



## **TEST REPORT**

**No. I20D00079-EMC01**

***For***

**Client : Thales DIS AIS Deutschland GmbH**

**Production : LTE Data-Only SMT World-Module**

**Model Name : PLS62-W**

**Brand Name: CINTERION**

**FCC ID: QIPPLS62-W1**

**Hardware Version: B2.1**

**Software Version: 02.000**

**Issued date: 2020-08-13**

## NOTE

1. The test results in this test report relate only to the devices specified in this report.
2. This report shall not be reproduced except in full without the written approval of East China Institute of Telecommunications
3. The measurement uncertainty is not taken into account when deciding conformity, and the results of measurement (or the average of measurement results) are directly used as the criterion for the stating conformity.

**Test Laboratory:**

East China Institute of Telecommunications

Add: Building 4, No. 766, Jingang Road, Pudong New District, Shanghai

Tel: +862163843300

E-Mail: [welcome@ecit.org.cn](mailto:welcome@ecit.org.cn)

**Revision Version**

Report Number	Revision	Date	Memo
I20D00079-EMC01	00	2020-08-13	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:	Building 4, No. 766, Jingang Road, Pudong New District, Shanghai
Postal Code:	201206
Telephone:	(+86)-021-63843300
FCC registration No:	958356
FCC designation No:	CN1177

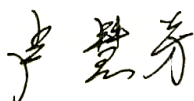
### 1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	30-60% RH
Supply Voltage	120V/60Hz

### 1.3. Project data

Project Leader:	Zhou Yan
Testing Start Date:	2020-08-11
Testing End Date:	2020-08-11

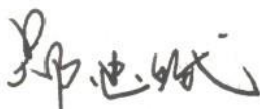
### 1.4. Signature



**Lu Huifang**  
(Prepared this test report)



**You Jinjun**  
(Reviewed this test report)



**Zheng Zhongbin**  
(Approved this test report)

## 2. Client Information

### 2.1. Applicant Information

Company Name	Thales DIS AIS Deutschland GmbH
Address	Werinherstr. 81, 81541 Munich, Germany
Telephone	/
Postcode	/

### 2.2. Manufacturer Information

Company Name	THALES DIS AIS Deutschland GmbH
Address	Thales DIS AIS Deutschland GmbH, Werinherstr. 81, 81541 Munich, Germany
Telephone	+ 86 10 59378342
Postcode	/

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

#### 3.1. About EUT

Product Name	LTE Data-Only SMT World-Module
Model name	PLS62-W
GSM Frequency Band	GSM850/GSM900/DCS1800/PCS1900
UMTS Frequency Band	Band I/ II/ IV/ V/ / VIII/ IX/ XIX
LTE Frequency Band	LTE1/2/3/4/5/7/8/12/18/19/20/28

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

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N01	/	B2.1	02.000	2020-08-11

\*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	Model	SN
CA01	Adapter	PSY1205000US	/
EA01	PCB	EXS82 W	/
EB02	Antenna	/	/

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

\*The AE were provided by the lab.

## 4. Reference Documents

### 4.1 Reference Documents for testing

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

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices	2020/08/10
ANSI C63.4	Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

## 5. Test Results

### 5.1 Summary of Test Results

Items	Test List	Clause in FCC rules	Verdict
1	Radiated Emission	15.109(a)	Pass
2	AC Conducted Emission	15.107(a)	Pass

### 5.2 Statements

The PLS62-W, supporting GSM/WCDMA/LTE.etc, manufactured by THALES DIS AIS Deutschland GmbH. is a new product for testing. ECIT only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

ECIT has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

## 6. Test Equipment Utilized

### 6.1 Radiated Emission Equipment list

Item	Instrument Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123126	R&S	2020-05-10	1 year
2	Universal Radio Communication Tester	CMW500	104178	R&S	2020-05-10	1 year
3	Test Receiver	ESU40	100307	R&S	2020-05-10	1 year
4	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2020-02-28	2 years
5	Double Ridged Guide	ETS-3117	00135890	ETS	2020-02-28	2 years
6	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

