



EMC Test Report

Product Name: HUAWEI MediaPad 10 Link

Model Number: S10-201w,S10-201wa

Report No: SYBH(Z-EMC)038112012-2

FCC ID: QISS10-201W,QISS10-201WA

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2. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.
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Applicant: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Receipt Test Item: Nov,03, 2012
Start Date of Test: Nov.04, 2012
End Date of Test: Nov.07, 2012
Test Result: Pass

**Approved By
(Lab Manager)**

2012-12-08
Date

Liu Chunlin
Name

Signature

**Operator
(Test Engineer)**

2012-12-08
Date

Liu Qingbin
Name

Signature



Modification Record

No.	Last Report No.	Modification Description
1	NA	First report



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1 General Information

1.1 EUT Description

EUT Description	
Product Name	HUAWEI MediaPad 10 Link
Model Number	S10-201w,S10-201wa
Serials Number	X4M01A92A2900046
Working Voltage	5Vdc
TX Frequency	Bluetooth: 2402MHz To 2480MHz WIFI: 2412MHz To 2462MHz 5150MHz To 5250MHz 5250MHz To 5350MHz 5470MHz To 5725MHz(5600MHz To 5650MHz is notched) 5725MHz To 5825MHz
RX Frequency	Bluetooth: 2402MHz To 2480MHz WIFI: 2412MHz To 2462MHz 5150MHz To 5250MHz 5250MHz To 5350MHz 5470MHz To 5725MHz(5600MHz To 5650MHz is notched) 5725MHz To 5825MHz GPS: 1575.42MHz
HW Version	SH1201UM
SW Version	S10-201w V100R001C001, S10-201wa V100R001C001
EUT Accessory	
Data cable	Brand: Huawei Technologies Co., Ltd. Data Cable USB Male to Mini USB Male, Black,
Adapter 1	Brand: HUAWEI Model:HW-050200U3W Input voltage: 100V-240V~50/60Hz, 0.5A MAX Output voltage: 5V $\overline{\text{---}}$ 2A S/N:HWHKAAC41900017; HWXQAAC41700017
Li-ion	Brand: HUAWEI Battery Model: HB3X1 Rated capacity: 6400mAh Nominal Voltage: $\overline{\text{---}}$ +3.7V Charging Voltage: $\overline{\text{---}}$ +4.2V
	Brand: HUAWEI Battery Model: HB3484V3EAW-12 Rated capacity: 6020 mAh Nominal Voltage: $\overline{\text{---}}$ +3.7V Charging Voltage: $\overline{\text{---}}$ +4.2V

Remark: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.



1.2 Test Site Information

Test Site 1:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.3 Applied Standards

APPLIED STANDARD

47 CFR FCC Part 15:2012, Subpart B

1.4 Modification information

The difference between S10-201w,S10-201wa is :

	S10-201w	S10-201wa
PCB	the same	the same
WIFI/BT 2.4G	the same	the same
WIFI 5G	support	Not support 【WIFI 5G Chip don't stick-on the PCB】
Battery	1.HB3X1 2.HB3484V3EAW-12	1.HB3X1

With the consideration of the identities and differences list above, all the EMC tests were conducted to the model S10-201w.



2 Summary of Results

Summary of Results				
Test Items	Test Mode	Performance Class & Required Performance Criteria	Result	Site
<u>Radiated Emissions</u> Enclosure Port	Mode2 Mode3	CLASS B	Pass	Site1
<u>Conducted Emissions</u> <input checked="" type="checkbox"/> DC Power Port <input checked="" type="checkbox"/> AC Power Port <input type="checkbox"/> Telecommunication Ports	Mode1 Mode2	CLASS B	Pass	Site1
Note: 1, Measurement taken is within the uncertainty of test system. 2, <input checked="" type="checkbox"/> The item has been tested; <input type="checkbox"/> The item has not been tested.				

During the measurement, the environmental conditions complied with the range listed as below.

