

## **PRELIMINARY MPE TEST RESULTS OF WSAP5000 ACCESS POINT**

### **1. Purpose**

This test method is used to verify that the DUI meets the MPE requirements as defined in the criteria for general population/uncontrolled exposure when operating at maximum ERP and in all operating modes.

### **2. Criteria**

**Power Density Limits** – The DUI shall not generate a power density beyond the limit of 1 **mW/cm<sup>2</sup>**. The power density shall be measured at a distance of 20 cm from the radiating antenna axis while the unit is in both vertical and flat configuration as shown in figure 1 and figure 2. The measured values shall be recorded.

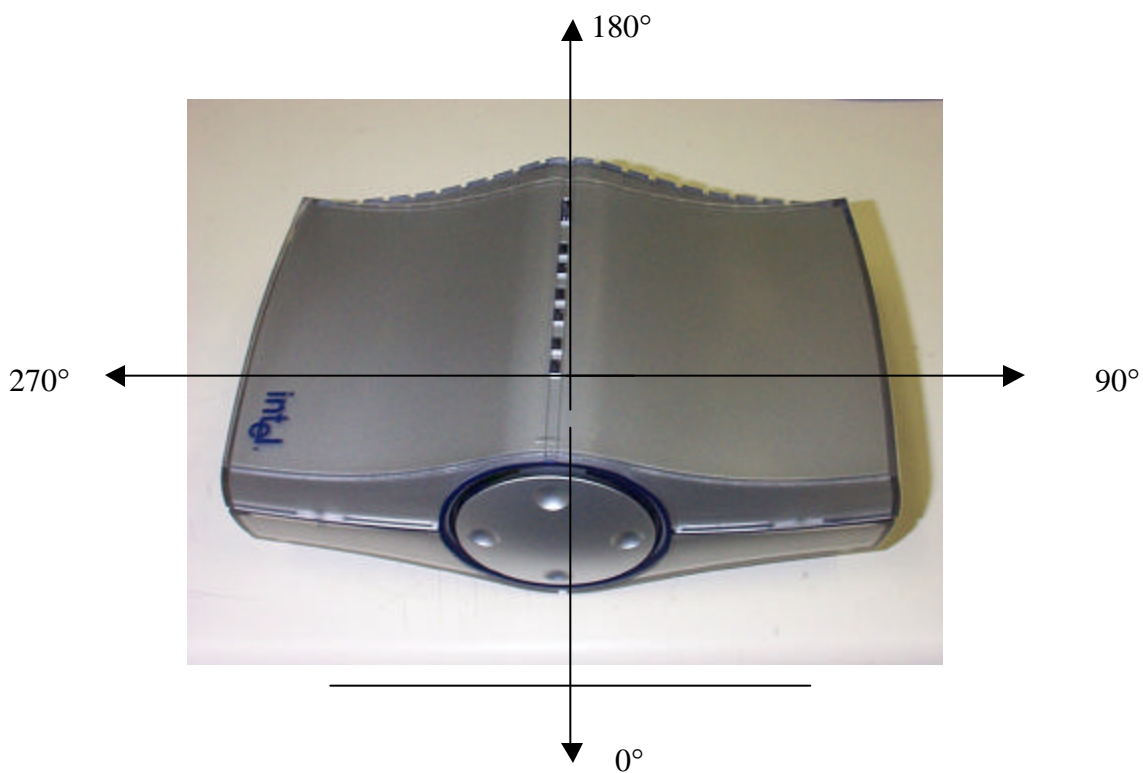


Figure 1 Flat configuration

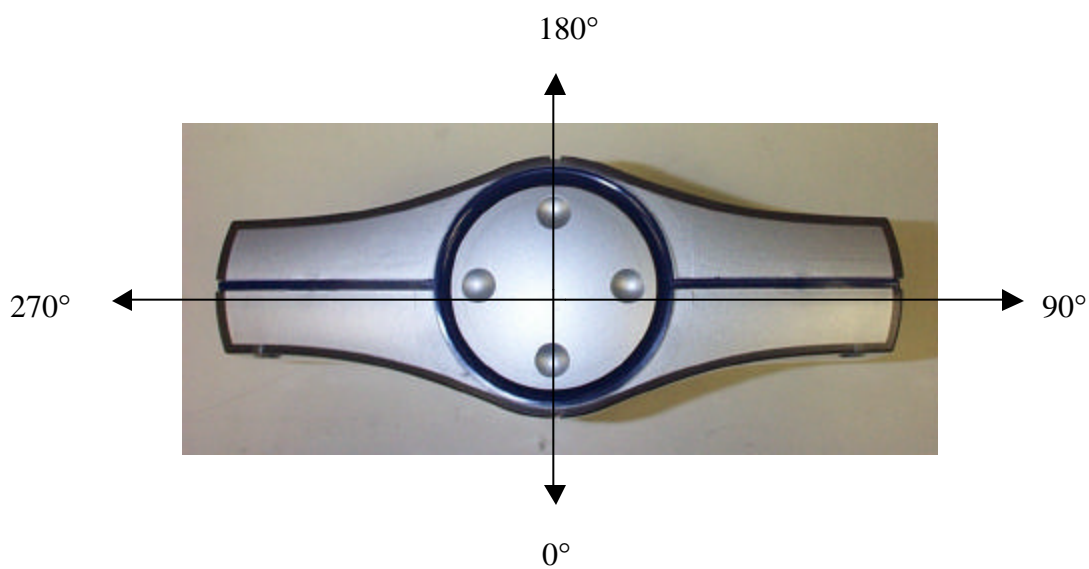


Figure 2 Vertical configuration

### 3 Results

Table 1 presents the results of the measurements made vertically along the DUI in order to find the location of the maximum power density.

**Table 1.1**  
 Power Density Measured at 0° as a Function of Height  
 Antenna Pattern: Omni

Height	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[cm]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
2	0.00522	0.00492	0.00716	0.01283	0.01287	0.01430
4	0.00506	0.00487	0.00706	0.01202	0.01264	0.01434
6	0.00498	0.00484	0.00698	0.01176	0.01220	0.01357
8	0.00491	0.00481	0.00689	0.01063	0.01138	0.01231
10	0.00486	0.00484	0.00684	0.00925	0.00946	0.01003
12	0.00471	0.00474	0.00676	0.00817	0.00742	0.00693
14	0.00465	0.00470	0.00658	0.00766	0.00643	0.00569
16	0.00449	0.00462	0.00643	0.00704	0.00598	0.00500
18	0.00433	0.00457	0.00626	0.00626	0.00572	0.00442
20	0.00400	0.00435	0.00603	0.00589	0.00529	0.00413
22	0.00364	0.00413	0.00582	0.00505	0.00482	0.00379
24	0.00324	0.00381	0.00527	0.00449	0.00435	0.00364

