



TEST REPORT

No. I20D00149-EMC01

For

Client: Asiatelco Technologies Co.

Production: Home phone connect

Mode Name: V810T/ V810TD/ V810V/

V810VD/ V810A/ V810AD

Brand Name: ATEL

FCC ID: XYO-V810

Hardware Version: V1.0

Software Version: QC25_V8100_1.0.4.802

Issued date: 2020-12-03

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

Revision Version

Report Number	Revision	Date	Memo
I20D00149-EMC01	00	2020-12-03	Initial creation of test report

CONTENTS

1. TEST LABORATORY	6
1.1. TESTING LOCATION	6
1.2. TESTING ENVIRONMENT	6
1.3. PROJECT DATA	6
1.4. SIGNATURE	6
2. CLIENT INFORMATION	7
2.1. APPLICANT INFORMATION	7
2.2. MANUFACTURER INFORMATION	7
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	8
3.1. ABOUT EUT	8
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	8
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	8
4. REFERENCE DOCUMENTS.....	9
4.1 REFERENCE DOCUMENTS FOR TESTING	9
5. TEST RESULTS.....	10
5.1 SUMMARY OF TEST RESULTS	10
5.2 STATEMENTS.....	10
6. TEST EQUIPMENT UTILIZED	11
6.1 RADIATED EMISSION EQUIPMENT LIST	11
6.1 AC CONDUCTED EMISSION EQUIPMENT LIST	11
7. SYSTEM CONFIGURATION DURING TEST	12
7.1 TEST MODE.....	12
7.2 CONNECTION DIAGRAM OF TEST SYSTEM.....	13
8. MEASUREMENT RESULTS	14
8.1 RADIATED EMISSION 30MHZ-18GHZ.....	14

8.2 AC CONDUCTED EMISSION.....	18
ANNEX A ACCREDITATION CERTIFICATE	20

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

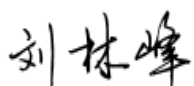
1.2. Testing Environment

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

1.3. Project data

Project Leader:	Chen Minfei
Testing Start Date:	2020-11-12
Testing End Date:	2020-11-13

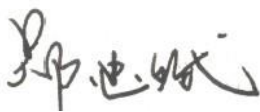
1.4. Signature



Liu Linfeng
(Prepared this test report)



Qin Yabin
(Reviewed this test report)



Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name	Asiatelco Technologies Co.
Address	#289 Bisheng Road, Building-8, 3F, Zhang jiang Hi-Tech Park, Pudong, Shanghai 201204, China
Telephone	/
Postcode	201204

2.2. Manufacturer Information

Company Name	Asiatelco Technologies Co.
Address	#289 Bisheng Road, Building-8, 3F, Zhang jiang Hi-Tech Park, Pudong, Shanghai 201204, China
Telephone	/
Postcode	201204

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

3.1. About EUT

Product Name	Home phone connect
Model name	V810T/V810TD/V810V/V810VD/V810A/V810AD
UMTS Frequency Band	Band II / IV / V
LTE Frequency Band	LTE 2/4/5/12/13/14/66/71
Additional Communication Function	WLAN 802.11 a,b,g,n,ac;

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N05	866834041312997	V1.0	QC25_V8100_1.0.4.802	2020-11-09

*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
CA04	Adapter	ASSA107a-050200	/
UA05	USB Cable	/	/
AE1	Notebook PC	DELL Latitude E6510	/
AE2	1.5V Battery	1009549	/
AE3	LAN Cable	/	/
AE4	Telephone Cable*2	/	/
AE5	Telephone*2	HA8000(28)P/T S	/
AE6	Antenna	/	/

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

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	2020/10/08
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 V810T/V810TD/V810V/V810VD/V810A/V810AD, supporting WCDMA/LTE.etc, manufactured by Asiatelco Technologies Co.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.

Note: The hardware of all the products in this project is the same, and Use software to turn off the frequency band of the product, just different model for different custom. Please refer to the product equality declaration for details, this time we only tested the V810AD model sample.

