



EMC Test Report

Product Name: IDEOS S7 Slim

Model Number: S7-201w

Report No: SYBH-Z(EMC)084032011-2

FCC ID: QISS7-201W

IC ID:6369A-S7201W

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Notice 1

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2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 97456.
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Notice 2

Modification Information:

Modification Information

Modification Information	1	
	2	
	3	<i>Not Applicable!</i>
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1 Status

1.1 Product Information

CLIENT:	Huawei Technologies Co., Ltd.
ADDRESS:	Bantian Longgang District Shenzhen, P.R. China
MANUFACTURING DESCRIPTION	IDEOS S7 Slim
MANUFACTURERS MODEL NUMBER	S7-201w

1.2 Test Site

Site 1:
EMC LABORATORY OF RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD

1.3 Test environment condition

Ambient temperature	20~25°C
Relative humidity	45~55%
Atmospheric pressure	101kPa

2 Summary of Results

Table below shows a brief summary of the results obtained.

Summary of results

EUT Classification: Wireless Terminal				
Test Items	Test Configuration & Test Mode	Required Performance Criteria	Result	Site
<u>Radiated Emissions</u> Enclosure Port	TC1 (TM3-TM4)	N/A	Pass	Site1
<u>Conducted Emissions</u>	TC1 (TM1-TM4)	N/A	Pass	Site1
Receiver Spurious Emission	TC1 (TM3~TM4)	N/A	Pass	Site1

Note:
1, Measurement taken is within the measurement uncertainty of measurement system.
2, TC = Test configuration

3 Equipment Specification

3.1 General Description

IDEOS S7 Slim with Bluetooth and Wi-Fi provides convenient and quality services such as picture, audio, video, network, and information base on the Android™ open operating system, the S7 Slim serves a powerful tool to obtain quality network and multimedia services conveniently, rendering entertainment to users' work and life. The S7 Slim has a stylish appearance and a portable design. With a full touch screen, an ultra-thin design, the S7 Slim presents a stylish and technically appealing appearance.

Main Equipment Technical Data

Description:	IDEOS S7 Slim
Models:	S7-201w
Input Rated Voltage:	5V
Extreme Voltage	4.75V and 5.25V
Rated Power	<6W
Dimensions	About 200mm (Length)×109.5mm (Width)×12.5mm (Height)
Weight	About 0.45Kg

Sub-Assembly Identity

Mode	Work Frequency	
	Transmitt Frequency (MHz)	Receive Frequency (MHz)
Bluetooth	2400-2483.5	
WIFI	2400-2483.5	
GPS	/	1575.42

3.2 Sub-Assembly Identity

Sub-Assembly Identity

Board				
	Qty.	Hardware Version		Description
	1	HIDS70IM		Main Board
	1	HIDS70HA		Auxiliary Board
	1	HIDS70CC		Soft Board Begin the Main Board and the Auxiliary Board
	1	HIDS70PA		boot-strap soft board
	1	HIDS70VL		volume soft board
	1	HIDS70SL		left speaker soft board
	1	HIDS70SR		Right speaker soft board
	1	LCD Panel		LCD Panel
Accessory				
Name	Qty.	Manufacture	Serials number	Description
Adapter	1	SHENZHEN FRECOM	/	Model:FPS012USA-050200 Input voltage: 100V~240V AC and 50/60 Hz,0.3A Output voltage: +5V --- 2A
Rechargeable Li-ion	1	Huawei Technologies Co.,Ltd.	LGCAC30HI5307418	Battery Model: HB4G1H Rated capacity: 3200 mAh Nominal Voltage: --- +3.7V Charging Voltage: --- +4.2V
Dock	1	Huawei Technologies Co.,Ltd.	/	This dock is specially designed for the IDEOS S7 Slim (S7 Slim for short). It is used as a dedicated charger as well as a stand for the S7 Slim, facilitating its use.

4 System Configuration during EMC Test

The Equipment under Test (EUT) was functioning correctly during all tests. The EUT was installed within the test site and was configured to simulate a typical user installation.

