Exhibit 6: Test Report

TEST REPORT FROM:

COMMUNICATION CERTIFICATION LABORATORY
1940 W. Alexander Street
Salt Lake City, UT 84119-2039
U.S.A.

Tel: (801) 972-6146
Fax: (801) 972-8432

TEST OF: PCD2000

To Part 2 Subpart J and Part 22 Subpart H
of the FCC Rules and Regulations

Test Report Serial No: 73-6493

APPLICATION FOR TYPE ACCEPTANCE:

AMPS Cellular Phone

Mobile Station Transmitter

Applicant:

Uniden Engineering Services
216 John Street
P.O. Box 580
Lake City, SC 29560

Issue Date: July 14, 1998

Dates of Test: June 22 – July 8, 1998

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Communication Certification Laboratory to verify compliance of the device described below with the requirements to Part 2 Subpart J and Part 22 Subpart H of the FCC Rules and Regulations. This report may be reproduced in full, partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: Uniden Engineering Services
- Model Number: PCD2000
- FCC ID: AMWUH046
- Brand Name: UNIDEN

On this 14th day of July, 1998, I, individually, and for Communication Certification Laboratory, certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

COMMUNICATION CERTIFICATION LABORATORY

_____
Checked by: Anh T. Wride
Telecom Engineering Director

_____
Tested by: Roger J. Midgley
EMC Engineering Manager

SECTION 1. Measurement Requirements

1.1 Introduction

The following data is submitted for Type Acceptance of a cellular phone for Uniden Engineering Services, in accordance with part 2, Subpart J and Part 22, Subpart H of FCC Rules and Regulations. The measurements were performed in accordance with the requirements of § 2.947, § 22.913, § 22.915, § 22.917, § 22.355 and OST Bulletin No. 53 (Cellular System Compatibility Specification).

1.2 Measurements Required for Type Acceptance

§ 2.985 (§ 22.913) RF Power Output

A mobile station transmitter must be capable of reducing power in steps of 4 dB on command from a land station. Each power level must be maintained within the range of +2 dB and -4 dB of its nominal level over the ambient temperature range of -30^0 C to $+60^0$ C.

Due to wide frequency range, which the phone may operate, measurements were performed on a channel near the bottom, on a channel near the middle and on a channel near the top of the spectrum.

§ 2.987 (§ 22.915) Modulation Characteristics

Cellular systems must be capable of providing service using the types of modulation described in the cellular system compatibility specification.

(a) Non-voice modulating signals. Modulating signals other than voice signals, such as data signals, may be transmitted, provided the resulting modulated emission exhibits spectral characteristics not exceeding those resulting from voice modulation.

(b) Modulation levels. The levels of the modulation signals must be set to the values specified in this paragraph and must be maintained within $\pm$10% of those values.
(1) The instantaneous frequency deviation resulting from the main modulating signal must be $\pm$12 kHz.
(2) The instantaneous frequency deviation resulting from the supervisory audio tones must be $\pm$2 kHz.

(3) The instantaneous frequency deviation resulting from the signaling tone must be ±8 kHz.
(4) The instantaneous frequency deviation resulting from the wideband data signals must be ±8 kHz.

(c) Deviation limitation circuitry. Cellular transmitters must be equipped with circuitry that automatically prevents modulation levels for voice transmissions from exceeding the limits specified in this section.

(d) Audio filter characteristics. Except as provided in §22.917, radiotelephony signals applied to the modulator from the modulation limiter must be attenuated must be attenuated as a function of frequency as specified in this paragraph.
(1) For mobile stations, these signals must be attenuated, relative to the level at 1 kHz, as follows.
(i) In the frequency range of 3.0 to 5.9 kHz and 6.1 to 15.0 kHz, signals must be attenuated at least 40 log (f÷3) dB, where f is the frequency of the signal in kHz.
(ii) In the frequency range of 5.9 to 6.1 kHz, signals must be attenuated at least 35 dB.
(iii) In the frequency range above 15 kHz, signals must be attenuated at least 28 dB.

Result:

The results of the modulation deviation testing are shown in section 2.2 and the test procedures are described in Appendix 1.

§ 2.989 Occupied Bandwidth

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

(c) Radiotelephone transmitters equipped with a device to limit modulation or peak envelope power shall be modulated as follows. For single sideband and independent sideband transmitters, the input level of the modulation signal shall be 10 dB greater than that necessary to produce rated peak envelope power.

(1) Other than sideband or independent sideband transmitters – when modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. The input level shall be established at the frequency of maximum response of the audio modulation circuit.

Result:

The results of the occupied bandwidth testing are shown in Section 2.3 and the test procedures are described in Appendix 1.

§ 2.991 (§ 22.917) Spurious Emissions at Antenna Terminals

§ 22.917 (b) Conducted Spurious Emissions (F3E/F3D emission mask with audio filter)

For F3E and F3D emissions, except as provided in paragraph (c) of this section, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz: at least 26 dB.

(2) On any frequency removed from the carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency: at least 60 dB or 43 + 10 log P dB, whichever is the lesser attenuation.

Result:

The frequency range from 30 MHz to the first multiple of the carrier frequency was investigated to measure any antenna-conducted emissions.

Shown in Tables 2 through 10 (Section 2.3) are the emission levels from 30 MHz to 45 kHz below the carrier frequency and from 45 kHz above the carrier frequency to the first multiple of the carrier frequency. Shown in Plots 1 through 8 are the emissions/occupied bandwidth from 45 kHz below the carrier frequency to 45 kHz above the carrier frequency. These plots show the PCD2000 tuned to the lower channel, the results with the PCD2000 tuned to the upper channel were the same.

§ 22.917 (d) Conducted Spurious Emissions (F1D emission mask)

For F1D emissions, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz: at least 26 dB.

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz: at least 45 dB.

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency: at least 60 dB or 43 + 10 log P dB, whichever is the lesser attenuation.

Result:

The frequency range from 30 MHz to the first multiple of the carrier frequency was investigated to measure any antenna-conducted emissions.

Shown in Tables 2 through 10 (Section 2.3) are the emission levels from 30 MHz to 45 kHz below the carrier frequency and from 45 kHz above the carrier frequency to the first multiple of the carrier frequency. Shown in Plot 9 is the emissions/occupied bandwidth from 45 kHz below the carrier frequency to 45 kHz above the carrier frequency. This plot shows the PCD2000 tuned to the lower channel, the results with the PCD2000 tuned to the upper channel were the same.

§ 22.917 (e) Conducted Spurious Emissions (Out of band emissions)

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB.

Result:

The frequency range from the first multiple of the carrier frequency to the tenth harmonic was investigated to measure any antenna-conducted emissions.

Shown in Tables 2 through 10 (Section 2.3) are the emission levels from the first multiple of the carrier frequency to the tenth harmonic.

§ 22.917 (f) Conducted Spurious Emissions (Mobile emission in base frequency range)

The mean power of emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not to exceed –80 dBm at the transmit antenna connector.

Result:

The frequency range from 869.04 MHz to 893.97 MHz was investigated to measure any antenna-conducted emissions within the base frequency range.

Shown in Table 1 (Section 2.3) are the emission levels from 869.04 MHz to 893.97 MHz.

§ 2.993 (§ 22.917) Field Strength of Spurious Radiation

Field strength measurements of radiated spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements must not exceed 43 + 10log (mean output power in watts) below the unmodulated carrier.

The reference level for spurious radiation was taken at an ideal dipole excited by the rated output power according to the following relationship:

$$E = \frac{\sqrt{(49.2)(Pt)}}{R}$$

Note: Reference Data for Radio Engineers, Pg. 676. International Telephone and Telephone Corporation, Fourth Edition.

Where E = electric Field Intensity in Volts/Meter
Pt = Transmitter Power in Watts
R = Measurements distance in Meters

At a maximum power of 0.363 Watts

$$E = \frac{\sqrt{(49.2)(0.363)}}{3} = 1.4\ Volts/Meter = 122.9\ dB\mu V/m$$

Paragraph 22.917 requires that spurious radiated emission be attenuated at least 43 + 10 log (mean output power in watts)

below the unmodulated carrier. In this case, the rated power of 0.363 watts requires a minimum attenuation of 43 + 10 log 0.363 = 38.5 dB below the reference level of 122.9 $dB\mu V/m$ calculated above; therefore, the criteria is 84.4 $db\mu V/m$ (122.9 – 38.5).

Result:

The results of the radiated spurious emissions testing are shown in section 2.4 and the test procedures are described in Appendix 1.

§ 2.995 (§ 22.355) Frequency Stability

The carrier frequency of the transmitter shall be maintained within 2.5 Parts Per Million (PPM) from the assigned frequency over the ambient temperature range of -30^0 C to $+60^0$ C, and over the supply voltage range of $\pm$10 % from the nominal value at $+20^0$ C.

Result:

The results of the frequency stability testing are shown in section 2.5 and the test procedures are described in Appendix 1.

SECTION 2. Measurement Data

2.1 RF Power Output

Channel # 1 (825.03 MHz)
-30^{0} C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.3	-2.7
5.83	1	-2	28	25.3	-2.7
5.83	2	-2	28	25.3	-2.7
5.83	3	-6	24	22.6	-1.4
5.83	4	-10	20	18.5	-1.5
5.83	5	-14	16	14.1	-1.9
5.83	6	-18	12	9.1	-2.9
5.83	7	-22	8	4.2	-3.8
5.30	0	-2	28	25.4	-2.6
5.30	1	-2	28	25.3	-2.7
5.30	2	-2	28	25.3	-2.7
5.30	3	-6	24	22.6	-1.4
5.30	4	-10	20	18.5	-1.5
5.30	5	-14	16	14.1	-1.9
5.30	6	-18	12	9.1	-2.9
5.30	7	-22	8	4.2	-3.8
4.77	0	-2	28	25.3	-2.7
4.77	1	-2	28	25.3	-2.7
4.77	2	-2	28	25.3	-2.7
4.77	3	-6	24	22.6	-1.4
4.77	4	-10	20	18.5	-1.5
4.77	5	-14	16	14.1	-1.9
4.77	6	-18	12	9.1	-2.9
4.77	7	-22	8	4.2	-3.8

Channel # 333 (834.99 MHz)
-30^0 C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.1	-2.9
5.83	1	-2	28	25.1	-2.9
5.83	2	-2	28	25.1	-2.9
5.83	3	-6	24	22.4	-1.6
5.83	4	-10	20	18.3	-1.7
5.83	5	-14	16	14.1	-1.9
5.83	6	-18	12	9.2	-2.8
5.83	7	-22	8	5.1	-2.9
5.30	0	-2	28	25.1	-2.9
5.30	1	-2	28	25.1	-2.9
5.30	2	-2	28	25.2	-2.8
5.30	3	-6	24	22.4	-1.6
5.30	4	-10	20	18.2	-1.8
5.30	5	-14	16	14.1	-1.9
5.30	6	-18	12	9.1	-2.9
5.30	7	-22	8	5.1	-2.9
4.77	0	-2	28	25.1	-2.9
4.77	1	-2	28	25.2	-2.8
4.77	2	-2	28	25.1	-2.9
4.77	3	-6	24	22.4	-1.6
4.77	4	-10	20	18.2	-1.8
4.77	5	-14	16	14.2	-1.8
4.77	6	-18	12	9.2	-2.8
4.77	7	-22	8	5.2	-2.8

