**	**12.9**	**54.0**

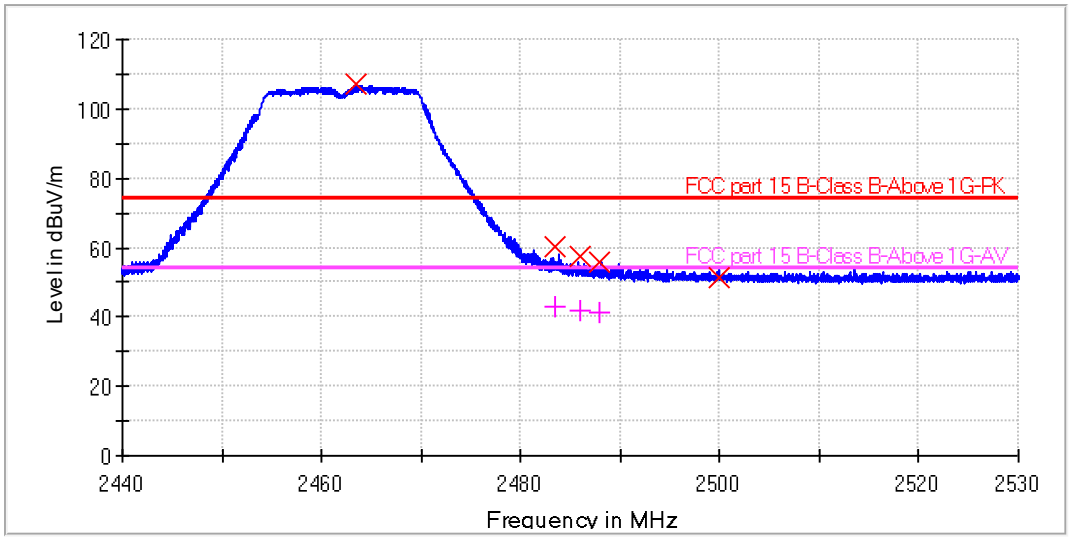
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2463.500000	107.0	---	1000.0	150.0	H	223.0	34.9			---	---
2483.500000	60.4	43.2	1000.0	150.0	H	208.0	35.0	13.6	74.0	10.8	54.0
2486.000000	57.5	41.9	1000.0	150.0	H	175.0	35.0	16.5	74.0	12.2	54.0
2488.000000	56.0	41.2	1000.0	150.0	H	93.0	35.0	18.0	74.0	12.8	54.0
2500.000000	51.1	---	1000.0	150.0	H	226.0	35.0	22.9	74.0	---	---

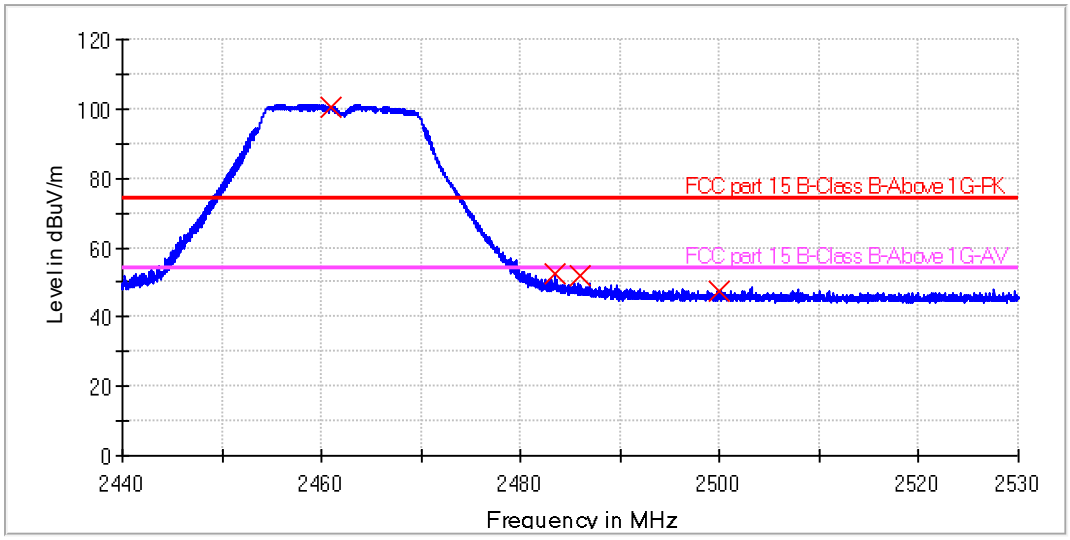
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11G_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2461.000000	100.6	1000.0	150.0	V	215.0	34.9		
2483.500000	52.4	1000.0	150.0	V	175.0	35.0	21.6	74.0
2486.000000	51.8	1000.0	150.0	V	138.0	35.0	22.2	74.0
2500.000000	47.4	1000.0	150.0	V	84.0	35.0	26.6	74.0

