

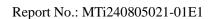
Test Report

Report No.:	MTi240805021-01E1
Date of issue:	2024-09-24
Applicant:	Shenzhen baoda lixing electronics co.,LTD.
Product name:	4-in-1 Wireless Charger
Model(s):	X-WXC-85, X-WXC-60, X-WXC-61, X-WXC-63, X-WXC-64, X-WXC-67
FCC ID:	2BK8Y-X-WXC-85

Shenzhen Microtest Co., Ltd. http://www.mtitest.cn

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Test Result Certification				
Applicant:	Shenzhen baoda lixing electronics co.,LTD.			
Address:	guangdong shenzhen longgangqu pinghujiedao ronghuzhongxincheng1dong Bzuo2203			
Manufacturer:	Shenzhen baoda lixing electronics co.,LTD.			
Address:	guangdong shenzhen longgangqu pinghujiedao ronghuzhongxincheng1dong Bzuo2203			
Product description				
Product name:	4-in-1 Wireless Charger			
Trade mark:	N/A			
Model name:	X-WXC-85			
Series Model(s):	X-WXC-60, X-WXC-61, X-WXC-63, X-WXC-64, X-WXC-67			
Standards:	47 CFR Part 15C			
Test Method:	ANSI C63.10-2013			
Date of Test				
Date of test:	2024-08-12 to 2024-09-24			
Test result:	Pass			

Test Engineer	:	James Qu
		(James Qin)
Reviewed By	•••	Dowid. Cee
		(David Lee)
Approved By	:	leon chen
		(Leon Chen)



1 General Description

1.1 Description of the EUT

-	
Product name:	4-in-1 Wireless Charger
Model name:	X-WXC-85
Series Model(s):	X-WXC-60, X-WXC-61, X-WXC-63, X-WXC-64, X-WXC-67
Model difference:	All the models are the same circuit and module, except the model name.
Electrical rating:	Input: DC 9V/ 1.6A Output: 5W/ 7.5W/ 10W/ 15W(Phone) 5W(Earphone) 2.5W(Watch)
Accessories:	Cable: USB-A to USB-C Cable: 100cm
Hardware version:	X1.0
Software version:	X1.0
Test sample(s) number:	MTi240805021-01S1001
RF specification	
Operating frequency range:	115-205kHz(Phone) 115-205kHz(Earphone) 300-350kHz(Watch)
Modulation type:	ASK

1.2 Description of test modes

No.	Emission test modes
Mode1	Wireless Output 5W(Phone)
Mode2	Wireless Output 7.5W(Phone)
Mode3	Wireless Output 10W(Phone)
Mode4	Wireless Output 15W(Phone)
Mode5	Wireless Output 5W(Ear Phone)
Mode6	Wireless Output 2.5W(Watch)
Mode7	Stand by



1.3 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

1.4 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list						
Description	Model	Serial No.	Manufacturer			
HUAWEI QUICK CHARGE(65W)	HW-200200ZP1	JN67LSN7N03451	HUAWEI			
wireless charging load	ireless charging load YBZ1.1		YBZ			
Watch S7		/	APPLE			
Support cable list						
Description Length (m)		From	То			
/ /		/	/			

1.5 Measurement uncertainty

Measurement	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	±3.1dB
Occupied channel bandwidth	±3 %
Radiated spurious emissions (9kHz~30MHz)	±4.3dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Temperature	±1 °C
Humidity	±5%

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15C	47 CFR Part 15.203	Pass
2	Conducted Emission at AC power line	47 CFR Part 15C	47 CFR Part 15.207(a)	Pass
3	20dB Occupied Bandwidth	47 CFR Part 15C	47 CFR Part 15.215(c)	Pass
4	Emissions in frequency bands (below 30MHz)	47 CFR Part 15C	47 CFR Part 15.209	Pass
5	Emissions in frequency bands (30MHz - 1GHz)	47 CFR Part 15C	47 CFR Part 15.209	Pass



3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location: 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong,	
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093



