

Compliance with 47 CFR 15.247(b)(5)

“Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.”

The EUT is a modular radio that operates from 2412 – 2462 MHz as a 15.247 DTS transmitter. The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091(b). The maximum antenna gain is from a 13 dBi Yagi. The maximum peak conducted output power is 11.6 mW.

The maximum peak power is 141.1 mW (ERP) for FCC ID: HN2802MIG2. Since the transmit frequency is greater than 1.5 GHz, and the output power is less than 3 W ERP, the EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c).

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population as 1 mW/cm². The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

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

Where: S = power density (mW/cm²)

P = power input to the antenna (mW)

G = numeric power gain relative to an isotropic radiator

R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)

PG = EIRP

Solving for S, the maximum power density 20 cm from the transmitting antenna is summarized in the following table:

MPE Estimate

FCC ID: HN2802MIG2

Manufacturer	Antenna Type	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm ²)	General Population Exposure Limit from 1.1310 (mW/cm ²)
Cushcraft	Omni	063363	2400	11.6	3	0	0.005	1
Cushcraft	Yagi	063365	2400	11.6	13	0	0.046	1
Mobile Mark	Omni	065349	2400	11.6	9	0	0.018	1
Centurion	Omni	066147	2400	11.6	1	0	0.003	1
Centurion	Flat Panel	067261	2400	11.6	3	0	0.005	1
Centurion	Flat Panel	067262	2400	11.6	5	0	0.007	1
Centurion	Flat Panel	067263	2400	11.6	9	0	0.018	1
Mobile Mark	Corner Reflector	071122	2400	11.6	9	0	0.018	1
Centurion	Omni	063825	2400	11.6	1.5	0	0.003	1
Radiall	Omni	070143	2400	11.6	1.5	0	0.003	1
Radiall	Flat Panel	590993	2400	11.6	4.5	0	0.007	1
Centurion	Flat Panel	071478	2400	11.6	3	0	0.005	1
Centurion	Omni	067325	2400	11.6	1.5	0	0.003	1
Radiall	Omni	069903	2400	11.6	1.5	0	0.003	1
European Ant	Flat Panel	071176	2400	11.6	4	0	0.006	1
ASK Comm.	Patch	805-543	2400	11.6	3	0	0.005	1
Maxrad	Omni	805-580-101	2400	11.6	5	0	0.007	1
Maxrad	Omni	805-580-102	2400	11.6	5	0	0.007	1
Maxrad	Omni	805-580-103	2400	11.6	5	0	0.007	1
NCC, Inc.	Omni	805-544	2400	11.6	2.1	0	0.004	1
Radiall	Flat Panel	805-545	2400	11.6	4.5	0	0.007	1
Intermec Custom	Flat Panel	073360	2400	11.6	3.5	0	0.005	1
Xertex	Flat Panel	805-552	2400	11.6	3	0	0.005	1
Centurion	Diversity	071121	2400	11.6	2	0	0.004	1

The power density does not exceed 1 mW/cm^2 at 20 cm; therefore, the exposure condition is compliant with FCC rules.

The applicant's radio, FCC ID: HN2802MIG2, is compliant with the requirements of 15.247(b)(5).