

6.4. Radiated Spurious Emissions Data -- Pursuant 47 CFR 2.1053, 2.1057

FCC Limits –

Radiated spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

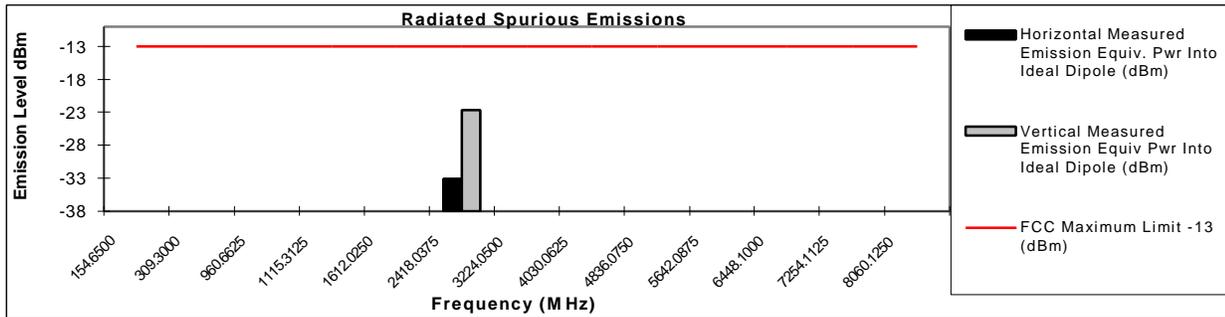
Spurious attenuation in dB = $43 + 10 \log_{10} (P)$
(Thus the effective limit is -13 dBm for any transmitter power level).

NOTE 1: The primary U500 and the alternate U500 PA were tested at both maximum and minimum power output settings. The primary U500 PA was tested at four frequencies within the transmit band. Due to the lack of significant variation in radiated spurious emissions across the useable transmit band, the alternate U500 PA was tested at only one frequency within the transmit band.

NOTE 2: Spurious emissions are independent of modulation type. Quad-16QAM was used to obtain the results reported.

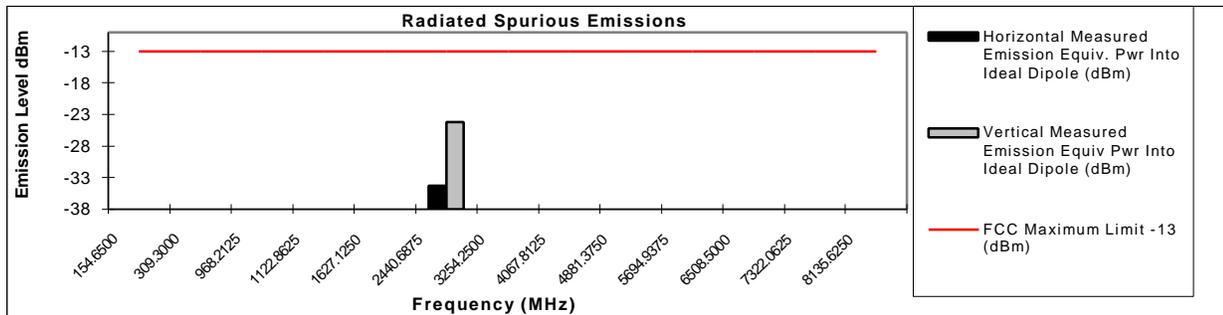
Transmitter Radiated Spurious Emissions (Maximum Power Setting)
806.0125 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	960.6625	-13	<-38	<-38
IF+LO	1115.3125	-13	<-38	<-38
2X FUND	1612.0250	-13	<-38	<-38
3X FUND	2418.0375	-13	-33.08	-22.66
4X FUND	3224.0500	-13	<-38	<-38
5X FUND	4030.0625	-13	<-38	<-38
6X FUND	4836.0750	-13	<-38	<-38
7X FUND	5642.0875	-13	<-38	<-38
8X FUND	6448.1000	-13	<-38	<-38
9X FUND	7254.1125	-13	<-38	<-38
10XFUND	8060.1250	-13	<-38	<-38



