



EMC TEST REPORT

Applicant MobiWire SAS
FCC ID QPN-DAKOTA
Brand MobiWire
Product 2G Feature phone
Model Dakota
Report No. RXA1603-0036EMC
Issue Date April 22, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2014)/ ANSI C63.4 (2014)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Wei Liu

Reviewed by: Wei Liu

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Summary of measurement results

Number	Test Case	Clause in FCC Rules	Conclusion
1	Radiated Emission	15.109, ANSI C63.4-2014	PASS
2	Conducted Emission	15.107, ANSI C63.4-2014	PASS
Test Date: March 15, 2016~April 8, 2016			

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of TA technology (shanghai) co., Ltd).The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2 Test facility

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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2 General Description of Equipment under Test

2.1 Client Information

Applicant	MobiWire SAS
Applicant address	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX France.
Manufacturer	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Manufacturer address	No.999,Dacheng East Road,Fenghua City,Zhejiang

2.2 General information

EUT Description	
Device Type:	Portable Device
Product Name:	2G Feature phone
Model Number:	Dakota
HW Version:	V01
SW Version:	V01
IMEI:	359816061158386
Antenna Type:	Internal Antenna
Used Host Product:	PC; Model: DELL E6430(SN : 32RKWW1)
Test Mode:	Transfer Data Mode
EUT Accessory	
Adapter	Manufacturer: DONG GUAN AOHAI POWER TECHNOLOGY CO., LTD Model: A31-500550
Battery	Manufacturer: Ningbo Veken Battery Co., Ltd. Model: 178102335 (NL11) Power Rating: DC 3.7V, 1400mAh, Li-ion
USB Cable	100cm Cable
Remark: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.	



2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards

FCC Code CFR47 Part15B (2014)

ANSI C63.4 (2014)

3 Test Case Results

3.1 Radiated Emission

Ambient condition

Temperature	Relative humidity	Pressure
24°C~26°C	45%~50%	102.5kPa

Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated signal level.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.

Set the spectrum analyzer in the following:

Below 1GHz:

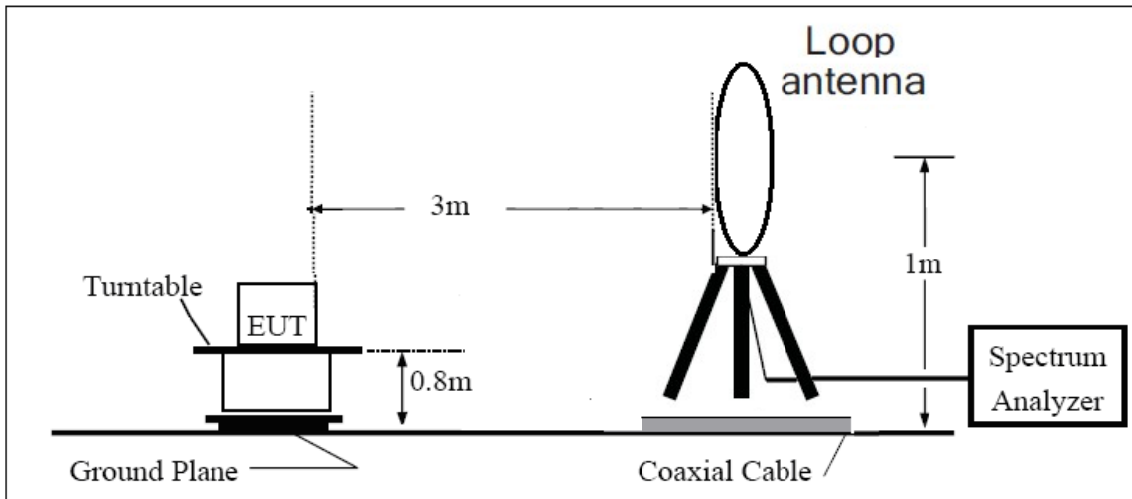
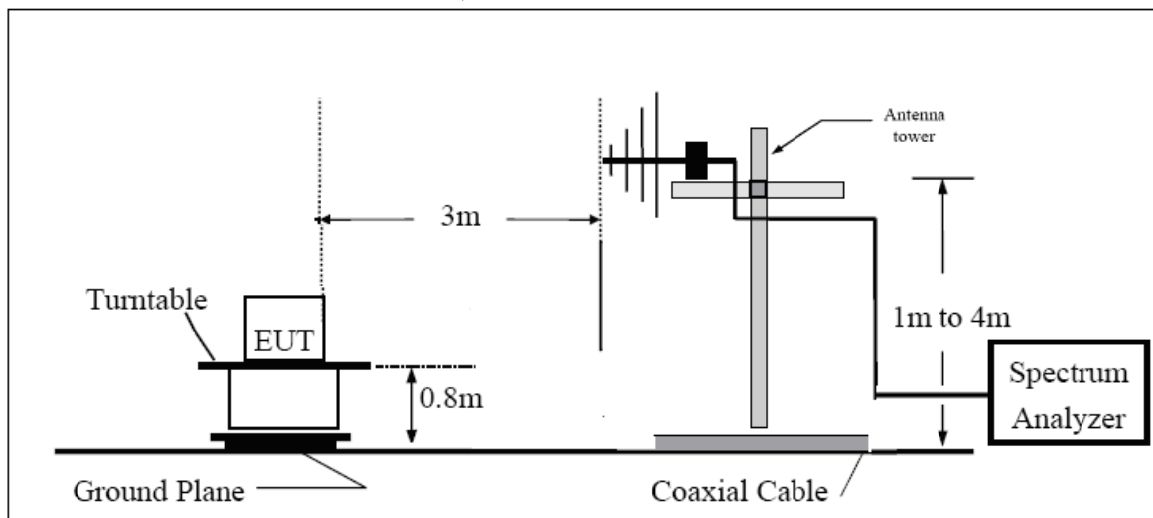
RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

