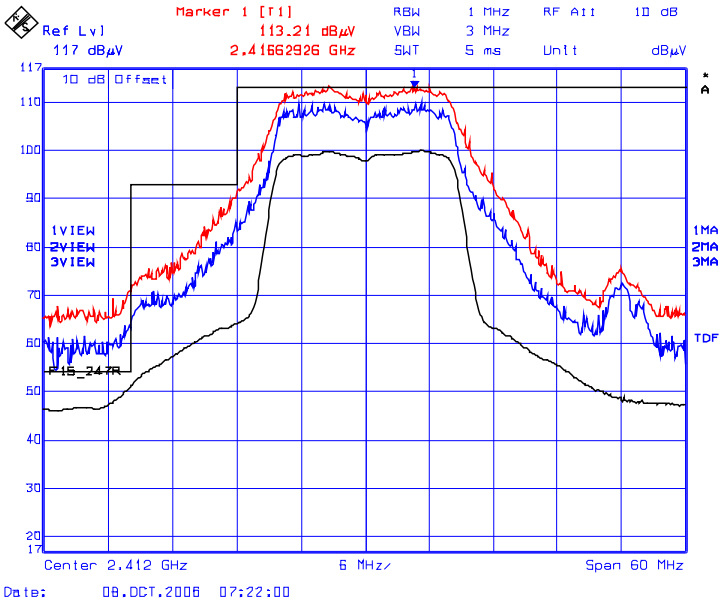
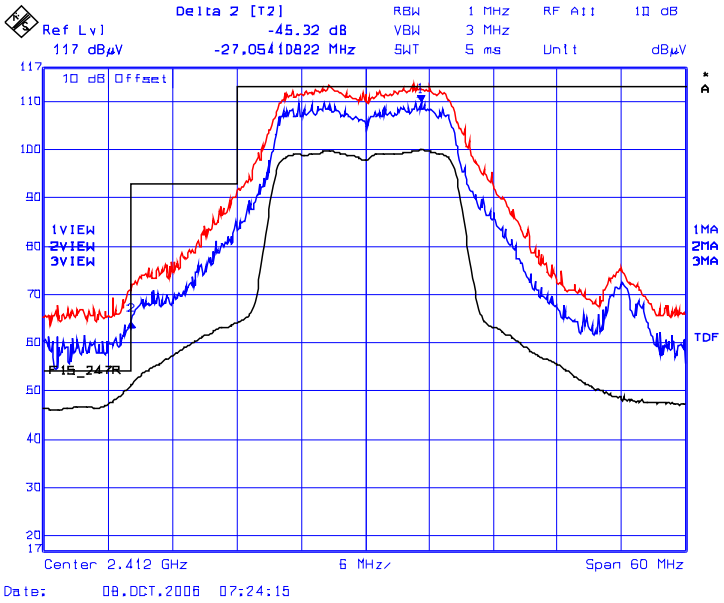
5.2.4.1.10. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

Plot 5.2.4.1.10.1a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2412 MHz, Power Setting: 10.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 113.21 dBµV/m – 45.32 dB = 67.89 dBµV/m < Limit (74 dBµV/m)

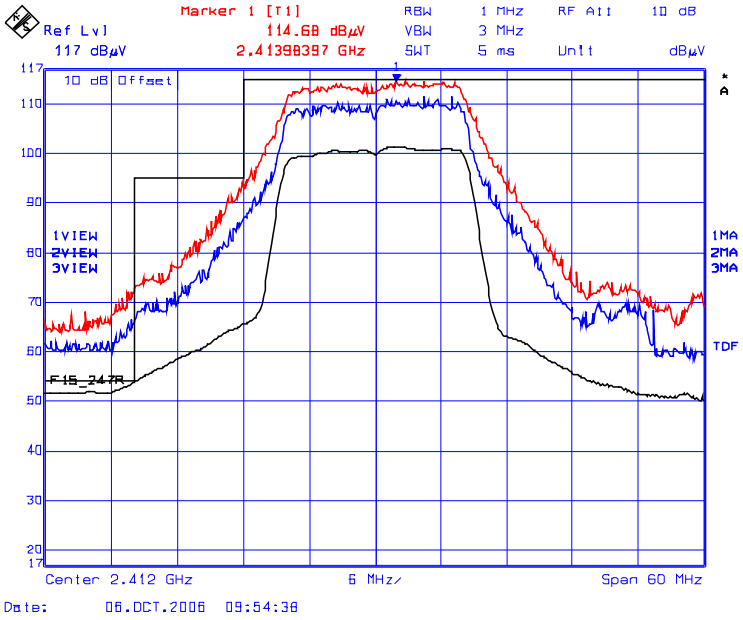


Plot 5.2.4.1.10.1b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.32 dB

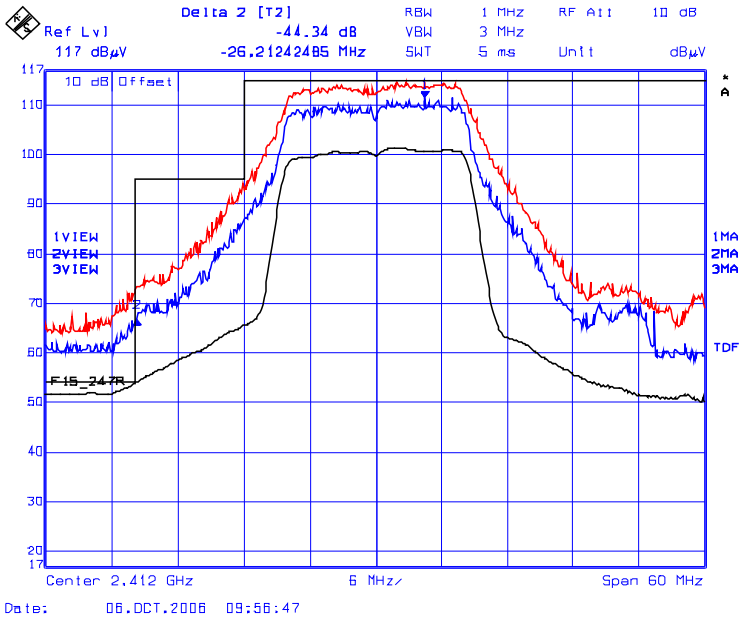


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

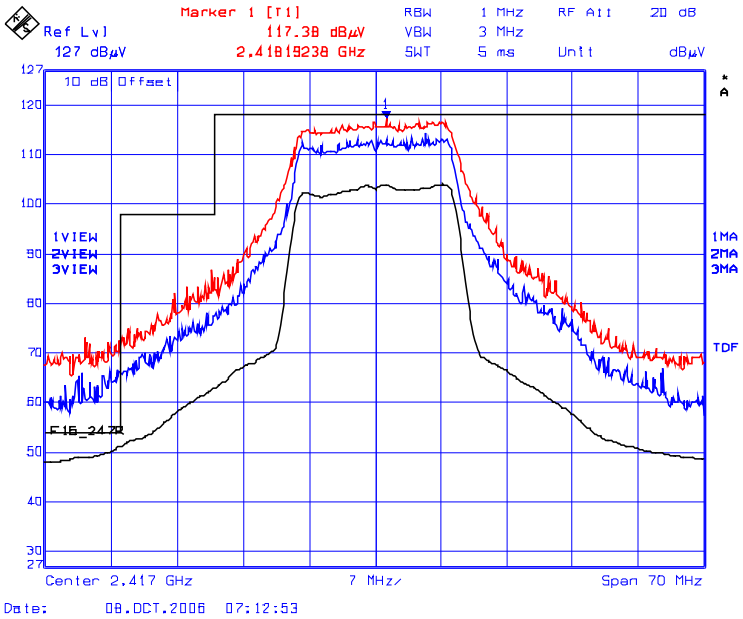
Plot 5.2.4.1.10.2a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2412 MHz, Power Setting: 10.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 114.68 dBµV/m – 44.34 dB = 70.34 dBµV/m < Limit (74 dBµV/m)



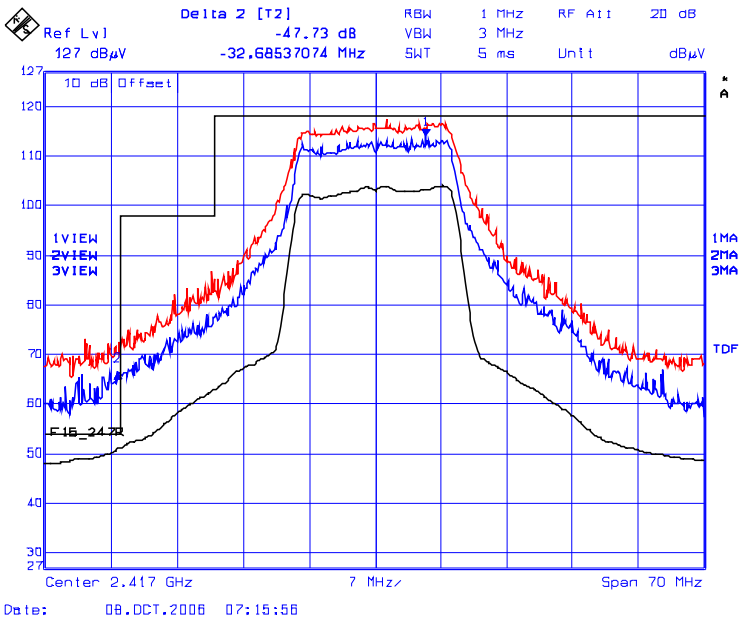
Plot 5.2.4.1.10.2b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 44.34 dB



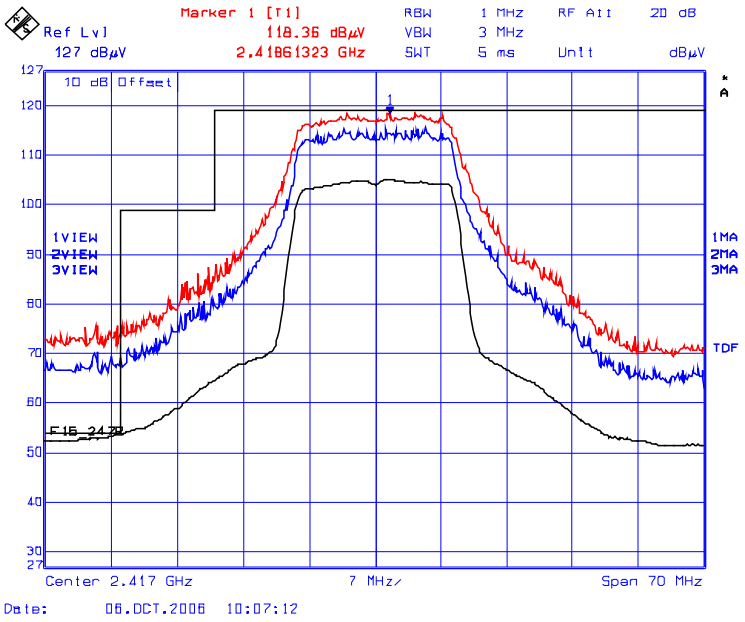
Plot 5.2.4.1.10.3a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2417 MHz, Power Setting: 14.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 117.38 dBµV/m – 47.73 dB = 69.65 dBµV/m < Limit (74 dBµV/m)



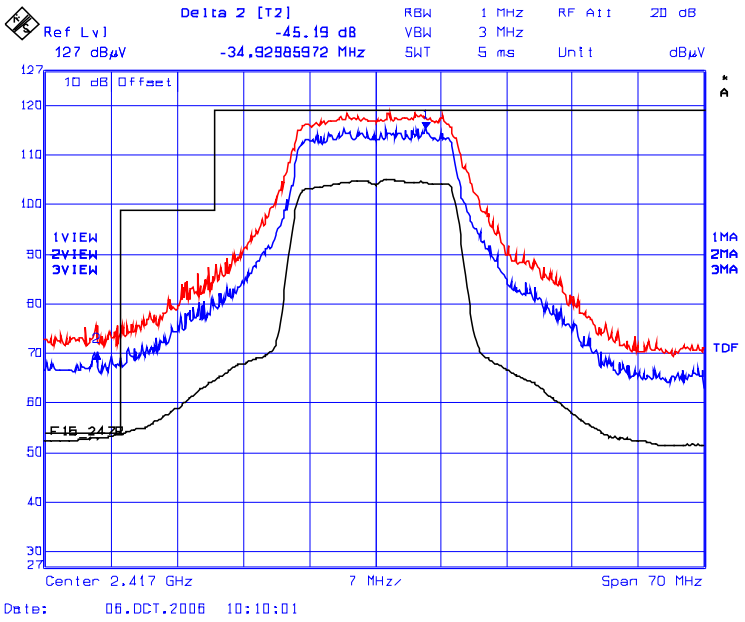
Plot 5.2.4.1.10.3b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.73 dB



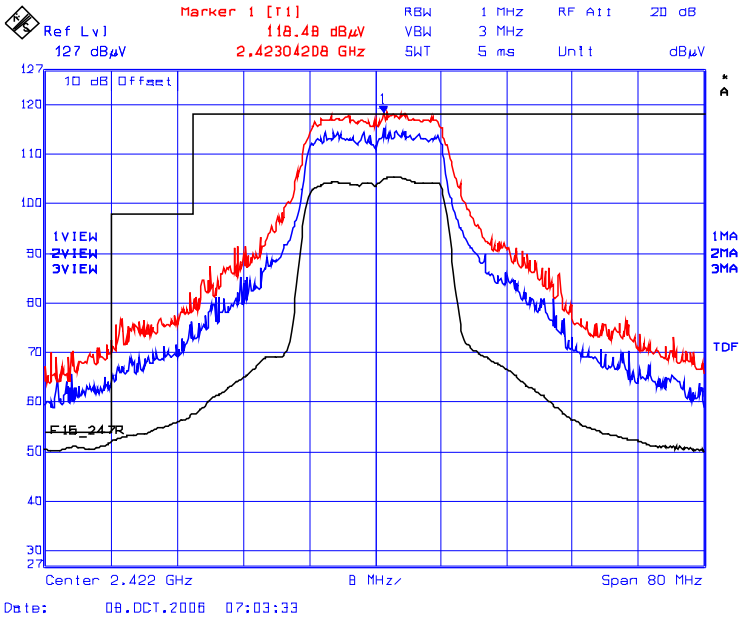
Plot 5.2.4.1.10.4a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2417 MHz, Power Setting: 14.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.36 dBµV/m – 45.19 dB = 73.17 dBµV/m < Limit (74 dBµV/m)



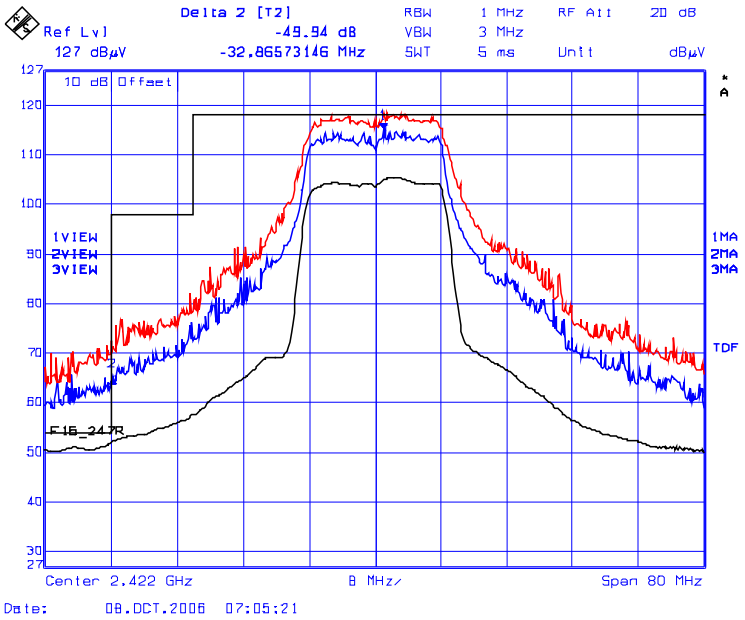
Plot 5.2.4.1.10.4b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.19 dB



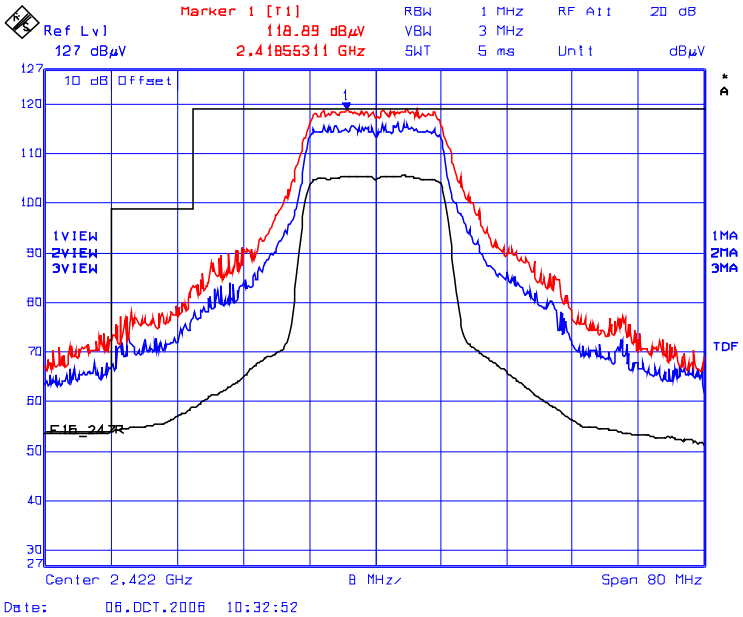
Plot 5.2.4.1.10.5a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2422 MHz, Power Setting: 15.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.48 dBµV/m – 49.94 dB= 68.54 dBµV/m < Limit (74 dBµV/m)



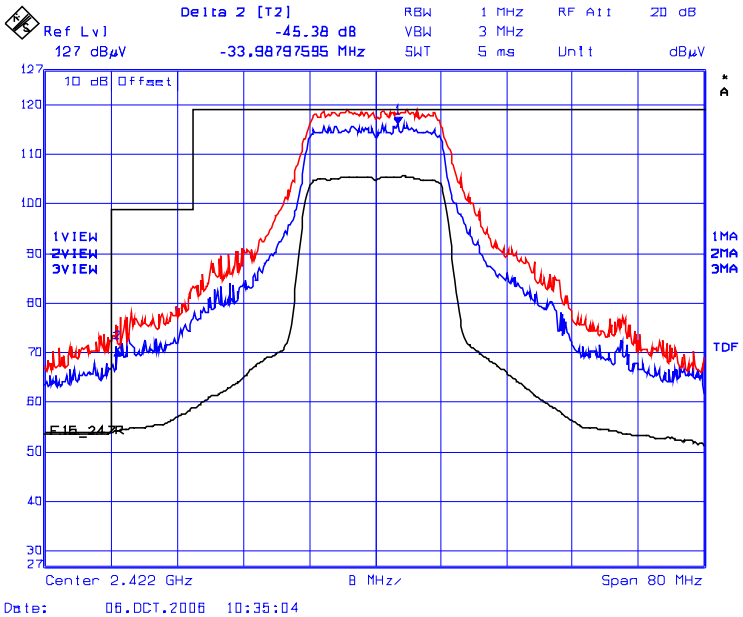
Plot 5.2.4.1.10.5b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.94 dB



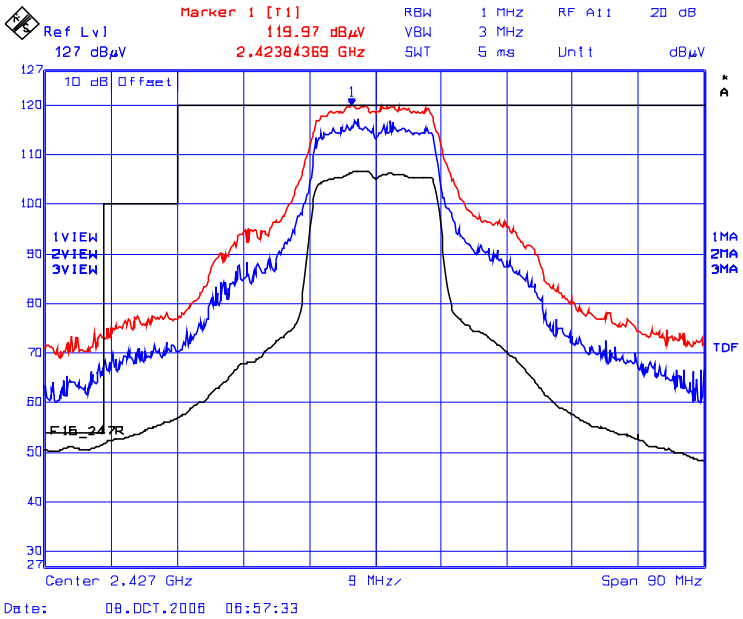
Plot 5.2.4.1.10.6a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2422 MHz, Power Setting: 15.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.89dBµV/m – 45.38 dB= 73.51dBµV/m < Limit (74 dBµV/m), Average 53.85dBµV/m



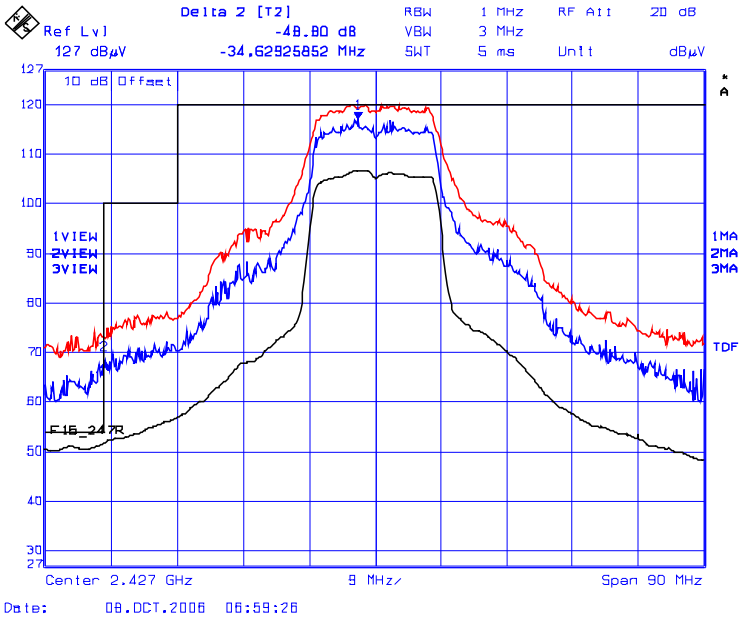
Plot 5.2.4.1.10.6b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.38 dB



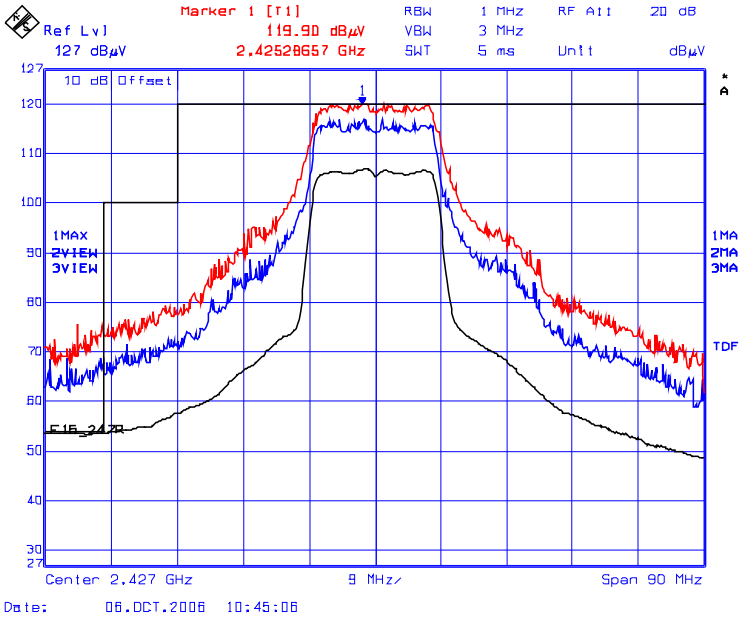
Plot 5.2.4.1.10.7a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2427 MHz, Power Setting: 16.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.97 dBµV/m – 48.80 dB= 71.17 dBµV/m < Limit (74 dBµV/m)



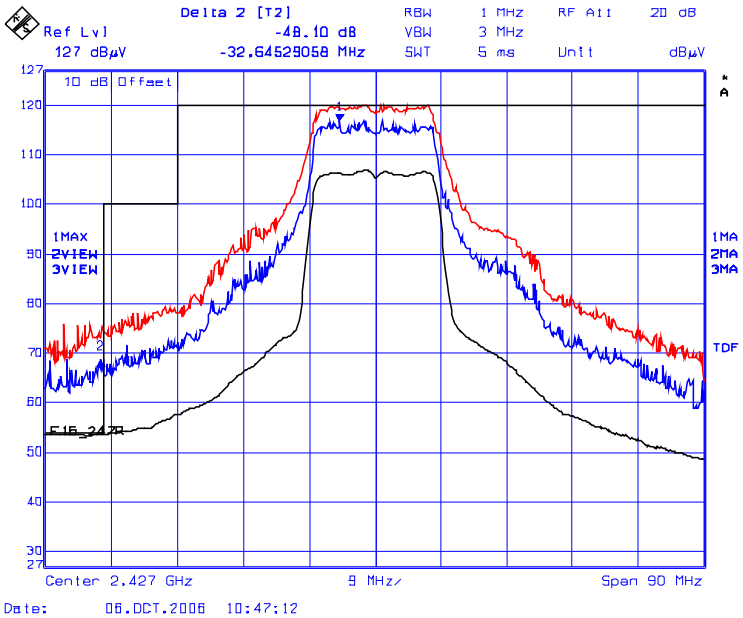
Plot 5.2.4.1.10.7b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.80 dB



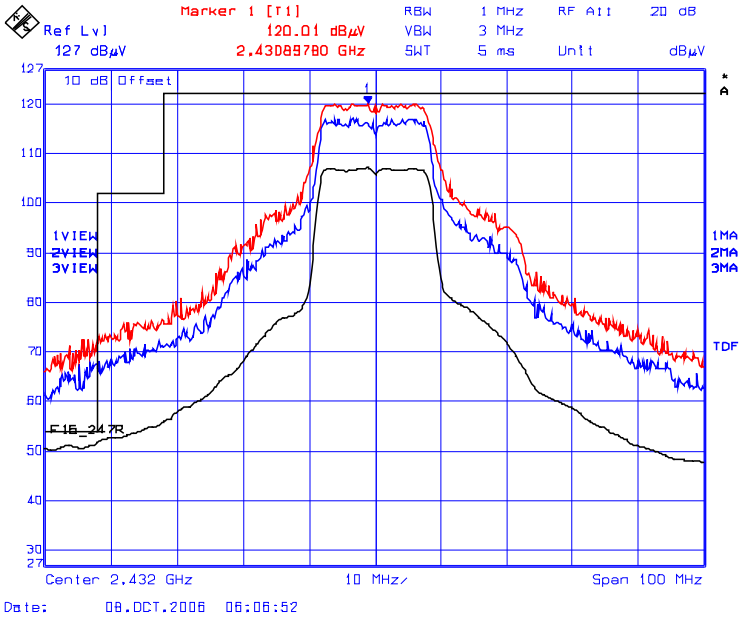
Plot 5.2.4.1.10.8a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2427 MHz, Power Setting: 16.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.90 dBµV/m – 48.10 dB = 71.80 dBµV/m < Limit (74 dBµV/m), Average 53.50dBµV/m



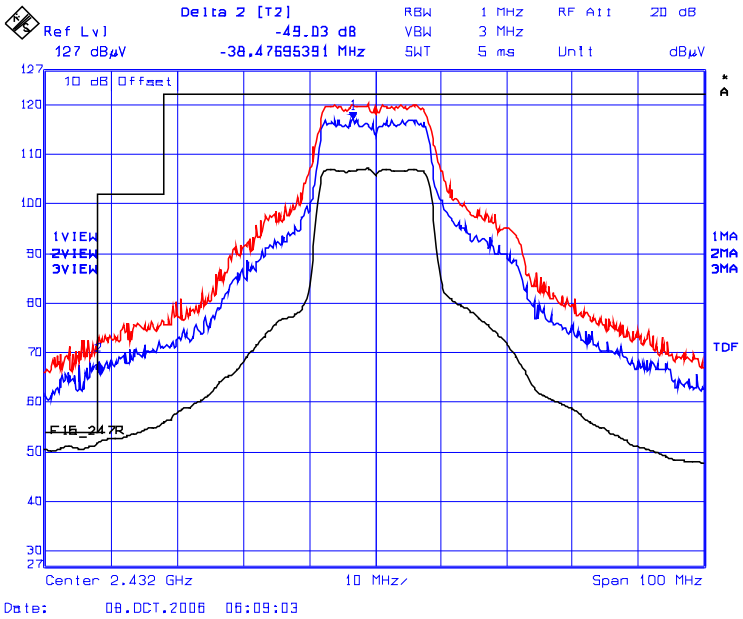
Plot 5.2.4.1.10.8b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.10 dB



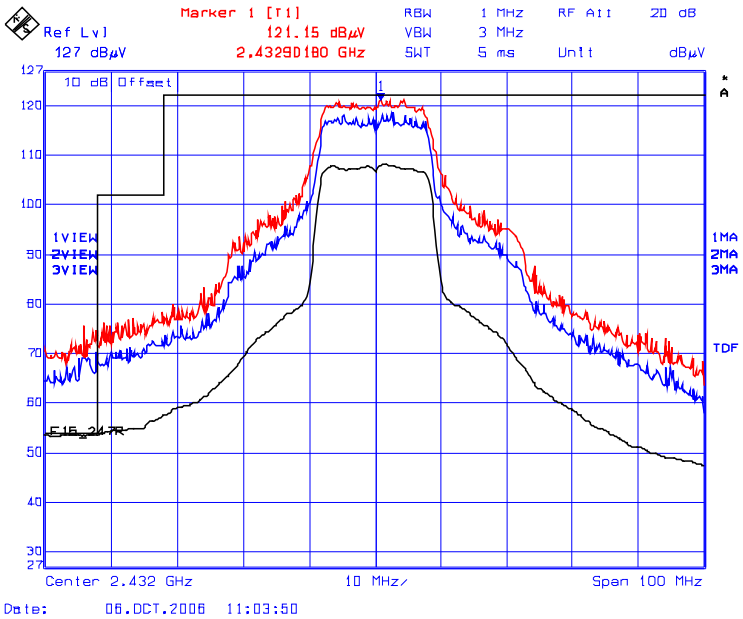
Plot 5.2.4.1.10.9a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2432 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 120.01 dBµV/m – 49.03 dB = 70.98 dBµV/m < Limit (74 dBµV/m)



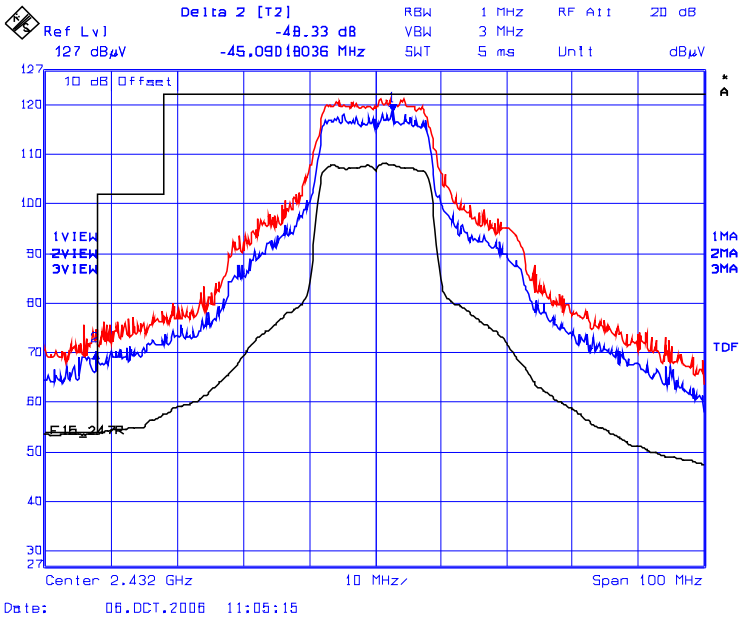
Plot 5.2.4.1.10.9b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.03 dB



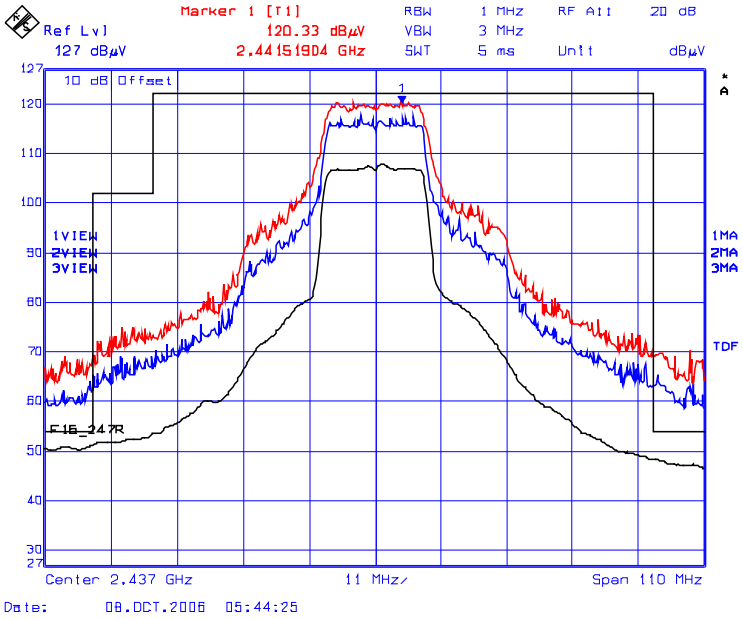
Plot 5.2.4.1.10.10a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2432 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 121.15 dBµV/m – 48.33 dB = 72.82 dBµV/m < Limit (74 dBµV/m), Average 53.65 dBµV/m



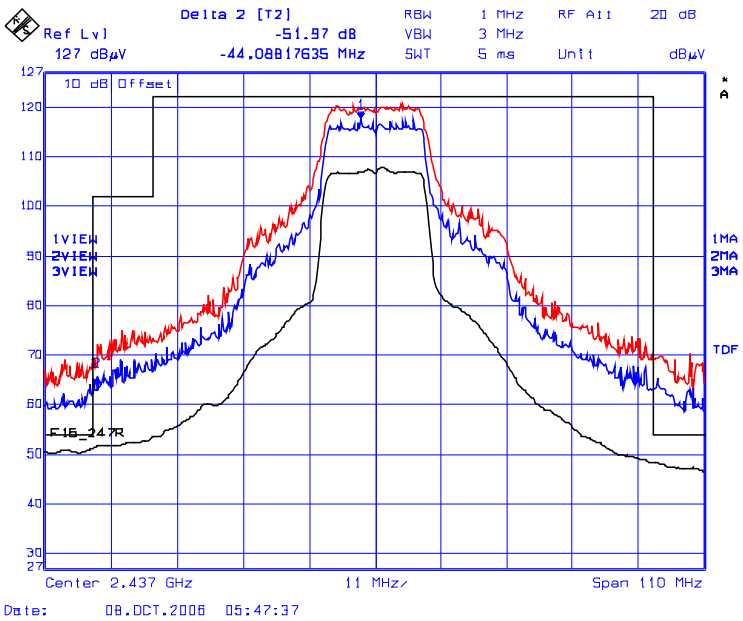
Plot 5.2.4.1.10.10b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.33 dB



