SUBMITTED MEASURED DATA INDEX

EXHIBIT	MEASUREMENT
9A	RF Power Output-Measured Data (Revised)
9B-1	Audio Response Wide Mode - Graph
9B-2	Audio Response Narrow Mode - Graph
9C	Post Limiter Low Pass Filter Response - Graph
9D-1	Signaling Channel Audio Roll-Off Filter Response-Graph
9D-2	DSAT Audio Roll-Off Filter Response - Graph
9E-1	Modulation Limiting (Compander In Wide Mode) - Graph
9E-2	Modulation Limiting (Compander Out Wide Mode) - Graph
9E-3	Modulation Limiting (Compander In Narrow Mode) - Graph
9E-4	Modulation Limiting (Compander Out Narrow Mode) - Graph
9F-1	Occupied Bandwidth, Audio (Wide Mode) - Plot (Revised)
9F-2	Occupied Bandwidth, Audio and SAT - Plot (Revised)
9F-3	Occupied Bandwidth, Signaling Tone and SAT - Plot (Revised)
9F-4	Occupied Bandwidth, Wide band Data - Plot (Revised)
9F-5	Occupied Bandwidth, Audio (Narrow Mode) - Plot (Revised)
9F-6	Occupied Bandwidth, Audio and DSAT- Plot (Revised)
9F-7	Occupied Bandwidth, Audio and Data (Digital Mode) - Plot (Revised)
9G	Conducted Spurious and Harmonic Emissions - Graph (Revised)
9H	Radiated Spurious and Harmonic Emissions - Graph (Revised)
9J-1	Frequency Change vs. Temperature (Wide Mode) - Graph
9J-2	Frequency Change vs. Temperature (Narrow Mode) - Graph
9J-3	Frequency Change vs. Temperature (Digital Mode) - Graph
9K-1	Frequency Change vs. Supply Voltage (Wide Mode) - Graph
9K-2	Frequency Change vs. Supply Voltage (Narrow Mode) - Graph
9K-3	Frequency Change vs. Supply Voltage (Digital Mode) - Graph

RF POWER OUTPUT DATA

The input supply to the transmitter was set at 3.6 Volts. The RF power output was measured with the indicated voltage and current applied into the final RF amplifying device(s).

ANALOG MODE

Measured RF output: 0.540 W

Measured DC voltage: 3.6 V

Measured DC current: 635 mA (Alternate P.A.: 550 mA)

Measured RF input: 5.01 mW

DIGITAL MODE

In Digital Mode the values measured for RF Output, DC Current and RF Input Power are all average values which reflect a 100% transmit duty cycle in CDMA operation.

Measured RF output: 0.251 W

Measured DC voltage: 3.6 V

Measured DC current: 570 mA (Alternate P.A.: 400 mA)

Measured RF input: 1.585 mW

Effective Radiated Power

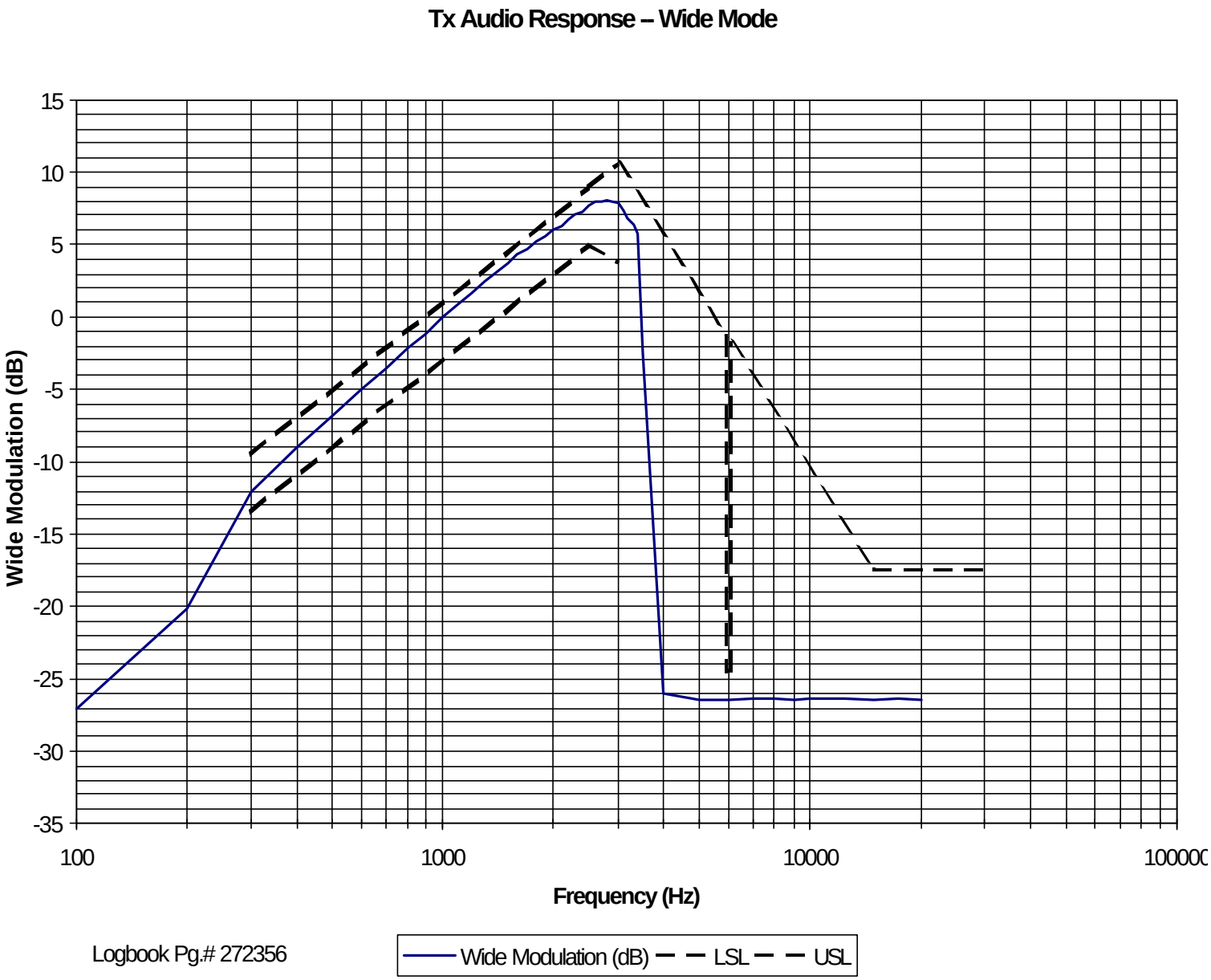
Since the unit is intended for use with a provided antenna (and “non-standard” RF connector), EIRP is measured. The dipole antenna substitution method was used. The result indicated is the maximum EIRP found over the channels and radio orientations tested. The maximum was found in Analog mode with the antenna in the extended position.

Maximum Effective Isotropic Radiated Power: 28.5 dBm (0.708 W)

Audio Response Wide Mode -Graph

Signature:

Date:



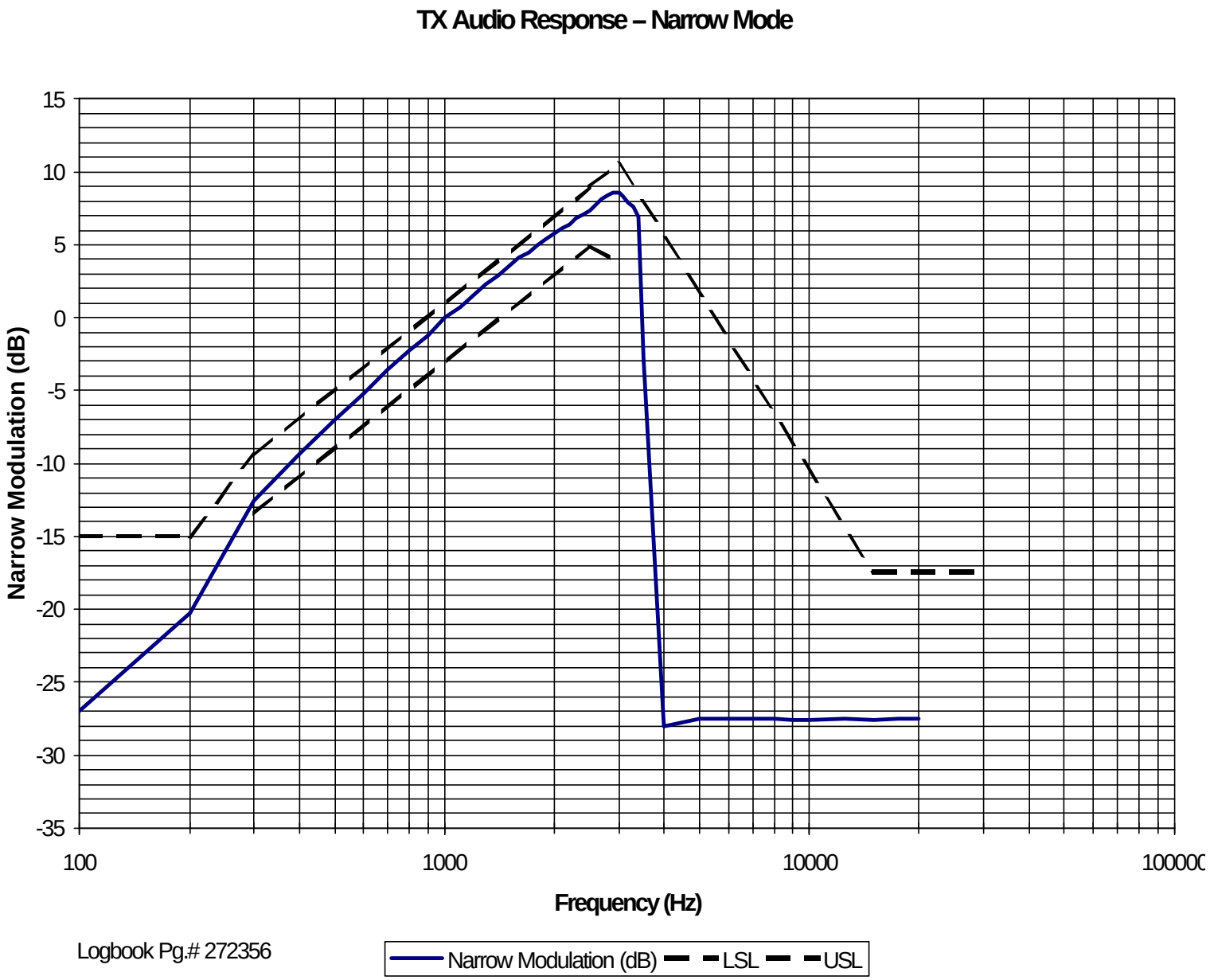
Logbook Pg.# 272356

APPLICANT: MOTOROLA, INC. TRANSCEIVER TYPE: IHDT5YD1

Audio Response Narrow Mode-Graph

Signature:

Date:



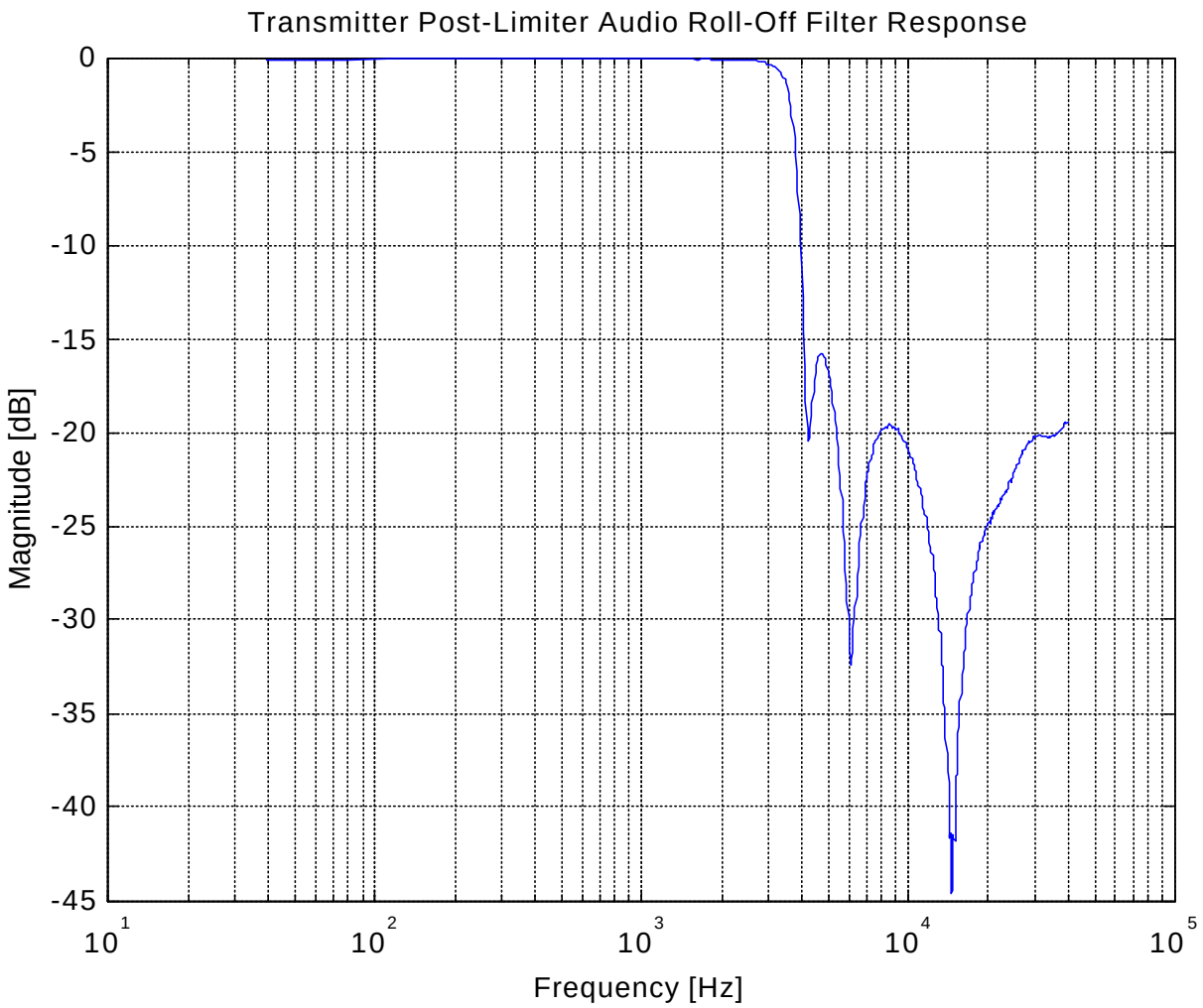
Logbook Pg.# 272356

EXHIBIT 9B-2

Post Limiter Low Pass Filter Response-Graph

Signature:

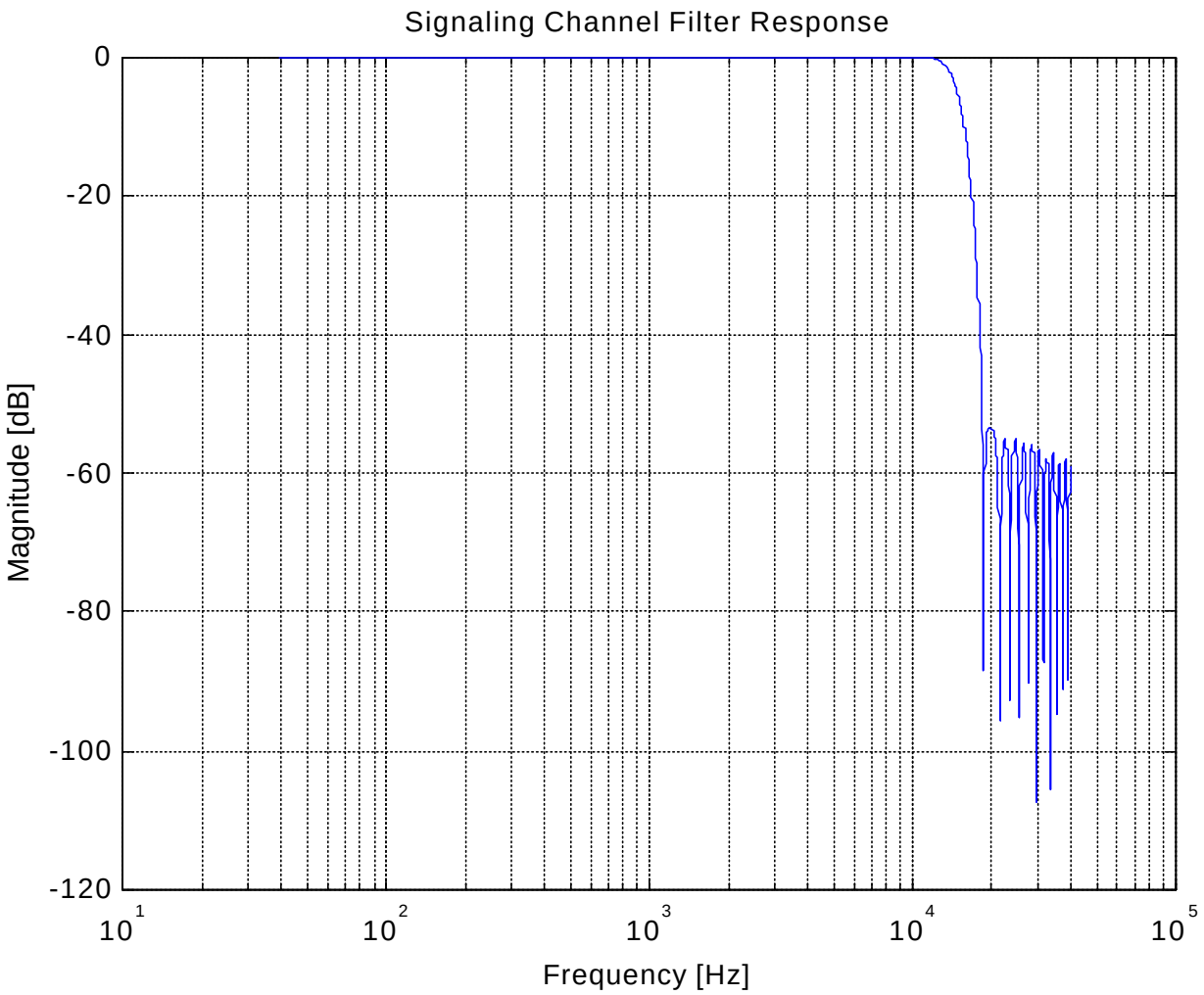
Date:



Signaling Channel Audio Roll-Off Filter Response-Graph

Signature:

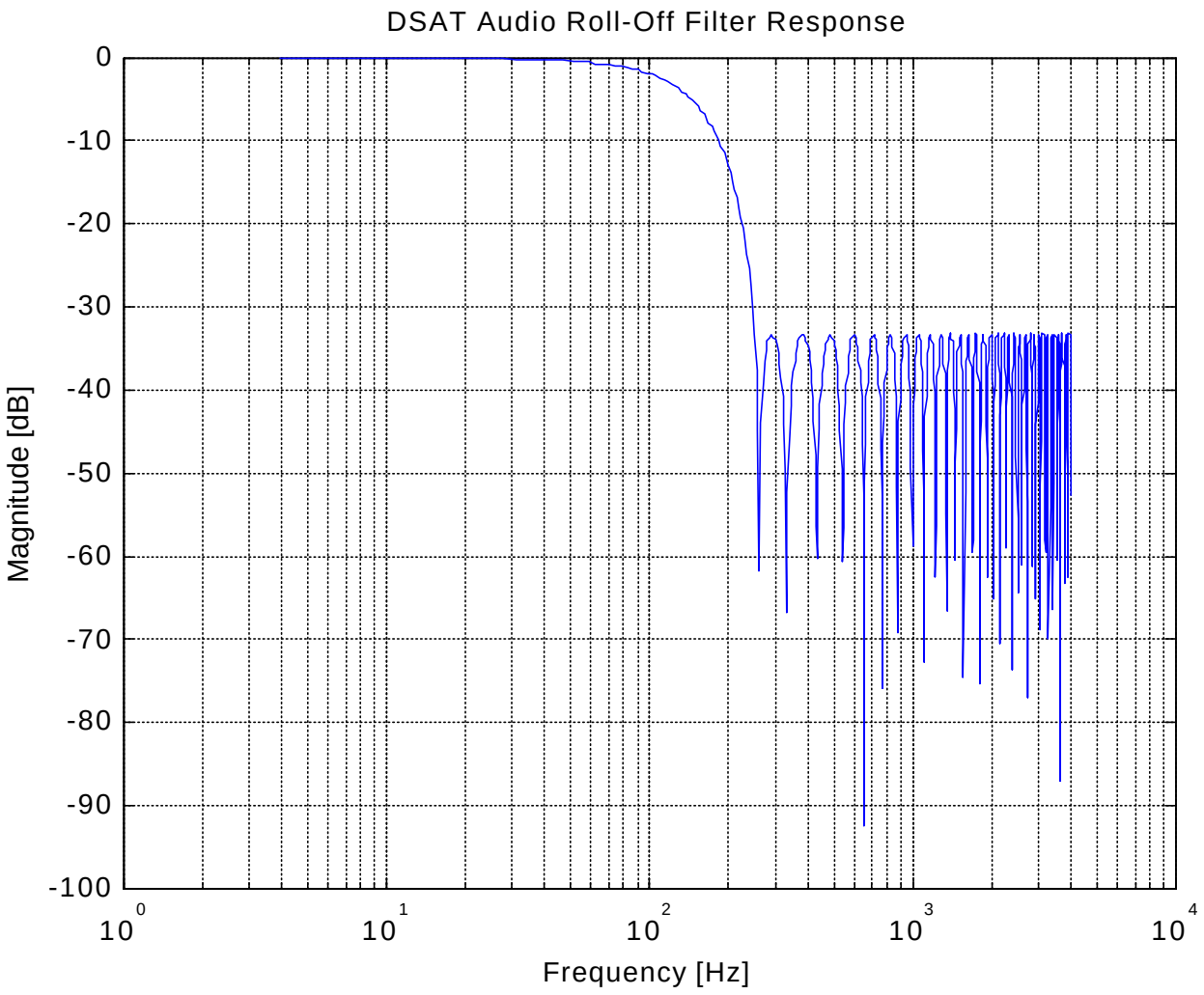
Date:



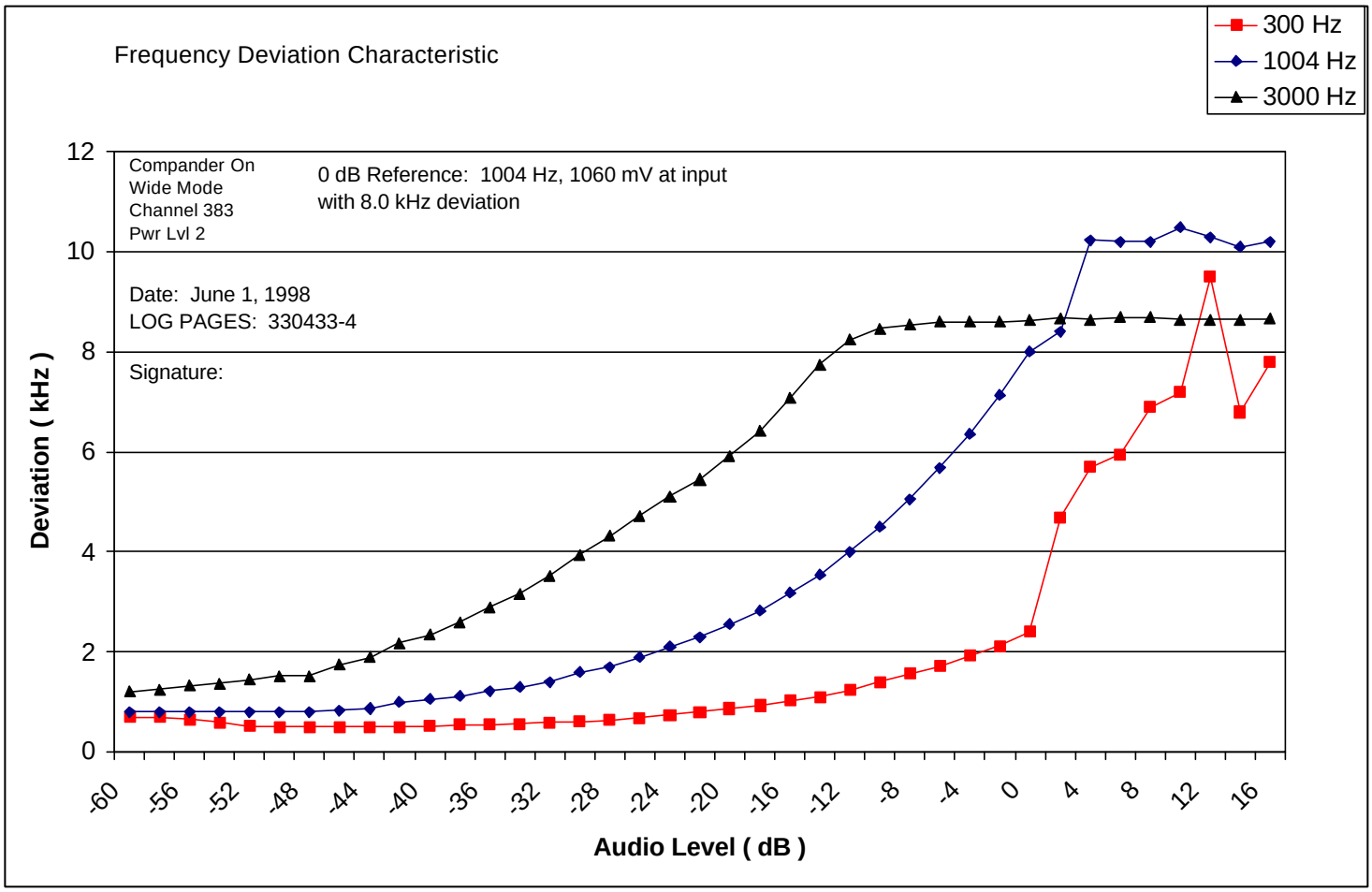
DSAT Audio Roll-Off Filter Response-Graph

Signature:

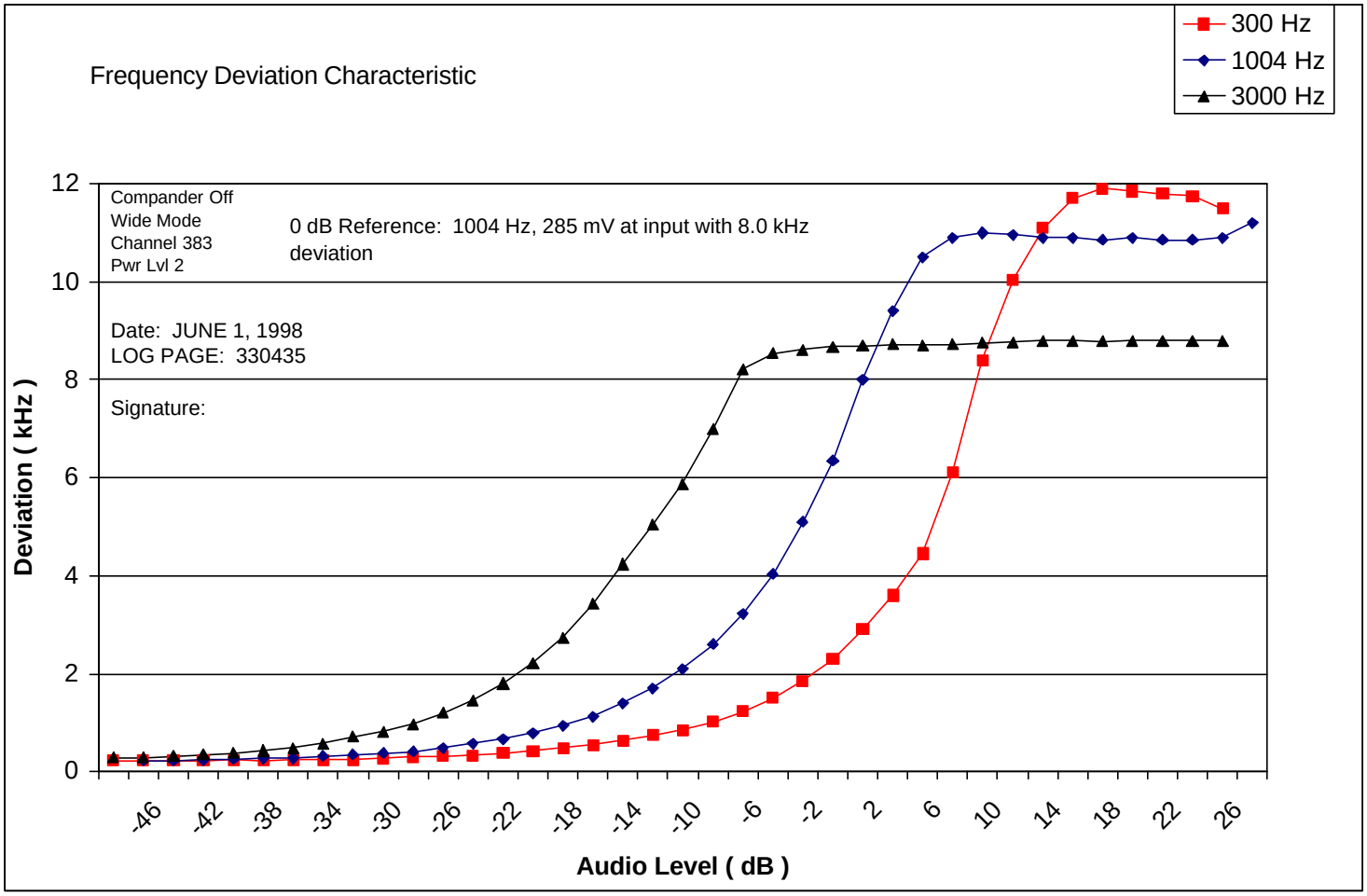
Date:



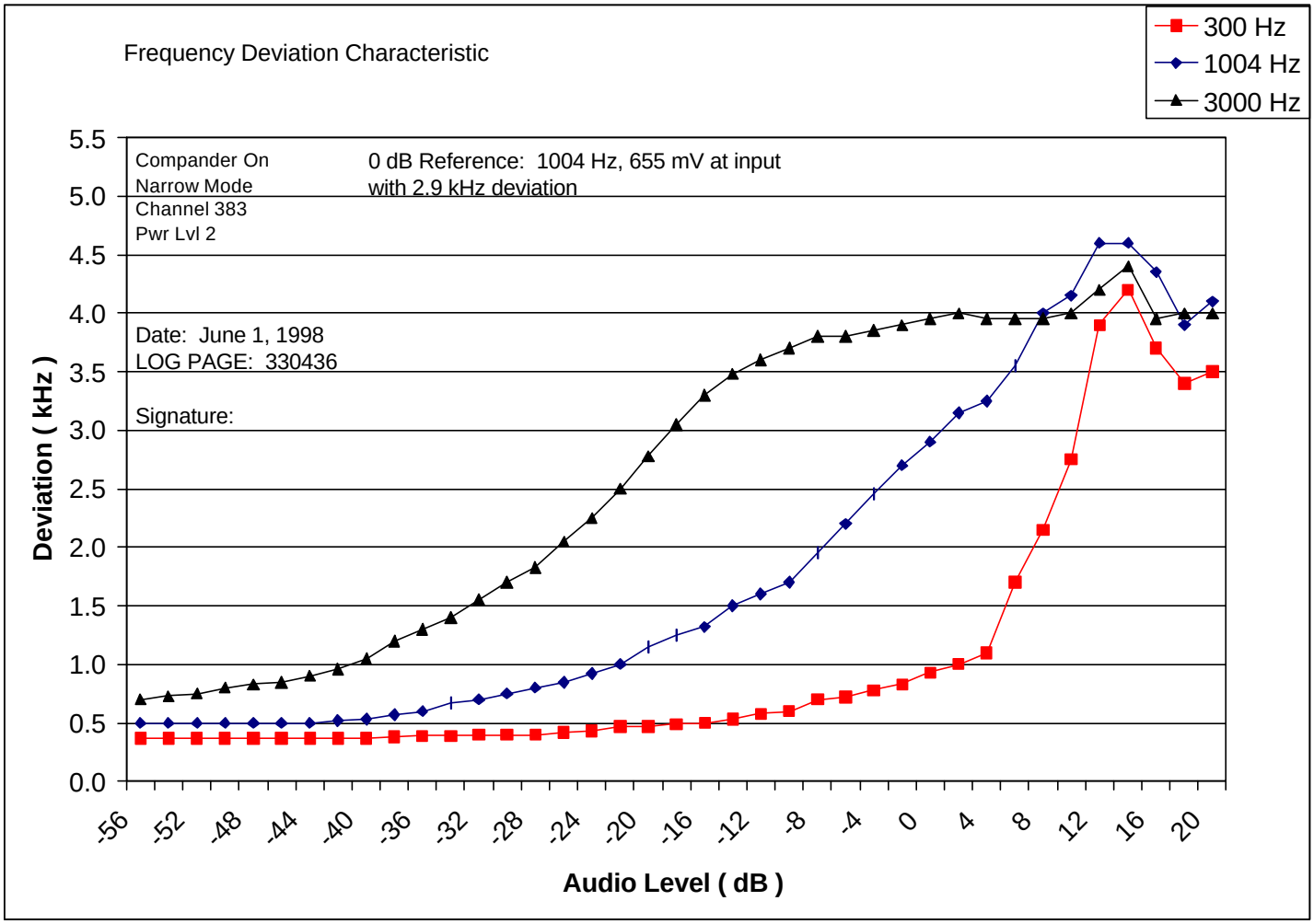
Modulation Limiting (Compander In Wide Mode)-Graph



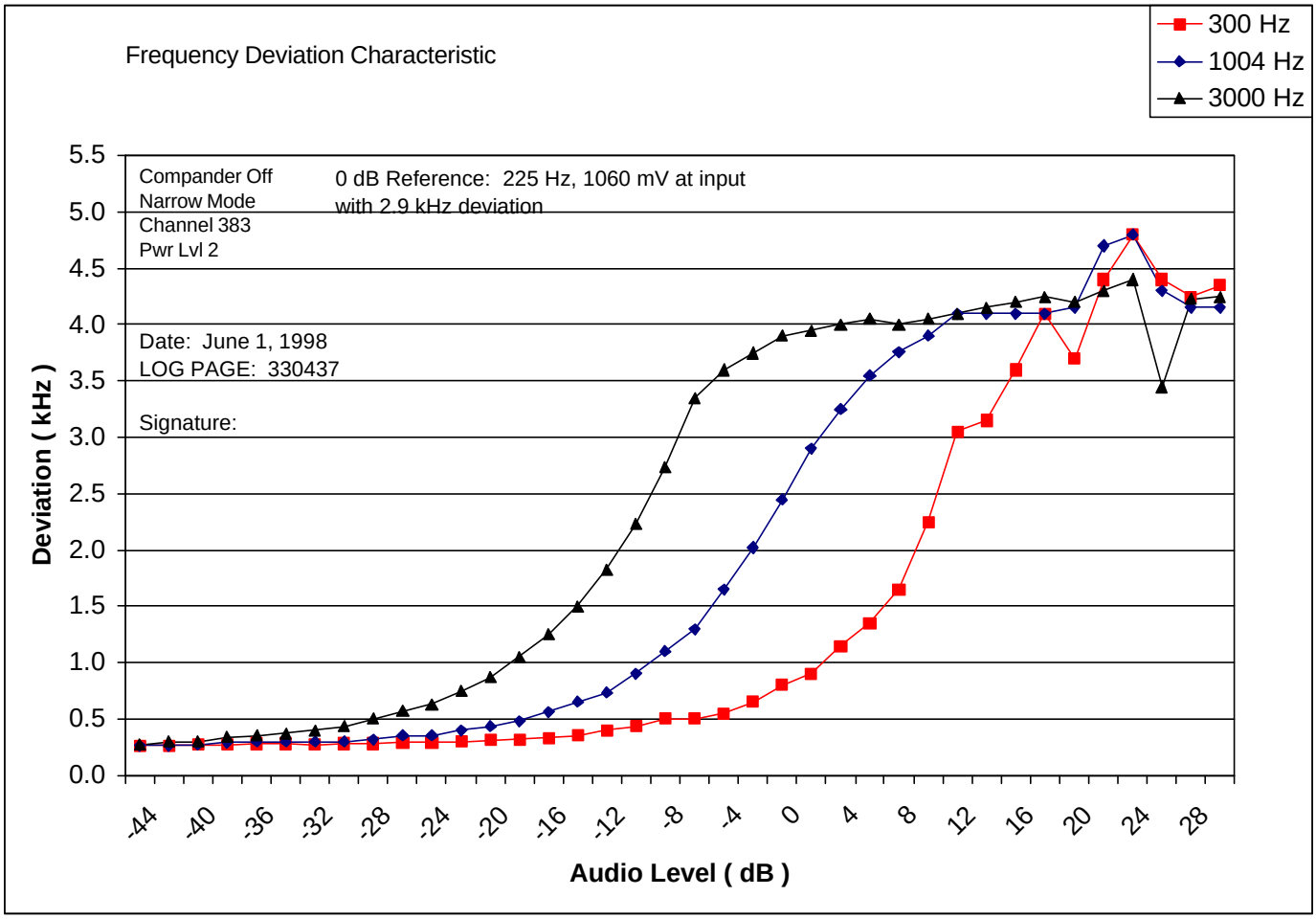
Modulation Limiting (Compander Out Wide Mode)-Graph



Modulation Limiting (Compander In Narrow Mode)-Graph



Modulation Limiting (Compander Out Narrow Mode)-Graph



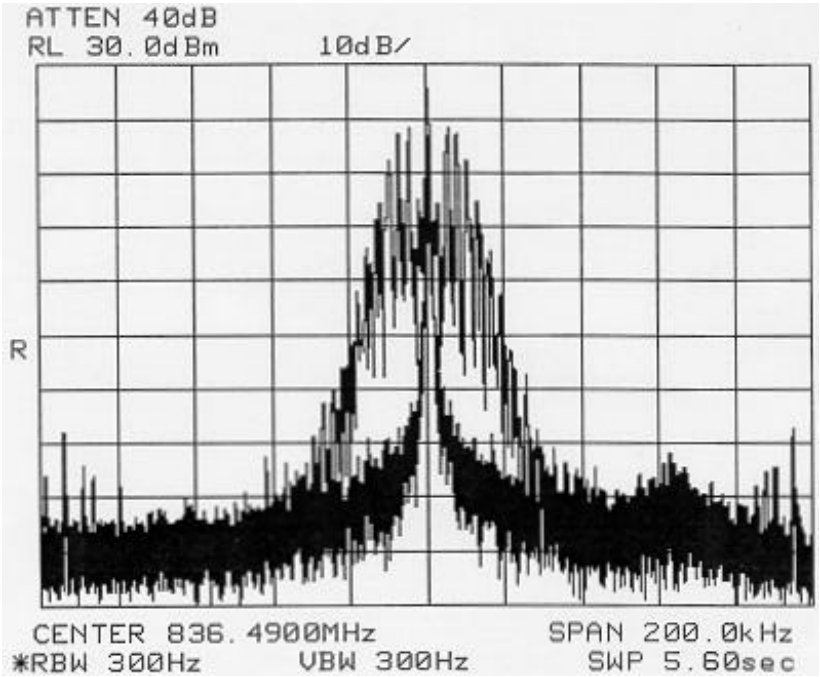
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F8W

DEVIATION OF THE CARRIER WITH 2500 Hz AUDIO MODULATION

HORIZONTAL SCALE = 20 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO PRODUCE +/- 6 kHz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 12 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with the 2500 Hz tone, 16 dB greater than that required to produce +/- 6 kHz modulation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.**
b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 63 + 10log$_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

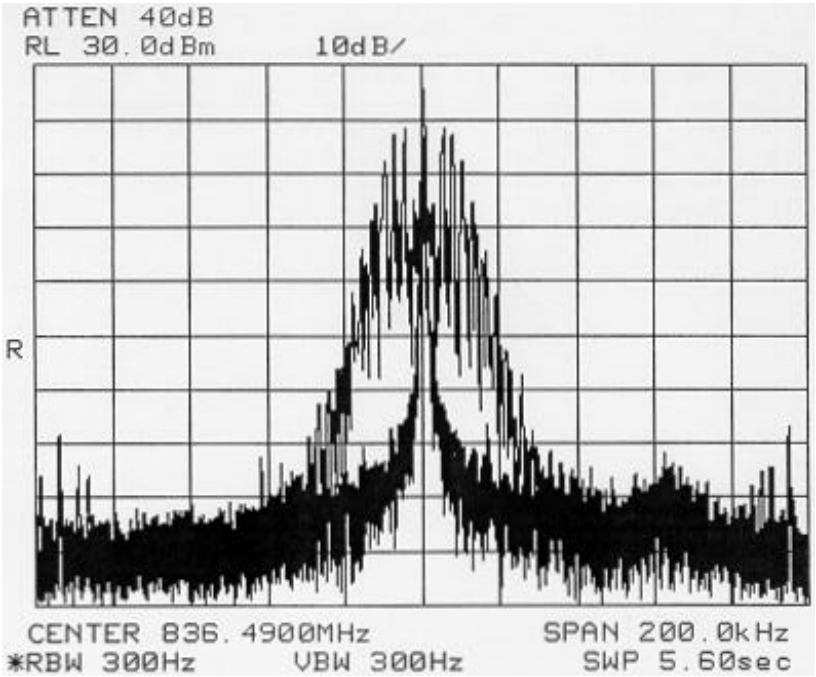
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F8W

DEVIATION OF THE CARRIER WITH 2500 Hz AUDIO MODULATION AND SUPERVISORY AUDIO TONE

HORIZONTAL SCALE = 20 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO PRODUCE +/- 6 kHz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 12 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with signaling tone with the 2500 Hz tone, 16 dB greater than that required to produce +/- 6 kHz modulation add SAT with +/- 2kHz of deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.**

b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 63 + 10log$_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

