



7.8. Conducted Spurious Emissions Measurement

7.8.1.Test Limit

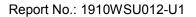
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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 or a radiated measurement, provided 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, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

7.8.2.Test Procedure Used

ANSI C63.10-2013 - Section 7.8.8

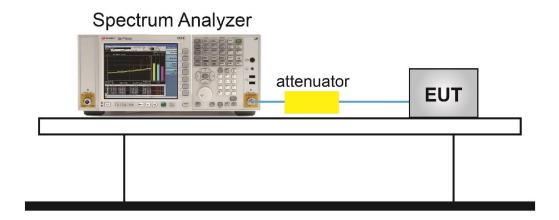
7.8.3.Test Setting

- Span = Wide enough to capture the peak level of the in-band emission and all spurious
 emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th
 harmonic. Typically, several plots are required to cover this entire span.
- 2. RBW = 100kHz
- 3. VBW = 300kHz
- 4. Detector = Peak
- 5. Sweep time = Auto couple
- 6. Trace mode = Max hold
- 7. Trace was allowed to stabilize
- Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this section.





7.8.4.Test Setup







7.8.5.Test Result

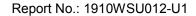
Product	Communication Module	Temperature	25°C
Test Engineer	Snake Ni	Relative Humidity	52%
Test Site	TR3	Test Date	2019/11/19

Test Mode	Channel No.	Frequency (MHz)	Limit (MHz)	Result
DH5	00	2402	20dBc	Pass
DH5	39	2441	20dBc	Pass
DH5	78	2480	20dBc	Pass
2DH5	00	2402	20dBc	Pass
2DH5	39	2441	20dBc	Pass
2DH5	78	2480	20dBc	Pass
3DH5	00	2402	20dBc	Pass
3DH5	39	2441	20dBc	Pass
3DH5	78	2480	20dBc	Pass



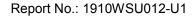


















7.9. Radiated Spurious Emission Measurement

7.9.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209							
Frequency	Field Strength	Measured Distance					
(MHz)	(μV/m)	(m)					
0.009 - 0.490	2400/F (kHz)	300					
0.490 - 1.705	24000/F (kHz)	30					
1.705 - 30	30	30					
30 - 88	100	3					
88 - 216	150	3					
216 - 960	200	3					
Above 960	500	3					

All out of band emissions appearing in a restricted band as specified in Section 8.10of the RSS-Gen must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9						
Frequency	Field Strength	Measured Distance				
[MHz]	[uV/m]	[Meters]				
0.009 - 0.490	2400/F (kHz)	300				
0.490 - 1.705	24000/F (kHz)	30				
1.705 - 30	30	30				
30 - 88	100	3				
88 - 216	150	3				
216 - 960	200	3				
Above 960	500	3				

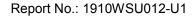
7.9.2.Test Procedure Used

ANSI C63.10 - Section 6.3 (General Requirements)

ANSI C63.10 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - Section 6.6 (Standard test method above 1GHz)





7.9.3.Test Setting

Table 1 - RBW as a function of frequency

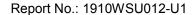
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Quasi-Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = As specified in Table 1
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = Auto couple
- 6. Trace was allowed to stabilize

Peak Measurements above 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = Peak
- 5. Sweep time = Auto couple
- 6. Trace mode = Max hold
- 7. Trace was allowed to stabilize



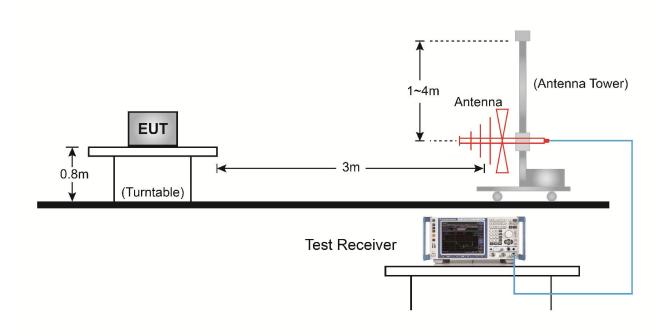


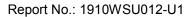
Average Measurements above 1GHz (Method VB)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10Hz
 If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration
- 4. Detector = Peak
- 5. Sweep time = Auto
- 6. Trace mode = Max hold
- 7. Trace was allowed to stabilize

7.9.4.Test Setup

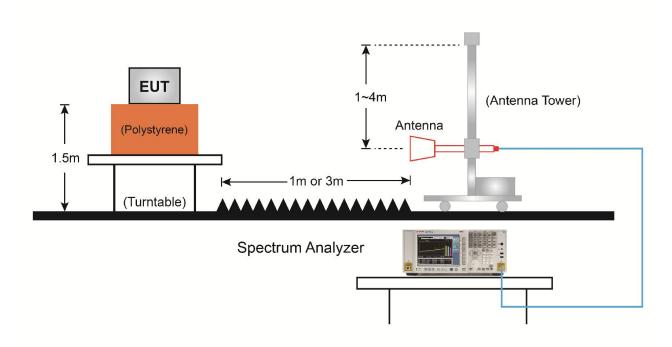
Below 1GHz Test Setup:

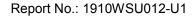






Above 1GHz Test Setup:







7.9.5.Test Result

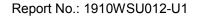
Product	Communication Module	Temperature	25°C			
Test Engineer	David Lv	Relative Humidity	56%			
Test Site	AC1	Test Date	2019/11/20			
Test Mode	DH5	Test Channel	00			
Antenna Type	Chip Antenna					
Remark	1. Average measurement was no	t performed if peak l	evel lower than average			
	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3822.0	40.1	2.9	43.0	74.0	-31.0	Peak	Horizontal
	5020.5	38.7	6.4	45.1	74.0	-28.9	Peak	Horizontal
*	5998.0	40.9	7.9	48.8	74.0	-25.2	Peak	Horizontal
*	7060.5	37.6	11.0	48.6	74.0	-25.4	Peak	Horizontal
	3813.5	40.1	2.8	42.9	74.0	-31.1	Peak	Vertical
	4961.0	39.0	6.2	45.2	74.0	-28.8	Peak	Vertical
*	5998.0	42.8	7.9	50.7	74.0	-23.3	Peak	Vertical
*	6499.5	36.8	9.5	46.3	74.0	-27.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (93.5dB μ V/m) or 15.209 which is higher.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





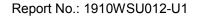
Product	Communication Module	Temperature	25°C			
Test Engineer	David Lv	Relative Humidity	56%			
Test Site	AC1	Test Date	2019/11/20			
Test Mode	DH5	Test Channel	39			
Antenna Type	Chip Antenna					
Remark	Average measurement was not performed if peak level lower than average					
	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3983.5	39.3	3.3	42.6	74.0	-31.4	Peak	Horizontal
	4893.0	38.0	6.0	44.0	74.0	-30.0	Peak	Horizontal
*	5998.0	40.5	7.9	48.4	74.2	-25.8	Peak	Horizontal
*	6661.0	37.0	9.7	46.7	74.2	-27.5	Peak	Horizontal
	3873.0	39.7	3.0	42.7	74.0	-31.3	Peak	Vertical
	4944.0	38.5	6.1	44.6	74.0	-29.4	Peak	Vertical
*	5998.0	43.9	7.9	51.8	74.2	-22.4	Peak	Vertical
*	6746.0	37.7	9.8	47.5	74.2	-26.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (94.2dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





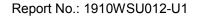
Product	Communication Module	Temperature	25°C			
Test Engineer	David Lv	Relative Humidity	56%			
Test Site	AC1	Test Date	2019/11/20			
Test Mode	DH5	Test Channel	78			
Antenna Type	Chip Antenna					
Remark	Average measurement was not performed if peak level lower than average					
	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	4051.5	38.7	3.4	42.1	74.0	-31.9	Peak	Horizontal
	4961.0	39.0	6.2	45.2	74.0	-28.8	Peak	Horizontal
*	5998.0	41.2	7.9	49.1	75.7	-26.6	Peak	Horizontal
*	7018.0	37.3	11.0	48.3	75.7	-27.4	Peak	Horizontal
	3813.5	41.0	2.8	43.8	74.0	-30.2	Peak	Vertical
	4731.5	38.8	5.6	44.4	74.0	-29.6	Peak	Vertical
*	5998.0	42.7	7.9	50.6	75.7	-25.1	Peak	Vertical
*	6814.0	37.6	9.8	47.4	75.7	-28.3	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (95.7dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





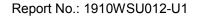
Product	Communication Module	Temperature	25°C			
Test Engineer	David Lv	Relative Humidity	56%			
Test Site	AC1	Test Date	2019/11/20			
Test Mode	2DH5	Test Channel	00			
Antenna Type	Chip Antenna					
Remark	Average measurement was not performed if peak level lower than average					
	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3983.5	38.8	3.3	42.1	74.0	-31.9	Peak	Horizontal
	4842.0	38.1	5.9	44.0	74.0	-30.0	Peak	Horizontal
*	5998.0	42.0	7.9	49.9	74.0	-24.1	Peak	Horizontal
*	6967.0	37.3	10.5	47.8	74.0	-26.2	Peak	Horizontal
	3864.5	39.7	2.9	42.6	74.0	-31.4	Peak	Vertical
	4961.0	41.1	6.2	47.3	74.0	-26.7	Peak	Vertical
*	5998.0	43.7	7.9	51.6	74.0	-22.4	Peak	Vertical
*	6661.0	38.1	9.7	47.8	74.0	-26.2	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (93.7dB μ V/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





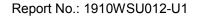
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	2DH5	Test Channel	39				
Antenna Type	Chip Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3779.5	40.2	2.8	43.0	74.0	-31.0	Peak	Horizontal
	4816.5	37.4	5.9	43.3	74.0	-30.7	Peak	Horizontal
*	5998.0	38.3	7.9	46.2	74.9	-28.7	Peak	Horizontal
*	6482.5	38.1	9.3	47.4	74.9	-27.5	Peak	Horizontal
	3660.5	40.3	2.4	42.7	74.0	-31.3	Peak	Vertical
	4544.5	39.6	4.9	44.5	74.0	-29.5	Peak	Vertical
*	5998.0	43.1	7.9	51.0	74.9	-23.9	Peak	Vertical
*	6941.5	37.9	10.4	48.3	74.9	-26.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (94.9dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





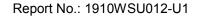
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	2DH5	Test Channel	78				
Antenna Type	Chip Antenna						
Remark	1. Average measurement was no	t performed if peak l	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3898.5	39.7	3.1	42.8	74.0	-31.2	Peak	Horizontal
	4833.5	38.5	6.0	44.5	74.0	-29.5	Peak	Horizontal
*	5998.0	41.0	7.9	48.9	76.2	-27.3	Peak	Horizontal
*	6831.0	37.7	10.0	47.7	76.2	-28.5	Peak	Horizontal
	4850.5	43.1	5.9	49.0	74.0	-25.0	Peak	Vertical
	4961.0	42.5	6.2	48.7	74.0	-25.3	Peak	Vertical
*	5998.0	43.7	7.9	51.6	76.2	-24.6	Peak	Vertical
*	7086.0	37.7	11.3	49.0	76.2	-27.2	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.2dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





