Shenzhen CTA Testing Technology Co., Ltd.

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

FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.231

CTA25030400201 Report Reference No.: FCC ID.: 2BN8K-BCT-9108

Compiled by

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Date of issue: Mar. 12, 2025

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

Shanghai Yuanjie Electronic Equipment Co., Ltd. Applicant's name:

Room 307, Building #C, 180 South Changilang Road, Baoshan

District, Shanghai, China

Test specification....:

Address:

FCC Part 15.231 Standard....:

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Test item description....: **Restaurant Pager System**

Trade Mark.....:

Shanghai Yuanjie Electronic Equipment Co., Ltd. Manufacturer:

Model/Type reference: BCT-9108

CTATESTIN'S Listed Models: BCT-9208, BCT-9308, BCT-9306, BCT-8200, BCT-9303

Modulation: **ASK**

Frequency 433.85MHz

Ratings: DC 12.0V From external circuit

Result: CTATESTIN'

Page 2 of 30 Report No.: CTA25030400201

TEST REPORT

Equipment under Test Restaurant Pager System

BCT-9108 Model /Type

BCT-9208, BCT-9308, BCT-9306, BCT-8200, BCT-9303 Listed Models

CTATESTING The PCB board, circuit, structure and internal of these models are the Model difference

same, Only model number and colour is different for these model.

Applicant Shanghai Yuanjie Electronic Equipment Co., Ltd.

Address Room 307, Building #C, 180 South Changjiang Road, Baoshan

District, Shanghai, China

Shanghai Yuanjie Electronic Equipment Co., Ltd. Manufacturer

Room 307, Building #C, 180 South Changjiang Road, Baoshan Address

	District, Shanghai	, China	
		CIATES	
	Test Result:	PASS	CACTATE
TESTI	//G		
CTATE	The test report merely corresponds to the test It is not permitted to copy extracts of thes laboratory		sion of the test

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

Contents

		TESTING	Contents	
		TEST STANDARDS	TING	4
	CAN	. 15	,5	
	2	SUMMARY	TING	5
	_		A TES	0
	2.1	General Remarks	CTA CTA	5
	2.1	Product Description		5
	2.2	Equipment Under Test		
	2.3	Short description of the Equipment un	odor Tost (FUT)	5
	2.4	EUT configuration	ider rest (EUT)	5 5
	2.6			-
	2.0	Block Diagram of Test Setup		6 6
		Special Accessories		
	2.8	Related Submittal(s) / Grant (s)		6
	2.9	Modifications		6
	<u>3</u>	TEST ENVIRONMENT		7
	_			LIVI.
	3.1	Address of the test laboratory	CTA	7
	3.2	Test Facility		7
	3.3	Environmental conditions	CTATES	7
	3.4	Summary of measurement results		8
	3.5	Statement of the measurement uncerta	ainty	8
	3.6	Equipments Used during the Test		8
		TES		
	<u>4</u>	TEST CONDITIONS AND RES	3ULTS	<u>. 10</u>
		75	2	
	No. No. of Concession, Name of Street, or other Persons, Name of Street, o	100	CTA TESTING	4.0
	4.1	AC Power Conducted Emission		10
	4.2	Radiated Emission	TATE	13
	4.3	20dB Bandwidth	CIA	19
	4.4	Deactivation Time		20
	4.5	Antenna Requirement		21
	5-1NG	TEST SETUP PHOTOS OF TH	4E EUT	. 22
	5 1 \\\			
7A7E				
CTATE	<u>6</u>	PHOTOS OF THE EUT		. 23
		CTATES!	CTATESTING CTATES	
			-6	
			CTATES CTATES	





Report No.: CTA25030400201 Page 4 of 30

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.231: Periodic operation in the band 40.66-40.70 MHz and above 70 MHz. ANSI C63.10:2013: American National Standard for Testing Unlicensed Wireless Devices

Page 5 of 30 Report No.: CTA25030400201

SUMMARY

2.1 General Remarks

2.1 General Remarks		
Date of receipt of test sample	:	Mar. 04, 2025
Testing commenced on		Mar. 04, 2025
Testing concluded on	:	Mar. 12, 2025

