

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 and tested at four frequencies within the transmit band.

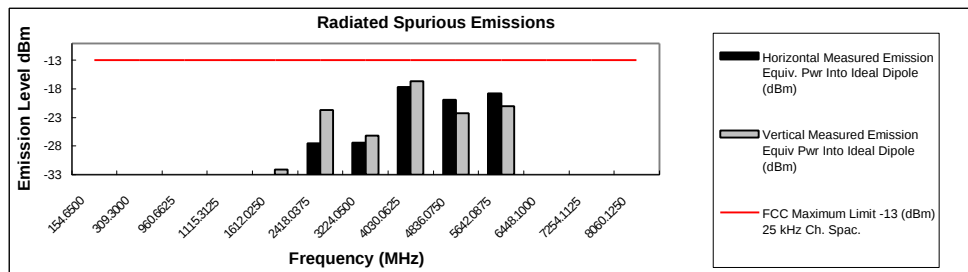
NOTE 2: Spurious emissions are independent of modulation type. Quad-16QAM was used to obtain the results reported.

NOTE 3: Emissions more than 20dB below the limit are not reported.

Transmitter Radiated Spurious Emissions (Maximum Power Setting)

806.0125MHz

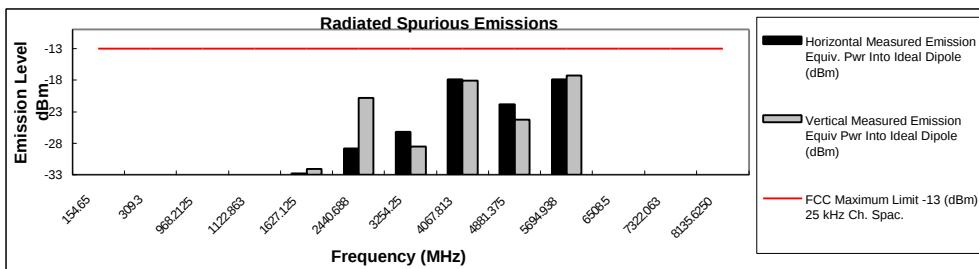
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	960.6625	-13	*	*
IF+LO	1115.3125	-13	*	*
2X FUND	1612.0250	-13	*	-32.04
3X FUND	2418.0375	-13	-27.49	-21.68
4X FUND	3224.0500	-13	-27.40	-26.13
5X FUND	4030.0625	-13	-17.63	-16.66
6X FUND	4836.0750	-13	-19.83	-22.29
7X FUND	5642.0875	-13	-18.73	-21.06
8X FUND	6448.1000	-13	*	*
9X FUND	7254.1125	-13	*	*
10X FUND	8060.1250	-13	*	*



Transmitter Radiated Spurious Emissions (Maximum Power Setting)

813.5625MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.65	-13	*	*
2XIF	309.3	-13	*	*
LO	968.2125	-13	*	*
IF+LO	1122.8625	-13	*	*
2X FUND	1627.125	-13	-32.80	-31.99
3X FUND	2440.6875	-13	-28.81	-20.77
4X FUND	3254.25	-13	-26.14	-28.56
5X FUND	4067.8125	-13	-17.87	-18.03
6X FUND	4881.375	-13	-21.76	-24.26
7X FUND	5694.9375	-13	-17.85	-17.25
8X FUND	6508.5	-13	*	*
9X FUND	7322.0625	-13	*	*
10X FUND	8135.6250	-13	*	*

