RF Exposure Info / MPE Sample Calculation

ION-B Series Booster for 700 MHz Commercial Band
Model: TFBM7/7
FCC ID: XS5-ION-BTFBM77

The device is a single band MIMO medium power booster designed to distribute 700 MHz commercial band signals using the built-in auxiliary channel of a remote unit. The MIMO functionality is accomplished by two identical 700 MHz paths (Ch 1 and Ch2) with the intended use of simultaneous transmission. The automatic level control (ALC) compensates any level variation of the auxiliary channel.

This specific device generally will be professionally installed.
Hereby the gain of the finally installed antenna(s), cable attenuation and antenna height will be defined site specific at the time of licensing with the appropriate FCC Bureau(s).

The maximum permissible exposure limit is defined in **47 CFR 1.1310**
(B) Limits for GeneralPopulation / Uncontrolled Exposures)

Frequency Range (MHz)	**Power Density (mW/cm²)**
300 – 1500	**f/1500**

The Repeater operates in the frequency range of 728 – 757 MHz,
so that the Power Density Limit is 728/1500 ~ **0.485 mW/cm²**

The max measured conducted output power is:
- max composite output power based on one carrier (rated) per path: 0.408 W (26.11 dBm)
- calculated max. rated composite output power/Remote Unit: 0.816 W (29.11 dBm)

The maximum permitted level is to be calculated using the general equation:

$$S = P*G / 4\pi R^2$$

P = 408 (816) mW; G = *antenna-cable attenuation to be defined* (numeric gain); π = 3,1416

The min separation distance between the antenna and any human body is to be calculated (solving for R in cm) with the final actual antenna gain/cable attenuation where the limit of **0.485 mW/cm²** is kept.

The antenna(s) used with this device must be fixed-mounted on outdoor permanent structures with a sufficient distance to any human body to comply with the RF Exposure limit.