



# Test Report

## FCC Part15 Subpart C

Product Name : IP surveillance camera (Wi-Fi & mobile)  
Model No. : EN-CNUC-001b  
FCC ID : 2AQEO-1001

Applicant : Eagle Eye Networks B.V.

Address : Hogehilweg 19, 1101 CB Amsterdam, The Netherlands

Date of Receipt : Feb. 03, 2018

Test Date : Feb. 03, 2018~ Jun. 06, 2018

Issued Date : Jul. 04, 2018

Report No. : 1822021R-RF- US-P06V01

Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, A2LA or any agency of the government.


The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.

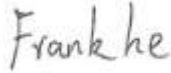
# Test Report Certification

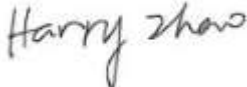
Issued Date : Jul. 04, 2018  
Report No. : 1822021R-RF-US-P06V01



Product Name : IP surveillance camera (Wi-Fi & mobile)  
Applicant : Eagle Eye Networks B.V.  
Address : Hogehilweg 19, 1101 CB Amsterdam, The Netherlands  
Manufacturer : Eagle Eye Networks B.V.  
Address : Hogehilweg 19, 1101 CB Amsterdam, The Netherlands  
Model No. : EN-CNUC-001b  
FCC ID : 2AQEO-1001  
EUT Voltage : 100-240Vac 0.3A max 50/60Hz  
Test Voltage : AC 120V/60Hz  
Brand Name : Eagle Eye NuboCam  
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C  
ANSI C63.10:2013;  
KDB 558074 D01v04  
Test Result : Complied  
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.  
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006,  
Jiangsu, China  
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098  
FCC Designation Number: CN1199

Documented By :   
\_\_\_\_\_  
(Adm. Specialist: Kathy Feng)

Reviewed By :   
\_\_\_\_\_  
(Senior Engineer: Frank He)

Approved By :   
\_\_\_\_\_  
(Engineering Manager: Harry Zhao )

## TABLE OF CONTENTS

Description	Page
1. General Information.....	6
1.1. EUT Description .....	6
1.2. Working Frequency of Each Channel: .....	7
1.3. Antenna information .....	8
1.4. Mode of Operation.....	9
1.5. Tested System Details .....	10
1.6. Configuration of Tested System.....	11
1.7. EUT Exercise Software.....	12
2. Technical Test.....	13
2.2. Summary of Test Result for WIFI module .....	13
2.3. Test Frequency configuration:.....	14
2.4. Power setting parameter.....	14
2.5. Power vs Data Rate.....	15
2.6. Test Environment.....	16
2.7. Measurement Uncertainty.....	16
3. AC Power Line Conducted Emission.....	17
3.2. Test Equipment.....	17
3.3. Test Setup.....	17
3.4. Limit.....	18
3.5. Test Procedure .....	18
3.6. Test Result.....	19
4. Emissions in restricted frequency bands .....	21
4.1. Test Equipment.....	21
4.2. Test Setup.....	22
4.3. Limit.....	23
4.4. Test Procedure .....	25
4.5. EUT test Axis definition.....	26
4.6. Test Result.....	27
5. Emissions in non-restricted frequency bands .....	48
5.1. Test Equipment.....	48
5.2. Test Setup.....	49
5.3. Limit.....	50
5.4. Test Procedure .....	51
5.5. EUT test Axis definition.....	52
5.6. Test Result.....	53
6. Radiated Emission Band Edge .....	54
6.1. Test Equipment.....	54

6.2.	Test Setup.....	55
6.3.	Limit.....	55
6.4.	Test Procedure .....	56
6.5.	EUT test definition .....	57
6.6.	Duty Cycle .....	58
6.7.	Test Result.....	59
7.	Occupied Bandwidth.....	83
7.1.	Test Equipment.....	83
7.2.	Test Setup.....	83
7.3.	Limit.....	84
7.4.	Test Procedure .....	84
7.5.	EUT test definition .....	85
7.6.	Test Result.....	86
8.	Fundamental emission output power .....	87
8.1.	Test Equipment.....	87
8.2.	Test Setup.....	87
8.3.	Limit.....	88
8.4.	Test Procedure .....	89
8.5.	EUT test definition .....	90
8.6.	Test Result.....	91
9.	Power Spectral Density .....	92
9.1.	Test Equipment.....	92
9.2.	Test Setup.....	92
9.3.	Limit.....	92
9.4.	Test Procedure .....	93
9.5.	EUT test definition .....	94
9.6.	Test Result.....	95
10.	Antenna Requirement.....	96
10.1.	Limit.....	96
10.2.	Antenna Connector Construction.....	96

## History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1822021R-RF-US-P06V01	V1.0	Initial Issued Report	Jul. 04, 2018

## 1. General Information

### 1.1. EUT Description

Product Name	IP surveillance camera (Wi-Fi & mobile)
Model No.	EN-CNUC-001b
EUT Voltage	100-240Vac 0.3A max 50/60Hz
Frequency Range	For 2.4GHz Band 802.11b/g/n(20MHz): 2412~2462MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11
Type of Modulation	802.11b: DSSS-DBPSK, DQPSK, CCK 802.11g/n: OFDM-BPSK, QPSK, 16QAM, 64QAM,
Data Rate	802.11b: 1/2/5.5/11 Mbps 802.11g: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 72.2 Mbps
Channel Control	Auto

**1.2. Working Frequency of Each Channel:**

802.11b/g/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A

**1.3. Antenna information**

Antenna manufacturer	N/A					
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/>	3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO				
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic		
			<input type="checkbox"/>	CDD		
			<input type="checkbox"/>	Sectorized		
			<input type="checkbox"/>	Beam-forming		
Antenna Type	<input type="checkbox"/>	External	<input checked="" type="checkbox"/>	Dipole		
			<input type="checkbox"/>	Sectorized		
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA		
			<input type="checkbox"/>	PCB		
			<input checked="" type="checkbox"/>	Ceramic Chip Antenna		
			<input type="checkbox"/>	Metal plate type F antenna		
Antenna #1	-1.3dBi					



#### 1.4. Mode of Operation

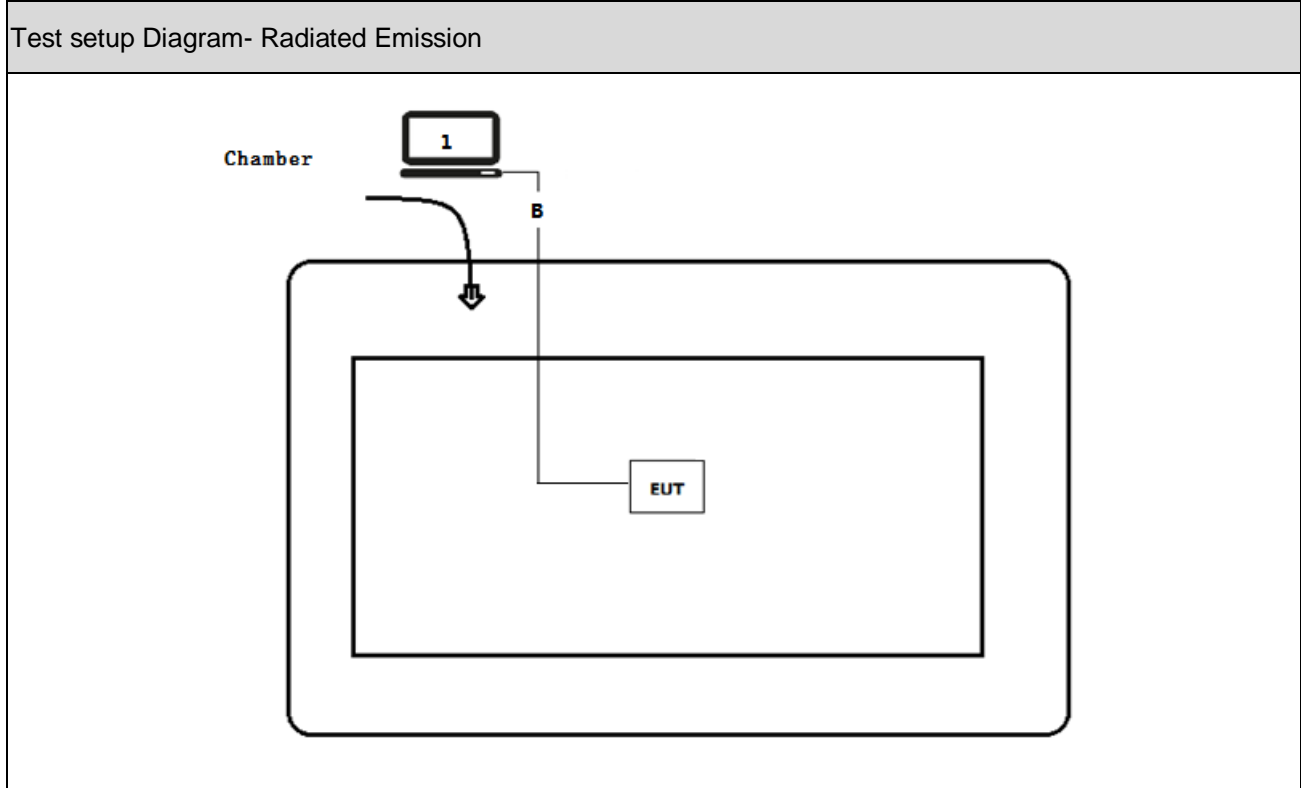
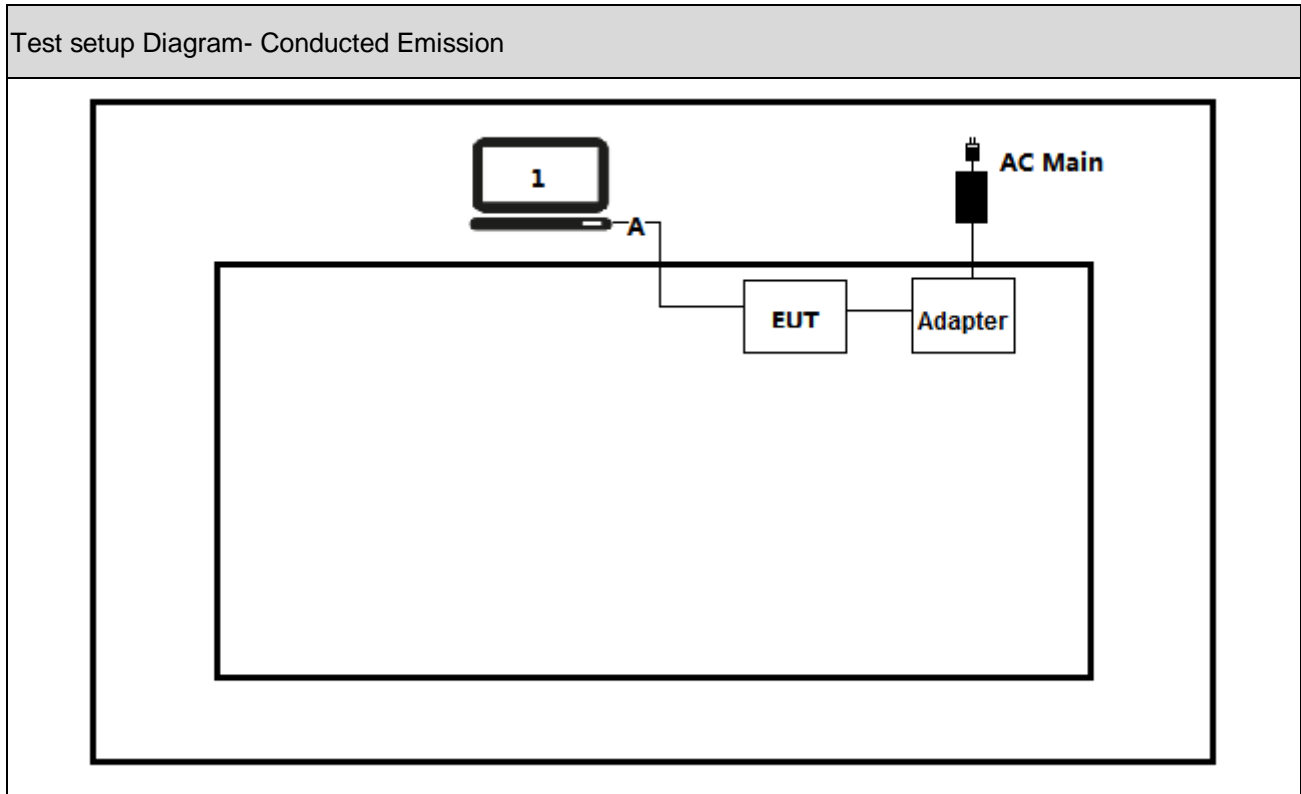
Test Modes List
Mode 1: Transmit by 802.11b
Mode 2: Transmit by 802.11g
Mode 3: Transmit by 802.11n(20MHz)

### 1.5. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded

### 1.6. Configuration of Tested System



Signal Cable Type		Signal Cable Type
A	USB Control Cable	Shielded,2m
B	USB Control Cable	Shielded,10m

### 1.7. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run RF software, and set the test mode and channel, then press OK to start to continue transmit.

## 2. Technical Test

### 2.2. Summary of Test Result for WIFI module

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: Section 15.207	FCC 15.207	N/A
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: Section 15.209	FCC 15.209	PASS
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(d)	$\geq 20\text{dBc}$	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 15.247(d)	FCC 15.209	PASS
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(a)(2)	$\geq 500\text{kHz}$	PASS
Fundamental emission output power	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(b)(3)	$\leq 30\text{dBm}$	PASS
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(e)	$\leq 8\text{dBm}/3\text{kHz}$	PASS
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: Section 15.203	FCC 15.203	PASS

### 2.3. Test Frequency configuration:

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
802.11b	01	2412 MHz	06	2437MHz	11	2462MHz
802.11g	01	2412 MHz	06	2437MHz	11	2462MHz
802.11n(20MHz)	01	2412 MHz	06	2437MHz	11	2462MHz

### 2.4. Power setting parameter

Test Software	Signaling software	
Modulation Mode	Test Frequency	Setting
802.11b	2412	0
	2437	0
	2462	0
802.11g	2412	0
	2437	0
	2462	0
802.11n(20MHz)	2412	0
	2437	0
	2462	0

## 2.5. Power vs Data Rate

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)			
		802.11b	802.11g	20MHz Bandwidth	
				800ns GI	400ns GI
0	1	1	6	6.5	7.2
1	1	2	9	13.0	14.4
2	1	5.5	12	19.5	21.7
3	1	11	18	26.0	28.9
4	1	---	24	39.0	43.3
5	1	---	36	52.0	57.8
6	1	---	48	58.5	65.0
7	1	---	54	65.0	72.2

Note 1: The EUT supports all data rate above. The blue form is the maximum power data rate

## 2.6. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

## 2.7. Measurement Uncertainty

Test Items	Uncertainty
AC Power Line Conducted Emission	$\pm 2.02\text{dB}$
Radiated Emission	Below 1GHz $\pm 3.8\text{ dB}$
	Above 1GHz $\pm 3.9\text{ dB}$
RF Antenna Port Conducted Emission	$\pm 1.27\text{dB}$
Radiated Emission Band Edge	$\pm 3.9\text{dB}$
Occupied Bandwidth	$\pm 1\text{kHz}$
Power Spectral Density	$\pm 1.27\text{dB}$



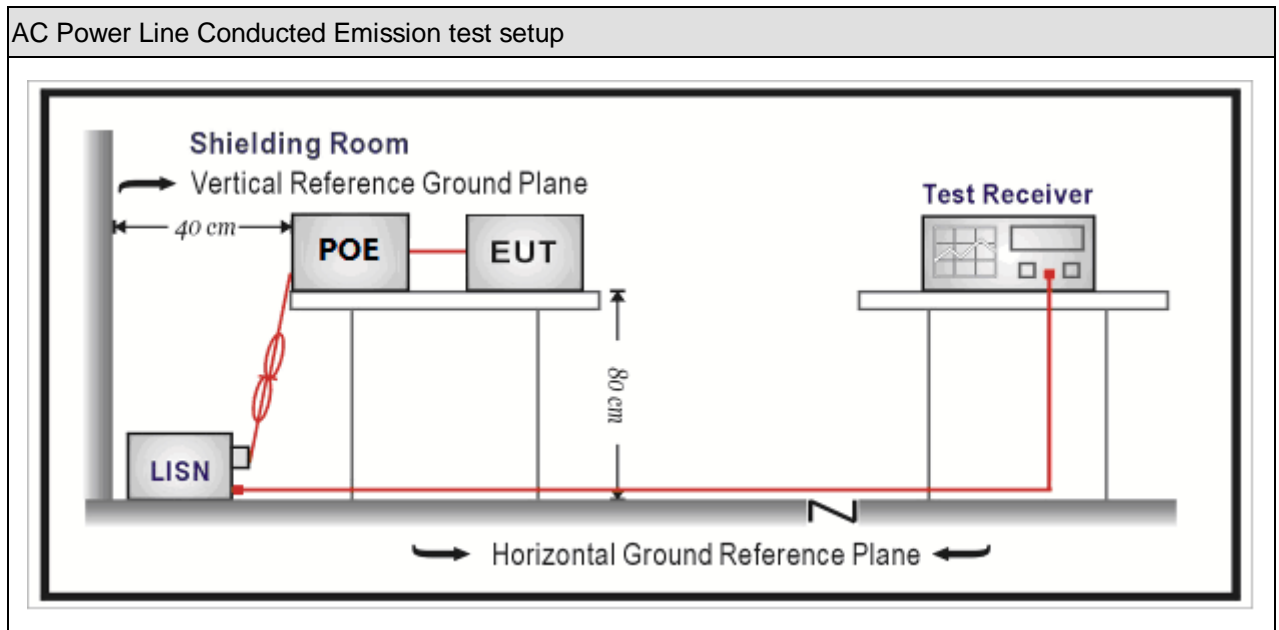
### 3. AC Power Line Conducted Emission

#### 3.2. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2018.03.29	2019.03.28
Two-Line V-Network	R&S	ENV216	100043	2018.03.29	2019.03.28
Two-Line V-Network	R&S	ENV216	100044	2017.09.17	2018.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2018.03.02	2019.03.01
50ohm Termination	SHX	TF2	07081401	2017.09.17	2018.09.16
Temperature/Humidity Meter	zhichen	ZC1-2	TR1-TH	2018.01.04	2019.01.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### 3.3. Test Setup



### 3.4. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

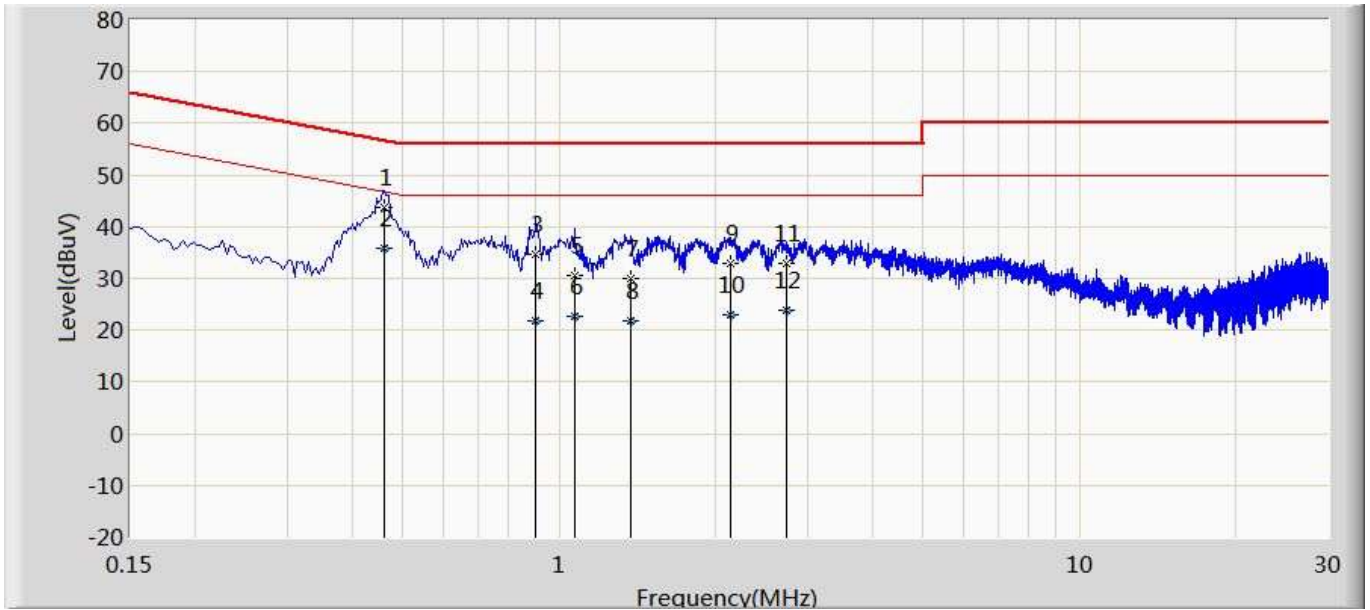
Note 1: The lower limit shall apply at the transition frequencies.  
 Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

### 3.5. Test Procedure

Test Method			
	References Rule	Chapter	Item
<input checked="" type="checkbox"/>	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

