TIMCO ENGINEERING, Inc.
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RF Exposure Evaluation Report

APPLICANT	SPECTRA ENGINEERING PTY LTD
	731 MARSHALL RD MALAGA WESTERN AUSTRALIA 6090 AUSTRALIA
FCC ID	OKRMXDR1V
IC	5605A-MXDR1V
MODEL NUMBER	MXDR1V
PRODUCT DESCRIPTION	ATLAS 4500 BASE STATION VHF
STANDARD APPLIED	CFR 47 Part 2.1091, ISED RSS-102
PREPARED BY	Franklin Rose

We, TIMCO ENGINEERING, INC. would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and ISED RSS-102 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:

Franklin Rose
Engineering Project Manager

Date: 5/9/2017

RF Exposure Requirements

General information

Device type: ATLAS 4500 BASE STATION VHF

Antenna

Configuration	Antenna p/n	Type	Max. Gain
Fixed mounted	Any	omni	6 dBd

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 and ISED RSS-102 § 4 Table 3.

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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	112.2	W	*equals*	Max Power	112200	mW
Duty Cycle	100	%	*equals*	Duty Factor	1	numeric
Antenna Gain	8.15	dBi	*equals*	Gain numeric	6.531306	numeric
Coax Loss	0	dB		Gain - Coax Los	6.531306	numeric
Power Density	0.2	mW/cm^2				

Enter power Density from the chart to the right

Frequency	174	MHz

Rule Part 1.1310, Table 1 (B)

Frequency ran	Power den	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	**0.1**
1,500-100,000	1	**1**

f = frequency in MHz

Minimum Separation Distance	**540 cm**	**5.40 m**

Minimum Seperation in Inches	212.4276	Inches

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Report: 443AUT17RF Exp MPE Rpt.docx