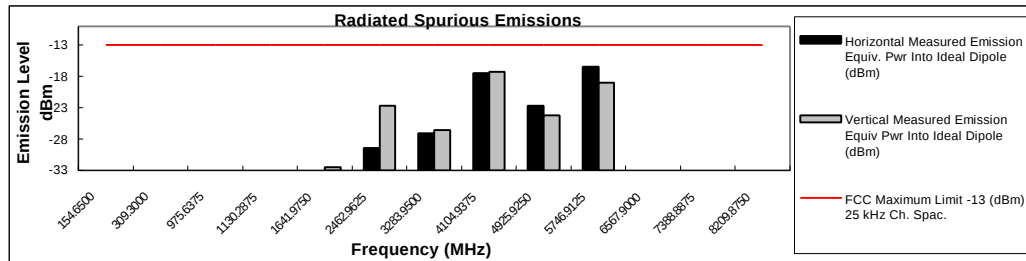


* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

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

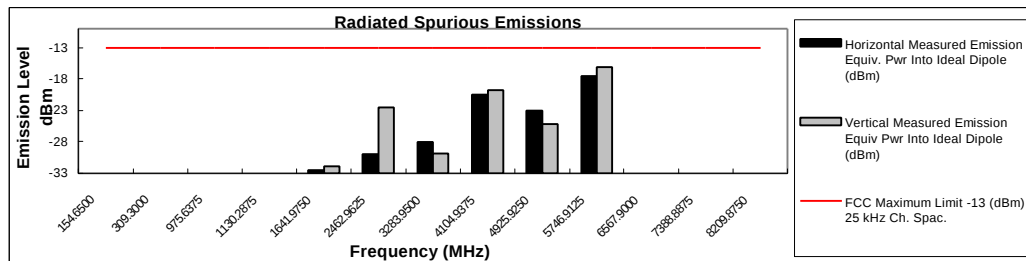
Transmitter Radiated Spurious Emissions (Maximum Power Setting) 820.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	975.6375	-13	*	*
IF+LO	1130.2875	-13	*	*
2X FUND	1641.9750	-13	*	-32.48
3X FUND	2462.9625	-13	-29.44	-22.71
4X FUND	3283.9500	-13	-27.05	-26.57
5X FUND	4104.9375	-13	-17.44	-17.24
6X FUND	4925.9250	-13	-22.65	-24.26
7X FUND	5746.9125	-13	-16.40	-19.00
8X FUND	6567.9000	-13	*	*
9X FUND	7388.8875	-13	*	*
10X FUND	8209.8750	-13	*	*



Transmitter Radiated Spurious Emissions (Maximum Power Setting) 824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	979.6375	-13	*	*
IF+LO	1134.2875	-13	*	*
2X FUND	1649.9750	-13	-32.55	-31.93
3X FUND	2474.9625	-13	-29.99	-22.50
4X FUND	3299.9500	-13	-28.04	-29.83
5X FUND	4124.9375	-13	-20.47	-19.74
6X FUND	4949.9250	-13	-23.03	-25.19
7X FUND	5774.9125	-13	-17.56	-16.15
8X FUND	6599.9000	-13	*	*
9X FUND	7424.8875	-13	*	*
10X FUND	8249.8750	-13	*	*

