

9. RF Exposure Evaluation

9.1 Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational /Control Exposures				
300 – 1 500	--	--	F/300	6
1 500 – 100 000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
<u>300 – 1 500</u>	--	--	<u>F/1500</u>	<u>30</u>
<u>1 500 – 100 000</u>	--	--	<u>1</u>	<u>30</u>

9.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

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9.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

9.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

Mode: CDMA800 1xRTT

Channel	Channel Frequency (MHz)	Measured E.R.P. (dB m)	Duty Cycle (%)	Power Density at 20 cm (mW/cm ²)	LIMITS (mW/cm ²)
Low	824.70	25.77	100	0.123 234	0.549 80
Middle	836.52	27.36	100	0.177 717	0.557 68
High	848.31	25.07	100	0.104 889	0.565 54

Note :

1. The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit .

Mode: CDMA1900 1xRTT

Channel	Channel Frequency (MHz)	Measured E.I.R.P. (dB m)	Duty Cycle (%)	Power Density at 20 cm (mW/cm ²)	LIMITS (mW/cm ²)
Low	1 851.25	24.57	100	0.056 981	1
Middle	1 880.00	24.39	100	0.054 667	1
High	1 908.75	23.17	100	0.041 279	1

Note :

1. The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit .

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