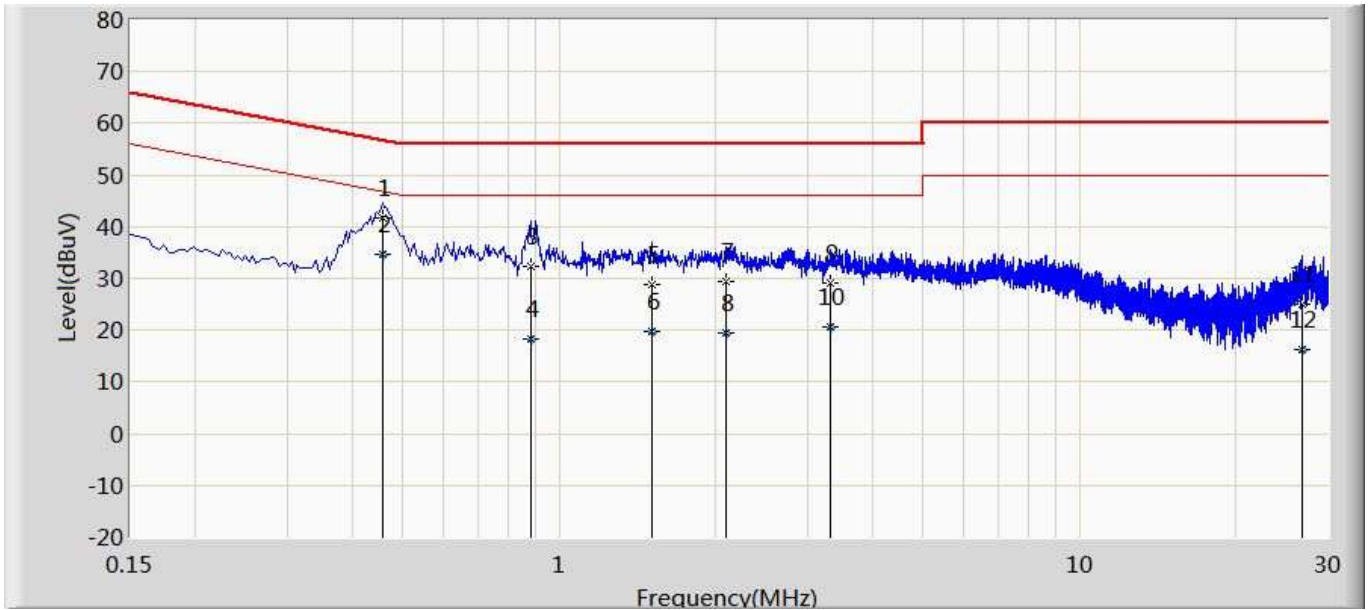
### 3.6. Test Result

Engineer: Simon	
Site: TR1	Time: 2018/02/09
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2412MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.462	43.766	34.125	-12.891	56.657	9.600	0.041	0.000	QP
2	*	0.462	35.734	26.093	-10.923	46.657	9.600	0.041	0.000	AV
3		0.902	34.577	24.914	-21.423	56.000	9.607	0.056	0.000	QP
4		0.902	21.830	12.167	-24.170	46.000	9.607	0.056	0.000	AV
5		1.070	30.714	21.042	-25.286	56.000	9.610	0.062	0.000	QP
6		1.070	22.632	12.960	-23.368	46.000	9.610	0.062	0.000	AV
7		1.374	30.002	20.322	-25.998	56.000	9.610	0.070	0.000	QP
8		1.374	21.809	12.129	-24.191	46.000	9.610	0.070	0.000	AV
9		2.130	32.990	23.288	-23.010	56.000	9.612	0.090	0.000	QP
10		2.130	22.990	13.288	-23.010	46.000	9.612	0.090	0.000	AV
11		2.730	32.982	23.257	-23.018	56.000	9.622	0.103	0.000	QP
12		2.730	23.792	14.067	-22.208	46.000	9.622	0.103	0.000	AV

Engineer: Simon	
Site: TR1	Time: 2018/02/09
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2412MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.458	41.625	31.993	-15.103	56.729	9.591	0.041	0.000	QP
2	*	0.458	34.717	25.085	-12.012	46.729	9.591	0.041	0.000	AV
3		0.882	32.221	22.576	-23.779	56.000	9.590	0.055	0.000	QP
4		0.882	18.180	8.534	-27.820	46.000	9.590	0.055	0.000	AV
5		1.510	28.734	19.059	-27.266	56.000	9.600	0.075	0.000	QP
6		1.510	19.696	10.021	-26.304	46.000	9.600	0.075	0.000	AV
7		2.090	29.271	19.572	-26.729	56.000	9.611	0.089	0.000	QP
8		2.090	19.416	9.716	-26.584	46.000	9.611	0.089	0.000	AV
9		3.314	29.230	19.488	-26.770	56.000	9.627	0.115	0.000	QP
10		3.314	20.560	10.818	-25.440	46.000	9.627	0.115	0.000	AV
11		26.858	24.895	13.920	-35.105	60.000	10.638	0.337	0.000	QP
12		26.858	16.166	5.191	-33.834	50.000	10.638	0.337	0.000	AV

## 4. Emissions in restricted frequency bands

### 4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2018.03.29	2019.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2017.11.16	2018.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2017.10.16	2018.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2018.03.02	2019.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2018.01.04	2019.01.03

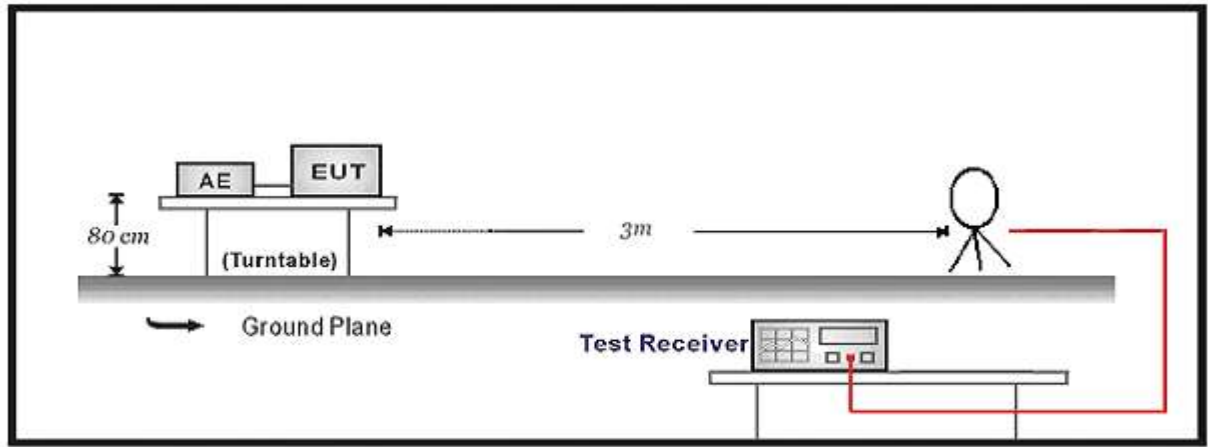
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2018.01.04	2019.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2018.05.06	2019.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2018.05.06	2019.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2018.01.22	2019.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.11.25	2018.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2018.03.02	2019.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2018.06.10	2019.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.04	2019.01.03

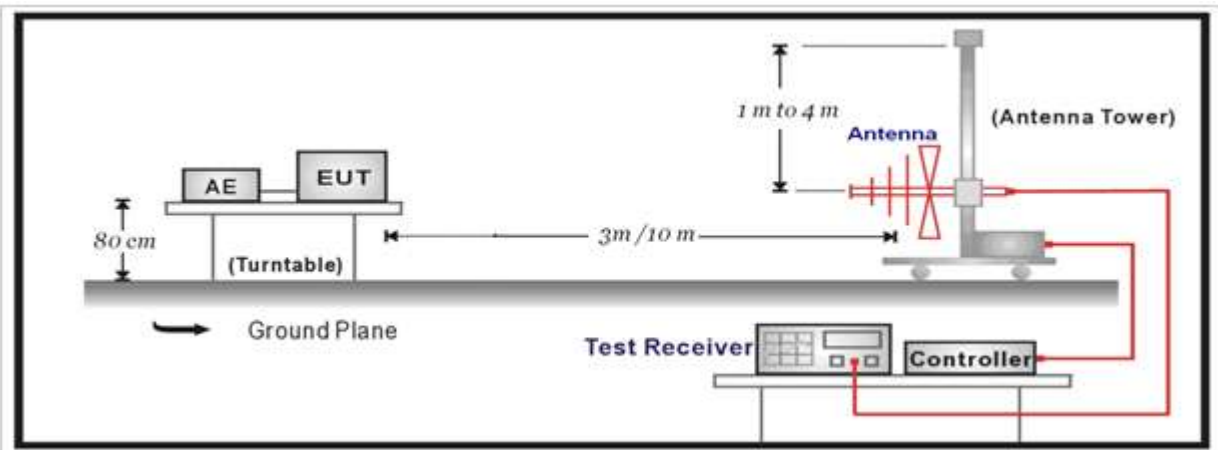
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

## 4.2. Test Setup

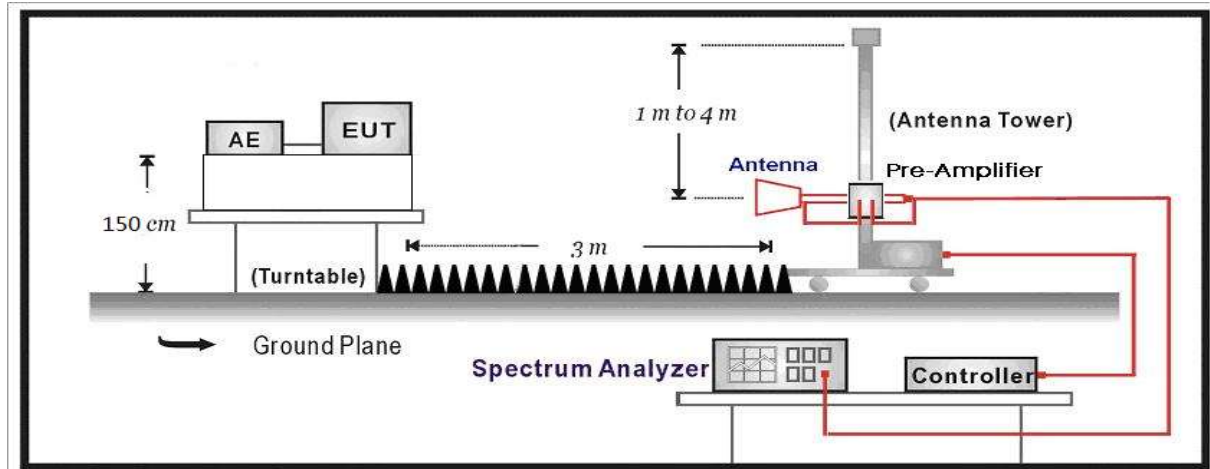
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



### 4.3. Limit

Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
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
8.81425 – 8.81475	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	
13.36 – 13.41			

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength ( $\mu$ V/m)	Field strength (dB $\mu$ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 <sub>(Note 1)</sub>
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 <sub>(Note 1)</sub>
1.705 - 30	30	29.5	30 <sub>(Note 1)</sub>
30 - 88	100	40	3 <sub>(Note 2)</sub>
88 - 216	150	43.5	3 <sub>(Note 2)</sub>
216 - 960	200	46	3 <sub>(Note 2)</sub>
Above 960	500	54	3 <sub>(Note 2)</sub>

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

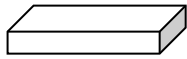
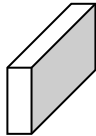
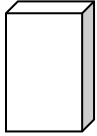

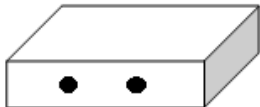

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).



#### 4.4. Test Procedure

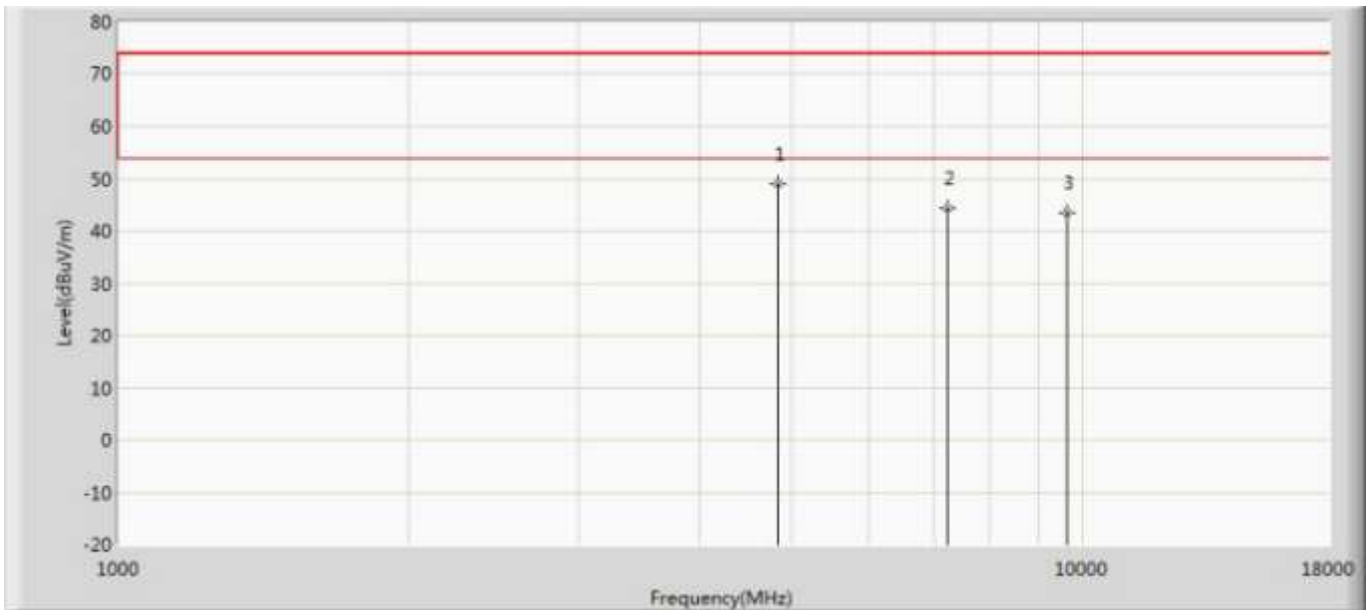
Test Method			
	References Rule	Chapter	Description
<input type="checkbox"/>	ANSI C63.10	11.11	Emissions in non-restricted frequency bands
	<input type="checkbox"/> ANSI C63.10	11.11.2	Reference level measurement
	<input type="checkbox"/> ANSI C63.10	11.11.3	Emission level measurement
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
<input type="checkbox"/>	ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

**4.5. EUT test Axis definition**

Item	Emissions in restricted frequency bands			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~3			
Test method	<input checked="" type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input type="checkbox"/>	Conducted		
	<input type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

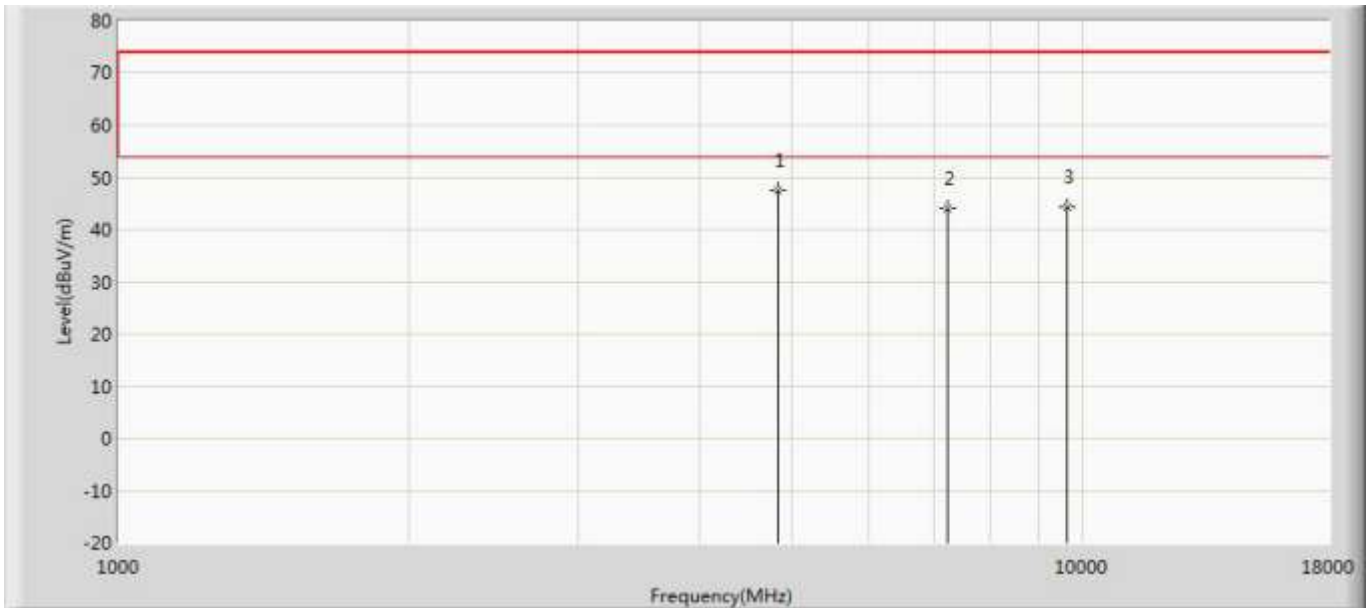
### 4.6. Test Result

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2412MHz by 802.11b	



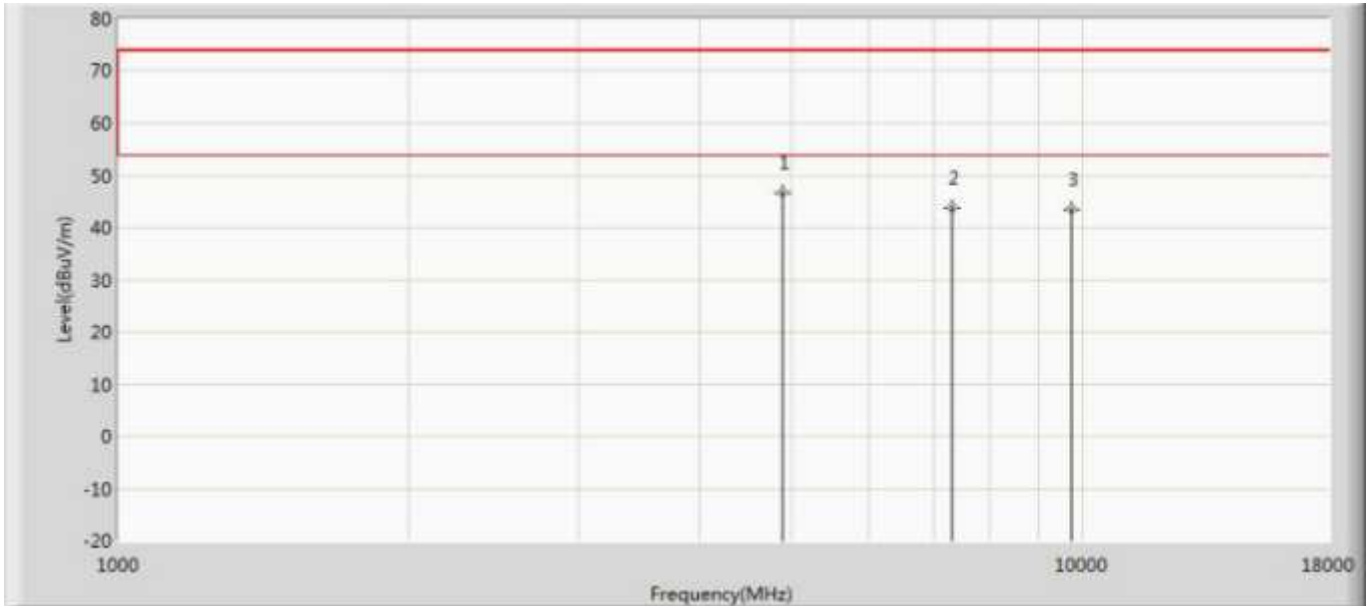
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	49.071	49.576	-24.929	74.000	-0.505	PK
2		7236.000	44.406	40.998	-29.594	74.000	3.407	PK
3		9648.000	43.349	38.353	-30.651	74.000	4.996	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2412MHz by 802.11b	



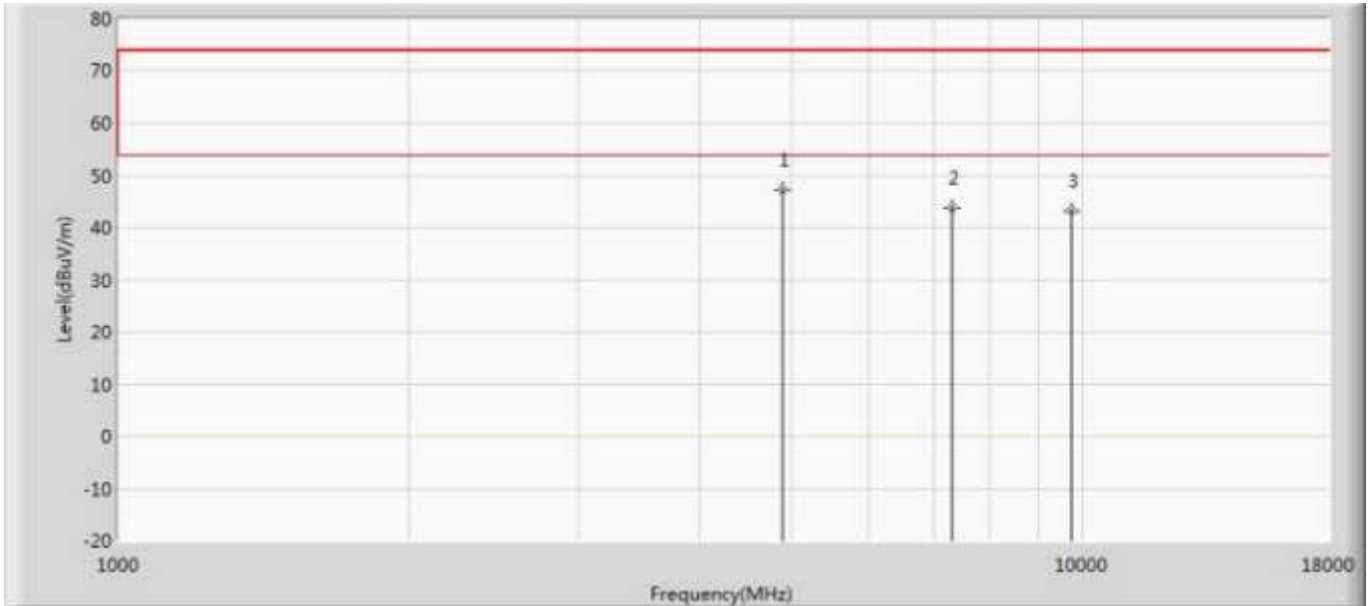
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	47.605	48.110	-26.395	74.000	-0.505	PK
2		7236.000	43.948	40.540	-30.052	74.000	3.407	PK
3		9648.000	44.280	39.284	-29.720	74.000	4.996	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2437MHz by 802.11b	



