FCC
EMC Test Report

Product Name: HSPA USB Stick

Model Number: K3772

Report No: SYBH(Z-EMC)112112011-2

FCC ID: QISK3772

Reliability Laboratory of Huawei Technologies Co., Ltd.

Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China

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Notice

1. The laboratory has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L0310.
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.
3. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-2.
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7. If there is any dissidence for the test report, please file objection to the test centre within 15 days from the date of receiving the test report.
8. Normally, the test report is only responsible for the samples that have undergone the test.
9. Context of the test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of the laboratory.

Applicant:	**Huawei Technologies Co., Ltd.**
Address:	**Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China**
Date of Receipt Test Item:	**Nov.22, 2011**
Start Date of Test:	**Nov.22, 2011**
End Date of Test:	**Nov.27, 2011**
Test Result:	**Pass**

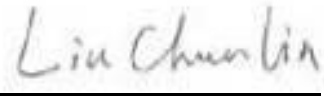
	Date	Name	Signature
Approved By	**2011-12-06**	**Liuchunlin**	
Reviewed By	**2011-12-06**	**Dailinjun**	
Operator	**2011-12-06**	**Daniel**	

TABLE OF CONTENT

1 General Information

1.1 EUT Description

EUT Description	
Product Name	HSPA USB Stick
Model Number	K3772
Serials Number	W5T01A11B1000034
Working Voltage	⎓ 5V
TX Frequency	GSM850: 824MHz To 849MHz PCS1900: 1850MHz To 1910MHz
RX Frequency	GSM850: 869MHz To 894MHz PCS1900: 1930MHz To 1990MHz
HW Version	CH2E303SM
SW Version	22.153.06.DEM.5011
EUT Accessory	
USB Cable	Quantity :1 Length: 80cm Type of Cable : shielded

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

1.2 Test Site Information

Site 1:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	Bantian Longgang District Shenzhen, P.R. China

1.3 Applied Standard

APPLIED STANDARD	
	FCC 47 CFR FCC Part 15 SubpartB

2 Summary of Results

Summary of Results				
Test Items	**Test Mode**	**Performance Class & Required Performance Criteria**	**Result**	**Site**
Radiated Emissions Enclosure Port	Mode2 Mode4	CLASS B	Pass	Site1
Conducted Emissions ☐DC Power Port ☒AC Power Port ☐Telecommunication Ports	Mode1 Mode3	CLASS B	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement system. 2, ☒ The item has been tested; ☐ The item has not been tested.				

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 in normal operation, which was in this test report and defined as:

Test Mode	
Mode 1:	USB Copy(EUT with PC)+ Traffic
Mode 2:	USB Copy(EUT with PC)+Idle
Mode 3:	USB Cable + USB Copy(EUT with PC)+ Traffic
Mode 4:	USB Cable + USB Copy(EUT with PC)+Idle

Remark：When the EUT have multiple Data cable, need separate test with Data cable. Here only the worst cases are recorded in this report.

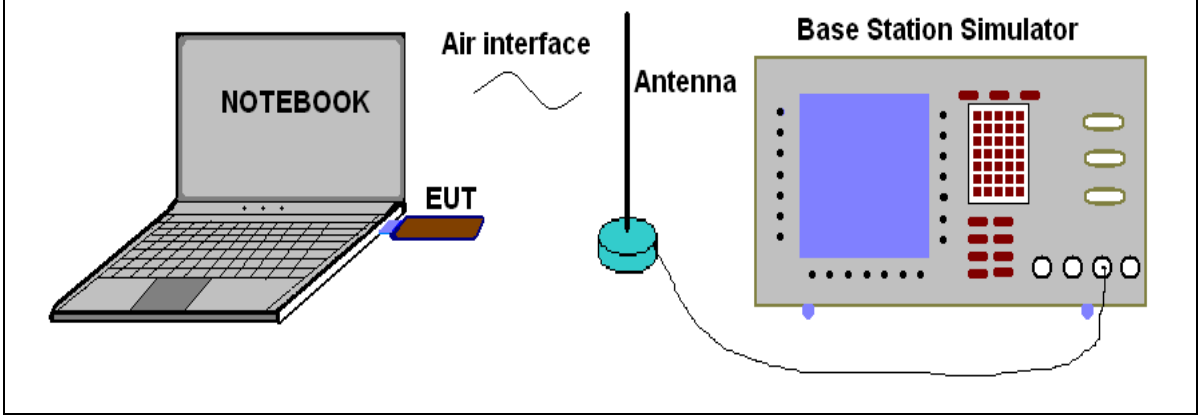
USB Copy:
State of EUT when transfered the data between the EUT and PC