Channel # 666 (844.98 MHz)
-30^0 C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	24.9	-3.1
5.83	1	-2	28	24.9	-3.1
5.83	2	-2	28	24.9	-3.1
5.83	3	-6	24	22.3	-1.7
5.83	4	-10	20	18.2	-1.8
5.83	5	-14	16	14.2	-1.8
5.83	6	-18	12	9.1	-2.9
5.83	7	-22	8	5.7	-2.3
5.30	0	-2	28	24.9	-3.1
5.30	1	-2	28	24.9	-3.1
5.30	2	-2	28	24.9	-3.1
5.30	3	-6	24	22.4	-1.6
5.30	4	-10	20	18.2	-1.8
5.30	5	-14	16	14.2	-1.8
5.30	6	-18	12	9.2	-2.8
5.30	7	-22	8	5.6	-2.4
4.77	0	-2	28	24.9	-3.1
4.77	1	-2	28	24.9	-3.1
4.77	2	-2	28	24.9	-3.1
4.77	3	-6	24	22.4	-1.6
4.77	4	-10	20	18.2	-1.8
4.77	5	-14	16	14.2	-1.8
4.77	6	-18	12	9.2	-2.8
4.77	7	-22	8	5.7	-2.3

Channel # 1 (825.03 MHz)
$+20^{0}$ C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.6	-2.4
5.83	1	-2	28	25.6	-2.4
5.83	2	-2	28	25.6	-2.4
5.83	3	-6	24	23.1	-0.9
5.83	4	-10	20	19.2	-0.8
5.83	5	-14	16	14.9	-1.1
5.83	6	-18	12	10.8	-1.2
5.83	7	-22	8	6.8	-1.2
5.30	0	-2	28	25.6	-2.4
5.30	1	-2	28	25.6	-2.4
5.30	2	-2	28	25.6	-2.4
5.30	3	-6	24	23.2	-0.8
5.30	4	-10	20	19.1	-0.9
5.30	5	-14	16	14.9	-1.1
5.30	6	-18	12	10.9	-1.1
5.30	7	-22	8	6.9	-1.1
4.77	0	-2	28	25.6	-2.4
4.77	1	-2	28	25.6	-2.4
4.77	2	-2	28	25.6	-2.4
4.77	3	-6	24	23.1	-0.9
4.77	4	-10	20	19.1	-0.9
4.77	5	-14	16	14.9	-1.1
4.77	6	-18	12	10.8	-1.2
4.77	7	-22	8	6.9	-1.1

Channel # 333 (834.99 MHz)
$+20^{0}$ C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.1	-2.9
5.83	1	-2	28	25.1	-2.9
5.83	2	-2	28	25.1	-2.9
5.83	3	-6	24	22.6	-1.4
5.83	4	-10	20	18.6	-1.4
5.83	5	-14	16	14.3	-1.7
5.83	6	-18	12	9.8	-2.2
5.83	7	-22	8	5.7	-2.3
5.30	0	-2	28	25.1	-2.9
5.30	1	-2	28	25.1	-2.9
5.30	2	-2	28	25.1	-2.9
5.30	3	-6	24	22.5	-1.5
5.30	4	-10	20	18.7	-1.3
5.30	5	-14	16	14.3	-1.7
5.30	6	-18	12	9.9	-2.1
5.30	7	-22	8	5.8	-2.2
4.77	0	-2	28	25.1	-2.9
4.77	1	-2	28	25.1	-2.9
4.77	2	-2	28	25.1	-2.9
4.77	3	-6	24	22.5	-1.5
4.77	4	-10	20	18.6	-1.4
4.77	5	-14	16	14.3	-1.7
4.77	6	-18	12	9.9	-2.1
4.77	7	-22	8	5.7	-2.3

Channel # 666 (844.98 MHz)
$+20^{0}$ C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.1	-2.9
5.83	1	-2	28	25.1	-2.9
5.83	2	-2	28	25.1	-2.9
5.83	3	-6	24	22.7	-1.3
5.83	4	-10	20	18.8	-1.2
5.83	5	-14	16	14.8	-1.2
5.83	6	-18	12	10.5	-1.5
5.83	7	-22	8	6.8	-1.2
5.30	0	-2	28	25.1	-2.9
5.30	1	-2	28	25.1	-2.9
5.30	2	-2	28	25.1	-2.9
5.30	3	-6	24	22.6	-1.4
5.30	4	-10	20	18.9	-1.1
5.30	5	-14	16	14.9	-1.1
5.30	6	-18	12	10.6	-1.4
5.30	7	-22	8	6.9	-1.1
4.77	0	-2	28	25.1	-2.9
4.77	1	-2	28	25.1	-2.9
4.77	2	-2	28	25.1	-2.9
4.77	3	-6	24	22.6	-1.4
4.77	4	-10	20	18.8	-1.2
4.77	5	-14	16	14.9	-1.1
4.77	6	-18	12	10.5	-1.5
4.77	7	-22	8	6.9	-1.1

Channel # 1 (825.03 MHz)
$+60^{0}$ C

Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	25.5	-2.5
5.83	1	-2	28	25.5	-2.5
5.83	2	-2	28	25.5	-2.5
5.83	3	-6	24	23.1	-0.9
5.83	4	-10	20	19.2	-0.8
5.83	5	-14	16	15.4	-0.6
5.83	6	-18	12	11.6	-0.4
5.83	7	-22	8	8.1	0.1
5.30	0	-2	28	25.5	-2.5
5.30	1	-2	28	25.5	-2.5
5.30	2	-2	28	25.5	-2.5
5.30	3	-6	24	23.1	-0.9
5.30	4	-10	20	19.2	-0.8
5.30	5	-14	16	15.4	-0.6
5.30	6	-18	12	11.6	-0.4
5.30	7	-22	8	8.1	0.1
4.77	0	-2	28	25.6	-2.4
4.77	1	-2	28	25.5	-2.5
4.77	2	-2	28	25.5	-2.5
4.77	3	-6	24	23.1	-0.9
4.77	4	-10	20	19.2	-0.8
4.77	5	-14	16	15.4	-0.6
4.77	6	-18	12	11.5	-0.5
4.77	7	-22	8	8.1	0.1

Channel # 333 (834.99 MHz)
$+60^{0}$ C

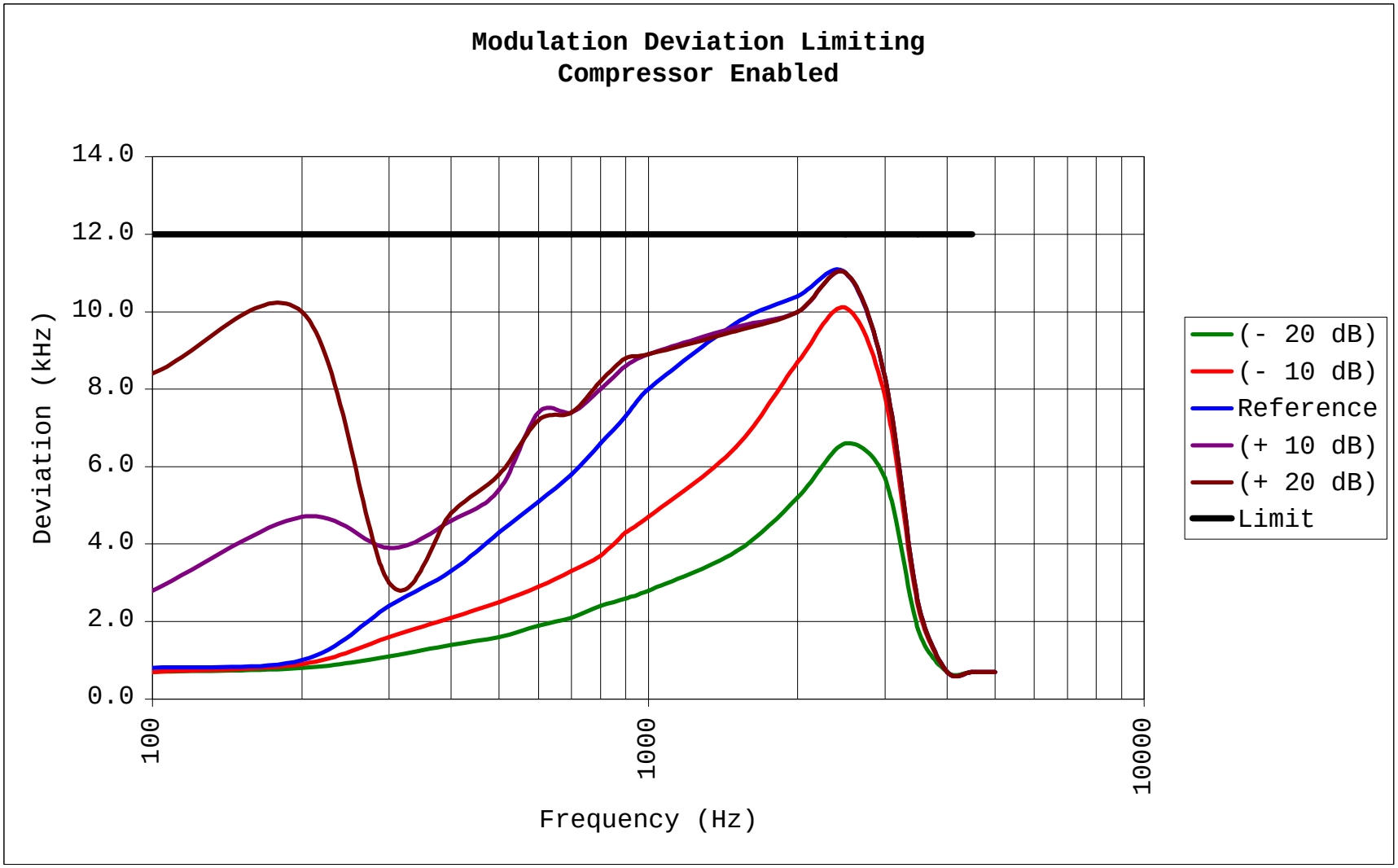
Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	24.9	-3.1
5.83	1	-2	28	24.9	-3.1
5.83	2	-2	28	24.9	-3.1
5.83	3	-6	24	22.6	-1.4
5.83	4	-10	20	18.7	-1.3
5.83	5	-14	16	14.9	-1.1
5.83	6	-18	12	10.8	-1.2
5.83	7	-22	8	7.3	-0.7
5.30	0	-2	28	24.9	-3.1
5.30	1	-2	28	24.9	-3.1
5.30	2	-2	28	24.9	-3.1
5.30	3	-6	24	22.5	-1.5
5.30	4	-10	20	18.6	-1.4
5.30	5	-14	16	14.8	-1.2
5.30	6	-18	12	10.8	-1.2
5.30	7	-22	8	7.4	-0.6
4.77	0	-2	28	24.9	-3.1
4.77	1	-2	28	24.9	-3.1
4.77	2	-2	28	24.9	-3.1
4.77	3	-6	24	22.5	-1.5
4.77	4	-10	20	18.7	-1.3
4.77	5	-14	16	14.8	-1.2
4.77	6	-18	12	10.8	-1.2
4.77	7	-22	8	7.3	-0.7