**Table 1.2**

Power Density Measured at 0° as a Function of Height  
 Antenna Pattern: Half circle front

Height	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[cm]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
2	0.00859	0.00839	0.00735	0.01407	0.01411	0.01393
4	0.00843	0.00823	0.00730	0.01353	0.01339	0.01322
6	0.00853	0.00814	0.00725	0.01279	0.01302	0.01291
8	0.00839	0.00816	0.00730	0.01304	0.01309	0.01302
10	0.00836	0.00805	0.00732	0.01370	0.01491	0.01402
12	0.00814	0.00789	0.00715	0.01566	0.01624	0.01564
14	0.00798	0.00775	0.00706	0.01671	0.01689	0.01594
16	0.00779	0.00742	0.00696	0.01591	0.01549	0.01486
18	0.00760	0.00701	0.00677	0.01432	0.01382	0.01270
20	0.00738	0.00694	0.00661	0.01178	0.01285	0.01098
22	0.00717	0.00657	0.00643	0.01016	0.01055	0.00991
24	0.00701	0.00622	0.00612	0.00928	0.00962	0.00920

**Table 1.3**

Power Density Measured at 0° as a Function of Height  
 Antenna Pattern: Half circle back

Height	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[cm]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
2	0.00945	0.00957	0.00928	0.01268	0.01222	0.01400
4	0.00940	0.00923	0.00876	0.01208	0.01133	0.01330
6	0.00938	0.00918	0.00775	0.01138	0.01085	0.01277
8	0.00935	0.00903	0.00772	0.01115	0.01055	0.01231
10	0.00930	0.00894	0.00765	0.01164	0.01044	0.01226
12	0.00920	0.00878	0.00746	0.01324	0.01129	0.01268
14	0.00902	0.00865	0.00715	0.01411	0.01148	0.01300
16	0.00840	0.00849	0.00693	0.01344	0.01106	0.01212
18	0.00801	0.00808	0.00667	0.01233	0.00998	0.01057
20	0.00776	0.00802	0.00627	0.01007	0.00873	0.00910
22	0.00753	0.00760	0.00589	0.00879	0.00802	0.00807
24	0.00709	0.00719	0.00557	0.00854	0.00760	0.00745

Table 2 presents the results of the measurements made around the DUI at every 30° of rotation at the **height which has the highest power density**.

