US Tech Test Report:	FCC Part 15 Certification/ RSS 247
FCC ID:	HSW-2420
IC:	4492A-2420
Report Number:	21-0174
Issue Date:	July 1, 2021
Customer:	Murata Electronics North America
Models:	WIT2420

Maximum Permissible Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S** as per the respective limits in Table 1 below, at a distance, d, of 20 cm (Mobile condition) from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 2400-2483.5 MHz:

Limit: 1.0 mW/cm²
Peak Power (dBm) = 17.23 dBm
Peak Power (Watts) = 0.053 W
Gain of Transmit Antenna = 9.0 dB$_i$ = 7.9 numeric (max gain antenna)

d = Distance = 20 cm = 0.2 m

$$\textbf{S = (PG/ } 4\pi\textbf{d}^2\textbf{)} = EIRP/4A = 0.053 \ (7.9)/4*\pi*0.2*0.2$$
$$= 0.4187/0.5030 = 0.8324 \ W/m^2$$
$$= (0.8324 \ W/m^2) \ (1m^2/W) \ (0.1 \ mW/cm^2)$$
$$= 0.08324 \ mW/cm^2$$

which is << less than S = 1.0 mW/cm²

US Tech Test Report: FCC Part 15 Certification/ RSS 247
FCC ID: HSW-2420
IC: 4492A-2420
Report Number: 21-0174
Issue Date: July 1, 2021
Customer: Murata Electronics North America
Models: WIT2420

RSS-102, 2.5.2 compliance for 2400 MHz – 2483.5 MHz for the Murata model: WIT2420:

At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\, f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

In this case f = 2440 MHz

$1.31 * 10^{-2} * 2440^{0.6834}$= 2.7 W
EUT max EIRP = 17.23 dBm + (9.0 dBi) = 26.23 dBm EIRP = 0.420 W
Which is << than 2.7 W

All calculations performed by:
Date: July 1, 2021
Test Engineer: George Yang

Signature: