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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: 0.470W

Measured DC voltage: 3.6V

Measured DC current: 654mA.

Measured RF input: 4.48mW

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: 0.270W

Measured DC voltage: 3.6V

Measured DC current: 455mA.

Measured RF input: 2.32mW

EFFECTIVE RADIATED POWER

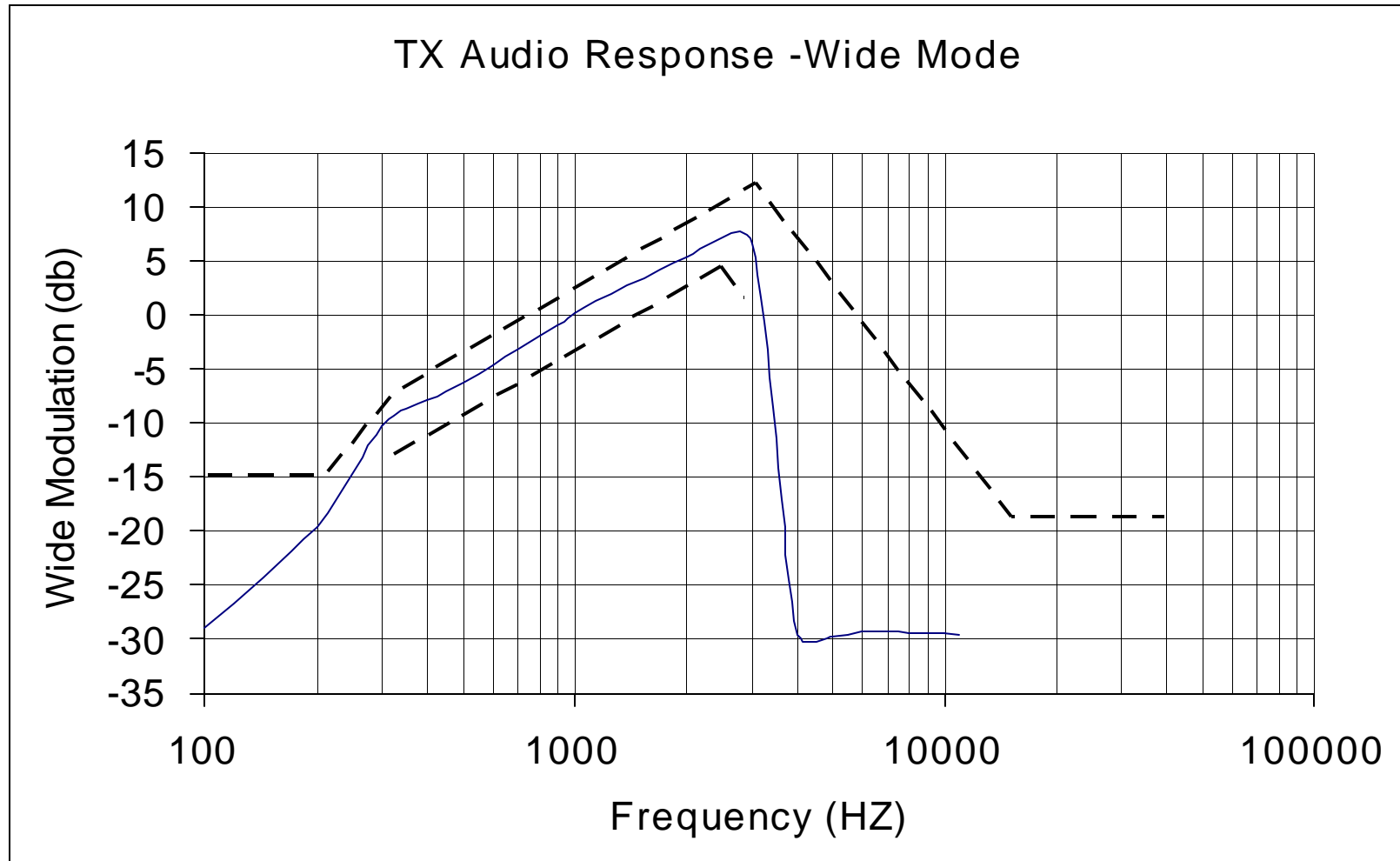
Since the unit is intended for use with a provided antenna (and “non standard” RF connector), ERP is measured. The dipole antenna substitution method was used. The result indicated is the maximum ERP found over the channels and radio orientations tested.

