



中国认可
国际互认
检测
TESTING
CNAS L0310



EMC Test Report

Product Name: honor band A1

Model Number: AW600

Report No: SYBH(Z-EMC)002042016-2

FCC ID: QISAW600

Reliability Laboratory of Huawei Technologies Co., Ltd.

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3. **The laboratory (Reliability Lab of Huawei Technologies Co., Ltd) is also named “Global Compliance and Testing Center of Huawei Technologies Co., Ltd” , the both names have coexisted since 2009.**
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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: Feb.22,2016
Start Date of Test: May.04,2016
End Date of Test: May.06,2016

Test Result: Pass

**Approved By
(Lab Manager)**

2016-05-27
Date

Roger Zhang
Name

Roger Zhang

Signature

**Prepared by
(Test Engineer)**

2016-05-27
Date

Wu Yafeng
Name

Wu Yafeng

Signature



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1 General Information

1.1 EUT Description

EUT Description	
Product Name	honor band A1
Model Number	AW600
Input voltage	3.7V
TX Frequency	2402MHz to 2480MHz
RX Frequency	2402MHz to 2480MHz
S/N	2102451836JN65000001
HW Version	V4.0
SW Version	AW600_HUA WEI_BT_V1.1.8
EUT Accessory	
Charger Dock	Input/output 5V, pin plug-USB A plug charger Dock,Unshielded

Remark: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed information.



1.2 Test Site Information

Test Site:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	No.2 New City Avenue Songshan Lake Sci. &Tech. Industry Park, Dongguan, Guangdong, P.R.C

1.3 Applied Standards

APPLIED STANDARD

47 CFR FCC Part 15:2014, Subpart B



2 Summary of Results

Summary of Results				
Test Items	Test Mode	Performance Class & Required Performance Criteria	Result	Site
<u>Radiated Emissions</u> <input checked="" type="checkbox"/> Enclosure Port	Mode1	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	CLASS B	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement 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

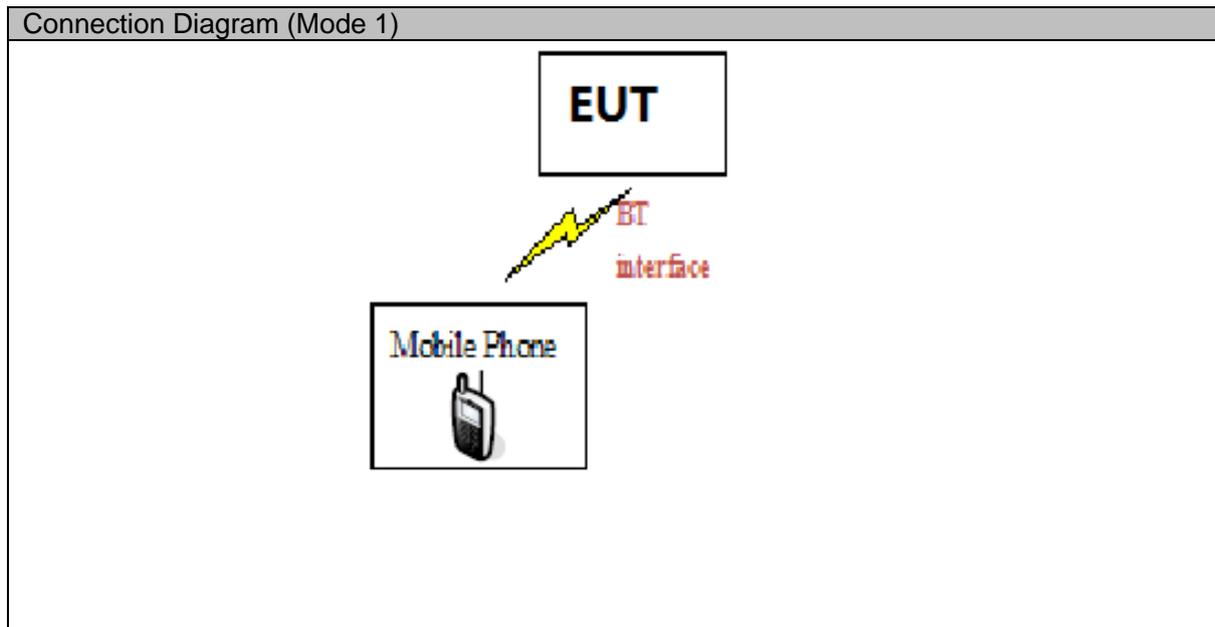
3 System Configuration during EMC Test

3.1 Test Mode

Huawei has verified the construction and function in typical operation. All the test modes were carried out with the EUT under normal operation, which were shown in this test report and defined as below:

