

Client:	MMB Research Inc.
Product Name/Model:	DTX01PA10-RFC and DTX01PA10-CHP
FCC ID:	XFF-DTX01
Reference	8365A-DTX01

FCC RF Exposure

1.1 Limits

The Device Under Test (DUT) did not meet the requirements for an exemption to RF Exposure evaluation pursuant to FCC 47 CFR §1.1307(b)(3). A RF Exposure evaluation is required with respect to the limits on human exposure to RF emissions provided in FCC 47 CFR §1.1310.

The limits, as defined FCC 1.1310 Table 1(ii) limits for general public exposure was applied.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging Time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

The power density limit, f/1500 mW/cm², for the frequency ranges 300 MHz to 1.5 GHz was applied to the DUT. The distance used for evaluation was 25 cm, which is the minimum distance an operator will be from the DUT during normal operation, as stated by the manufacturer.

1.2 Evaluation Method

Calculation of power density:

$$S = \frac{PG}{4\pi r^2}$$

Where:

S: power density in mW/cm²

P: conducted output power

G: numerical gain of antenna

r: separation distance from antenna

The maximum peak conducted power of the DUT is 835.60 mW and the highest antenna gain is 6 dBi, which is 3.98 numerical gain.

$$S = \frac{835.60 * 3.98}{4\pi * 25^2}$$

$$S = 0.42$$

The lowest operating frequency of the DUT is 902.2 MHz; therefore, the power density limit is 902.2/1500 = 0.60.

1.3 Results

The DUT passed the requirements. The worst case calculated power density was 0.42 mW/cm², which is under the 0.60 mW/cm² limit.