Lab Code: 200707-0

FCC PART 15B, CLASS B
TEST REPORT

For

Grandstream Networks, Inc.

5F, Bldg. #1, No.2 Kefa Road, Science & Technology Park,

Shenzhen, Guangdong, China

FCC ID: YZZGXV3612

Report Type:	Product Type:
Original Report	IP Camera

Test Engineer:	Lebron Wang
Report Number:	RSZ110810002-00
Report Date:	2011-10-18
Reviewed By:	Lisa Zhu EMC Engineer
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Grandstream Networks, Inc.'s* product, model number: *GXV3612_N (FCC ID: YZZGXV3612)* (the "EUT") in this report is an *IP Camera*, which was measured approximately: 78.2 cm (L) x 17.4 cm (W) x 26.7 cm (H), rated input voltage: DC 12 V from adapter AC 120V/60Hz. The highest operating frequency is 288MHz.

Adapter information (AC Adapter):
Model: SFF1200150A1BB
Input: 100-240V-50/60Hz 0.4A
Output: DC 12V 1.5A

Note: the series product, model GXV3612_N and GXV3612_P are electrically identical, only different in model number and camera lens, which was explained in the attached declaration. And we select GXV3612_N for fully testing.

All measurement and test data in this report was gathered from production sample serial number: 1108032 (Assigned by BACL, Shenzhen). The EUT was received on 2011-08-10.

Objective

This test report is prepared on behalf of *Grandstream Networks, Inc.* in accordance with Part 2-Subpart J, Part 15-Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 Class B.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009. American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

N/A

Equipment Modifications

No modification was made to the unit tested.

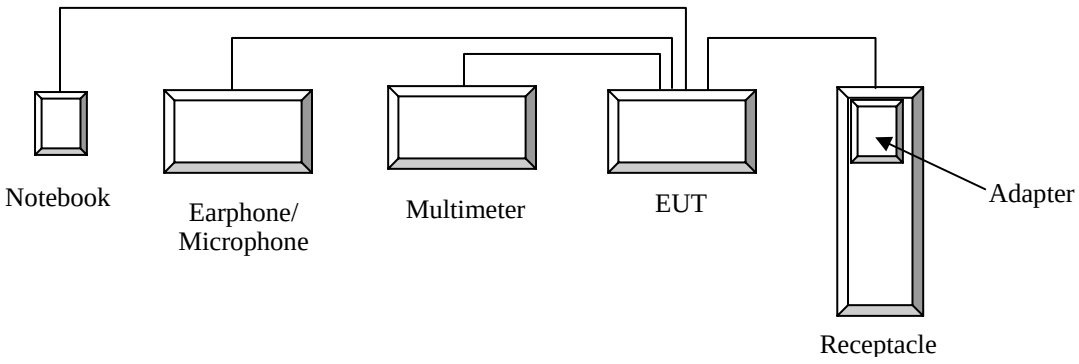
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	System PC	2#	N/A
PHILIPS	Earphone/Microphone	SBCHP250	N/A
DELL	Mouse 1#	MOC5UO	G1B0096D

