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RF Exposure Evaluation Report

APPLICANT	SPECTRA ENGINEERING PTY LTD
	731 MARSHALL RD MALAGA WESTERN AUSTRALIA 6090 AUSTRALIA
FCC ID	OKRMXDR4V
IC	5605A-MXDR4V
MODEL NUMBER	MXDR4V
PRODUCT DESCRIPTION	MXDR/ATLAS 4500 BASE STATION UHF
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	Cory Leverett

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.

The attached report shall not be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

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:

Cory Leverett

Engineering Project Manager




Date: **11/1/2016**

Applicant: SPECTRA ENGINEERING PTY LTD
FCC ID: OKRMXDR4V
Report: 2104AUT16RF EXP MPE RPT_Rev1

RF Exposure Requirements

General information

Device type: MXDR/ATLAS 4500 BASE STATION UHF

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	Any	8.15

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:

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

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

Insert values in yellow highlighted boxes to determine Minimum Separation Distance						
Max Power	109.9	W	equals	Max Power	109900	mW
Duty Cycle	100	%	equals	Duty Factor	1	numeric
Antenna Gain	8.15	dBi	equals	Gain numeric	6.531306	numeric
Coax Loss	2	dB		Gain - Coax Loss	4.120975	numeric
Power Density	0.3	mW/cm ²				
Enter power Density from the chart to the right						
Frequency	512	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	0.3
				1,500-100,000	1	1
f = frequency in MHz						
Minimum Separation Distance			347 cm		3.47 m	
Minimum Separation in Inches			136.3539 Inches			

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