

# FCC MPE REPORT

On Model Name: IP Multimedia Phone

Model Numbers: GXV3175

Brand Name: Grandstream

FCC ID Number: YZZGXV3175

Prepared for Grandstream Networks,INC

Test Report #: SHE-1204-10808-FCC MPE

Tested by: Daomen Galanz  
Engineer Company Name

Reviewed by: Jameryn ECMG  
Senior Engineer Company Name

QC Manager: Swall Zhang ECMG  
QC Manager Company Name

Test Report Released by: Swall Zhang May 17<sup>th</sup>, 2012  
Swall Zhang Date

## **Test Location**

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

*Test Site Location : Galanz*

*25 South Ronggui Rd., Shunde, Foshan,  
Guangdong, China*

*Tel : (86)-757-23612785*

*Fax : (86)-757-23612537*

## **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.*

### List of Test and Measurement Instruments

<i>Equipment</i>	<i>Manufacturer</i>	<i>Model No.</i>	<i>Serial No.</i>	<i>Calibrated Untill</i>
<i>Spectrum Analyzer</i>	<i>R&amp;S</i>	<i>FSP30</i>	<i>100755</i>	<i>2012-11-30</i>
<i>EMI Receiver</i>	<i>SCHAFFNER</i>	<i>SMR4503</i>	<i>11725</i>	<i>2012-11-30</i>
<i>LISN</i>	<i>ETS</i>	<i>4825/2</i>	<i>1161</i>	<i>2012-11-30</i>
<i>Coaxial Cable</i>	<i>ATC</i>	<i>N/A</i>	<i>N/A</i>	<i>2012-11-30</i>
<i>Double-ridged Wave guide horn</i>	<i>ETS</i>	<i>3115</i>	<i>6587</i>	<i>2012-11-30</i>
<i>Amplifier</i>	<i>Agilent</i>	<i>83017A</i>	<i>MY39500438</i>	<i>2012-11-30</i>
<i>Band filter</i>	<i>ASI</i>	<i>82346</i>	<i>S06389</i>	<i>2012-11-30</i>
<i>Biconilog Antenna</i>	<i>ETS</i>	<i>3142C</i>	<i>00042672</i>	<i>2012-11-30</i>
<i>Semi-anechoic Chamber</i>	<i>ETS</i>	<i>N/A</i>	<i>N/A</i>	<i>2012-11-30</i>

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### **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* : *IP Multimedia Phone*

*Model Name* : *GXV3175*

*Model Tested* : *GXV3175*

*Receipt Date* : *April 29<sup>th</sup>, 2012*

*Date Tested* : *May 3<sup>rd</sup>, 2012 to May 15<sup>th</sup>, 2012*

*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*

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

## EUT Description

Grandstream Networks, Inc., model tested GXV3175 (referred to as the EUT in this report) is an IP Multimedia Phone.

The EUT is an IP multimedia phone which integrates an IEEE 802.11 b/g/n wireless adapter. Main technical specifications of the EUT as follows:

Parameter		Range																															
Rating	Rated voltage	DC12V																															
	Rated Current	1.5A																															
802.11b/g/n Adapter Parameters	Operating band	2400-2483.5MHz																															
	WiFi Module Voltage	5.0VDC $\pm$ 5% (or 3.3VDV $\pm$ 5% upon special requirement)																															
	Working Frequency of Each Channel	<table border="1"> <thead> <tr> <th>Channel No.</th> <th>Frequency (MHz)</th> <th>Channel No.</th> <th>Frequency (MHz)</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>2412</td> <td>007</td> <td>2442</td> </tr> <tr> <td>002</td> <td>2417</td> <td>008</td> <td>2447</td> </tr> <tr> <td>003</td> <td>2422</td> <td>009</td> <td>2452</td> </tr> <tr> <td>004</td> <td>2427</td> <td>010</td> <td>2457</td> </tr> <tr> <td>005</td> <td>2432</td> <td>011</td> <td>2462</td> </tr> <tr> <td>006</td> <td>2437</td> <td>--</td> <td>--</td> </tr> </tbody> </table>				Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	001	2412	007	2442	002	2417	008	2447	003	2422	009	2452	004	2427	010	2457	005	2432	011	2462	006	2437	--	--
		Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)																												
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		003	2422	009	2452																												
004		2427	010	2457																													
005		2432	011	2462																													
006	2437	--	--																														
Frequency of Number	IEEE 802.11b/g: 11 channels; 802.11n HT 20MHz: 11 channels; 802.11n HT 40MHz: 7 channels.																																
Modulation Type	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM IEEE 802.11n H420: OFDM																																
Data Rate	IEEE 802.11b: 11/5.5/2/1Mbps(adaptive); IEEE 802.11g: 54/48/36/24/18/12/9/6Mbps(adaptive); IEEE 802.11n: 65/58.5/52/39/26/19.5/13/6.5Mbps; 130/117/104/78/52/39/26/13Mbps; 150/121.5/108/81/54/40.5/27/13.5Mbps;																																