2.2 Product Description

Product Name:	Restaurant Pager System
Model/Type reference:	BCT-9108
Power supply:	DC 12.0V From external circuit
Adapter information:	Model: GQ24-120200-DU Input: AC 100-240V 50/60Hz 1.0A Max Output: DC 12.0V 2.0A
Testing sample ID:	CTA250304002-1# (Engineer sample), CTA250304002-2#(Normal sample)
Modulation:	ASK
Operation frequency:	433.85MHz
Channel number:	1
Antenna type:	External antenna
Antenna gain:	2.0 dBi

2.3 Equipment Under Test

Power supply system utilised

	Power supply voltage	:	0	230V / 50 Hz	0	120V / 60Hz
	5		•	12 V DC	0	24 V DC
CTA	Other (specified in blank below)					
	7ES11	100				

/

Short description of the Equipment under Test (EUT)

This is a Restaurant Pager System.

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

2.5 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

supplied by the manufacturer

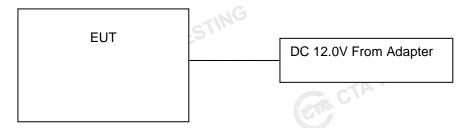
O - supplied by the lab

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Report No.: CTA25030400201 Page 6 of 30

2.6 Block Diagram of Test Setup



2.7 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
	1	TES	a G	/	
	C		ESTING		

2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for the device filing to comply with Section 15.231 of the FCC Part 15, Subpart C Rules.

2.9 Modifications

No modifications were implemented to meet testing criteria.

Page 7 of 30 Report No.: CTA25030400201

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

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

Environmental conditions

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

Radiated Emission:

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

Conducted testing:

	Atmospheric pressure:	950-1050mbar	
	ING		
TATES	Conducted testing:		
Cir		05.0	
	Temperature:	25 ° C	
			JING
	Humidity:	44 %	STILL
	(6.)		ATES
	Atmospheric pressure:	950-1050mbar	\r
			•

Report No.: CTA25030400201 Page 8 of 30

Summary of measurement results

FCC and IC Requirements					
FCC Part 15.207	Conducted Emission	PASS			
FCC Part 15.231(a)(2)	Automatically Deactivate	PASS			
FCC Part 15.231(b)	Electric Field Strength of Fundamental Emission	PASS			
FCC Part 15.205 &15.209& 15.231(b)	Electric Field Strength of Spurious Emission	PASS			
FCC Part 15.231(c)	-20dB bandwidth	PASS			

Remark: The measurement uncertainty is not included in the test result.

Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd.

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	1	1.1%	(1)
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)

⁽¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Equipments Used during the Test

TATESTING

confidence level using a coverage factor of 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	2024/08/03	2025/08/02			
LISN	R&S	ENV216	CTA-314	2024/08/03	2025/08/02			
EMI Test Receiver	R&S	ESPI	CTA-307	2024/08/03	2025/08/02			
EMI Test Receiver	R&S	ESCI	CTA-306	2024/08/03	2025/08/02			
Spectrum Analyzer	Agilent	N9020A	CTA-301	2024/08/03	2025/08/02			

						TES!"	
	Report No.: CTA250	030400201			Page	e 9 of 30	
	Spectrum Analyzer	R&S	FSU	CTA-337	2024/08/03	2025/08/02	
	Vector Signal generator	Agilent	N5182A	CTA-305	2024/08/03	2025/08/02	
	Analog Signal Generator	R&S	SML03	CTA-304	2024/08/03	2025/08/02	
	WIDEBAND RADIO COMMUNICATION TESTER	CMW500	R&S	CTA-302	2024/08/03	2025/08/02	
	Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2024/08/03	2025/08/02	
	Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2026/10/16	
	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2026/10/12	
CTATE	Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2026/10/16	
1	Broadband Horn Antenna	A-INFOMW	LB-180500H-2.4F	CTA-336	2023/09/13	2026/09/12	
	Amplifier	Schwarzbeck	BBV 9745	CTA-312	2024/08/03	2025/08/02	
	Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2024/08/03	2025/08/02	
	Directional coupler	NARDA	4226-10	CTA-303	2024/08/03	2025/08/02	
	High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2024/08/03	2025/08/02	
	High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2024/08/03	2025/08/02	
	Automated filter bank	Tonscend	JS0806-F	CTA-404	2024/08/03	2025/08/02	
	Power Sensor	Agilent	U2021XA	CTA-405	2024/08/03	2025/08/02	
	Amplifier	Schwarzbeck	BBV9719	CTA-406	2024/08/03	2025/08/02	
	Test Equipment	Manufacturer	Model No.	Version number	Calibration Date	Calibration Due Date	