### 6.1 AC Conducted Emission Equipment list

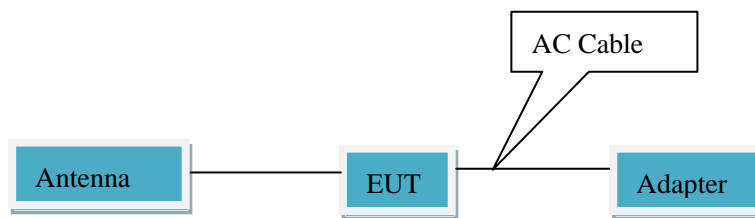
Item	Instrument Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2020-05-10	1 year
2	Universal Radio Communication Tester	CMW500	104178	R&S	2020-05-10	1 year
3	Test Receiver	ESCI	101235	R&S	2020-05-10	1 year
4	2-Line V-Network	ENV216	101380	R&S	2020-05-10	1 year
5	EMI Test Software	EMC32 V10.35.02	NA	R&S	NA	NA

## 7. System Configuration during Test

### 7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Adapter charging + GSM850 receiver <Figure 1>
Radiated Emission	Mode 1: Adapter charging + GSM850 receiver <Figure 1>
Remark: 1. All test modes are performed, only the worst cases test data are recorded in this report. 2. After laboratory verification, GSM850 is the worst mode among all receiving modes of GSM/WCDMA/LTE and is recorded in the report.	

## 7.2 Connection Diagram of Test System



<Figure 1>

## 8. Measurement Results

Only the worst test result was shown in this report.

### 8.1 Radiated Emission 30MHz-18GHz

#### Method of Measurement

For 30MHz -1000MHz, the EUT was placed on the top of a rotating 0.8m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement. Tested in accordance with the procedures of ANSI C63.4-2014, section 8.3.

For 1000MHz-18000MHz, The maximal emission value was acquired by adjusting the antenna height, The table was rotated 360 degree to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

#### Limits for Radiated Emission at a measuring distance of 3m

Frequency Range (MHz)	Quasi-Peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

#### Test conditions

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
30-1000	120kHz/300kHz	Auto
1000-18000	1MHz/3MHz	Auto

#### Uncertainty Measurement

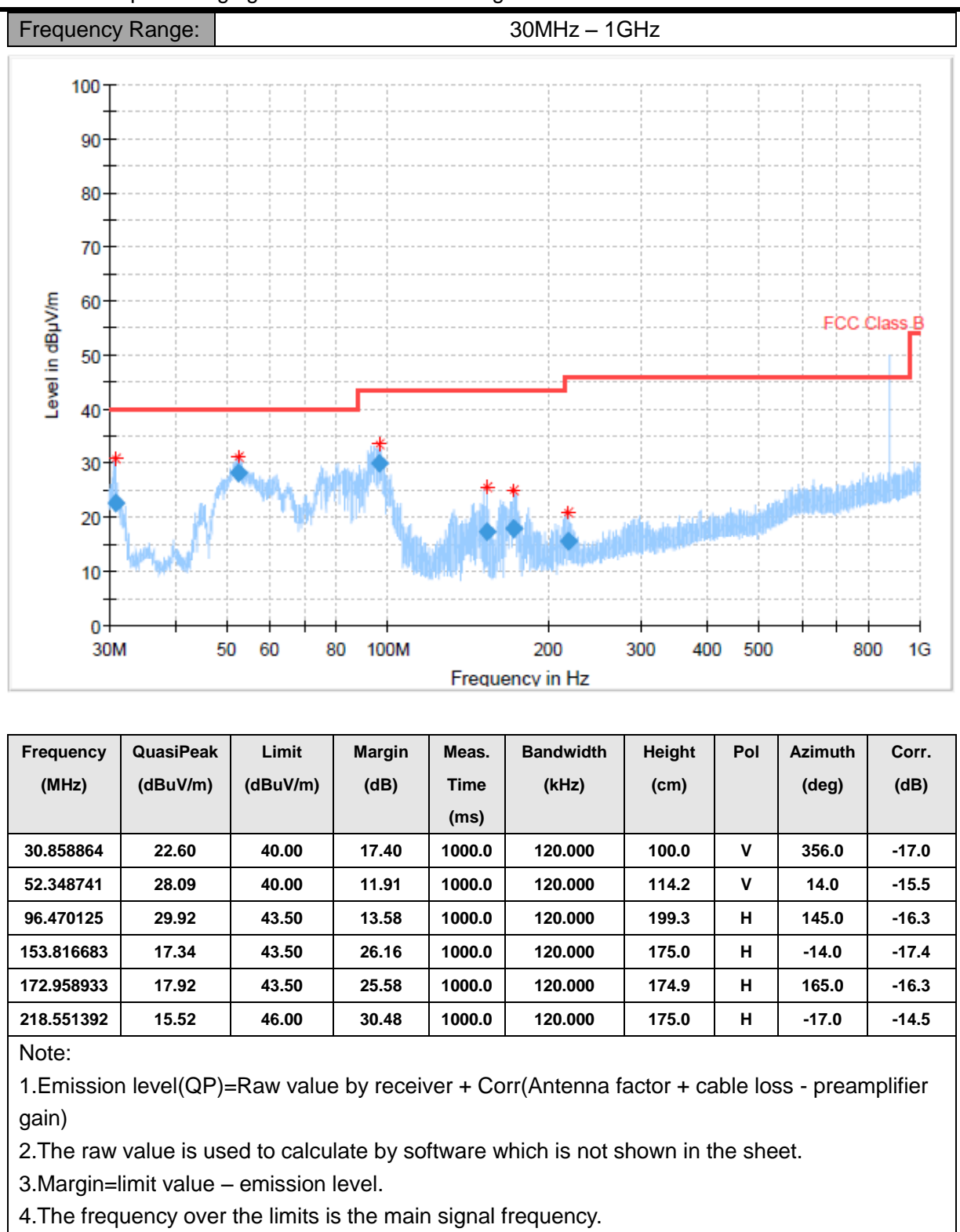
The measurement uncertainty (30MHz-1000MHz) is 4.82 dB (k=2).