Transmitter Radiated Spurious Emissions (Maximum Power Setting)
813.5625 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured	Vertical Measured Emission
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	968.2125	-13	<-38	<-38
IF+LO	1122.8625	-13	<-38	<-38
2X FUND	1627.1250	-13	<-38	<-38
3X FUND	2440.6875	-13	-34.4	-24.21
4X FUND	3254.2500	-13	<-38	<-38
5X FUND	4067.8125	-13	<-38	<-38
6X FUND	4881.3750	-13	<-38	<-38
7X FUND	5694.9375	-13	<-38	<-38
8X FUND	6508.5000	-13	<-38	<-38
9X FUND	7322.0625	-13	<-38	<-38
10XFUND	8135.6250	-13	<-38	<-38



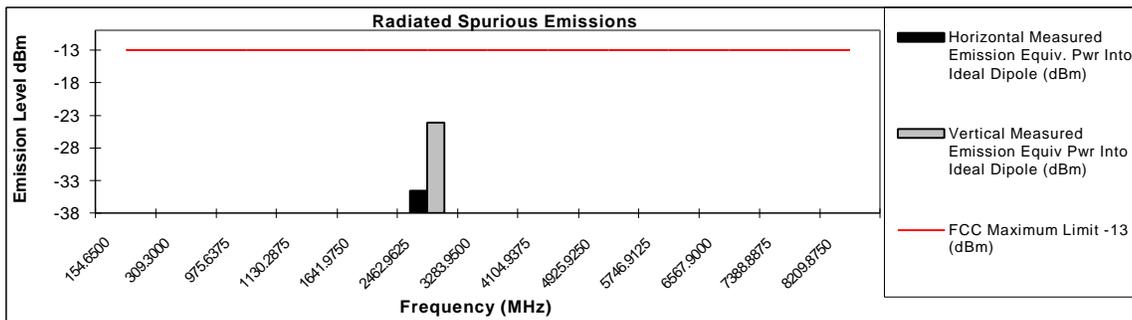
* Indicates the spurious emission was less than -60dBm or could not be detected due to noise limitations or ambients.

Figure 6-29: Radiated Emissions – Primary U500 Emissions at 806.0125 and 813.5625 MHz

Transmitter Radiated Spurious Emissions (Maximum Power Setting)

820.9875 MHz

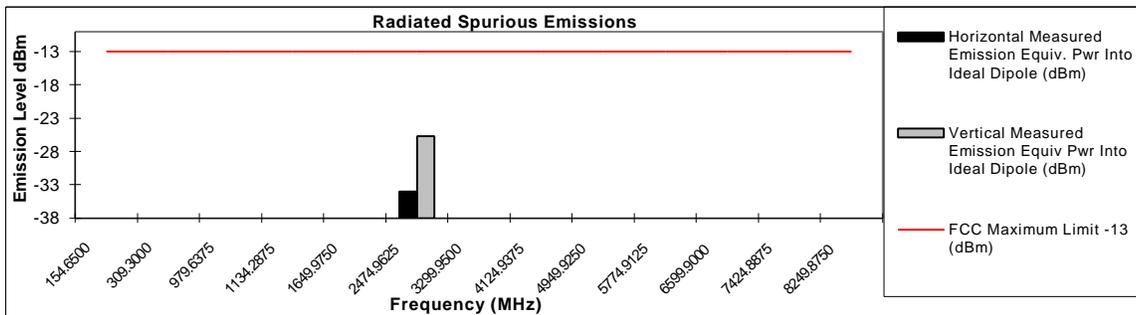
Spur	Frequency (MHz)	FCC Maximum Limit - 13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	975.6375	-13	<-38	<-38
IF+LO	1130.2875	-13	<-38	<-38
2X FUND	1641.9750	-13	<-38	<-38
3X FUND	2462.9625	-13	-34.58	-24.15
4X FUND	3283.9500	-13	<-38	<-38
5X FUND	4104.9375	-13	<-38	<-38
6X FUND	4925.9250	-13	<-38	<-38
7X FUND	5746.9125	-13	<-38	<-38
8X FUND	6567.9000	-13	<-38	<-38
9X FUND	7388.8875	-13	<-38	<-38
10XFUND	8209.8750	-13	<-38	<-38



Transmitter Radiated Spurious Emissions (Maximum Power Setting)