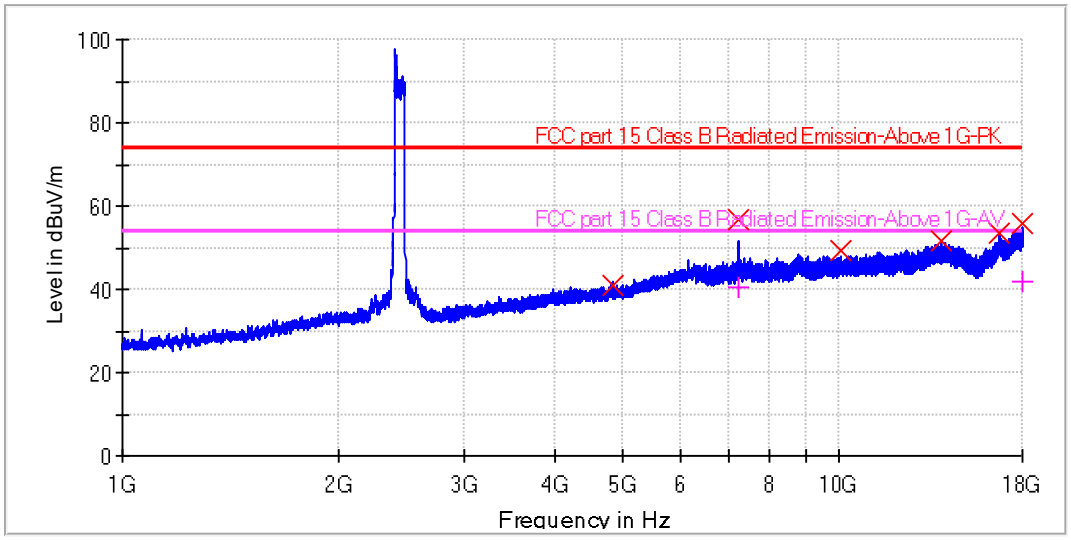
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4830.000000	41.1	---	1000.0	150.0	H	271.0	1.0	32.9	74.0	---	---
7232.000000	56.6	40.3	1000.0	150.0	H	98.0	9.9	17.4	74.0	13.7	54.0
10052.000000	49.1	---	1000.0	150.0	H	262.0	13.6	24.9	74.0	---	---
13862.000000	51.8	---	1000.0	150.0	H	134.0	18.9	22.2	74.0	---	---
16659.500000	53.4	---	1000.0	150.0	H	113.0	19.6	20.6	74.0	---	---
17983.000000	55.7	42.0	1000.0	150.0	H	157.0	23.3	18.3	74.0	12.0	54.0

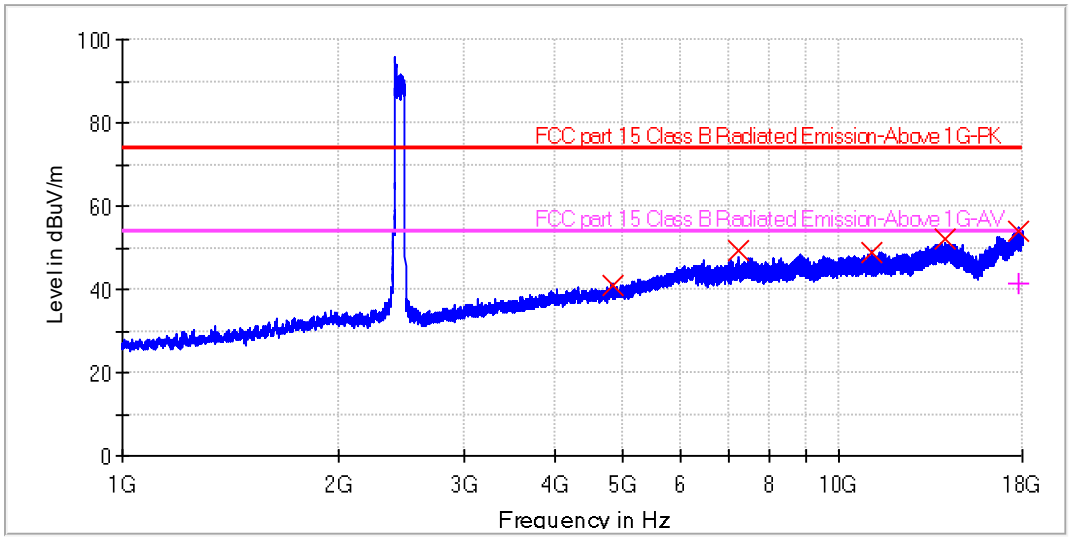
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4823.500000	41.0	---	1000.0	150.0	V	162.0	1.0	33.0	74.0	---	---
7240.500000	49.2	---	1000.0	150.0	V	73.0	9.9	24.8	74.0	---	---
11096.500000	48.9	---	1000.0	150.0	V	268.0	14.1	25.1	74.0	---	---
14067.000000	52.0	---	1000.0	150.0	V	78.0	18.5	22.0	74.0	---	---
17809.000000	54.1	41.3	1000.0	150.0	V	167.0	22.9	19.9	74.0	12.7	54.0