Channel # 666 (844.98 MHz)
$+60^{0}$ C

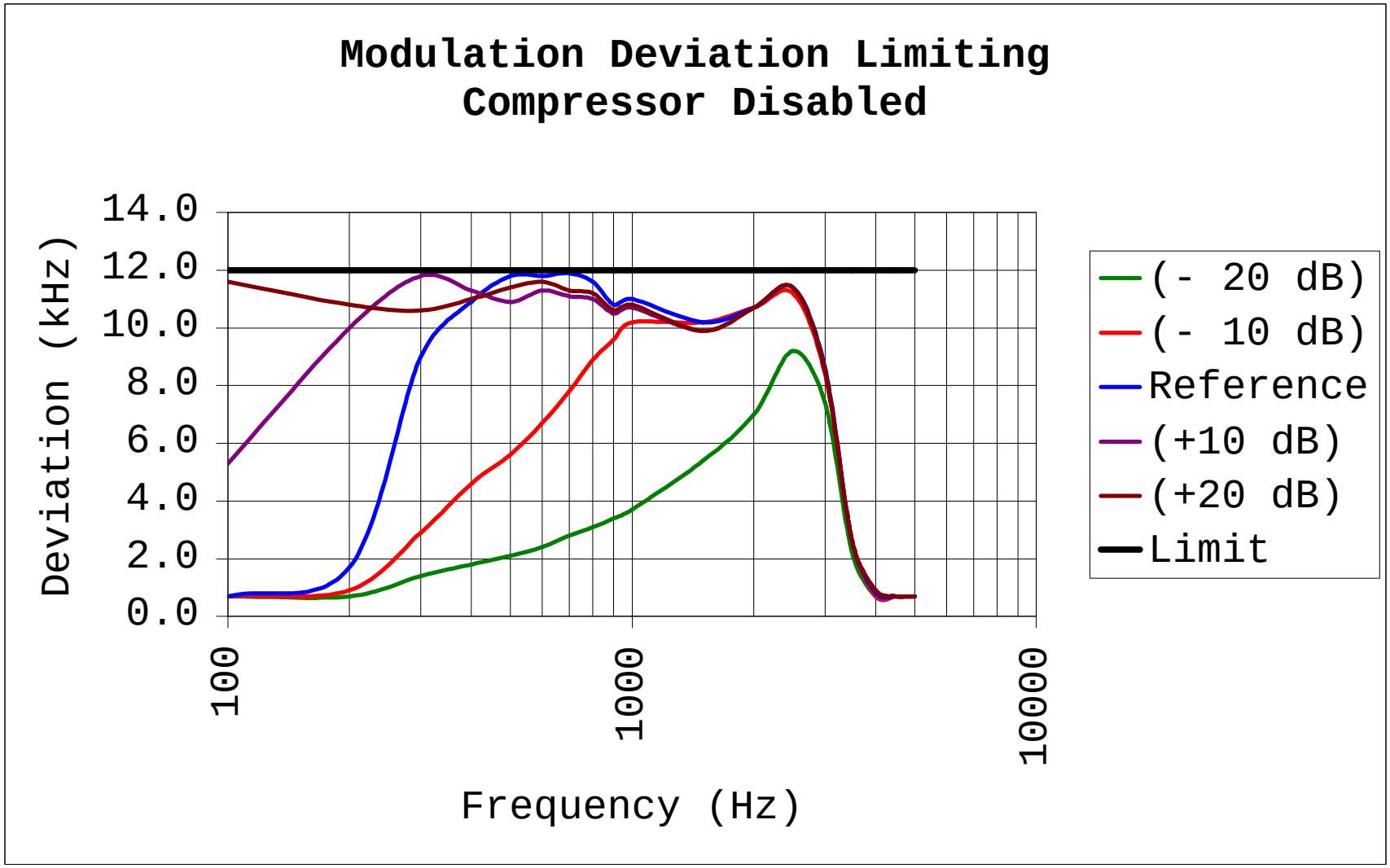
Supply Voltage (VDC)	Power Level	Nominal ERP (dBW)	Nominal ERP (dBm)	Measured ERP (dBm)	Difference (dB)
5.83	0	-2	28	24.8	-3.2
5.83	1	-2	28	24.8	-3.2
5.83	2	-2	28	24.8	-3.2
5.83	3	-6	24	22.4	-1.6
5.83	4	-10	20	18.6	-1.4
5.83	5	-14	16	14.8	-1.2
5.83	6	-18	12	10.4	-1.6
5.83	7	-22	8	7.1	-0.9
5.30	0	-2	28	24.8	-3.2
5.30	1	-2	28	24.8	-3.2
5.30	2	-2	28	24.8	-3.2
5.30	3	-6	24	22.3	-1.7
5.30	4	-10	20	18.5	-1.5
5.30	5	-14	16	14.7	-1.3
5.30	6	-18	12	10.5	-1.5
5.30	7	-22	8	7.2	-0.8
4.77	0	-2	28	24.8	-3.2
4.77	1	-2	28	24.8	-3.2
4.77	2	-2	28	24.8	-3.2
4.77	3	-6	24	22.3	-1.7
4.77	4	-10	20	18.6	-1.4
4.77	5	-14	16	14.7	-1.3
4.77	6	-18	12	10.4	-1.6
4.77	7	-22	8	7.1	-0.9

2.2 Modulation Characteristics

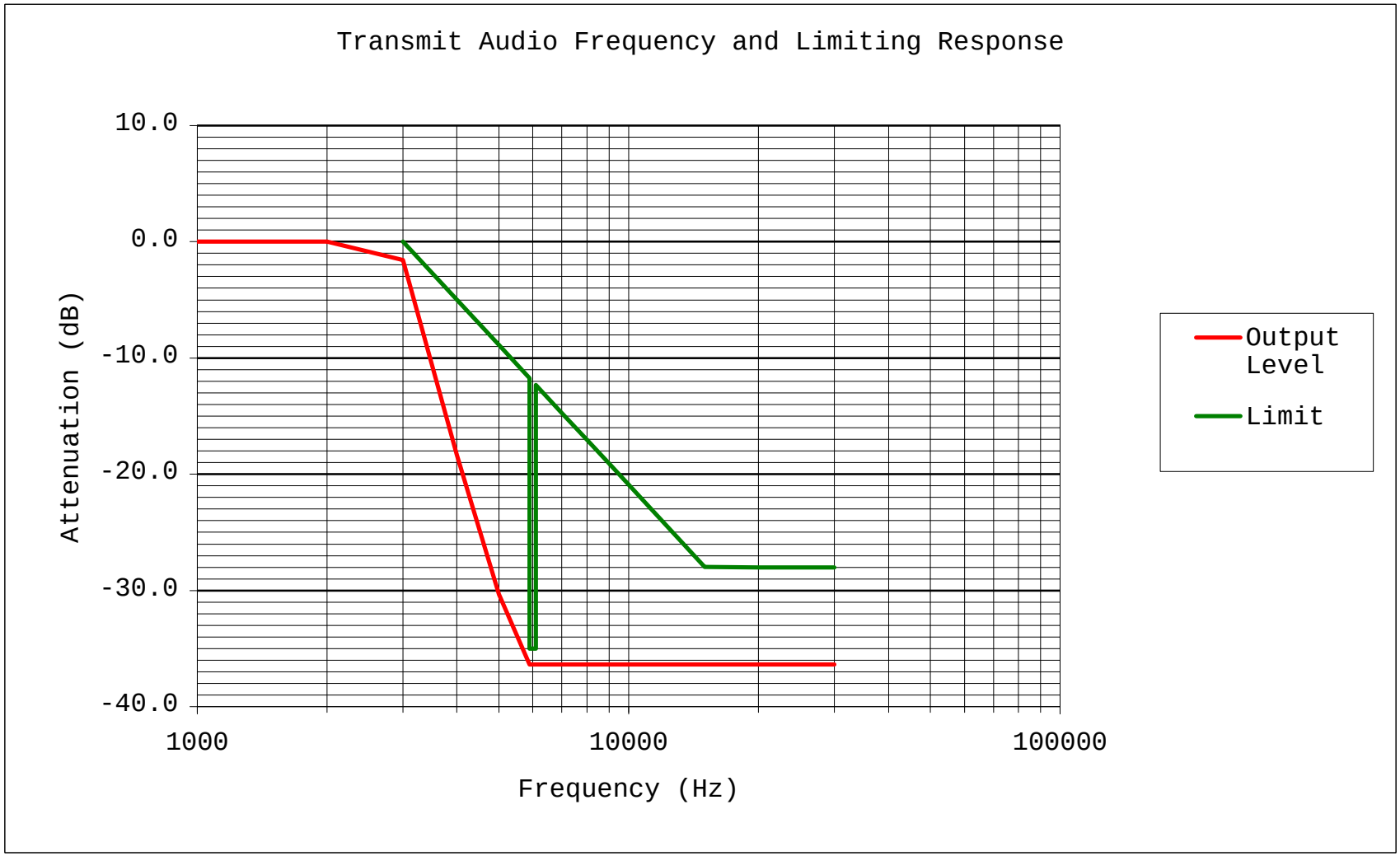
Modulating Signal	Deviation + kHz	Deviation - kHz	Criteria – 10% kHz	Criteria + 10% kHz
DTMF	11.51	10.89	10.8	13.2
Supervisory Audio Tone (5970 Hz)	2.01	2.05	1.8	2.2
Supervisory Audio Tone (6000 Hz)	2.03	2.05	1.8	2.2
Supervisory Audio Tone (6030 Hz)	2.02	2.05	1.8	2.2
Signaling Tone	8.66	8.57	7.2	8.8
Wideband Data	8.01	8.21	7.2	8.8


Modulation Deviation Limiting
Compressor Enabled
Deviation (kHz)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
100
1000
10000
Frequency (Hz)
(- 20 dB)
(- 10 dB)
Reference
(+ 10 dB)
(+ 20 dB)
Limit

