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October 15, 2013

Subject: Antenna Kitting

Re: FCC ID: PWO460001

To Whom It May Concern:

The antenna kitting options for model 460001 signal booster were done for 1 Outside Antenna kit option and 2 Inside Antenna kit options. The order of the attached calculations is as follows:

Outside Antenna Kit Options:

1. 314473-0630: Panel Antenna With 30' RG-6

Inside Antenna Kit Options:

1. 301213: Desktop Antenna with 5' RG-174
2. 311155-0630: Panel Antenna with 30' RG-6

Sincerely,

A handwritten signature in black ink, appearing to read 'Patrick L. Cook', written in a cursive style.

Patrick L. Cook

Senior Research and Development Engineer



Fixed Outside Antenna Kit Option

FCC ID: PWO460001

Final Output Power Limited to 30 dBm EIRP in all frequency bands

Uplink Frequency (MHz)	704-716	777-787	824-849	1710-1755	1850-1915
Uplink Output Power (dBm)	23.7	23.6	24.6	24.9	23.3

1 Panel Antenna With 30' RG-6

314473-0630

Antenna Gains (dBi)	3.84	3.63	4.4	8.21	10.04
Coax Loss (dB)	2.3	2.43	2.52	3.81	3.99
Final Gain less Loss (dB)	1.56	1.2	1.9	4.4	6.05
Output Power plus Final Gain (dBm EIRP)	25.3	24.8	26.5	29.3	29.4



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Uplink Frequency Band (MHz)	704-716	777-787	824-849	1710-1755	1850-1915
Measured Uplink Gain (dB)	57.2	58.70	56.02	62.50	61.70
Measured RSSI Shutoff (dBm/MHz)	-63.50	-63.50	-59.44	-68.46	-63.20
MSCL Minimum (dB)	27.70	29.20	30.58	28.04	32.50
4' Separation Distance Path Loss (dB)	31.21	32.05	32.64	38.96	39.68
Polarity Loss	3.0	3.0	3.0	3.0	3.0
Max Antenna Gain Less Cable Loss (dB)	6.51	5.85	5.06	11.20	10.18

Inside Antenna Kit 301213: Desktop Antenna with 5' RG-174

Antenna Gain Less Cable Loss (dB)	1.0	1.0	1.6	0.8	-5.5
Margin (dB)	-5.50	-4.84	-3.51	-10.44	-15.67

Uplink Frequency Band (MHz)	704-716	777-787	824-849	1710-1755	1850-1915
Measured Uplink Gain (dB)	57.2	58.70	56.02	62.50	61.70
Measured RSSI Shutoff (dBm/MHz)	-63.50	-63.50	-59.44	-68.46	-63.20
MSCL Minimum (dB)	27.70	29.20	30.58	28.04	32.50
6' Separation Distance Path Loss (dB)	34.74	35.57	36.16	42.48	43.21
Polarity Loss	3.0	3.0	3.0	3.0	3.0
Max Antenna Gain Less Cable Loss (dB)	10.04	9.37	8.58	11.20	10.90

Inside Antenna Kit 311155-0630: Panel Antenna with 30' RG-6

Antenna Gain Less Cable Loss (dB)	1.81	1.79	3.50	5.45	2.34
Margin (dB)	-8.23	-7.58	-5.08	-5.75	-8.56