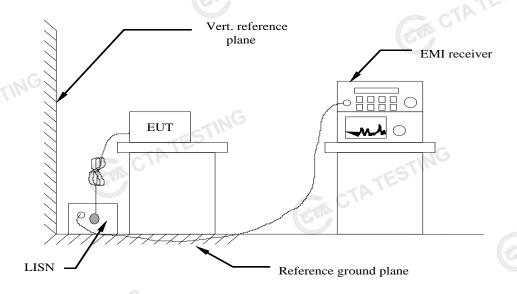
	Test Equipment	Manufacturer	Model No.	Version number	Calibration Date	Calibration Due Date
CTATE	EMI Test Software	Tonscend	TS®JS32-RE	5.0.0.2	N/A	N/A
	EMI Test Software	Tonscend	TS®JS32-CE	5.0.0.1	N/A	N/A
	RF Test Software	Tonscend	TS®JS1120-3	3.1.65	N/A	N/A
	RF Test Software	Tonscend	TS®JS1120	3.1.46	N/A	N/A
			The second second		CT	N .
G						

Report No.: CTA25030400201 Page 10 of 30

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 C63.10-2013.
- 2 Support equipment, if needed, was placed as per ANSI C63.10-2013
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
- 4 The EUT received DC 12V power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz 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.
- 8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

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

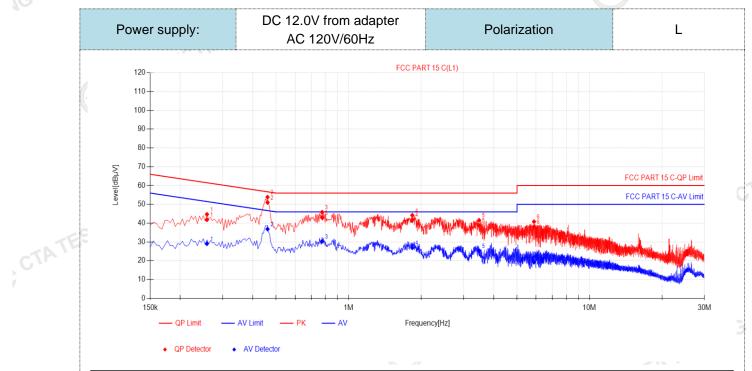
Frequency rang	70 (MHz)	Limit	(dBuV)
Frequency rang	je (IVII 12)	Quasi-peak	Average
0.15-0.	5	66 to 56*	56 to 46*
0.5-5		56	46
5-30		60	50
* Decreases with the logar	arithm of the frequen	cy.	
TEST RESULTS	CTP CTP		TESTING
Remark:			TA

TEST RESULTS

Remark:

1. 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:

Page 11 of 30 Report No.: CTA25030400201



Fina	Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dΒμV]	QP Margin [dB]	AV Reading [dΒμV]	AV Value [dΒμV]	AV Limit [dΒμV]	AV Margin [dB]	Verdict		
1	0.258	9.94	31.87	41.81	61.50	19.69	19.13	29.07	51.50	22.43	PASS		
2	0.4605	9.96	41.03	50.99	56.68	5.69	26.88	36.84	46.68	9.84	PASS		
3	0.7755	9.96	33.00	42.96	56.00	13.04	20.39	30.35	46.00	15.65	PASS		
4	1.8375	9.92	31.79	41.71	56.00	14.29	16.97	26.89	46.00	19.11	PASS		
5	3.48	9.97	28.79	38.76	56.00	17.24	15.37	25.34	46.00	20.66	PASS		
6	5.883	10.13	27.97	38.10	60.00	21.90	9.11	19.24	50.00	30.76	PASS		

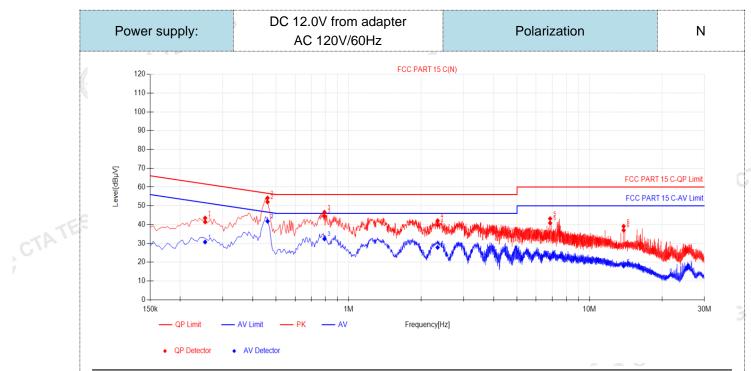
CTATE

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 (dBu\)\ QP\'
- 4). $AVMargin(dB) = AV Limit (dB\mu V) AV Value (dB\mu V)$

