

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

TEST REPORT FCC Rules and Regulations Part PART 15.249

Report Reference No...... CTA22022200801

FCC ID..... 2A5FNPTM-10

Compiled by

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Date of issue.....: Mar. 08, 2022

Testing Laboratory Name Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Address...... Fuhai Street, Bao' an District, Shenzhen, China

Applicant's name...... Enping O K S N Electronics Technology Co.,Ltd

Address...... NO.180 South Suburb Industrial Area, Enping City, Guangdong, China.

Standard FCC Rules and Regulations Part PART 15.249

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Test item description: Wireless Monitor Systems

Trade Mark PHENYX PRO,AR VOIVIIO,IIIIOPO...
USA,Baolesh,AKB,OKSN,Beatasy PHENYX PRO, ARVOMIC, innopow, Aplomb, GUDEHOLO, PROMAX, SKY

Manufacturer Enping O K S N Electronics Technology Co.,Ltd

Model/Type reference...... PTM-10

PTM-20, PTM-30, PTM-40, PTM-50, PTM-60, PTM-70, PTM-80,

PTM-11, PTM-22, PTG-11, PTG-12, PTM-1000, PTM-10B, IM300,

BL-91, BL-92, BL-93, BL-94, BL-91B, BL-92B, BL-93B, BL-94B, PTM-33, PTM-44, PTM-55, PTG-13, PTG-15, PTG-16, PTG-17

CTATESTING

Ratings..... DC 13.5V From External circuit

Modulation: 4FSK

Result..... PASS

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TEST REPORT

Equipment under Test : Wireless Monitor Systems

Model /Type : PTM-10

Listed Models

: PTM-20, PTM-30, PTM-40, PTM-50, PTM-60, PTM-70, PTM-

80, PTM-11, PTM-22, PTG-11, PTG-12, PTM-1000, PTM-10B, IM300, GM30, G920, G920B, GM-90, IM500, G930, G930B, G940, G940B, BL-91, BL-92, BL-93, BL-94, BL-91B, BL-92B,

BL-93B, BL-94B, PTM-33, PTM-44, PTM-55, PTG-13, PTG-15,

PTG-16, PTG-17

Model Declaration : PCB board, structure and internal of these model(s) are the

same, So no additional models were tested.

Applicant : Enping O K S N Electronics Technology Co.,Ltd

Address : NO.180 South Suburb Industrial Area, Enping

City, Guangdong, China.

Manufacturer : Enping O K S N Electronics Technology Co.,Ltd

Address : NO.180 South Suburb Industrial Area, Enping

City, Guangdong, China.

Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.249: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

ANSI C63.10:2013: American National Standard for Testing Unlicensed Wireless Devices

ANSI C63.4: 2014: –American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz Range of 9 kHz to 40GHz

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2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Feb. 20, 2022
Testing commenced on		Feb. 20, 2022
Testing concluded on	:	Mar. 08, 2022

2.2. Product Description

Name of EUT	Wireless Monitor Systems	
Model Number	PTM-10	
List Model:	PTM-20, PTM-30, PTM-40, PTM-50, PTM-60, PTM-70, PTM-80, PTM-11, PTM-22, PTG-11, PTG-12, PTM-1000, PTM-10B, IM300, GM30, G920, G920B, GM-90, IM500, G930, G930B, G940, G940B, BL-91, BL-92, BL-93, BL-94, BL-91B, BL-92B, BL-93B, BL-94B, PTM-33, PTM-44, PTM-55, PTG-13, PTG-15, PTG-16, PTG-17	
Power Rating	DC 13.5V From External circuit	
Adapter information:	Model:YN-1210 Input:AC 110-240V 50/60Hz Output:DC 13.5V 600mA	
Sample ID:	CTA220222008-1#(Engineer sample) CTA220222008-2#(Normal sample)	
Operation frequency:	902.3-927.7MHz	
Modulation:	4FSK	
Antenna Type:	Internal antenna	
Antenna Gain:	0dBi	

2.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	0	230V / 50 Hz	0	120V / 60Hz
		0	12 V DC	0	24 V DC
		•	Other (specified in blank below)		

DC 13.5V From External circuit

2.4. Short description of the Equipment under Test (EUT)

This is a Wireless Monitor Systems

For more details, refer to the user's manual of the EUT.

