

Test Report

Report No.:	MTi240927011-05E2
Date of issue:	2024-10-21
Applicant:	Fanvil Technology Co., Ltd
Product name:	All-in-one Phone Station
Model(s):	DB20-H
FCC ID:	2APPZ-DB20H

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

The test report is only used for customer scientific research, teaching, internal quality control and other purposes, and is for internal reference only.





Instructions

- 1. This test report shall not be partially reproduced without the written consent of the laboratory.
- 2. The test results in this test report are only responsible for the samples submitted
- 3. This test report is invalid without the seal and signature of the laboratory.
- 4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.
- 5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



Table of contents

1	Gen	eral Description	5
	1.1 1.2 1.3 1.4 1.5	Description of the EUT Description of test modes Environmental Conditions Description of support units Measurement uncertainty	5 6 6
2	Sum	mary of Test Result	7
3	Test	Facilities and accreditations	8
	3.1	Test laboratory	8
4	List	of test equipment	9
5	Eval	uation Results (Evaluation)	10
	5.1	Antenna requirement	10
6	Radi	o Spectrum Matter Test Results (RF)	11
	6.1 6.2 6.3 6.4	Conducted Emission at AC power line 20dB Occupied Bandwidth Emissions in frequency bands (below 30MHz) Emissions in frequency bands (30MHz - 1GHz)	16 19
Ph	otogra	aphs of the test setup	27
Ph	otogra	aphs of the EUT	28

Test Result Certification			
Applicant: Fanvil Technology Co., Ltd			
Address:	10/F Block A, Dualshine Global Science Innovation Center, Honglang North 2nd Road, Bao'an District, Shenzhen		
Manufacturer:	Fanvil Technology Co., Ltd		
Address:	10/F Block A, Dualshine Global Science Innovation Center, Honglang North 2nd Road, Bao'an District, Shenzhen		
Product description			
Product name:	All-in-one Phone Station		
Trademark: LINXVIL			
Model name: DB20-H			
Series Model(s):	N/A		
Standards:	47 CFR Part 15C		
Test Method:	ANSI C63.10-2013		
Date of Test			
Date of test:	2024-10-11 to 2024-10-16		
Test result:	Pass		

Test Engineer	•	Yamice Xie		
		(Yanice.Xie)		
Reviewed By	:	Dowid. Cee		
		(David Lee)		
Approved By	:	(con chen		
		(Leon Chen)		



1 General Description

1.1 Description of the EUT

•				
Product name:	All-in-one Phone Station			
Model name:	DB20-H			
Series Model(s):	N/A			
Model difference:	N/A			
Electrical rating:	Station Input: DC 12V/1.5A Station Wireless Output: 5W/7.5W/10W Handset Input: 5W Handset Battery: DC 3.7V 300mAh			
Accessories:	Adapter1: Model: DCT18W120150US-A0 Input: AC 100-240V~ 50/60Hz 0.7A max. Output: DC 12V/1.5A 18.0W Adapter2: Model: F18L16-120150SPAU Input: AC 100-240V~ 50/60Hz 0.6A Output: DC 12V/1.5A 18.0W Cable: USB-A to Type-C cable (1.0m)*1			
Hardware version:	V1.1			
Software version:	V1.1			
Test sample(s) number:	MTi240927011-05S1001			
RF specification				
Operating frequency range:	115-205kHz			
Modulation type:	ASK			
Antenna(s) type:	Coil			
1.2 Description of test	2 Description of test modes			

1.2 Description of test modes

No.	Emission test modes			
Mode1	Wireless Output(5W)			
Mode2	Wireless Output(7.5W)			
Mode3	Wireless Output(10W)			
Mode4	Standby			



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	Serial No.	Manufacturer			
wireless charging load	YBZ1.1	/ YBZ			
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, C			
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

Test 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)

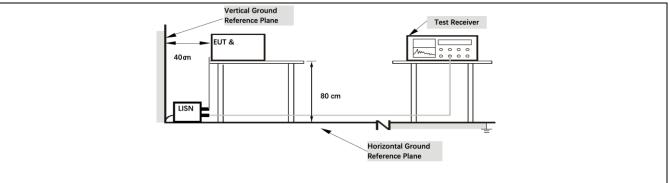
6.1 Conducted Emission at AC power line

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 µH/50 ohms line impedance stabilization network (LISN).						
Test Limit:	Frequency of emission (MHz)	Conducted limit (dBµ	V)				
		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:

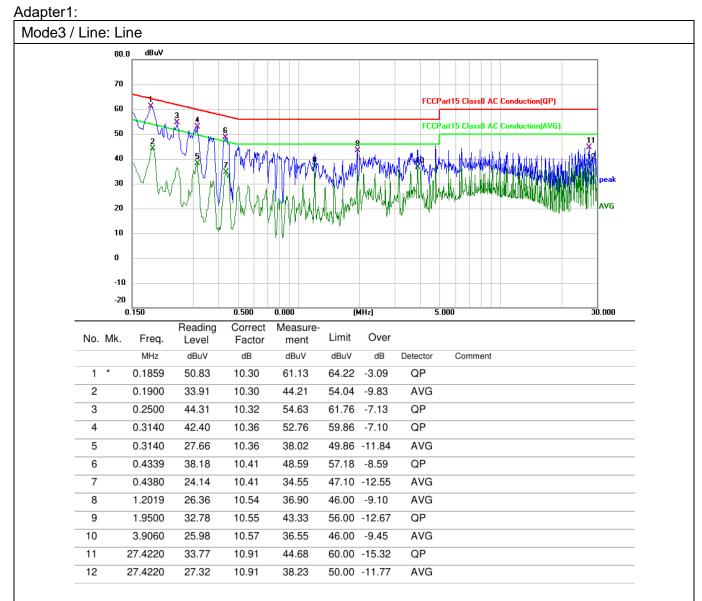
Operating Environment:							
Temperature: 25.9 °C Humidity: 44 % Atmospheric Pressure: 101 kPa						101 kPa	
Pre test mode: Mode1, Mode2, Mode3, Mode4							
Final test mode:All of the listed pre-test mode were tested, only the data of the worst mode (Mode3) is recorded in the report					of the worst mode		