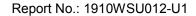
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	3DH5	Test Channel	00				
Antenna Type	Chip Antenna						
Remark	1. Average measurement was no	t performed if peak l	evel lower than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	4272.5	39.7	4.0	43.7	74.0	-30.3	Peak	Horizontal
	4876.0	39.2	5.9	45.1	74.0	-28.9	Peak	Horizontal
*	5998.0	42.1	7.9	50.0	76.0	-26.0	Peak	Horizontal
*	6678.0	36.3	9.7	46.0	76.0	-30.0	Peak	Horizontal
	4799.5	41.8	5.8	47.6	74.0	-26.4	Peak	Vertical
	4961.0	42.8	6.2	49.0	74.0	-25.0	Peak	Vertical
*	5998.0	43.7	7.9	51.6	76.0	-24.4	Peak	Vertical
*	7171.0	38.3	11.6	49.9	76.0	-26.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (96.0dB μ V/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





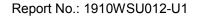
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	3DH5	Test Channel	39				
Antenna Type	Chip Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3805.0	40.5	2.7	43.2	74.0	-30.8	Peak	Horizontal
	4961.0	42.1	6.2	48.3	74.0	-25.7	Peak	Horizontal
*	5998.0	41.5	7.9	49.4	74.6	-25.2	Peak	Horizontal
*	6746.0	38.2	9.8	48.0	74.6	-26.6	Peak	Horizontal
	4051.5	39.2	3.4	42.6	74.0	-31.4	Peak	Vertical
	4978.0	38.9	6.4	45.3	74.0	-28.7	Peak	Vertical
*	5998.0	42.9	7.9	50.8	74.6	-23.8	Peak	Vertical
*	6967.0	38.0	10.5	48.5	74.6	-26.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (94.6dBµV/m) or 15.209 which is higher.

Note 2: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





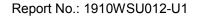
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	3DH5 Test Channel 78						
Antenna Type	Chip Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3966.5	39.0	3.2	42.2	74.0	-31.8	Peak	Horizontal
	4782.5	38.3	5.7	44.0	74.0	-30.0	Peak	Horizontal
*	5998.0	41.6	7.9	49.5	74.0	-24.5	Peak	Horizontal
*	7069.0	37.7	11.0	48.7	74.0	-25.3	Peak	Horizontal
	4000.5	39.1	3.3	42.4	74.0	-31.6	Peak	Vertical
	4816.5	38.5	5.9	44.4	74.0	-29.6	Peak	Vertical
*	5998.0	43.1	7.9	51.0	74.0	-23.0	Peak	Vertical
*	6788.5	37.8	9.8	47.6	74.0	-26.4	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (92.6dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





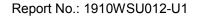
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	DH5	Test Channel	00				
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak l	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3941.0	40.4	3.2	43.6	74.0	-30.4	Peak	Horizontal
	5046.0	39.3	6.6	45.9	74.0	-28.1	Peak	Horizontal
*	5998.0	42.2	7.9	50.1	81.9	-31.8	Peak	Horizontal
*	7188.0	38.2	11.6	49.8	81.9	-32.1	Peak	Horizontal
	3983.5	39.5	3.3	42.8	74.0	-31.2	Peak	Vertical
	4961.0	40.5	6.2	46.7	74.0	-27.3	Peak	Vertical
*	5998.0	44.0	7.9	51.9	81.9	-30.0	Peak	Vertical
*	7060.5	38.6	11.0	49.6	81.9	-32.3	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (101.9dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





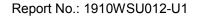
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	DH5	Test Channel	39				
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak l	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3788.0	40.5	2.7	43.2	74.0	-30.8	Peak	Horizontal
	4978.0	38.5	6.4	44.9	74.0	-29.1	Peak	Horizontal
*	5998.0	41.3	7.9	49.2	82.3	-33.1	Peak	Horizontal
*	7128.5	37.9	11.3	49.2	82.3	-33.1	Peak	Horizontal
	3898.5	40.9	3.1	44.0	74.0	-30.0	Peak	Vertical
	4825.0	39.0	6.1	45.1	74.0	-28.9	Peak	Vertical
*	5998.0	42.2	7.9	50.1	82.3	-32.2	Peak	Vertical
*	7060.5	37.3	11.0	48.3	82.3	-34.0	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (102.3dBμV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





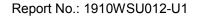
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	DH5 Test Channel 78						
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak	level lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3813.5	39.0	2.8	41.8	74.0	-32.2	Peak	Horizontal
	4961.0	40.2	6.2	46.4	74.0	-27.6	Peak	Horizontal
*	5998.0	41.6	7.9	49.5	81.8	-32.3	Peak	Horizontal
*	7111.5	38.6	11.3	49.9	81.8	-31.9	Peak	Horizontal
	4026.0	39.8	3.3	43.1	74.0	-30.9	Peak	Vertical
	4884.5	38.7	5.9	44.6	74.0	-29.4	Peak	Vertical
*	5998.0	44.0	7.9	51.9	81.8	-29.9	Peak	Vertical
*	6499.5	38.3	9.5	47.8	81.8	-34.0	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (101.8dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





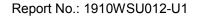
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	2DH5	Test Channel	00				
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak l	evel lower than average				
	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	4060.0	39.7	3.5	43.2	74.0	-30.8	Peak	Horizontal
	4689.0	36.6	5.3	41.9	74.0	-32.1	Peak	Horizontal
*	5998.0	40.1	7.9	48.0	79.1	-31.1	Peak	Horizontal
*	7247.5	38.5	11.6	50.1	79.1	-29.0	Peak	Horizontal
	3915.5	39.1	3.1	42.2	74.0	-31.8	Peak	Vertical
	5037.5	38.1	6.5	44.6	74.0	-29.4	Peak	Vertical
*	5998.0	42.4	7.9	50.3	79.1	-28.8	Peak	Vertical
*	7120.0	38.6	11.3	49.9	79.1	-29.2	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (99.1dB μ V/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





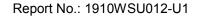
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	2DH5 Test Channel 39						
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3822.0	39.7	2.9	42.6	74.0	-31.4	Peak	Horizontal
	5097.0	38.2	6.8	45.0	74.0	-29.0	Peak	Horizontal
*	5998.0	42.2	7.9	50.1	80.2	-30.1	Peak	Horizontal
*	7103.0	37.3	11.3	48.6	80.2	-31.6	Peak	Horizontal
	3915.5	39.7	3.1	42.8	74.0	-31.2	Peak	Vertical
	4961.0	39.4	6.2	45.6	74.0	-28.4	Peak	Vertical
*	5998.0	43.1	7.9	51.0	80.2	-29.2	Peak	Vertical
*	7035.0	37.9	10.9	48.8	80.2	-31.4	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (100.2dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





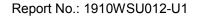
Product	Communication Module	Temperature	25°C					
Test Engineer	David Lv	Relative Humidity	56%					
Test Site	AC1	Test Date	2019/11/20					
Test Mode	2DH5	Test Channel	78					
Antenna Type	Pattern Antenna							
Remark	1. Average measurement was no	t performed if peak l	evel lower than average					
	limit.	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show							
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	4026.0	38.9	3.3	42.2	74.0	-31.8	Peak	Horizontal
	4978.0	39.1	6.4	45.5	74.0	-28.5	Peak	Horizontal
*	5998.0	40.7	7.9	48.6	80.7	-32.1	Peak	Horizontal
*	7094.5	38.3	11.3	49.6	80.7	-31.1	Peak	Horizontal
	3992.0	40.0	3.4	43.4	74.0	-30.6	Peak	Vertical
	5029.0	38.0	6.5	44.5	74.0	-29.5	Peak	Vertical
*	5998.0	43.3	7.9	51.2	80.7	-29.5	Peak	Vertical
*	6440.0	38.4	9.2	47.6	80.7	-33.1	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (100.7dBμV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





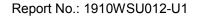
Product	Communication Module	Temperature	25°C				
Test Engineer	David Lv	Relative Humidity	56%				
Test Site	AC1	Test Date	2019/11/20				
Test Mode	3DH5 Test Channel 00						
Antenna Type	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average				
	limit.	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show						
	in the report.						

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3992.0	39.6	3.4	43.0	74.0	-31.0	Peak	Horizontal
	4646.5	38.9	5.3	44.2	74.0	-29.8	Peak	Horizontal
*	5998.0	40.8	7.9	48.7	79.1	-30.4	Peak	Horizontal
*	7128.5	37.7	11.3	49.0	79.1	-30.1	Peak	Horizontal
	3813.5	40.3	2.8	43.1	74.0	-30.9	Peak	Vertical
	5071.5	38.8	6.7	45.5	74.0	-28.5	Peak	Vertical
*	5998.0	43.5	7.9	51.4	79.1	-27.7	Peak	Vertical
*	6856.5	37.3	10.1	47.4	79.1	-31.7	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (99.1dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





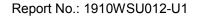
Product	Communication Module	Temperature	25°C			
Test Engineer	David Lv	Relative Humidity	56%			
Test Site	AC1	Test Date	2019/11/20			
Test Mode	3DH5	Test Channel	39			
Antenna Type	Pattern Antenna					
Remark	1. Average measurement was no	t performed if peak l	evel lower than average			
	limit.					
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show					
	in the report.					

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3864.5	40.0	2.9	42.9	74.0	-31.1	Peak	Horizontal
	4782.5	38.6	5.7	44.3	74.0	-29.7	Peak	Horizontal
*	5998.0	42.6	7.9	50.5	80.1	-29.6	Peak	Horizontal
*	6916.0	37.6	10.3	47.9	80.1	-32.2	Peak	Horizontal
	4017.5	40.1	3.3	43.4	74.0	-30.6	Peak	Vertical
	4944.0	38.3	6.1	44.4	74.0	-29.6	Peak	Vertical
*	5998.0	42.0	7.9	49.9	80.1	-30.2	Peak	Vertical
*	6652.5	38.0	9.7	47.7	80.1	-32.4	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (100.1dBµV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)





Product	Communication Module	Temperature	25°C					
Test Engineer	David Lv	Relative Humidity	56%					
Test Site	AC1	Test Date	2019/11/20					
Test Mode	3DH5	3DH5 Test Channel 78						
Antenna Type	Pattern Antenna	Pattern Antenna						
Remark	1. Average measurement was no	t performed if peak	evel lower than average					
	limit.	limit.						
	2. Other frequency was 20dB below limit line within 1-18GHz, there is not show							
	in the report.							

Mark	Frequency	Reading	Factor	Measure	Limit	Margin	Detector	Polarization
	(MHz)	Level	(dB)	Level	(dBµV/m)	(dB)		
		(dBµV)		(dBµV/m)				
	3745.5	46.4	2.6	49.0	74.0	-25.0	Peak	Horizontal
	4961.0	38.8	6.2	45.0	74.0	-29.0	Peak	Horizontal
*	5998.0	42.0	7.9	49.9	80.5	-30.6	Peak	Horizontal
*	6848.0	37.7	10.0	47.7	80.5	-32.8	Peak	Horizontal
	3907.0	39.9	3.1	43.0	74.0	-31.0	Peak	Vertical
	4876.0	38.5	5.9	44.4	74.0	-29.6	Peak	Vertical
*	5998.0	43.7	7.9	51.6	80.5	-28.9	Peak	Vertical
*	7120.0	37.6	11.3	48.9	80.5	-31.6	Peak	Vertical

Note 1: "*" is not in restricted band, its limit is 20dBc of the fundamental emission level (100.5dBμV/m) or 15.209 which is higher.

