

# **TEST REPORT**

## No. I17D00262-SRD01

## For

Client: Shanghai Sunmi Technology Co.,Ltd.

**Production: POS System** 

Model Name: W5920

FCC ID: 2AH25V1SNFC

Hardware Version: 2.0

**Software Version: 1.1.0** 

Issued date: 2018-01-12

#### Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of ECIT Shanghai.

### **Test Laboratory:**

ECIT Shanghai, East China Institute of Telecommunications

Add: 7-8F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

Tel: (+86)-021-63843300, E-Mail: welcome@ecit.org.cn



### **Revision Version**

Report No.: I17D00262-SRD01

Report Number	Revision	Date	Memo
I17D00262-SRD01	00	2018-01-12	Initial creation of test report

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## 1. Test Laboratory

## 1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications	
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District,	
	Shanghai, P. R. China	
Postal Code:	200001	
Telephone:	(+86)-021-63843300	
Fax:	(+86)-021-63843301	

### 1.2. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-10/+55℃
Relative Humidity:	20-75%

### 1.3. Project data

Project Leader:	Zhou Yan
Testing Start Date:	2017-12-14
Testing End Date:	2018-01-05

## 1.4. Signature

Shi Hongqi
(Prepared this test report)

Ding Li

(Reviewed this test report)

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Zheng Zhongbin

Director of the laboratory (Approved this test report)

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## **RF Test Report** Report No.: I17D00262-SRD01

### 2. Client Information

### 2.1. Applicant Information

Company Name: Shanghai Sunmi Technology Co.,Ltd.

Room 605, Block 7, KIC Plaza, No.388 Song Hu Road, Yang Pu Address:

District, Shanghai, China

Postcode: 200433

Telephone: 18721763396

#### 2.2. Manufacturer Information

Company Name: Shanghai Sunmi Technology Co.,Ltd.

Room 605, Block 7, KIC Plaza, No.388 Song Hu Road, Yang Pu Address:

District, Shanghai, China

Postcode: 200433

Telephone: 18721763396

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# 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

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### 3.1. About EUT

EUT Description	Wireless data POS System
Model name	W5920
BT Frequency	2402MHz-2480MHz
BT Channel	Channel0-Channel78
BT type of modulation	GFSK/ π /4 DQPSK/8DPSK
Extreme Temperature	-10/+55°C
Nominal Voltage	3.6 V
Extreme High Voltage	4.2 V
Extreme Low Voltage	3.5 V

## 3.2. Internal Identification of EUT used during the test

EUT ID	* SN or IMEI	HW Version	SW Version	Date of receipt
N02	865150030317082	2.0	1.1.0	2017-11-24

<sup>\*</sup>EUT ID: is used to identify the test sample in the lab internally.

## 3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	

<sup>\*</sup>AE ID: is used to identify the test sample in the lab internally.

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## 4. Reference Documents

## 4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15,Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.	Jun,2016 Edition
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013

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## 5. Summary of Test Results

A brief summary of the tests carried out is shown as following.

Measurement Items	Sub-clause of Part15C	Sub-claus e of IC	Verdict
Transmitter Spurious Emission-Radiated	15.247,15.209,	/	Р
AC Powerline Conducted Emission	15.107,15.207	/	Р

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Please refer to part 5 for detail.

The measurements are according to ANSI C63.10.

Terms used in Verdict column

Р	Pass, the EUT complies with the essential requirements in the standard.
NP	Not Perform, the test was not performed by ECIT.
NA	Not Applicable, the test was not applicable.
F	Fail, the EUT does not comply with the essential requirements in the standard.

#### **Test Conditions**

Tnom	Normal Temperature
Tmin	Low Temperature
Tmax	High Temperature
Vnom	Normal Voltage
Vmin	Low Voltage
Vmax	High Voltage
Hnom	Norm Humidity
Anom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

	,,,	
Temperature	Tnom	22℃
Voltage	Vnom	3.6V
Humidity	Hnom	48%
Air Pressure	Anom	1010hPa

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# Note:

- a. All the test data for each data were verified, but only the worst case was reported.
- b.The GFSK,  $\pi/4$  DQPSK and 8DPSK were set in DH1 for GFSK, 2-DH1 for  $\pi/4$  DQPSK, 3-DH1 for 8DPSK.

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c.The DC and low frequency voltages' measurement uncertainty is ±2%.

