

TEST REPORT

REPORT NUMBER: I23W00036-EMC-Rev2

ON

Type of Equipment: POS System

Type of Designation: L15A1, L15B1

Brand Name: SUNMI

Manufacturer: Shanghai Sunmi Technology Co.,Ltd.

FCC ID 2AH25T3PRO

ACCORDING TO

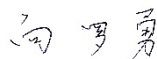
Subpart B, PART 15, RADIO FREQUENCY DEVICES, ANSI C63.4-2014

Chongqing Academy of Information and Communications Technology

Month date, year

October 16, 2023

Signature



Xiang Luoyong

Director

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 Chongqing Academy of Information and Communications Technology.



Report No.: I23W00036-EMC-Rev2

Revision Version

Report Number	Revision	Date
I23W00036-EMC	00	2023-09-05
I23W00036-EMC	Rev1	2023-10-12
I23W00036-EMC	Rev2	2023-10-16

Chongqing Academy of Information and Communication Technology

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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
FCC Registration Number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	15-35°C
Relative Humidity:	25-75%RH

1.3. Project data

Testing Start Date:	2023-07-21
Testing End Date:	2023-08-25

1.4. Signature



2023-10-16

Li Runhao
(Prepared this test report)

Date

2023-10-16

Xiao Yu
(Reviewed this test report)

Date

2023-10-16

**Xiang Luoyong Director of the
laboratory (Approved this test report)**

Date

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2. Client Information

2.1. Applicant Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
Address /Post:	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	+86 17302160204
Fax:	N/A
Email:	minfei.chen@sunmi.com
Contact Person:	Chen Minfei

2.2. Manufacturer Information

Company Name:	Shanghai Sunmi Technology Co.,Ltd.
Address /Post:	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	+86 17302160204
Fax:	N/A
Email:	minfei.chen@sunmi.com
Contact Person:	Chen Minfei

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

3.1. About EUT

EUT Description	POS System
Model name	L15A1, L15B1
Brand name	SUNMI
Power Rating	DC 24 from Adapter
Highest frequency range	7115 MHz

Note: Photographs of EUT are shown in ANNEX B of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
S8	T302D37140061	6490Coreboard_MB_V2.0	1.0.0	2023-07-20
S11	TK02D37240116	6490Coreboard_MB_V2.0	1.0.0	2023-07-20

*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	dB*
CB04	Adapter	Model: CYZSE65-240250 Input:100-240V~50/60Hz 1.7A Output: 24.0V=2.5A 60.0W
UE01	AC Cable	N/A
EC01	RJ11 Cable	N/A
UC02	USB Cable	N/A
AE1	Separate Monitor	NP511
AE2	Separate Monitor	NP512
AE3	Cash Box	NC020
AE4	Notebook PC	Lenovo T440P
AE5	U disk	Kingston DTSE9 16GB
AE6	U disk	Kingston DTSE9 16GB

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AE7	Mouse	N/A
AE8	Keyboard	N/A
AE9	LAN Cable	N/A

*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
FCC CFR Part 15, Subpart B	Radio frequency devices
ANSI C63.4-2014	Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

5. Test Equipment Utilized

No.	Equipment	Model	SN	HW Version	SW Version	Manuf acture	Cal. Interval	Cal.Due Date
1	Test Receiver	ESR 3	101382	03	3.48 SP2	R&S	1 Year	2024-01-28
2	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	1 Year	2024-06-28
3	Ultra-wideband Log Periodic Antenna	VULB9163	9163-586	--	--	Schwarzbeck	2 Years	2024-10-29
4	Double Ridged Guide Antenna	9120D	1083	--	--	R&S	2 Years	2024-12-14
5	2-Line V-Network	ENV216	102368	--	--	R&S	1 Year	2024-05-27
6	Test Receiver	ESU 40	100350	01	4.43 SP3	R&S	1 Year	2024-06-28
7	Loop Antenna	6502	00213256	--	--	ETS	1 Year	2024-06-29
8	Amplifier1	SCU-08F1	8320027	--	--	R&S	1 Year	2024-06-28
9	Amplifier2	SCU-18F	180093	--	--	R&S	1 Year	2024-06-28
10	LISN	ESH2-Z5	100340	--	--	R&S	1 Year	2024-06-28

Test software

No.	Name	version	SN	Manufacture
1	EMC32 (RE Below 1GHz)	V9.26.01	--	R&S
2	EMC32 (RE Above 1GHz)	V 10.20.01	--	R&S
3	EMC32 (CE)	V 10.40.10	--	R&S

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6. Test Results

6.1. Summary of Test Results

FCC Rules	Name of Test	Result												
15.109	Radiated Emission	Pass												
15.107	AC Conducted Emission	Pass												
Note: N/A means not applicable. The L15A1, L15B1, manufactured by Shanghai Sunmi Technology Co.,Ltd. is a new product for testing. There are two configurations S8 Main Supply-L15A1 (With Printer) & S11 Secondary Supply-L15B1 (Without Printer). We mainly tested S8 Main Supply-L15A1, and S11 Secondary Supply-L15B1 tested the worst mode of the S8 Main Supply-L15A1, and recorded the test results of the worst respectively in the report. The description of the differences between S8 and S11 is as follows. <table><tr><th>EUT ID</th><th>SN or IMEI</th><th>Model</th><th>Printer</th></tr><tr><td>S8</td><td>T302D37140061</td><td>L15A1</td><td>80 Printer</td></tr><tr><td>S11</td><td>TK02D37240116</td><td>L15A2</td><td>N/A</td></tr></table>			EUT ID	SN or IMEI	Model	Printer	S8	T302D37140061	L15A1	80 Printer	S11	TK02D37240116	L15A2	N/A
EUT ID	SN or IMEI	Model	Printer											
S8	T302D37140061	L15A1	80 Printer											
S11	TK02D37240116	L15A2	N/A											

7. Test Results

7.1. Radiated Emission

S8 (Main Supply-L15A1):

Specifications:	15.109
Date of Tests	2023-08-11
Test conditions:	Ambient Temperature:24.3°C Relative Humidity:56.3% Air pressure: 100.4kPa
Operation Mode	30MHz-18GHz frequency range: Mode 1: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 2: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 3: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 4: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 5: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ UC02+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 6: Print mode + CB04+ UE01
Test Results:	Pass
Note: 1. The worst case of radiated emission for 30MHz-1GHz is Mode 2 and for 1GHz -18GHz is Mode 2. 2. Full system mode: The EUT is powered by a power adapter and maintained camera recording condition. Separate Monitor is plugged directly into the EUT or connected to the EUT via a USB cable. The EUT is connected to a PC through network cable. The RJ11 port is shorted through EC01. Other ports are connected to keyboard, U disk etc. and through LAN cable to PC for exchange of PING command, EUT and U disk for data transmission. Keep working at maximum load.	

