TEST REPORT

FCC ID: 2ACYPYN622CII

For

SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD

Wireless Flash Trigger Transceiver

Model No.	:	YN622C II, YN622N II
Prepared for	:	SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD
Address	:	B509 5/F, BUILDING 2, SAIGE SCIENCE AND TECHNOLOGY PARK, NORTH OF HUAQIANG ROAD, FUTIAN, SHENZHEN, CHINA.
Prepared by	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road, Bao'an, Shenzhen, China
Report No.	:	T1851045 05
Date of Receipt	:	August 20, 2015
Date of Test	:	August 20, 2015- August 28, 2015
Date of Report	:	August 29, 2015
Version Number	:	REV0

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DECLARATION

Applicant	:	SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD
Manufacturer	:	Shenzhen YONGNUO Electrical Equipment Co., Ltd.
Product	:	Wireless Flash Trigger Transceiver
	(A) Model No.	: YN622C II, YN622N II
	(B) Trade Name	: **YONGNUO**
	(C) Power supply	: DC 3V from battery Or DC 5V from PC with AC 120V/60Hz

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.249: 2014, ANSI C63.4:2009

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....…..:	Peter Kang Test Engineer	…… Peter Kang ……
Approved by (name + signature)…....:	Simple Guan Project Manager	… ……
Date of issue…… ……..:		August 29, 2015

1 General Information

1.1 Description of Device (EUT)

EUT	:	Wireless Flash Trigger Transceiver
Model No.	:	YN622C II, YN622N II
DIFF	:	All model's the function, software and electric circuit are the same, only with a product model named different. The test mode is YN622C II.
Trade Name	:	**YONGNUO**
Type of Antenna	:	PCB Antenna, Maximum Gain is 3.0dBi.
Operation Frequency	:	2403-2474MHz
Channel number	:	14
Modulation type	:	FSK
Power Supply	:	DC 3V from battery Or DC 5V from PC with AC 120V/60Hz
Fundamental field strength (PK)	:	87.58 dBuV/m
Hardware Version	:	V1.1
Software Version	:	REV 01
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 Electrical Equipment Co., Ltd.
Address	:	FACTORY 1, WENHAO INDUSTRIAL ESTATE, TONGLE VILLAGE, LONGGANG STREET, LONGGANG DISTRICT, SHENZHEN, CHINA.

1.2 Description of Test Facility

Shenzhen Alpha Product Testing Co., Ltd.

Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road, Bao'an, Shenzhen, China

March 25, 2015 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2 Summary of Measurement

2.1 Summary of test result

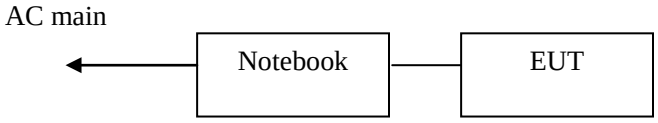
Description of Test Item	Standard	Results
Radiated Emission	Section 15.249&15.209	PASS
Occupied bandwidth	FCC Part 15: 15.215& FCC Part 15: 15.249	PASS
Band Edge Compliance	Section 15.249	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2.2 Test mode

Tested mode, channel information		
Mode	Channel	Frequency (MHz)
FSK	CH1	2403
	CH7	2436
	CH14	2474
Note: For the relevant Conducted Measurement, the temporary antenna connector is used during the measurement. Antenna Connector Impedance: 50Ω, Cable Loss: 1.0 dB		

Channel list			
CH1	2403MHz	CH8	2442MHz
CH2	2407MHz	CH9	2450MHz
CH3	2411MHz	CH10	2454MHz
CH4	2418MHz	CH11	2458MHz
CH5	2422MHz	CH12	2466MHz
CH6	2426MHz	CH13	2470MHz
CH7	2436MHz	CH14	2474MHz

2.3 Block Diagram



2.4 Assistant equipment used for test

Description	:	Notebook
Manufacturer	:	Acer
Model No.	:	4552G

Description	:	Notebook adapter
Manufacturer	:	Chicony
Model No.	:	A11-065N1A
Information	:	Input: AC 100-240V-1.7A50-60Hz Output: DC 19V,3.42A 6W

2.5 Test Conditions

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

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

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.70dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.90 dB	Polarize: V
	3.92dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.26 dB	Polarize: H
	4.28 dB	Polarize: V
Uncertainty for conducted RF Power	0.16dB	

2.7 Test Equipment

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
3m Semi-Anechoic	CHENYU	9*6*6	N/A	2014.01.20	3Year
Spectrum analyzer	Agilent	E4407B	MY49510055	2015.01.19	1Year
Receiver	R&S	ESCI	101165	2015.01.19	1Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	2014.01.22	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2015.01.21	2Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	2015.01.21	2Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2015.01.21	1Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	309972/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	329112/4	2015.01.19	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2015.03.21	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2015.03.21	1Year
LISN	Schwarzbeck	NSLK8126	8126466	2015.01.19	1Year
Pulse Limiter	Schwarzbeck	9516F	9618	2015.01.19	1Year

Note: Cable test frequency range:

Equipment	Manufacture	Model No.	Serial No.	Test Location	Frequency Rang
Cable	Resenberger	SUCOFLEX 104	MY6562/4	Conducted	150KHz-30MHz
Cable	Resenberger	SUCOFLEX 104	309972/4	Radiation	30MHz-2GHz
Cable	Resenberger	SUCOFLEX 104	329112/4	Radiation	1GHz-26.5GHz

3 Radiation Emission

3.1 Radiation Emission Limits(15.209&249)

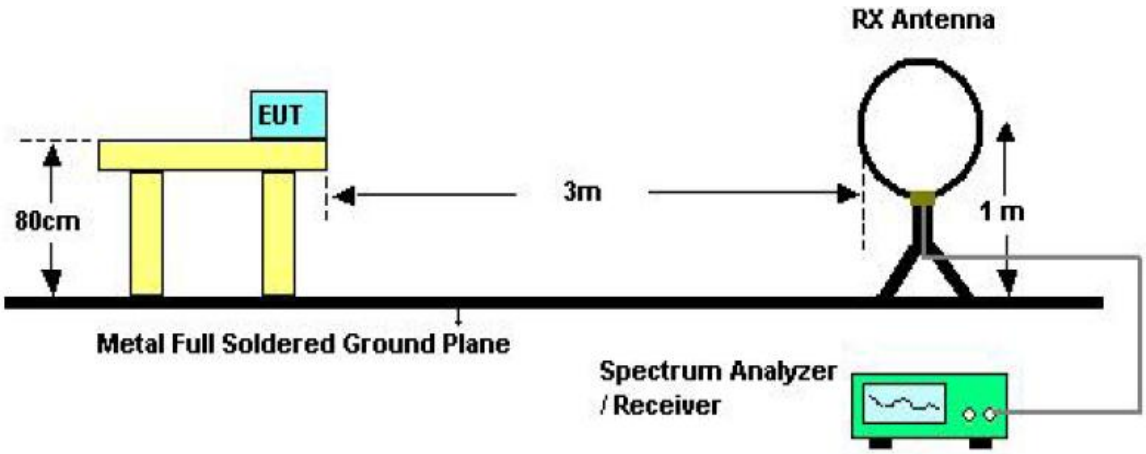
Frequency (MHz)	**Field Strength Limits at 3 metres (watts, e.i.r.p.)**		
	uV/m	dB uV/m	Measurement distance(m)
0.009-0.490	2400/F(kHz)	XX	300
0.490-1.705	24000/F(kHz)	XX	30
1.705-30	30	29.5	30
30~88	100(3nW)	40	3
88~216	150(6.8nW)	43.5	3
216~960	200(12nW)	46	3
Above960	500(75nW)	54	3
Carrier frequency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

NOTE:

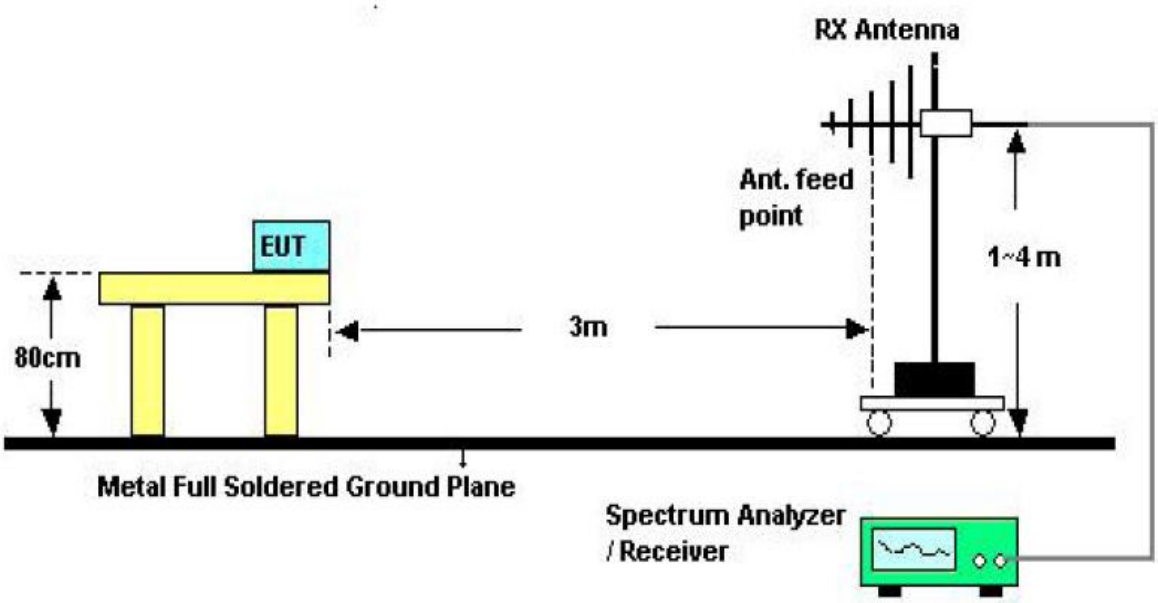
a) The tighter limit applies at the band edges.

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

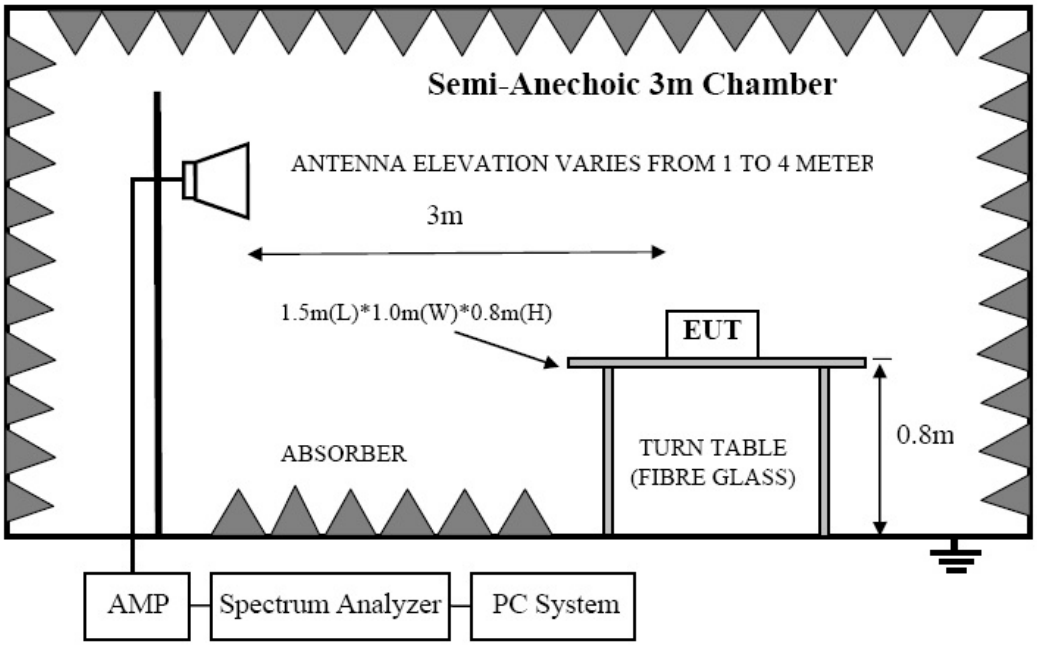
3.2 Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

3.3 Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.

(2) For the actual test configuration, please see the test setup photo.

(3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.

(a) Change work frequency or channel of device if practicable.

(b) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions

(4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated

(5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2009 on Radiated Emission test.

(6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

(7) For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane

3.4 Test Equipment Setting For emission test.

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

3.5 Test Condition

Continual Transmitting in maximum power.

3.6 Test Result

PASS.

Note: The Radiated emissions is showed the maximum power data of TX test mode and showed worst orthogonal axes with Y orthogonal axes.
Note: The device can be charged by using the AC adapter
(M/N: PGAK0500150U1EU, input : 100-240V~, 50/60Hz, 0.3A, output : 5V DC, 1500mA) and the laptop, so these 2 charging conditions had been taken into the consideration during the AC power line conducted test. After evaluations, charging device through the laptop is the worst case and only record the worst case here.

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

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 has no need to be reported.

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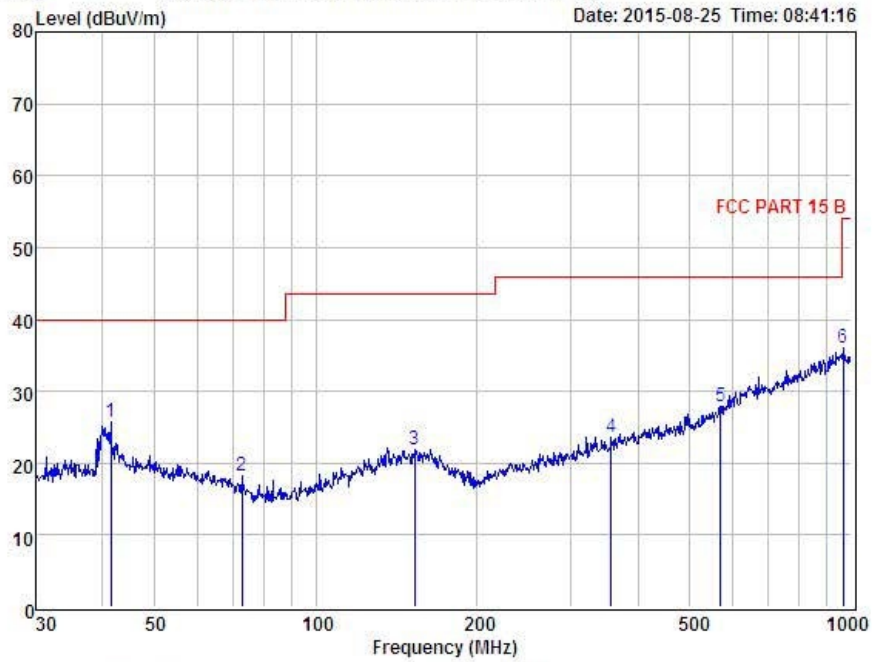


```
Condition      : FCC PART 15 B        3m       POL: VERTICAL
EUT            : Wireless Flash Trigger Transceiver
Model No       : YN622C II
Test Mode      : TX 2403MHz
Power          : DC 5V From PC With AC 120V/60Hz
Test Engineer  : Simple
Remark         :
                 24.2℃
                 54%
```

Item	Freq MHz	Read Level dBuA/m	Antenna Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuA/m	Limit dBuA/m	Margin dBuA/m	Remark
1	41.42	42.38	13.93	30.85	0.19	25.65	40.00	-14.35	Peak
2	72.85	37.94	10.21	30.12	0.21	18.24	40.00	-21.76	Peak
3	153.20	36.73	14.16	29.36	0.41	21.94	43.50	-21.56	Peak
4	356.68	36.70	13.95	27.72	0.66	23.59	46.00	-22.41	Peak
5	570.61	35.45	17.74	26.72	1.41	27.88	46.00	-18.12	Peak
6	965.54	36.98	22.19	25.04	1.97	36.10	54.00	-17.90	Peak

