TEST REPORT

FCC ID: 2ACYP-RF605C

Applicant : **SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD**

Address : **B509 5/F, BUILDING 2, SAIGE SCIENCE AND TECHNOLOGY PARK, NORTH OF HUAQIANG ROAD, FUTIAN, SHENZHEN, CHINA .**

Equipment under Test (EUT):

Name : Wireless Flash Trigger

Model : RF605C， RF605N

Standards : FCC PART 15, SUBPART C : 2013 (Section 15.249)

Report No. : A1840922 07

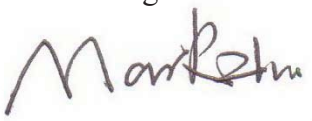
Date of Test : November 07-12, 2014

Date of Issue : November 13, 2014

Test Result :	**PASS ***

In the configuration tested, the EUT complied with the standards specified above

Authorized Signature



(Mark Zhu)
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Alpha Product Testing Laboratory. Or test done by Alpha Product Testing Laboratory. Approvals in connection with, distribution or use of the product described in this report must be approved by Alpha Product Testing Laboratory. Approvals in writing.

TABLE OF CONTENT

1 General Information

1.1 Description of Device (EUT)

EUT Name	:	Wireless Flash Trigger
Trade Name	:	**YONGNUO**
Model No.	:	RF605C，RF605N
DIFF.	:	All model's the function, software and electric circuit are the same , only with the product model named different, so all the test were performed on the model RF605C
Type of Antenna	:	PCB Antenna, Max. Gain: 1.5dBi
Operation Frequency	:	RF-603 mode: 2402.5-2456.5MHz (16 Channel) RF-602 mode: 2410MHz (1 Channel)
Note		RF-603 mode and RF-602 mode cannot transmit simultaneously
Modulation type	:	FSK
Power Supply	:	DC 3V Supply by battery
Applicant	:	SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD
Address	:	B509 5/F, BUILDING 2, SAIGE SCIENCE AND TECHNOLOGY PARK, NORTH OF HUAQIANG ROAD, FUTIAN, SHENZHEN, CHINA .
Manufacturer	:	SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD
Address	:	B509 5/F, BUILDING 2, SAIGE SCIENCE AND TECHNOLOGY PARK, NORTH OF HUAQIANG ROAD, FUTIAN, SHENZHEN, CHINA .

1.2 Description of Test Facility

Alpha Product Testing Laboratory.
2F, Building B, East Area of Nanchang Second Industrial Zone,
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China

August 11, 2014 File on Federal Communication Commission
Registration Number: 203110

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Cal. Due day	Cal Interval
3m Semi-Anechoic	CHENYU	9*6*6	N/A	2017.01.19	3Year
Spectrum analyzer	Agilent	E4407B	MY49510055	2015.01.19	1Year
Temperature Chamber	TERCHY	MHG-120LF	911009	2015.01.19	1Year
Receiver	R&S	ESCI	101873	2015.01.19	1Year
Receiver	R&S	ESCI	101165	2015.01.19	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	9168-438	2016.01.21	2Year
Horn Antenna	Schwarzbeck	BBHA912D	BBHA912 D(1201)	2016.01.21	2Year
ETS Horn Antenna	ETS	3160	SEL0076	2016.01.21	2Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2016.01.21	2Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	2015.01.19	1Year
Cable	SCHWARZBECK	SUCOFLEX 104	309972/4	2015.01.19	1Year
Cable	SCHWARZBECK	SUCOFLEX 104	329112/4	2015.01.19	1Year
Pre-amplifier	Schwarzbeck	BBV9743	9743-019	2015.01.19	1Year
Pre-amplifier	Quietek	AP-180C	CHM-0602012	2015.01.19	1Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50 u H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.
Example:
Freq (MHz) METER READING + ACF + CABLE = FS
33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m
ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

4 Summary of Measurement

4.1 Summary of test result

Test Item	Test Requirement	Standard Paragraph	Result
Spurious Emission	FCC PART 15: 2013	Section 15.249&15.209	Compliance
Conduction Emission	FCC PART 15: 2013	Section 15.207	Compliance
Occupied bandwidth	FCC PART 15: 2013	Section 15.249	Compliance
Band edge Requirement	FCC PART 15: 2013	Section 15.249	Compliance
Antenna Requirement	FCC PART 15: 2013	Section 15.203	Compliance

Note: EUT can by powered with inside battery, according to exploratory test, when powered by battery have worse emissions, and also can make sure EUT have enough power for wireless work, so all the final test were performed with new battery.

4.2 Test mode

Tested mode, channel information		
Mode	Channel	Frequency (MHz)
FSK RF-603 mode	CH1	2456.5
	CH8	2429.5
	CH16	2402.5
FSK RF-602 mode	2410MHz	

	Channel list			
FSK RF-603	CH1	2456.5 MHz	CH9	2426.5 MHz
	CH2	2453.5 MHz	CH10	2420.5 MHz
	CH3	2450.5 MHz	CH11	2417.5 MHz
	CH4	2444.5 MHz	CH12	2414.5 MHz
	CH5	2441.5 MHz	CH13	2411.5 MHz
	CH6	2438.5 MHz	CH14	2408.5 MHz
	CH7	2432.5 MHz	CH15	2405.5 MHz
	CH8	2429.5 MHz	CH16	2402.5MHz
RF-602	2410MHz			

4.3 Block Diagram

For Radiated Emission:

4.4 Assistant equipment used for test

Description : N/A
Manufacturer : N/A
Model No. : N/A

4.5 Test Conditions

Temperature range	21-25℃
Humidity range	40-75%
Pressure range	86-106kPa

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

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.50dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.04dB	Polarize: V
	3.02dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	3.84dB	Polarize: H
	3.56dB	Polarize: V
Uncertainty for radio frequency	1×10^{-9}	
Uncertainty for temperature	0.2℃	
Uncertainty for humidity	3%	
Uncertainty for DC and low frequency voltages	0.06%	

5 POWER LINE CONDUCTED EMISSION

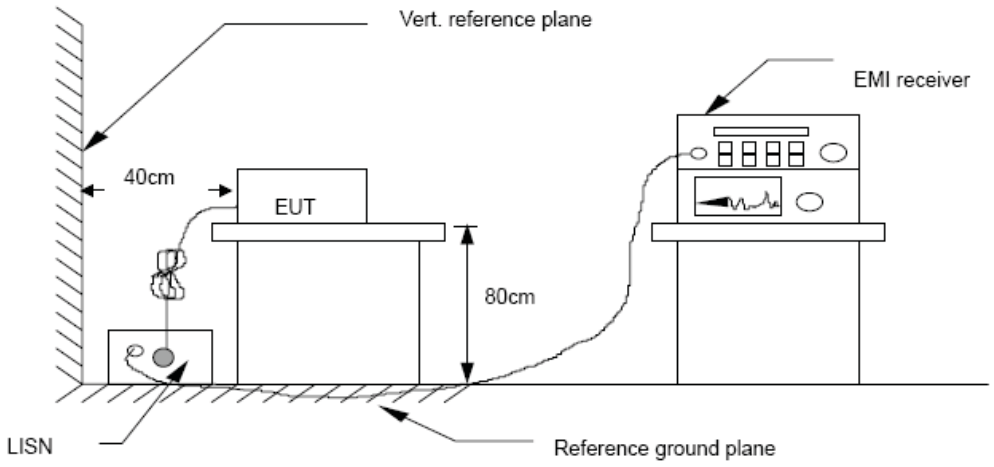
5.1 Conducted Emission Limits(15.209&249)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

5.2 Test Setup



5.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2003 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

5.4 Test Results

EUT'S power supply by DC battery, so this test not applicable.

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6 Radiation Emission

6.1 Radiation Emission Limits(15.209&249 (a))

Frequency (MHz)	**Field Strength Limits at 3 metres (watts,e.i.r.p.)**		
	uV/m	dB uV/m	Measurement distance(m)
0.009-0.490	2400/F(kHz)	XX	300
0.490-1.705	24000/F(kHz)	XX	30
1.705-30	30	29.5	30
30~88	100(3nW)	40	3
88~216	150(6.8nW)	43.5	3
216~960	200(12nW)	46	3
Above960	500(75nW)	54	3
Carrier frequency		93.97(AV)	3
Carrier frequency		113.97(PK)	3

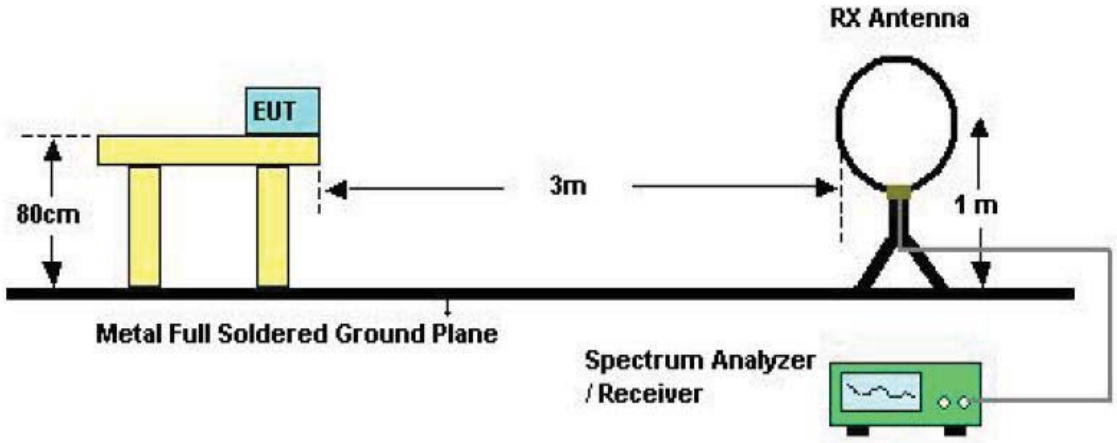
NOTE:

a) The tighter limit applies at the band edges.

