

4 Maximum Permissible Exposure

4.1 Maximum Permissible Exposure

4.1.1 Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30
Note 1: f = frequency in MHz ; *Plane-wave equivalent power density				
Note 2: For the applicable limit, see FCC 1.1310				

4.1.2 MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

E = Electric field (V/m)

G = EUT Antenna numeric gain (numeric)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

P = RF output power (W)

d = Separation distance between radiator and human body (m)

4.1.3 Result of Maximum Permissible Exposure

Maximum Permissible Exposure - Power Setting 1 (Ant No. 1)							
Worst Case Mode Abbreviations	Test Freq. (FX)	Total Cond. Power (dBm)	Dir. Gain (dBi)	EIRP Power (dBm)	User and EUT Min. Distance (cm)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)
OFDM-2TX-5	F1	20.44	15.01	35.45	20	0.6982	1
OFDM-2TX-5	F2	20.02	15.01	35.03	20	0.6338	1
OFDM-2TX-5	F3	20.01	15.01	35.02	20	0.6323	1
OFDM-2TX-10	F1	20.88	15.01	35.89	20	0.7726	1
OFDM-2TX-10	F2	20.69	15.01	35.70	20	0.7395	1
OFDM-2TX-10	F3	19.73	15.01	34.74	20	0.5929	1
OFDM-2TX-20	F2	20.63	15.01	35.64	20	0.7294	1
Test Result						Complied	
Note 1: antenna no., directional gain and power setting define in test report clause 1.1.2 and 2.3.							
Note 2: worst case mode abbreviations and test frequency define in test report clause 2.1 and 2.2.							
Note 3: worst case RF conducted test define in test report clause 2.4.							
Note 4: EUT have 2 transmitter outputs (port 1 - port 2).							