

Re: FCC ID MIJMILCPE-USA-01
Applicant: Motorola GSTG
Correspondence Reference Number: 11125
731 Confirmation Number: EA95366
Date of Original E-Mail: 12/20/1999
Date of Response: 1/5/2000

- 1.) *Please show the highest and lowest operating frequency that will satisfy the emissions limitations / mask. Note that a spectrum analyzer resolution bandwidth of 1 MHz is specified in Section 101.111(a)(2)(ii).*

RESPONSE:

The frequencies that are to be used by the Millitech Band A CPE's are as follows:

- 31.0833 GHz
- 31.0845 GHz
- 31.0857 GHz

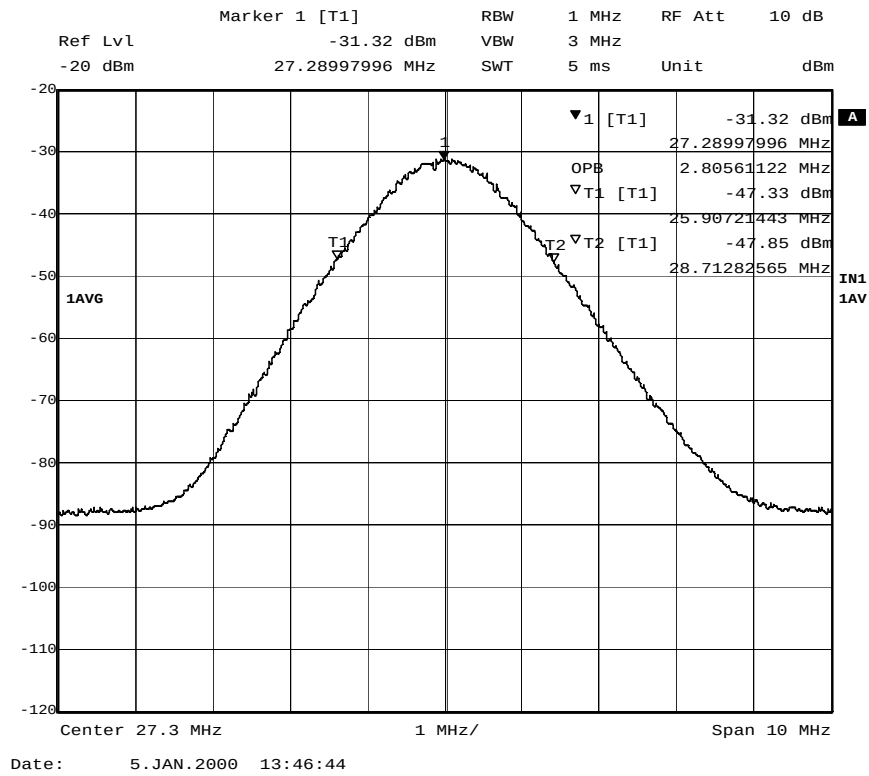
These CPE's were built for a specific site installation and are not to be used at any other locations or with any other frequencies of operations. None of the listed frequencies are near the edges of the allocated band (31.075 and 31.225 GHz).

Future Motorola LMDS equipment will more fully utilize the allocated frequency spectrum. For these equipment, emission limitation/masks will be measured at the highest and lowest operating frequency of the equipment.