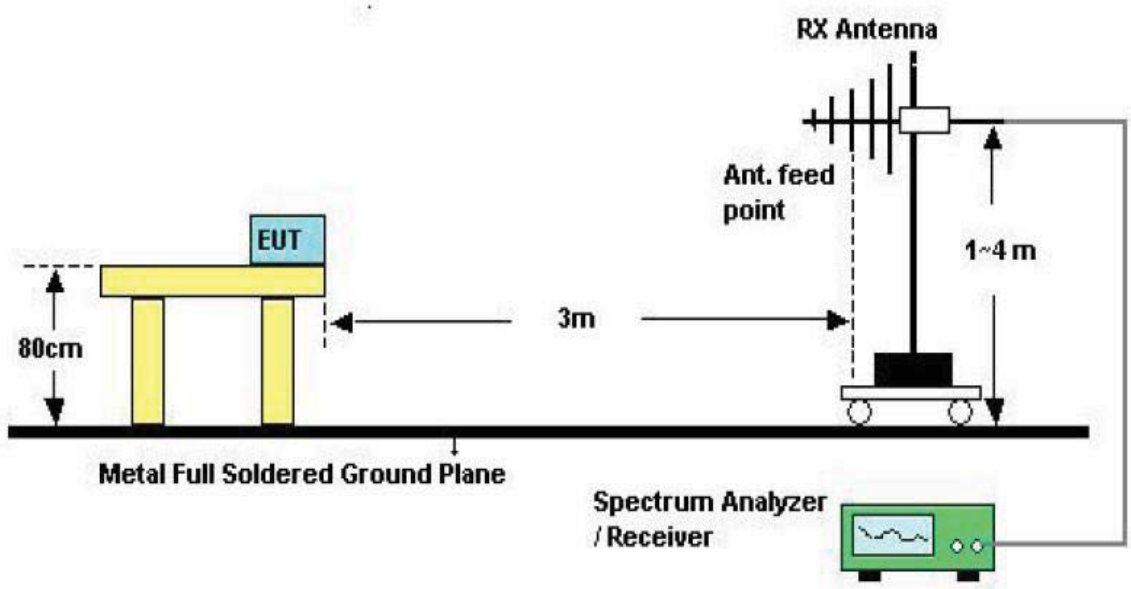
b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

6.2 Test Setup

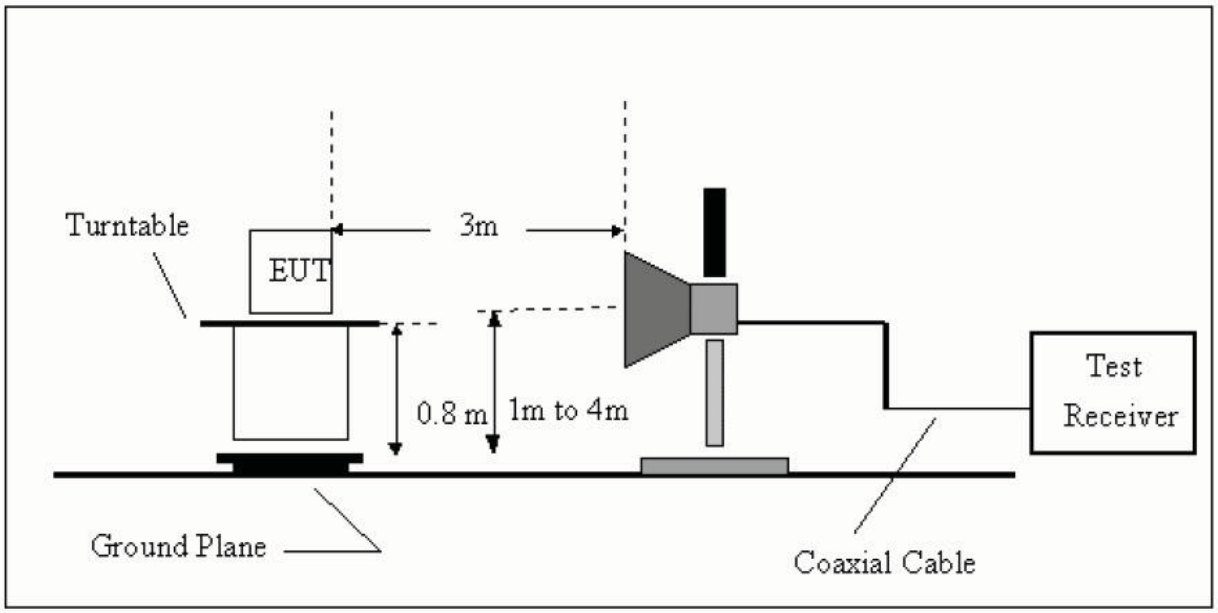
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

a) The measureing distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
b) The Test antenna shall vary between 1m and 4m,Both Horizontal and Vertical antenna are set ot make measurement.
c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode remeasured
d) If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
f) For the actual test configuration, please see the test setup photo.

Note： The EUT was tested on three different polar directions; i.e. X axis, Y axis, Z axis. Only the worse case is reported.

6.4 Test Equipment Setting For emission test.

9KHz~150KHz	RBW 200Hz	VBW1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHZ~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

6.5 Test Condition

Continual Transmitting in maximum power.

6.6 Test Result

PASS.

We have scanned the 10th harmonic from 9KHz to the EUT.

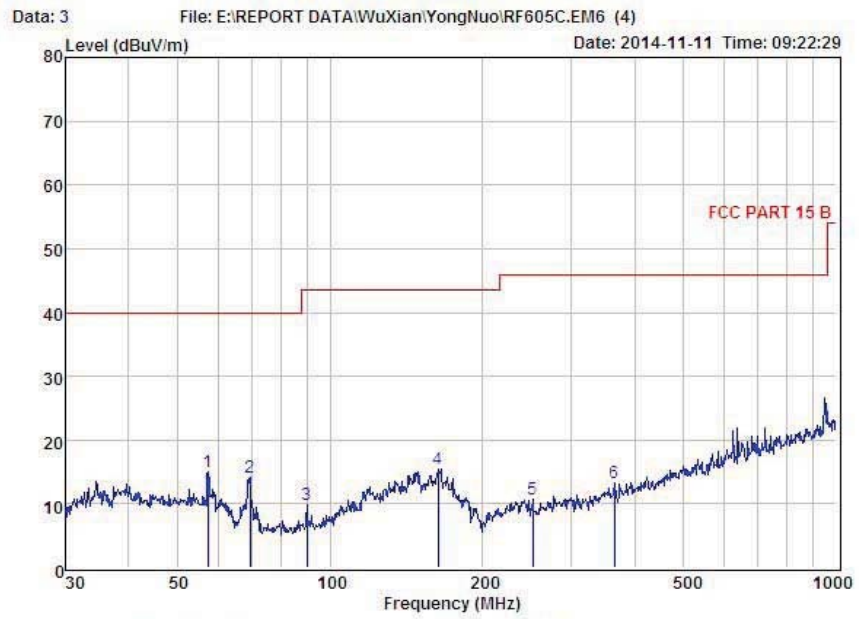
Note: The Radiated emissions is showed the maximum power data of TX test mode and showed worst orthogonal axes with Z orthogonal axes.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: **PASS**

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value hasno need to be reported.

Below 1GHz test data:

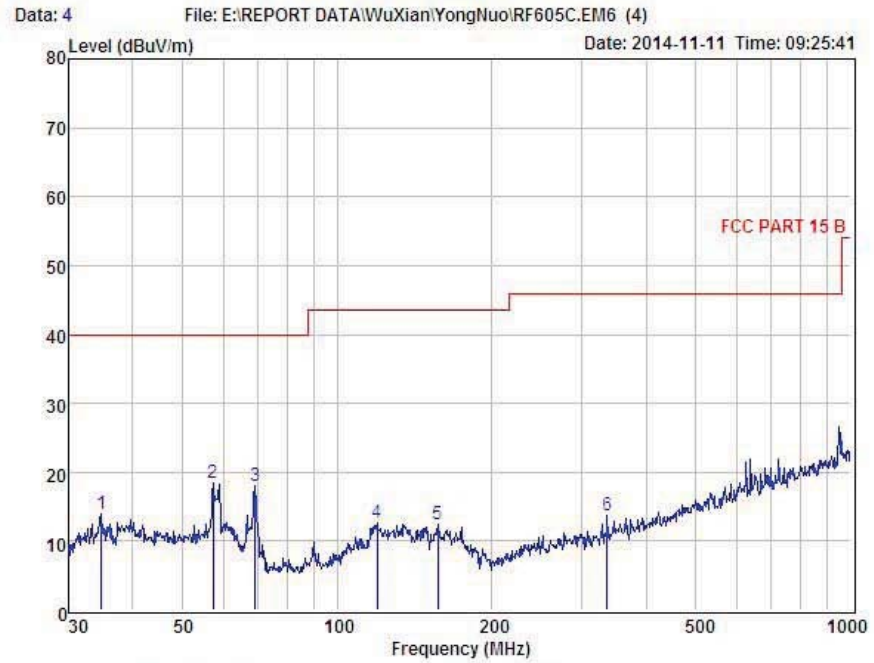
For RF-603 mode， low mid high channel all have been tested， only worse case 2402.5MHz is reported