#### 5.1. Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with section 3.

The test results of this test report relate exclusively to the item(s) tested as specified in section 5

#### 5.2. Statements

The W5920, supporting GPRS/WCDMA/BT/BLE/WIFI/GPS/NFC, manufactured by Shanghai Sunmi Technology Co.,Ltd.. is a variant product for testing.

We only test worst-case of RSE and AC Power line ,The other test cases please refer to the prototype report No: CCISE170603503, which was prepared by Shenzhen Zhongjian Nanfang Testing Co.,Ltd

ECIT has verified that the compliance of the tested device specified in section 5 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 5 of this test report.



### 6. Test result

#### 6.1. Radiated Emission

#### 6.1.1 Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

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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) (see 15.205(c)).

#### Limit in restricted band:

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)
30~88	100	40
88~216	150	43.5
216~960	200	46
Above 960	500	54

#### 6.1.2 Test Method

Portable, small, lightweight, or modular devices that may be handheld, worn on the body, or placed on a table during operation shall be positioned on a non-conducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.10-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time (s)
30~1000	100KHz/300KHz	5
1000~4000	1MHz/1MHz	15

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4000~18000	1MHz/1MHz	40
18000~26500	1MHz/1MHz	20

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#### 6.1.3 Measurement Results:

A "reference path loss" is established and  $A_{Rpi}$  is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

A<sub>Rpi</sub> = Cable loss + Antenna Gain-Preamplifier gain

Result= $P_{Mea} + A_{Rpi}$ 

#### For GFSK

Channel	Frequency Range	Test Results	Conclusion
	30MH~1GHz	Fig1	Р
Ch0 2402MHz	1GHz~3GHz	Fig2	Р
	3GHz~18GHz	Fig3	Р
Power	2.38GHz~2.4GHz	Fig4	Р
Power	2.45GHz~2.5GHz	Fig5	Р

#### For π/4 DQPSK

Channel	Frequency Range	Test Results	Conclusion
	30MH~1GHz	Fig6	Р
Ch0 2402MHz	1GHz~3GHz	Fig7	Р
	3GHz~18GHz	Fig8	Р
Power	2.38GHz~2.4GHz	Fig9	Р
Power	2.45GHz~2.5GHz	Fig10	Р

#### For 8DPSK

Channel	Frequency Range	Test Results	Conclusion
	30MH~1GHz	Fig11	Р
Ch0 2402MHz	1GHz~3GHz	Fig12	Р
	3GHz~18GHz	Fig13	Р
Power	2.38GHz~2.4GHz	Fig14	Р
Power	2.45GHz~2.5GHz	Fig15	Р

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### GFSK Ch0 30MHz-1GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.649768	19.82	-22	41.82	V
40.66454	32.7	-20.6	53.3	V
81.377256	26.5	-27	53.5	V
119.715704	7.58	-25.3	32.88	Н
149.14482	22.55	-27.9	50.45	Н
180.442268	34.23	-25.2	59.43	Н

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### GFSK Ch0 1GHz-3GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2483.989595	56.63	9.5	47.13	Н
2542.4525	53.63	7.1	46.53	V
2604.372693	54.33	7.3	47.03	V
2657.097885	54.61	7.7	46.91	Н
2709.6725	54.65	7.9	46.75	V
2750.475384	54.95	7.7	47.25	V

### GFSK Ch0 1GHz-3GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2483.989595	43.78	9.5	34.28	Н
2604.372693	42.15	7.3	34.85	Н
2657.097885	42.72	7.7	35.02	Н
2709.6725	42.57	7.9	34.67	V
2750.475384	42.52	7.7	34.82	V

### GFSK Ch0 3GHz-18GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
12667.24867	52.67	15.8	36.87	V

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13609.93973	53.85	17.4	36.45	Н
14297.4914	55.21	20.2	35.01	Н
15703.1614	57.19	23.2	33.99	Н
16553.10107	58.61	25.8	32.81	V
17308.22527	60.64	27.8	32.84	V

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## GFSK Ch0 3GHz-18GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
14297.4914	42.47	20.2	22.27	Н
15703.1614	45.08	23.2	21.88	Н
16553.10107	46.49	25.8	20.69	V
17308.22527	48.07	27.8	20.27	V

## π/4 DQPSK Ch0 30MHz-1GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.793444	16.96	-21.9	38.86	V
40.668104	32.75	-20.6	53.35	V
53.491996	11.55	-20.7	32.25	V
67.80244	28.48	-24.3	52.78	V
149.181984	27.14	-27.9	55.04	Н
203.42224	26.74	-24.3	51.04	Н