4.1 Cables Used during Test

Cable Used during Test

Cable	Quantity	Type of Cable
AC Power	1	Unshielded
HDMI	1	shielded
Earphone	1	Unshielded

4.2 Associated Equipment Used during Test

Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Cal Date
Radio Communication Tester	CMU200	R&S	1117057	2010-08-04
Notebook	D630	DELL	0W7349	N/A
Television	KLV-20S400A	SONY	5017657	N/A

4.3 Test Configurations and Test Mode

4.3.1 Test Configuration.

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

TC1:EUT powered with an adapter and connected to the test system (Base Station Simulator).

Configuration table

TC1	TM1~TM4
-----	---------

4.3.2 Test Mode

There were 4 test Modes. TM1 to TM4 were shown in the diagrams below:

TM1	operate in traffic mode WIFI;
TM2	operate in traffic mode Bluetooth;
TM3	operate in idle mode WIFI;
TM4	operate in idle mode Bluetooth;

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

4.4 Test conditions and test Connections

4.4.1 Test Conditions

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

4.4.2 Test Connections

Traffic Mode:

The EUT is required to be in the traffic mode, a call is set up according to the generic call set up procedure and enter the EUT into loop back test mode.

Please refer to following figure:

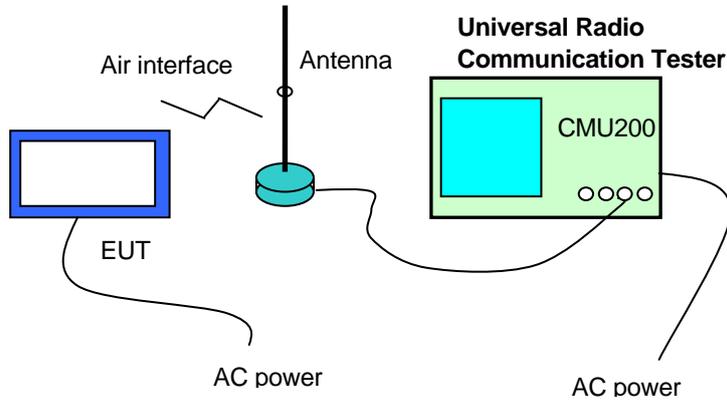


Figure 1.: Test Configuration

Idle Mode:

The EUT is required to be in the idle mode.

Please refer to following figure:

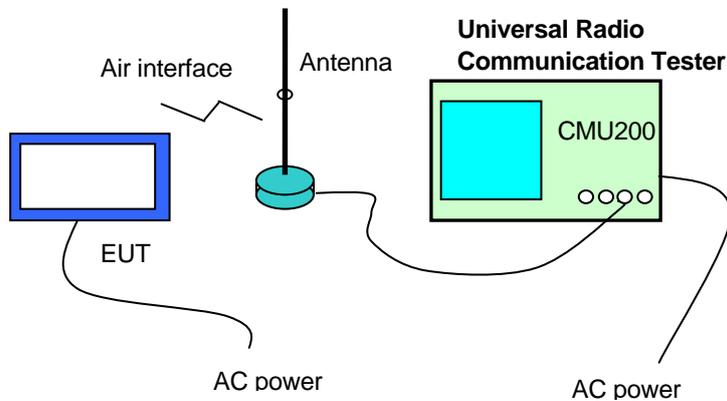


Figure 2. Test Configuration

5 Electromagnetic Interference (EMI)

5.1 Radiated Disturbance 30MHz to 18GHz

5.1.1 Test Procedure

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

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 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 receive antenna has two polarizations V and H.

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

Measurement bandwidth: 30 MHz – 1000 MHz: 120 k Hz

Measurement bandwidth: 1GHz – 18GHz: 1MHz

Test set up figure:

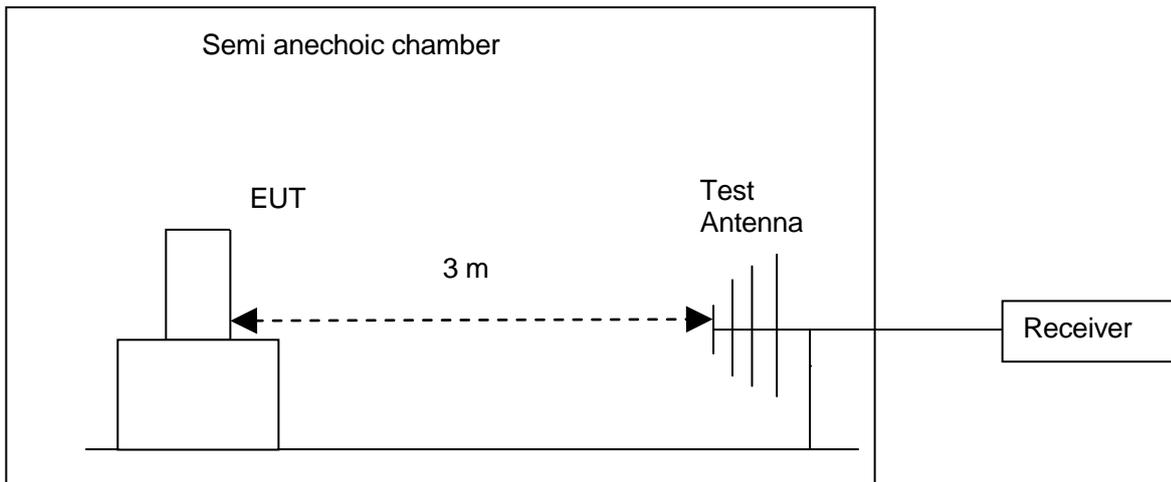


Figure 3. Test set-up

5.1.2 Test Results

The EUT has met the requirements for Radiated Emission of enclosure port.

Test Limits

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

5.2 Conducted Disturbance 0.15 MHz to 30MHz

5.2.1 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 from LISN. The set-up and test methods were according to ANSI C63.4.

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.

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

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

Test Set-up figure:

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

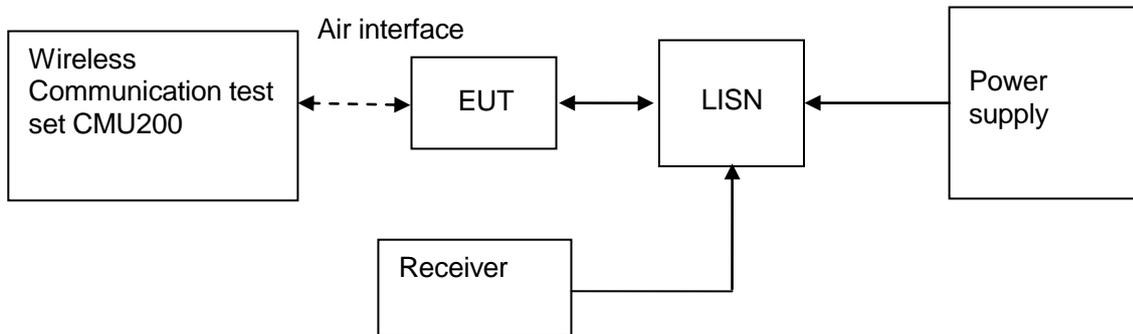


Figure 4. Test Set-up

5.2.2 Test Results

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

Test Limit of AC Power Port

Frequency range	150kHz~ 30MHz	
Classification	Class B	
Limit(Class B)	Voltage limits	
	QP	AV
0.15MHz~0.5MHz	66~56 dB μ V	56~46 dB μ V
0.5MHz~5MHz	56 dB μ V	46 dB μ V
5MHz~30MHz	60 dB μ V	50 dB μ V

6 Receiver Spurious Emission (Radiated)

6.1.1 Test Procedure

The EUT was connected to the Spectrum Analyzer or equivalent via one RF RX diversity connector, and other RF connectors were connected to match loads. The EUT was controlled to transmit maximum power and to be operated in the normal receive mode by Console Computer. Measure and record the Receiver Out-band Spurious Emissions of the EUT by the Spectrum Analyzer or equivalent.

According to IC RSS-Gen clause 4.10, the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

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 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 receive antenna has two polarizations V and H.

