RF Exposure Info / MPE Sample Calculation

Model: ION-M7P
FCC-ID: XS5-IONM7P

The fibre-optic distribution system is designed for LTE 700 MHz services. Each fibre is able to operate services of up to four providers. One Master Unit can operate up to 124 Remote Units.
An auto-levelling function for compensating different fibre losses and a comprehensive supervision concept are implemented. Auto-levelling in the DL works with optical power measurement, in the UL a 10.7 MHz signal is used for measuring the optical loss.
The Remote Unit ION-M7P is connected to a central Master Unit via optical fibre lines. Specific customer designs for lamp pole or wall mounting are available. Thus, the system provides many advantages in view of easy site acquisition.

The RF gain in the system is maintained at a constant level throughout the system via AGC and the user does not need to adjust the gain of the system. The user would inject an RF signal to produce the appropriate RF output power from the ION-M remote unit. The receive path will always terminate in an RF source, such as a base station or repeater, and will not be directly connected to any antenna.

The specific device generally will be <u>professionally</u> 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 General Population / Uncontrolled Exposures

Frequency Range (MHz)	Power Density (mW/cm^2)
300 – 1550	1

The EUT operates in the frequency band: 728 MHz – 757 MHz
The worst case limit for Power Density is **0.485mW/cm^2.**

The max measured conducted output power is 43.0 dBm (20 W).

The maximum permitted level is to be calculated using general equation:
$S = P*G/4\pi R^2$
P = 20W; 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/cm^2 is kept.

Example:
For f = 728MHz (0.485 mW/cm^2 and P=43 dBm) and a gain = **12 dBi** the calculated distance is **R = 2.228 m.**

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