Excellence in Compliance Testing

Certification Exhibit

FCC ID: VEYXAPR1

FCC Rule Part: 15.247

ACS Project Number: 14-2006

Manufacturer: xG Technology, Inc.
Model: xAP

RF Exposure

General Information:

Applicant:	xG Technology, Inc.
ACS Project:	14-2006
Device Category:	Base Station
Environment:	General Population/Uncontrolled Exposure

Transmitter Signal Correlation Information:

The xAP 900 MHz output signals are correlated using cyclic delay diversity (CDD). The maximum output power listed corresponds to the summation of the output power at both TX antenna ports. The directional gain 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.)

The xAP is professionally installed and uses different antenna gains. The transmitter RF output power is adjusted based on the antenna configuration. The technical information for the xAP for each output power / antenna configuration is provided below.

Technical Information:[1]

Antenna Type:	Monopole
Individual Antenna Gain:	5 dBi
Directional Antenna Gain:	8.01 dBi
Maximum Transmitter Conducted Power:	27.39 dBm, 548.28 mW
Maximum System EIRP:	35.4 dBm, 3467.6 mW
Exposure Conditions:	Greater than 22 centimeters

Antenna Type:	2x2 Mimo Sector Antenna
Antenna Gain:	13.8 dBi
Directional Antenna Gain:	13.8 dBi (Based on cross-polarization of TX antennas)
Maximum Transmitter Conducted Power:	21.6 dBm, 144.54 mW
Maximum System EIRP:	35.4 dBm, 3467.37 mW
Exposure Conditions:	Greater than 22 centimeters

Antenna Type:	4x2 Mimo Panel Antenna
Antenna Gain:	11.3 dBi
Directional Antenna Gain:	11.3 dBi (Based on cross-polarization of TX antennas)
Maximum Transmitter Conducted Power:	24.23 dBm, 264.85 mW
Maximum System EIRP:	35.53 dBm, 3572.7284 mW
Exposure Conditions:	Greater than 22 centimeters

[1] The antenna and power information provided includes the antennas and power levels reported during the original filing.

MPE Calculations

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)

Table 1: xAP 900 MHz MPE Calculations 5 dBi Omni/Monopole Antenna

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)**
900	27.39	0.60	548.28	8.01	6.324	22	0.570

Table 2: xAP 900 MHz MPE Calculations 13.8 dBi Sector Antenna

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)**
900	21.6	0.60	144.54	13.8	23.988	22	0.570

Table 3: xAP 900 MHz MPE Calculations 11.3 dBi Panel Antenna

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)**
900	24.23	0.60	264.85	11.3	13.490	22	0.587

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 22 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.