The measurement uncertainty (1000MHz-18000MHz) is 5.08 dB (k=2).

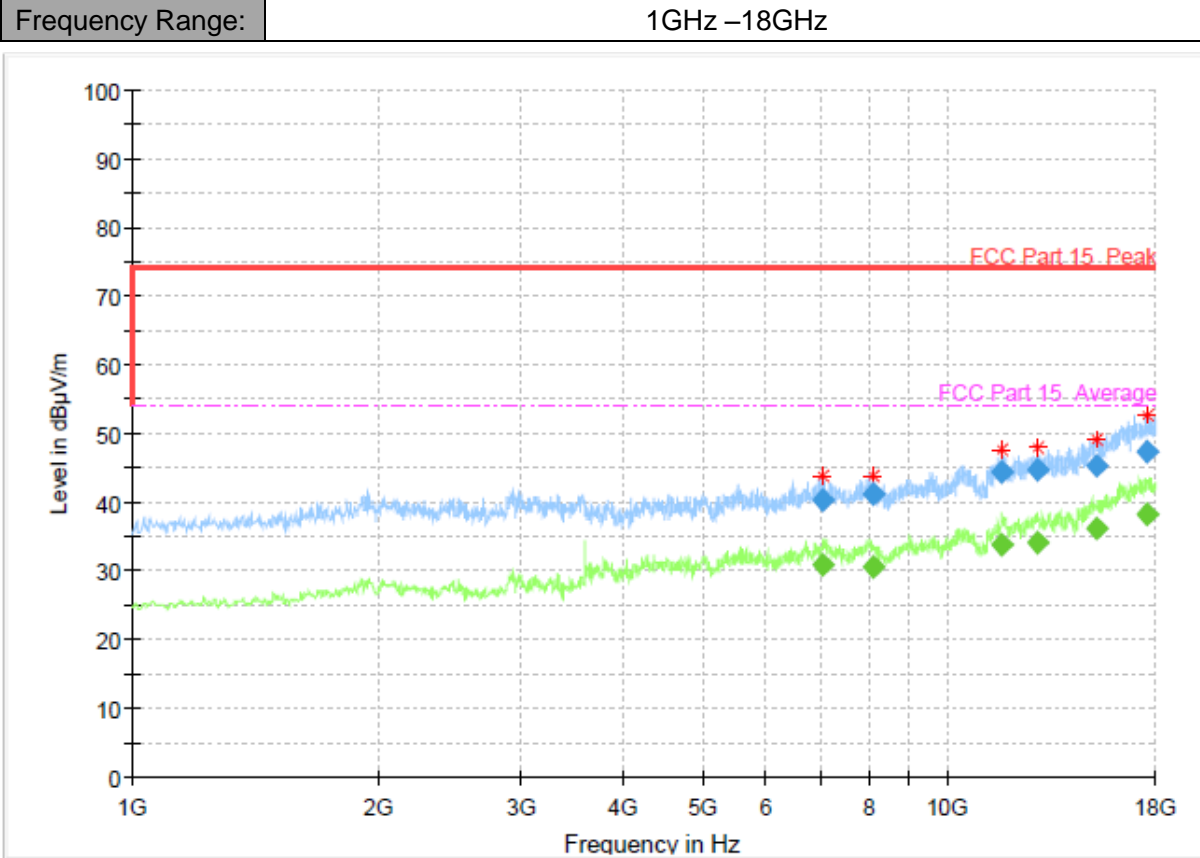
## Test Results

Sweep the whole frequency band through the range from 30MHz to the 5<sup>th</sup> harmonic of the carrier, the Emissions in the frequency band 18GHz-40GHz is more than 20dB below the limit are not report.