4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due	
	Conducted Emission at AC power line						
1	EMI Test Receiver	Rohde&schwarz	ESCI3	101368	2024-03-20	2025-03-19	
2	Artificial mains network	Schwarzbeck	NSLK 8127	183	2024-03-21	2025-03-20	
3	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100263	2024-03-20	2025-03-19	
		20dB Oc	cupied Bandwid	th			
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2024-03-20	2025-03-19	
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2024-03-21	2025-03-20	
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2024-03-21	2025-03-20	
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2024-03-21	2025-03-20	
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2024-03-21	2025-03-20	
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2024-03-21	2025-03-20	
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2024-03-21	2025-03-20	
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2024-03-20	2025-03-19	
9	DC Power Supply	Agilent	E3632A	MY40027695	2024-03-21	2025-03-20	
		Emissions in frequ	iency bands (bel	ow 30MHz)			
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19	
2	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2025-03-22	
3	Amplifier	Hewlett-Packard	8447F	3113A06184	2024-03-20	2025-03-19	
	Emissions in frequency bands (30MHz - 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19	
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10	
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2025-03-22	
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2024-03-20	2025-03-19	



5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Refer to 47 CFR Part 15.203, 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.

5.1.1 Conclusion:

The antenna of the EUT is permanently attached. The EUT complies with the requirement of FCC PART 15.203.



6 Radio Spectrum Matter Test Results (RF)

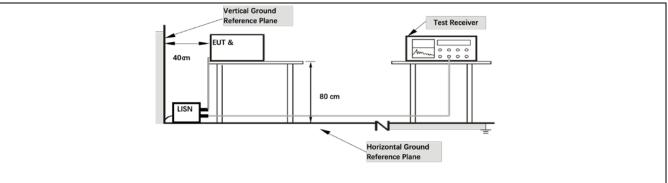
6.1 Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).						
Test Limit:	Frequency of emission (MHz)	Conducted limit (dE	3μV <u>)</u>				
		Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46				
	5-30	60	50				
	*Decreases with the logarithm of the frequency.						
Test Method:	ANSI C63.10-2013 section 6.2						
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power- line conducted emissions from unlicensed wireless devices						

6.1.1 E.U.T. Operation:

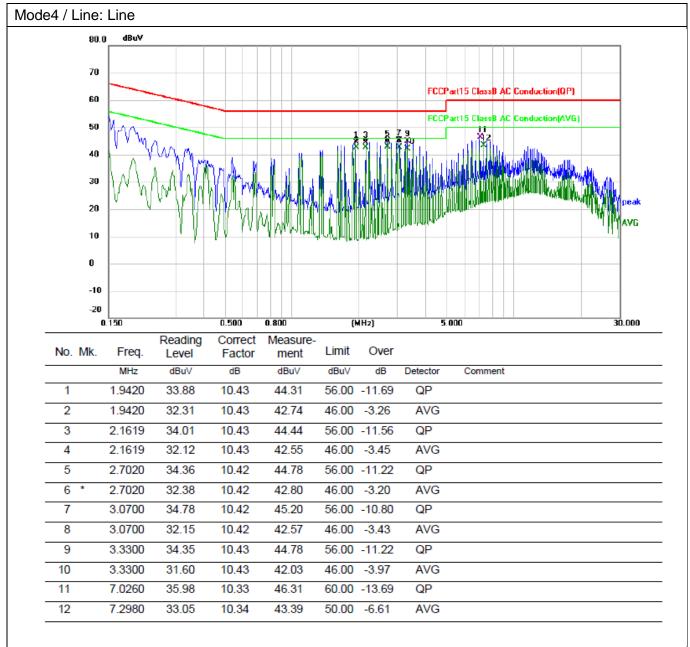
Operating Environment:						
Temperature:	ıre: 25.9 °C		Humidity:	58 %	Atmospheric Pressure:	101 kPa
Pre test mode: Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7						
Final test mode:All of the listed pre-test mode were tested, only the data of the worst mode (Mode4) is recorded in the report					of the worst mode	