### π/4 DQPSK Ch0 1GHz-3GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2603.781923	54.69	7.3	47.39	Н
2768.358461	55.57	7.8	47.77	Н
2833.708461	55.21	8.2	47.01	Н
2890.579807	55.49	8.8	46.69	V
2938.895384	55.51	8.7	46.81	Н

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2984.207116	55.84	8.9	46.94	V
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### π/4 DQPSK Ch0 1GHz-3GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2603.781923	42.09	7.3	34.79	Н
2768.358461	42.32	7.8	34.52	Н
2833.708461	42.73	8.2	34.53	Н
2890.579807	43.6	8.8	34.8	V
2938.895384	43.7	8.7	35	Н
2984.207116	43.73	8.9	34.83	V

## π/4 DQPSK Ch0 3GHz-18GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
13263.172	52.71	16.6	36.11	V
14353.97593	53.52	19.6	33.92	Н
14938.82027	55.82	21.5	34.32	V
15745.59247	57.03	23.6	33.43	Н
16808.17853	59.13	27	32.13	Н
17559.2982	60.85	28.6	32.25	V

### π/4 DQPSK Ch0 3GHz-18GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
14938.82027	43.79	21.5	22.29	V
15745.59247	44.91	23.6	21.31	Н
16808.17853	47.1	27	20.1	Н
17559.2982	49.15	28.6	20.55	V

### 8DPSK Ch0 30MHz-1GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.906728	17.17	-21.9	39.07	٧

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36.60416	18.41	-21.5	39.91	V
40.695752	31.11	-20.6	51.71	V
67.809316	27.75	-24.3	52.05	V
149.164752	26.18	-27.9	54.08	Н
203.4006	24.88	-24.3	49.18	V

## 8DPSK Ch0 1GHz-3GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2612.854231	54.16	7.4	46.76	Н
2693.892693	54.88	7.9	46.98	V
2733.348077	54.58	7.8	46.78	Н
2868.944231	55.46	8.5	46.96	V
2904.850577	56.09	8.9	47.19	Н
2976.362693	57.14	8.8	48.34	V

### 8DPSK Ch0 1GHz-3GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2612.854231	42.03	7.4	34.63	Н
2693.892693	42.6	7.9	34.7	V
2733.348077	42.62	7.8	34.82	Н
2868.944231	43.31	8.5	34.81	V
2904.850577	43.5	8.9	34.6	Н
2976.362693	43.61	8.8	34.81	V

### 8DPSK Ch0 3GHz-18GHz (Peak)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
13529.56113	53.11	17.9	35.21	Н
14363.68867	53.55	19.5	34.05	Н
15270.313	55.65	21.2	34.45	Н

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15986.07533

16842.0212

17519.9332

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59.1	24.6	34.5	V
59.46	26.9	32.56	V
60.61	28.5	32.11	Н

8DPSK Ch0 3GHz-18GHz (Average)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
15270.313	43.08	21.2	21.88	Н
15986.07533	46.55	24.6	21.95	V
16842.0212	47.55	26.9	20.65	V
17519.9332	48.97	28.5	20.47	Н

Note: Only the worst case is written in the report.

Conclusion: PASS
Test graphs as below:

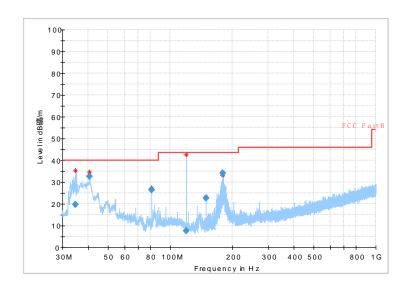


Fig 1 Radiated emission: GFSK, Ch0, 30MHz~1GHz

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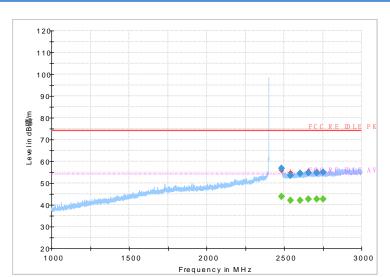