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

Measurement bandwidth: 30 MHz – 1000 MHz: 120 kHz
 Measurement bandwidth: 1GHz – 18GHz: 1MHz

Test set up figure:

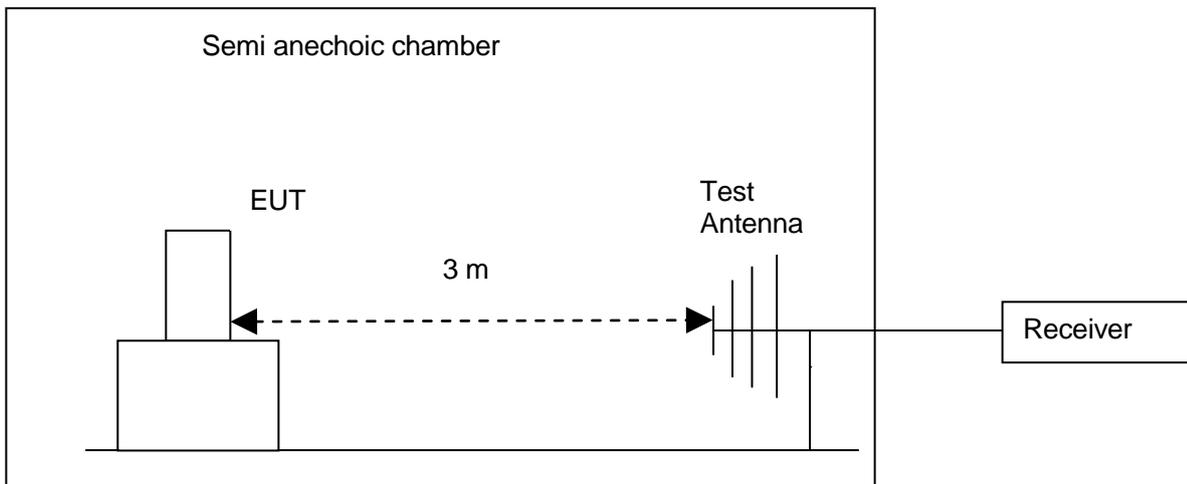


Figure 5. Test set-up

6.1.2 Test Results

The EUT has met the requirements for Radiated Emission of enclosure port.

Test Limits

Frequency of Emission (MHz)	Radiated Limit	
	Unit($\mu\text{V}/\text{m}$)	Unit($\text{dB}\mu\text{V}/\text{m}$)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

7 Main Test Instruments

Main Test Equipments

Test item	Test Instrument	Model	Manufacturer	Cal-Date	Cal Interval (month)
RE&CE	EMI Test receiver	ESU26	R&S	Jun.25, 2010	12
	Broadband Antenna	VULB 9163	SCHWARZBECK	May.15, 2010	12
	Horn Antenna	HF906	R&S	May.15, 2010	12
	LISN	ENV216	R&S	Jun.25.2010	12
Software Information					
Test Item	Software Name	Manufacturer	Version		
RE/CE	ES-K1	R&S	1.7.1		