2.5. EUT operation mode

The Applicant provides test software to control the EUT for staying in continuous transmitting and receiving mode for testing .There is 16 channels provided to the EUT. Channel Low,Mid,High was selected to test.

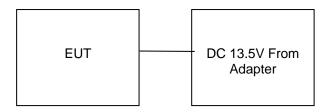
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Channel	Frequency(MHz)	Channel	Frequency(MHz)
00	902.30	08	916.70
01	905.60	09	917.40
02	907.10	10	918.50
03	908.80	11	919.40
04	910.75	12	921.10
05	912.00	13	922.20
06	913.80	14	923.35
07	915.40	15	927.70

Testing Frequency:

Channel	Frequency(MHz)
Low	902.30
Mid	915.40
High	927.70

2.6. Block Diagram of Test Setup



2.7. Modifications

No modifications were implemented to meet testing criteria.

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3. TEST ENVIRONMENT

3.1. TEST FACILITY

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Baoʻan District, Shenzhen, China

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

Industry Canada Registration Number. Is: 27890 CAB identifier: CN0127

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3. Environmental conditions

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

Temperature:	25 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

Conducted testing:

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4. Summary of measurement results

FCC PART 15.249		
FCC Part 15.249(a)	Field Strength of Fundamental	PASS
FCC Part 15.209	Spurious Emission	PASS
FCC Part 15.209	Band edge	PASS
FCC Part 15.215(c)	20dB bandwidth	PASS
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.203	Antenna Requirement	PASS

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3.5. Statement of the measurement uncertainty

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2 Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2 Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2 Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2

3.6. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	CTA-308	2021/08/06	2022/08/05
LISN	R&S	ENV216	CTA-314	2021/08/06	2022/08/05
EMI Test Receiver	R&S	ESPI	CTA-307	2021/08/06	2022/08/05
EMI Test Receiver	R&S	ESCI	CTA-306	2021/08/06	2022/08/05
Spectrum Analyzer	Agilent	N9020A	CTA-301	2021/08/06	2022/08/05
Spectrum Analyzer	R&S	FSP	CTA-337	2021/08/06	2022/08/05
Vector Signal generator	Agilent	N5182A	CTA-305	2021/08/06	2022/08/05
Analog Signal Generator	R&S	SML03	CTA-304	2021/08/06	2022/08/05
Universal Radio Communication	CMW500	R&S	CTA-302	2021/08/06	2022/08/05
Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2021/08/06	2022/08/05
Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2021/08/07	2022/08/06
Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2021/08/07	2022/08/06
Loop Antenna	Zhinan	ZN30900C	CTA-311	2021/08/07	2022/08/06
Horn Antenna	Beijing Hangwei Dayang	OBH100400	CTA-336	2021/08/06	2022/08/05
Amplifier	Schwarzbeck	BBV 9745	CTA-312	2021/08/06	2022/08/05
Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2021/08/06	2022/08/05
Directional coupler	NARDA	4226-10	CTA-303	2021/08/06	2022/08/05
High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2021/08/06	2022/08/05
High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2021/08/06	2022/08/05
Automated filter bank	Tonscend	JS0806-F	CTA-404	2021/08/06	2022/08/05
Power Sensor	Agilent	U2021XA	CTA-405	2021/08/06	2022/08/05
Amplifier	Schwarzbeck	BBV9719	CTA-406	2021/08/06	2022/08/05

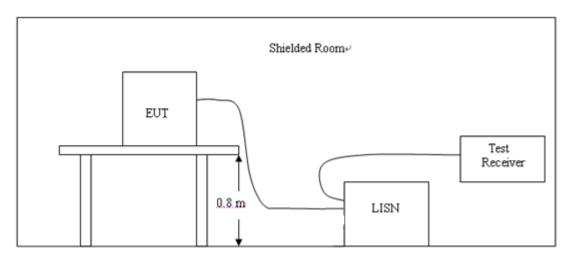
Note: The Cal.Interval was one year.