Note 2: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)



The Worst Case of Radiated Emission below 1GHz:

Site: AC1	Time: 2019/11/20 - 07:44			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: VULB 9168 _20-2000MHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Worst Case Mode: Transmit by Bluetooth DH5 at Channel 2441MHz with Chip Antenna				

90 80 70 60 20 10 30 30 100 100

No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	95.960	22.078	11.360	-21.422	43.500	10.718	QP
2			148.825	25.662	10.500	-17.838	43.500	15.161	QP
3			223.023	25.992	13.853	-20.008	46.000	12.140	QP
4			321.000	26.453	11.542	-19.547	46.000	14.911	QP
5			459.710	29.093	11.130	-16.907	46.000	17.962	QP
6			636.735	27.616	6.360	-18.384	46.000	21.257	QP

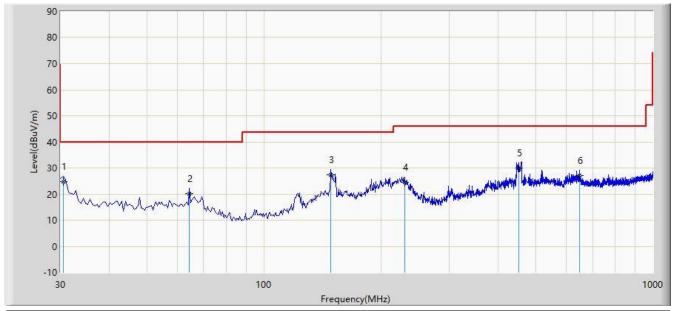
Frequency(MHz)

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC1	Time: 2019/11/20 - 07:45				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: VULB 9168 _20-2000MHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Worst Case Mode: Transmit by Bluetooth DH5 at Channel 2441MHz with Chin Antenna					



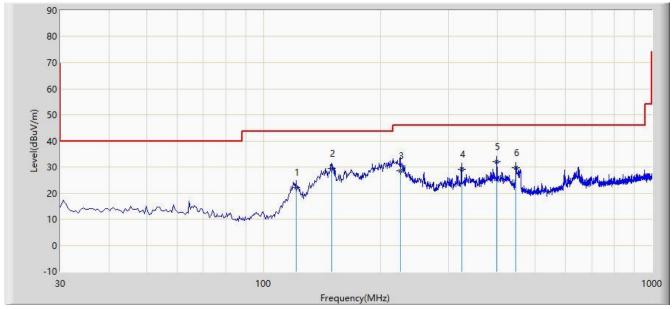
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			30.485	24.728	11.042	-15.272	40.000	13.685	QP
2		*	64.435	20.071	7.490	-19.929	40.000	12.581	QP
3			148.525	27.423	12.282	-16.077	43.500	15.142	QP
4			230.302	24.627	12.058	-21.373	46.000	12.569	QP
5			451.950	30.111	12.236	-15.889	46.000	17.875	QP
6			649.345	27.230	5.799	-18.770	46.000	21.431	QP

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



Site: AC1	Time: 2019/11/20 - 07:33				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: VULB 9168 _20-2000MHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Worst Case Mode: Transmit by Bluetooth DH5 at Channel 2441MHz with Pattern Antenna					



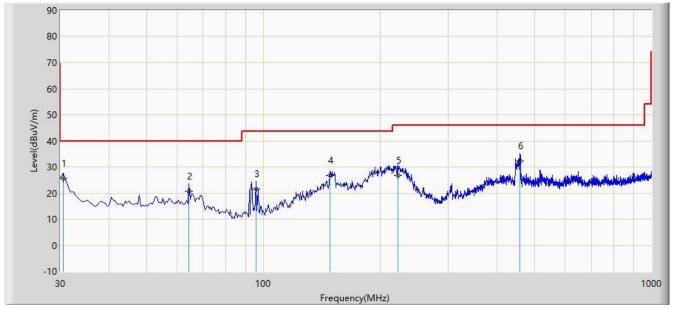
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	121.180	22.271	9.000	-21.229	43.500	13.271	QP
2			149.795	29.404	14.200	-14.096	43.500	15.203	QP
3			224.970	28.504	16.250	-17.496	46.000	12.254	QP
4			323.910	29.150	14.160	-16.850	46.000	14.990	QP
5			399.085	32.087	15.584	-13.913	46.000	16.503	QP
6			446.130	29.766	12.022	-16.234	46.000	17.744	QP

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



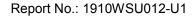
Site: AC1	Time: 2019/11/20 - 07:37			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: VULB 9168 _20-2000MHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Worst Case Mode: Transmit by Bluetooth DH5 at Channel 2441MHz with Pattern Antenna				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			30.485	25.546	11.860	-14.454	40.000	13.685	QP
2		*	64.435	20.591	8.010	-19.409	40.000	12.581	QP
3			95.960	21.731	11.013	-21.769	43.500	10.718	QP
4			148.825	26.682	11.520	-16.818	43.500	15.161	QP
5			222.545	26.882	14.770	-19.118	46.000	12.112	QP
6			458.740	32.306	14.360	-13.694	46.000	17.947	QP

Note 1: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)



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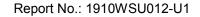
7.10. Radiated Restricted Band Edge Measurement

7.10.1.Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

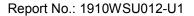
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			





All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209						
Frequency	Field Strength	Measured Distance				
[MHz]	[uV/m]	[Meters]				
0.009 - 0.490	2400/F (kHz)	300				
0.490 - 1.705	24000/F (kHz)	30				
1.705 - 30	30	30				
30 - 88	100	3				
88 - 216	150	3				
216 - 960	200	3				
Above 960	500	3				



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For RSS-Gen Section 8.10 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 8.10 of RSS-Gen, must also comply with the radiated emission limits specified in Section 8.9.

Frequency	Frequency	Frequency
(MHz)	(MHz)	(GHz)
0.009 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505		
	156.52475 - 156.525225	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125-4.128	167.72 - 173.2	14.47 - 14.5
4.17725-4.17775	240 - 285	15.35 - 16.2
4.20725-4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 -1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 -2390	
12.51975 - 12.52025	2483.5 -2500	
12.57675 - 12.57725	2655 - 2900	
13.36 -13.41	3260 - 3267	
16.42 - 16.423	3332 -3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	0005 0500	
108 - 138	8025 - 8500	



All out of band emissions appearing in a restricted band as specified in Section 8.10 of the RSS-Gen must not exceed the limits shown in Table per Section 8.9.

RSS-Gen Section 8.9							
Frequency	Field Strength	Measured Distance					
[MHz]	[uV/m]	[Meters]					
0.009 - 0.490	2400/F (kHz)	300					
0.490 - 1.705	24000/F (kHz)	30					
1.705 - 30	30	30					
30 - 88	100	3					
88 - 216	150	3					
216 - 960	200	3					
Above 960	500	3					

7.10.2.Test Procedure Used

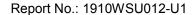
ANSI C63.10 - Section 6.3 (General Requirements)

ANSI C63.10 - Section 6.6 (Standard test method above 1GHz)

7.10.3.Test Setting

Peak Field Strength Measurements

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = Peak
- 5. Sweep time = Auto couple
- 6. Trace mode = Max hold
- 7. Trace was allowed to stabilize

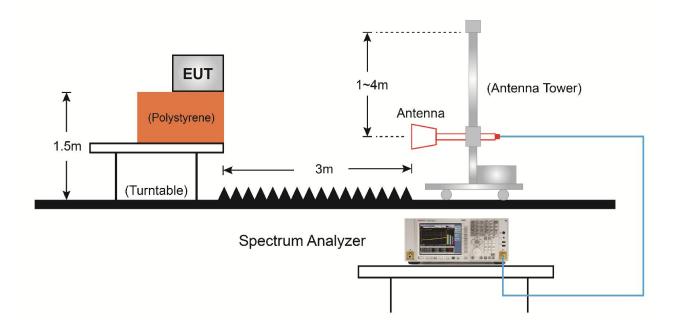




Average Measurements above 1GHz (Method VB)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10Hz
- 4. If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration
- 5. Detector = Peak
- 6. Sweep time = Auto
- 7. Trace mode = Max hold
- 8. Trace was allowed to stabilize

7.10.4.Test Setup

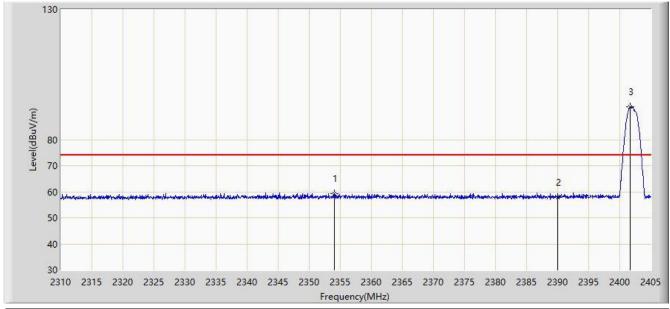






7.10.5.Test Result

Site: AC1	Time: 2019/11/19 - 22:32			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Chip Antenna				



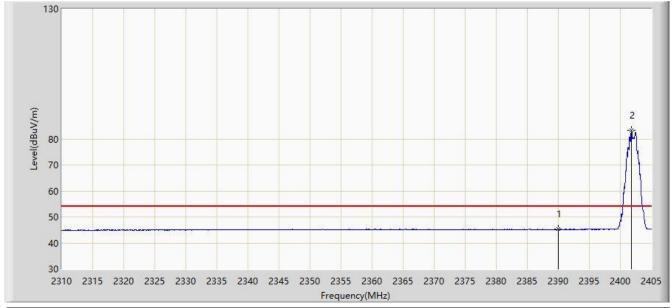
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2354.032	59.353	27.226	-14.647	74.000	32.127	PK
2			2390.000	57.769	25.697	-16.231	74.000	32.072	PK
3		*	2401.722	92.586	60.511	NA	NA	32.075	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

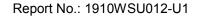




Site: AC1	Time: 2019/11/19 - 22:53			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module Power: DC 3V				
Test Mode: Transmit by DH5 at channel 2402MHz with Chip Antenna				

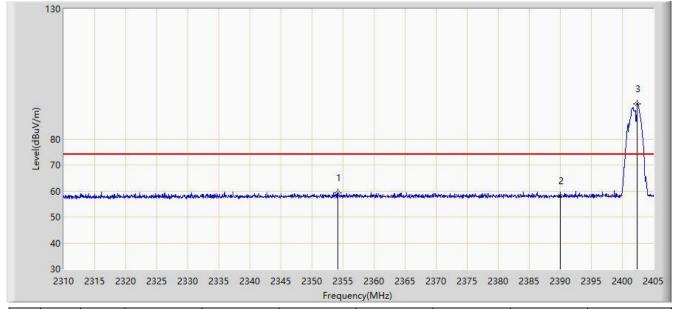


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.219	13.147	-8.781	54.000	32.072	AV
2		*	2401.770	83.370	51.295	NA	NA	32.075	AV