Item	Required
Ambient temperature	15°C ~ 35°C
Relative humidity	25% ~ 75%
Atmospheric pressure	86kPa ~ 106kPa

3 System Configuration during EMC Test

3.1 **Test Mode**

The EUT was configured, installed, arranged and operated in a manner consistent with typical application. The following mode(s) were applied during the compliance test.

Test Mode	
Mode 1:	Adapter (charge) + earphone + Camera on + wireless service traffic mode
Mode 2:	PC (Power supply and USB xcopy) + TF card + earphone + wireless service IDLE mode
Mode 3:	Adapter (charge) + earphone + Camera on + wireless service IDLE mode

Remark: If there is more than one adapter, each one should be applied throughout the compliance test respectively, however, only the worst case will be recorded in this report.

The wireless service contained Bluetooth, WIFI and GPS.

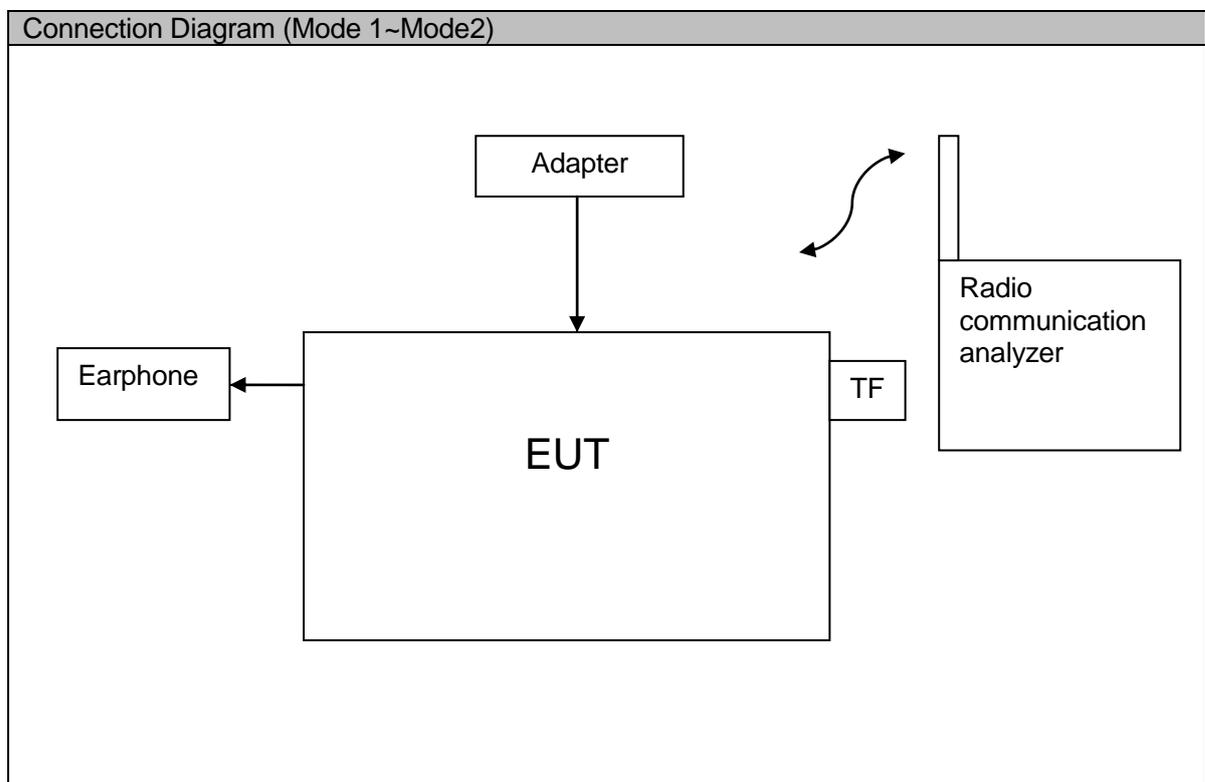
Traffic Mode:

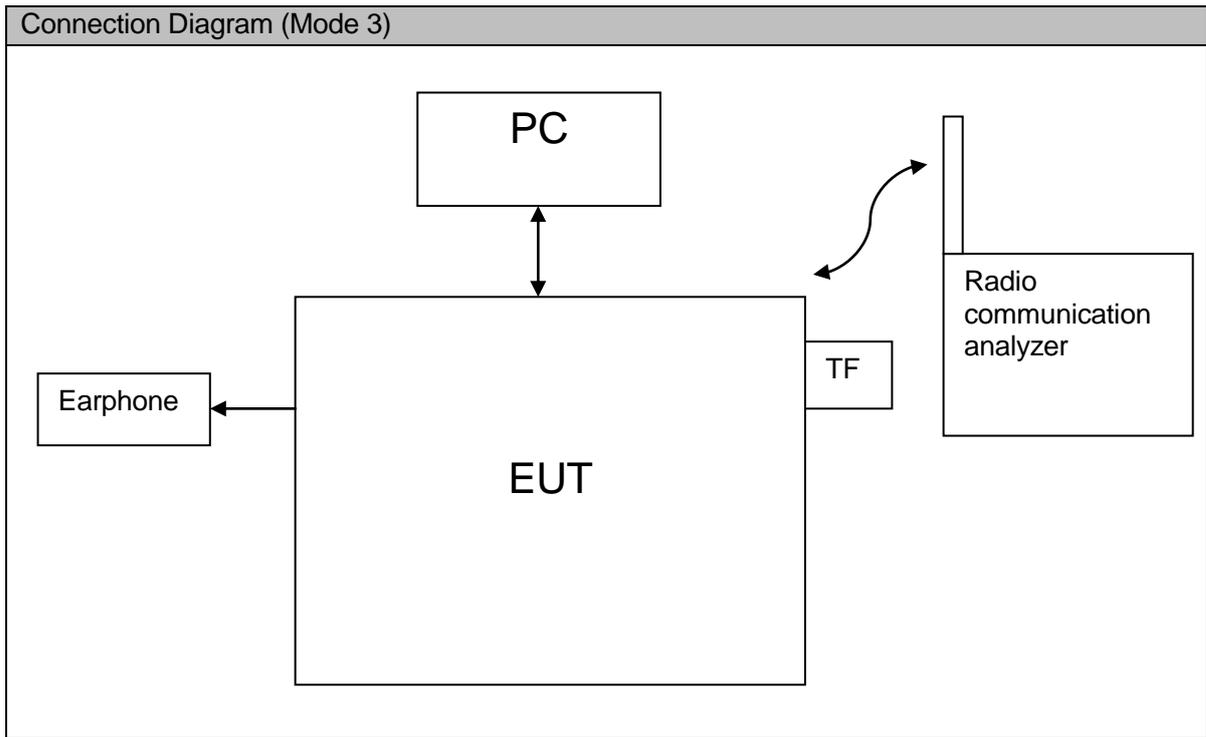
State of EUT when switched on and with Radio Resource Control (RRC) connection established

IDLE Mode:

State of EUT when switched on but with no Radio Resource Control (RRC) connection

3.2 **Configurations of Test System**





3.3 Cables Used during Test

Cable	Quantity	Length	Type of Cable
USB	1	<3m	shielded
Earphone	1	<3m	unshielded

3.4 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Calibrated Deadline	Cal interval (month)
Radio Communication Tester	CMU200	R&S	1117057	2013-9-2	12
Notebook	X200	Lenovo	3108052581	/	/
TF card	2GB	Kingdon	1040RE5672k	/	/

4 Electromagnetic Interference (EMI)

4.1 Radiated Disturbance 30MHz to 18GHz

4.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4-2009. The test distance was 3m. The set-up and test methods were according to ANSI C63.4-2009.