Mode 1: Adapter charging + GSM850 receiver <Figure 1>



Mode 1: Adapter charging + GSM850 receiver <Figure 1>

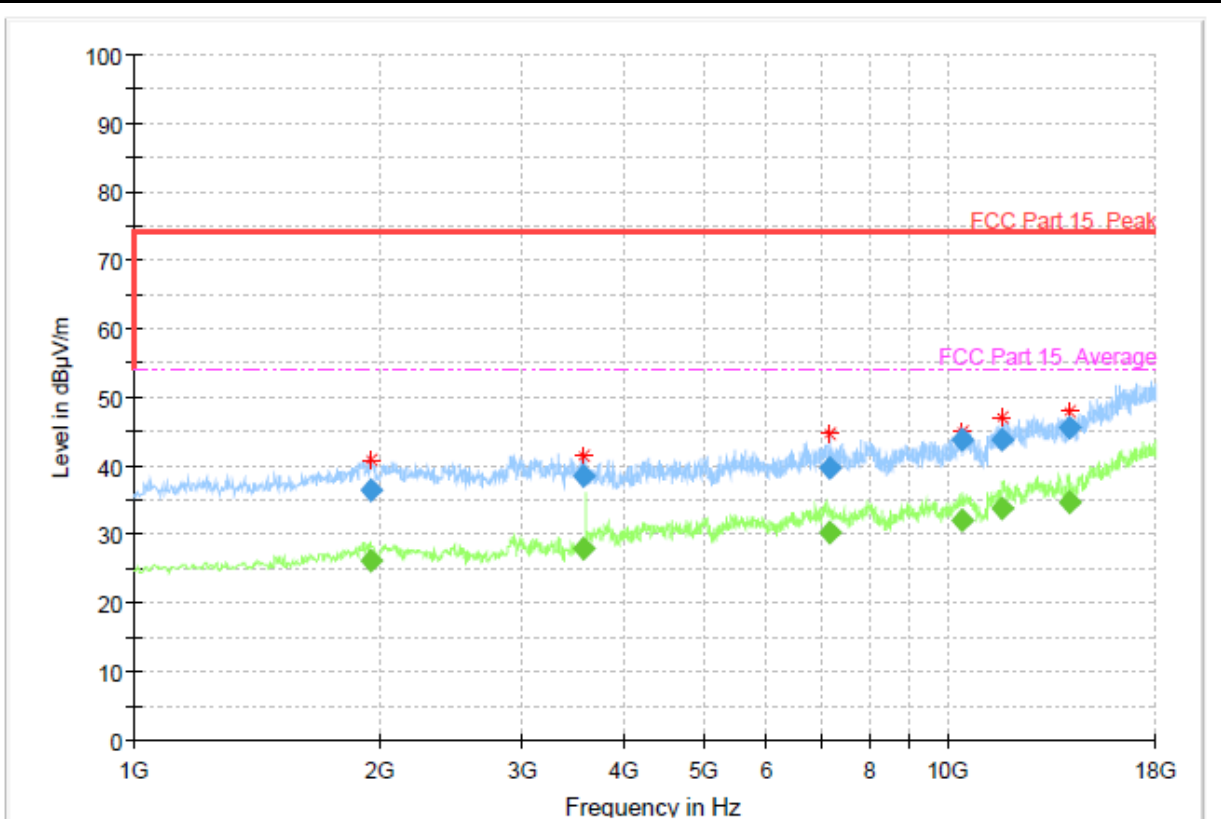


## Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time	Band width	Heigh t	Po l	Azimu th	Corr. (dB)
7051.200000	---	30.81	54.00	23.19	1.0	1000.	199.9	H	40.0	5.0
7051.200000	40.42	---	74.00	33.58	1.0	1000.	199.9	H	40.0	5.0
8102.800000	41.17	---	74.00	32.83	1.0	1000.	199.9	H	169.0	5.2
8102.800000	---	30.69	54.00	23.31	1.0	1000.	199.9	H	169.0	5.2
11639.000000	44.51	---	74.00	29.49	1.0	1000.	199.9	H	254.0	10.3
11639.000000	---	33.87	54.00	20.13	1.0	1000.	199.9	H	254.0	10.3
12911.000000	44.82	---	74.00	29.18	1.0	1000.	199.9	H	359.0	12.1
12911.000000	---	34.21	54.00	19.79	1.0	1000.	199.9	H	359.0	12.1
15255.200000	---	36.15	54.00	17.85	1.0	1000.	100.1	H	266.0	15.2
15255.200000	45.41	---	74.00	28.59	1.0	1000.	100.1	H	266.0	15.2
17578.000000	47.45	---	74.00	26.55	1.0	1000.	100.1	H	131.0	18.5
17578.000000	---	38.14	54.00	15.86	1.0	1000.	100.1	H	131.0	18.5

Note:

- 1.Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level



## Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwi dth	Heigh t	Po l	Azimu th	Corr. (dB)