8 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

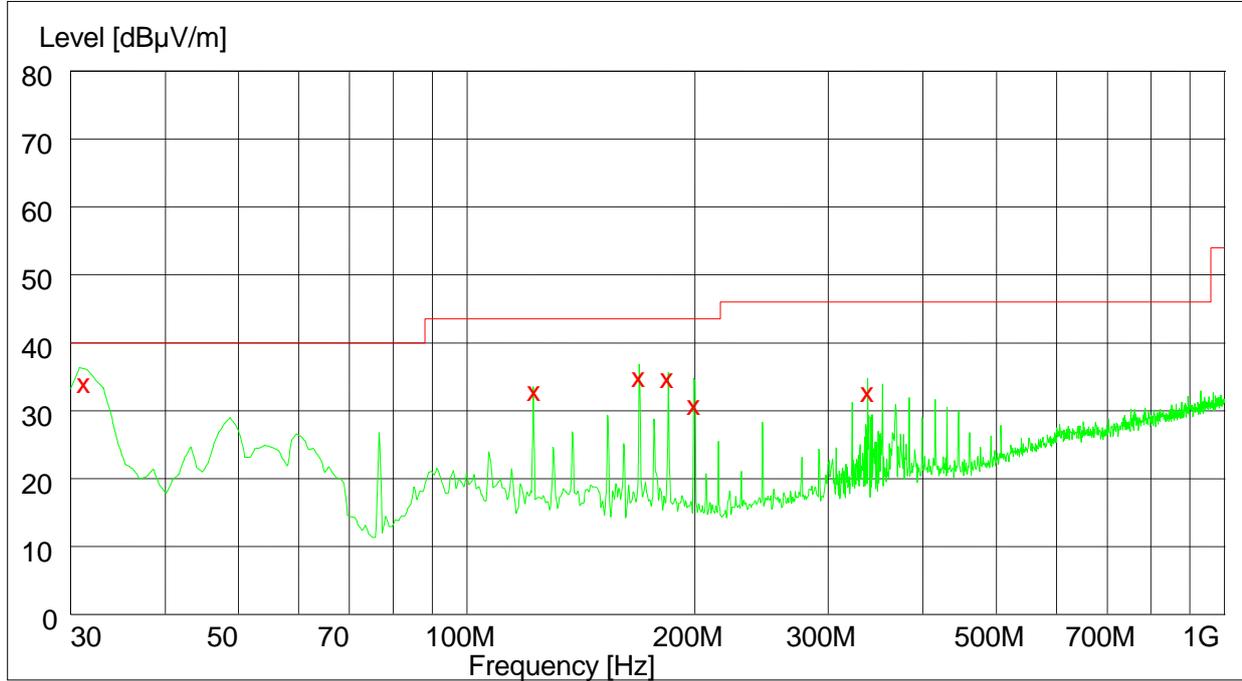
Items		Extended Uncertainty
RE	Field strength (dB μ V/m)	U=4.1dB; k=2(30MHz-1GHz)
RE	Field strength (dB μ V/m)	U=4.1dB; k=2(1GHz-18GHz)
CE	Disturbance Voltage (dB μ V)	U=3.4dB; k=2

9 Graph and Data of Emission Test

9.1 Radiated Disturbance

This test was carried out in all the test modes, Here only the worst test result was shown.

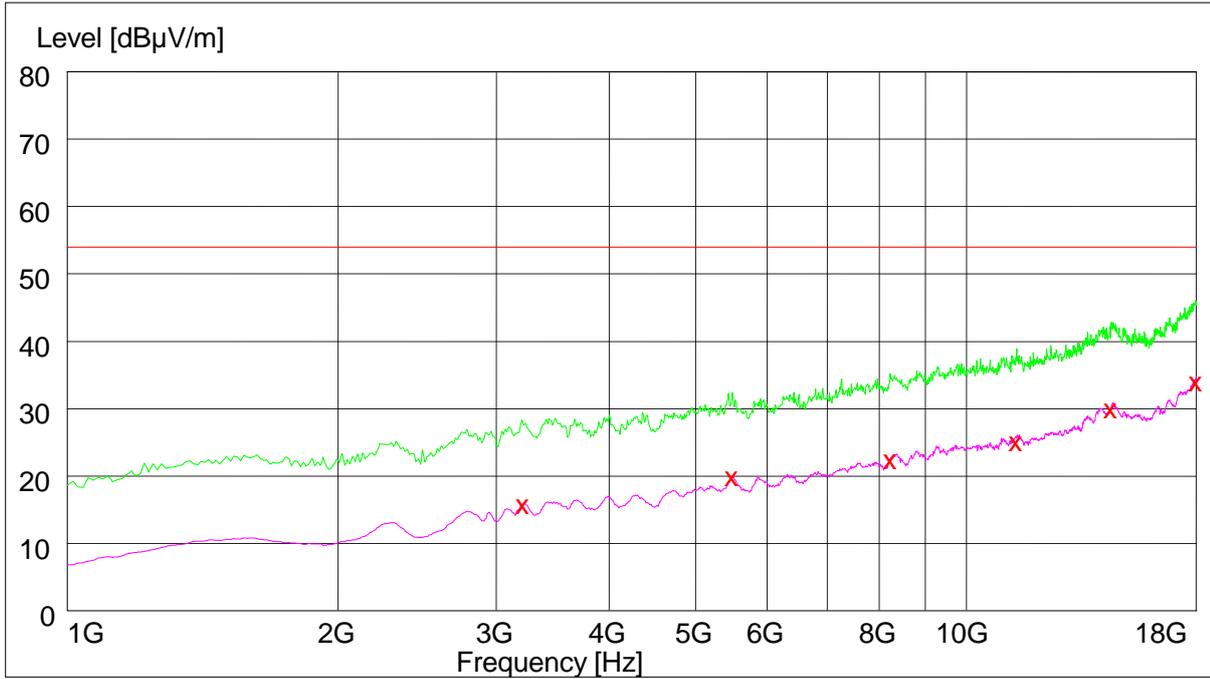
30MHz-1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
31.260000	34.90	11.7	40.0	5.1	100.0	133.00	VERTICAL
122.884000	33.60	10.1	43.5	9.9	200.0	336.00	HORIZONTAL
168.964000	35.60	10.0	43.5	7.9	100.0	265.00	VERTICAL
184.304000	35.50	11.4	43.5	8.0	190.0	27.00	VERTICAL
199.704000	31.60	12.1	43.5	11.9	100.0	359.00	VERTICAL
337.892000	33.50	16.8	46.0	12.5	114.0	112.00	HORIZONTAL