A preliminary scan and a final scan of the emissions were made from 30 MHz to 18 GHz by using test script of software; The emissions were measured using Quasi-Peak Detector (30MHz~1GHz) and AV/PK detector (above 1GHz). The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m. The azimuth range of turntable was 0° to 360°. The receiving antenna has two polarizations V and H.

Measurement bandwidth (RBW) for 30MHz to 1000 MHz: 120 kHz;

Measurement bandwidth (RBW) for 1000MHz to 18000 MHz: 1MHz;

EUT was configured in idle mode and the test performed at worst emission state.

4.1.2 Test setup

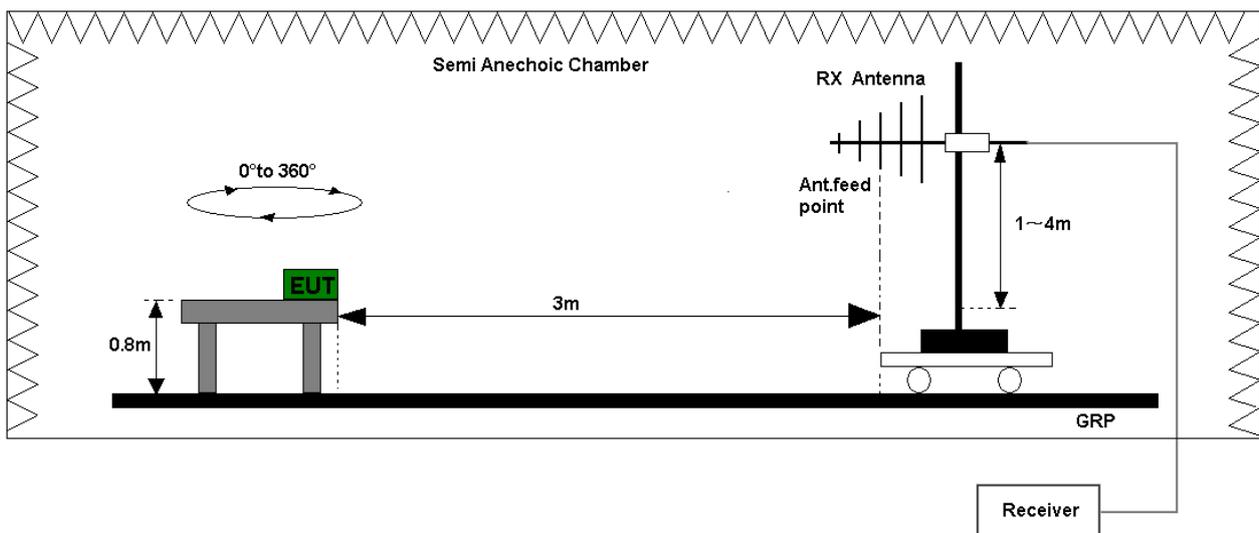


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

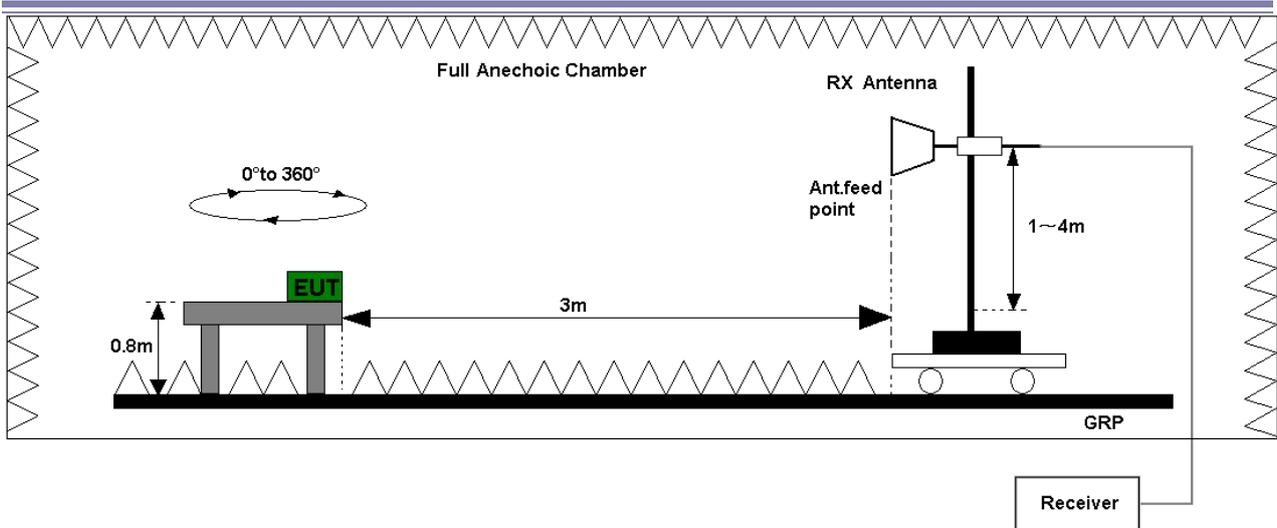


Figure 2. Test set-up of radiated disturbance(above 1GHz)

4.1.3 Test Results

The EUT has met the requirements for Radiated Emission of enclosure port.
 Refer to the section 7.1 of this report for test data.

Test Limits (Class B)				
Frequency of Emission (MHz)	Radiated Limit			