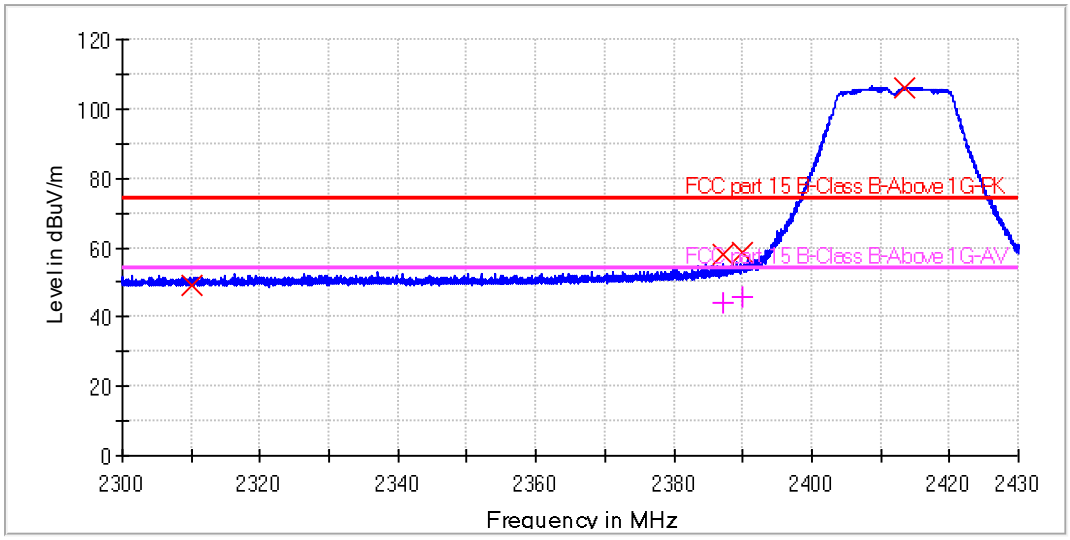
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2310.000000	48.9	---	1000.0	150.0	H	128.0	34.8	25.1	74.0	---	---
2387.000000	58.1	44.3	1000.0	150.0	H	111.0	34.8	15.9	74.0	9.8	54.0
2390.000000	58.8	45.7	1000.0	220.0	H	196.0	34.8	15.2	74.0	8.3	54.0
2413.500000	106.2	---	1000.0	150.0	H	155.0	34.9			---	---

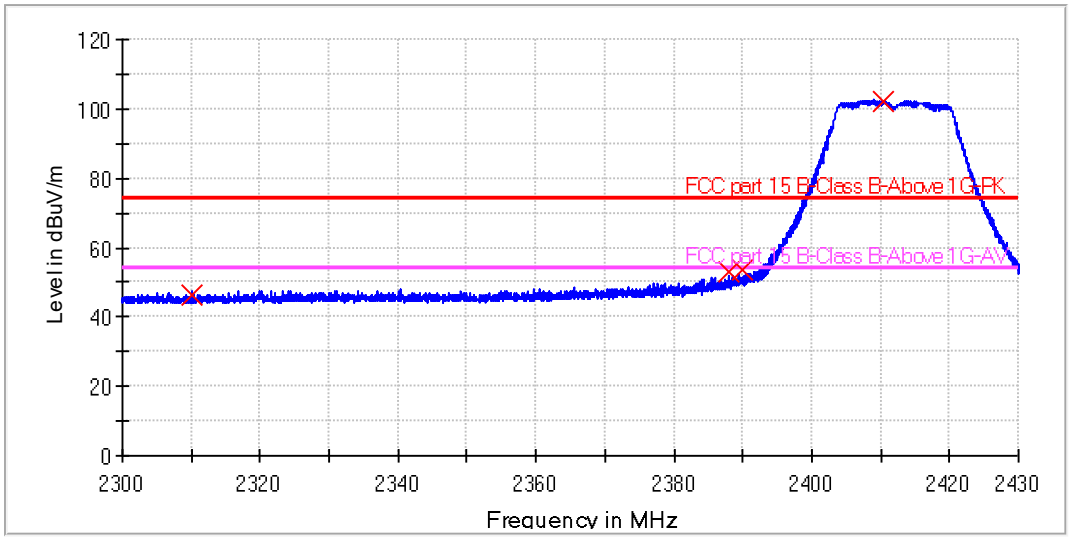
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2412MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2300-2430 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.3 GHz - 2.43 GHz	26 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2310.000000	46.6	1000.0	150.0	V	137.0	34.8	27.4	74.0
2388.000000	53.2	1000.0	150.0	V	30.0	34.8	20.8	74.0
2390.000000	53.8	1000.0	150.0	V	151.0	34.8	20.2	74.0
2410.500000	102.0	1000.0	150.0	V	278.0	34.9		