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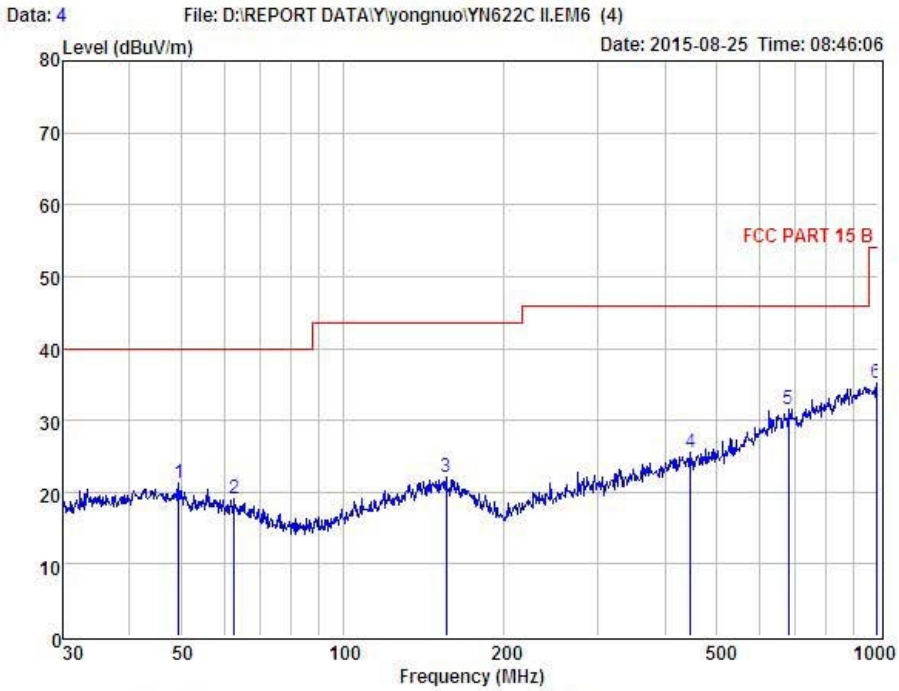


```
Condition      : FCC PART 15 B        3m       POL: HORIZONTAL
EUT            : Wireless Flash Trigger Transceiver
Model No       : YN622C II
Test Mode      : TX 2403MHz
Power          : DC 5V From PC With AC 120V/60Hz
Test Engineer  : Simple
Remark         :
                 24.2℃
                 54%
```

Item	Freq MHz	Read Level dBuA/m	Antenna Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuA/m	Limit dBuA/m	Margin dBuA/m	Remark
1	49.36	37.75	13.54	30.25	0.10	21.14	40.00	-18.86	Peak
2	62.65	37.55	11.98	30.72	0.21	19.02	40.00	-20.98	Peak
3	155.91	36.90	14.15	29.31	0.38	22.12	43.50	-21.38	Peak
4	446.41	36.20	15.87	27.49	0.93	25.51	46.00	-20.49	Peak
5	679.96	36.22	19.44	25.80	1.70	31.56	46.00	-14.44	Peak
6	993.01	36.62	22.22	25.24	1.59	35.19	54.00	-18.81	Peak

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Notes: Above is below 1GHz test data. This report only shall the worst case mode for TX 2403MHz.

Radiated Emissions Result of Inside band (2403MHz)

EUT	Wireless Flash Trigger Transceiver	**Model Name**	YN622C II
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V supply by PC
Test Mode	TX Low	**Antenna polarization**	Horizontal/Vertical

Channel Low(2403MHz)									
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**
2403	H	88.42（PK）	27.61	3.92	34.97	-3.44	84.98	113.97	-28.99
2403	H	80.25 (AV)	27.61	3.92	34.97	-3.44	76.81	93.97	-17.16
--	H	--	--	--	--	--	--	--	--
2403	V	87.48（PK）	27.61	3.92	34.97	-3.44	84.04	113.97	-29.93
2403	V	79.54(AV)	27.61	3.92	34.97	-3.44	76.10	93.97	-17.87
--	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	51.74	---	-10.27	41.47	---	74.00	54.00	-12.53	Peak
1942.13	H	51.51	---	-8.86	42.65	---	74.00	54.00	-11.35	Peak
2654.72	H	49.52	---	-6.94	42.58	---	74.00	54.00	-11.42	Peak
4806.00	H	48.05	---	0.64	48.69	---	74.00	54.00	-5.31	Peak
N/A										
1218.43	V	52.15	---	-11.52	40.63	---	74.00	54.00	-13.37	Peak
1821.56	V	51.31	---	-9.16	42.15	---	74.00	54.00	-11.85	Peak
2794.23	V	50.06	---	-6.38	43.68	---	74.00	54.00	-10.32	Peak
4806.00	V	46.82		0.64	47.46	---	74.00	54.00	-6.54	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 30MHz-1GHz, RBW=120KHz, VBW=300KHz.
Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting 30MHz-1GHz, RBW=1MHz, VBW=10Hz.
Above 1G: RBW=1MHz, VBW=10Hz

Radiated Emissions Result of Inside band (2436MHz)

EUT	Wireless Flash Trigger Transceiver	**Model Name**	YN622C II
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V supply by PC
Test Mode	TX Mid	**Antenna polarization**	Horizontal/Vertical

Channel Low(2436MHz)									
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**
2436	H	90.97（PK）	27.62	3.96	34.97	-3.39	87.58	113.97	-26.39
2436	H	85.62 (AV)	27.62	3.96	34.97	-3.39	82.23	93.97	-11.74
--	H	--	--	--	--	--	--	--	--
2436	V	89.31（PK）	27.62	3.96	34.97	-3.39	85.92	113.97	-28.05
2436	V	82.88 (AV)	27.62	3.96	34.97	-3.39	79.49	93.97	-14.48
--	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	52.98	---	-11.52	41.46	---	74.00	54.00	-12.54	Peak
2215.05	H	50.74	---	-8.13	42.61	---	74.00	54.00	-11.39	Peak
2932.16	H	48.69	---	-5.95	42.74	---	74.00	54.00	-11.26	Peak
4872.00	H	49.01	---	0.76	49.77	---	74.00	54.00	-4.23	Peak
N/A										
1305.47	V	53.06	---	-10.84	42.22	---	74.00	54.00	-11.78	Peak
2306.43	V	48.89	---	-7.46	41.43	---	74.00	54.00	-12.57	Peak
3145.07	V	48.69	---	-5.63	43.06	---	74.00	54.00	-10.94	Peak
4872.00	V	47.72		0.76	48.48	---	74.00	54.00	-5.52	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 30MHz-1GHz, RBW=120KHz, VBW=300KHz.
Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting 30MHz-1GHz, RBW=1MHz, VBW=10Hz.
Above 1G: RBW=1MHz, VBW=10Hz

Radiated Emissions Result of Inside band (2474MHz)

EUT	Wireless Flash Trigger Transceiver	**Model Name**	YN622C II
Temperature	25°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V supply by PC
Test Mode	TX High	**Antenna polarization**	Horizontal/Vertical

Channel Low(2474MHz)									
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**
2474	H	87.73（PK）	27.59	3.98	34.97	-3.4	84.33	113.97	-29.64
2474	H	80.15 (AV)	27.59	3.98	34.97	-3.4	76.75	93.97	-17.22
--	H	--	--	--	--	--	--	--	--
2474	V	84.42（PK）	27.59	3.98	34.97	-3.4	81.02	113.97	-32.95
2474	V	79.58 (AV)	27.59	3.98	34.97	-3.4	76.18	93.97	-17.79
--	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	52.32	---	-10.96	41.36	---	74.00	54.00	-12.64	Peak
1954.17	H	50.88	---	-8.64	42.24	---	74.00	54.00	-11.76	Peak
2915.74	H	48.47	---	-5.95	42.52	---	74.00	54.00	-11.48	Peak
4948.00	H	46.84	---	0.87	47.71	---	74.00	54.00	-6.29	Peak
N/A										
1294.75	V	53.60	---	-10.96	42.64	---	74.00	54.00	-11.36	Peak
2106.41	V	51.94	---	-8.36	43.58	---	74.00	54.00	-10.42	Peak
3257.22	V	46.95	---	-5.39	41.56	---	74.00	54.00	-12.44	Peak
4948.00	V	45.48		0.87	46.35	---	74.00	54.00	-7.65	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 30MHz-1GHz, RBW=120KHz, VBW=300KHz.
Above 1G: RBW=1MHz, VBW=3MHz

b. AV setting 30MHz-1GHz, RBW=1MHz, VBW=10Hz.
Above 1G: RBW=1MHz, VBW=10Hz

4 POWER LINE CONDUCTED EMISSION

4.1 Conducted Emission Limits(15.207)

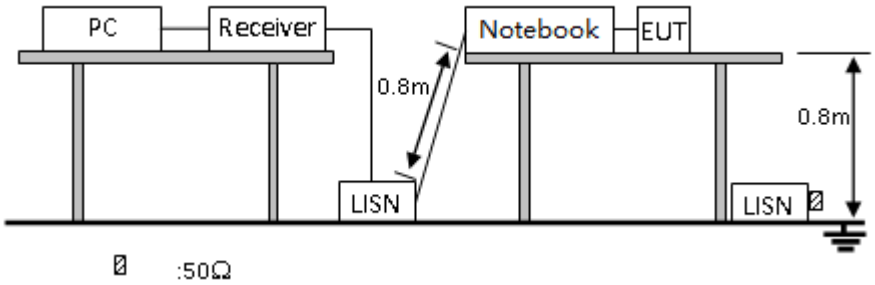
Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

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 range of 0.15 to 0.50 MHz.

