11.MPE ESTIMATION

11.1.Limit for General Population/ Uncontrolled Exposures

Frequency	**Power density (mW/ cm^2)**	**Averaging time(minutes)**
300MHz----1.5GHz	F/1500	30
1.5GHz---100GHz	1.0	30

Frequency(MHz)	**Power density (mW/ cm^2)**	**Averaging time(minutes)**
2412	1	30
2437	1	30
2462	1	30

Note: F= Frequency in MHz

11.2. Estimation Result

EUT:3G Wireless N Router		
M/N: ARN01154U4		
Test date: 2013-05-22	Pressure: 101.2±1.0 kpa	Humidity: 52.6±3.0%
Tested by: Leo-Li	Test site: RF Site	Temperature:24.9±0.6 ℃

Cable loss: 1 dB		Attenuator loss: 20 dB				Antenna Gain: 5 dBi	
Test Mode	CH	Frequency（MHz）	Peak Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	MPE
11b	CH1	2412	18.38	68.87	5	3.16	0.0433
	CH6	2437	18.65	73.28	5	3.16	0.0461
	CH11	2462	18.69	73.96	5	3.16	0.0466
11g	CH1	2412	18.06	63.97	5	3.16	0.0403
	CH6	2437	25.78	378.44	5	3.16	0.2382
	CH11	2462	19.23	83.75	5	3.16	0.0527
11n HT20	CH1	2412	17.97	62.66	5	3.16	0.0394
	CH6	2437	25.66	368.13	5	3.16	0.2317
	CH11	2462	18.06	63.97	5	3.16	0.0403
11n HT40	CH1	2422	16.80	47.86	5	3.16	0.0301
	CH4	2437	26.24	420.73	5	3.16	0.2648
	CH7	2452	17.67	58.48	5	3.16	0.0368

11.3. This device have a SUB interface and it tends to be used for 3G USB dongle, so need MPE Evaluation that this device working along with the 3G USB dongle.

11.4. RF exposure limit

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 (minutes)
(A) Limits for Occupational / Control Exposures				
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				
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30

F= Frequency in MHz

11.5. RF exposure calculations

Power density (S) is calculated by the following formula:

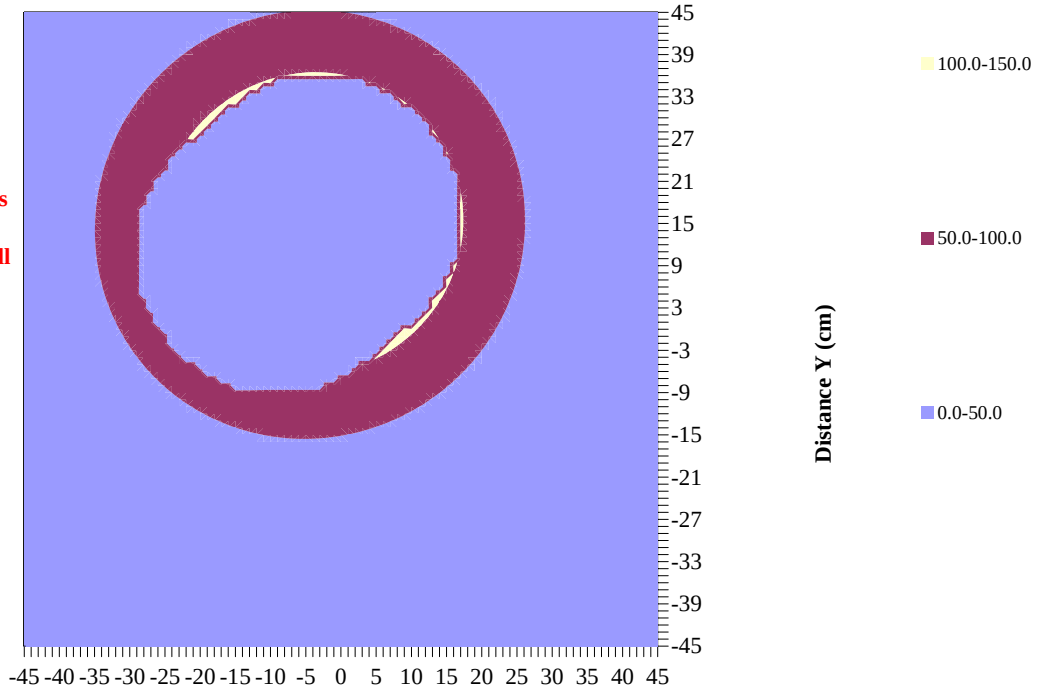
$S = (P * G)/4\pi R^2$

where, S = Power density (mW/cm^2)
P = Output power to antenna (mW)
R = Distance between radiating structure and observation point (cm)
G = Gain of antenna in numeric
$\pi = 3.1416$

11.6.Test result

Antenna No.		Total	1	2	3	4	5	6
Tx Status			On	On	Off	Off	Off	Off
Frequency	MHz		850	2450	1900	2450	2450	5800
MPE Limit	mW/cm^2		0.57	1.00	0.00	0.00	0.00	0.00
Max % MPE	%	112.1	88.4	26.4	0.0	0.0	0.0	0.0
Power	(W)	2.420	2.000	0.420	0.000	0.000	0.000	0.000
Antenna Gain	dBi		1.00	5.00	3.00	1.50	0.50	1.00
EIRP	(W)	3.85	2.518	1.328	0.000	0.000	0.000	0.000
X	(cm)		-3.0	-9.0	9.0	4.0	-8.0	8.0
Y	(cm)		16.0	11.0	11.0	0.0	0.0	0.0
Sector			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Arc			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
θ_1	degs	input	-120	-120	-120	-120	-120	-120
θ_2			60	60	60	60	60	60
θ_1		actual	-120	-120	-120	-120	-120	-120
θ_2			60	60	60	60	60	60

% MPE Contour



Distance X (cm)

Note: The 0% contour surrounding the antennas identifies a 20 cm perimeter surrounding all active antennas