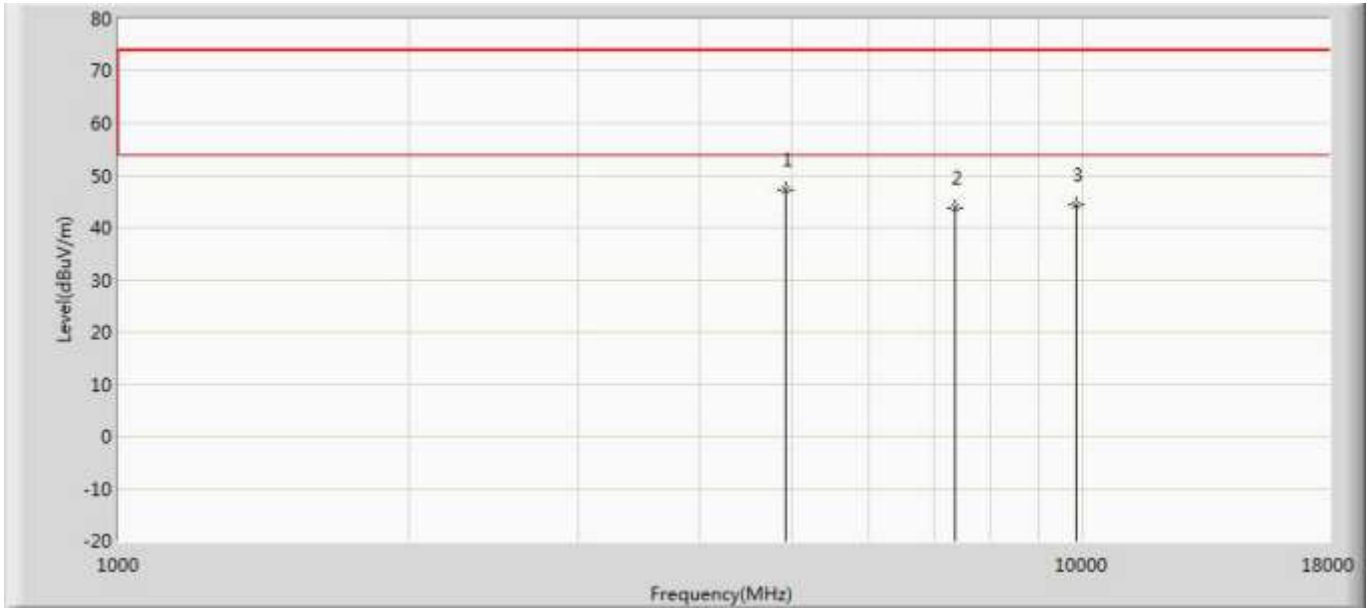
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4876.000	46.700	47.110	-27.300	74.000	-0.410	PK
2		7311.000	43.810	39.938	-30.190	74.000	3.872	PK
3		9748.000	43.475	38.474	-30.525	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2437MHz by 802.11b	



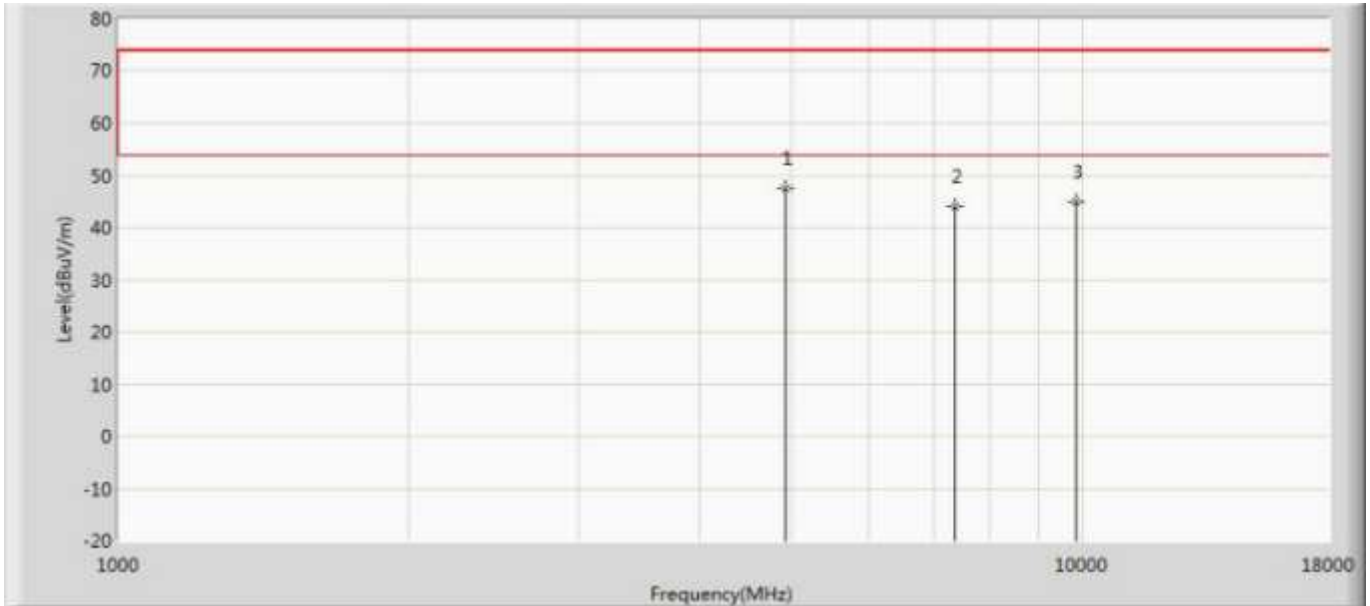
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4876.000	47.366	47.776	-26.634	74.000	-0.410	PK
2		7311.000	43.717	39.845	-30.283	74.000	3.872	PK
3		9748.000	43.154	38.153	-30.846	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4927.000	47.368	47.241	-26.632	74.000	0.127	PK
2		7386.000	43.694	40.520	-30.306	74.000	3.174	PK
3		9848.000	44.394	38.405	-29.606	74.000	5.989	PK

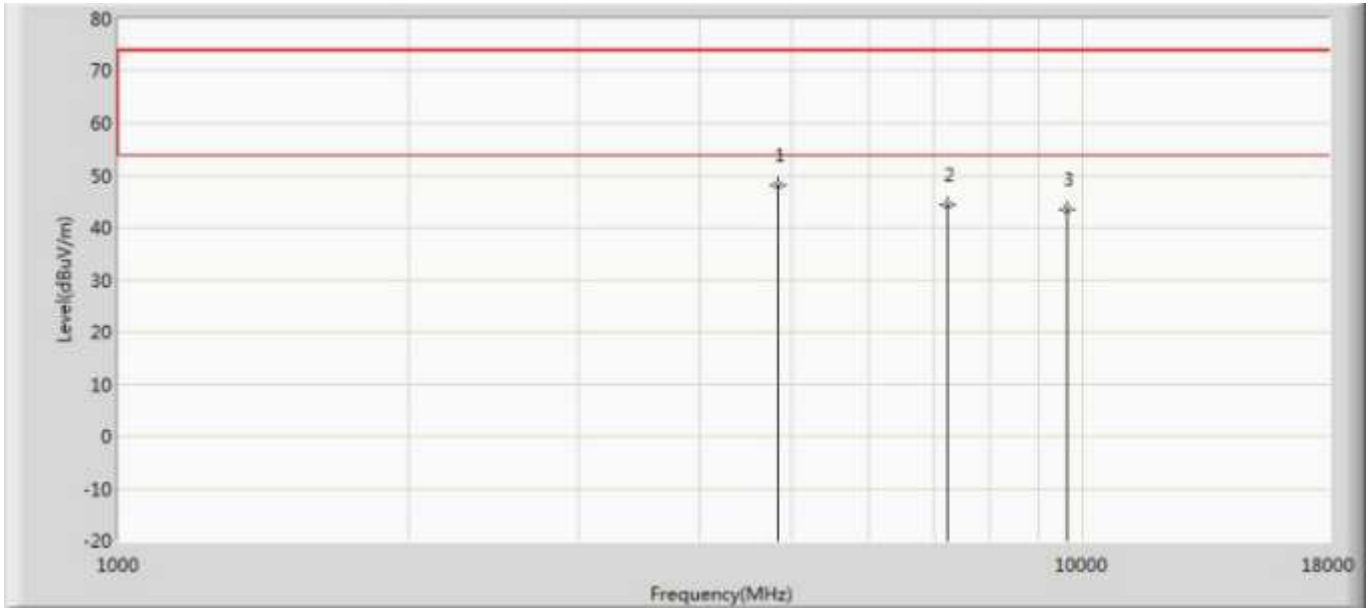
Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 1:Transmit at 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4927.000	47.622	47.495	-26.378	74.000	0.127	PK
2		7386.000	44.084	40.910	-29.916	74.000	3.174	PK
3		9848.000	44.862	38.873	-29.138	74.000	5.989	PK

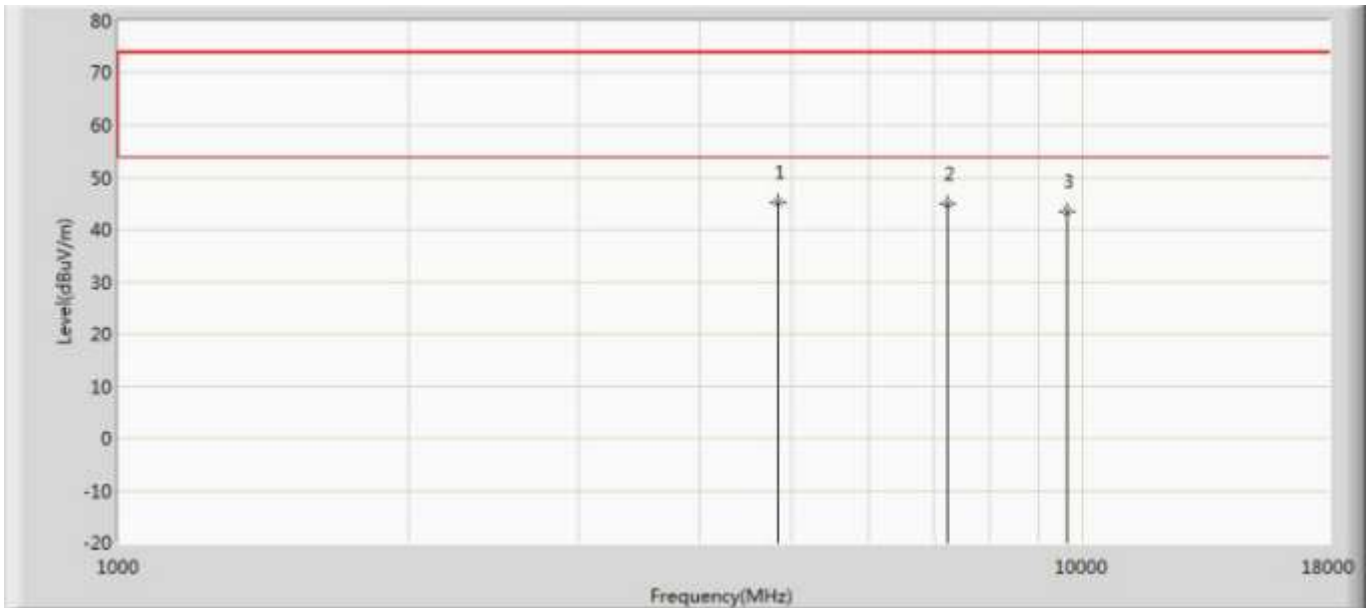


Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2412MHz by 802.11g	



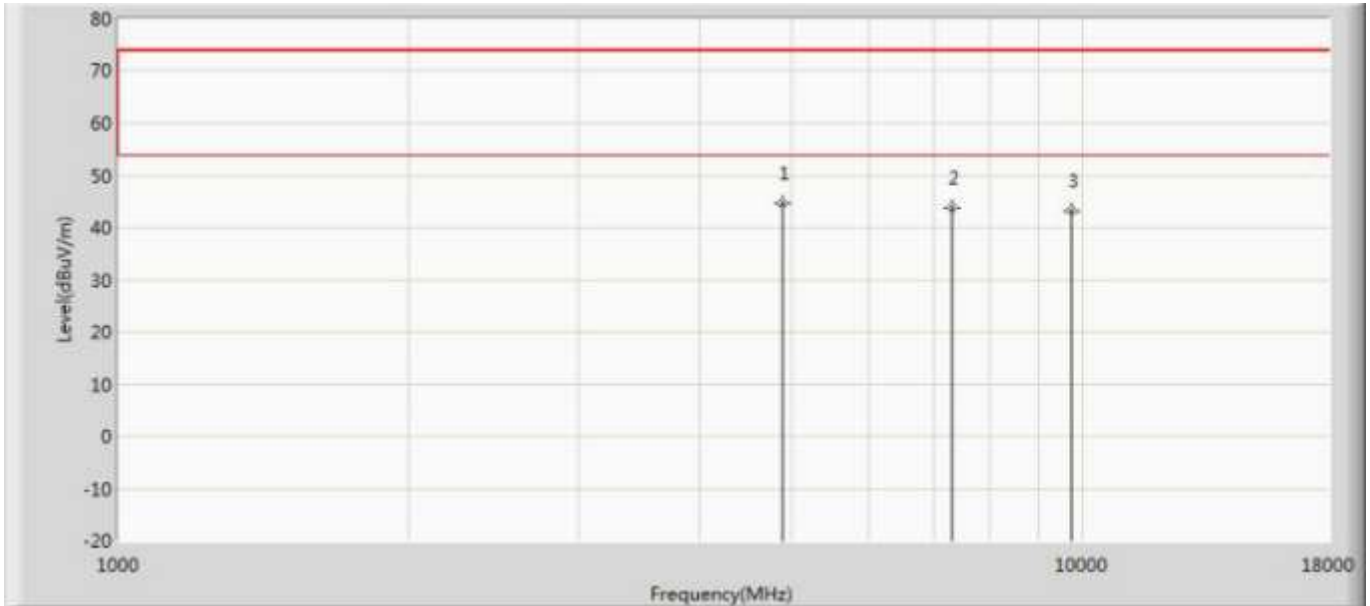
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	48.238	48.743	-25.762	74.000	-0.505	PK
2		7236.000	44.226	40.818	-29.774	74.000	3.407	PK
3		9648.000	43.414	38.418	-30.586	74.000	4.996	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2412MHz by 802.11g	



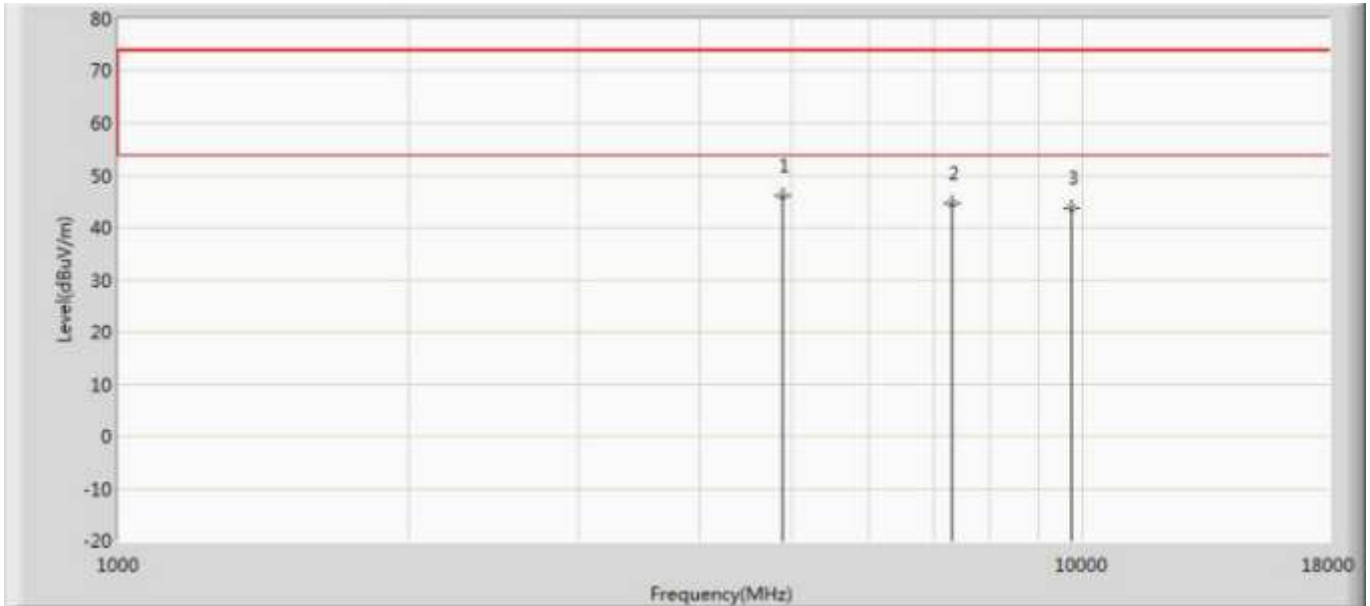
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	45.269	45.774	-28.731	74.000	-0.505	PK
2		7236.000	44.891	41.483	-29.109	74.000	3.407	PK
3		9648.000	43.535	38.539	-30.465	74.000	4.996	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2437MHz by 802.11g	



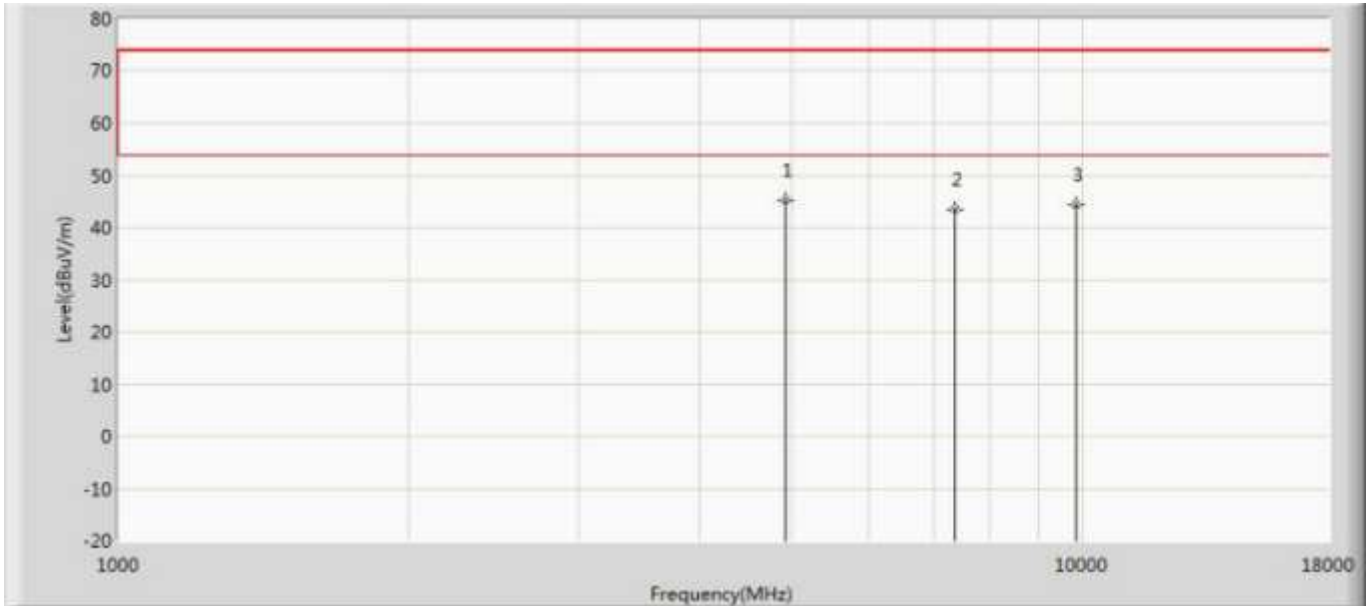
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4876.000	44.612	45.022	-29.388	74.000	-0.410	PK
2		7311.000	43.907	40.035	-30.093	74.000	3.872	PK
3		9748.000	43.224	38.223	-30.776	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2437MHz by 802.11g	



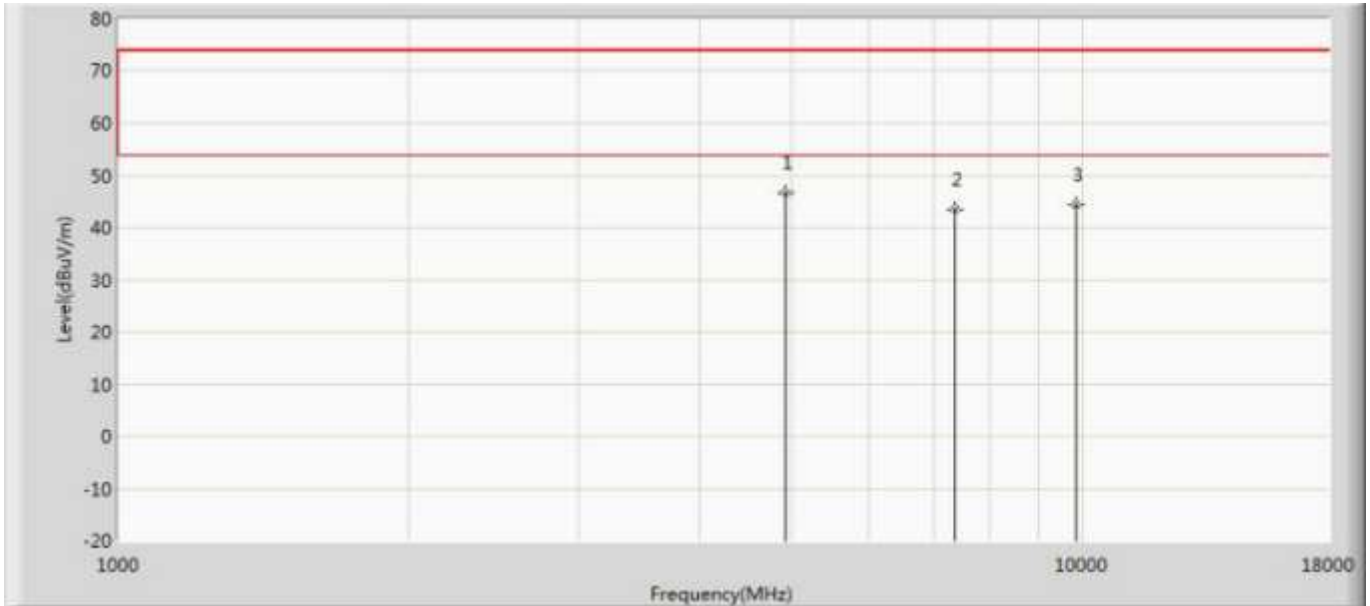
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4876.000	46.127	46.537	-27.873	74.000	-0.410	PK
2		7311.000	44.520	40.648	-29.480	74.000	3.872	PK
3		9748.000	43.889	38.888	-30.111	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2462MHz by 802.11g	



