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## EMI TEST REPORT

On Model Name: Analog Telephone Adaptor

Model Number: HT802

Brand Name: Grandstream

Prepared for Grandstream Networks, Inc.

FCC ID Number: YZZHT802

According to FCC 47 CFR Part 15, Subpart B

*Test Report #: SHE-1502-11288-FCC*

Prepared by: *Nancy* *Nancy Han /Assistant* *ECMG*  
*Company Name*

Reviewed by: *Jawen Yin* *Jawen Yin/ Senior Engineer* *ECMG*  
*Company Name*

QC Manager: *Swall Zhang* *Swall Zhang/QC Manager* *ECMG*  
*Company Name*

Test Report Released by: *Swall Zhang* *Swall Zhang* *February 9<sup>th</sup>, 2015*  
*Date*

## **Test Location**

*Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room.*

<i>Test Site Location</i>	<i>: Galanz</i>
	<i>25 South Ronggui Rd., Shunde, Foshan, Guangdong, China</i>
<i>Tel</i>	<i>: (86)-757-23612785</i>
<i>Fax</i>	<i>: (86)-757-23612537</i>

## **Test Facility**

*The test facility was recognized, certified, or accredited by the following organizations:*

- CNAL - LAB Code: L2244**

*Galanz EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.*

- FCC - Registration No.: 580210**

*Galanz EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC was maintained in our files.*

- IC - Registration No.: 8801A**

*The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is 8801A.*

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### List Attached Files

<b>Exhibit Type</b>	<b>File Description</b>	<b>File Name</b>
<i>Test Report</i>	<i>Test Report</i>	YZZHT802 _Test Report.pdf
<i>Operation Description</i>	<i>Technical Description</i>	YZZHT802 _Operation description.pdf
<i>External Photos</i>	<i>External Photos</i>	YZZHT802 _External Photos
<i>Internal Photos</i>	<i>Internal Photos</i>	YZZHT802 _Internal Photos
<i>Block Diagram</i>	<i>Block Diagram</i>	YZZHT802 _Block Diagram.pdf
<i>Schematics</i>	<i>Circuit Diagram</i>	YZZHT802 _Schematics.pdf
<i>ID Label/Location</i>	<i>Label and Location</i>	YZZHT802 _Label & Location.pdf
<i>User Manual</i>	<i>User Manual</i>	YZZHT802 _User Manual.pdf
<i>Test setup photos</i>	<i>Test set-up photos</i>	YZZHT802 _Test Set-up Photos

### ***Government Disclaimer Notice***

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*Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from ECMG Electronic Technical Testing Corp (Shenzhen).*

### ***Opinions and Interpretations***

*This test report relates to the abovementioned equipment under test (EUT). Without the permission of ECMG Electronic Technical Testing Corp (Shenzhen) Test Lab this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.*

### ***Statement of Measurement Uncertainty***

*The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.*

## **Administrative Data**

*Test Sample* : *Analog Telephone Adaptor*

*Model Numbers* : *HT802*

*Model Tested* : *HT802*

*Date of Received* : *Feb. 4<sup>th</sup>, 2015*

*Date Tested* : *Feb. 4<sup>th</sup>, 2015*

*Applicant* : *Grandstream Networks, Inc.*

*Address* : *5F, Bldg #1, No.2 Kefa Rd., Science & Technology Park, Shenzhen, China*

*Telephone* : *(86)-755-26014600*

*Fax* : *(86)-755-26014601*

*Manufacturer* : *Grandstream Networks, Inc.*

*Address* : *5F, Bldg #1, No.2 Kefa Rd., Science & Technology Park, Shenzhen, China*

*Telephone* : *(86)-755-26014600*

*Fax* : *(86)-755-26014601*

*Factory* : *Grandstream Networks, Inc.*

*Address* : *5F, Bldg #1, No.2 Kefa Rd., Science & Technology Park, Shenzhen, China*

*Telephone* : *(86)-755-26014600*

*Fax* : *(86)-755-26014601*

## **EUT Description**

*Grandstream Networks, Inc. Model Tested HT802 (referred to as the EUT in this report) is an Analog Telephone Adaptor.*

*Technical specifications are as belows:*

<b>Parameter</b>		<b>Ranges</b>
<i>Basic parameters</i>	<i>Rated voltage</i>	5.0V
	<i>Rated Current</i>	1.0A
<i>I/O Ports</i>	<i>Internet Port (RJ-45)</i>	<i>Connect to network or PC</i>
	<i>2 RJ11 FXS port</i>	<i>Used to connect to analog phones / fax machines</i>
	<i>Power</i>	<i>Micro USB 5V 1A</i>
<i>Power Adapter #1</i>	<i>Input</i>	<i>AC 100-240 V 50/60 Hz 0.15A max</i>
	<i>Output</i>	<i>DC 5V, 1.0A, UL, FCC certified</i>
	<i>Model</i>	<i>PCF-0500100AV</i>
	<i>Brand name</i>	<i>Mass power</i>
<i>Power Adapter #2</i>	<i>Input</i>	<i>100-240VAC 50/60Hz 0.2A</i>
	<i>Output</i>	<i>5VDC, 1.0A</i>
	<i>Model</i>	<i>R60UC0500100A</i>
	<i>Brand name</i>	<i>Sunlight</i>

***Note :For other informations &features please refer to user's manual of EUT.***

## Frequency Range Of Radiated Measurements

(b) For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

<i>Highest frequency generated or used in the device or on which the device operates or tunes (MHz)</i>	<i>Upper frequency of measurement range (MHz)</i>
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	<i>5<sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower.</i>

*Note: Since the highest frequency operated of the EUT is 400MHz, so upper frequency of radiated emission test is up to 2GHz as per §15.33(b)(1).*

## Test Summary

*The Electromagnetic Compatibility requirements on model HT802 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.*

<b>Emission Tests</b>				
<b>Specifications</b>	<b>Description</b>	<b>Test Results</b>	<b>Test Point</b>	<b>Remark</b>
<i>FCC Part 15.107 ANSI C63.4 -2009</i>	<i>Conducted Emission</i>	<i>Passed</i>	<i>AC Input Port</i>	<i>Attachment 1</i>
<i>FCC Part 15.109 ANSI C63.4 -2009</i>	<i>Radiated Emission</i>	<i>Passed</i>	<i>Enclosure</i>	<i>Attachment 2</i>

### **Test Mode Justification**

*Pre-Scan has been conducted to determine the worst-case from all possible combination between available operation mode .Following mode(s) was (were) selected for the final test as listed below:*

<b>Pre-Test Mode</b>	
<b>EMI Test Mode</b>	Mode 1: Communication with PC&Analog Telephone + Mass Power (Model: PCF-0500100AV)
	Mode 2: Communication with PC&Analog Telephone + Sunlight Power (Model: R60UC0500100A)
	No PoE Mode
<b>Final Test Mode</b>	
<b>EMI Test Mode</b>	Mode 1: Communication with PC&Analog Telephone + Mass Power (Model: PCF-0500100AV)
	Mode 2: Communication with PC&Analog Telephone + Sunlight Power (Model: R60UC0500100A )

### **EUT Exercise Software**

*No test software support this test.*

### **Equipment Modification**

*Any modifications installed previous to testing by Grandstream Networks, Inc. will be incorporated in each production model sold or leased in United States.*