	Unit(μ V/m)		Unit(dB μ V/m)	
30-88	100		40	
88-216	150		43.5	
216-960	200		46	
Above 960	500		54	
Above 1000	AV	PK	AV	PK
	500	5000	54	74

4.2 Conducted Disturbance 0.15 MHz to 30MHz

4.2.1 Test Procedure

The Table-top EUT was placed upon a non-metallic table 0.8 m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm away from LISN. The set-up and test methods were according to ANSI C63.4-2009.

Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

The EUT was communicated with the simulator through Air interface, the simulator controls the EUT to transmitter the maximum power which defined in specification of product. The EUT operated on the typical channel.

Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz;

The Mobile Station was setup in the shielded chamber and operated under nominal conditions.

4.2.2 Test Setup

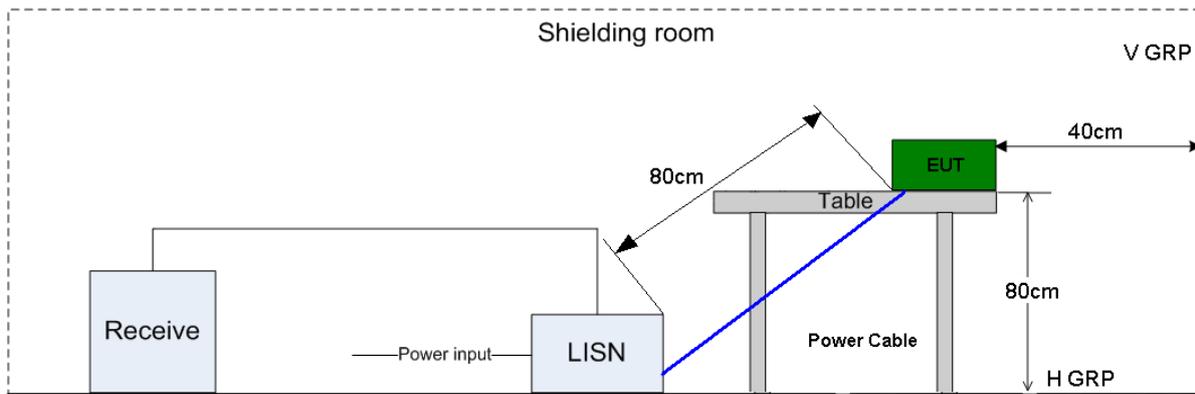


Figure 3. Test Set-up of conducted disturbance

4.2.3 Test Results

The EUT has met requirements for Conducted disturbance of power lines.