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

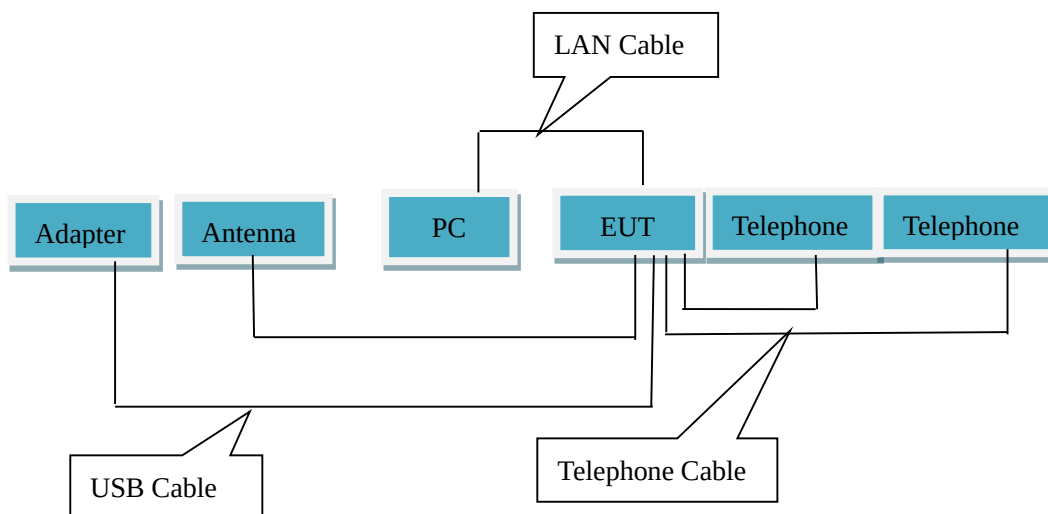
Item	Instrument Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2020-05-10	1 year
2	Universal Radio Communication Tester	CMW500	104178	R&S	2020-05-10	1 year
3	Test Receiver	ESCI	101235	R&S	2020-05-10	1 year
4	2-Line V-Network	ENV216	101380	R&S	2020-03-17	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: Full System mode <Figure 1>
Radiated Emission	Mode 1: Full System mode <Figure 1> Mode 2: Battery-powered mode + WCDMA Band V receiver <Figure 2>
Remark: 1. All test modes are performed, only the worst cases test data are recorded in this report. 2. Mode 1_Full System mode: EUT is powered by the power adapter, connected to the PC through the lan cable, and connected to the telephone through the telephone line, and connecting the external antenna, respectively in normal working state. 3. Mode 2: EUT is battery-powered and maintains the WCDMA Band V communication connection via CMU200. 4. After laboratory verification, WCDMA Band V is the worst mode among all receiving modes of WCDMA/LTE and is recorded in the report.	