CTATESTING

Report No.: CTA25030400201 Page 12 of 30



Fina NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2535	10.01	31.41	41.42	61.64	20.22	20.75	30.76	51.64	20.88	PASS
2	0.4605	9.98	42.10	52.08	56.68	4.60	31.82	41.80	46.68	4.88	PASS
3	0.7935	10.14	34.39	44.53	56.00	11.47	22.26	32.40	46.00	13.60	PASS
4	2.3415	10.14	29.54	39.68	56.00	16.32	17.71	27.85	46.00	18.15	PASS
5	6.864	10.40	30.47	40.87	60.00	19.13	12.01	22.41	50.00	27.59	PASS
6	13.8615	10.42	26.60	37.02	60.00	22.98	7.58	18.00	50.00	32.00	PASS
2) 3)).QP Value . Factor (dl . QPMargir . AVMargir	3)=insert n(dB) = 0	ion loss (QP Limit (of LISN (dBµV) -	(dB) + Ca QP Valu	able loss ıe (dBµV	(dB))				

- ...ως οι LISN (dB) + Cable loss
 ...ως ινιαrgin(dB) = QP Limit (dBμV) QP Value (dBμV)
 4). AVMargin(dB) = AV Limit (dBμV) AV Value (dBμV) 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
 - 3). QPMargin(dB) = QP Limit (dB μ V) QP Value (dB μ V)
 - CTATESTING

Report No.: CTA25030400201 Page 13 of 30

4.2 Radiated Emission

Limit

For intentional device, according to 15.209(a) the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table.

	THE STATE OF THE S		toto ottaii iiot oxtooodi iiio ioiioiiiiig tabioi	
	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
CTATE	216-960	3	46.0	200
	Above 960	3	54.0	500
,	la addition to the provi	siana of 45 004/b) that	ald atranath of aminaiana from intentional r	endiatora anarotad

In addition to the provisions of 15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

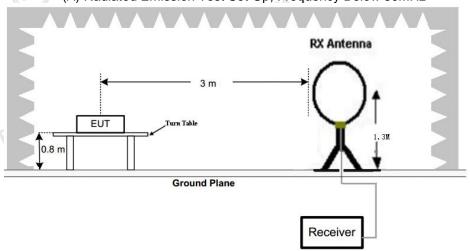
Funda- mental fre- quency (MHz)	Field strength of funda- mental (microvolts/ meter)	Field strength of spurious emissions (microvolts/meter)
40.66– 40.70.	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹ Linear interpolations.

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 260-470 MHz, 20*log(41.6667*433.85-7083.3333)=80.82dBuV/m The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

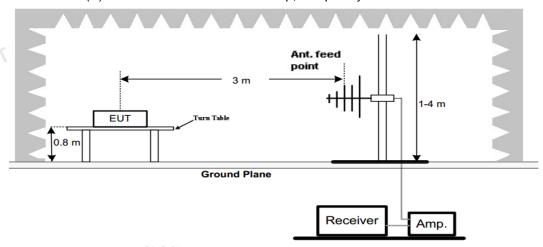
TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz

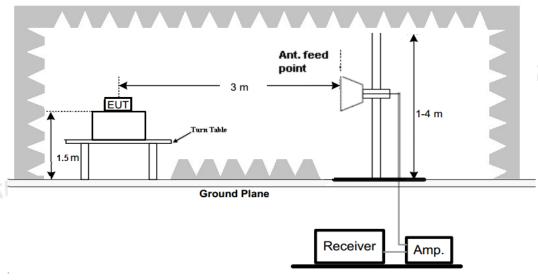


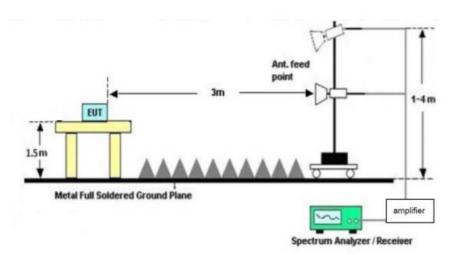
Report No.: CTA25030400201 Page 14 of 30

(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz





Test Procedure

 Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane. Report No.: CTA25030400201 Page 15 of 30

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. There were no emissions found below 30MHz within 20dB of the limit.