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

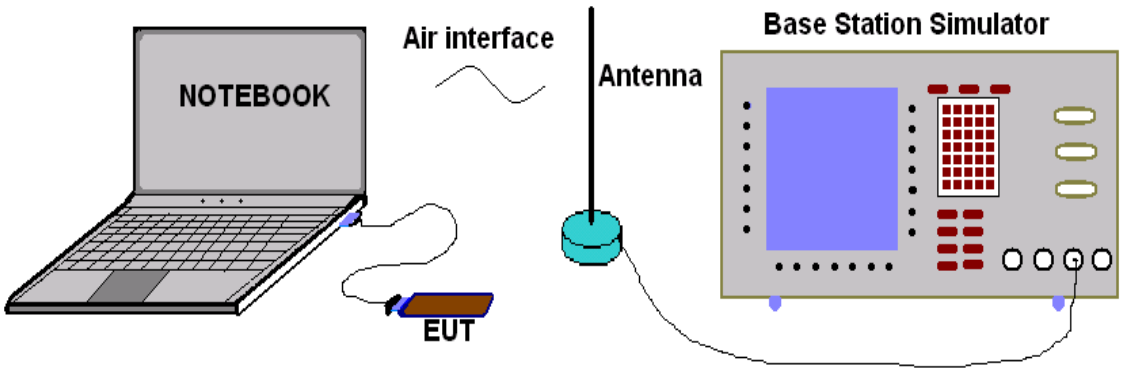
Idle Mode:
State of EUT when switched on but with no Radio Resource Control (RRC) connection

3.2 Configurations of Test System

Connection Diagram (Mode 1/ Mode 2)



Connection Diagram (Mode 3/ Mode 4)



3.3 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Cal Date
Radio Communication Tester	CMU200	R&S	3607033573	2011-03-17
Notebook	D620	DELL	3106085412	NA

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. 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 30MHz to18GHz 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 receive antenna has two polarizations V and H.