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4. TEST CONDITIONS AND RESULTS

4.1. AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

AC Power Conducted Emission Limit

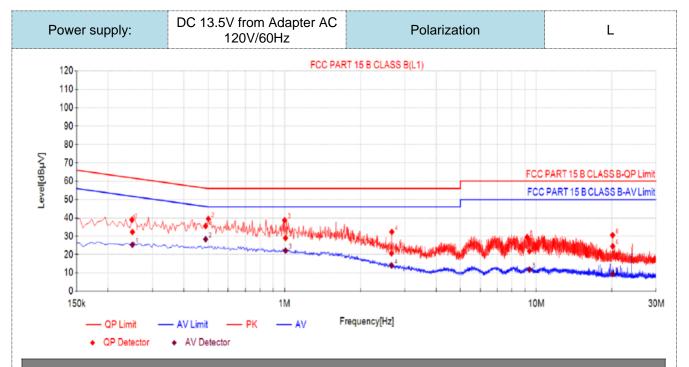
For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following:

, ,	、 /	<u> </u>
Eroquoney rango (MHz)	Limit (c	lBuV)
Frequency range (MHz)	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 frequen	ncy.	

TEST RESULTS

Remark:

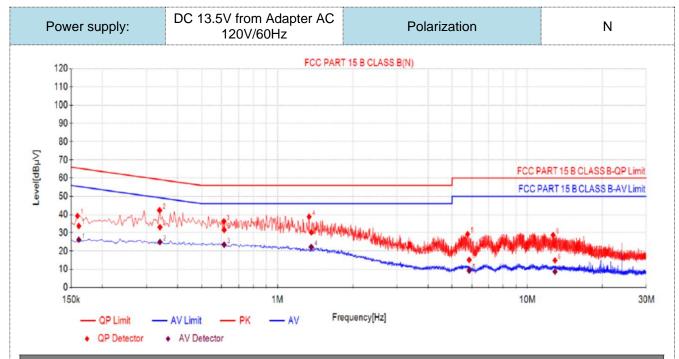
- 1. All modes of 4FSK were test at Low, Middle, and High channel; only the worst result of 4FSK Middle Channel was reported as below:
- 2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:



Final	Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dΒμV]	QP Margin [dB]	AV Reading [dBμV]	ΑV Value [dBμV]	AV Limit [dΒμV]	AV Margin [dB]	Verdict		
1	0.2500	10.50	21.73	32.23	61.76	29.53	14.88	25.38	51.76	26.38	PASS		
2	0.4885	10.50	25.07	35.57	56.19	20.62	17.87	28.37	46.19	17.82	PASS		
3	1.0090	10.50	18.49	28.99	56.00	27.01	11.68	22.18	46.00	23.82	PASS		
4	2.6617	10.50	10.17	20.67	56.00	35.33	3.57	14.07	46.00	31.93	PASS		
5	9.4046	10.50	11.29	21.79	60.00	38.21	1.28	11.78	50.00	38.22	PASS		
6	20.1451	10.50	14.00	24.50	60.00	35.50	-1.06	9.44	50.00	40.56	PASS		

Note:1).QP Value ($dB\mu V$)= QP Reading ($dB\mu V$)+ Factor (dB)

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). $QPMargin(dB) = QP Limit (dB\mu V) QP Value (dB\mu V)$
- 4). $AVMargin(dB) = AV Limit (dB\mu V) AV Value (dB\mu V)$



