

APPENDIX B: FCC PART 1.1307, 1.1310, 2.1091, 2.1093: RF EXPOSURE

Please refer to the MPE Evaluations that follow.



Electronics

M/A-COM

M/A-COM, Inc.
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

Telephone: 434.455.9527
FAX: 434.455.6851
popowitda@tycoelectronics.com
www.macom.com

Mobile Radio MPE Evaluation Report
(One antenna)

Declaration of Compliance

| | |
|---------------------------|--|
| FCC Rule Part: | 47 CFR §90; §2.1091; §1.1310 |
| Device Classification: | Licensed Non-Broadcast Station Transmitter (TNB) |
| Device Type: | Mobile UHF PTT Radio Transceiver with Motorcycle Mounted Antenna |
| FCC ID: | OWDTR-0020-E |
| Model Name: | M7100 (IP) |
| Modulation: | FM |
| Tx Frequency Range: | 378 - 430 MHz |
| Max. RF Conducted Power: | 50 W |
| Power Supply: | 12 VDC |
| Antenna Type: | Quarter wave vertical (P/N LE-OM420BKTNC) |
| Antenna Gain: | 5.5 dbi |
| Minimum Antenna Distance: | 71.03 cm Limits for Occupational/Controlled Exposure. 158.8 cm Limits for General Population/Uncontrolled Exposure. |

Calculation

$$S = \frac{PG}{4\pi R^2} \quad \text{therefore: } R = \sqrt{\frac{PG}{4\pi S}}$$

Where: S – power density (mW/cm²; as defined in 47 CFR § 1.1310), P – power input to antenna at 50% duty cycle (in mW), G – power gain of the antenna relative to isotropic (numeric value, not db), R – distance to center of antenna (result in cm).

S = 1.4/.28 (Controlled/Uncontrolled) at Tx frequency 420 MHz (frequency when applicable).

Calculated controlled distance: 71.03 cm

Calculated uncontrolled distance: 158.8 cm

Daryl Popowitch
Regulatory Manager,
Engineering Project Manager

M/A-COM, Inc. – Lynchburg, VA



Electronics

M/A-COM

M/A-COM, Inc.
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

Telephone: 434.455.9527
FAX: 434.455.6851
popowitda@tycoelectronics.com
www.macom.com

Mobile Radio MPE Evaluation Report
(One antenna)

Declaration of Compliance

| | |
|---------------------------|--|
| FCC Rule Part: | 47 CFR §90; §2.1091; §1.1310 |
| Device Classification: | Licensed Non-Broadcast Station Transmitter (TNB) |
| Device Type: | Mobile UHF PTT Radio Transceiver with Motorcycle Mounted Antenna |
| FCC ID: | OWDTR-0020-E |
| Model Name: | M7100 (IP) |
| Modulation: | FM |
| Tx Frequency Range: | 378 - 430 MHz |
| Max. RF Conducted Power: | 50 W |
| Power Supply: | 12 VDC |
| Antenna Type: | Quarter wave vertical (P/N LE-OM406BKTNC) |
| Antenna Gain: | 5.5 dbi |
| Minimum Antenna Distance: | 74.87 cm Limits for Occupational/Controlled Exposure. 167.4 cm Limits for General Population/Uncontrolled Exposure. |

Calculation

$$S = \frac{PG}{4\pi R^2} \quad \text{therefore: } R = \sqrt{\frac{PG}{4\pi S}}$$

Where: S – power density (mW/cm²; as defined in 47 CFR § 1.1310), P – power input to antenna at 50% duty cycle (in mW), G – power gain of the antenna relative to isotropic (numeric value, not db), R – distance to center of antenna (result in cm).

S = 1.26/.252 (Controlled/Uncontrolled) at Tx frequency 378 MHz (frequency when applicable).

Calculated controlled distance: 74.87 cm

Calculated uncontrolled distance: 167.4 cm

Daryl Popowitch
Regulatory Manager,
Engineering Project Manager

M/A-COM, Inc. – Lynchburg, VA

Mobile Radio MPE Evaluation Report
(One antenna)

Declaration of Compliance

| | |
|---------------------------|---|
| FCC Rule Part: | 47 CFR §90; §2.1091; §1.1310 |
| Device Classification: | Licensed Non-Broadcast Station Transmitter (TNB) |
| Device Type: | Mobile UHF PTT Radio Transceiver with Vehicle Rooftop Antenna |
| FCC ID: | OWDTR-0020-E |
| Model Name: | M7100 (IP) |
| Modulation: | FM |
| Tx Frequency Range: | 378 - 420 MHz |
| Max. RF Conducted Power: | 50 W |
| Power Supply: | 12 VDC |
| Antenna Type: | Quarter wave vertical (P/N AN102800V1) |
| Antenna Gain: | 2.15 dbi |
| Minimum Antenna Distance: | 50.89 cm Limits for Occupational/Controlled Exposure. 113.79 cm Limits for General Population/Uncontrolled Exposure. |

Calculation

$$S = \frac{PG}{4\pi R^2} \quad \text{therefore: } R = \sqrt{\frac{PG}{4\pi S}}$$

Where: S – power density (mW/cm²; as defined in 47 CFR § 1.1310), P – power input to antenna at 50% duty cycle (in mW), G – power gain of the antenna relative to isotropic (numeric value, not db), R – distance to center of antenna (result in cm).

S = 1.26/.252 (Controlled/Uncontrolled) at Tx frequency 378 MHz (frequency when applicable).

Calculated controlled distance: 50.89 cm

Calculated uncontrolled distance: 113.79 cm



Daryl Popowitch
Regulatory Manager,
Engineering Project Manager

M/A-COM, Inc. – Lynchburg, VA