

**FCC PART 15B
TEST REPORT**

For

SHENZHEN TENDA TECHNOLOGY CO.,LTD.

Tenda Industrial Park, No. 34-1, Shilong Rd., Shiyan Town, Bao'an District, Shenzhen, P.R.China

FCC ID: V7T1300S

Report Type: Original Report	Product Type: PoE Adapter
Test Engineer: Star Xie	star xie
Report Number: R1DG120723002-00	
Report Date: 2012-08-20	
Reviewed By: Harry Wu EMC Engineer	Harry Wu
Prepared by:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk "★" (Rev.2)

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION (FCC §15.27)	4
JUSTIFICATION	4
EUT EXERCISE SOFTWARE	4
EQUIPMENT MODIFICATIONS	4
LOCAL SUPPORT EQUIPMENT LIST AND DETAILS	4
EXTERNAL I/O CABLE.....	4
PRINTER	4
KEYBOARD	4
RJ45 PORT OF EUT.....	4
BLOCK DIAGRAM OF TEST SETUP	5
SUMMARY OF TEST RESULTS	6
FCC §15.107 – AC LINE CONDUCTED EMISSIONS.....	7
MEASUREMENT UNCERTAINTY.....	7
EUT SETUP	7
EMI TEST RECEIVER SETUP.....	7
TEST PROCEDURE	8
TEST EQUIPMENT LIST AND DETAILS.....	8
TEST RESULTS SUMMARY	8
TEST DATA	8
FCC §15.109 - RADIATED EMISSIONS	11
MEASUREMENT UNCERTAINTY.....	11
EUT SETUP	11
EMI TEST RECEIVER SETUP.....	11
TEST PROCEDURE	12
CORRECTED AMPLITUDE & MARGIN CALCULATION	12
TEST EQUIPMENT LIST AND DETAILS.....	12
TEST RESULTS SUMMARY	12
TEST DATA	13

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SHENZHEN TENDA TECHNOLOGY CO.,LTD.*'s product, model number: *POE1300S (FCC ID: V7T1300S)* (the "EUT") in this report is a PoE Adapter, which was measured approximately: 13.2 cm (L) x 6.0 cm (W) x 3.4 cm (H), rated input voltage: AC 120V/60Hz, the highest operating frequency is 25MHz.

All measurement and test data in this report was gathered from production sample serial number: 120723002 (Assigned by BACL, Dongguan). The EUT was received on 2012-07-24.

Objective

This report is prepared on behalf of *SHENZHEN TENDA TECHNOLOGY CO.,LTD.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC Part 15 Class B.

Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>.

SYSTEM TEST CONFIGURATION (FCC §15.27)**Justification**

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

Traffic generator VER 1.00 was used.

Equipment Modifications

No modification was made to the EUT.

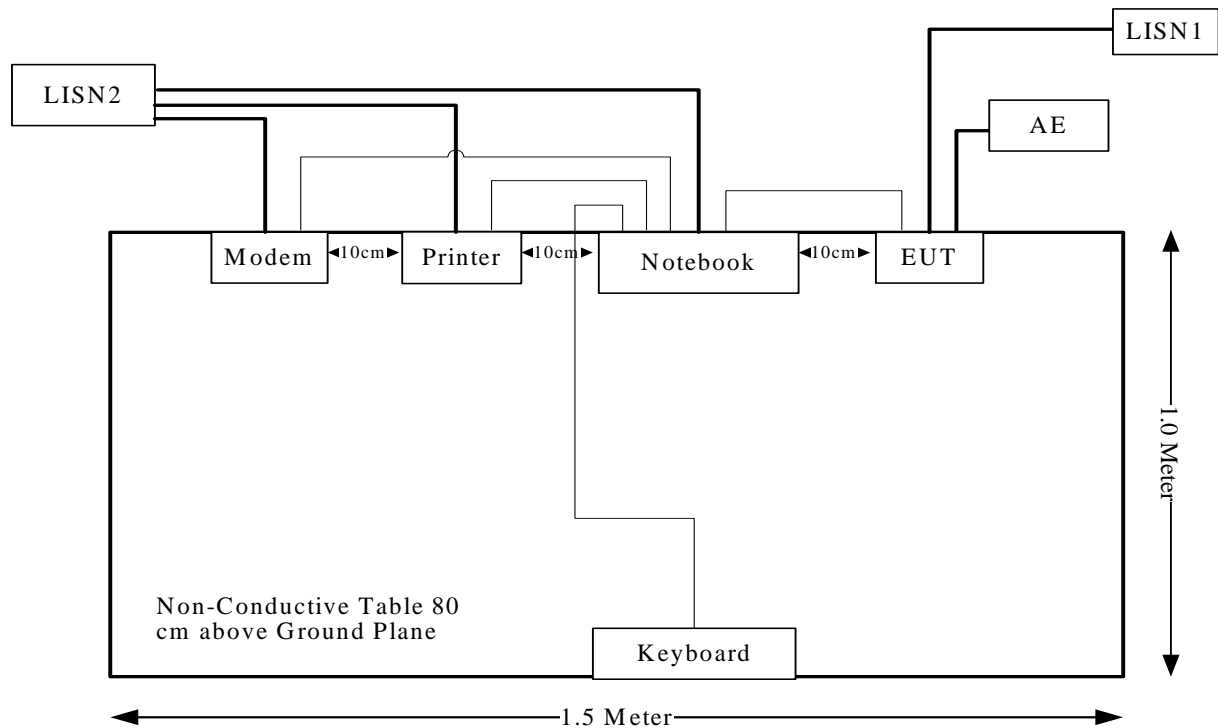
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Notebook computer	PP11L	QDS-BRCM1017
HP	Laser Jet5L	C3941A	JPTVOB2337
DELL	Keyboard	L100	CNORH656658907BL 05DC
SAST	Modem	AEM-2100	0293