Condition : FCC PART 15 B 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2402.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	57.39	33.24	12.91	31.30	0.14	14.99	40.00	-25.01	QP
2	69.60	34.49	10.82	31.38	0.24	14.17	40.00	-25.83	QP
3	89.90	31.75	9.44	31.61	0.34	9.92	43.50	-33.58	QP
4	163.18	32.39	13.95	31.28	0.45	15.51	43.50	-27.99	QP
5	251.18	29.80	11.61	31.08	0.49	10.82	46.00	-35.18	QP
6	364.26	29.24	14.12	30.76	0.70	13.30	46.00	-32.70	QP

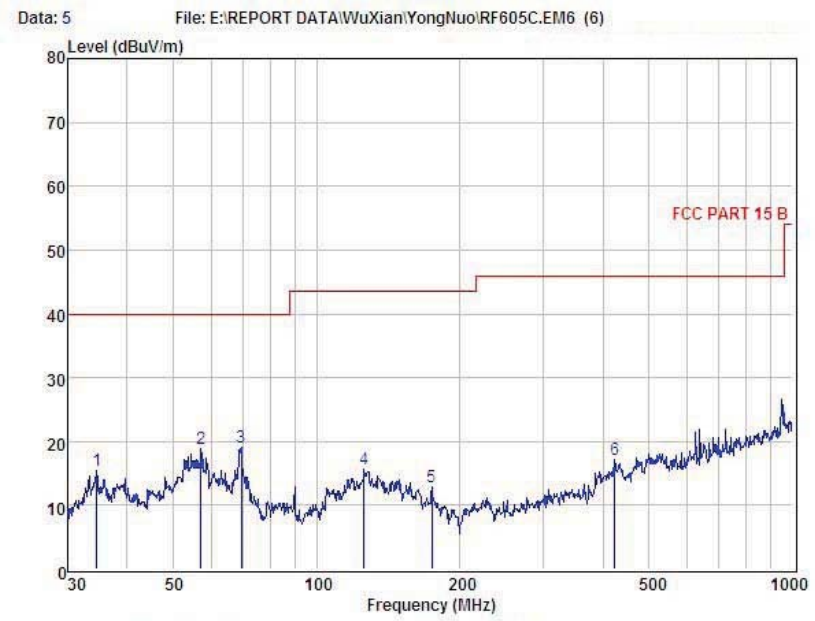
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2402.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	34.76	31.59	13.33	31.03	0.13	14.02	40.00	-25.98	QP
2	57.39	36.80	12.91	31.30	0.14	18.55	40.00	-21.45	QP
3	69.36	38.35	10.82	31.38	0.24	18.03	40.00	-21.97	QP
4	119.86	31.52	12.06	31.31	0.36	12.63	43.50	-30.87	QP
5	157.01	29.26	14.15	31.36	0.38	12.43	43.50	-31.07	QP
6	336.04	30.33	13.61	31.01	0.78	13.71	46.00	-32.29	QP

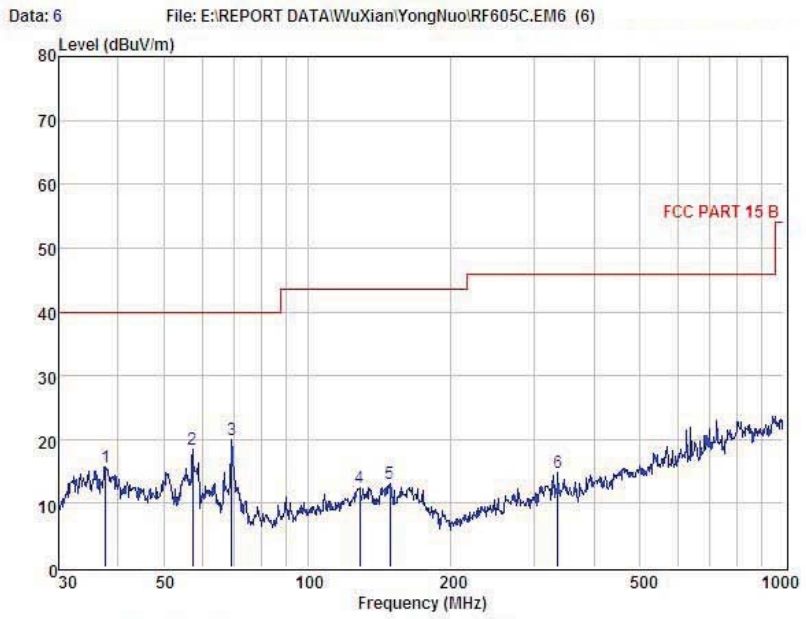
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410 MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	34.52	32.99	13.33	31.03	0.13	15.42	40.00	-24.58	QP
2	57.19	37.09	12.91	31.30	0.14	18.84	40.00	-21.16	QP
3	69.60	39.49	10.82	31.38	0.24	19.17	40.00	-20.83	QP
4	125.89	34.12	12.46	31.33	0.35	15.60	43.50	-27.90	QP
5	174.42	30.82	12.58	31.09	0.63	12.94	43.50	-30.56	QP
6	423.54	31.80	15.33	30.77	0.76	17.12	46.00	-28.88	QP

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410 MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	37.68	33.00	13.73	31.06	0.08	15.75	40.00	-24.25	QP
2	57.39	36.80	12.91	31.30	0.14	18.55	40.00	-21.45	QP
3	69.36	40.35	10.82	31.38	0.24	20.03	40.00	-19.97	QP
4	128.56	30.82	12.68	31.39	0.38	12.49	43.50	-31.01	QP
5	148.96	30.06	14.03	31.46	0.35	12.98	43.50	-30.52	QP
6	336.04	31.33	13.61	31.01	0.78	14.71	46.00	-31.29	QP

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Notes:-Means other frequency and mode comply with standard requirements and at least have 20dB margin.

Radiated Emissions Result of Inside band (2402.5MHz)

EUT	Wireless Flash Trigger	**Model Name**	RF605C
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 3V supply by battery
Test Mode	RF-603 mode TX Low	**Antenna polarization**	Horizontal/Vertical

Channel Low(2402.5MHz)									
Fre. MHz	**Plority H/V**	**Reading dBuV**	**Antenna Factor dB**	**Cable Loss dB**	**Amplifier Gain dB**	**Correct Factor dB**	**Measure Result dBuV/m**	**Limit dBuV/m**	**Margin dB**
2402.5	H	89.83（PK）	27.62	3.92	34.97	-3.43	86.40	113.97	-27.57
2402.5	H	81.26 (AV)	27.62	3.92	34.97	-3.43	77.83	93.97	-16.14
--	H	--	--	--	--	--	--	--	--
2402.5	V	90.58（PK）	27.62	3.92	34.97	-3.43	87.15	113.97	-26.82
2402.5	V	83.69(AV)	27.62	3.92	34.97	-3.43	80.26	93.97	-13.71
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	**Ant. Pol H/V**	**Peak Reading (dBuV)**	**AV Reading (dBuV)**	**Ant. / CL CF (dB)**	**Actual Fs**		**Peak Limit (dBuV/m)**	**AV Limit (dBuV/m)**	**Margin (dB)**	**Remark**
					Peak (dBuV/m)	**AV (dBuV/m)**				
1489.53	H	48.22	---	-10.27	37.95	---	74.00	54.00	-16.05	Peak
1942.13	H	47.12	---	-8.86	38.26	---	74.00	54.00	-15.74	Peak
2654.72	H	45.92	---	-6.94	38.98	---	74.00	54.00	-15.02	Peak
4805.00	H	38.49	---	0.64	39.13	---	74.00	54.00	-14.87	Peak
N/A										
1218.43	V	50.00	---	-11.52	38.48	---	74.00	54.00	-15.52	Peak
1821.56	V	46.39	---	-9.16	37.23	---	74.00	54.00	-16.77	Peak
2794.23	V	44.99	---	-6.38	38.61	---	74.00	54.00	-15.39	Peak
4805.00	V	38.52		0.64	39.16	---	74.00	54.00	-14.84	Peak
N/A										

Notes: 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit

2 –Spectrum setting:For fundamental frequency： RBW =2MHz VBW=6MHz ， Peak detector is for PK value ， RMS detector is for AV value

a. Peak setting Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting Above 1G: RBW=1MHz, VBW=10Hz，Peak detector is for AV value.

Radiated Emissions Result of Inside band (2429.5MHz)

EUT	Wireless Flash Trigger	**Model Name**	RF605C
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 3V supply by battery
Test Mode	RF-603 mode TX Mid	**Antenna polarization**	Horizontal/Vertical

Channel Low(2429.5MHz)									
Fre. MHz	**Plority H/V**	**Reading dBuV**	**Antenna Factor dB**	**Cable Loss dB**	**Amplifier Gain dB**	**Correct Factor dB**	**Measure Result dBuV/m**	**Limit dBuV/m**	**Margin dB**
2429.5	H	93.15（PK）	27.62	3.96	34.97	-3.39	89.76	113.97	-24.21
2429.5	H	81.25 (AV)	27.62	3.96	34.97	-3.39	77.86	93.97	-16.11
--	H	--	--	--	--	--	--	--	--
2429.5	V	92.62（PK）	27.62	3.96	34.97	-3.39	89.23	113.97	-24.74
2429.5	V	82.41 (AV)	27.62	3.96	34.97	-3.39	79.02	93.97	-14.95
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	**Ant. Pol H/V**	**Peak Reading (dBuV)**	**AV Reading (dBuV)**	**Ant. / CL CF (dB)**	**Actual Fs**		**Peak Limit (dBuV/m)**	**AV Limit (dBuV/m)**	**Margin (dB)**	**Remark**
					Peak (dBuV/m)	**AV (dBuV/m)**				
1231.29	H	49.78	---	-11.52	38.26	---	74.00	54.00	-15.74	Peak
2215.05	H	47.25	---	-8.13	39.12	---	74.00	54.00	-14.88	Peak
2932.16	H	45.70	---	-5.95	39.75	---	74.00	54.00	-14.25	Peak
4859.00	H	39.65	---	0.76	40.41	---	74.00	54.00	-13.59	Peak
N/A										
1305.47	V	50.53	---	-10.84	39.69	---	74.00	54.00	-14.31	Peak
2306.43	V	46.39	---	-7.46	38.93	---	74.00	54.00	-15.07	Peak
3145.07	V	45.87	---	-5.63	40.24	---	74.00	54.00	-13.76	Peak
4859.00	V	39.22		0.76	39.98	---	74.00	54.00	-14.02	Peak
N/A										

Notes: 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit

2 –Spectrum setting:For fundamental frequency： RBW =2MHz VBW=6MHz， Peak detector is for PK value， RMS detector is for AV value

a. Peak setting Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting Above 1G: RBW=1MHz, VBW=10Hz，Peak detector is for AV value.

Radiated Emissions Result of Inside band (2456.5MHz)

EUT	Wireless Flash Trigger	Model Name	RF605C
Temperature	25°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3V supply by battery
Test Mode	RF-603 mode TX High	Antenna polarization	Horizontal/Vertical

Channel Low(2456.5MHz)									
Fre. MHz	Plority H/V	Reading dBuV	Antenna Factor dB	Cable Loss dB	Amplifier Gain dB	Correct Factor dB	Measure Result dBuV/m	Limit dBuV/m	Margin dB
2456.5	H	91.12（PK）	27.59	3.98	34.97	-3.4	87.72	113.97	-26.25
2456.5	H	83.31 (AV)	27.59	3.98	34.97	-3.4	79.91	93.97	-14.06
--	H	--	--	--	--	--	--	--	--
2456.5	V	92.55（PK）	27.59	3.98	34.97	-3.4	89.15	113.97	-24.82
2456.5	V	85.08 (AV)	27.59	3.98	34.97	-3.4	81.68	93.97	-12.29
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1256.33	H	50.32	---	-10.96	39.36	---	74.00	54.00	-14.64	Peak
1954.17	H	48.79	---	-8.64	40.15	---	74.00	54.00	-13.85	Peak
2915.74	H	45.18	---	-5.95	39.23	---	74.00	54.00	-14.77	Peak
4913.00	H	37.54	---	0.87	38.41	---	74.00	54.00	-15.59	Peak
N/A										
1294.75	V	50.75	---	-10.96	39.79	---	74.00	54.00	-14.21	Peak
2106.41	V	48.50	---	-8.36	40.14	---	74.00	54.00	-13.86	Peak
3257.22	V	45.37	---	-5.39	39.98	---	74.00	54.00	-14.02	Peak
4913.00	V	40.45		0.87	41.32	---	74.00	54.00	-12.68	Peak
N/A										

Notes: 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit

2 –Spectrum setting:For fundamental frequency： RBW =2MHz VBW=6MHz， Peak detector is for PK value， RMS detector is for AV value

a. Peak setting Above 1G: RBW=1MHz, VBW=3MHz
b. AV setting Above 1G: RBW=1MHz, VBW=10Hz，Peak detector is for AV value.

Radiated Emissions Result of Inside band (2410MHz)

EUT	Wireless Flash Trigger	**Model Name**	RF605C
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 3V supply by battery
Test Mode	RF-602 mode TX Mid	**Antenna polarization**	Horizontal/Vertical

Channel Low(2410MHz)									
Fre. MHz	**Plority H/V**	**Reading dBuV**	**Antenna Factor dB**	**Cable Loss dB**	**Amplifier Gain dB**	**Correct Factor dB**	**Measure Result dBuV/m**	**Limit dBuV/m**	**Margin dB**
2410	H	92.58（PK）	27.62	3.92	34.97	-3.43	89.15	113.97	-24.82
2410	H	80.97 (AV)	27.62	3.92	34.97	-3.43	77.54	93.97	-16.43
--	H	--	--	--	--	--	--	--	--
2410	V	90.66（PK）	27.62	3.92	34.97	-3.43	87.23	113.97	-26.74
2410	V	81.43 (AV)	27.62	3.92	34.97	-3.43	78.00	93.97	-15.97
--	V	--	--	--	--	--	--	--	--

Freq. (MHz)	**Ant. Pol H/V**	**Peak Reading (dBuV)**	**AV Reading (dBuV)**	**Ant. / CL CF (dB)**	**Actual Fs**		**Peak Limit (dBuV/m)**	**AV Limit (dBuV/m)**	**Margin (dB)**	**Remark**
					Peak (dBuV/m)	**AV (dBuV/m)**				
1231.29	H	49.5	---	-11.52	37.98	---	74.00	54.00	-16.02	Peak
2215.05	H	46.86	---	-8.13	38.73	---	74.00	54.00	-15.27	Peak
2932.16	H	45.74	---	-5.95	39.79	---	74.00	54.00	-14.21	Peak
4820.00	H	39.9	---	0.76	40.66	---	74.00	54.00	-13.34	Peak
N/A										
1305.47	V	49.51	---	-10.84	38.67	---	74.00	54.00	-15.33	Peak
2306.43	V	46.59	---	-7.46	39.13	---	74.00	54.00	-14.87	Peak
3145.07	V	45.91	---	-5.63	40.28	---	74.00	54.00	-13.72	Peak
4820.00	V	38.08		0.76	38.84	---	74.00	54.00	-15.16	Peak
N/A										

Notes: 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain
Measurement Result=Reading + Correct Factor
Margin=Measurement Result-Limit

2 –Spectrum setting:

a. Peak setting Above 1G: RBW=1MHz, VBW=3MHz
b. AV setting Above 1G: RBW=1MHz, VBW=10Hz，Peak detector is for AV value.

7 Occupied bandwidth

7.1 Test limit

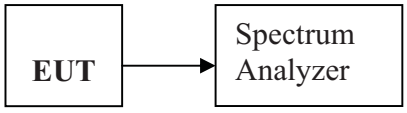
Please refer section15.249

7.2 Method of measurement

a)The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

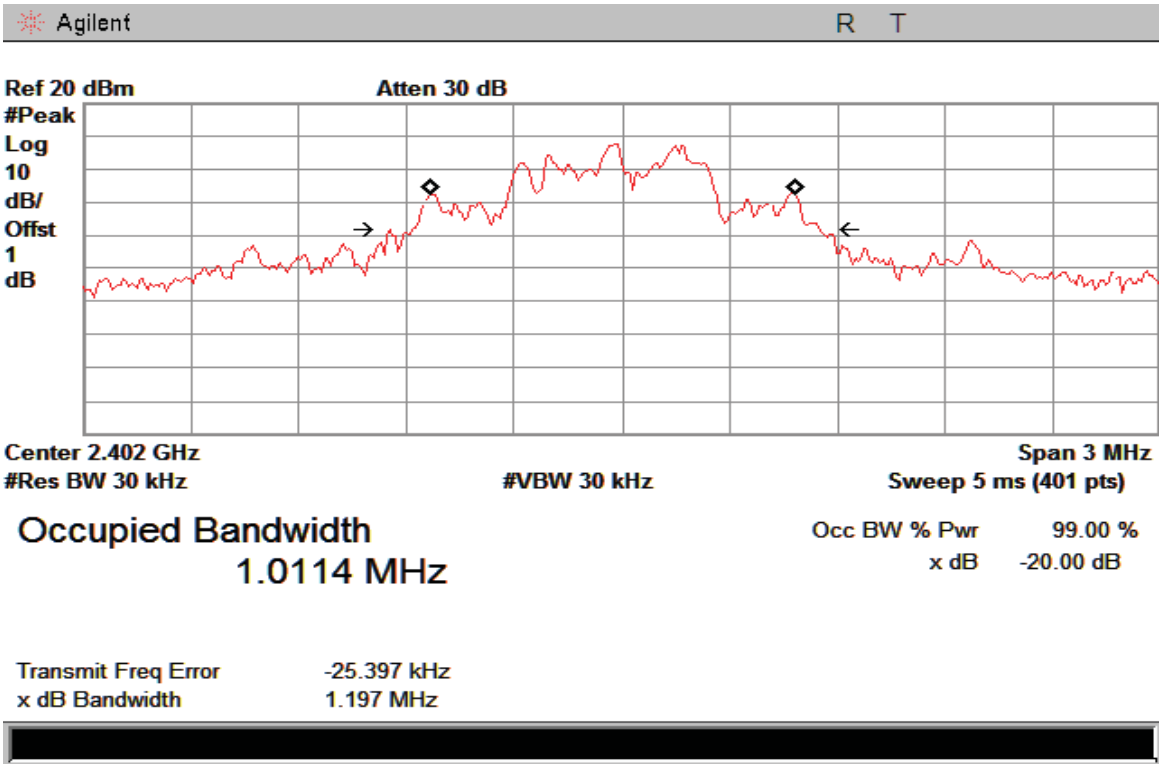
b)The test receiver RBW set 30KHz,VBW set 30KHz,Sweep time set auto.

