

MPE Exhibit for Airvana OneCell

MPE Calculation													
Test Date: 8/13/2015			Company: Airvana						W/O#: P0152				
Engineer: Ryan Brown			EUT: RP-A2014 (Switched IQ Radio Point Domestic)						Operating Voltage: 120Vac/60Hz				
Standard: FCC §1.1310(e), Table 1, Limits for Maximum Permissible Exposure (MPE)													
Notes: EUT only operates one frequency at a time and transmit from both Antenna at that frequency. / Worst case measurement only Conducted Peak Power (ports J1 + J2) already accounts for Cable Loss and Attenuation.													
Band	Frequency Range (MHz)	Modulation / BW (MHz)	Frequency (MHz)	Conducted Power (J1+J2) (dBm)	Linear Power (mWatts)	Antenna Gain (dBi)	Correction for Two Antennas (dB)	Directional Gain (dBi)	Numerical Gain	Power Density (mW/cm ²)	Limit (mW/cm ²)	Margin (mW/cm ²)	Result Pass/Fail
12	730.5-743.5	16QAM / 5 MHz	737	22.4	174.18	0.0	3.0	3.0	2.000	0.069300	0.491	-0.422034	Pass
12	733-741	64QAM / 10 MHz	741	22.0	159.22	0.0	3.0	3.0	2.000	0.063348	0.494	-0.430652	Pass
17	736.5-743.5	16QAM / 5 MHz	740	22.5	179.06	0.0	3.0	3.0	2.000	0.071241	0.493	-0.422092	Pass
17	739-741	64QAM / 10 MHz	739	22.3	168.27	0.0	3.0	3.0	2.000	0.066947	0.493	-0.425720	Pass
13	748.5-753.5	16QAM / 5 MHz	748.5	22.7	186.21	0.0	3.0	3.0	2.000	0.074085	0.499	-0.424915	Pass
13	751 (single channel)	64QAM / 10 MHz	751	22.4	172.19	0.0	3.0	3.0	2.000	0.068506	0.501	-0.432160	Pass
10	2112.5-2167.5	16QAM / 5 MHz	2167.5	22.5	177.01	5.0	3.0	8.0	6.324	0.222705	1.000	-0.777295	Pass
10	2115-2165	64QAM / 10 MHz	2115	22.0	158.85	5.0	3.0	8.0	6.324	0.199862	1.000	-0.800138	Pass
4	2112.5-2152.5	16QAM / 5 MHz	2132.5	21.0	126.18	5.0	3.0	8.0	6.324	0.158756	1.000	-0.841244	Pass
4	2115-2150	64QAM / 10 MHz	2132.5	21.0	125.89	5.0	3.0	8.0	6.324	0.158391	1.000	-0.841609	Pass
25	1932.5-1992.5	16QAM / 5 MHz	1962.5	22.4	173.78	5.0	3.0	8.0	6.324	0.218640	1.000	-0.781360	Pass
25	1935-1990	64QAM / 10 MHz	1962.5	23.3	213.80	5.0	3.0	8.0	6.324	0.268986	1.000	-0.731014	Pass
2	1932.5-1987.5	16QAM / 5 MHz	1960	23.5	223.87	5.0	3.0	8.0	6.324	0.281663	1.000	-0.718337	Pass
2	1935-1985	64QAM / 10 MHz	1960	23.5	223.87	5.0	3.0	8.0	6.324	0.281663	1.000	-0.718337	Pass

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

- where:
- S = power density
 - P = power input to the antenna
 - G = power gain of the antenna in the direction of interest relative to an isotropic radiator
 - R = distance to the center of radiation of the antenna

Note that no summation of multiple channels or frequencies is needed, since this product transmits on only on frequency at a time (see Operational Description & Block Diagram document).