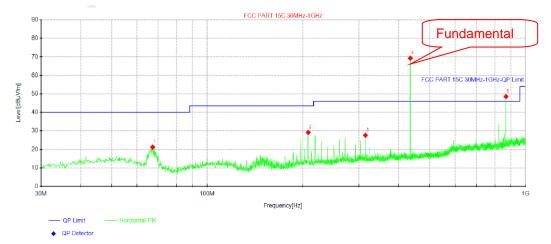
TEST RESULTS

The emissions from 30MHz to 5GHz are measured peak and average level, below 1 GHz measured QP level, detailed test data please see below. Besides, we tested 3 directions and recorded the worst data.

Note: We tested all Modes and recorded the worst case as follow.



Report No.: CTA25030400201 Page 16 of 30

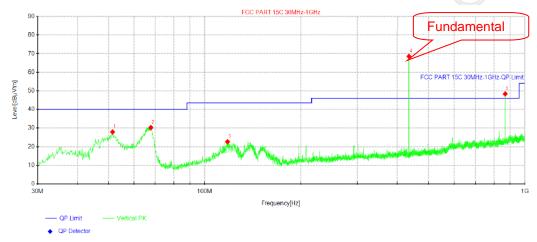


		0 ↓ 30M	i		100M		i	-ii		1G
-CC			— OP Limit —— Ho			Frequency[Hz]				
CTATES			QP Detector	rizontal PK						
	Suspected Data List									
	NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity
	NO.	[MHz]	[dBµV]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
	1	67.345	35.55	21.25	-14.30	40.00	18.75	100	10	Horizontal
	2	207.873	41.93	29.18	-12.75	43.50	14.32	100	85	Horizontal
	3	314.573	38.54	27.63	-10.91	46.00	18.37	100	246	Horizontal
(G	4	433.850	79.12	69.28	-9.84	46.00	-23.28	100	212	Horizontal
	5	867.700	52.01	48.52	-3.49	46.00	-2.52	100	61	Horizontal

	STING					·	·	
Emission Styles	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	PK Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Direction (H)
Fundamental	433.85	79.12	-9.84	69.28	100.82	31.54	PK	Н
Harmonics	867.70	52.01	-3.49	48.52	80.82	32.30	PK	Н
Harmonics	1301.55	66.64	-20.17	46.47	74.00	27.53	PK	Н
					125 cart 111			75.10
TING		Б	ok		AV			To make the

1 C1			ı			1	
Emission Styles	Frequency (MHz)	PK Level (dBuV/m)	AV Factor (dB/m)	AV Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Direction (H)
Fundamental	433.85	69.28	-10.89	58.39	80.82	22.43	Н
Harmonics	867.70	48.52	-10.89	37.63	60.82	23.19	Н
Harmonics	1301.55	46.47	-10.89	35.58	54.00	18.42	HI.
					E	CTA	10
	Fundamental Harmonics	Fundamental 433.85 Harmonics 867.70	Emission Frequency (MHz) Level (dBuV/m) Styles 433.85 69.28 Harmonics 867.70 48.52	Emission Frequency (MHz) Level (dBuV/m) AV Factor (dB/m) Fundamental 433.85 69.28 -10.89 Harmonics 867.70 48.52 -10.89	Emission Styles Frequency (MHz) Level (dBuV/m) AV Factor (dB/m) Level (dBuV/m) Fundamental 433.85 69.28 -10.89 58.39 Harmonics 867.70 48.52 -10.89 37.63	Emission Styles Frequency (MHz) Level (dBuV/m) AV Factor (dB/m) Level (dBuV/m) Level (dBuV/m) Level (dBuV/m) Level (dBuV/m) Fundamental 433.85 69.28 -10.89 58.39 80.82 Harmonics 867.70 48.52 -10.89 37.63 60.82	Emission Styles Frequency (MHz) Level (dBuV/m) AV Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dBuV/m) Fundamental 433.85 69.28 -10.89 58.39 80.82 22.43 Harmonics 867.70 48.52 -10.89 37.63 60.82 23.19