Fig 2 Radiated emission: GFSK, Ch0, 1GHz~3GHz

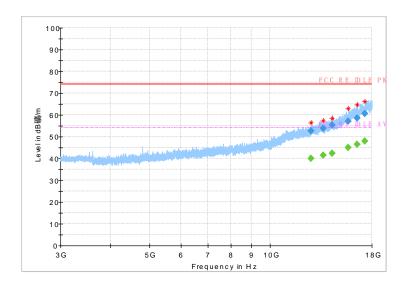
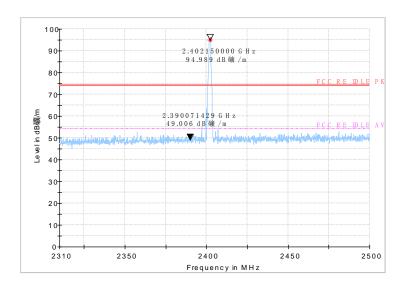


Fig 3 Radiated emission: GFSK, Ch0, 3GHz~18GHz



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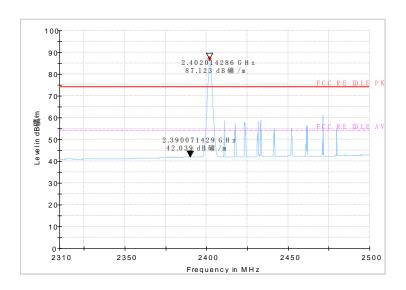


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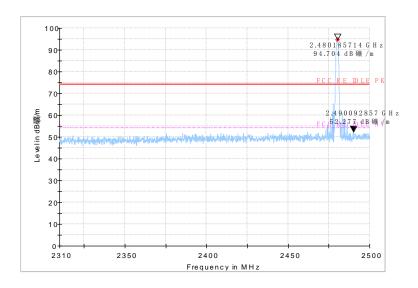
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#### **Peak Detector**



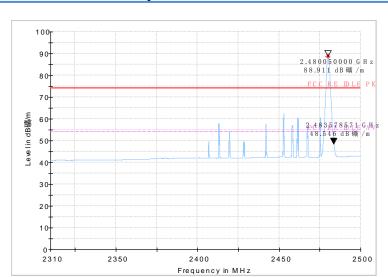
Average Detector

Fig 4 Radiated emission (Power): GFSK, low channel



**Peak Detector** 





Average Detector
Fig 5 Radiated emission (Power): GFSK, high channel

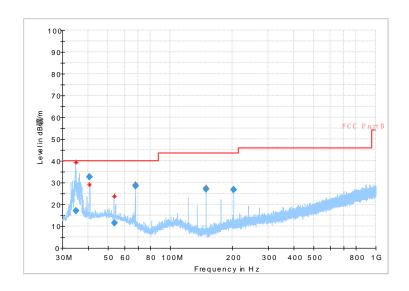


Fig 6 Radiated emission: π/4 DQPSK, Ch0, 30MHz~1GHz

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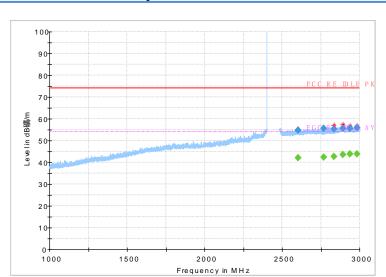


Fig 7 Radiated emission: π/4 DQPSK, Ch0, 1GHz~3GHz

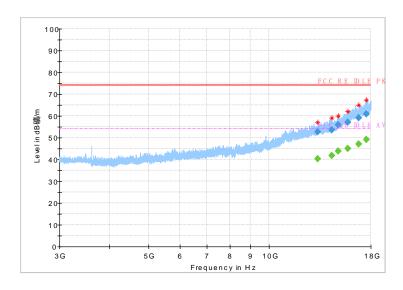
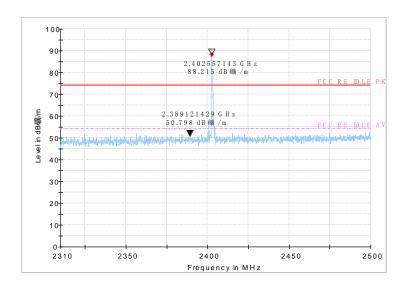


Fig 8 Radiated emission: π/4 DQPSK, Ch0, 3GHz~18GHz

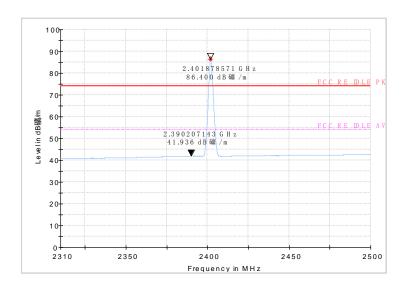


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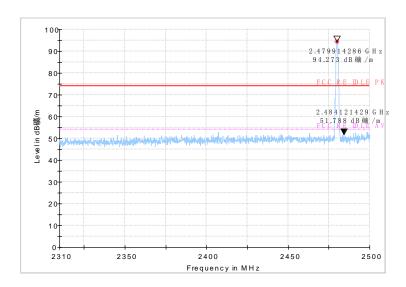