6.1.2 Test Setup Diagram:

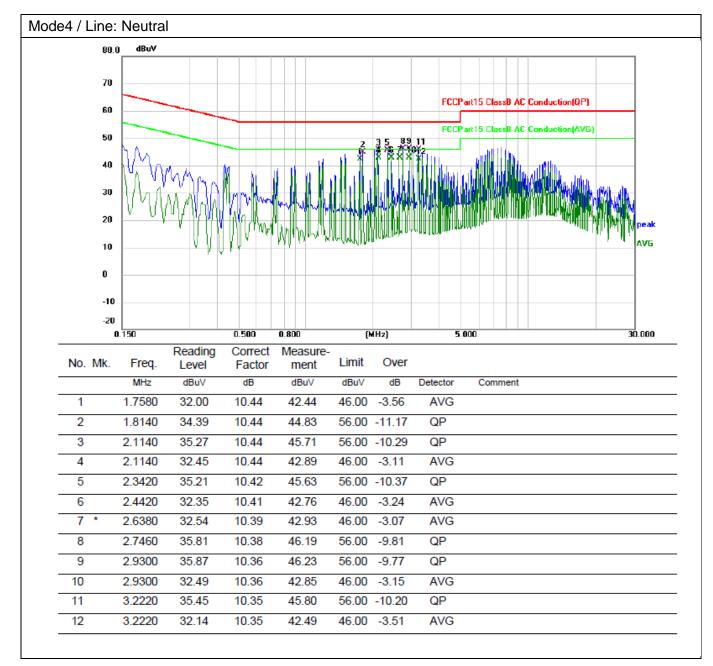




6.1.3 Test Data:









6.2 20dB Occupied Bandwidth

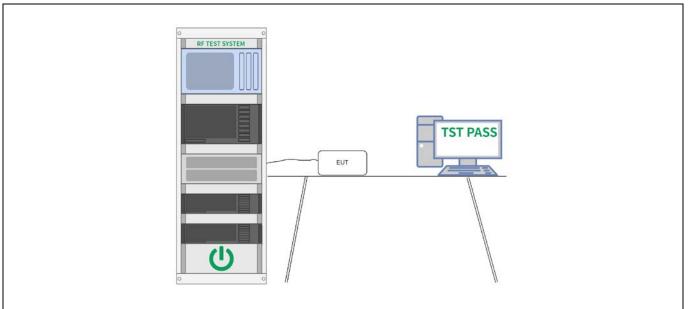
Test Requirement:	47 CFR Part 15.215(c)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2013, section 6.9.2
Procedure:	 a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "-xx dB down" requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the "-xx dB down amplitude" using [(reference value) - xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or stat a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envel



6.2.1 E.U.T. Operation:

Operating Environment:						
Temperature:	24 °C		Humidity:	54 %	Atmospheric Pressure:	101 kPa
Pre test mode: Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7						
Final test mode:All of the listed pre-test mode were tested, only the data of the worst (Mode4, Mode5, Mode6) is recorded in the report					of the worst mode	

6.2.2 Test Setup Diagram:





6.2.3 Test Data:

Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

		Mode4			
Frequency	20 dB	dB occupied bandwidth 99% o			pied bandwidt
kHz		Hz			Hz
135.39		812 691			691
Agilent Spectrum Analyzer - Occupied BW X7 RL RF 50 𝔅 ⚠ DC C Center Freq 135.390 kHz 10 dB/div Ref 20.00 dBm Log	Center	Freq: 135.390 kHz ree Run Avg Hold	Radio 5 : 10/10	Device: BTS	Frequency Center Freq 135.390 kHz
Center 135.4 kHz #Res BW 300 Hz	#\	/BW 1 kHz	Swee	Span 5 kHz p 68.07 ms	CF Step 500 Hz
Occupied Bandwidth	691 Hz	Total Power	2.09 d B m	Au	to Man Freq Offset
Transmit Freq Error	12 Hz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	812 Hz	x dB	-20.00 dB		
MSG			STATUS LDC (Coupled	



Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

Frequency	20 dB	20 dB occupied bandwidth			99% occupied bandwidt	
kHz	Hz				Hz	
120		749			638	
Agilent Spectrum Analyzer - Occupied BW (X) RL RF 50 Ω DC		SENSE:INT		12:27 PM Sep 24, 2024	Frequency	
Center Freq 120.000 kHz	🛶 Trig: Fi	Freq: 120.000 kHz ree Run Avg Hold : 10 dB	: 10/10	o Std: None o Device: BTS	Frequency	
10 dB/div Ref 0.00 dBm Log						
-20.0		-			Center Freq 120.000 kHz	
-30.0						
-50.0	/					
-60.0	\sim					
-80.0						
Center 120 kHz				Span 5 kHz	27.01	
#Res BW 300 Hz	#\	VBW 1 kHz	Swe	eep 68.07 ms	CF Step 500 Hz	
Occupied Bandwidth		Total Power	-17.5 dBr	n Aut	<u>o</u> Man	
	638 Hz				Freq Offset	
Transmit Freq Error	-2 Hz	OBW Power	99.00		0 Hz	
x dB Bandwidth	749 Hz	x dB	-20.00 d	В		
MSG			STATUS			
mod			011100			



Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

		Mode6			
Frequency	20 dB occupied bandwidth			99% occ	cupied bandwid
kHz		Hz			Hz
323.5		775			704
Agilent Spectrum Analyzer - Occupied BW		ENSE:INT	ALIGN AUTO 05:	07:17 PM Sep 24, 2024	
Center Freq 323.500 kHz		Freq: 323.500 kHz	Rad	lio Std: None	Frequency
#IF	Gain:Low #Atten:			io Device: BTS	
10 dB/div Ref -20.00 dBm					
-30.0					Center Freq
-40.0		$\uparrow \hspace{-1.5mm} + \hspace{-1.5mm} - \hspace{-1.5mm} -$			323.500 kHz
-50.0					
-70.0	/				
-80.0			\rightarrow	$-\gamma\gamma$	
-90.0					
-110					
Center 323.5 kHz #Res BW 300 Hz	-443		C:::	Span 5 kHz eep 68.07 ms	CF Step
	#1	/BW 1 kHz			500 Hz Auto Man
Occupied Bandwidth	704 Hz	Total Power	-36.9 dB	m	
				<i></i>	Freq Offset 0 Hz
Transmit Freq Error	-8 Hz	OBW Power	99.00		0 HZ
x dB Bandwidth	775 Hz	x dB	-20.00 c	IB	
MSG			STATUS		



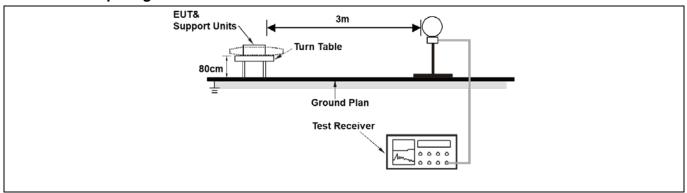
6.3 Emissions in frequency bands (below 30MHz)

Test Limit:	Frequency (MHz)			
		Field strength	Measuremen	
		(microvolts/meter)	t distance	
			(meters)	
	0.009-0.490	2400/F(kHz)	300	
	0.490-1.705	24000/F(kHz)	30	
	1.705-30.0	30	30	
	30-88	100 **	3	
	88-216	150 **	3	
	216-960	200 **	3	
	Above 960	500	3	
Test Method: Procedure:	frequency bands 54-72 M However, operation within sections of this part, e.g., In the emission table abo The emission limits show employing a CISPR quas kHz, 110–490 kHz and ab three bands are based or As shown in § 15.35(b), for limits in paragraphs (a) an However, the peak field s maximum permitted avera any condition of modulation (b) of this section, the peak	ve, the tighter limit applies at the n in the above table are based i-peak detector except for the f pove 1000 MHz. Radiated emiss n measurements employing an or frequencies above 1000 MH d (b)of this section are based of trength of any emission shall n age limits specified above by m on. For point-to-point operation k field strength shall not excee rs along the antenna azimuth. n 6.4	or 470-806 MHz. mitted under othe ne band edges. on measurements requency bands 9 ssion limits in thes average detector. Iz, the field streng on average limits. ot exceed the nore than 20 dB un nunder paragraph	r 39–90 se th nder

