RF EXPOSURE EVALUATION

1.TEST RESULT CERTIFICATION

Applicant	Midland Radio Corporation
Address	5900 Parretta Drive, Kansas City, MO 64120,USA
manufacturer	Midland Radio Corporation
Address	5900 Parretta Drive, Kansas City, MO 64120,USA
Factory	Midland Radio Corporation
Address	5900 Parretta Drive, Kansas City, MO 64120,USA
Product Designation:	GMRS Mobile Radio
Brand Name:	MIDLAND
Test Model:	MXT500
FCC ID:	MMAMXT500
Date of Test:	Mar. 26, 2021~Apr. 29, 2021

2.TECHNICAL INFORMATION

A major technical description of EUT is described as following:

Operation Frequency	GMRS: 462.5500MHz-462.7250MHz 462.5625MHz-462.7125MHz 467.5500MHz-467.7250MHz
Modulation	FM
Antenna Designation	Detachable
Antenna type	External Antenna
Output power	50W/5W
Antenna gain	2.5dBi
Power Supply	DC 13.8V

Channel list:

Channel. No	CH. Freq	Rated Power	CH. No	CH. Freq	Rated Power
1	462.5625	5W	16	467.5500	50W
2	462.5875		17	467.5750	
3	462.6125		18	467.6000	
4	462.6375		19	467.6250	
5	462.6625		20	467.6500	
6	462.6875		21	467.6750	
7	462.7125		22	467.7000	
8	462.5500	50W	23	467.7250	
9	462.5750		24	--	--
10	462.6000		25	--	
11	462.6250		26	--	
12	462.6500		27	--	
13	462.6750		28	--	
14	462.7000		29	--	
15	462.7250		30	--	

3.RF EXPOSURE MEASUREMENT

3.1 INTRODUCTION

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

The 1992 ANSI/IEEE standard (See Listed limit table) specifies a minimum separation distance of 20 cm for performing reliable field measurements to determine adherence to MPE limits.
If the minimum separation distance between a transmitter and nearby persons is more than 20 cm under normal operating conditions, compliance with MPE limits may be determined at such distance from the transmitter. When applicable, operation instructions and prominent warning labels may be used to alert the exposed persons to maintain a specified distance from the transmitter or to limit their exposure durations and usage conditions to ensure compliance.

3.2 FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (Minutes)
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 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

*Note:

1. f= Frequency in MHz * Plane-wave Equivalent Power Density
2. The averaging time for General Population/Uncontrolled exposure to fixed transmitters is not applicable for mobile and portable transmitters. See 47 CFR §§2.1091 and 2.1093 on source-based time-averaging requirement for mobile and portable transmitters.

3.3 CLASSIFICATION OF THE ASSESSMENT METHODS

According to user manual, The antenna of the product, under normal use condition is at least 151.8cm away from the body of the user. Warning statement to the user for keeping at least 151.8cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

$S=PG/4\pi R^2$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator R=distance to the center of radiation of the antenna

3.4 EUT OPERATION CONDITION

Make the EUT to transmit at Bottom channel, Middle channel and Top channel individually.

3.5 TEST RESULTS

Note: report the worst result in this part

Antenna Gain=2.5dBi (Numeric 1.78), π=3.141

TEST Frequency (MHz)	Tune-up Tolerance (dBm)	Max tune-up (dBm)	Max tune-up (mW)	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)	Result (Pass/Fail)
462.6500	46.5±0.5	47	50118.7234	0.308140322	0.3084	Pass

Note:

1. The output power is refer to **AGC01284210304FE10.**
2. According to the user manual, the minimum separate distance which used for MPE calculate is 151.8cm.