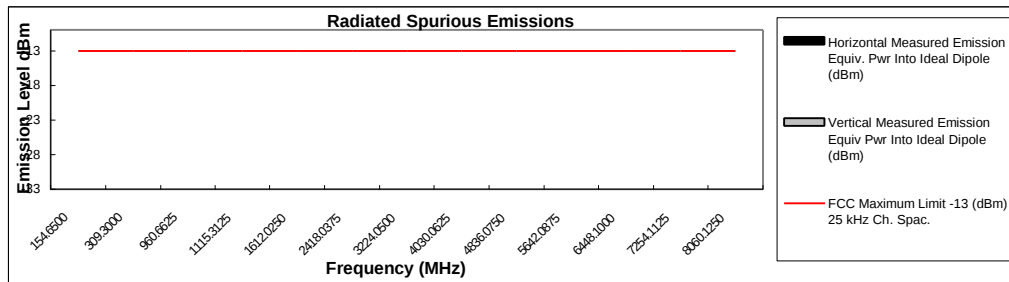


* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

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

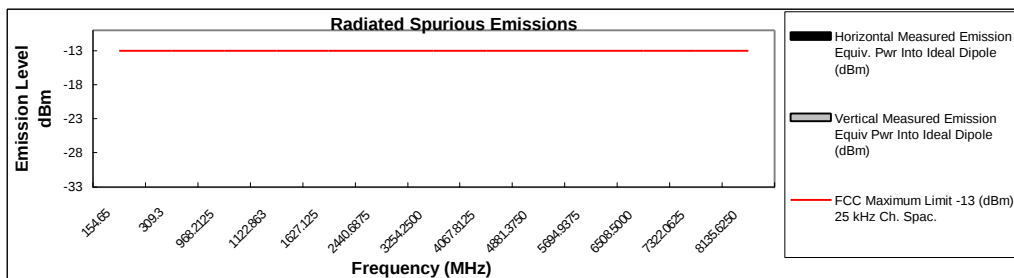
Transmitter Radiated Spurious Emissions (Minimum Power Setting)
806.0125 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	960.6625	-13	*	*
IF+LO	1115.3125	-13	*	*
2X FUND	1612.0250	-13	*	*
3X FUND	2418.0375	-13	*	*
4X FUND	3224.0500	-13	*	*
5X FUND	4030.0625	-13	*	*
6X FUND	4836.0750	-13	*	*
7X FUND	5642.0875	-13	*	*
8X FUND	6448.1000	-13	*	*
9X FUND	7254.1125	-13	*	*
10X FUND	8060.1250	-13	*	*



Transmitter Radiated Spurious Emissions (Minimum Power Setting)
813.5625MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.65	-13	*	*
2XIF	309.3	-13	*	*
LO	968.2125	-13	*	*
IF+LO	1122.8625	-13	*	*
2X FUND	1627.125	-13	*	*
3X FUND	2440.6875	-13	*	*
4X FUND	3254.2500	-13	*	*
5X FUND	4067.8125	-13	*	*
6X FUND	4881.3750	-13	*	*
7X FUND	5694.9375	-13	*	*
8X FUND	6508.5000	-13	*	*
9X FUND	7322.0625	-13	*	*
10X FUND	8135.6250	-13	*	*



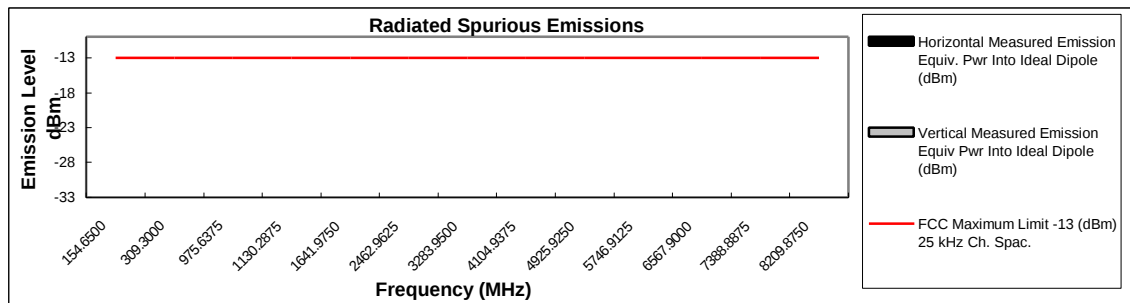
* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

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

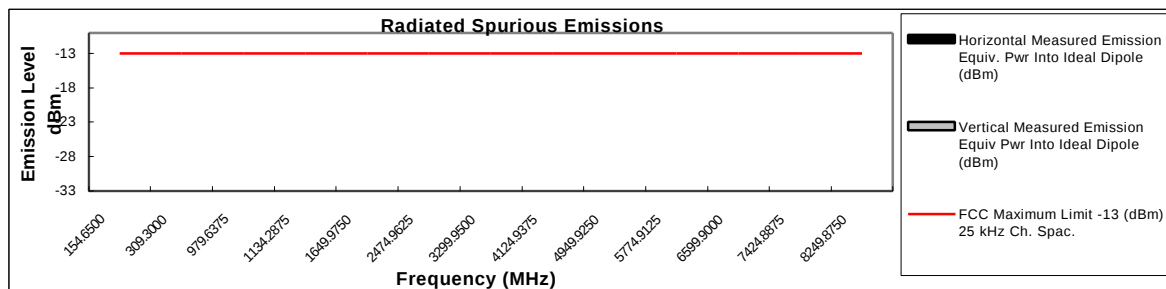
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	975.6375	-13	*	*
IF+LO	1130.2875	-13	*	*
2X FUND	1641.9750	-13	*	*
3X FUND	2462.9625	-13	*	*
4X FUND	3283.9500	-13	*	*
5X FUND	4104.9375	-13	*	*
6X FUND	4925.9250	-13	*	*
7X FUND	5746.9125	-13	*	*
8X FUND	6567.9000	-13	*	*
9X FUND	7388.8875	-13	*	*
10X FUND	8209.8750	-13	*	*