S11 (Secondary Supply-L15B1):

Specifications:	15.109
Date of Tests	2023-08-11
Test conditions:	Ambient Temperature:24.3°C Relative Humidity:56.3% Air pressure: 100.4kPa
Operation Mode	30MHz-18GHz frequency range: Mode 1: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 2: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 3: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 4: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 5: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ UC02+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9
Test Results:	Pass

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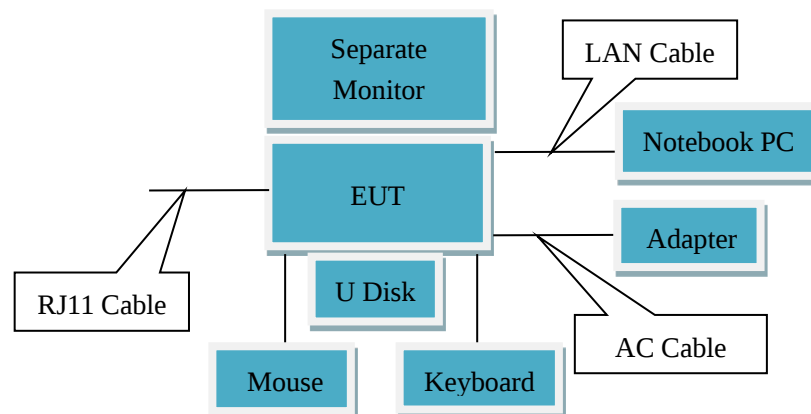
Note:

1. The worst case of radiated emission for 30MHz-1GHz is Mode 2 and for 1GHz -18GHz is Mode 2.
2. Full system mode: The EUT is powered by a power adapter and maintained camera recording condition. Separate Monitor is plugged directly into the EUT or connected to the EUT via a USB cable. The EUT is connected to a PC through network cable. The RJ11 port is shorted through EC01. Other ports are connected to keyboard, U disk etc. and through LAN cable to PC for exchange of PING command, EUT and U disk for data transmission. Keep working at maximum load.

Limit Level Construction (Except for Class A digital devices):

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

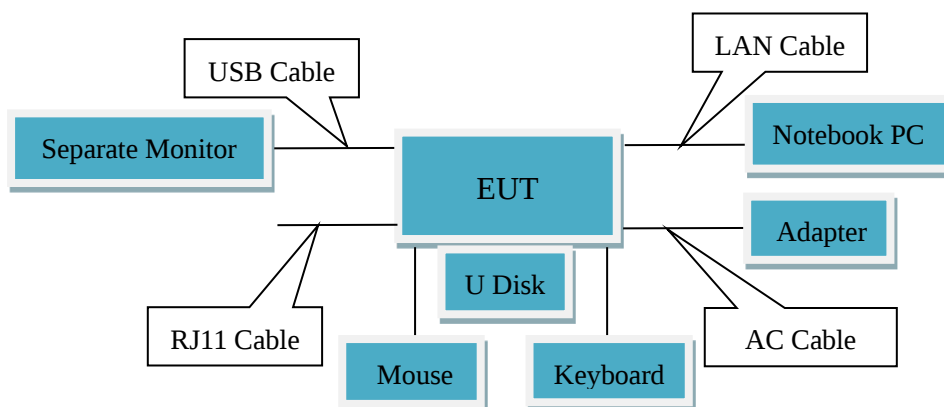
EUT Setup:


Mode 1~4

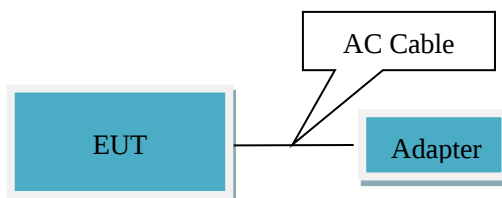
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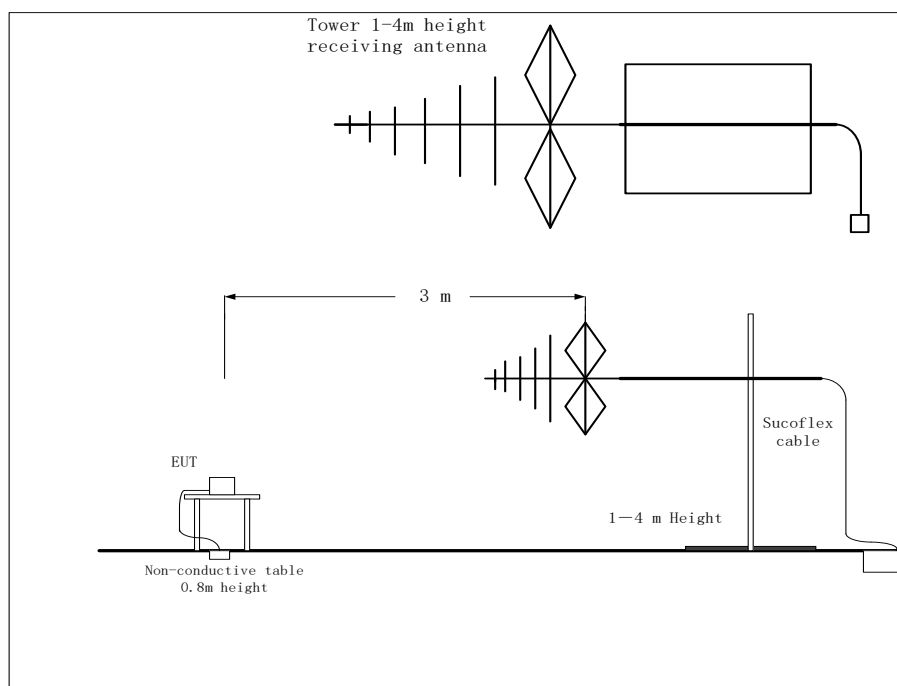
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Mode 5



Mode 6



Test Method:

For 30-1000MHz, the EUT was placed on the top of a rotating 0.8-m 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 1000-18000MHz, the maximal emission value was acquired by adjusting the antenna height, and the table was rotated 360 degrees to determine the maximum value of the field strength.