4.2 Test Setup



4.3 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 C63.4-2009 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

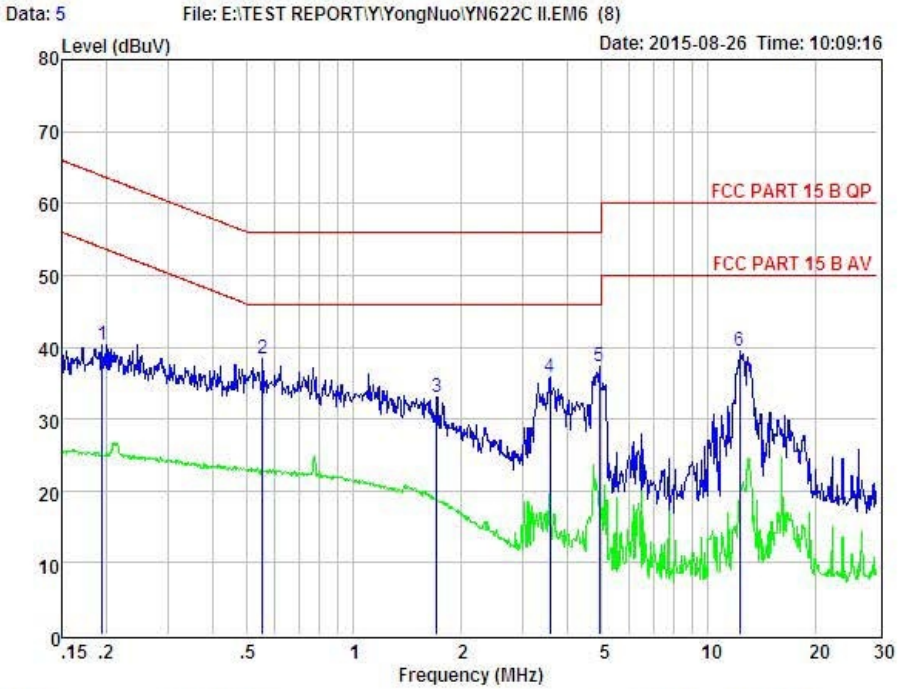
4.4 Test Results

PASS.

Detailed information please see the following page.

Note: The device can be charged by using the AC adapter (M/N: PGAK0500150U1EU, input : 100-240V~, 50/60Hz, 0.3A, output : 5V DC, 1500mA) and the laptop, so these 2 charging conditions had been taken into the consideration during the AC power line conducted test. After evaluations, charging device through the laptop is the worst case and only record the worst case here.

Shenzhen Certification Technology Service Co., Ltd.
2F, Building B, East Area of Nanchang Second Industrial Zone,
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China
Tel: 4006786199 Fax: +86-755-26736857
Website: http://www.cessz.com Email:Service@cessz.com



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:23.1℃ Hum:48 %
EUT : Wireless Flash Trigger Transceiver
Model No : YN622C II
Test Mode : TX mode
Power : DC 5V From PC With AC 120V/60Hz
Test Engineer: Simple
Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.195	40.28	0.03	0.00	0.10	40.41	63.80	-23.39	Peak
2	0.552	38.37	0.03	0.00	0.10	38.50	56.00	-17.50	Peak
3	1.716	32.89	0.05	0.00	0.10	33.04	56.00	-22.96	Peak
4	3.584	35.60	0.08	0.00	0.12	35.80	56.00	-20.20	Peak
5	4.926	36.99	0.10	0.00	0.12	37.21	56.00	-18.79	Peak
6	12.253	39.01	0.25	0.00	0.22	39.48	60.00	-20.52	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

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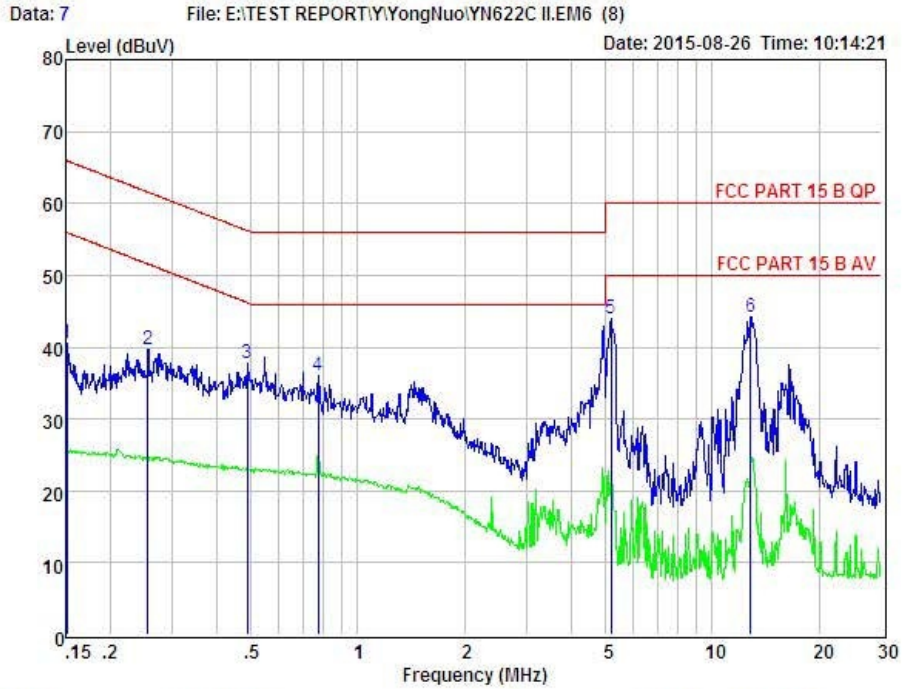
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China
Tel: 4006786199 Fax: +86-755-26736857
Website: http://www.cessz.com Email:Service@cessz.com



Condition : FCC PART 15 B QP POL: LINE Temp:23.1℃ Hum:48 %
EUT : Wireless Flash Trigger Transceiver
Model No : YN622C II
Test Mode : TX mode
Power : DC 5V From PC With AC 120V/60Hz
Test Engineer: Simple
Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.151	40.37	0.03	0.00	0.10	40.50	65.96	-25.46	Peak
2	0.256	39.51	0.03	0.00	0.10	39.64	61.56	-21.92	Peak
3	0.489	37.55	0.03	0.00	0.10	37.68	56.19	-18.51	Peak
4	0.775	35.84	0.00	0.00	0.10	35.94	56.00	-20.06	Peak
5	5.194	43.75	0.10	0.00	0.12	43.97	60.00	-16.03	Peak
6	12.852	43.83	0.23	0.00	0.22	44.28	60.00	-15.72	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

- 7 -

5 Occupied bandwidth

5.1 Test limit

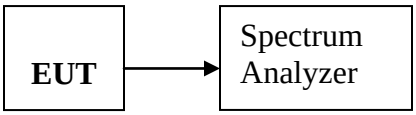
Please refer section15.249

5.2 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 100KHz,VBW set 100KHz,Sweep time set auto.

