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RF Exposure Evaluation Report

APPLICANT	ROHILL ENGINEERING B.V.
	Edisonstraat 12 P.O. Box 373, 7900 AJ Hoogeveen Hoogeeveen 7903 AN NETHERLANDS
FCC ID	2AGJ3R-8070-450MHZ
MODEL NUMBER	R-8070-450
PRODUCT DESCRIPTION	TETRA TRANSCEIVER
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.

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: 3/11/2016

RF Exposure Requirements

General information

Device type: TETRA TRANSCEIVER

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	12

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%.

Operation: A typical installation consists of an antenna system with a 10 meter coaxial cable of the type RG 213/ U type which has a loss as follows;

Nom. Attenuation for RG 213/U:

Frequency MHz	Attenuation per 100ft. dB
1	.27
10	.55
50	1.3
100	1.9
200	2.7
400	4.1
700	6.5
900	7.6
1000	8.0
4000	21.5

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.

Minimum Separation Distance for Mobile or Fixed Devices
Controlled Exposure

Insert values in yellow highlighted boxes to determine Minimum Separation Distance

Max Power	43.4	W	*equals*	Max Power	43400	mW
Duty Cycle	100	%	*equals*	Duty Factor	1	numeric
Antenna Gain	12	dBi	*equals*	Gain numeric	15.84893192	numeric
Coax Loss	1	dB		Gain - Coax Loss	12.58925412	numeric
Power Density	1.6	mW/cm^2				

Enter power Density from the chart to the right

Frequency 470 MHz

Rule Part 1.1310, Table 1 (A)

Freq range	Power density	Enter this value
MHz	mW/cm^2	mW/cm^2
0.3 - 3	100	**100**
3 - 30	$900/f^2$	**0.0**
30-300	1	**1**
300-1,500	f/300	**1.6**
1,500-100,000	5	**5**

f = frequency in MHz

Minimum Separation Distance	**165 cm**	**1.65 m**

Minimum Seperation in Inches 64.85064 Inches

Applicant: ROHILL ENGINEERING B.V.
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Report: 113AUT16TestReport_Rev1