



Test Report - FCC Part 1.1310/ MPE

Applicant: Worldcast Systems, Inc.

Approved for Release By:

Signature:

A handwritten signature of 'Timothy Royer' is written over a horizontal line.

Name & Title: Timothy Royer,



Date of Signature 2/15/2024

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Industrial Inspection & Analysis
13146 NW 86th Drive, Suite 400, Alachua, Florida 32615
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1. Applicant Information

Applicant: Worldcast Systems, Inc.
Address: 19595 10th Avenue NE
Suite A
Miami, Florida, 33179, 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 IIA's permanent laboratory located at 13146 NW 86th Drive, Suite 400, Alachua, Florida 32615.

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: 2/8/2024 – 2/12/2024

Signature:



Sr. EMC Engineer
EMC-003838-NE



Name & Title: Tim Royer, EMC Engineer

Date of Signature 2/15/2024

Signature:



Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 2/15/2024

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

The test sample was received: 2/7/2024

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:	O35-AIO0300W
Brief Description	LPFM Broadcast Transmitter
Model(s) #	AIO300W, AIO100W
Firmware version	N/A
Software version	V3.1.0
Serial Number	EA030102

Technical Characteristics	
Frequency Range	88 MHz- 108 MHz
RF O/P Power (Max.)	300W
Modulation	FM
Bandwidth & Emission Class	F3E
Duty Cycle	100%
Antenna Connector	N Type
Voltage Rating (AC or Batt.)	110VAC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	0 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

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

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

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

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

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

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.)

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

Where:

DC = Duty Cycle in % as applicable.

EIRP = Equivalent Isotropic radiated Power, in mW



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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 Limit (cm)
88-108 MHz	20	54.77	0.00	100%	299.9163	59.666 mW/cm ²	0.2 mW/cm ²	1 mW/cm ²	345.45

RESULT: Pass at DISTANCE 345.45 cm



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6. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_12219-24_FCC 1.1310/ MPE_	1	Initial release	2/13/2024



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END OF TEST REPORT