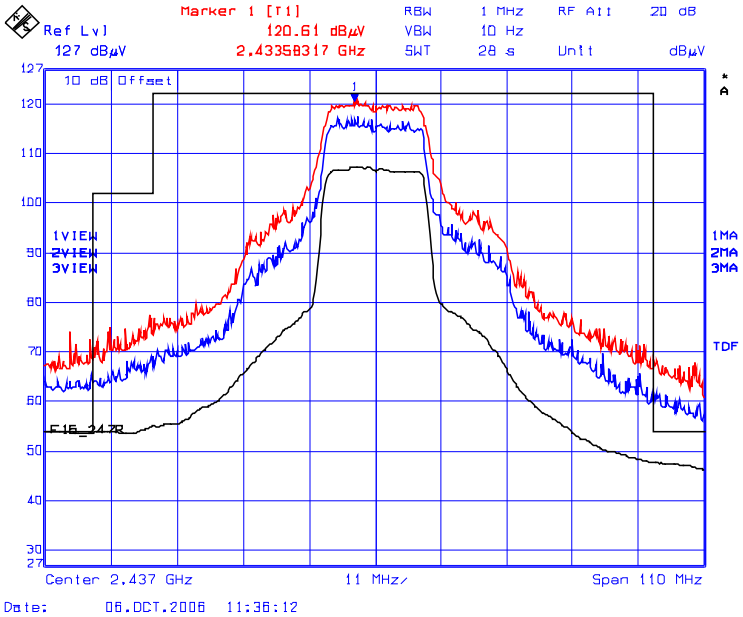
Plot 5.2.4.1.10.11a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2437 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 120.33 dBµV/m – 51.97 dB = 68.36 dBµV/m < Limit (74 dBµV/m)



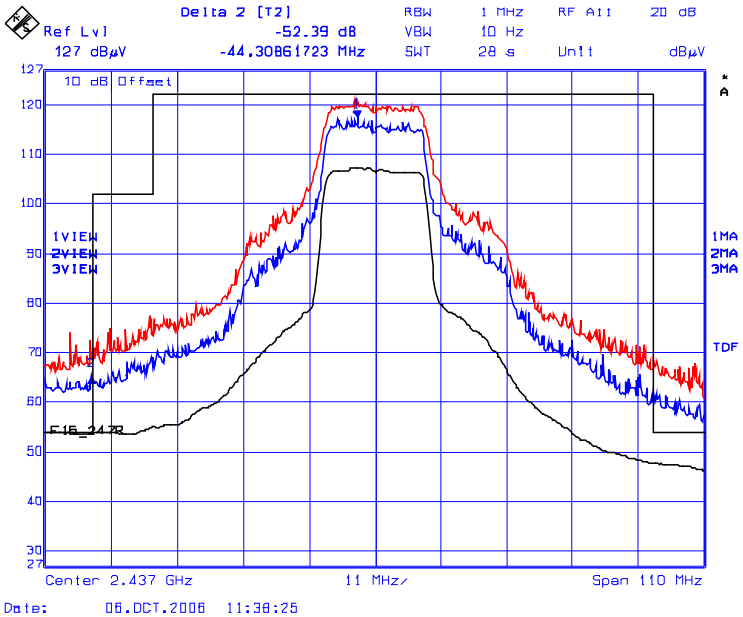
Plot 5.2.4.1.10.11b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 51.97 dB



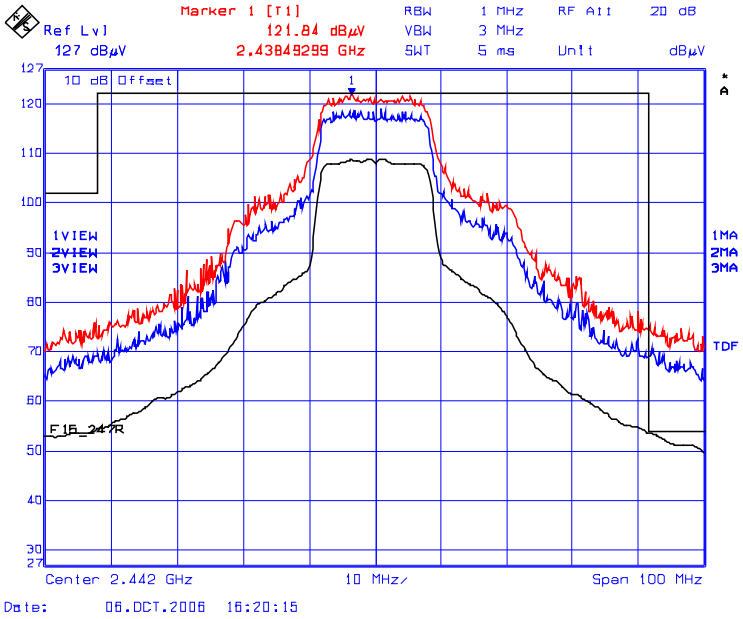
Plot 5.2.4.1.10.12a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2437 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 120.61 dBµV/m – 52.39 dB = 68.22 dBµV/m < Limit (74 dBµV/m), Average 53.78 dBµV/m



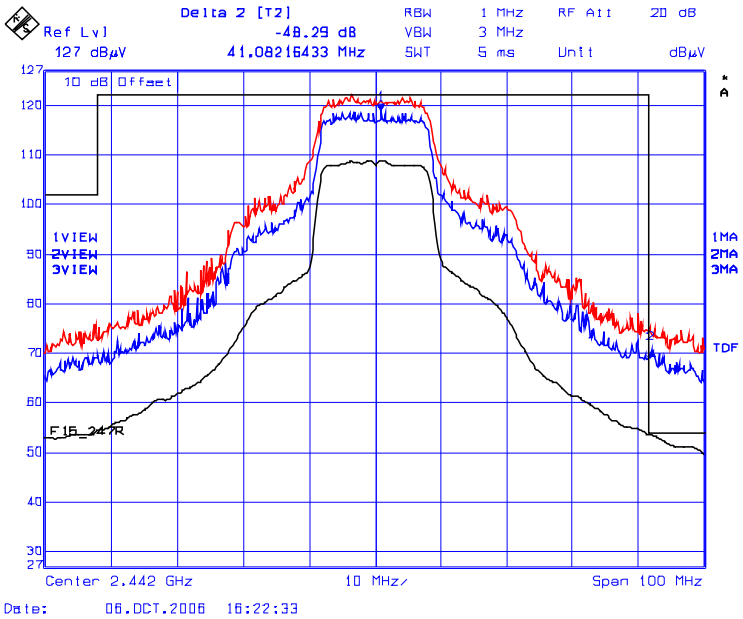
Plot 5.2.4.1.10.12b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 52.39 dB



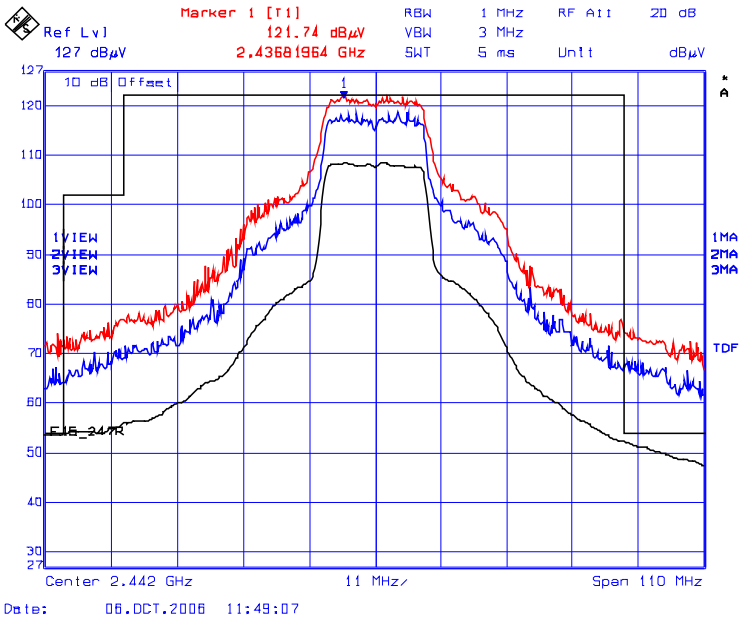
Plot 5.2.4.1.10.13a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2442 MHz, Power Setting: 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 121.84 dBµV/m – 48.29 dB = 73.55 dBµV/m < Limit (74 dBµV/m)



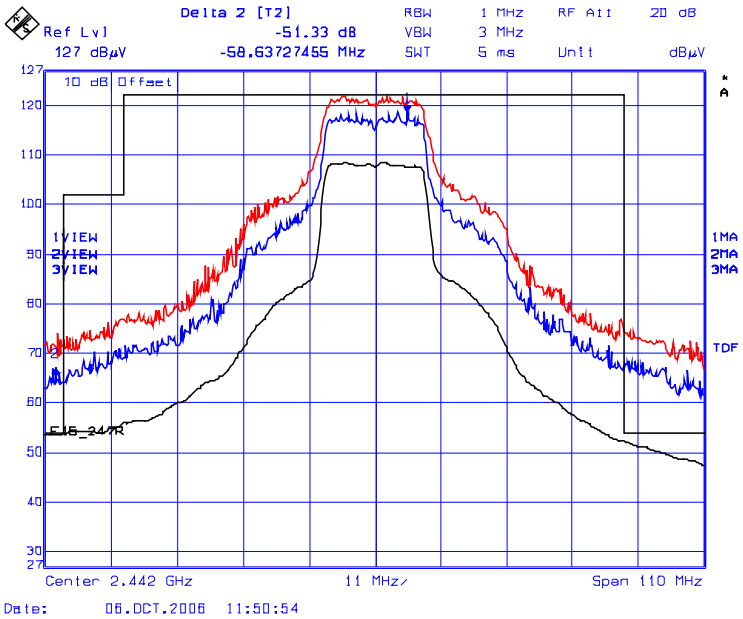
Plot 5.2.4.1.10.13b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.29 dB



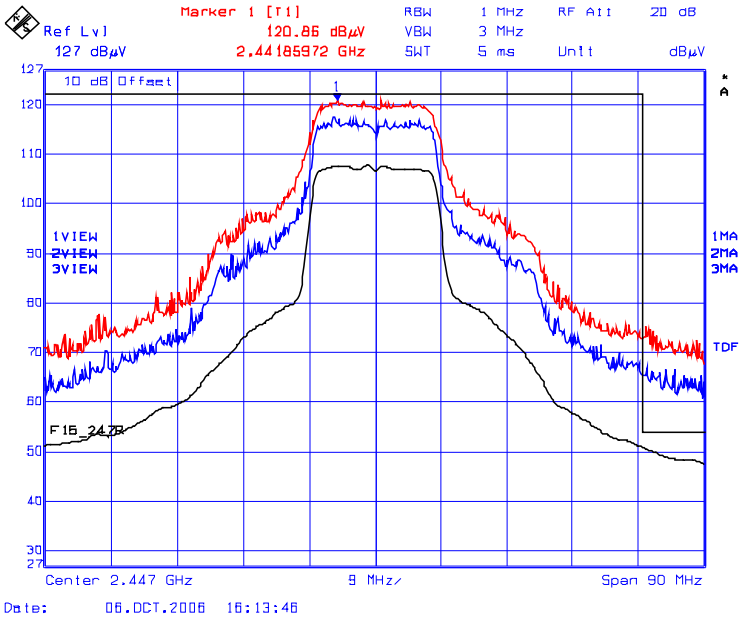
Plot 5.2.4.1.10.14a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2442 MHz, Power Setting: 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 121.74 dBµV/m – 51.33 dB = 70.41 dBµV/m < Limit (74 dBµV/m), Average 53.77 dBµV/m



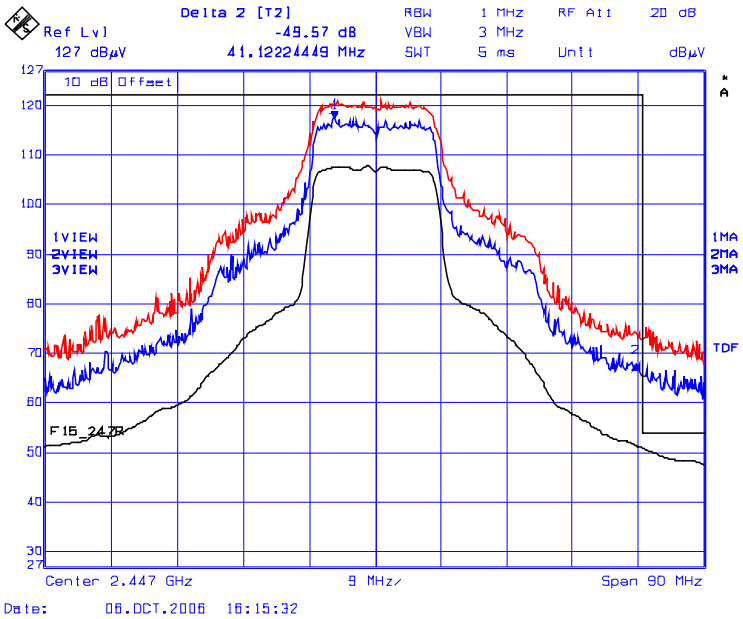
Plot 5.2.4.1.10.14b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 51.33 dB



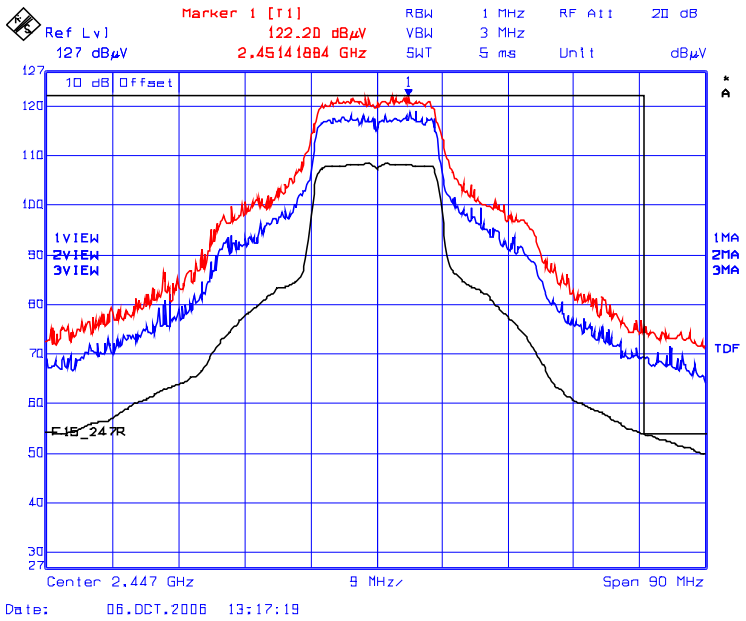
Plot 5.2.4.1.10.15a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2447 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 120.86 dBµV/m – 49.57 dB = 71.29 dBµV/m < Limit (74 dBµV/m)



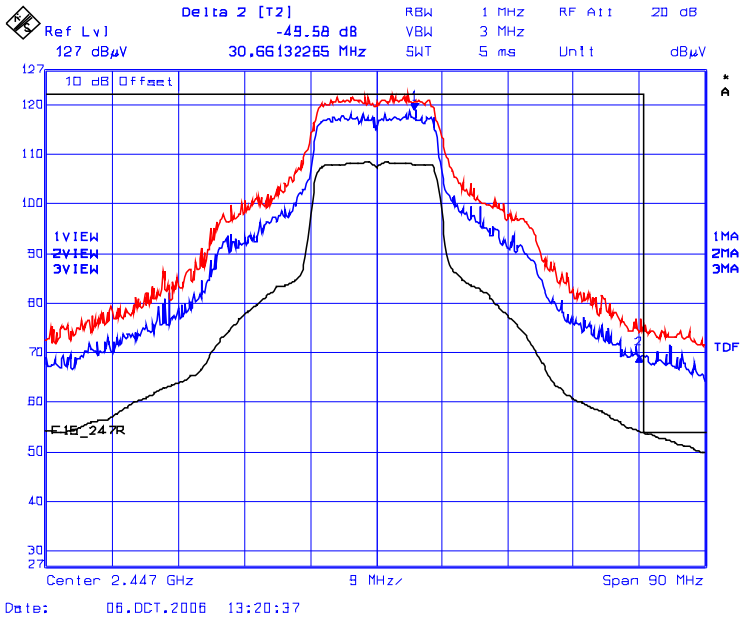
Plot 5.2.4.1.10.15b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.57 dB



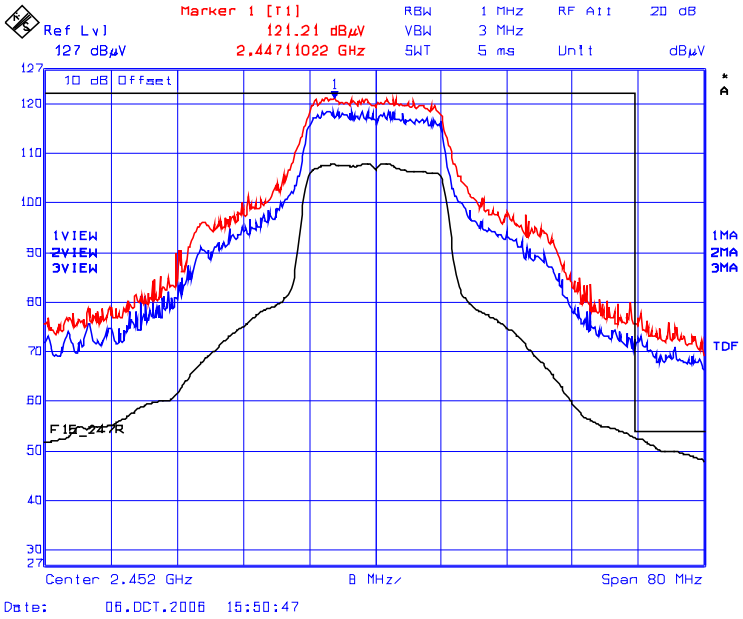
Plot 5.2.4.1.10.16a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2447 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 122.20 dBµV/m – 49.58 dB = 72.62 dBµV/m < Limit (74 dBµV/m)



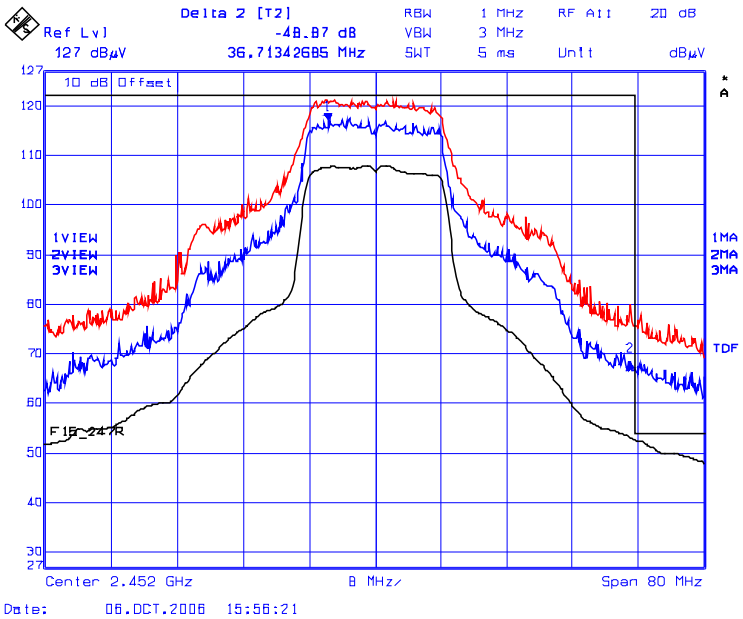
Plot 5.2.4.1.10.16b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.58 dB



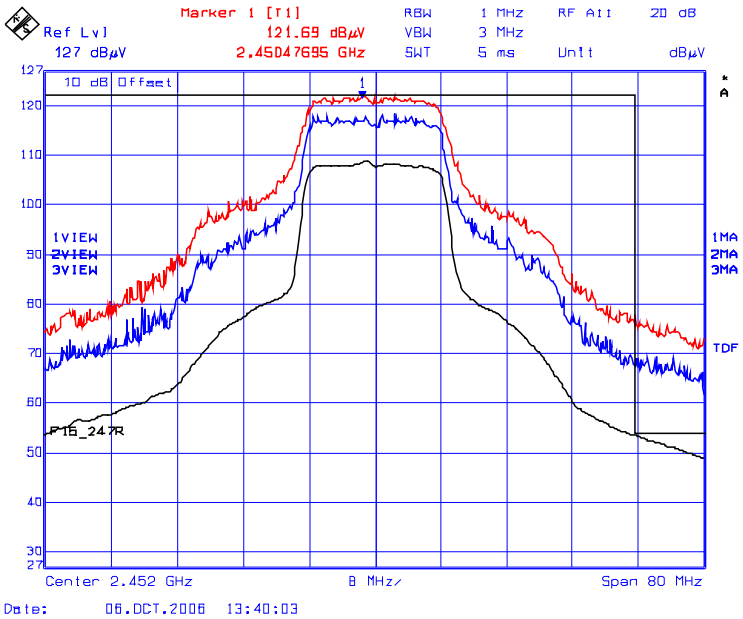
Plot 5.2.4.1.10.17a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2452 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 121.21 dBµV/m – 48.87 dB = 72.34 dBµV/m < Limit (74 dBµV/m)



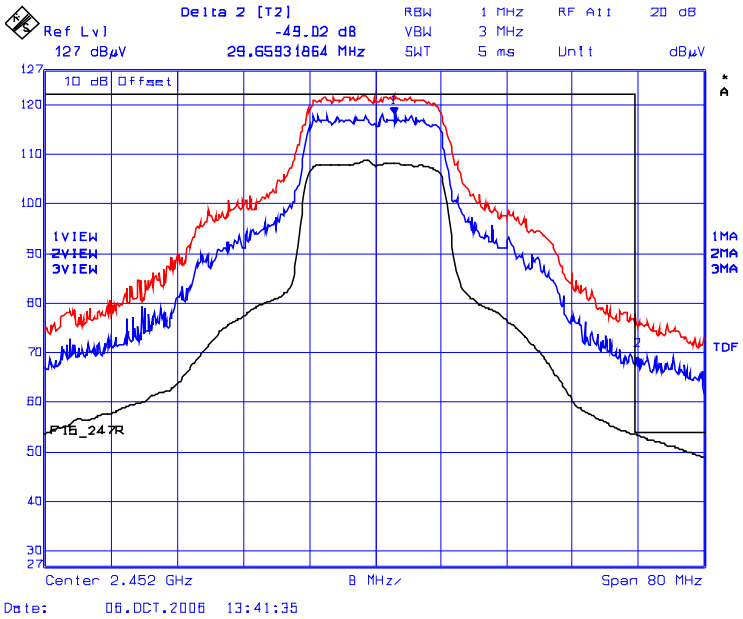
Plot 5.2.4.1.10.17b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.87 dB



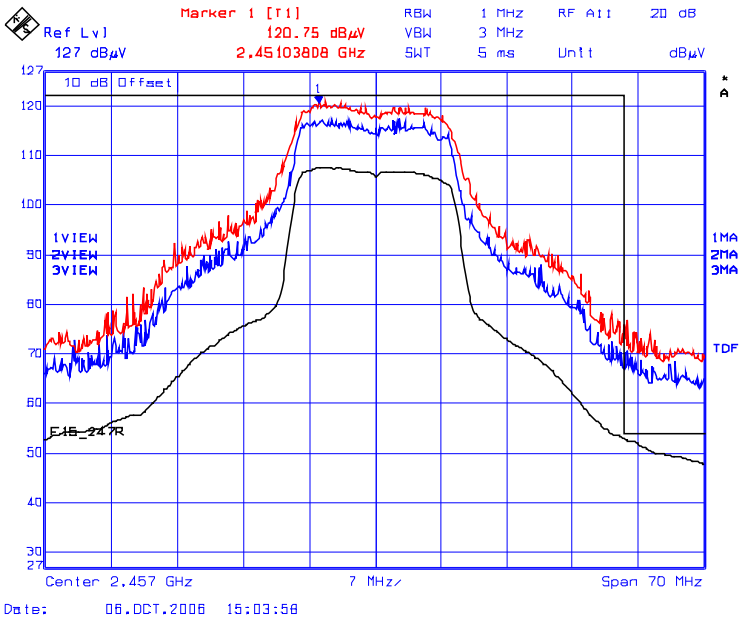
Plot 5.2.4.1.10.18a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2452 MHz, Power Setting = 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 121.69 dBµV/m – 49.02 dB = 72.67 dBµV/m < Limit (74 dBµV/m)



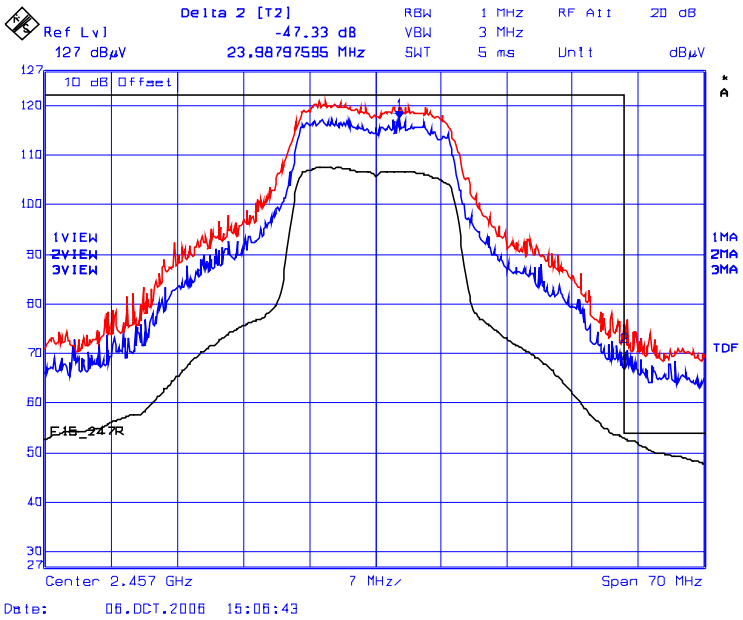
Plot 5.2.4.1.10.18b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.02 dB



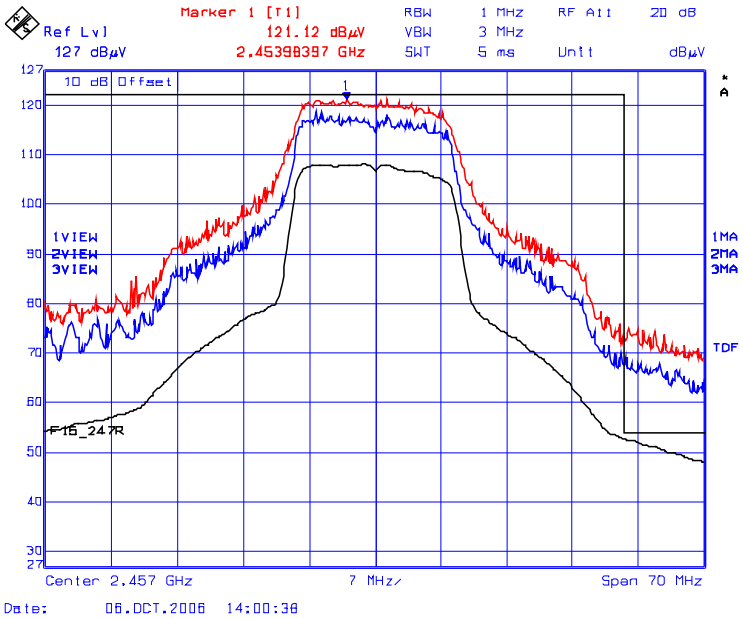
Plot 5.2.4.1.10.19a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2457 MHz, Power Setting: 17.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 120.75 dBµV/m – 47.33 dB = 73.42 dBµV/m < Limit (74 dBµV/m)



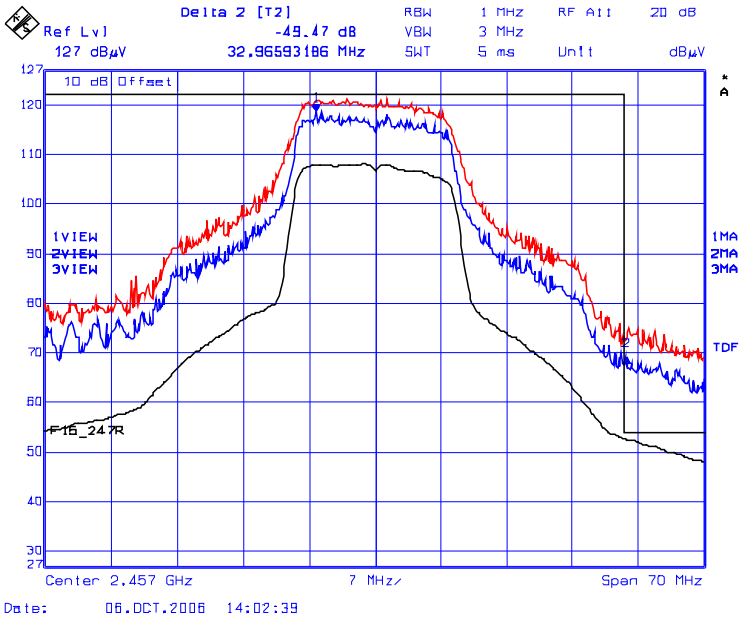
Plot 5.2.4.1.10.19b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.33 dB



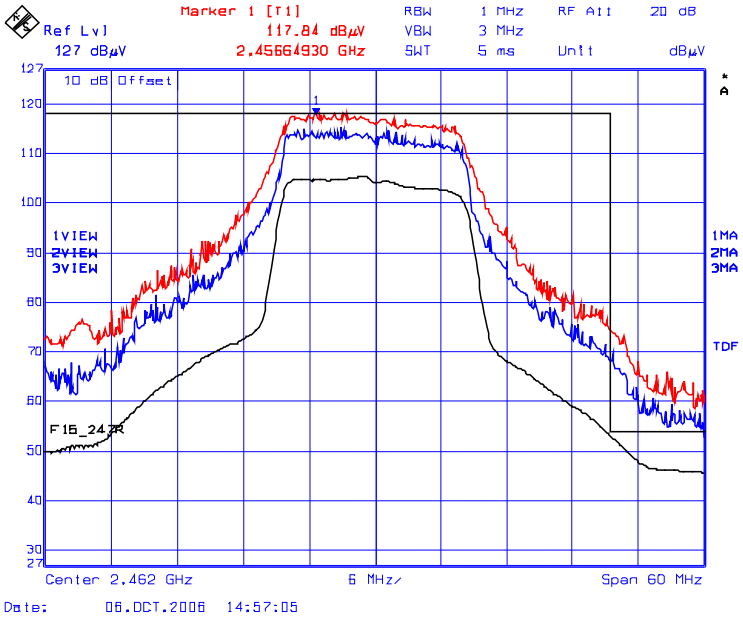
Plot 5.2.4.1.10.20a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2457 MHz, Power Setting: 17.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 121.12 dBµV/m – 49.47 dB = 71.65 dBµV/m < Limit (74 dBµV/m)



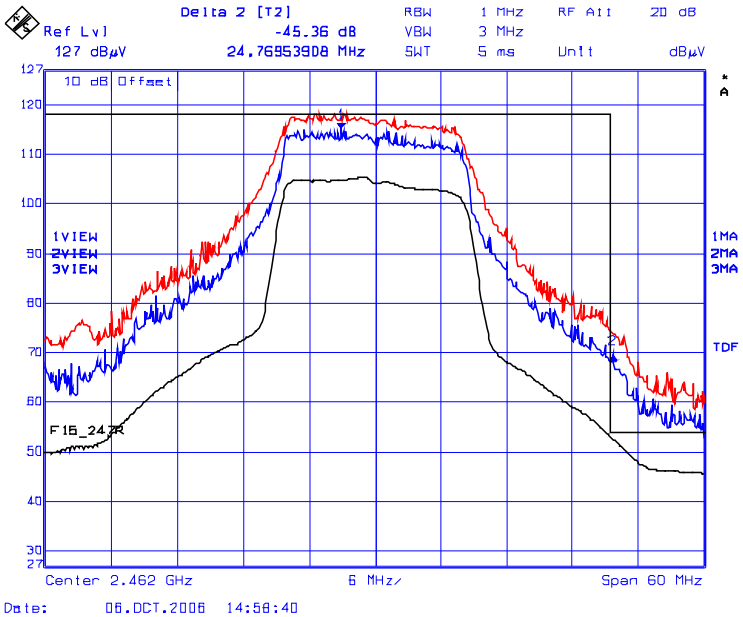
Plot 5.2.4.1.10.20b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.47 dB



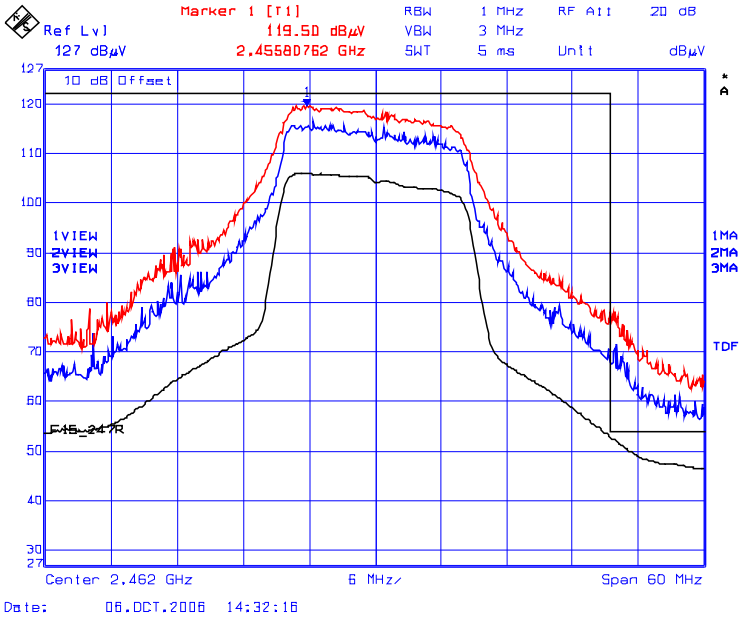
Plot 5.2.4.1.10.21a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2462 MHz, Power Setting = 14.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 117.84 dBµV/m – 45.36 dB = 72.48 dBµV/m < Limit (74 dBµV/m)