Transmitter Radiated Spurious Emissions (Minimum Power Setting)

824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	979.6375	-13	*	*
IF+LO	1134.2875	-13	*	*
2X FUND	1649.9750	-13	*	*
3X FUND	2474.9625	-13	*	*
4X FUND	3299.9500	-13	*	*
5X FUND	4124.9375	-13	*	*
6X FUND	4949.9250	-13	*	*
7X FUND	5774.9125	-13	*	*
8X FUND	6599.9000	-13	*	*
9X FUND	7424.8875	-13	*	*
10X FUND	8249.8750	-13	*	*



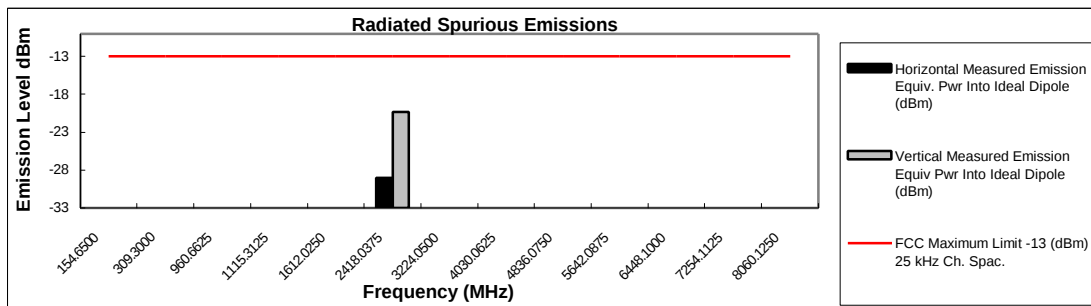
* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

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

Transmitter Radiated Spurious Emissions (Maximum Power Setting)

806.0125 MHz

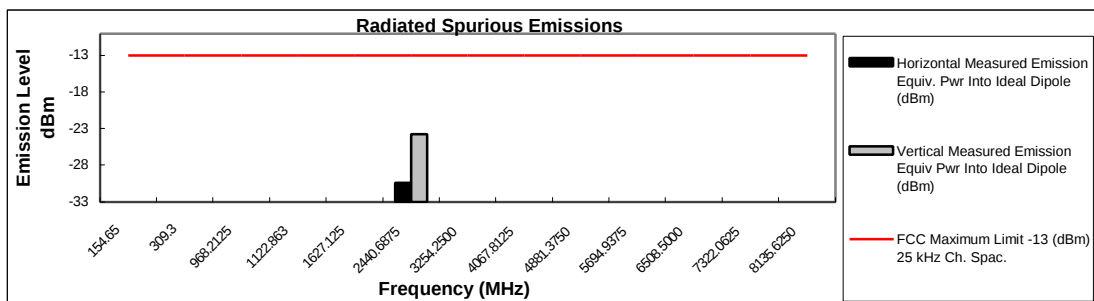
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	960.6625	-13	*	*
IF+LO	1115.3125	-13	*	*
2X FUND	1612.0250	-13	*	*
3X FUND	2418.0375	-13	-28.97	-20.33
4X FUND	3224.0500	-13	*	*
5X FUND	4030.0625	-13	*	*
6X FUND	4836.0750	-13	*	*
7X FUND	5642.0875	-13	*	*
8X FUND	6448.1000	-13	*	*
9X FUND	7254.1125	-13	*	*
10X FUND	8060.1250	-13	*	*



