EXHIBIT 10

Conducted Spurious Emissions

Exhibit Summary:

EXHIBIT 10 contains measurement data pertaining to conducted spurious emissions. As indicated on the chart, some spur levels were reported using Motorola's proposed "Brickwall Filter" technique. This technique is outlined in the included letter that was sent to Julius Knapp of the FCC. This measurement method is intended to overcome limitations caused by non-ideal filter roll-off within the measurement equipment (spectrum analyzer). For each spur level reported using this technique, the associated level measured using the FCC method per Part 24.238 is reported in the included table. In addition, at spurs located 1 Mhz away from the band edge, the level recorded using the 1 % occupied bandwidth or greater requirement is also listed.

Contents:

Measurement Procedure:

The following steps outline the procedure used to measure the conducted emissions from the mobile station.

1. Determine frequency range for measurements: From CFR 2.997 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 19.1 GHz, data taken from 10 MHz to 20 GHz.

2. Determine mobile station transmit frequencies: Table 10.1 below outlines the band edge frequencies pertinent to conducted emissions testing.

USPCS Channel	Transmitter Frequency
512	1850.2 MHz
810	1909.8 MHz

Table 10.1: transmit frequencies for conducted emissions testing.

The carrier frequencies for each of the 200 Khz wide channels of the USPCS transmit band (1850 to 1910 Mhz) begins with the first channel 0.2 Mhz higher than the lower band edge, at 1850.2 Mhz for channel number 512, and ends with the last channel 0.2 Mhz lower than the upper band edge, at 1909.8 Mhz for channel number 810.

3. Measure attenuator and cable losses:

   a) Connect a TX bandpass filter and nominal 20 dB attenuator together, and place cables at input of the filter and output of the attenuator.
   b) Using a signal generator and power meter, calculate the loss through the filter, attenuator and cables at each of the frequencies listed in Table 10.1. Use these measurements to properly set the spectrum analyzer amplitude offset.
   c) Repeat the measurements on the cables and filter only, without the attenuator. This provides the spectrum analyzer offset for the minimum power case.

4. Connect test set-up:

   a) If measuring at max. mobile station output power (+30 dBm for the band edge frequencies of interest) connect the filter, attenuator and cable network measured in 3. above from the output of the mobile station to the input of the spectrum analyzer.

b) If measuring at min. output power (+10 dBm) connect the filter and cable network (no attenuator) measured in 3. above from the output of the mobile station to the input of the spectrum analyzer.

5. Power up Mobile Station:

a) Tune to desired frequency.
b) Set desired output power.
c) Modulate carrier with the mobile station's internal pseudo random data sequence.

6. Set appropriate spectrum analyzer offset level to account for input attenuator using values measured in 3. above.

7. Measure spectrum:

a) In the 1st 1 MHz band outside the band edge nearest the channel of interest use a 3 KHz res. bw.
b) In the 2nd and 3rd 1 MHz bands outside the band edge nearest the channel of interest use the brickwall technique with 3 KHz res. bw. and integrate the power in the two 1 MHz bands. The 3 MHz cut-off was determined from the spectrum analyzer filter plot shown on page 12. At 3 MHz from the carrier, the filter attenuation is sufficient enough to guarantee against non-compliance readings.
c) From 3 MHz outside the band edge nearest the channel of interest to the End use 1 MHz res. bw.

8. Repeat 5. through 7. for each carrier frequency listed in Table 10.1.

9. Repeat procedure for both min. and max. power settings.

Measurement Limit:

Sec. 24.238 Emission Limits.

(a) On any frequency outside frequency band of the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

Measurement Results:

Conducted Emissions Measurements were made only at the extreme upper and lower carrier frequencies of the USPCS band. It was decided that measurements at these block edge frequencies would be sufficient to demonstrate compliance with emissions limits. The equipment must still, however, meet emissions requirements at all frequencies over which the equipment is designed to operate and it is the manufacturer's responsibility to verify this.

Measurement results are listed below in Tables 10.2 and 10.3 and Figures 10.1 through 10.4. In each of the following charts the emission level reported is the level of the spurious emission of largest magnitude found within the specified frequency window whether the mobile station was transmitting at either high or low power.

Carrier: 1850.2 Mhz (Channel 512)

Frequency	Emissions Level	Method Used
10 MHz - 1846 MHz	-32.18dBm @1711.96 MHz	FCC
1846 MHz - 1847 MHz	-20.83 dBm, See Plot pg. 5	FCC
1847 MHz - 1848 MHz	-36.2 dBm	Brickwall Filter
1848 MHz - 1849 MHz	-31.67 dBm	Brickwall Filter
1849 MHz - 1850 MHz	-17.0 dBm, See Plot pg. 5	FCC
1910 MHz - 20 GHz	-27.0 dBm @ 5550 MHz	FCC

Table 10.2: Conducted emissions results for a 1850.2 MHz carrier.

Carrier: 1909.8 Mhz (Channel 810)

Frequency	Emissions Level	Method Used
10MHz - 1850MHz	-25dBm@1.773GHz	FCC
1910 MHz - 1911 MHz	-16.17 dBm, See Plot pg. 6	FCC
1911MHz - 1912MHz	-32.83dBm@1911.182MHz	Brickwall Filter
1912 MHz - 1913 MHz	-28.3 dBm	Brickwall Filter
1913 MHz - 1914 MHz	-15.83 dBm, See Plot pg. 6	FCC
1914 MHz - 20 GHz	-31.33 dBm @ 3819 MHz	FCC

Table 10.3: Conducted emissions results for a 1909.8 MHz carrier.

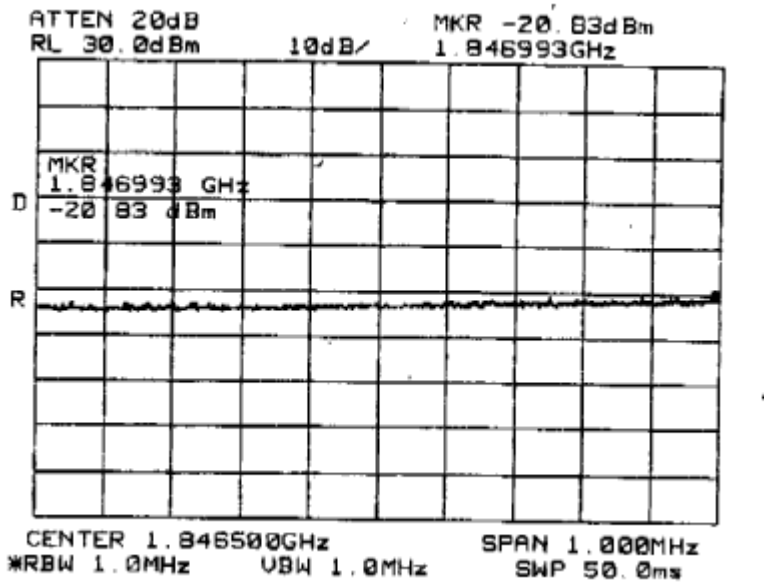

Figure 10.1: Carrier 1850.2 MHz, Spectrum 1846 to 1847 MHz.