Page 17 of 30 Report No.: CTA25030400201



Suspe	Suspected Data List													
NO	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Dolority					
NO.	[MHz]	[dBµV]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	51.4612	39.17	27.91	-11.26	40.00	12.09	100	265	Vertical					
2	67.83	44.60	30.23	-14.37	40.00	9.77	100	206	Vertical					
3	117.906	36.44	22.67	-13.77	43.50	20.83	100	137	Vertical					
4	433.850	78.36	68.52	-9.84	46.00	-22.52	100	3	Vertical					
5	867.700	51.84	48.35	-3.49	46.00	-2.35	100	194	Vertical					

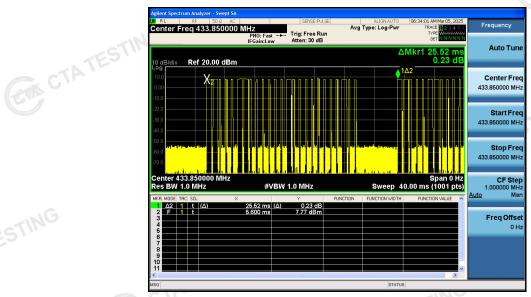
Emission Styles	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	PK Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Direction (V)
Fundamental	433.85	78.36	-9.84	68.52	100.82	32.30	PK	V
Harmonics	867.70	51.84	-3.49	48.35	80.82	32.47	PK	V
Harmonics	1301.55	67.77	-20.17	47.60	74.00	26.40	PK	V

CTATE	Emission Styles	Frequency (MHz)	PK Level (dBuV/m)	AV Factor (dB/m)	AV Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Direction (V)		
	Fundamental	433.85	68.52	-10.89	57.63	80.82	23.19	V		
	Harmonics	867.70	48.35	-10.89	37.46	60.82	23.36	V		
	Harmonics	1301.55	47.60	-10.89	36.71	54.00	17.29	V		
	Note:			G IN C				TESTING		
	Note:: The other emission levels were very low against the limit.									
	 Level (dBuV/m)= Reading (dBuV)+Factor(dB/m) 									
1	2. AV Level (dBuV/m)= PK Level (dBuV/m)+ AV Factor(dB)									

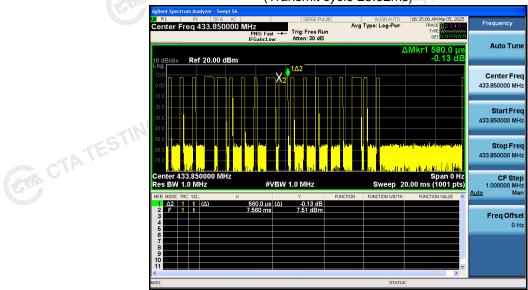
Note:

- --: The other emission levels were very low against the limit.
- Level (dBuV/m)= Reading (dBuV)+Factor(dB/m)
- AV Level (dBuV/m)= PK Level (dBuV/m)+ AV Factor(dB) 2.
- 3. In a transmit cycle 100ms period found burst 25pcs, the Duty Cycle can calculate as below: Duty Cycle= (0.58*6+0.20*19)/25.52=7.28/25.52=0.2853 AV Factor=20*log(Duty Cycle)=20*log(0.2853)=-10.89

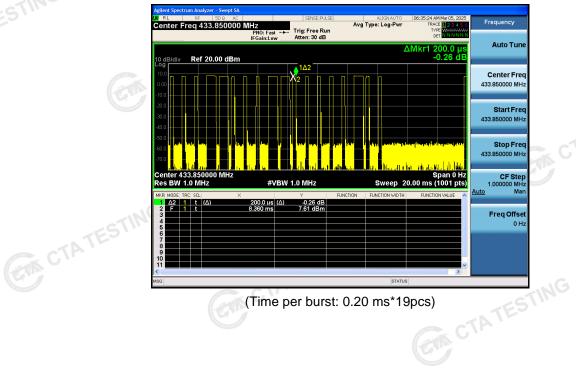
(The plot of Duty Cycle See the follow page)



(Transmit cycle 25.52ms)



(Time per burst: 0.58ms*6pcs)



(Time per burst: 0.20 ms*19pcs)

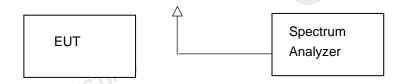
Report No.: CTA25030400201 Page 19 of 30

4.3 20dB Bandwidth

Limit

According to 47 CFR 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the centre frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