External I/O Cable

Cable Description	Length (m)	From	To
Shielded Detachable Printer Cable	1.2	Parallel Port of PC	Printer
Shielded Detachable Serial Cable	1.2	Serial Port of PC	Modem
Shielded Detachable Keyboard Cable	1.5	Keyboard Port of PC	Keyboard
RJ45 Cable	1.5	RJ45 Port of PC	RJ45 Port of EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance
§15.33	Frequency range of radiated measurements	Compliance
§15.27	Special Accessories	Compliance

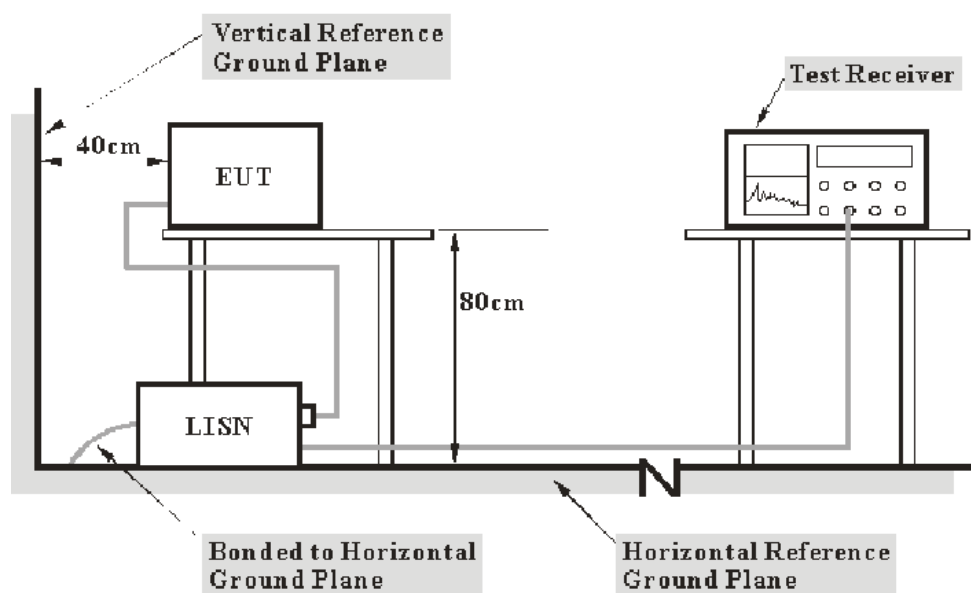
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Dongguan) is 1.5 dB.

EUT Setup



- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The EUT was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

<u>Frequency Range</u>	<u>IF B/W</u>
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the EUT was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Reciever	ESCS 30	830245/006	2011-10-08	2012-10-07
R&S	LISN1	ESH3-Z5	843331/015	2011-10-08	2012-10-07
R&S	LISN2	ESH3-Z5	100113	2011-10-08	2012-10-07

* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

12.56 dB at 0.510 MHz in the Neutral conducted

Test Data

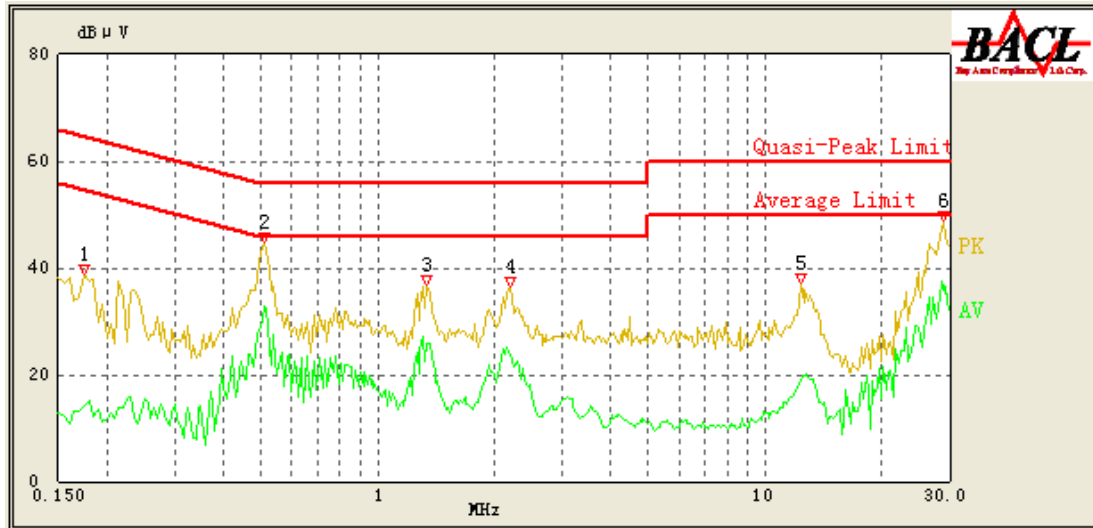
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

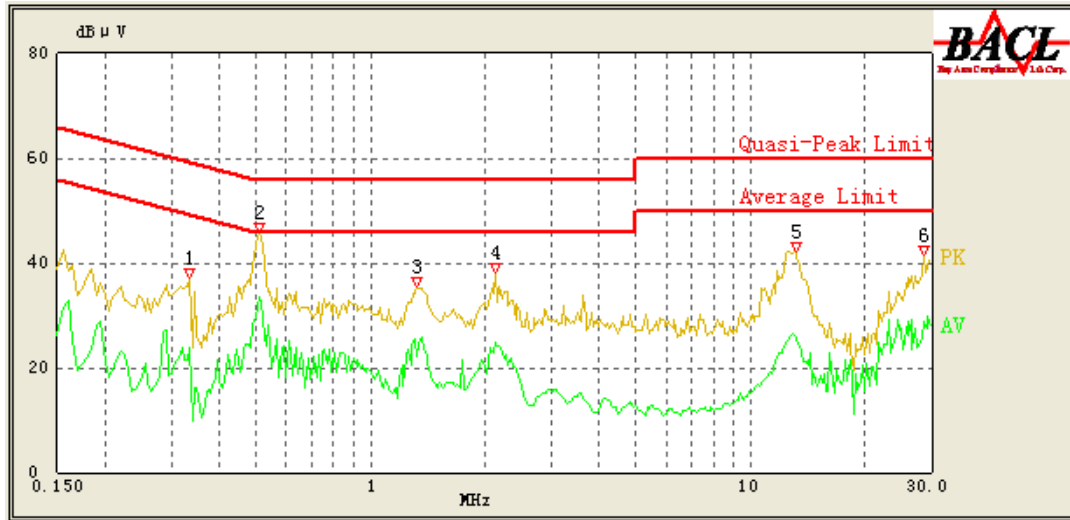
The testing was performed by Star Xie on 2012-08-17.

Test mode: Running

120 V, 60 Hz, Line:



Frequency (MHz)	Reading (dBμV)	Correction (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
0.510	32.91	0.42	46.00	13.09	Ave.
29.110	35.22	1.98	50.00	14.78	Ave.
0.510	41.18	0.42	56.00	14.82	QP
1.335	25.91	0.46	46.00	20.09	Ave.
28.945	39.42	2.00	60.00	20.58	QP
2.200	23.80	0.48	46.00	22.20	Ave.
1.335	32.59	0.46	56.00	23.41	QP
2.200	31.09	0.48	56.00	24.91	QP
12.505	19.74	0.97	50.00	30.26	Ave.
12.445	27.92	0.96	60.00	32.08	QP
0.175	30.50	0.41	65.29	34.79	QP
0.175	14.05	0.41	55.29	41.24	Ave.

