

Band Edge Measurement

Don Umbdenstock
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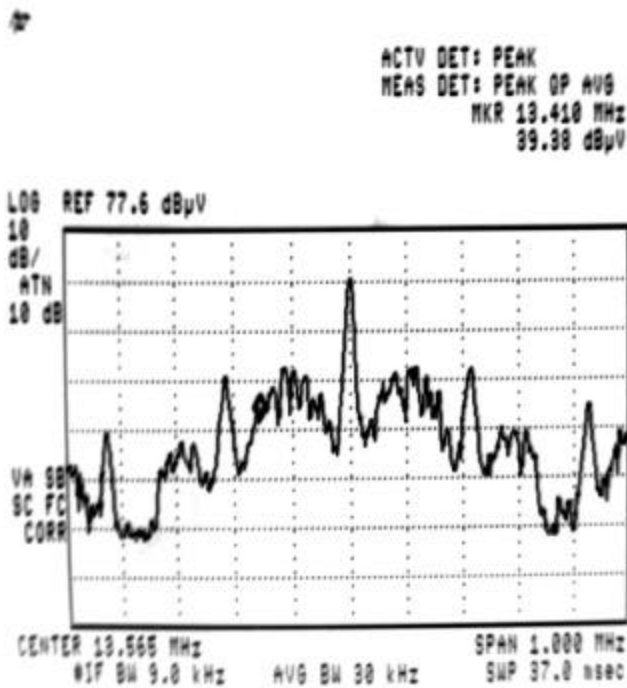
The “marker high” function was used to establish the fundamental frequency. “Marker center frequency” was used to center the emission in the display, thus indicating a center frequency of 13.565 MHz. The relative level of the carrier is 67.6 dB. The marker was then positioned at 13.41 MHz, the high side of the restricted band. The level indicated at the marker is 39.4 dB or -28.2 dBc.

Comparing restricted band data to the data previously submitted for the carrier (attached on the following page for your convenience), we see that the restricted band edge level is

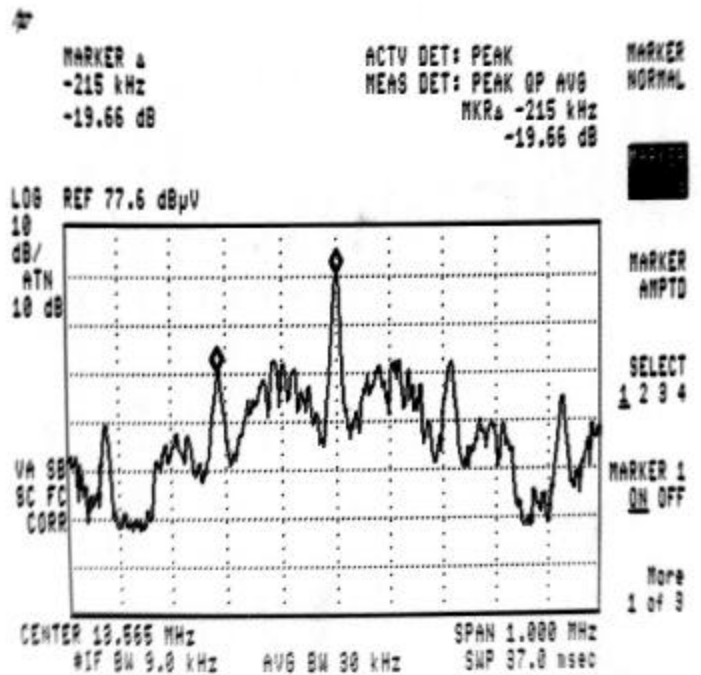
$$39.9 - 28.2 = 11.2 \text{ dBuV/m @ 30m}$$

The limit is 30 uV/m or 29.5 dBuV/m @ 30m; therefore there is a margin of 18.3 dB.

The restricted band edge closest to 13.56 is located at 13.41 MHz. The highest low-side out-of-band signal occurs at 13.345 MHz, or 215 kHz below the carrier, out side of the restricted band.



Band-Edge Measurement



Out-Of-Band Measurement

Part B Radiated Emissions

Date Tested: 01/24/01

GemPlus Reader was placed on 1m high tabletop. (A box concrete block was placed on tabletop). An apc/8X panel (placed on turntable) powered the reader at 120vac 60hz for FCC readings. A plug-in transformer was used to power the reader at 230vac50hz for ETSI readings. The loop antenna (ALP70 N-S orientation used) was placed on tripod 1m from floor to center of loop for FCC measurements and 1m from floor to bottom of loop for ETSI. A Bicon (EMCO 3110B s/n 3380 E-W orientation) was used for frequencies above 30Mhz. 1-4m v/h. A distance of 3m was maintained between antenna and EUT.

Engineer: Ray Kozak

EMC Staff: S. Krizmanich, D. J. Umbdenstock

FCC Data

| Freq | S.A. | Det | BW | Ant Fac | DCF | Reading | Limit | Test Dist |
|--------|------|-----|------|---------|-------|---------|--------|-----------|
| MHz | dB | | | dBuV/m | dB | dBuV/m | dBuV/m | m |
| 13.56 | 22.9 | pk | 9kHz | 37 | -20.0 | 39.9 | 80 | 30 |
| 27.12 | nf | pk | 9kHz | 36 | -20.0 | nf | 30 | 30 |
| 40.68 | 21.0 | pk | 9kHz | * | 0 | 21 | 40 | 3 |
| 54.24 | nf | pk | 9kHz | * | 0 | nf | 40 | 3 |
| 67.80 | nf | pk | 9kHz | * | 0 | nf | 40 | 3 |
| 81.36 | nf | pk | 9kHz | * | 0 | nf | 40 | 3 |
| 94.92 | amb | pk | 9kHz | * | 0 | amb | 40 | 3 |
| 108.48 | amb | pk | 9kHz | * | 0 | amb | 40 | 3 |
| 122.04 | amb | pk | 9kHz | * | 0 | amb | 40 | 3 |
| 135.60 | amb | pk | 9kHz | * | 0 | amb | 40 | 3 |

*programmed into spectrum analyzer

nf: not found (noise floor)