	<i>Wireless Transmit Power</i>	<i>802.11g/n:15dBm ±10%, max: 16dBm ±10%; 802.11b: 18dBm ±10%.</i>
	<i>Antenna Spec.</i>	<i>1. Gain: 2dBi 2. Impedance: 50ohm 3. I-PEX Receptacle</i>
<i>I/O Ports</i>	<i>PC Ethernet Port</i>	<i>10/100Mbps RJ-45 port connecting to PC</i>
	<i>Network Ethernet Port</i>	<i>10/100Mbps RJ-45 port connecting to Ethernet</i>
	<i>Power Jack</i>	<i>12V DC Power connector port12V DC Power connector port</i>
	<i>RJ11 Jack</i>	<i>Phone handset connector port</i>
	<i>USB Port</i>	<i>USB devices may be connected via the USB port</i>
	<i>SD Card Slot</i>	<i>SD card could be inserted in for picture/music/video files storage</i>
	<i>HDMI</i>	<i>High-Definition Multimedia Interface</i>
	<i>Headset Jack</i>	<i>3.5mm stereo headset connector port</i>
<i>Universal Power Supply</i>	<i>Input</i>	<i>100-240V AC 50/60Hz</i>
	<i>Output</i>	<i>12V DC,1.5A</i>
	<i>Model</i>	<i>SFF1200150A1BB</i>
	<i>Brand name</i>	<i>Mass</i>

*NOTE: For more detailed informations or features please refer to user's manual of EUT.*



## ATTACHMENT 1 - RF EXPOSURE COMPLIANCE REQUIREMENT

### Applicable Standard:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

### Limits for General Population/Uncontrolled Exposure

#### a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Times / E / 2, / H / 2 or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100000			5	6

#### (b) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Times / E / 2, / H / 2 or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100000			1.0	30

Note: f=frequency in MHz; \*Plane-wave equivalent power density

### **MPE Calculation Method**

$$E \text{ (V/m)} = (30 \cdot P \cdot G)^{0.5} / d \quad \text{Power Density: } S \text{ (mW/m}^2\text{)} = E^2 / 377$$

*E = Electric Field (V/m)*

*P = Peak RF output Power (W)*

*G = EUT Antenna numeric gain (numeric)*

*d = Separation distance between radiator and human body (m)*

*The formula can be changed to*

$$S = (30 \cdot P \cdot G) / (377 \cdot d^2)$$

*From the peak EUT RF output power, the minimum mobile separation distance  $d=0.2\text{m}$ , as well as the gain of the used antenna, the RF power density can be obtained.*

*Note :*

*The maximal conducted peak output power is **18.47dBm(0.0703W)** in the high channel(2.462GHz).*

*The best case gain of the antenna is 2.0dBi.*

*2.0dB logarithmic terms convert to numeric result is nearly 1.58.*

### **Test Result:**

<b>Channel (MHz)</b>	<b>Antenna Gain (Numeric)</b>	<b>Peak Output Power (dBm)</b>	<b>Peak Output Power (W)</b>	<b>Power Density (S) (mW/cm<sup>2</sup>)</b>	<b>Limit of Power Density (S) (mW/cm<sup>2</sup>)</b>	<b>Test Result</b>
2462	1.58	18.47	0.0703	0.2210	1.0	Compliant

*The unit does meet the requirement.*