1952.800000	---	26.04	54.00	27.96	1.0	1000.00	199.9	V	353.0	5.3
1952.800000	36.55	---	74.00	37.45	1.0	1000.00	199.9	V	353.0	5.3
3561.000000	38.58	---	74.00	35.42	1.0	1000.00	100.1	V	1.0	1.9
3561.000000	---	27.93	54.00	26.07	1.0	1000.00	100.1	V	1.0	1.9
7155.000000	39.81	---	74.00	34.19	1.0	1000.00	199.9	V	118.0	4.7
7155.000000	---	30.43	54.00	23.57	1.0	1000.00	199.9	V	118.0	4.7
10403.400000	43.83	---	74.00	30.17	1.0	1000.00	100.1	V	112.0	8.0
10403.400000	---	31.98	54.00	22.02	1.0	1000.00	100.1	V	112.0	8.0
11673.200000	---	33.87	54.00	20.13	1.0	1000.00	100.1	V	232.0	10.4
11673.200000	43.91	---	74.00	30.09	1.0	1000.00	100.1	V	232.0	10.4
14087.000000	45.68	---	74.00	28.32	1.0	1000.00	199.9	V	1.0	12.7
14087.000000	---	34.84	54.00	19.16	1.0	1000.00	199.9	V	1.0	12.7

Note:

- 1.Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.

## 8.2 AC Conducted Emission

### Method of Measurement

For equipment 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 with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2014, section 7.3

### Limit of Conducted Emission

Frequency Range (MHz)	Conducted Limit (dBuV)	
	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 Condition in Charging Mode

