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FCC MAXIMUM PERMISSIBLE EXPOSURE ASSESSMENT REPORT

On Model Name: IP Multimedia Phone

Model Numbers: GXV3240

Brand Name: Grandstream

FCC ID Number: YZZGXV3240

Prepared for Grandstream Networks,INC

Test Report #: SHE-1402-11114-FCC-MPE

Tested by: Daomen _____ Galanz

Daomen/ Engineer — Company Name

Reviewed by: _____ ECMG

Jawen Yin/Senior Engineer — Company Name

QC Manager: Swall Zhang _____ ECMG

Swall Zhang/ QC Manager — Company Name

Test Report Released by: Swall Zhang _____ March 18th, 2014

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

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated Untill
01	Shielding Room	ETS	N/A	N/A	2014-10-25
02	Spectrum Analyzer (9KHz-30GHz)	R&S	FSP30	100755	2014-10-25
03	EMI Receiver	SCHAFFNER	SMR4503	11725	2014-10-25
04	LISN	ETS	4825/2	1161	2014-10-25
05	Coaxial Cable	ATC-Lab	N/A	N/A	2014-10-25
06	Double-ridged Wave guide horn	ETS	3115	6587	2014-10-25
07	Double-ridged Wave guide horn	ETS	3160	00052486	2014-10-25
08	Microwave system amplifier (0.5G-26.5G)	Agilent	83017A	MY39500438	2014-10-25
09	Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2014-10-25
10	Biconilog Antenna	ETS	3142C	00042672	2014-10-25
11	Semi-anechoic Chamber	ETS	N/A	N/A	2014-10-25

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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 (Shenzh en) Test Lab this test report is not permitted to be duplicated in extract s.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 accura te.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 resultin additional deviation.

Administrative Data

Test Sample	*: IP Multimedia Phone*
Model Name	*: GXV3240*
Model Tested	*: GXV3240*
Receipt Date	*: March 5th, 2014*
Date Tested	*: March 13th to 16th, 2014*
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. Tested model GXV3240 (referred to as the EUT in this report) is an IP Multimedia Phone.The EUT is an IP Multimedia Phone with IEEE 80211.b/g/n(1T1R) and Bluetooth Radio functionalityes. Technical specifications of the EUT are as beLowests:

Parameters		Ranges
Basic parameters	Rated voltage	DC +12V
	Rated Current	DC 1.5A
Specifications of Bluetooth	Operating band	2402-2480MHz
	Modulation Techniques	FHSS
	Number of Channels:	79 channels
	Data Rate	GFSK (1Mbps), π/4-DQPSK (2Mbps), 8DPSK (3Mbps)
	Type of modulation:	GFSK, DPSK,DQPSK
	Antenna Gain:	Small antennas with 0~2 dBi peak gain
Specifications of IEEE 802.11b/g/n	Operating band	2.400 GHz ~ 2.497 GHz (2.4 GHz ISM Band)
	WLAN standard	IEEE 802.11b/g/n, WiFi compliant
	Modulation	802.11b : DQPSK, DBPSK, CCK 802.11 g/n : OFDM /64-QAM,16-QAM, QPSK, BPSK
	Number of Channels:	11 channels
	Data Rate	802.11b : 1, 2, 5.5, 11Mbps; 802.11g : 6, 9, 12, 18, 24, 36, 48, 54Mbps; 802.11n: 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps; 802.11n : 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65,72.2Mbps
	Output Power	802.11b /11Mbps : 16 dBm ± 1.5 dB @ EVM -9dB; 802.11g /54Mbps : 15 dBm ± 1.5 dB @ EVM -25dB; 802.11n /65Mbps : 14 dBm ± 1.5 dB @ EVM -28dB
	Antenna Type	FPC Antenna,1T1R

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IEEE 802.11b/g/n :Working Frequency of Each Channel

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*		

Parameter		***Ranges***
I/O Ports	*USB Port*	*USB devices may be connected via the USB port*
	Handset Port	*3.5mm stereo headset connector port*
	RJ9 Headset Port	*Connect headsets*
	LAN Port	*10/100/1000Mbps Ethernet port connect to LAN. It supports PoE.*
	PC Port	*10/100/1000Mbps Ethernet port connect to PC.*
	Power Jack	*12V/5A Power Jack used to connect the power adapter*
	SD Card Slot	*SD card could be inserted in for picture/music/video files storage*
	Mini HDMI Port	*Connect the display device that supports HDMI.*
	Extension Port	*Connect the extension board.*
Universal power supply	*Input*	*AC 100-240V 50/60Hz,0.4A*
	Output	*DC 12V,1.5A*
	Model	*SFF1200150A1BY*
	Trademark	*Mass power*

Note:For more detailed information's 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 freque ncy 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/cm2)***	***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/cm2)***	***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:

$E (V/m) = (30*P*G)^{0.5}/d$ Power Density: $S (mW/m2) = E^2/377$

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=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

Note :
*The maximal conducted peak output power is **23.28dBm (0.213Watt)** 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	21.28	0.213	**0.670**	1.0	Compliant

The unit does meet the requirement.