Uncertainty Measurement:

The measurement uncertainty (30MHz-150MHz) is 3.79 dB (k=2).

The measurement uncertainty (150MHz-1000MHz) is 3.51dB (k=2).

The measurement uncertainty (1000MHz-6000MHz) is 4.84 dB (k=2).

The measurement uncertainty (6000MHz-18000MHz) is 4.54 dB (k=2).

Test Result:

A “reference path loss” is established and Corr is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

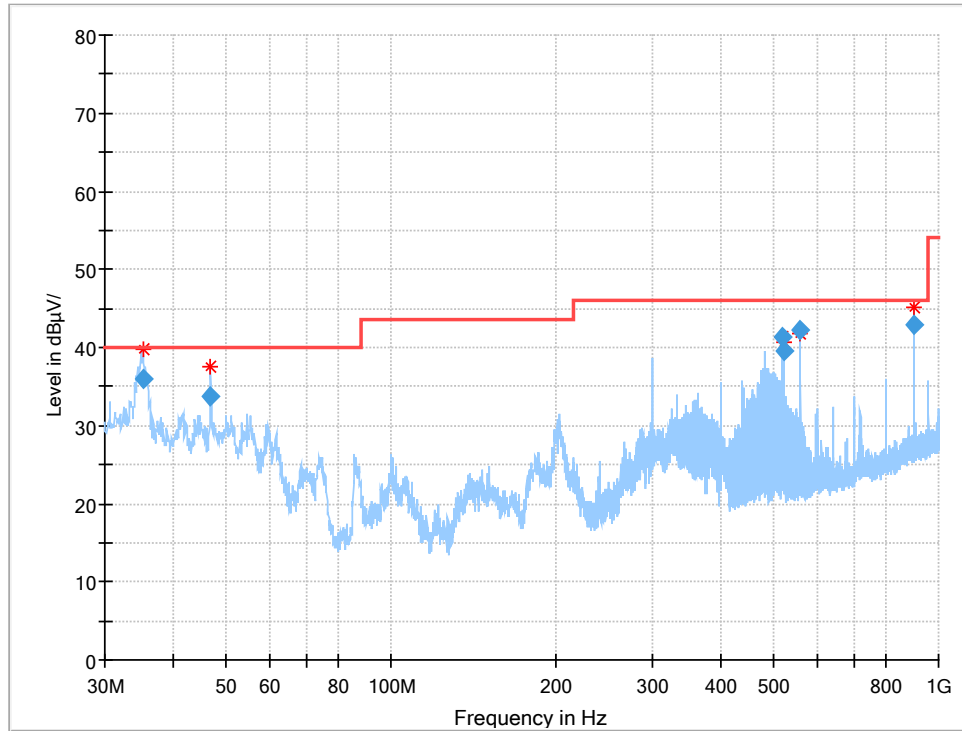
The measurement results are obtained as described below:

$\text{Corr (dB/m)} = \text{Cable loss (dB)} + \text{Antenna Factor (dB/m)} - \text{Preamplifier gain (dB)}$

$\text{Result (dB}\mu\text{V/m)} = \text{PMea (dB}\mu\text{V)} + \text{Corr (dB/m)}$

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.

Test Data



RE 30MHz-1GHz Mode 2_ Main Supply-L15A1_S8

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
35.294760	36.01	40.00	3.99	100.0	V	160.0	-14.5
46.866960	33.82	40.00	6.18	200.0	V	0.0	-11.6
518.036880	41.41	46.00	4.59	200.0	H	328.0	-5.2
521.976320	39.66	46.00	6.34	200.0	H	328.0	-5.1
560.002360	42.30	46.00	3.70	100.0	H	347.0	-4.3
899.689480	42.93	46.00	3.07	100.0	H	286.0	1.5

Emission level(QP)=Raw value by receiver + Corr(Antenna factor + cable loss - preamplifier gain)

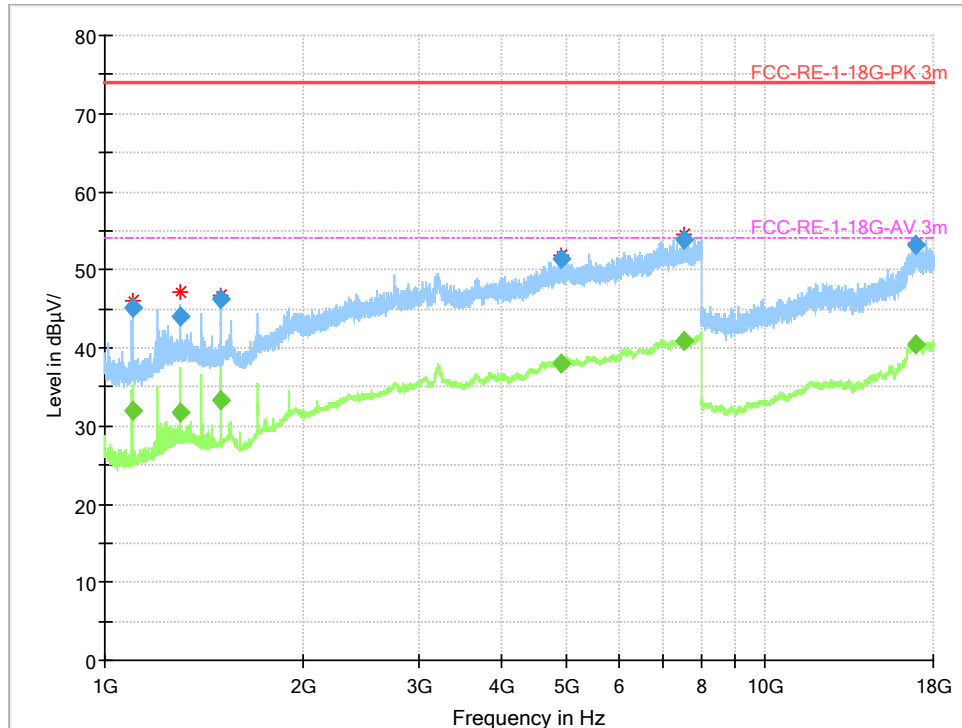
Horizontal and vertical polarity is all have been tested, the result of them is synthesized in the above data diagram.