Test Mode	
Mode 1:	USB Charging + BT Linking

3.2 Test System Configuration





3.3 Cables Used during Test

Cable	Quantity	Length	Type of Cable
USB	1	<3m	Shielded

3.4 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Calibrated Deadline	Cal interval (month)
Mobile phone	C8813Q	Huawei	C8R01A92915 00024	/	/
Adaptor	HW- 050100E0 1	Huawei	Y66801F4K000 40	/	/
Charger Dock	/	Huawei	/	/	/

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

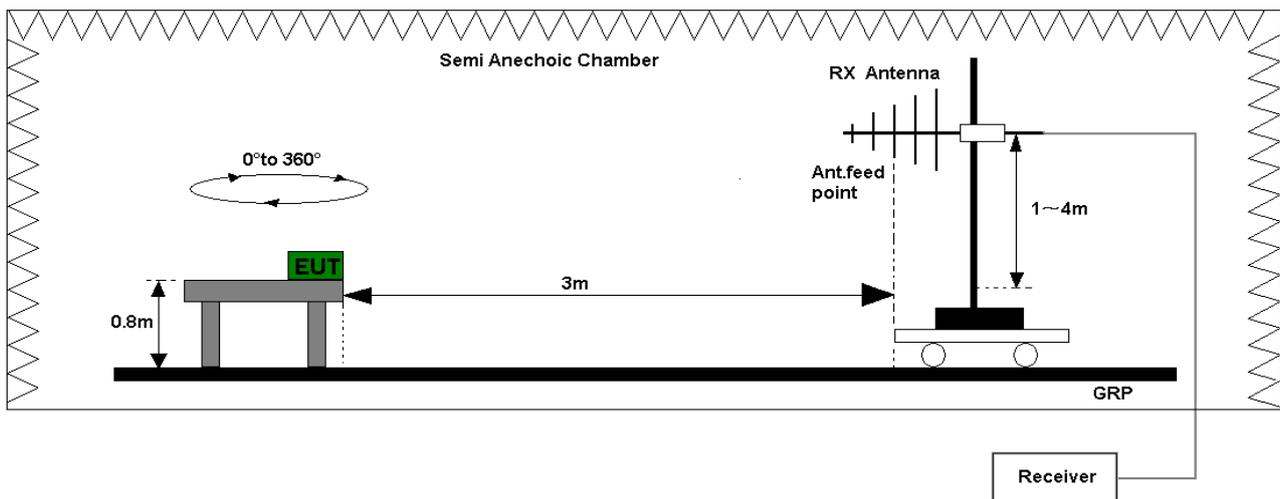


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

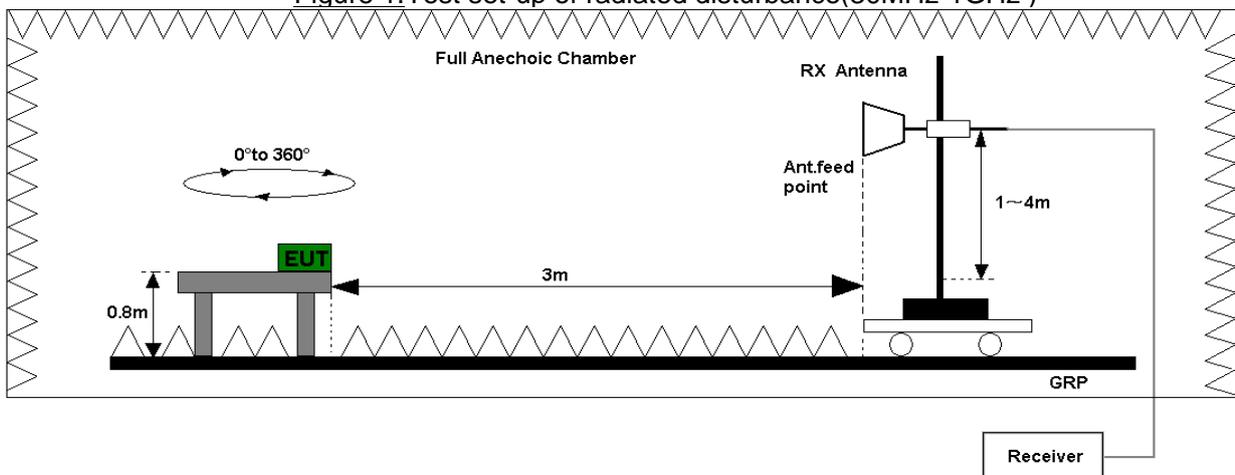


Figure 2. Test set-up of radiated disturbance(above 1GHz)

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.

