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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
( Robin Wu )

Approved By : Marlin Chen
( Marlin Chen )

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

# Revision History

| Report No. | Version | Description | Issue Date |
|---|---|---|---|
| 1505RSU01907 | Rev. 01 | Initial report | 06-09-2015 |
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# 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:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] * [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(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

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|---|---|
| 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) = 0.0067mW/cm$^2$ < 1mW/cm$^2$.

So the EUT complies with the requirement.

The End