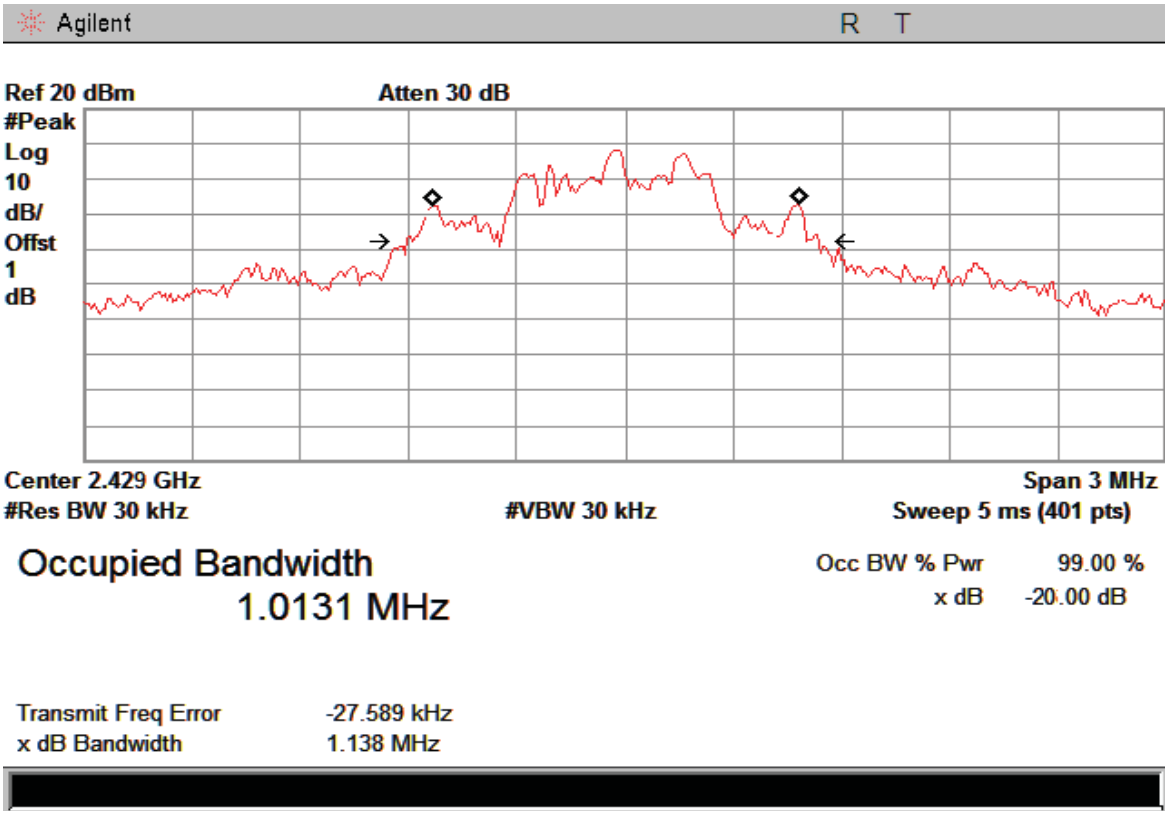
7.3 Test Setup

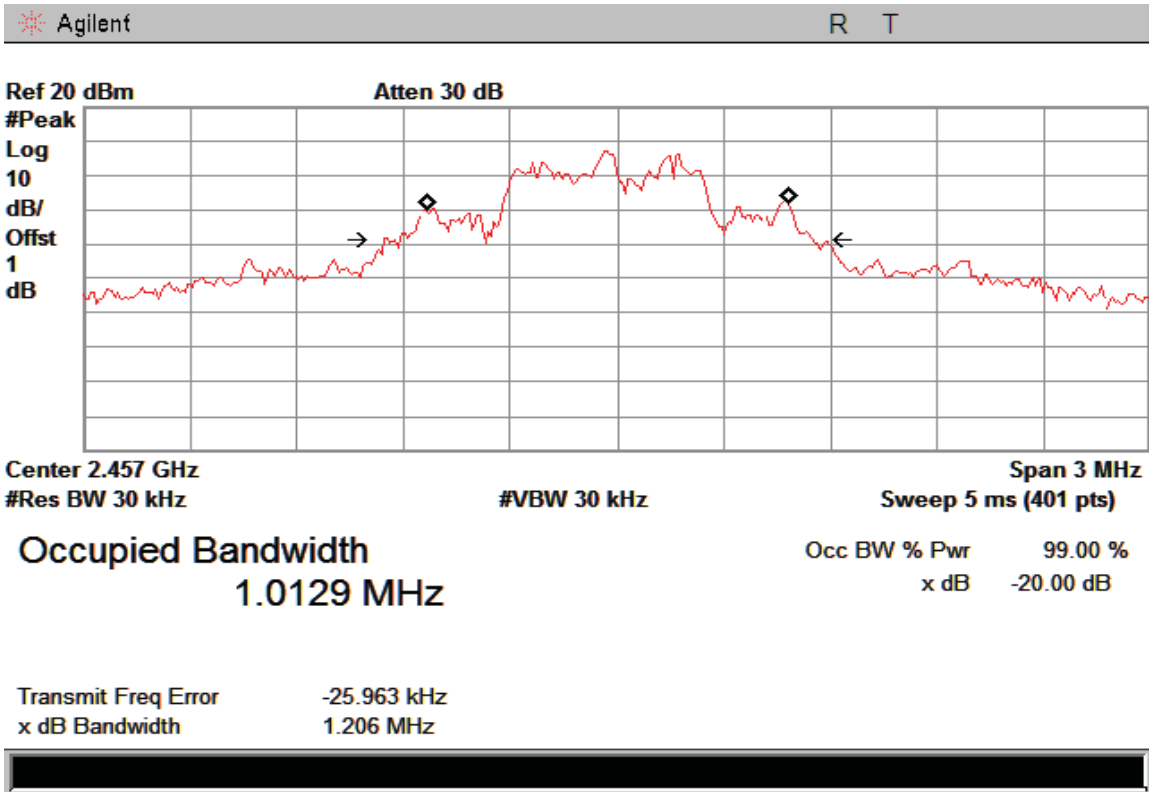


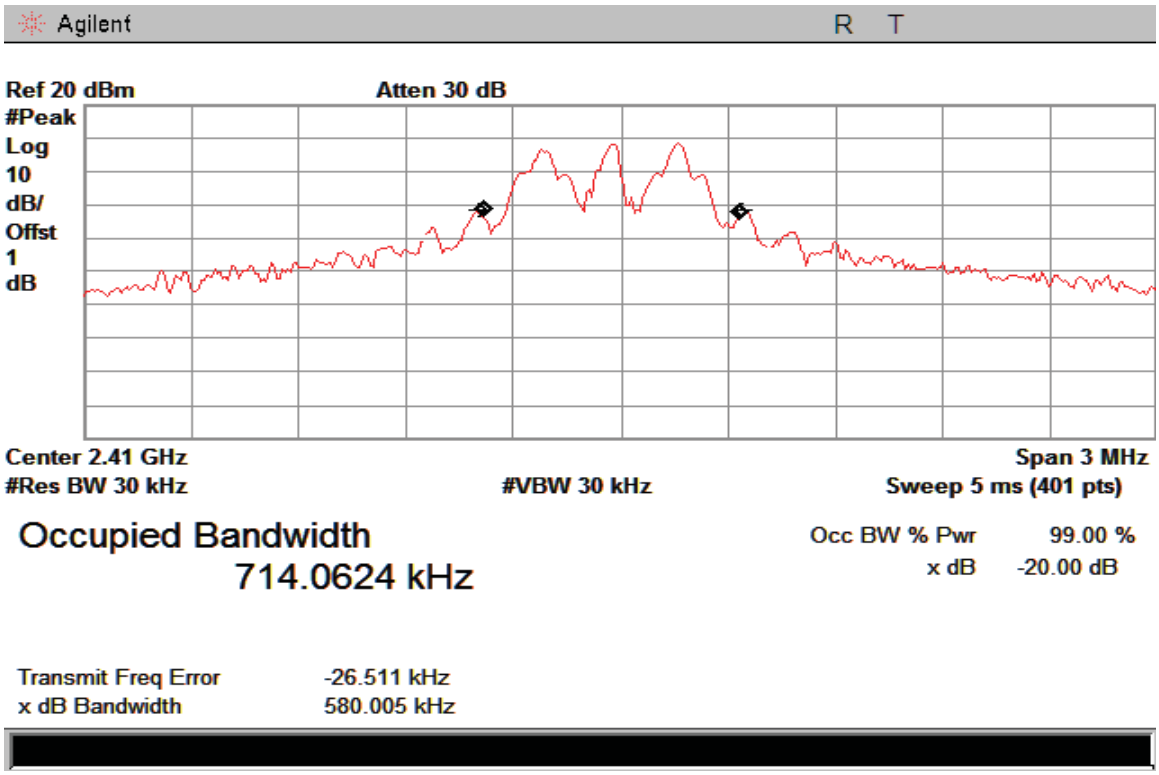
7.4 Test Results

Mode	Freq (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (kHz)	Conclusion
FSK RF-603 mode	2402.5	1.197	1.0114	/	PASS
	2429.5	1.138	1.0131	/	PASS
	2456.5	1.206	1.0129	/	PASS
RF-602 mode	2410	0.580	0.7141		PASS
Note: Detailed information please see the following page.					


Agilent
R T
Ref 20 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.402 GHz
#Res BW 30 kHz
#VBW 30 kHz
Span 3 MHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
1.0114 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error -25.397 kHz
x dB Bandwidth 1.197 MHz


Agilent
R T
Ref 20 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.429 GHz
#Res BW 30 kHz
#VBW 30 kHz
Span 3 MHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
1.0131 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error -27.589 kHz
x dB Bandwidth 1.138 MHz


Agilent
R T
Ref 20 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.457 GHz
#Res BW 30 kHz
#VBW 30 kHz
Span 3 MHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
1.0129 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error -25.963 kHz
x dB Bandwidth 1.206 MHz


Agilent
R T
Ref 20 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.41 GHz
#Res BW 30 kHz
#VBW 30 kHz
Span 3 MHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
714.0624 kHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error -26.511 kHz
x dB Bandwidth 580.005 kHz

8 Band Edge Check

8.1 Test limit

Please refer section15.249 and section 15.205.