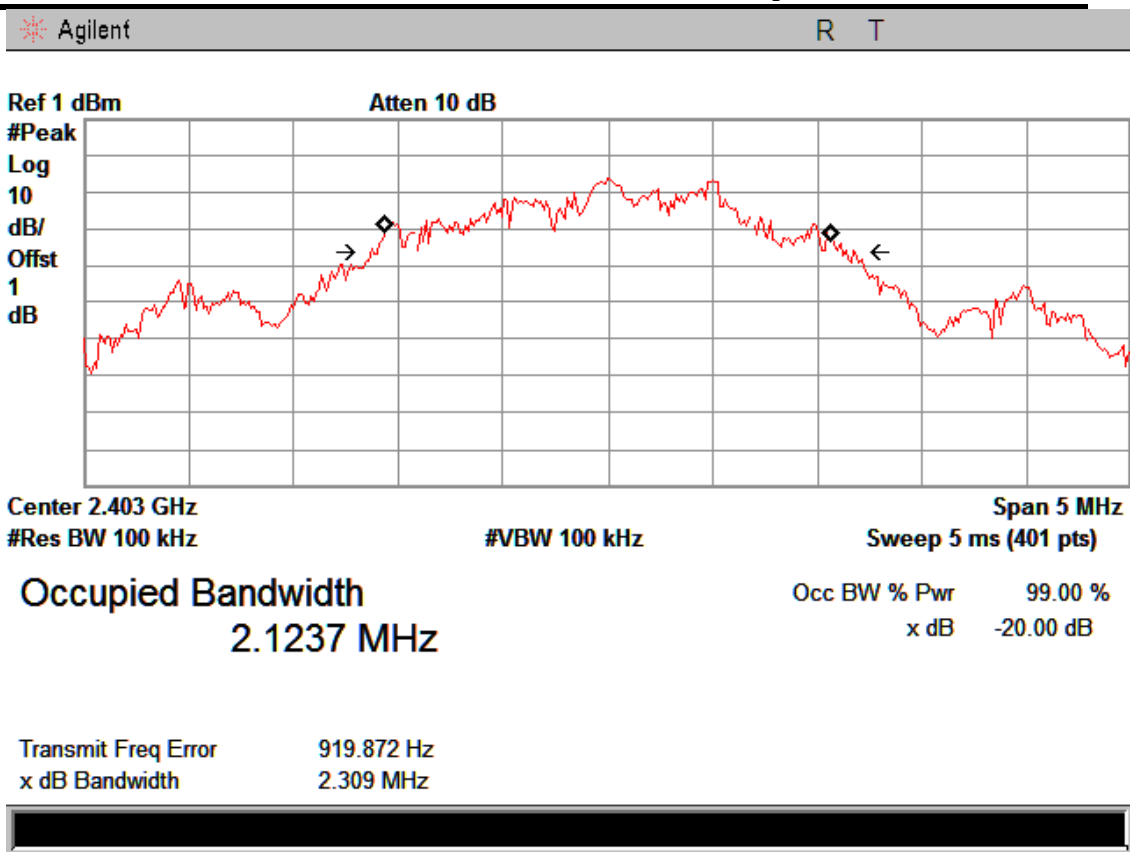
5.3 Test Setup

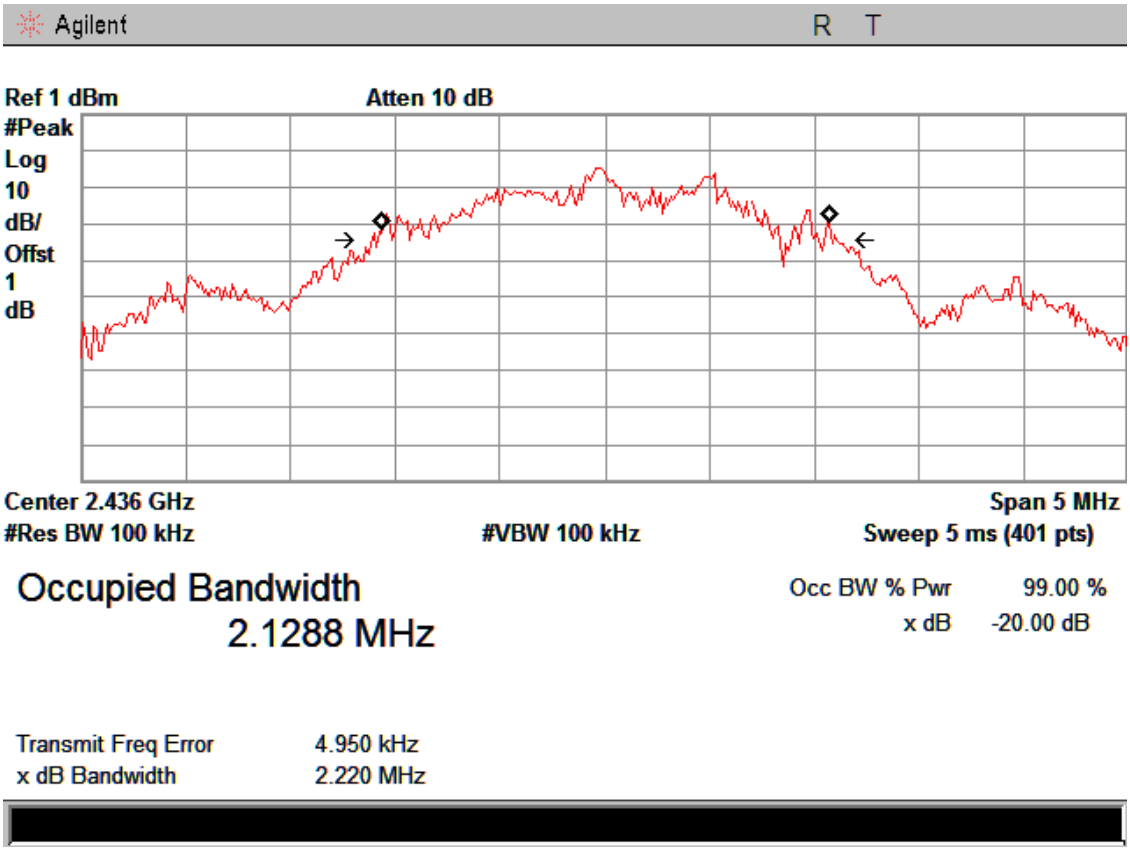


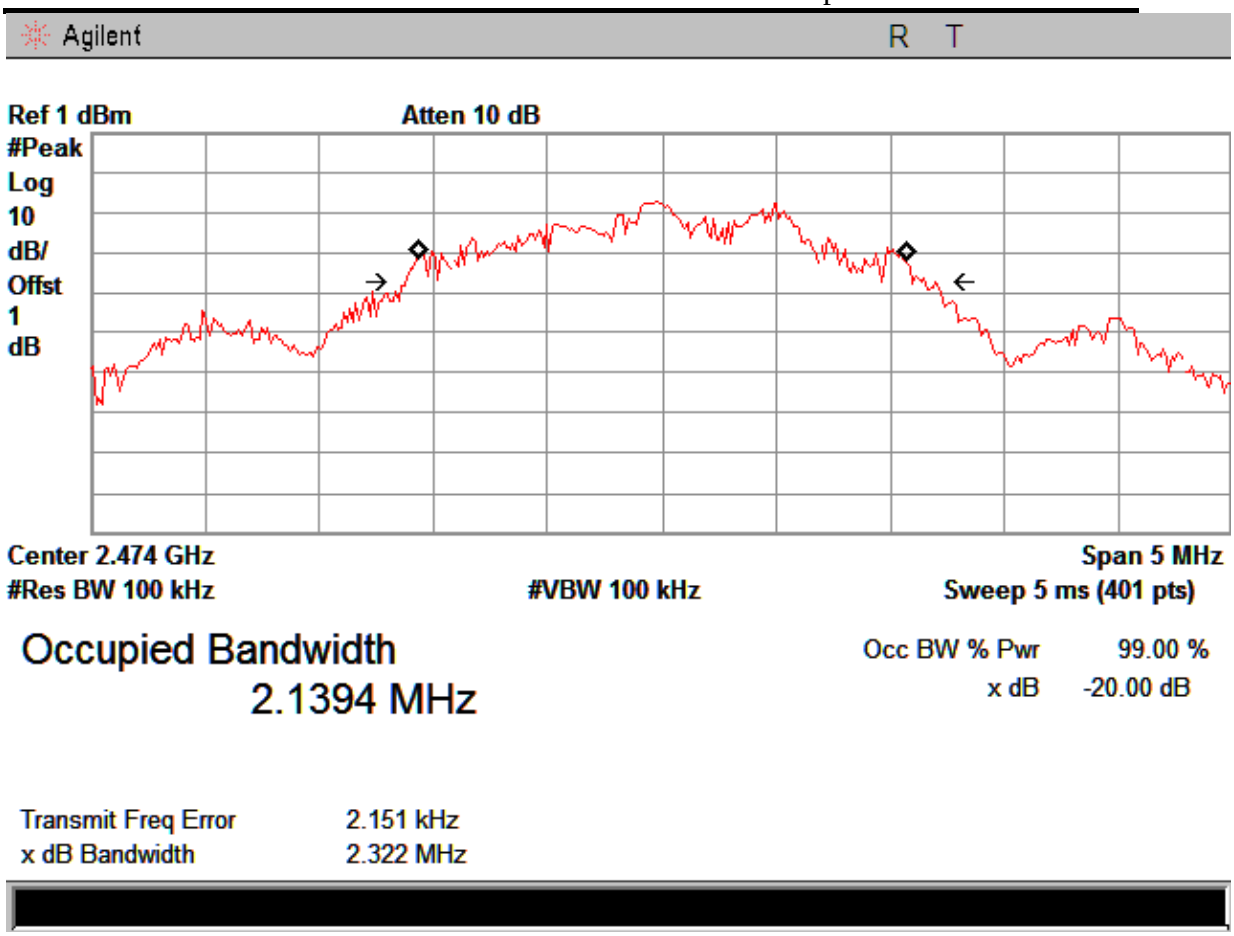
5.4 Test Results

PASS.

Mode	Freq (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (kHz)	Conclusion
FSK	2403	2.309	2.1237	/	PASS
	2436	2.220	2.1288	/	PASS
	2474	2.322	2.1394	/	PASS
Note: Detailed information please see the following page.					


Agilent
R T
Ref 1 dBm
Atten 10 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.403 GHz
Span 5 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
2.1237 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 919.872 Hz
x dB Bandwidth 2.309 MHz


Agilent
R T
Ref 1 dBm
Atten 10 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.436 GHz
Span 5 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
2.1288 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 4.950 kHz
x dB Bandwidth 2.220 MHz


Agilent
R T
Ref 1 dBm
Atten 10 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.474 GHz
Span 5 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 5 ms (401 pts)
Occupied Bandwidth
2.1394 MHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 2.151 kHz
x dB Bandwidth 2.322 MHz

6 Band Edge Check

6.1 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.

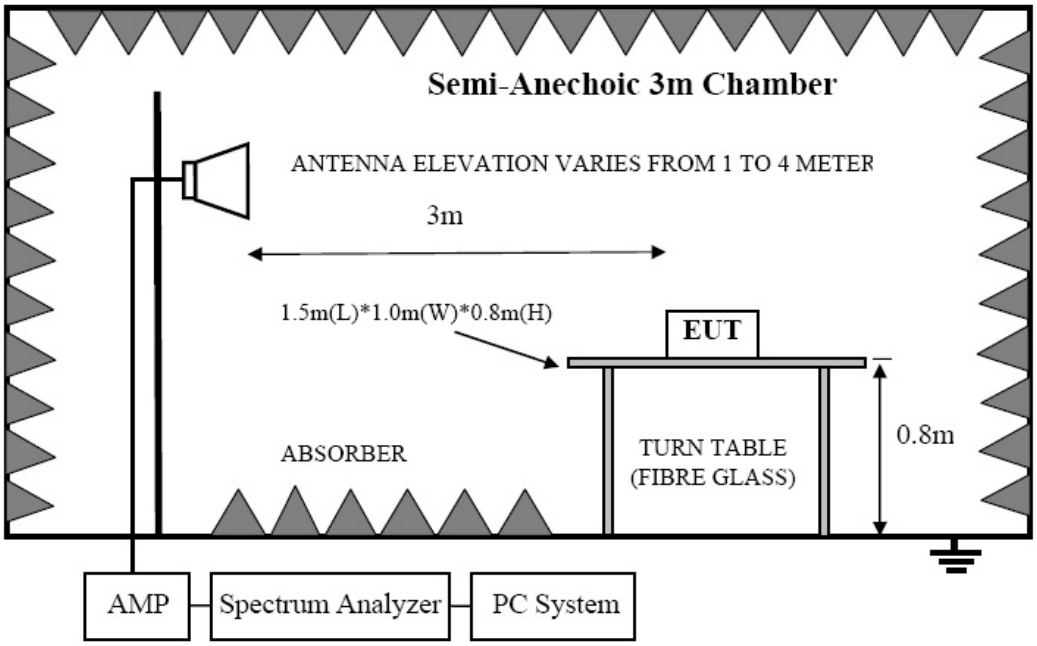
6.2 Test Procedure

All restriction band and non- restriction band have been tested， only worse case is reported.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

6.3 Test Setup



6.4 Test Result

Pass.

Radiated Method