Test Configuration



CTATESTING **Test Procedure**

The 20dB bandwidth and 99% bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

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

The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Test Results

est Results			TEST		
Modulation	Channel Frequency (MHz)	99% OBW (KHz)	20dB bandwidth (KHz)	Limit (KHz)	Result
ASK	433.85	215.82	229.4	0.25%*433.85*1000=1084.625	Pass

Test plot as follows:





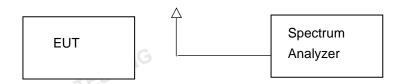
Report No.: CTA25030400201 Page 20 of 30

Deactivation Time 4.4

Limit

According to FCC §15.231(a)(2), A transmitter activated automatically shall cease transmission within 5 CTATEST seconds after activation.

Test Configuration



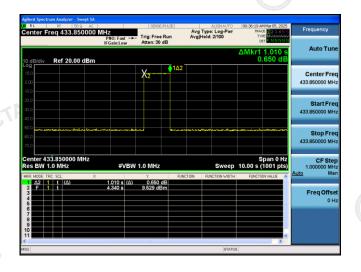
Test Procedure

- The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
- 2. The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was set to 1 MHz to encompass all significant spectral components during the test. The spectrum analyzer was operated in linear scale and zero span mode after tuning to the transmitter carrier frequency.

TEST RESULTS

Note: The transmitter was automatically activated, and the carrier frequency 433.85MHz:

Frequency (MHz)	One transmission time (S)	Limit(S)	Result	
433.85	1.010	5	Pass	
		C.T.		
	Allend Spectrum Analyzes - Send 5A OR 16 Fig. 50 S AC Center Freq 433.850000 MHz PRO: Fast PRO: Fast Freq: Free Run Atten: 30 dB	Avg Type: Leg-Par Read 12 3 4 5 Avg Hold: 2100 Frequency Avg Hold: 2100 Ct 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		





Report No.: CTA25030400201 Page 21 of 30

4.5 Antenna Requirement

Standard Applicable

According to FCC Part 15C 15.203

- a) An intentional radiator shall be de-signed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
- b) 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.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

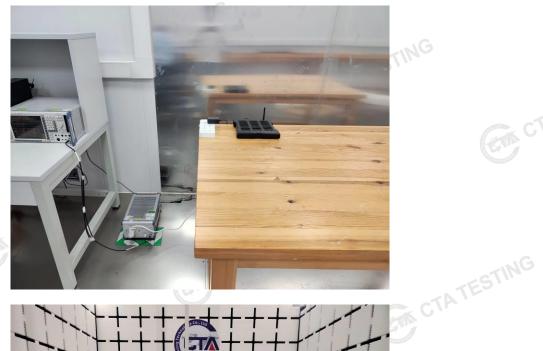
The antenna used in this product is a External Antenna, The directional gains of antenna used for transmitting is 2.0 dBi.

Remark: The antenna gain is provided by the customer, if the data provided by the customer is not accurate, Shenzhen CTA Testing Technology Co., Ltd. does not assume any responsibility.



Report No.: CTA25030400201 Page 22 of 30

5 Test Setup Photos of the EUT







A TESTING

Report No.: CTA25030400201 Page 23 of 30

6 Photos of the EUT







Report No.: CTA25030400201 Page 24 of 30







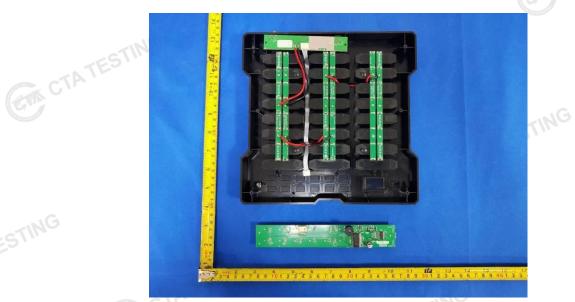
Report No.: CTA25030400201 Page 25 of 30