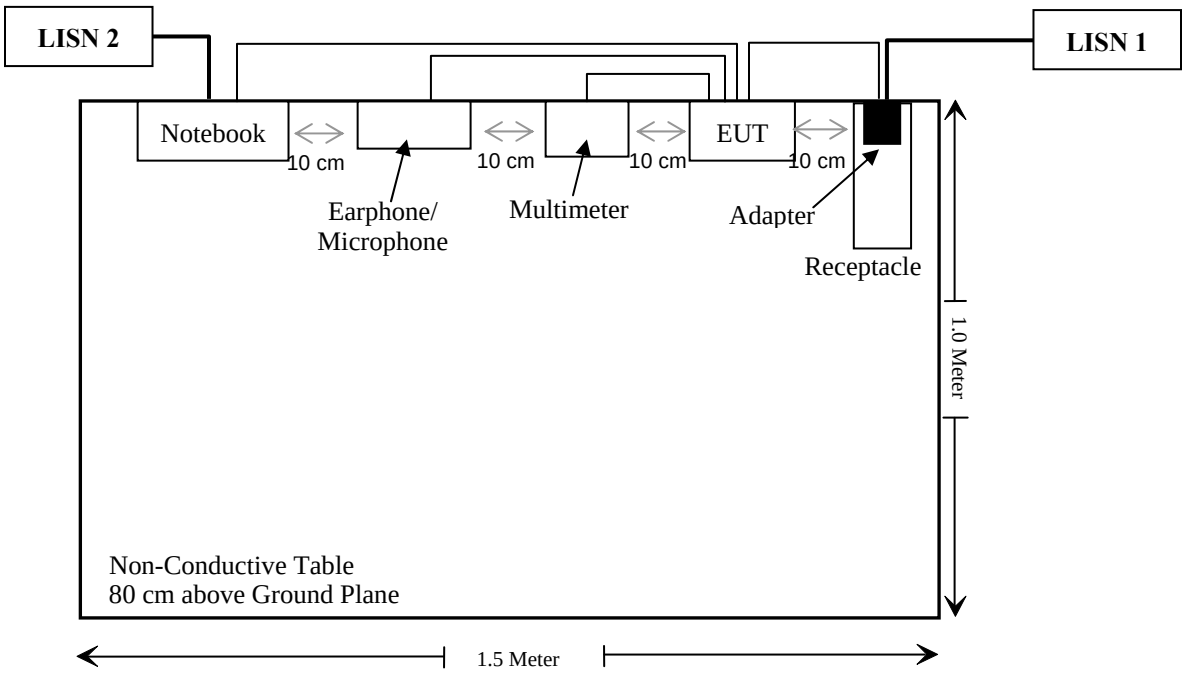
External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Detachable DC Cable	2.5	EUT	Adapter
Unshielded Detachable Earphone Cable	2.4	EUT	Earphone/ Microphone
Unshielded Detachable Ground Cable	1.0	EUT	Earth Plane
Unshielded Detachable Net Cable	1.2	EUT	PC
Unshielded Detachable AC Cable	1.0	Adapter	LISN

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Spurious Emissions	Compliance

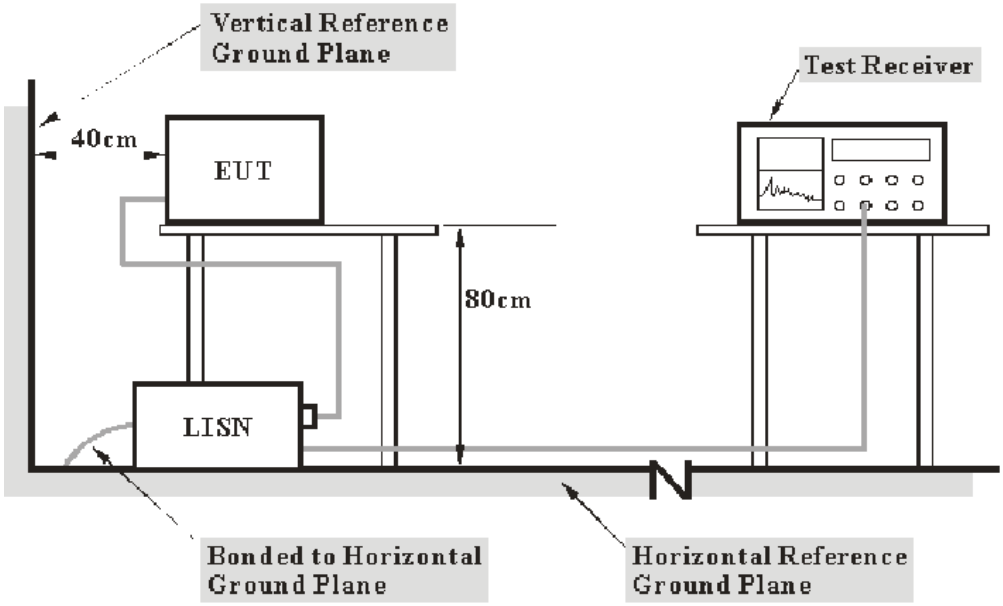
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp (Shenzhen) is ±2.4 dB. (k=2, 95% level of confidence)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2011-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratory Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107 Class B, with the worst margin reading of:

12.04 dB at **0.470 MHz** in the **Line** conducted mode

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

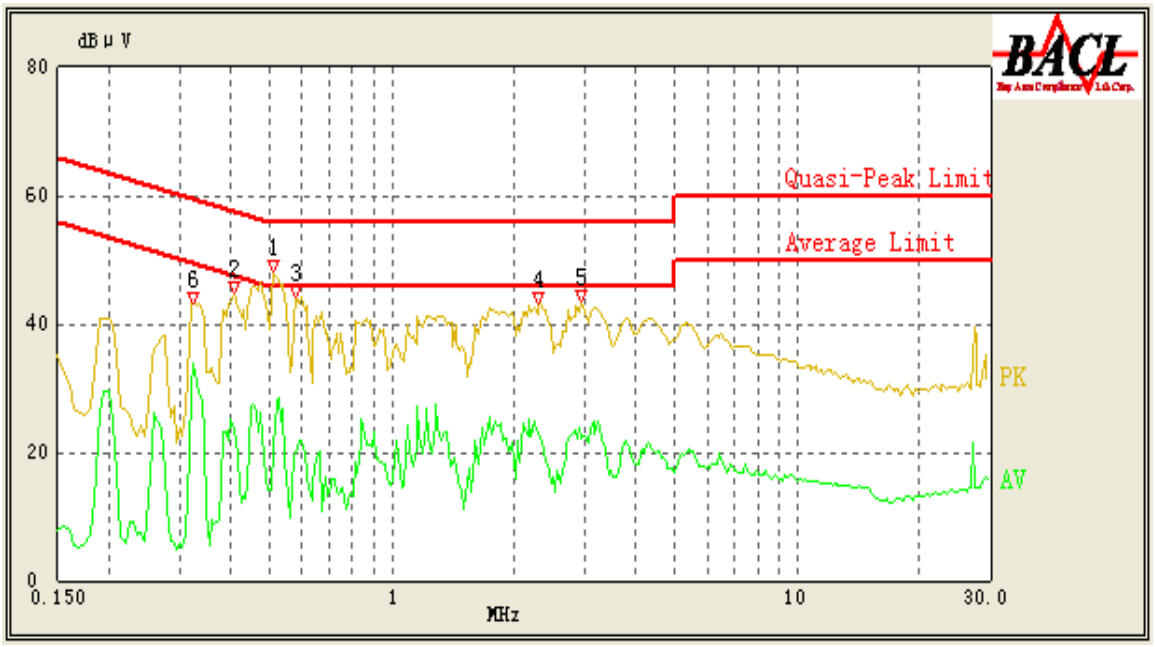
The testing was performed by Lebron Wang on 2011-09-08.

Test Mode: Running

AC 120V/60Hz, Line:

Conducted Emissions			FCC Part 15.107 Class B		
Frequency (MHz)	**Correction Amplitude (dBμV)**	**Corrected Factor (dB)**	**Limit (dBμV)**	**Margin (dB)**	**Detector (PK /QP/Ave.)**
0.470	44.82	10.10	56.86	12.04	QP
0.470	33.57	10.10	46.86	13.29	Ave.
0.645	40.41	10.10	56.00	15.59	QP
0.645	30.09	10.10	46.00	15.91	Ave.
2.195	38.67	10.10	56.00	17.33	QP
1.245	38.16	10.10	56.00	17.84	QP
1.745	37.47	10.10	56.00	18.53	QP
2.185	26.38	10.10	46.00	19.62	Ave.
1.235	24.72	10.10	46.00	21.28	Ave.
4.490	34.55	10.10	56.00	21.45	QP
1.740	23.24	10.10	46.00	22.76	Ave.
4.490	20.77	10.10	46.00	25.23	Ave.