249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in section 15.209, whichever is the lesser attenuation.

249(e) As show in section 15.35(b), for frequencies above 1000MHz,the above field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak filed strength shall not exceed 2500 millivolts/meter at 3meters along the antenna azimuth.

8.2 Test Procedure

8.2.1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

8.2.2. Set spectrum analyzer please see the following test plot.

8.2.3. Set the spectrum analyzer as RBW, VBW=1000 KHz,

8.2.4. Max hold, view and count how many channel in the band.

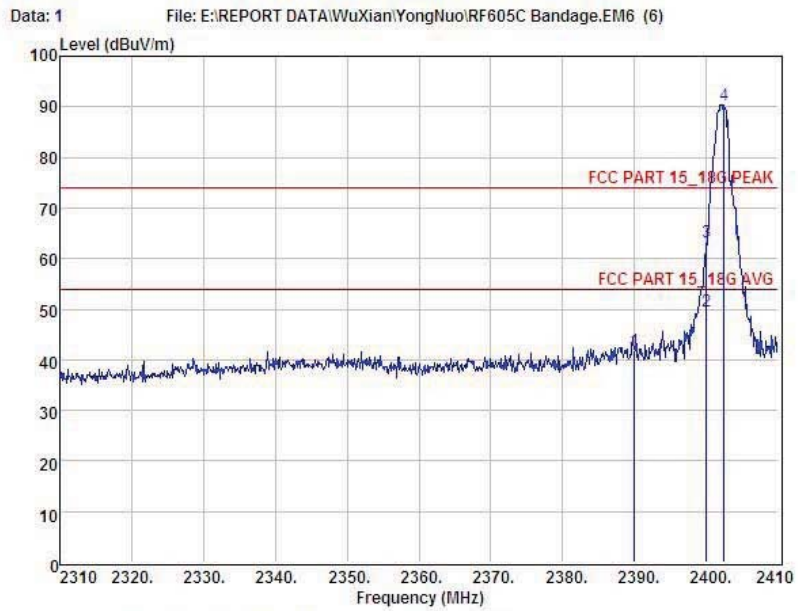
8.3 Test Setup

Please see the section 6.2, Above 1GHz Test Setup.

8.4 Test Result

Pass.

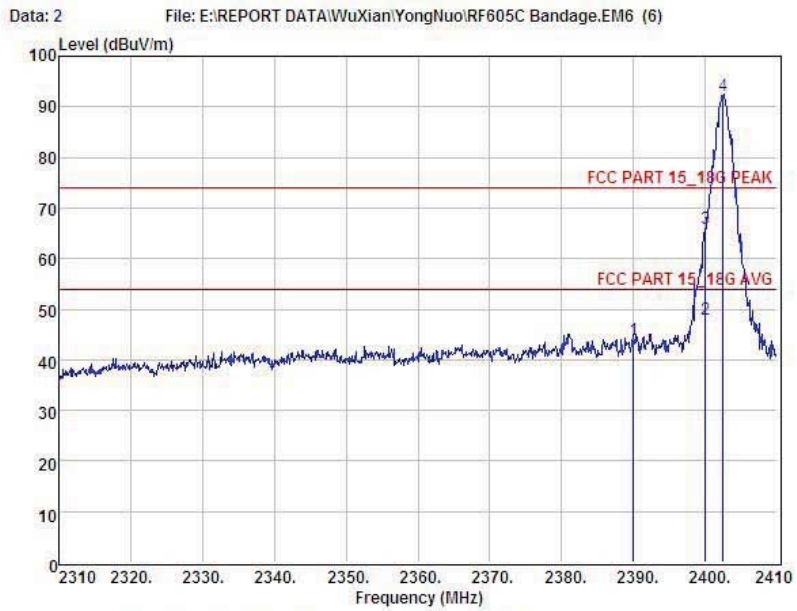
Detailed information please see the following page.



Condition : FCC PART 15_18G PEAK 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2402.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	45.15	27.62	34.97	3.92	41.72	74.00	-32.28	Peak
2	2400.00	53.06	27.62	34.97	3.94	49.65	54.00	-4.35	Average
3	2400.00	66.73	27.62	34.97	3.94	63.32	74.00	-10.68	Peak
4	2402.50	93.75	27.62	34.97	3.94	90.34	74.00	16.34	Peak

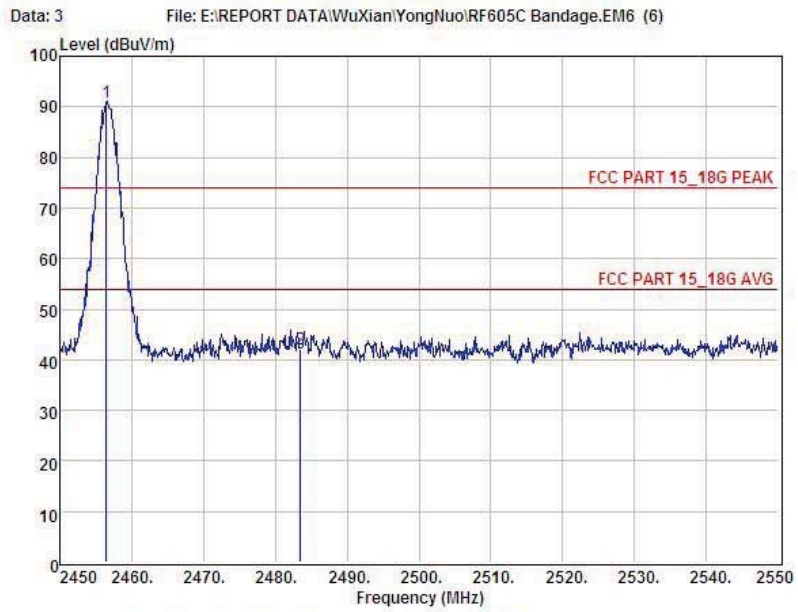
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2402.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	47.27	27.62	34.97	3.92	43.84	74.00	-30.16	Peak
2	2400.00	51.33	27.62	34.97	3.94	47.92	54.00	-6.08	Average
3	2400.00	69.46	27.62	34.97	3.94	66.05	74.00	-7.95	Peak
4	2402.50	95.51	27.62	34.97	3.94	92.10	74.00	18.10	Peak

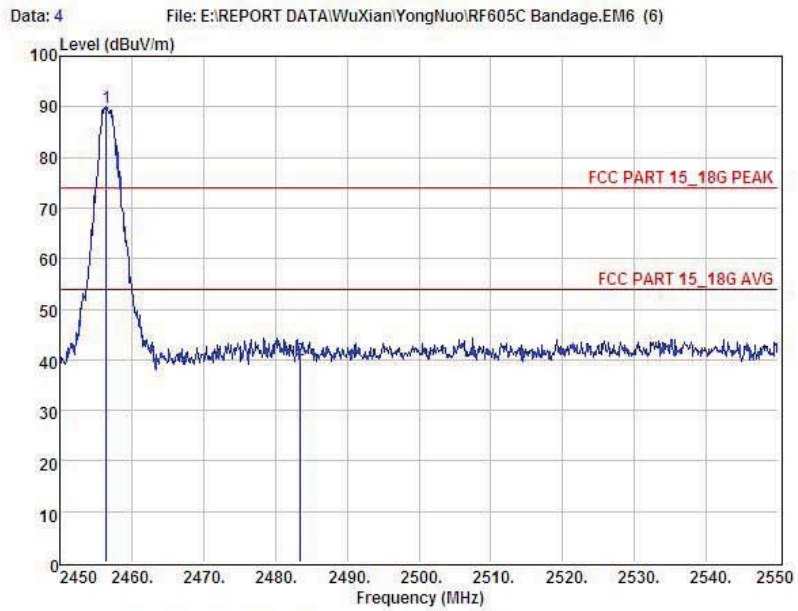
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2456.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2456.50	94.30	27.59	34.97	3.98	90.90	74.00	16.90	Peak
2	2483.50	45.40	27.59	34.97	4.00	42.02	74.00	-31.98	Peak

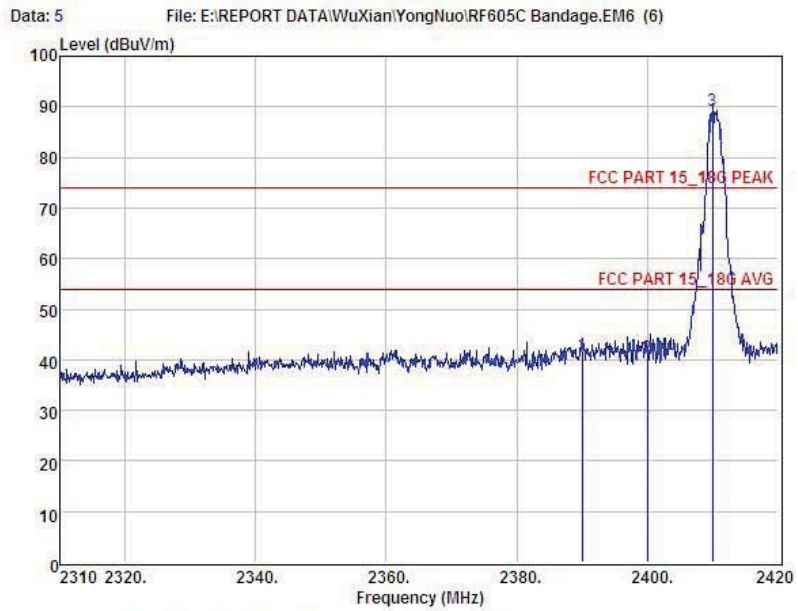
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2456.5MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2456.50	93.30	27.59	34.97	3.98	89.90	74.00	15.90	Peak
2	2483.50	43.27	27.59	34.97	4.00	39.89	74.00	-34.11	Peak

