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## RF Exposure Evaluation Report

<b>APPLICANT</b>	UNICATION CO., LTD.
	5F, NO.6, WU-KUNG 5 RD. HSINCHUANG CITY, TAIPEI TAIWAN
<b>FCC ID</b>	LEA-R01VHF
<b>MODEL NUMBER</b>	R01VHFT
<b>PRODUCT DESCRIPTION</b>	VHF REPEATER - FIXED MOUNTED
<b>STANDARD APPLIED</b>	CFR 47 Part 2.1091
<b>PREPARED BY</b>	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.

Applicant: UNICATION CO., LTD.

FCC ID: LEA-R01VHF

Report: V:\U\UNICATION\_LEA\438ZAUT16\438ZAUT16RF EXP MPE RPT\_REV2.DOCX

## 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: 8/5/2016**

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# RF Exposure Requirements

## General information

Device type: VHF REPEATER - FIXED MOUNTED

## Antenna

The manufacturer does not specify an antenna, but a typical antenna has a gain of up to 10.65 dBi

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	omni	10.65 dBi

## MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.1310, 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	100	W	equals	Max Power	100000	mW
Duty Cycle	100	%	equals	Duty Factor	1	numeric
Antenna Gain	10.65	dBi	equals	Gain numeric	11.61449	numeric
Duplexer/Coax Loss	3.15	dB		Gain - Coax Lo	5.623413	numeric
Power Density	0.2	mW/cm <sup>2</sup>				

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

Frequency	174	MHz	Frequency ran	Power de	Enter this value
			MHz	$\text{mW/cm}^2$	$\text{mW/cm}^2$
			0.3-1.34	100	100
			1.34-30	$180/\text{f}^2$	0.0
			30-300	0.2	0.2
			300-1,500	$\text{f}/1500$	0.1
			1,500-100,000	1	1

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

## Minimum Separation Distance

473 cm

4.73 m

Minimum Separation in Inches 186.0863 Inches

Applicant: UNICATION CO., LTD.

Applicant: UNIONATION C  
FCC ID: 1FA-R01VHF

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