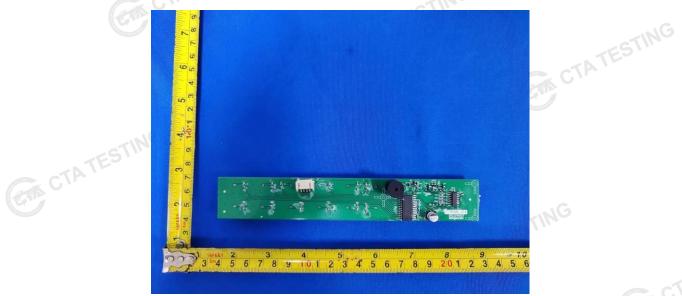






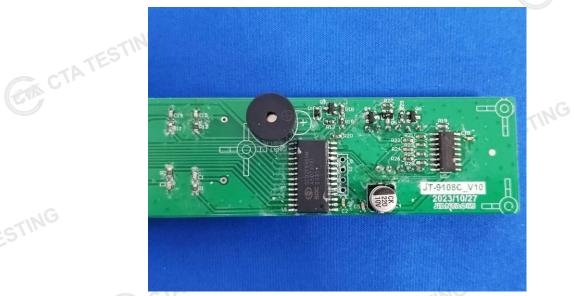
Report No.: CTA25030400201 Page 26 of 30

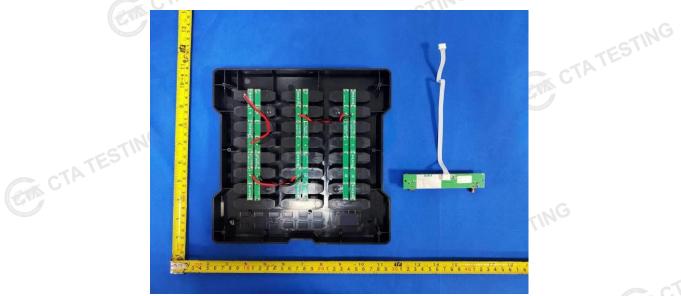


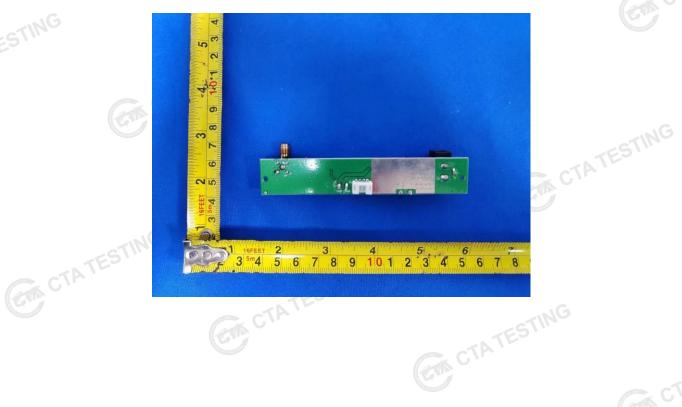




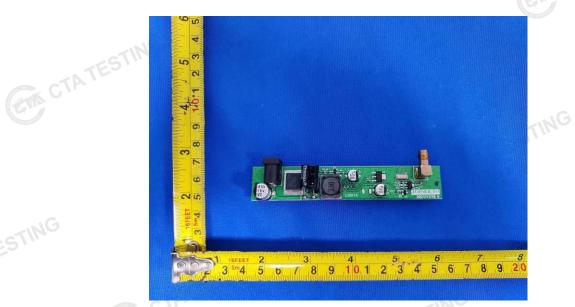
Report No.: CTA25030400201 Page 27 of 30







Report No.: CTA25030400201 Page 28 of 30



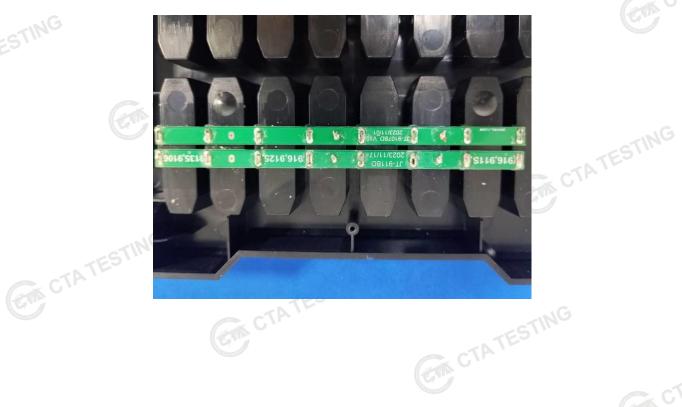




Report No.: CTA25030400201 Page 29 of 30







Report No.: CTA25030400201 Page 30 of 30 CTA TESTIN TING CTATE! CTA TESTING CIR