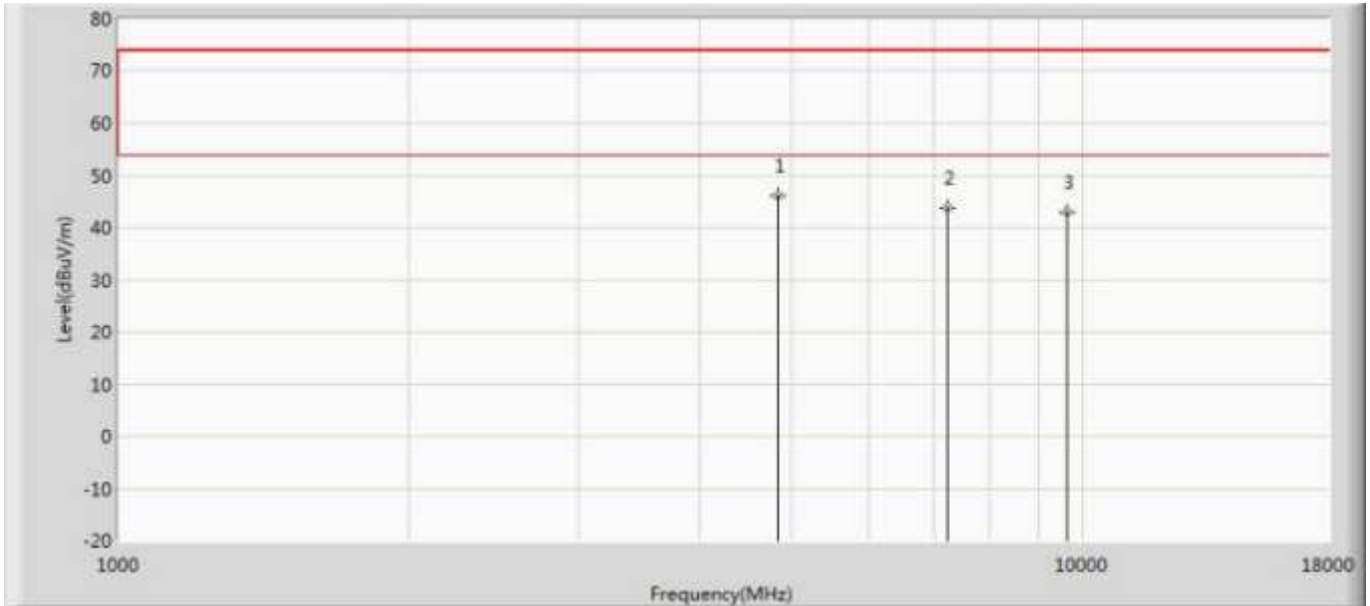
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4927.000	45.356	45.229	-28.644	74.000	0.127	PK
2		7386.000	43.526	40.352	-30.474	74.000	3.174	PK
3		9848.000	44.334	38.345	-29.666	74.000	5.989	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 2:Transmit at 2462MHz by 802.11g	



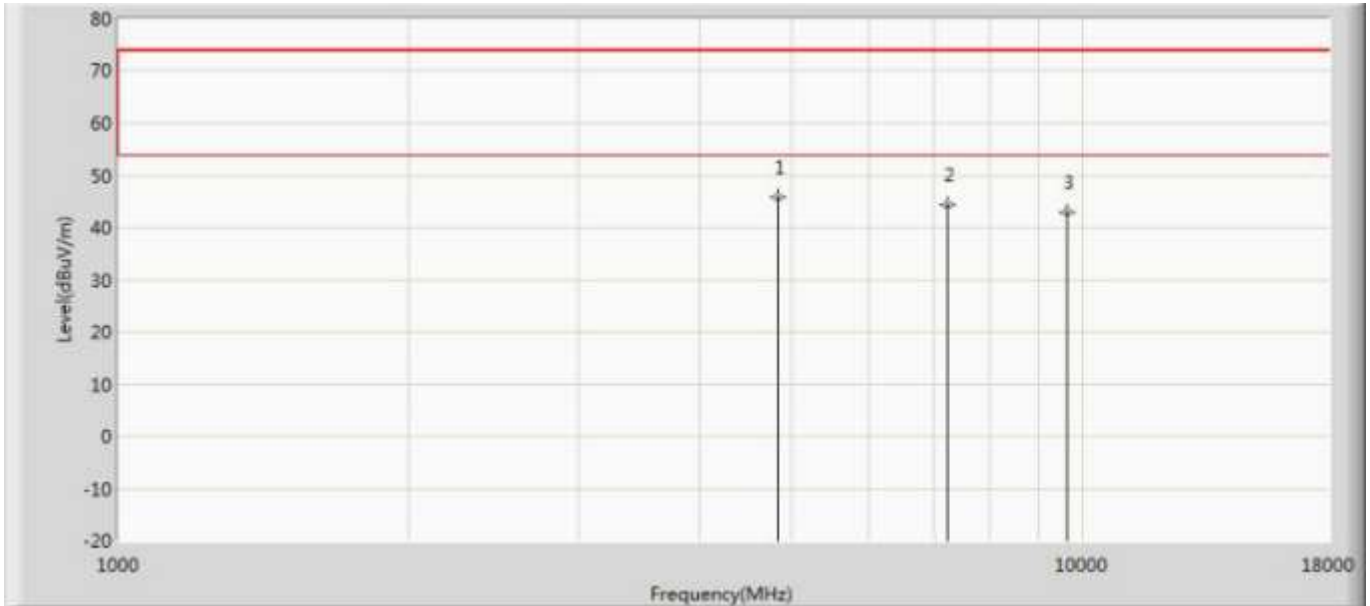
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4927.000	46.680	46.553	-27.320	74.000	0.127	PK
2		7386.000	43.557	40.383	-30.443	74.000	3.174	PK
3		9848.000	44.392	38.403	-29.608	74.000	5.989	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	46.066	46.571	-27.934	74.000	-0.505	PK
2		7236.000	43.661	40.253	-30.339	74.000	3.407	PK
3		9648.000	43.018	38.022	-30.982	74.000	4.996	PK

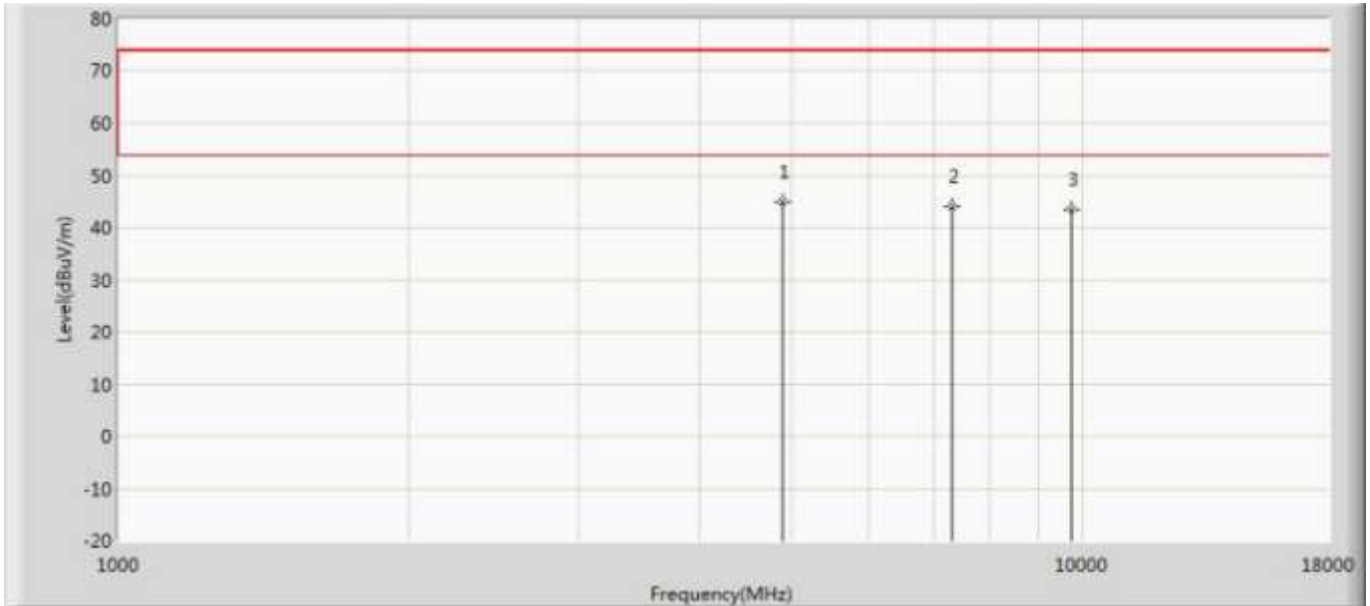
Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4825.000	45.711	46.216	-28.289	74.000	-0.505	PK
2		7236.000	44.363	40.955	-29.637	74.000	3.407	PK
3		9648.000	42.868	37.872	-31.132	74.000	4.996	PK

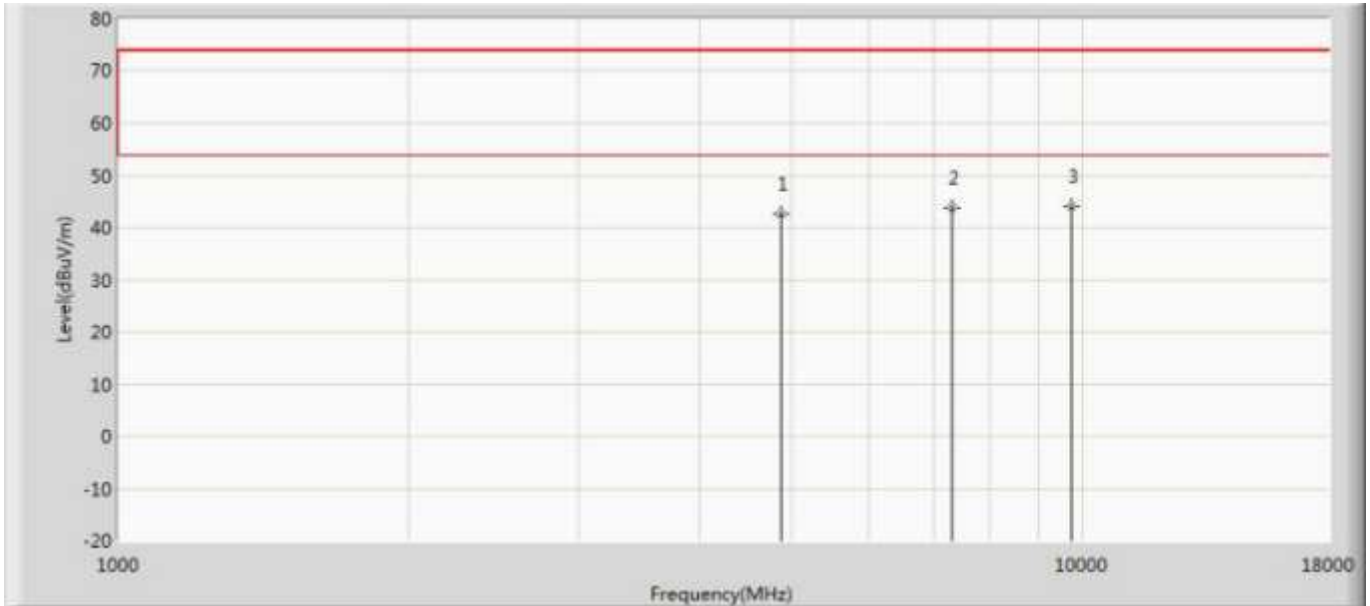


Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2437MHz by 802.11n20	



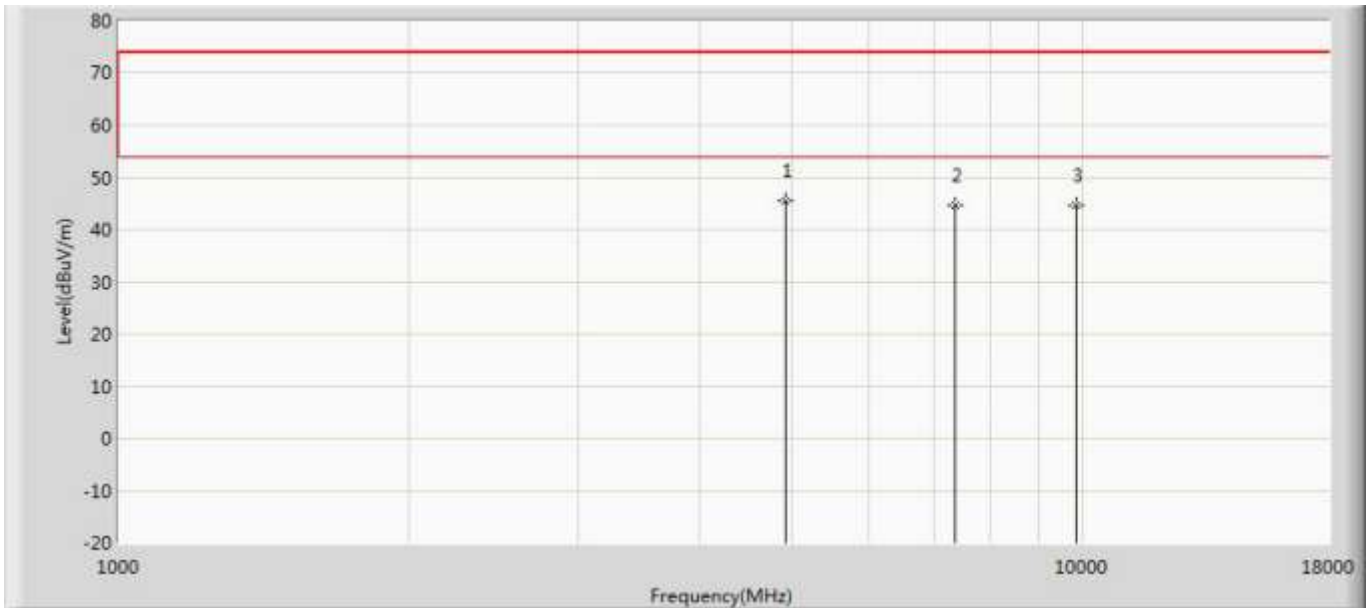
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4876.000	44.798	45.208	-29.202	74.000	-0.410	PK
2		7311.000	44.017	40.145	-29.983	74.000	3.872	PK
3		9748.000	43.465	38.464	-30.535	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2437MHz by 802.11n20	



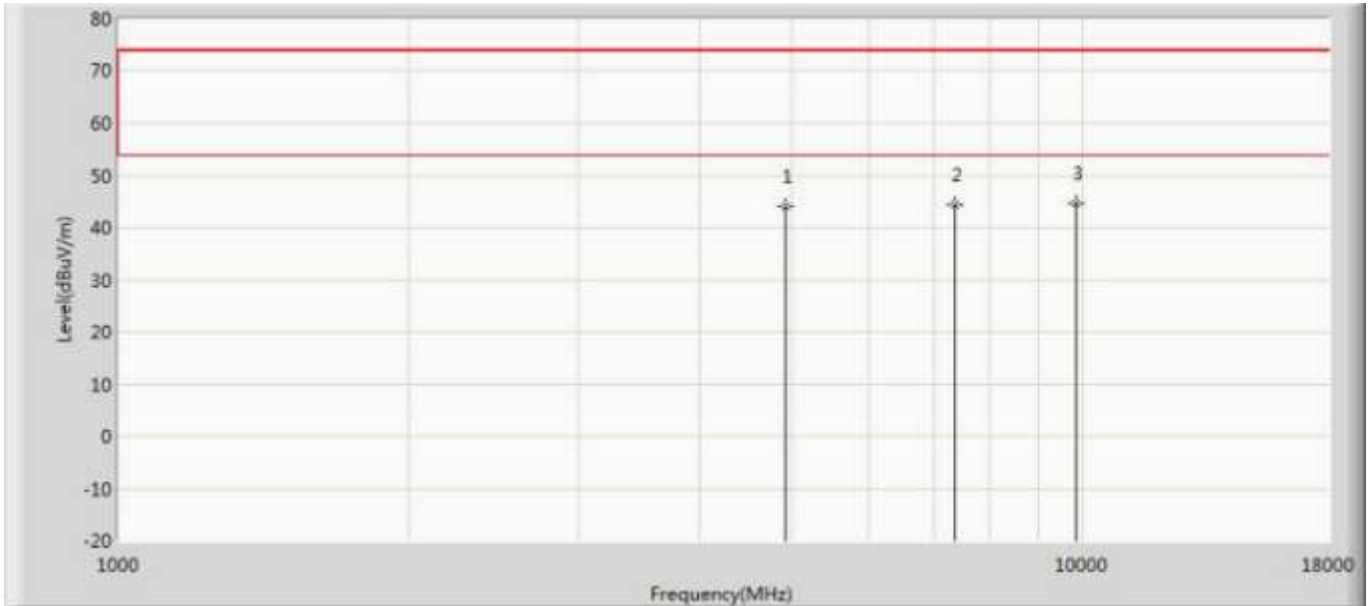
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	42.696	43.138	-31.304	74.000	-0.442	PK
2		7311.000	43.732	39.860	-30.268	74.000	3.872	PK
3	*	9748.000	44.001	39.000	-29.999	74.000	5.002	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4927.000	45.365	45.238	-28.635	74.000	0.127	PK
2		7386.000	44.578	41.404	-29.422	74.000	3.174	PK
3		9848.000	44.578	38.589	-29.422	74.000	5.989	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power:
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



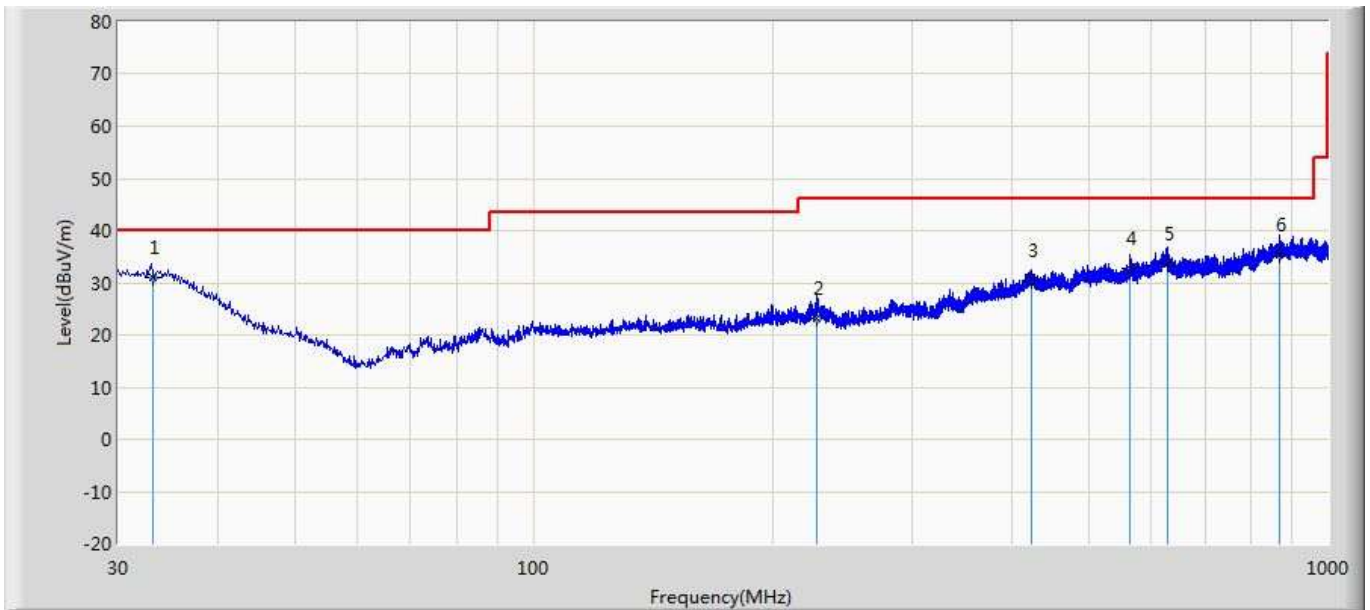
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4927.000	44.173	44.046	-29.827	74.000	0.127	PK
2		7386.000	44.284	41.110	-29.716	74.000	3.174	PK
3	*	9848.000	44.691	38.702	-29.309	74.000	5.989	PK

**Radiated Emission above 18GHz:**

Note : The peak value of Radiated Emission above 18GHz is negligible, so this test item is not shown in the report.