6.3.1 E.U.T. Operation:

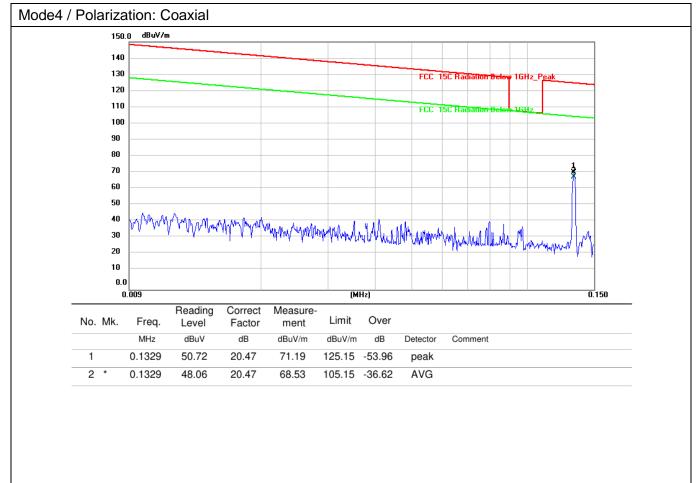
Operating Environment:						
Temperature:	22.5 °C		Humidity:	58 %	Atmospheric Pressure:	101 kPa
Pre test mode: Mode1, Mode2, Mode3, Mode4, Mode5, Mode6						
Final test mode:All of the listed pre-test mode were tested, only the data of the worst mode (Mode4, Mode5, Mode6) is recorded in the report					of the worst mode	

6.3.2 Test Setup Diagram:

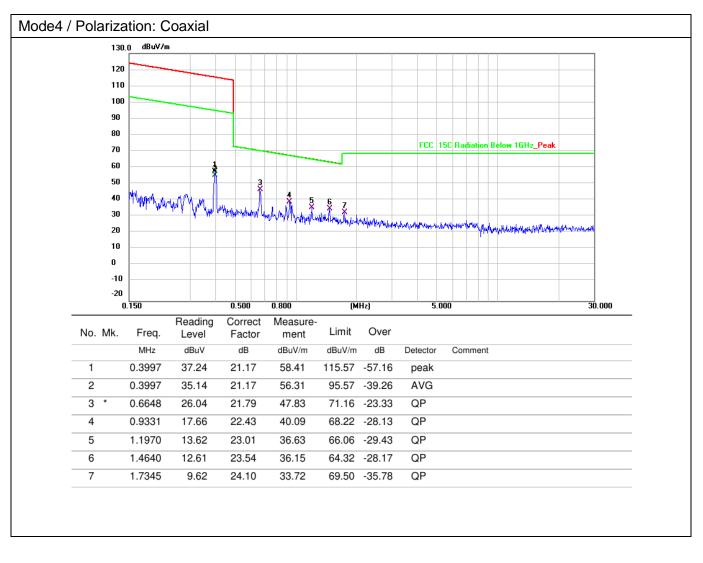




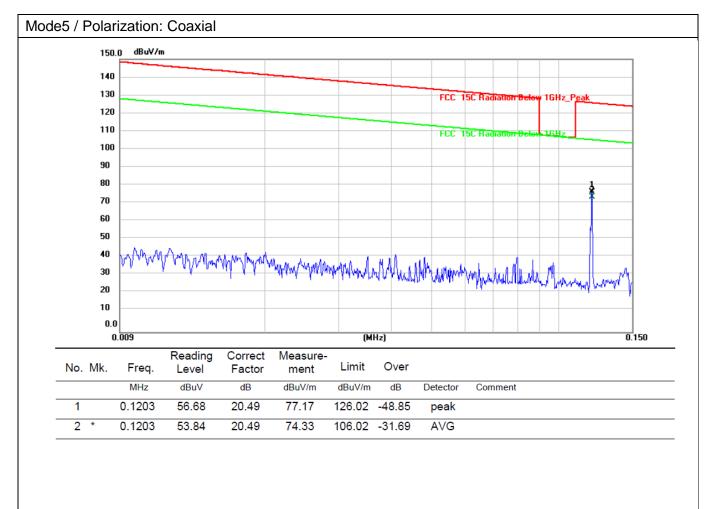
6.3.3 Test Data:



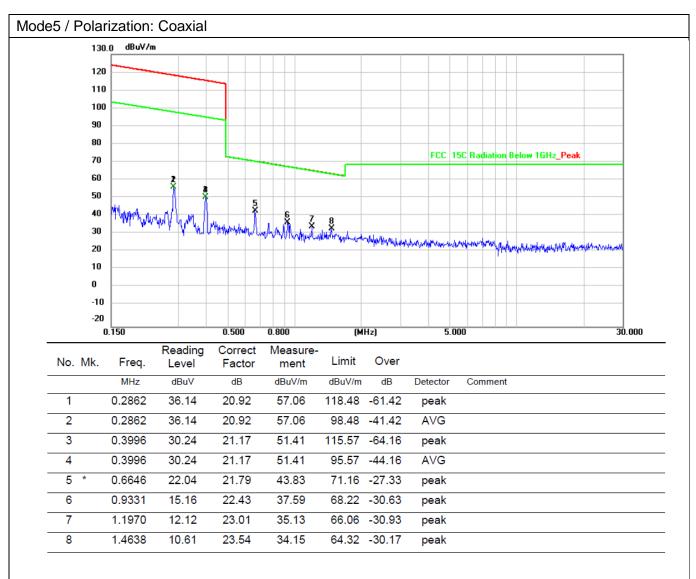




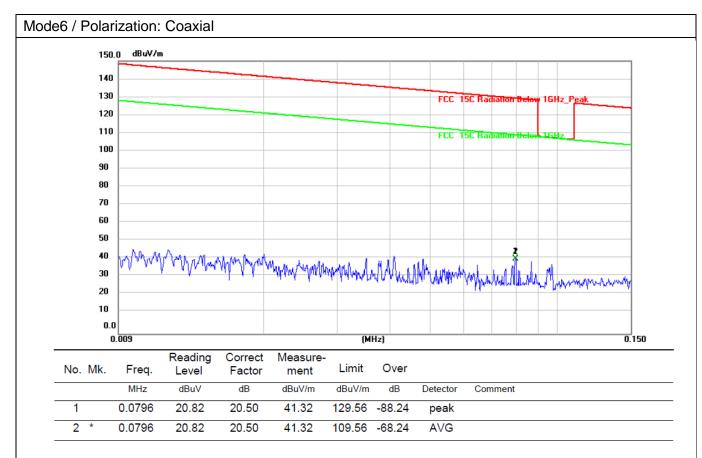














6

7

0.8943

1.4638

19.72

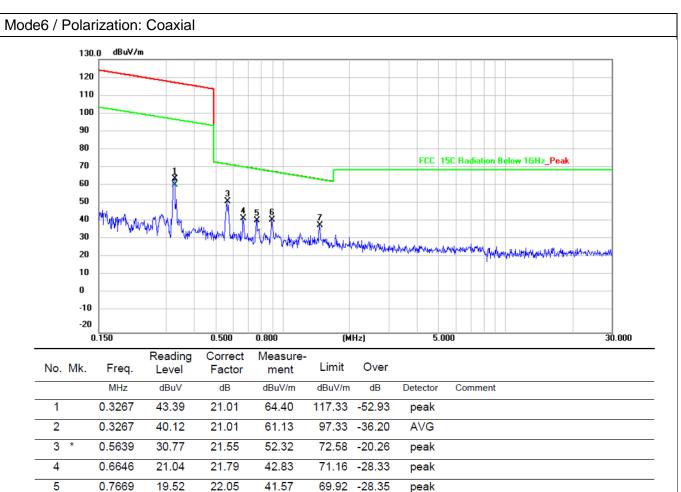
15.61

22.34

23.54

42.06

39.15



68.59 -26.53

64.32 -25.17

peak

peak



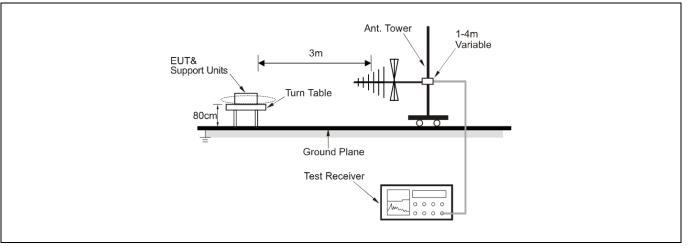
6.4 Emissions in frequency bands (30MHz - 1GHz)

