Excellence in Compliance Testing

Certification Exhibit

FCC ID: V2V-WMR900

FCC Rule Part: 15.247

ACS Report Number: 09-0231 - 15C

Manufacturer: LigoWave LCC
Model: WMR900

RF Exposure

General Information:

Applicant: LigoWave LLC
ACS Project: 09-0231
Device Category: Mobile
Environment: General Population/Uncontrolled Exposure

Technical Information – Omni Antenna:

Antenna Type: Omni
Antenna Gain: 8 dBi
Maximum Transmitter Conducted Power: 25.76 dBm
Maximum System EIRP: 33.76 dBm, 2376 mW
Exposure Conditions: Greater than 20 centimeters

Technical Information – Panel Antenna:

Antenna Type: Panel
Antenna Gain: 13 dBi
Maximum Transmitter Conducted Power: 21.9 dBm
Maximum System EIRP: 34.9 dBm, 3090 mW
Exposure Conditions: Greater than 20 centimeters

Technical Information – Yagi Antenna:

Antenna Type: Yagi
Antenna Gain: 13 dBi
Maximum Transmitter Conducted Power: 22.9 dBm
Maximum System EIRP: 35.9 dBm, 3890 mW
Exposure Conditions: Greater than 20 centimeters

Technical Information – Grid Antenna:

Antenna Type: Grid
Antenna Gain: 18 dBi
Maximum Transmitter Conducted Power: 17.95 dBm
Maximum System EIRP: 35.95 dBm, 3935 mW
Exposure Conditions: Greater than 20 centimeters

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)**
922	25.76	0.61	376.70	8	6.310	20	0.473
922	21.9	0.61	154.88	13	19.953	21	0.558
922	22.9	0.61	194.98	13	19.953	23	0.585
917	17.95	0.61	62.37	18	63.096	23	0.592

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 23 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.