AC 120V/60Hz, Neutral:



Conducted Emissions			FCC Part 15.107 Class B		
Frequency (MHz)	Correction Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK /QP/Ave.)
2.300	39.79	10.10	56.00	16.21	QP
0.510	39.42	10.10	56.00	16.58	QP
0.325	33.88	10.10	51.00	17.12	Ave.
0.410	40.51	10.10	58.57	18.06	QP
2.935	37.22	10.10	56.00	18.78	QP
0.580	35.55	10.10	56.00	20.45	QP
2.315	22.62	10.10	46.00	23.38	Ave.
2.945	22.13	10.10	46.00	23.87	Ave.
0.410	23.83	10.10	48.57	24.74	Ave.
0.510	20.88	10.10	46.00	25.12	Ave.
0.585	20.82	10.10	46.00	25.18	Ave.
0.325	35.08	10.10	61.00	25.92	QP

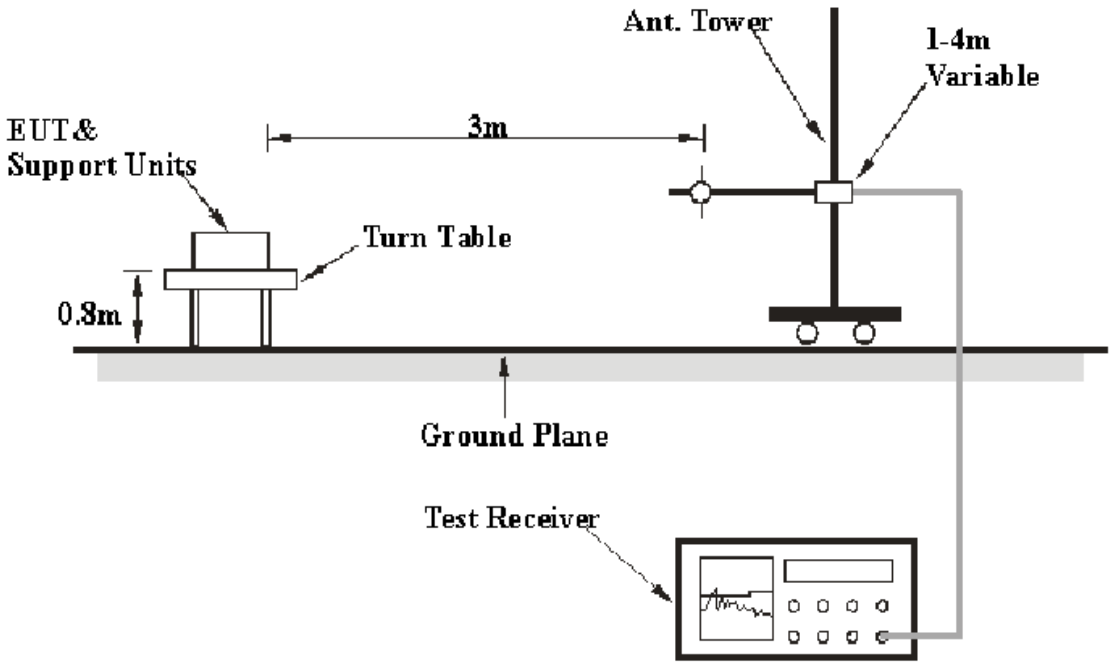
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ±4.0 dB. (k=2, 95% level of confidence)

EUT Setup



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 2 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	*RBW*	*Video B/W*	*Detector*
30MHz – 1000 MHz	100 kHz	300 kHz	QP
Above 1 GHz	1MHz	3 MHz	Peak
Above 1 GHz	1MHz	10 Hz	Ave.

