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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: Jameym ECMG
Senior Engineer Company Name

QC Manager: Swall Zhang ECMG
QC Manager Company Name

Test Report Released by: Swall Zhang May 17th, 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

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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 Until
<i>Spectrum Analyzer</i>	R&S	FSP30	100755	2012-11-30
<i>EMI Receiver</i>	SCHAFFNER	SMR4503	11725	2012-11-30
<i>LISN</i>	ETS	4825/2	1161	2012-11-30
<i>Coaxial Cable</i>	ATC	N/A	N/A	2012-11-30
<i>Double-ridged Wave guide horn</i>	ETS	3115	6587	2012-11-30
<i>Amplifier</i>	Agilent	83017A	MY39500438	2012-11-30
<i>Band filter</i>	ASI	82346	S06389	2012-11-30
<i>Biconilog Antenna</i>	ETS	3142C	00042672	2012-11-30
<i>Semi-anechoic Chamber</i>	ETS	N/A	N/A	2012-11-30

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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 : *April 29th, 2012*
Date Tested : *May 3rd, 2012 to May 15th, 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*
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 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 belows:

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 ± 5% (or 3.3VDV± 5% upon special requirement)	
	Working Frequency of Each Channel	Channel No.	Frequency (MHz)
		001	2412
		002	2417
		003	2422
		004	2427
	Frequency of Number	005	2432
	006	2437	
	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;	

	Wireless Transmit Power	802.11g/n: 15dBm $\pm 10\%$, max: 16dBm $\pm 10\%$; 802.11b: 18dBm $\pm 10\%$.
	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
	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
	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

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=0.2m, 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:

<i>Channel (MHz)</i>	<i>Antenna Gain (Numeric)</i>	<i>Peak Output Power (dBm)</i>	<i>Peak Output Power (W)</i>	<i>Power Density (S) (mW/cm²)</i>	<i>Limit of Power Density (S) (mW/cm²)</i>	<i>Test Result</i>
2462	1.58	18.47	0.0703	0.2210	1.0	Compliant

The unit does meet the requirement.