



**11. RF EXPOSURE TEST**

**11.1 APPLIED PROCEDURES / LIMIT**

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

**(A) 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> 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

**(B) 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> 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: f = frequency in MHz ; \*Plane-wave equivalent power density

**11.1.1 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	Feb. 10, 2010
2	Power Meter Sensor	Anritsu	MA2491A	34138	Feb. 10, 2010

Remark: " N/A" denotes No Model Name , Serial No. or No Calibration specified.

**11.1.2 MPE CALCULATION METHOD**

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = Peak RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

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

The formula can be changed to

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

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained



**11.1.3 DEVIATION FROM STANDARD**

No deviation.

**11.1.4 TEST SETUP**



**11.1.5 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



**11.1.6 TEST RESULTS**

EUT :	Driver Control Unit	Model Name :	5500XXXXXXXX
Temperature :	23 °C	Relative Humidity :	50%
Test Voltage :	DC 24V		
Test Mode :	1M_CH00 / CH39 / CH78		

Frequency	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power ( mW )	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2402 MHz	2.60	1.8197	-7.7500	0.1679	0.000061	1	<b>Complies</b>
2441 MHz	2.60	1.8197	-10.3000	0.0933	0.000034	1	<b>Complies</b>
2480 MHz	2.60	1.8197	-11.1800	0.0762	0.000028	1	<b>Complies</b>

EUT :	Driver Control Unit	Model Name :	5500XXXXXXXX
Temperature :	23 °C	Relative Humidity :	50%
Test Voltage :	DC 24V		
Test Mode :	3M_CH00 / CH39 / CH78		

Frequency	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power ( mW )	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2402 MHz	2.60	1.8197	6.8900	4.8865	0.001770	1	<b>Complies</b>
2441 MHz	2.60	1.8197	7.7100	5.9020	0.002138	1	<b>Complies</b>
2480 MHz	2.60	1.8197	1.9700	1.5740	0.000570	1	<b>Complies</b>