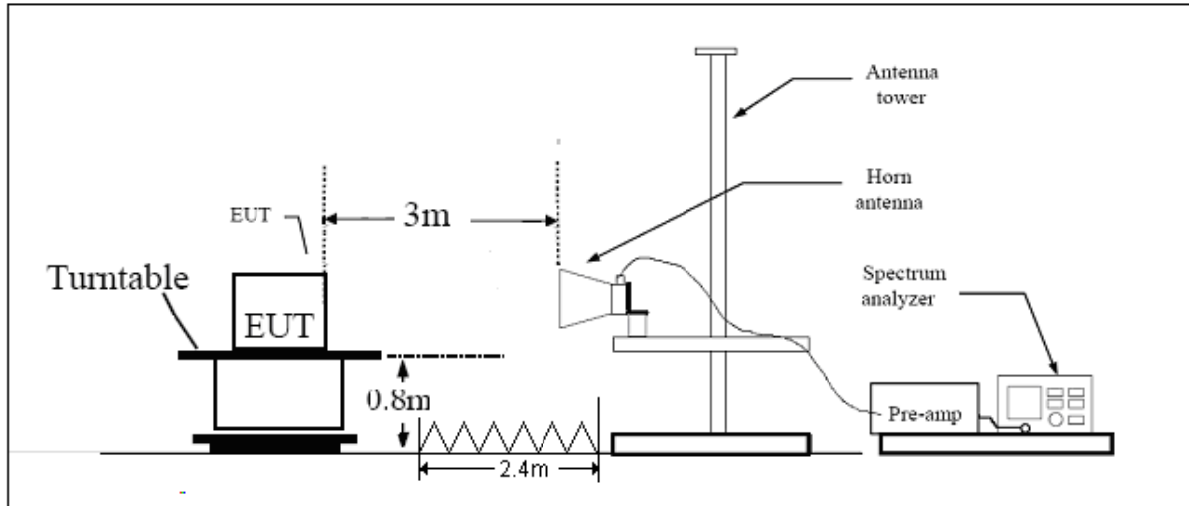
Above 1GHz:

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.

Test Setup**9 kHz-30MHz****30MHz -1GHz****Below 1GHz****Above 1GHz**



Note: Area side:2.4mX3.6m

Antenna Tower meets ANSI C63.4 requirements for measurements above 1 GHz by keeping the antenna aimed at the EUT during the antenna's ascent/ descent along the antenna mast.

Limits

Frequency (MHz)	Field Strength (dB μ V/m)	Detector
30 -88	40.0	Quasi-peak
88-216	43.5	Quasi-peak
216 – 960	46.0	Quasi-peak
960-1000	54.0	Quasi-peak
1000-5 th harmonic of the highest frequency or 40GHz, which is lower	54 74	Average Peak

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 3.92$ dB.