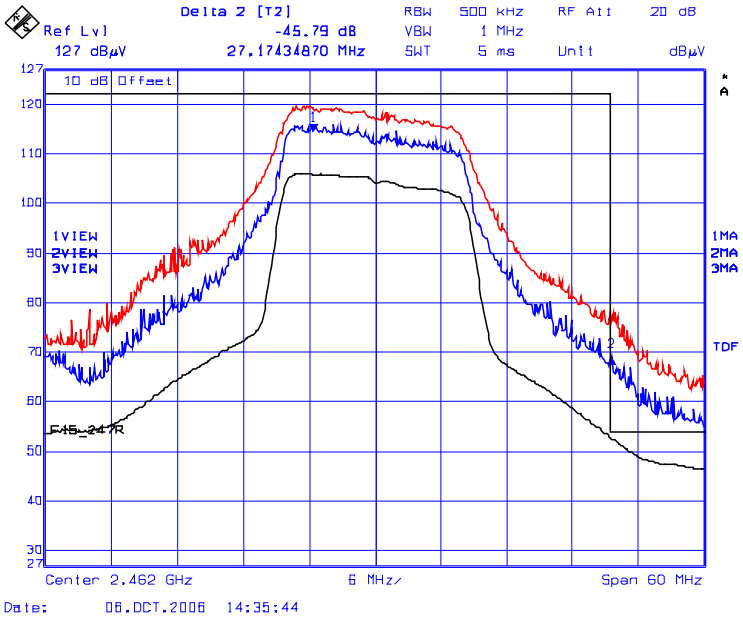
Plot 5.2.4.1.10.21b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.36 dB



Plot 5.2.4.1.10.22a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2462 MHz, Power Setting = 14.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 119.50 dBµV/m – 45.79 dB = 73.71 dBµV/m < Limit (74 dBµV/m)

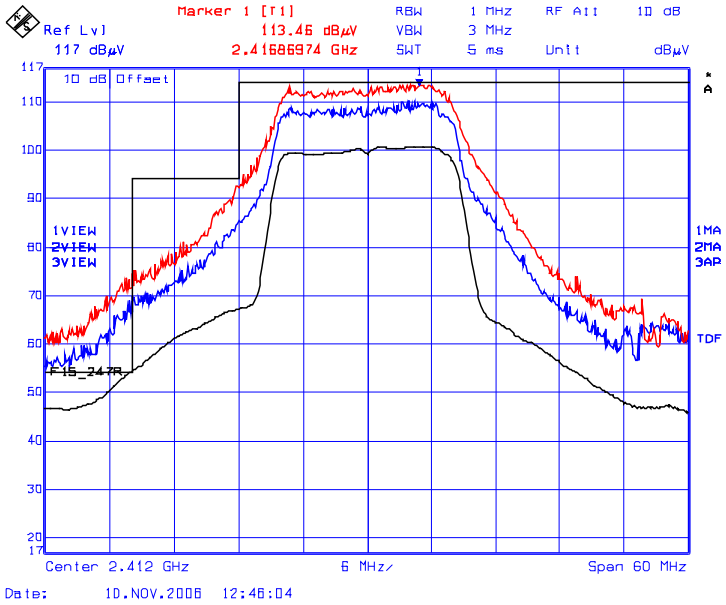


Plot 5.2.4.1.10.22b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.79 dB

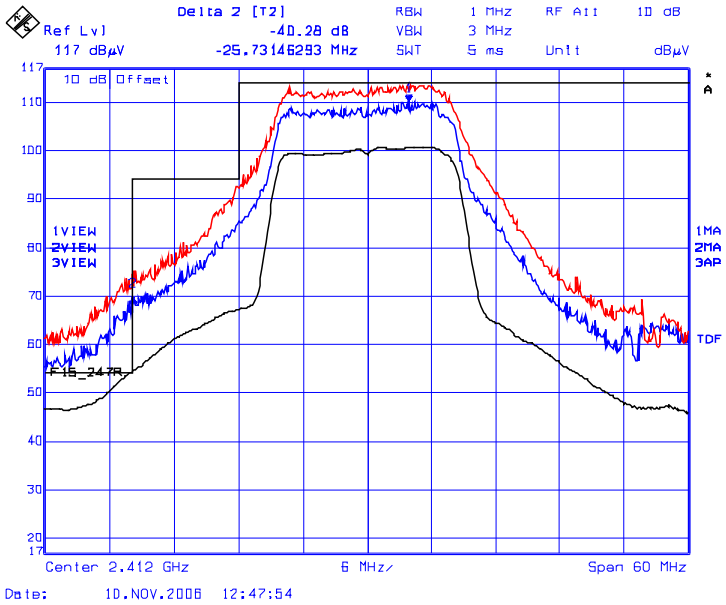


5.2.4.1.11. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

Plot 5.2.4.1.11.1a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2412 MHz, Power Setting: 12.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 113.46 dBµV/m – 40.28 dB = 73.18 dBµV/m < Limit (74 dBµV/m)

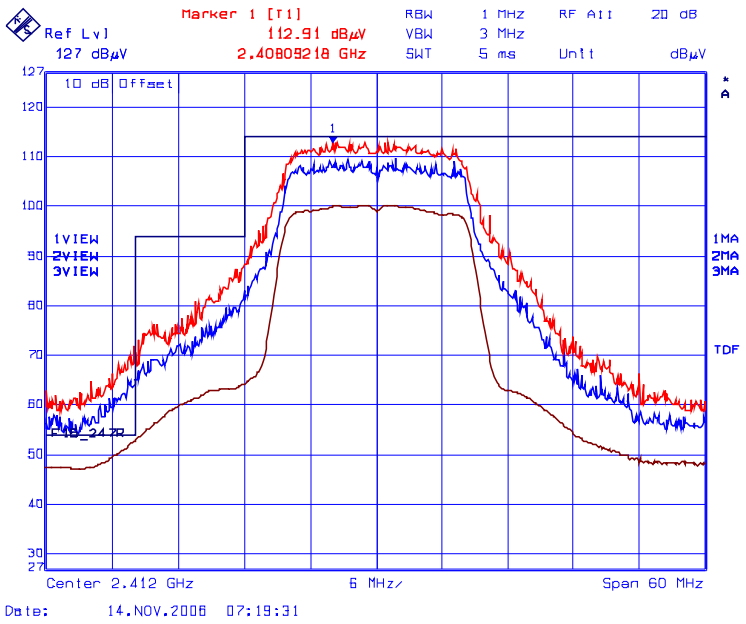


Plot 5.2.4.1.11.1b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 40.28 dB

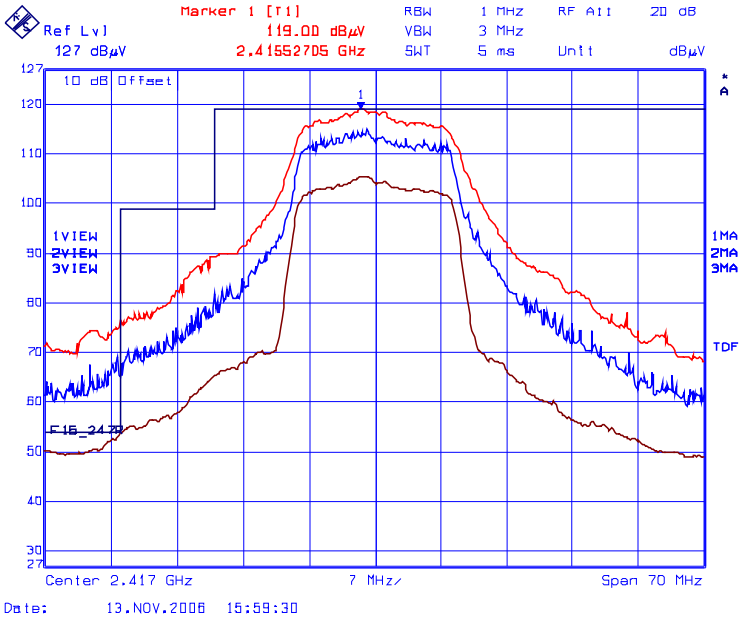


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

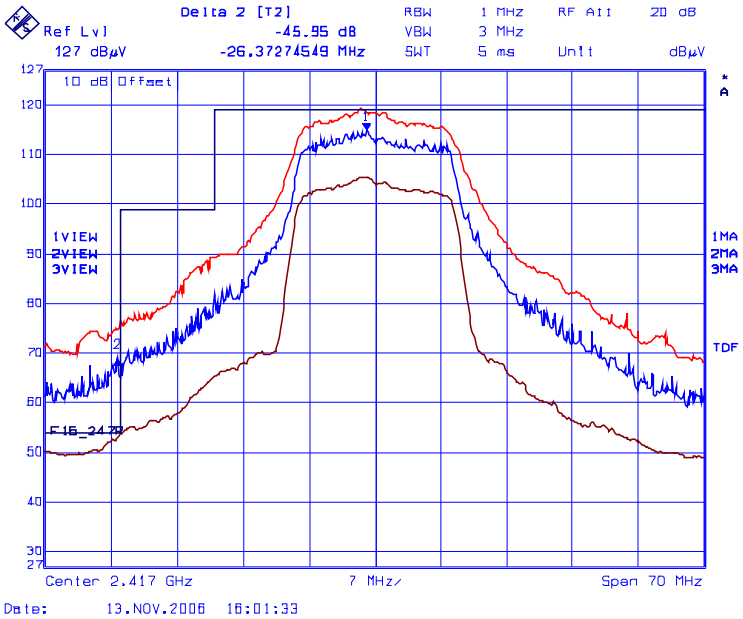
Plot 5.2.4.1.11.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2412 MHz, Power Setting: 12.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



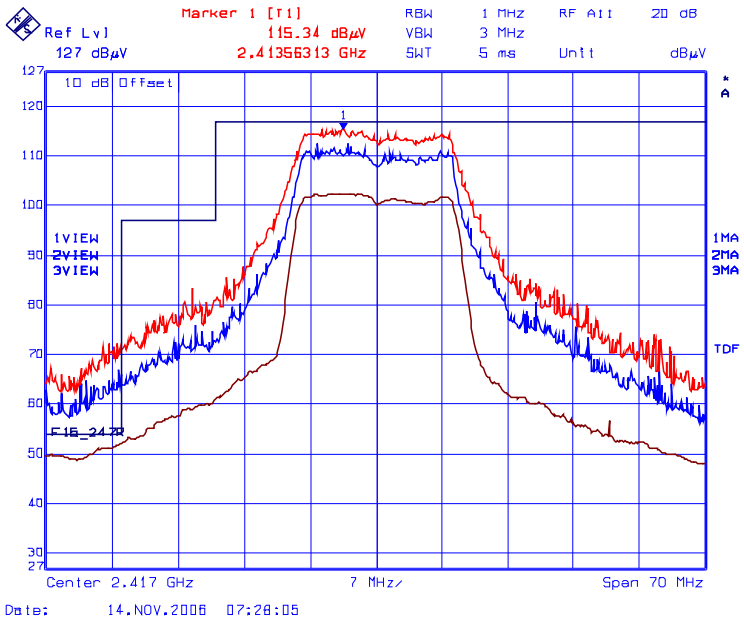
Plot 5.2.4.1.11.3a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2417 MHz, Power Setting: 15.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.00 dBµV/m – 45.95 dB = 73.05 dBµV/m < Limit (74 dBµV/m)



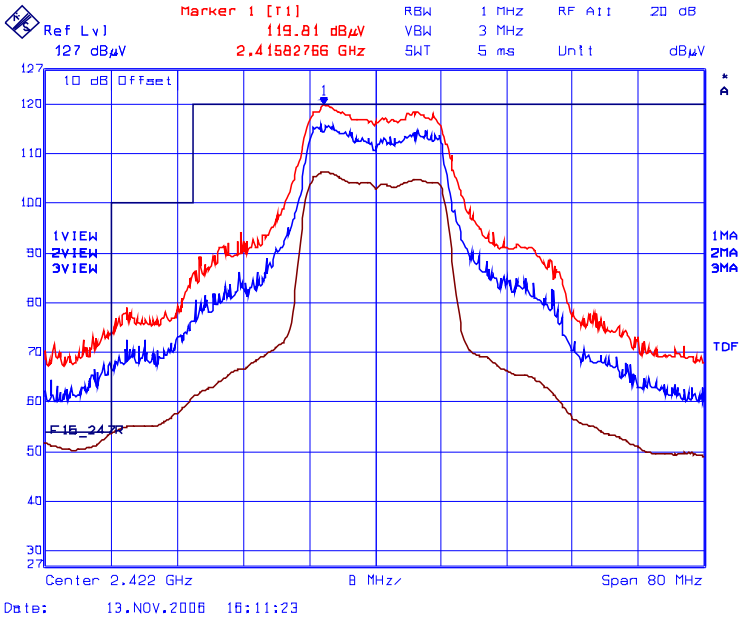
Plot 5.2.4.1.11.3b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.95 dB



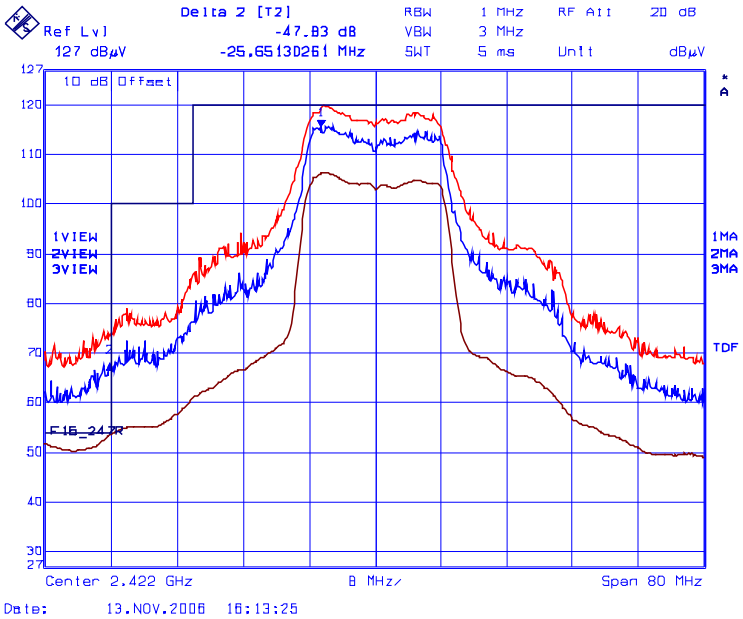
Plot 5.2.4.1.11.4 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2417 MHz, Power Setting: 15.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



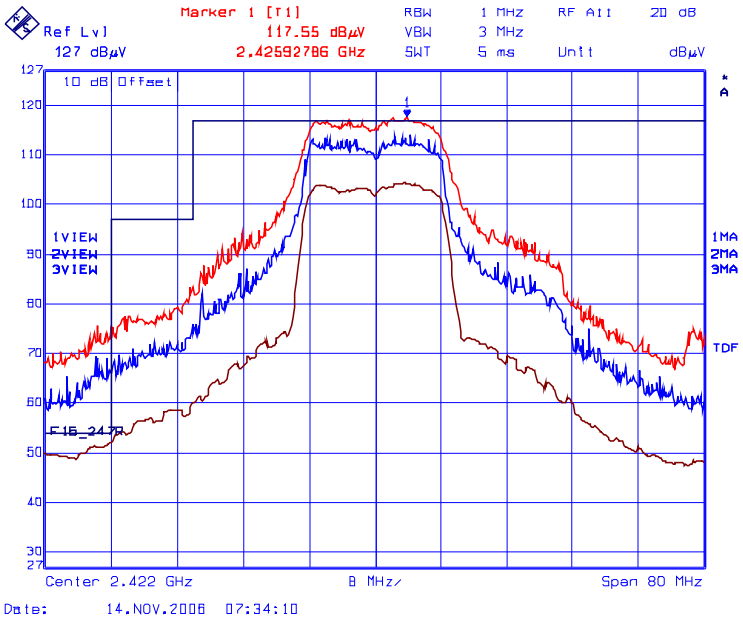
Plot 5.2.4.1.11.5a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2422 MHz, Power Setting: 16.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.81 dBµV/m – 47.83 dB = 71.98 dBµV/m < Limit (74 dBµV/m)



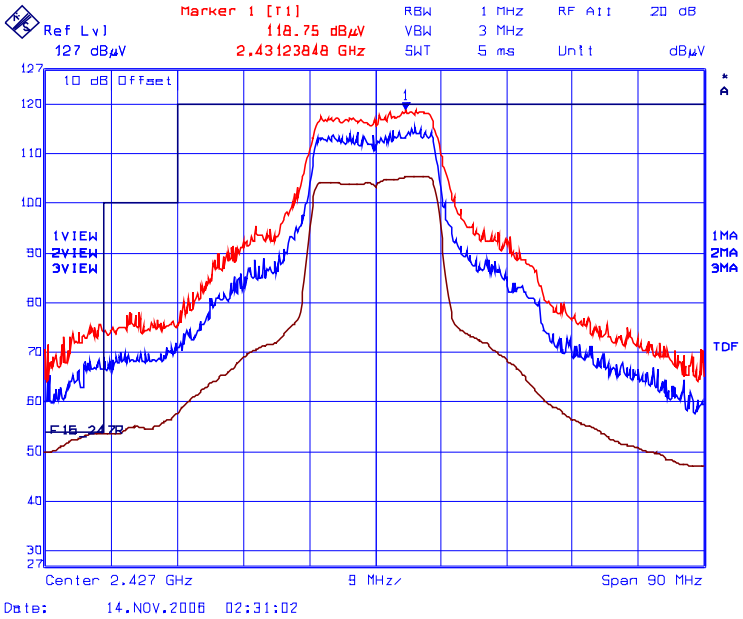
Plot 5.2.4.1.11.5b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.83 dB



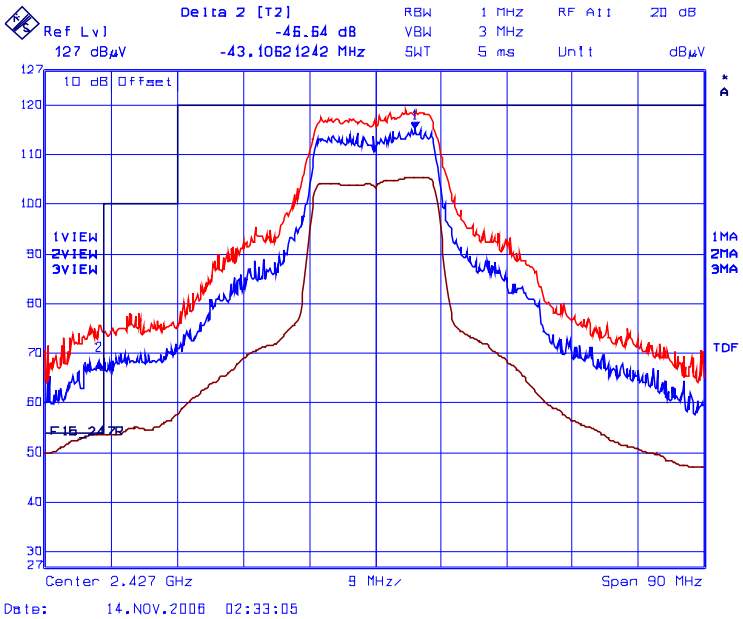
Plot 5.2.4.1.11.6 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2422 MHz, Power Setting: 16.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



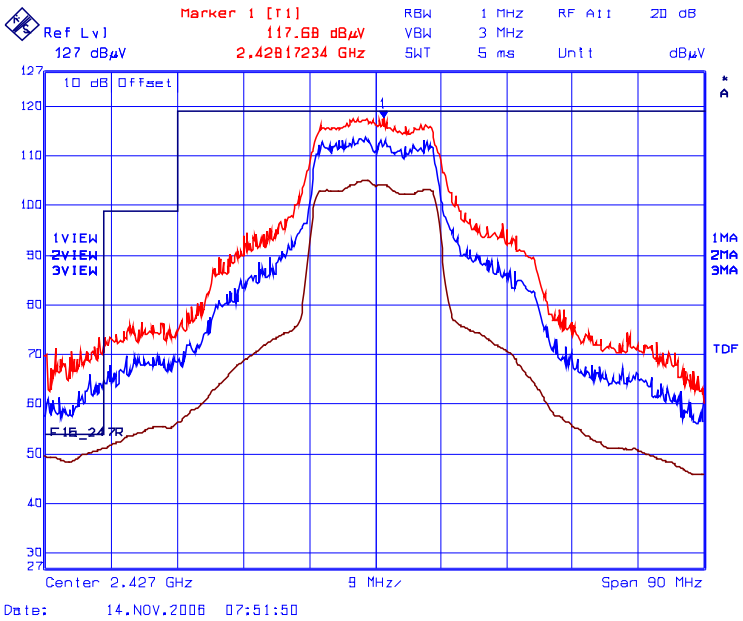
Plot 5.2.4.1.11.7a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2427 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.75 dBµV/m – 46.64 dB = 72.11 dBµV/m < Limit (74 dBµV/m)



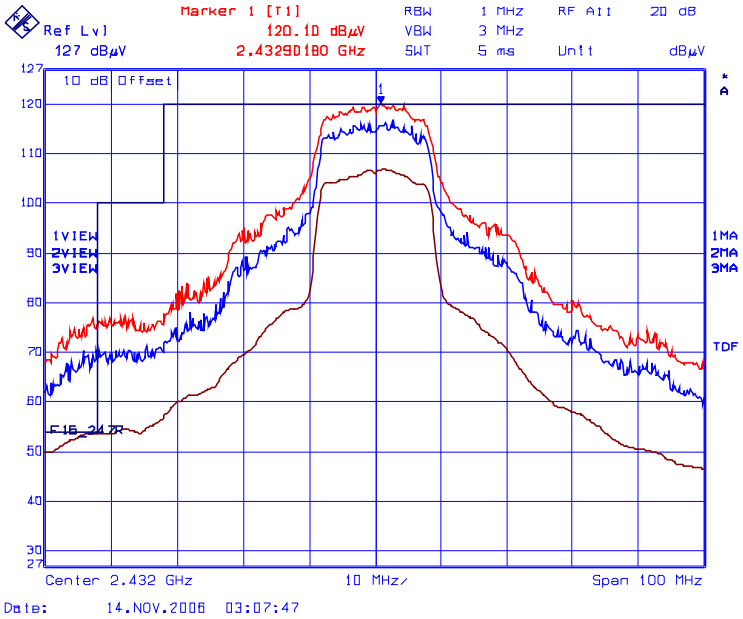
Plot 5.2.4.1.11.7b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.64 dB



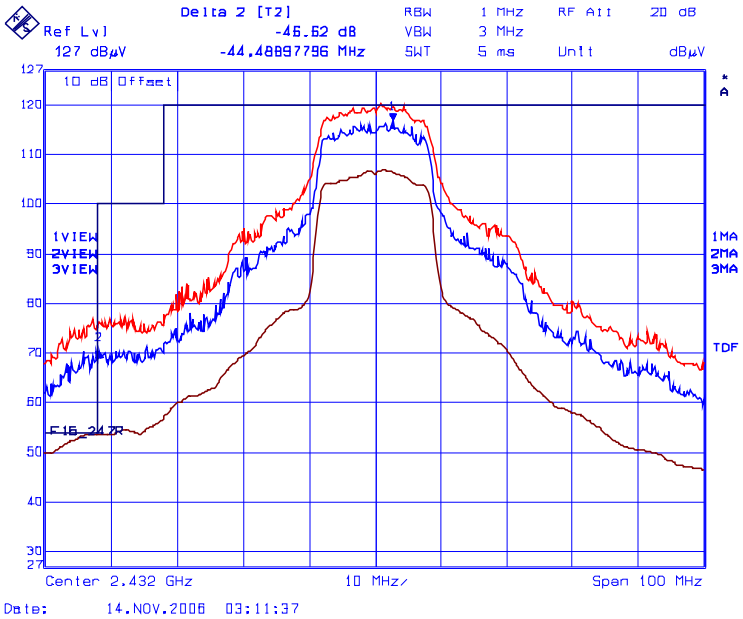
Plot 5.2.4.1.11.8 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2427 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



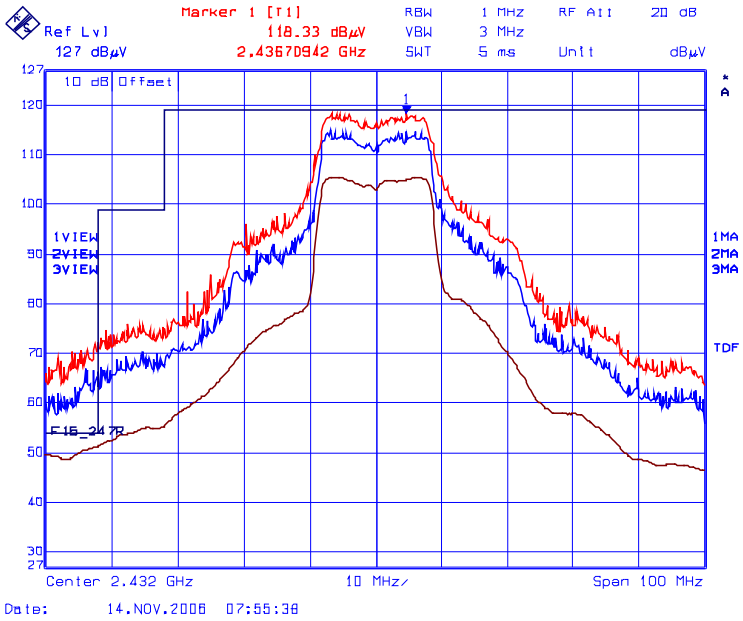
Plot 5.2.4.1.11.9a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2432 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 120.10 dBµV/m – 46.62 dB = 73.48 dBµV/m < Limit (74 dBµV/m)



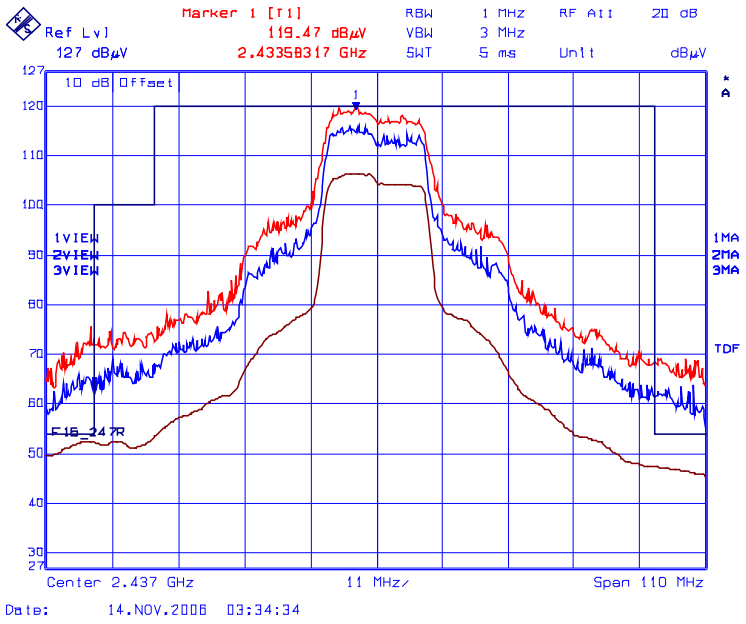
Plot 5.2.4.1.11.9b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.62 dB



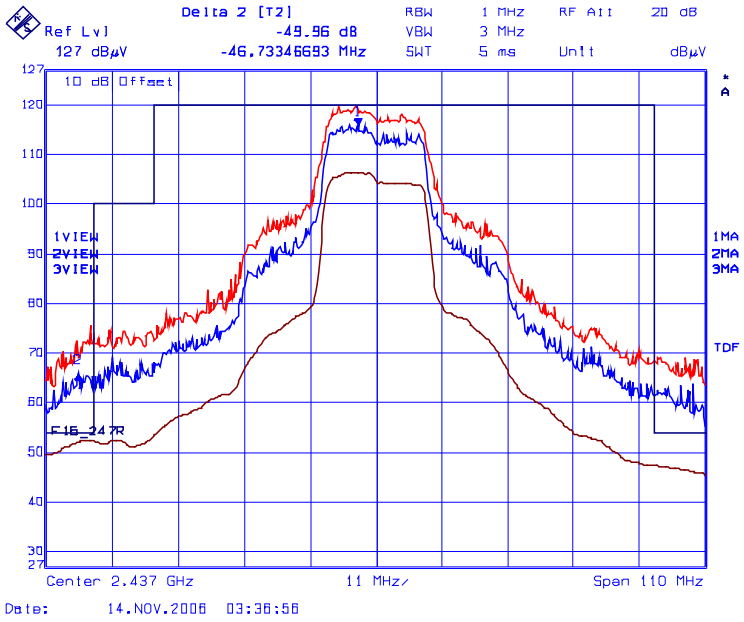
Plot 5.2.4.1.11.10 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2432 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



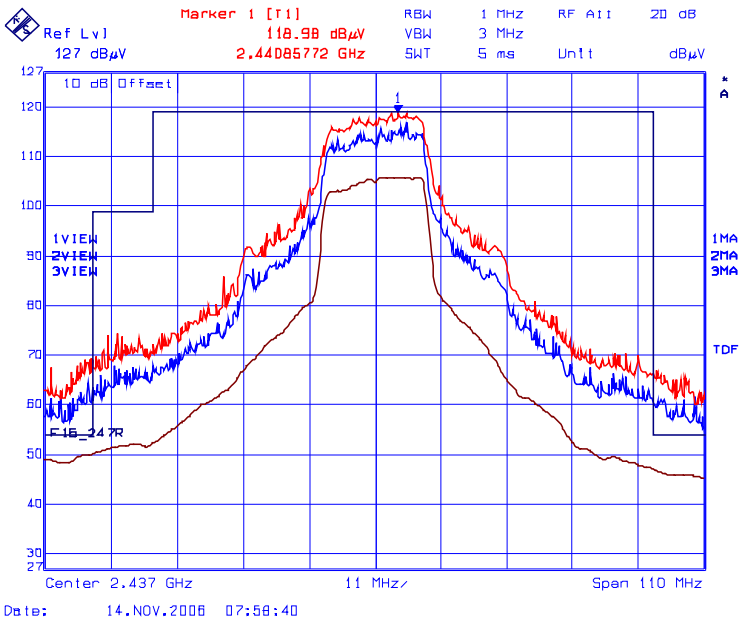
Plot 5.2.4.1.11.11a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2437 MHz, Power Setting: 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.47 dBµV/m – 49.96 dB = 69.51 dBµV/m < Limit (74 dBµV/m)



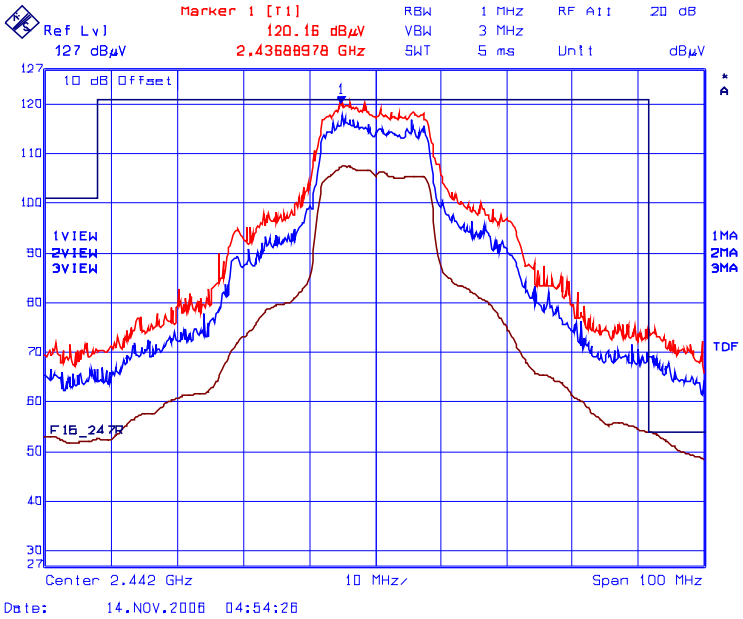
Plot 5.2.4.1.11.11b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.96 dB



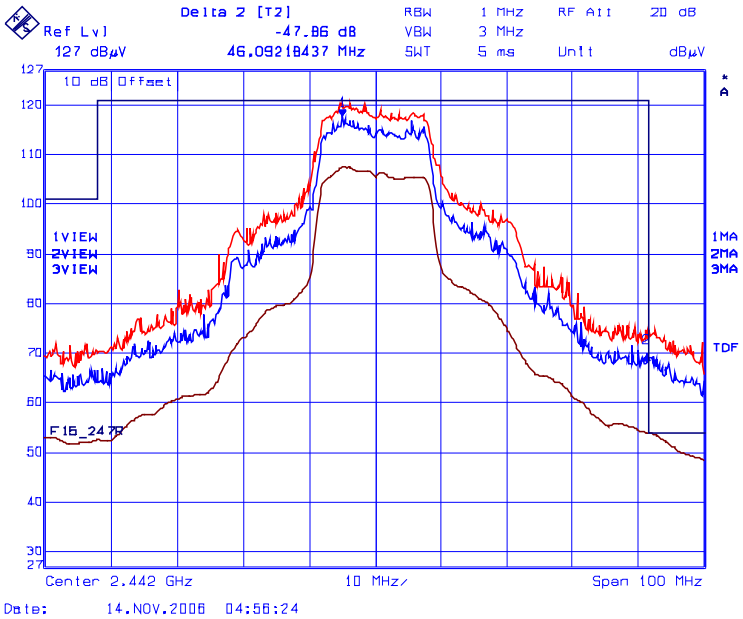
Plot 5.2.4.1.11.12 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2437 MHz, Power Setting: 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



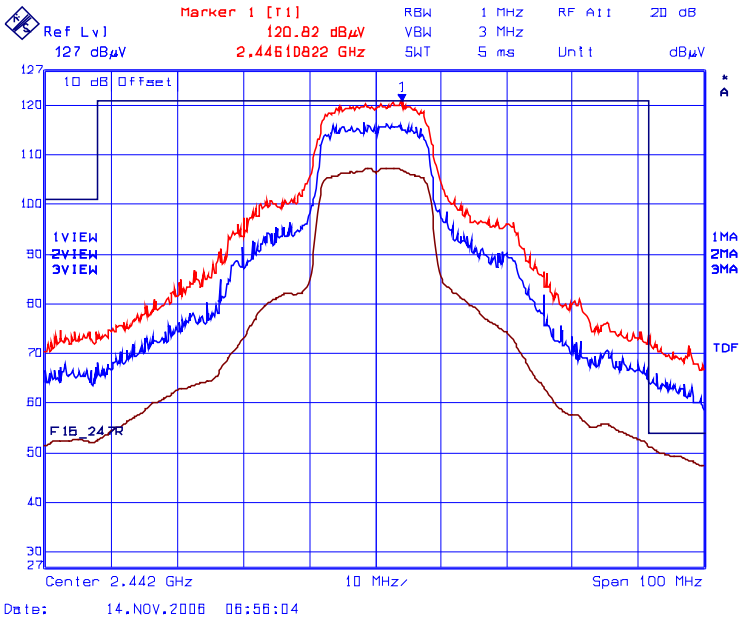
Plot 5.2.4.1.11.13a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2442 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 120.16 dBµV/m – 47.86 dB = 72.30 dBµV/m < Limit (74 dBµV/m)



