

Agilent 12:15:52 Oct 7, 2005

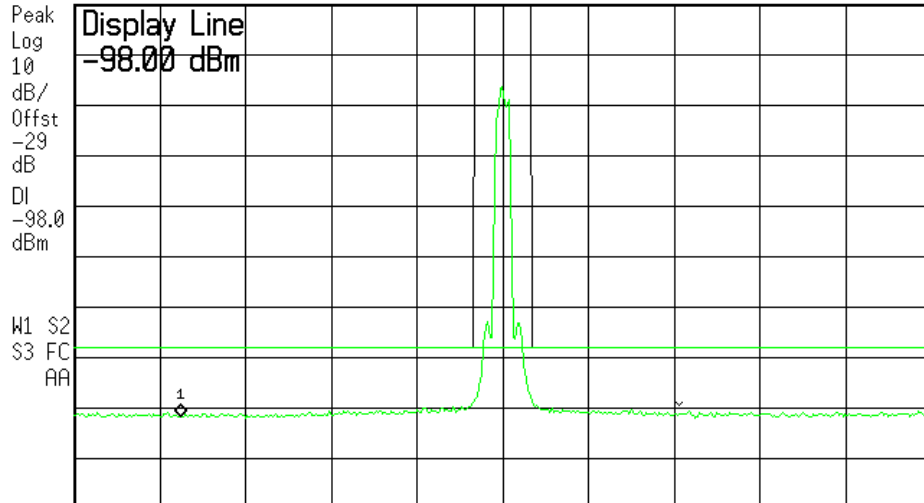
Figure 7

Ref -30 dBm

\*Atten 20 dB

Mkr1 2.2775 GHz

-111.6 dBm



Center 2.353 GHz

\*Res BW 30 kHz

\*VBW 300 Hz

Span 200 MHz

\*Sweep 20 s (401 pts)

FIGURE 7

Agilent 11:54:08 Sep 30, 2005

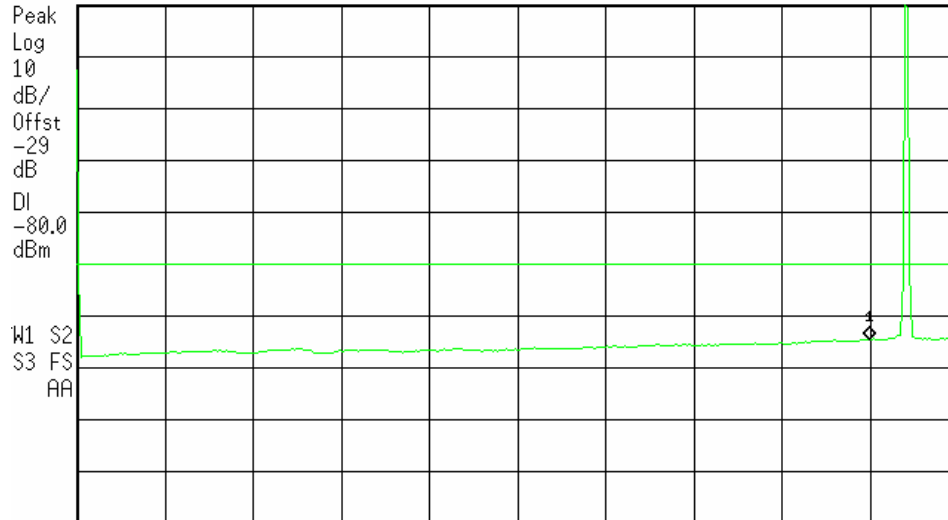
Figure 8

Ref -30 dBm

\*Atten 15 dB

Mkr1 2.250 GHz

-94.47 dBm



Start 1 MHz

\*Res BW 1 MHz

\*VBW 1 kHz

Stop 2.5 GHz

Sweep 2.03 s (401 pts)