*There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen).*

## EUT Sample Photos

### EUT Model: HT802



EUT- Front View



EUT- Rear View



**EUT- Top View**



**EUT- Bottom View**



**EUT- Left Side View**



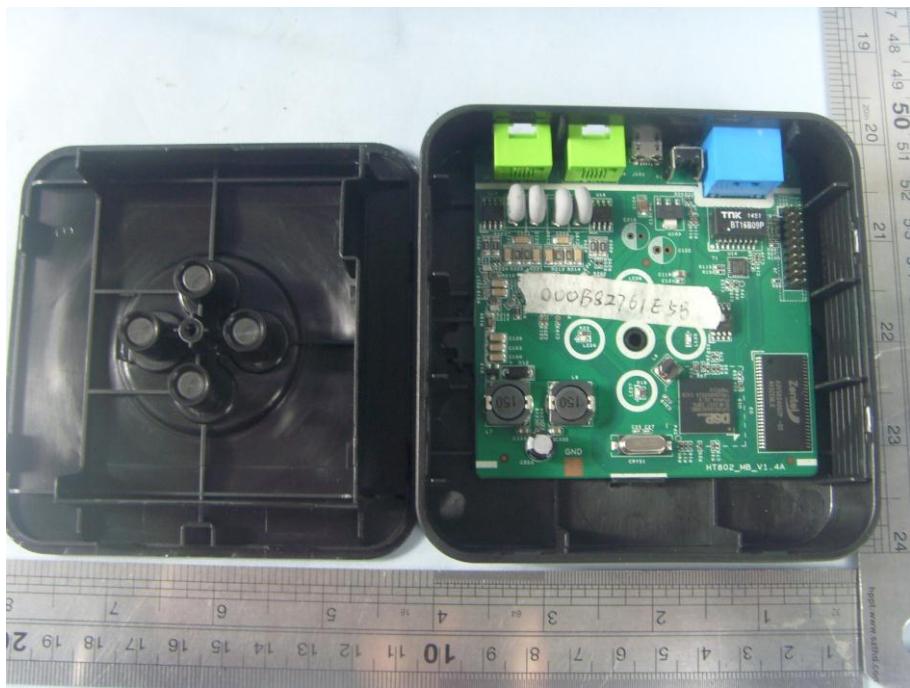
**EUT- Sight Side View**



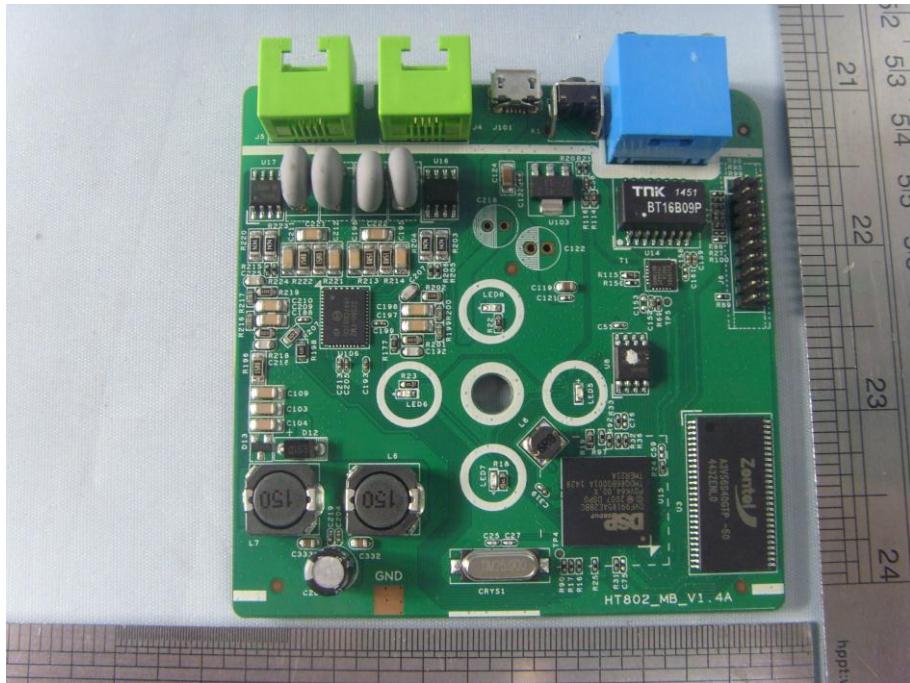
**Power Adapter #1 View**(Manufacturer: *Mass power*)



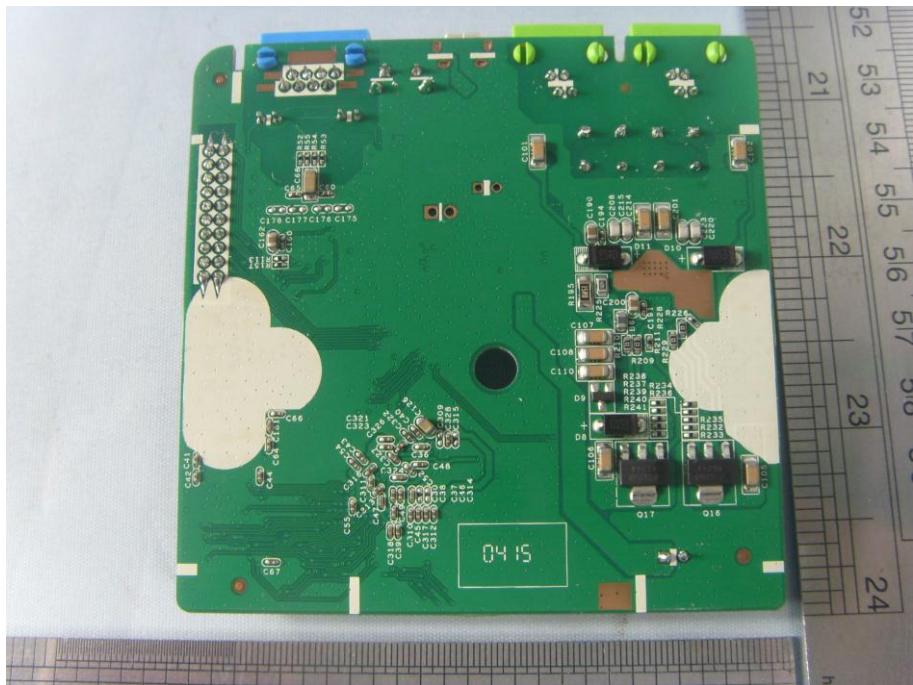
**Power Adapter #2 View**(Manufacturer: *Sunlight*)