Transmitter Radiated Spurious Emissions (Maximum Power Setting)

813.5625 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.65	-13	*	*
2XIF	309.3	-13	*	*
LO	968.2125	-13	*	*
IF+LO	1122.8625	-13	*	*
2X FUND	1627.125	-13	*	*
3X FUND	2440.6875	-13	-30.37	-23.78
4X FUND	3254.2500	-13	*	*
5X FUND	4067.8125	-13	*	*
6X FUND	4881.3750	-13	*	*
7X FUND	5694.9375	-13	*	*
8X FUND	6508.5000	-13	*	*
9X FUND	7322.0625	-13	*	*
10X FUND	8135.6250	-13	*	*



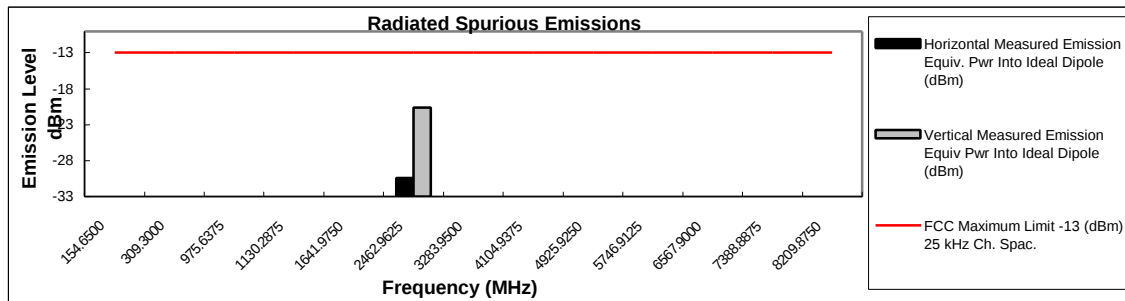
* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

Figure 6-33: Radiated Emissions – Alternate U500 Emissions at 806.0125 and 813.5625 MHz

Transmitter Radiated Spurious Emissions (Maximum Power Setting)

820.9875 MHz

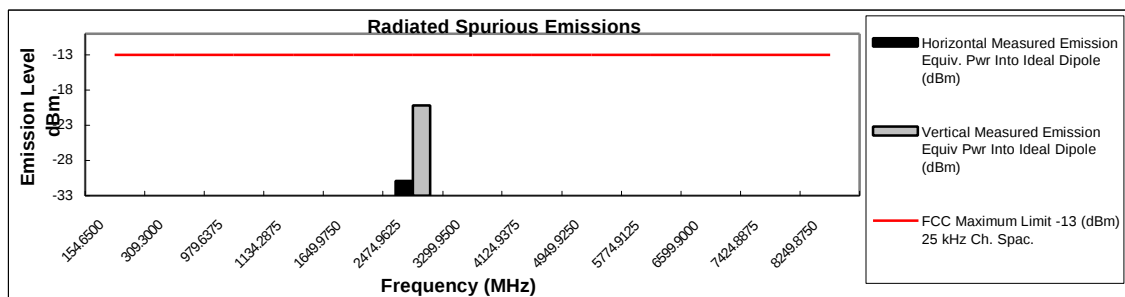
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	975.6375	-13	*	*
IF+LO	1130.2875	-13	*	*
2X FUND	1641.9750	-13	*	*
3X FUND	2462.9625	-13	-30.40	-20.69
4X FUND	3283.9500	-13	*	*
5X FUND	4104.9375	-13	*	*
6X FUND	4925.9250	-13	*	*
7X FUND	5746.9125	-13	*	*
8X FUND	6567.9000	-13	*	*
9X FUND	7388.8875	-13	*	*
10X FUND	8209.8750	-13	*	*



Transmitter Radiated Spurious Emissions (Maximum Power Setting)