824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit - 13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	979.6375	-13	<-38	<-38
IF+LO	1134.2875	-13	<-38	<-38
2X FUND	1649.9750	-13	<-38	<-38
3X FUND	2474.9625	-13	-34.0	-25.72
4X FUND	3299.9500	-13	<-38	<-38
5X FUND	4124.9375	-13	<-38	<-38
6X FUND	4949.9250	-13	<-38	<-38
7X FUND	5774.9125	-13	<-38	<-38
8X FUND	6599.9000	-13	<-38	<-38
9X FUND	7424.8875	-13	<-38	<-38
10XFUND	8249.8750	-13	<-38	<-38

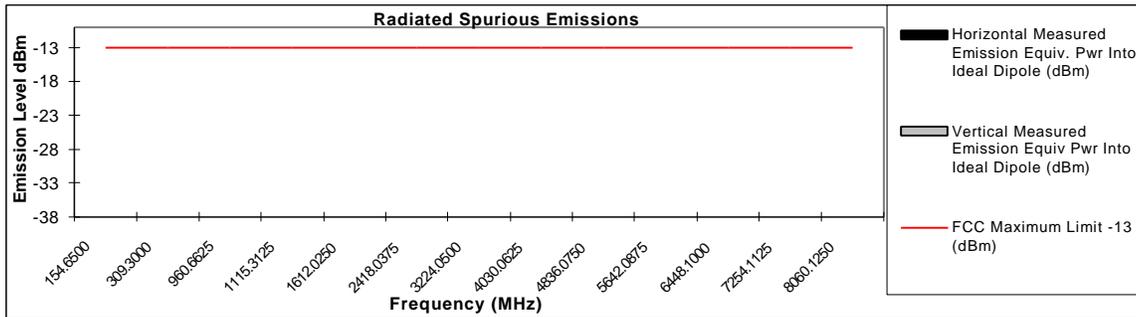


* Indicates the spurious emission was less than -60dBm or could not be detected due to noise limitations or ambients.

Figure 6-30: Radiated Emissions – Primary U500 Emissions at 820.9875 and 824.9875 MHz

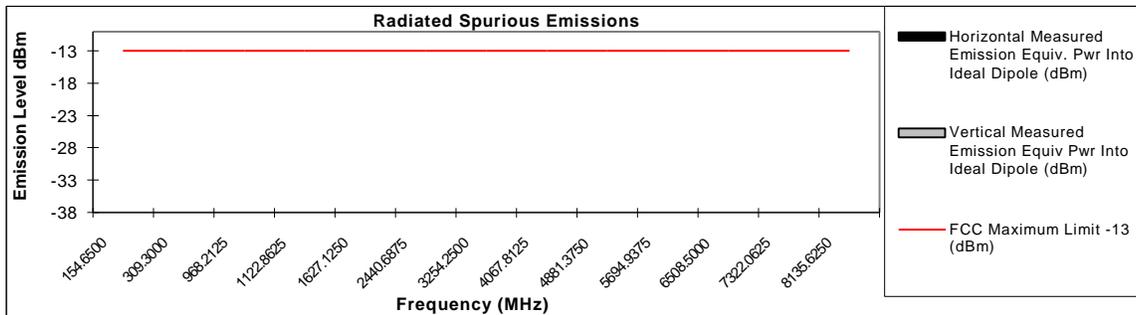
Transmitter Radiated Spurious Emissions (Minimum Power Setting)
806.0125 MHz

Spur	Frequency (MHz)	FCC Maximum Limit - 13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	960.6625	-13	<-38	<-38
IF+LO	1115.3125	-13	<-38	<-38
2X FUND	1612.0250	-13	<-38	<-38
3X FUND	2418.0375	-13	<-38	<-38
4X FUND	3224.0500	-13	<-38	<-38
5X FUND	4030.0625	-13	<-38	<-38
6X FUND	4836.0750	-13	<-38	<-38
7X FUND	5642.0875	-13	<-38	<-38
8X FUND	6448.1000	-13	<-38	<-38
9X FUND	7254.1125	-13	<-38	<-38
10XFUND	8060.1250	-13	<-38	<-38



Transmitter Radiated Spurious Emissions (Minimum Power Setting)
813.5625 MHz

Spur	Frequency (MHz)	FCC Maximum Limit - 13 (dBm)	Horizontal Measured	Vertical Measured Emission
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	968.2125	-13	<-38	<-38
IF+LO	1122.8625	-13	<-38	<-38
2X FUND	1627.1250	-13	<-38	<-38
3X FUND	2440.6875	-13	<-38	<-38
4X FUND	3254.2500	-13	<-38	<-38
5X FUND	4067.8125	-13	<-38	<-38
6X FUND	4881.3750	-13	<-38	<-38
7X FUND	5694.9375	-13	<-38	<-38
8X FUND	6508.5000	-13	<-38	<-38
9X FUND	7322.0625	-13	<-38	<-38
10XFUND	8135.6250	-13	<-38	<-38

