849 NW STATE ROAD 45
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TIMCO ENGINEERING, Inc.

An IIA Company

RF Exposure Evaluation Report

APPLICANT	RFE BROADCAST S.R.L.
ADDRESS	VIA MAREVITANO N. 26 FALERNA (CZ) 88042 ITALY
FCC ID	2ARJIDS3000
IC	24642-DS3000
MODEL NUMBER	DS1000, DS2000, DS3000
PRODUCT DESCRIPTION	FM BROADCAST TRANSMITTER
FINAL TEST DATE	1/14/2019
PREPARED BY	Franklin Rose
TEST RESULTS	☒ PASS ☐ FAIL

Report Number	Report Version	Description	Issue Date
2272UT18 MPETestReport_	Rev1	Initial Issue	12/4/2019
	Rev2	Updated power output	06/29/2020

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

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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:

Name and Title	Franklin Rose, Project Director / EMC Specialist
Date	06/29/2020

GENERAL INFORMATION

EUT Description	FM BROADCAST TRANSMITTER		
Model Number	DS1000, DS2000, DS3000		
EUT Power Source	☒110–120Vac, 50–60Hz	☐ DC Power (13.8 VDC)	☐ Battery Operated
Test Item	☐ Engineering Prototype	☒ Pre-Production	☐ Production
Type of Equipment	☒ Fixed	☐ Mobile	☐ Portable
Antenna Connector	External, N Type		
Test Conditions	The temperature was 26ºC Relative humidity of 50%.		
Modification to the EUT	No Modification to EUT.		
Applicable Standards	FCC CFR 47 Part 2.1091		
Test Facility	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA. Designation #: US1070		

ANTENNA INFORMATION

Antenna is Provided	Type	Max Gain (dBi)
No	n/a	**0.0**

RF POWER OUTPUT

Model	Stable over Input Voltage Variation (+/- %)	Output Power (W)	Min Power 90% (W)	Max Power 105% (W)
DS1000	5%	1000	900	1050
DS2000	5%	2000	1800	2100
DS3000	5%	3000	2700	3150

FCC MPE Distance

Uncontrolled Public RF Exposure/MPE Guideline	
Separation Distance (cm)	1119 cm
Power Density (mW/cm^2)	0.2 mW/cm2
Controlled Occupational RF Exposure/MPE Guideline	
Separation Distance (cm)	500 cm
Power Density (mW/cm^2)	1 mW/cm2

FCC MPE Calculations

EUT Parameters

Parameter	Value	Unit
EUT Form Factor	Fixed	
Lowest Frequency	88.000	MHz
Highest Frequency	108.000	MHz
Maximum Power	3150.000	W
Tune Up Tolerance	0.000	+/- W
Duty Cycle	100%	%
Antenna Gain	0.000	dBi EIRP
Coax Loss	0.000	dB
EIRP	3150.000	W

Calculations

RF Exposure Field Strength Limits

	Public Persons may be exposed up to:
Worst-Case RF Field Strength Limit for the General Public (Uncontrolled Environment)	0.2 mW/cm2

	Occupational Persons may be exposed up to:
Worst-Case RF Field Strength Limit for Controlled Use (Controlled Environment)	1 mW/cm2

Separation Distance

	Mandatory distance from radiating element:
Calculation Method	Distance from Radiating Element (cm) = SQRT (P(mW) / 4π S(mW/cm^2))
Uncontrolled Sep. Distance @ 0.2 mW/cm2	1119.53 cm
Controlled Sep. Distance @ 1 mW/cm2	500.67 cm

EUT Power Density at 20 cm

Calculation Method	Power Density (mW/cm^2) = P(mW) / 4π R(cm)^2
EUT Power Density @ 20 cm	626.673 mW/cm2

ISED MPE Distance

Uncontrolled Public RF Exposure/MPE Guideline	
Separation Distance (cm)	1393 cm
Power Density (W/m^2)	1.291 W/m2
Controlled Occupational RF Exposure/MPE Guideline	
Separation Distance (cm)	623 cm
Power Density (W/m^2)	6.46 W/m2

ISED MPE Calculations

EUT Parameters

Parameter	Value	Unit
EUT Form Factor	Fixed	
Lowest Frequency	88.000	MHz
Highest Frequency	108.000	MHz
Maximum Power	3150.000	W
Tune Up Tolerance	0.000	+/- W
Duty Cycle	100%	%
Antenna Gain	0.000	dBi EIRP
Coax Loss	0.000	dB
EIRP	3150.000	W

Calculations

RF Exposure Field Strength Limits

	Public Persons may be exposed up to:
Worst-Case RF Field Strength Limit for the General Public (Uncontrolled Environment)	1.291 W/m2

	Occupational Persons may be exposed up to:
Worst-Case RF Field Strength Limit for Controlled Use (Controlled Environment)	6.46 W/m2

Separation Distance

	Mandatory distance from radiating element:
Calculation Method	Distance from Radiating Element (cm) = SQRT (P(mW) / 4π S(mW/cm^2))
Uncontrolled Sep. Distance @ 1.291 W/m2	1393.44 cm
Controlled Sep. Distance @ 6.46 W/m2	623.16 cm

EUT Power Density at 20 cm

Calculation Method	Power Density (mW/cm^2) = P(mW) / 4π R(cm)^2
EUT Power Density @ 20 cm	6266.73 W/m2