824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	979.6375	-13	*	*
IF+LO	1134.2875	-13	*	*
2X FUND	1649.9750	-13	*	*
3X FUND	2474.9625	-13	-30.94	-20.22
4X FUND	3299.9500	-13	*	*
5X FUND	4124.9375	-13	*	*
6X FUND	4949.9250	-13	*	*
7X FUND	5774.9125	-13	*	*
8X FUND	6599.9000	-13	*	*
9X FUND	7424.8875	-13	*	*
10X FUND	8249.8750	-13	*	*



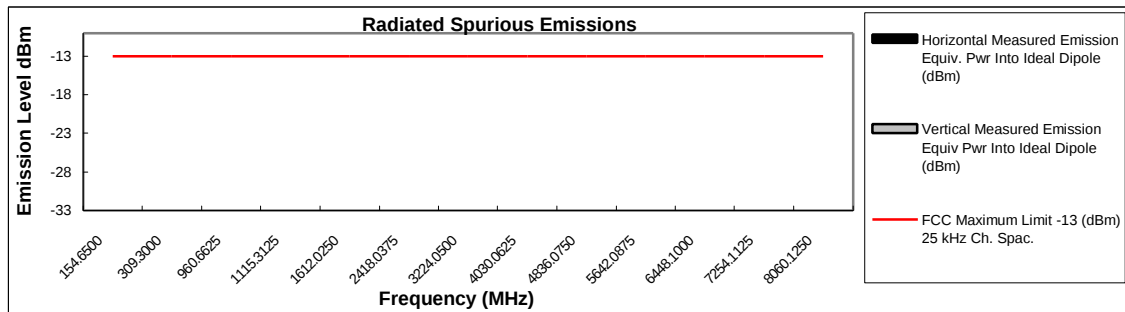
* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

Figure 6-34: Radiated Emissions – Alternate U500 Emissions at 820.9875 and 824.9875 MHz

Transmitter Radiated Spurious Emissions (Minimum Power Setting)

806.0125 MHz

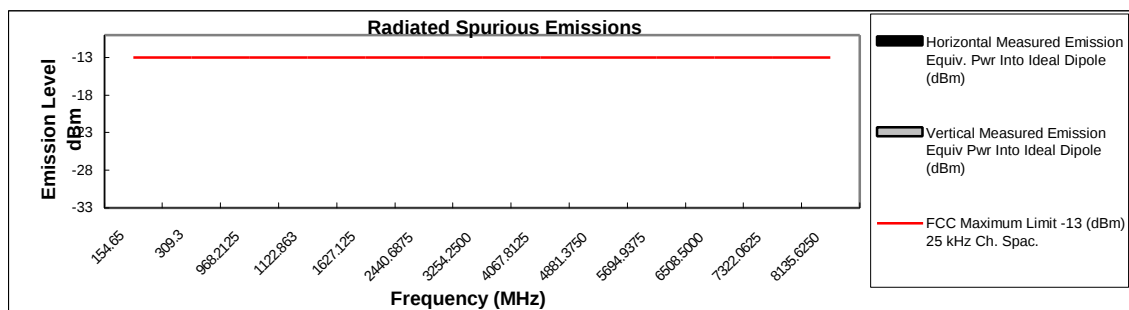
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	960.6625	-13	*	*
IF+LO	1115.3125	-13	*	*
2X FUND	1612.0250	-13	*	*
3X FUND	2418.0375	-13	*	*
4X FUND	3224.0500	-13	*	*
5X FUND	4030.0625	-13	*	*
6X FUND	4836.0750	-13	*	*
7X FUND	5642.0875	-13	*	*
8X FUND	6448.1000	-13	*	*
9X FUND	7254.1125	-13	*	*
10X FUND	8060.1250	-13	*	*



Transmitter Radiated Spurious Emissions (Minimum Power Setting)

813.5625MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.65	-13	*	*
2XIF	309.3	-13	*	*
LO	968.2125	-13	*	*
IF+LO	1122.8625	-13	*	*
2X FUND	1627.125	-13	*	*
3X FUND	2440.6875	-13	*	*
4X FUND	3254.2500	-13	*	*
5X FUND	4067.8125	-13	*	*
6X FUND	4881.3750	-13	*	*
7X FUND	5694.9375	-13	*	*
8X FUND	6508.5000	-13	*	*
9X FUND	7322.0625	-13	*	*
10X FUND	8135.6250	-13	*	*