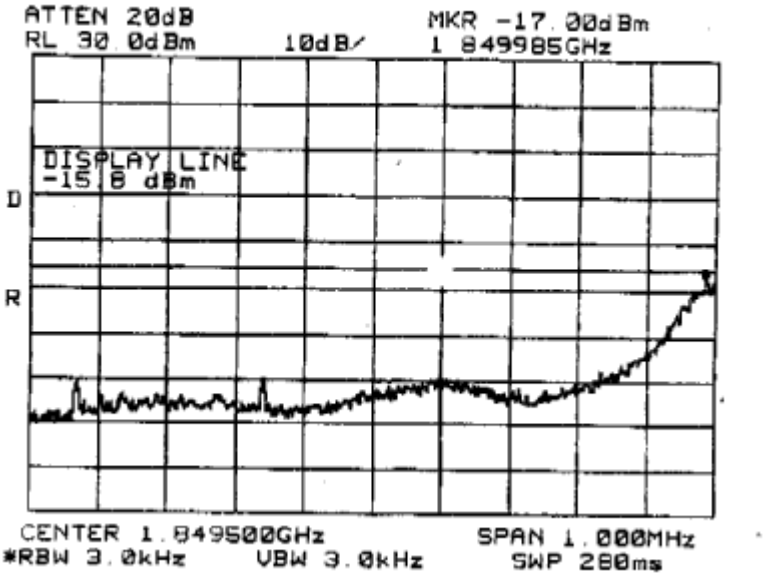

Figure 10.2: Carrier 1850.2 MHz, Spectrum 1849 to 1850MHz.

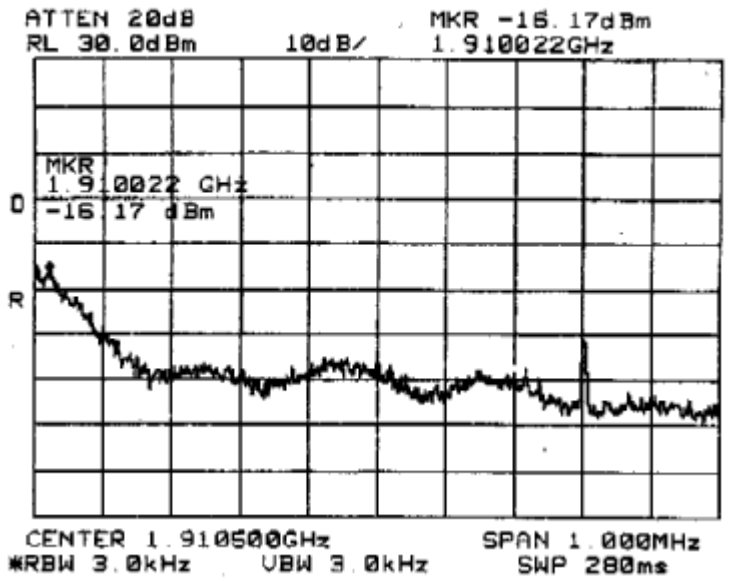

Figure 10.3: Carrier 1909.8 MHz, Spectrum 1910 to 1911 MHz.

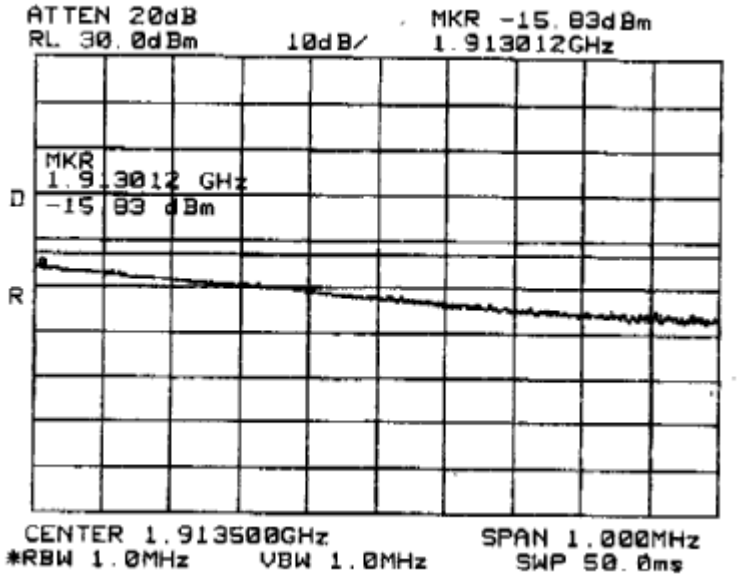

Figure 10.4: Carrier 1909.8 MHz, Spectrum 1913 to 1914 MHz.