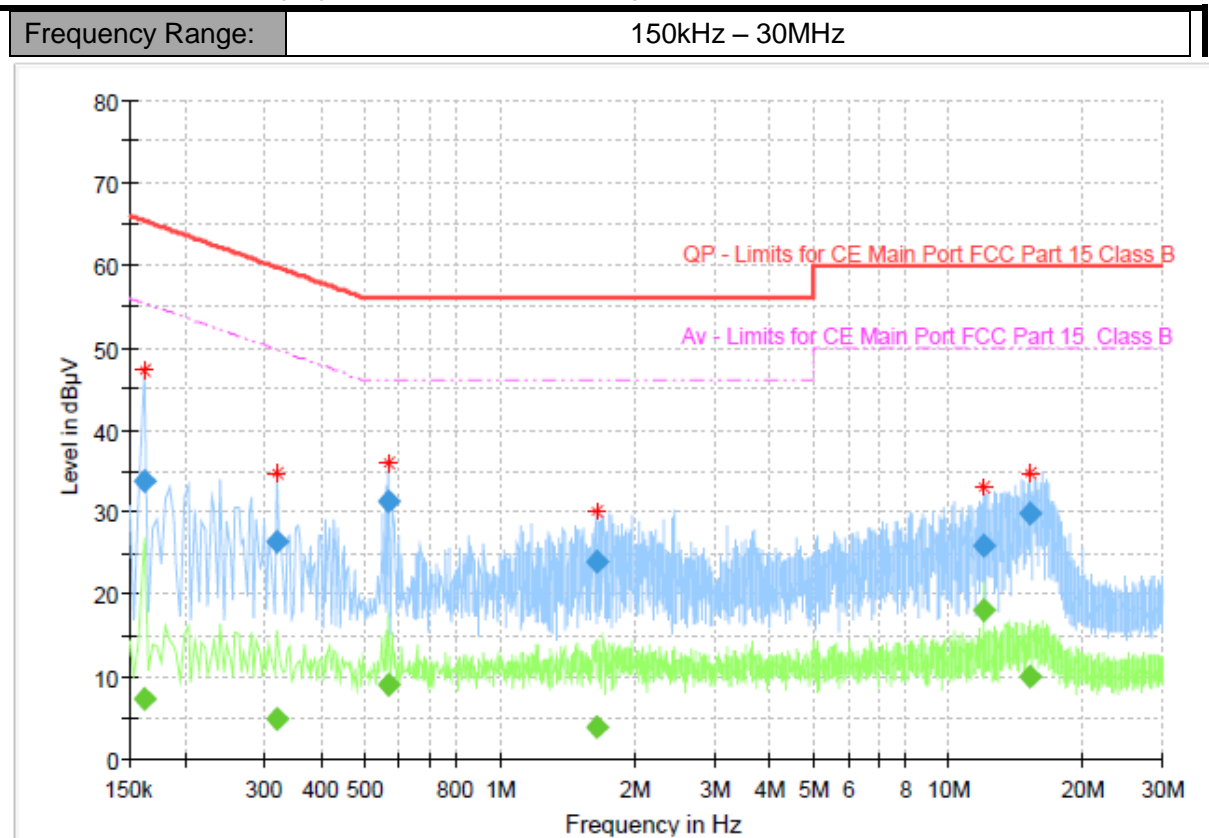
Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 kHz	Auto

### Uncertainty Measurement

The measurement uncertainty is 3.58dB (k=2).

### Test Results

Mode 1: Adapter charging + GSM850 receiver <Figure 1>



Frequency (MHz)	QuasiPeak (dBµ V)	Average (dBµ V)	Limit (dBµ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.161194	---	7.45	55.40	47.95	15000.	9.000	L1	ON	9.6
0.161194	33.67	---	65.40	31.73	15000.	9.000	L1	ON	9.6
0.317906	---	4.92	49.76	44.84	15000.	9.000	N	ON	9.7
0.317906	26.49	---	59.76	33.28	15000.	9.000	N	ON	9.7
0.564169	---	9.02	46.00	36.98	15000.	9.000	N	ON	9.8
0.564169	31.34	---	56.00	24.66	15000.	9.000	N	ON	9.8
1.638769	---	3.87	46.00	42.13	15000.	9.000	N	ON	9.8
1.638769	24.04	---	56.00	31.96	15000.	9.000	N	ON	9.8
11.933288	---	18.21	50.00	31.79	15000.	9.000	N	ON	9.9
11.933288	25.81	---	60.00	34.19	15000.	9.000	N	ON	9.9
15.179475	---	10.09	50.00	39.91	15000.	9.000	N	ON	9.9
15.179475	29.82	---	60.00	30.18	15000.	9.000	N	ON	9.9

Note:

- 1.Emission level(quasi-peak or Average peak)=Raw value by receiver + Corr(Insertion loss+ cable loss)
- 2.The raw value is used to calculate by software which is not shown in the sheet.
- 3.Margin=limit value – emission level.
- 4.L1 and N line is all have been tested, the result of them is synthesized in the above data diagram.

**Annex A Accreditation Certificate**

**Accredited Laboratory**

A2LA has accredited

**EAST CHINA INSTITUTE OF TELECOMMUNICATIONS**  
*Shanghai, People's Republic of China*

for technical competence in the field of  
**Electrical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 6<sup>th</sup> day of May 2019.



Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3682.01  
Valid to February 28, 2021

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*

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