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

4.1.2 Test setup

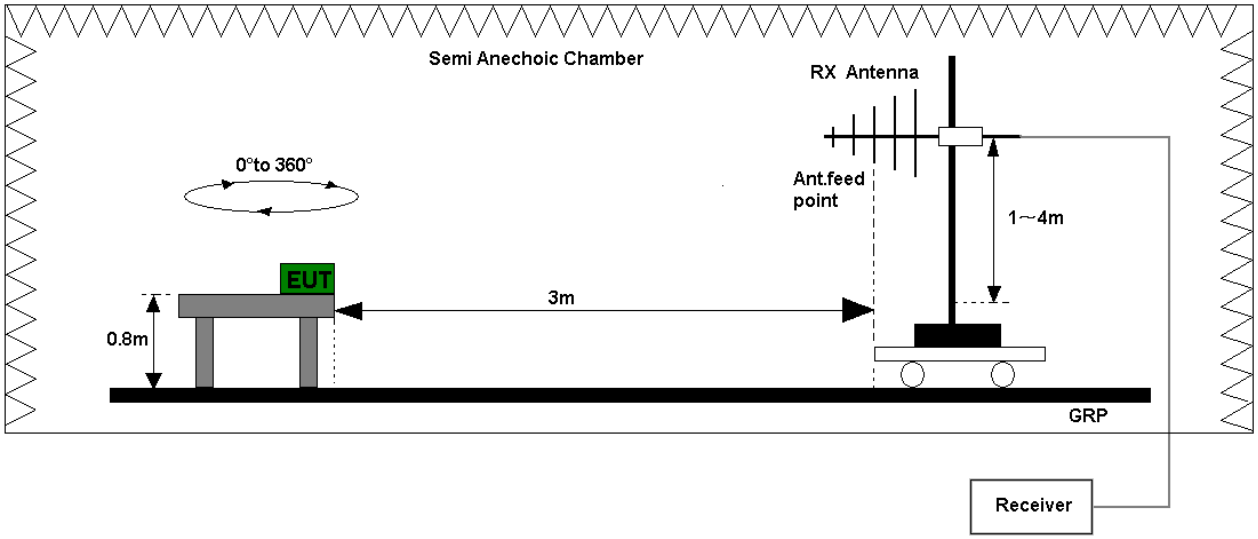


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

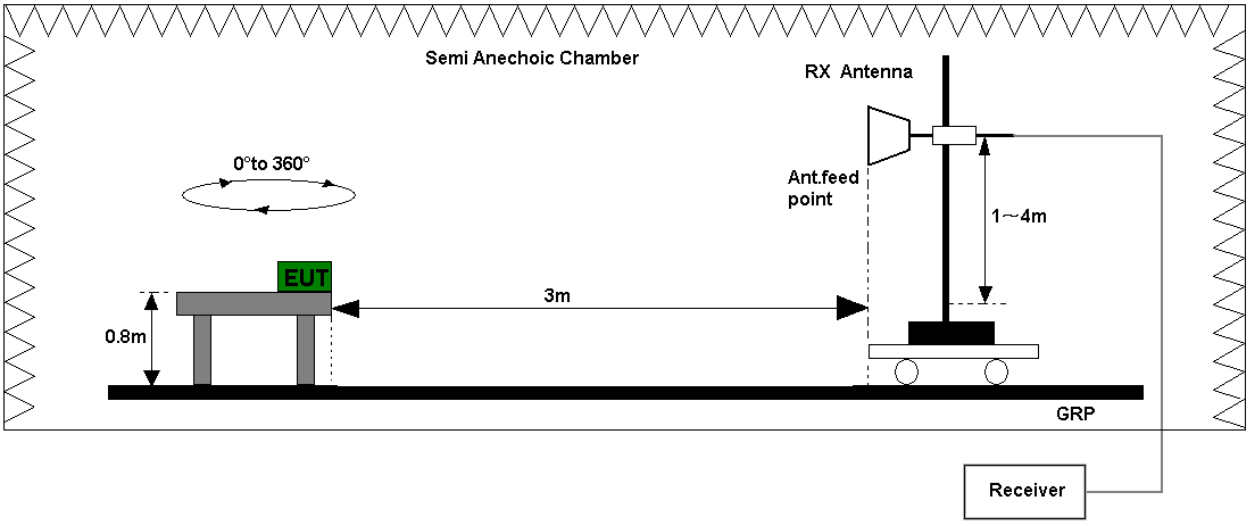


Figure 2. Test set-up of radiated disturbance(above 1GHz)

4.1.3 Test Results

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

Test Limits				
Frequency of Emission (MHz)	Radiated Limit			
	Unit(μV/m)		Unit(dBμV/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

Test environment condition:

Performed Item	Item	Required	Actual
Radiated Emission	Ambient temperature	15°C～35°C	22°C
	Relative humidity	25%～75%	55%
	Atmospheric pressure	86 kPa～106kPa	100kPa

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 0.8m 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.
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 150kz to 30 MHz: 9 kHz;
The EUT was setup in the screened chamber and operated under nominal conditions.

4.2.2 Test Setup

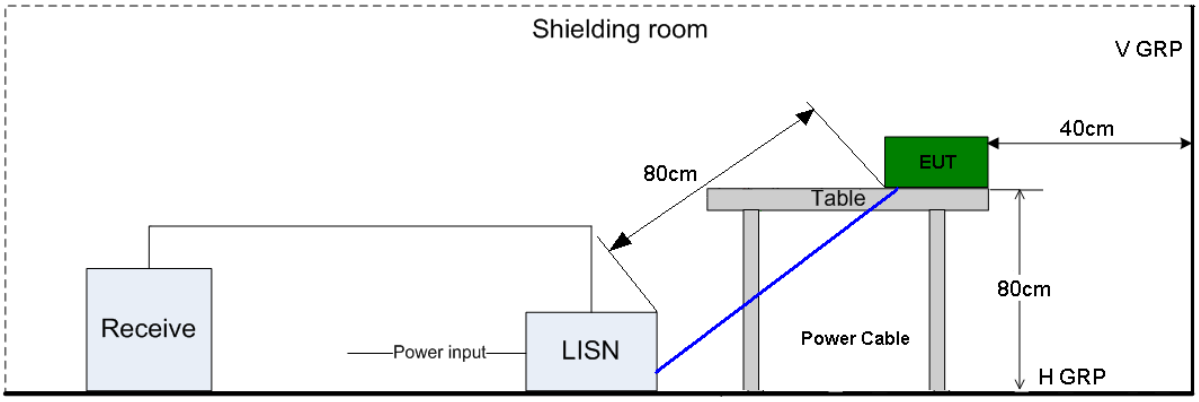


Figure 3. Test Set-up of conducted disturbance

4.2.3 Test Results

The EUT has met requirements for Conducted disturbance of power lines.
The test data see section 7.2 of this report.