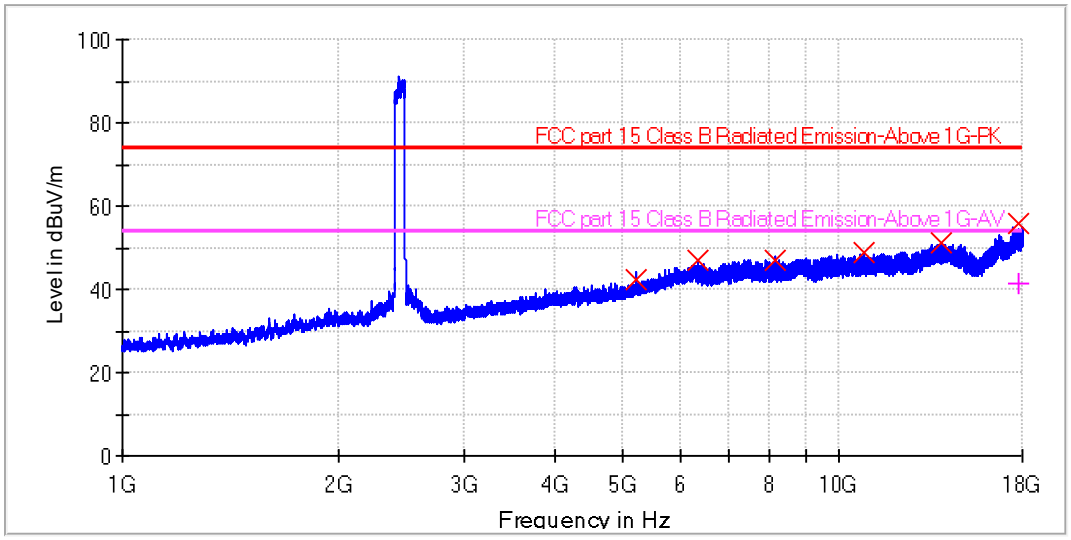
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
5200.000000	42.2	---	1000.0	150.0	H	43.0	2.5	31.8	74.0	---	---
6348.500000	47.0	---	1000.0	150.0	H	330.0	9.6	27.0	74.0	---	---
8160.500000	47.0	---	1000.0	150.0	H	183.0	11.3	27.0	74.0	---	---
10798.000000	49.0	---	1000.0	150.0	H	66.0	14.1	25.0	74.0	---	---
13873.000000	51.3	---	1000.0	150.0	H	144.0	18.9	22.7	74.0	---	---
17771.000000	55.9	41.5	1000.0	150.0	H	147.0	23.0	18.1	74.0	12.5	54.0

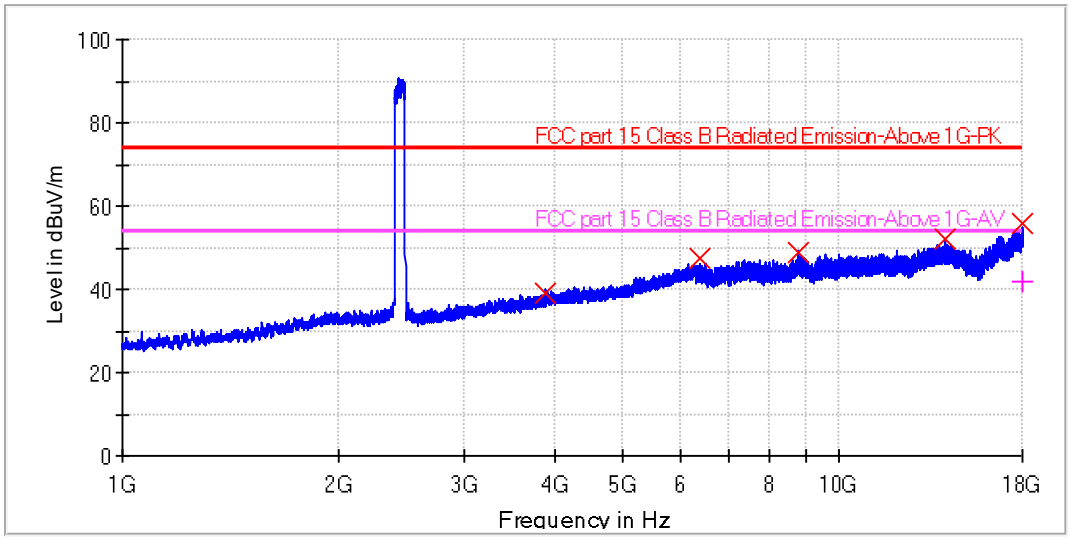
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2437MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
3882.500000	39.0	---	1000.0	150.0	V	304.0	-1.4	35.0	74.0	---	---
6373.000000	47.4	---	1000.0	150.0	V	171.0	9.7	26.6	74.0	---	---
8760.000000	48.9	---	1000.0	150.0	V	98.0	12.6	25.1	74.0	---	---
14066.500000	51.9	---	1000.0	150.0	V	75.0	18.5	22.1	74.0	---	---
17989.500000	55.8	42.0	1000.0	150.0	V	248.0	23.4	18.2	74.0	12.0	54.0