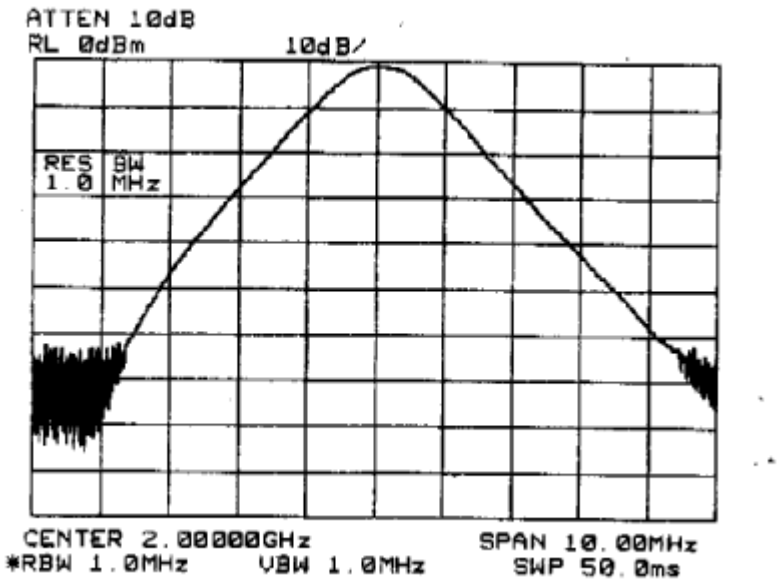

Figure 10.4: Spectrum Analyzer 1 MHz Resolution Bandwidth Filter Response.

FEDERAL COMMUNICATIONS COMMISSION
Equipment Authorization Division
7435 Oakland Mills Road
Columbia, MD 21046
Telephone: (301) 725-1585
Facsimile: (301) 344-2050
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In Reply Refer To:
File 21010.94/1
120082

Wiley, Rein & Fielding
1776 K Street, N. W.
Washington, D. C. 20006

Attention: Mr. David E. Hilliard

Dear Mr. Hilliard:

This refers to your letter of January 25, 1995 concerning the measurement procedure for out of band emissions produced by broadband PCS transmitting equipment.

As referenced in your letter, Section 24.238 of the Commission's Rules and Regulations requires that out of band emissions be attenuated at least 43 + 10Log(P) or 60 dB, whichever is the lesser attenuation. Section 24.238(a) allows the use of a resolution bandwidth of at least 1% of the fundamental emission bandwidth in the 1 MHz bands immediately outside and adjacent to the desired frequency block. Compliance for emissions more than +/- 1 MHz beyond the band edge is to be determined by a measurement resolution bandwidth of 1 MHz or greater.

As indicated in your letter, the reality of the effective resolution bandwidth and variances in measurement instrumentation brands and design creates the possibility that a reading with an instrument set at 1 MHz outside the band edge will include some emissions from within the desired and authorized frequency block. You have proposed that measurements to show the aggregate of emissions in a 1 MHz band be acceptable. These would be made by continuing the use of the 1% resolution bandwidth value and summing the emissions in sliding 1 MHz blocks.

We agree that such a method may be used to show the integrated power in 1 MHz segments. Readings should be displayed at intervals corresponding to the 1% resolution bandwidth increments. The use of a 1 MHz resolution bandwidth setting on the spectrum analyzer must begin when it is demonstrated that the roll-off of the resolution bandwidth skirts is sufficient to reject emissions in the desired frequency

Mr. David Hilliard

block so that false readings of non-compliance are avoided. This would mean, in effect, that the resolution bandwidth filter skirts should be down to a degree equal to or greater than the 40 + 10Log(P), or 60 dB, specification, as appropriate. Thus in order to justify this alternative measurement technique, the test report, description of the technique and data must include a plot of the resolution bandwidth shape, i.e. roll-off, for the actual instrument used to obtain the readings.

Sincerely,

Julius P. Knapp, Chief
Equipment Authorization Division