



Test Report - FCC PART 1.1310 / MPE

Applicant: Fiplex Communications Inc.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 5/12/2022

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Timco Engineering, Inc., an IIA Company
849 NW State Road 45, Newberry, Florida 32669
(352) 472-5500 / testing@timcoengr.com

1. Customer Information

Applicant: Fiplex Communications Inc.
Address: 2101 NW 79th Avenue
Miami Florida, 33122, United States

2. Location of Testing

2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at Timco's permanent laboratory located at 849 NW State Road 45, Newberry, Florida 32669

FCC test firm # 578780

FCC Designation # US1070

FCC site registration is under A2LA certificate # 0955.01

ISED Canada test site registration # 2056A

EU Notified Body # 1177



For all designations see A2LA scope # 0955.01



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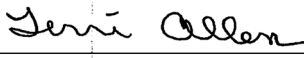
2.2 Testing was performed, reviewed by

Dates of Testing: 5/4/2022 – 5/9/2022

Signature:  Sr. EMC Engineer
EMC-003838-NE 

Name & Title: Tim Royer, EMC Engineer

Date of Signature 5/12/2022

Signature: 

Name & Title: Terri Allen, Lab Assistant

Date of Signature 5/12/2022



3. Test Sample(s) (EUT/DUT)

The test sample was received: 5/3/2022

3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

Identification	
FCC ID:	P3TILB4AB
Brief Description	PE287 IN-LINE BOOSTER
Type of Modular	ILB4A-WMO
Model(s) #	N/A
Firmware version	N/A
Software version	N/A
Serial Number	P3TILB4AB

Technical Characteristics	
Technology	IN-LINE BOOSTER
Frequency Range	Downlink: 489.5-491 MHz, 496-497 MHz Uplink: 492.5-494 MHz, 499-500 MHz
RF O/P Power (Max.)	DL: 30.88 dBm/ 1.22 W UL: 30.85 dBm/ 1.21 W
Bandwidth & Emission Class	4K00F1E, 11K3F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 9K80F1D, 9K80F1E, 9K80D7W
Number of Channels	4
Duty Cycle	100%
Antenna Connector	N Type
Voltage Rating (AC or Batt.)	AC



Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	489.5-491 MHz 496-497 MHz 492.5-494 MHz 499-500 MHz	Operational	3 dBi

- Note: Information such as antenna gain, firmware/software numbers are provided by manufacturer and cannot be validated by the test lab.

Note: This EUT does not include antenna(s).



4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance:

The following guidance FCC KDB 447498 D01 General RF Exposure Guidance v06 was used for RF exposure evaluation as per FCC Part 1.1310 and FCC Part 2.1091 and part 2.1093. Full test results are available in this report.

4.1.1 FCC Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging Time (minutes)
A Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
B Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30



4.2 Equations

POWER DENSITY

$$E(V/m) = \text{SQRT} (30 * P * G) / d$$

$$Pd(W/m^2) = E^2 / 377$$

$$S = \text{EIRP} / (4 * \text{Pi} * D^2v)$$

Where:

S = Power density, in mW/cm²

EIRP = Equivalent Isotropic Radiated Power, in mW

D = Separation distance in cm

Power density is converted from units of mW/cm² to units of W/m² by multiplying by 10.

DISTANCE

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where:

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power, in mW

S = Power density in mW/cm²

SOURCE-BASED DUTY CYCLE (When applicable (for example, multi-slot mobile phone applications) A duty cycle factor may be applied.)

$$\text{Source-based time-average EIRP} = (\text{DC} / 100) * \text{EIRP}$$

Where:

DC = Duty Cycle in % as applicable.

EIRP = Equivalent Isotropic radiated Power, in mW



5. RF Exposure Results

Separation Distance: 30.75 cm

MPE

Frequency Band	Evaluation Distance (cm)	Max Power + Tolerance (dBm)	Antenna Gain (dBi)	Duty Cycle (%)	EIRP (W)	Power Density	Limit for Uncontrolled Exposure	Limit for Controlled Exposure	Distance Required to meet Uncontrolled Exposure Limit (cm)
489.5-497 MHz	20	35.88	3.00	100%	3.87	0.77 mW/cm ²	0.326 mW/cm ²	1.632 mW/cm ²	30.75

RESULT: Pass at DISTANCE 30.75 cm



6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_2069-22_Downlink_FCC PT 1.1310/ MPE_	1	Initial release	5/12/2022



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END OF TEST REPORT