*EUT-Uncovered View*



*Mother board- Top View*



**Mother board- Bottom View**

## Test System Details

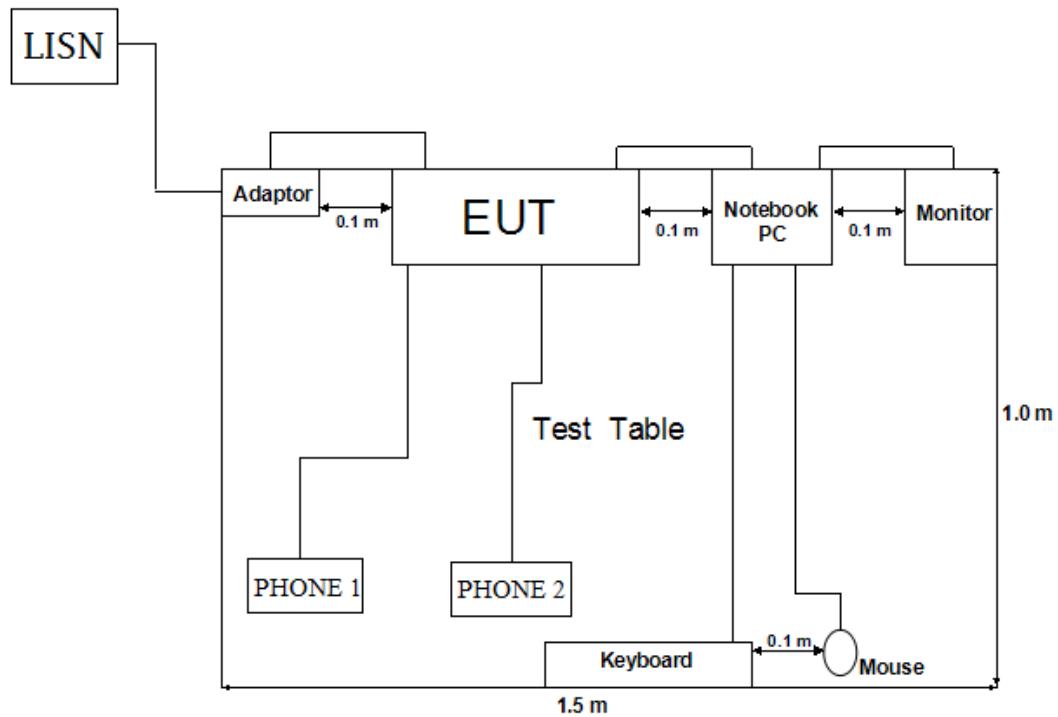
<b>EUT</b>			
<b>Model Number:</b>	<i>HT802</i>		
<b>Model Tested:</b>	<i>HT802</i>		
<b>Description:</b>	<i>Analog Telephone Adaptor</i>		
<b>Input:</b>	<i>AC 120V/60Hz</i>		
<b>Manufacturer:</b>	<i>Grandstream Networks, Inc.</i>		
<b>Support Equipment</b>			
<b>Description</b>	<b>Model Number</b>	<b>Serial Number</b>	<b>Manufacturer</b>
<i>Notebook COMPUTER</i>	<i>NV57H03c-2412G64Mnc2s</i>	<i>LXWZ401001125109 201601</i>	<i>Gateway</i>
<i>Mouse</i>	<i>MO32B0</i>	<i>23-033131</i>	<i>IBM</i>
<i>Keyboard</i>	<i>SK-1788</i>	<i>---</i>	<i>LENOVO</i>
<i>Monitor</i>	<i>TFT1780PS</i>	<i>---</i>	<i>AOC</i>
<i>ANALOG TELEPHONE</i>	<i>HCD007(33)TSDL</i>	<i>---</i>	<i>BBK</i>

<b>Cable Description</b>					
<b>Description</b>	<b>From</b>	<b>To</b>	<b>Length (Meters)</b>	<b>Shielded (Y/N)</b>	<b>Ferrite (Y/N)</b>
<i>Power Adapter Cord Of Notebook Computer</i>	<i>Power Adapter</i>	<i>Notebook COMPUTER</i>	<i>1.6</i>	<i>N</i>	<i>Y</i>
	<i>AC Plug</i>	<i>Power Adapter</i>	<i>1.2</i>	<i>N</i>	<i>Y</i>
<i>Mouse Cord</i>	<i>Mouse</i>	<i>Notebook COMPUTER</i>	<i>1.2</i>	<i>N</i>	<i>Y</i>
<i>Keyboard Cord</i>	<i>Keyboard</i>	<i>Notebook COMPUTER</i>	<i>1.2</i>	<i>N</i>	<i>Y</i>
<i>RJ-45 Cord</i>	<i>EUT</i>	<i>Notebook COMPUTER</i>	<i>1.5</i>	<i>N</i>	<i>N</i>
<i>Power Adapter Cord Of EUT</i>	<i>EUT</i>	<i>Plug</i>	<i>1.8</i>	<i>N</i>	<i>N</i>

*Note: The "EUT" means "Analog Telephone Adaptor".*

**NOTE:** The EUT has been tested as an independent unit together with other necessary accessories or support units. The above support units or accessories were used to form a representative test configuration during the test tests.

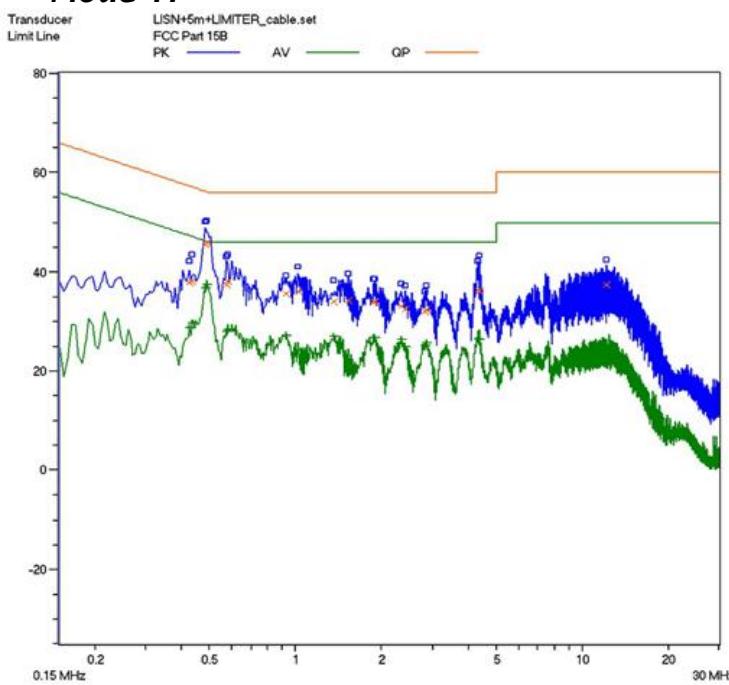
## Configuration of Tested System



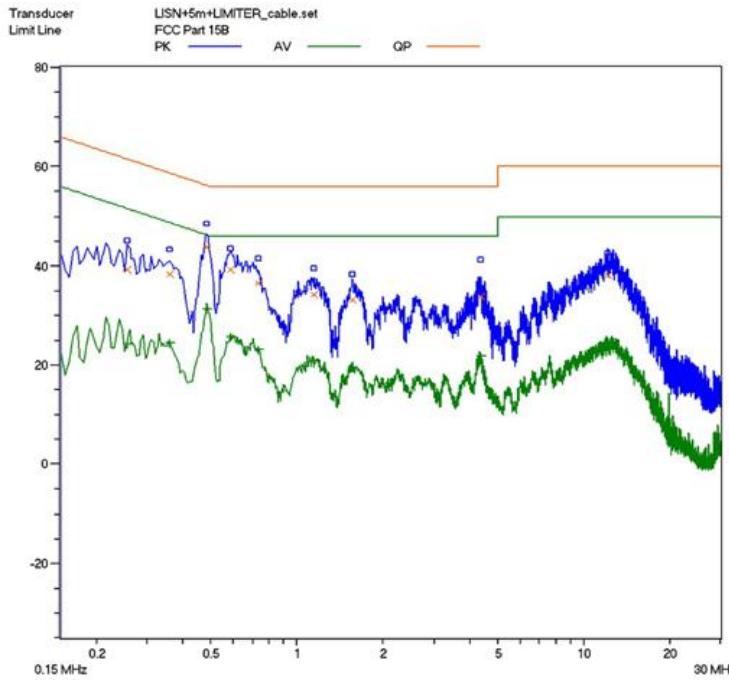
## ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS

<b>CLIENT:</b>	Grandstream Networks, Inc.	<b>TEST STANDERD:</b>	Section 15.107
<b>MODEL NUMBERS:</b>	HT802	<b>PRODUCT:</b>	Analog Telephone Adaptor
<b>MODEL TESTED:</b>	HT802	<b>EUT DESIGNATION:</b>	Home or Office
<b>TEMPERATURE:</b>	22 °C	<b>HUMIDITY:</b>	48%
<b>ATM PRESSURE:</b>	103kPa	<b>GROUNDING:</b>	None
<b>TESTED BY:</b>	Daomen	<b>DATE OF TEST:</b>	Feb. 4 <sup>th</sup> , 2015
<b>TEST REFERENCE:</b>	ANSI C63.4- 2009		
<b>TEST PROCEDURE:</b>	The EUT was set up according to the guidelines of ANSI C63.4: 2009 for conducted emissions. The measurement was using a AMN on each line and an EMI receiver peak scan was made at the frequency measurement range. The six highest significant peaks were then marked, and these signals were then quasi-peaked and averaged. The frequency range investigated was from 150KHz to 30MHz.		
<b>TEST MODE:</b>	Mode 1,Mode 2		
<b>TEST SET UP:</b>			
<b>TESTED RANGE:</b>	150kHz to 30MHz		
<b>TEST VOLTAGE:</b>	AC 120V/60Hz		
<b>RESULTS:</b>	The EUT meets the requirements of test reference for Conducted Emissions. The test results relate only to the equipment under test provided by client.		
<b>CHANGES OR MODIFICATIONS:</b>	There were no modifications installed by ECMG Electronic Technical Testing Corp(Shenzhen) test personnel.		
<b>M. UNCERTAINTY:</b>	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm 2.6$ dB		