Final	Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dΒμV]	QP Margin [dB]	AV Reading [dBμV]	ΑV Value [dBμV]	AV Limit [dΒμV]	AV Margin [dB]	Verdict		
1	0.1611	10.50	23.23	33.73	65.41	31.68	15.68	26.18	55.41	29.23	PASS		
2	0.3402	10.50	22.60	33.10	59.20	26.10	14.47	24.97	49.20	24.23	PASS		
3	0.6155	10.50	21.10	31.60	56.00	24.40	12.97	23.47	46.00	22.53	PASS		
4	1.3649	10.50	19.79	30.29	56.00	25.71	11.71	22.21	46.00	23.79	PASS		
5	5.8599	10.50	4.65	15.15	60.00	44.85	-1.22	9.28	50.00	40.72	PASS		
6	12.9179	10.50	4.38	14.88	60.00	45.12	-1.82	8.68	50.00	41.32	PASS		

Note:1).QP Value ($dB\mu V$)= QP Reading ($dB\mu V$)+ Factor (dB)

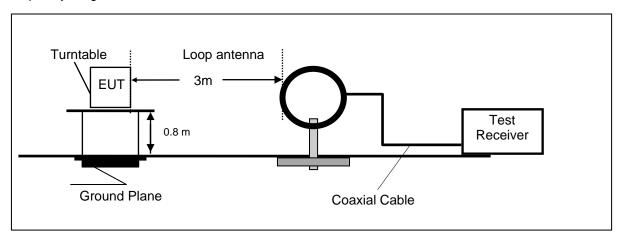
- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). $QPMargin(dB) = QP Limit (dB\mu V) QP Value (dB\mu V)$
- 4). $AVMargin(dB) = AV Limit (dB\mu V) AV Value (dB\mu V)$

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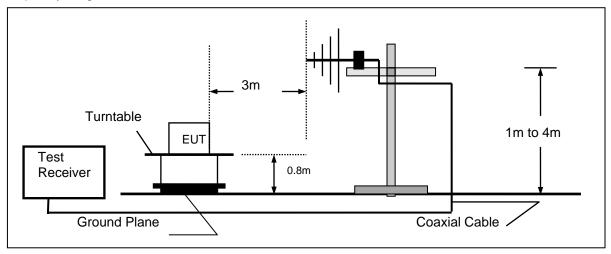
4.2. Radiated Emission and Band Edges

TEST CONFIGURATION

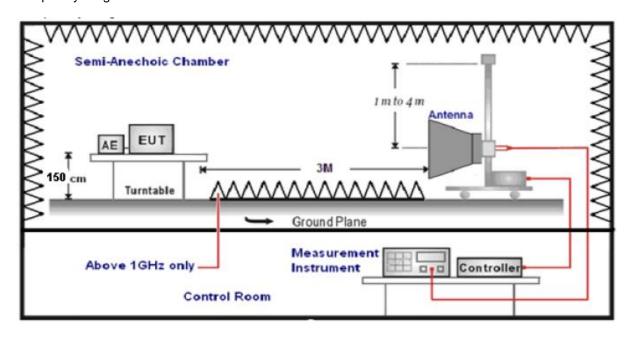
Frequency range 9 KHz - 30MHz



Frequency range 30MHz - 1000MHz



Frequency range above 1GHz-25GHz



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TEST PROCEDURE

- 1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –25GHz.
- 2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° C to 360°C to acquire the highest emissions from EUT.
- 3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 4. Repeat above procedures until all frequency measurements have been completed.
- 5. The EUT minimum operation frequency was 26MHz and maximum operation frequency was 1910MHz.so radiated emission test frequency band from 9KHz to 25GHz.

6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
	Peak Value: RBW=1MHz/VBW=3MHz,	
1GHz-40GHz	Sweep time=Auto	Peak
10112-400112	Average Value: RBW=1MHz/VBW=10Hz,	reak
	Sweep time=Auto	

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Transd=AF +CL-AG

RADIATION LIMIT

According 15.249, the field strength of emissions from intentional radiators operated within 2400MHz-2483.5 MHz shall not exceed 94dBµV/m (50mV/m):

FCC PART 15.249(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 §15.209, whichever is the lesser attenuation.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

Frequency (MHz)	Distance (Meters)	Radiated (dBµV/m)	Radiated (µV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