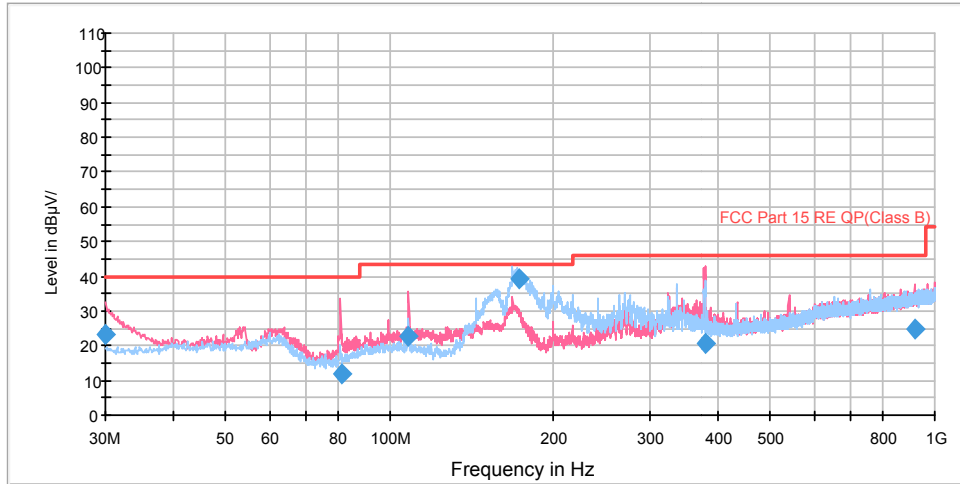
Test Results

Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

The following graphs display the maximum values of horizontal and vertical by software.

For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

FCC RE 0.03-1GHz QP Class B

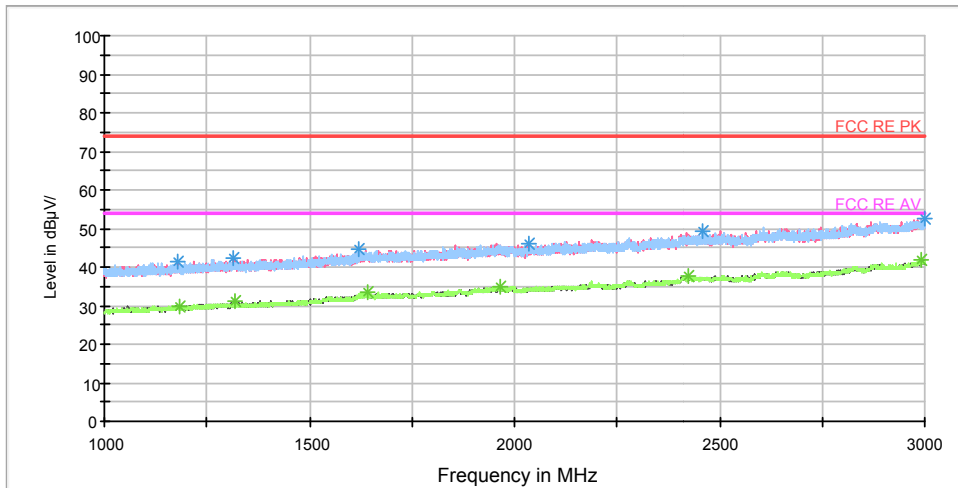


Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Reading value (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.040000	23.2	35.1	100.0	V	318.0	-11.9	16.8	40.0
81.247500	12.0	20.9	114.0	V	309.0	-8.9	28.0	40.0
107.806250	22.7	35.2	100.0	V	268.0	-12.5	20.8	43.5
173.000000	39.2	49.6	125.0	H	313.0	-10.4	4.3	43.5
378.836250	20.8	38.3	125.0	V	0.0	-17.5	25.2	46.0
916.901250	24.9	50.7	100.0	V	340.0	-25.8	21.1	46.0

- Remark: 1. Quasi-Peak = Reading value + Correction factor
- 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
- 3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



Radiated Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Reading value (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1184.250000	40.0	48.1	101.0	H	214.0	-8.1	34.0	74
1316.750000	39.6	47.0	101.0	H	0.0	-7.4	34.4	74
1643.000000	43.0	47.8	101.0	V	267.0	-4.8	31.0	74
1963.750000	43.7	47.0	101.0	H	214.0	-3.3	30.3	74
2423.000000	46.7	47.2	101.0	V	254.0	-0.5	27.3	74
2993.000000	51.2	53.4	101.0	H	4.0	-2.2	22.8	74