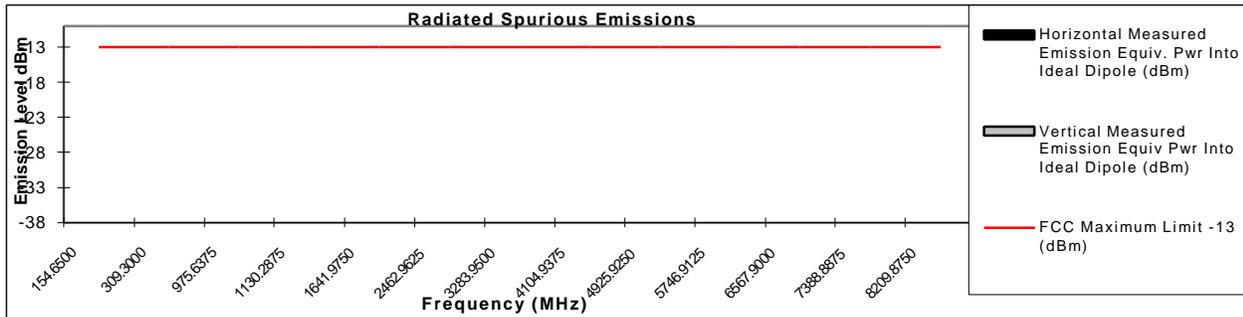


* Indicates the spurious emission was less than -60dBm or could not be detected due to noise limitations or ambients.

Figure 6-31: Radiated Emissions – Primary U500 Emissions at 806.0125 and 813.5625 MHz

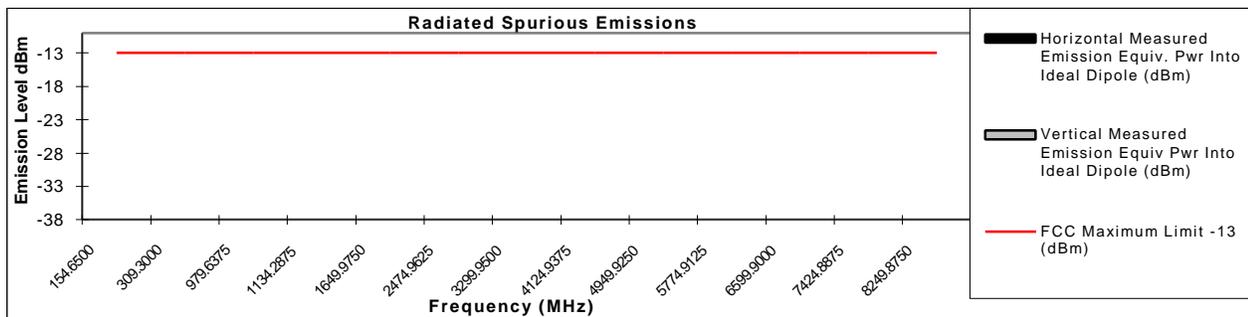
Transmitter Radiated Spurious Emissions (Minimum Power Setting)
820.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	975.6375	-13	<-38	<-38
IF+LO	1130.2875	-13	<-38	<-38
2X FUND	1641.9750	-13	<-38	<-38
3X FUND	2462.9625	-13	<-38	<-38
4X FUND	3283.9500	-13	<-38	<-38
5X FUND	4104.9375	-13	<-38	<-38
6X FUND	4925.9250	-13	<-38	<-38
7X FUND	5746.9125	-13	<-38	<-38
8X FUND	6567.9000	-13	<-38	<-38
9X FUND	7388.8875	-13	<-38	<-38
10XFUND	8209.8750	-13	<-38	<-38