### The worst case of Radiated Emission below 1GHz:

Engineer: Nino	
Site: AC2	Time: 2018/05/10
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: Bluetooth Headset	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2402MHz by DH5	

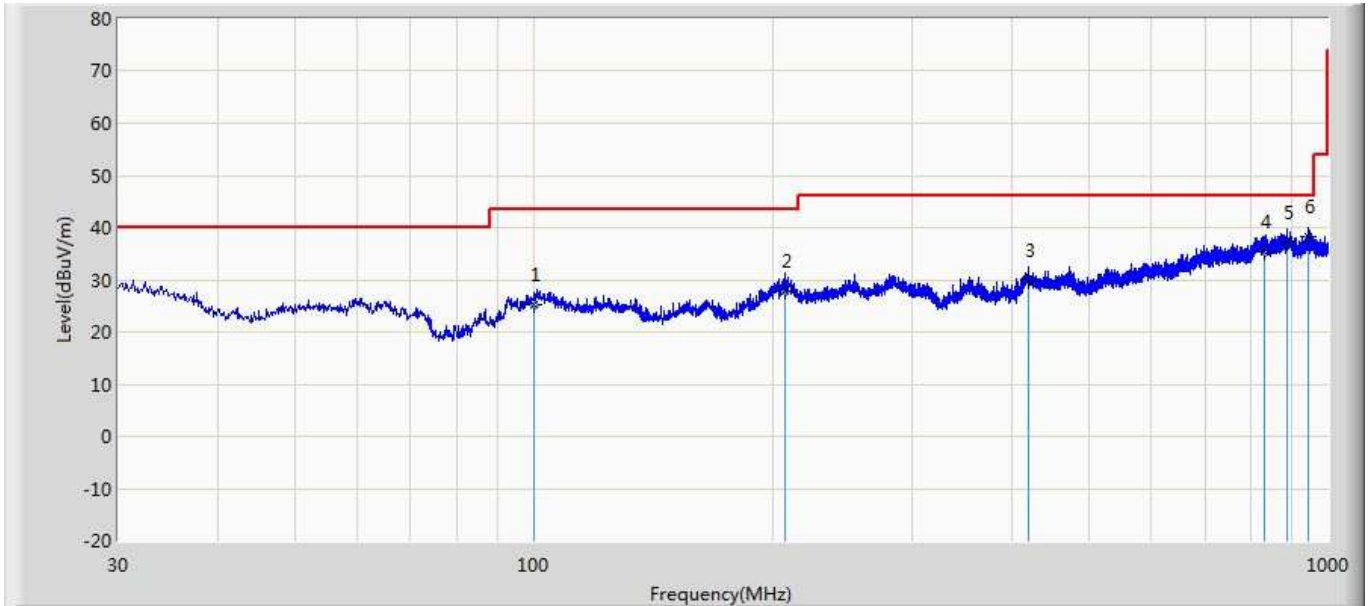


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	33.214	30.966	3.600	-9.034	40.000	20.713	6.653	0.000	100	141	QP
2		227.358	23.095	4.900	-22.905	46.000	10.729	7.466	0.000	100	228	QP
3		423.325	30.360	3.100	-15.640	46.000	19.289	7.970	0.000	100	48	QP
4		562.352	32.773	4.100	-13.227	46.000	20.342	8.331	0.000	100	114	QP
5		628.258	33.672	3.200	-12.328	46.000	21.895	8.577	0.000	100	185	QP
6		870.256	35.320	2.300	-10.680	46.000	23.841	9.178	0.000	100	214	QP

Note:

1. " \* ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Nino	
Site: AC2	Time: 2018/05/10
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: Bluetooth Headset	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		100.258	25.220	3.200	-18.280	43.500	15.147	6.873	0.000	100	149	QP
2		207.541	27.693	4.200	-15.807	43.500	16.118	7.375	0.000	100	211	QP
3		419.584	29.853	3.100	-16.147	46.000	18.786	7.967	0.000	100	18	QP
4		830.254	35.437	2.600	-10.563	46.000	23.755	9.082	0.000	100	141	QP
5		889.325	37.001	3.600	-8.999	46.000	24.177	9.224	0.000	100	174	QP
6	*	943.251	38.226	4.200	-7.774	46.000	24.690	9.336	0.000	100	188	QP

Note:

1. " \* ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

## 5. Emissions in non-restricted frequency bands

### 5.1. Test Equipment

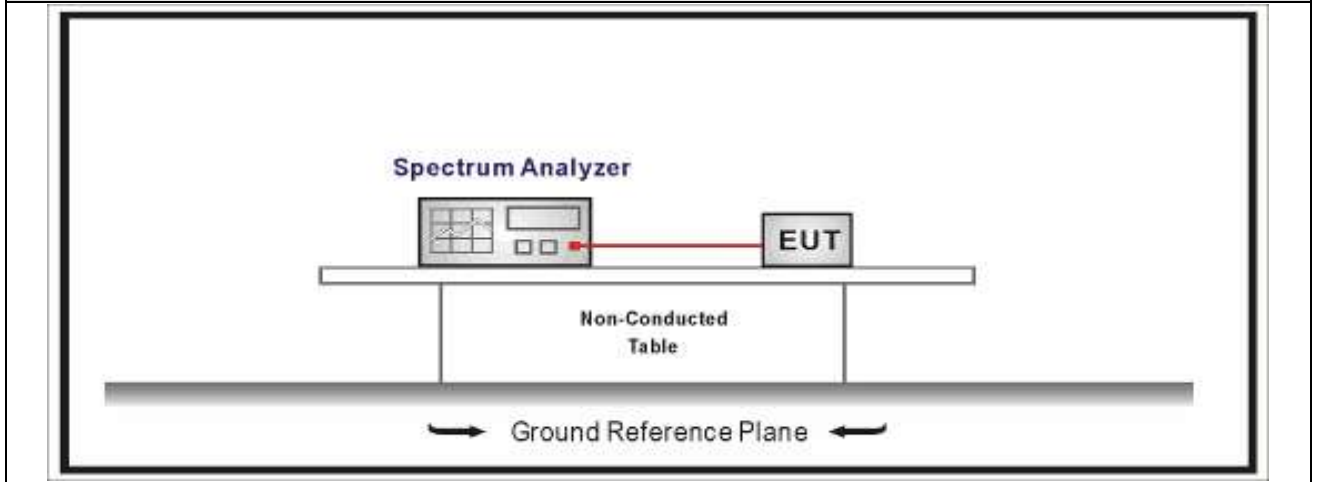
Emissions in non-restricted frequency bands / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.



## 5.2. Test Setup

### Emissions in non-restricted frequency bands



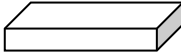
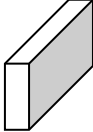
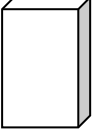

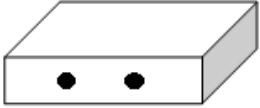

### 5.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)
<p>Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).</p> <p>Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).</p>	

## 5.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.11	Emissions in non-restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.11.2	Reference level measurement
	<input checked="" type="checkbox"/> ANSI C63.10	11.11.3	Emission level measurement
<input type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
<input type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<input type="checkbox"/> ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

**5.5. EUT test Axis definition**

Item	Emissions in non-restricted frequency bands			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1 ~ 3			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input checked="" type="checkbox"/>	Conducted		
	<input type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

### 5.6. Test Result

Product Name	: IP surveillance camera (Wi-Fi & mobile)	Power	: AC 120V/60Hz
Test Mode	: Mode1~3	Test Site	: TR8
Test Date	: 2018.2.28	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Maximum In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2412	-4.023	2400	-51.683	47.66	>20	Pass
1	11	2462	1.596	2500	-70.767	72.363	>20	Pass
2	01	2412	-2.560	2400	-41.985	39.425	>20	Pass
2	11	2462	-2.549	2500	-69.384	66.835	>20	Pass
3	01	2412	-3.421	2400	-43.402	39.981	>20	Pass
3	11	2462	-3.219	2500	-70.581	67.362	>20	Pass

Note: The worst case of emissions in non-restricted frequency bands as below:

Mode 2 CH01(2412MHz)

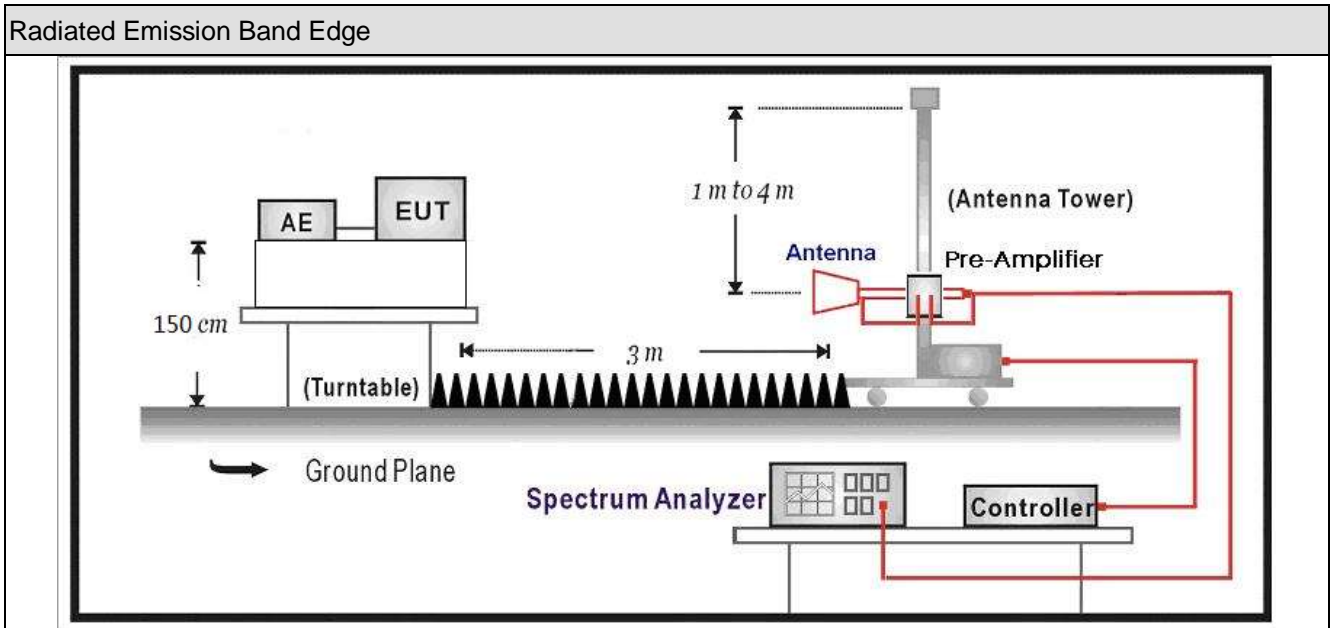


## 6. Radiated Emission Band Edge

### 6.1. Test Equipment

Radiated Emission Band Edge / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2018.01.04	2019.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2018.05.06	2019.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2018.05.06	2019.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2017.01.22	2019.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.11.25	2018.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2018.03.02	2019.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2018.06.10	2019.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.04	2019.01.03
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

## 6.2. Test Setup



## 6.3. Limit

Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB $\mu$ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

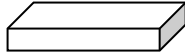
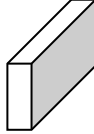
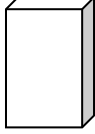



Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

## 6.4. Test Procedure

Radiated Emission Band Edge			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.10	Band-edge testing
	<input checked="" type="checkbox"/> ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	<input type="checkbox"/> ANSI C63.10	6.10.6	Marker-delta method
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
<input type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input checked="" type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<input type="checkbox"/> ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

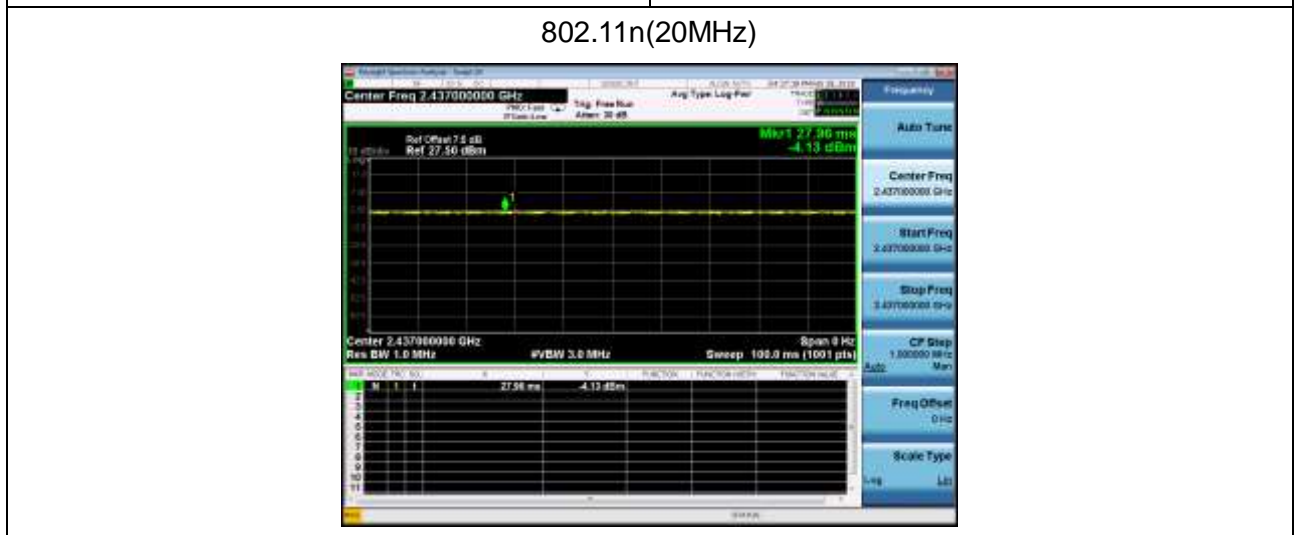


**6.5. EUT test definition**

Item	Radiated Emission Band Edge			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~3			
Test method	<input checked="" type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input type="checkbox"/>	Conducted		
	<input type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

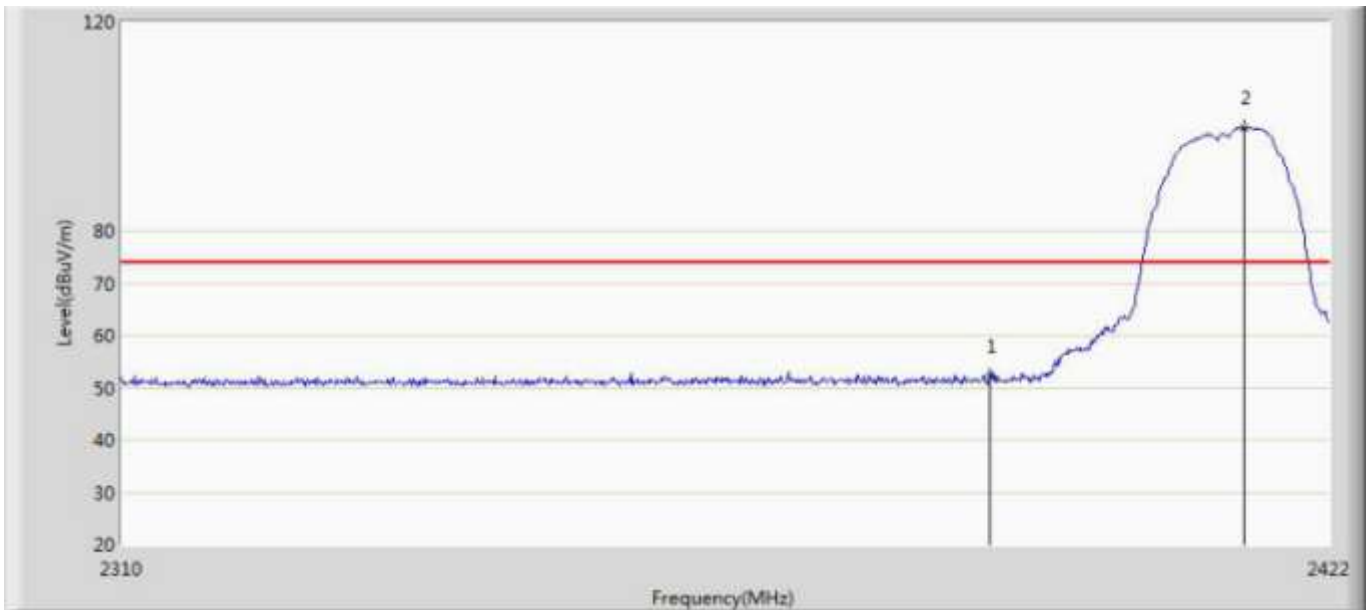
### 6.6. Duty Cycle

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11b	-	-	10Hz	-	100%
802.11g	-	-	10Hz	-	100%
802.11n(20MHz)	-	-	10Hz	-	100%



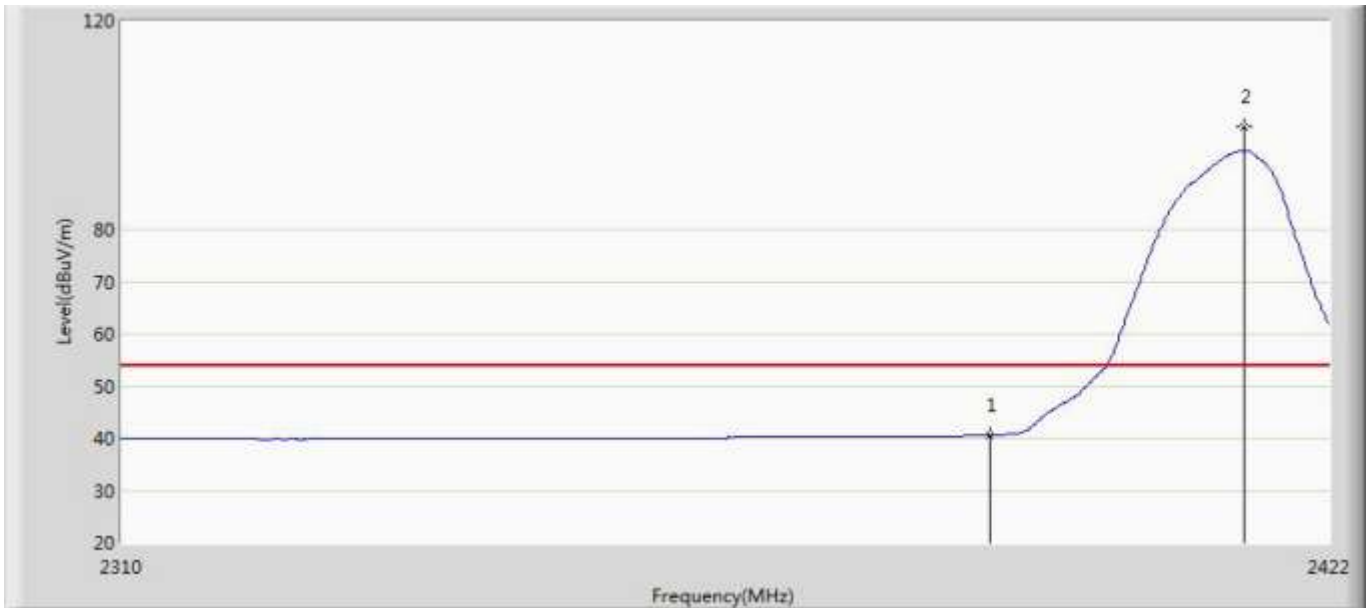
### 6.7. Test Result

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 18:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



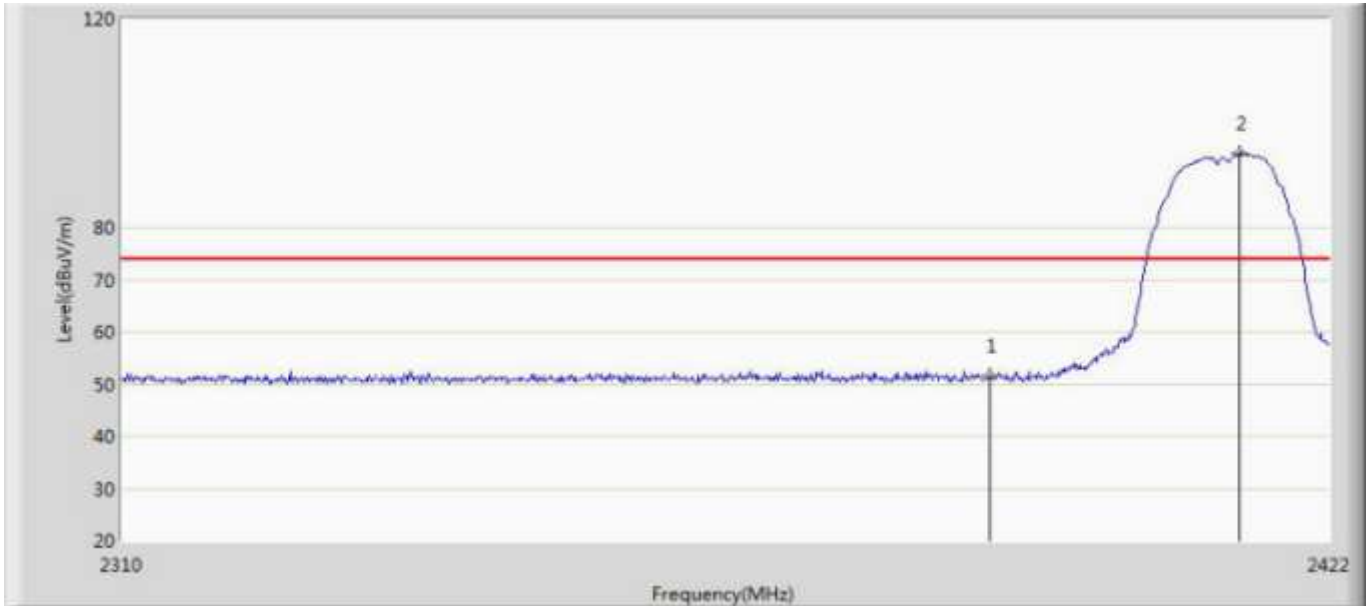
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.162	15.832	-21.838	74.000	36.329	PK
2	*	2413.936	99.694	63.320	25.694	74.000	36.374	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.589	4.259	-13.411	54.000	36.329	AV
2	*	2413.936	99.694	63.320	45.694	54.000	36.374	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



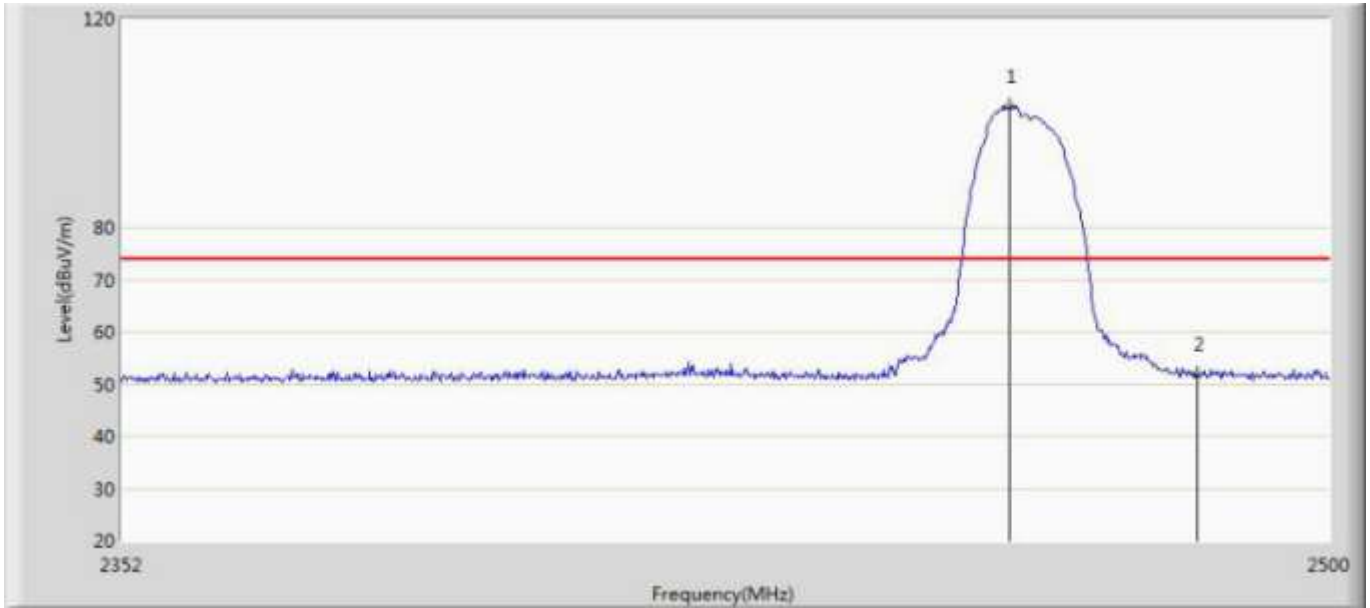
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.484	15.154	-22.516	74.000	36.329	PK
2	*	2413.488	94.097	57.730	20.097	74.000	36.366	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



