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FCC MAXIMUM PERMISSIBLE EXPOSURE ASSESSMENT REPORT

On Model Name: IP Multimedia Phone

Model Numbers: GXV3175

Brand Name: Grandstream

FCC ID Number: YZZGXV3175-P

Prepared for Grandstream Networks,INC

Test Report #: SHE-1212-10918-FCC MPE

Tested by: Daomen Galanz
Engineer Company Name

Reviewed by: Janemyon ECMG
Senior Engineer Company Name

QC Manager: Swall Zhang
QC Manager Company Name

Test Report Released by: Swall Zhang January 10th, 2013
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

Equipment	Manufacturer	Model No.	Serial No.	Calibrated Untill
<i>Spectrum Analyzer</i>	<i>R&S</i>	<i>FSP30</i>	<i>100755</i>	<i>2013-11-30</i>
<i>EMI Receiver</i>	<i>SCHAFFNER</i>	<i>SMR4503</i>	<i>11725</i>	<i>2013-11-30</i>
<i>LISN</i>	<i>ETS</i>	<i>4825/2</i>	<i>1161</i>	<i>2013-11-30</i>
<i>Coaxial Cable</i>	<i>ATC</i>	<i>N/A</i>	<i>N/A</i>	<i>2013-11-30</i>
<i>Double-ridged Wave guide horn</i>	<i>ETS</i>	<i>3115</i>	<i>6587</i>	<i>2013-11-30</i>
<i>3116C Double-Ridged Waveguide Horn</i>	<i>ETS-Lindgren</i>	<i>3116C</i>	<i>6587/01</i>	<i>2013-11-30</i>
<i>Amplifier</i>	<i>Agilent</i>	<i>83017A</i>	<i>MY39500438</i>	<i>2013-11-30</i>
<i>Band filter</i>	<i>ASI</i>	<i>82346</i>	<i>S06389</i>	<i>2013-11-30</i>
<i>Biconilog Antenna</i>	<i>ETS</i>	<i>3142C</i>	<i>00042672</i>	<i>2013-11-30</i>
<i>Semi-anechoic Chamber</i>	<i>ETS</i>	<i>N/A</i>	<i>N/A</i>	<i>2013-11-30</i>

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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 : *IP Multimedia Phone*

Model Name : *GXV3175*

Model Tested : *GXV3175*

Receipt Date : *December 5th, 2012*

Date Tested : *December 6th to 29th, 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*

Telephone : *(86)-755-26014600*

Fax : *(86)-755-26014601*

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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 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 module. Main technical specifications of the EUT as follows:

Parameter		Range																												
Rating	Rated voltage	DC12V																												
	Rated Current	1.5A																												
IEEE 802.11b/g/n Wi- Fi module 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	---	---
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004	2427	010	2457																											
005	2432	011	2462																											
006	2437	---	---																											
Frequency of Number	IEEE 802.11b/g: 11 channels; Draft 802.11n standard 20MHz: 11 channels; Draft 802.11n standard 40MHz: 7 channels.																													
Modulation Type	802.11b: DBPSK, DQPSK, CCK (DSSS); 802.11g/n: BPSK, QPSK, 16-QAM, 64-QAM (OFDM)																													
Data Rate	IEEE 802.11b: 11/5.5/2/1Mbps (Dynamic); IEEE 802.11g: 54/48/36/24/18/12/9/6Mbps; IEEE 802.11n: up to 150Mbps;																													

Continue on the next page...

	Wireless Transmit Power	IEEE 802.11b(1-11M): 18dBm +/-2dB IEEE 802.11g(6-54M): 15dBm +/-2dB IEEE 802.11n(mcs=0~7): 15dBm +/-2dB
	Antenna Spec.	1. Gain: 2dBi 2. Impedance: 50ohm 3. I-PEX Receptacle
I/O Ports	PC Ethernet Port	10/100Mbps RJ-45 port connecting to PC
	Network Ethernet Port	10/100Mbps RJ-45 port connecting to Ethernet
	Power Jack	12V DC Power connector port 12V DC Power connector port
	RJ11 Jack	Phone handset connector port
	USB Port	USB devices may be connected via the USB port
	SD Card Slot	SD card could be inserted in for picture/music/video files storage
	HDMI	High-Definition Multimedia Interface
	Headset Jack	3.5mm stereo headset connector port
Universal Power Supply	Input	100-240V AC 50/60Hz,0.4A
	Output	12V DC, 1.5A
	Model	SFF1200150A1BB
	Brand name	Mass

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 ²)	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 ²)	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

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MPE Calculation Method:

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

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

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

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 22.24dBm (0.167Watt) in the high channel(2412MHz).

The best case gain of the antenna is 2.0dBi.

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

Test Result:

Channel (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (W)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2412	1.58	22.24	0.167	0.525	1.0	Compliant

The unit does meet the requirement.