### Mode 1:

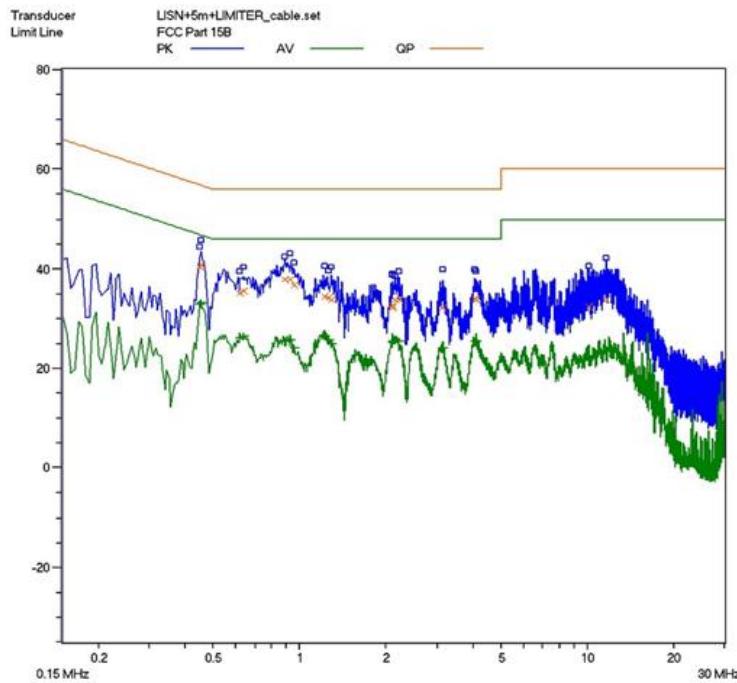


**Line L Conducted Emission Graph**

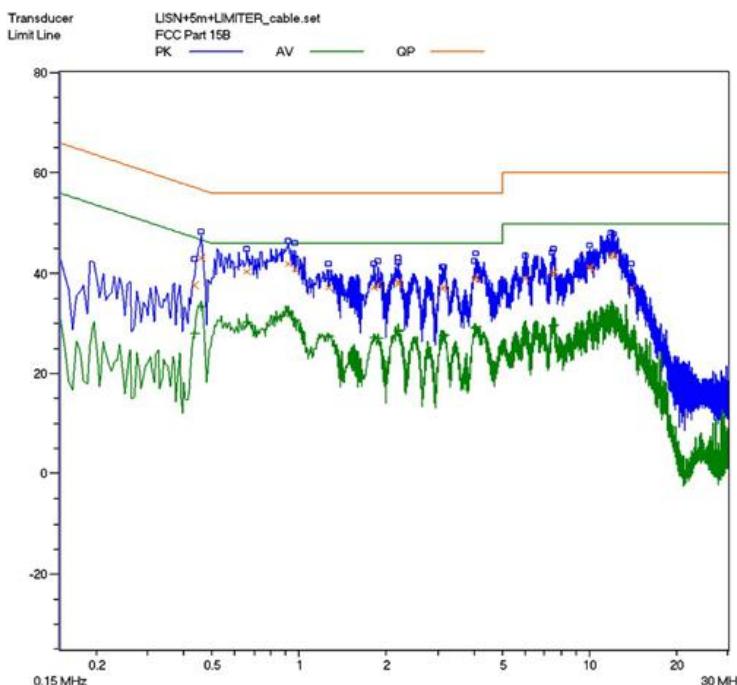


**Line N Conducted Emission Graph**

### Mode 2:



**Line L Conducted Emission Graph**



**Line N Conducted Emission Graph**

**Test Data:**

**Mode 1:**

Lines (L/N)	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AV Level (dBuV)	Limits AV (dBuV)	Margin QP (dB)
L	0.490	46.2	56.2	-10.0	0.490	37.4	46.2	-8.8
L	4.675	43.7	56	-12.3	4.675	30.1	46	-15.9
L	4.730	43.4	56	-12.6	4.730	30.3	46	-15.7
N	0.185	45.8	64.3	-18.5	0.185	24.0	54.3	-30.3
N	0.485	43.8	56.3	-12.5	0.485	31.4	46.3	-14.9
N	0.585	39.2	56	-16.8	0.585	25.7	46	-20.3

**Note :**

- 1) All readings are using a bandwidth of 9 kHz, with a 500ms sweep time. A video filter was not use.
- 2) "QP" means "Quasi-Peak" values, "AV" means "Average" values.
- 3) The other reading are too low against official limits that are not be recorded.

**Mode 2:**

Lines (L/N)	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AV Level (dBuV)	Limits AV (dBuV)	Margin QP (dB)
L	0.455	40.8	56.8	-16.0	0.455	33.1	46.8	-13.7
L	4.675	43.1	56	-12.9	4.675	30.0	46	-16.0
L	4.730	43.4	56	-12.6	4.730	30.3	46	-15.7
N	0.185	45.1	64.3	-19.2	0.185	23.7	54.3	-30.6
N	0.920	42.1	56	-13.9	0.920	32.1	46	-13.9
N	11.905	43.8	60	-16.2	11.905	31.9	50	-18.1

**Note :**

- 1) All readings are using a bandwidth of 9 kHz, with a 500ms sweep time. A video filter was not use.
- 2) "QP" means "Quasi-Peak" values, "AV" means "Average" values.
- 3) The other reading are too low against official limits that are not be recorded.

**Test Equipment List:**

<i>Test Equipment</i>	<i>Model No.</i>	<i>Manufacturer</i>	<i>Serial No.</i>	<i>Last Cal.</i>	<i>Cal. Interval</i>
<i>EMI Test Receiver</i>	<i>SMR4503</i>	<i>SCHAFFNER</i>	<i>11725</i>	<i>2014.07.08</i>	<i>2015.07.08</i>
<i>Line impedance stabilization network</i>	<i>ESH2-Z5</i>	<i>R&amp;S</i>	<i>/</i>	<i>2014.03.14</i>	<i>2015.03.13</i>
<i>Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.</i>					