Test Limit of AC Power Port		
Frequency range	**150kHz ~ 30MHz**	
Frequency	Voltage limits	
	QP	AV
0.15MHz~0.5MHz	66-56dBμV	56-46 dBμV
0.5MHz-5MHz	56dBμV	46 dBμV
5MHz~30MHz	60dBμV	50 dBμV

Test environment condition:

Performed Item	Item	Required	Actual
Conducted Disturbance	Ambient temperature	15°C～35°C	22°C
	Relative humidity	25%～75%	55%
	Atmospheric pressure	86 kPa～106kPa	100kPa

5 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	May.30, 2011	12
	Broadband Antenna	VULB 9163	SCHWARZBECK	May.16, 2011	12
	Horn Antenna	HF906	R&S	May.16, 2011	12
	Artificial Mains Network	ENV216	R&S	May.30, 2011	12

Software Information			
Test Item	**Software Name**	**Manufacturer**	**Version**
RE/CE	ES-K1	R&S	1.7.1

6 System Measurement Uncertainty

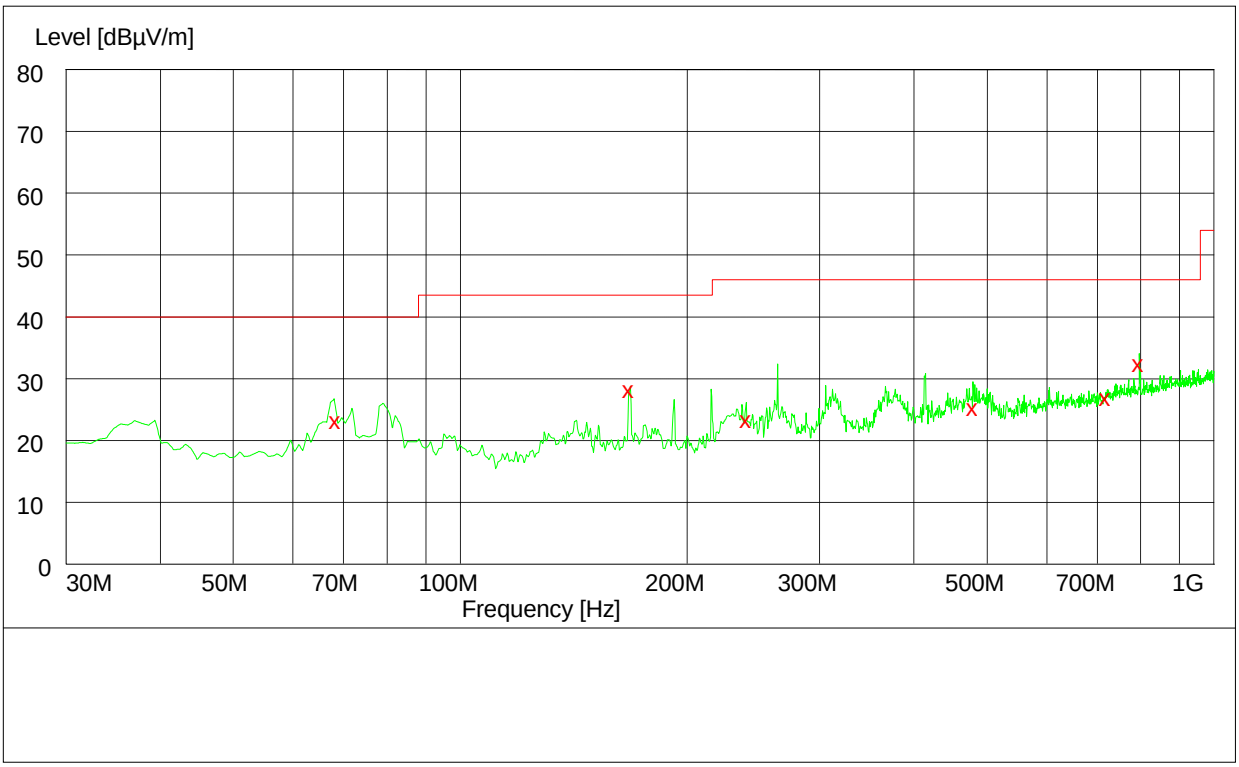
For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty		
Items		**Extended Uncertainty**
RE(30MHz-1GHz,)	Field strength (dBμV/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dBμV/m)	U=4.1dB; k=2
CE	Disturbance Voltage (dBμV)	U=3.4dB; k=2

