

RF Exposure Calculation

Applicant: RTX Telecom Inc

FCC ID: ELIRTX3055

The internal / external antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

A safety statement concerning minimum separation distances from enclosure of the **RTX3055.1** will be integrated in the user's manual to provide end-users with transmitter operating conditions for satisfying RF exposure compliance.

The appropriate Max conducted power can be drawn from the test report no. G0M20503-9313-C-1.

For transmitter operating in the 1920-1930 Mhz range, paragraph 1.1310 Table 1 limits maximum permissible exposure (MPE) to 1.0 mW/cm² for uncontrolled environments and 5.0 mW/cm² for controlled environments.

The far field on-axis power flux density (W/m²) is calculated using the following formula:

S = Power density (mW/cm²)

ERP = effective radiated power (mW)

EIRP = isotropically radiated power (mW)

r = Distance in cm

Calculations

$$S = \frac{PG}{4\pi R^2} \quad S = \frac{EIRP}{4\pi R^2} = \frac{1.64 \text{ ERP}}{4\pi R^2} = \frac{0.41 \text{ ERP}}{\pi R^2}$$

name			nature value	log value
conducted power			118,58 mW	20,74 dBm
max Antenna gain dBi			2,00	3,00 dBi
max Antenna gain dBd			1,52	1,83 dBd
		r	20 cm	
	calculated	S	0,047 mW/cm ²	
	Limit	S	1,00 mW/cm ²	for f > 1500 MHz
calculated radiated power	EIRP	236,59 mW	23,74	
	ERP	180,69 mW	22,57	
measured radiated power	EIRP	mW		
	ERP	mW		



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