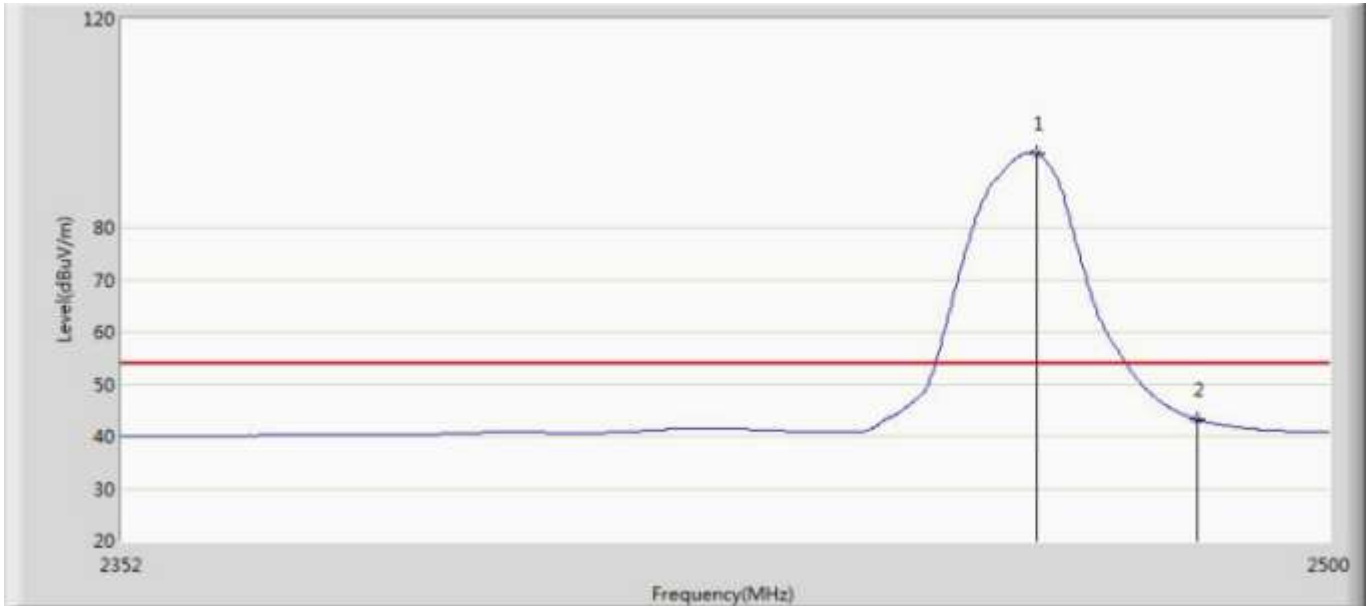
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.378	4.048	-13.622	54.000	36.329	AV
2	*	2413.488	94.097	57.730	40.097	54.000	36.366	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.040	103.111	66.521	29.111	74.000	36.591	PK
2		2483.500	51.796	15.329	-22.204	74.000	36.467	PK

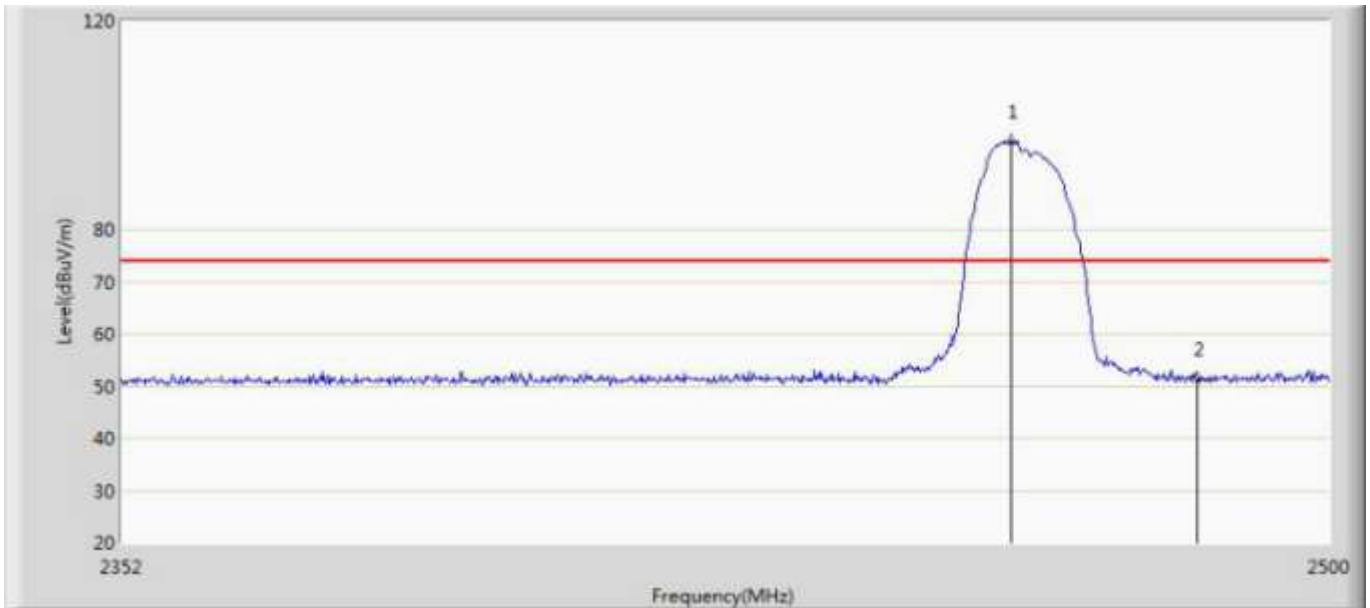
Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.444	94.285	57.675	40.285	54.000	36.610	AV
2		2483.500	43.151	6.684	-10.849	54.000	36.467	AV

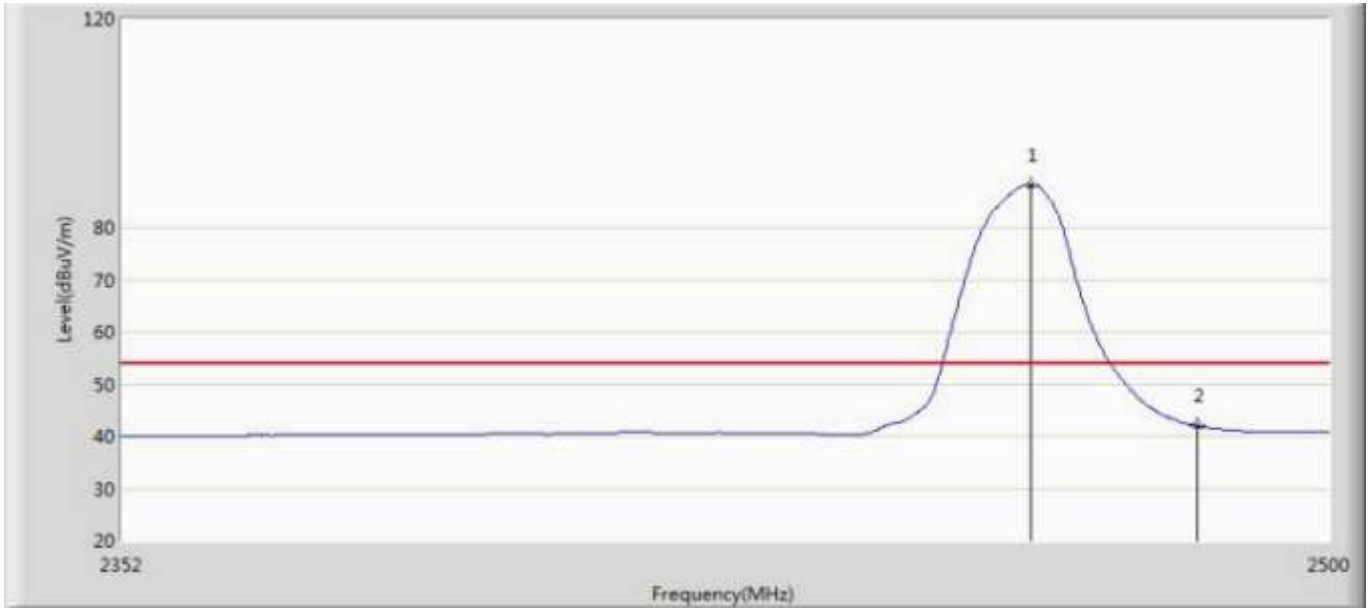


Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11b	



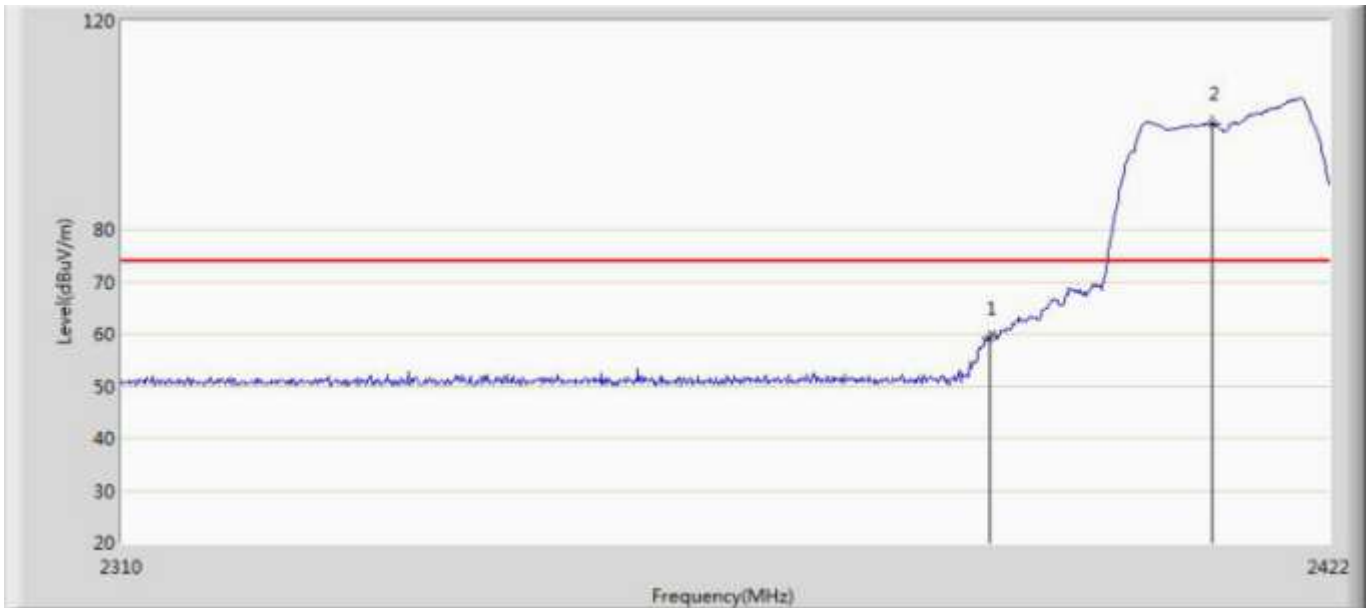
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.188	96.838	60.245	22.838	74.000	36.593	PK
2		2483.500	51.281	14.814	-22.719	74.000	36.467	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11b	



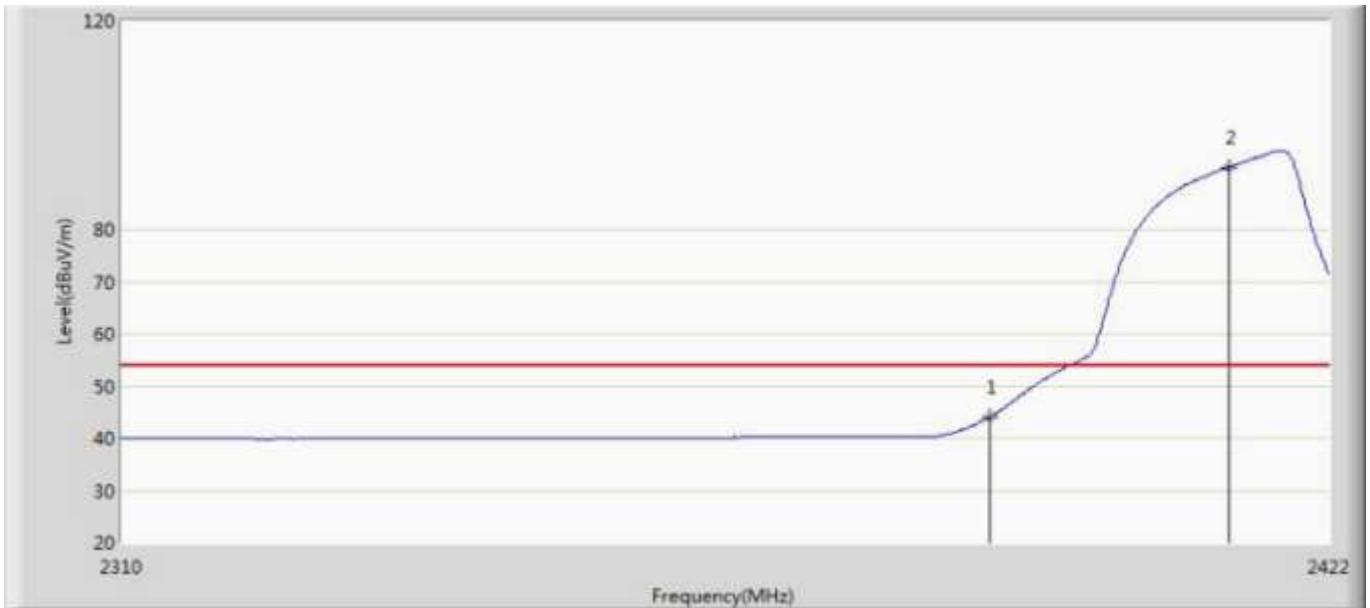
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.704	88.234	51.614	34.234	54.000	36.620	AV
2		2483.500	41.939	5.472	-12.061	54.000	36.467	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



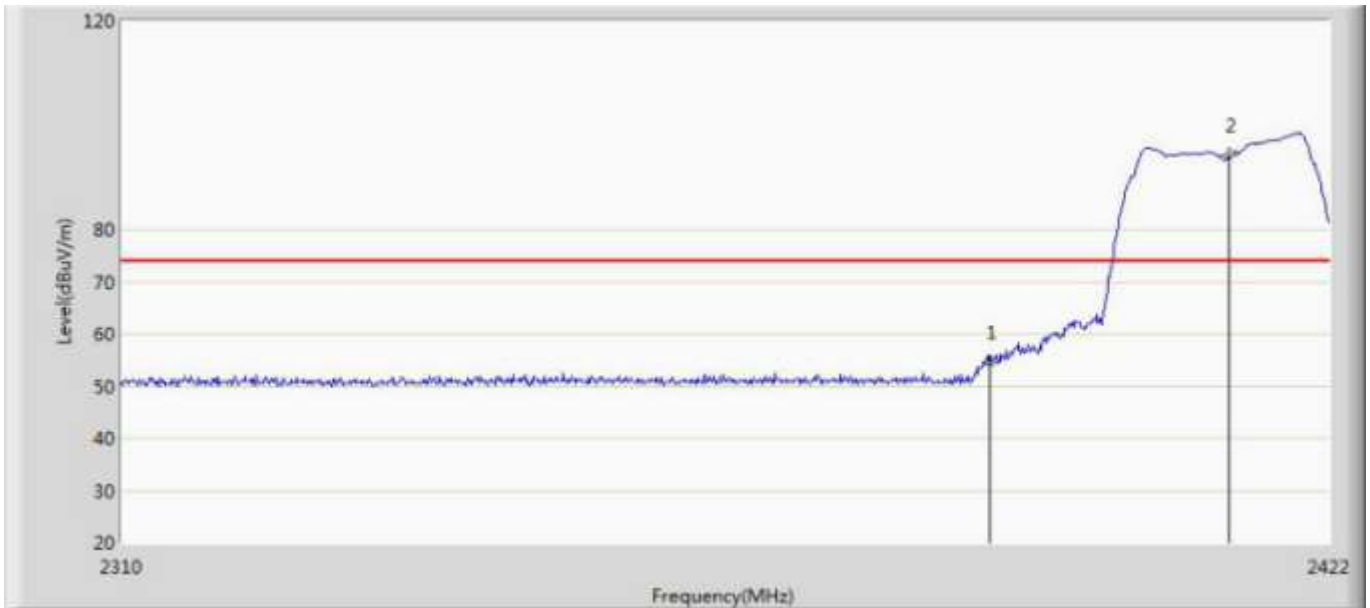
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	59.256	22.926	-14.744	74.000	36.329	PK
2	*	2411.024	100.303	63.976	26.303	74.000	36.327	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



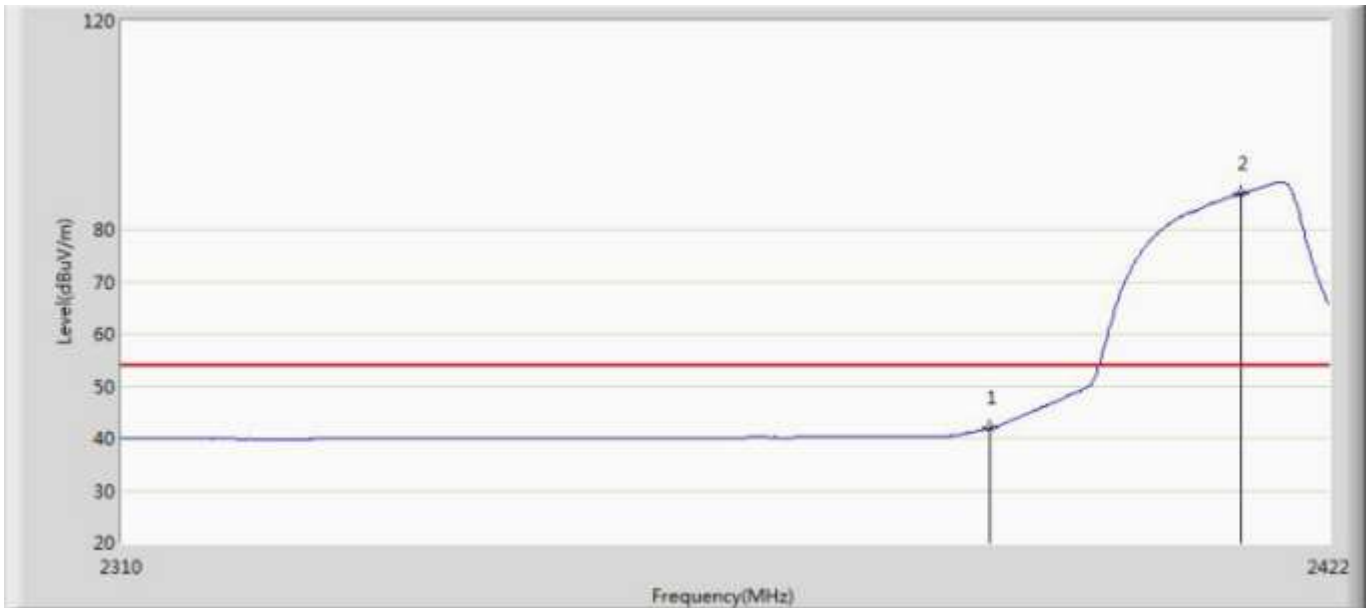
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	44.095	7.765	-9.905	54.000	36.329	AV
2	*	2412.480	91.952	55.601	37.952	54.000	36.351	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



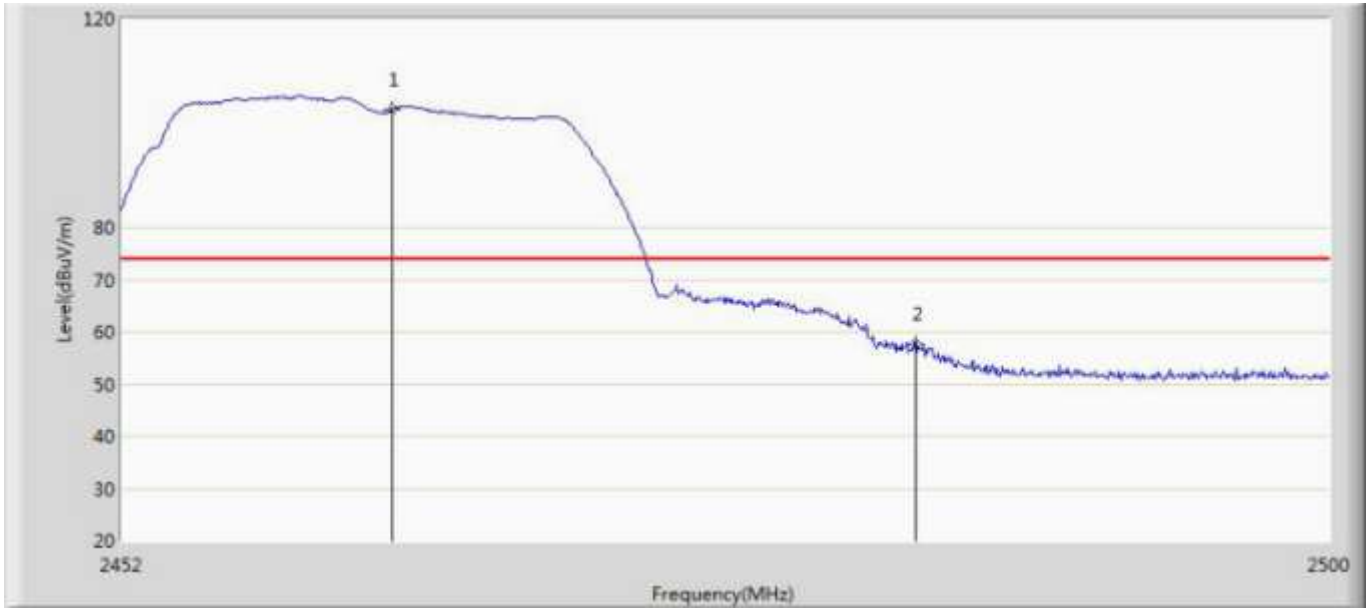
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.628	18.298	-19.372	74.000	36.329	PK
2	*	2412.592	94.328	57.976	20.328	74.000	36.352	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