6.1.2 Test Setup Diagram:

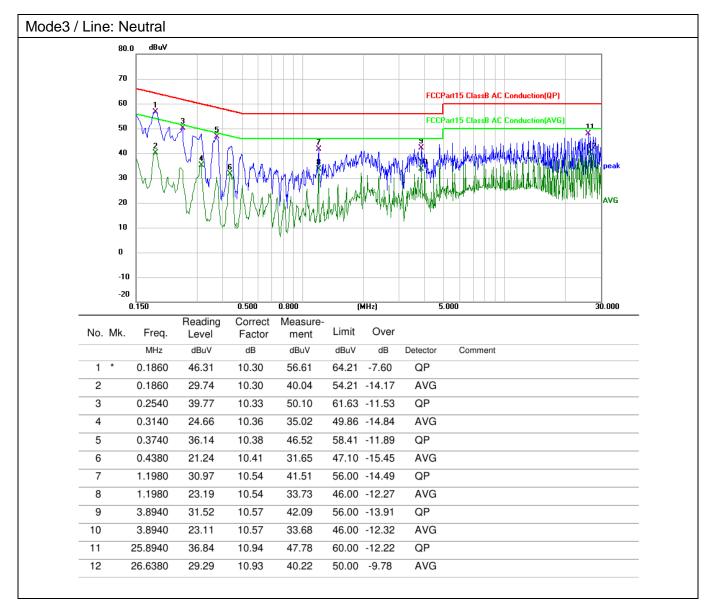




6.1.3 Test Data:

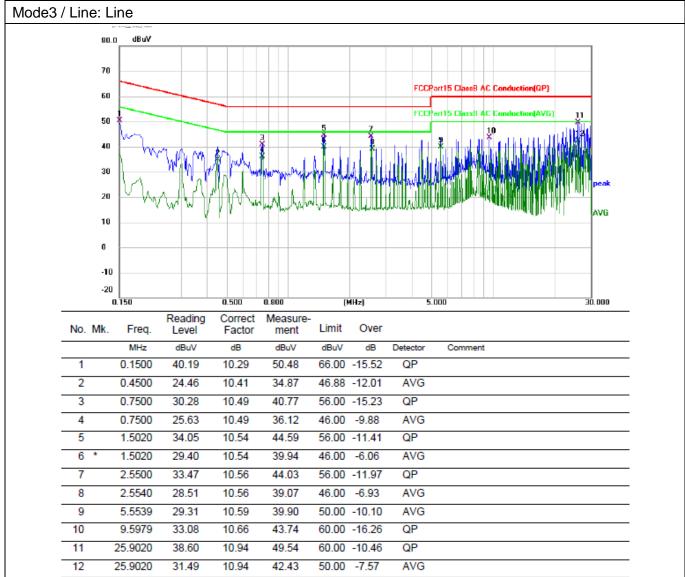




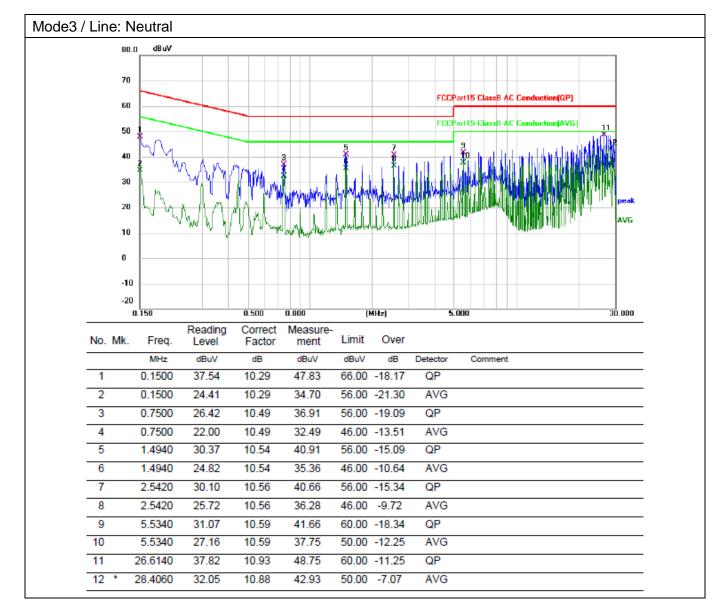




Adapter2:









6.2 20dB Occupied Bandwidth

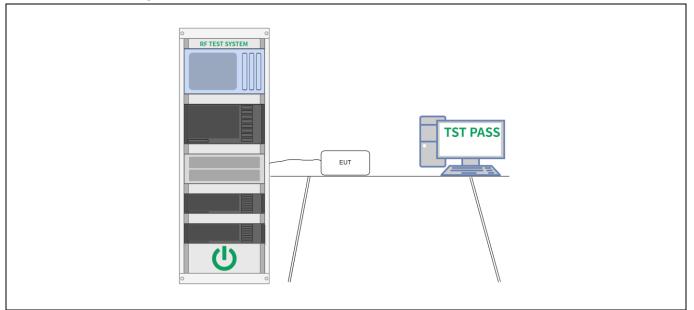
Test Requirement:	47 CFR Part 15.215(c)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of 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 start 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. Alternatively, set a marker at the lowest frequency of the envelope o



6.2.1 E.U.T. Operation:

Operating Environment:								
Temperature: 25 °C Humidity: 56 % Atmospheric Pressure: 100 kPa								
Pre test mode:	Pre test mode: Mode1, Mode2, Mode3, Mode4							
Final test mode: All of the listed pre-test mode were tested, only the data of the worst mode (Mode3) 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.

Frequency	20 dB occupied bandwidth			99% occupied bandwidt		
kHz		Hz		Hz		
140.755		852			730	
Agilent Spectrum Analyzer - Occupied BW						
Center Freq 140.755 kHz	Center	NSE:PULSE SOURCE OFF * Freq: 140.755 kHz ree Run Avg Hold	Rad	33:26 PM Oct 12, 2024 io Std: None	Frequency	
#IF0		: 10 dB		io Device: BTS		
10 dB/div Ref -10.00 dBm						
-20.0					Center Freq 140.755 kHz	
-40.0					140.755 KH2	
-50.0						
-60.0						
-70.0						
-90.0						
-100						
Center 140.8 kHz				Span 5 kHz	CF Step	
#Res BW 300 Hz	#	VBW 1 kHz	Sw	eep 68.07 ms	500 Hz uto Man	
Occupied Bandwidth		Total Power	-26.4 dB	m 🎽	Internet internet	
	730 Hz				Freq Offset	
Transmit Freq Error	-13 Hz	OBW Power	99.00	%	0 Hz	
x dB Bandwidth	852 Hz	x dB	-20.00 d	IB		
MSG			STATUS 🚺 D	C Coupled		



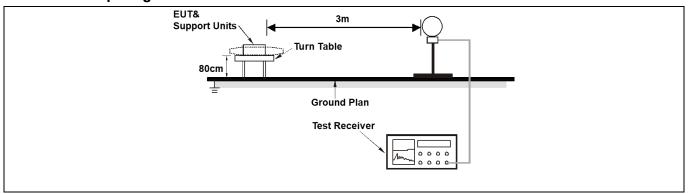
6.3 Emissions in frequency bands (below 30MHz)