1GHz-18GHz



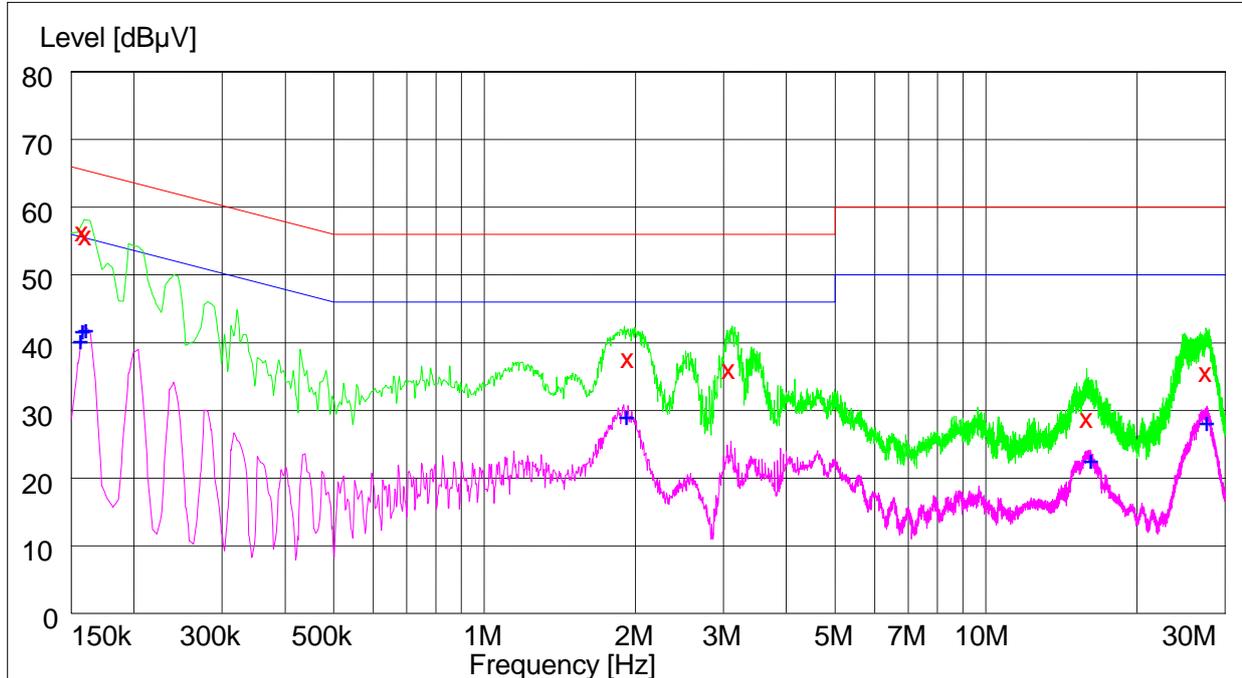
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3209.700000	14.70	-8.3	54.0	39.3	100.0	288.00	VERTICAL
5481.000000	19.10	-2.4	54.0	34.9	100.0	338.00	HORIZONTAL
8219.100000	21.50	2.6	54.0	32.5	100.0	6.00	VERTICAL
11361.700000	24.70	7.1	54.0	29.3	100.0	135.00	VERTICAL
14470.100000	29.40	12.3	54.0	24.6	100.0	73.00	HORIZONTAL
17960.200000	32.90	17.1	54.0	21.1	100.0	248.00	HORIZONTAL

9.2 Conducted Disturbance

This test was carried out in all the test modes, Here only the worst test result was shown.