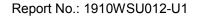




Site: AC1	Time: 2019/11/19 - 22:59			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Chip Antenna				

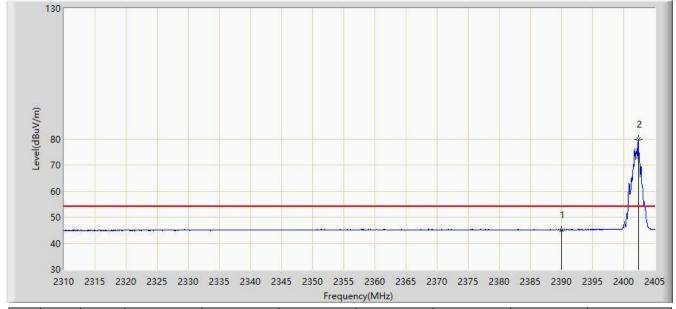


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2354.127	59.419	27.292	-14.581	74.000	32.127	PK
2			2390.000	58.153	26.081	-15.847	74.000	32.072	PK
3		*	2402.387	93.547	61.471	NA	NA	32.075	PK

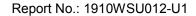




Site: AC1	Time: 2019/11/19 - 23:04			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Chip Antenna				

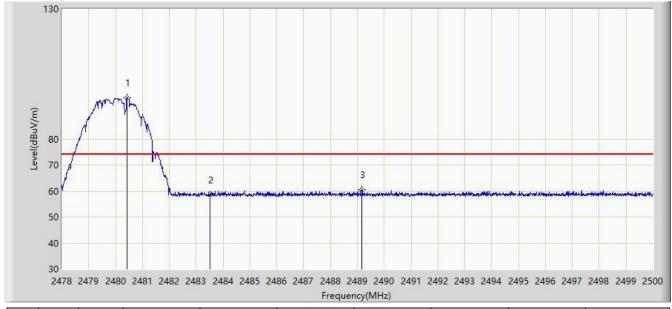


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.189	13.117	-8.811	54.000	32.072	AV
2		*	2402.340	79.719	47.643	NA	NA	32.075	AV

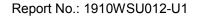




Site: AC1	Time: 2019/11/19 - 23:08			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2480MHz with Chip Antenna				

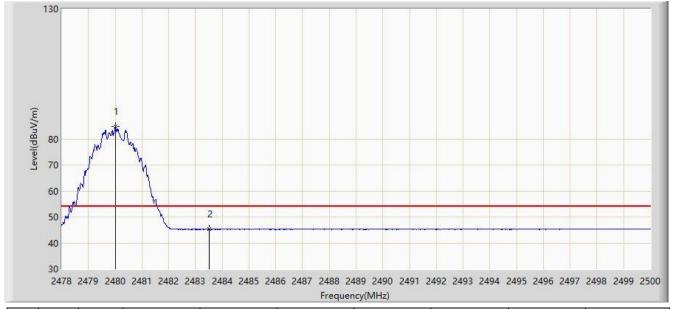


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.420	95.705	63.662	NA	NA	32.043	PK
2			2483.500	58.350	26.313	-15.650	74.000	32.037	PK
3			2489.176	60.518	28.492	-13.482	74.000	32.027	PK

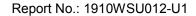




Site: AC1	Time: 2019/11/19 - 23:19			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2480MHz with Chip Antenna				

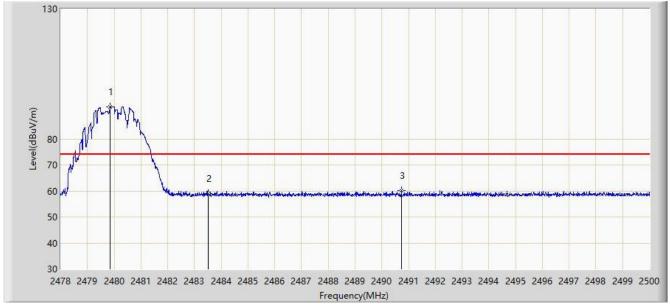


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.013	84.885	52.841	NA	NA	32.044	AV
2			2483.500	45.250	13.213	-8.750	54.000	32.037	AV

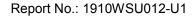




Site: AC1	Time: 2019/11/19 - 23:21			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2480MHz with Chip Antenna				

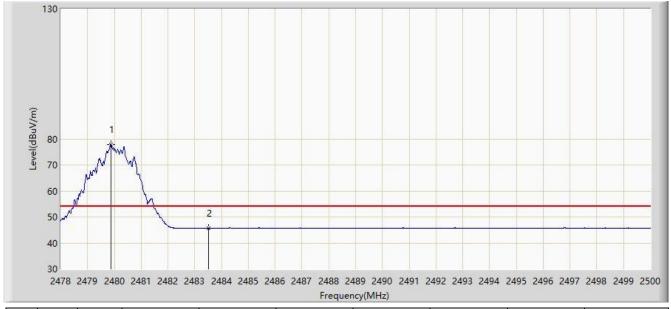


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.848	92.388	60.344	NA	NA	32.044	PK
2			2483.500	58.992	26.955	-15.008	74.000	32.037	PK
3			2490.738	60.020	27.997	-13.980	74.000	32.023	PK

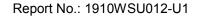




Site: AC1	Time: 2019/11/19 - 23:26				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by DH5 at channel 2480MHz with Chip Antenna					

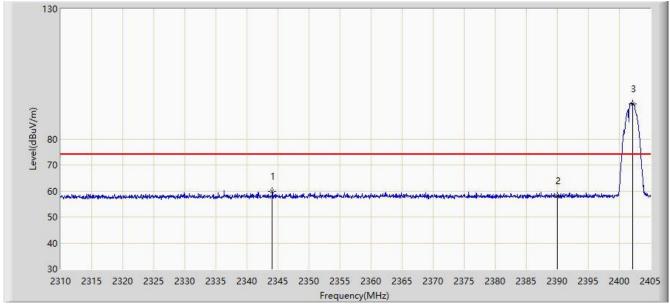


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.870	77.935	45.891	NA	NA	32.044	AV
2			2483.500	45.640	13.603	-8.360	54.000	32.037	AV





Site: AC1	Time: 2019/11/19 - 23:32			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 2DH5 at channel 2402MHz with Chip Antenna				

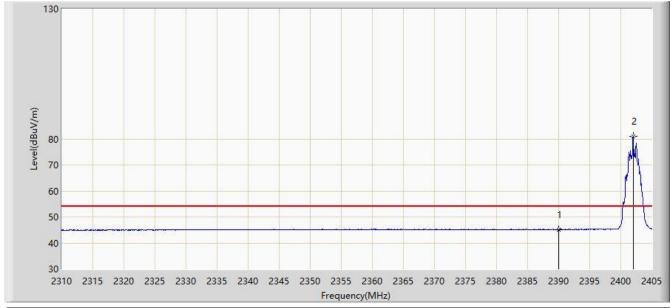


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2344.105	59.981	27.846	-14.019	74.000	32.135	PK
2			2390.000	58.175	26.103	-15.825	74.000	32.072	PK
3		*	2402.150	93.594	61.519	NA	NA	32.076	PK





Site: AC1	Time: 2019/11/19 - 23:37			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 2DH5 at channel 2402MHz with Chip Antenna				

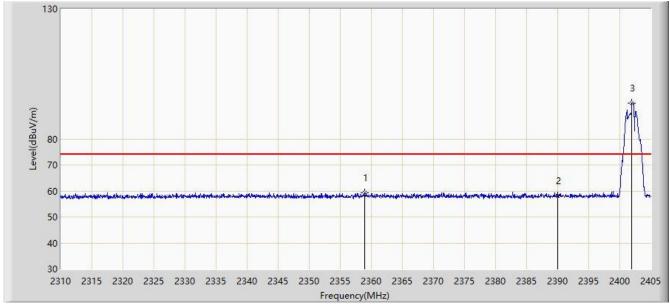


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.182	13.110	-8.818	54.000	32.072	AV
2		*	2402.008	81.147	49.072	NA	NA	32.076	AV

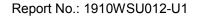




Site: AC1	Time: 2019/11/19 - 23:42				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Chip Antenna					

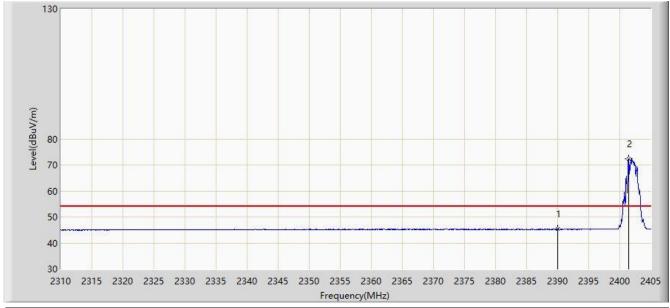


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2358.925	59.240	27.117	-14.760	74.000	32.123	PK
2			2390.000	58.115	26.043	-15.885	74.000	32.072	PK
3		*	2401.913	93.703	61.628	NA	NA	32.075	PK

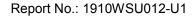




Site: AC1	Time: 2019/11/19 - 23:45				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Chip Antenna					

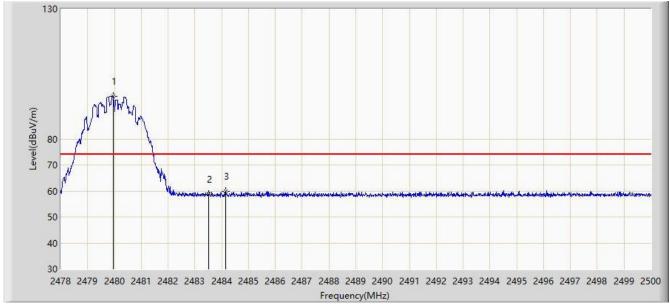


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.234	13.162	-8.766	54.000	32.072	AV
2		*	2401.390	72.418	40.343	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/19 - 23:51				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2480MHz with Chip Antenna					

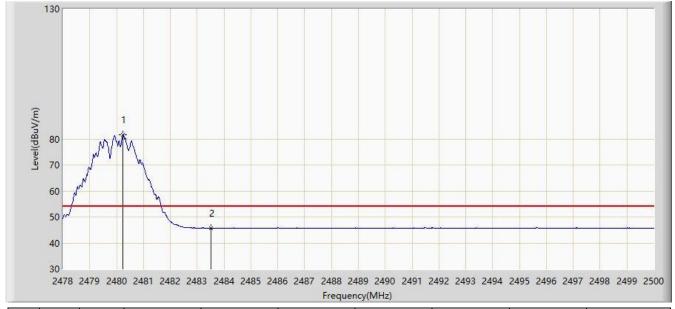


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.969	96.245	64.201	NA	NA	32.044	PK
2			2483.500	58.594	26.557	-15.406	74.000	32.037	PK
3			2484.138	60.000	27.964	-14.000	74.000	32.036	PK