Margin=limit value – emission level.

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RE 1GHz-18GHz Mode 2-H_ Main Supply-L15A1_S8

Final_Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1100.025000	45.22	---	74.00	28.78	500.0	1000.000	187.0	H	158.0	-0.8
1100.025000	---	31.89	54.00	22.11	500.0	1000.000	187.0	H	158.0	-0.8
1299.778750	---	31.74	54.00	22.26	500.0	1000.000	188.0	H	102.0	2.5
1299.778750	44.00	---	74.00	30.00	500.0	1000.000	188.0	H	102.0	2.5
1499.988750	---	33.25	54.00	20.75	500.0	1000.000	215.0	H	130.0	2.3
1499.988750	46.37	---	74.00	27.63	500.0	1000.000	215.0	H	130.0	2.3
4904.045000	51.29	---	74.00	22.71	500.0	1000.000	215.0	H	163.0	15.6
4904.045000	---	37.96	54.00	16.04	500.0	1000.000	215.0	H	163.0	15.6
7562.636250	53.85	---	74.00	20.15	500.0	1000.000	199.0	H	359.0	20.8
7562.636250	---	40.80	54.00	13.20	500.0	1000.000	199.0	H	359.0	20.8
16937.345000	53.18	---	74.00	20.82	500.0	1000.000	200.0	H	0.0	22.0
16937.345000	---	40.54	54.00	13.46	500.0	1000.000	200.0	H	0.0	22.0

Emission level (peak or average)=Raw value by receiver + Corr (Antenna factor+ cable loss- preamplifier gain)

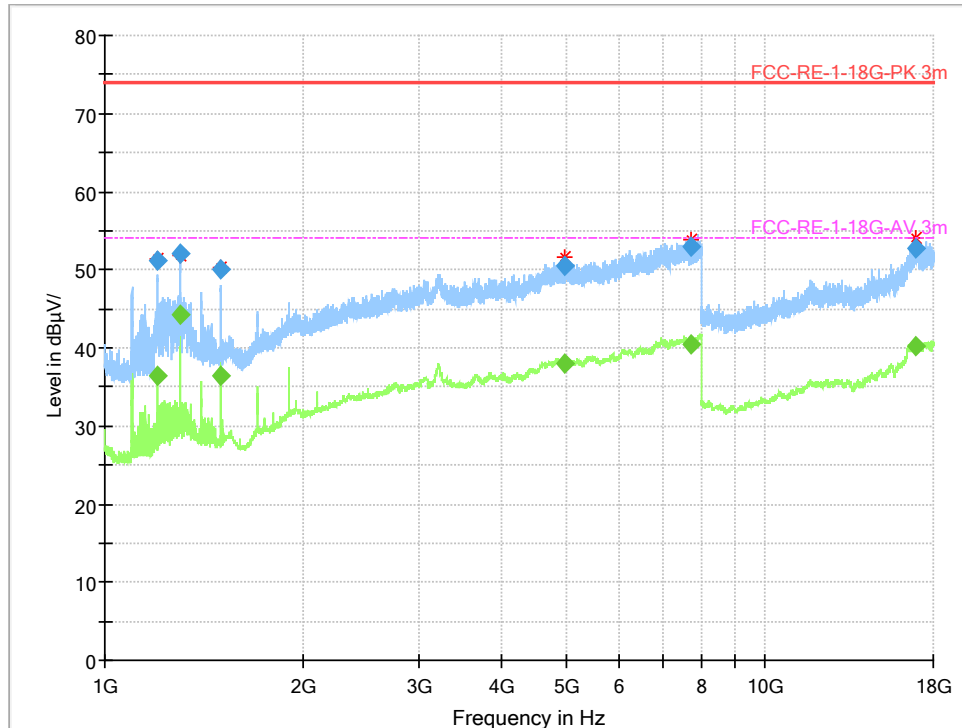
Margin=limit value – emission level.

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RE 1GHz-18GHz Mode 2-V_ Main Supply-L15A1_S8

Final_Result 2

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1200.292500	51.26	---	74.00	22.74	500.0	1000.000	100.0	V	216.0	0.6
1200.292500	---	36.33	54.00	17.67	500.0	1000.000	100.0	V	216.0	0.6
1300.275000	51.97	---	74.00	22.03	500.0	1000.000	100.0	V	131.0	2.5
1300.275000	---	44.25	54.00	9.75	500.0	1000.000	100.0	V	131.0	2.5
1500.130000	50.08	---	74.00	23.92	500.0	1000.000	100.0	V	304.0	2.3
1500.130000	---	36.43	54.00	17.57	500.0	1000.000	100.0	V	304.0	2.3
4962.516250	50.51	---	74.00	23.49	500.0	1000.000	206.0	V	0.0	15.7
4962.516250	---	37.94	54.00	16.06	500.0	1000.000	206.0	V	0.0	15.7
7750.692500	---	40.45	54.00	13.55	500.0	1000.000	115.0	V	118.0	20.5
7750.692500	53.06	---	74.00	20.94	500.0	1000.000	115.0	V	118.0	20.5
16902.266250	---	40.26	54.00	13.74	500.0	1000.000	115.0	V	43.0	22.0
16902.266250	52.72	---	74.00	21.28	500.0	1000.000	115.0	V	43.0	22.0