**TESTED BY:** Darren **GALANZ**  
**ENGINEER** **COMPANY NAME**

**REVIEWED BY:** Jawen **ECMG**  
**SENIOR ENGINEER** **COMPANY NAME**



***Conducted Emission Test Set-up -Front view***



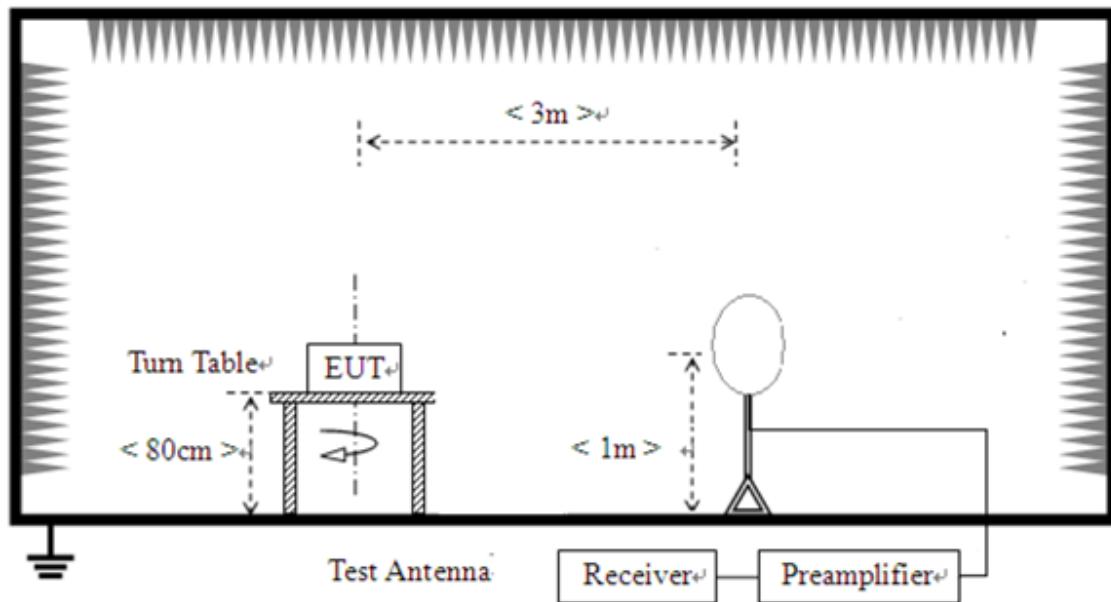
***Conducted Emission Test Set-up -Rear view***

## **ATTACHMENT 2 – RADIATED EMISSION MEASUREMENT**

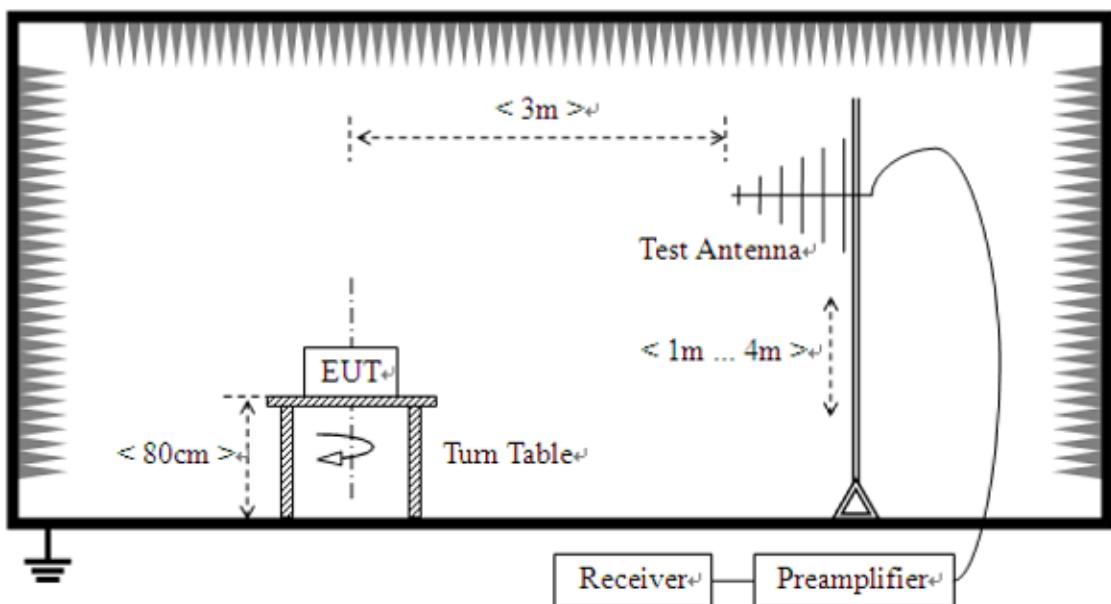
<b>CLIENT:</b>	Grandstream Networks, Inc.	<b>TEST STANDERD:</b>	Section 15.109
<b>MODEL NUMBERS:</b>	HT802	<b>PRODUCT:</b>	Analog Telephone Adaptor
<b>EUT MODEL:</b>	HT802	<b>EUT DESIGNATION:</b>	Home or Office
<b>TEMPERATURE:</b>	22 °C	<b>HUMIDITY:</b>	47%RH
<b>ATM PRESSURE:</b>	103.0kPa	<b>GROUNDING:</b>	None
<b>TESTED BY:</b>	Daomen	<b>DATE OF TEST:</b>	Feb. 4, 2015
<b>TEST REFERENCE:</b>	ANSI C63.4: 2009		
<b>TEST PROCEDURE:</b>	<p>The EUT was set up according to the guidelines of ANSI C63.4: 2009 for radiated emissions. An EMI receiver peak scan was made at the frequency measurement range (pre-scan) in an Anechoic chamber. signal discrimination was then performed and the significant peaks marked. these peaks were then quasi-peaked in the frequency range of 30 MHz to 1GHz and average and peak in the frequency range of 1GHz to 2GHz at an anechoic chamber.</p> <p>The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor are given as follows:</p> <p>FS= RA + AF + CF - AG</p> <p>Where: FS = Field Strength</p> <p>RA = Receiver Amplitude</p> <p>AF = Antenna Factor</p> <p>CF = Cable Attenuation Factor</p> <p>AG = Amplifier Gain</p>		
<b>TEST MODE:</b>	Mode 1,Mode 2		
<b>TESTED RANGE:</b>	9KHz to 30MHz and 30 to 2000MHz		
<b>TEST VOLTAGE:</b>	AC 120V/60Hz		
<b>RESULTS:</b>	The EUT meet the requirements of test reference for radiated emissions. The test results relate only to the equipment under test provided by client.		
<b>CHANGES OR MODIFICATIONS:</b>	There were no modifications installed by ECMG Electronic Technical Testing Corp (Shenzhen). Test personnel.		
<b>M. UNCERTAINTY:</b>	Freq. $\pm 2 \times 10^{-7} \times$ Center Freq., Amp $\pm 3.6$ dB		

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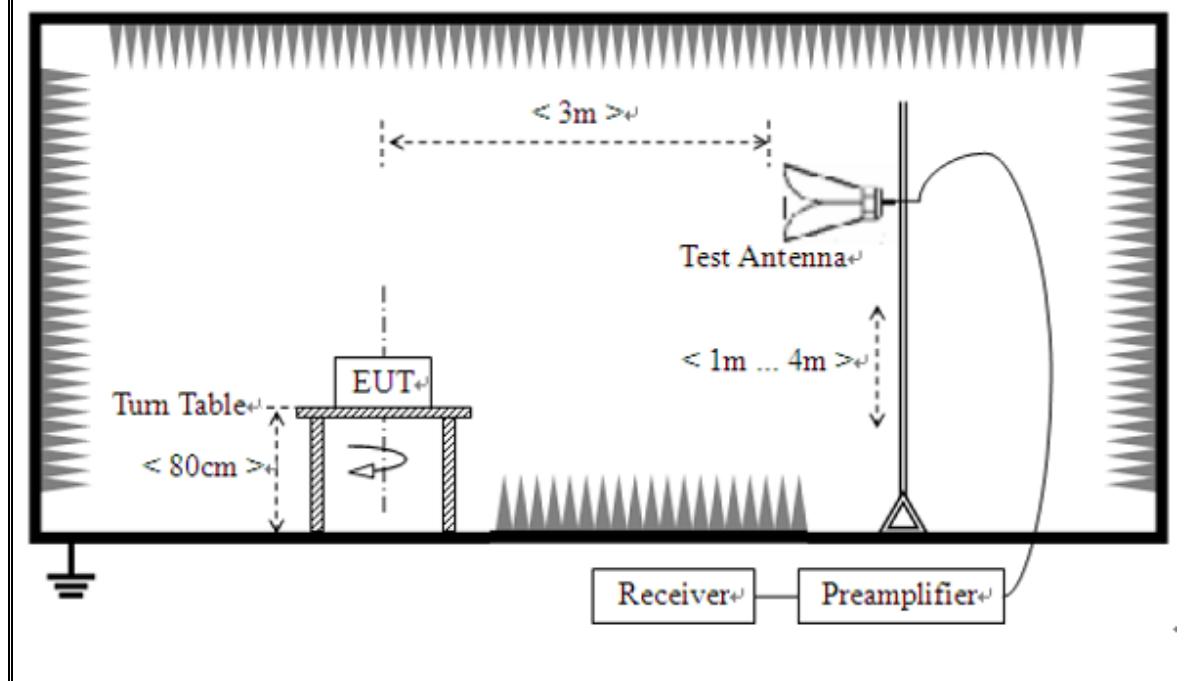
**Frequency measured at 9KHz to 30MHz:**