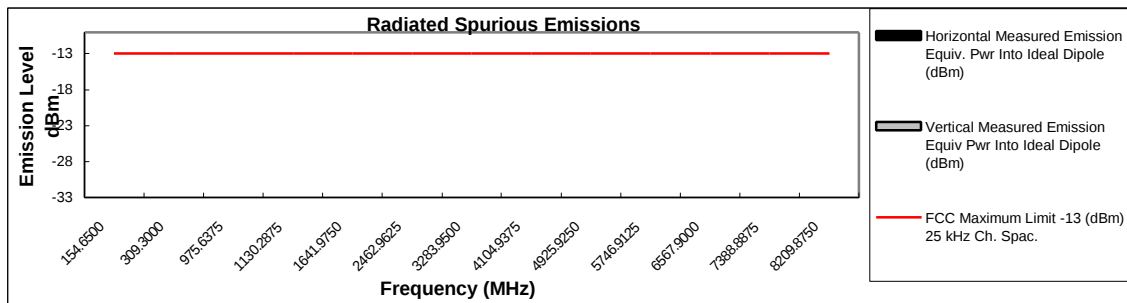
* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

Figure 6-35: Radiated Emissions – Alternate U500 Emissions at 806.0125 and 813.5625 MHz

Transmitter Radiated Spurious Emissions (Minimum Power Setting)

820.9875 MHz

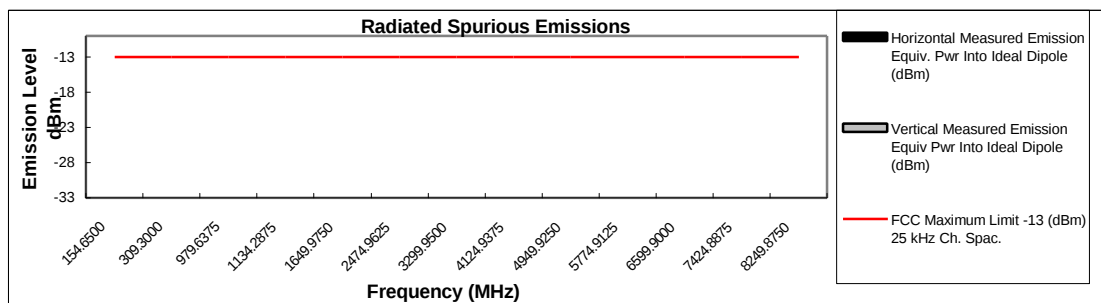
Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	975.6375	-13	*	*
IF+LO	1130.2875	-13	*	*
2X FUND	1641.9750	-13	*	*
3X FUND	2462.9625	-13	*	*
4X FUND	3283.9500	-13	*	*
5X FUND	4104.9375	-13	*	*
6X FUND	4925.9250	-13	*	*
7X FUND	5746.9125	-13	*	*
8X FUND	6567.9000	-13	*	*
9X FUND	7388.8875	-13	*	*
10X FUND	8209.8750	-13	*	*



Transmitter Radiated Spurious Emissions (Minimum Power Setting)

824.9875 MHz

Spur	Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
IF	154.6500	-13	*	*
2XIF	309.3000	-13	*	*
LO	979.6375	-13	*	*
IF+LO	1134.2875	-13	*	*
2X FUND	1649.9750	-13	*	*
3X FUND	2474.9625	-13	*	*
4X FUND	3299.9500	-13	*	*
5X FUND	4124.9375	-13	*	*
6X FUND	4949.9250	-13	*	*
7X FUND	5774.9125	-13	*	*
8X FUND	6599.9000	-13	*	*
9X FUND	7424.8875	-13	*	*
10X FUND	8249.8750	-13	*	*



* Indicates the spurious emission was less than -33dBm or could not be detected due to noise limitations or ambients.

Figure 6-36: Radiated Emissions – Alternate U500 Emissions at 820.9875 and 824.9875 MHz