Transmitter Radiated Spurious Emissions (Minimum Power Setting)
824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	979.6375	-13	<-38	<-38
IF+LO	1134.2875	-13	<-38	<-38
2X FUND	1649.9750	-13	<-38	<-38
3X FUND	2474.9625	-13	<-38	<-38
4X FUND	3299.9500	-13	<-38	<-38
5X FUND	4124.9375	-13	<-38	<-38
6X FUND	4949.9250	-13	<-38	<-38
7X FUND	5774.9125	-13	<-38	<-38
8X FUND	6599.9000	-13	<-38	<-38
9X FUND	7424.8875	-13	<-38	<-38
10XFUND	8249.8750	-13	<-38	<-38



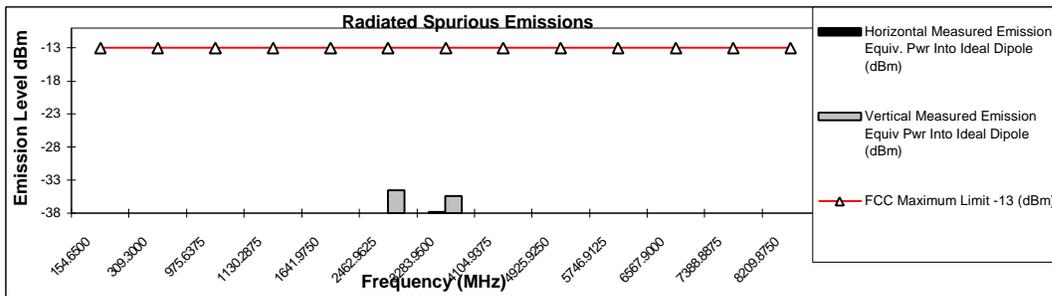
* Indicates the spurious emission was less than -60dBm or could not be detected due to noise limitations or ambients.

Figure 6-32: Radiated Emissions – Primary U500 Emissions at 820.9875 and 824.9875 MHz

Transmitter Radiated Spurious Emissions (Maximum Power Setting)

820.9875 MHz

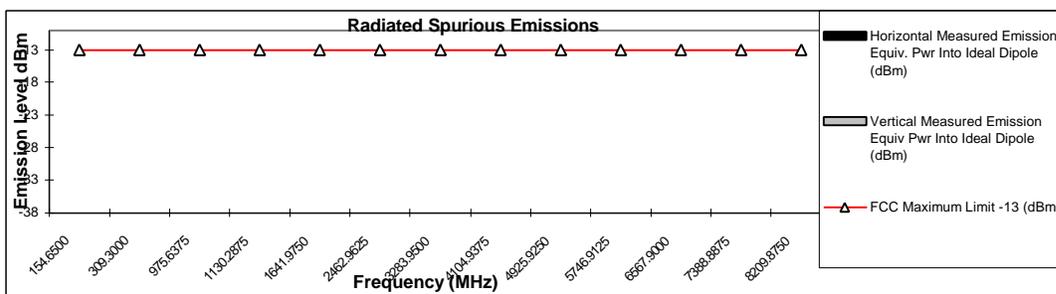
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	975.6375	-13	<-38	<-38
IF+LO	1130.2875	-13	<-38	<-38
2X FUND	1641.9750	-13	<-38	<-38
3X FUND	2462.9625	-13	<-38	-34.56
4X FUND	3283.9500	-13	-37.75	-35.33
5X FUND	4104.9375	-13	<-38	<-38
6X FUND	4925.9250	-13	<-38	<-38
7X FUND	5746.9125	-13	<-38	<-38
8X FUND	6567.9000	-13	<-38	<-38
9X FUND	7388.8875	-13	<-38	<-38
10XFUND	8209.8750	-13	<-38	<-38



Transmitter Radiated Spurious Emissions (Minimum Power Setting)

820.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	<-38	<-38
2XIF	309.3000	-13	<-38	<-38
LO	975.6375	-13	<-38	<-38
IF+LO	1130.2875	-13	<-38	<-38
2X FUND	1641.9750	-13	<-38	<-38
3X FUND	2462.9625	-13	<-38	<-38
4X FUND	3283.9500	-13	<-38	<-38
5X FUND	4104.9375	-13	<-38	<-38
6X FUND	4925.9250	-13	<-38	<-38
7X FUND	5746.9125	-13	<-38	<-38
8X FUND	6567.9000	-13	<-38	<-38
9X FUND	7388.8875	-13	<-38	<-38
10XFUND	8209.8750	-13	<-38	<-38



* Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Figure 6-33: Radiated Emissions – Alternate U500 Emissions at 820.9875 MHz