9. RF EXPOSURE TEST

9.1 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^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

(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^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: f = frequency in MHz ; *Plane-wave equivalent power density

9.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	Feb. 10, 2011
2	Power Meter Sensor	Anritsu	MA2491A	34138	Feb. 10, 2011

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

9.1.2 MPE CALCULATION METHOD

E (V/m) $= \frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) $= \frac{E^2}{377}$

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

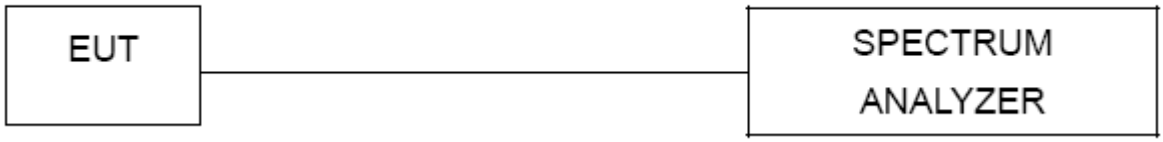
Pd $= \frac{30 \times P \times G}{377 \times d^2}$

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

9.1.3 DEVIATION FROM STANDARD

No deviation.

9.1.4 TEST SETUP



9.1.5 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.

9.1.6 TEST RESULTS

EUT：	Wireless docking	Model Name ：	DC-A11
Temperature：	13℃	Relative Humidity：	64%
Test Voltage：	AC 120V/60Hz		
Test Mode ：	802.11b		

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)
2412	2.81	1.9099	15.4000	34.6737	0.013181	1
2437	2.81	1.9099	15.1600	32.8095	0.012472	1
2462	2.81	1.9099	15.4700	35.2371	0.013395	1

EUT：	Wireless docking	Model Name ：	DC-A11
Temperature：	13℃	Relative Humidity：	64%
Test Voltage：	AC 120V/60Hz		
Test Mode ：	802.11g		

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)
2412	2.81	1.9099	19.6000	91.2011	0.034670	1
2437	2.81	1.9099	19.5500	90.1571	0.034273	1
2462	2.81	1.9099	20.5900	114.5513	0.043546	1

EUT：	Wireless docking	Model Name ：	DC-A11
Temperature：	13℃	Relative Humidity：	64%
Test Voltage：	AC 120V/60Hz		
Test Mode ：	802.11n HT20 Single TX		

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)
2412	2.81	1.9099	18.8300	76.3836	0.029037	1
2437	2.81	1.9099	17.5600	57.0164	0.021675	1
2462	2.81	1.9099	17.6600	58.3445	0.022179	1

Remark：

(1) The MIMO test requirement, MPE shall measure by using the total sum power of each transmitter chain.

EUT：	Wireless docking	Model Name ：	DC-A11
Temperature：	13℃	Relative Humidity：	64%
Test Voltage：	AC 120V/60Hz		
Test Mode ：	802.11n HT40 Single TX		

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)
2422	2.81	1.9099	16.4000	43.6516	0.016594	1
2437	2.81	1.9099	16.1500	41.2098	0.015666	1
2452	2.81	1.9099	16.3300	42.9536	0.016329	1

Remark：

(1) The MIMO test requirement, MPE shall measure by using the total sum power of each transmitter chain.