Maximum Effective Radiated Power: Analog Mode : 26.1dBm

AUDIO RESPONSE -GRAPH

Signature:

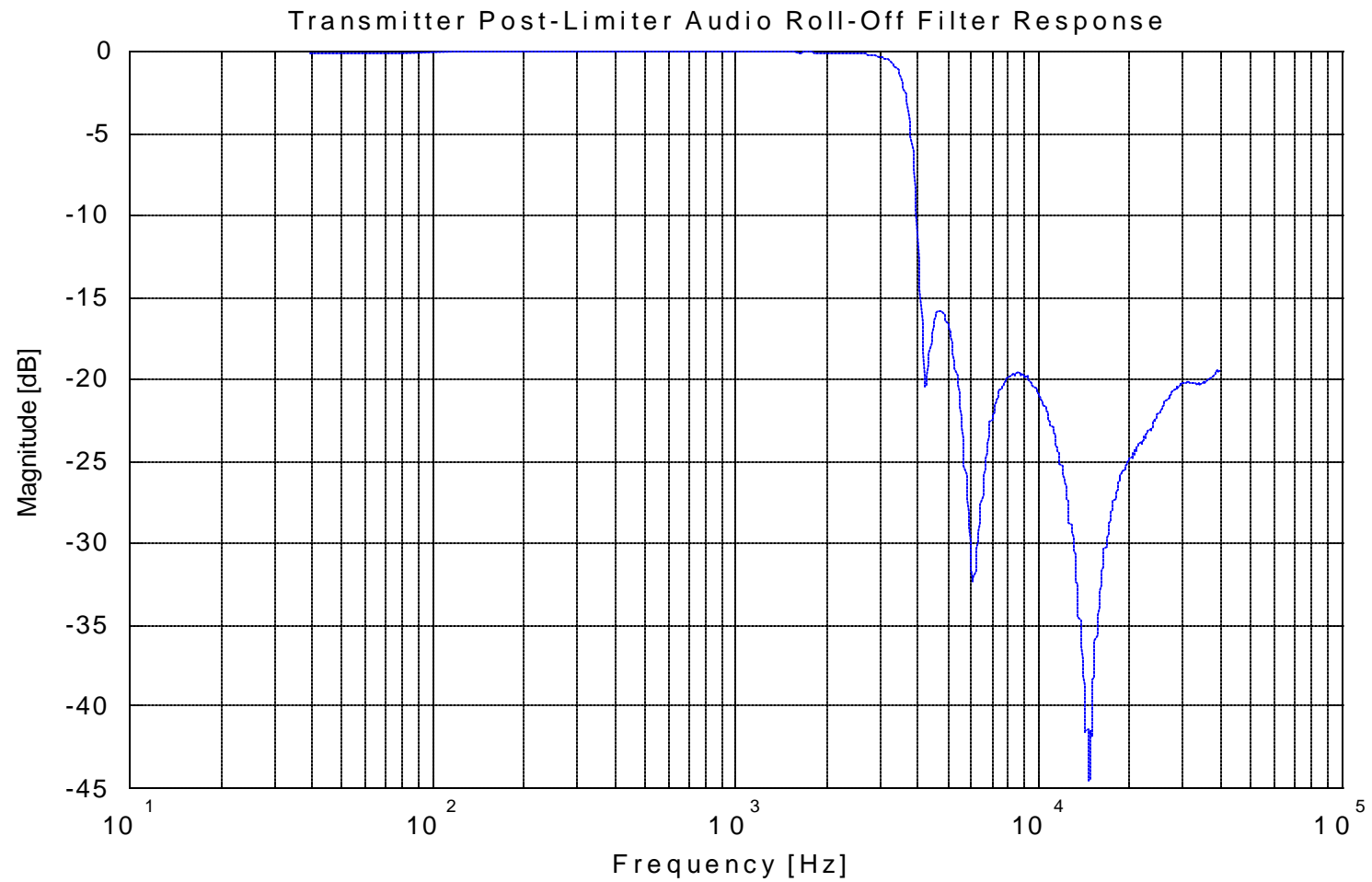
Date: 9/28/99



POST LIMITER LOW PASS FILTER RESPONSE -GRAPH

Signature:

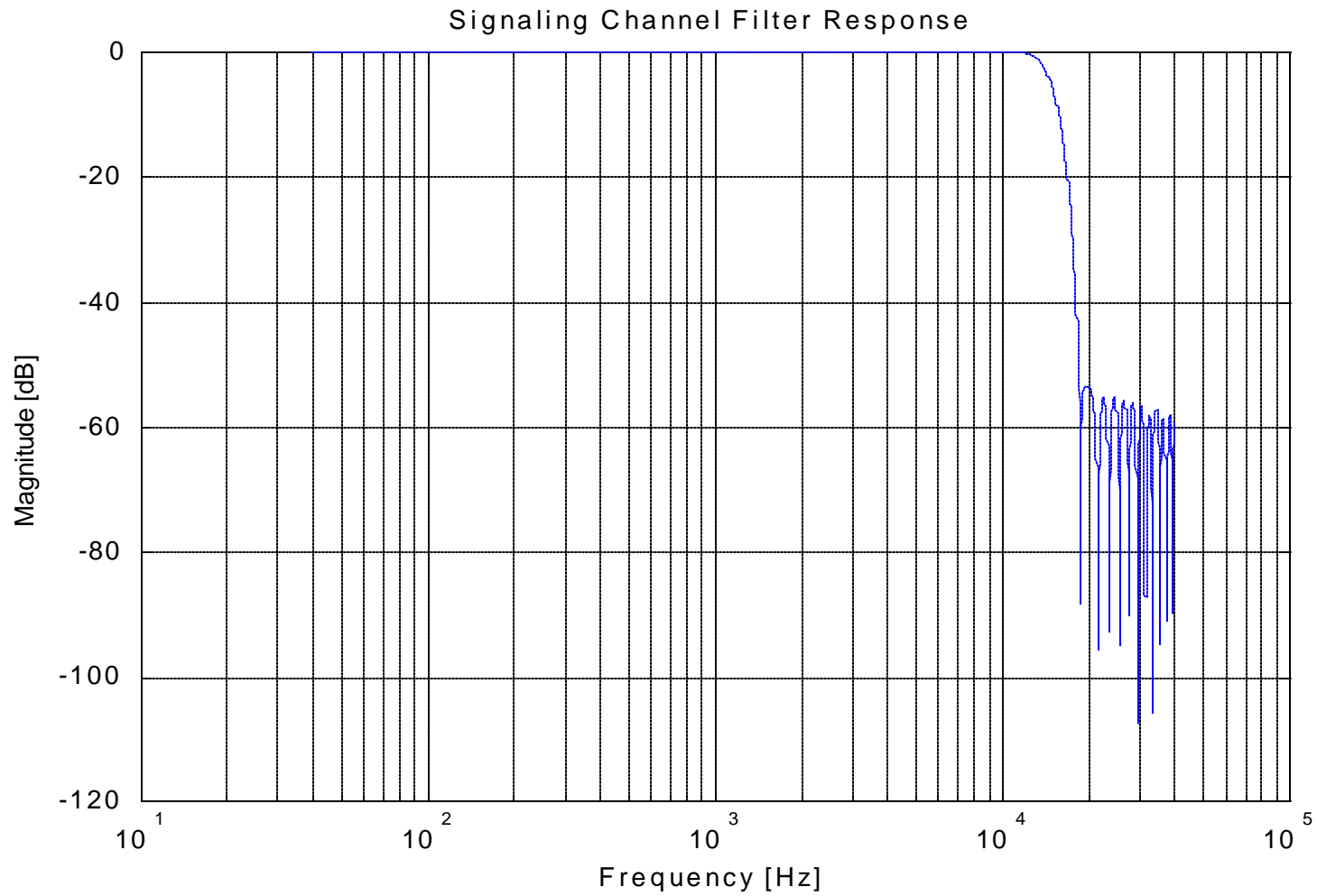
Date: 9/28/99



SIGNALING CHANNEL AUDIO ROLL-OFF FILTER RESPONSE - GRAPH

Signature:

Date: 9/28/99

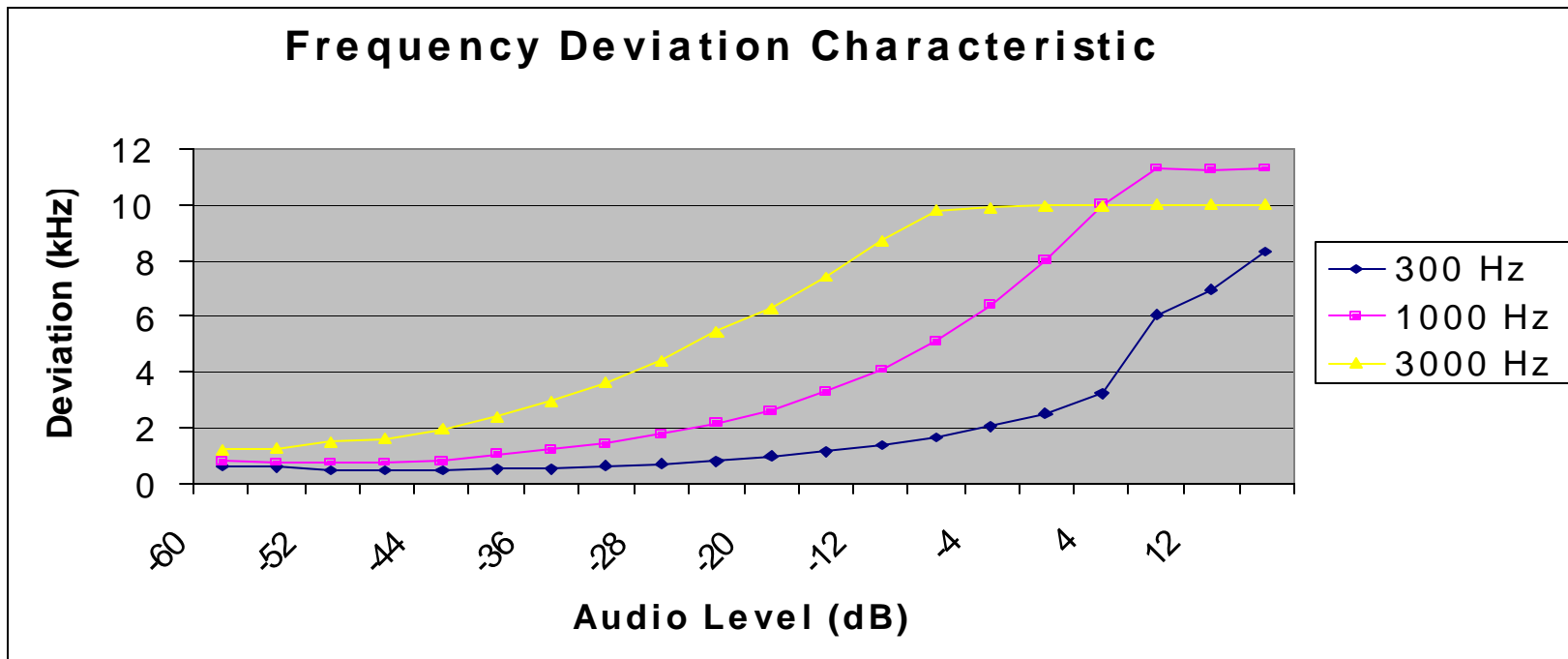


MODULATION LIMITING (COMPANDOR IN) -GRAPH

Componder On
Wide Mode 0 dB Reference: 1004 Hz, 860 mV with 8.0 kHz deviation
Channel 322
Pwr Lvl 2