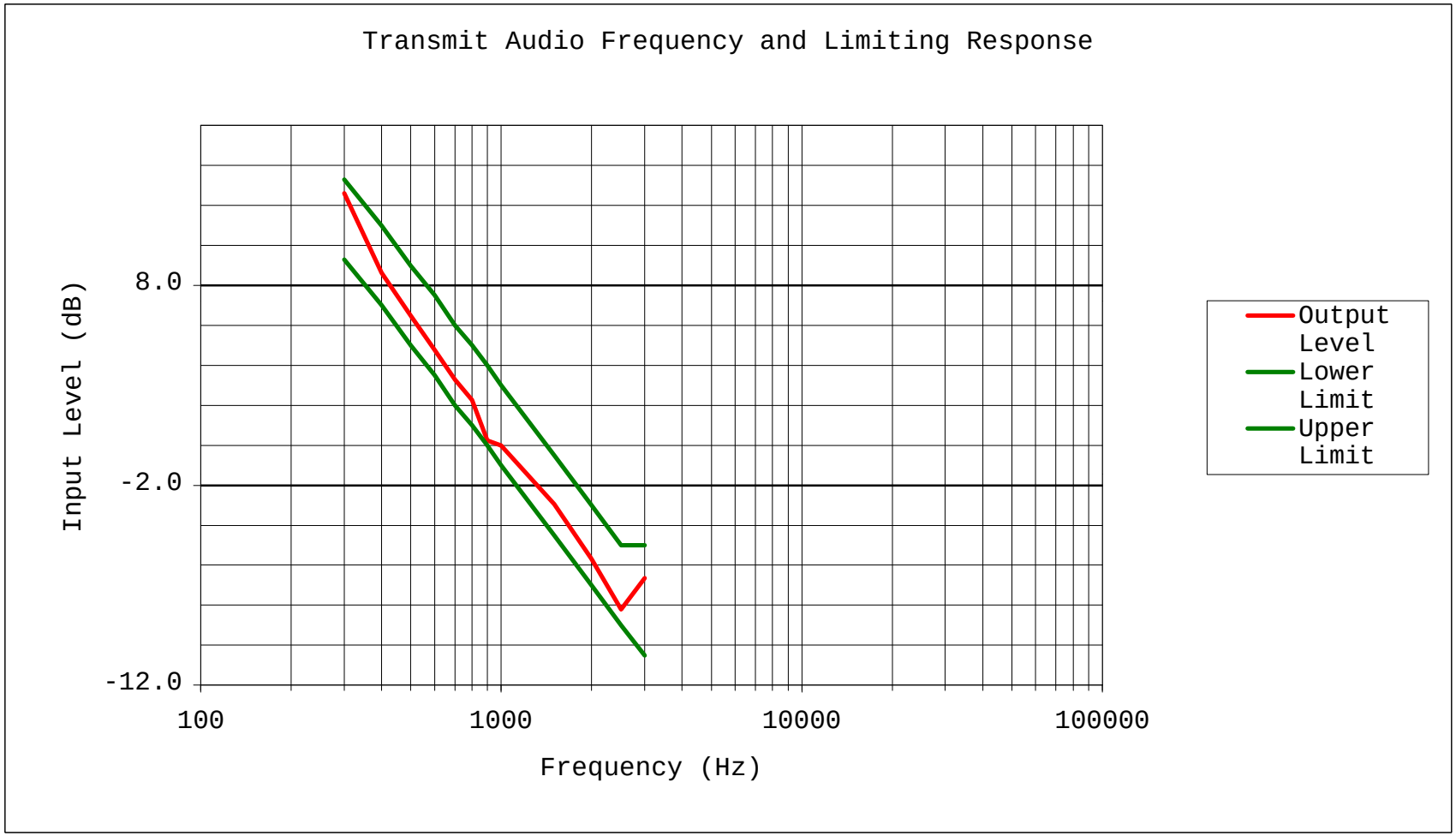
PLOT 1


Modulation Deviation Limiting
Compressor Disabled
Deviation (kHz)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
100
1000
10000
Frequency (Hz)
(- 20 dB)
(- 10 dB)
Reference
(+10 dB)
(+20 dB)
Limit

PLOT 2


Transmit Audio Frequency and Limiting Response
10.0
0.0
-10.0
-20.0
-30.0
-40.0
Attenuation (dB)
1000
10000
100000
Frequency (Hz)
Output Level
Limit

PLOT 3


Transmit Audio Frequency and Limiting Response
Input Level (dB)
8.0
-2.0
-12.0
100
1000
10000
100000
Frequency (Hz)
Output Level
Lower Limit
Upper Limit

PLOT 4

2.3 Conducted Spurious Emissions / Occupied Bandwidth

The worst case emissions were with the PCD2000 transmitting wideband data. The data below represents the worst case configuration.

Table 1

Transmitting on Channel 1 (825.03 MHz) Power Level 0			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
869.04 – 893.97	881.11	-89.4	-80.0
Note: There were no emissions detected at power levels 3 and 7.			

RBW = 3 kHz VBW = 10 kHz

Table 2

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 363 mW (25.6 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.363) = 36.8 dB. The criteria is 25.6 dBm – 36.8 dB = -13.0 dBm.

Transmitting on Channel 1 (825.03 MHz) Power Level 0			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	90.0	-64.2	-13.0
200 – 824.985	823.0	-42.0	-13.0
825.075 - 1000	827.1	-41.1	-13.0
1000 - 1500	1005.0	-54.2	-13.0
1500 - 2000	1650.1	-57.6	-13.0
2000 - 3000	2475.1	-54.7	-13.0
3000 - 4000	3300.1	-56.5	-13.0
4000 - 4500	4125.1	-71.0	-13.0
4500 - 5000	4950.1	-70.6	-13.0
5000 - 6000	5775.3	-71.7	-13.0
6000 - 7000	6599.9 *	-73.3	-13.0
7000 - 8000	7425.1 *	-72.4	-13.0
8000 - 9000	8249.9 *	-72.1	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 3

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 209 mW (23.2 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.209) = 36.2 dB. The criteria is 23.2 dBm – 36.2 dB = -13.0 dBm.

Transmitting on Channel 1 (825.03 MHz) Power Level 3			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	180.0	-61.3	-13.0
200 – 824.985	810.2	-48.4	-13.0
825.075 - 1000	827.1	-41.0	-13.0
1000 - 1500	1005.0	-59.8	-13.0
1500 - 2000	1650.1	-59.2	-13.0
2000 - 3000	2475.1	-56.7	-13.0
3000 - 4000	3300.1	-61.1	-13.0
4000 - 4500	4125.1	-70.7	-13.0
4500 - 5000	4950.1	-72.3	-13.0
5000 - 6000	5775.3	-73.9	-13.0
6000 - 7000	6599.9 *	-73.3	-13.0
7000 - 8000	7425.1 *	-72.4	-13.0
8000 - 9000	8249.9 *	-72.1	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 4

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 6.46 mW (8.1 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.00646) = 21.1 dB. The criteria is 8.1 dBm – 21.1 dB = -13.0 dBm.

Transmitting on Channel 1 (825.03 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	180.0	-68.6	-13.0
200 – 824.985	645.0	-57.0	-13.0
825.075 - 1000	839.8	-53.3	-13.0
1000 - 1500	1005.0	-59.8	-13.0
1500 - 2000	1650.1	-59.8	-13.0

Transmitting on Channel 1 (825.03 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
2000 - 3000	2475.1	-75.4	-13.0
3000 - 4000	3300.1	-69.6	-13.0
4000 - 4500	4125.1 *	-78.6	-13.0
4500 - 5000	4950.1 *	-77.8	-13.0
5000 - 6000	5775.3 *	-79.1	-13.0
6000 - 7000	6599.9 *	-73.3	-13.0
7000 - 8000	7425.1 *	-72.4	-13.0
8000 - 9000	8249.9 *	-72.1	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 5

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 331 mW (25.2 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.331) = 38.2 dB. The criteria is 25.2 dBm – 38.2 dB = -13.0 dBm.

Transmitting on Channel 333 (834.99 MHz) Power Level 0			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	67.3	-63.8	-13.0
200 – 834.945	832.9	-48.6	-13.0
835.035 - 1000	849.8	-57.7	-13.0
1000 - 1500	1016.3	-48.8	-13.0
1500 - 2000	1669.9	-56.0	-13.0
2000 - 3000	2504.9	-56.8	-13.0
3000 - 4000	3340.0	-65.9	-13.0
4000 - 4500	4174.9	-62.6	-13.0
4500 - 5500	5009.9	-66.5	-13.0
5500 - 6000	5844.9	-68.5	-13.0
6000 - 7000	6680.1 *	-71.9	-13.0
7000 - 8000	7514.6 *	-72.4	-13.0
8000 - 9000	8350.6 *	-72.2	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 6

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 178 mW (22.5 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.178) = 35.5 dB. The criteria is 22.5 dBm – 35.5 dB = -13.0 dBm.

Transmitting on Channel 333 (834.99 MHz) Power Level 3			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	180.0	-59.6	-13.0
200 – 834.945	832.9	-45.7	-13.0
835.035 - 1000	849.8	-54.4	-13.0
1000 - 1500	1016.3	-45.6	-13.0
1500 - 2000	1669.9	-54.1	-13.0
2000 - 3000	2504.9	-59.9	-13.0
3000 - 4000	3340.0	-77.7	-13.0
4000 - 4500	4174.9	-66.1	-13.0
4500 - 5500	5009.9	-70.4	-13.0
5500 - 6000	5844.9	-71.1	-13.0
6000 - 7000	6680.1 *	-71.9	-13.0
7000 - 8000	7514.6 *	-72.4	-13.0
8000 - 9000	8350.6 *	-72.2	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 7

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 5.50 mW (7.4 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.00550) = 20.4 dB. The criteria is 7.4 dBm – 20.4 dB = -13.0 dBm.

Transmitting on Channel 333 (834.99 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	67.3	-63.5	-13.0
200 – 834.945	655.0	-61.2	-13.0
835.035 - 1000	849.8	-66.5	-13.0
1000 - 1500	1016.3	-42.5	-13.0
1500 - 2000	1669.9	-56.0	-13.0

Transmitting on Channel 333 (834.99 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
2000 - 3000	2504.9	-69.8	-13.0
3000 - 4000	3340.0 *	-78.0	-13.0
4000 - 4500	4174.9 *	-78.2	-13.0
4500 - 5500	5009.9 *	-77.5	-13.0
5500 - 6000	5844.9 *	-72.8	-13.0
6000 - 7000	6680.1 *	-71.9	-13.0
7000 - 8000	7514.6 *	-72.4	-13.0
8000 - 9000	8350.6 *	-72.2	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 8

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 324 mW (25.1 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.324) = 38.1 dB. The criteria is 25.1 dBm – 38.1 dB = -13.0 dBm.

Transmitting on Channel 666 (844.98 MHz) Power Level 0			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	67.3	-63.6	-13.0
200 – 844.935	842.9	-45.6	-13.0
845.025 - 1000	847.0	-49.8	-13.0
1000 - 1500	1024.9	-49.5	-13.0
1500 - 2000	1689.9	-58.4	-13.0
2000 - 3000	2534.9	-58.6	-13.0
3000 - 4000	3379.9	-77.5	-13.0
4000 - 4500	4224.9	-72.3	-13.0
4500 - 5500	5069.8	-70.5	-13.0
5500 - 6000	5914.9	-69.5	-13.0
6000 - 7000	6759.9 *	-72.1	-13.0
7000 - 8000	7604.9 *	-72.0	-13.0
8000 - 9000	8449.8 *	-71.5	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

Table 9

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 182 mW (22.6 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.182) = 35.6 dB. The criteria is 22.6 dBm – 35.6 dB = -13.0 dBm.

Transmitting on Channel 666 (844.98 MHz) Power Level 3			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	67.2	-64.1	-13.0
200 – 844.935	842.9	-41.3	-13.0
845.025 - 1000	847.0	-46.6	-13.0
1000 - 1500	1024.9	-50.9	-13.0
1500 - 2000	1689.9	-70.4	-13.0
2000 - 3000	2534.9	-59.7	-13.0
3000 - 4000	3379.9	-78.2	-13.0
4000 - 4500	4224.9	-71.2	-13.0
4500 - 5500	5069.8 *	-76.7	-13.0
5500 - 6000	5914.9 *	-72.0	-13.0
6000 - 7000	6759.9 *	-72.1	-13.0
7000 - 8000	7604.9 *	-72.0	-13.0
8000 - 9000	8449.8 *	-71.5	-13.0
* Noise Floor			