AC Power Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.158000	57.20	10.1	66	8.8	L1	FLO
0.160000	56.60	10.1	66	9.4	L1	FLO
1.932000	38.40	10.1	56	17.6	L1	FLO
3.078000	36.90	10.2	56	19.1	L1	FLO
15.882000	29.70	10.3	60	30.3	L1	FLO
27.444000	36.40	10.4	60	23.6	L1	FLO

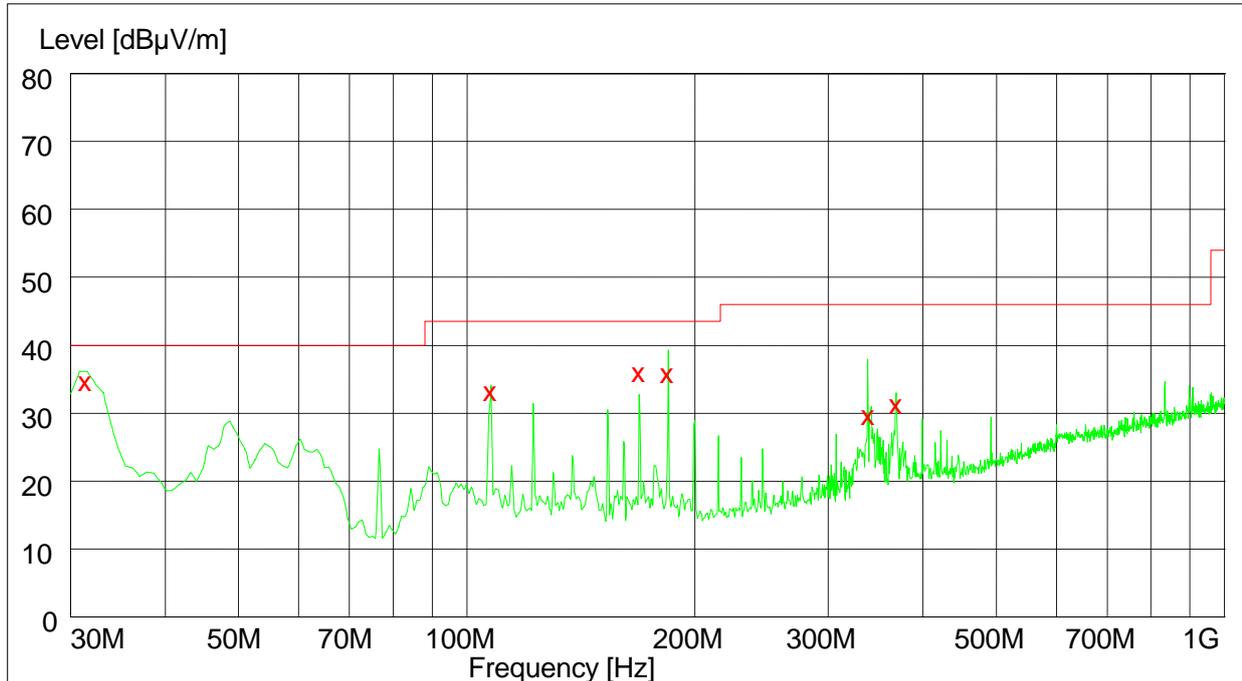
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.156000	41.10	10.1	56	14.9	L1	FLO
0.158000	42.50	10.1	56	13.5	L1	FLO
0.160000	42.80	10.1	56	13.2	L1	FLO
1.920000	30.00	10.1	46	16.0	N	FLO
16.196000	23.40	10.3	50	26.6	L1	FLO
27.580000	29.10	10.4	50	20.9	L1	FLO

9.3 Receiver Spurious Emission Radiated

This test was carried out in all the test modes, Here only the worst test result was shown.