Frequency (MHz)	Average (dBuV/m)	Reading value (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1184.250000	29.9	38.0	101.0	H	214.0	-8.1	24.1	54
1316.750000	31.2	38.6	101.0	H	0.0	-7.4	22.8	54
1643.000000	33.3	38.1	101.0	V	267.0	-4.8	20.7	54
1963.750000	34.9	38.2	101.0	H	214.0	-3.3	19.1	54
2423.000000	37.5	38.0	101.0	V	254.0	-0.5	16.5	54
2993.000000	41.7	43.9	101.0	H	4.0	-2.2	12.3	54

3.2 Conducted Emission

Ambient condition

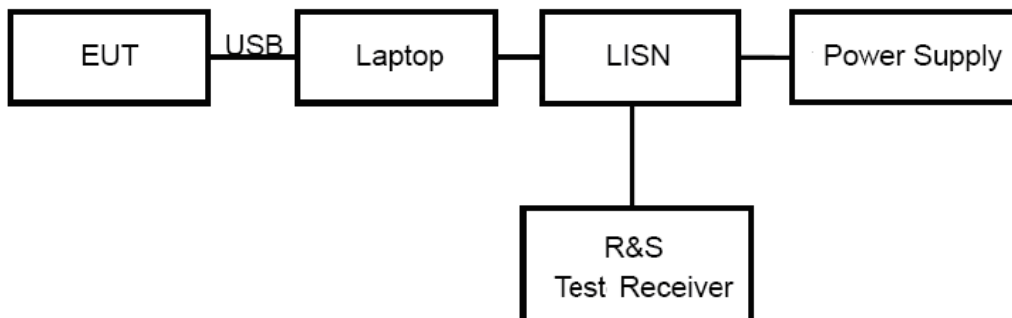
Temperature	Relative humidity	Pressure
24°C ~26°C	50%~55%	102.5kPa

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.

Test Setup



Note: Power Supply is AC Power source and it is used to change the voltage 120V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	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.

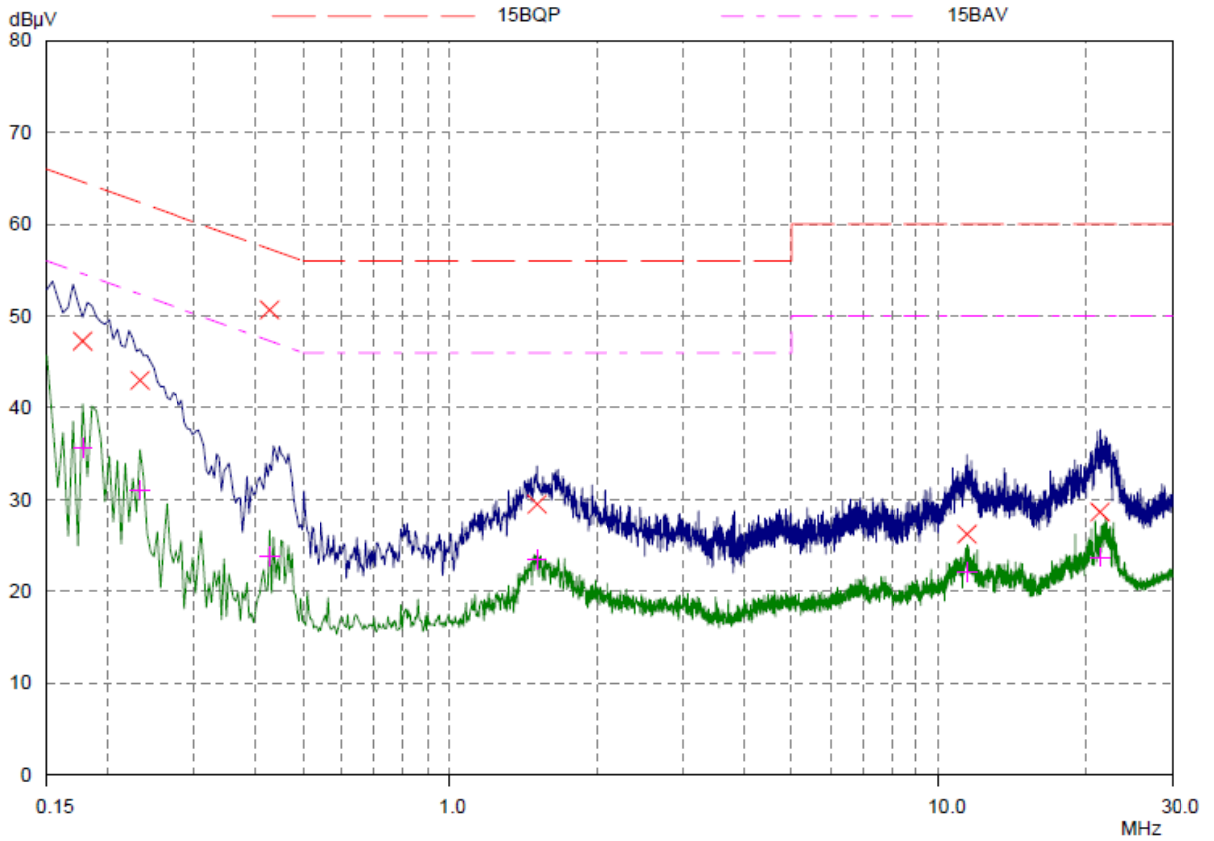
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 2.69$ dB.