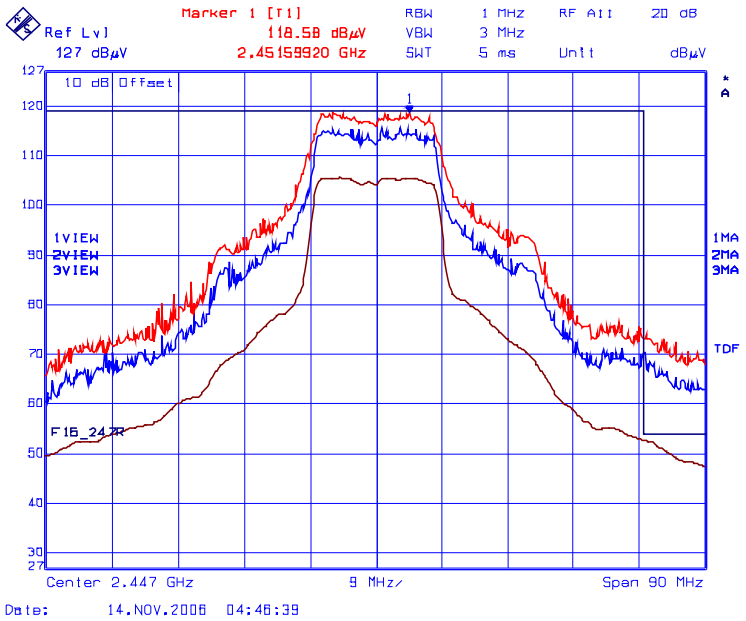
Plot 5.2.4.1.11.13b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.86 dB



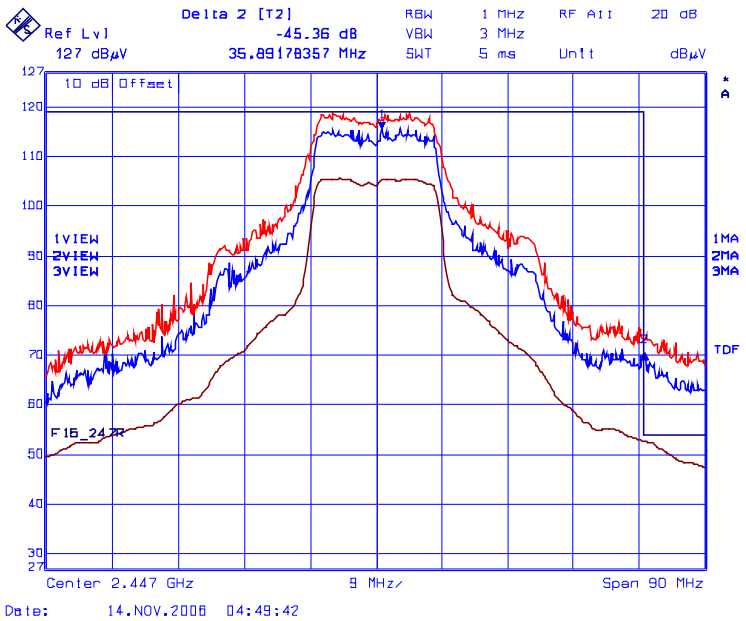
Plot 5.2.4.1.11.14 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2442 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



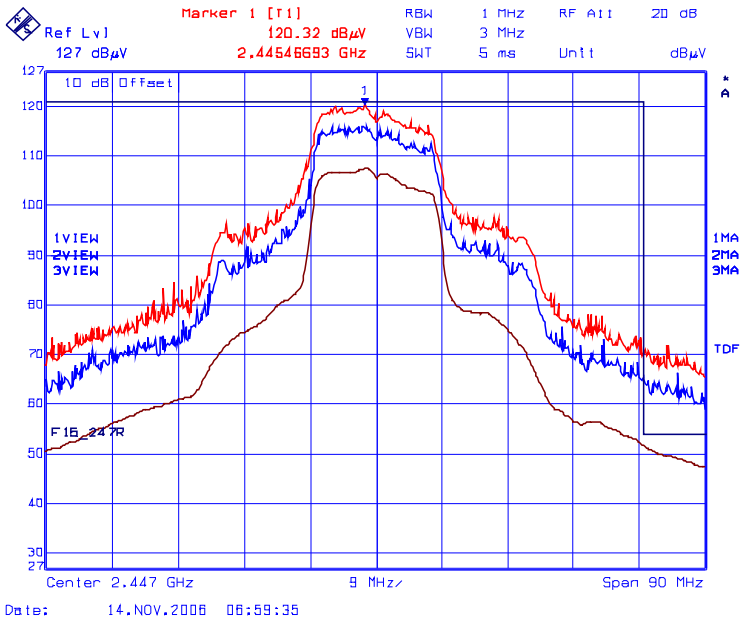
Plot 5.2.4.1.11.15a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2447 MHz, Power Setting; 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 118.58 dBµV/m – 45.36 dB = 73.22 dBµV/m < Limit (74 dBµV/m)



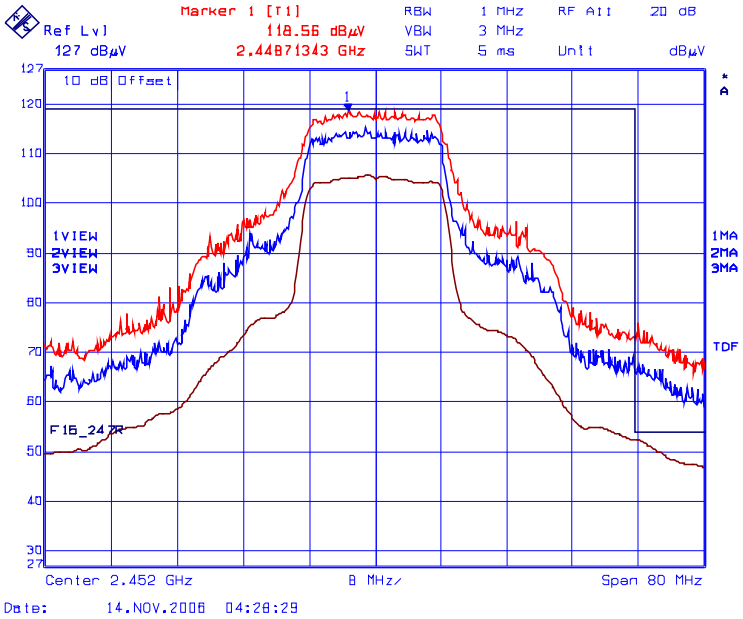
Plot 5.2.4.1.11.15b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.36dB



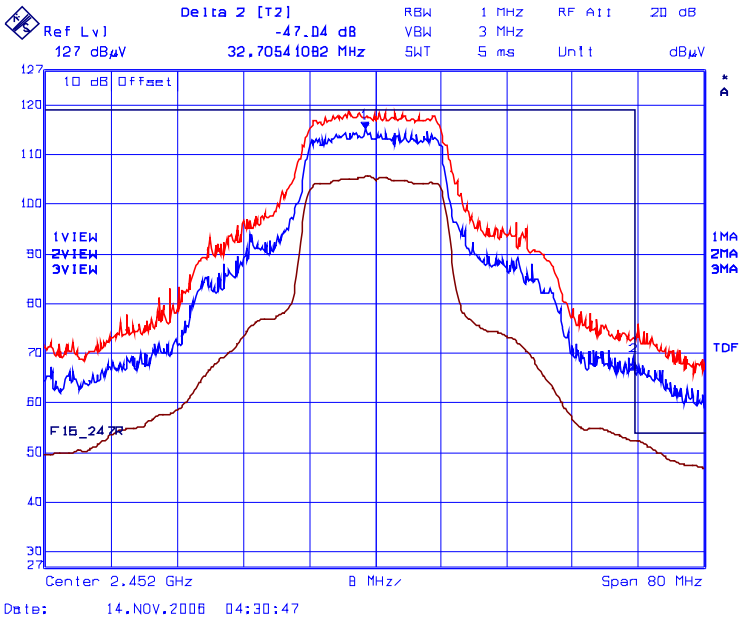
Plot 5.2.4.1.11.16 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2447 MHz, Power Setting; 19.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



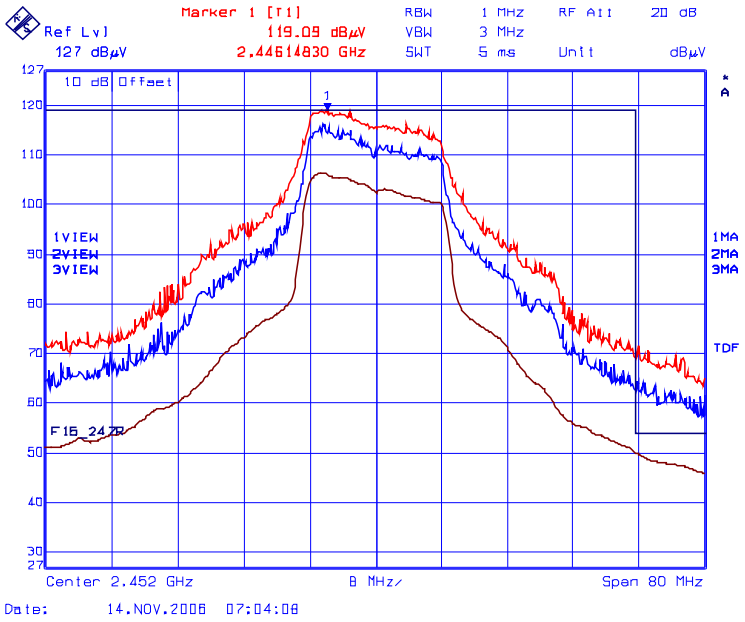
Plot 5.2.4.1.11.17a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2452 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 118.56 dBµV/m – 47.04 dB = 71.52 dBµV/m < Limit (74 dBµV/m)



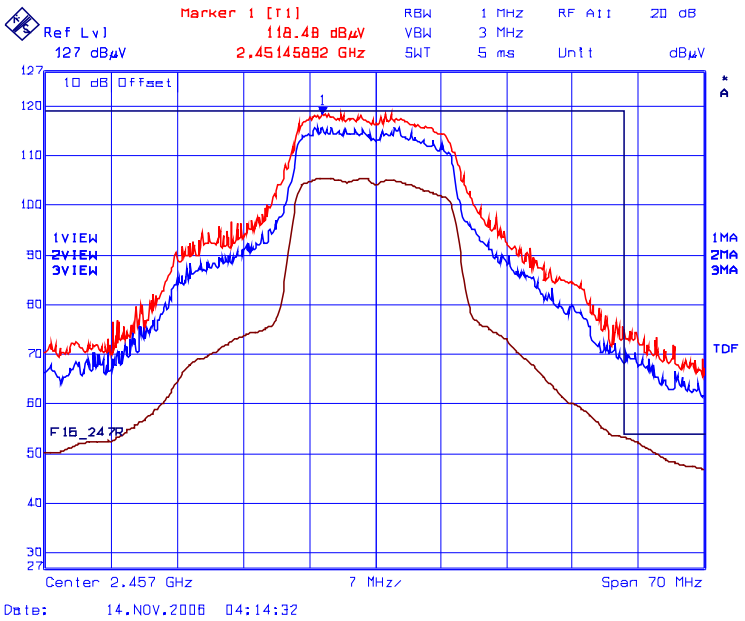
Plot 5.2.4.1.11.17b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.04dB



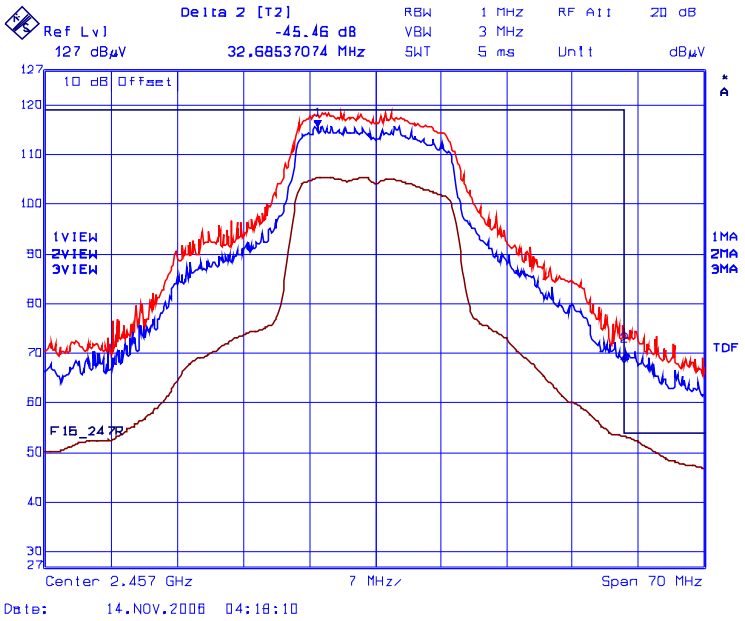
Plot 5.2.4.1.11.18 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2452 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



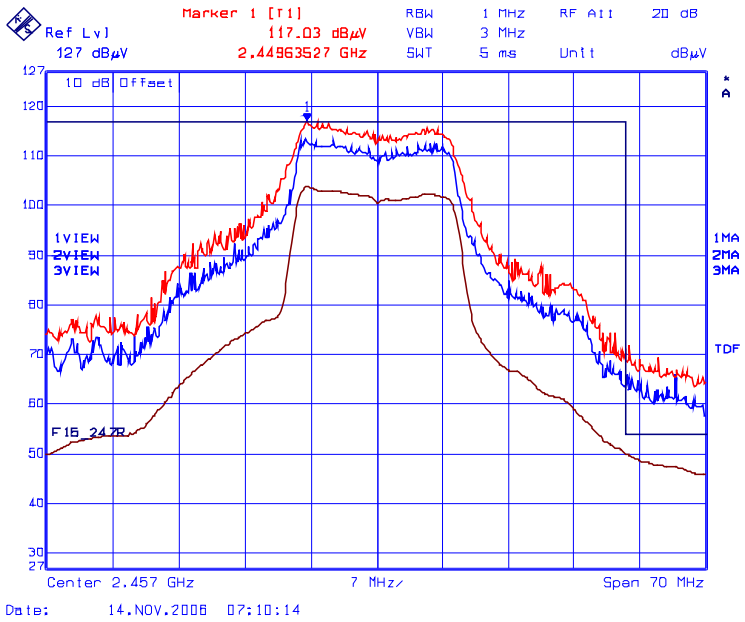
Plot 5.2.4.1.11.19a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2457 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 118.48 dBµV/m – 45.46 dB = 73.02 dBµV/m < Limit (74 dBµV/m)



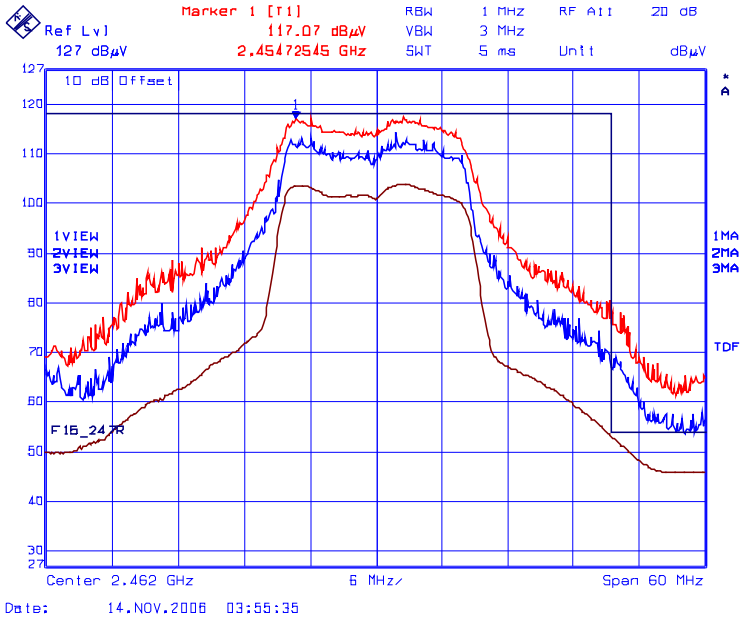
Plot 5.2.4.1.11.19b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.46 dB



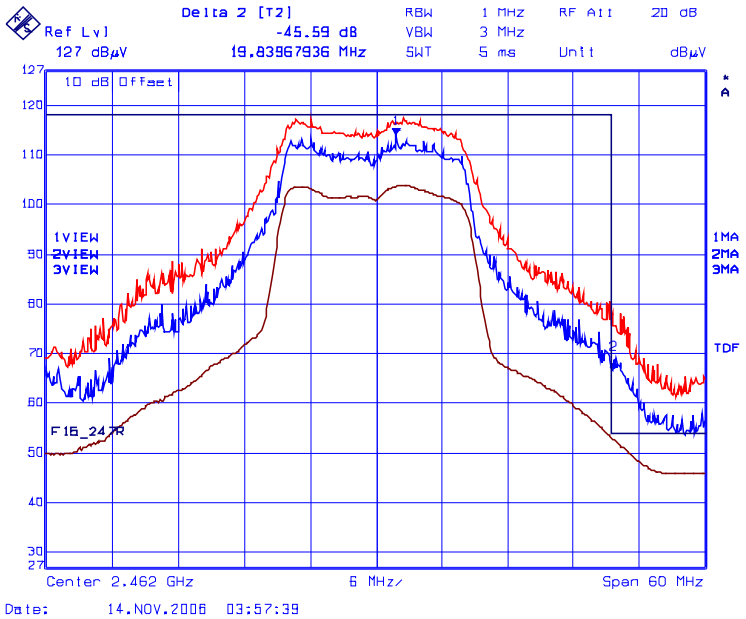
Plot 5.2.4.1.11.20 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2457 MHz, Power Setting: 17.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



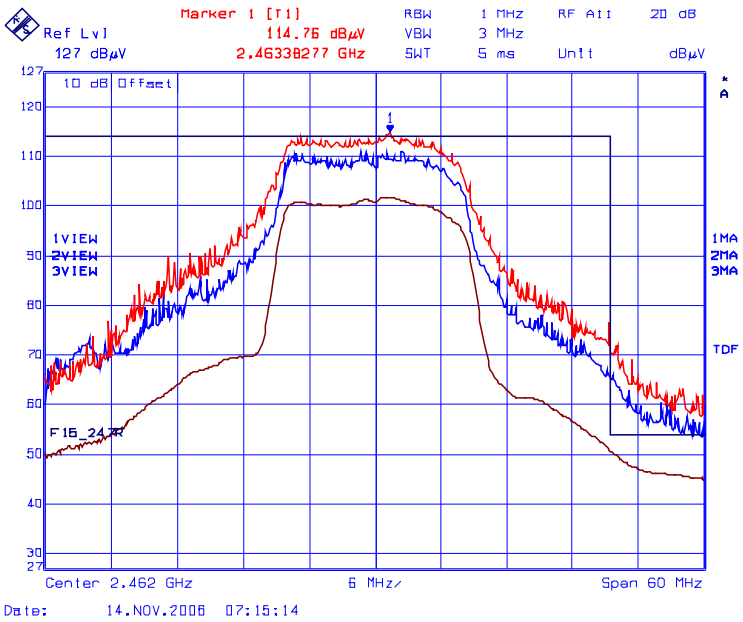
Plot 5.2.4.1.11.21a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2462 MHz, Power Setting: 15.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 117.07 dBµV/m – 45.59 dB = 71.48 dBµV/m < Limit (74 dBµV/m)



Plot 5.2.4.1.11.21b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 45.59dB

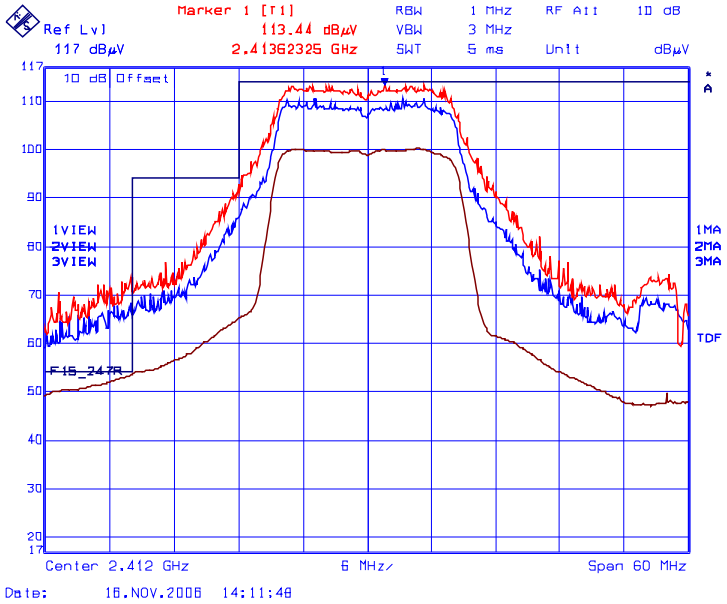


Plot 5.2.4.1.11.22 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2462 MHz, Power Setting: 15.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz

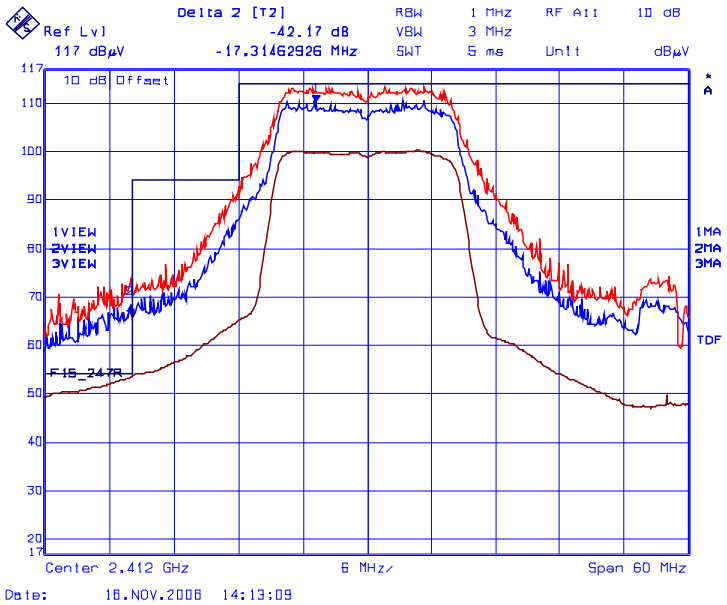


5.2.4.1.12. EUT with Antenna #6 Maxrad Omni, 2 Inputs Antenna (Model MDO24005PTRPMSMA, 5.2 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

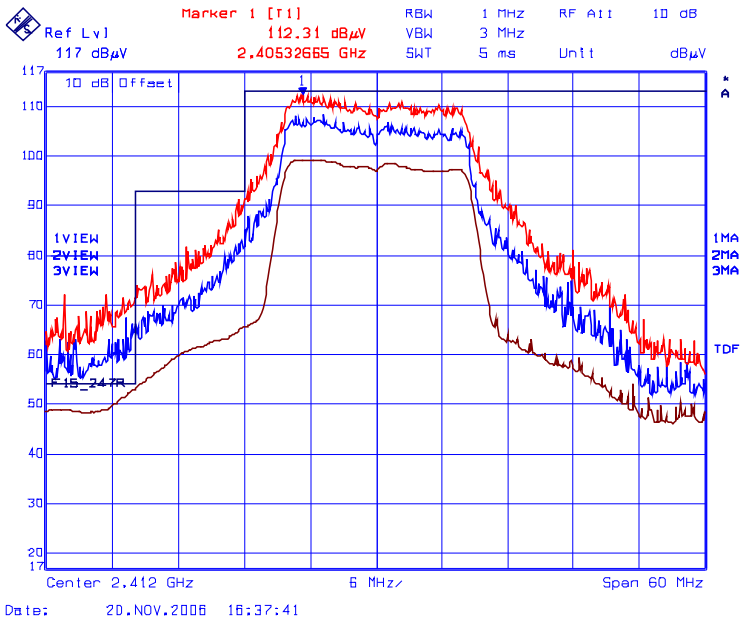
Plot 5.2.4.1.12.1a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2412 MHz, Power Setting: 13.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 113.44 dBµV/m – 42.17 dB = 71.27 dBµV/m < Limit (74 dBµV/m)



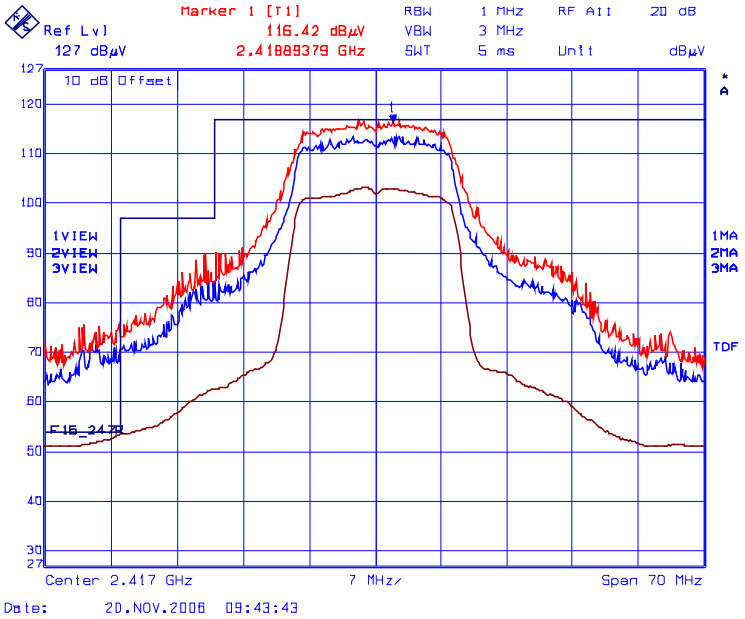
Plot 5.2.4.1.12.1b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 42.17 dB



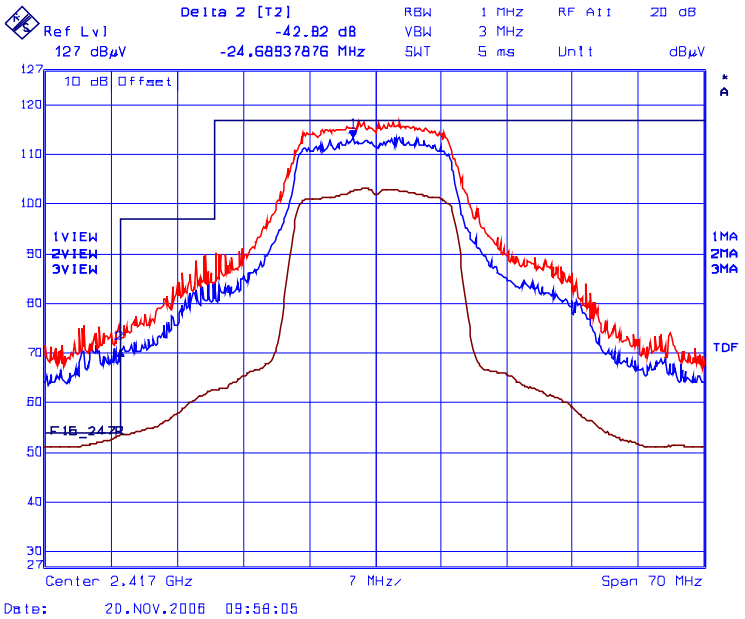
Plot 5.2.4.1.12.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2412 MHz, Power Setting: 13.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



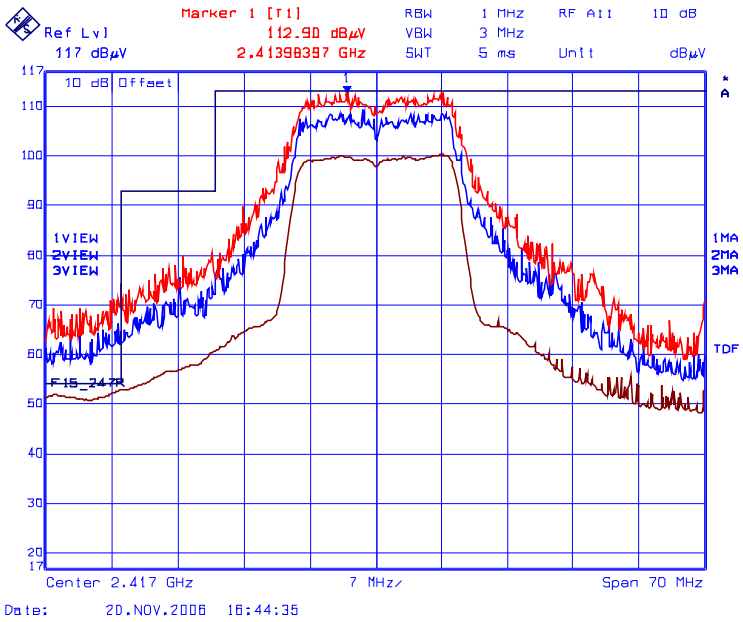
Plot 5.2.4.1.12.3a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2417 MHz, Power Setting: 14.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 116.42 dBµV/m – 42.82 dB = 73.60 dBµV/m < Limit (74 dBµV/m)



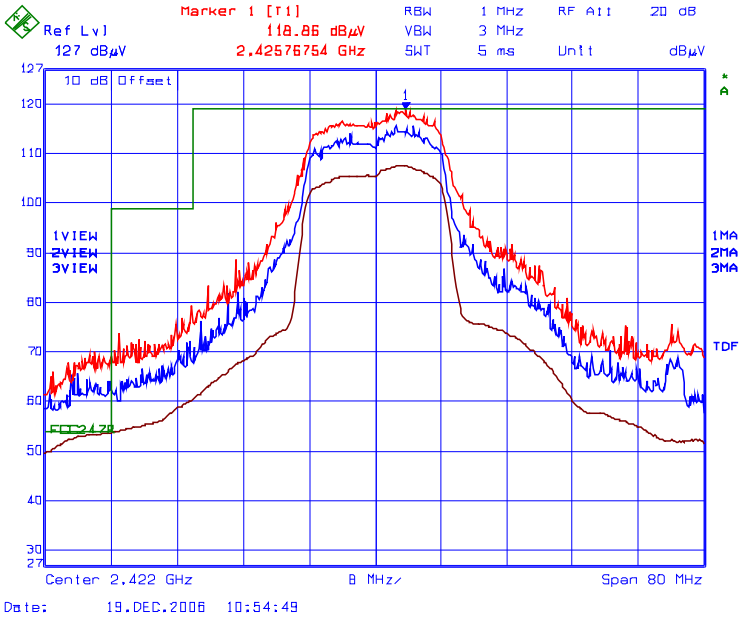
Plot 5.2.4.1.12.3b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 42.82 dB



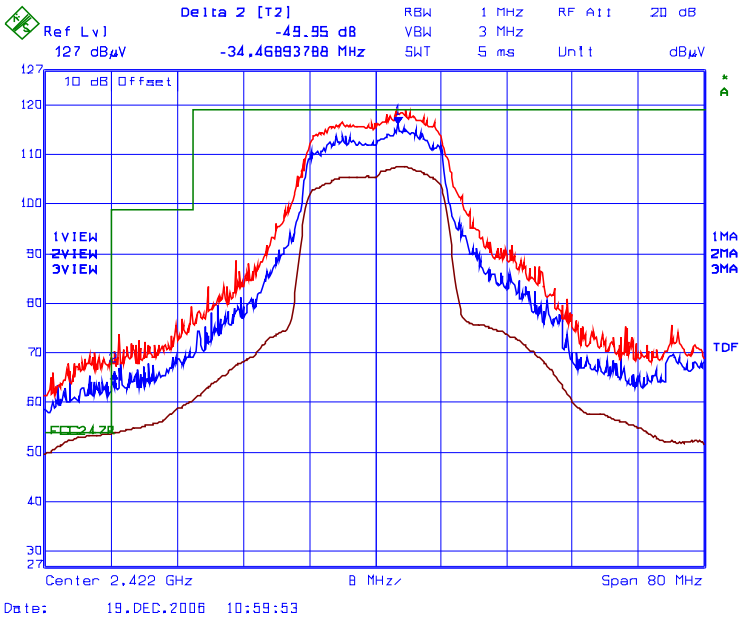
Plot 5.2.4.1.12.4 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2417 MHz, Power Setting: 14.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



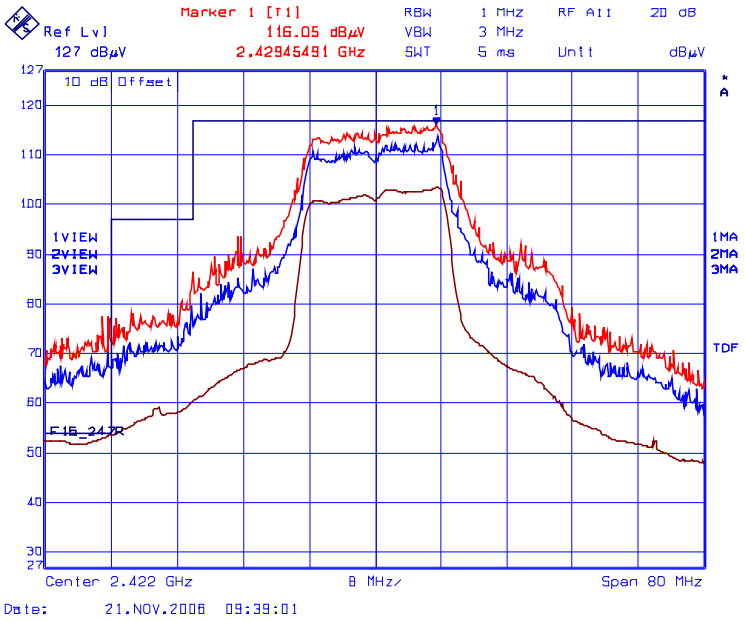
Plot 5.2.4.1.12.5a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2422 MHz, Power Setting: 16.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.86 dBµV/m - 49.95 dB = 68.91 dBµV/m < Limit (74 dBµV/m)



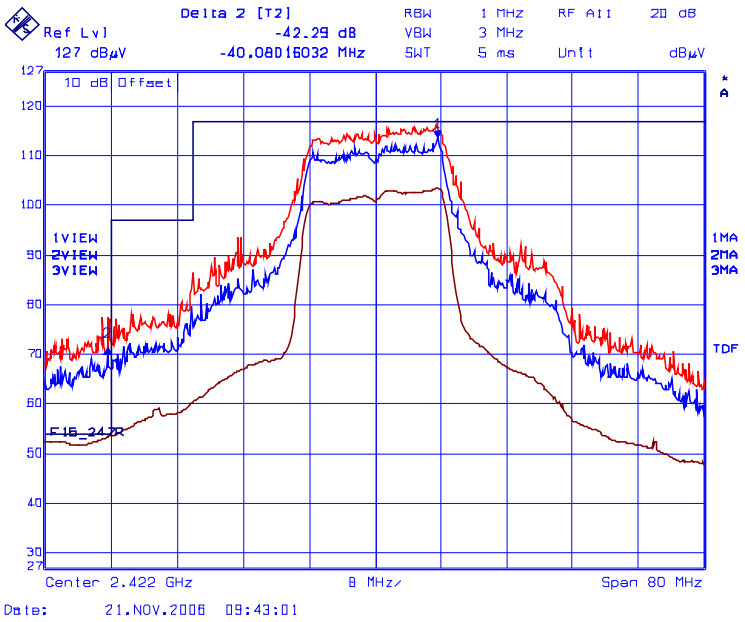
Plot 5.2.4.1.12.5b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.95 dB



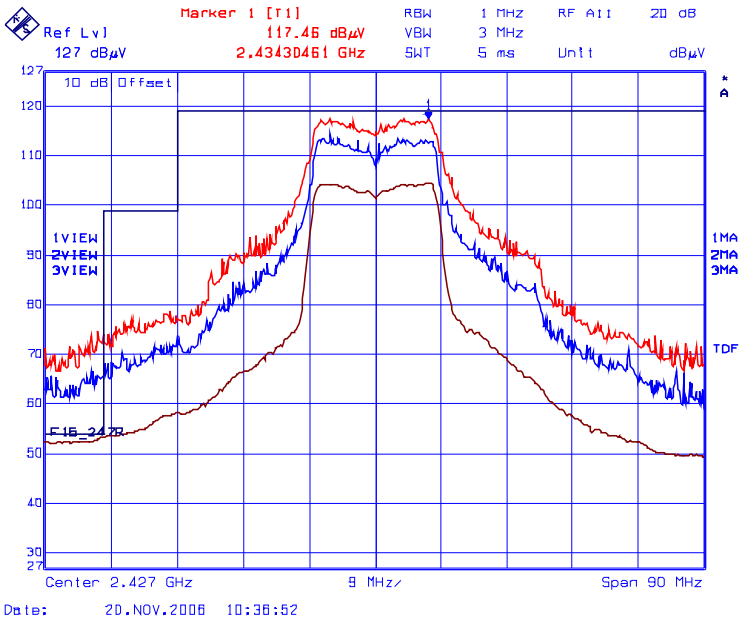
Plot 5.2.4.1.12.6a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2422 MHz, Power Setting: 16.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 116.05 dBµV/m – 42.29 dB = 73.76 dBµV/m < Limit (74 dBµV/m)



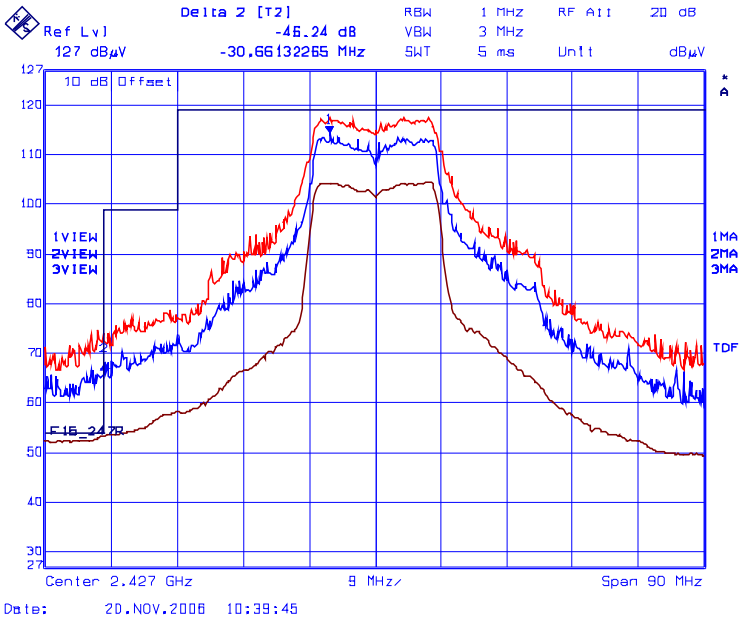
Plot 5.2.4.1.12.6b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 42.29 dB



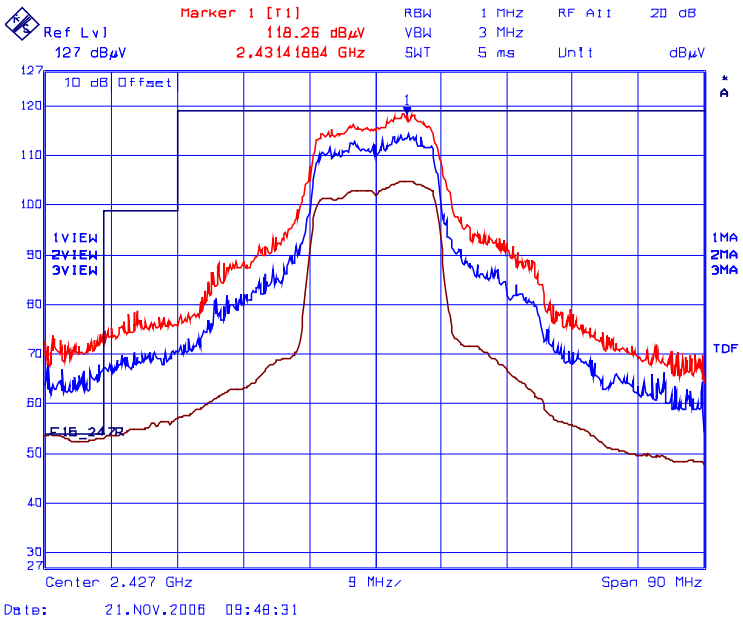
Plot 5.2.4.1.12.7a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2427 MHz, Power Setting: 17.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 117.46 dBµV/m – 46.24 dB = 71.22 dBµV/m < Limit (74 dBµV/m)



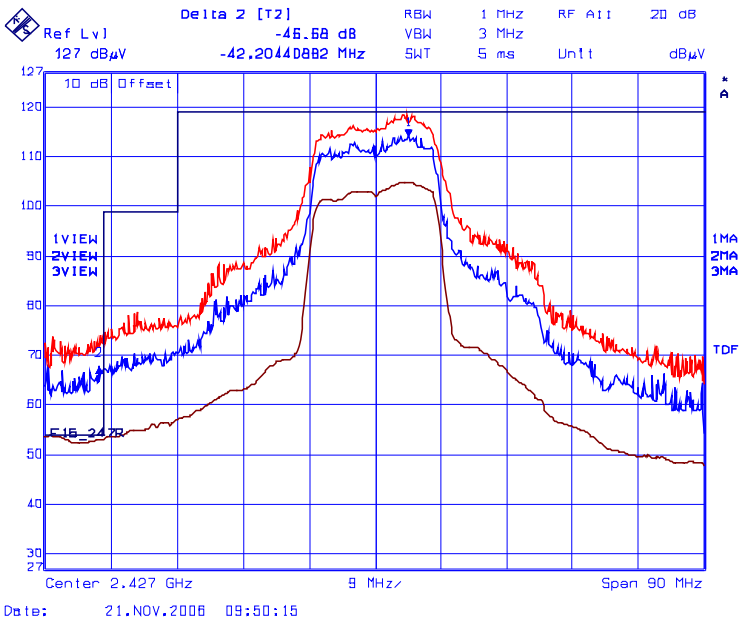
Plot 5.2.4.1.12.7b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.24 dB



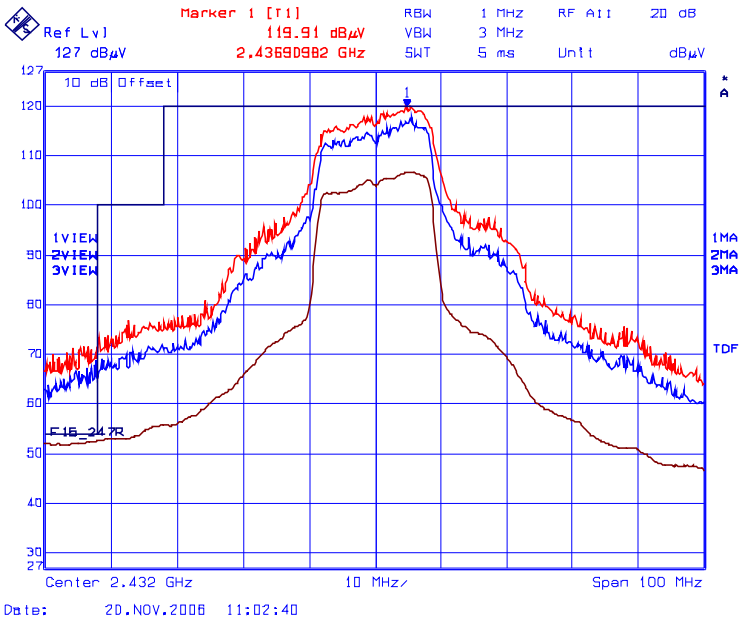
Plot 5.2.4.1.12.8a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2427 MHz, Power Setting: 17.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.26 dBµV/m – 46.68 dB = 71.58 dBµV/m < Limit (74 dBµV/m)



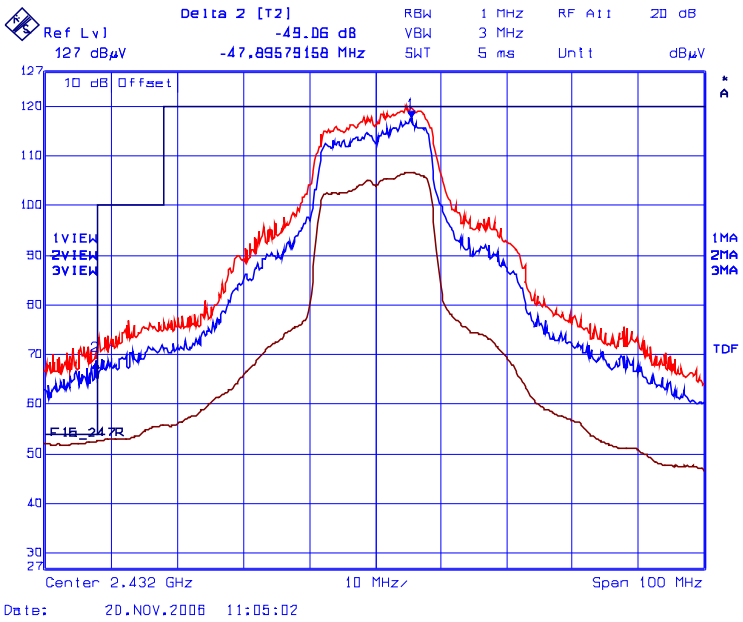
Plot 5.2.4.1.12.8b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.68 dB



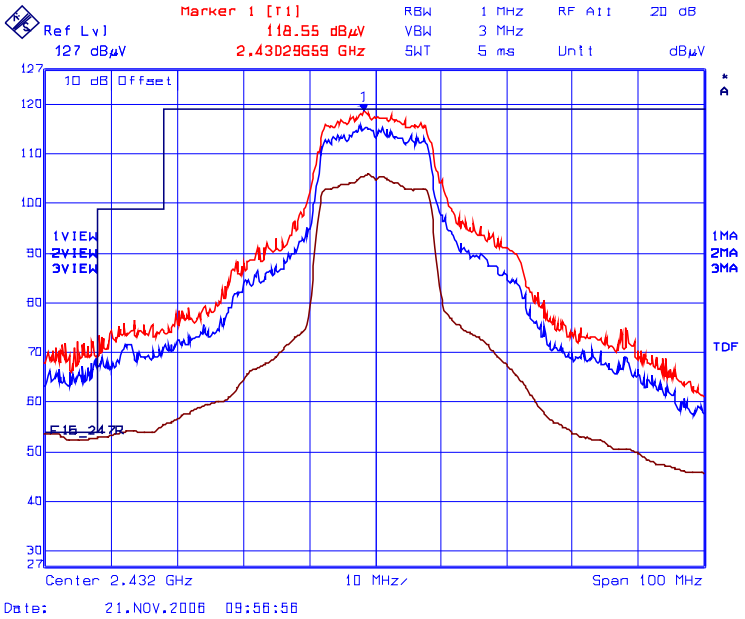
Plot 5.2.4.1.12.9a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2432 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 119.91 dBµV/m – 49.06 dB = 70.85 dBµV/m < Limit (74 dBµV/m)



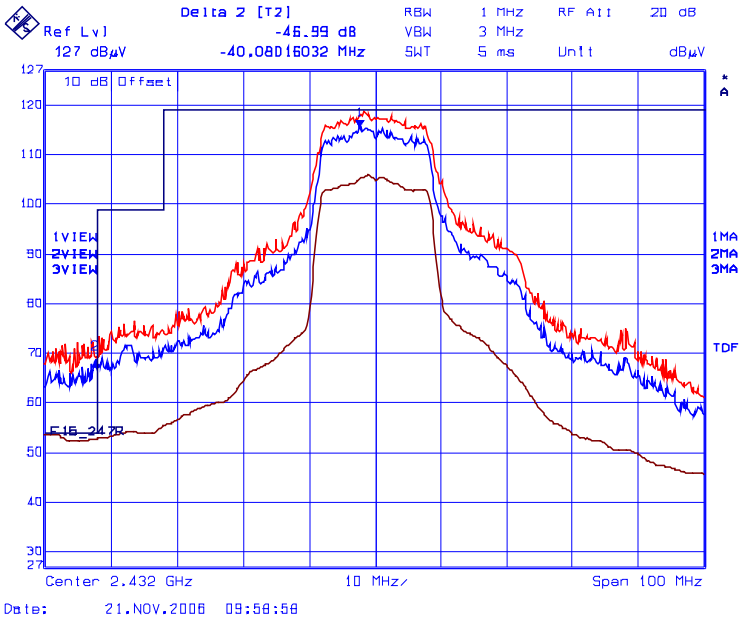
Plot 5.2.4.1.12.9b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 49.06 dB



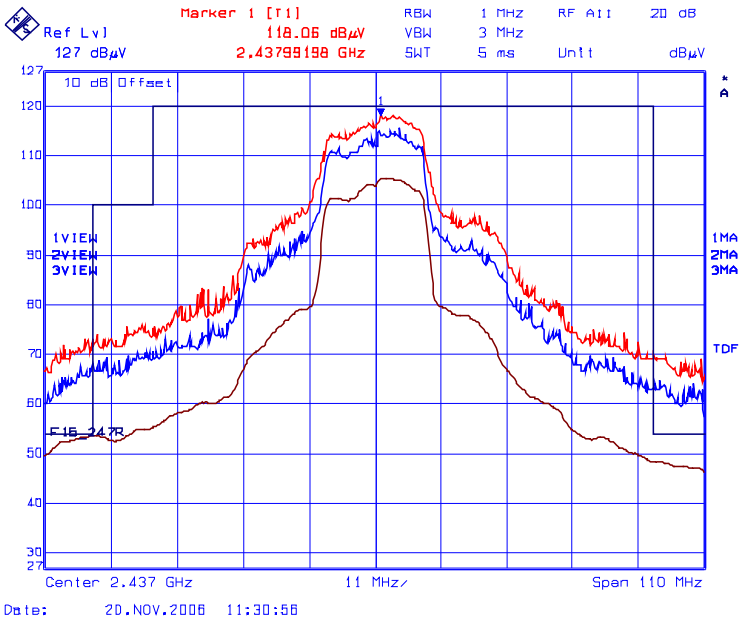
Plot 5.2.4.1.12.10a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2432 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.55 dBµV/m – 46.99 dB = 71.56 dBµV/m < Limit (74 dBµV/m)



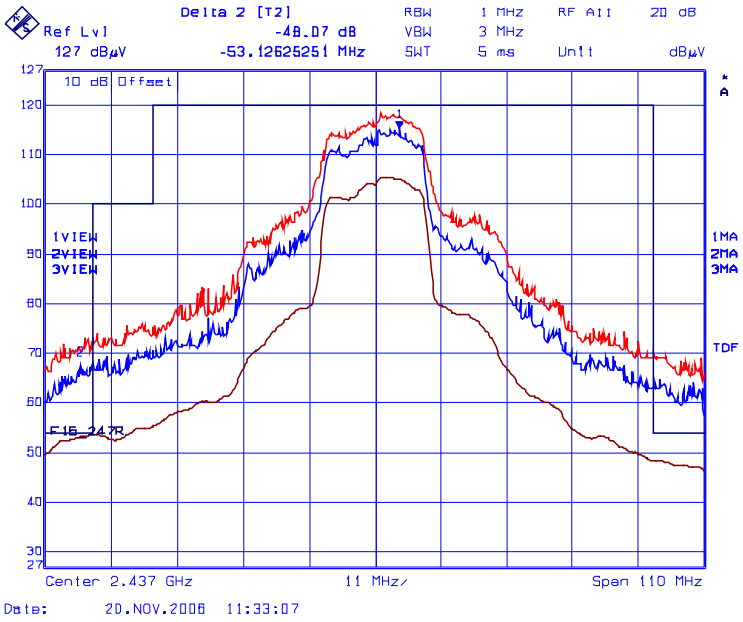
Plot 5.2.4.1.12.10b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.99 dB



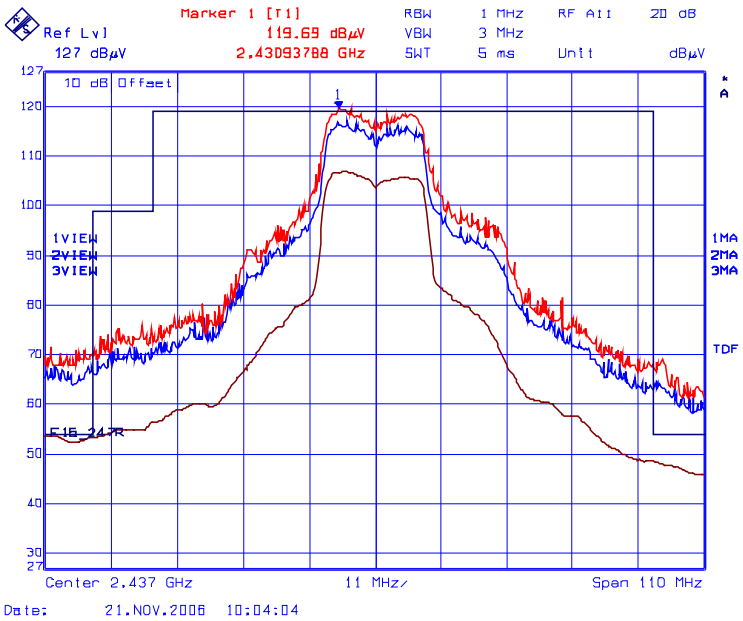
Plot 5.2.4.1.12.11a Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2437 MHz, Power Setting: 19.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2390 MHz: 118.06 dBµV/m – 48.07 dB = 69.99 dBµV/m < Limit (74 dBµV/m)



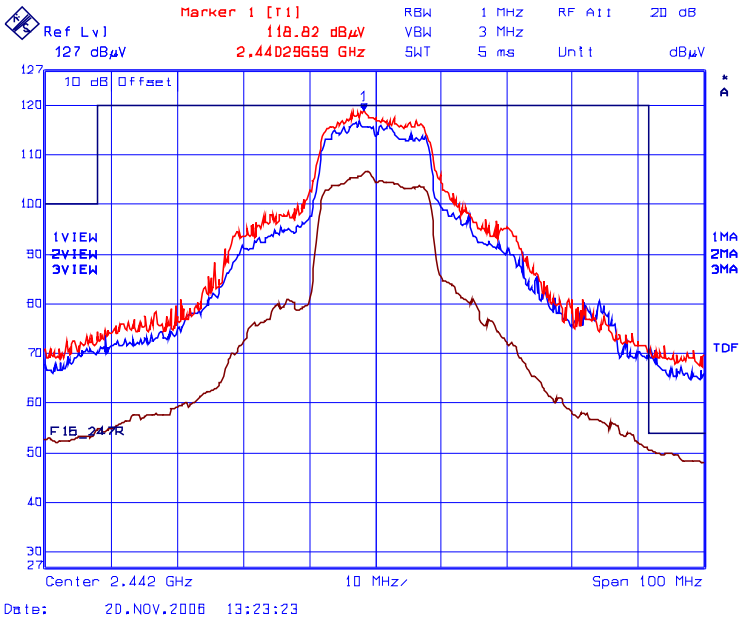
Plot 5.2.4.1.12.11b Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.07 dB



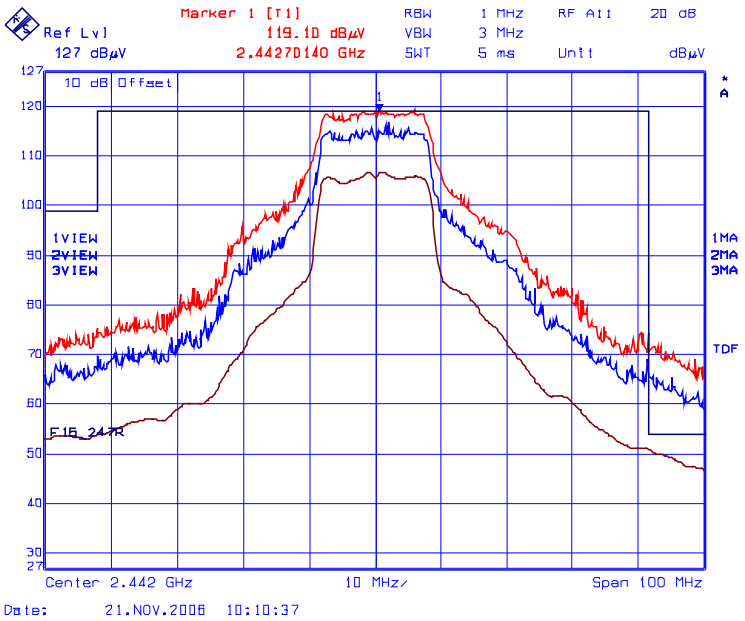
Plot 5.2.4.1.12.12 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2437 MHz, Power Setting: 19.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



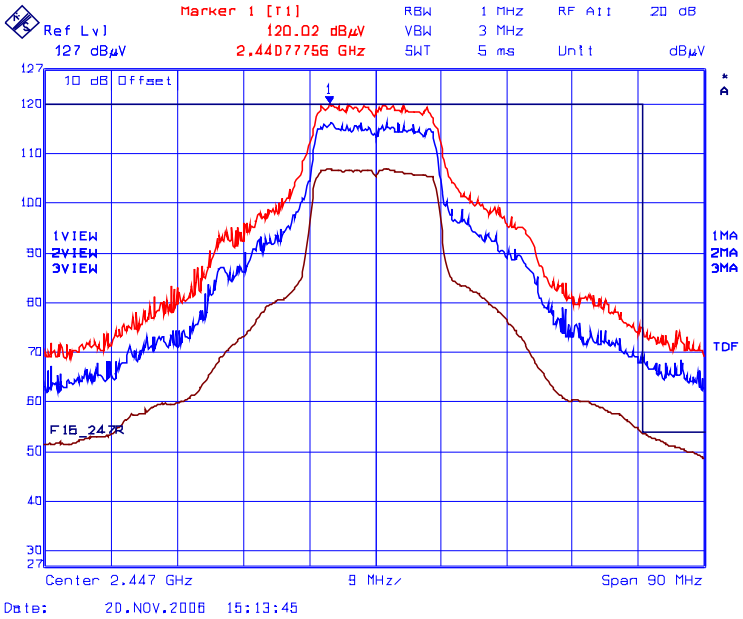
Plot 5.2.4.1.12.13 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2442 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



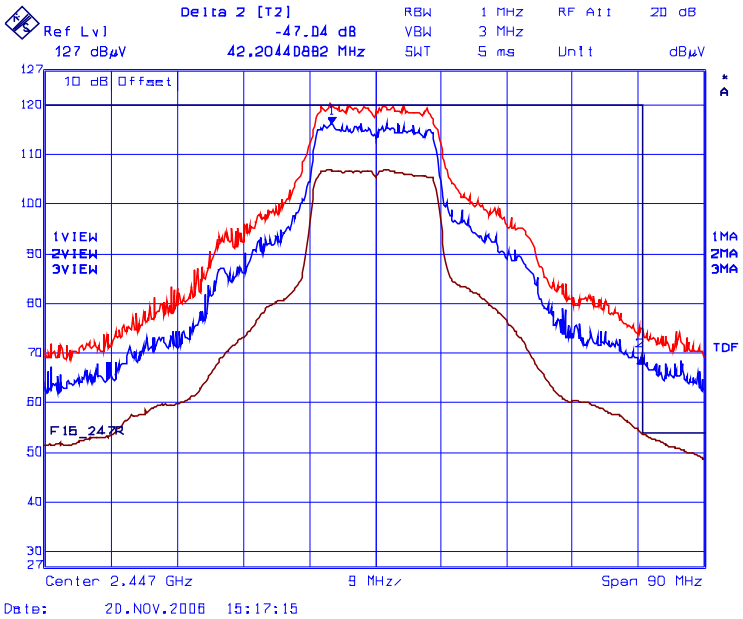
Plot 5.2.4.1.12.14 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2442 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



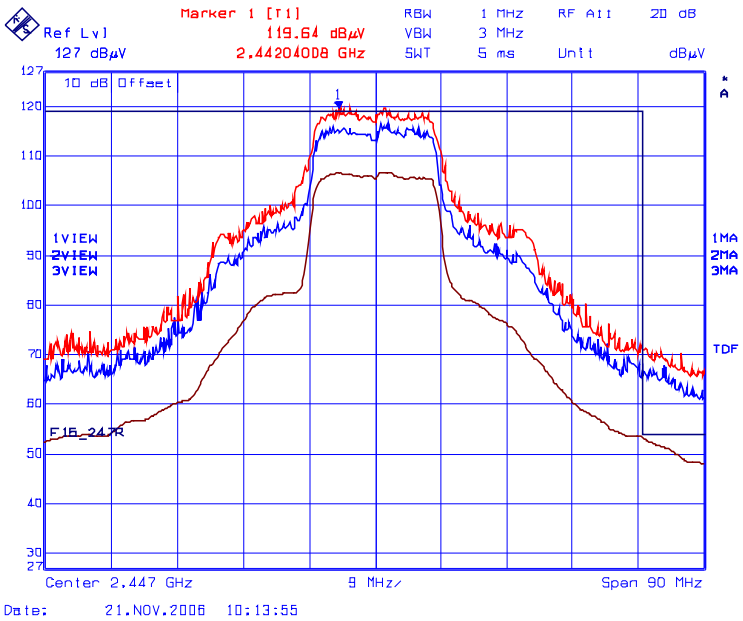
Plot 5.2.4.1.12.15a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2447 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 120.02 dBµV/m – 47.04 dB = 72.98 dBµV/m < Limit (74 dBµV/m)



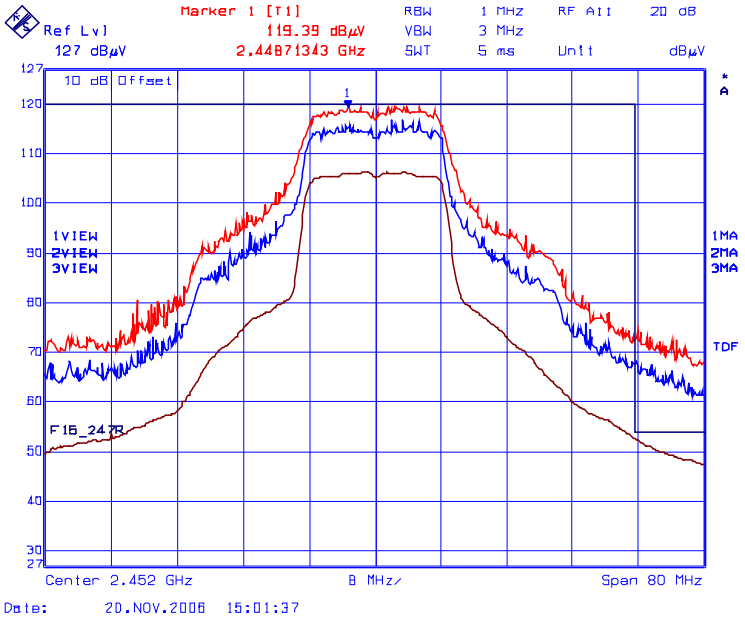
Plot 5.2.4.1.12.15b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.04 dB



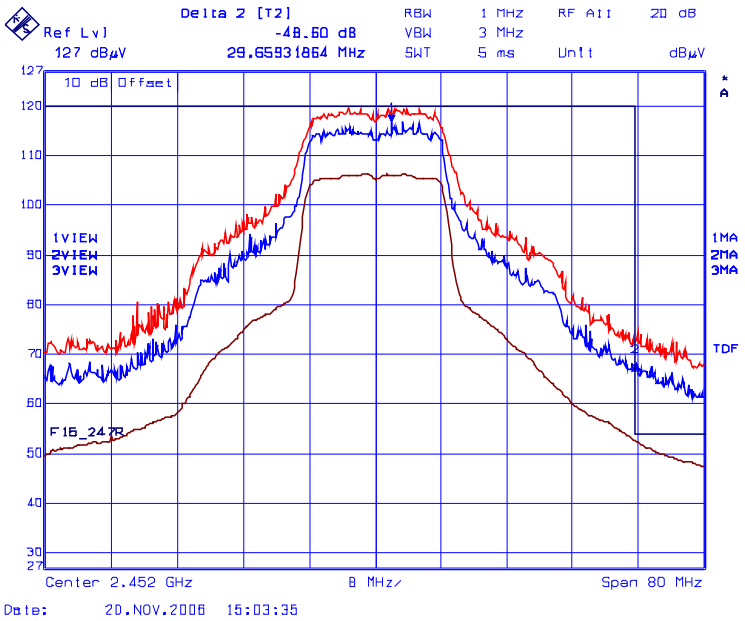
Plot 5.2.4.1.12.16 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2447 MHz, Power Setting: 20.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



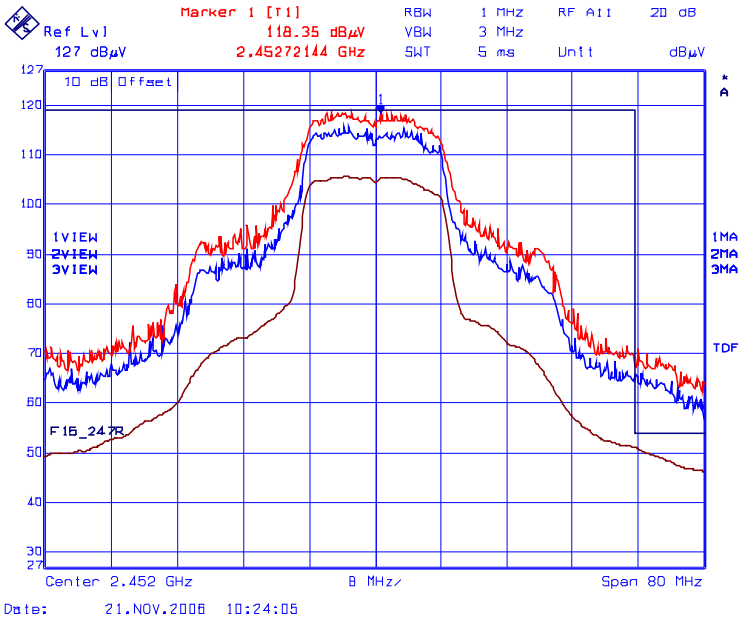
Plot 5.2.4.1.12.17a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2452 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 119.39 dBµV/m – 48.60 dB = 70.79 dBµV/m < Limit (74 dBµV/m)



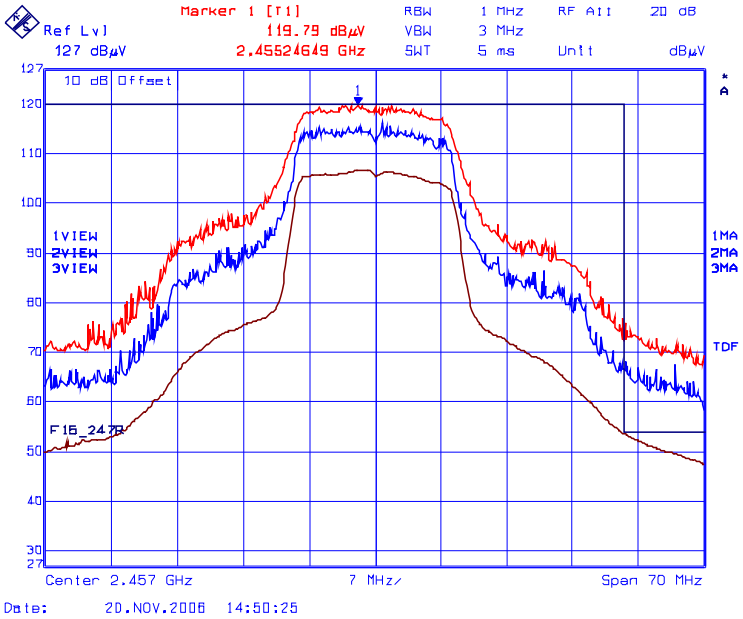
Plot 5.2.4.1.12.17b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 48.60 dB



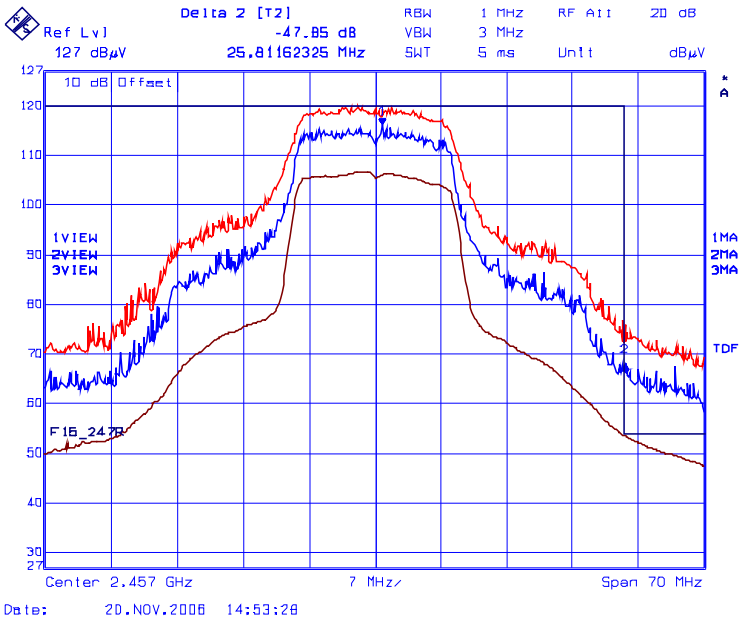
Plot 5.2.4.1.12.18 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2452 MHz, Power Setting: 18.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



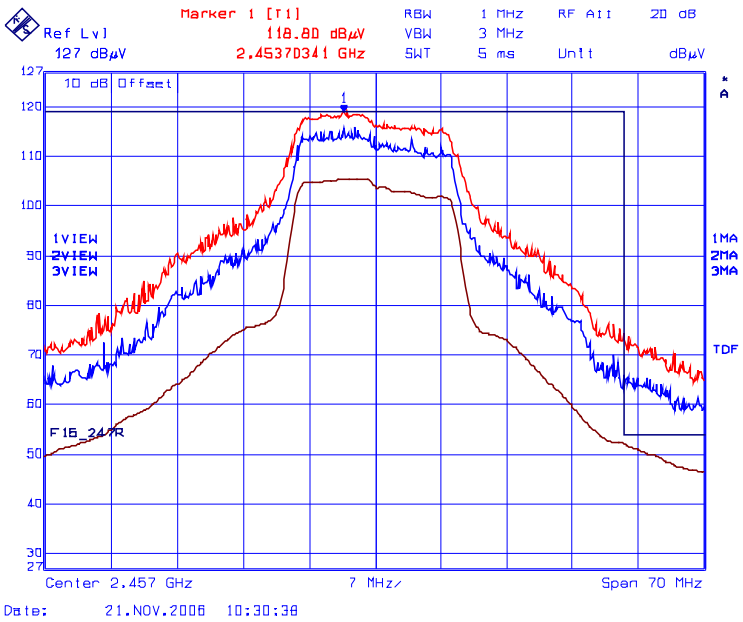
Plot 5.2.4.1.12.19a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2457 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 119.794 dBµV/m – 47.85 dB = 71.94 dBµV/m < Limit (74 dBµV/m)



