



RF Exposure Evaluation Report

APPLICANT	BEI ELECTRONICS, LLC
ADDRESS	4100 N 24TH STREET P.O. BOX 3606 QUINCY, IL 62305
FCC ID	DDEETG1000
IC	131A-ETG1000
MODEL NUMBER	ETG1000
PRODUCT DESCRIPTION	FM BROADCAST TRANSMITTER
DATE SAMPLE RECEIVED	11/21/2019
FINAL TEST DATE	11/21/2019
PREPARED BY	Tim Royer
TEST RESULTS	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

Report Number	Report Version	Description	Issue Date
213UT20 MPETestReport	Rev1	Initial Issue	3/5/2020

**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	Tim Royer, Project Manager / EMC Engineer
Date	11/25/2019

Applicant: BEI ELECTRONICS, LLC
FCC ID: DDEETG1000
IC: 131A-ETG1000
Report: 213UT20 MPE_TestReport_Rev1

GENERAL INFORMATION

EUT Description	FM BROADCAST TRANSMITTER		
Model Number	ETG1000		
EUT Power Source	<input checked="" type="checkbox"/> 110-120Vac, 50-60Hz	<input type="checkbox"/> DC Power (13.8 VDC)	<input type="checkbox"/> Battery Operated
Test Item	<input type="checkbox"/> Engineering Prototype	<input checked="" type="checkbox"/> Pre-Production	<input type="checkbox"/> Production
Type of Equipment	<input checked="" type="checkbox"/> Fixed	<input type="checkbox"/> Mobile	<input type="checkbox"/> Portable
Antenna Connector	External, N Type		
Test Conditions	The temperature was 26°C 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

Frequency (MHz)	Stable over Input Voltage Variation (+/- %)	Output Power (dBm)	Output Power (W)	Grant Output Power (W)
88.0	5%	60.28	1066.6	1067
98.0	5%	60.75	1188.5	1189
108.0	5%	60.84	1213.4	1214

Maximum Power Output: 1214 W.

MPE CALCULATION

The minimum separation distance is calculated as follows:

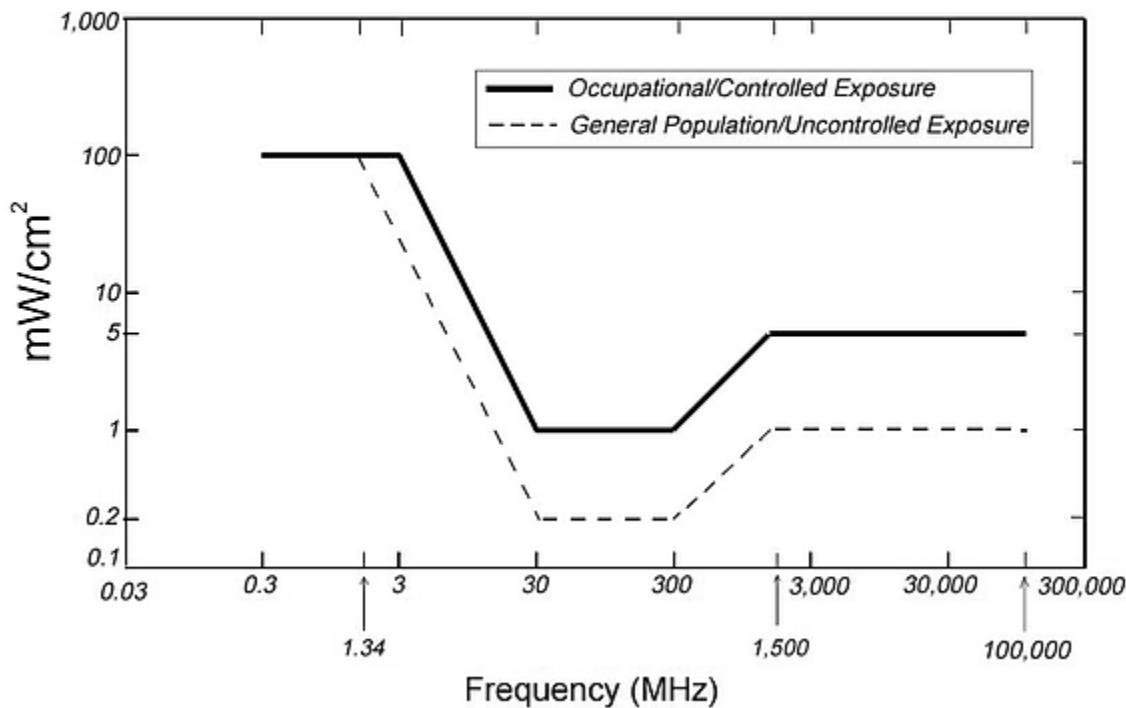
$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$$

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

MPE LIMITS

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

Plane-wave Equivalent Power Density

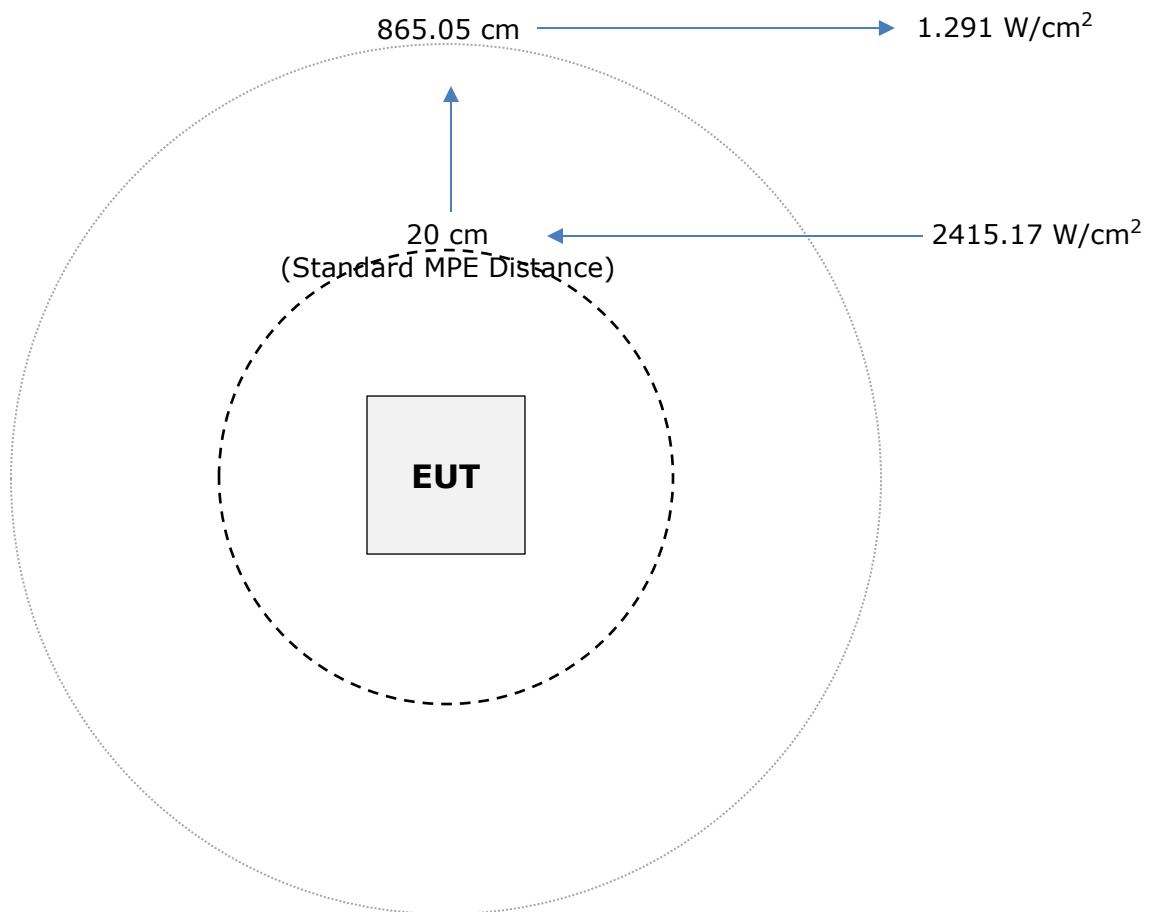


MPE Table

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	1214 W
Frequency Range	88-108 MHz
Duty Cycle (at full power)	100%
Max Antenna Gain	0 dBi
Coax Loss	0 dB
Power Density	1.291 W/cm ²
Minimum Separation Distance	865.05 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	255.27 W
Frequency Range	88-108 MHz
Duty Cycle (at full power)	100%
Max Antenna Gain	0 dBi
Coax Loss	0 dB
Power Density	6.455 W/cm ²
Minimum Separation Distance	386.86 cm

