

OCCUPIED BANDWIDTH

Modulation Type: Sub-carriers modulated with 6400 bps random 4 level FSK data (symbol deviations: +/-2400 Hz for outer, +/- 800 Hz for inner).
 Modulation Designator: 38K0F2D, 18K0F2D, 8K00F1D
 Channelization: 50 KHz

SPECIFICATION REQUIREMENT:

The power of any emission shall be attenuated below the transmitter power (P), {as measured in terms of the maximum power, averaged over a 100ms interval, when measured with instrumentation calibrated in terms of an rms-equivalent voltage with a resolution bandwidth equal to or greater than the authorized bandwidth}, in accordance with the following schedule:

On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (fd in KHz) of:

a) up to and including 40 KHz: $116\text{LOG}_{10}((fd+10)/6.1)$ dB or $[50 + 10\text{LOG}_{10}(P)]$ dB or 70 dB, whichever is the lesser attenuation.

Note the following calculations:

$50+10\text{LOG}_{10}(125)=70.97$ dB

@ fd=0 Hz $116\text{LOG}_{10}((10)/6.1)=24.9$ dB

@ fd=14.5 KHz $116\text{LOG}_{10}((24.5)/6.1)=70.0$ dB

@ fd=40 KHz $116\text{LOG}_{10}((50)/6.1)=106.0$ dB

Therefore the OBW Mask will follow the following format:

fd=0 Hz to fd=14.5 KHz $116\text{LOG}_{10}((fd+10)/6.1)$ dBc

fd=14.5 KHz to fd=40 KHz 70 dBc

b) more than 40 KHz: $43+10\text{LOG}_{10}(P)$ dB or 80 dB, whichever is the lesser attenuation.

Note the following calculation:

$43+10\text{LOG}_{10}(125)=64$ dB

Therefore the OBW Mask will follow the following format:

fd=40 KHz or greater 70 dBc

CALIBRATION STEPS:

The zero dB reference point for the Mask was set by integrating the total power in the 50 KHz bandwidth using the following steps

- The Resolution Bandwidth of the Spectrum Analyzer was set to 100 KHz
- The Sweep rate was set to 10 Sec
- Measure the peak of the waveform.
- Set the Reference value of the Spectrum Analyzer to the peak value measured in step c above.

** Reference Plot 10F-7 and 10F-12