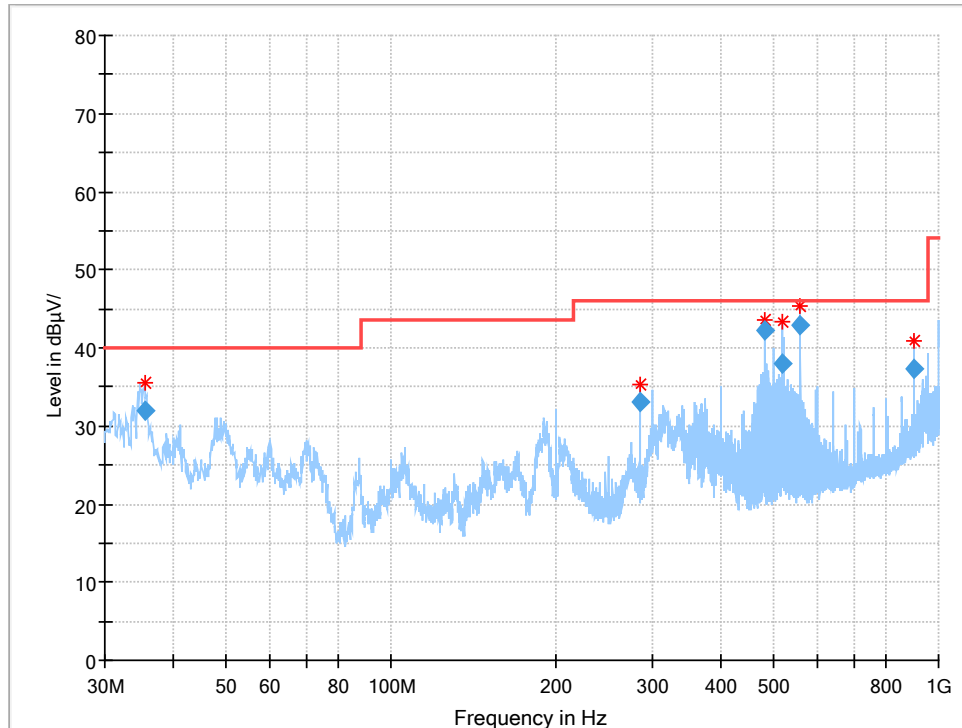
Emission level (peak or average)=Raw value by receiver + Corr (Antenna factor+ cable loss- preamplifier gain)

Margin=limit value – emission level.

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RE 30MHz-1GHz Mode 2_ Secondary Supply-L15B1_S11

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
35.619920	31.92	40.00	8.08	100.0	V	4.0	-14.4
284.596400	33.10	46.00	12.90	100.0	H	0.0	-10.3
480.007960	42.17	46.00	3.83	100.0	H	104.0	-5.7
518.044440	37.89	46.00	8.11	100.0	H	206.0	-5.2
560.005000	42.84	46.00	3.16	100.0	H	206.0	-4.3
899.962960	37.43	46.00	8.57	100.0	H	355.0	1.5

Emission level(QP)=Raw value by receiver + Corr(Antenna factor + cable loss - preamplifier gain)

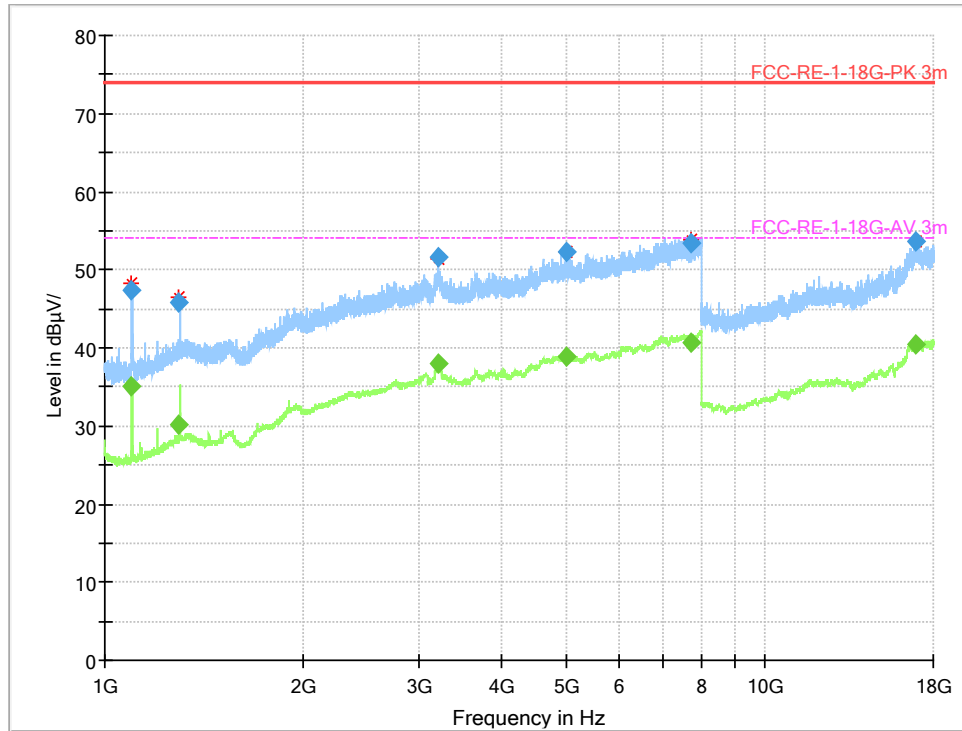
Horizontal and vertical polarity is all have been tested, the result of them is synthesized in the above data diagram.

Margin=limit value – emission level.

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RE 1GHz-18GHz Mode 2-H_ Secondary Supply-L15B1_S11

Final_Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1097.587500	47.39	---	74.00	26.61	500.0	1000.000	115.0	H	220.0	-0.8
1097.587500	---	35.12	54.00	18.88	500.0	1000.000	115.0	H	220.0	-0.8
1295.712500	---	30.13	54.00	23.87	500.0	1000.000	115.0	H	356.0	2.4
1295.712500	45.74	---	74.00	28.26	500.0	1000.000	115.0	H	356.0	2.4
3202.463750	---	37.98	54.00	16.02	500.0	1000.000	215.0	H	4.0	14.4
3202.463750	51.69	---	74.00	22.31	500.0	1000.000	215.0	H	4.0	14.4
5019.851250	---	38.78	54.00	15.22	500.0	1000.000	115.0	H	356.0	15.8
5019.851250	52.40	---	74.00	21.60	500.0	1000.000	115.0	H	356.0	15.8
7726.232500	---	40.62	54.00	13.38	500.0	1000.000	115.0	H	114.0	20.5
7726.232500	53.35	---	74.00	20.65	500.0	1000.000	115.0	H	114.0	20.5
16898.067500	53.61	---	74.00	20.39	500.0	1000.000	115.0	H	103.0	22.0
16898.067500	---	40.50	54.00	13.50	500.0	1000.000	115.0	H	103.0	22.0

Emission level (peak or average)=Raw value by receiver + Corr (Antenna factor+ cable loss- preamplifier gain)