7.2 Connection Diagram of Test System



<Figure 1>



<Figure 2>

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

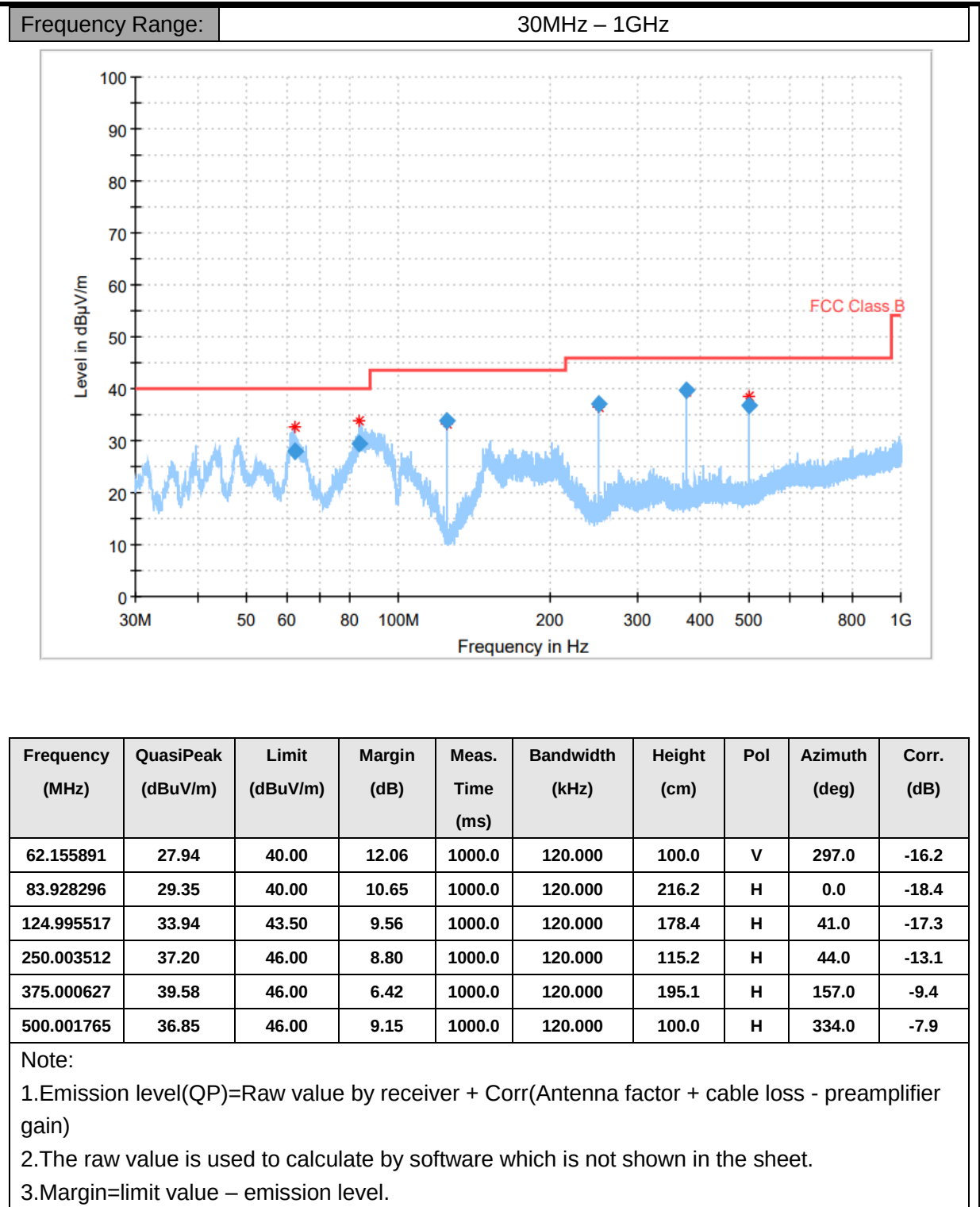
The measurement uncertainty (30MHz-1000MHz) is 4.82 dB (k=2).