Refer to the section 7.2 of this report for test data.

Test Limit of AC Power Port		
Frequency range	150kHz ~ 30MHz	
Frequency	Voltage limits	
	QP (dB μ V)	AV (dB μ V)
0.15MHz~0.5MHz	66-56	56-46
0.5MHz-5MHz	56	46
5MHz~30MHz	60	50



5 Main Test Instruments

Main Test Equipments						
Test item	Test Instrument	Model	S/N	Manufacturer	Calibrated Deadline	Cal interval (month)
RE	EMI Test receiver	ESU26	100387	R&S	Nov.08, 2013	12
	Broadband Antenna	VULB 9163	9163-520	SCHWARZBECK	Dec.08, 2013	24
	Horn Antenna	HF907	10365	R&S	Nov.09,2013	24
CE	EMI Test receiver	ESCI	101163	R&S	Mar.05, 2013	12
	Artificial Mains Network	ENV216	100382	R&S	Mar.21, 2013	12
Software Information						
Test Item	Software Name		Manufacturer		Version	
RE	EMC 32		R&S		V8.50.10	
CE	EMC 32		R&S		V8.52.0	



6 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty		
	Items	Extended Uncertainty
RE(30MHz-1GHz)	Field strength (dB μ V/m)	U=4.2dB; k=2
RE(1GHz-18GHz)	Field strength (dB μ V/m)	U=5.1dB; k=2
CE	Disturbance Voltage (dB μ V)	U=2.6dB; k=2