#### **Peak Detector**



### **Average Detector**

Fig 9 Radiated emission (Power): π/4 DQPSK, low channel

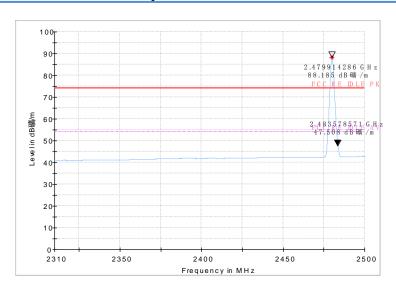


**Peak Detector** 

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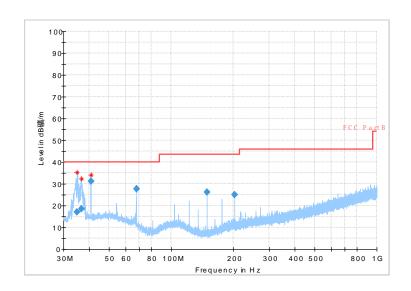


Fig 11 Radiated emission: 8DPSK, Ch0, 30MHz~1GHz

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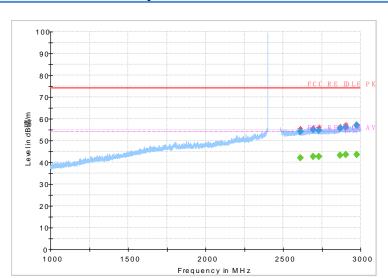


Fig 12 Radiated emission: 8DPSK, Ch0, 1GHz~3GHz

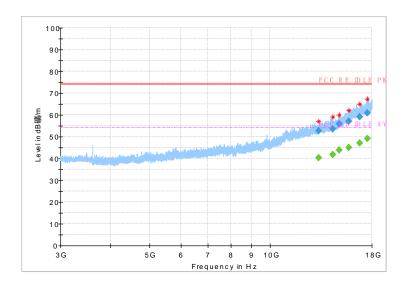
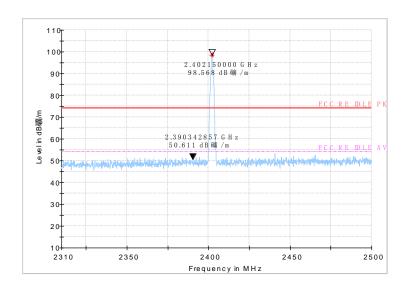


Fig 13 Radiated emission: 8DPSK, Ch0, 3GHz~18GHz

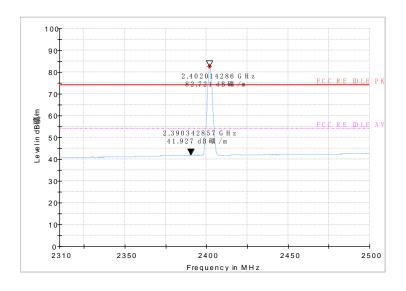


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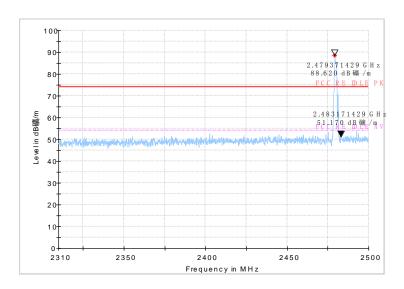


#### **Peak Detector**



**Average Detector** 

Fig 14 Radiated emission (Power): 8DPSK, low channel

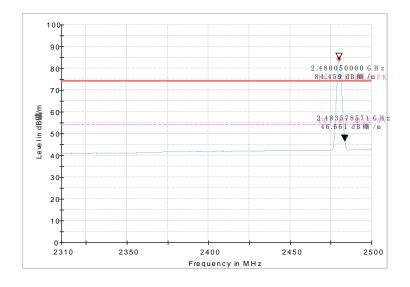


**Peak Detector** 

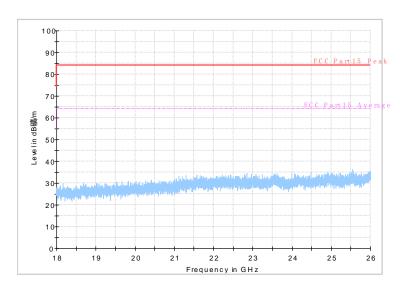
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Average Detector
Fig 15 Radiated emission (Power): 8DPSK, high channel



ALL Channel 18GHz~26GHz

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#### 6.2. AC Power line Conducted Emission

#### Method of Measurement: See ANSI C63.10-2013-clause 6.2

The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.