Band Edge Test result								
EUT: Wireless Flash Trigger Transceiver M/N: YN622C II								
Power: DC 5.0V From PC with AC 120V/60Hz								
Test date: 2015-08-27 Test site: 3m Chamber Tested by: peter								
Test mode: Tx CH Low 2403MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	40.89	27.62	3.92	34.97	37.46	74	36.54	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
2400	50.52	27.62	3.94	34.97	47.11	74	26.89	PK
2400	--	27.62	3.94	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	40.35	27.62	3.92	34.97	36.92	74	37.08	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
2400	49.86	27.62	3.94	34.97	46.45	74	27.55	PK
2400	--	27.62	3.94	34.97	--	54	--	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Band Edge Test result								
EUT: Wireless Flash Trigger Transceiver M/N: YN622C II								
Power: DC 5.0V From PC with AC 120V/60Hz								
Test date: 2015-08-27 Test site: 3m Chamber Tested by: peter								
Test mode: Tx CH High 2474MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	41.71	27.89	4	34.97	38.63	74	35.37	**PK**
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	41.22	27.89	4	34.97	38.14	74	35.86	**PK**
2483.5		--	--	--	--	54	--	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

7 Antenna Requirement

7.1 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.

7.2 Antenna Connected Construction

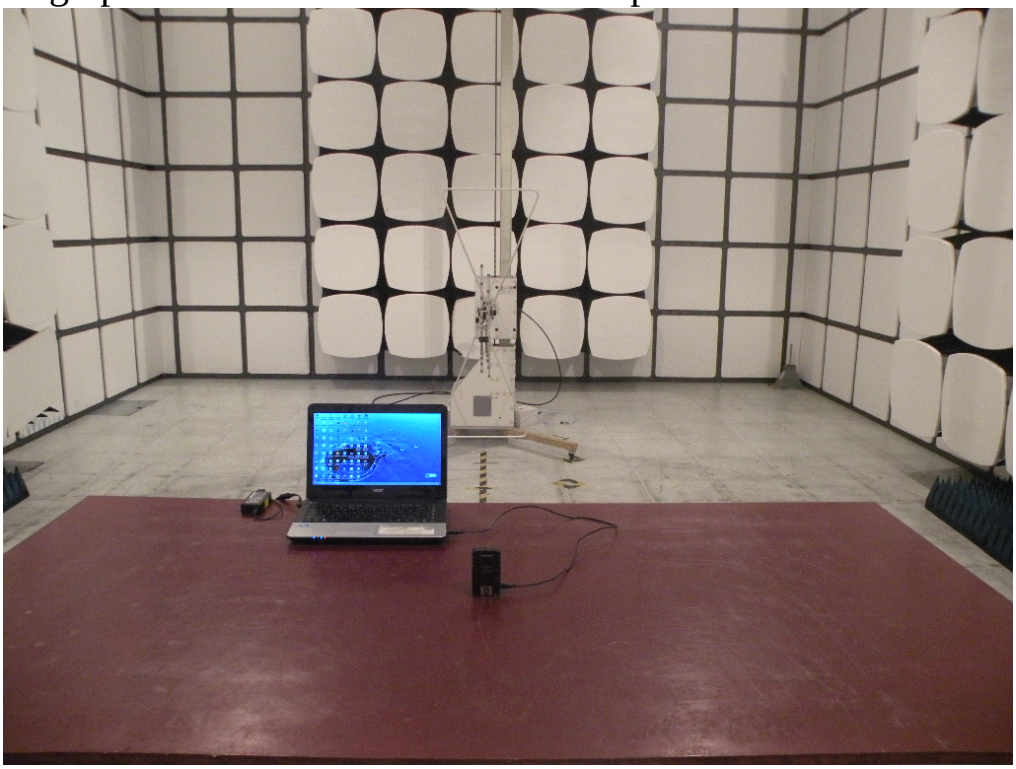
The directional gains of antenna used for transmitting is 3dBi, and the antenna is PCB antenna no consideration of replacement. Please see EUT photo for details.