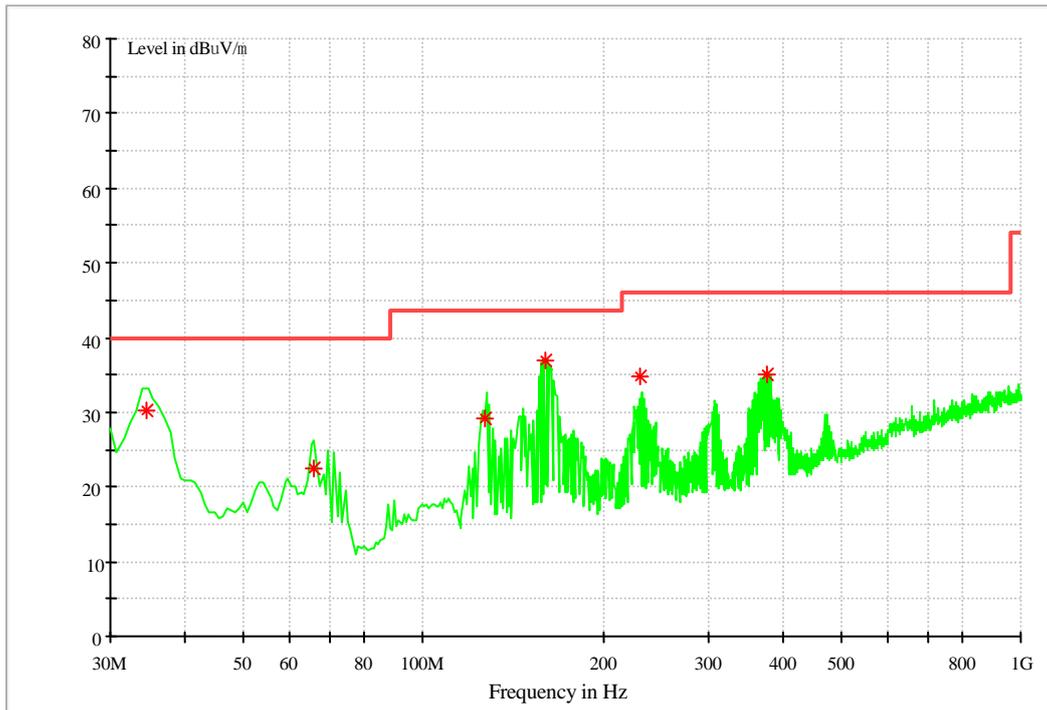


7 Test Data and Graph

Only the worst test results were shown

7.1 Radiated Disturbance

7.1.1 30MHz~1GHz



MEASUREMENT RESULT: QP Detector

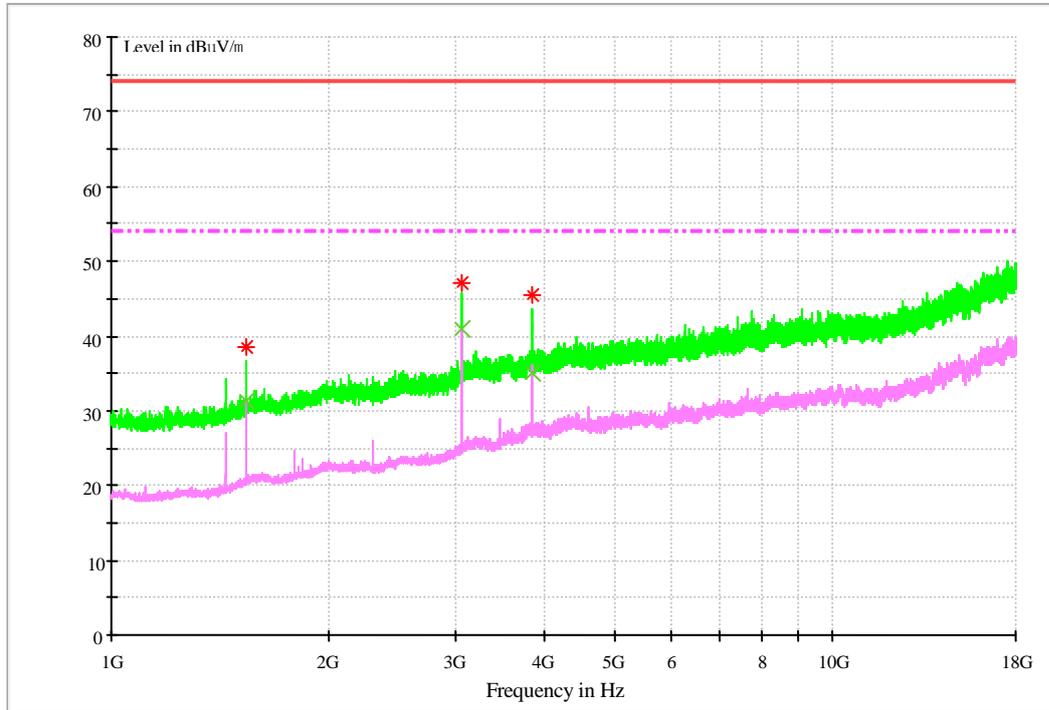
Frequency MHz	Level dB μ V/m	Transducer dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.621120	30.1	12.0	40.0	9.9	100.0	195.0	HORIZONTAL
65.638400	22.5	10.4	40.0	17.5	100.0	281.0	HORIZONTAL
126.812160	29.1	10.0	43.5	14.4	100.0	158.0	HORIZONTAL
159.693760	36.9	10.0	43.5	6.6	100.0	169.0	HORIZONTAL
231.347520	34.9	13.8	46.0	11.1	122.0	346.0	VERTICAL
377.408000	35.1	18.1	46.0	10.9	100.0	283.0	VERTICAL

Note:

Level= Reading level+ Transducer (cable loss + correction factor)

The reading level is used to calculate by software which is not shown in the sheet.