RBW = 30 kHz VBW = 100 kHz

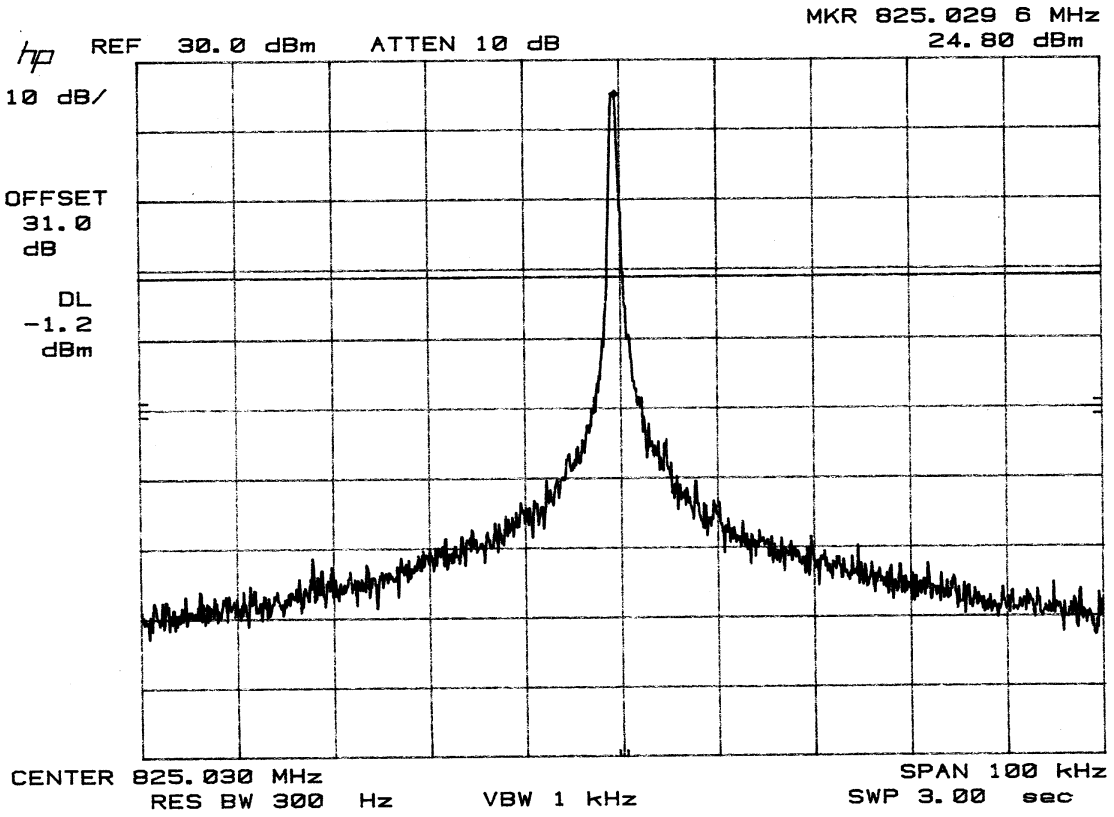
Table 10

The emissions must be attenuated 43 + 10 log P dB where P = Mean power of the unmodulated carrier. The maximum power of the unmodulated carrier was measured to 5.13 mW (7.1 dBm), therefore, the emissions must be attenuated 43 + 10 log (0.00513) = 20.1 dB. The criteria is 7.1 dBm – 20.1 dB = -13.0 dBm.

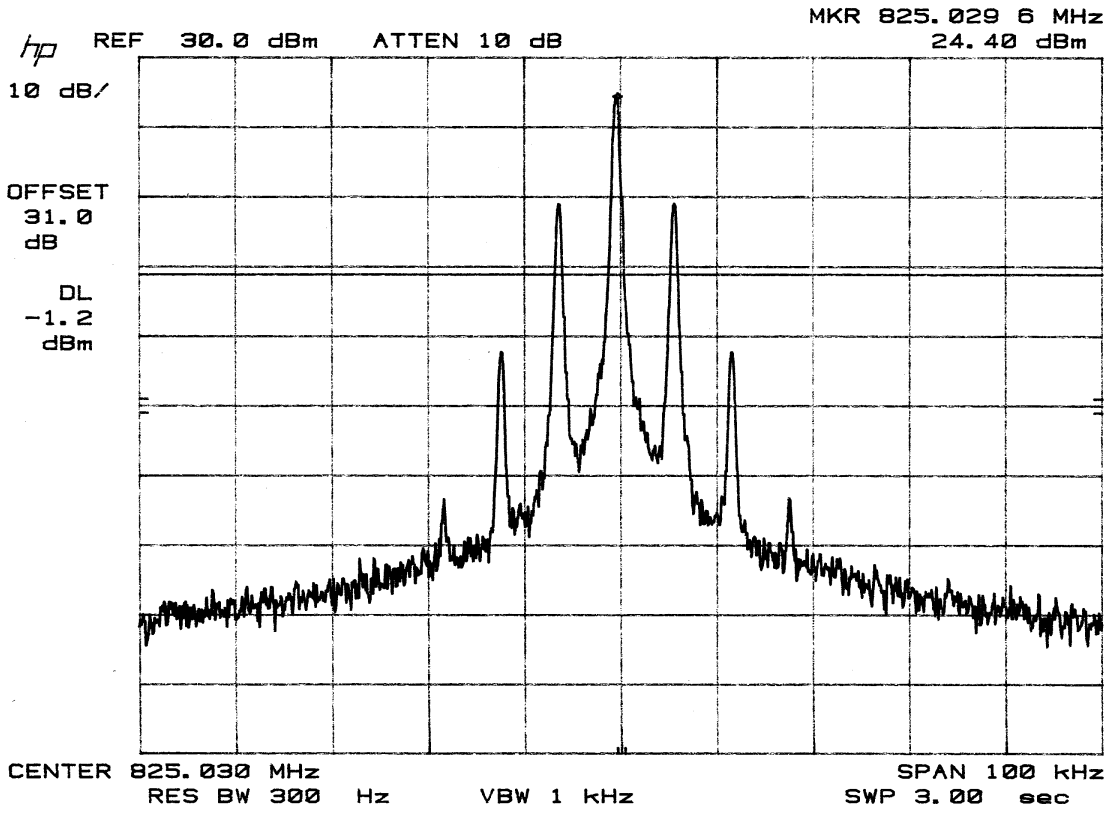
Transmitting on Channel 666 (844.98 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
30 - 200	67.2	-63.9	-13.0
200 – 844.935	842.9	-52.1	-13.0
845.025 - 1000	846.9	-56.1	-13.0
1000 - 1500	1024.9	-50.5	-13.0
1500 - 2000	1689.9	-53.7	-13.0

Transmitting on Channel 666 (844.98 MHz) Power Level 7			
Frequency Range MHz	Frequency MHz	Corrected Level dBm	Criteria dBm
2000 - 3000	2534.9	-71.7	-13.0
3000 - 4000	3379.9 *	-78.2	-13.0
4000 - 4500	4224.9 *	-77.5	-13.0
4500 - 5500	5069.8 *	-76.7	-13.0
5500 - 6000	5914.9 *	-72.0	-13.0
6000 - 7000	6759.9 *	-72.1	-13.0
7000 - 8000	7604.9 *	-72.0	-13.0
8000 - 9000	8449.8 *	-71.5	-13.0
* Noise Floor			