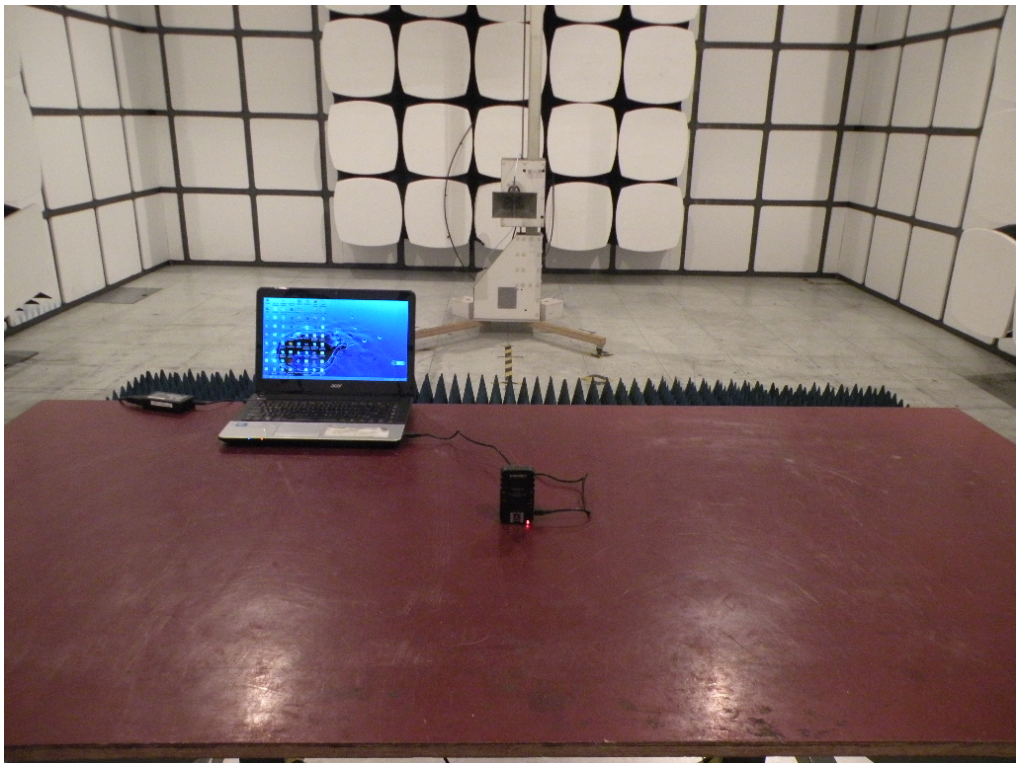
7.3 Result

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

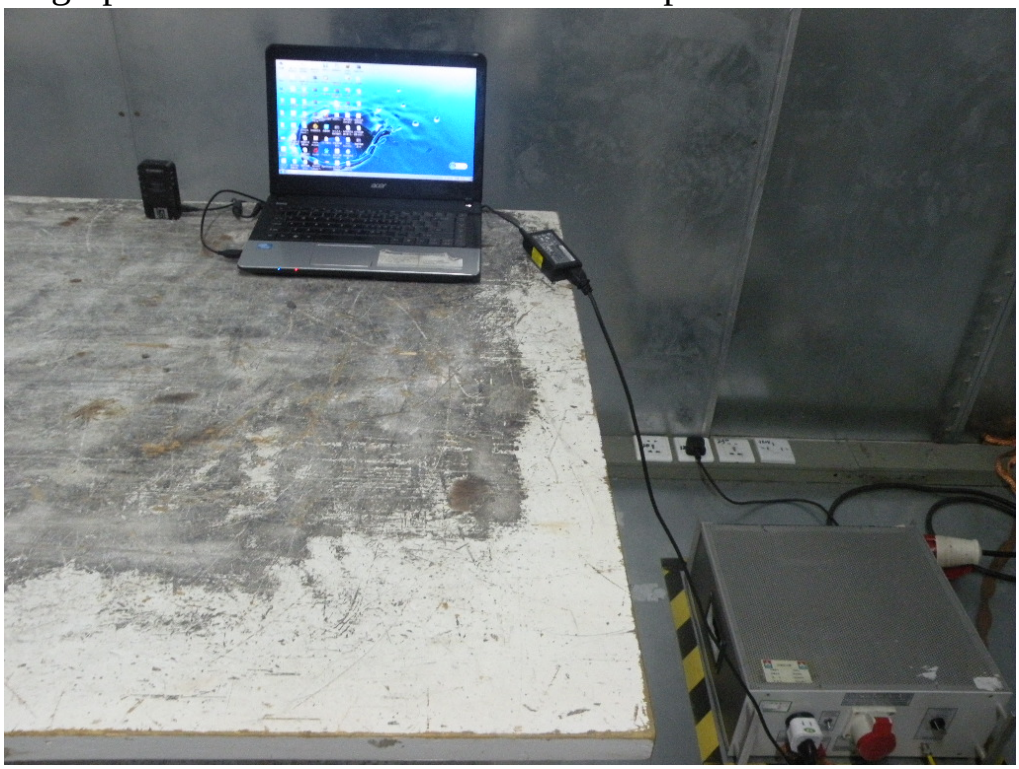
8 Photographs of Test Setup

Photographs-Radiated Emission Test Setup in Chamber





Photographs-Conducted Emission Test Setup

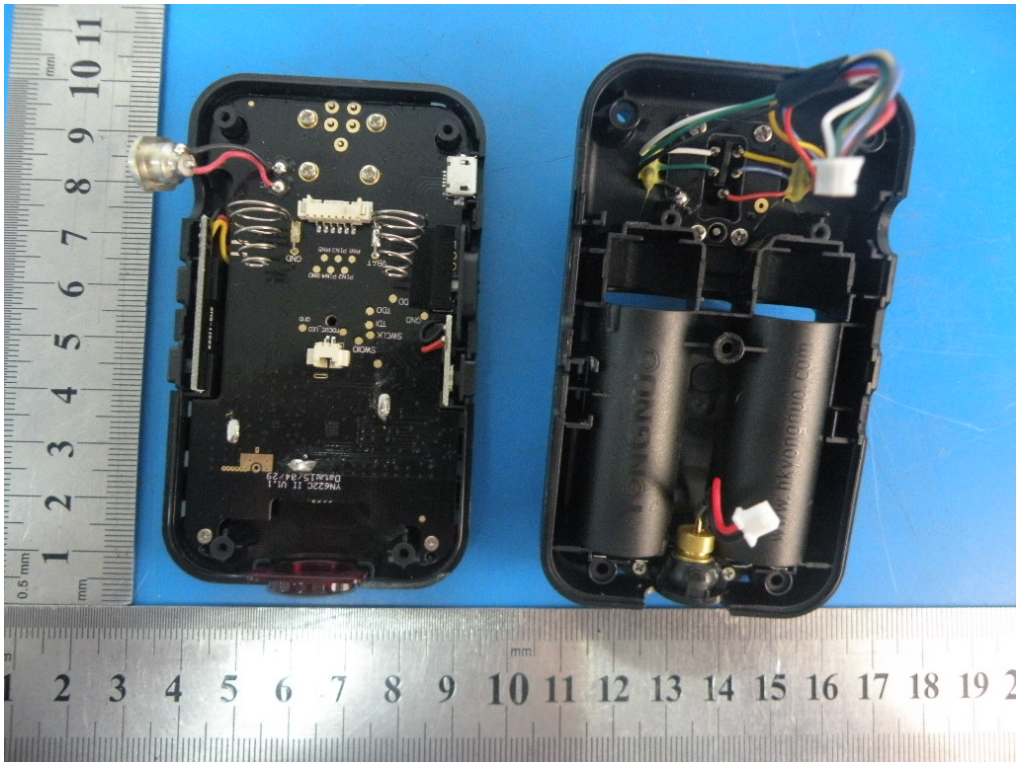


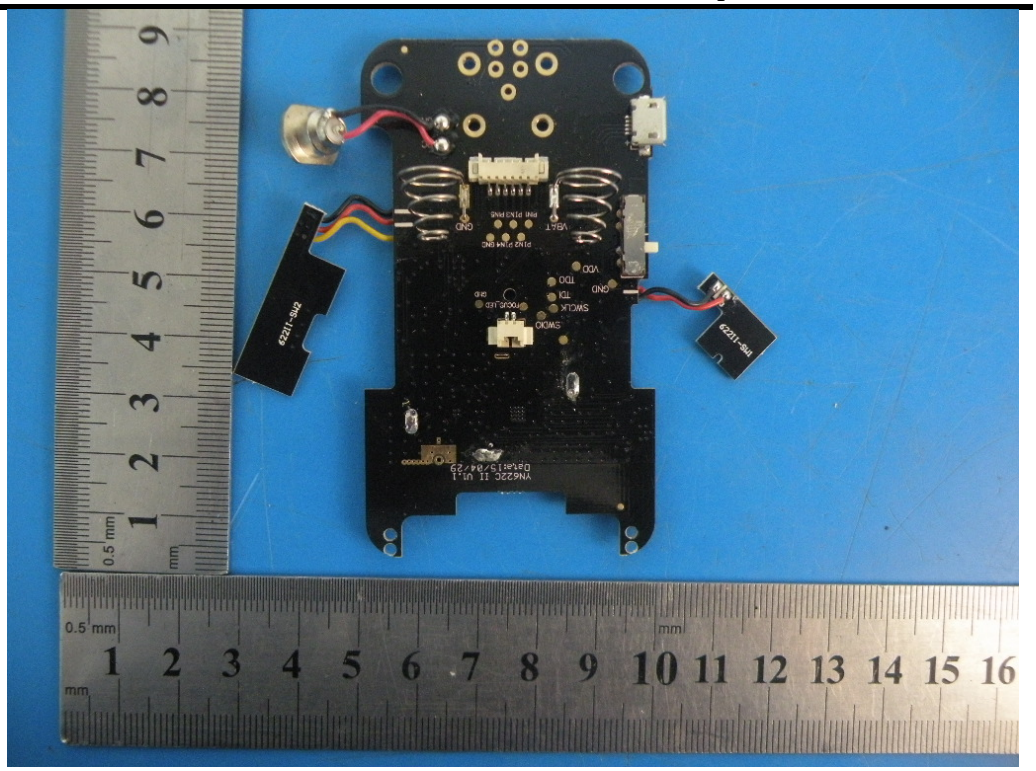
9 Photographs of EUT

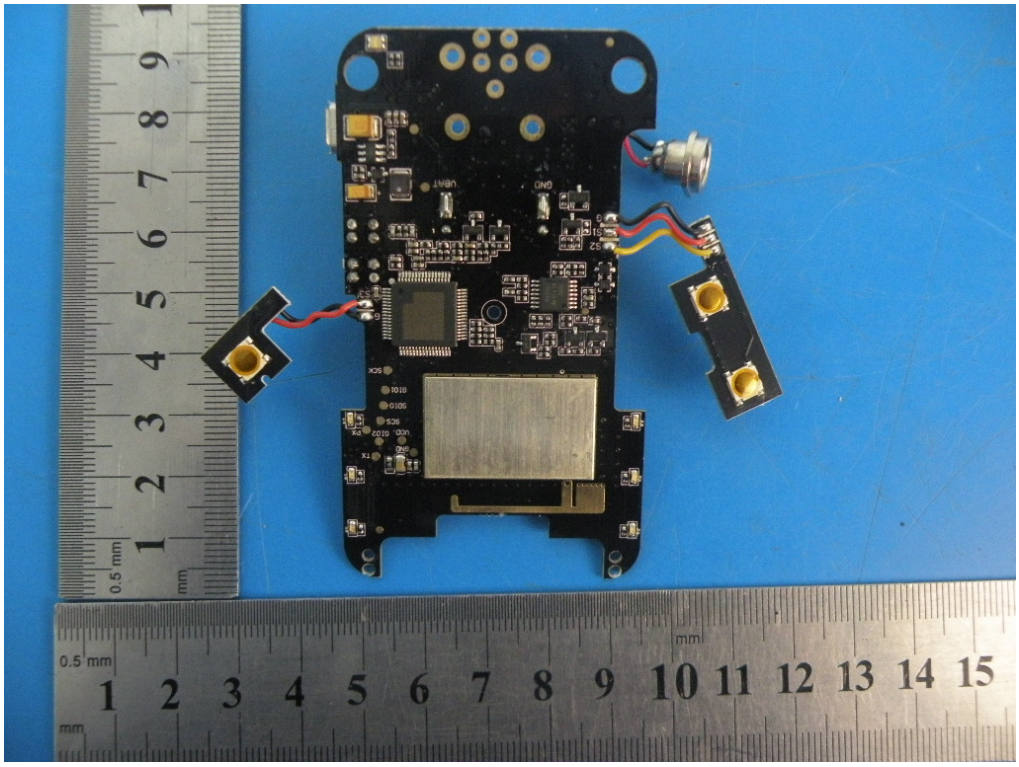
YONGNUO
YN622C II
E-TTL