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 150 kHz to 30 MHz: 9 kHz;

The EUT was set in the shielded chamber and operated under nominal conditions.

4.2.2 Test Setup

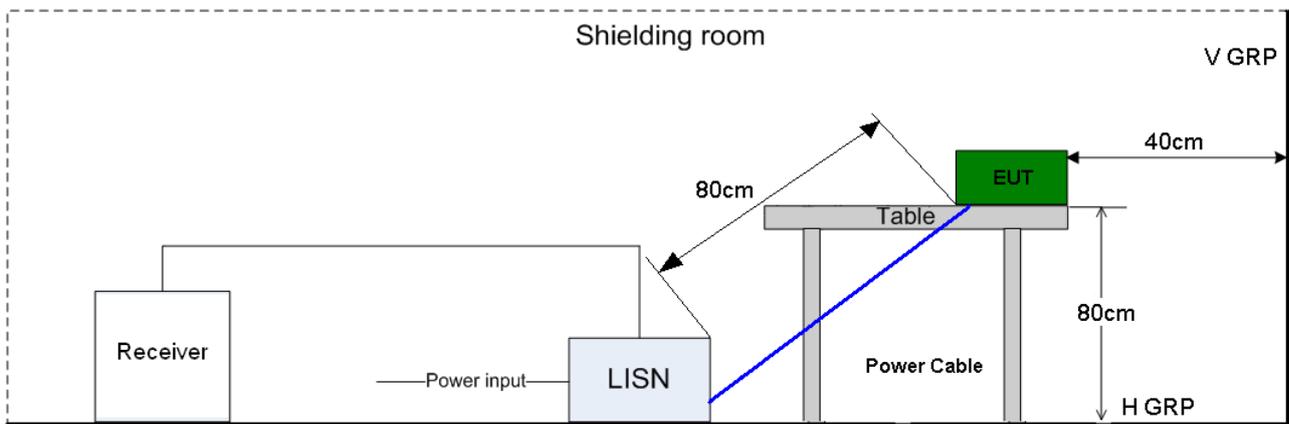


Figure 3. Test Set-up of conducted disturbance

4.2.3 Test Results

The EUT has met requirements for Conducted disturbance.

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	AV
0.15MHz~0.5MHz	66-56dB μ V	56-46 dB μ V
0.5MHz-5MHz	56dB μ V	46 dB μ V
5MHz~30MHz	60dB μ V	50 dB μ V

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	100150	R&S	Jun. 23, 2016	12
	Broadband Antenna	VULB 9163	9163-356	SCHWARZBECK	Apr. 29, 2017	24
	Horn Antenna	HF906	100684	R&S	Apr. 29, 2017	24
CE	EMI Test receiver	ESCI	101163	R&S	Nov. 10, 2016	12
	Artificial Mains Network	ENV216	100382	R&S	Jun. 23, 2016	12
Software Information						
Test Item	Software Name		Manufacturer		Version	
RE	EMC32		R&S		V9.25.0	
CE	EMC32		R&S		V9.25.0	

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:

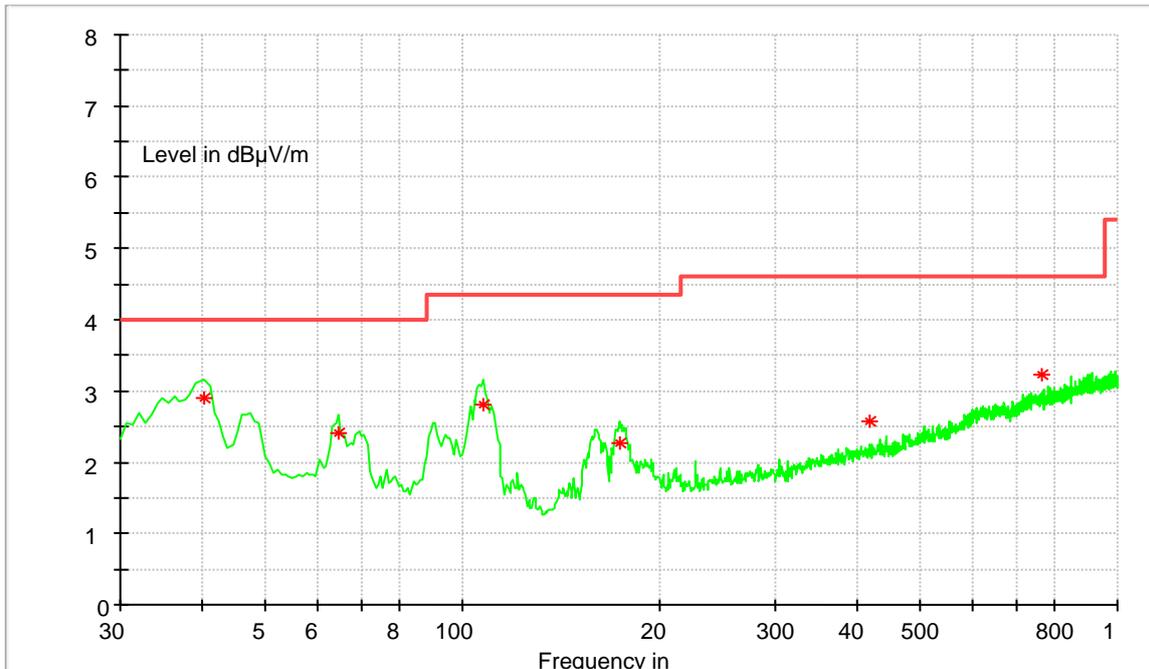
System Measurement Uncertainty		
	Items	Extended Uncertainty
RE(30MHz-1GHz)	Field strength (dB μ V/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dB μ V/m)	U=5.1dB; k=2
CE	Disturbance Voltage (dB μ V)	U=2.6dB; k=2

7 Test Data and Graph

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

7.1.1 30MHz~1GHz



MEASUREMENT RESULT: QP Detector

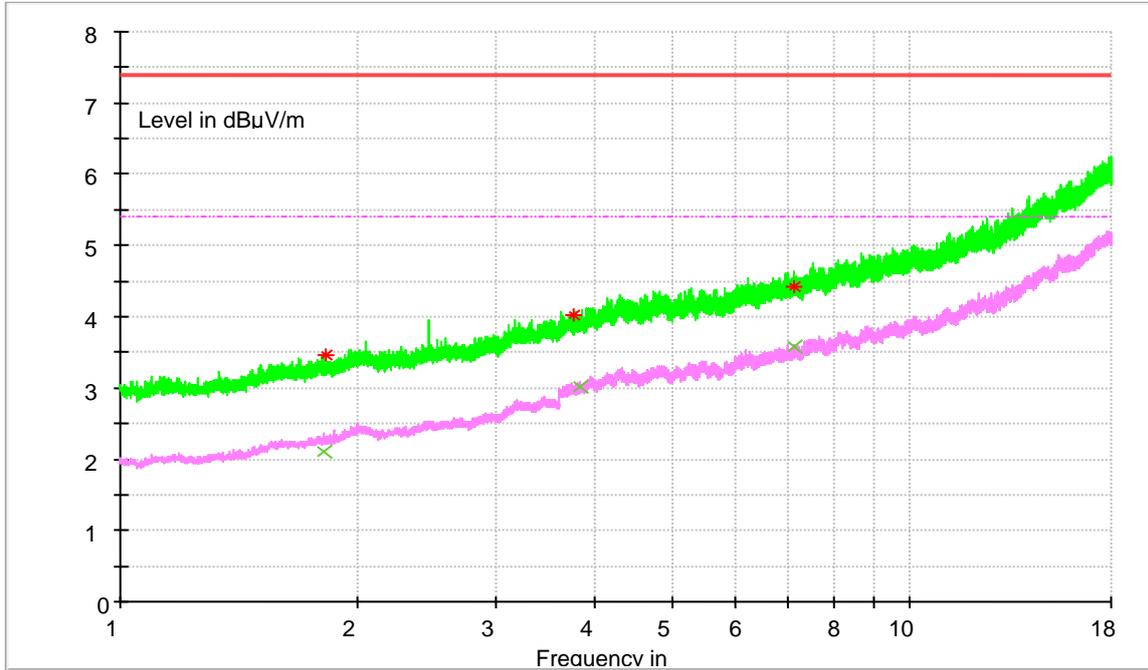
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
40.31714	29.04	14.9	40	10.96	101	296	VERTICAL
64.58286	24.11	11.7	40	15.89	107	133	VERTICAL
107.2057	28.08	13.4	43.5	15.42	100	67	VERTICAL
174.258	22.77	11	43.5	20.73	101	295	HORIZONTAL
419.5791	25.79	18.1	46	20.21	161	167	VERTICAL
765.4991	32.3	23.6	46	13.7	387	84	VERTICAL