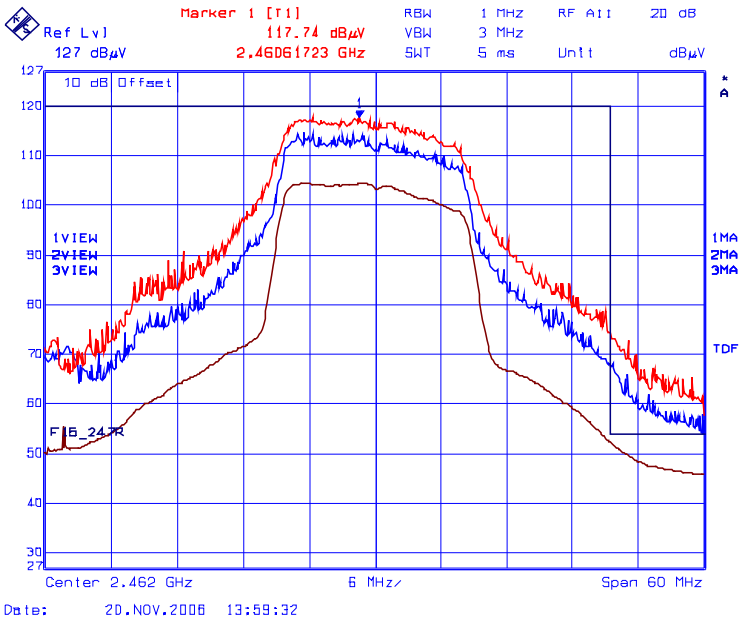
Plot 5.2.4.1.12.19b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 47.85 dB



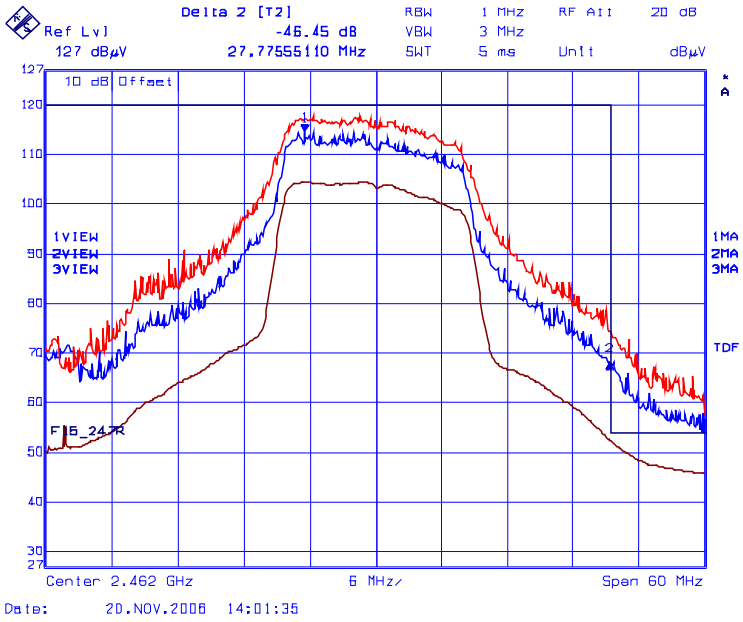
Plot 5.2.4.1.12.20 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2457 MHz, Power Setting: 18.0dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz



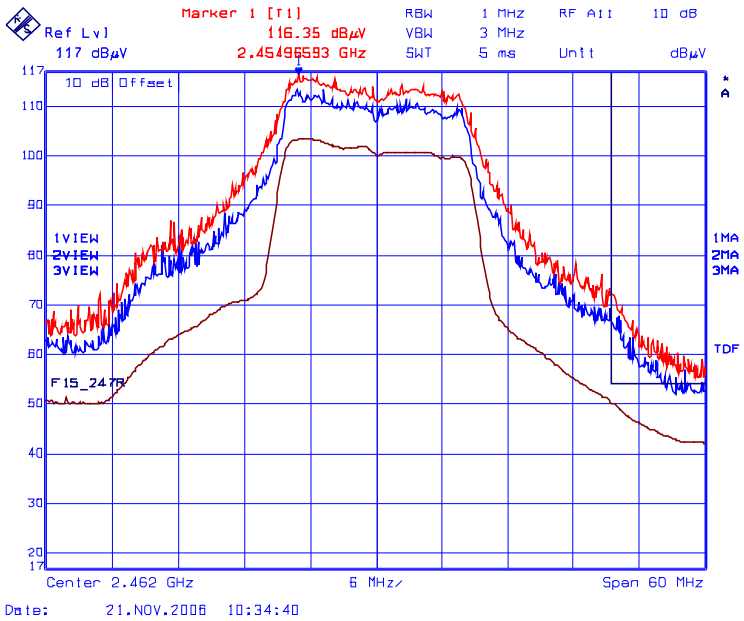
Plot 5.2.4.1.12.21a Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 2462 MHz, Power Setting: 15.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Band-Edge Level at 2483.5 MHz: 117.74 dBµV/m – 46.45 dB = 71.29 dBµV/m < Limit (74 dBµV/m)



Plot 5.2.4.1.12.21b Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz
Delta (Peak to Band-Edge) = 46.45 dB

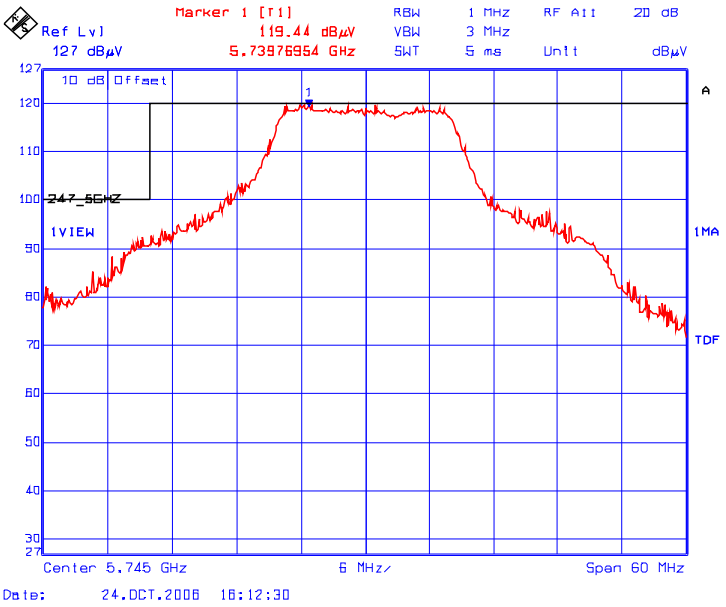


Plot 5.2.4.1.12.22 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 2462 MHz, Power Setting: 15.5dBm
Trace 1: RBW = 1 MHz, VBW = 3 MHz; Trace 2: RBW = 500 kHz, VBW = 1 MHz; Trace 3: RBW = 1 MHz, VBW = 10 Hz

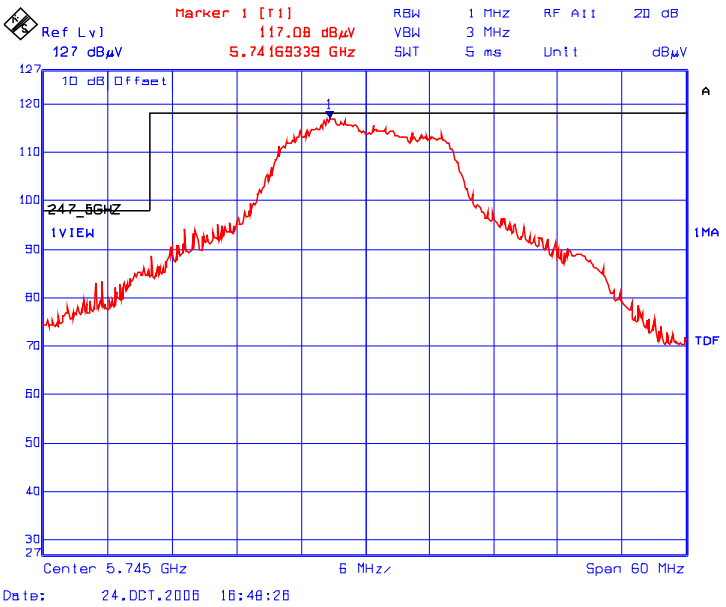


5.2.4.1.13. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

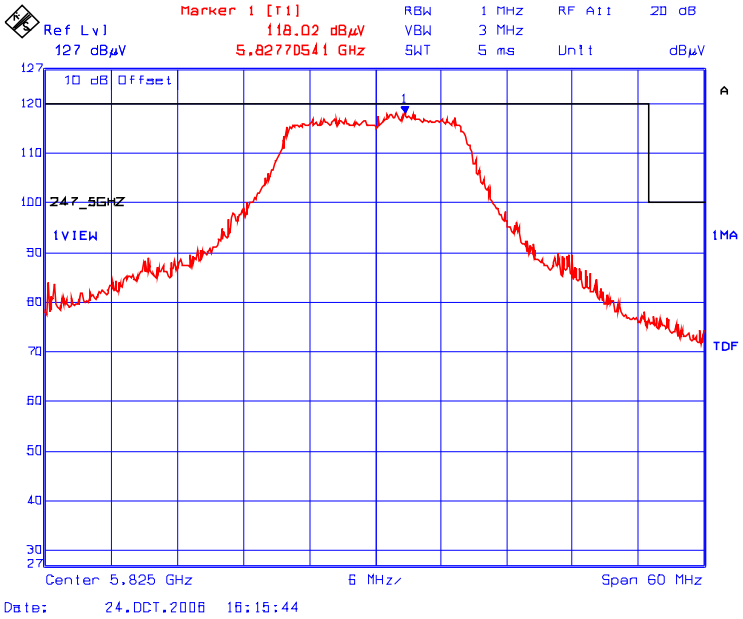
Plot 5.2.4.1.13.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



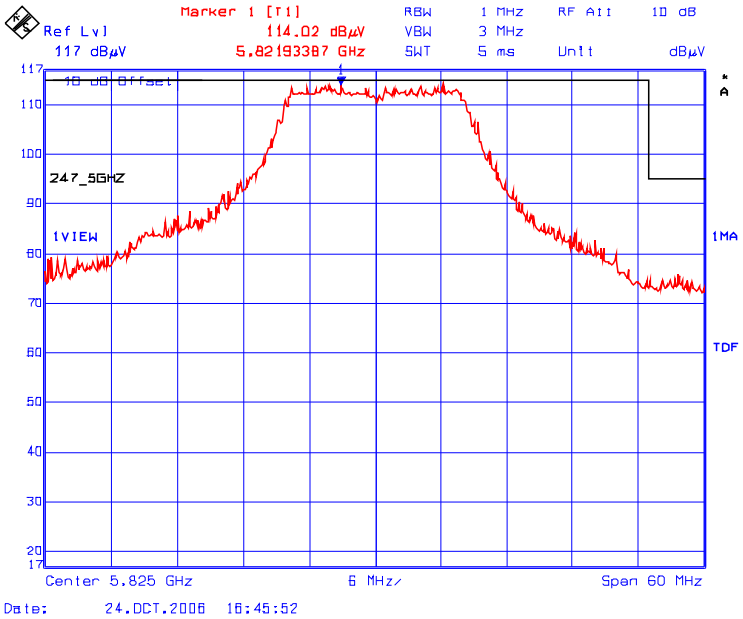
Plot 5.2.4.1.13.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



Plot 5.2.4.1.13.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5825 MHz, Power Setting: 16.5dBm
RBW= 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

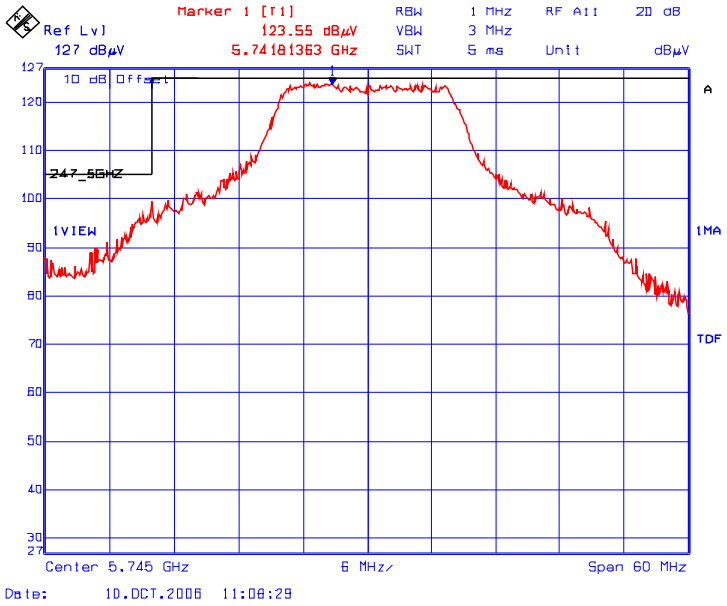


Plot 5.2.4.1.13.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5825 MHz, Power Setting: 16.5dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

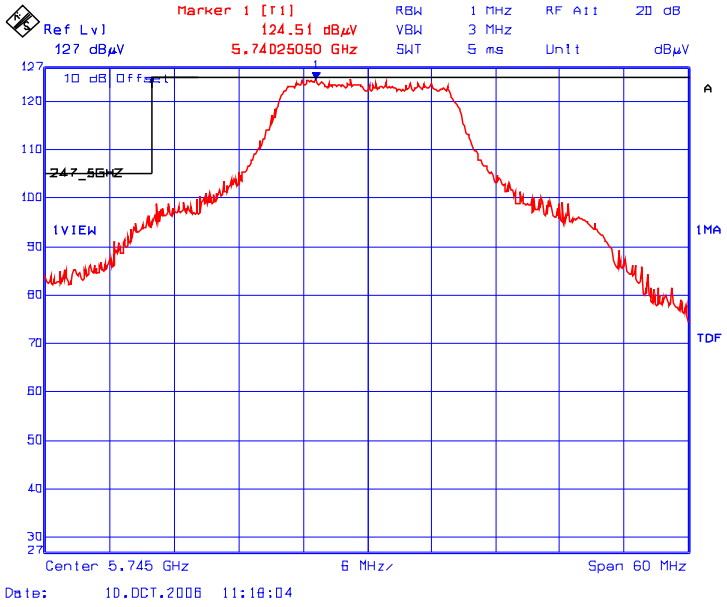


5.2.4.1.14. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

Plot 5.2.4.1.14.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

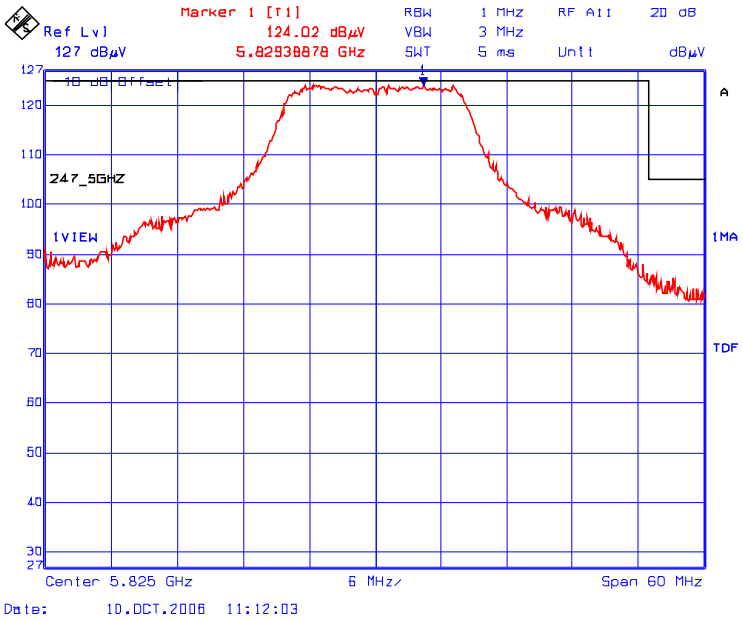


Plot 5.2.4.1.14.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

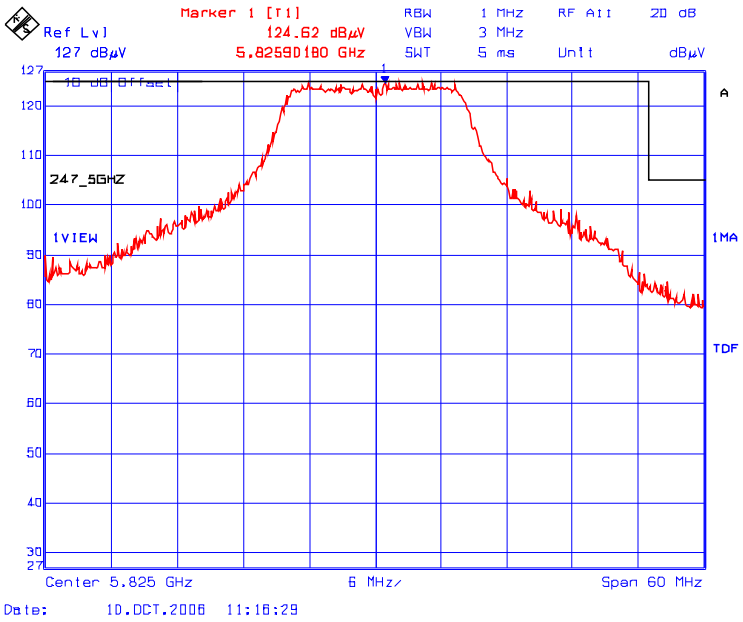


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 5.2.4.1.14.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5825 MHz, Power Setting: 18.5dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

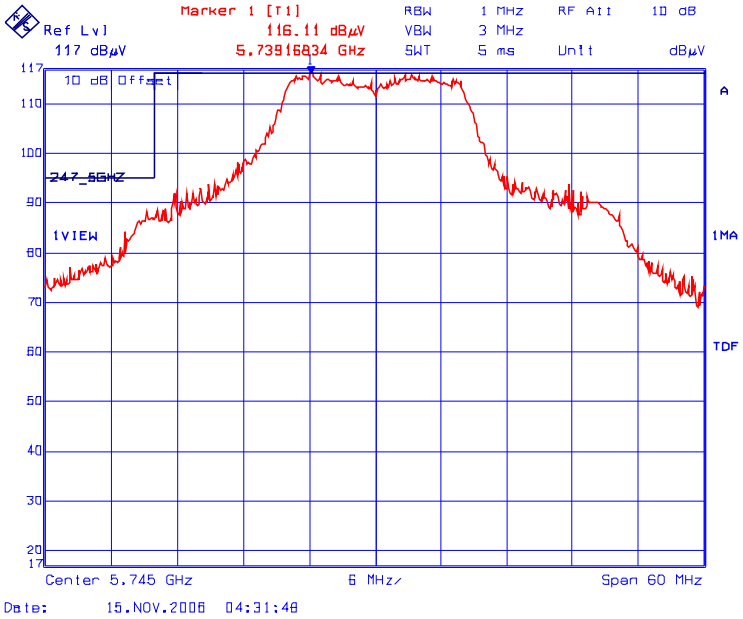


Plot 5.2.4.1.14.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5825 MHz, Power Setting: 18.5dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold

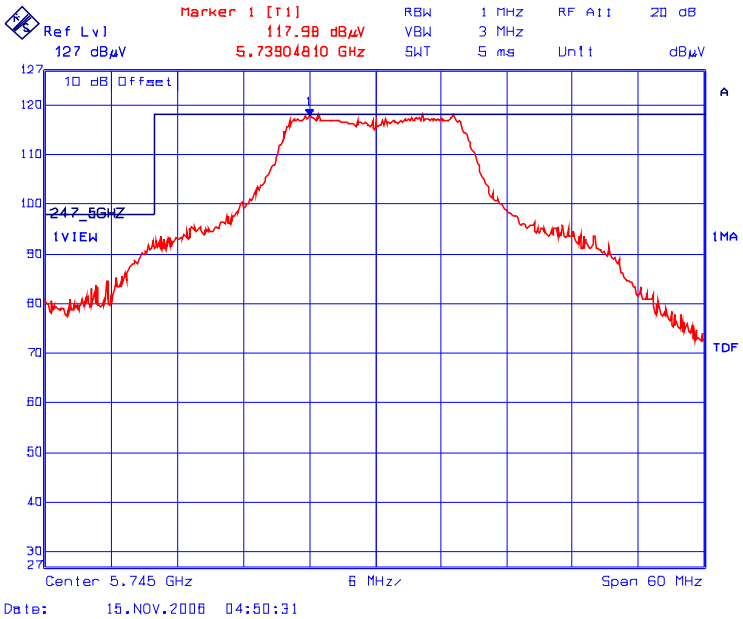


5.2.4.1.15. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

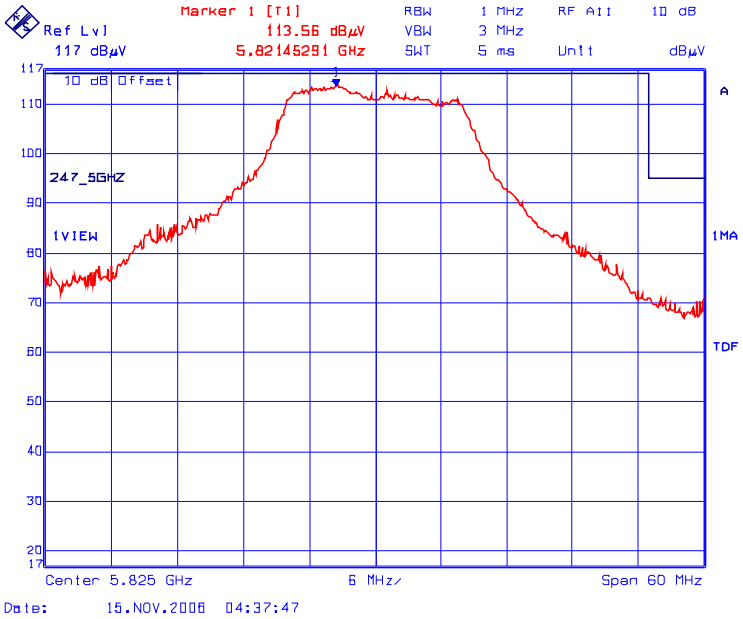
Plot 5.2.4.1.15.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



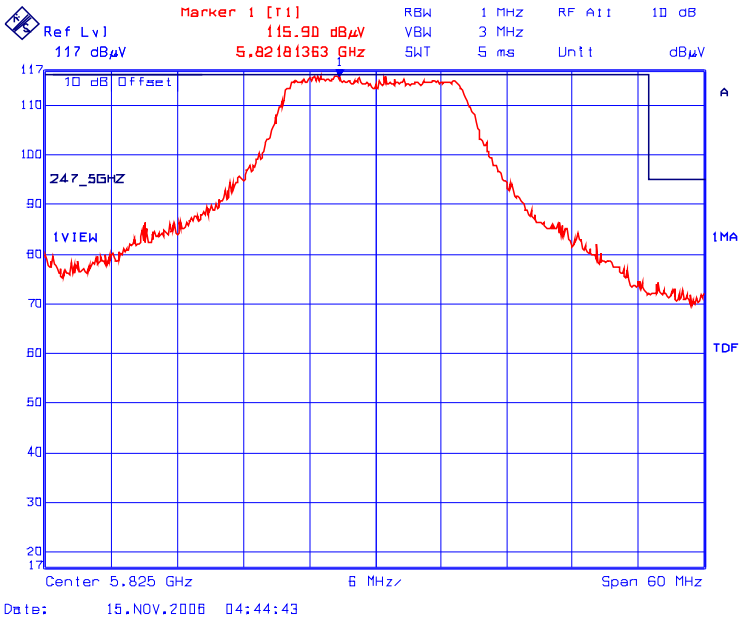
Plot 5.2.4.1.15.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5745 MHz, Power Setting: 19.0dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



Plot 5.2.4.1.15.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5825 MHz, Power Setting: 15.5dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



Plot 5.2.4.1.15.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5825 MHz, Power Setting: 15.5dBm
RBW = 1 MHz, VBW = 3 MHz, Peak Detector Max Hold



5.2.4.2. Transmitter Spurious Emissions (Radiated at 3 Meters)

Remarks:

1) Tests were performed with both modulations IEEE 802.11b and IEEE 802.11g (OFDM).

2) The emissions were scanned from 30 MHz to 25 GHz and all emissions within 20 dB below the limits were recorded.

5.2.4.2.1. EUT with Antenna #1 Cushcraft Directional Antenna (Model SR2405135D, 5 dBi gain), 802.11b Modulation (CCK @ 11 Mbps)

5.2.4.2.1.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.1.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.1.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.2. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain), 802.11b Modulation (CCK @ 11 Mbps)

5.2.4.2.2.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.2.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.2.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.3. EUT with Antenna #3 Cushcraft Omni Antenna (Model SL24513P, 3 dBi gain), 802.11b Modulation (CCK @ 11 Mbps)

5.2.4.2.3.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.3.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.3.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.4. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11b Modulation (CCK @ 11 Mbps

5.2.4.2.4.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.4.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.4.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.5. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11b Modulation (CCK @ 11 Mbps)

5.2.4.2.5.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.5.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.5.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.6. EUT with Antenna #6 Maxrad Omni, 2 Inputs Antenna (Model MDO24005PTRPMSMA, 5.2 dBi gain), 802.11b Modulation (CCK @ 11 Mbps)

5.2.4.2.6.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.6.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.6.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.7. EUT with Antenna #1 Cushcraft Directional Antenna (Model SR2405135D, 5 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.7.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.7.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.7.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.8. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.8.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.8.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
2437	115.35	--	V	--	--	--	--
2437	118.57	--	H	--	--	--	--
7311	59.98	42.81	V	54.0	98.57	-11.2	*Pass
7311	61.44	44.59	H	54.0	98.57	-9.4	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.8.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.9. EUT with Antenna #3 Cushcraft Omni Antenna (Model SL24513P, 3 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.9.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.9.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
2437	119.25	--	V	--	--	--	--
2437	119.86	--	H	--	--	--	--
7311	60.69	43.69	V	54.0	99.86	-10.3	*Pass
7311	61.56	45.14	H	54.0	99.86	-8.9	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.9.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.10. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.10.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.10.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
2437	120.61	--	V	--	--	--	--
2437	120.33	--	H	--	--	--	--
7311	56.23	38.58	V	54.0	100.61	-15.4	*Pass
7311	58.60	40.25	H	54.0	100.61	-13.8	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.10.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.11. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.11.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.11.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
2437	118.98	--	V	--	--	--	--
2437	119.47	--	H	--	--	--	--
7311	59.33	41.77	V	54.0	99.47	-12.2	*Pass
7311	60.32	43.25	H	54.0	99.47	-10.8	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.11.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.12. EUT with Antenna #6 Maxrad Omni, 2 Inputs Antenna (Model MDO24005PTRPMSMA, 5.2 dBi gain), 802.11g Modulation (64QAM @ 54Mbps)

5.2.4.2.12.1. Lowest Frequency (2412 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.12.2. Middle Frequency (2437 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
2437	119.69	--	V	--	--	--	--
2437	118.06	--	H	--	--	--	--
7311	58.43	40.59	V	54.0	99.69	-13.4	*Pass
7311	57.70	40.56	H	54.0	99.69	-13.4	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.12.3. Highest Frequency (2462 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
All emissions were more than 20 dB below the permissible limits.							

5.2.4.2.13. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

5.2.4.2.13.1. Lowest Frequency (5745 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5745	117.08	--	V	--	--	--	--
5745	119.44	--	H	--	--	--	--
11490	64.93	52.05	V	54.0	99.44	-2.0	*Pass
11490	62.07	49.40	H	54.0	99.44	-4.6	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.13.2. Adjacent Channel to Lowest Frequency (5765 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5765	116.24	--	V	--	--	--	--
5765	119.04	--	H	--	--	--	--
11530	65.85	53.64	V	54.0	99.04	-0.4	*Pass
11530	64.41	51.20	H	54.0	99.04	-2.8	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.13.3. Middle Frequency (5785 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5785	113.47	--	V	--	--	--	--
5785	117.89	--	H	--	--	--	--
11570	66.34	53.54	V	54.0	97.89	-0.5	*Pass
11570	65.54	51.89	H	54.0	97.89	-2.1	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.13.4. Adjacent Channel to Highest Frequency (5805 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5805	114.32	--	V	--	--	--	--
5805	118.15	--	H	--	--	--	--
11610	66.47	53.42	V	54.0	98.15	-0.6	*Pass
11610	65.86	51.81	H	54.0	98.15	-2.2	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.13.5. Highest Frequency (5825 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5825	114.02	--	V	--	--	--	--
5825	118.02	--	H	--	--	--	--
11650	67.00	53.80	V	54.0	98.02	-0.2	*Pass
11650	65.70	53.11	H	54.0	98.02	-0.9	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.14. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

5.2.4.2.14.1. Lowest Frequency (5745 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5745	124.51	--	V	--	--	--	--
5745	123.55	--	H	--	--	--	--
11490	60.97	49.48	V	54.0	104.51	-4.5	*Pass
11490	58.17	45.85	H	54.0	104.51	-8.2	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.14.2. Adjacent Channel to Lowest Frequency (5765 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5765	124.41	--	V	--	--	--	--
5765	123.78	--	H	--	--	--	--
11530	63.92	50.96	V	54.0	104.41	-3.0	*Pass
11530	61.50	47.80	H	54.0	104.41	-6.2	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.14.3. Middle Frequency (5785 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5785	124.01	--	V	--	--	--	--
5785	123.05	--	H	--	--	--	--
11570	66.14	53.55	V	54.0	104.01	-0.5	*Pass
11570	64.56	51.25	H	54.0	104.01	-2.8	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.14.4. Adjacent Channel to Highest Frequency (5805 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5805	123.49	--	V	--	--	--	--
5805	123.72	--	H	--	--	--	--
11610	66.86	53.17	V	54.0	103.72	-0.8	*Pass
11610	65.61	53.10	H	54.0	103.72	-0.9	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.14.5. Highest Frequency (5825 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5825	124.62	--	V	--	--	--	--
5825	124.02	--	H	--	--	--	--
11650	66.41	53.41	V	54.0	104.62	-0.6	*Pass
11650	65.91	53.27	H	54.0	104.62	-0.7	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.15. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11a Modulation (64QAM @ 54Mbps)

5.2.4.2.15.1. Lowest Frequency (5745 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5745	117.98	--	V	--	--	--	--
5745	116.11	--	H	--	--	--	--
11490	61.09	48.14	V	54.0	97.98	-5.9	*Pass
11490	65.46	53.12	H	54.0	97.98	-0.9	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.15.2. Adjacent Channel to Lowest Frequency (5765 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5765	117.16	--	V	--	--	--	--
5765	116.01	--	H	--	--	--	--
11530	60.09	47.65	V	54.0	97.16	-6.4	*Pass
11530	66.67	53.61	H	54.0	97.16	-0.4	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.15.3. Middle Frequency (5785 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5785	115.36	--	V	--	--	--	--
5785	114.05	--	H	--	--	--	--
11570	63.81	50.07	V	54.0	95.36	-3.9	*Pass
11570	67.81	53.45	H	54.0	95.36	-0.5	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.15.4. Adjacent Channel to Highest Frequency (5805 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5805	115.49	--	V	--	--	--	--
5805	114.81	--	H	--	--	--	--
11610	64.42	50.34	V	54.0	95.49	-3.7	*Pass
11610	66.18	53.37	H	54.0	95.49	-0.6	*Pass

*Frequency in restricted frequency bands.

5.2.4.2.15.5. Highest Frequency (5825 MHz)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.247(d)		
5825	115.90	--	V	--	--	--	--
5825	113.56	--	H	--	--	--	--
11650	64.12	51.16	V	54.0	95.90	-2.8	*Pass
11650	66.30	53.36	H	54.0	95.90	-0.6	*Pass

*Frequency in restricted frequency bands.

EXHIBIT 6. TEST DATA [§ 15.407 – OPERATION IN 5.15-5.35 GHz]

6.1. POWER LIMITS [§ 15.407(a)]

6.1.1. Limits

15.407(a) - Power limits:

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10logB, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the band 5.25-5.35 GHz and 5.47-5.725 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10logB, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.1.2. Method of Measurements

FCC § 15.407(a):

(4) The peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement conforming to the definitions in this paragraph for the emission in question.

(5) The peak power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A resolution bandwidth less than the measurement bandwidth can be used, provided that the measured power is integrated to show total power over the measurement bandwidth. If the resolution bandwidth is approximately equal to the measurement bandwidth, and much less than the emission bandwidth of the equipment under test, the measured results shall be corrected to account for any difference between the resolution bandwidth of the test instrument and its actual noise bandwidth.

(6) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified in this paragraph) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

6.1.2.1. Guidelines for Emission Bandwidth "B"

Emission Bandwidth “B” MHz can be measured using a spectrum analyzer with the following setting:

- Use a RBW = 1% of the emission bandwidth.
- Set the VBW > RBW
- Use a peak detector.
- Do not use the Max Hold function. Rather, use the view button to capture the emission.
- Measure the widest width of the emission that is 26 dB down from the peak of the emission.

6.1.2.2. Guidelines for Peak Conducted Transmit Output Power

6.1.2.2.1. Peak conducted transmit output power

1. In the following, “T” is the transmission pulse duration over which the transmitter is on and transmitting at its maximum power control level.
2. Measurements are performed with a spectrum analyzer.
3. Three methods are provided to accommodate measurement limitations of the spectrum analyzer depending on signal parameters.
4. Set resolution bandwidth (RBW) = 1 MHz.
5. Set span to encompass the entire emission bandwidth (EBW) of the signal. Use automatic setting for analyzer sweep time (except in Method #2).
6. Check the sweep time to determine which procedure to use.

- If sweep time ≤ T, use Method #1 -- spectral trace averaging -- and sum the power across the band. Note that the hardware operation may be modified to extend the transmission time to achieve this condition for test purposes. (Method #1 may be used only if it results in averaging over intervals during which the transmitter is operating at its maximum power control level; intervals during which the transmitter is off or is transmitting at a reduced power level must not be included in the average.)
- If sweep time > T, then the choice of measurement procedure will depend on the EBW of the signal.
- If EBW ≤ largest available RBW on the analyzer, use Method #2--zero-span mode with trace averaging--and find the temporal peak. (Method #2 may be used only if it results in averaging over intervals during which the transmitter is operating at its maximum power control level; intervals during which the transmitter is off or is transmitting at a reduced power level must not be included in the average.)
- If EBW > largest available RBW, use Method #3--video averaging with max hold--and sum power across the band.

Method #1:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode
- Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”.
- Trace average 100 traces in power averaging mode.
- Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the

EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

Method #2:

- Set zero span mode. Set center frequency to the midpoint between the -26 dB points of the signal.
- Set RBW ≥ EBW.
- Set VBW ≥ 3 RBW. [If VBW ≥ 3 RBW is not available, use highest available VBW, but VBW must be ≥ RBW]
- Set sweep time = T
- Use sample detector mode.
- Use a video trigger with the trigger level set to enable triggering only on full power pulses.
- Trace average 100 traces in power averaging mode.
- Find the peak of the resulting average trace.