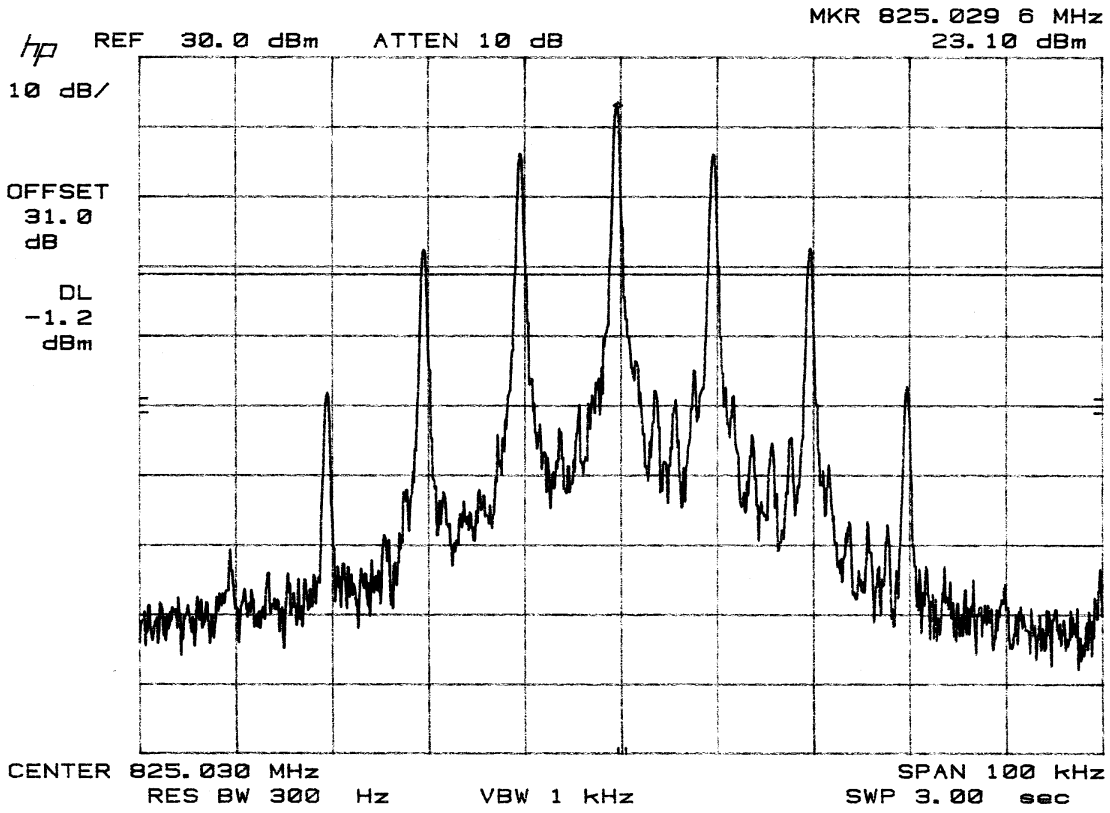
RBW = 30 kHz VBW = 100 kHz



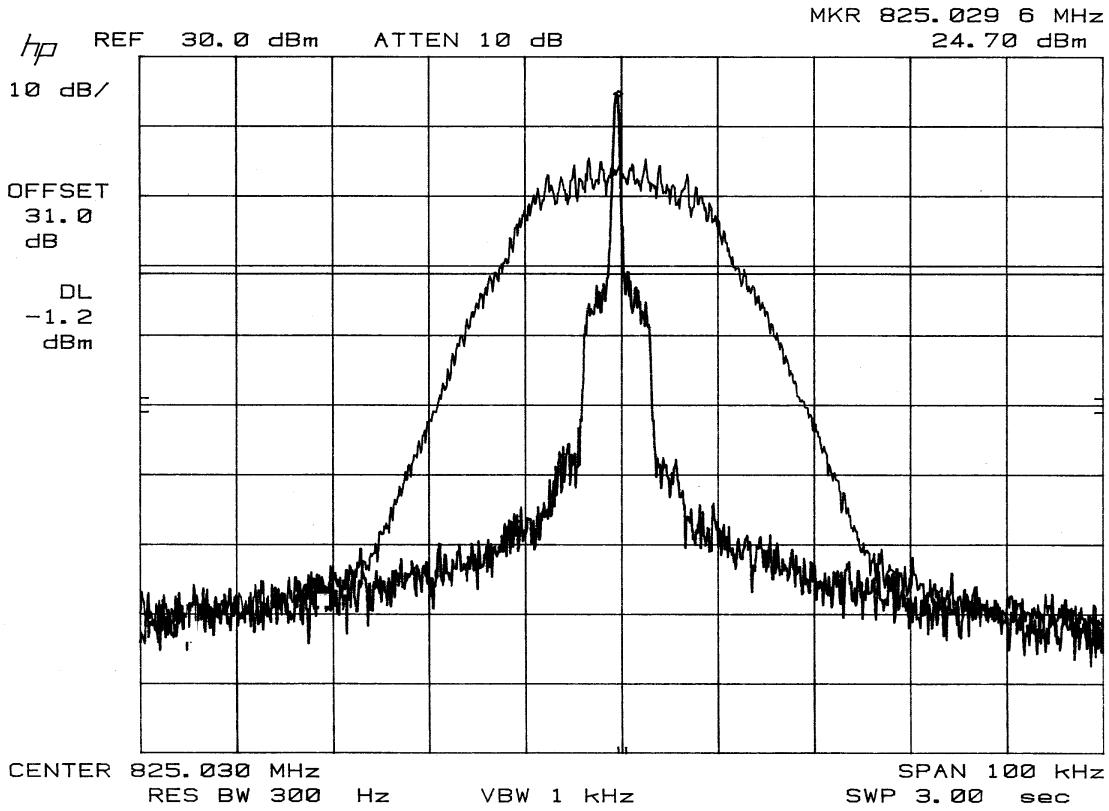
Plot 1 – Unmodulated Carrier



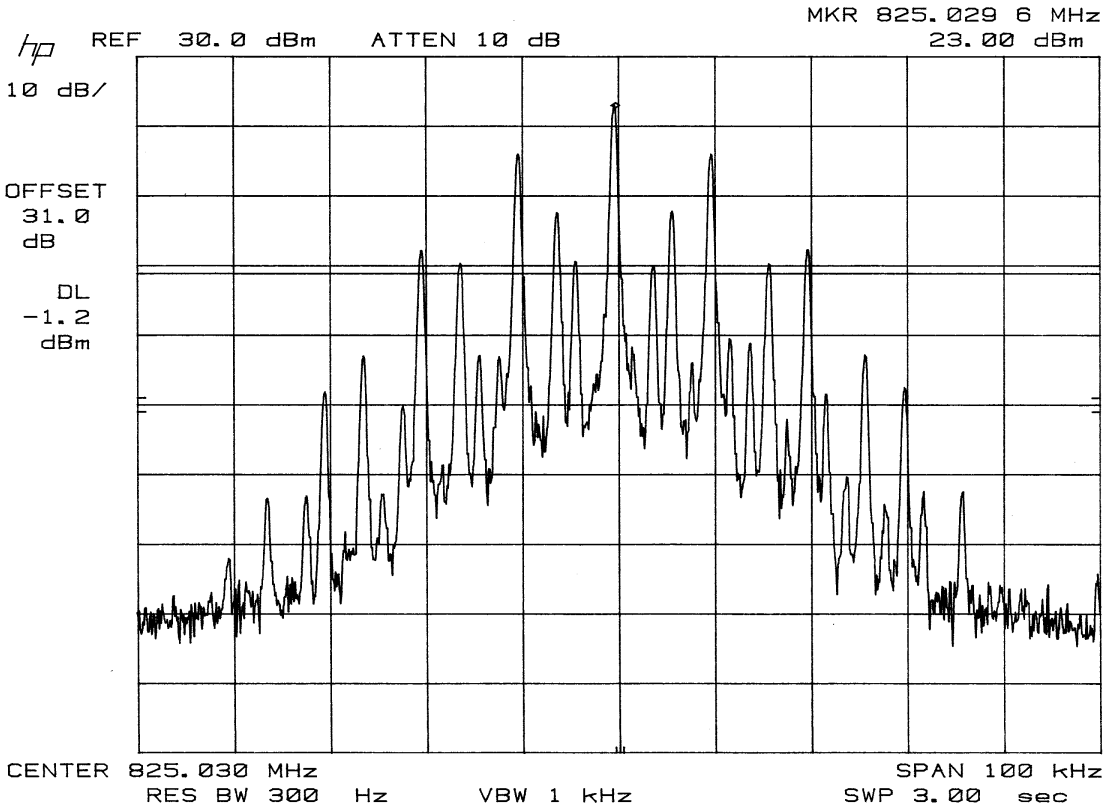
Plot 2 – Modulated with SAT (6030 Hz)



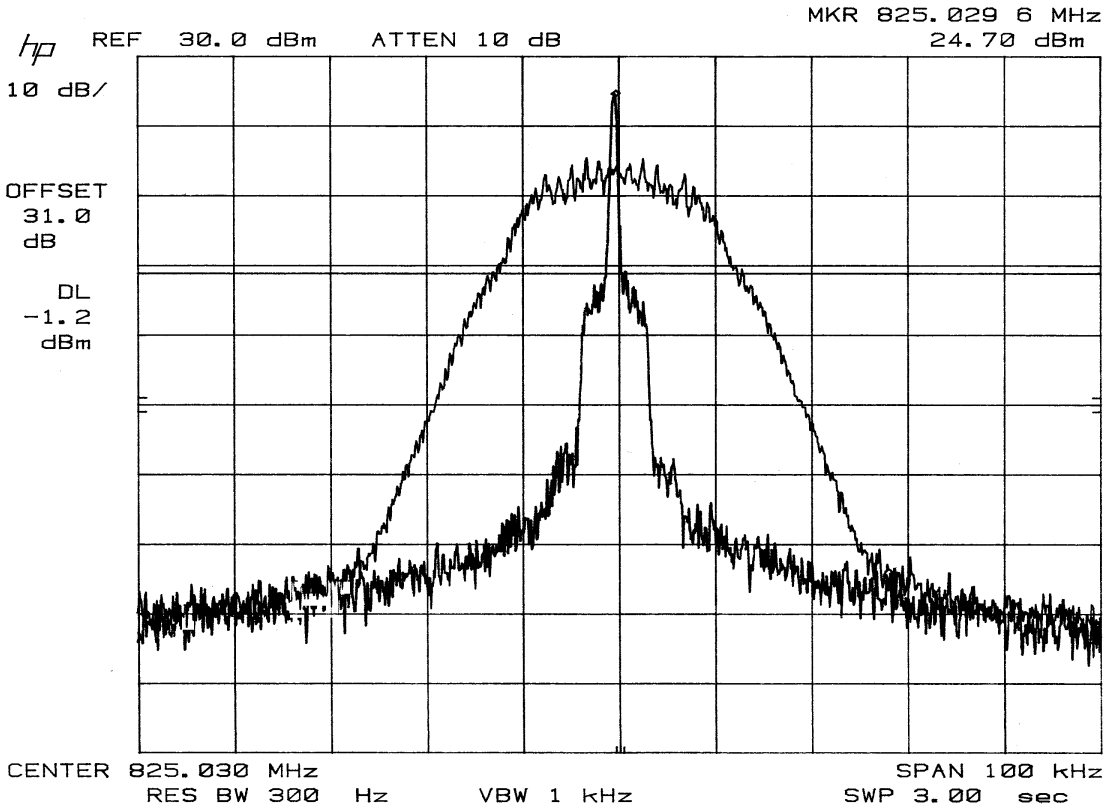
Plot 3 – Modulated with ST



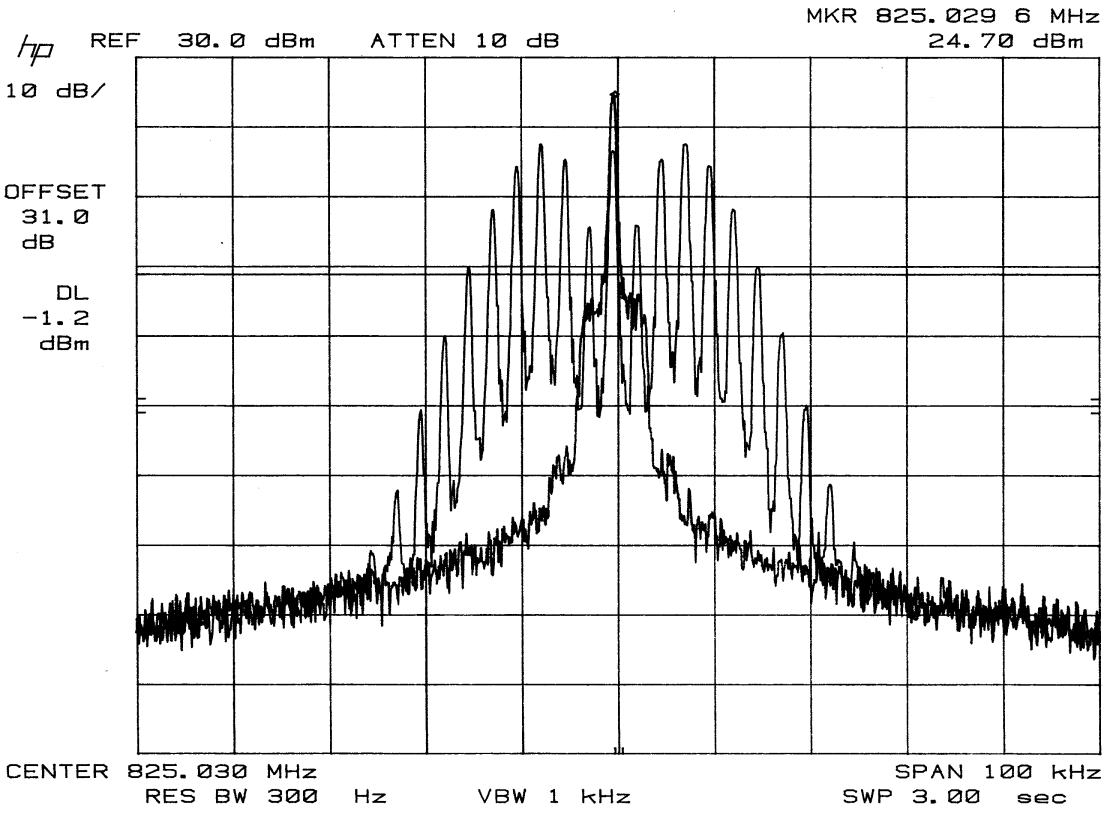
Plot 4 – Modulated with DTMF



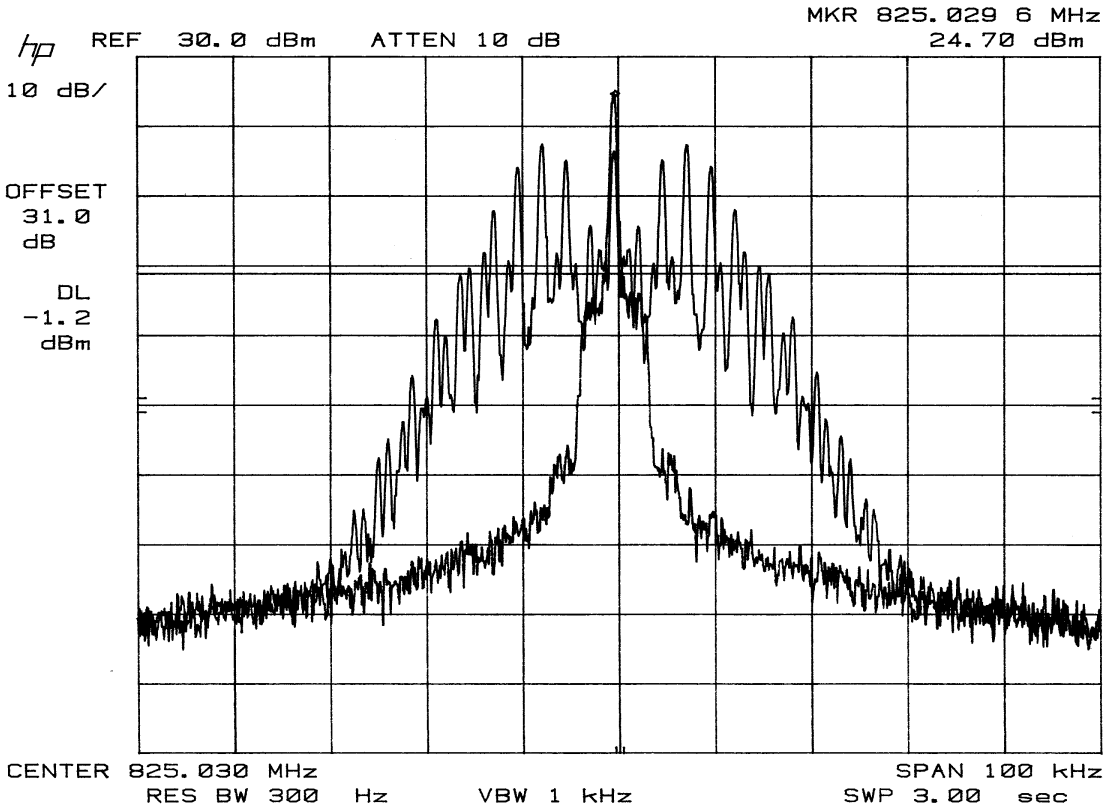
Plot 5 – Modulated with ST and SAT (6030 Hz)



