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RF Exposure Evaluation Report

APPLICANT	KP ELECTRONIC SYSTEMS LTD.
	P.O. BOX 42 TEFEN INDUSTRIAL PARK 24959 ISRAEL
FCC ID	H78KPMT2PIT
MODEL NUMBER	MT2PIT
PRODUCT DESCRIPTION	VHF AUTOMATIC METER READING TRANSCEIVER W/ 2.4 GHz MODULE
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: 2/16/2016

RF Exposure Requirements

General information

Device type: VHF AUTOMATIC METER READING TRANSCEIVER W/ 2.4 GHz MODULE

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%.

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	2	W	*equals*	Max Power	2000	mW
Duty Cycle	100	%	*equals*	Duty Factor	1	numeric
Antenna Gain	0	dBi	*equals*	Gain numeric	1	numeric
Coax Loss	0	dB		Gain - Coax Loss	1	numeric
Power Density	1	mW/cm^2				

Enter power Density from the chart to the right

Frequency	173.5	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	**0.6**
1,500-100,000	5	**5**

f = frequency in MHz

Minimum Separation Distance	**13 cm**	**0.13 m**

Minimum Seperation in Inches	4.963002	Inches