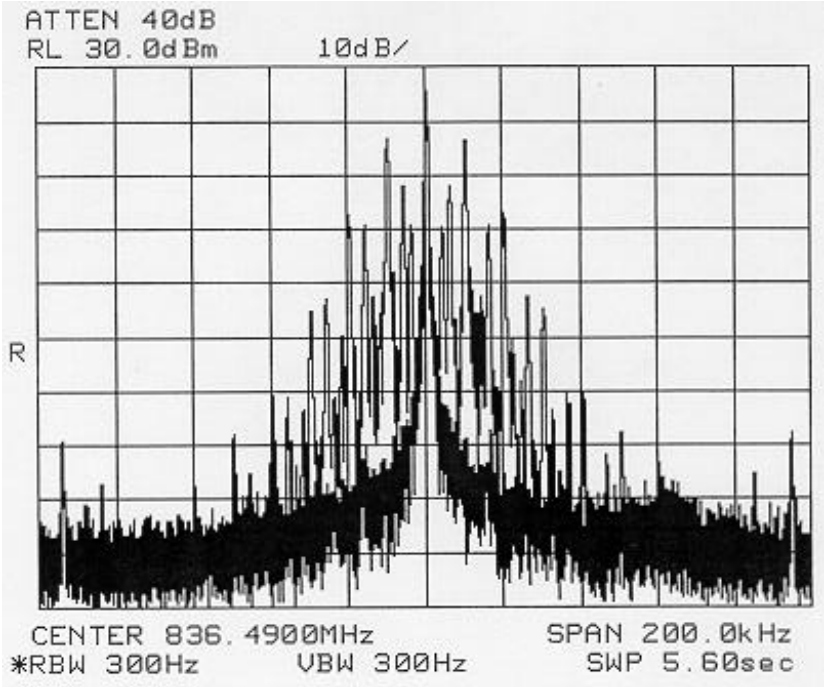
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F1D

DEVIATION OF THE CARRIER WITH 10 kHz SIGNALING TONE AND SUPERVISORY AUDIO TONE

HORIZONTAL SCALE = 20 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 12 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with signaling tone with +/- 8 kHz deviation and add SAT with +/- 2kHz of deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.**
b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to and including 90 kHz, the sideband is at least 45 dB below the carrier.**
c. **On any frequency removed from the assigned carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 63 + $10\log_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

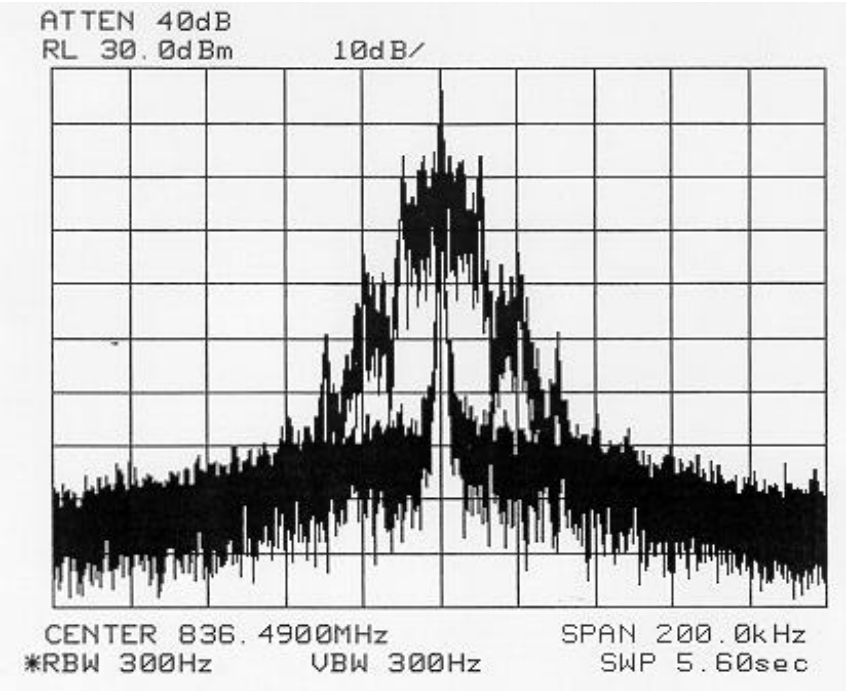
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F1D

DEVIATION OF THE CARRIER WITH WIDE BAND DATA

HORIZONTAL SCALE = 20 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 12 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with wide band data with +/- 8 kHz. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.**
b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to and including 90 kHz, the sideband is at least 45 dB below the carrier.**
c. **On any frequency removed from the assigned carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 63 + 10log$_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

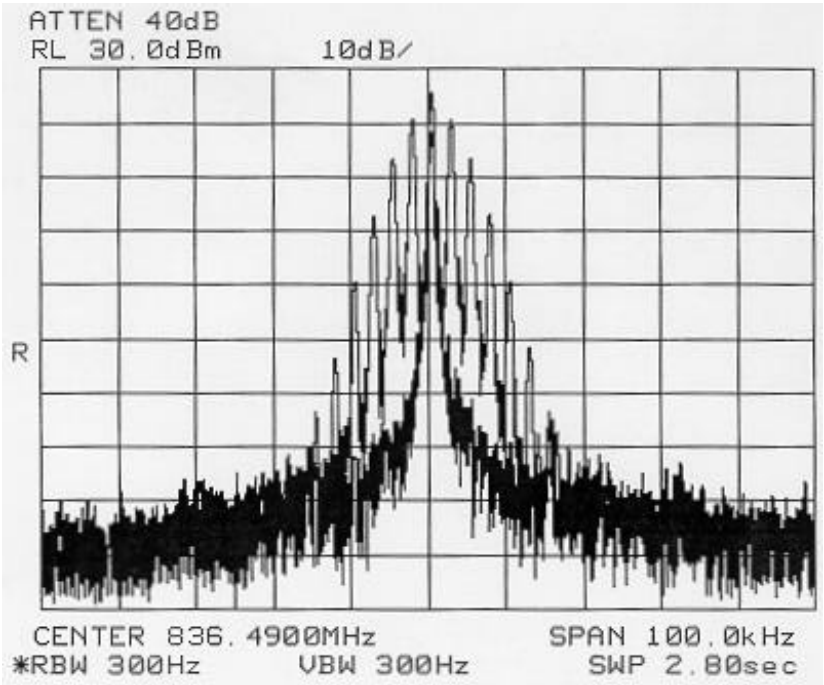
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F9W

DEVIATION OF THE CARRIER WITH 2500 Hz AUDIO MODULATION (NARROW MODE)

HORIZONTAL SCALE = 10 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO PRODUCE +/- 2.5 kHz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 5 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with the 2500 Hz tone, 16 dB greater than that required to produce +/- 2.5 kHz modulation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 9 kHz, up to and including 45 kHz, the sideband is at least 24 dB below the carrier.**
b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 43 + $10\log_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

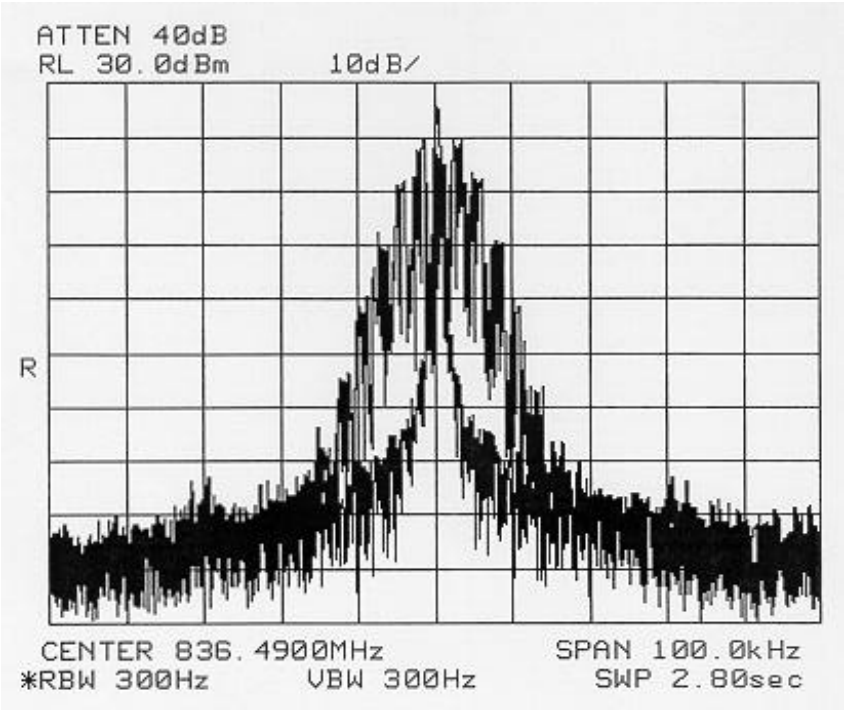
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F9W

DEVIATION OF THE CARRIER WITH 2500 Hz AUDIO MODULATION AND DSAT (NARROW MODE)

HORIZONTAL SCALE = 10 kHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30 dBm)
RESOLUTION BANDWIDTH = 300 Hz
VIDEO BANDWIDTH = 300 Hz
AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO PRODUCE +/- 2.5 kHz
POWER LEVEL = 0.54 W

MEASURED DATA:

1. **Instantaneous Deviation Control set for a maximum of +/- 5 kHz.**
2. **Tune and adjust to obtain unmodulated carrier on the spectrum analyzer. Save trace of the unmodulated carrier.**
3. **Modulate the transmitter with the 2500 Hz tone, 16 dB greater than that required to produce +/- 2.5 kHz modulation and add DSAT with +/- 700 Hz deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.**



SPEC LIMITS:

a. **On any frequency removed from the assigned carrier frequency by more than 15 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.**

b. **On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 43 + 10log$_{10}$(mean output power in Watts) dB, whichever is the smaller attenuation.**

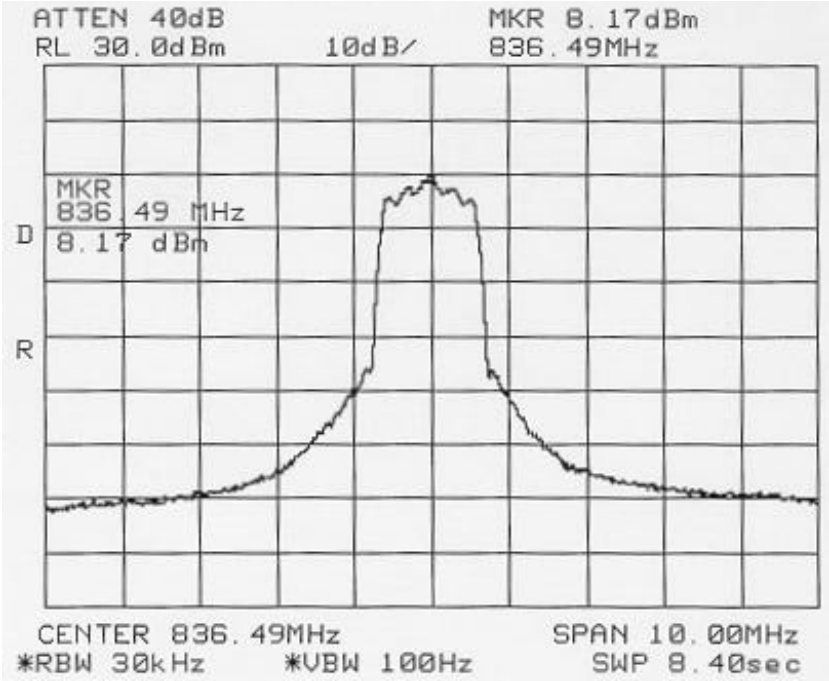
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F9W