Date: September 22, 1999
Log Pages: 111784-85

Signature:

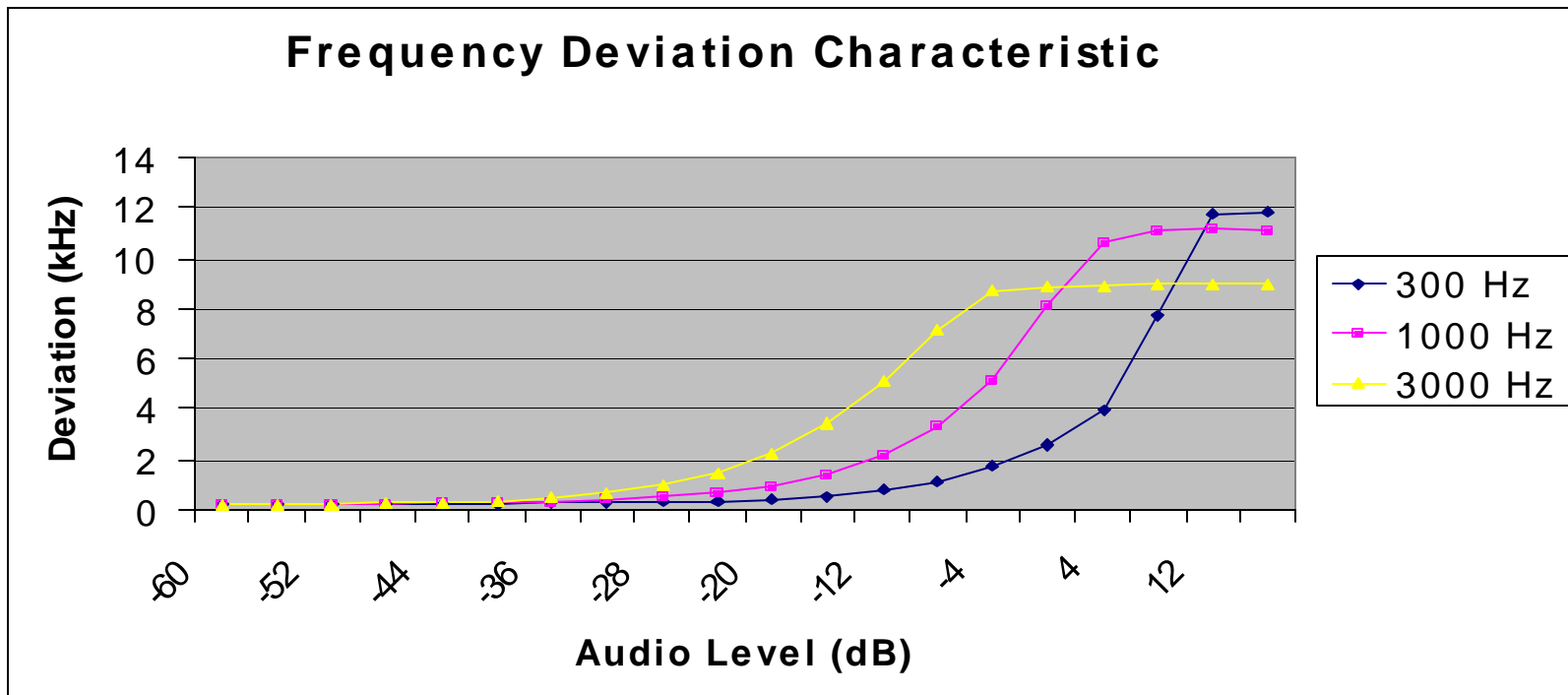


MODULATION LIMITING (COMPANDOR OUT) -GRAPH

Compander Off
Wide Mode 0 dB Reference: 1004 Hz, 300 mV with 8.0 kHz deviation
Channel 322
Pwr Lvl 2