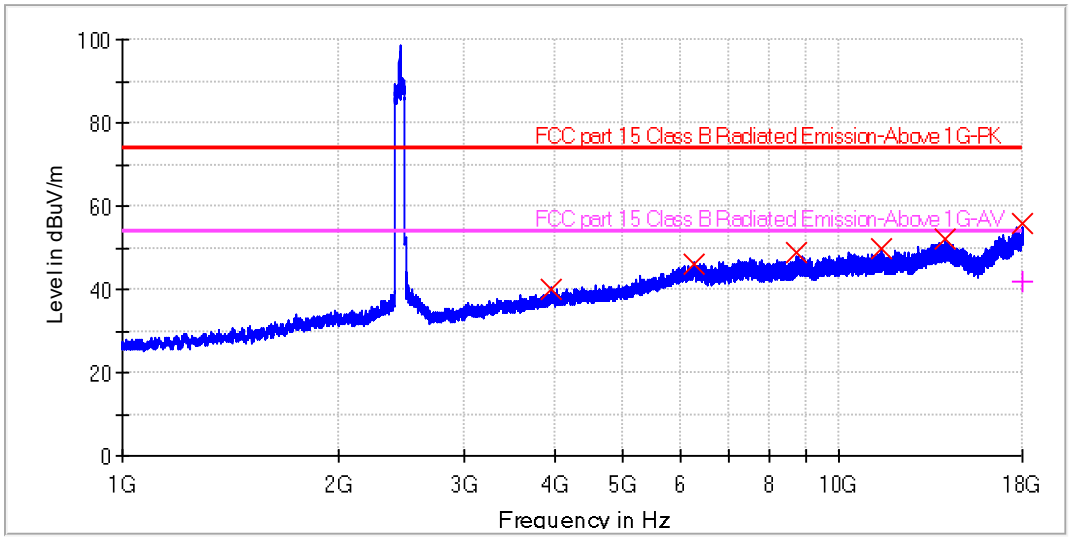
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
3958.500000	40.0	---	1000.0	150.0	H	309.0	-0.8	34.0	74.0	---	---
6281.500000	46.1	---	1000.0	150.0	H	212.0	7.6	27.9	74.0	---	---
8708.500000	49.0	---	1000.0	150.0	H	166.0	12.4	25.0	74.0	---	---
11477.000000	49.6	---	1000.0	150.0	H	155.0	14.4	24.4	74.0	---	---
14084.500000	51.9	---	1000.0	150.0	H	71.0	18.4	22.1	74.0	---	---
17974.500000	55.8	41.8	1000.0	150.0	H	135.0	23.2	18.2	74.0	12.2	54.0

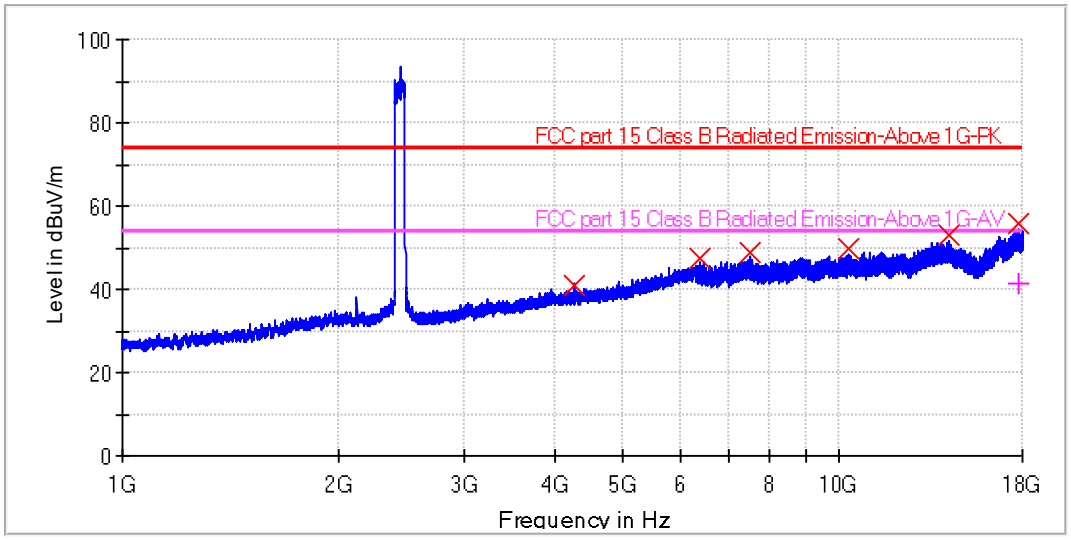
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N40_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_1-18G Sweep 3m_bonn [EMI radiated]

Hardware Setup:	FCC part15C Radiated E Field 1GHz-18GHz_3m_BONN
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 6.3 GHz	441.667 kHz	PK+	1 MHz	1 s	0 dB
6.3 GHz - 18 GHz	487.5 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
4274.500000	41.1	---	1000.0	150.0	V	190.0	-0.2	32.9	74.0	---	---
6384.500000	47.5	---	1000.0	150.0	V	145.0	9.7	26.5	74.0	---	---
7490.500000	48.8	---	1000.0	150.0	V	100.0	10.5	25.2	74.0	---	---
10322.500000	49.7	---	1000.0	150.0	V	287.0	13.8	24.3	74.0	---	---
14193.000000	53.2	---	1000.0	150.0	V	140.0	18.5	20.8	74.0	---	---
17756.000000	55.7	41.5	1000.0	150.0	V	261.0	23.1	18.3	74.0	12.5	54.0