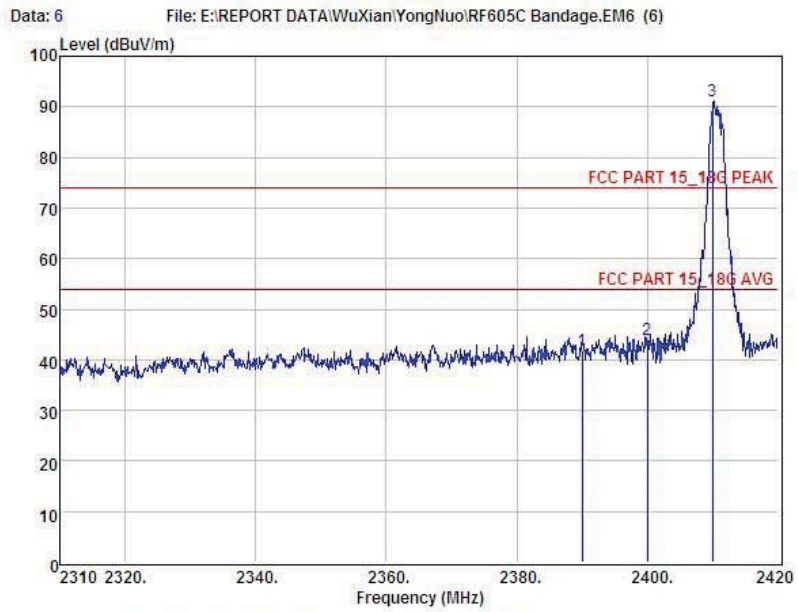
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	44.36	27.62	34.97	3.92	40.93	74.00	-33.07	Peak
2	2400.00	43.93	27.62	34.97	3.94	40.52	74.00	-33.48	Peak
3	2410.00	92.62	27.61	34.97	3.94	89.20	74.00	15.20	Peak

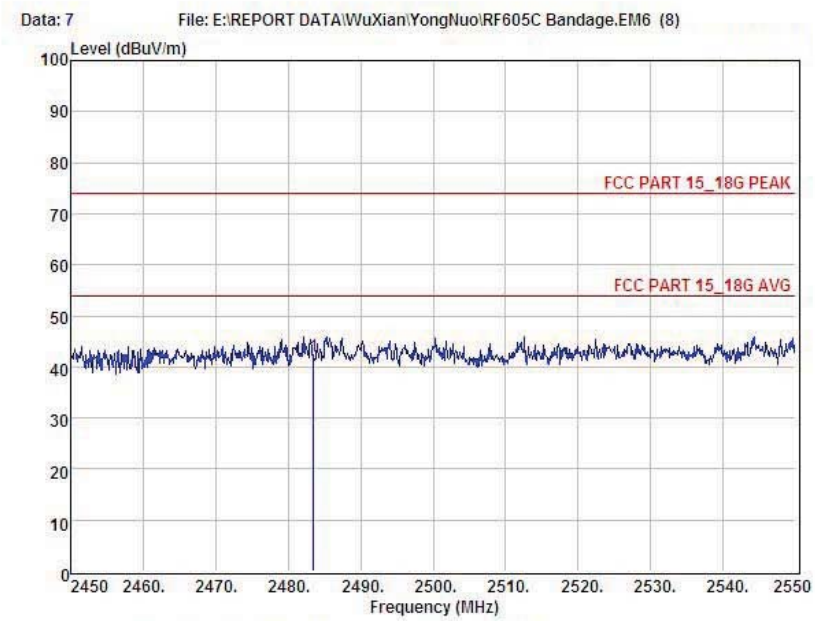
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	45.12	27.62	34.97	3.92	41.69	74.00	-32.31	Peak
2	2400.00	47.27	27.62	34.97	3.94	43.86	74.00	-30.14	Peak
3	2410.00	94.50	27.61	34.97	3.94	91.08	74.00	17.08	Peak

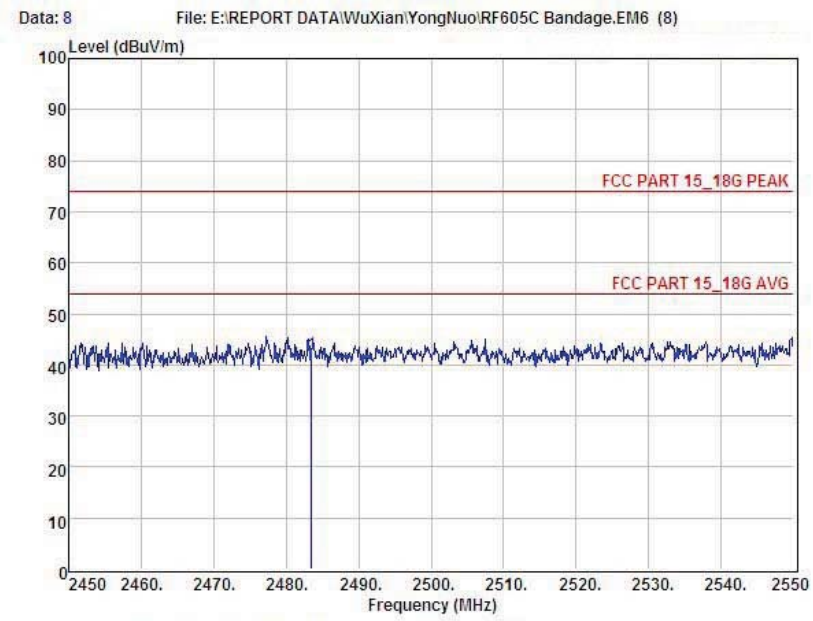
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: HORIZONTAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2483.50	45.60	27.59	34.97	4.00	42.22	74.00	-31.78	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15_18G PEAK 3m POL: VERTICAL
EUT : Wireless Flash Trigger
Model No : RF605C
Test Mode : TX 2410MHz
Power : DC 3V From Battery
Test Engineer : Store
Remark :
Temp : 25℃
Hum : 52%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2483.50	45.36	27.59	34.97	4.00	41.98	74.00	-32.02	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

9 Antenna Requirement

9.1 Standard Requirement

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.

9.2 Antenna Connected Construction

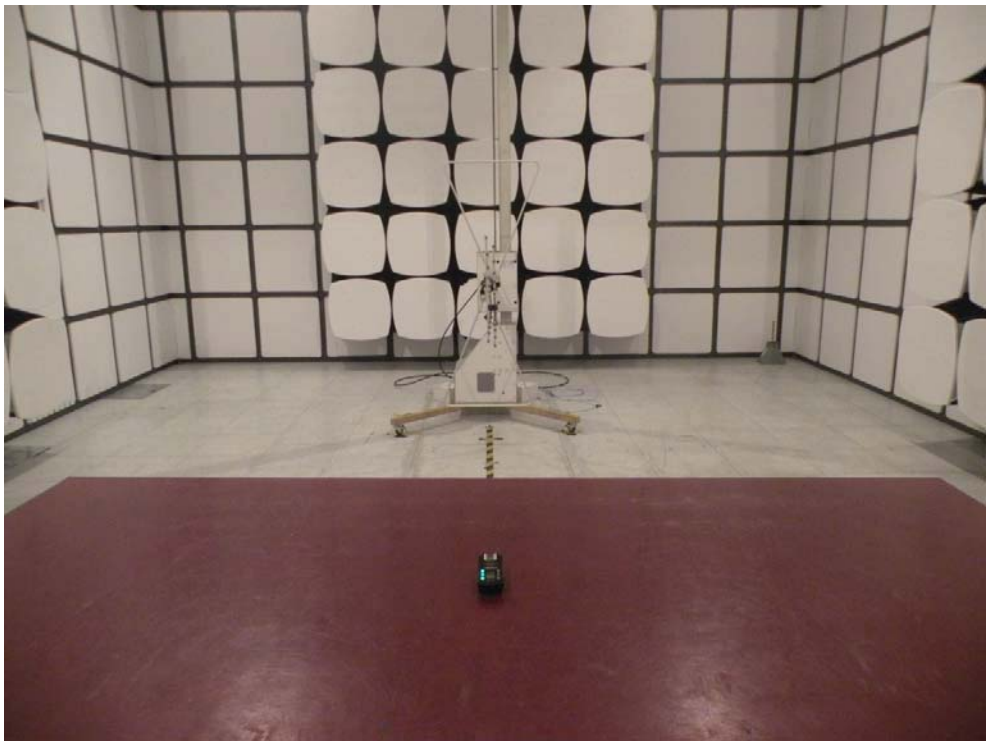
The directional gains of antenna used for transmitting is 1.5dBi, and the antenna is PCB Antenna. Please see EUT photo for details.