Date: October 7, 1999
Log Pages: 111784-85

Signature:



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 = .501 W

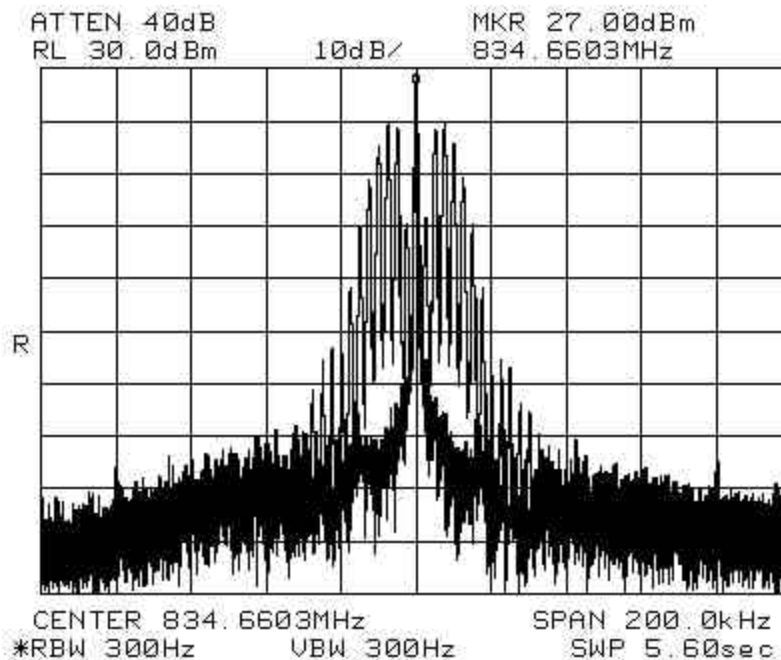
MEASURED DATA:

Date: September 22, 1999

Log Pages: 111784-86

Signature:

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 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.



Occupied Bandwidth,
Audio (Wide Mode)
Ch. 322

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 $63 + 10 \log$ (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 = .501 W

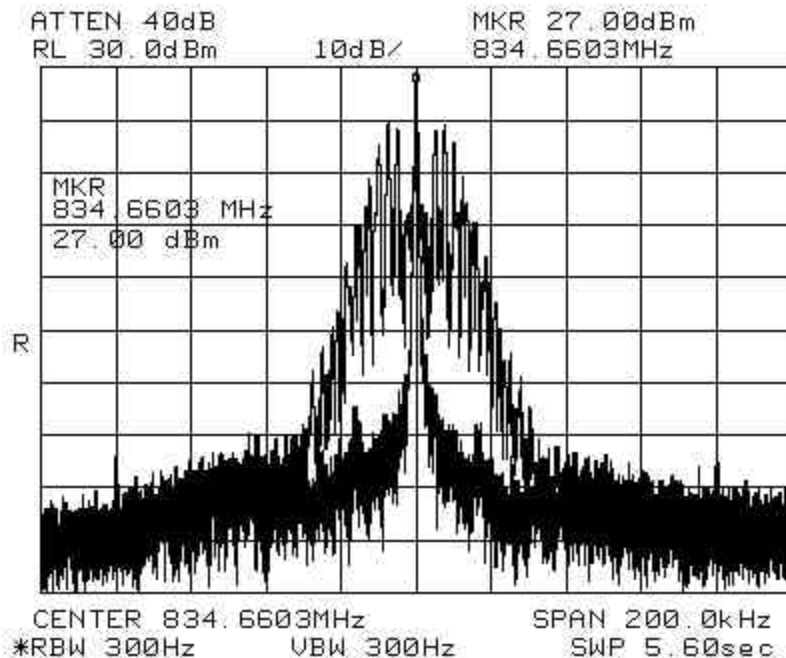
MEASURED DATA:

Date: September 22, 1999

Log Pages: 111784-86

Signature:

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 2500 Hz tone, 16 dB greater than that required to produce +/- 6 kHz modulation and add SAT with +/- 2 kHz of deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.