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	500	3				
	** Except as provided in	paragraph (g), fundamental em	nissions from				
		ating under this section shall n					
	frequency bands 54-72	/Hz, 76-88 MHz, 174-216 MHz	2 or 470-806 MHz.				
		n these frequency bands is per	rmitted under other				
	sections of this part, e.g., §§ 15.231 and 15.241.						
	In the emission table above, the tighter limit applies at the band edges.						
	The emission limits shown in the above table are based on measurements						
		mploying a CISPR quasi-peak detector except for the frequency bands 9–90					
		bove 1000 MHz. Radiated emi					
	three bands are based on measurements employing an average detector.						
		for frequencies above 1000 MH					
		nd (b)of this section are based					
		strength of any emission shall r					
		age limits specified above by r					
any condition of modulation. For point-to-point operation under parage							
	(b)of this section, the peak field strength shall not exceed 2500						
		ers along the antenna azimuth.					
Test Method:	ANSI C63.10-2013 section	on 6.4					
Procedure:	ANSI C63.10-2013 section	on 6.4					

6.3.1 E.U.T. Operation:

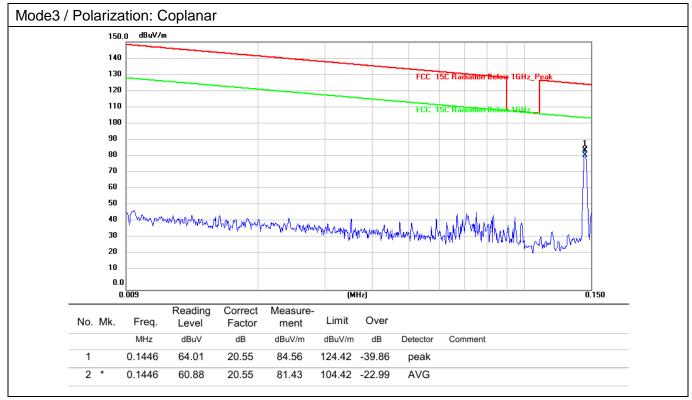
Operating Environment:							
Temperature:	Temperature: 25 °C Humidity: 56 % Atmospheric Pressure: 100 kPa						
Pre test mode:	Pre test mode: Mode1, Mode2, Mode3, Mode4						
Final test mode:All of the listed pre-test mode were tested, only the data of the worst mode (Mode3) is recorded in the report						of the worst mode	

6.3.2 Test Setup Diagram:

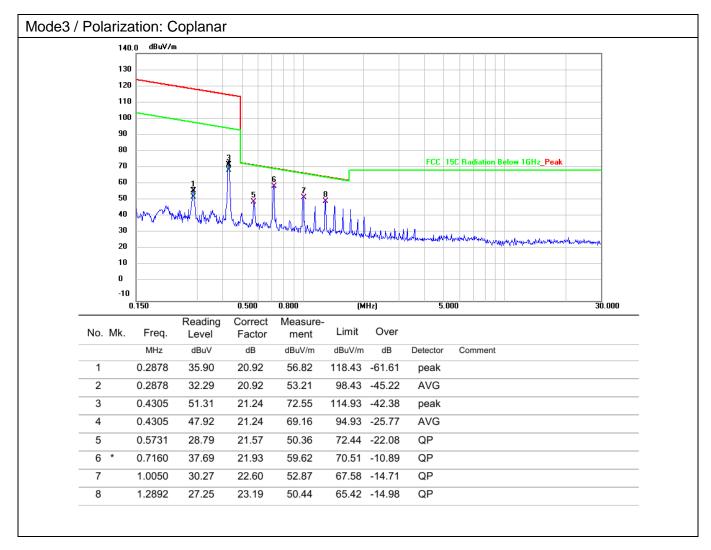




6.3.3 Test Data:









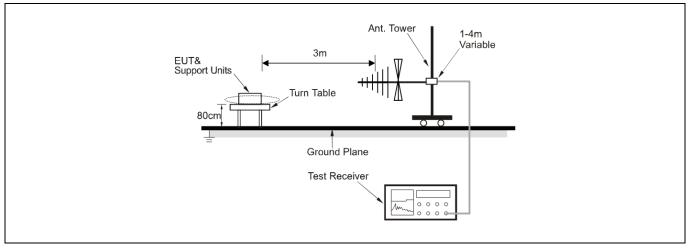
6.4 Emissions in frequency bands (30MHz - 1GHz)

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	500	3			
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9- kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. As shown in § 15.35(b), for frequencies above 1000 MHz, the 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 to maximum permitted average limits specified above by more than 2 any condition of modulation. For point-to-point operation under part (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.						
Test Method:	ANSI C63.10-2013 section	on 6.5				
Procedure:	ANSI C63.10-2013 section	on 6.5				