7.1.2 1GHz~18GHz



MEASUREMENT RESULT: PK Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
1536.066667	36.6	-11.9	74.0	37.4	110.0	232.0	HORIZONTAL
3071.733333	45.3	-5.0	74.0	28.7	100.0	210.0	HORIZONTAL
3840.133333	43.5	-2.3	74.0	30.5	100.0	210.0	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
1536.121334	31.3	-11.9	54.0	22.7	100.0	232.0	HORIZONTAL
3072.200666	40.9	-5.0	54.0	13.1	100.0	210.0	HORIZONTAL
3839.885333	35.0	-2.3	54.0	19.0	100.0	210.0	HORIZONTAL

Note:

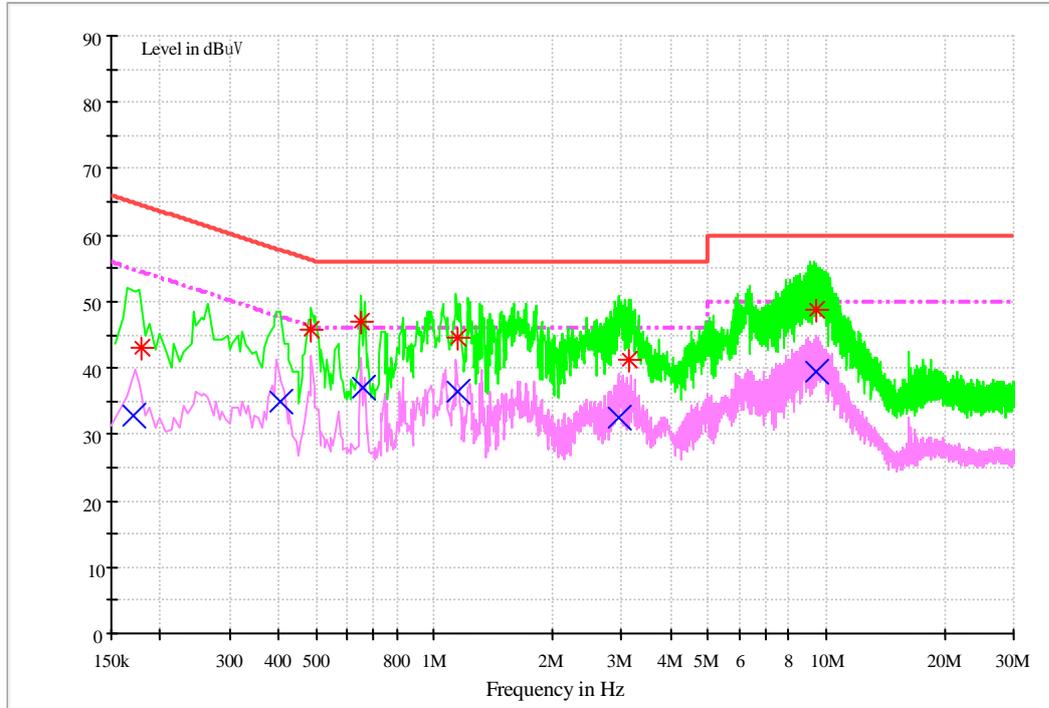
Level= Reading level+ Transducer (cable loss + correction factor)

The reading level is used to calculate by software which is not shown in the sheet.



7.2 Conducted Disturbance

7.2.1 AC Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.178729	42.9	9.7	64.5	21.6	N	FLO
0.485790	45.8	9.7	56.2	10.4	N	FLO
0.653472	46.9	9.7	56.0	9.1	N	FLO
1.148344	44.5	9.7	56.0	11.5	N	FLO
3.118616	41.1	9.7	56.0	14.9	N	FLO
9.383084	48.9	9.9	60.0	11.1	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.170707	32.8	9.7	54.9	22.1	N	FLO
0.407444	34.9	9.7	47.7	12.8	N	FLO
0.655204	37.1	9.7	46.0	8.9	N	FLO
1.141818	36.4	9.7	46.0	9.6	N	FLO
2.959740	32.6	9.7	46.0	13.4	N	FLO
9.452437	39.5	9.9	50.0	10.5	N	FLO



Note:

Level= Reading level+ Transducer (cable loss + correction factor)

The reading level is used to calculate by software which is not shown in the sheet.

-----**END**-----