Test Results

Following plots, Blue trace uses the peak detection; Green trace uses the average detection.



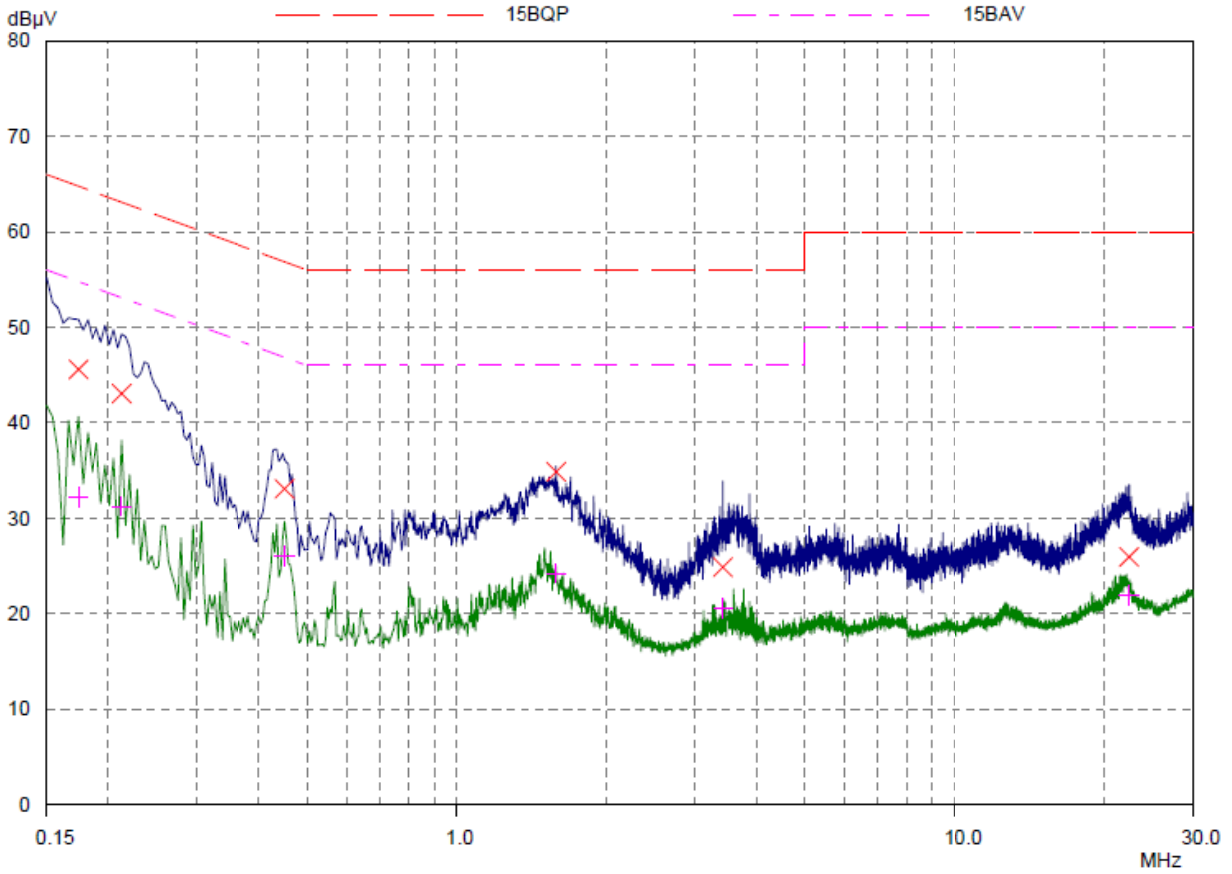
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase	PE
0.17734	47.27	64.61	17.34	L1	gnd
0.23203	42.99	62.38	19.39	L1	gnd
0.42734	50.66	57.30	6.64	L1	gnd
1.50546	29.50	56.00	26.50	L1	gnd
11.42343	26.23	60.00	33.77	L1	gnd
21.39218	28.66	60.00	31.34	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase	PE
0.17734	35.66	54.61	18.95	L1	gnd
0.23203	31.08	52.38	21.30	L1	gnd
0.42734	23.82	47.30	23.48	L1	gnd
1.50546	23.53	46.00	22.47	L1	gnd
11.42343	22.10	50.00	27.90	L1	gnd
21.39218	23.73	50.00	26.27	L1	gnd