Wireless Flash Trigger
Transceiver
CH
SET
Test

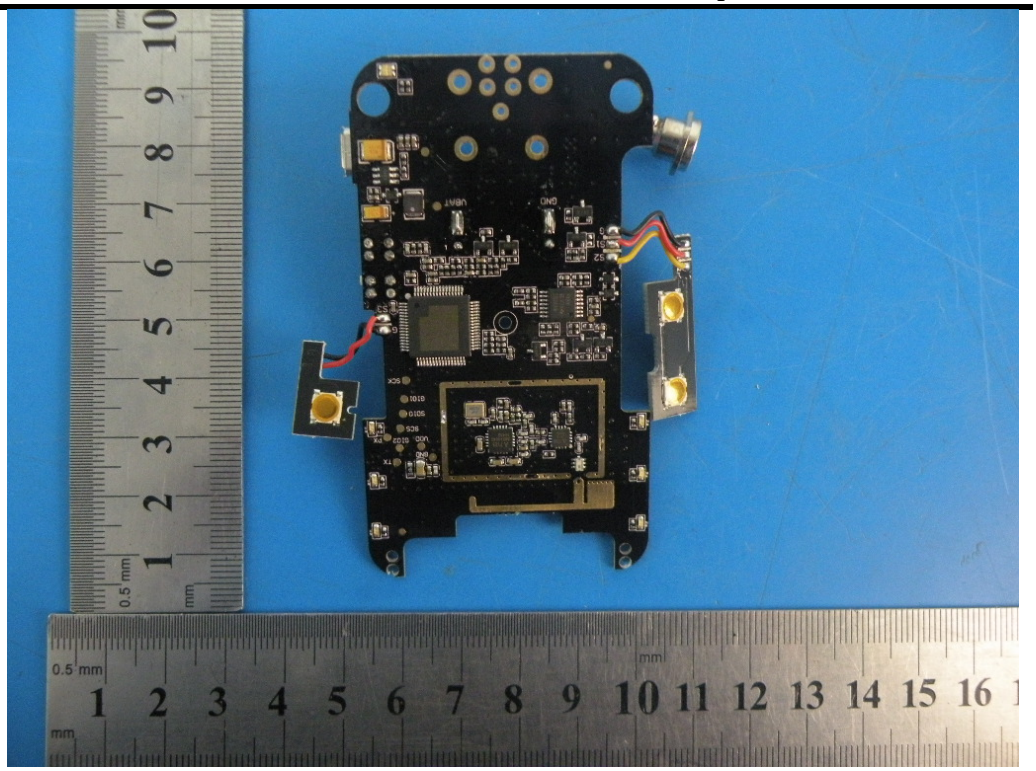
YONGNUO
YN622C II
E-TTL
Wireless Flash Trigger
Transceiver
Test
560-RX
OFF
622
GR
SET

YONGNUO
DIGITAL
YN622C II
E-TTL
Wireless Flash Trigger
Transceiver


YONGNUO
www.yongnuo.com


0.5 mm
mm
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16


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



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