DEVIATION OF THE CARRIER WITH OQPSK MODULATION

HORIZONTAL SCALE = 1 MHz / DIVISION
VERTICAL SCALE = 10 dB / DIVISION (ATTENUATION)
RESOLUTION BANDWIDTH = 30 KHz
POWER LEVEL = 0.250 W (Average Power in transmitter)

MEASURED DATA:

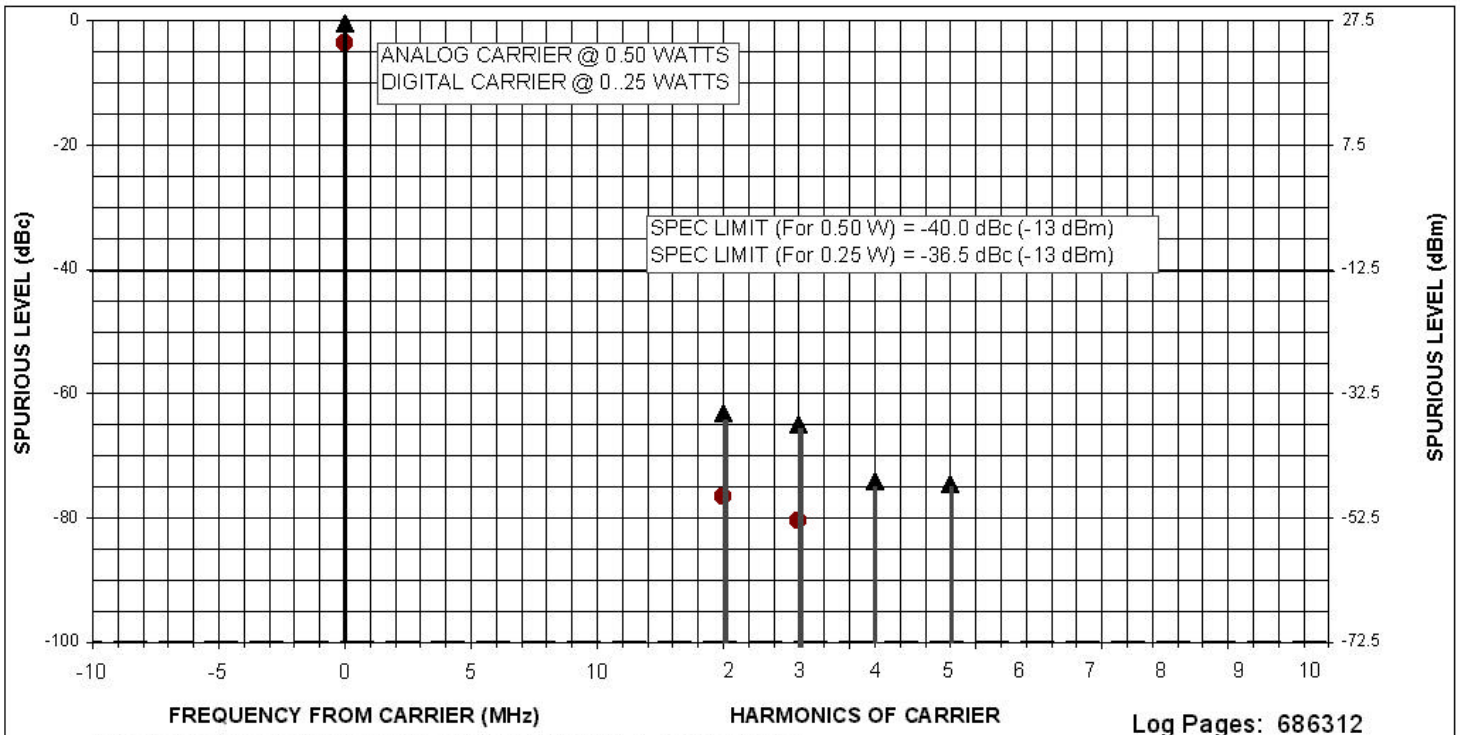
1. Modulate the transmitter with OQPSK modulation, using pseudo random data. Obtain image on spectrum analyzer.



COMMENTS:

Modulation products in a bandwidth of 30 kHz centered ±900 kHz from the channel center frequency should be at least 45 dB and shall be at least 42 dB below the mean output power level.