9.3 Result

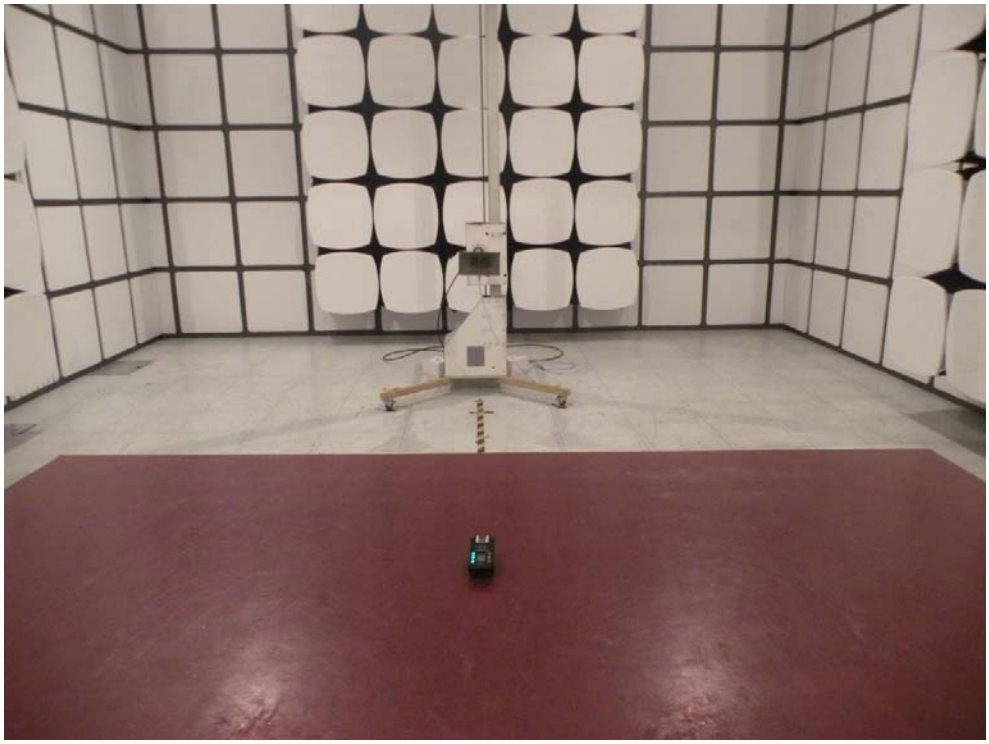
The EUT antenna is PCB Antenna. It complies with the standard requirement.

10 Photographs of Test Setup

Below 1G



Above 1G



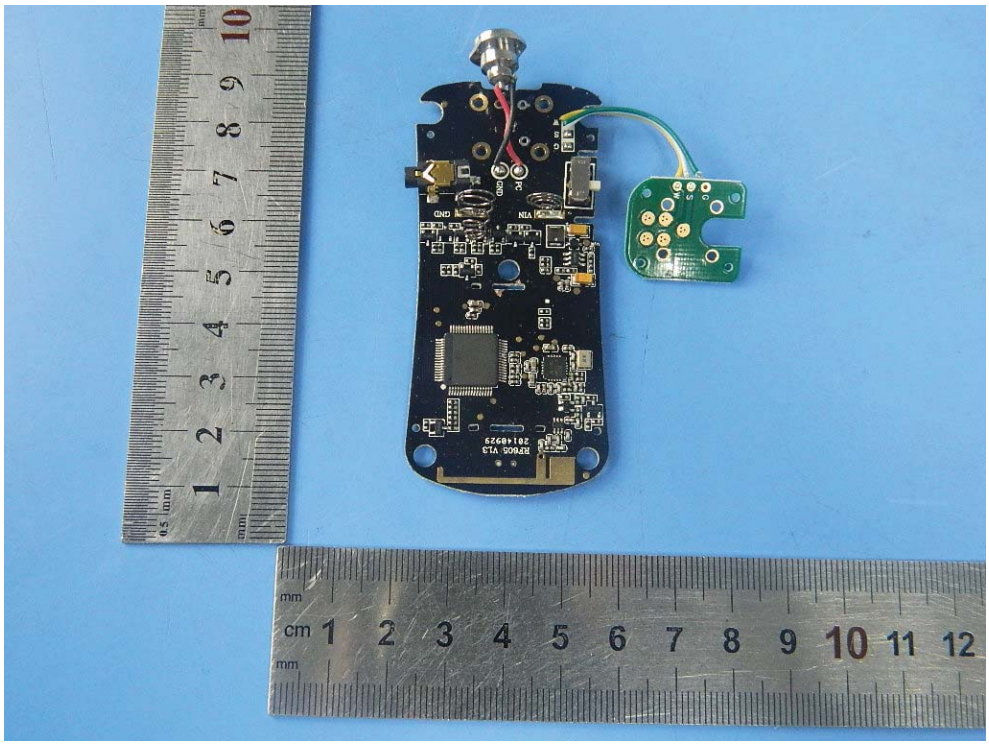
11 Photographs of EUT

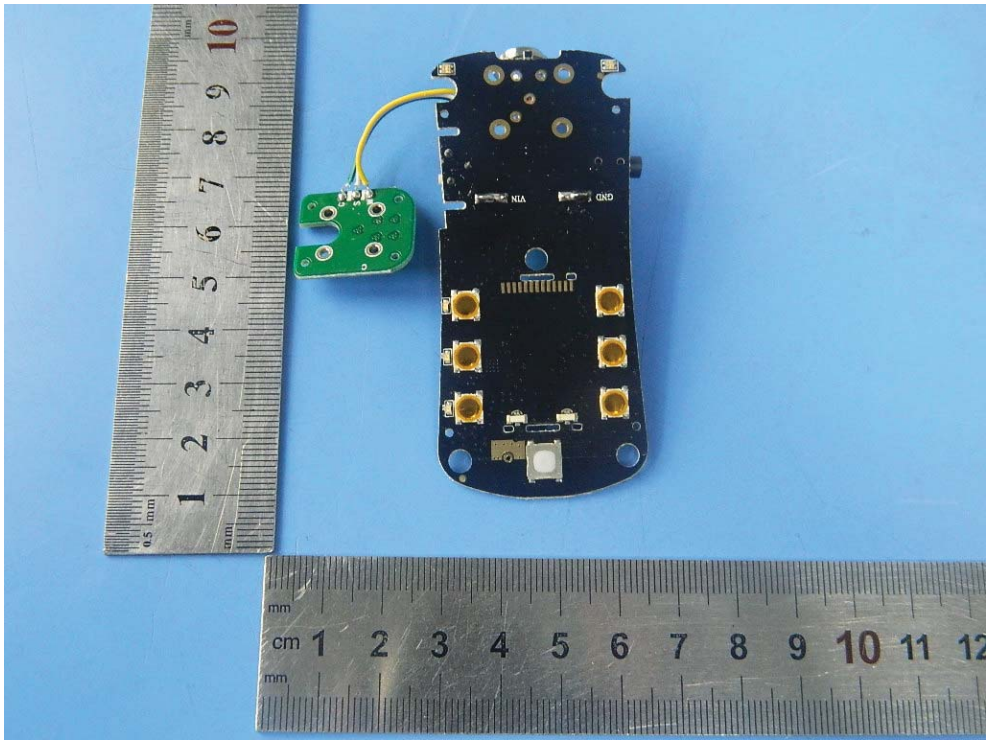

YONGNUO
RF605C
Wireless Flash Trigger
Trancseiver

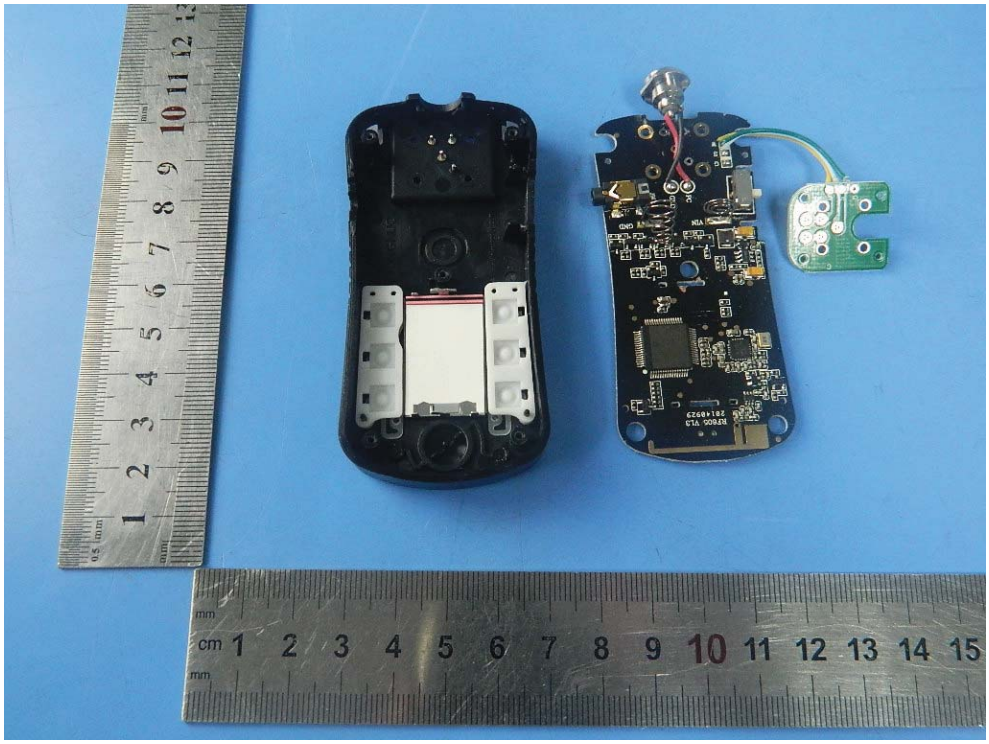

YONGNUO
RF605C
Wireless Flash Trigger
Trancseiver
CH
MODE
C/F
B/E
A/D


YONGNUO
RF605C
Wireless Flash Trigger
Transceiver
MODE/*
CH
A/B
B/E
C/F
cm 1 2 3 4 5 6 7 8 9 10 11


cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15


GND
NIA
mm
cm 1 2 3 4 5 6 7 8 9 10 11 12
mm


NIA
GND
mm
cm 1 2 3 4 5 6 7 8 9 10 11 12
mm



-------END OF THE REPORT----