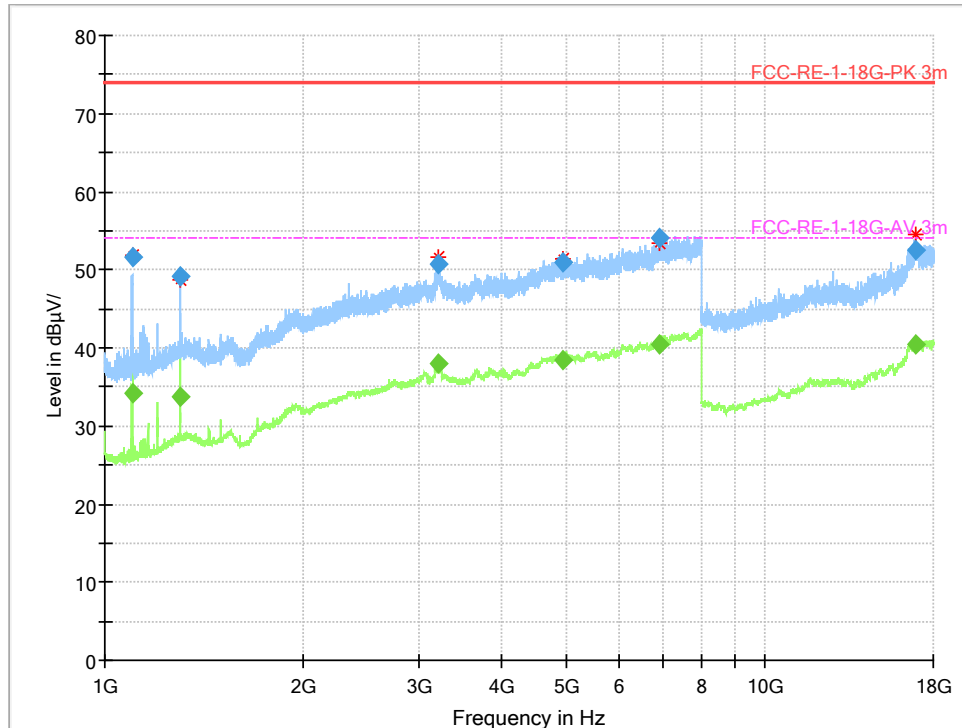
Margin=limit value – emission level.

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RE 1GHz-18GHz Mode 2-V_ Secondary Supply-L15B1_S11

Final_Result 2

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1099.816250	---	34.28	54.00	19.72	500.0	1000.000	100.0	V	21.0	-0.8
1099.816250	51.63	---	74.00	22.37	500.0	1000.000	100.0	V	21.0	-0.8
1299.877500	---	33.82	54.00	20.18	500.0	1000.000	100.0	V	218.0	2.5
1299.877500	49.21	---	74.00	24.79	500.0	1000.000	100.0	V	218.0	2.5
3201.410000	50.77	---	74.00	23.23	500.0	1000.000	215.0	V	219.0	14.4
3201.410000	---	38.01	54.00	15.99	500.0	1000.000	215.0	V	219.0	14.4
4950.178750	51.02	---	74.00	22.98	500.0	1000.000	215.0	V	5.0	15.6
4950.178750	---	38.41	54.00	15.59	500.0	1000.000	215.0	V	5.0	15.6
6933.375000	53.99	---	74.00	20.01	500.0	1000.000	115.0	V	312.0	19.5
6933.375000	---	40.54	54.00	13.46	500.0	1000.000	115.0	V	312.0	19.5
16958.003750	52.59	---	74.00	21.41	500.0	1000.000	115.0	V	220.0	21.9
16958.003750	---	40.38	54.00	13.62	500.0	1000.000	115.0	V	220.0	21.9

Emission level (peak or average)=Raw value by receiver + Corr (Antenna factor+ cable loss- preamplifier gain)

Margin=limit value – emission level.

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7.2. Conducted Emission

S8 (Main Supply-L15A1):

Specifications:	15.107
Date of Tests	2023-08-09
Test conditions:	Ambient Temperature:23.2°C Relative Humidity:57.6% Air pressure: 101.3kPa
Operation Mode	Mode 1: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 2: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 3: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 4: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 5: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ UC02+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 6: Print mode + CB04+ UE01
Test Results:	Pass
Note: 1. The worst case of AC conducted emission is Mode 2. 2. Full system mode: The EUT is powered by a power adapter and maintained camera recording condition. Separate Monitor is plugged directly into the EUT or connected to the EUT via a USB cable. The EUT is connected to a PC through network cable. The RJ11 port is shorted through EC01. Other ports are connected to keyboard, U disk etc. and through LAN cable to PC for exchange of PING command, EUT and U disk for data transmission. Keep working at maximum load.	

S11 (Secondary Supply-L15B1):

Specifications:	15.107
Date of Tests	2023-08-09
Test conditions:	Ambient Temperature:23.2°C Relative Humidity:57.6% Air pressure: 101.3kPa
Operation Mode	Mode 1: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 2: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 3: Working mode (Full system) + Data Link (EUT TO U DISK) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 4: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ EC01+ AE2+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9 Mode 5: Working mode (Full system) + Data Link (U DISK TO EUT) + CB04+ UE01+ UC02+ EC01+ AE1+ AE3+ AE4+ AE5+ AE6+ AE7+ AE8+ AE9
Test Results:	Pass

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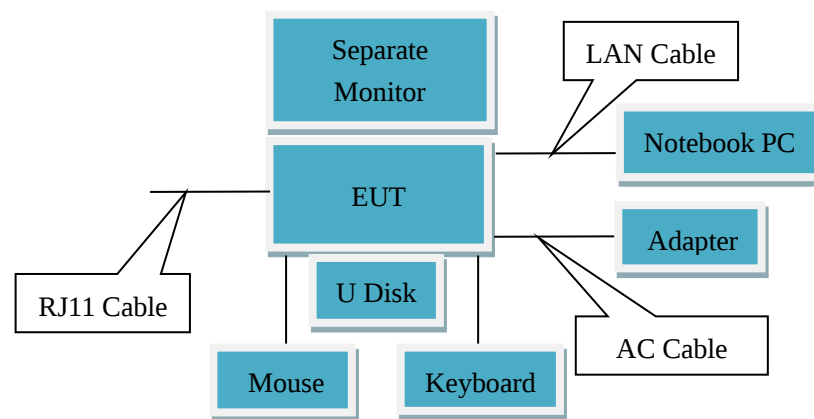
Note:

1. The worst case of AC conducted emission is Mode 4.
2. Full system mode: The EUT is powered by a power adapter and maintained camera recording condition. Separate Monitor is plugged directly into the EUT or connected to the EUT via a USB cable. The EUT is connected to a PC through network cable. The RJ11 port is shorted through EC01. Other ports are connected to keyboard, U disk etc. and through LAN cable to PC for exchange of PING command, EUT and U disk for data transmission. Keep working at maximum load.