120 V, 60 Hz, Neutral:

Frequency (MHz)	Reading (dBμV)	Correction (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
0.510	33.44	0.42	46.00	12.56	Ave.
0.510	42.56	0.42	56.00	13.44	QP
28.685	28.82	2.03	50.00	21.18	Ave.
2.130	24.73	0.48	46.00	21.27	Ave.
1.330	22.01	0.46	46.00	23.99	Ave.
13.170	25.92	1.04	50.00	24.08	Ave.
2.130	31.88	0.48	56.00	24.12	QP
13.175	35.07	1.04	60.00	24.93	QP
0.335	23.93	0.42	50.71	26.78	Ave.
28.610	33.01	2.04	60.00	26.99	QP
1.330	27.98	0.46	56.00	28.02	QP
0.335	29.87	0.42	60.71	30.84	QP

FCC §15.109 - RADIATED EMISSIONS

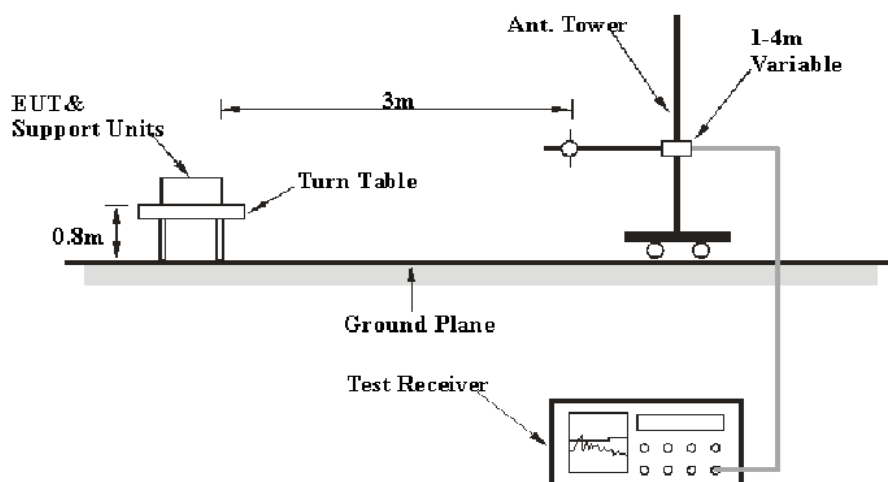
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement from 30 MHz to 1 GHz at Bay Area Compliance Laboratories Corp. (Dongguan) is 4.9 dB.

EUT Setup

Below 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109, Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The EUT connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>	<i>Detector</i>
30MHz – 1000 MHz	120 kHz	300 kHz	QP

Test Procedure

For the radiated emissions test, the EUT was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2011-11-11	2012-11-10
Sunol Sciences	Hybrid Antennas	JB3	A060611-1	2011-09-06	2012-09-05
HP	Pre-amplifier	8447E	2434A02181	2011-10-08	2012-10-07
R&S	Spectrum Analyzer	FSEM	1079 8500	2011-10-09	2012-10-08
Beijingdayang	Horn Antenna	OMCDH10180	10279001B	2010-07-30	2015-07-29
Mini-Circuits	Wideband Amplifier	ZVA-183-S+	96901149	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B, with the worst margin reading of:

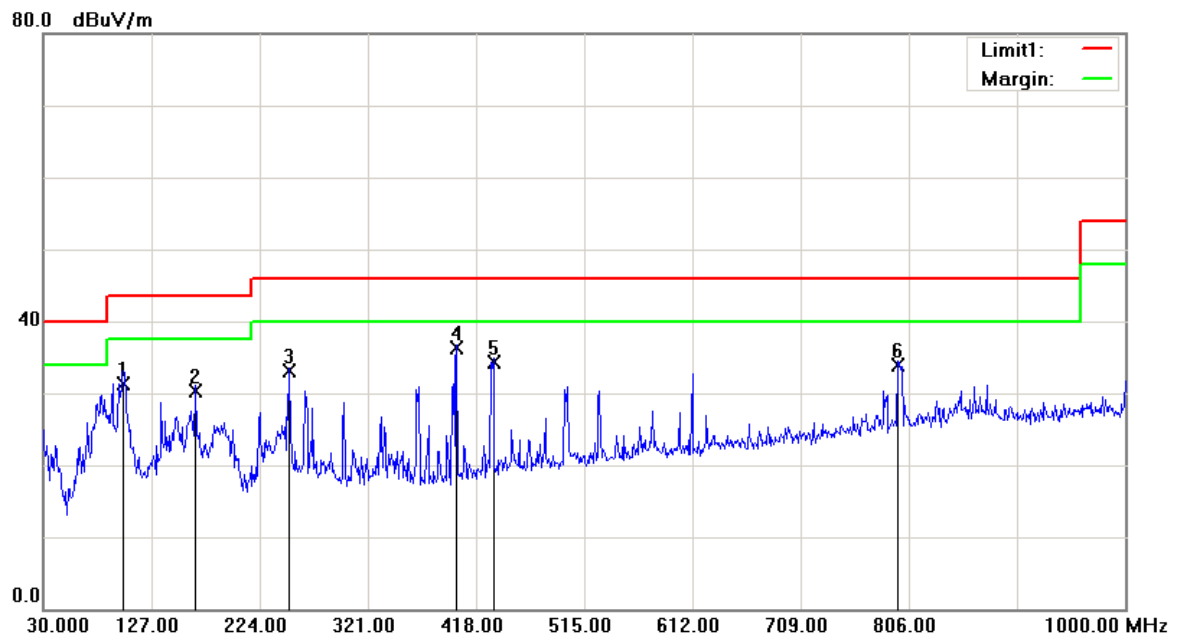
6.20 dB at 40.6700 MHz in the Vertical polarization