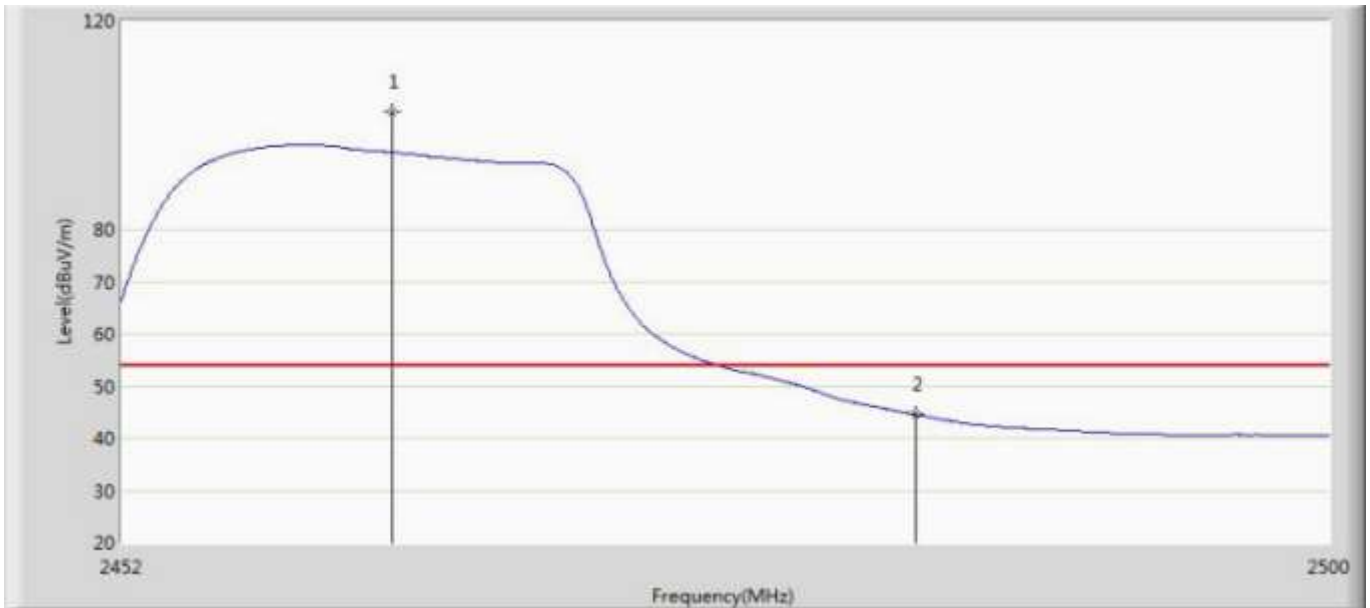
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.920	5.590	-12.080	54.000	36.329	AV
2	*	2413.712	86.928	50.558	32.928	54.000	36.370	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.704	102.647	66.027	28.647	74.000	36.620	PK
2		2483.500	57.815	21.348	-16.185	74.000	36.467	PK

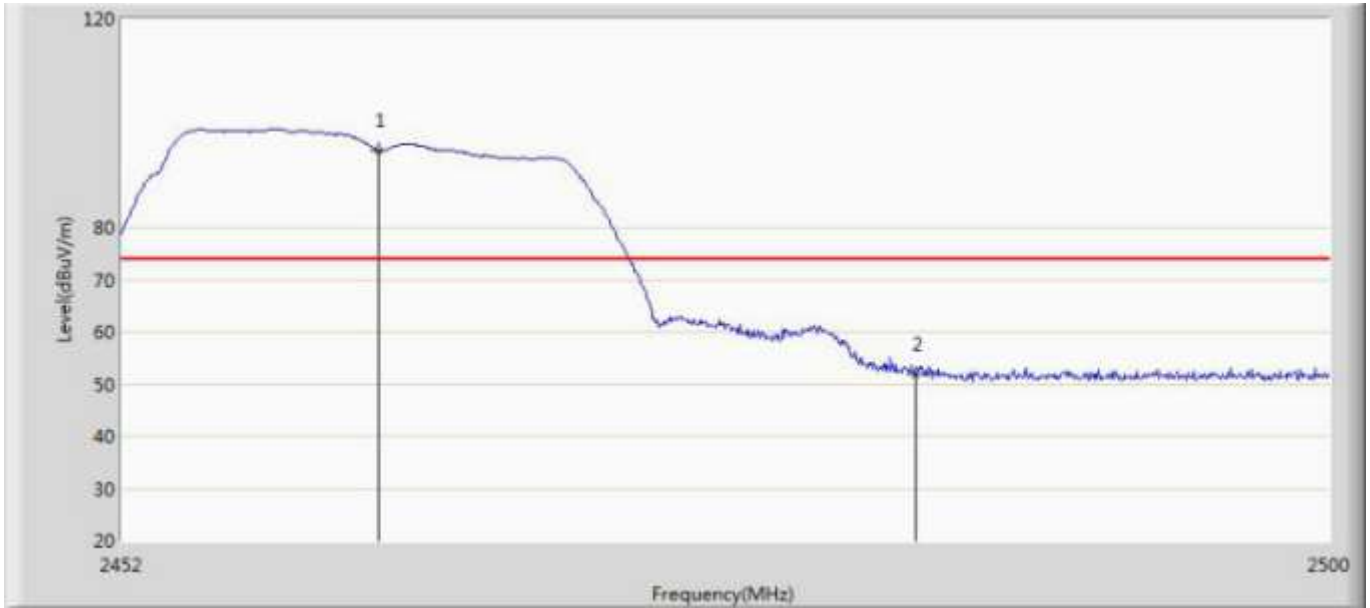
Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.704	102.647	66.027	48.647	54.000	36.620	AV
2		2483.500	44.506	8.039	-9.494	54.000	36.467	AV

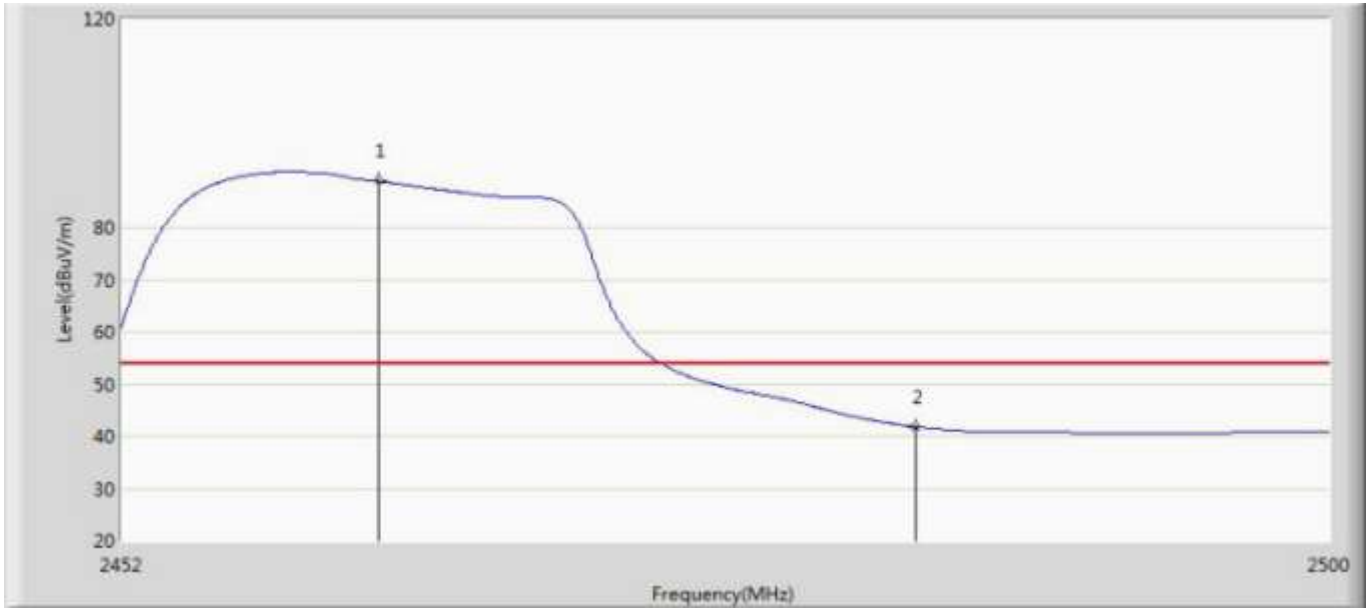


Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



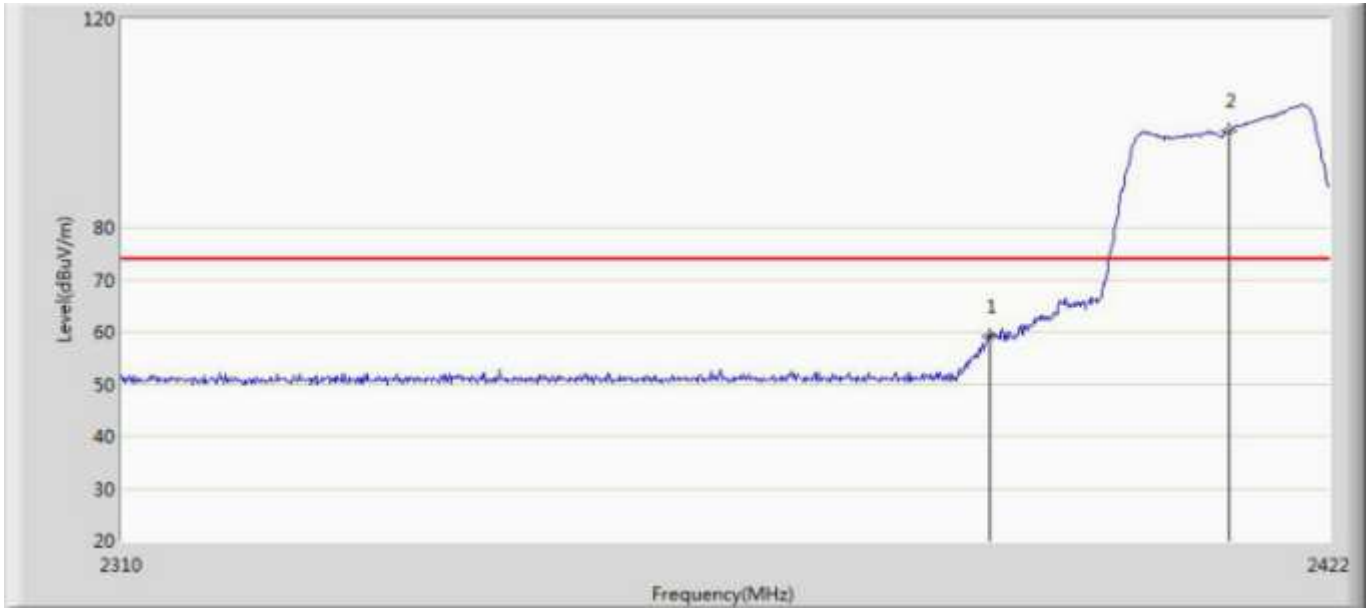
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.128	94.769	58.142	20.769	74.000	36.627	PK
2		2483.500	51.741	15.274	-22.259	74.000	36.467	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



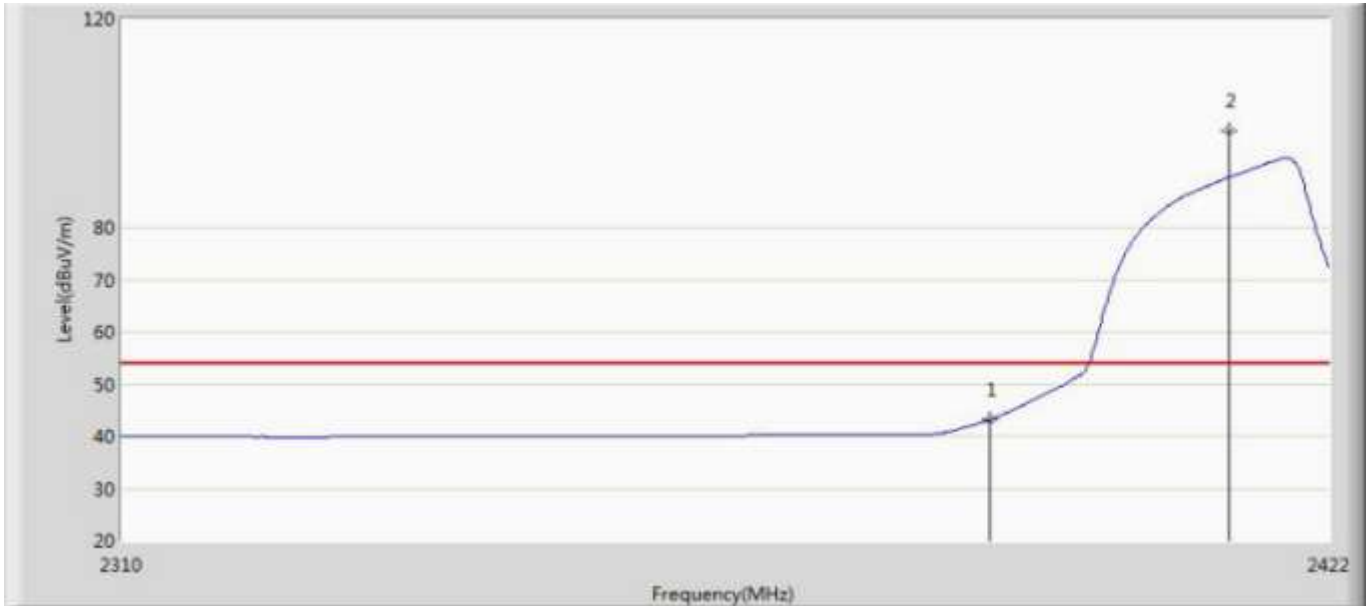
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.128	88.862	52.235	34.862	54.000	36.627	AV
2		2483.500	41.787	5.320	-12.213	54.000	36.467	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



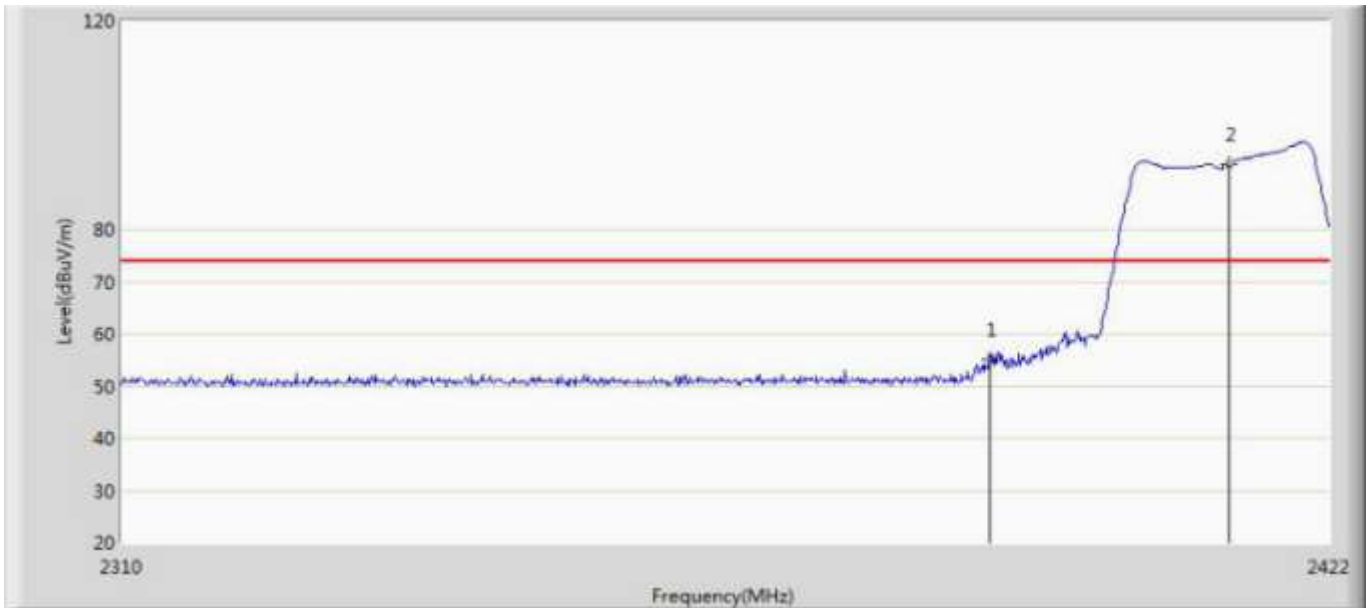
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	59.049	22.719	-14.951	74.000	36.329	PK
2	*	2412.592	98.508	62.156	24.508	74.000	36.352	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



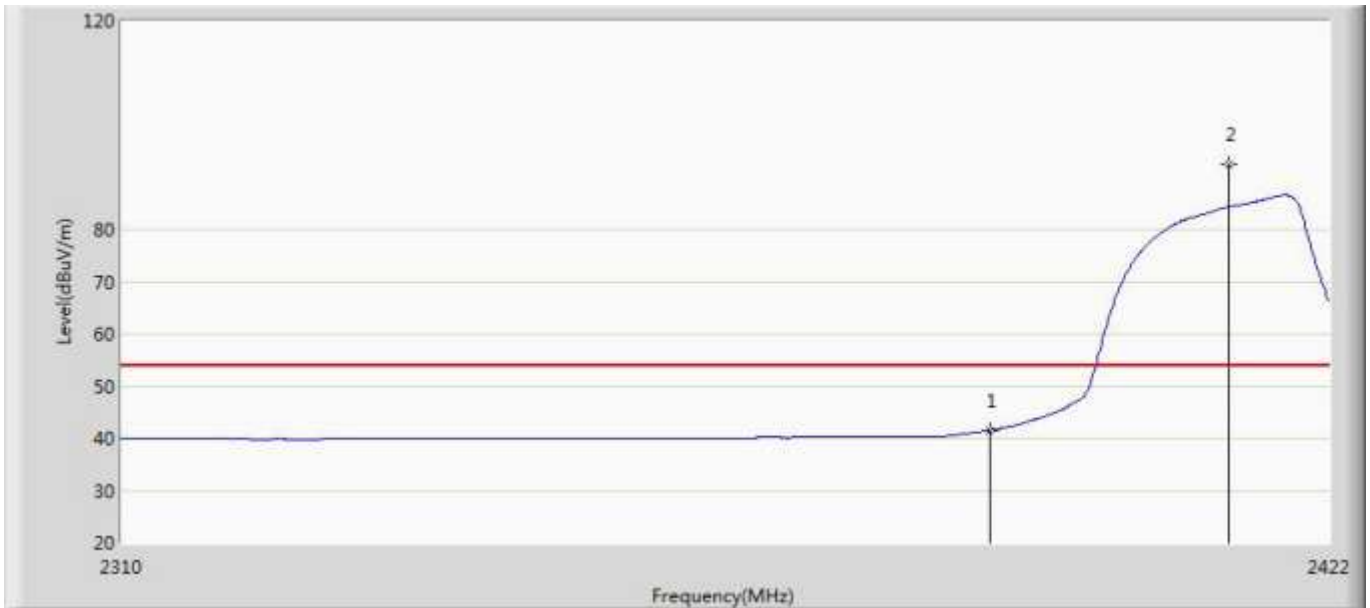
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.213	6.883	-10.787	54.000	36.329	AV
2	*	2412.592	98.508	62.156	44.508	54.000	36.352	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



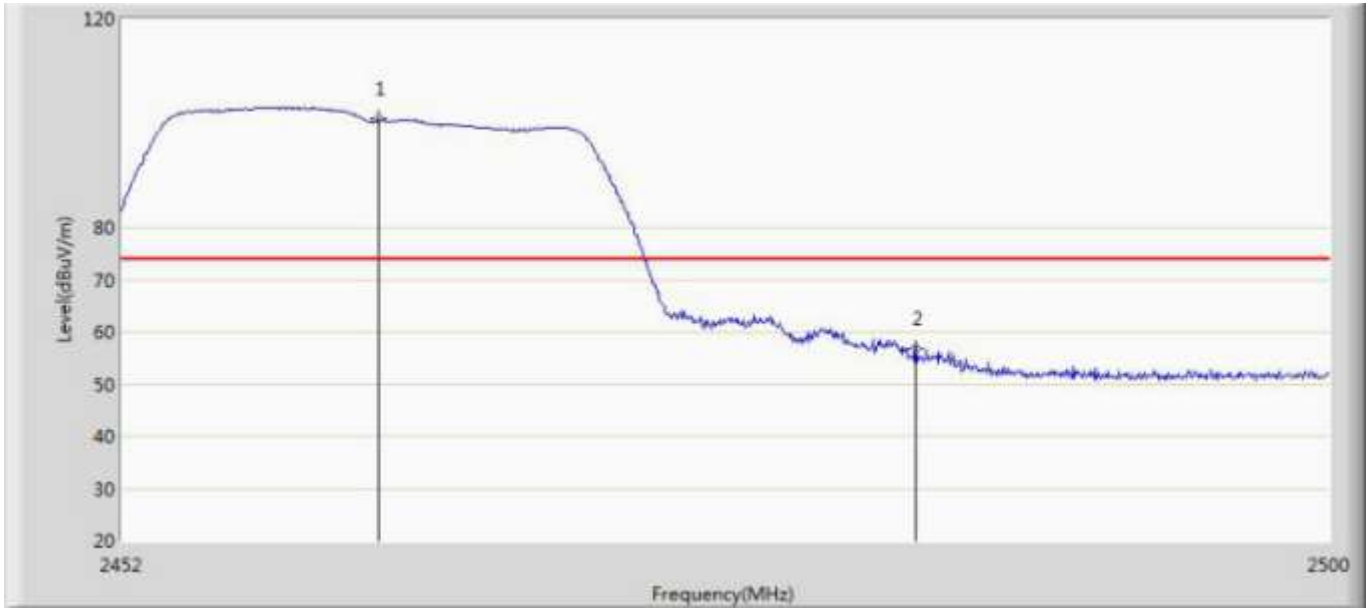
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	55.161	18.831	-18.839	74.000	36.329	PK
2	*	2412.480	92.534	56.183	18.534	74.000	36.351	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