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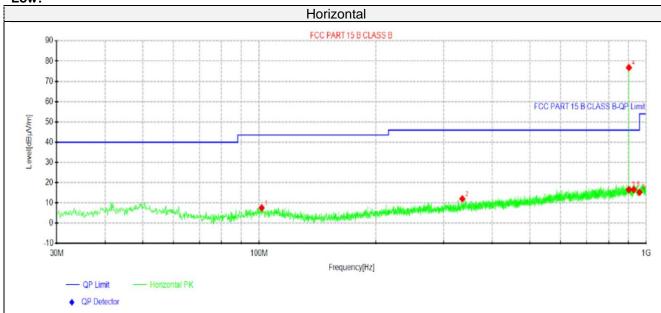
TEST RESULTS

Remark:

- 1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
- 2. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

Low:

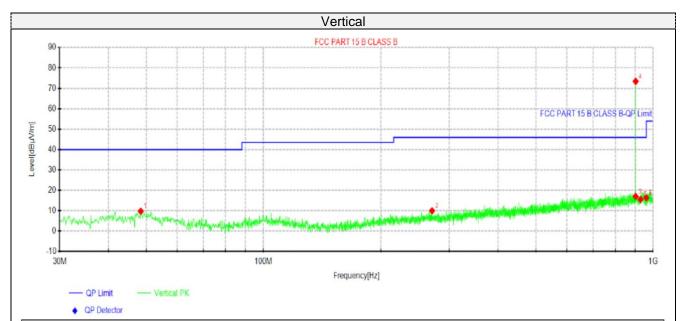


Suspe	Suspected Data List												
NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity				
NO.	[MHz]	[dBµ∨]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity				
1	101.537	26.01	7.57	-18.44	43.50	35.93	100	80	Horizontal				
2	334.943	28.50	12.05	-16.45	46.00	33.95	100	100	Horizontal				
3	902.000	25.73	16.54	-9.19	46.00	29.46	100	120	Horizontal				
4	902.272	86.00	76.81	-9.19	94.00	17.19	100	180	Horizontal				
5	928.000	25.61	16.59	-9.02	46.00	29.41	100	10	Horizontal				
6	960.000	24.30	15.25	-9.05	54.00	38.75	100	170	Horizontal				

Note:1).Level ($dB\mu V/m$)= Reading ($dB\mu V$)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

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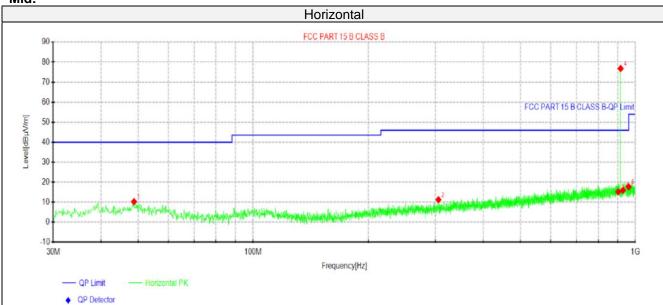


Susp	Suspected Data List												
NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Dolovity				
NO.	[MHz]	[dBµ∨]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity				
1	48.43	25.96	9.78	-16.18	40.00	30.22	100	10	Vertical				
2	270.923	27.70	10.01	-17.69	46.00	35.99	100	90	Vertical				
3	902.000	26.22	17.03	-9.19	46.00	28.97	100	130	Vertical				
4	902.272	82.62	73.43	-9.19	94.00	11.39	100	50	Vertical				
5	928.000	24.60	15.58	-9.02	46.00	30.42	100	100	Vertical				
6	960.000	25.42	16.37	-9.05	54.00	37.63	100	40	Vertical				

Note:1).Level (dB μ V/m)= Reading (dB μ V)+ Factor (dB/m) 2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

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Mid:

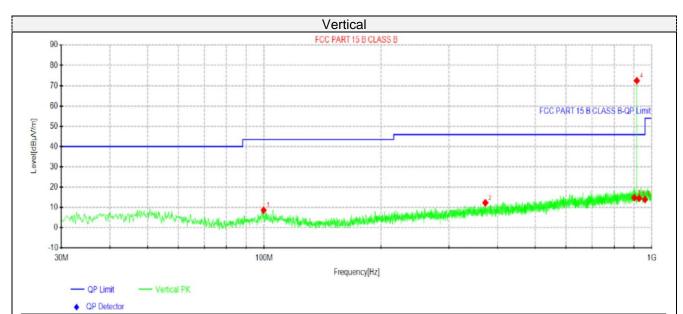


Suspe	Suspected Data List												
NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity				
NO.	[MHz]	[dBµ∨]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	lolanty				
1	48.7938	26.44	10.29	-16.15	40.00	29.71	100	80	Horizontal				
2	305.358	28.53	11.26	-17.27	46.00	34.74	100	60	Horizontal				
3	902.000	24.36	15.17	-9.19	46.00	30.83	100	90	Horizontal				
4	915.403	86.02	76.82	-9.20	94.00	17.18	100	60	Horizontal				
5	928.000	24.98	15.96	-9.02	46.00	30.04	100	80	Horizontal				
6	960.000	26.75	17.70	-9.05	54.00	36.30	100	60	Horizontal				

Note:1).Level (dB μ V/m)= Reading (dB μ V)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

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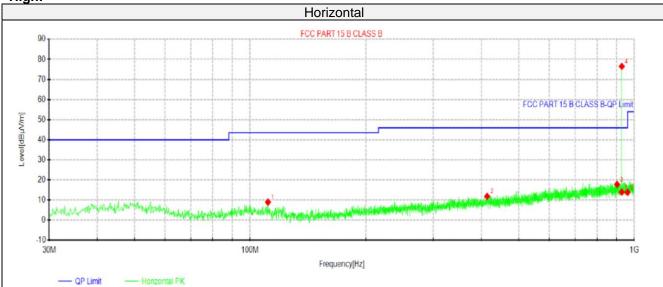


Suspe	Suspected Data List												
NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity				
NO.	[MHz]	[dBµ∨]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Folality				
1	99.7188	27.08	8.68	-18.40	43.50	34.82	100	100	Vertical				
2	372.167	28.16	12.31	-15.85	46.00	33.69	100	30	Vertical				
3	902.000	24.02	14.83	-9.19	46.00	31.17	100	50	Vertical				
4	915.503	81.70	72.50	-9.20	94.00	21.50	100	70	Vertical				
5	928.000	23.51	14.49	-9.02	46.00	31.51	100	30	Vertical				
6	960.000	22.97	13.92	-9.05	54.00	40.08	100	10	Vertical				

Note:1).Level (dB μ V/m)= Reading (dB μ V)+ Factor (dB/m) 2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB) 3). Margin(dB) = Limit (dB μ V/m) - Level (dB μ V/m)

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High:

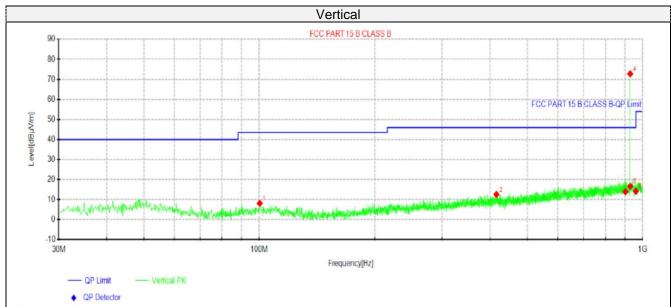


QP Detector

Suspe	Suspected Data List												
NO.	Freq.	Freq. Reading		Factor	Limit	Margin	Height	Angle	Polarity				
NO.	[MHz]	[dBµ∨]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity				
1	111.358	28.03	8.98	-19.05	43.50	34.52	100	70	Horizontal				
2	414.12	27.29	11.88	-15.41	46.00	34.12	100	20	Horizontal				
3	902.000	26.99	17.80	-9.19	46.00	28.20	100	20	Horizontal				
4	927.735	85.54	76.52	-9.02	94.00	17.48	100	110	Horizontal				
5	928.000	22.99	13.97	-9.02	46.00	32.03	100	80	Horizontal				
6	960.000	22.92	13.87	-9.05	54.00	40.13	100	80	Horizontal				