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- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.

If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.36 Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

#### **Test Condition:**

Voltage (V)	Frequency (Hz)	
120	60	

#### Measurement Result and limit:

(Quasi-peak-average Limit)

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Frequency range (MHz)	Quasi-peak Limit (dB <sub>µ</sub> V)	Average Limit (dBμV)	Result (dBμV) With charger	Conclusion
			ВТ	
0.15 to 0.5	66 to 56	56 to 46		
0.5 to 5	56	46	Fig.16	Р
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

### **Conclusion: Pass**

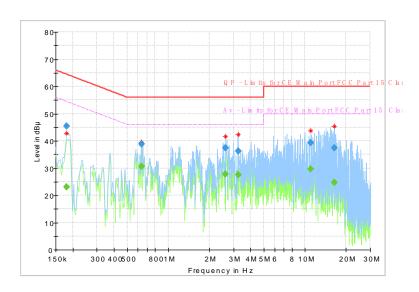


Fig 16 AC Power line Conducted Emission

		3							
Frequency	QuasiPeak	Average	Limit	Margin	Meas.	Bandwidth	Line	Filter	Corr.
(MHz)	(dB $\mu$ V)	(dB µ V)	(dB μ	(dB)	Time	(kHz)			(dB)
0.179850	45.30		64.49	19.19	1000.0	9.000	N	ON	9.6
0.179850		23.02	54.49	31.47	1000.0	9.000	N	ON	9.6
0.635062	38.88		56.00	17.12	1000.0	9.000	L1	ON	9.7
0.635062		30.60	46.00	15.40	1000.0	9.000	L1	ON	9.7
2.631281	37.41		56.00	18.59	1000.0	9.000	L1	ON	9.7
2.631281		27.88	46.00	18.12	1000.0	9.000	L1	ON	9.7
3.232012		27.58	46.00	18.42	1000.0	9.000	L1	ON	9.7
3.232012	36.26		56.00	19.74	1000.0	9.000	L1	ON	9.7
11.019131	39.36		60.00	20.64	1000.0	9.000	L1	ON	9.8
11.019131		29.75	50.00	20.25	1000.0	9.000	L1	ON	9.8
16.433175		24.82	50.00	25.18	1000.0	9.000	N	ON	9.9
16.433175	37.35		60.00	22.65	1000.0	9.000	N	ON	9.9

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## 7. Test Equipment and Ancillaries Used For Tests

The test equipment and ancillaries used are as follows.

#### **Conducted test system**

No.	Equipmen t	Model	Serial Number	Manufactur er	Calibration date	Cal.interval
1	Vector Signal Analyzer	FSQ26	101096	Rohde&Sch warz	2017-05-11	1 Year
2	DC Power Supply	ZUP60-14	LOC-220Z0 06	TDL-Lambd a	2017-05-11	1 Year
3	Bluetooth Tester	CBT32	100785	Rohde&Sch warz	2017-05-11	1 Year

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### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufactu rer	Calibration date	Cal.interval
1	Universal Radio Communication Tester	CMU20 0	123123	R&S	2017-05-11	1 Year
2	EMI Test Receiver	ESU40	100307	R&S	2017-05-11	1 Year
3	TRILOG Broadband Antenna	VULB9 163	VULB916 3-515	Schwarzbe ck	2017-02-25	3 Year
4	Double- ridged Waveguide Antenna	ETS-31 17	0013589 0	ETS	2017-01-11	3 Year
5	2-Line V-Network	ENV21 6	101380	R&S	2017-05-11	1 Year

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**Anechoic chamber** 

Fully anechoic chamber by Frankonia German.

### 8. Test Environment

**Shielding Room1** (6.0 meters × 3.0 meters × 2.7 meters) did not exceed following limits along the conducted RF performance testing:

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Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Ground system resistance	< 0.5 Ω

**Control room** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

**Fully-anechoic chamber1** (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB,30MHz to 1GHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

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## **ANNEX A.** Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

\*\*\*\*\*\*\*\*END OF REPORT\*\*\*\*\*\*\*

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