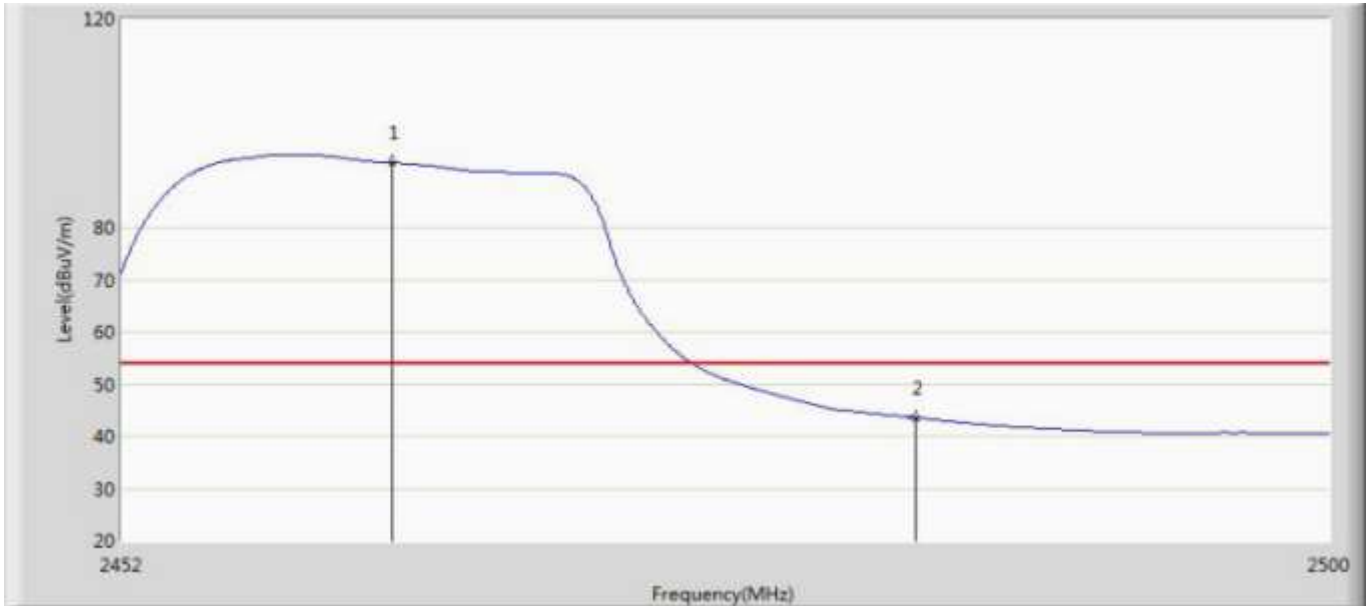
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.567	5.237	-12.433	54.000	36.329	AV
2	*	2412.480	92.534	56.183	38.534	54.000	36.351	AV

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.176	100.843	64.216	26.843	74.000	36.626	PK
2		2483.500	56.745	20.278	-17.255	74.000	36.467	PK

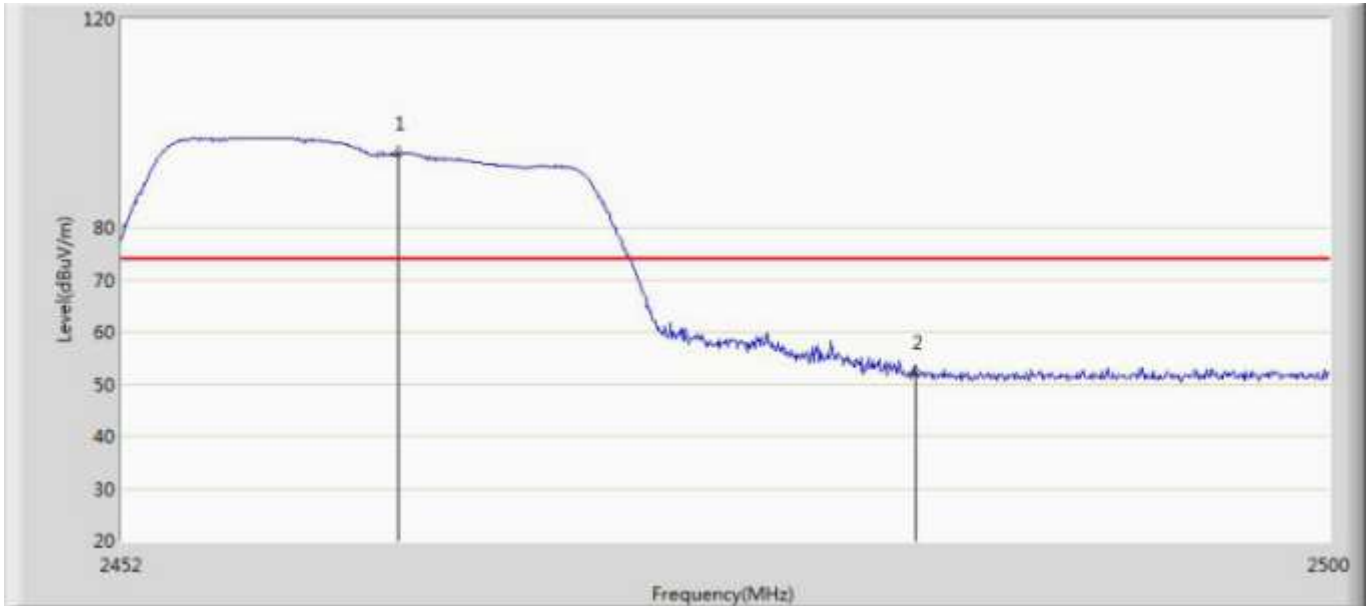
Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.704	92.422	55.802	38.422	54.000	36.620	AV
2		2483.500	43.585	7.118	-10.415	54.000	36.467	AV

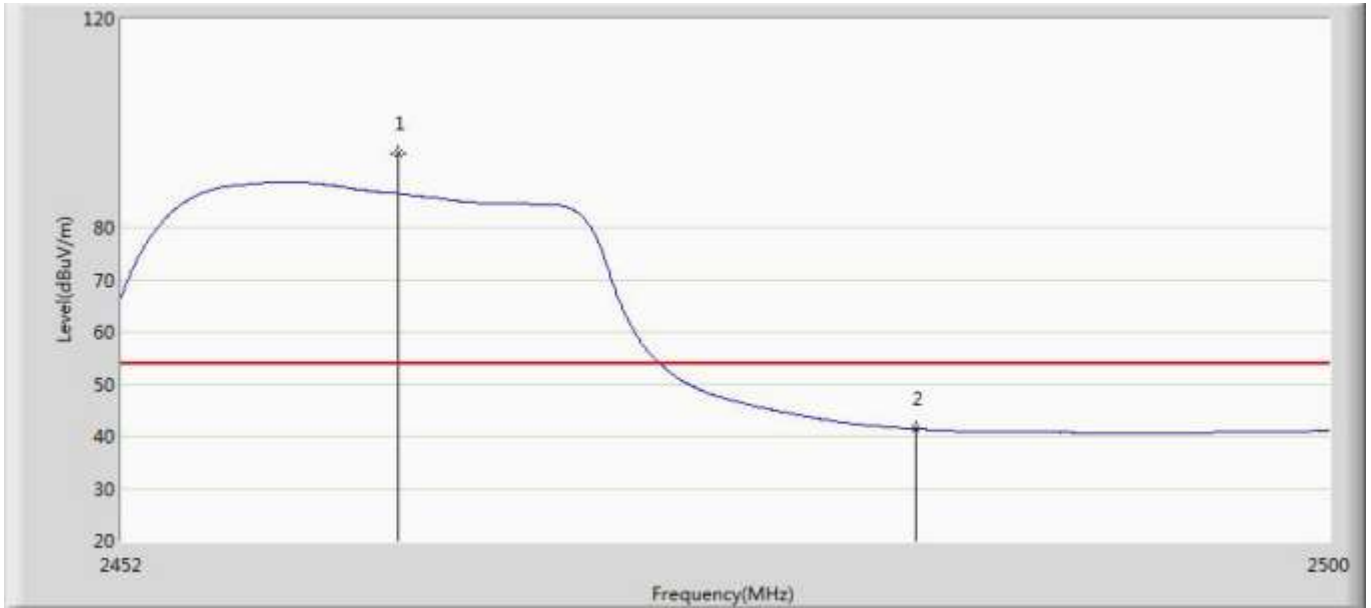


Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.896	94.169	57.552	20.169	74.000	36.617	PK
2		2483.500	52.277	15.810	-21.723	74.000	36.467	PK

Engineer: Tommie	
Site: AC5	Time: 2018/03/01 - 19:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: IP surveillance camera (Wi-Fi & mobile)	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.896	94.169	57.552	40.169	54.000	36.617	AV
2		2483.500	41.399	4.932	-12.601	54.000	36.467	AV

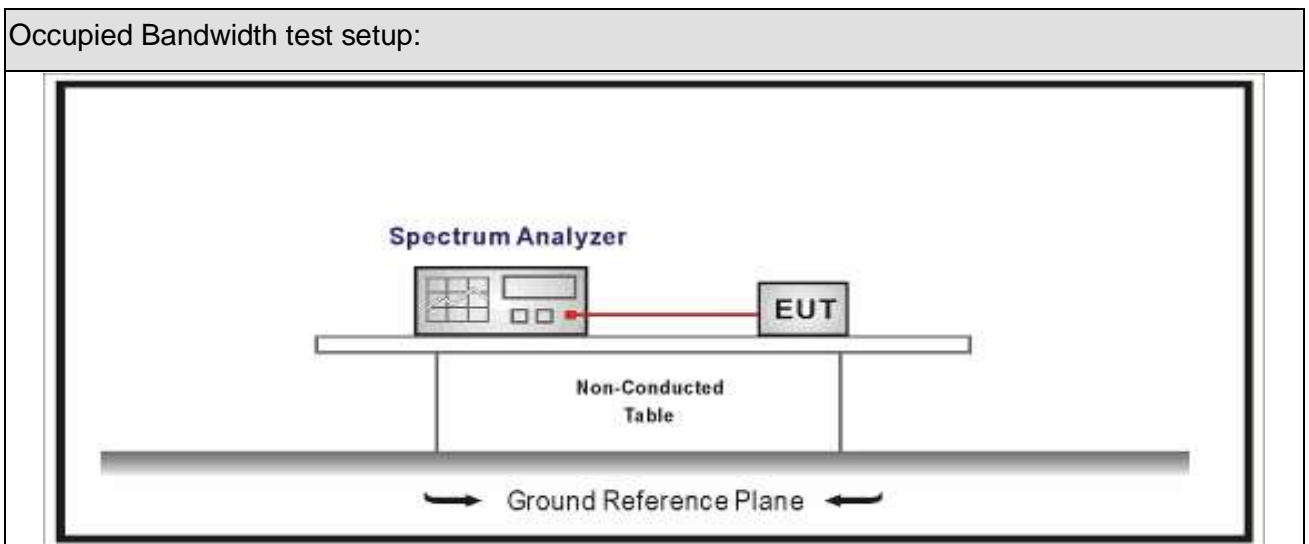
## 7. Occupied Bandwidth

### 7.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 7.2. Test Setup



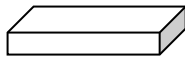
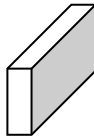
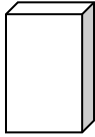
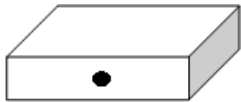
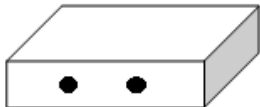
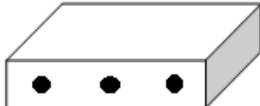
### 7.3. Limit

Occupied Bandwidth
Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

### 7.4. Test Procedure

Test Method			
	Reference Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.8	DTS bandwidth
	<input type="checkbox"/> ANSI C63.10	11.8.1	Option 1
	<input checked="" type="checkbox"/> ANSI C63.10	11.8.2	Option 2

**7.5. EUT test definition**

Item	Occupied Bandwidth			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~3			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

### 7.6. Test Result

Product Name	: IP surveillance camera (Wi-Fi & mobile)	Power	: AC 120V/60Hz
Test Mode	: Mode1~3	Test Site	: TR8
Test Date	: 2018.02.28	Test Engineer	: Tommie

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
			Ant 1	Ant 1		
1	01	2412	12.573	9.172	>500	Pass
1	06	2437	12.454	9.162	>500	Pass
1	11	2462	11.024	6.673	>500	Pass
2	01	2412	16.883	6.690	>500	Pass
2	06	2437	16.901	16.230	>500	Pass
2	11	2462	16.143	10.460	>500	Pass
3	01	2412	17.779	16.810	>500	Pass
3	06	2437	17.698	8.308	>500	Pass
3	11	2462	17.168	10.300	>500	Pass

Note : The worst case of Occupied Bandwidth as below in next page:

#### Mode 1 CH11 (2462MHz)



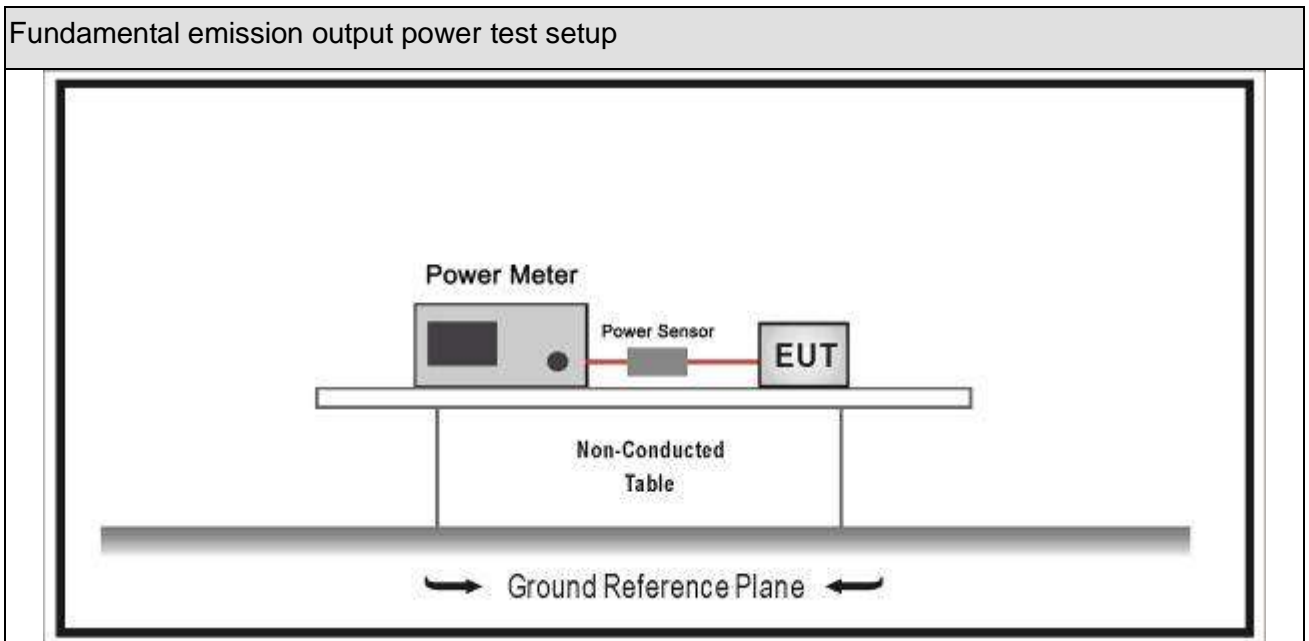
## 8. Fundamental emission output power

### 8.1. Test Equipment

Fundamental emission output power/ TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2018.01.04	2019.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2017.10.14	2018.10.13
Power Sensor	Anritsu	MA2411B	0846014	2017.10.14	2018.10.13
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2018.04.10	2019.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 8.2. Test Setup



### 8.3. Limit

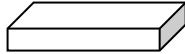
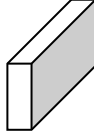
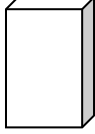



Fundamental emission output power Limit		
<input checked="" type="checkbox"/>	$G_{TX} < 6\text{dBi}$	$P_{out} \leq 30\text{dBm}$
<input type="checkbox"/>	$G_{TX} > 6\text{dBi}$	
<input type="checkbox"/>	Non-Fix point-point	$P_{out} \leq 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Fix point-point	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	Point-to-multipoint	$P_{out} \leq 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Overlap Beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	Aggregate power transmitted simultaneously on all beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	single directional beam	$P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$
Note 1 : $G_{TX}$ directional gain of transmitting antennas.		
Note 2 : $P_{out}$ is maximum peak conducted output power .		



### 8.4. Test Procedure

Fundamental emission output power Test Method					
	References Rule		Chapter	Description	
<input checked="" type="checkbox"/>	ANSI C63.10		11.9	Fundamental emission output power	
	<input checked="" type="checkbox"/>	ANSI C63.10		11.9.1	Maximum peak conducted output power
	<input type="checkbox"/>	ANSI C63.10	11.9.1.1	RBW $\geq$ DTS bandwidth	
	<input type="checkbox"/>	ANSI C63.10	11.9.1.2	Integrated band power method	
	<input checked="" type="checkbox"/>	ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method	
	<input type="checkbox"/>	ANSI C63.10		11.9.2	Maximum conducted (average) output power
	<input type="checkbox"/>	ANSI C63.10		11.9.2.2	Measurement using a spectrum analyzer (SA)
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.2	Method AVGSA-1(Duty cycle $\geq$ 98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle $\geq$ 98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle $\leq$ 98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle $\leq$ 98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.4	Method AVGSA-3	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.5	Method AVGSA-3A	
	<input type="checkbox"/>	ANSI C63.10		11.9.2.3	Measurement using a power meter (PM)
	<input type="checkbox"/>	ANSI C63.10	11.9.2.3.1	Method AVGPM	
<input type="checkbox"/>	ANSI C63.10	11.9.2.3.2	Method AVGPM-G		

**8.5. EUT test definition**

Item	Fundamental emission output power			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~3			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

## 8.6. Test Result

Product Name	: IP surveillance camera (Wi-Fi & mobile)	Power	: AC 120V/60Hz
Test Mode	: Mode1~3	Test Site	: TR8
Test Date	: 2018.03.02	Test Engineer	: Tommie

Mode	Channel	Test Frequency (MHz)	Peak Power Output (dBm)	Limit (dBm)	Result
1	01	2412	8.45	30	Pass
1	06	2437	6.83	30	Pass
1	11	2462	12.97	30	Pass
2	01	2412	16.46	30	Pass
2	06	2437	13.97	30	Pass
2	11	2462	16.38	30	Pass
3	01	2412	15.02	30	Pass
3	06	2437	13.33	30	Pass
3	11	2462	15.92	30	Pass

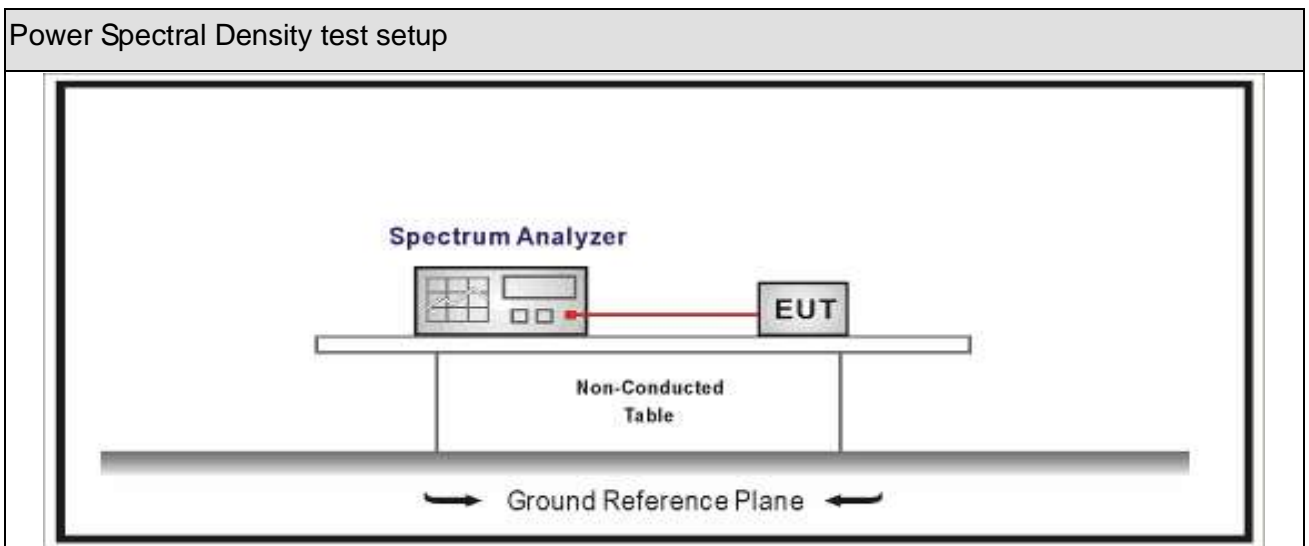
## 9. Power Spectral Density

### 9.1. Test Equipment

Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 9.2. Test Setup



### 9.3. Limit

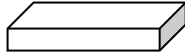
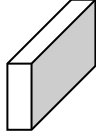
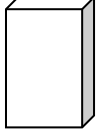



Power Spectral Density Limit

Power Spectral Density  $\leq 8\text{dBm}/3\text{kHz}$

#### 9.4. Test Procedure

Power Spectral Density Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.10	Maximum power spectral density level in the fundamental emission
<input checked="" type="checkbox"/>	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
<input type="checkbox"/>	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle $\geq$ 98%)
<input type="checkbox"/>	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq$ 98%)
<input type="checkbox"/>	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle <98%)
<input type="checkbox"/>	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle <98%)
<input type="checkbox"/>	ANSI C63.10	11.10.7	Method AVGPSD-3
<input type="checkbox"/>	ANSI C63.10	11.10.8	Method AVGPSD-3A

**9.5. EUT test definition**

Item	Power Spectral Density Test Method			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~3			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

### 9.6. Test Result

Product Name	: IP surveillance camera (Wi-Fi & mobile)	Power	: AC 120V/60Hz
Test Mode	: Mode1~3	Test Site	: TR8
Test Date	: 2018.03.01	Test Engineer	: Tommie

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	01	2412	-23.430	8.0	Pass
1	06	2437	-25.058	8.0	Pass
1	11	2462	-17.601	8.0	Pass
2	01	2412	-17.482	8.0	Pass
2	06	2437	-19.228	8.0	Pass
2	11	2462	-16.802	8.0	Pass
3	01	2412	-18.206	8.0	Pass
3	06	2437	-21.039	8.0	Pass
3	11	2462	-18.235	8.0	Pass

Mode 2 CH01(2462MHz)



## 10. Antenna Requirement

### 10.1. Limit

Antenna Requirement Limit	
<p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</p>	

### 10.2. Antenna Connector Construction

Antenna Connector Construction	
<input checked="" type="checkbox"/>	The use of a permanently attached antenna
<input type="checkbox"/>	The antenna use of a unique coupling to the intentional radiator
<input type="checkbox"/>	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document "Internal Photograph" to show the antenna connector.	

\_\_\_\_\_ The End \_\_\_\_\_