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

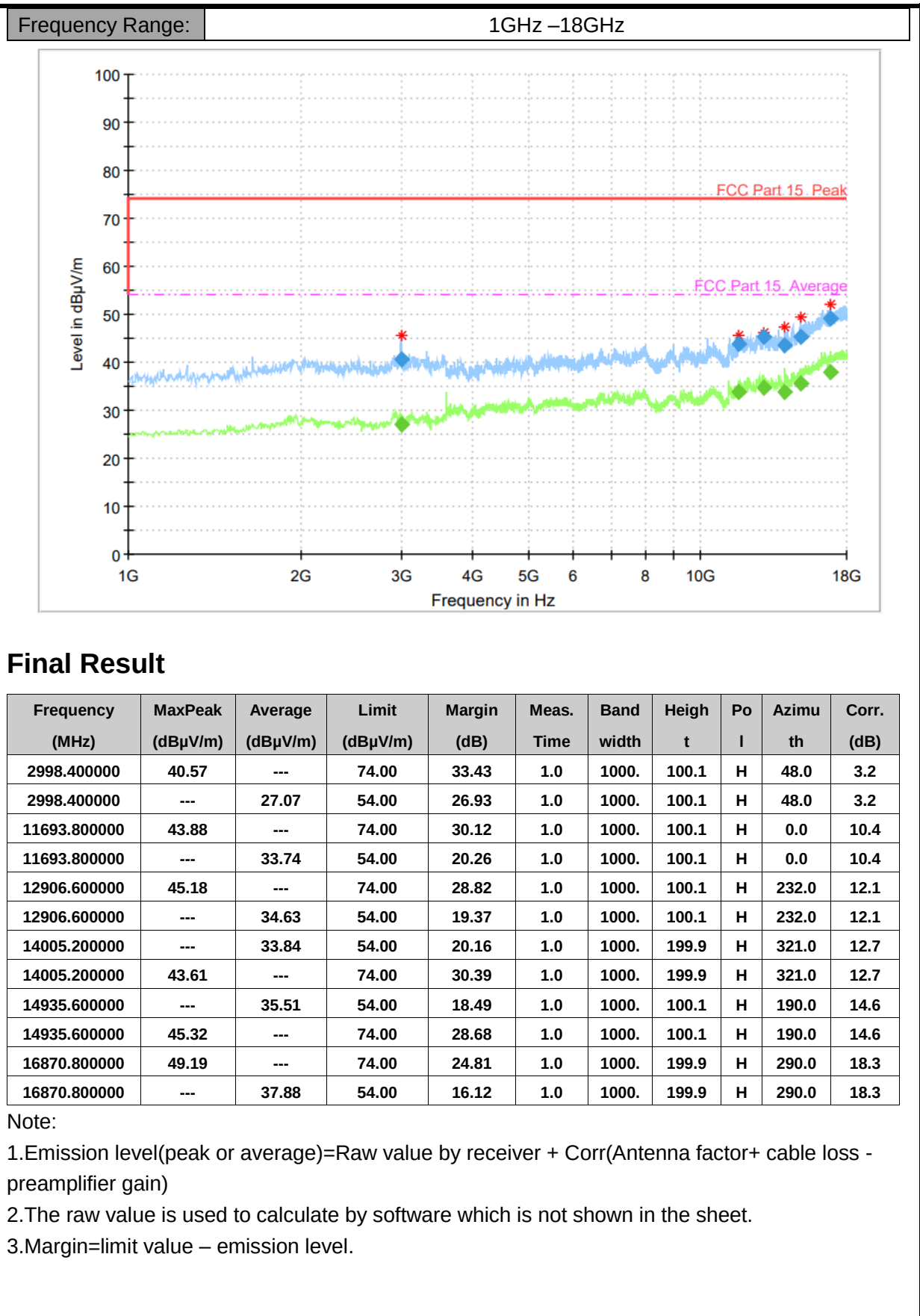
Test Results

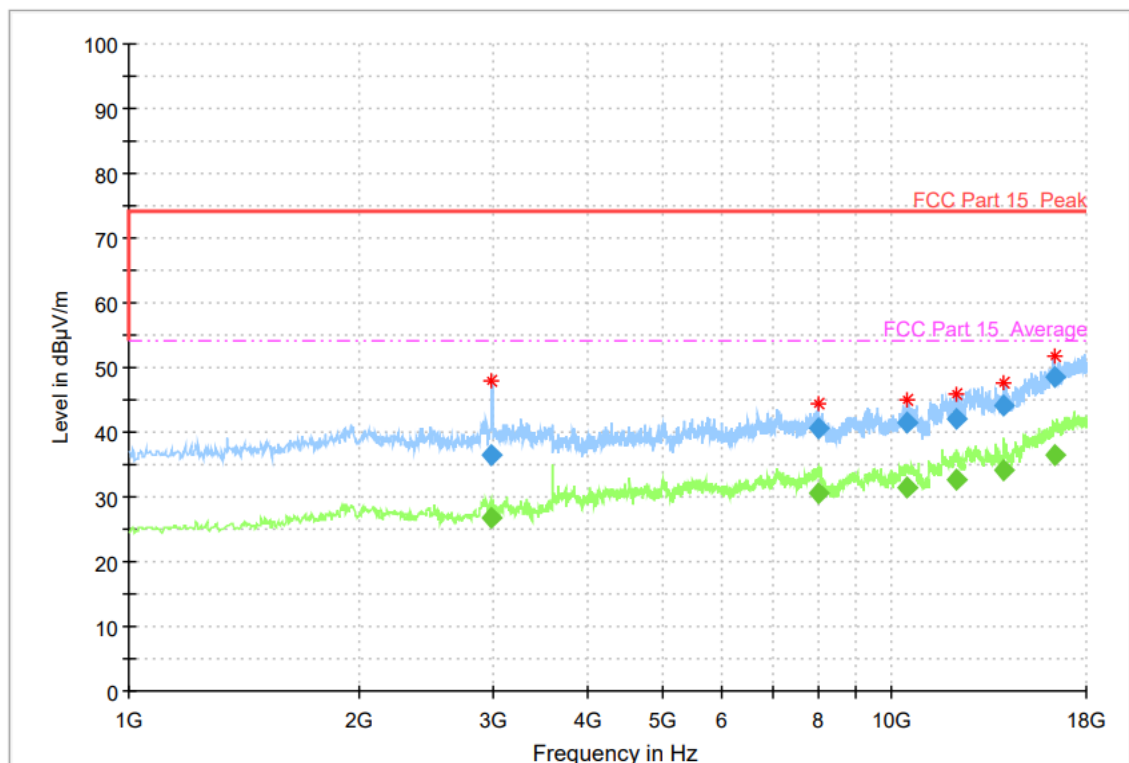
Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier, the Emissions in the frequency band 18GHz-40GHz is more than 20dB below the limit are not report.

Mode 1: Full System mode <Figure 1>



Mode 1: Full System mode <Figure 1>





Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth	Height	Polarization	Azimuth	Corr. (dB)
2995.200000	36.39	---	74.00	37.61	1.0	1000.00	199.9	V	284.0	3.3
2995.200000	---	26.84	54.00	27.16	1.0	1000.00	199.9	V	284.0	3.3
8015.200000	40.56	---	74.00	33.44	1.0	1000.00	100.1	V	196.0	5.3
8015.200000	---	30.65	54.00	23.35	1.0	1000.00	100.1	V	196.0	5.3
10469.600000	41.49	---	74.00	32.51	1.0	1000.00	100.1	V	203.0	7.9
10469.600000	---	31.58	54.00	22.42	1.0	1000.00	100.1	V	203.0	7.9
12132.000000	---	32.57	54.00	21.43	1.0	1000.00	199.9	V	18.0	11.0
12132.000000	42.16	---	74.00	31.84	1.0	1000.00	199.9	V	18.0	11.0
14043.400000	44.19	---	74.00	29.81	1.0	1000.00	100.1	V	337.0	12.7
14043.400000	---	34.09	54.00	19.91	1.0	1000.00	100.1	V	337.0	12.7
16361.400000	---	36.58	54.00	17.42	1.0	1000.00	100.1	V	98.0	17.4
16361.400000	48.39	---	74.00	25.61	1.0	1000.00	100.1	V	98.0	17.4

