Excellence in Compliance Testing

Certification Exhibit

FCC ID: VEYCN1300W1

FCC Rule Part: 15.247

ACS Project: 14-2102

Manufacturer: xG Technology, Inc.
Model: CN1300W1

RF Exposure

General Information:

Applicant: xG Technology, Inc.
ACS Project: 14-2102
Device Category: Mobile/Fixed
Environment: General Population/Uncontrolled Exposure

Technical Information:

Antenna Type: 2X MIMO Sector Antenna
Antenna Gain: 15 dBi
Maximum Transmitter Conducted Power: 15.18 dBm, 32.96 mW
Maximum System EIRP: 30.18 dBm, 1042.32 mW
Exposure Conditions: Greater than 20 centimeters

The WLAN CN1300W1 module (FCC ID: VEYCN1300W1) is integrated inside the xG Technology CN1300 host device which provides the 2X 15 dBi MIMO sector antenna. The directional gain of the array is calculated per FCC KDB Publication No. 662911 D01 Multiple Transmitter Output v02r01.

Directional Gain = G_{ANT} + Array Gain
*Array Gain = 10*log(N_{ANT}/N_{SS}) dB*

Where,
G_{ANT} = Antenna Gain
N_{ANT} = number of transmit antennas and
N_{SS} = number of spatial streams. (Assume N_{SS} = *1* unless you have specific information to the contrary.)

For the panel antenna configuration, the TX antennas are cross-polarized. Therefore, the directional gain is the individual gain of the antenna:

Directional Gain = 15 dBi

MPE Calculation

The Power Density (mW/cm^2) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

MPE Calculator for Mobile Equipment Limits for General Population/Uncontrolled Exposure*							
Transmit Frequency (MHz)	**Radio Power (dBm)**	**Power Density Limit (mW/Cm2)**	**Radio Power (mW)**	**Antenna Gain (dBi)**	**Antenna Gain (mW eq.)**	**Distance (cm)**	**Power Density (mW/cm^2)**
2437	15.18	1.00	32.96	15	31.623	20	0.207

Installation Guidelines

The installation manual should contain text similar to the following advising how to install the equipment to maintain compliance with the FCC RF exposure requirements:

RF Exposure

In accordance with FCC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20 centimeters will be maintained.

Conclusion

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure and the general population.