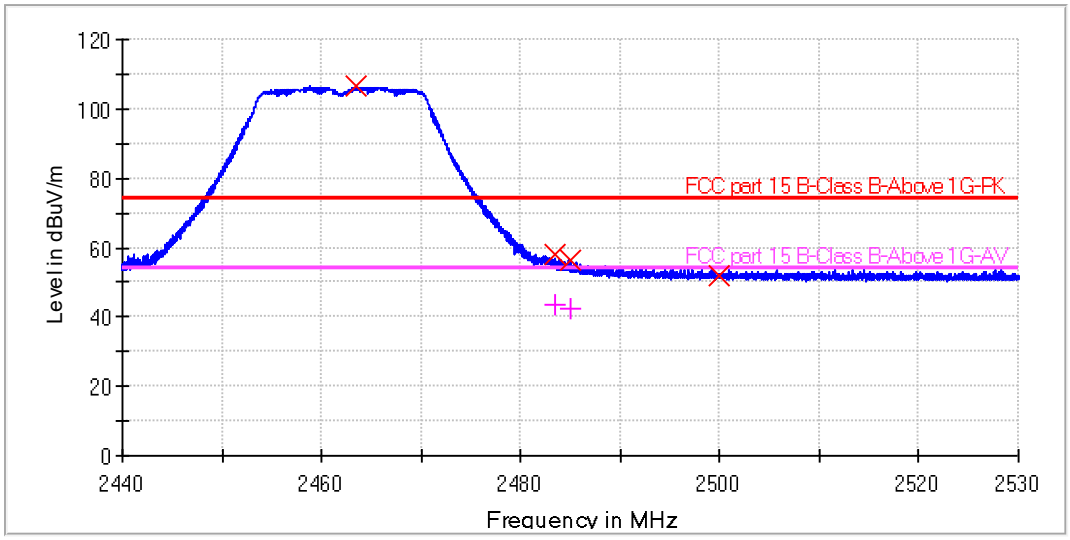
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
2463.500000	106.6	---	1000.0	150.0	H	176.0	34.9			---	---
2483.500000	58.1	43.3	1000.0	150.0	H	26.0	35.0	15.9	74.0	10.7	54.0
2485.000000	56.5	42.4	1000.0	150.0	H	104.0	35.0	17.5	74.0	11.6	54.0
2500.000000	52.0	---	1000.0	150.0	H	262.0	35.0	22.0	74.0	---	---

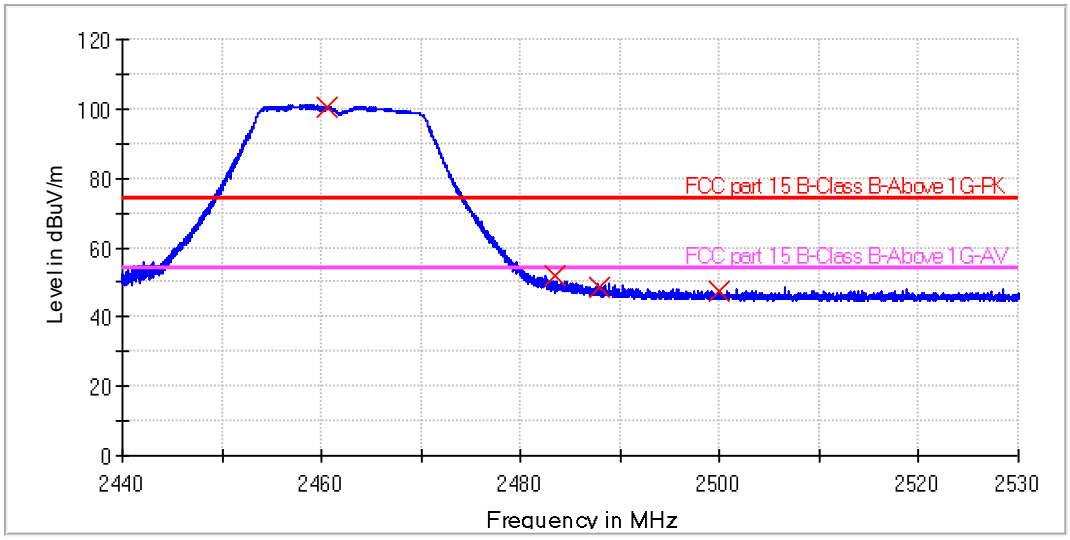
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11N20_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_Band edge-2440-2530 Sweep 3m_without PA [EMI radiated]