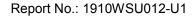




Site: AC1	Time: 2019/11/19 - 23:56			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 2DH5 at channel 2480MHz with Chip Antenna				

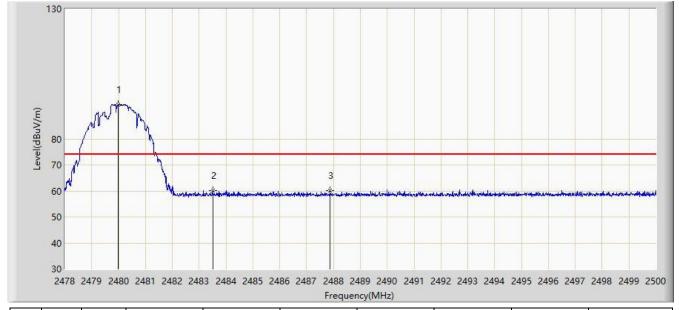


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.244	81.659	49.616	NA	NA	32.043	AV
2			2483.500	45.701	13.664	-8.299	54.000	32.037	AV





Site: AC1	Time: 2019/11/19 - 23:57			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 2DH5 at channel 2480MHz with Chip Antenna				

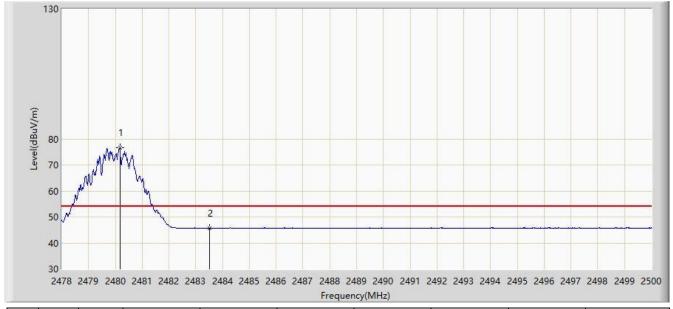


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.991	93.234	61.190	NA	NA	32.044	PK
2			2483.500	60.241	28.204	-13.759	74.000	32.037	PK
3			2487.878	60.013	27.984	-13.987	74.000	32.028	PK





Site: AC1	Time: 2019/11/20 - 00:02			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 2DH5 at channel 2480MHz with Chip Antenna				

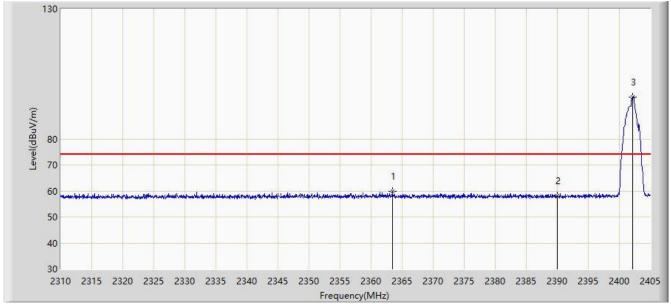


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.167	76.543	44.500	NA	NA	32.043	AV
2			2483.500	45.748	13.711	-8.252	54.000	32.037	AV





Site: AC1	Time: 2019/11/20 - 00:06			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2402MHz with Chip Antenna				

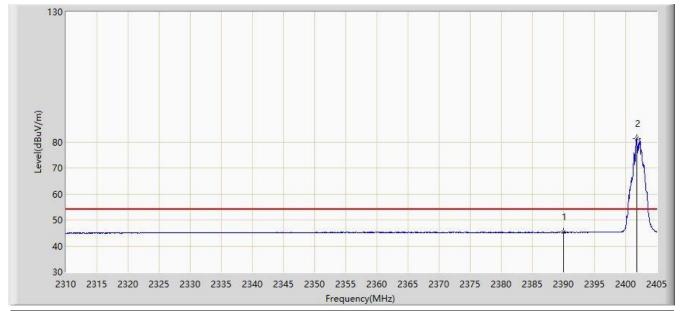


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2363.437	59.744	27.631	-14.256	74.000	32.113	PK
2			2390.000	58.033	25.961	-15.967	74.000	32.072	PK
3		*	2402.150	96.049	63.974	NA	NA	32.076	PK





Site: AC1	Time: 2019/11/20 - 00:10			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2402MHz with Chip Antenna				

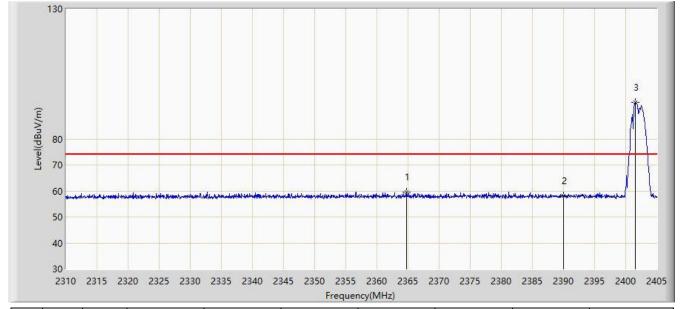


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.303	13.231	-8.697	54.000	32.072	AV
2		*	2401.770	81.344	49.269	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 00:13				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 3DH5 at channel 2402MHz with Chip Antenna					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2364.720	59.669	27.560	-14.331	74.000	32.109	PK
2			2390.000	58.197	26.125	-15.803	74.000	32.072	PK
3		*	2401.580	93.983	61.908	NA	NA	32.076	PK

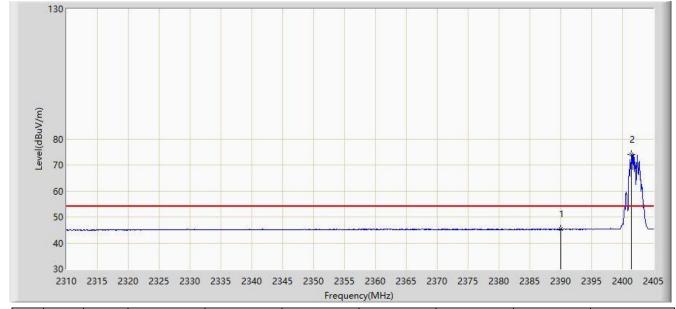
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

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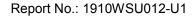




Site: AC1	Time: 2019/11/20 - 00:16			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2402MHz with Chip Antenna				

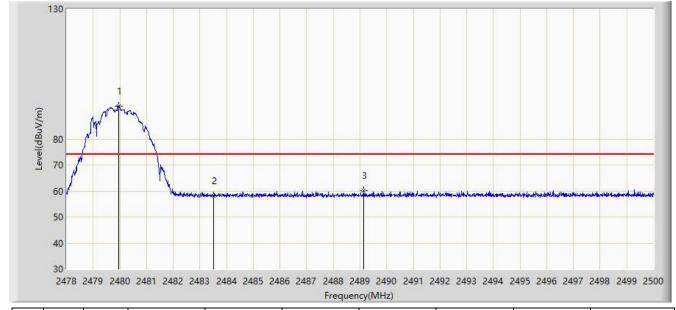


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.322	45.322	-8.678	54.000	0.000	AV
2		*	2401.437	73.987	41.912	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 00:19			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2480MHz with Chip Antenna				



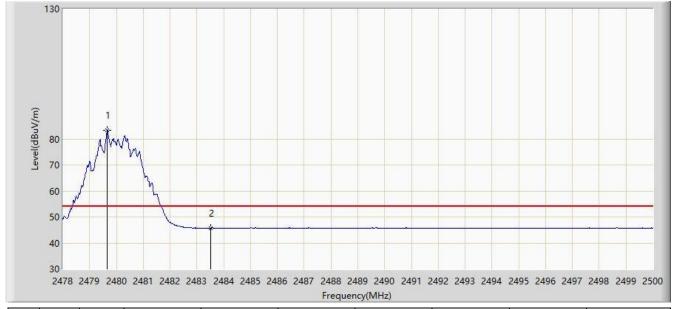
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.969	92.586	60.542	NA	NA	32.044	PK
2			2483.500	58.039	26.002	-15.961	74.000	32.037	PK
3			2489.143	60.080	28.054	-13.920	74.000	32.027	PK



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Site: AC1	Time: 2019/11/20 - 00:22			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2480MHz with Chip Antenna				



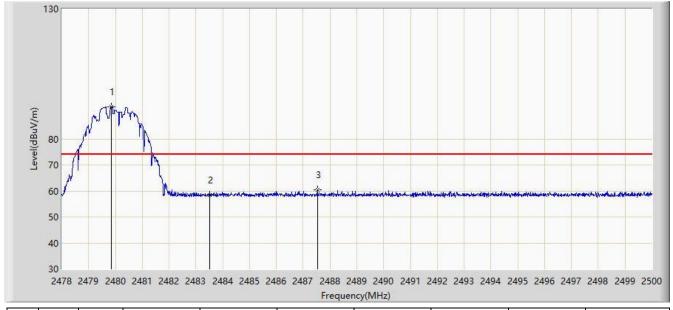
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.661	83.261	51.217	NA	NA	32.044	AV
2			2483.500	45.727	13.690	-8.273	54.000	32.037	AV

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)





Site: AC1	Time: 2019/11/20 - 00:24				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 3DH5 at channel 2480MHz with Chip Antenna					

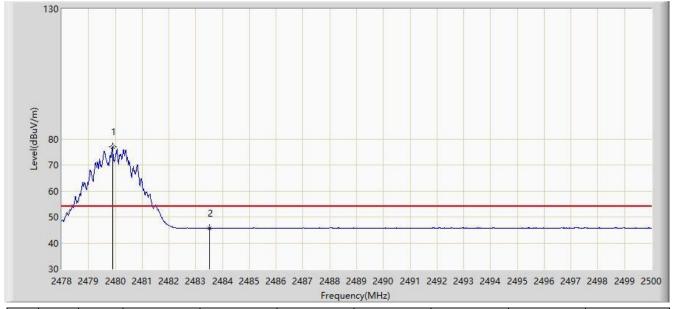


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.848	92.269	60.225	NA	NA	32.044	PK
2			2483.500	58.342	26.305	-15.658	74.000	32.037	PK
3			2487.526	60.512	28.483	-13.488	74.000	32.029	PK





Site: AC1	Time: 2019/11/20 - 00:27			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2480MHz with Chip Antenna				

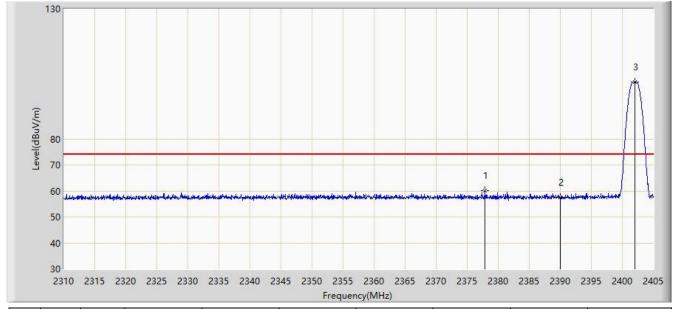


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.892	77.079	45.035	NA	NA	32.044	AV
2			2483.500	45.741	45.741	-8.259	54.000	0.000	AV





