TIMCO ENGINEERING, Inc.

An IIA Company

Test Report - FCC Part 1.1310/ MPE
Applicant: Solid Tech LLC

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 10/11/2023

Table of Contents

1. Applicant Information

Applicant: Solid Tech LLC
Address: 478 Fillmore Ave NE
Palm Bay, Florida, 32907, 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

2.2 Testing was performed, reviewed by

Dates of Testing: 5/3/2023 – 5/16/2023

Signature:  Sr. EMC Engineer EMC-003838-NE

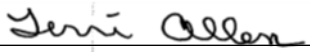
Name & Title: Tim Royer, EMC Engineer

Date of Signature 10/11/2023

Signature: 

Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 10/11/2023

Signature: 

Name & Title: Terri Allen, Project Specialist

Date of Signature 10/11/2023

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

The test sample was received: 5/3/2023

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:	2BA2X-R5LNA
Brief Description	Radio Control Transceiver
Model(s) #	R5LNA
Firmware version	N/A
Software version	N/A
Serial Number	N/A

Technical Characteristics	
Frequency Range	2405 MHz- 2475 MHz
RF O/P Power (Max.)	18.61 dBm/ 0.0726 W
Modulation	O-QPSK
Bandwidth & Emission Class	G7D
Number of Channels	15
Duty Cycle	20%
Antenna Connector	N/A
Voltage Rating (AC or Batt.)	5 VDC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	2.14 dBi

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

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) = SQRT (30 * P * G) / d

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

S = EIRP / (4 * Pi * D^2v)

Where:

S = Power density, in mW/cm^2
EIRP = Equivalent Isotropic Radiated Power, in mW
D = Separation distance in cm

Power density is converted from units of mW/cm^2 to units of W/m^2 by multiplying by 10.

DISTANCE

D = SQRT (EIRP / (4 * Pi * S))

Where:

D = Separation distance in cm
EIRP = Equivalent Isotropic Radiated Power, in mW
S = Power density in mW/cm^2

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

Source-based time-average EIRP = (DC / 100) * EIRP

Where:

DC = Duty Cycle in % as applicable.
EIRP = Equivalent Isotropic radiated Power, in mW

5. RF Exposure Results

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 Limt (cm)
2405-2475 MHz	20	18.61	2.14	20%	0.02	0.005 mW/cm2	1 mW/cm2	5 mW/cm2	20.00

RESULT: Pass at DISTANCE 20 cm

6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_7764-23_FCC 1.1310/ MPE_	1	Initial release	9/18/2023
	2	Revised pg.8. Corrected typo in table, column Max Power+Tolerance (dBm).	10/11/2023

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END OF TEST REPORT