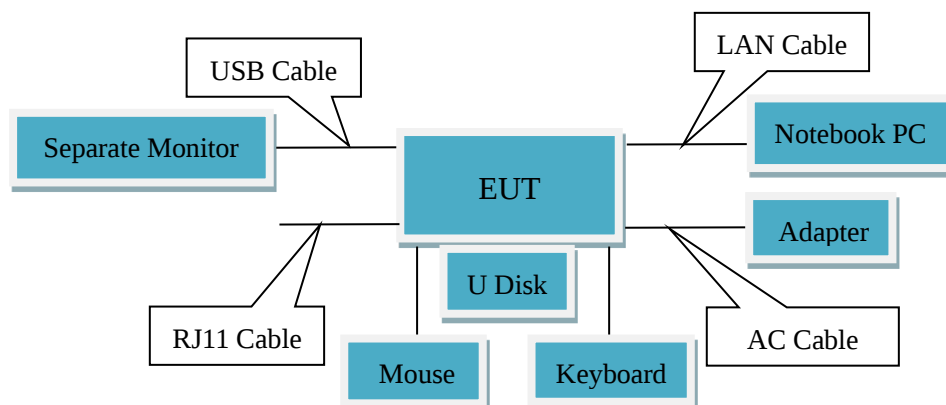
Limit Level Construction:

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

EUT Setup:


Mode 1~4

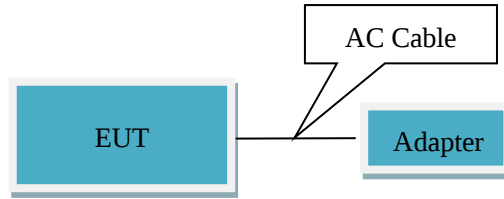


Mode 5

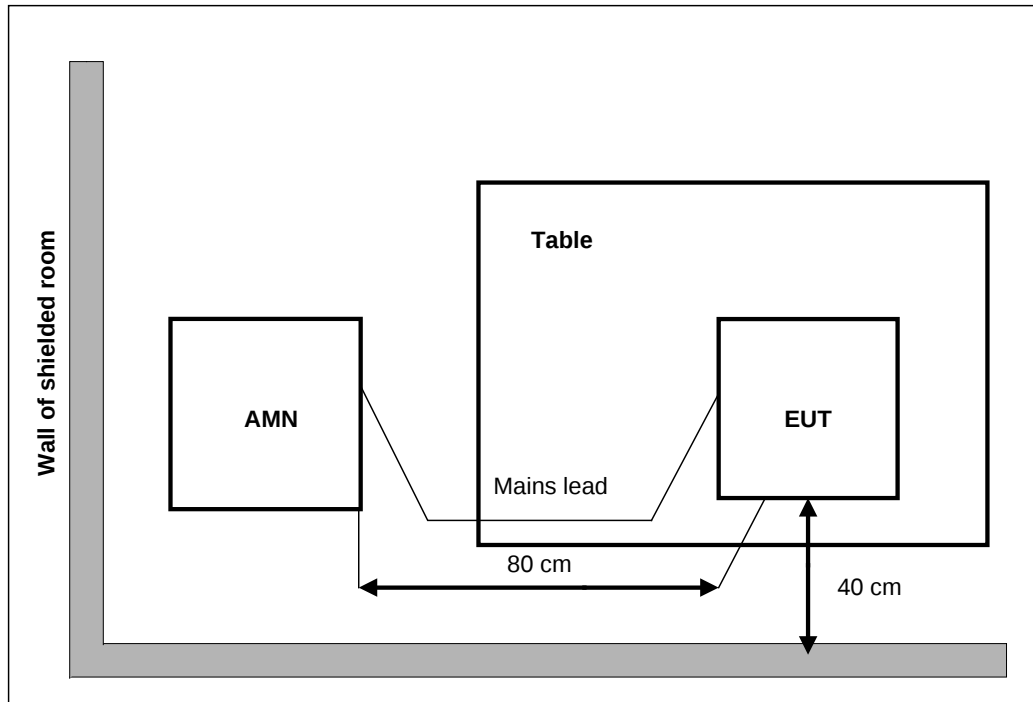
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Mode 6



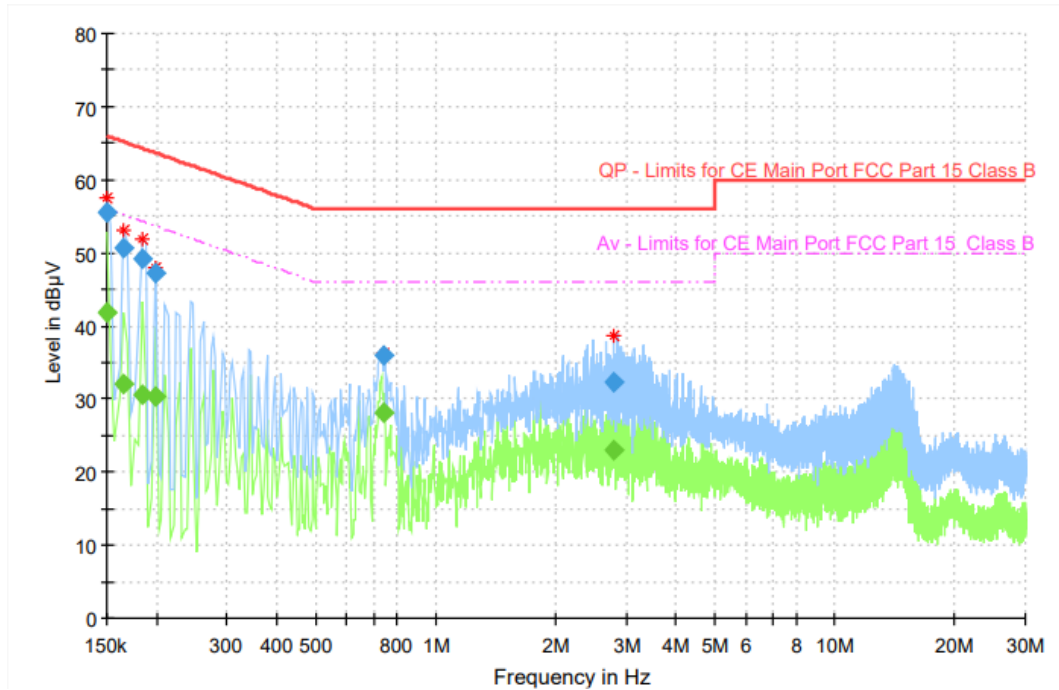
Test Method:

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.