Site: AC1	Time: 2019/11/20 - 02:36			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Pattern Antenna				

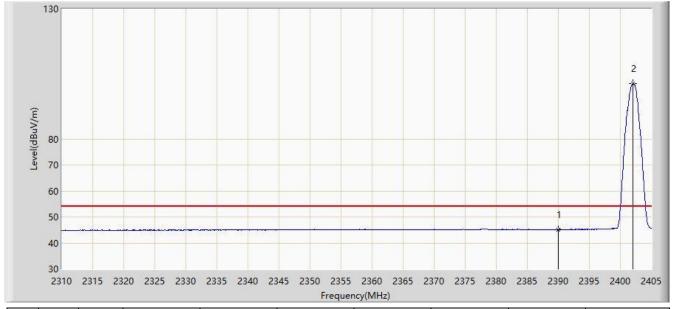


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2377.877	60.110	28.034	-13.890	74.000	32.076	PK
2			2390.000	57.510	25.438	-16.490	74.000	32.072	PK
3		*	2402.008	101.932	69.857	NA	NA	32.076	PK





Site: AC1	Time: 2019/11/20 - 02:38			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Pattern Antenna				

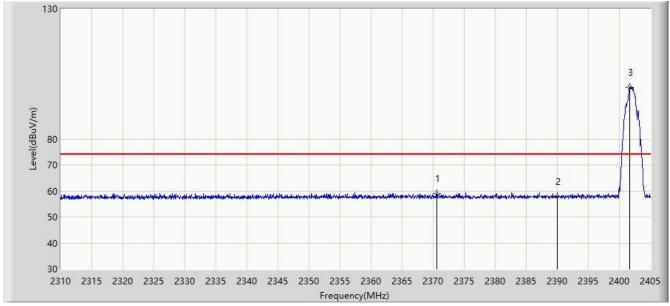


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.073	13.001	-8.927	54.000	32.072	AV
2		*	2402.055	101.333	69.258	NA	NA	32.076	AV





Site: AC1	Time: 2019/11/20 - 02:39			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Pattern Antenna				

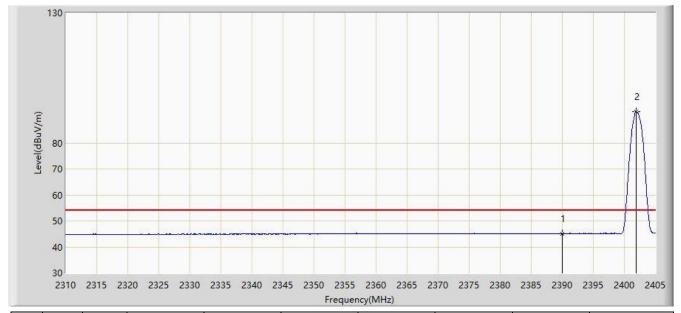


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2370.610	59.105	27.012	-14.895	74.000	32.094	PK
2			2390.000	57.745	25.673	-16.255	74.000	32.072	PK
3		*	2401.722	99.746	67.671	NA	NA	32.075	PK

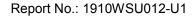




Site: AC1	Time: 2019/11/20 - 02:41			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2402MHz with Pattern Antenna				

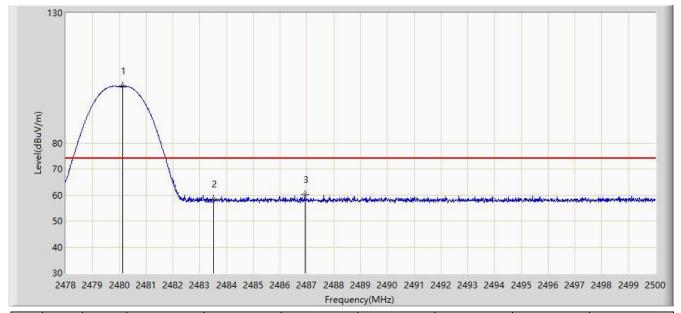


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.067	12.995	-8.933	54.000	32.072	AV
2		*	2401.913	92.092	60.017	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 02:43			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2480MHz with Pattern Antenna				

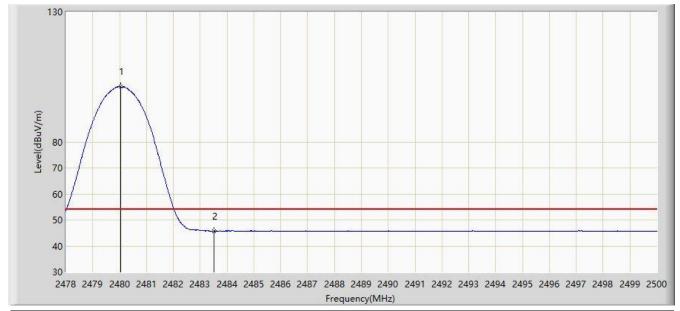


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.112	101.756	69.713	NA	NA	32.043	PK
2			2483.500	58.418	26.381	-15.582	74.000	32.037	PK
3			2486.921	60.237	28.206	-13.763	74.000	32.031	PK

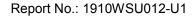




Site: AC1	Time: 2019/11/20 - 02:44			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by DH5 at channel 2480MHz with Pattern Antenna				

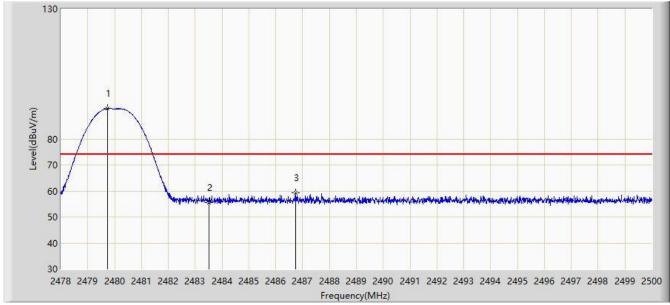


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.035	101.278	69.234	NA	NA	32.044	AV
2			2483.500	45.795	13.758	-8.205	54.000	32.037	AV





Site: AC1	Time: 2019/11/20 - 02:45				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by DH5 at channel 2480MHz with Pattern Antenna					

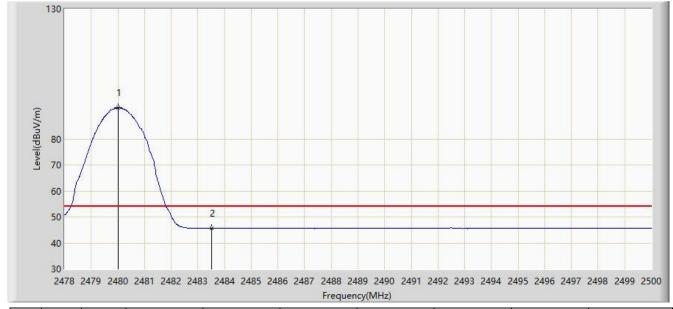


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.749	91.663	59.619	NA	NA	32.044	PK
2			2483.500	55.646	23.609	-18.354	74.000	32.037	PK
3			2486.734	59.166	27.135	-14.834	74.000	32.031	PK





Site: AC1	Time: 2019/11/20 - 02:48				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by DH5 at channel 2480MHz with Pattern Antenna					

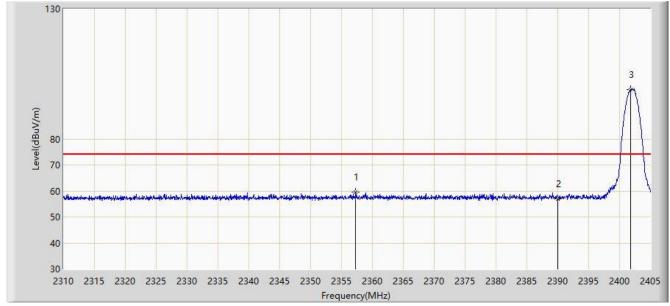


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.024	91.960	59.916	NA	NA	32.044	AV
2			2483.500	45.590	13.553	-8.410	54.000	32.037	AV





Site: AC1	Time: 2019/11/20 - 02:49				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Pattern Antenna					

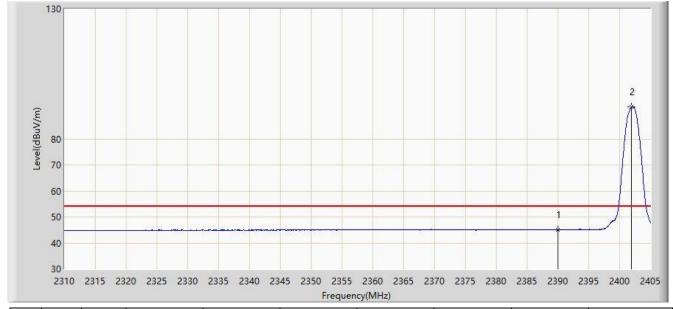


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2357.310	59.450	27.326	-14.550	74.000	32.124	PK
2			2390.000	57.010	24.938	-16.990	74.000	32.072	PK
3		*	2401.817	99.117	67.042	NA	NA	32.075	PK





Site: AC1	Time: 2019/11/20 - 02:51				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Pattern Antenna					

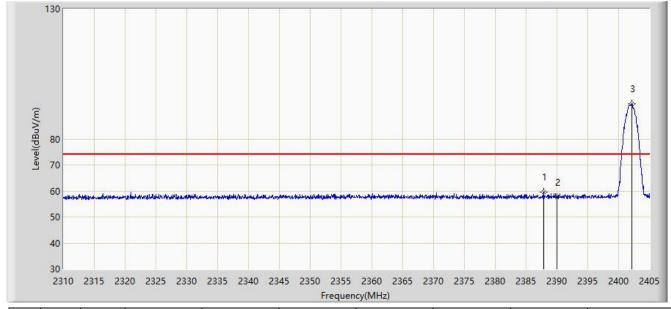


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.105	13.033	-8.895	54.000	32.072	AV
2		*	2401.960	92.313	60.238	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 02:51				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Pattern Antenna					

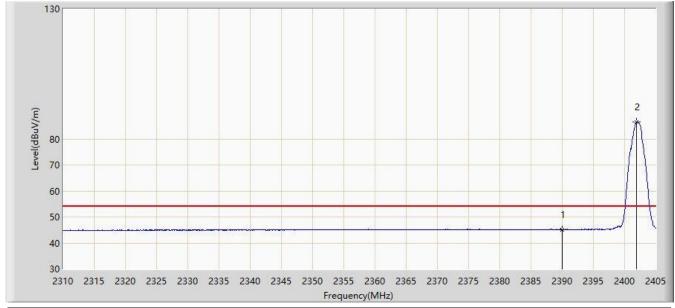


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2387.900	59.486	27.413	-14.514	74.000	32.073	PK
2			2390.000	57.563	25.491	-16.437	74.000	32.072	PK
3		*	2402.103	93.364	61.289	NA	NA	32.076	PK

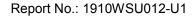




Site: AC1	Time: 2019/11/20 - 02:54				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2402MHz with Pattern Antenna					