Conducted Spurious and Harmonic Emissions-Graph

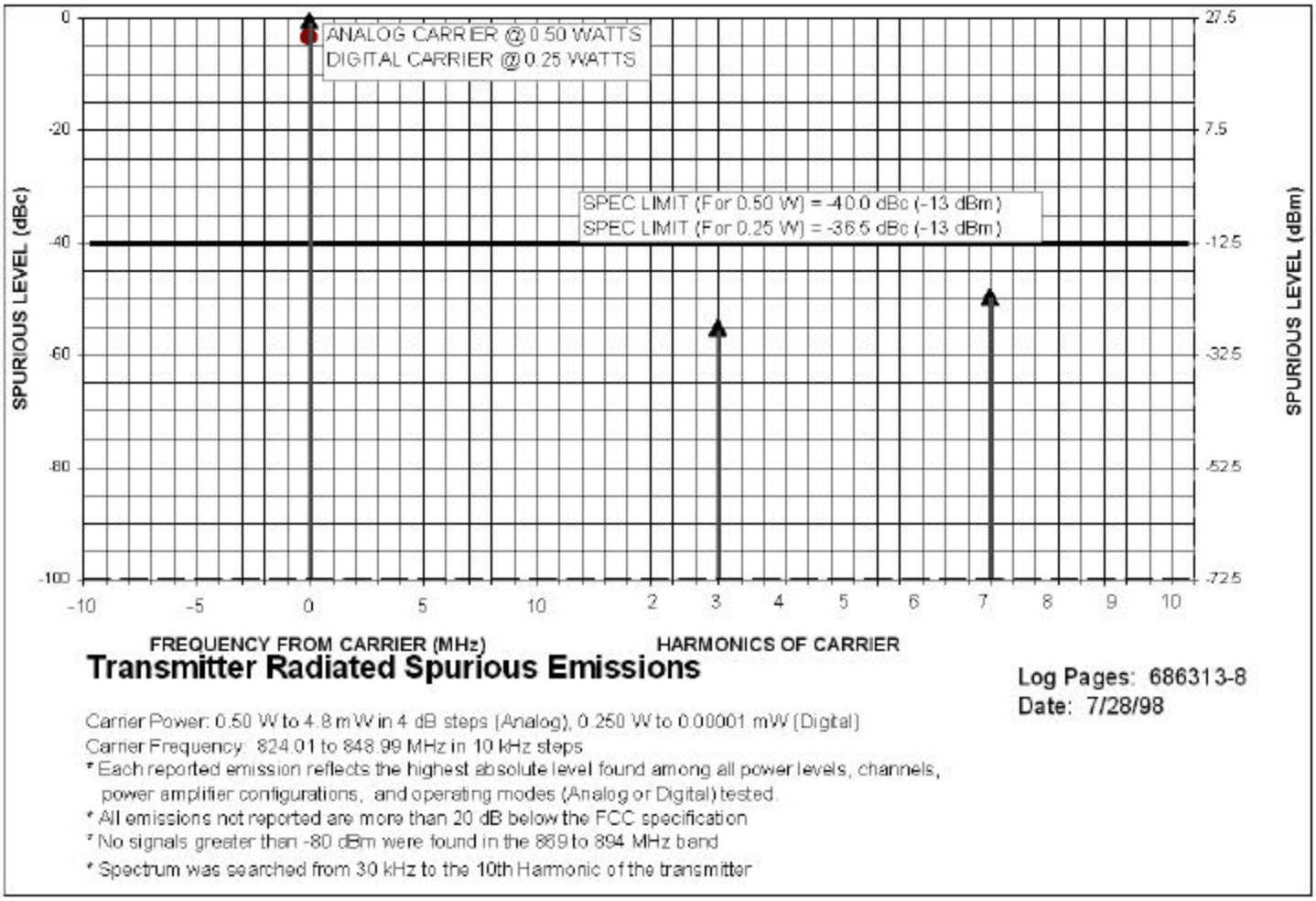


Transmitter Conducted Spurious Emissions

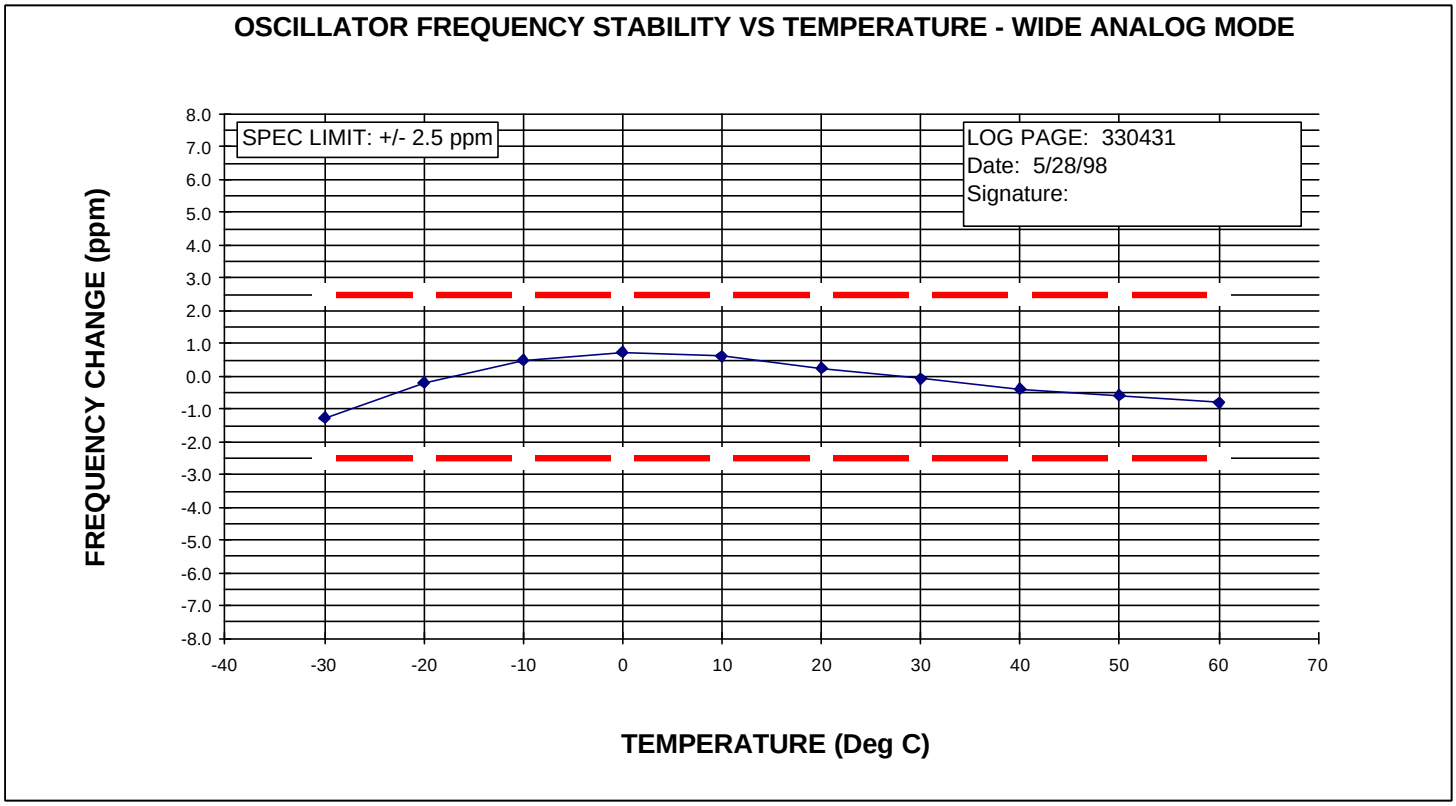
Log Pages: 686312
Date: 7/29/98

Carrier Power: 0.50 W to 4.8 mW in 4 dB steps (Analog), 0.250 W to 0.00001 mW (Digital)
Carrier Frequency: 824.01 to 848.99 MHz in 10 kHz steps
* Each reported emission reflects the highest absolute level found among all power levels, channels, power amplifier configurations, and operating modes (Analog or Digital) tested.
* All emissions not reported are more than 20 dB below the FCC specification
* No signals greater than -80 dBm were found in the 869 to 894 MHz band
* Spectrum was searched from 30 kHz to the 10th Harmonic of the transmitter

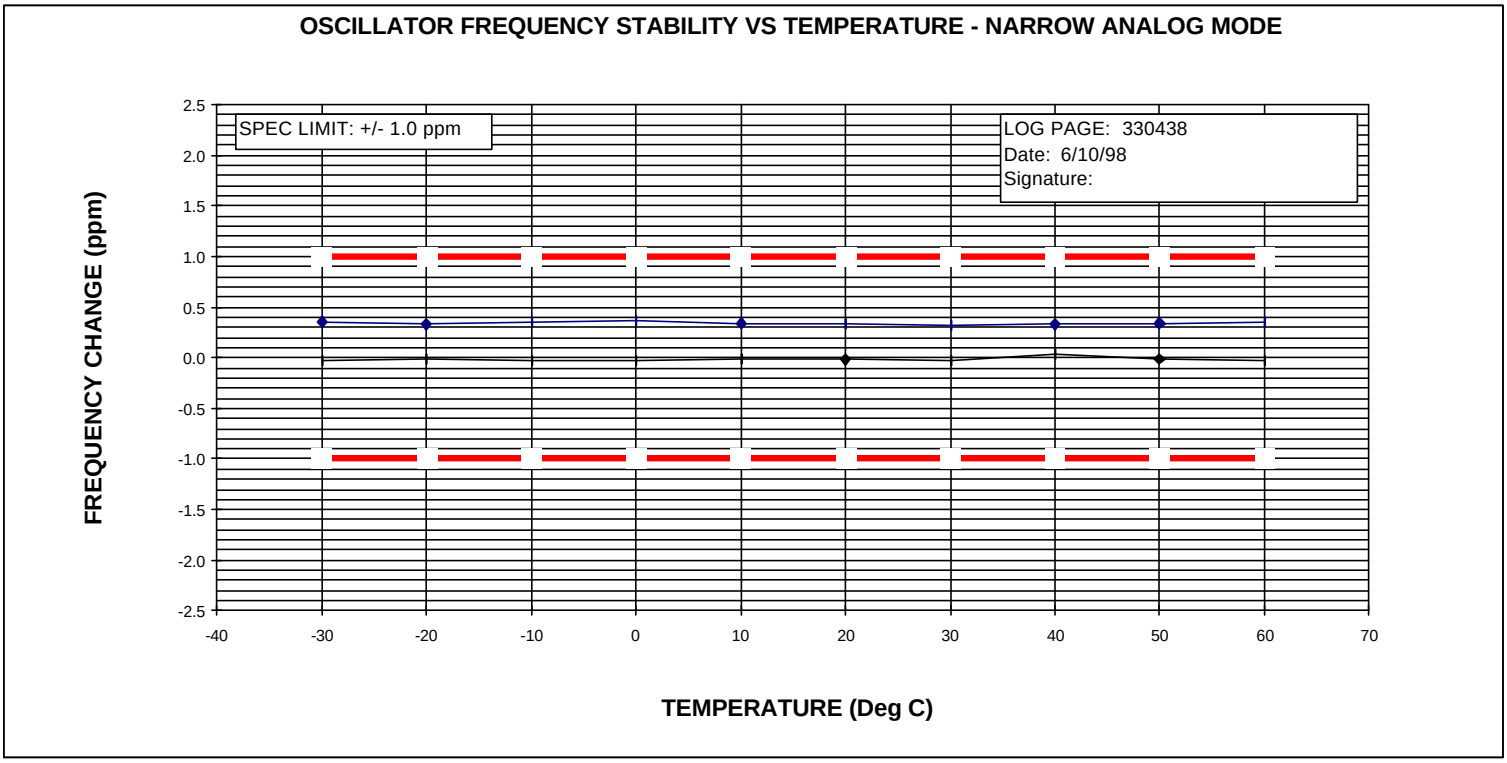
Radiated Spurious and Harmonic Emissions-Graph



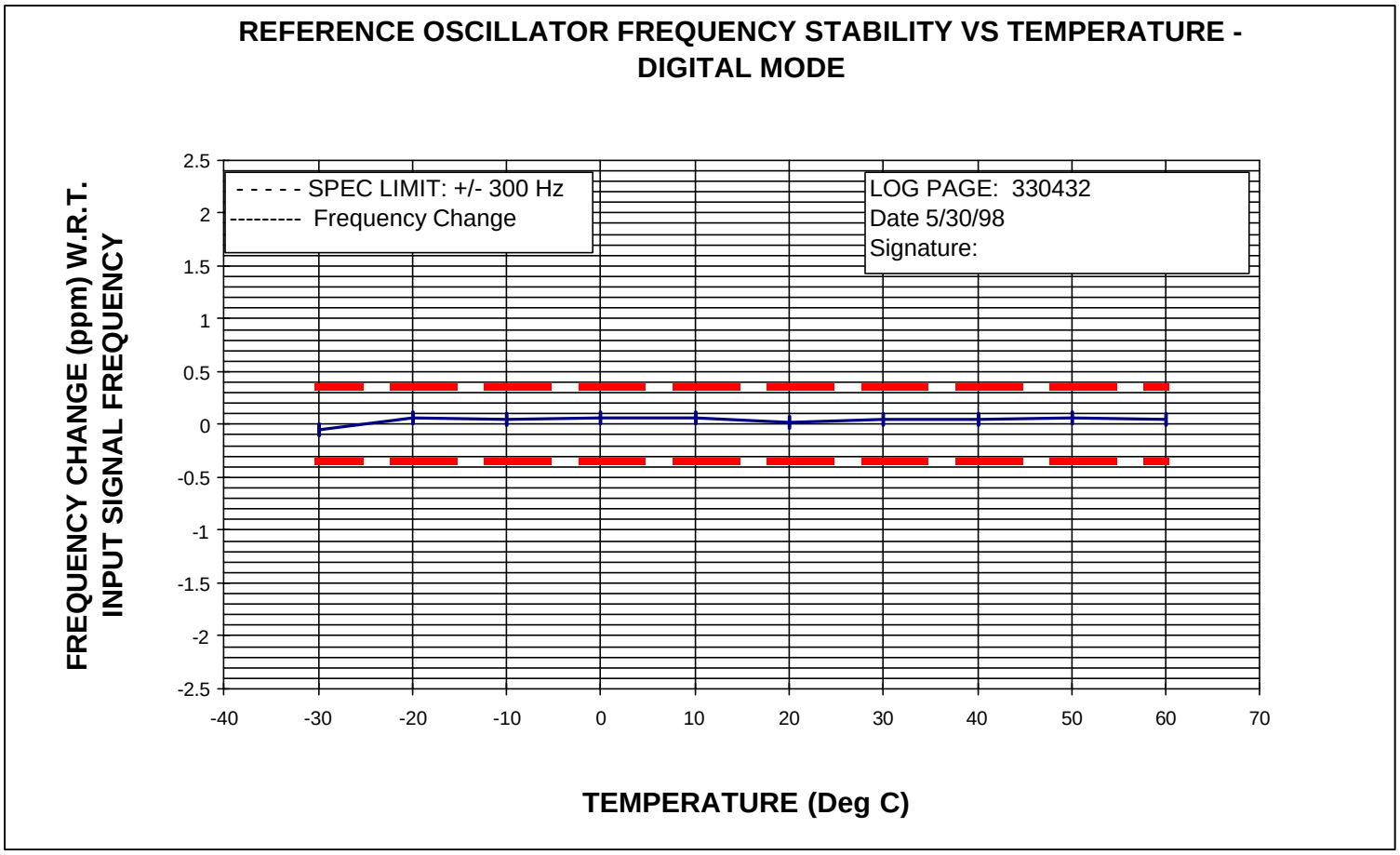
Frequency Change vs. Temperature (Wide Mode)-Graph