Test Procedure

For the radiated emissions test, the adapter was connected to AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447E	1937A01046	2011-08-02	2012-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-07-08	2012-07-07
Mini-Circuits	Amplifier	ZVA-213+	N/A	2011-09-12	2012-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.109 Class B, with the worst margin reading of:

2.2 dB at **432.038250 MHz** in the **Horizontal** polarization

Test Data

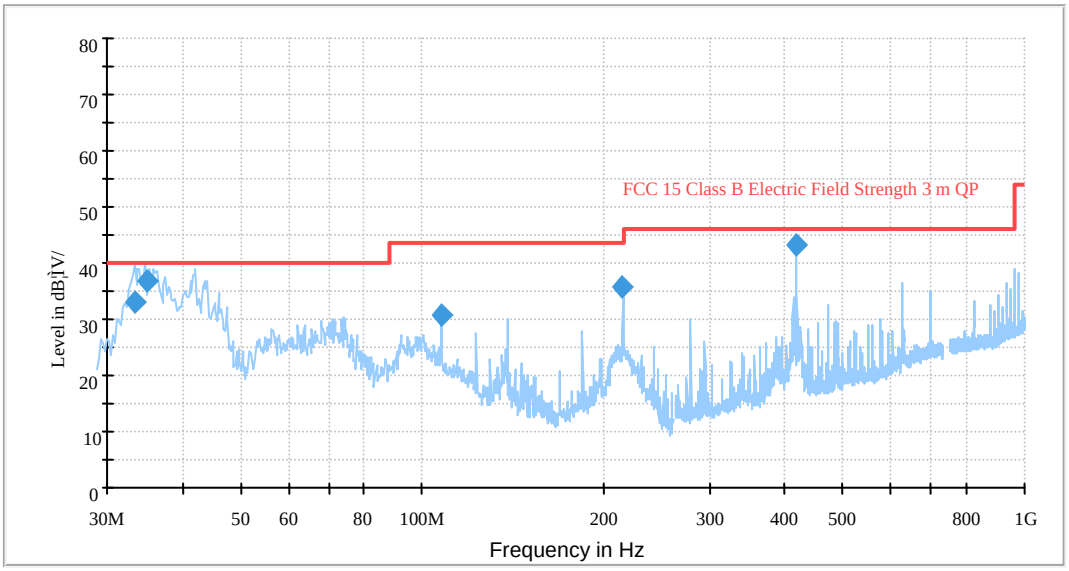
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Lebron Wang on 2011-09-13.

Test Mode: Running

1) Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (degree)	Limit (dBµV/m)	Margin (dB)
432.038250	43.8	104.0	H	3.0	46.0	2.2*
36.145750	37.5	100.0	V	248.0	40.0	2.5*
34.663750	33.6	100.0	V	254.0	40.0	6.4
224.029750	36.6	159.0	H	101.0	43.5	6.9
112.049000	31.6	303.0	H	139.0	43.5	11.9

Note: *Within measurement uncertainty.

2) Above 1GHz:

Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/QP/Ave.)	Direction (Degree)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Amp. (dBµV/m)	FCC Part 15.109	
				Height (m)	Polar (H/V)	Factor (dB)				Limit (dBµV/m)	Margin (dB)
1609.2	30.10	Ave.	185	1.8	H	25.95	2.36	26.67	31.74	54	22.26
1621.2	29.26	Ave.	191	1.5	V	25.97	2.37	26.68	30.92	54	23.06
1621.3	39.53	PK	191	1.5	V	25.97	2.37	26.68	41.19	74	32.81
1609.2	39. 28	PK	185	1.8	H	25.95	2.36	26.67	40.92	74	33.08

PRODUCT SIMILARITY DECLARATION

Company: Grandstream Networks, Inc.
Add: 5F, Bldg #1, No.2 Kefa Rd., Science & Technology Park, Shenzhen, China

Declaration of Similarity

To:
Bay Area Compliance Laboratories Corp. (Shenzhen)
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http://www.baclcorp.com.cn

We, Grandstream Networks, Inc. hereby declare that our product IP Camera, Model: GXV3612_N was tested by BACL. Model: GXV3612_P belongs to Grandstream Networks, Inc. with the trade name Grandstream. These two models are electrically and mechanically identical, share the same PCB Layout and components. And the differences between them are the model number and Camera lens: GXV3612_N (camera for American lens), GXV3612_P (camera lens for Europe lens).

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******* END OF REPORT *******