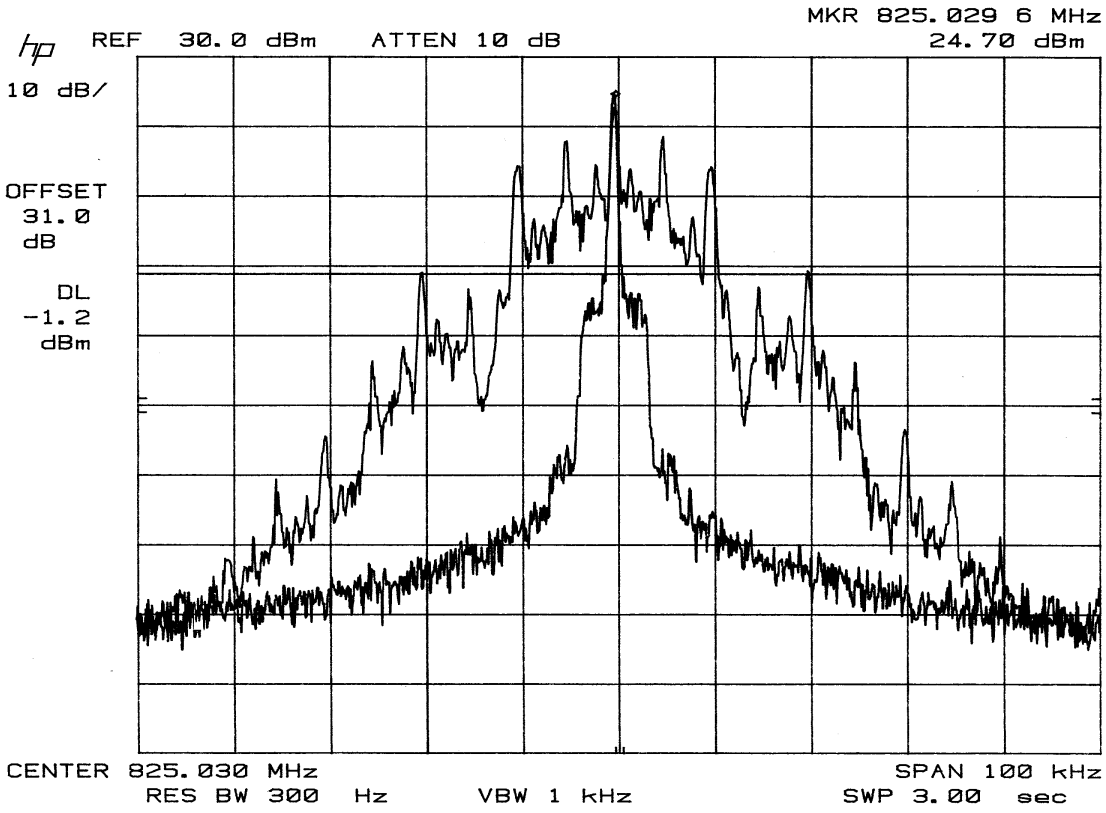
Plot 6 – Modulated with DTMF and SAT (6030 Hz)



Plot 7 – Modulated with Voice (2500 Hz)



Plot 8 – Modulated with Voice (2500 Hz) and SAT (6030 Hz)



Plot 9 – Modulated with Wideband data

2.4 Radiated Spurious Emissions

Transmitting on Channel 1 (825.03 MHz)					
Antenna Polarity	Frequency (MHz)	Uncorr. Level ($dB\mu V$)	Correction Factor (dB)	Field Strength ($dB\mu V/m$)	Criteria ($dB\mu V/m$)
V	1650.0	33.0	30.9	63.9	84.4
V	2475.0	35.3	34.0	69.3	84.4
V	3300.1	17.6	37.6	55.2	84.4
V	4125.1	16.8	41.0	57.8	84.4
V	4950.1	21.5	43.9	65.4	84.4
V	5775.2	11.9 *	47.1	59.0	84.4
V	6600.2	12.4 *	50.6	63.0	84.4
V	7425.2	12.8 *	54.6	67.4	84.4
V	8250.3	12.7 *	58.1	70.8	84.4
H	1650.0	34.3	30.9	65.2	84.4
H	2475.0	27.9	34.0	61.9	84.4
H	3300.1	18.0	37.6	55.6	84.4
H	4125.1	19.4	41.0	60.4	84.4
H	4950.1	20.2	43.9	64.1	84.4
H	5775.2	11.9 *	47.1	59.0	84.4
H	6600.2	12.4 *	50.6	63.0	84.4
H	7425.2	12.8 *	54.6	67.4	84.4
H	8250.3	12.7 *	58.1	70.8	84.4

Note 1: * Noise Floor Measurements

Note 2: All emissions from 30 MHz to the first harmonic were more than 20 dB below the limit.

Note 3: The radiated emissions were measured at power levels 0, 3 and 7. The worst case emissions were with the phone transmitting on power level 0; therefore, this data was used to determine compliance.

Transmitting on Channel 333 (834.99 MHz)					
Antenna Polarity	Frequency (MHz)	Uncorr. Level ($dB\mu V$)	Correction Factor (dB)	Field Strength ($dB\mu V/m$)	Criteria ($dB\mu V/m$)
V	1670.0	33.4	30.9	64.3	84.4
V	2504.9	24.8	34.0	58.8	84.4
V	3340.0	18.7	37.6	56.3	84.4
V	4174.9	17.7	41.0	58.7	84.4
V	5010.0	21.4	43.9	65.3	84.4
V	5844.9	11.9 *	47.1	59.0	84.4
V	6680.0	12.4 *	50.6	63.0	84.4
V	7514.9	12.8 *	54.6	67.4	84.4
V	8349.9	12.7 *	58.1	70.8	84.4
H	1670.0	33.7	30.9	64.6	84.4
H	2504.9	26.7	34.0	60.7	84.4
H	3340.0	16.6	37.6	54.2	84.4
H	4174.9	17.8	41.0	58.8	84.4
H	5010.0	18.7	43.9	62.6	84.4
H	5844.9	11.9 *	47.1	59.0	84.4
H	6680.0	12.4 *	50.6	63.0	84.4
H	7514.9	12.8 *	54.6	67.4	84.4
H	8349.9	12.7 *	58.1	70.8	84.4

Note 1: * Noise Floor Measurements

Note 2: All emissions from 30 MHz to the first harmonic were more than 20 dB below the limit.

Note 3: The radiated emissions were measured at power levels 0, 3 and 7. The worst case emissions were with the phone transmitting on power level 0; therefore, this data was used to determine compliance.

Transmitting on Channel 666 (844.98 MHz)					
Antenna Polarity	Frequency (MHz)	Uncorr. Level ($dB\mu V$)	Correction Factor (dB)	Field Strength ($dB\mu V/m$)	Criteria ($dB\mu V/m$)
V	1690.0	33.5	30.9	64.4	84.4
V	2534.9	23.0	34.0	57.0	84.4
V	3380.0	15.4	37.6	53.0	84.4
V	4224.9	16.0	41.0	57.0	84.4
V	5069.9	19.6	43.9	63.5	84.4
V	5914.8	11.9 *	47.1	59.0	84.4
V	6759.8	12.4 *	50.6	63.0	84.4
V	7604.8	12.8 *	54.6	67.4	84.4
V	8449.8	12.7 *	58.1	70.8	84.4
H	1690.0	33.9	30.9	64.8	84.4
H	2534.9	23.7	34.0	57.7	84.4
H	3380.0	12.9	37.6	50.5	84.4
H	4224.9	19.3	41.0	60.3	84.4
H	5069.9	18.5	43.9	62.4	84.4
H	5914.8	11.9 *	47.1	59.0	84.4
H	6759.8	12.4 *	50.6	63.0	84.4
H	7604.8	12.8 *	54.6	67.4	84.4
H	8449.8	12.7 *	58.1	70.8	84.4

Note 1: * Noise Floor Measurements

Note 2: All emissions from 30 MHz to the first harmonic were more than 20 dB below the limit.

Note 3: The radiated emissions were measured at power levels 0, 3 and 7. The worst case emissions were with the phone transmitting on power level 0; therefore, this data was used to determine compliance.

2.5 Frequency Stability

Channel # 1 (825.03 MHz)

Ambient Temperature (^{0} C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (PPM)	Criteria (PPM)
-30	825.03	825.02996	-0.05	2.5
-20	825.03	825.02994	-0.07	2.5
-10	825.03	825.02990	-0.12	2.5
0	825.03	825.03025	0.30	2.5
10	825.03	825.03038	0.46	2.5
20	825.03	825.03006	0.07	2.5
30	825.03	825.02948	-0.63	2.5
40	825.03	825.02940	-0.73	2.5
50	825.03	825.02940	-0.73	2.5
60	825.03	825.02944	-0.68	2.5

Voltage (DC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (PPM)	Criteria (PPM)
5.83	825.03	825.03000	0.00	2.5
5.30	825.03	825.03006	0.07	2.5
4.77	825.03	825.02992	-0.10	2.5

Sample Calculation

$$\text{Deviation (PPM)} = \frac{\text{FM - TF}}{\text{TF}} * 10^6$$

FM = Frequency Measured
TF = Intended Transmit Frequency

Appendix 1 - Test Procedures

Radiated Spurious Emissions

The radiated emissions were tested as per ANSI C63.4.

The radiated emissions from the PCD2000 were measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings. A preamplifier with a fixed gain of 26 dB was used to increase the sensitivity of the measuring instrumentation. The spectrum analyzer's resolution bandwidth was set to 100 kHz and the video bandwidth was set to 300 kHz, for readings in the 30 to 1000 MHz frequency range. Above 1000 MHz the spectrum analyzer's resolution bandwidth was set to 1 MHz and the video bandwidth was set to 3 MHz for peak readings and the resolution bandwidth was set to 1 MHz and the video bandwidth was set to 1 Hz for average readings.

An EMCO BiconiLog antenna was used to measure the frequency range of 30 to 1000 MHz, and a double ridge guide antenna was used to measure the frequency range of 1 to 20 GHz, at a distance of 3 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding the antenna factors.