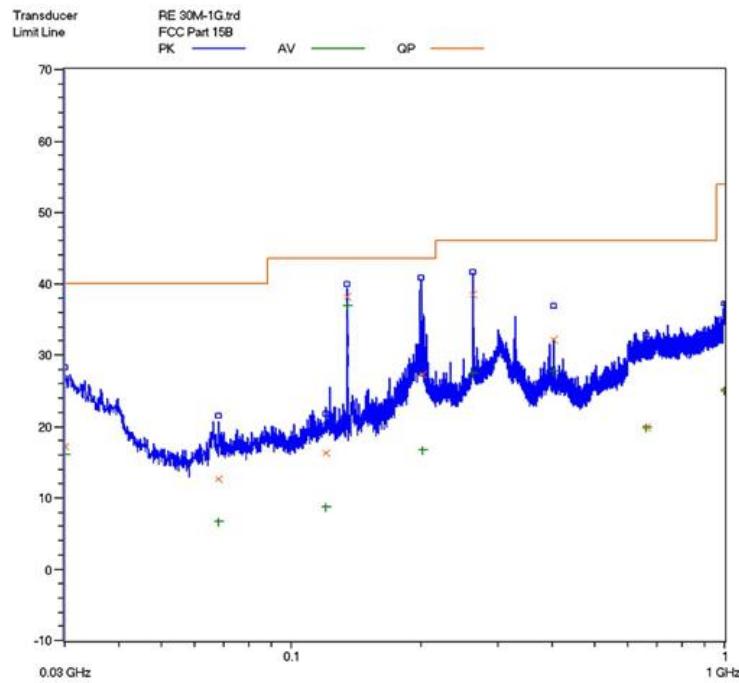
**Frequency measured at 30MHz to 1000MHz:**



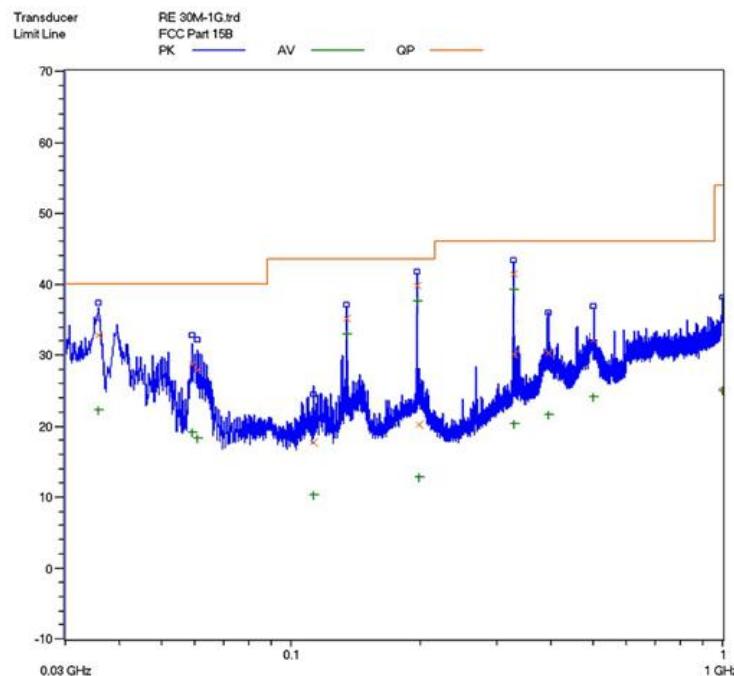
*Frequency measured at Above 1GHz:*



### Mode 1:

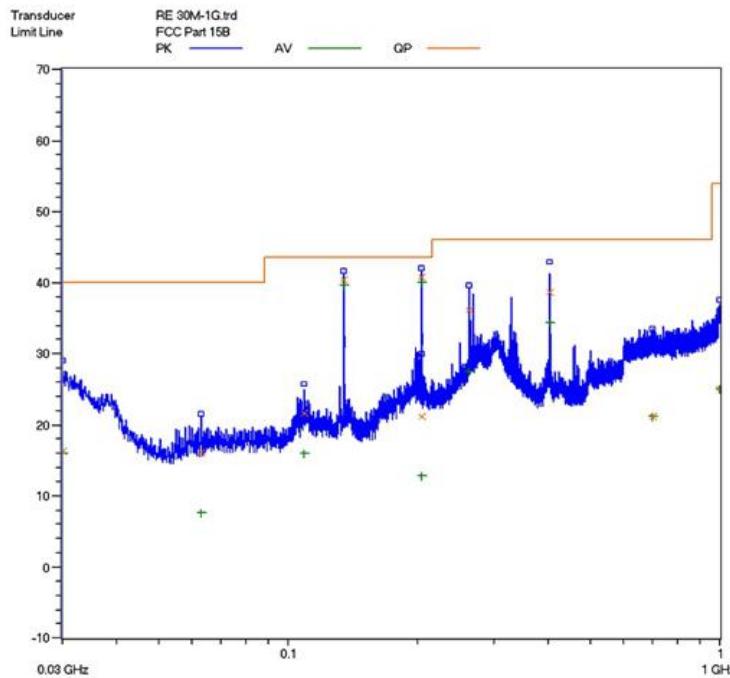


**Horizontal: Radiated Emission Test Plot  
(30-1000MHz)**

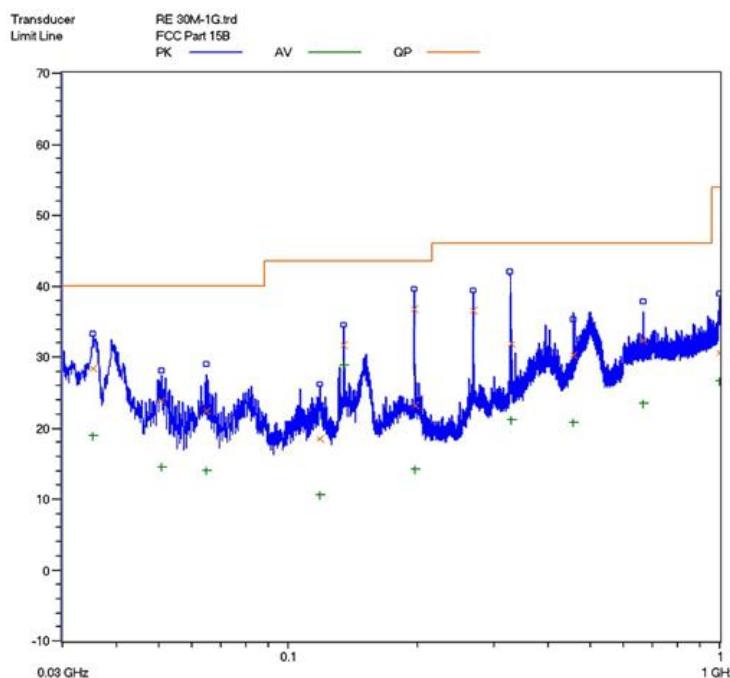


**Vertical: Radiated Emission Test Plot  
(30-1000MHz)**

### Mode 2:



**Horizontal: Radiated Emission Test Plot  
(30-1000MHz)**



**Vertical: Radiated Emission Test Plot  
(30-1000MHz)**

**Test Data:**

Pre-scan has been conducted to determine the worst-case from all possible combinations between available operation mode. The worst-case is mode 1 was selected for the final testing.