L line

Conducted Emission from 150 KHz to 30 MHz



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase	PE
0.17343	45.60	64.79	19.19	N	gnd
0.2125	43.07	63.11	20.04	N	gnd
0.45078	33.10	56.86	23.76	N	gnd
1.58359	34.87	56.00	21.13	N	gnd
3.41953	24.88	56.00	31.12	N	gnd
22.43906	25.96	60.00	34.04	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase	PE
0.17343	32.25	54.79	22.54	N	gnd
0.2125	31.25	53.11	21.86	N	gnd
0.45078	26.06	46.86	20.80	N	gnd
1.58359	24.24	46.00	21.76	N	gnd
3.41953	20.59	46.00	25.41	N	gnd
22.43906	21.92	50.00	28.08	N	gnd

N line
Conducted Emission from 150 KHz to 30 MHz

4 Main Test Equipment

Name	Type	Manufacturer	Serial Number	Last Cal.	Cal. Due Date
EMI Test Receiver	ESCI	R&S	100948	2015-05-22	2016-05-21
Signal Analyzer	FSV30	R&S	100815	2015-12-17	2016-12-16
Loop Antenna	FMZB1519	SCHWARZBECK	1519-047	2014-02-29	2017-02-28
Trilog Antenna	VULB 9163	SCHWARZBECK	9163-201	2014-12-06	2017-12-05
Horn Antenna	HF907	R&S	100126	2014-12-06	2017-12-05
Horn Antenna	3160-09	ETS-Lindgren	00102643	2015-01-30	2018-01-29
EMI Test Receiver	ESCS30	R&S	100138	2015-12-17	2016-12-16
LISN	ENV216	R&S	101171	2013-12-18	2016-12-17
Bore Sight Antenna mast	2171B	ETS	00058752	NA	NA