6.4.1 E.U.T. Operation:

Operating Environment:							
Temperature: 22.5 °C Humidity: 43 % Atmospheric Pressure: 101 kPa							
Pre test mode: Mode1, Mode2, Mode3, Mode4							
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	

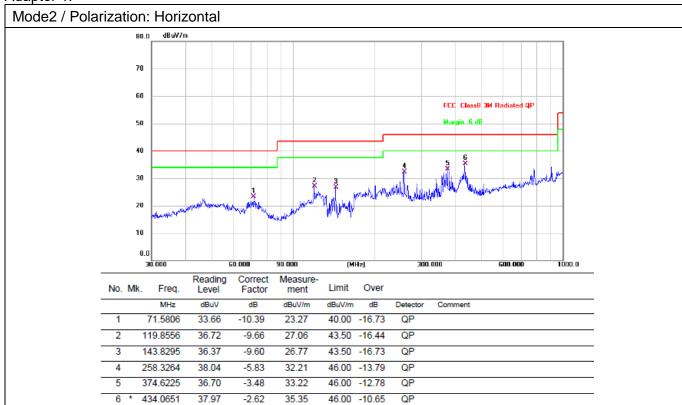
6.4.2 Test Setup Diagram:



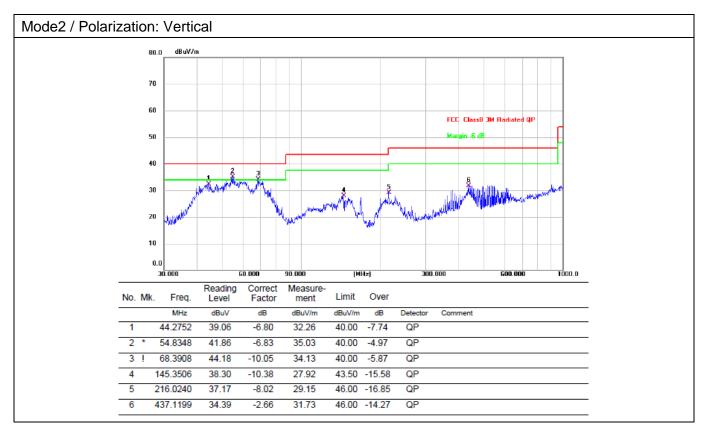


6.4.3 Test Data:



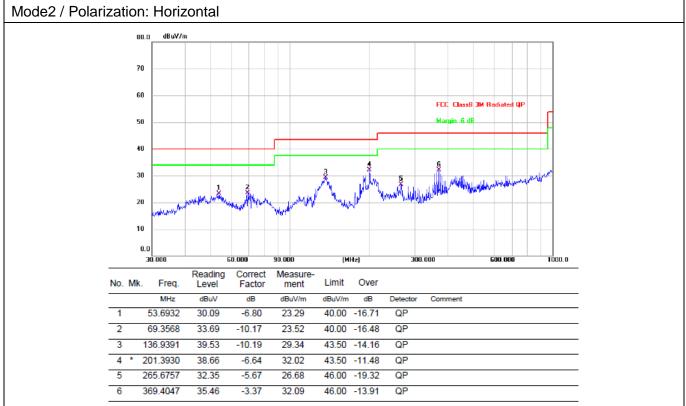




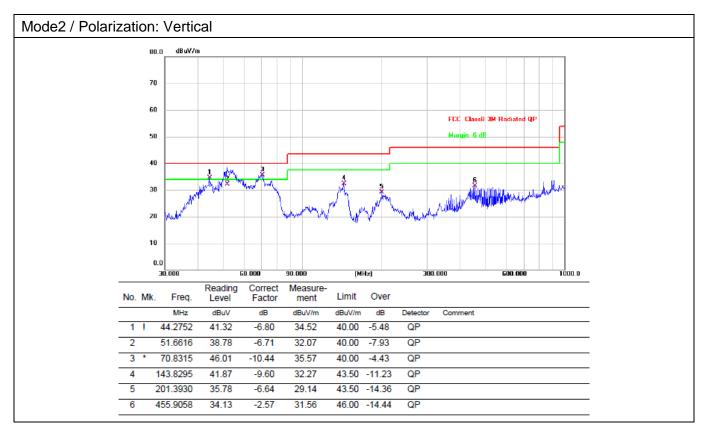




Adapter 2:









Photographs of the test setup

Refer to Appendix - Test Setup Photos



Photographs of the EUT

Refer to Appendix - EUT Photos

----End of Report----