Test Requirement:	47 CFR Part 15.209					
Test Limit:	Frequency (MHz)	Field strength	Measuremen			
		(microvolts/meter)	t distance (meters)			
	0.009-0.490	2400/F(kHz)	300			
	0.490-1.705	24000/F(kHz)	30			
	1.705-30.0	30	30			
	30-88	100 **	3			
	88-216	150 **	3			
	216-960	200 **	3			
	Above 960	paragraph (g), fundamental em	3			
Test Method:	intentional radiators oper frequency bands 54-72 However, operation with sections of this part, e.g In the emission table ab The emission limits show employing a CISPR quark kHz, 110–490 kHz and a three bands are based of As shown in § 15.35(b), limits in paragraphs (a) However, the peak field maximum permitted ave any condition of modula (b)of this section, the peak	rating under this section shall ne MHz, 76-88 MHz, 174-216 MHz in these frequency bands is per ., §§ 15.231 and 15.241. ove, the tighter limit applies at th wn in the above table are based si-peak detector except for the f above 1000 MHz. Radiated emission measurements employing an for frequencies above 1000 MH nd (b)of this section are based of strength of any emission shall n rage limits specified above by m tion. For point-to-point operation ak field strength shall not exceet ers along the antenna azimuth.	ot be located in the or 470-806 MHz mitted under othe ne band edges. on measuremen frequency bands ssion limits in the average detecto lz, the field streng on average limits not exceed the nore than 20 dB in nunder paragrap	er 9–90 se r. gth		
Procedure:	ANSI C63.10-2013 sect					

6.4.1 E.U.T. Operation:

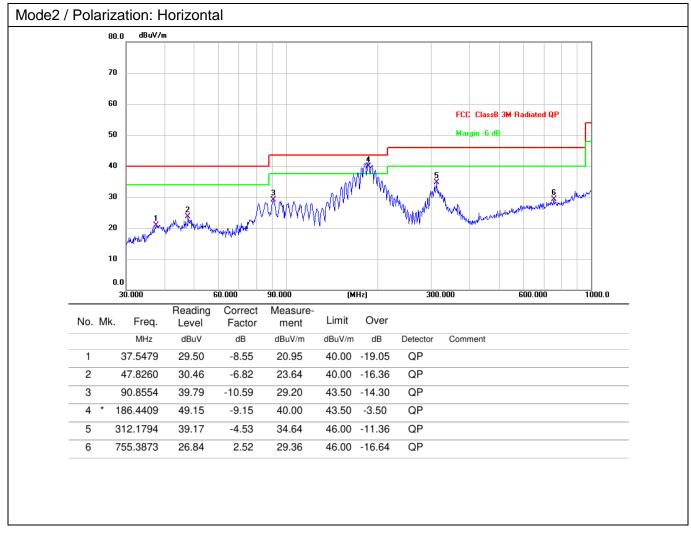
Operating Environment:						
Temperature: 26	С	Humidity:	54 %	Atmospheric Pressure:	98.2 kPa	
Pre test mode: Mode1, Mode2, Mode3, Mode4, Mode5, Mode6, Mode7						
Final test mode:All of the listed pre-test mode were tested, only the data of the worst mode (Mode2) is recorded in the report					of the worst mode	

6.4.2 Test Setup Diagram:

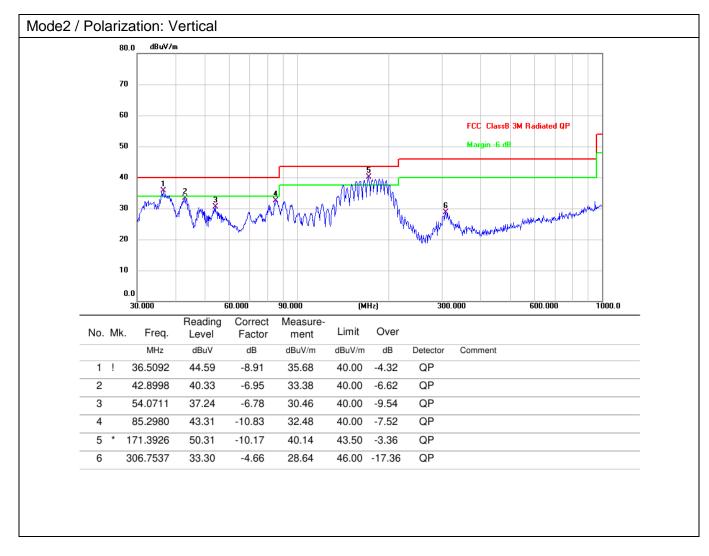




6.4.3 Test Data:









Photographs of the test setup

Refer to Appendix - Test Setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

----End of Report----