



MRT Technology (Suzhou) Co., Ltd
Phone: +86-512-66308358
Fax: +86-512-66308368
Web: www.mrt-cert.com

Report No.: 1505RSU01907
Report Version: V01
Issue Date: 06-09-2015

RF Exposure Evaluation Declaration

FCC ID: YZZGVC3200

APPLICANT: Grandstream Networks, Inc.

Application Type: Certification

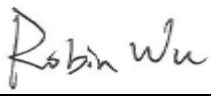
Product: Full HD Video Conferencing System


Model No.: GVC3200

Brand Name: Grandstream

FCC Classification: Digital Transmission System (DTS)

Test Date: May 29 ~ June 07, 2015

Reviewed By : 
(Robin Wu)

Approved By : 
(Marlin Chen)



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date
1505RSU01907	Rev. 01	Initial report	06-09-2015

1. RF Exposure Evaluation

1.1. Limits

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation

distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] * \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	Full HD Video Conferencing System
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.12dBi for 2.4GHz & 1.14dBi for 5GHz in logarithm scale.

For 2.4GHz Wi-Fi ISM Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11b	2412 ~ 2462	17.32	0.0175	1
802.11g	2412 ~ 2462	16.24	0.0136	1
802.11n-HT20	2412 ~ 2462	15.17	0.0107	1

For 5GHz Wi-Fi UNII Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11a	5180 ~ 5240	13.02	0.0052	1
	5260 ~ 5320	13.04	0.0052	1
	5500 ~ 5700	14.12	0.0067	1
	5725 ~ 5825	13.14	0.0053	1
802.11n-HT20	5180 ~ 5240	11.54	0.0037	1
	5260 ~ 5320	11.56	0.0037	1
	5500 ~ 5700	13.03	0.0052	1
	5725 ~ 5825	12.58	0.0047	1

For 2.4GHz Bluetooth Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
V3.0 + HS	2402 ~ 2480	1.06	0.0004	1
BLE	2402 ~ 2480	6.39	0.0014	1

CONCULISON:

Therefore, the Max Power Density at R (20 cm) = $0.0067\text{mW/cm}^2 < 1\text{mW/cm}^2$.

So the EUT complies with the requirement.