7 Graph and Data of Emission Test

7.1 Radiated Disturbance

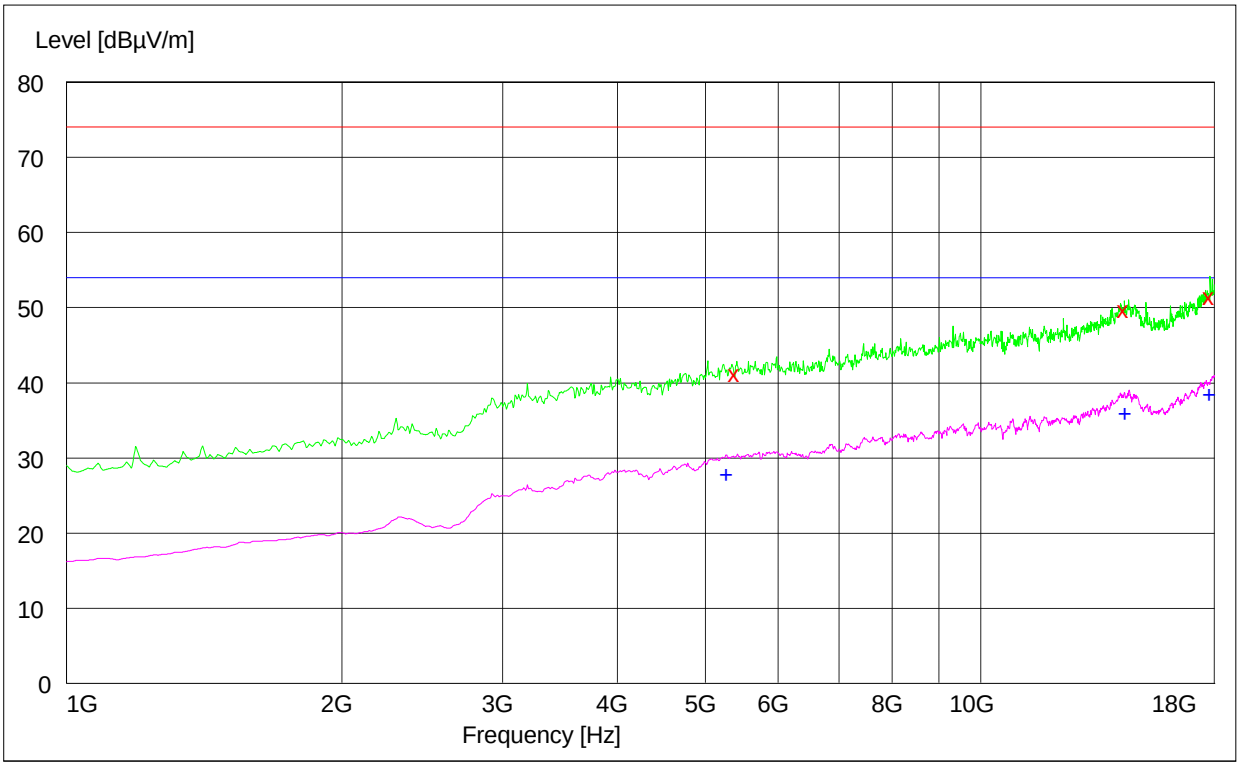
7.1.1 30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
68.504000	23.70	9.0	40.0	16.3	200.0	76.00	VERTICAL
168.008000	28.70	9.9	43.5	14.8	200.0	19.00	HORIZONTAL
239.996000	23.40	14.0	46.0	22.6	100.0	195.00	VERTICAL
479.956000	25.80	19.6	46.0	20.2	100.0	129.00	VERTICAL
719.800000	27.20	23.6	46.0	18.8	121.0	24.00	VERTICAL
796.388000	32.90	24.8	46.0	13.1	122.0	76.00	VERTICAL

