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RF Exposure Evaluation Report

APPLICANT	YAESU MUSEN CO., LTD.
	TENNOZU PARKSIDE BUILDING 2-5-8 HIGASHI-SHINAGAWA, SHINAGAWA-KU, TOKYO 140-0002 JAPAN
FCC ID	K6630583X3D
MODEL NUMBER	GX1300
PRODUCT DESCRIPTION	MOBILE MARINE TRANSCEIVER
STANDARD APPLIED	CFR 47 Part 2.1091
PREPARED BY	Cory Leverett

We, TIMCO ENGINEERING, INC. would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and meets the requirements.

GENERAL REMARKS

Attestations

This equipment has been evaluated in accordance with the standards identified in this report. To the best of my knowledge and belief, these evaluations were performed using the procedures described in this report.

I attest that the necessary evaluations were made, under my supervision, at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, Fl 32669

Authorized Signatory Name:

Cory Leverett

Engineering Project Manager

Date: 12/26/2014

RF Exposure Requirements

General information

Device type: MOBILE MARINE TRANSCEIVER

Devices that operate under Part 80 of this chapter are subject to RF exposure evaluation prior to equipment authorization or use.

Antenna

The manufacturer does not specify an antenna, but a typical antenna has a gain of 0 dBi.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	omni	0

Operating configuration and exposure conditions:

The conducted output power is shown in the table below. Typical use qualifies for a maximum duty cycle factor of 100%.

Operation: A typical installation consists of an antenna system with a 10 meter coaxial cable of the type RG 213/ U type which has a loss as follows;

Nom. Attenuation for RG 213/U:

Frequency MHz	Attenuation per 100ft. dB
1	.27
10	.55
50	1.3
100	1.9
200	2.7
400	4.1
700	6.5
900	7.6
1000	8.0
4000	21.5

MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.11310, Table 1.

Minimum Separation Distance for Mobile or Fixed Devices
General Population/Uncontrolled Exposure

Insert values in yellow highlighted boxes to determine Minimum Separation Distance

Max Power	25	W	*equals*	Max Power	25000	mW
Duty Cycle	50	%	*equals*	Duty Factor	0.5	numeric
Antenna Gain	3	dBi	*equals*	Gain numeric	1.995262	numeric
Coax Loss	2.1	dB		Gain - Coax Los	1.230269	numeric
Power Density	0.2	mW/cm^2				

Enter power Density from the chart to the right

Frequency 157.425 MHz

Rule Part 1.1310, Table 1

Frequency rang	Power den	Enter this value
MHz	mW/cm^2	mW/cm^2
0.3-1.34	100	**100**
1.34-30	$180/f^2$	**0.0**
30-300	0.2	**0.2**
300-1,500	f/1500	**0.1**
1,500-100,000	1	**1**

f = frequency in MHz

Minimum Separation Distance	**78 cm**	**0.78 m**

Minimum Seperation in Inches 30.77297 Inches