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

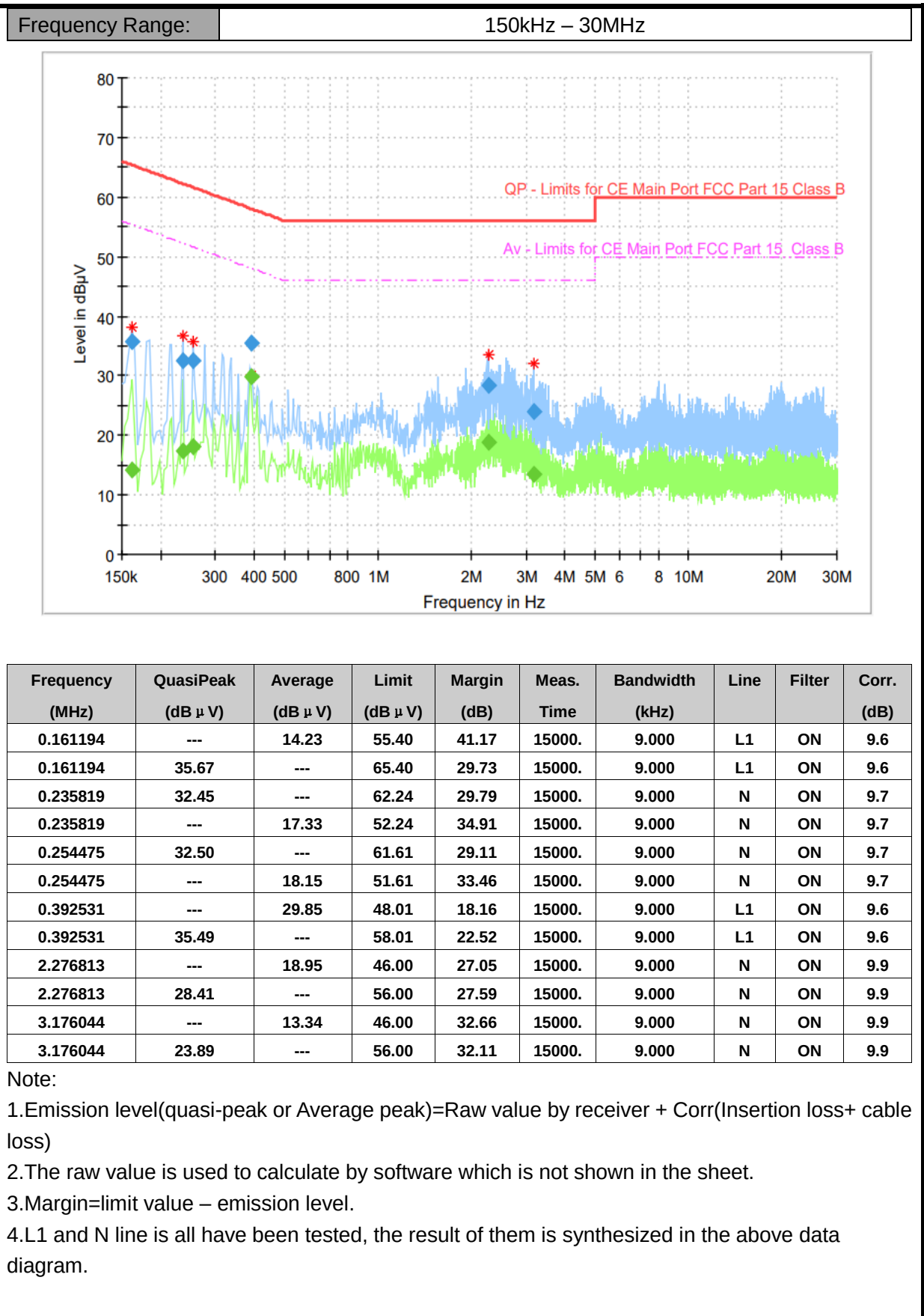
Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 kHz	Auto

Uncertainty Measurement

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

Test Results

Mode 1: Full System mode <Figure 1>



Annex A Accreditation Certificate

Accredited Laboratory

A2LA has accredited

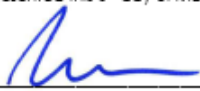
EAST CHINA INSTITUTE OF TELECOMMUNICATIONS
Shanghai, People's Republic of China

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 6th 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*****