**Table 2.1**  
 Power Density Measured at every 30° as a Function of Angle  
 Antenna Pattern: Omni

Angular Position	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[°]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
0	0.00528	0.00494	0.00620	0.01270	0.01361	0.01411
30	0.00532	0.00505	0.00677	0.00873	0.00746	0.00758
60	0.00624	0.00632	0.00792	0.00760	0.00675	0.00645
90	0.00679	0.00679	0.00797	0.00720	0.00638	0.00668
120	0.00583	0.00561	0.00720	0.00638	0.00531	0.00515
150	0.00509	0.00486	0.00620	0.00590	0.00484	0.00482
180	0.00465	0.00441	0.00563	0.00574	0.00468	0.00426
210	0.00450	0.00450	0.00568	0.00577	0.00497	0.00451
240	0.00467	0.00472	0.00596	0.00637	0.00514	0.00497
270	0.00652	0.00544	0.00670	0.00748	0.00640	0.00629
300	0.00622	0.00496	0.00723	0.00903	0.00668	0.00715
330	0.00583	0.00475	0.00657	0.00925	0.00868	0.00981

**Table 2.2**

Power Density Measured at every 30° as a Function of Angle

Antenna Pattern: Half circle front

Angular Position	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[°]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
0	0.00868	0.00819	0.00727	0.01544	0.01726	0.01561
30	0.00887	0.00846	0.00741	0.01172	0.01294	0.01202
60	0.01002	0.01003	0.00868	0.01078	0.01190	0.01196
90	0.01066	0.01142	0.00962	0.00936	0.01016	0.00977
120	0.01007	0.01017	0.00910	0.00886	0.00925	0.00910
150	0.00887	0.00878	0.00780	0.00779	0.00845	0.00807
180	0.00842	0.00839	0.00739	0.00769	0.00920	0.00804
210	0.00903	0.00826	0.00688	0.00851	0.00907	0.00853
240	0.01028	0.00857	0.00708	0.00955	0.00977	0.00905
270	0.01034	0.00836	0.00704	0.01102	0.01154	0.00986
300	0.00918	0.00810	0.00694	0.01204	0.01170	0.01093
330	0.00910	0.00736	0.00701	0.01198	0.01328	0.01266

**Table 2.3**

Power Density Measured at every 30° as a Function of Angle

Antenna Pattern: Half circle back

Angular Position	Measured Power Density @ 0.20 m Vertical Configuration			Measured Power Density @ 0.20 m Flat Configuration		
	#518	#524	#532	#518	#524	#532
[°]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]	[mW/cm <sup>2</sup> ]
0	0.00916	0.00979	0.00933	0.01397	0.01237	0.01330
30	0.00926	0.01005	0.00969	0.01154	0.01251	0.01208
60	0.00953	0.01148	0.01093	0.00977	0.01324	0.01150
90	0.00967	0.01296	0.01268	0.00892	0.01337	0.01212
120	0.01014	0.01188	0.01093	0.00860	0.01208	0.01123
150	0.00998	0.01094	0.01037	0.00738	0.01085	0.00984
180	0.00996	0.01087	0.01034	0.00736	0.01037	0.00977
210	0.00970	0.01034	0.00970	0.00823	0.01083	0.00995
240	0.01057	0.01081	0.01054	0.00977	0.01231	0.01140
270	0.01078	0.01296	0.01076	0.01021	0.01420	0.01302
300	0.01009	0.01174	0.01050	0.01133	0.01359	0.01333

330	0.00981	0.01070	0.01010	0.01184	0.01251	0.01168
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#### 4. Conclusion

All reading recorded are below the above limit of **1 mW/cm<sup>2</sup>**.