



Excellence in Compliance Testing

Certification Exhibit

**FCC ID: SM6-MINODE-WATER4
IC: 9235A-MINODE4**

**FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210**

ACS Project Number: 15-0006

**Manufacturer: Mueller Systems, LLC
Model: MiNODE-WATER4**

RF Exposure

General Information:

Applicant: Mueller Systems, LLC
 Device Category: Mobile
 Environment: General Population/Uncontrolled Exposure

Technical Information, Mode 1 – 912.310059 – 927.012451 MHz:

Antenna Type: ¼ Helical, -1dBi gain
 ¼ Monopole, 0dBi gain
 Maximum Transmitter Conducted Power: 29.26 dBm, 843.33 mW
 Maximum System EIRP: 29.26 dBm, 843.33 mW
 Exposure Conditions: Greater than 20 centimeters

Technical Information, Mode 2 – 903.649963 – 915.725525 MHz:

Antenna Type: ¼ Helical, -1dBi gain
 ¼ Monopole, 0dBi gain
 Maximum Transmitter Conducted Power: 28.69 dBm, 739.61 mW
 Maximum System EIRP: 28.69 dBm, 739.61 mW
 Exposure Conditions: Greater than 20 centimeters

MPE Calculation

The Power Density (mW/cm²) 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/Cm ²)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)
927.012451	29.26	0.62	843.33	0	1.000	20	0.168
915.625525	28.69	0.61	739.61	0	1.000	20	0.147

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.