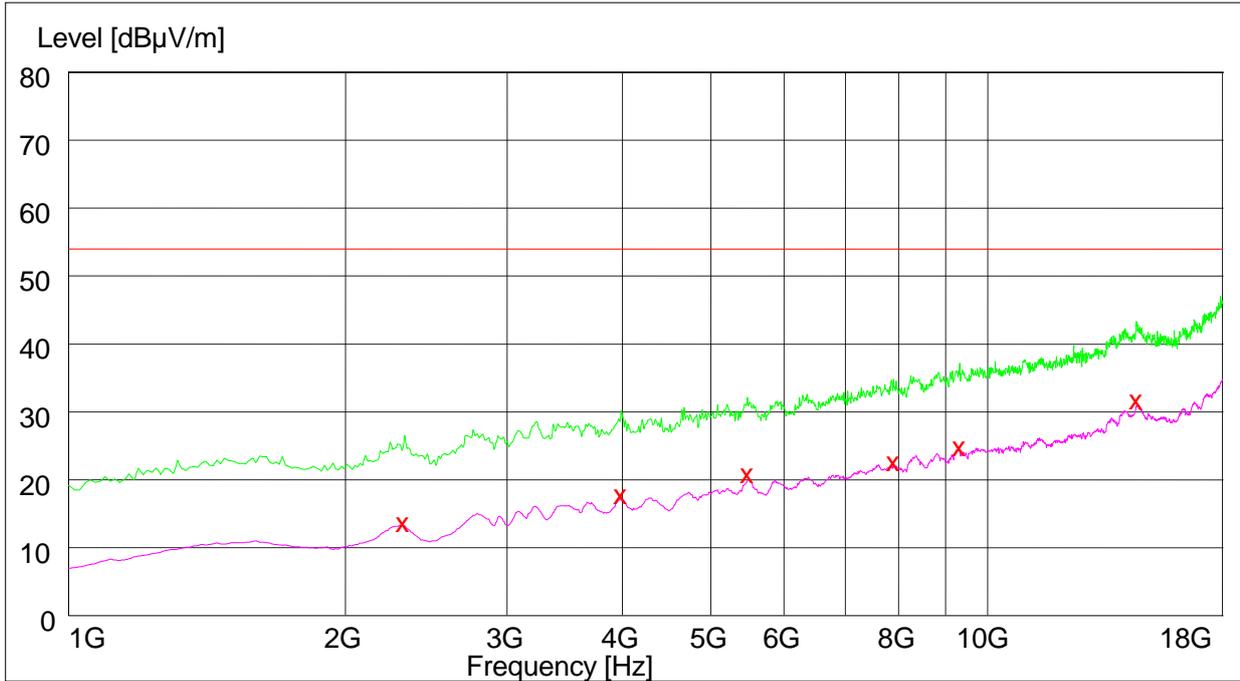
30MHz-1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
31.372000	35.40	11.7	40.0	4.6	100.0	130.00	VERTICAL
107.540000	33.90	12.5	43.5	9.6	100.0	162.00	VERTICAL
168.964000	36.80	10.0	43.5	6.7	100.0	116.00	VERTICAL
184.304000	36.70	11.4	43.5	6.8	102.0	329.00	VERTICAL
338.792000	30.50	16.8	46.0	15.5	102.0	275.00	HORIZONTAL
368.632000	32.10	17.4	46.0	13.9	109.0	359.00	HORIZONTAL

1GHz-18GHz



MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
2311.700000	12.40	-11.7	54.0	41.6	100.0	152.00	HORIZONTAL
3988.000000	16.50	-5.8	54.0	37.5	100.0	220.00	HORIZONTAL
5473.900000	19.10	-2.4	54.0	34.9	100.0	135.00	HORIZONTAL
7892.200000	21.50	1.8	54.0	32.5	100.0	89.00	VERTICAL
9320.700000	23.30	4.7	54.0	30.7	100.0	331.00	HORIZONTAL
14507.800000	29.90	12.4	54.0	24.1	100.0	2.00	VERTICAL

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