7.1.2 1GHz~18GHz



MEASUREMENT RESULT: PK Detector

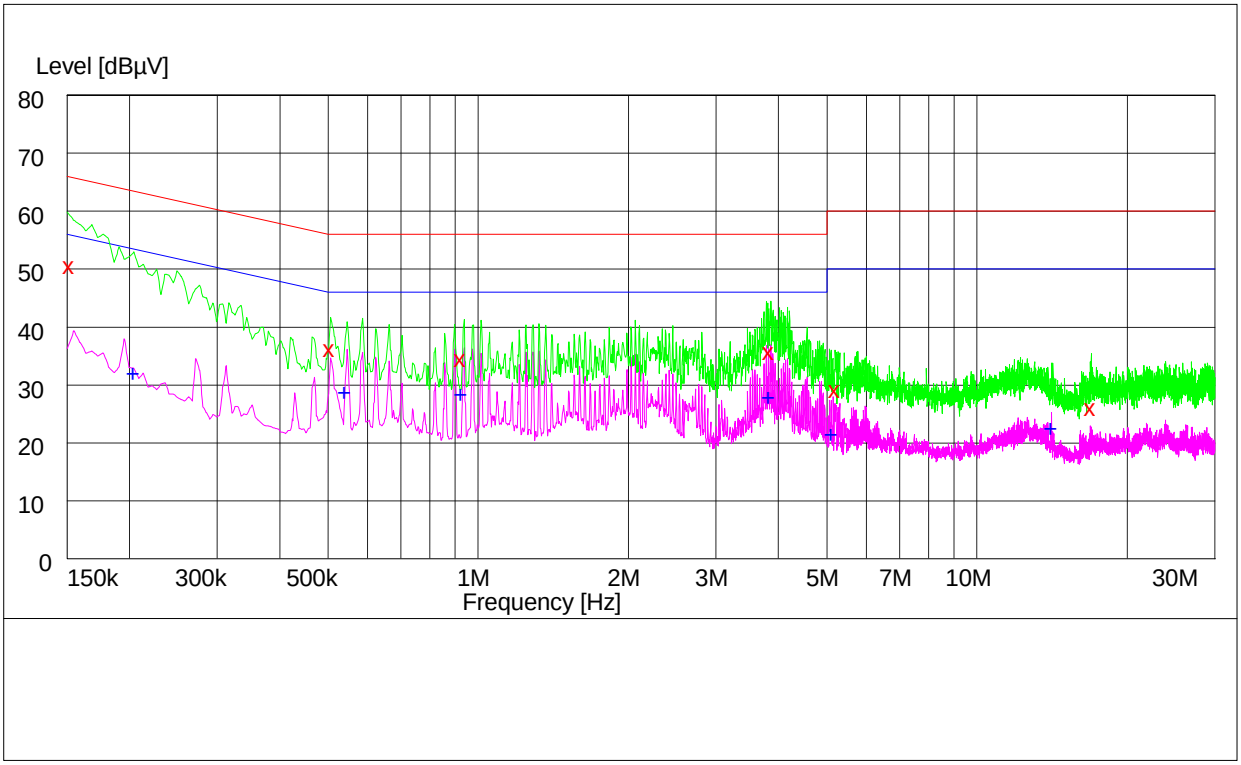
Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
5392.000000	41.40	-0.7	74.0	32.6	100.0	316.00	HORIZONTAL
14352.000000	49.90	14.8	74.0	24.1	100.0	12.00	HORIZONTAL
17813.500000	51.60	18.6	74.0	22.4	100.0	89.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
5277.000000	27.90	-1.4	54.0	26.1	100.0	360.00	HORIZONTAL
14394.500000	36.10	14.2	54.0	17.9	100.0	141.00	HORIZONTAL
17816.500000	38.60	18.7	54.0	15.4	100.0	0.00	HORIZONTAL

7.2 Conducted Disturbance

7.2.1 AC Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency	Level	Transducer	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.152000	51.20	10.1	66	14.8	L1	FLO
0.506000	37.10	10.1	56	18.9	L1	FLO
0.926000	35.30	10.1	56	20.7	L1	FLO
3.840000	36.50	10.2	56	19.5	N	FLO
5.214000	30.00	10.2	60	30.0	L1	FLO
16.952000	26.80	10.3	60	33.2	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency	Level	Transducer	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.204000	32.60	10.1	53	20.4	L1	FLO
0.542000	29.30	10.1	46	16.7	L1	FLO
0.924000	29.00	10.1	46	17.0	L1	FLO
3.832000	28.60	10.2	46	17.4	L1	FLO
5.126000	22.10	10.2	50	27.9	L1	FLO
14.092000	23.30	10.3	50	26.7	N	FLO

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