Uncertainty Measurement:

The measurement uncertainty (150kHz-30MHz) is 1.97 dB (k=2).

Test Data



CE 150kHz-30MHz Mode 2_ Main Supply-L15A1_S8

Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	55.53	---	15000	9.000	N	ON	9.6	10.47	66.00
0.150000	---	41.79	15000	9.000	N	ON	9.6	14.21	56.00
0.164925	50.64	---	15000	9.000	N	ON	8.3	14.58	65.21
0.164925	---	32.04	15000	9.000	N	ON	8.3	23.17	55.21
0.183581	49.20	---	15000	9.000	L1	ON	9.6	15.12	64.32
0.183581	---	30.65	15000	9.000	L1	ON	9.6	23.67	54.32
0.198506	47.16	---	15000	9.000	L1	ON	9.6	16.51	63.67
0.198506	---	30.35	15000	9.000	L1	ON	9.6	23.32	53.67
0.743269	---	28.07	15000	9.000	N	ON	9.6	17.93	46.00
0.743269	35.92	---	15000	9.000	N	ON	9.6	20.08	56.00
2.795456	---	22.91	15000	9.000	N	ON	9.7	23.09	46.00
2.795456	32.18	---	15000	9.000	N	ON	9.7	23.82	56.00

L1 and N is all have been tested, the result of them is synthesized in the above data diagram.

Emission level(quasi-peak or Average peak)(dBμV)=Raw value by receiver(dBμV) + Corr(Insertion loss+ cable loss) (dB)

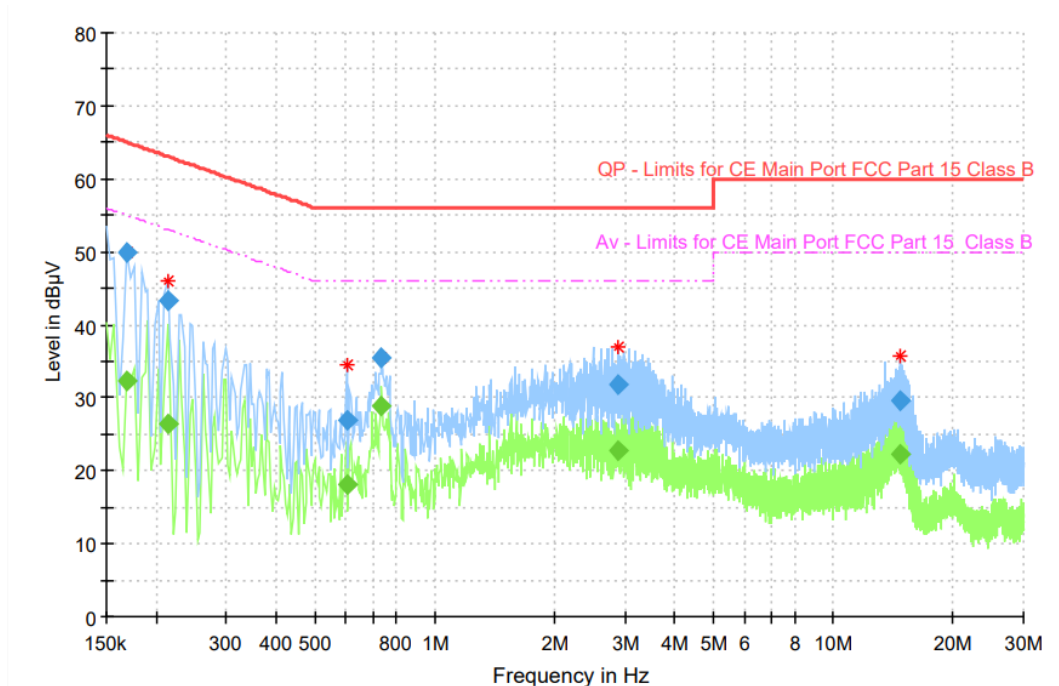
The raw value is used to calculate by software which is not shown in the sheet.

Margin (dB) =limit value(dBμV) – emission level(dBμV).

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CE 150kHz-30MHz Mode 4_ Secondary Supply-L15B1_S11

Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.168656	---	32.40	15000	9.000	L1	ON	9.6	22.62	55.03
0.168656	49.94	---	15000	9.000	L1	ON	9.6	15.09	65.03
0.213431	---	26.42	15000	9.000	L1	ON	9.6	26.65	53.07
0.213431	43.34	---	15000	9.000	L1	ON	9.6	19.73	63.07
0.601481	---	18.11	15000	9.000	N	ON	9.6	27.89	46.00
0.601481	26.98	---	15000	9.000	N	ON	9.6	29.02	56.00
0.735806	---	28.82	15000	9.000	N	ON	9.6	17.18	46.00
0.735806	35.46	---	15000	9.000	N	ON	9.6	20.54	56.00
2.885006	---	22.85	15000	9.000	N	ON	9.6	23.15	46.00
2.885006	31.73	---	15000	9.000	N	ON	9.6	24.27	56.00
14.675756	---	22.24	15000	9.000	N	ON	9.9	27.76	50.00
14.675756	29.65	---	15000	9.000	N	ON	9.9	30.35	60.00

L1 and N is all have been tested, the result of them is synthesized in the above data diagram.

Emission level(quasi-peak or Average peak)(dBμV)=Raw value by receiver(dBμV) + Corr(Insertion loss+ cable loss) (dB)

The raw value is used to calculate by software which is not shown in the sheet.

Margin (dB) =limit value(dBμV) – emission level(dBμV).

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Annex A EUT Photos

See the document “I23W00036-External Photos”.

See the document “I23W00036-Internal Photos”.

Test photo See the in document “I23W00036-EMC Test Setup Photos”.

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Annex B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

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

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