Note:

Level = Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

7.1.2 1GHz~18GHz



MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarisation
1818.814	34.69	-10.5	74	39.31	157	184	VERTICAL
3764.645	40.31	-3.5	74	33.69	135	94	VERTICAL
7130.192	44.17	3	74	29.83	141	298	VERTICAL

MEASUREMENT RESULT: AV Detector

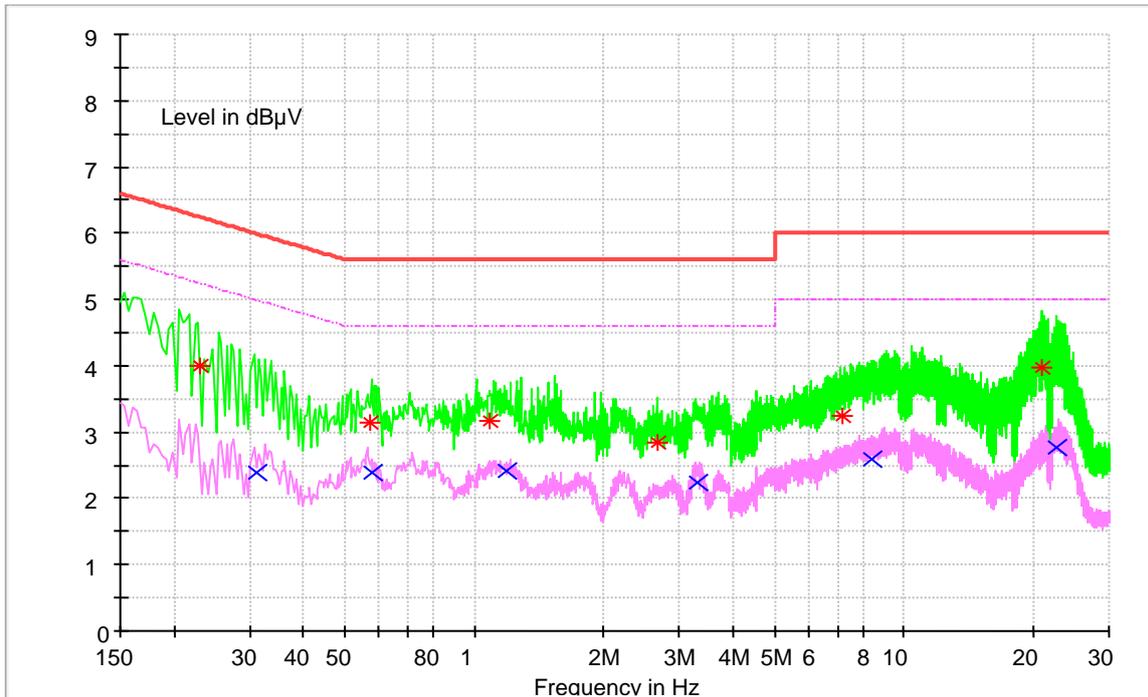
Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarisation
1816.185	20.97	-10.5	54	33.03	110	164	HORIZONTAL
3828.226	30.08	-2.7	54	23.92	107	345	HORIZONTAL
7150.827	35.81	3	54	18.19	288	24	HORIZONTAL

Note:

Level = Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is calculated 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	Line	Transd dB	Margin dB	Limit dBµV	PE
0.229568	39.94	N	9.7	22.53	62.47	FLO
20.83579	39.68	N	10.2	20.32	60	FLO
7.158974	32.39	N	9.9	27.61	60	FLO
2.67034	28.36	N	9.8	27.64	56	FLO
0.569935	31.43	N	9.7	24.57	56	FLO
1.092022	31.7	L1	9.7	24.3	56	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Line	Transd dB	Margin dB	Limit dBµV	PE
22.76607	27.57	N	10.3	22.43	50	FLO
8.412176	25.98	N	10	24.02	50	FLO
0.313124	23.85	L1	9.7	26.04	49.89	FLO
0.576224	23.9	N	9.7	22.1	46	FLO
1.194758	24.1	N	9.7	21.9	46	FLO
3.29599	22.46	N	9.8	23.54	46	FLO

Note:

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

The reading level is calculated by software which is not shown in the sheet.

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