Test Data**Environmental Conditions**

Temperature:	26°C
Relative Humidity:	60 %
ATM Pressure:	100.0 kPa

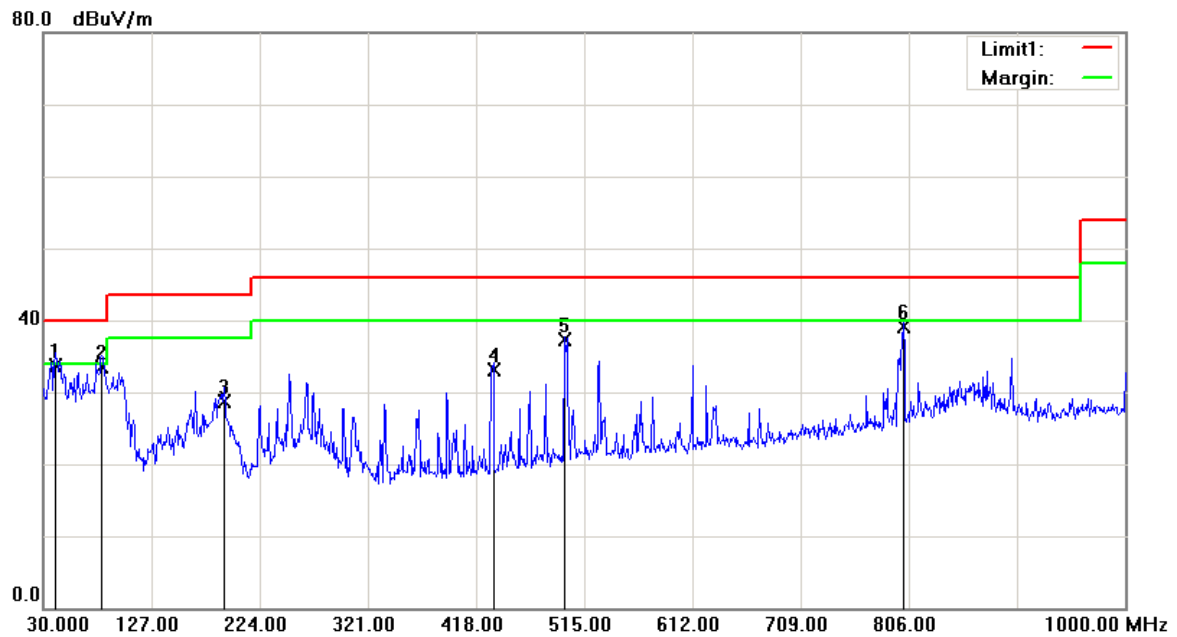
The testing was performed by Star Xie on 2012-08-16.

Test mode: Running

Horizontal:

Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
101.7800	40.49	QP	-9.15	31.34	43.50	12.16
166.7700	37.86	QP	-7.65	30.21	43.50	13.29
250.1900	40.52	QP	-7.40	33.12	46.00	12.88
400.5400	39.35	QP	-3.14	36.21	46.00	9.79
433.5200	36.87	QP	-2.53	34.34	46.00	11.66
796.3000	31.01	QP	2.95	33.96	46.00	12.04

*Within measurement uncertainty!

Vertical:

Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
40.6700	40.44	QP	-6.64	33.80	40.00	6.20
82.3800	46.05	QP	-12.45	33.60	40.00	6.40
191.9900	36.91	QP	-8.16	28.75	43.50	14.75
433.5200	35.67	QP	-2.53	33.14	46.00	12.86
497.5400	38.50	QP	-1.23	37.27	46.00	8.73
801.1500	36.04	QP	3.06	39.10	46.00	6.90

*Within measurement uncertainty!

***** END OF REPORT *****