



# RF Exposure Evaluation Report

<b>APPLICANT</b>	FIPLEX COMMUNICATIONS INC.
<b>ADDRESS</b>	2101 NW 79th Ave. MIAMI FL 33122 USA
<b>FCC ID</b>	P3TDH440-HG-SCH-1
<b>MODEL NUMBER</b>	DH440-HG-SCH-1
<b>PRODUCT DESCRIPTION</b>	UHF AMPLIFIER/BOOSTER
<b>DATE SAMPLE RECEIVED</b>	05/06/2019
<b>FINAL TEST DATE</b>	05/28/2019
<b>PREPARED BY</b>	Franklin Rose
<b>TEST RESULTS</b>	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

Report Number	Report Version	Description	Issue Date
1138AUT19 MPE_	Rev1	Initial Issue	05/30/2019
1138AUT19 MPE_	Rev2	Updated Power Output	07/01/2019
1138AUT19 MPE_	Rev3	Updated Power Output	07/24/2019

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



## TABLE OF CONTENTS

<b>GENERAL REMARKS .....</b>	<b>2</b>
<b>GENERAL INFORMATION .....</b>	<b>3</b>
<b>ANTENNA INFORMATION .....</b>	<b>3</b>
<b>OUTPUT POWER .....</b>	<b>3</b>
<b>MPE CALCULATION.....</b>	<b>3</b>
<b>MPE LIMITS.....</b>	<b>4</b>
<b>MPE TABLE .....</b>	<b>5</b>
GENERAL UNCONTROLLED EXPOSURE .....	5
GENERAL CONTROLLED EXPOSURE .....	6

## GENERAL REMARKS

### Summary

The device under test does:

- ☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.
- ☐ Not fulfill the general approval requirements as identified in this test report

### Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

**Timco Engineering Inc.**  
**849 NW State Road 45**  
**Newberry, FL 32669**  
**Designation #: US1070**

**Prepared by:**



<b>Name and Title</b>	Franklin Rose, Project Manager / EMC Specialist
<b>Date</b>	05/30/2019

## General Information

<b>EUT Description</b>	UHF AMPLIFIER/BOOSTER		
<b>Model Number</b>	DH440-HG-SCH-1		
<b>EUT Power Source</b>	<input checked="" type="checkbox"/> 110–120Vac, 50–60Hz	<input type="checkbox"/> DC Power	<input type="checkbox"/> Battery Operated
<b>Test Item</b>	<input type="checkbox"/> Engineering Prototype	<input checked="" type="checkbox"/> Pre-Production	<input type="checkbox"/> Production
<b>Type of Equipment</b>	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Mobile	<input type="checkbox"/> Portable
<b>Antenna Connector</b>	N Type		
<b>Test Conditions</b>	The temperature was 26°C Relative humidity of 50%.		
<b>Modification to the EUT</b>	No Modification to EUT.		
<b>Applicable Standards</b>	FCC CFR 47 Part 2.1091		
<b>Test Facility</b>	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA. Designation #: US1070		

## Antenna Information

<b>Manufacturer Provides Antenna</b>	<b>Type</b>	<b>Max Gain (dBi)</b>
No	Unspecified	Unspecified

## Output Power

<b>Frequency</b>	<b>Output Power + Tune Up Tolerance (dBm)</b>	<b>Max Power Output (W)</b>
454.50	42.00	15.85
456.00625	42.00	15.85

**Note:** The EUT will be deployed per FCC 47 CFR 90.219(d) "Deployment Rules", which requires output power be limited to 5 W in system installation.

## MPE CALCULATION

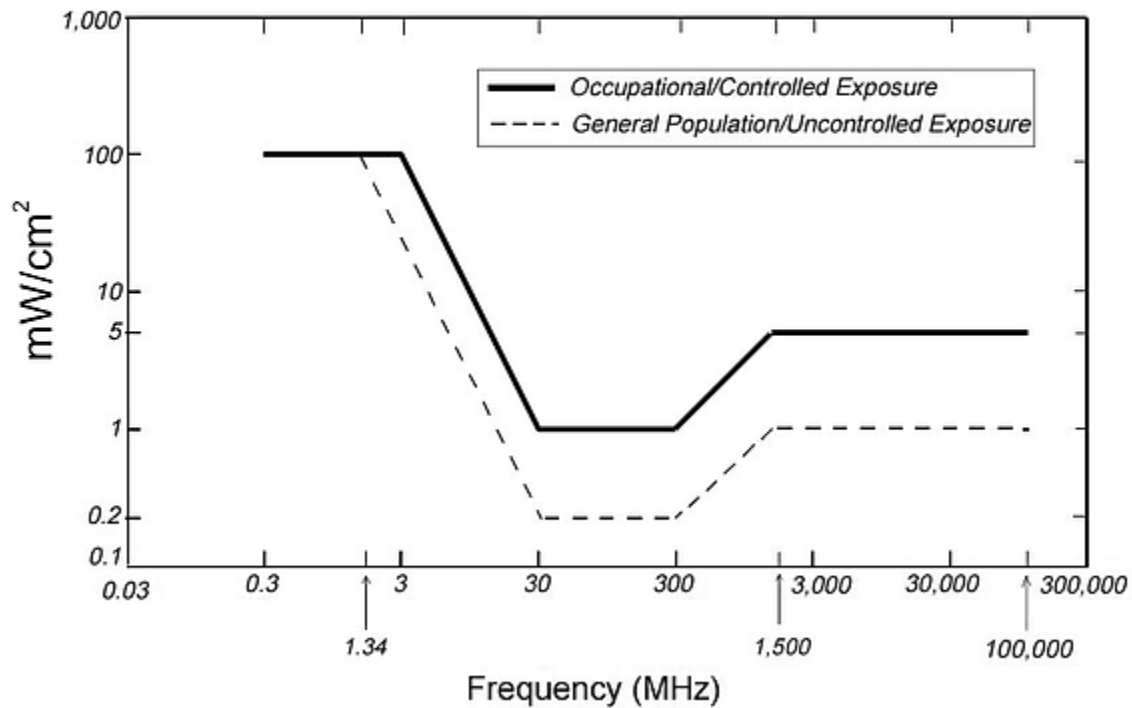
The minimum separation distance is calculated as follows:

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

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

## MPE LIMITS

**Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)**  
Plane-wave Equivalent Power Density

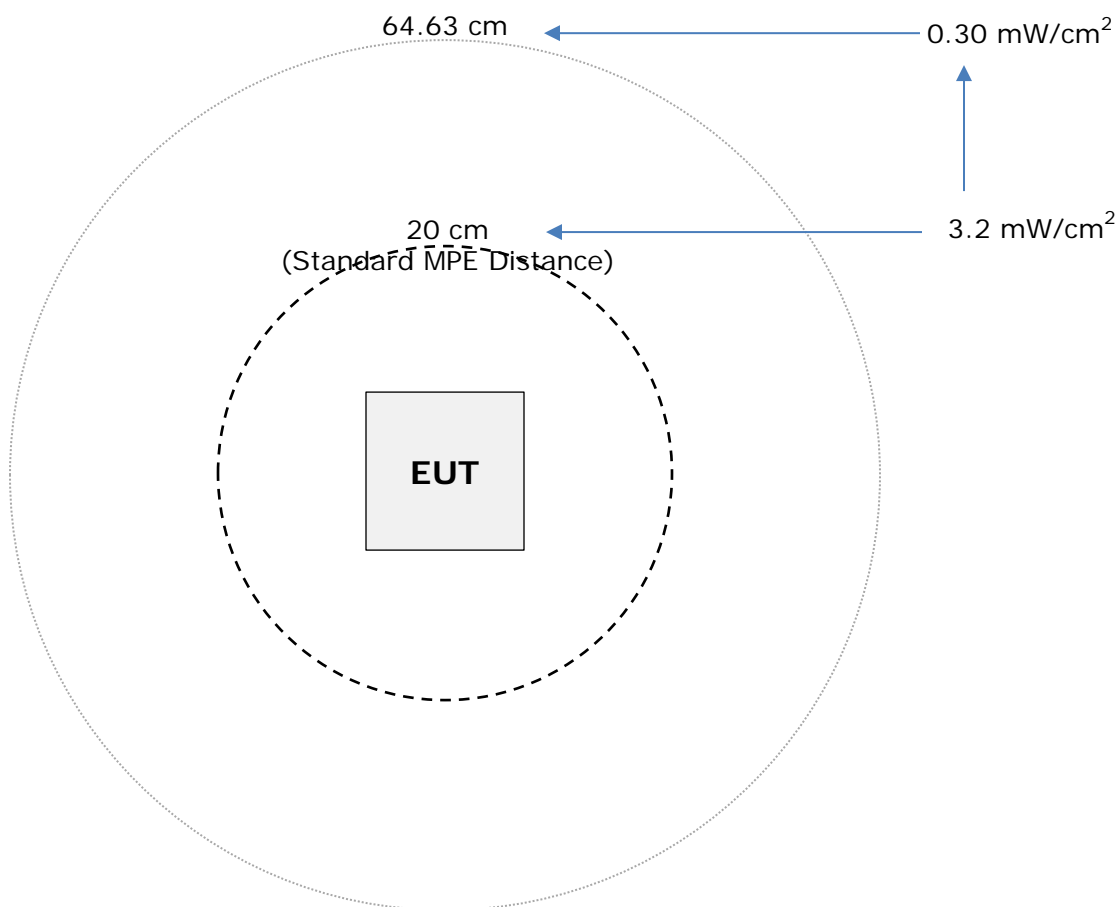


## MPE Table

### General Uncontrolled Exposure

The limit for General Uncontrolled Exposure Environment is calculated as shown in FCC Pt. 1.1310, Table B:

Variable	Value
Max Power	15.85 W
Frequency Range	453 – 461 MHz
Worst-case Frequency	453 MHz
Duty Cycle (at full power)	100%
Power Density	0.30 mW/cm <sup>2</sup>
Minimum Separation Distance	64.63 cm



## General Controlled Exposure

The limit for General Controlled Exposure Environment is calculated as shown in FCC Pt. 1.1310, Table A:

Variable	Value
Max Power	15.85 W
Frequency Range	453 – 461 MHz
Worst-case Frequency	453 MHz
Duty Cycle (at full power)	100%
Power Density	1.5 mW/cm <sup>2</sup>
Minimum Separation Distance	28.9 cm