Note:1).Level (dB μ V/m)= Reading (dB μ V)+ Factor (dB/m) 2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

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Susp	Suspected Data List												
NO	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Dolovity				
NO.	[MHz]	[dBµV]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity				
1	100.325	26.54	8.16	-18.38	43.50	35.34	100	40	Vertical				
2	415.696	27.97	12.58	-15.39	46.00	33.42	100	100	Vertical				
3	902.000	23.11	13.92	-9.19	46.00	32.08	100	20	Vertical				
4	927.735	81.78	72.76	-9.02	94.00	12.22	100	130	Vertical				
5	928.000	25.62	16.60	-9.02	46.00	29.40	100	130	Vertical				
6	960.000	23.28	14.23	-9.05	54.00	39.77	100	130	Vertical				

Note:1).Level (dB μ V/m)= Reading (dB μ V)+ Factor (dB/m) 2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB) 3). Margin(dB) = Limit (dB μ V/m) - Level (dB μ V/m)

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For 1GHz to 25GHz

GFSK (above 1GHz)

Low:

Frequency(MHz):		902.3		Polarity:		HORIZONTAL			
Frequency (MHz)	_	ssion vel V/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1804.60	59.88	PK	74	14.12	72.18	25.48	3.56	41.34	-12.3
1804.60	40.98	AV	54	13.02	53.28	25.48	3.56	41.34	-12.3
2706.90	51.31	PK	74	22.69	60.51	28.3	4.53	42.03	-9.2
2706.90	38.77	AV	54	15.23	47.97	28.3	4.53	42.03	-9.2

Frequency(MHz):		902.3		Polarity:		VERTICAL			
Frequency (MHz)	Emis Le (dBu	vel	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1804.60	60.17	PK	74	13.83	72.47	25.48	3.56	41.34	-12.3
1804.60	41.52	AV	54	12.48	53.82	25.48	3.56	41.34	-12.3
2706.90	52.18	PK	74	21.82	61.38	28.3	4.53	42.03	-9.2
2706.90	38.22	AV	54	15.78	47.42	28.3	4.53	42.03	-9.2

Mid:

Frequency(MHz):		915.40		Polarity:		HORIZONTAL			
Frequency (MHz)	Le	ssion vel V/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1830.80	59.20	PK	74	14.80	71.47	25.53	3.56	41.36	-12.27
1830.80	41.09	AV	54	12.91	53.36	25.53	3.56	41.36	-12.27
2746.20	50.87	PK	74	23.13	60.03	28.38	4.52	42.06	-9.16
2746.20	37.69	AV	54	16.31	46.85	28.38	4.52	42.06	-9.16

Frequency(MHz):		915.40		Polarity:		VERTICAL			
Frequency (MHz)	_	ssion vel V/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1830.80	60.27	PK	74	13.73	72.54	25.53	3.56	41.36	-12.27
1830.80	41.62	AV	54	12.38	53.89	25.53	3.56	41.36	-12.27
2746.20	51.55	PK	74	22.45	60.71	28.38	4.52	42.06	-9.16
2746.20	38.12	AV	54	15.88	47.28	28.38	4.52	42.06	-9.16

High:

Frequency(MHz):		927.70		Polarity:		HORIZONTAL			
Frequency (MHz)	Emis Lev (dBu		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1855.40	59.37	PK	74	14.63	71.65	25.57	3.57	41.42	-12.28
1855.40	41.26	AV	54	12.74	53.54	25.57	3.57	41.42	-12.28
2783.10	51.23	PK	74	22.77	60.38	28.42	4.53	42.1	-9.15
2783.10	37.77	PK	54	16.23	46.92	28.42	4.53	42.1	-9.15