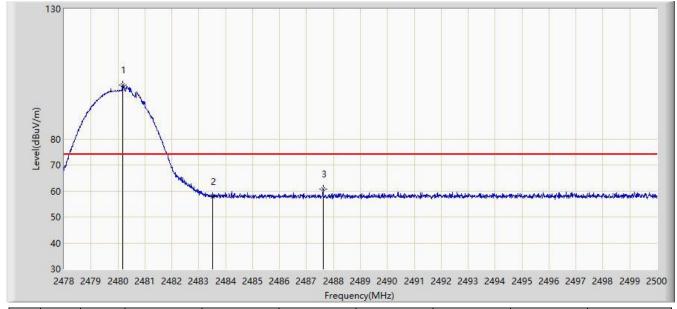


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.137	13.065	-8.863	54.000	32.072	AV
2		*	2401.913	86.384	54.309	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 02:54				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2480MHz with Pattern Antenna					

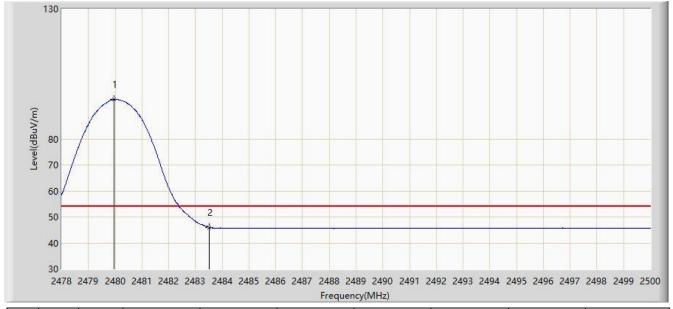


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.189	100.739	68.696	NA	NA	32.043	PK
2			2483.500	57.851	25.814	-16.149	74.000	32.037	PK
3			2487.614	60.660	28.631	-13.340	74.000	32.029	PK





Site: AC1	Time: 2019/11/20 - 02:56				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2480MHz with Pattern Antenna					



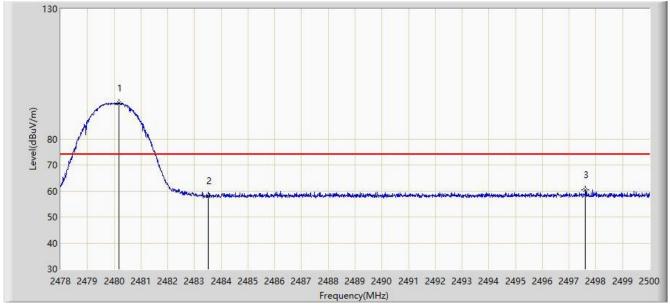
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.969	95.169	63.125	NA	NA	32.044	AV
2			2483.500	46.075	14.038	-7.925	54.000	32.037	AV



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Site: AC1	Time: 2019/11/20 - 02:57				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2480MHz with Pattern Antenna					



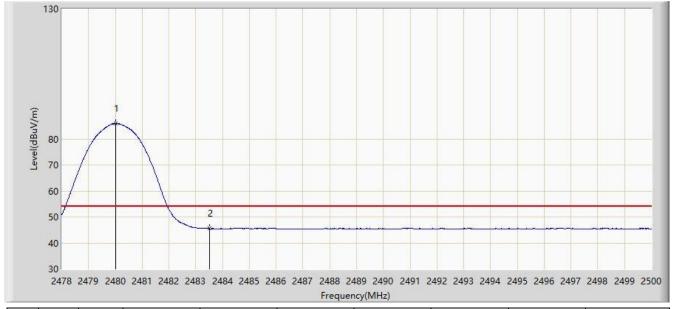
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.178	93.837	61.794	NA	NA	32.043	PK
2			2483.500	58.238	26.201	-15.762	74.000	32.037	PK
3			2497.613	60.383	28.366	-13.617	74.000	32.017	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)





Site: AC1	Time: 2019/11/20 - 03:00				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 2DH5 at channel 2480MHz with Pattern Antenna					

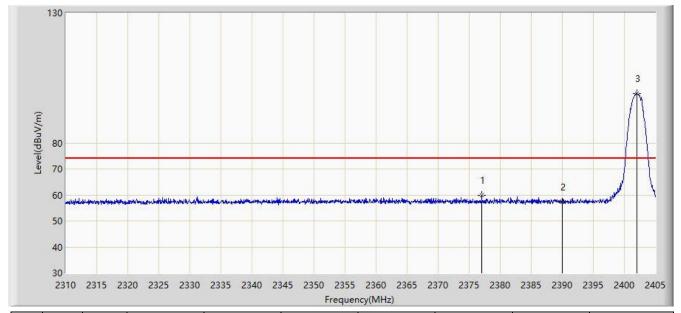


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.002	85.882	53.838	NA	NA	32.044	AV
2			2483.500	45.740	13.703	-8.260	54.000	32.037	AV





Site: AC1	Time: 2019/11/20 - 03:02					
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv					
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal					
EUT: Communication Module	Power: DC 3V					
Test Mode: Transmit by 3DH5 at channel 2402MHz with Pattern Antenna						

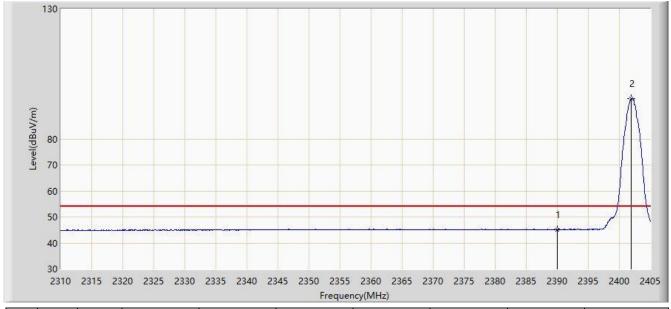


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2377.022	59.793	27.717	-14.207	74.000	32.076	PK
2			2390.000	57.354	25.282	-16.646	74.000	32.072	PK
3		*	2402.008	99.114	67.039	NA	NA	32.076	PK





Site: AC1	Time: 2019/11/20 - 03:03					
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv					
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal					
EUT: Communication Module	Power: DC 3V					
Test Mode: Transmit by 3DH5 at channel 2402MHz with Pattern Antenna						

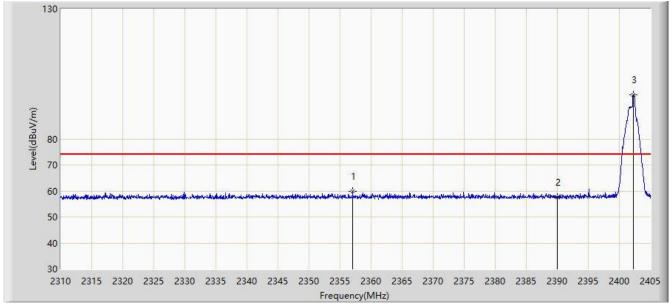


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.168	13.096	-8.832	54.000	32.072	AV
2		*	2401.960	95.470	63.395	NA	NA	32.075	AV





Site: AC1	Time: 2019/11/20 - 03:04					
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv					
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical					
EUT: Communication Module	Power: DC 3V					
Test Mode: Transmit by 3DH5 at channel 2402MHz with Pattern Antenna						

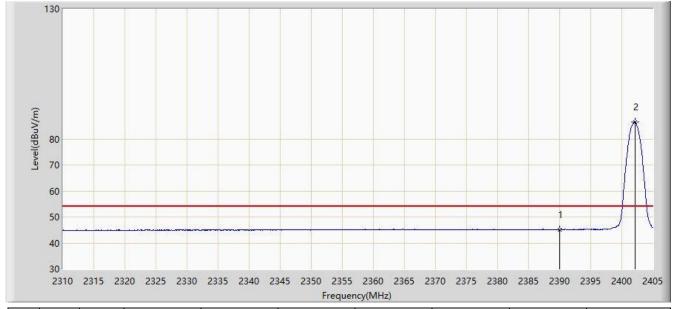


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2357.025	59.910	27.785	-14.090	74.000	32.125	PK
2			2390.000	57.527	25.455	-16.473	74.000	32.072	PK
3		*	2402.292	97.013	64.937	NA	NA	32.075	PK





Site: AC1	Time: 2019/11/20 - 03:06				
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv				
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical				
EUT: Communication Module	Power: DC 3V				
Test Mode: Transmit by 3DH5 at channel 2402MHz with Pattern Antenna					

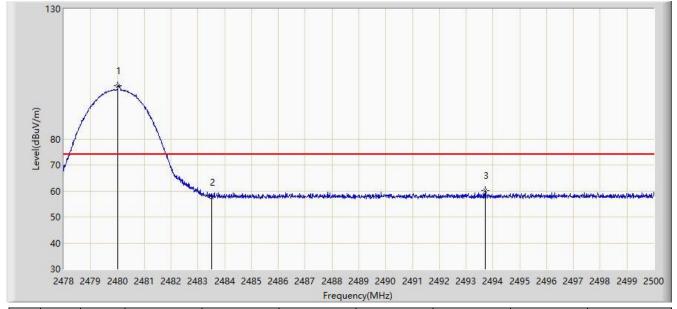


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1			2390.000	45.084	13.012	-8.916	54.000	32.072	AV
2		*	2402.150	86.633	54.558	NA	NA	32.076	AV





Site: AC1	Time: 2019/11/20 - 03:07					
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv					
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal					
EUT: Communication Module	Power: DC 3V					
Test Mode: Transmit by 3DH5 at channel 2480MHz with Pattern Antenna						

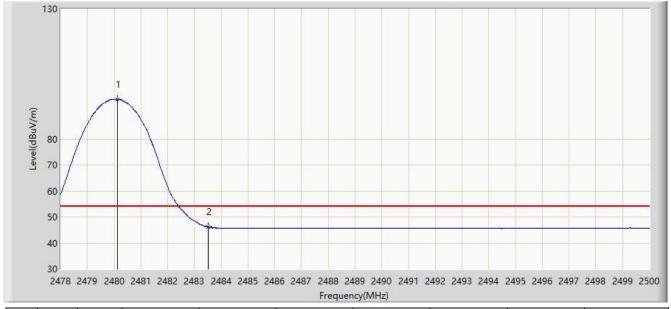


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.013	100.493	68.449	NA	NA	32.044	PK
2			2483.500	57.613	25.576	-16.387	74.000	32.037	PK
3			2493.719	60.109	28.091	-13.891	74.000	32.017	PK





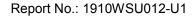
Site: AC1	Time: 2019/11/20 - 03:09					
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv					
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Horizontal					
EUT: Communication Module	Power: DC 3V					
Test Mode: Transmit by 3DH5 at channel 2480MHz with Pattern Antenna						



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.112	95.309	63.266	NA	NA	32.043	AV
2			2483.500	46.187	14.150	-7.813	54.000	32.037	AV

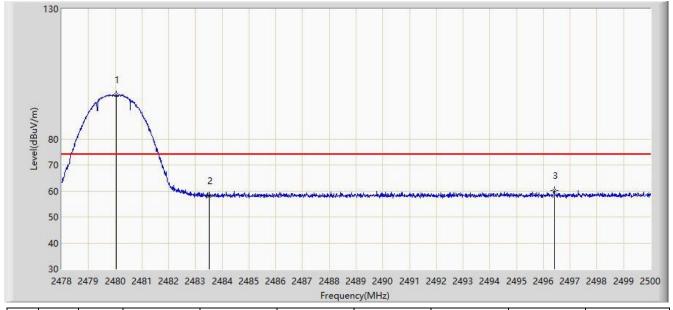
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

