Addendum to Report A801005

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EMI TEST REPORT

on

Access Link

Prepared For

Multipoint Networks
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15.247 (b) Maximum Peak Output Power

The Access Link was placed in continuous transmit mode and tested at 2417 and 2466.5 MHz. Table 1 shows the maximum peak power of the transmitter at these three frequencies, respectively. The highest level (at 2466.5 MHz) is at +18.86 dBm, or 76.9milliwatts. Maximum permitted is 1.0 watts, or +30 dBm. The Access Link output was connected to a Spectrum Analyzer through a 20dB pad.

Frequency, MHz	Reading, dBm	Pad & Cable Loss, dB	Corrected Reading, dBm / mW
2417.0	-2.50	20.4	17.90 dBm / 61.6 mW
2466.5	-1.50	20.4	18.86 dBm / 76.9 mW

Table 1. Summary of Access Link Output Power(Conducted)

The Access Link was tested with 8 different antennas. The maximum EIRP (Equivalent Isotropically Radiated Power) for each antenna is :

California Amplifier 21dBi QLP Parabolic Antenna
Power = 18.86 dBm (peak reading) + 21 dBi (ant. gain) = +39.86 dBm / 9.68 W EIRP

California Amplifier 24dBi QLP Parabolic Antenna
Power = 18.86 dBm (peak reading) + 24 dBi (ant. gain) = +42.86 dBm / 19.3 W EIRP

Gabriel 26 dBi Grid Parabolic Antenna
Power = 18.86 dBm (peak reading) + 26 dBi (ant. gain) = +44.86 dBm / 30.6 W EIRP

Gabriel 21 dBi Solid Parabolic Antenna
Power = 18.86 dBm (peak reading) + 21 dBi (ant. gain) = +39.86 dBm / 9.68 W EIRP

Gabriel 17 dBi Panel Antenna
Power = 18.86 dBm (peak reading) + 17 dBi (ant. gain) = +35.86 dBm / 3.85 W EIRP

Cushcraft 7 dBi Panel Antenna
Power = 18.86 dBm (peak reading) + 7 dBi (ant. gain) = +25.86 dBm / 385 mW EIRP

Andrew 24 dBi Grid Parabolic Antenna
Power = 18.86 dBm (peak reading) + 24 dBi (ant. gain) = +42.86 dBm / 19.3 W EIRP

COMSAT RSI 21 dBi Solid Parabolic Antenna
Power = 18.86 dBm (peak reading) + 21 dBi (ant. gain) = +39.86 dBm / 9.68 W EIRP

Manufacturers antenna drawings are in Appendix F.

15.247 (c) Out Of Band Emissions (Not Falling within Restricted Bands)

The Access Link was placed in transmit mode at the low (2417 MHz) and the high (2466.5 MHz) channels. The spectrum analyzer was placed in the MAX HOLD mode. Out of Band emissions were investigated and found to be better than 20 dB (in power) below the highest in-band emission. In addition, out of band emissions (radiated) were below the limits specified in 15.209. **See Plots in Appendix A.**

Plot Title	Frequency Range of Plot, MHz	Purpose of Plot
Out Of Band Emissions Lower Edge	2400 - 2440	Show Emissions are down by 20 dB
Out Of band Emissions Upper Edge	2440 - 2483.5	Show Emissions are down by 20 dB
Out Of band Emissions 2417 MHz	0 - 1000 1000 - 2750 2750 - 26,500	Show Emissions are down by 20 dB
Out Of band Emissions 2466.5 MHz	0 - 1000 1000 - 2750 2750 - 26,500	Show Emissions are down by 20 dB

15.247 (d). Transmitted Power Density

The Access Link exhibits a transmitted power density of less than +8 dBm in any 3 kHz bandwidth over any one second interval. This test was performed in accordance with the guidelines set forth in "Guidance on Measurements for Direct Sequence Spread Spectrum Systems", as published by Federal Communication, Authorization and Evaluation Division. **Please refer to a copy of this document in Appendix J**.

The Access Link was connected to the Spectrum Analyzer via a short length of test cable (4 inches RG214) and a 20 dB Pad. The detector in the Spectrum Analyzer was set to Peak mode, the resolution and video bandwidths were set to 3 kHz, and the sweep time was set per the following relation:

$$\textit{Sweep Time (seconds)} = \frac{\textit{Spectrum Analyzer Span in Hertz}}{\textit{Resolution Bandwidth, Hertz}}$$

For this case, We have a sweep time of 250kHz/3kHZ = **83.3 seconds.** Note that the peak level of the Access Link's Spectral Mask was selected prior to reducing the span to 250 kHz. In this manner, the maximum level was observed and selected for this test. **Table 2** below summarizes the results, **Plots labeled "Spectral Power Density" are in Appendix A.**

Frequency, MHz	Reading dBm
2417.0	8.00
2466.5.0	7.00

note; FCC LIMIT< than + 8 dBm

Table 2. Summary of Spectral Power Density measurements for the Access Link