

## Triton Network Systems, Inc.

### 47 CFR 101 Test Plan

#### 5.9 RF Safety evaluation

The wireless consecutive point millimeter-wave transceiver models TNS29-ETPFE-100-XX, TNS29-ETPFE-200-XX are stationary fixed-mounted units with a maximum EIRP of 1,995 watts effective radiated power in the main lobe of the antenna. This is greater than the 1,640 watts EIRP established by the FCC for RF safety evaluation, therefore the transmitter is not excluded from MPE evaluation.

The radio equipment has the following physical characteristics:

Conducted Antenna Power	27 dBm
Antenna Gain	3981.1
Maximum Antenna Dimension	34.29 cm
Minimum Operating Frequency	29.100 GHz

The applicable theoretical calculation per FCC OET Bulletin-65 is shown below based on physical characteristics described above.

			FCC OET Bulletin-65 (Ed. 97-01) Equation Reference
Near Field Distance from Antenna Surface (m) $R_{nf} =$	2.85		Pg 31 - (12)
Distance to Beginning of Far Field from Antenna (m) $R_{ff} =$	6.84		Pg 33 - (16)
Distance to Reach $1\text{mW} / \text{cm}^2$ from antenna surface (m)	2.26		Pg 33 - (17,18)
		<b>% of MPE <math>5\text{mW} / \text{cm}^2</math></b>	
Max Power Density at Antenna Surface ( $\text{mW}/\text{cm}^2$ ) $S_s =$	2.17	43.42%	Pg 31 - (11)
Max Mainbeam Near-Field Power Density ( $\text{mW}/\text{cm}^2$ ) $S_{nf} =$	0.79	15.83%	Pg 32 - (13)
Max Mainbeam Transition-Region Power Density ( $\text{mW}/\text{cm}^2$ ) $S_t =$	0.79	15.83%	Pg 33 - (17)
Max Mainbeam Far-Field Power Density ( $\text{mW}/\text{cm}^2$ ) $S_{ff} =$	0.34	6.78%	Pg 33 - (18)

From the above the following conclusions can be reached:

- The TNS29 series transceivers comply with the  $5\text{mW}/\text{cm}^2$  RF safety limits for occupational RF workers.
- A safety zone in front of the unit of at least 2.3 meters for the protection of the general public can be established by appropriate warning signs and wordings, per the applicable FCC 47 CFR 1.1307, OSHA regulation 29 CFR 1910.97 or similar successor regulation(s).
- A RF safety warning label will be presented on the transceiver. The user / installation manual provides information on the proper mounting such that a safe minimum separation distance is maintained.

**Triton Network Systems, Inc.**

---

**47 CFR 101 Test Plan**