Hardware Setup:	1-18G_3m_without PA
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
2.44 GHz - 2.53 GHz	18 kHz	PK+	1 MHz	1 s	20 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)
2460.500000	100.6	1000.0	150.0	V	287.0	34.9		
2483.500000	52.0	1000.0	150.0	V	120.0	35.0	22.1	74.0
2488.000000	48.7	1000.0	150.0	V	86.0	35.0	25.3	74.0
2500.000000	47.3	1000.0	150.0	V	140.0	35.0	26.7	74.0

worst case listed as below:18GHz-25GHz

18-25G Radiated Emission Test

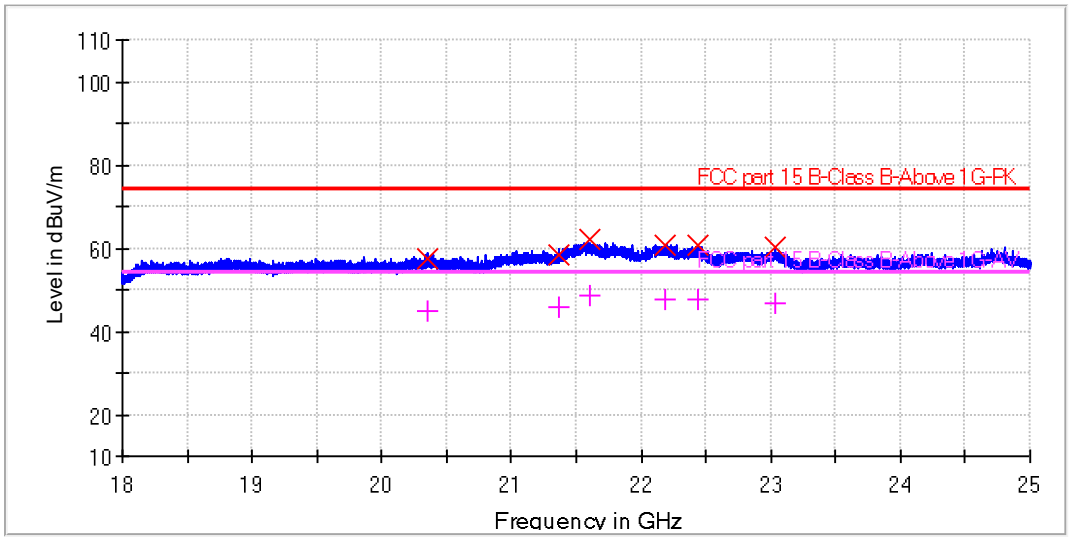
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Horizontal
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_18-25G_Sweep_3m [EMI radiated]

Hardware Setup:	18-40GHz_3m
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
18 GHz - 25 GHz	500 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
20359.500000	57.3	44.8	1000.0	150.0	H	191.0	15.1	16.7	74.0	9.2	54.0
21361.500000	58.5	45.7	1000.0	150.0	H	248.0	17.1	15.5	74.0	8.3	54.0
21597.500000	61.9	48.4	1000.0	150.0	H	161.0	17.7	12.1	74.0	5.6	54.0
22181.000000	60.9	47.8	1000.0	150.0	H	231.0	18.1	13.1	74.0	6.2	54.0
22431.500000	60.7	47.5	1000.0	150.0	H	157.0	17.9	13.3	74.0	6.5	54.0
23029.000000	60.1	46.6	1000.0	150.0	H	29.0	16.6	13.9	74.0	7.4	54.0

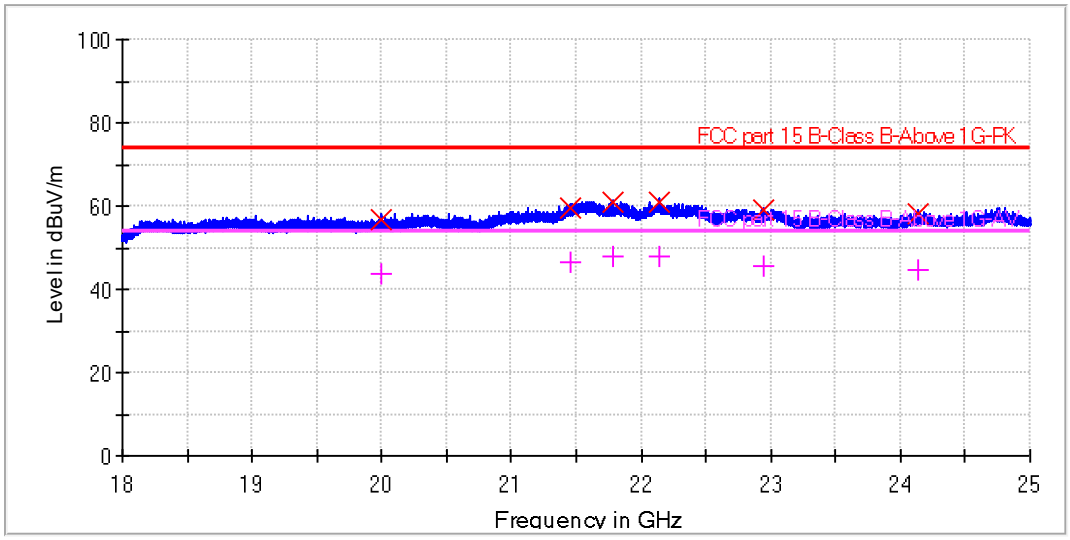
Common Information

EUT:	Wi-Fi and Bluetooth Module
Model:	HEWBRCS1
Client:	Hangzhou Tuya Information Technology Co., Ltd
Operating Conditions:	Power on, transmitting at 802.11B_2462MHz
Operator Name:	Xu Zheng
Input:	DC 5V
Test Standard:	FCC Part 15.209(a)
Comment:	Vertical
Comment:	Temp.:22.5℃,Humi.:59.1%,Atm.:1004.2hPa

Sweep Setup: FCC_RE_18-25G_Sweep_3m [EMI radiated]

Hardware Setup:	18-40GHz_3m
Receiver:	[FSV 40]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
18 GHz - 25 GHz	500 kHz	PK+	1 MHz	1 s	0 dB



Limit and Margin

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBuV/m)	Margin - AVG (dB)	Limit - AVG (dBuV/m)
20002.000000	56.9	43.9	1000.0	150.0	V	156.0	15.0	17.1	74.0	10.1	54.0
21450.500000	59.7	46.5	1000.0	150.0	V	55.0	17.4	14.3	74.0	7.5	54.0
21782.000000	60.7	47.7	1000.0	150.0	V	271.0	17.9	13.3	74.0	6.3	54.0
22146.000000	61.2	47.8	1000.0	150.0	V	122.0	18.1	12.8	74.0	6.2	54.0
22942.000000	58.9	45.8	1000.0	150.0	V	84.0	16.8	15.1	74.0	8.2	54.0
24138.500000	58.1	44.8	1000.0	150.0	V	145.0	16.0	15.9	74.0	9.2	54.0

10 Test Equipment List

List of Test Instruments
Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
C	Signal Analyzer	Rohde & Schwarz	FSV40	487/641405	2023-03-31	2026-03-30
	Power Probe	Rohde & Schwarz	NRP-Z81	487/431819	2024-11-23	2025-11-22
	COAXIAL FIXED ATTENUATOR	HUBER+SUHNER	6610SMA-50-2-10dB/6GHz/2W	487/412511	Applicable	Applicable
	RF Test System	Rohde & Schwarz	TS8997	487/391835	2024-11-23	2025-11-22
	Coaxial Cable	Rohde & Schwarz	RF03	/	Applicable	Applicable
RE	EMI Test Receiver	Rohde & Schwarz	ESR7	487/632315	2025-03-13	2026-03-12
	EMI Test Receiver	Rohde & Schwarz	ESR7	487/632316	2025-03-13	2026-03-12
	Spectrum analyzer	Rohde & Schwarz	FSV3044	487/642307	2025-03-13	2026-03-12
	Broadband Test Antenna	Schwarzbeck	VULB 9168	487/622345	2025-03-14	2026-03-13
	Horn Antenna	Rohde & Schwarz	3115PB	487/622346	2025-01-08	2026-01-08
	Pre-amplifier	Rohde & Schwarz	SCU-18D	487/402318	2025-03-13	2026-03-12
	Pre-amplifier	Rohde & Schwarz	BLMA0118-1M	487/401411	2025-03-13	2026-03-12
	Loop antenna	Rohde & Schwarz	HFH2-Z2	487/621128	2024-11-23	2025-11-22
	DOUBLE-RIDGED WAVEGUIDE HORN WITH PRE-AMPLIFIER (18 GHZ - 40 GHZ)	ETS-Lindgren	3116C-PA	487/622347	2024-08-19	2025-08-18
	3m Semi-anechoic chamber	TDK	9.2mx6.2mx6.2m	487/772307	2023-02-24	2026-02-23
	Coaxial Cable	Rohde & Schwarz	RF02	/	Applicable	Applicable
	3m Fully anechoic chamber	TDK	9.2mx6.2mx6.2m	487/772304	2023-03-30	2026-03-29
CE	EMI Test Receiver	Rohde & Schwarz	ESW8	487/631911	2025-03-13	2026-03-12
	LISN	Rohde & Schwarz	NSLK8127	487/601428	2024-09-02	2025-09-01

Measurement Software Information			
Test Item	Software	Manufacturer	Version
C	MTS 8310	MAXWELL	2.0.0.0
C	Power Viewer	Rohde & Schwarz	V11.3 3.2.2020 Build:7338 Rev: 3230
RE	EMC 32	Rohde & Schwarz	V10.50.40
CE	EMC 32	Rohde & Schwarz	V9.15.03

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth and 99% Occupied Bandwidth
- Power spectral density*
- Spurious RF conducted emissions
- Band edge

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, 3.07dB
Radiated Disturbance	9kHz to 30MHz, 2.83dB 30MHz to 1GHz, 4.12dB (Horizontal) 4.30dB (Vertical) 1GHz to 18GHz, 5.04dB 18GHz to 40GHz, 5.42dB
RF Conducted Measurement	Power related： 1.32dB Frequency related：5.6x10-6 or 1%

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2023, clause 4.3.3.

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12 Photographs of Test Set-ups

Refer to the < Test Setup photos >.

13 Photographs of EUT

Refer to the < External Photos > & < Internal Photos >.

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

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