The configuration of the PCD2000 was varied to find the maximum radiated emission. All interconnecting cables were moved to search for the worst case radiated emissions. The computing equipment was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

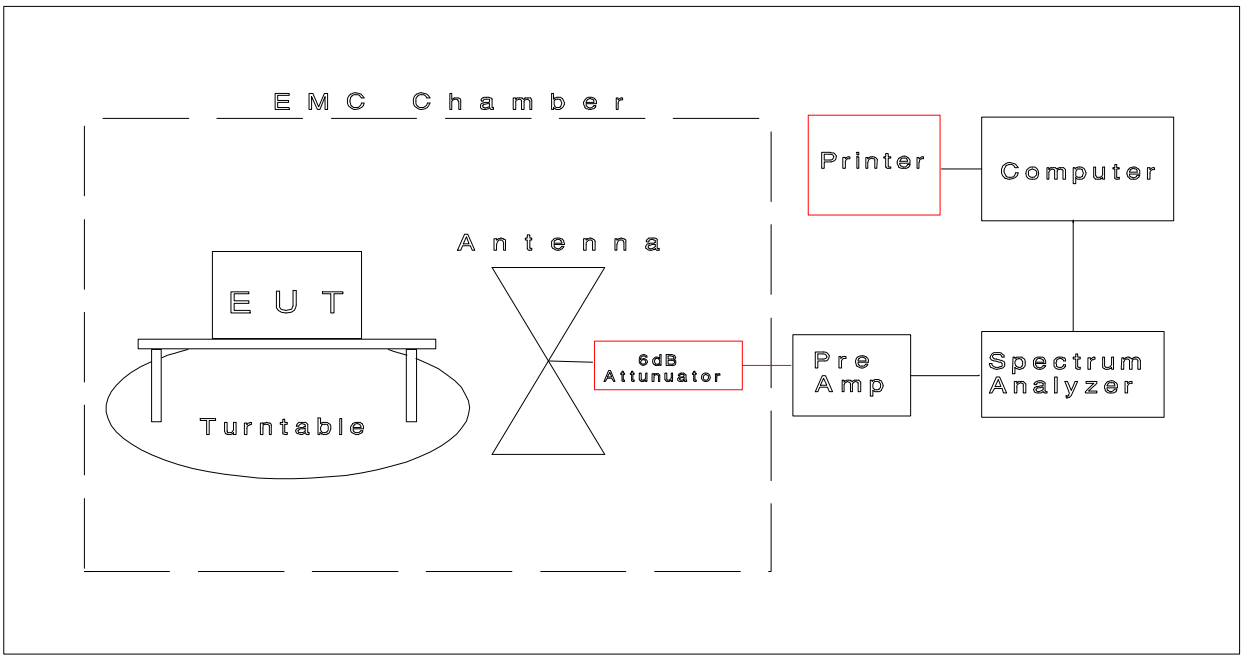
The PCD2000 was measured on a non-conducting table 0.8 m above the ground plane. The table is placed on a turntable which is level with the ground plane. The turntable has slip rings which supply AC power to the computing equipment.

Type of Equipment	Manufacturer	Model Number	Serial Number
Anechoic Chamber	CCL	N/A	N/A
Test Software	CCL	Radiated Emissions	Revision 1.3
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Biconilog Antenna	EMCO	3141	1045

Type of Equipment	Manufacturer	Model Number	Serial Number
Double Ridged Guide Antenna	EMCO	3115	9409-4355
Radiated Emissions Cable Anechoic Chamber	CCL	Cable B	N/A
Pre-Amplifier	Hewlett Packard	8447D	1937A03151
Power-Amplifier	Hewlett Packard	8447E	2434A01975
6 dB Attenuator	Hewlett Packard	8491A	32835

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Radiated Emissions Test



Peak Transmit Power

The EUT was placed inside a temperature chamber and directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below. The measurements were performed at -30^0 C, $+20^0$ C and $+60^0$ C and tuned to three

different channels, as per 47 CFR 15.31(m), one near the bottom of the spectrum, one near the middle of the spectrum and one near the top of the spectrum.

Testing was performed as per ANSI-C63.4 1992, Methods of Measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.

The spectrum analyzer's resolution bandwidth and video bandwidth were set as follows:

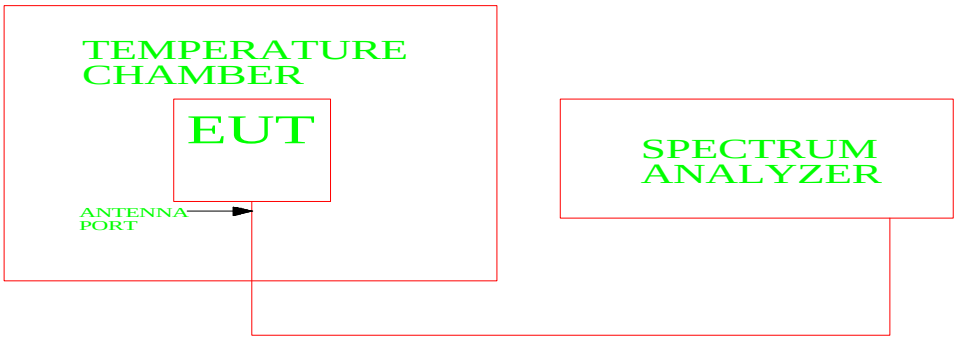
Peak Transmit Power

RBW = 100 kHz
VBW = 300 kHz

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A
Temperature Chamber	Tenney Engineering, Inc.	Tenney Jr.	11184-83

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram



Conducted Spurious Emissions and Occupied Bandwidth

The EUT was directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below. The carrier was modulated with wideband data, this produced the worst case emissions. The measurements were performed with the phone at three different power levels and tuned to three channels, as per 47 CFR 15.31(m), one near the bottom of the spectrum, one near the middle of the spectrum and one near the top of the spectrum.

Testing was performed as per ANSI-C63.4 1992, Methods of Measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.

The spectrum analyzer's resolution bandwidth and video bandwidth were set as follows:

Conducted Spurious Emissions

45 kHz above and below the carrier

RBW = 300 Hz
VBW = 1 kHz

Greater than 45 kHz above and below the carrier

RBW = 30 kHz
VBW = 100 kHz

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A
Plotter	Hewlett Packard	7470A	2210A01469

Modulation Deviation Limiting (Plots 1 and 2)

Turn on the phone to a channel near the center of the band and adjust for full rated system deviation, as per manufacturer's procedure and instructions. Adjust the audio input for ± 8 kHz peak frequency deviation at 1000 Hz with the 2:1 compressor enabled and the SAT disabled, this is the reference level. Vary the frequency of the audio signal from 100 Hz to 5000 Hz and measure and record the peak ± frequency deviation.

Repeat the measurements with the audio input level increased by 10 dB and 20 dB.

Repeat the measurements with the audio input level decreased by 10 dB and 20 dB.

Repeat all of the above measurements with the compressor disabled.

Minimum Performance Standard

Over the frequency range 100 to 5000 Hz; the maximum system deviation shall not exceed ± 12 kHz.

Transmit Audio Frequency and Limiting Response (Plots 3 and 4)

Operate the transmitter with the compressor disabled, and monitor the output with a frequency deviation meter without the standard 750 μsec de-emphasis, with expander disabled, and

without C-message weighted filter. Apply a sine wave audio input to the transmitter external audio input port, vary the modulation frequency from 300 to 3000 Hz, and record the input levels necessary to maintain a constant ± 2.9 kHz system deviation.

To test the band limiting condition: adjust the audio input frequency to 1000 Hz, and adjust the input level to 20 dB greater than that required to produce ± 8 kHz deviation. Note the output level on the frequency deviation meter. Using this output level as reference (0 dB), vary the modulation frequency from 3000 to 20,000 Hz, and record the change in output while maintaining a constant audio input level.

Minimum Performance Standard

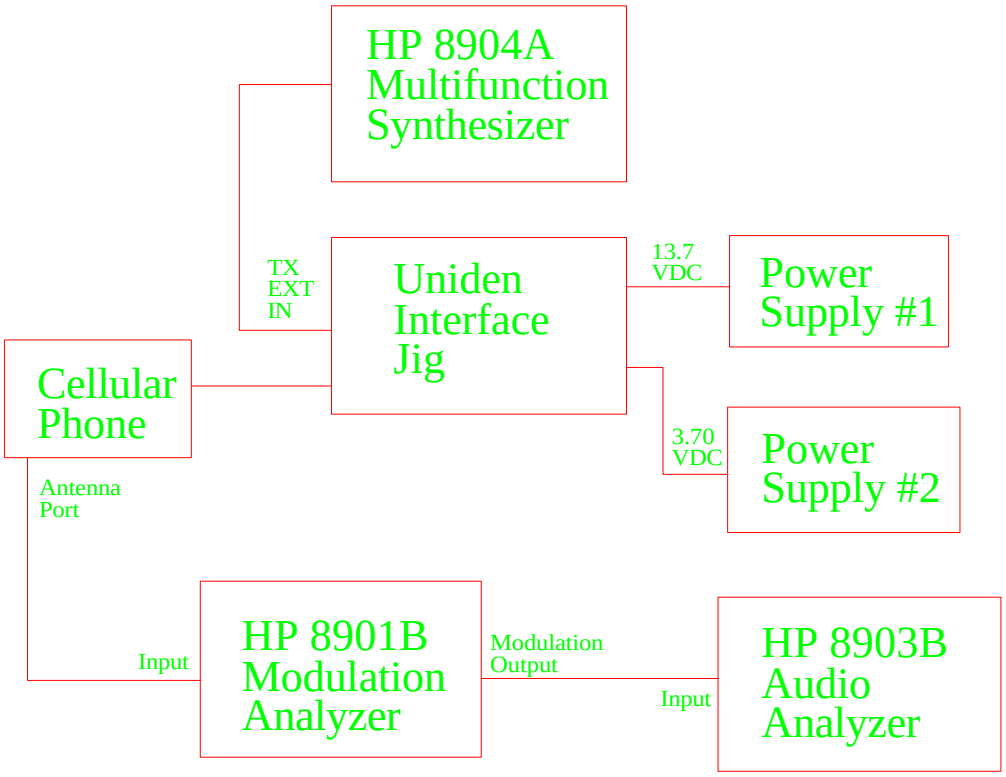
Over the frequency range 300 to 3000 Hz, the input level to maintain a constant ± 2.9 kHz system deviation shall not vary more than +1 to –3 dB from a true 6 dB/octave pre-emphasis characteristic (with the exception of a permissible 6 dB/octave roll-off from 2500 to 3000 Hz relative to the true level at 2500 Hz).

Between 3000 to 20,000 Hz the response attenuation shall not exceed the values defined in §22.915 (d)(1).

Type of Equipment	Manufacturer	Model Number	Serial Number
Multifunction Synthesizer	Hewlett Packard	8904A	2948A04120
Modulation Analyzer	Hewlett Packard	8901B	3019A02755
Audio Analyzer	Hewlett Packard	8903B	3011A12156
Interface Jig	Uniden	UH-045Z	N/A
Power Supply #1	Lambda	LXTD-5152	A75750
Power Supply #2	Lambda	LM 262	079749

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram



Carrier Frequency Stability

The EUT was placed inside of a temperature chamber and directly connected to the spectrum analyzer via the antenna output port as shown in the block diagram below. The measurements were performed from –30^0 C to +60^0 C in 10^0 increments.

The spectrum analyzer's was configured as follows:

RBW = 1 kHz
VBW = 3 kHz
Span = 20 kHz
Sweep = Auto

Type of Equipment	Manufacturer	Model Number	Serial Number
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711

Type of Equipment	Manufacturer	Model Number	Serial Number
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582
Low Loss Cable (1 dB)	N/A	N/A	N/A
Temperature Chamber	Tenney Engineering, Inc.	Tenney Jr.	11184-83

All the equipment listed above is calibrated every 12 months by an independent calibration laboratory or by CCL personal following outlined calibration procedures.

Test Configuration Block Diagram