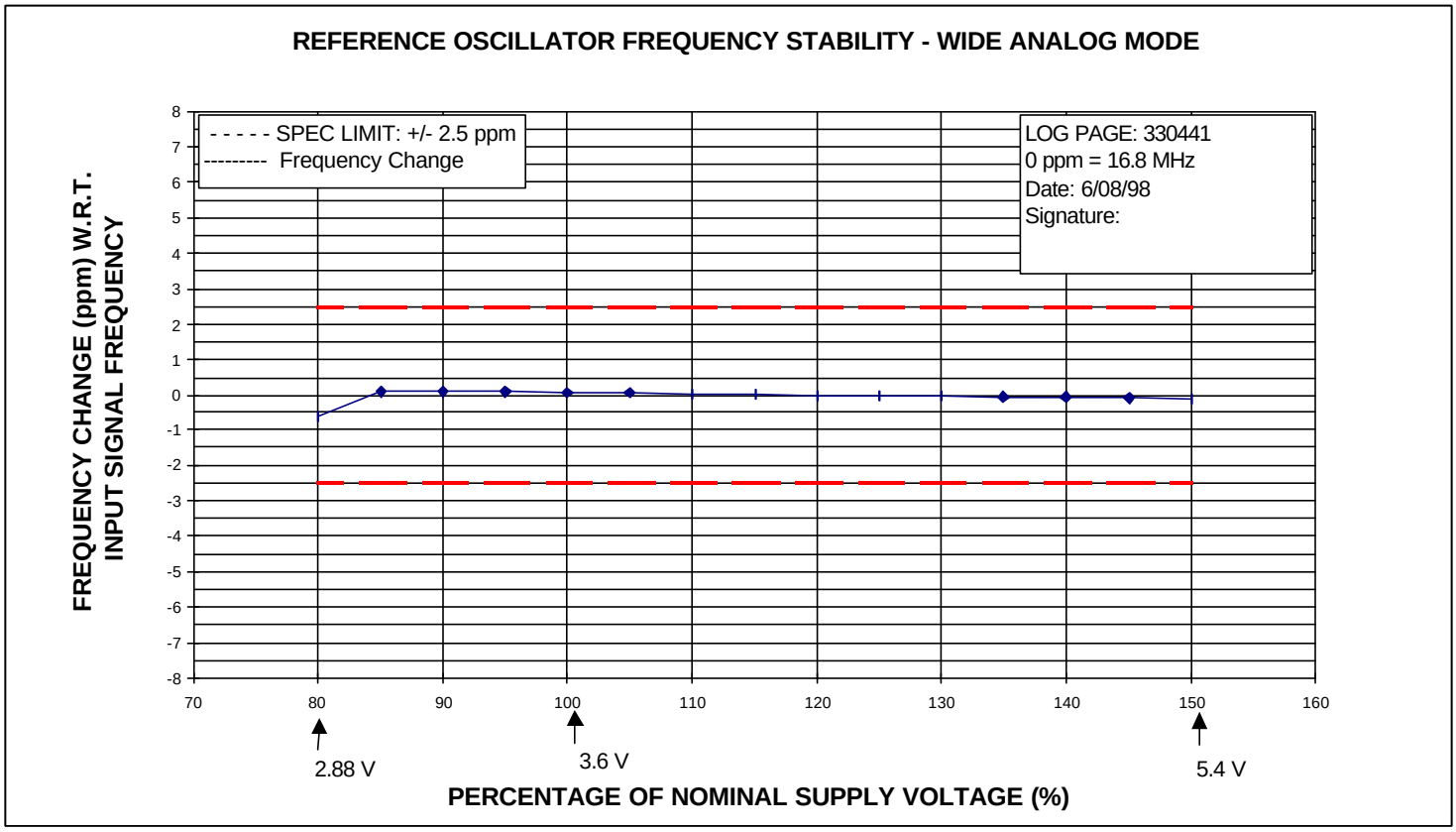
Frequency Change vs. Temperature (Narrow Mode)-Graph



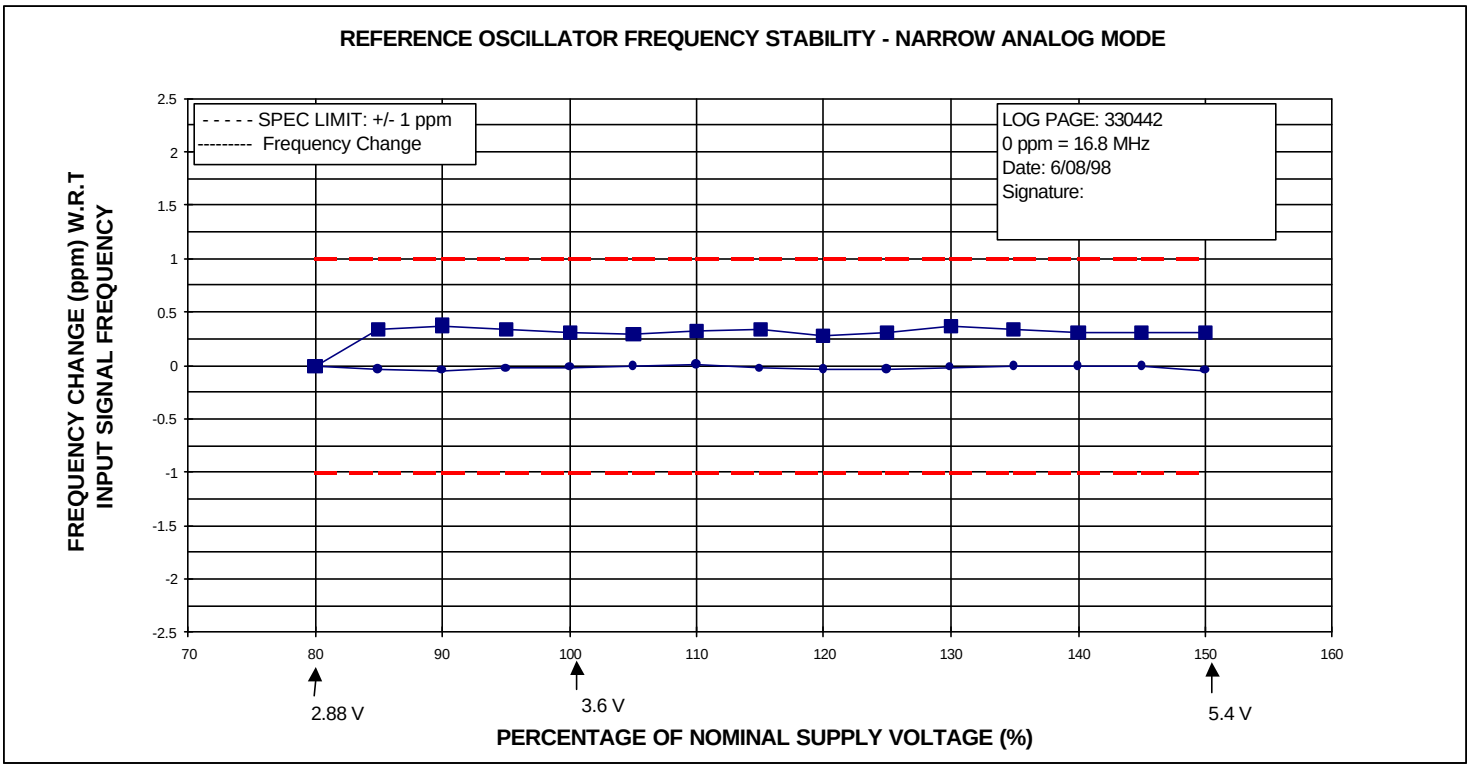
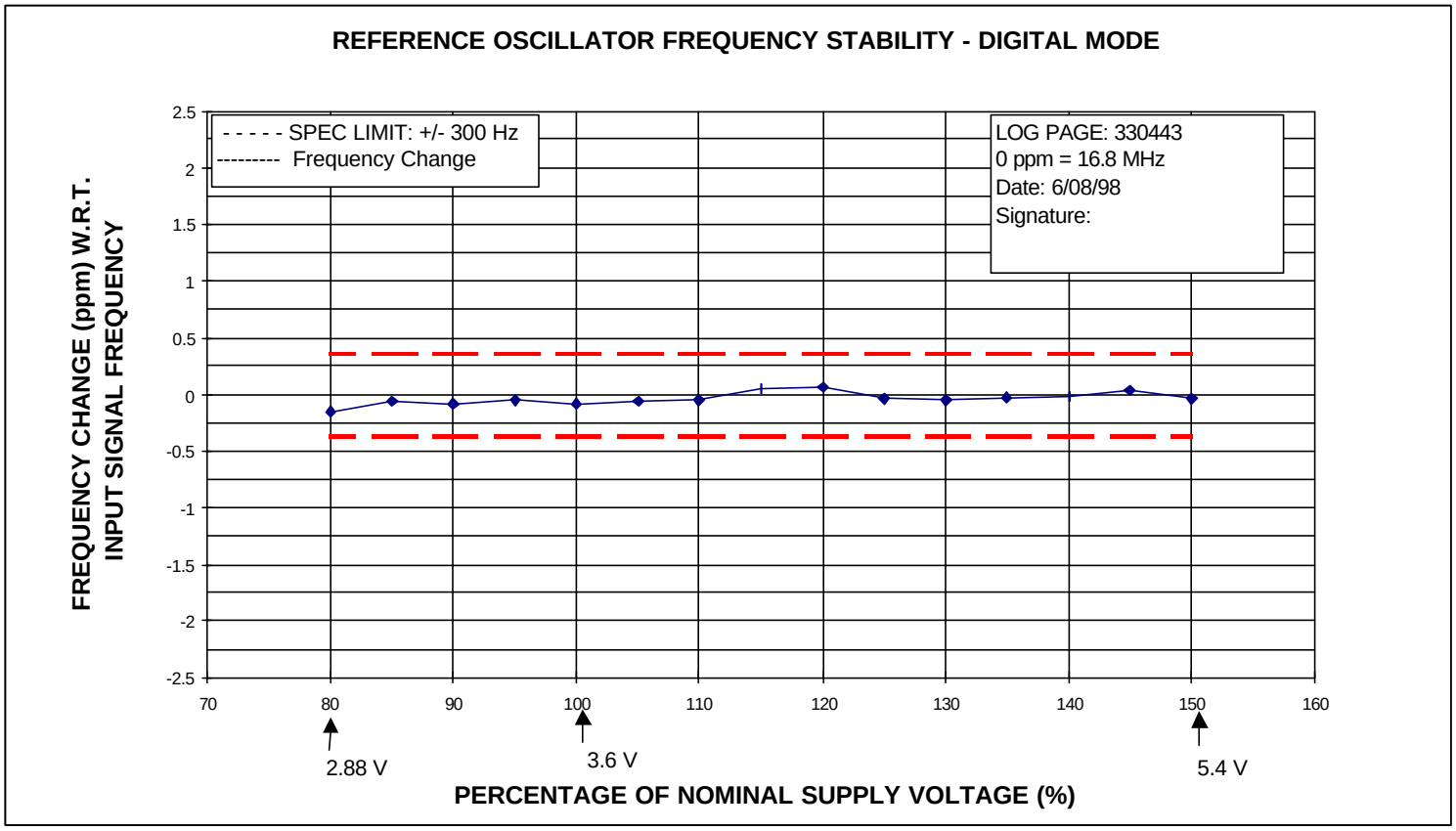
Frequency Change vs. Temperature (Digital Mode)-Graph



Frequency Change vs. Supply Voltage (Wide Mode)-Graph



Frequency Change vs. Supply Voltage (Narrow Mode)-Graph



Frequency Change vs. Supply Voltage (Digital Mode)-Graph