ANNEX A: The EUT Appearance and Test Configuration

A.1 EUT Appearance



Front Side

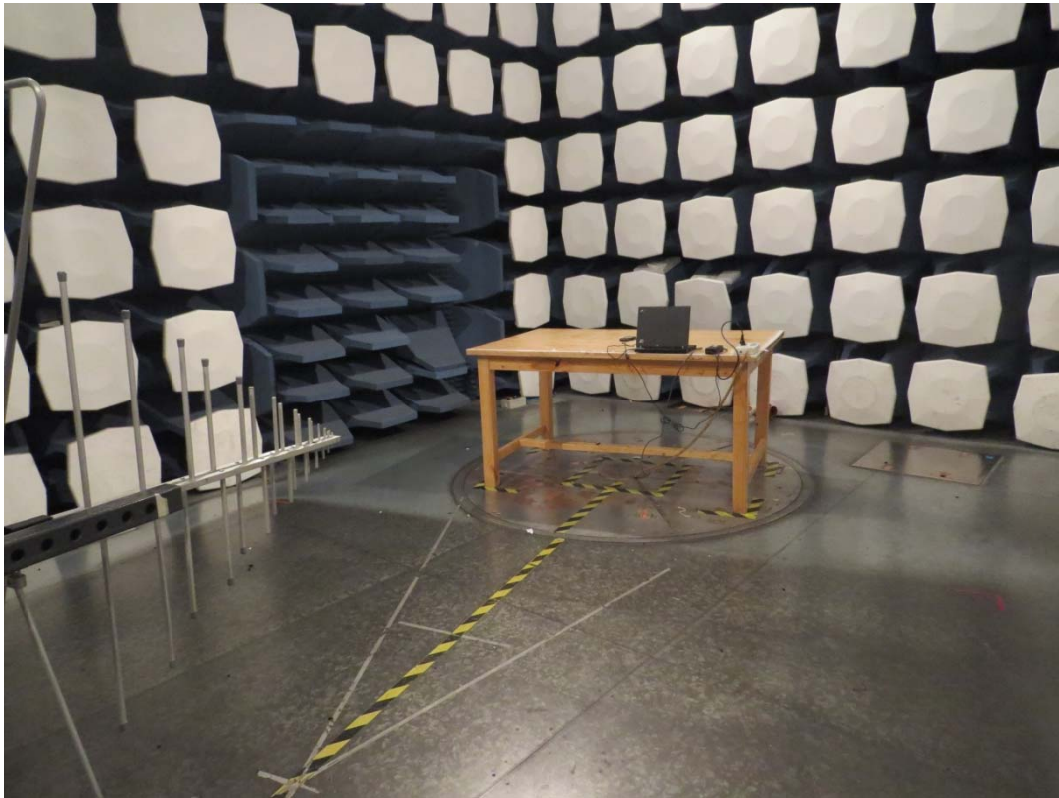


Back Side

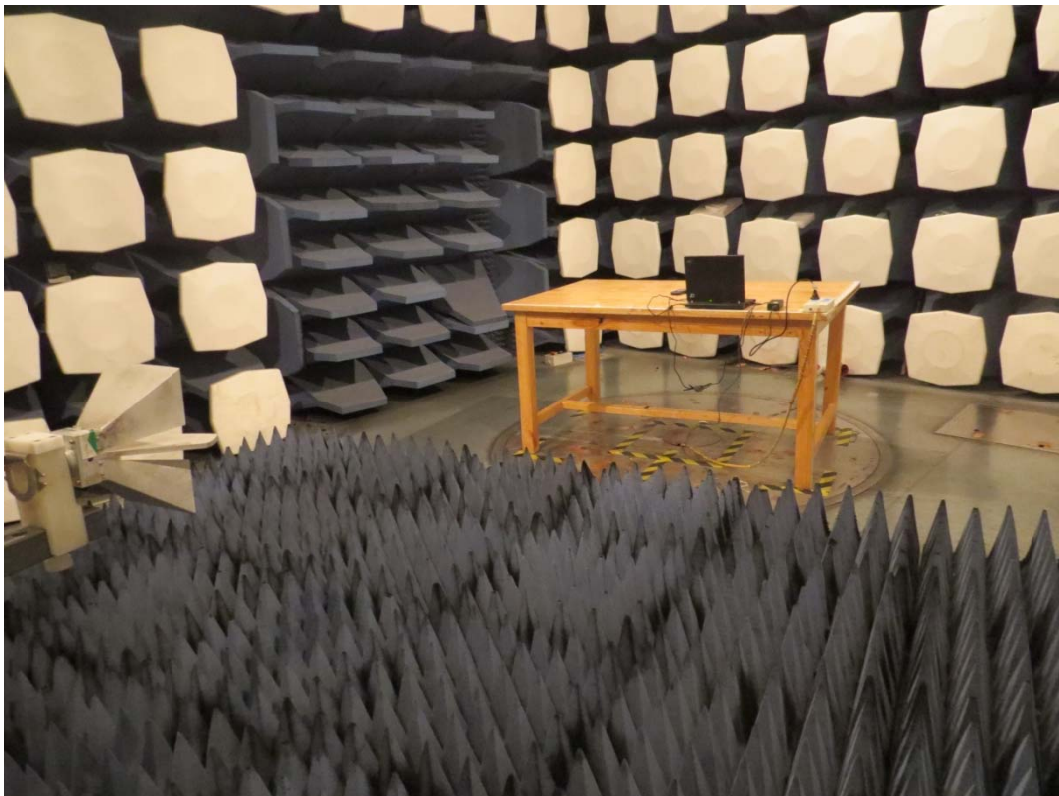
a: EUT

Picture 1 EUT

A.2 Test Setup



a: Below 1GHz



b: Above 1GHz

Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup

A.3 Host Product