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Site: AC1	Time: 2019/11/20 - 03:09			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2480MHz with Pattern Antenna				

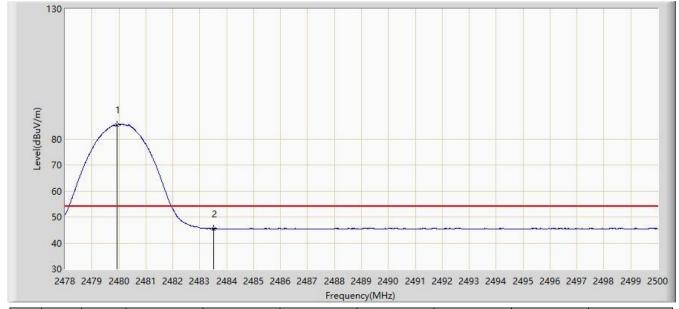


No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2480.046	97.051	65.008	NA	NA	32.044	PK
2			2483.500	58.115	26.078	-15.885	74.000	32.037	PK
3			2496.403	60.227	28.213	-13.773	74.000	32.015	PK

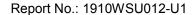




Site: AC1	Time: 2019/11/20 - 03:13			
Limit: FCC_Part15.209_RE(3m)	Engineer: David Lv			
Probe: AC1_BBHA9120D_1-18GHz	Polarity: Vertical			
EUT: Communication Module	Power: DC 3V			
Test Mode: Transmit by 3DH5 at channel 2480MHz with Pattern Antenna				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV/m)	(dB)	
				(dBuV/m)	(dBuV)				
1		*	2479.925	85.452	53.408	NA	NA	32.044	AV
2			2483.500	45.506	13.469	-8.494	54.000	32.037	AV





7.11. AC Conducted Emissions Measurement

7.11.1.Test Limit

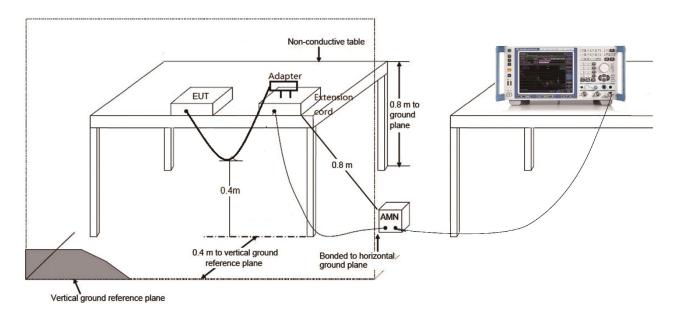
FCC Part 15 Subpart C Paragraph 15.207 &RSS-Gen Issue 5 Section 8.8 Limits							
Frequency	QP (ID.) (Average					
(MHz)	(dBµV)	(dBμV)					
0.15 - 0.50	66 - 56	56 - 46					
0.50 - 5.0	56	46					
5.0 - 30	60	50					

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to

0.5MHz.

7.11.2.Test Setup



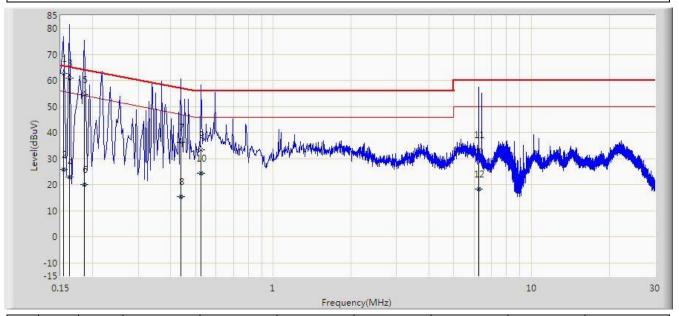


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7.11.3.Test Result

Site: SR2	Time: 2019/11/24 - 15:15			
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan			
Probe: ENV216_101683_Filter On	Polarity: Line			
EUT: Communication Module	Power: AC 120V/60Hz			
Test Mode: Transmit by DH5 at Channel 2402MHz with Chip Antenna				



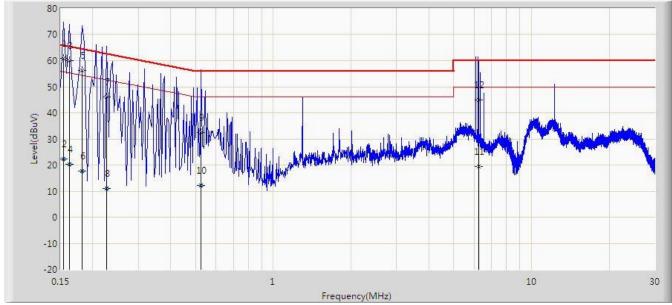
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)	
				(dBuV)	(dBuV)				
1			0.154	62.594	51.854	-3.187	65.781	10.740	QP
2			0.154	25.745	15.006	-30.036	55.781	10.740	AV
3			0.162	60.947	50.850	-4.413	65.361	10.097	QP
4			0.162	22.897	12.800	-32.464	55.361	10.097	AV
5		*	0.186	54.672	44.633	-9.541	64.213	10.039	QP
6			0.186	20.102	10.063	-34.111	54.213	10.039	AV
7			0.438	36.403	26.287	-20.697	57.100	10.117	QP
8			0.438	15.463	5.346	-31.637	47.100	10.117	AV
9			0.526	33.306	23.153	-22.694	56.000	10.153	QP
10			0.526	24.371	14.218	-21.629	46.000	10.153	AV
11			6.258	33.496	23.370	-26.504	60.000	10.125	QP
12			6.258	18.408	8.282	-31.592	50.000	10.125	AV

Note: Measure Level ($dB\mu V$) = Reading Level ($dB\mu V$) + Factor (dB)





Site: SR2	Time: 2019/11/24 - 15:26				
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan				
Probe: ENV216_101683_Filter On	Polarity: Neutral				
EUT: Communication Module	Power: AC 120V/60Hz				
Test Mode: Transmit by DH5 at Channel 2402MHz with Chin Antenna					



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)	
				(dBuV)	(dBuV)				
1		*	0.154	60.969	50.253	-4.812	65.781	10.716	QP
2			0.154	22.241	11.525	-33.540	55.781	10.716	AV
3			0.162	59.940	49.862	-5.420	65.361	10.078	QP
4			0.162	20.388	10.309	-34.973	55.361	10.078	AV
5			0.182	56.243	46.201	-8.151	64.394	10.042	QP
6			0.182	17.555	7.513	-36.839	54.394	10.042	AV
7			0.226	46.187	36.204	-16.408	62.595	9.982	QP
8			0.226	10.955	0.973	-41.640	52.595	9.982	AV
9			0.526	32.541	22.369	-23.459	56.000	10.172	QP
10			0.526	12.208	2.037	-33.792	46.000	10.172	AV
11			6.237	19.536	9.400	-40.464	60.000	10.136	QP
12			6.237	44.936	34.800	-15.064	60.000	10.136	AV





Site: SR2	Time: 2019/11/24 - 16:16				
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan				
Probe: ENV216_101683_Filter On	Polarity: Line				
EUT: Communication Module	Power: AC 120V/60Hz				
Test Mode: Transmit by DH5 at Channel 2402MHz with Pattern Antenna					

Frequency(MHz)

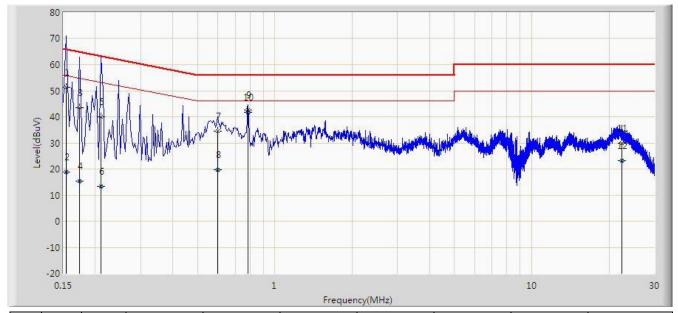
No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)	
				(dBuV)	(dBuV)				
1			0.192	44.925	34.900	-19.025	63.950	10.025	QP
2			0.192	10.525	0.500	-43.425	53.950	10.025	AV
3			0.206	39.138	29.136	-24.228	63.365	10.001	QP
4			0.206	6.824	-3.178	-46.541	53.365	10.001	AV
5		*	0.258	31.952	21.945	-29.543	61.496	10.007	QP
6			0.258	3.801	-6.206	-47.695	51.496	10.007	AV
7			0.410	22.489	12.369	-35.159	57.648	10.119	QP
8			0.410	2.532	-7.588	-45.117	47.648	10.119	AV
9			0.786	27.353	17.326	-28.647	56.000	10.027	QP
10			0.786	22.941	12.914	-23.059	46.000	10.027	AV
11			10.402	30.200	20.046	-29.800	60.000	10.154	QP
12			10.402	23.107	12.953	-26.893	50.000	10.154	AV

Note: Measure Level (dB μ V) = Reading Level (dB μ V) + Factor (dB)





Site: SR2	Time: 2019/11/24 - 16:22			
Limit: FCC_Part15.207_CE_AC Power	Engineer: Liz Yuan			
Probe: ENV216_101683_Filter On	Polarity: Neutral			
EUT: Communication Module	Power: AC 120V/60Hz			
Test Mode: Transmit by DH5 at Channel 2402MHz with Pattern Antenna				



No	Flag	Mark	Frequency	Measure	Reading	Margin	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)	
				(dBuV)	(dBuV)				
1		*	0.154	51.240	40.500	-14.542	65.781	10.740	QP
2			0.154	18.940	8.200	-36.842	55.781	10.740	AV
3			0.174	43.345	33.278	-21.422	64.767	10.068	QP
4			0.174	15.326	5.258	-39.441	54.767	10.068	AV
5			0.210	40.121	30.152	-23.084	63.205	9.969	QP
6			0.210	13.352	3.383	-39.854	53.205	9.969	AV
7			0.598	34.375	24.259	-21.625	56.000	10.116	QP
8			0.598	19.647	9.531	-26.353	46.000	10.116	AV
9			0.786	42.623	32.605	-13.377	56.000	10.018	QP
10			0.786	41.693	31.675	-4.307	46.000	10.018	AV
11			22.350	29.761	19.608	-30.239	60.000	10.153	QP
12			22.350	23.062	12.909	-26.938	50.000	10.153	AV



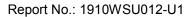
Report No.: 1910WSU012-U1

8. CONCLUSION

The data collected relate only the item(s) tested and show that the device is in compliance with Part 15C of the FCC rules and ISED rules.

The End

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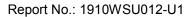
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Appendix A - Test Setup Photograph

Refer to "1910WSU012-UT" file.

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Appendix B - EUT Photograph

Refer to "1910WSU012-UE" file.

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