TIMCO ENGINEERING, Inc.
www.timcoengr.com

849 NW STATE ROAD 45
NEWBERRY, FL 32669 USA
PH: 888.472.2424 OR 352.472.5500
FAX: 352.472.2030
EMAIL: INFO@TIMCOENGR.COM
HTTP://WWW.TIMCOENGR.COM

# RF Exposure Evaluation Report

| | |
|---|---|
| **APPLICANT** | SPECTRA ENGINEERING PTY LTD |
| | 731 MARSHALL RD<br>MALAGA WESTERN AUSTRALIA 6090<br>AUSTRALIA |
| **FCC ID** | OKRMXDR7V |
| **MODEL NUMBER** | MXDR7V |
| **PRODUCT DESCRIPTION** | ATLAS 4500 MULTIMODE STATION |
| **STANDARD APPLIED** | CFR 47 Part 2.1091 |
| **PREPARED BY** | Sid Sanders |

We, TIMCO ENGINEERING, INC. would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and meets the requirements.

## GENERAL REMARKS

### Attestations

This equipment has been evaluated in accordance with the standards identified in this report. To the best of my knowledge and belief, these evaluations were performed using the procedures described in this report.

I attest that the necessary evaluations were made, under my supervision, at:

**Timco Engineering Inc.**
**849 NW State Road 45**
**Newberry, FL 32669**

**Authorized Signatory Name:**

Sid Sanders
Engineering Project Manager

**Date: 7/27/2016**

# RF Exposure Requirements

## General information

Device type: ATLAS 4500 MULTIMODE STATION

Devices that operate under Part 90 of this chapter are subject to RF exposure evaluation prior to equipment authorization or use.

## Antenna

The manufacturer does not specify an antenna, but a typical antenna has a gain of 0 dBi.

| Configuration | Antenna p/n | Type | Max. Gain (dBi) |
|---|---|---|---|
| Fixed mounted | Any | omni | 0 |
| | | | |

## Operating configuration and exposure conditions:

The conducted output power is shown in the table below. Typical use qualifies for a maximum duty cycle factor of 100%.

## MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.11310, Table 1.

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## Minimum Separation Distance for Mobile or Fixed Devices
## General Population/Uncontrolled Exposure

**Insert values in yellow highlighted boxes to determine Minimum Separation Distance**

| | | | | | | |
|---|---|---|---|---|---|---|
| Max Power | 120 | W | *equals* | Max Power | 120000 | mW |
| Duty Cycle | 100 | % | *equals* | Duty Factor | 1 | numeric |
| Antenna Gain | 0 | dBi | *equals* | Gain numeric | 1 | numeric |
| Coax Loss | 1.5 | dB | | Gain - Coax Los | 0.707946 | numeric |
| Power Density | 0.6 | $mW/cm^2$ | | | | |

**Enter power Density from the chart to the right**

| | | |
|---|---|---|
| Frequency | 869 | MHz |

**Rule Part 1.1310, Table 1 (B)**

| Frequency ran | Power der | Enter this value |
|---|---|---|
| MHz | $mW/cm^2$ | $mW/cm^2$ |
| 0.3-1.34 | 100 | **100** |
| 1.34-30 | $180/f^2$ | **0.0** |
| 30-300 | 0.2 | **0.2** |
| 300-1,500 | f/1500 | **0.6** |
| 1,500-100,000 | 1 | **1** |

f = frequency in MHz

| | | |
|---|---|---|
| **Minimum Separation Distance** | **106 cm** | **1.06 m** |

| | | |
|---|---|---|
| Minimum Seperation in Inches | 41.75845 | Inches |