**Mode 1:**

Test No. #:	Frequency (MHz)	Factor (dB)	Reading Level QP (dBuV/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	/	/	/	/	/	/
2	/	/	/	/	/	/
3	/	/	/	/	/	/
4	/	/	/	/	/	/
5	/	/	/	/	/	/
6	/	/	/	/	/	/

**Note:**

1. The field strength is calculated by adding the antenna factor, cable factor. The basic equation with a sample calculation is as follows:  
Emission Level = Reading Level + Factor.
2. The limits shown are based on quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. the bandwidth of Test Receiver was set at 200Hz in frequency range of 9KHz to 150KHz, 9kHz in the frequency range of 150KHz to 30MHz.
3. All emission levels in the frequency range of 9KHz to 30MHz are 20dB below the official limits that are not reported.

**Test Data:**  
**Mode 1&Below 1GHz:**

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Preamp Factor (dB)	Reading Level QP (dBuV/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
<b>Horizontal</b>							
133.151	0.02	7.6	/	32.18	39.8	43.5	-3.7
199.986	0.1	6.8	/	32.00	38.9	43.5	-4.6
266.609	0.12	12.6	/	31.76	44.5	46	-1.5
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
<b>Vertical</b>							
133.200	0.02	7.6	/	30.46	38.1	43.5	-5.4
201.393	0.1	7.1	/	32.70	39.9	43.5	-3.6
266.010	0.12	12.6	/	29.48	41.4	46	-4.6
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/

**Note:**

1. All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 60 s sweep time. A video filter was not used.
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Emission Level =Reading Level + Antenna Factor + Cable Loss -Preamplifier Factor.
3. The other emission levels are 20dB below the official limits that are not reported.

### Mode 1 & Above 1GHz:

Frequency (GHz)	Cable Loss (dB)	Antenna Factor (dB)	Preamp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Polarization (H/V)
<b>Peak Measurement</b>								
1.166	1.40	23.9	-33.6	53.97	45.67	74	-28.33	H
1.190	1.45	24.5	-33.6	54.37	46.72	74	-27.28	H
1.325	1.57	25.1	-33.6	55.29	48.36	74	-25.64	H
1.360	1.58	25.1	-33.6	54.2	47.28	74	-26.72	V
1.455	1.65	25.7	-33.6	55.64	49.39	74	-24.61	V
1.585	1.76	26.7	-33.0	54.55	50.01	74	-23.99	V
<b>Average Measurement</b>								
1.166	1.40	23.9	-33.6	47.04	38.74	54	-15.26	H
1.190	1.45	24.5	-33.6	49.75	42.10	54	-11.90	H
1.325	1.57	25.1	-33.6	46.94	40.01	54	-13.99	H
1.360	1.58	25.1	-33.6	46.58	39.66	54	-14.34	V
1.455	1.65	25.7	-33.6	48.97	42.72	54	-11.28	V
1.585	1.76	26.7	-33.0	44.64	40.10	54	-13.9	V

#### Note:

1. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Emission Level = Reading Level + Antenna Factor + Cable Loss - Preamplifier Factor.
2. The limits shown are based on Peak value and Average value detector above 1GHz, the bandwidth of Test Receiver was set at 1MHz above 1GHz.
3. The other emission levels are 20dB below the official limits that are not reported.

**Mode 2&Below 1GHz:**

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Preamp Factor (dB)	Reading Level QP (dBuV/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
<b>Horizontal</b>							
133.151	0.02	7.6	/	32.58	40.2	43.5	-3.3
268.720	0.13	13.4	/	28.37	41.9	46	-4.1
266.720	0.13	13.4	/	28.37	41.9	46	-4.1
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
<b>Vertical</b>							
134.559	0.02	7.6	/	30.88	38.5	43.5	-5.0
199.986	0.1	6.8	/	34.40	41.3	43.5	-2.2
268.485	0.13	13.4	/	28.37	41.9	46	-4.1
663.840	0.36	22.2	/	12.74	35.3	46	-10.7
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/

**Note:**

1. All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 60 s sweep time. A video filter was not used.
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Emission Level =Reading Level + Antenna Factor + Cable Loss -Preamplifier Factor.
3. The other emission levels are 20dB below the official limits that are not reported.

### Mode 2&Above 1GHz:

Frequency (GHz)	Cable Loss (dB)	Antenna Factor (dB)	Preamp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Polarization (H/V)
<b>Peak Measurement</b>								
1.166	1.40	23.9	-33.6	53.97	45.67	74	-28.33	H
1.190	1.45	24.5	-33.6	54.37	46.72	74	-27.28	H
1.325	1.57	25.1	-33.6	55.29	48.36	74	-25.64	H
1.360	1.58	25.1	-33.6	54.2	47.28	74	-26.72	V
1.455	1.65	25.7	-33.6	55.64	49.39	74	-24.61	V
1.585	1.76	26.7	-33	54.55	50.01	74	-23.99	V
<b>Average Measurement</b>								
1.166	1.40	23.9	-33.6	47.04	38.74	54	-15.26	H
1.190	1.45	24.5	-33.6	49.75	42.10	54	-11.9	H
1.325	1.57	25.1	-33.6	46.94	40.01	54	-13.99	H
1.360	1.58	25.1	-33.6	46.58	39.66	54	-14.34	V
1.455	1.65	25.7	-33.6	48.97	42.72	54	-11.28	V
1.585	1.76	26.7	-33	44.64	40.10	54	-13.9	V

#### Note:

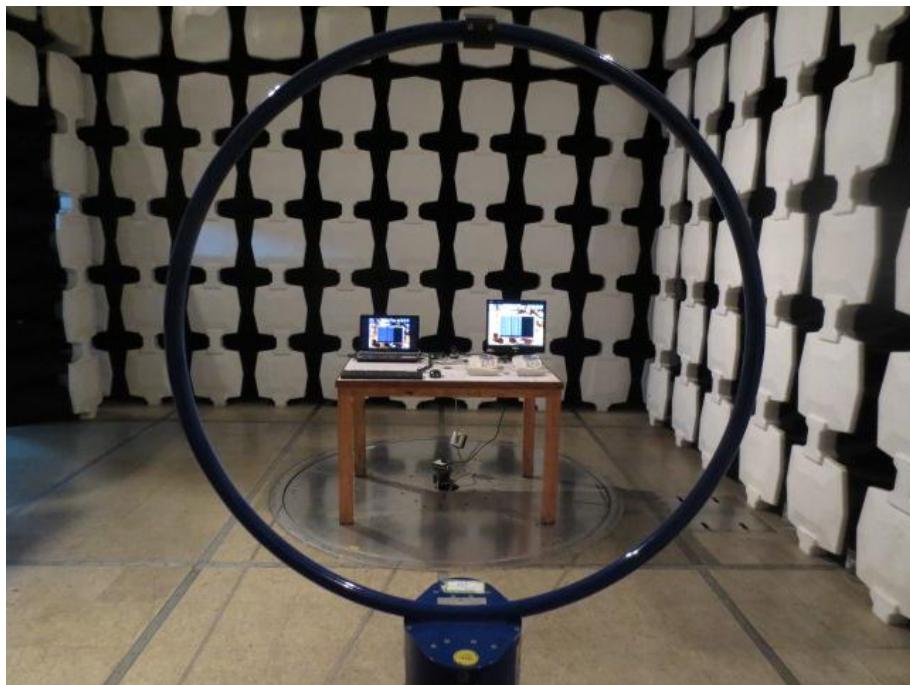
1. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Emission Level =Reading Level + Antenna Factor + Cable Loss -Preamplifier Factor.
2. The limits shown are based on Peak value and Average value detector above 1GHz, the bandwidth of Test Receiver was set at 1MHz above 1GHz.
3. The other emission levels are 20dB below the official limits that are not reported.