Method #3:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set sweep trigger to "free run".
- Set RBW = 1 MHz. Set VBW ≥ 1/T
- Use linear display mode.
- Use sample detector mode if bin width (i.e., span/number of points in spectrum) < 0.5 RBW. Otherwise use peak detector mode.
- Set max hold.
- Allow max hold to run for 60 seconds.
- Compute power by integrating the spectrum across the 26 dB EBW or apply a bandwidth correction factor of 10 log(EBW/1 MHz) to the spectral peak of the emission. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

Emission bandwidth "B" MHz:

- Use a RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW
- Use a peak detector.
- Do not use the Max Hold function. Rather, use the view button to capture the emission.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Peak Power Spectral Density (PPSD):
This is an antenna conducted measurement using a spectrum analyzer. Method #2 provides the most accurate implementation of the rule; however, equipment limitations may preclude its use for short pulses. Method #1 is also acceptable to show compliance; it may overestimate the PPSD, but is easier to implement than method #2, and must be used when the conditions of method #2 cannot be achieved.

Method 1:

Use peak detector mode and max hold. Set RBW= 1MHz* and VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band.

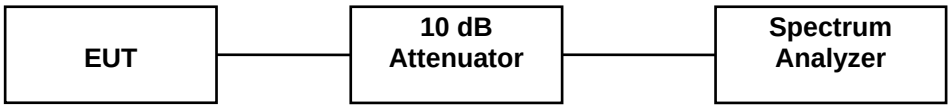
Method 2:
Use sample detector and power averaging (not video averaging) mode. Set RBW= 1 MHz*, VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging. This method is permitted only if the transmission pulse or sequence of pulses remains at maximum transmit power throughout each of the 100 sweeps of averaging and that the interval between pulses is not included in any of the sweeps (e.g., 100 sweeps should occur during one transmission, or each sweep gated to occur during a transmission).

- When the emission bandwidth is less than 1 MHz, use a measurement bandwidth equal to the emission bandwidth, in accordance with Section 15.407(a)(5).
- It is permissible to use a resolution bandwidth less than the measurement bandwidth provided the measured power is integrated to show total power over the measurement bandwidth. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the measurement band edges or by summing power levels in each band in linear power terms.

Peak Excursion Measurement:
Set the spectrum analyzer span to view the entire emission bandwidth. The largest difference between the following two traces must be ≤ 13 dB for all frequencies across the emission bandwidth. Submit a plot.

- 1st Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and Maxhold settings.
- 2nd Trace: If Method #1 was used for the peak conducted transmit output power test, then create the 2nd trace using the settings described in Method #1.
- If Methods #2 or #3 were used for the peak conducted transmit power test, then create the 2nd trace using the setting described in Method #3.

6.1.3. Test Arrangement



6.1.4. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer	Rohde & Schwarz	FSEK20/B4/B21	834157/005	9 kHz – 40 GHz

6.1.5. Test Data

6.1.5.1. Peak Power Spectral Density (PPSD) In 1 MHz BW

Remark: The measurements for PPSD are not required to be repeated based on the nature of this class II permissive change. Only the transmit power are required to be tested to ensure the transmitter operates at its maximum output power for transmitter radiated spurious/harmonic measurements.

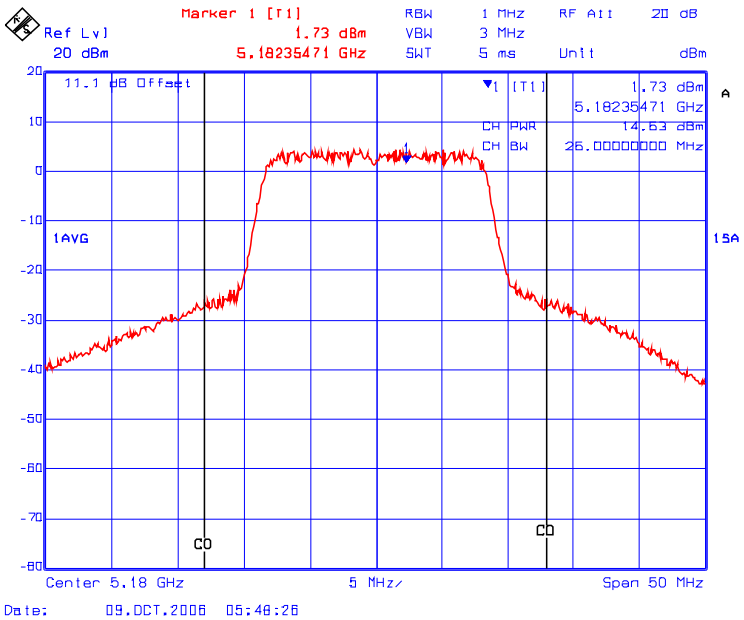
6.1.5.2. Maximum Conducted Transmit Power (Full Bandwidth)

Remark: Test Method used: Test Method #1 using Sample Detector

6.1.5.2.1. For 5150-5250 MHz Band

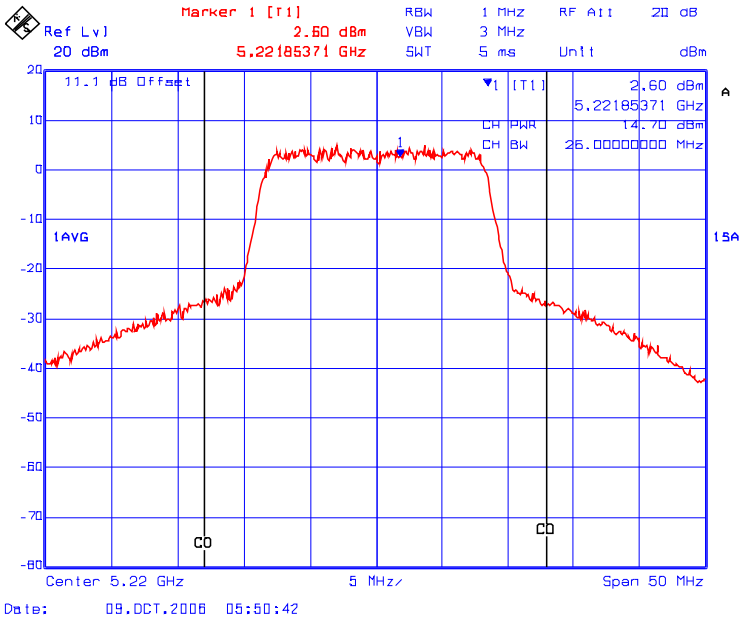
Frequecy (MHz)	Power Setting (dBm)	Modulation 802.11a	Measured Channel Power in 26 dB BW (dBm)	Limit (dBm)
5180	18	64QAM @ 54 Mbps	14.63	17
5220	18	64QAM @ 54 Mbps	14.70	17
5240	18	64QAM @ 54 Mbps	14.93	17

Plot 6.1.5.2.1.1 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5180 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)

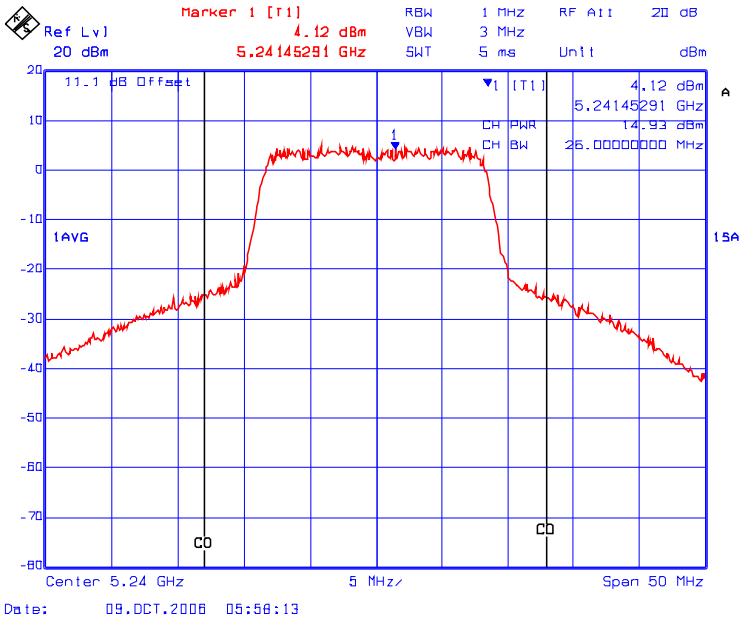


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 6.1.5.2.1.2 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5220 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)



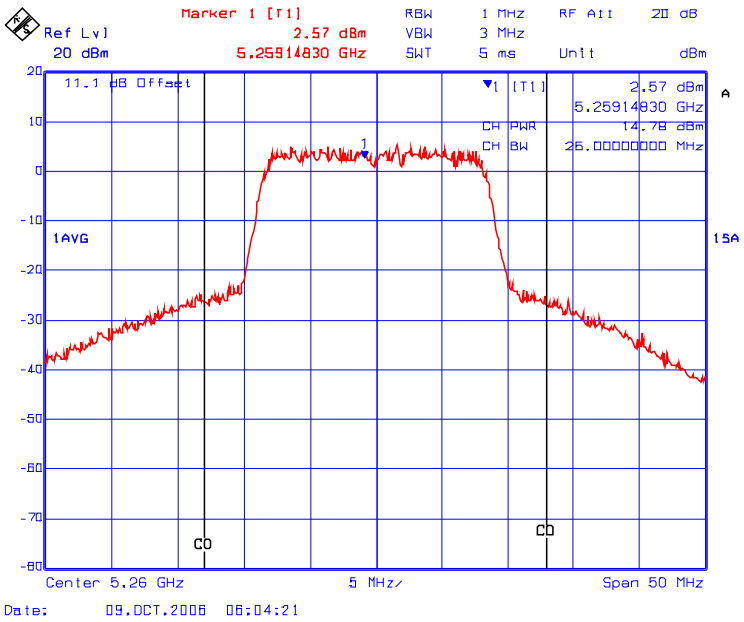
Plot 6.1.5.2.1.3 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5240 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)



6.1.5.2.2. For 5250-5350 MHz Band

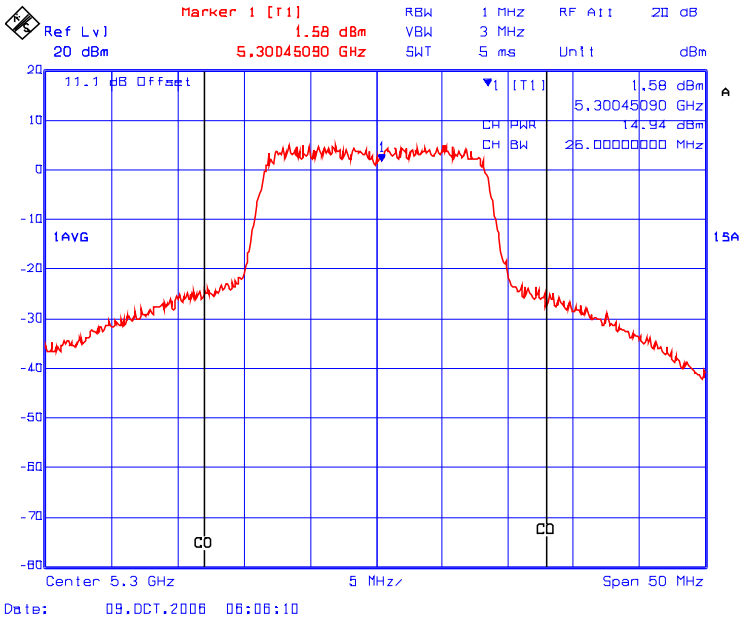
Frequency (MHz)	Power Setting (dBm)	Modulation 802.11a	Measured Channel Power in 26 dB BW (dBm)	Limit (dBm)
5260	18	64QAM @ 54 Mbps	14.78	24.0
5300	18	64QAM @ 54 Mbps	14.94	24.0
5320	18	64QAM @ 54 Mbps	14.91	24.0

Plot 6.1.5.2.2.1 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5260 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)

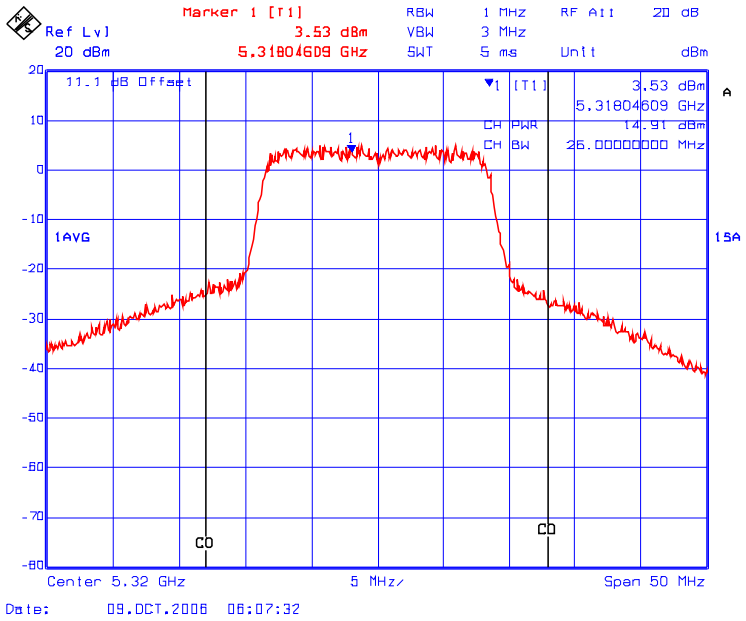


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 6.1.5.2.2.2 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5300 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)



Plot 6.1.5.2.2.3 Channel Conducted Power in 26 dB Bandwidth
Power Setting 18 dBm, Test Method #1: Sample Detector
Frequency: 5320 MHz, Modulation: 802.11a - 64 QAM (54 Mbps)



6.2. UNDESIRED EMISSIONS (RADIATED @ 3 METERS) [§ 15.407(b)]

6.2.1. Limits

Undesirable emission limits: the PEAK emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.25 GHz, 5.25-5.35 GHz and band shall not exceed an EIRP of -27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.25 GHz, 5.25-5.35 GHz and band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of –27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.850 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Sec. 15.209.
(7) The provisions of Sec. 15.205 apply to intentional radiators operating under this section. (7) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Remarks:

FCC 47 CFR § 5.205(a) - Restricted Frequency Bands

MHz	MHz	MHz	GHz
0.090 - 0.110	162.0125 - 167.17	2310 - 2390	9.3 - 9.5
0.49 – 0.51	167.72 - 173.2	2483.5 - 2500	10.6 - 12.7
2.1735 - 2.1905	240 - 285	2655 - 2900	13.25 - 13.4
8.362 - 8.366	322 - 335.4	3260 - 3267	14.47 - 14.5
13.36 - 13.41	399.9 - 410	3332 - 3339	14.35 - 16.2
25.5 – 25.67	608 - 614	3345.8 - 3358	17.7 - 21.4
37.5 – 38.25	960 - 1240	3600 - 4400	22.01 - 23.12
73 - 75.4	1300 - 1427	4500 - 5250	23.6 - 24.0
108 – 121.94	1435 - 1626.5	5350 - 5460	31.2 - 31.8
123 – 138	1660 - 1710	7250 - 7750	36.43 - 36.5
149.9 – 150.05	1718.8 - 1722.2	8025 - 8500	Above 38.6
156.7 – 156.9	2200 - 2300	9000 - 9200	

FCC 47 CFR § 15.209(a)
-- Field Strength Limits within Restricted Frequency Bands --

FREQUENCY (MHz)	FIELD STRENGTH LIMITS (microvolts/m)	DISTANCE (Meters)
0.009 - 0.490	2,400 / F (KHz)	300
0.490 - 1.705	24,000 / F (KHz)	30
1.705 - 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

6.2.2. Method of Measurements

Refer to Exhibit 8 Section 8.2 of this test report and ANSI 63.4 for detailed radiated emissions measurement procedures.

The following measurement procedures were also applied:

- Applies to harmonics/spurious that fall in the restricted bands listed in Section 15.205, the maximum permitted average field strength is listed in Section 15.209. A Pre-Amp and highpass filter are used for this measurement.
- For measurement below 1 GHz, set RBW = 100 KHz, VBW $\geq$ 100 KHz, SWEEP=AUTO.
- For measurement above 1 GHz, set RBW = 1 MHz, VBW = 1 MHz (Peak), SWEEP=AUTO.

6.2.3. Test Arrangement

See Test Arrangement in Section 2.6 for details of test setup for emission measurements.

6.2.4. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer	Rohde & Schwarz	FSEK20/B4/B21	834157/005	9 kHz – 40 GHz
Microwave Amplifier	Hewlett Packard	HP 83017A		1 GHz to 26.5 GHz
Biconilog Antenna	EMCO	3143	1029	20 MHz to 2 GHz
Horn Antenna	EMCO	3155	9701-5061	1 GHz – 18 GHz
Horn Antenna	EMCO	3160-09	..	18 GHz – 26.5 GHz
Horn Antenna	EMCO	3160-10	..	26.5 GHz – 40 GHz
Mixer	Tektronix	118-0098-00	..	18 GHz – 26.5 GHz
Mixer	Tektronix	119-0098-00	..	26.5 GHz – 40 GHz

6.2.5. Test Data

Theory of Conversion From EIRP Limits to E-Field Limits:

FCC specifies the limit of an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, and an EIRP of -27 dBm/MHz. For other emissions outside 5.725 GHz - 10 MHz and 5.825 GHz + 10 MHz. In addition, the FCC E-Field Limits @ 15.209 in dBµV/m are applied for spurious and harmonic emissions which fall in the restricted band specified in FCC 15.205. In order to uniform our measurements, all EIRP limits (dBm/MHz) converted into E-Field Limits [dB(uV/m)/MHz} as follows:

$P = (Ed)^2/30G$
$EIRP = PG = (Ed)^2/30$
$E = (30*EIRP)^{0.5}/d$

Where:
P: Conducted power at the antenna in Watts
G: Transmitter's isotropic gain in numeric
EIRP: Equivalent isotropic radiated power in Watts
E: Electric Field in uV/m
D: Distance in meters (3 meters)

$10^6*E_{V/m}/10^6 = [30*EIRP_W*10^3/10^3]^{0.5}/d$
$20*\log[10^6*E_{V/m}/10^6] = 20*\log\{[30*EIRP_W*10^3/10^3]^{0.5}/d\}$
$20*\log[E_{uV/m}] - 20*\log[10^6] = 10*\log[EIRP_{mW}] + 10*\log[30] + 10*\log[10^{-3}] - 20*\log(d)$
$E_{dBµV/m} = EIRP_{dBm} + 14.77 - 30 - 9.54 + 120$

$E_{dBµV/m} = EIRP_{dBm} + 95.25$ dB

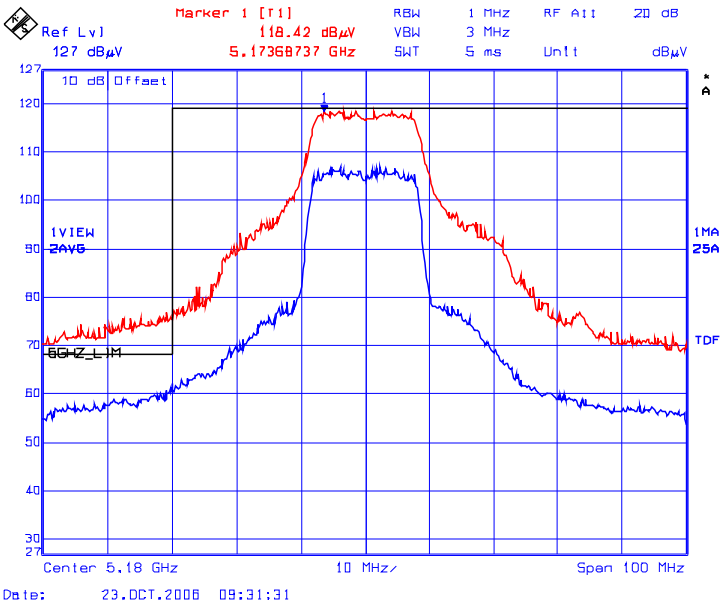
The FCC Equivalent E-Field Limits are:

-17 dB/MHz ⇐=> 78.24 dB(uV/m)/MHz
-27 dBm/MHz ⇐=> 68.24 dB(uV/m)/MHz

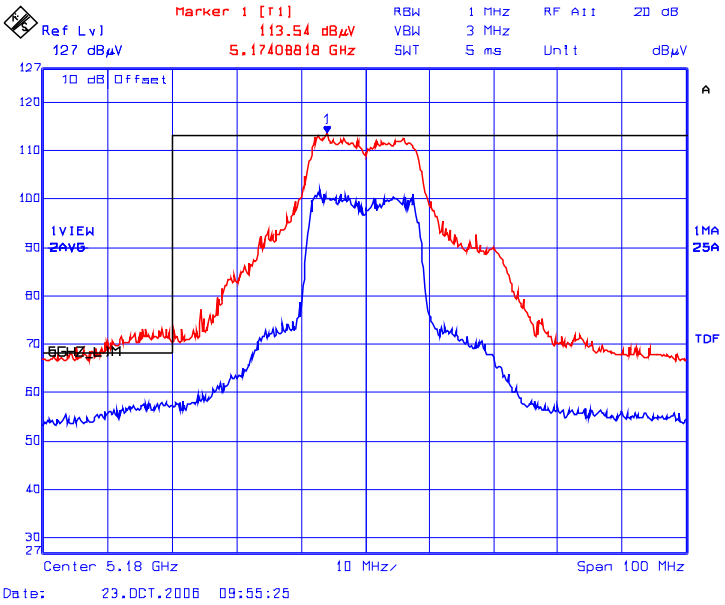
6.2.5.1. Band-edges Emissions (Radiated at 3 Meters)

6.2.5.1.1. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain), 802.11a Modulation (64QAM @ 54 Mbps)

Plot 6.2.5.1.1.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

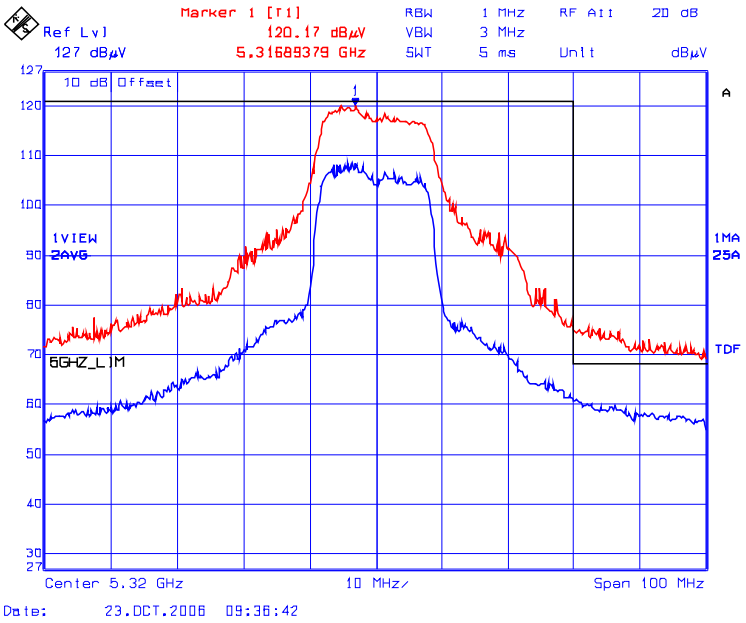


Plot 6.2.5.1.1.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

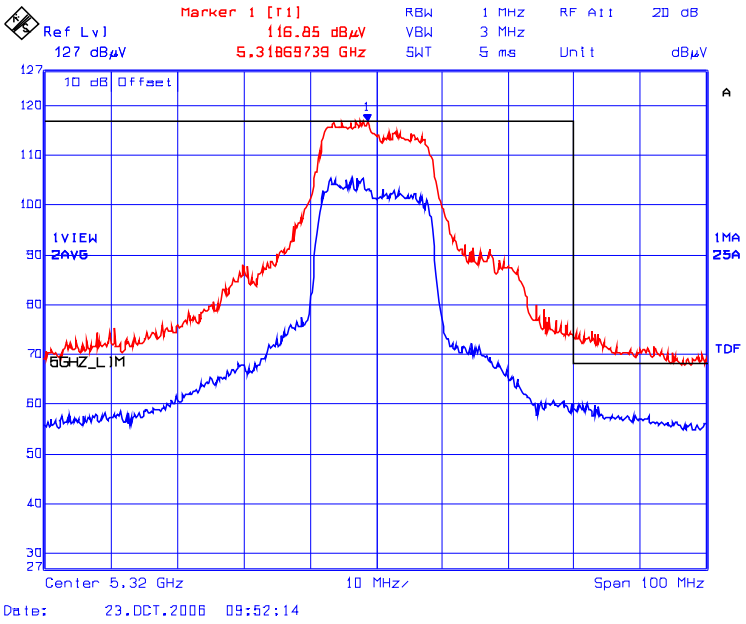


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 6.2.5.1.1.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

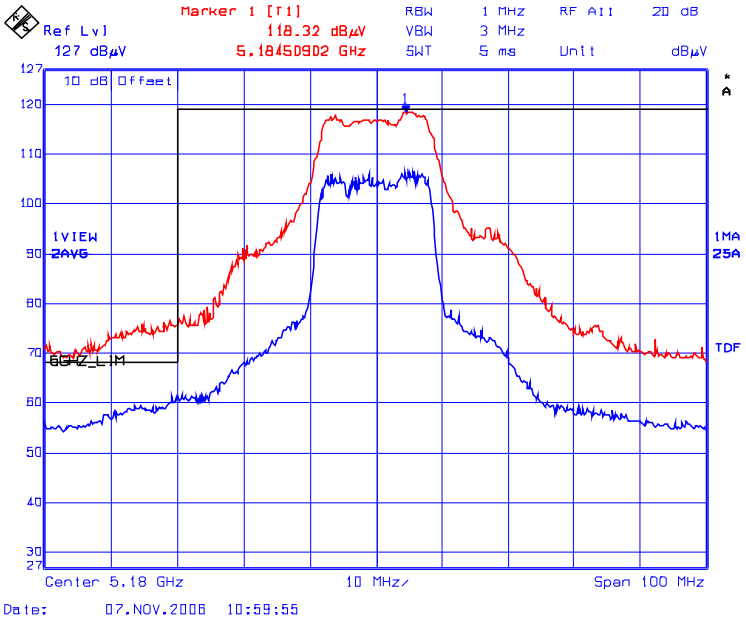


Plot 6.2.5.1.1.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

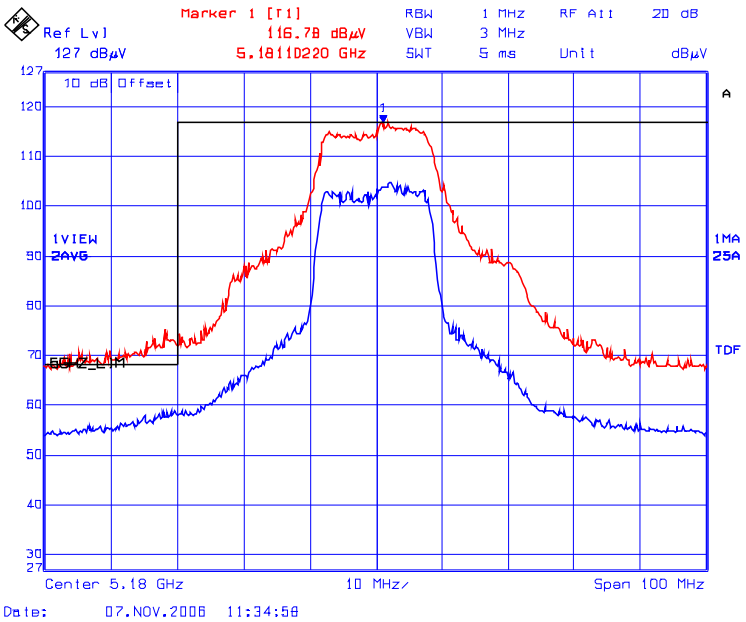


6.2.5.1.2. EUT with Antenna #3 Cushcraft Omni Antenna (Model SL24513P, 3 dBi gain), 802.11a Modulation (64QAM @ 54 Mbps)

Plot 6.2.5.1.2.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

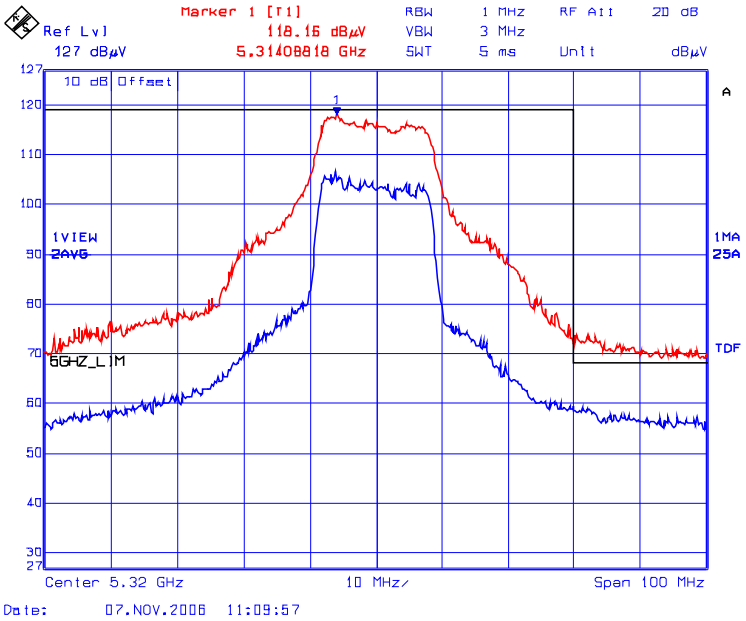


Plot 6.2.5.1.2.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

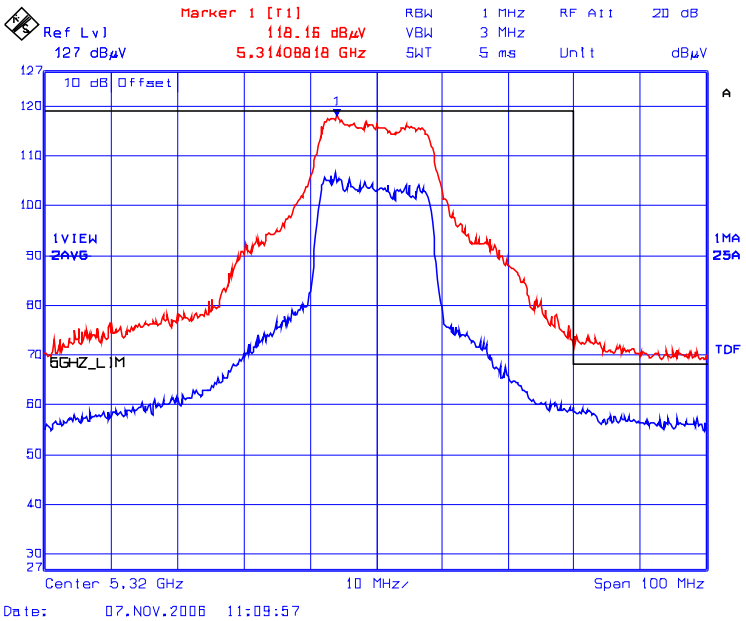


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 6.2.5.1.2.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

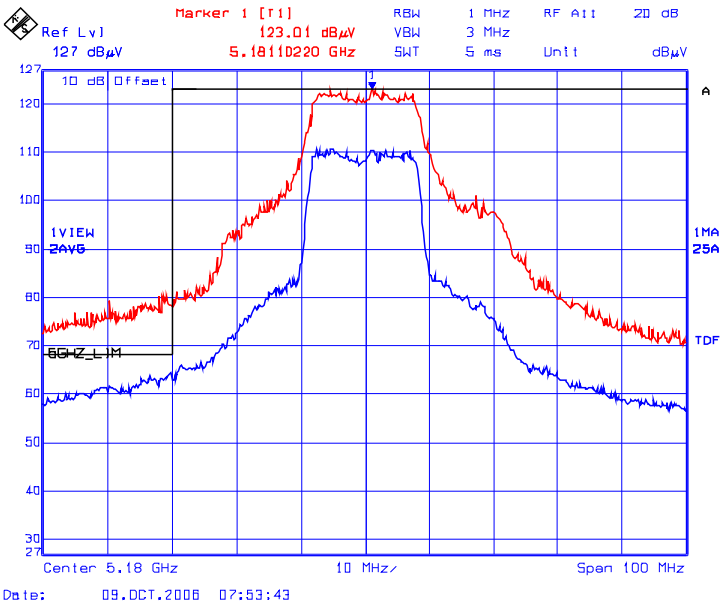


Plot 6.2.5.1.2.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

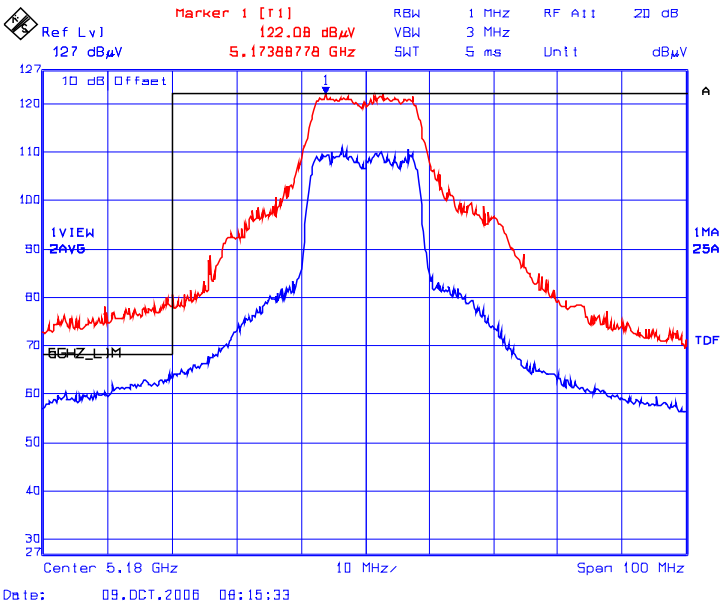


6.2.5.1.3. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain), 802.11a Modulation (64QAM @ 54 Mbps)

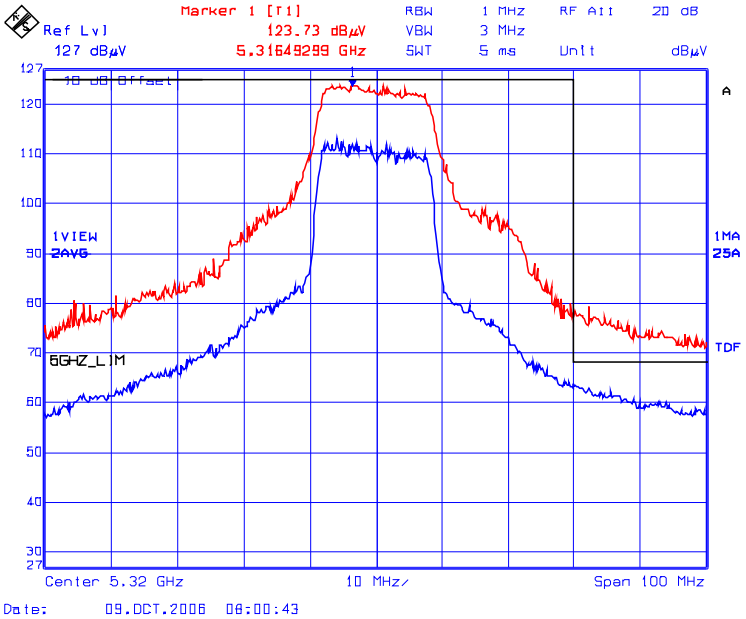
Plot 6.2.5.1.3.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps



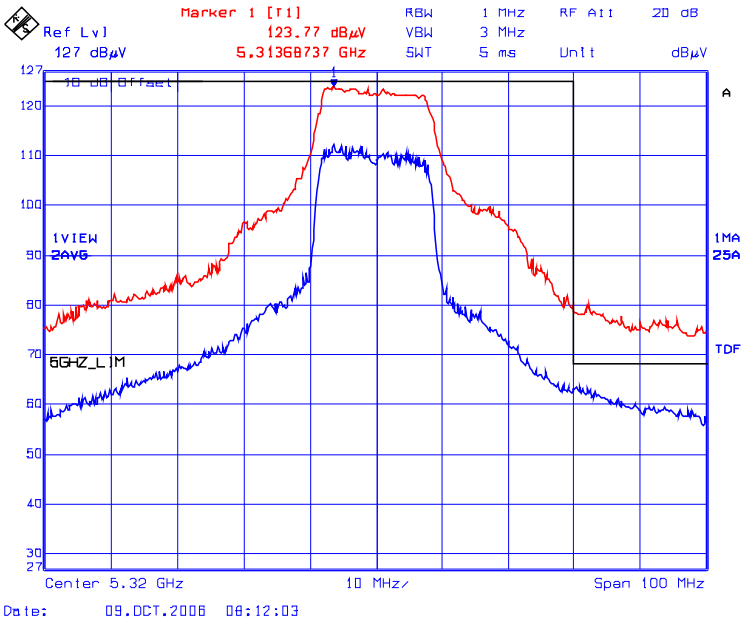
Plot 6.2.5.1.3.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps



Plot 6.2.5.1.3.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

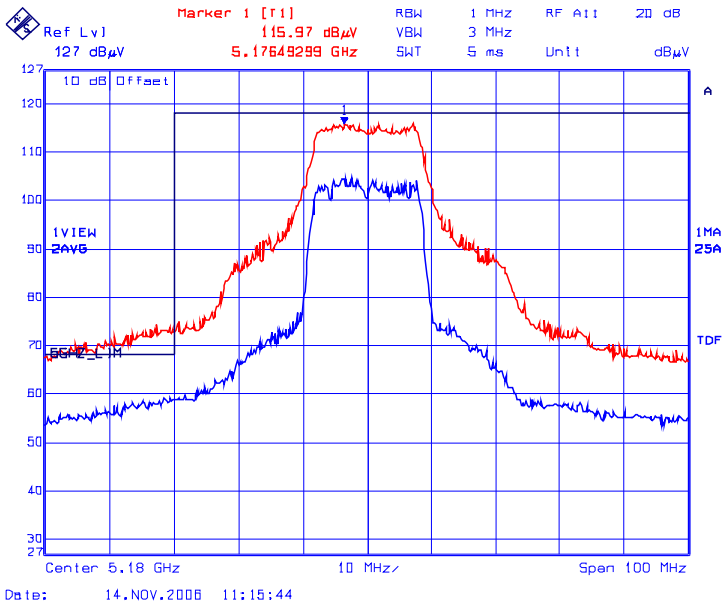


Plot 6.2.5.1.3.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

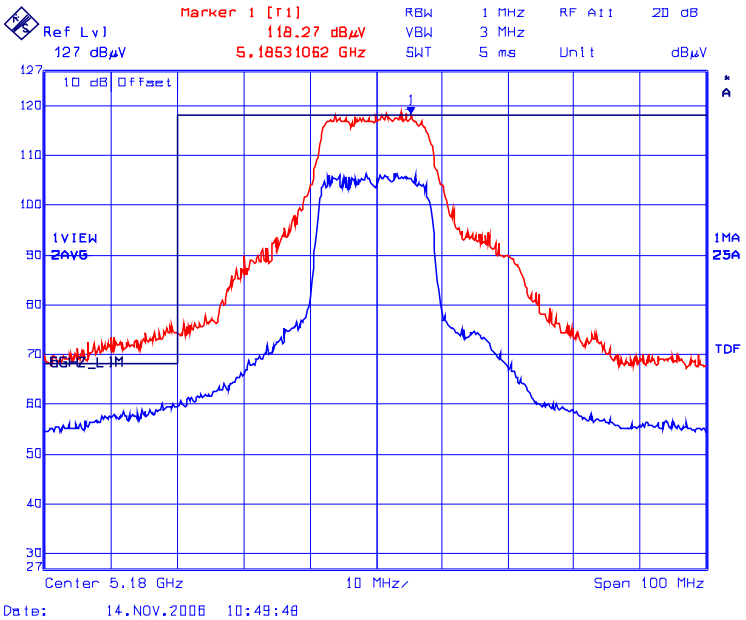


6.2.5.1.4. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain), 802.11a Modulation (64 QAM @ 54 Mbps)

Plot 6.2.5.1.4.1 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

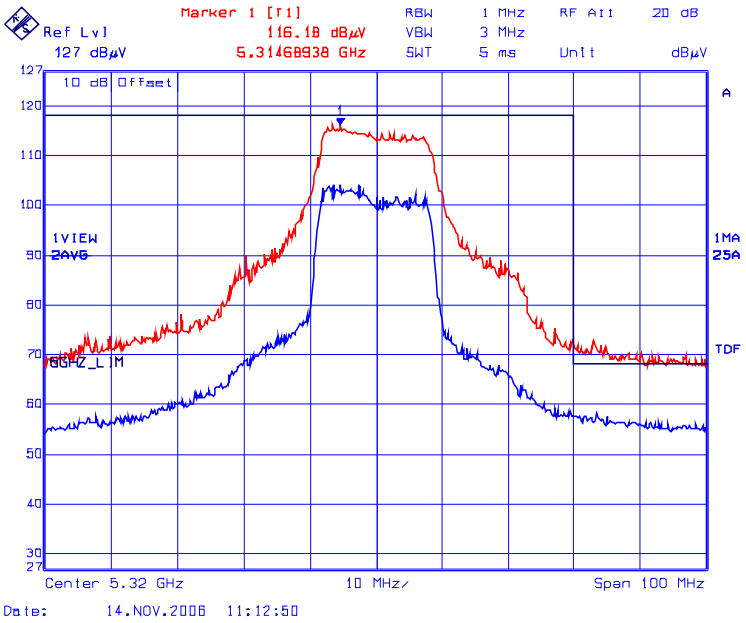


Plot 6.2.5.1.4.2 Lower Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5180 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps

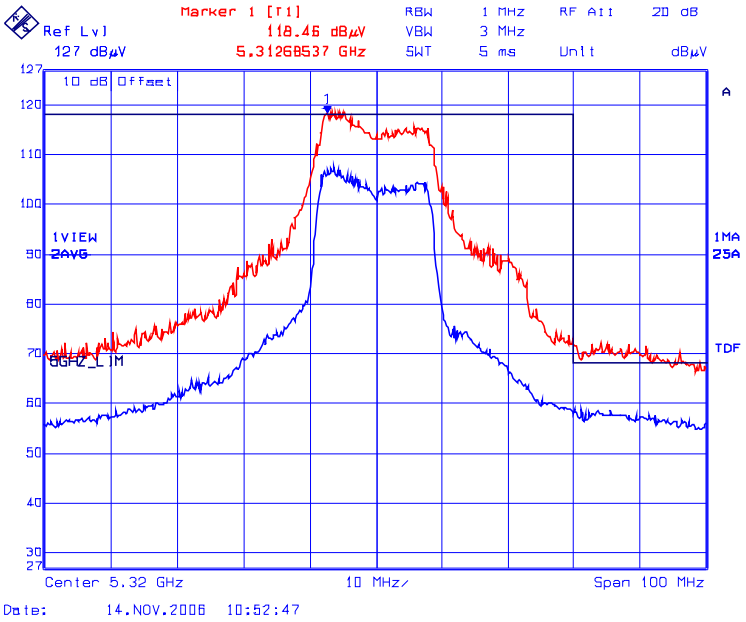


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

Plot 6.2.5.1.4.3 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Horizontal Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps



Plot 6.2.5.1.4.4 Upper Band-Edge Transmitter Radiated Emissions @ 3 Meters, Vertical Polarization
Frequency: 5320 MHz; Power Setting: 18.0dBm
Trace 1: Peak Detector Max Hold; Trace 2: Power Averaging 100 Sweeps



6.2.5.2. Undesired Emissions

Remarks:

1) Radiated emissions pre-scans show no differences in RF interferences with different modulations. Therefore, the transmitter operates with 64QAM modulation at highest data rate of 54 Mbps were tested to represent the worst case of radiated emissions, since it output the highest power.

2) The emissions were scanned from 30 MHz to 40 GHz and all emissions within 20 dB below the permissible limits were recorded.

6.2.5.2.1. For 5.15-5.25 GHz Band

6.2.5.2.1.1. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5180 MHz, Power Setting: 18 dBm							
10360	58.50	46.91	V	54.0	68.2	-21.3	Pass
10360	61.77	50.35	H	54.0	68.2	-17.9	Pass
Channel Frequency: 5220 MHz, Power Setting: 18 dBm							
10440	60.37	49.23	V	54.0	68.2	-19.0	Pass
10440	61.72	50.46	H	54.0	68.2	-17.7	Pass
Channel Frequency: 5240 MHz, Power Setting: 18 dBm							
10480	60.00	48.29	V	54.0	68.2	-19.0	Pass
10480	61.01	49.53	H	54.0	68.2	-17.7	Pass

*Frequency in restricted frequency bands.

6.2.5.2.1.2. EUT with Antenna #3 Cushcraft Omni Antenna (Model SL24513P, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5180 MHz, Power Setting: 18 dBm							
10360	61.42	48.50	V	54.0	68.2	-19.7	Pass
10360	59.28	45.21	H	54.0	68.2	-23.0	Pass
Channel Frequency: 5220 MHz, Power Setting: 18 dBm							
10440	58.20	45.07	V	54.0	68.2	-23.1	Pass
10440	59.88	45.07	H	54.0	68.2	-23.1	Pass
Channel Frequency: 5240 MHz, Power Setting: 18 dBm							
10480	59.23	46.73	V	54.0	68.2	-21.5	Pass
10480	58.89	45.77	H	54.0	68.2	-22.4	Pass

*Frequency in restricted frequency bands.

6.2.5.2.1.3. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5180 MHz, Power Setting: 18 dBm							
10360	62.84	49.61	V	54.0	68.2	-18.6	Pass
10360	60.60	48.37	H	54.0	68.2	-19.8	Pass
Channel Frequency: 5220 MHz, Power Setting: 18 dBm							
10440	59.75	46.88	V	54.0	68.2	-21.3	Pass
10440	62.64	49.97	H	54.0	68.2	-18.2	Pass
Channel Frequency: 5240 MHz, Power Setting: 18 dBm							
10480	57.87	43.56	V	54.0	68.2	-24.6	Pass
10480	59.43	47.05	H	54.0	68.2	-21.2	Pass

*Frequency in restricted frequency bands.

6.2.5.2.1.4. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5180 MHz, Power Setting: 18 dBm							
10360	59.70	45.84	V	54.0	68.2	-22.4	Pass
10360	61.28	47.77	H	54.0	68.2	-20.4	Pass
Channel Frequency: 5220 MHz, Power Setting: 18 dBm							
10440	57.99	45.11	V	54.0	68.2	-23.1	Pass
10440	61.21	48.87	H	54.0	68.2	-19.3	Pass
Channel Frequency: 5240 MHz, Power Setting: 18 dBm							
10480	56.88	44.07	V	54.0	68.2	-24.1	Pass
10480	61.97	47.92	H	54.0	68.2	-20.3	Pass

*Frequency in restricted frequency bands.

6.2.5.2.2. For *5.25-5.35 GHz* Band

6.2.5.2.2.1. EUT with Antenna #2 Cushcraft Omni Antenna (Model S24493DS, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5260 MHz, Power Setting: 18 dBm							
10520	62.59	49.78	V	54.0	68.2	-18.4	Pass
10520	65.27	51.74	H	54.0	68.2	-16.5	Pass
Channel Frequency: 5300 MHz, Power Setting: 18 dBm							
10600	59.33	48.09	V	54.0	68.2	-5.9	*Pass
10600	62.24	49.66	H	54.0	68.2	-4.3	*Pass
Channel Frequency: 5320 MHz, Power Setting: 18 dBm							
10640	58.98	48.19	V	54.0	68.2	-5.8	*Pass
10640	60.89	48.60	H	54.0	68.2	-5.4	*Pass

*Frequency in restricted frequency bands.

6.2.5.2.2.2. EUT with Antenna #3 Cushcraft Omni Antenna (Model SL24513P, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5260 MHz, Power Setting: 18 dBm							
10520	62.17	49.41	V	54.0	68.2	-18.8	Pass
10520	60.11	46.58	H	54.0	68.2	-21.6	Pass
Channel Frequency: 5300 MHz, Power Setting: 18 dBm							
10600	60.74	47.78	V	54.0	68.2	-6.2	*Pass
10600	58.44	45.72	H	54.0	68.2	-8.3	*Pass
Channel Frequency: 5320 MHz, Power Setting: 18 dBm							
10640	60.56	46.92	V	54.0	68.2	-7.1	*Pass
10640	58.04	45.50	H	54.0	68.2	-8.5	*Pass

*Frequency in restricted frequency bands.

6.2.5.2.2.3. EUT with Antenna #4 Cushcraft Directional Antenna (Model S24497P, 7 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5260 MHz, Power Setting: 18 dBm							
10520	58.80	46.55	V	54.0	68.2	-21.7	Pass
10520	62.35	50.14	H	54.0	68.2	-18.1	Pass
Channel Frequency: 5300 MHz, Power Setting: 18 dBm							
10600	57.68	45.80	V	54.0	68.2	-8.2	*Pass
10600	61.17	49.46	H	54.0	68.2	-4.5	*Pass
Channel Frequency: 5320 MHz, Power Setting: 18 dBm							
10640	58.14	45.05	V	54.0	68.2	-9.0	*Pass
10640	60.97	47.93	H	54.0	68.2	-6.1	*Pass

*Frequency in restricted frequency bands.

6.2.5.2.2.4. EUT with Antenna #5 Hyperlink Technologies Omni Antenna (Model HG2458CU, 3 dBi gain)

Frequency (MHz)	RF Peak Level (dBμV/m)	RF AVG Level (dBμV/m)	Antenna Plane (H/V)	Limit (dBμV/m)		Margin (dB)	Pass/ Fail
				§15.209(a)	§15.407(b)		
Channel Frequency: 5260 MHz, Power Setting: 18 dBm							
10520	60.94	48.26	V	54.0	68.2	-19.9	Pass
10520	65.02	51.47	H	54.0	68.2	-16.7	Pass
Channel Frequency: 5300 MHz, Power Setting: 18 dBm							
10600	60.59	48.25	V	54.0	68.2	-5.8	*Pass
10600	62.48	50.73	H	54.0	68.2	-3.3	*Pass
Channel Frequency: 5320 MHz, Power Setting: 18 dBm							
10640	60.55	47.05	V	54.0	68.2	-7.0	*Pass
10640	60.95	48.25	H	54.0	68.2	-5.8	*Pass

*Frequency in restricted frequency bands.

6.3. RF EXPOSURE REQUIRMENTS [§ 15.407(f), 1.1310 & 2.1091]

6.3.1. Limits

- **FCC 15.407(f):** U-NII devices are subject to the radio frequency radiation exposure requirements specified in Sec. 1.1307(b), Sec. 2.1091 and Sec. 2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a ``general population/uncontrolled'' environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.
- **FCC 1.1310:**- The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b).

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)
(B) Limits for General Population/Uncontrolled Exposure				
1500-100,000	...	...	1.0	30

F = Frequency in MHz

6.3.2. Method of Measurements

In order to demonstrate compliance with MPE requirements (see Section 2.1091), the following information is typically needed:

1. Calculation that estimates the minimum separation distance (20 cm or more) between an Antenna and persons required to satisfy power density limits defined for free space.

   Calculation Method of RF Safety Distance:

   $S = PG/4\Pi r^2 = EIRP/4\Pi r^2$

   Where: P: power input to the antenna in mW
   EIRP: Equivalent (effective) isotropic radiated power.
   S: power density mW/cm^2
   G: numeric gain of antenna relative to isotropic radiator
   r: distance to centre of radiation in cm

   $r = \sqrt{PG/4\Pi S}$

2. Antenna installation and device operating instructions for installers (professional/unskilled users), and the parties responsible for ensuring compliance with the RF exposure requirement
3. Any caution statements and/or warning labels that are necessary in order to comply with the exposure limits
4. Any other RF exposure related issues that may affect MPE compliance

6.3.3. Test Data

Frequency Band (MHz)	Highest Conducted Peak Power at the Antenna Terminal (dBm)	Maximum Antenna Gain (dBi)	Maximum Measured Total EIRP/channel (dBm)	Maximum Combined EIRP of 2.4 GHz and 5 GHz Channel Powers For multiple Tx	Minimum RF Safety Distance r (cm)
2412-2462 5180-5240	23.3 14.9	7 7	30.3 21.9	30.9 dBm or 1226.4 mW	9.9
2412-2462 5260-5320	23.3 14.9	7 7	30.3 21.9	30.9 dBm or 1226.4 mW	9.9
2412-2462 5745-5825	23.3 23.0	7 7	30.3 30.0	33.2 dBm or 2071.5 mW	12.8

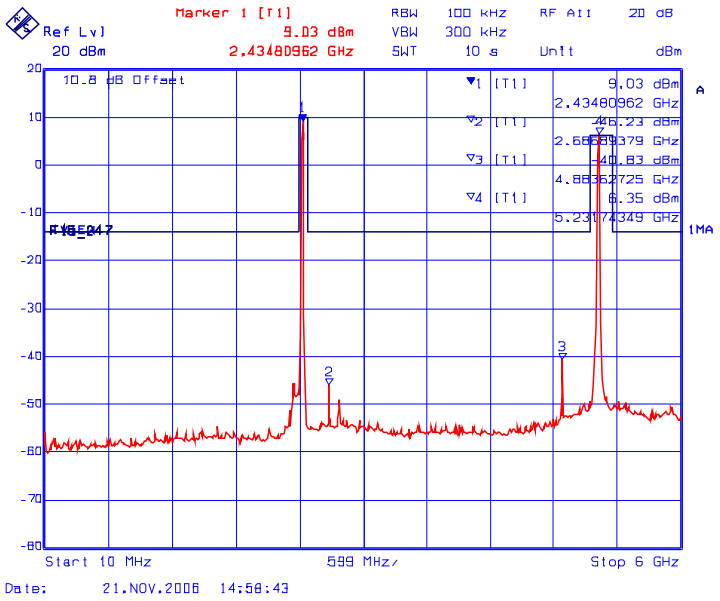
Note: **RF EXPOSURE DISTANCE LIMITS: $r = (PG/4\Pi S)^{1/2} = (EIRP/4\Pi S)^{1/2}$**
Limits for General Population/Uncontrolled Exposure: $S = 1.0$ mW/cm^2

Evaluation of RF Exposure Compliance Requirements	
RF Exposure Requirements	**Compliance with FCC Rules**
Minimum calculated separation distance between Antenna and persons: **12.8 cm**	Manufacturer' instruction for separation distance between Antenna and persons required: **20 cm.**
Antenna installation and device operating instructions for installers (professional/unskilled users), and the parties responsible for ensuring compliance with the RF exposure requirement	N/A
Caution statements and/or warning labels that are necessary in order to comply with the exposure limits	Refer to user's manual for RF Exposure information.
Any other RF exposure related issues that may affect MPE compliance	N/A

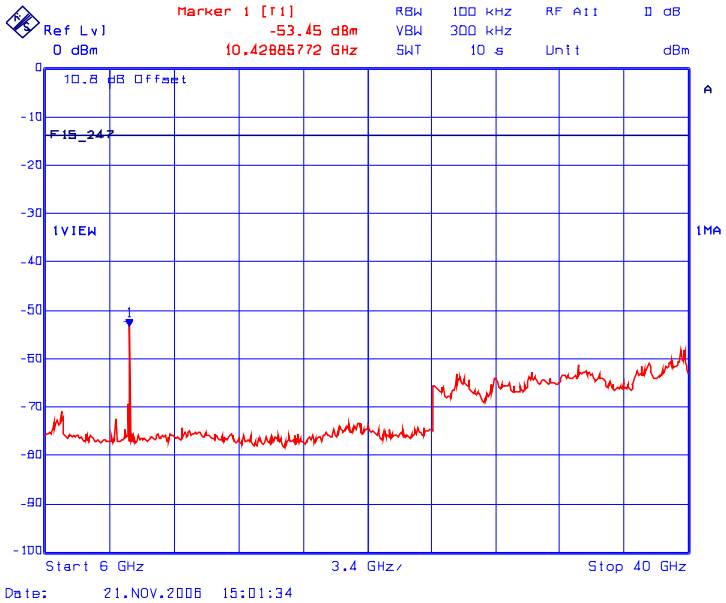
6.4. INTERMODULATION FOR MULTIPLE TRANSMISSION ON A TRANSMITTING ANTENNA

Since a transmitter's antenna can transmit 2 rf signals, one from 2.4 GHz band and one from 5 GHz band, at the same time. The following conducted emissions/intermodulation tests show that all spurious, harmonic and intermodulation components (I.M.) are still below the spurious emission limits.

Plot 6.4.1a Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5220 MHz, Power Setting at 18.0dBm

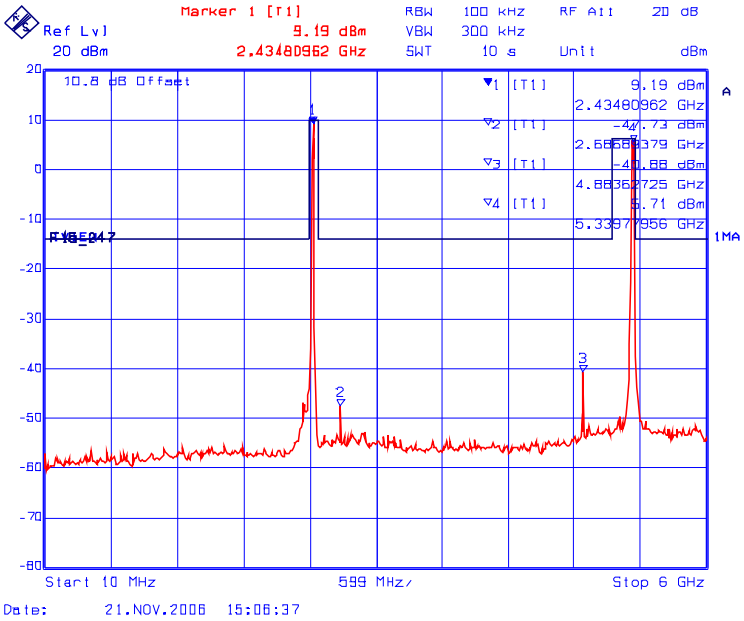


Plot 6.4.1b Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5220 MHz, Power Setting at 18.0dBm

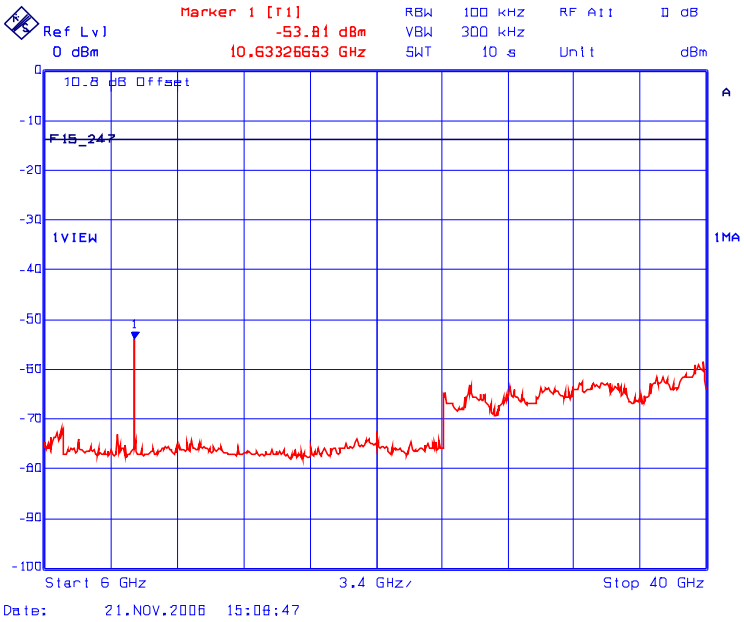


- *All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)*

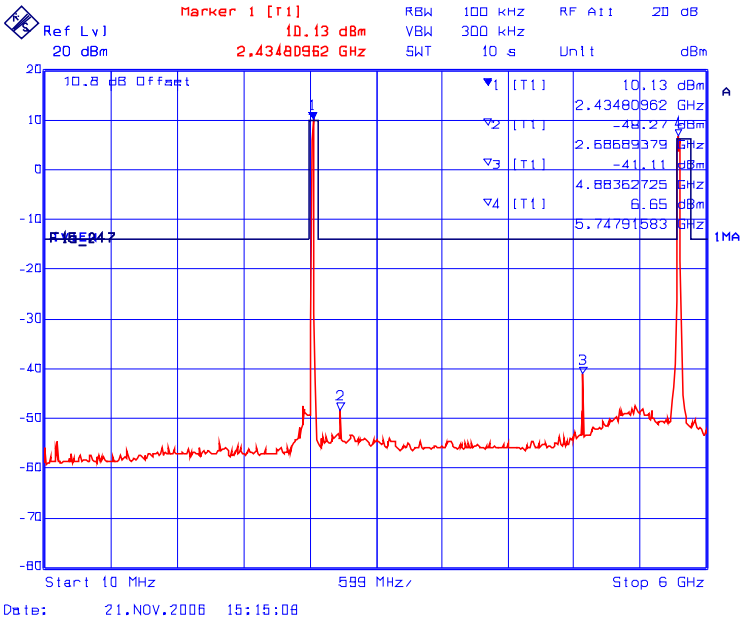
Plot 6.4.2a Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5330 MHz, Power Setting at 18.0dBm



Plot 6.4.2b Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5330 MHz, Power Setting at 18.0dBm



Plot 6.4.3a Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5745 MHz, Power Setting at 19.0dBm



Plot 6.4.3b Conducted Spurious Emissions & Intermodulation with 2 RF Output Signals on Antenna Port A
2437 MHz, Power Setting at 20.0dBm and 5745 MHz, Power Setting at 19.0dBm

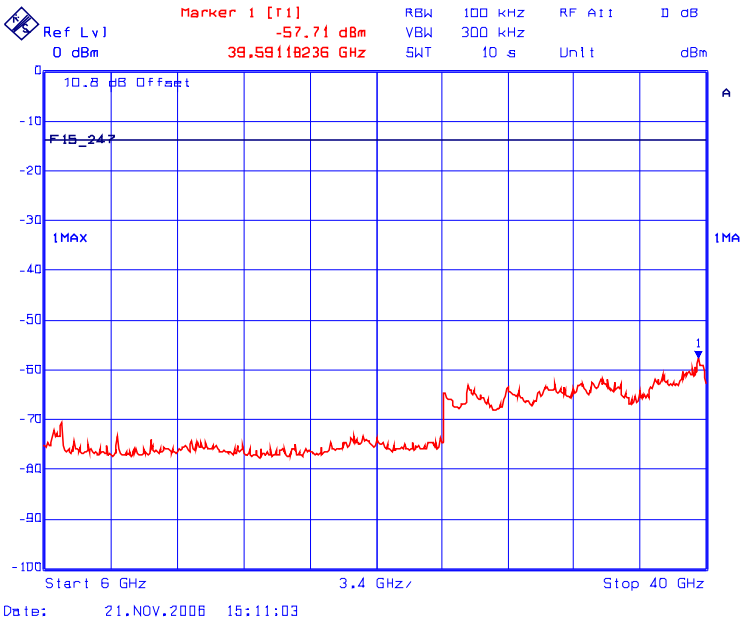


EXHIBIT 7. MEASUREMENT UNCERTAINTY

The measurement uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 and NIS 81 (1994)

7.1. RADIATED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Radiated Emissions)	PROBABILITY DISTRIBUTION	UNCERTAINTY (± dB)	
		3 m	10 m
Antenna Factor Calibration	Normal (k=2)	±1.0	±1.0
Cable Loss Calibration	Normal (k=2)	±0.3	±0.5
EMI Receiver specification	Rectangular	±1.5	±1.5
Antenna Directivity	Rectangular	+0.5	+0.5
Antenna factor variation with height	Rectangular	±2.0	±0.5
Antenna phase center variation	Rectangular	0.0	±0.2
Antenna factor frequency interpolation	Rectangular	±0.25	±0.25
Measurement distance variation	Rectangular	±0.6	±0.4
Site imperfections	Rectangular	±2.0	±2.0
Mismatch: Receiver VRC Γ_1 = 0.2 Antenna VRC Γ_R = 0.67(Bi) 0.3 (Lp) Uncertainty limits 20Log(1±$\Gamma_1\Gamma_R$)	U-Shaped	+1.1 -1.25	±0.5
System repeatability	Std. Deviation	±0.5	±0.5
Repeatability of EUT		-	-
Combined standard uncertainty	Normal	+2.19 / -2.21	+1.74 / -1.72
Expanded uncertainty U	Normal (k=2)	+4.38 / -4.42	+3.48 / -3.44

Calculation for maximum uncertainty when 3m biconical antenna including a factor of k = 2 is used:

$U = 2u_c(y) = 2x(+2.19) = +4.38$ dB And $U = 2u_c(y) = 2x(-2.21) = -4.42$ dB

EXHIBIT 8. MEASUREMENT METHODS

8.1. GENERAL TEST CONDITIONS

The following test conditions shall be applied throughout the tests covered in this report.

8.1.1. Normal temperature and humidity

- Normal temperature: +15°C to +35°C
- Relative Humidity: +20% to 75%

The actual values during tests shall be recorded in the test report.

8.1.2. Normal power source

8.1.2.1. Mains Voltage

The nominal test voltage of the equipment to be connected to mains shall be the nominal mains voltage which is the declared voltage or any of the declared voltages for which the equipment was designed.

The frequency of test power source corresponding to the AC mains shall be between 59 Hz and 61 Hz.

8.1.2.2. Battery Power Source

For operation from battery power sources, the nominal test voltage shall be as declared by the equipment manufacturer. This shall be recorded in the test report.

8.1.3. Operating Condition of Equipment under Test

- All tests were carried out while the equipment operated at the following frequencies:
  - The lowest operating frequency,
  - The middle operating frequency and
  - The highest operating frequency

- Modulation were applied using the Test Data sequence
- The transmitter was operated at the highest output power, or in the case the equipment able to operate at more than one power level, at the lowest and highest output powers

8.2. SPURIOUS EMISSIONS (RADIATED)

For both conducted and radiated measurements, the spurious emissions were scanned from the lowest frequency generated by the EUT or 10 MHz whichever is lower to 10th harmonic of the highest frequency generated by the EUT.

- The radiated emission measurements were performed at the UltraTech's 3 Meter Open Field Test Site (OFTS) situated in the Town of Oakville, province of Ontario. The Attenuation Characteristics of OFTS have been filed to FCC, Industry Canada, ACA, NVLap and ITI.
- Radiated emissions measurements were made using the following test instruments:

1. Calibrated EMCO BiconiLog antenna in the frequency range from 30 MHz to 2000 MHz.
2. Calibrated Emco Horn antennas in the frequency range above 1000 MHz (1GHz - 40 GHz).
3. The test is required for any spurious emission or modulation product that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

   - RBW = 100 kHz for f < 1GHz and RBW = 1 MHz for f ≥ 1 GHz
   - VBW = RBW
   - Sweep = auto
   - Detector function = peak
   - Trace = max hold
   - Follows the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc.. A pre-amp and highpass filter are required for this test, in order to provide the measuring system with sufficient sensitivity.
   - Allow the trace to stabilize.
   - The peak reading of the emission, after being corrected by the antenna correction factor, cable loss, pre-amp gain, etc…. is the peak field strength which comply with the limit specified in Section 15.35(b)

   Calculation of Field Strength:

   The field strength is calculated by adding the calibrated antenna factor and cable factor, and subtracting the Amplifier gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength
RA = Receiver/Analyzer Reading
AF = Antenna Factor
CF = Cable Attenuation Factor
AG = Amplifier Gain

Example: If a receiver reading of 60.0 dBuV is obtained, the antenna factor of 7.0 dB/m and cable factor of 1.0 dB are added, and the amplifier gain of 30 dB is subtracted. The actual field strength will be:

Field Level = 60 + 7.0 + 1.0 - 30 = 38.0 dBµV/m.
Field Level = $10^{(38/20)}$ = 79.43 µV/m.

- Submit this test data
- Now set the VBW to 10Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time of the each channel is less than 100ms, then the reading obtained may be further adjusted by a "duty cycle correction factor", derived from 10log(dwell time/100mS) in an effort to demonstrate compliance with the 15.209.
- Submit test data

Maximizing The Radiated Emissions:

- The frequencies of emissions was first detected. Then the amplitude of the emissions was measured at the specified measurement distance using required antenna height, polarization, and detector characteristics.
- During this process, cables and peripheral devices were manipulated within the range of likely configuration.
- For each mode of operation required to be tested, the frequency spectrum was monitored. Variations in antenna heights (from 1 meter to 4 meters above the ground plane), antenna polarization (horizontal plane and vertical plane), cable placement and peripheral placement were explored to produce the highest amplitude signal relative to the limit.

  The maximum radiated emission for a given mode of operation was found by using the following step-by-step procedure:

  Step 1: Monitor the frequency range of interest at a fixed antenna height and EUT azimuth.

  Step 2: Manipulate the system cables to produce highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.

  Step 3: Rotate the EUT 360 degrees to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, go back to the azimuth and repeat Step 2. Otherwise, orient the EUT azimuth to repeat the highest amplitude observation and proceed.

  Step 4: Move the antenna over its full allowable range of travel (1 to 4 meters) to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, return to Step 2 with the highest amplitude observation and proceed.

  Step 5: Change the polarization of the Antenna and repeat Step 2 through 4. Compare the resulting suspected highest amplitude signal with that found for the other polarization. Select and note the higher of the two signals. This signal is termed the highest observed signal with respect to the limit for this EUT operational mode.

  Step 6: The effects of various modes of operation is examined. This is done by varying the equipment modes as steps 2 through 5 are being performed.

  Step 7: After completing steps 1 through 6, record the final highest emission level, frequency, antenna polarization and detector mode of the measuring instrument.