Frequency(MHz):		927.70		Polarity:		VERTICAL			
Frequency (MHz)	Le	ssion vel V/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1855.40	59.59	PK	74	14.41	71.87	25.57	3.57	41.42	-12.28
1855.40	42.00	AV	54	12.00	54.28	25.57	3.57	41.42	-12.28
2783.10	51.87	PK	74	22.13	61.02	28.42	4.53	42.1	-9.15
2783.10	38.34	PK	54	15.66	47.49	28.42	4.53	42.1	-9.15

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4.3. 20dB bandwidth

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100KHz RBW and 300KHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Occupied Bandwidth is defined as the average power emitted out-of-band below its lower frequency limit or above the upper frequency limit is each equal to 0.5% of the total average power of a given emission. **LIMIT**

N/A

TEST RESULTS

Modulation	Channel	20dB bandwidth (kHz)	Result	
	Low	172.4		
4FSK	Mid	171.1	Pass	
	High	165.9		

Note: 1.The test results including the cable lose.



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4.4. Antenna Requirement

Standard Applicable

According to RSS-Gen, 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.

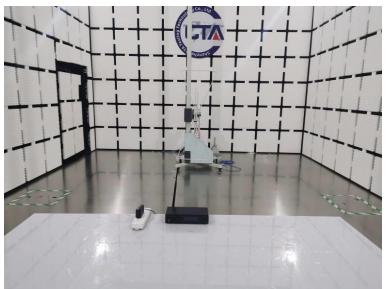
Antenna Information

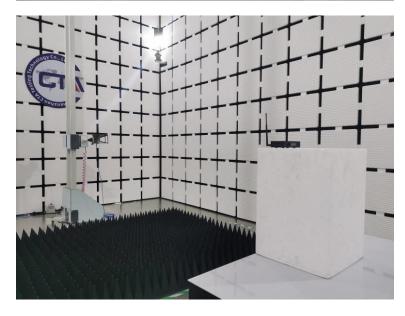
The directional gains of antenna used for transmitting is 2.00dBi, and the antenna is connect to PCB board and no consideration of replacement. Please see EUT photo for details.

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5. Test Setup Photos of the EUT







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6. Photos of the EUT







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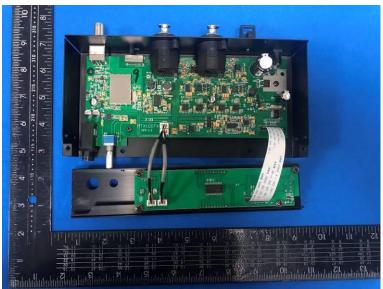


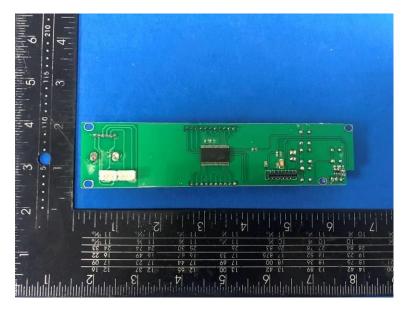


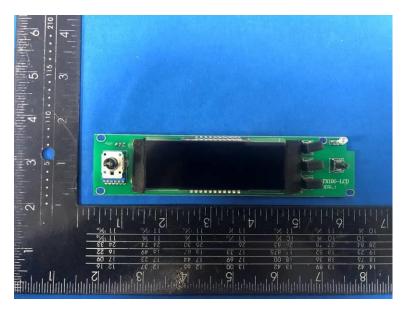


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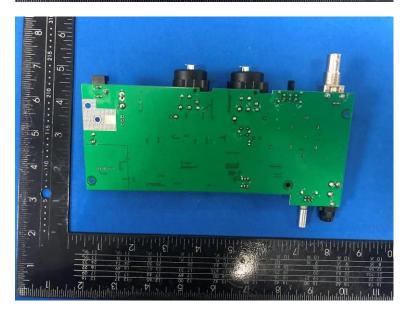












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.....End of Report.....