**Test Equipment List:**

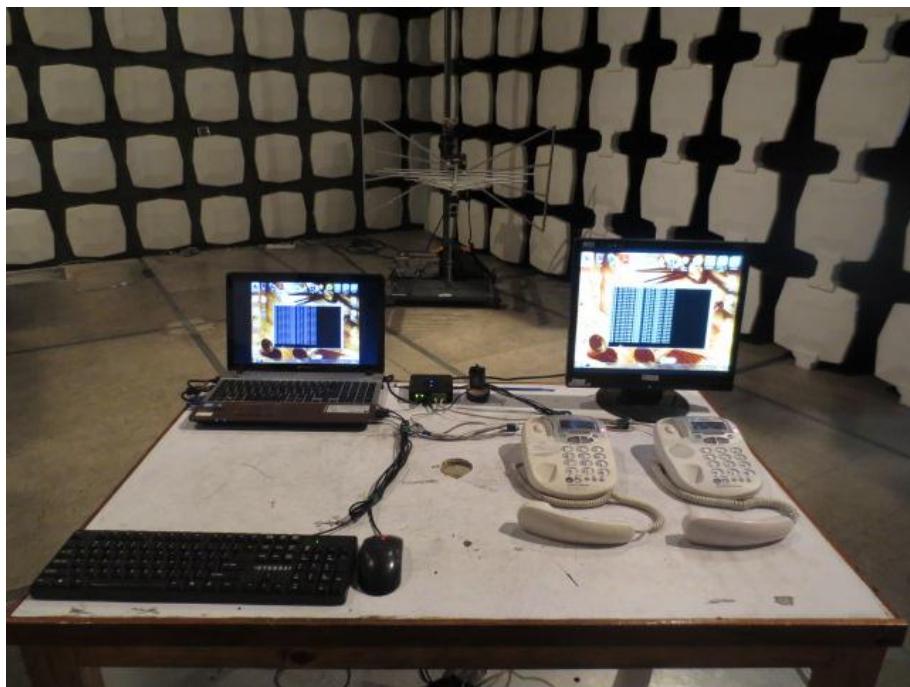
<b>Test Equipment</b>	<b>Model No.</b>	<b>Manufacturer</b>	<b>Serial No.</b>	<b>Last Cal.</b>	<b>Cal. Due</b>
EMI Test Receiver	SMR4503	SCHAFFNER	11725	2014.07.08	2015.07.07
Double-ridged Wave guide horn	3115	ETS	6587	2014.08.02	2015.08.01
Microwave system amplifier	83017A	Agilent	MY39500438	2014.07.11	2015.07.10
Biconilog Antenna	3142C	ETS	00042672	2014.09.28	2015.09.27
Band-pass Filter	BRM50702	Micro-Tronic	S/N-030	2014.11.30	2015.11.29
Spectrum Analyzer	FSP30	R&S	100755	2014.11.30	2015.11.29
HF Loop Antenna	HLA6120	TESEQ	26348	2014-10-11	2015-10-12
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

TESTED BY: Darren GALANZ  
**ENGINEER** COMPANY NAME

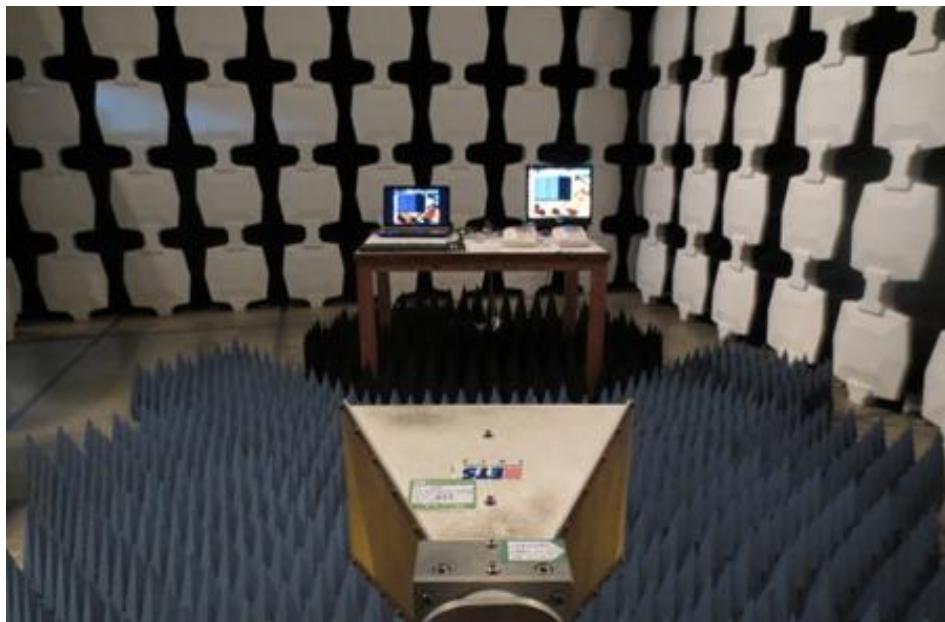
REVIEWED BY: James ECMG  
**SENIOR ENGINEER** COMPANY NAME



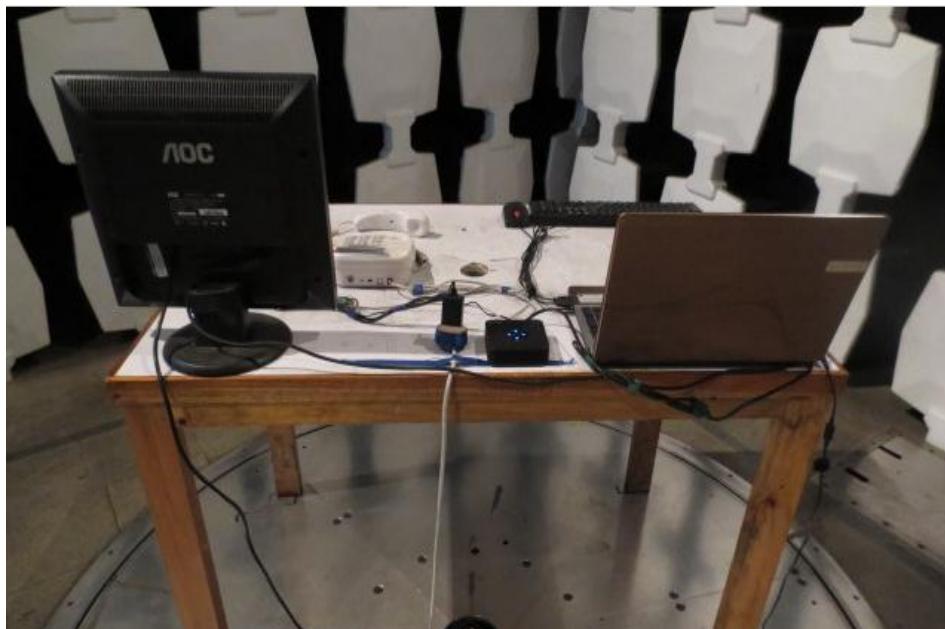
***Radiated Emission Test Set-up(9KHz-30MHz)***



***Radiated Emission Test Set-up(30-1000MHz)***



***Radiated Emission Test Set-up(Above 1GHz)***



***Radiated Emission Test Set-up (Rear View)***

※※※ ***End Of Report*** ※※※