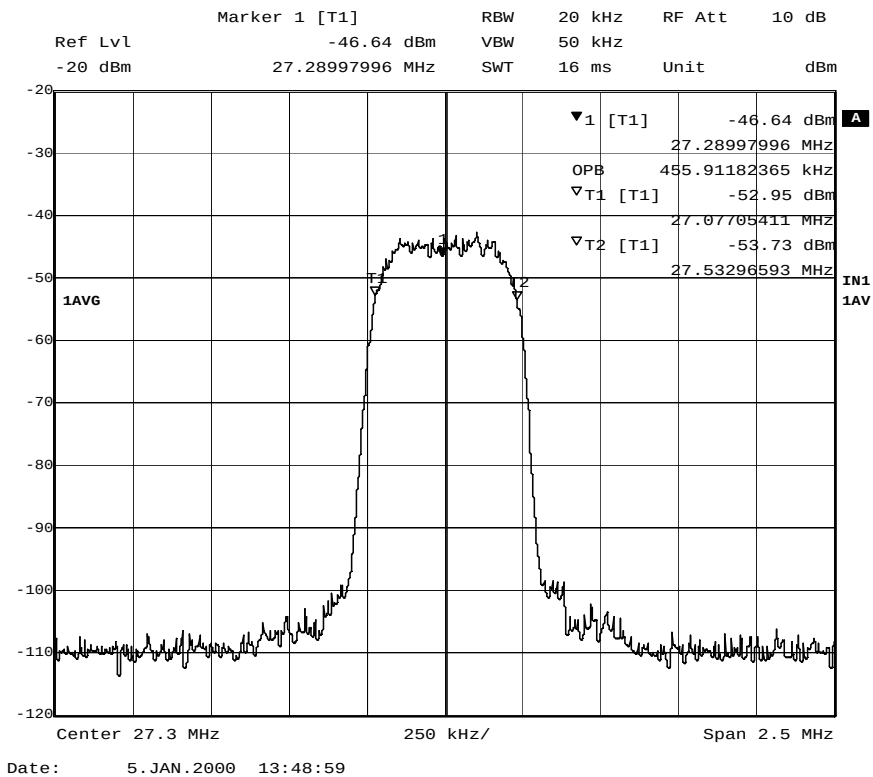
- 2.) *Please provide a determination of necessary or occupied bandwidth.*

RESPONSE:

The necessary or occupied bandwidth for the CPE is determined by the Data over Cable Interface System Specification (DOCSIS). The modulation used for the cable modem's is 16QUAM at a symbol rate of 384kS/s with a filter alpha of 0.35. The following graphs are the measured occupied bandwidth at the output of the signal generator used to supply the IF input to the CPE. The first graph is measured with a 1 MHz resolution bandwidth. The second graph is measured with a 20 kHz resolution bandwidth to better demonstrate the true spectral shape of the modulation.



Occupied bandwidth measured with a 1 MHz resolution bandwidth.



Occupied bandwidth measured with a 20 kHz resolution bandwidth.

- 3.) Please supply measurement data showing the relative levels of spurious emissions at the output terminals as required by Section 2.1051 of the Commission's R&R.

RESPONSE:

At the time of test, the Millitech CPE antenna could not be removed for purposes of conducted spurious emission tests. Therefore, all tests were performed in a radiated mode. One spurious radiated emissions was detected and measured at 30.865 GHz (See Figure 9.3-1 of Exhibit 9). The second harmonic radiated emissions was also detected and measured at 56.286 GHz (See Figure 9.3-2 of Exhibit 9).

- 4.) Please provide measurement data showing the transmitter frequency stability for variations in temperature over the range -30 to +50 degrees C at 10 degree C intervals as required by Section 2.1055(b) of the Commission's R&R.

RESPONSE:

The CPE that was tested is no longer available for additional testing. The following table is the measured frequency stability data taken on a similar CPE (FCC ID: MIJTELCPE-USB-01). The frequency stability control for both CPE's are identical.

f_0	31.235220 GHz		% Error		FCC Limit
°C	f @ -15% rated voltage in GHz	f @ +15% rated voltage in GHz	% Error @ -15% rated voltage	% Error @ +15% rated voltage	
-30	31.23522040	31.23522033	0.00000128%	0.00000106%	0.001%
-20	31.23522033	31.23522037	0.00000106%	0.00000118%	0.001%
-10	31.23522027	31.23522030	0.00000086%	0.00000096%	0.001%
0	31.23522040	31.23522033	0.00000128%	0.00000106%	0.001%
10	31.23522027	31.23522040	0.00000086%	0.00000128%	0.001%
20	31.23522027	31.23522030	0.00000086%	0.00000096%	0.001%
30	31.23522033	31.23522027	0.00000106%	0.00000086%	0.001%
40	31.23522033	31.23522033	0.00000106%	0.00000106%	0.001%
50	31.23522030	31.23522033	0.00000096%	0.00000106%	0.001%