FIGURE 8

Agilent 12:37:17 Sep 30, 2005

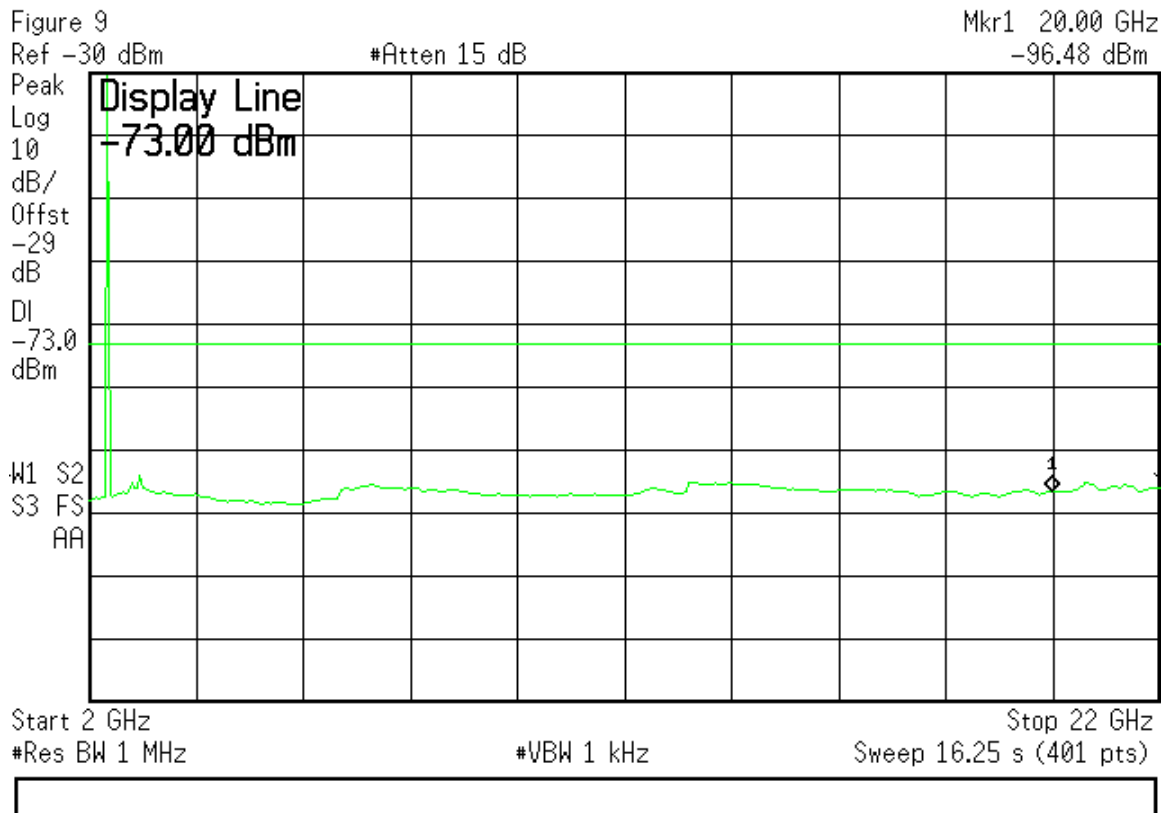


FIGURE 9

## 2.983 FIELD OF SPURIOUS RADIATION

The spectrum emissions of the equipment were measured in an anechoic chamber at a distance of 3 meters. Measurements were made with the receiving antenna mounted both horizontally and vertically.

Considering the transmitter as a dipole radiator, the field intensity for a given power at a given distance can be expressed as:

$$E = 10 \log ( ( P \times 30 \times G)/R^2 )$$

Where:        E = field intensity in dBV/m  
                  P = transmitter mean output power (+32 dBm = 2 watts)  
                  G = dipole antenna gain (1.64)  
                  R = radius (3 meters)

$$E = 10 \log ( ( 2 \times 30 \times 1.64)/9 ) = 10.5 \text{ dBv/m} = 130.5 \text{ dBuV/m}$$

Part 27.53 specifies that emissions below 2300 MHz and above 2370 MHz must be attenuated from the transmitter power by:

$$A = 70 + 10 \text{ LOG } (p) = 70 + 10 \text{ LOG } (2) = 73 \text{ dB}$$

Therefore, the maximum allowable spurious emissions at 3 meters are:

$$E = 130.5 \text{ dBuV/m} - 73 \text{ dB} = 57.5 \text{ dBuV/m}$$

Measurements were made using a 1 MHz resolution bandwidth and the levels of significant (greater than 35 dBuV/m) spurious emissions were recorded.

The significant spurious emissions found are as follows:

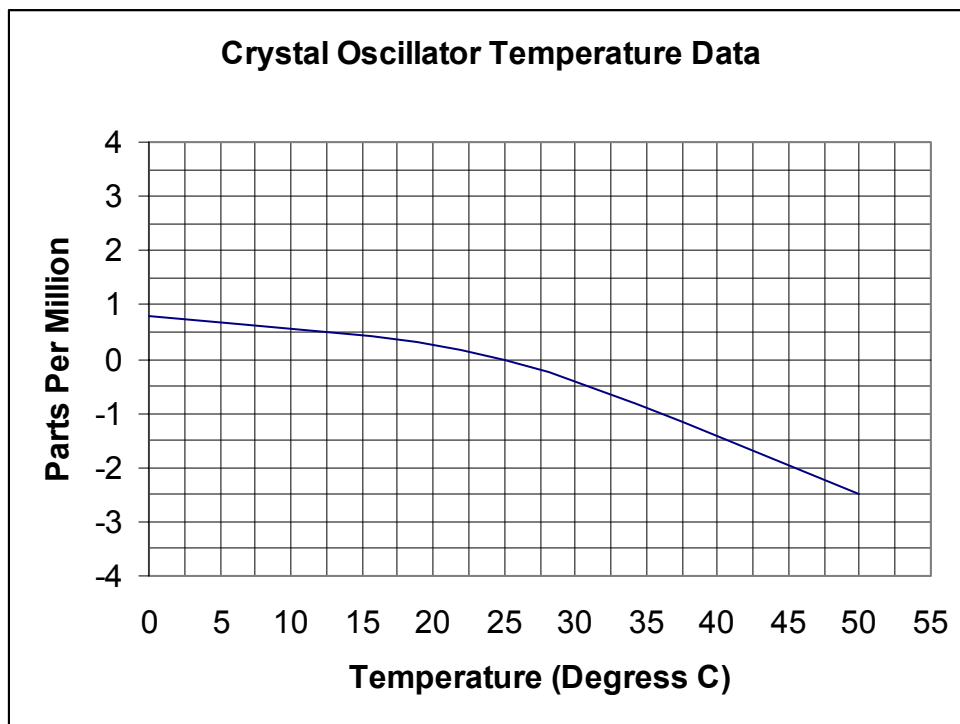
| Freq    | Peak  | AF   | Horizontal |           | Limit (3m) | Delta |
|---------|-------|------|------------|-----------|------------|-------|
|         |       |      | Gain       | Corrected |            |       |
| 72.85   | 52.8  | 6.9  | 25         | 34.7      | 49.6       | 14.90 |
| 121     | 45.5  | 7.9  | 25         | 28.4      | 54         | 25.60 |
| 145.4   | 51.5  | 8.5  | 25         | 35        | 54         | 19.00 |
| 148.23  | 52.1  | 8.9  | 25         | 36        | 56.9       | 20.90 |
| 169.6   | 58.1  | 9.7  | 25         | 42.8      | 56.9       | 14.10 |
| 218.2   | 56.8  | 11.3 | 25         | 43.1      | 56.9       | 13.80 |
| 266.9   | 45.7  | 12.8 | 25         | 33.5      | 56.9       | 23.40 |
| 274.9   | 53.4  | 13.1 | 25         | 41.5      | 56.9       | 15.40 |
| 290.85  | 46.7  | 13.6 | 25         | 35.3      | 56.9       | 21.60 |
| 296.4   | 55.4  | 14.1 | 25         | 44.5      | 56.9       | 12.40 |
| 315.1   | 47.2  | 14.7 | 25         | 36.9      | 56.9       | 20.00 |
| 336.07  | 50.8  | 15   | 25         | 40.8      | 56.9       | 16.10 |
| 339.175 | 54.6  | 15   | 25         | 44.6      | 56.9       | 12.30 |
| 345.675 | 60.1  | 15.4 | 25         | 50.5      | 56.9       | 6.40  |
| 363.875 | 55.6  | 15.7 | 25         | 46.3      | 56.9       | 10.60 |
| 395.2   | 56    | 16.4 | 25         | 47.4      | 56.9       | 9.50  |
| 411.95  | 52.8  | 16.4 | 25         | 44.2      | 56.9       | 12.70 |
| 436.32  | 48.3  | 16.4 | 25         | 39.7      | 56.9       | 17.20 |
| 509.12  | 46.7  | 18   | 25         | 39.7      | 56.9       | 17.20 |
| 592.33  | 50.5  | 19.8 | 25         | 45.3      | 60         | 14.70 |
| 630.7   | 43.1  | 21   | 25         | 39.1      | 60         | 20.90 |
| 655     | 48.9  | 20.8 | 25         | 44.7      | 60         | 15.30 |
| 825     | 47.7  | 22.3 | 25         | 45        | 60         | 15.00 |
| 2036    | 40.15 | 21.5 | 12.5       | 49.15     | 60         | 10.85 |

No significant spurious emissions were found above 10 GHz.

## 2.989 FREQUENCY STABILITY

The transmit source that is used is a crystal oscillator operating in the 125 MHz range and multiplied up to the operating frequency.

Two sources were tested over a temperature range of 0 to + 50 degrees C and the largest deviation over the specified temperature range was +/- 4 PPM, which is adequate to maintain the transmit spectrum within the desired band of operation as per FCC Part 27.54.



The sources were also tested over the range of the DC input voltage and no significant variation in the frequency was observed.