**Occupied Bandwidth,
Audio and SAT
Ch.322**

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 (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 = .501 W

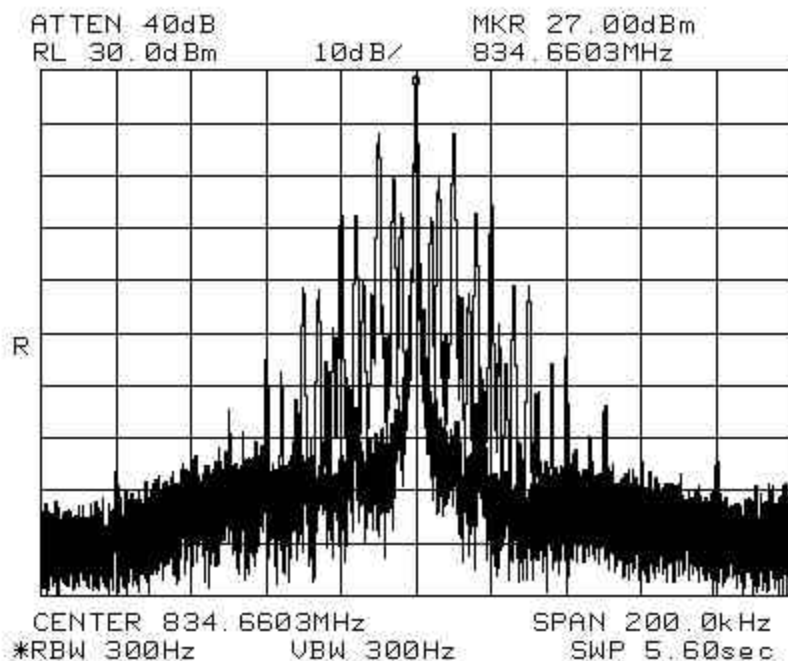
MEASURED DATA:

Date: September 22, 1999

Log Pages: 111784-86

Signature:

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 +/- 2 kHz of deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.



Occupied Bandwidth,
Signaling Tone and SAT
Ch. 322

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 (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 = .501 W

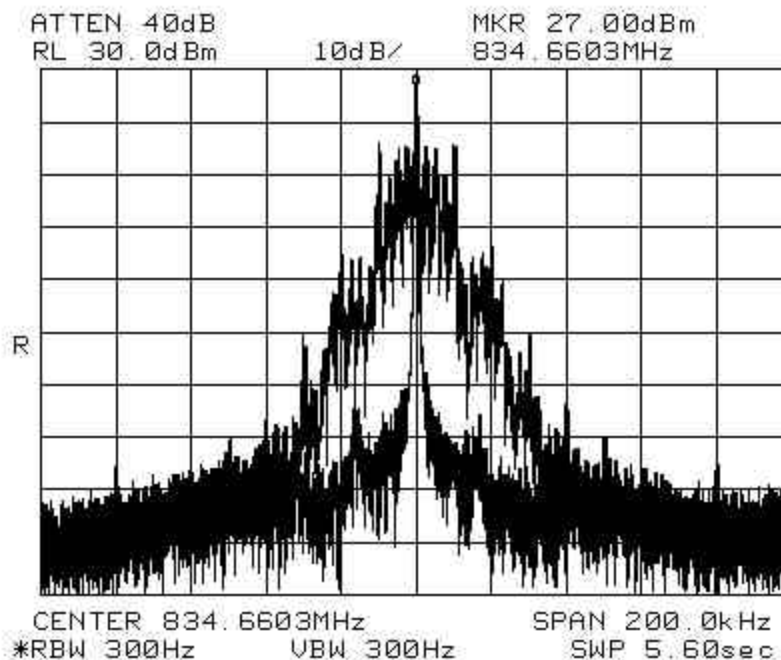
MEASURED DATA:

Date: September 22, 1999

Log Pages: 111784-86

Signature:

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 of deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.

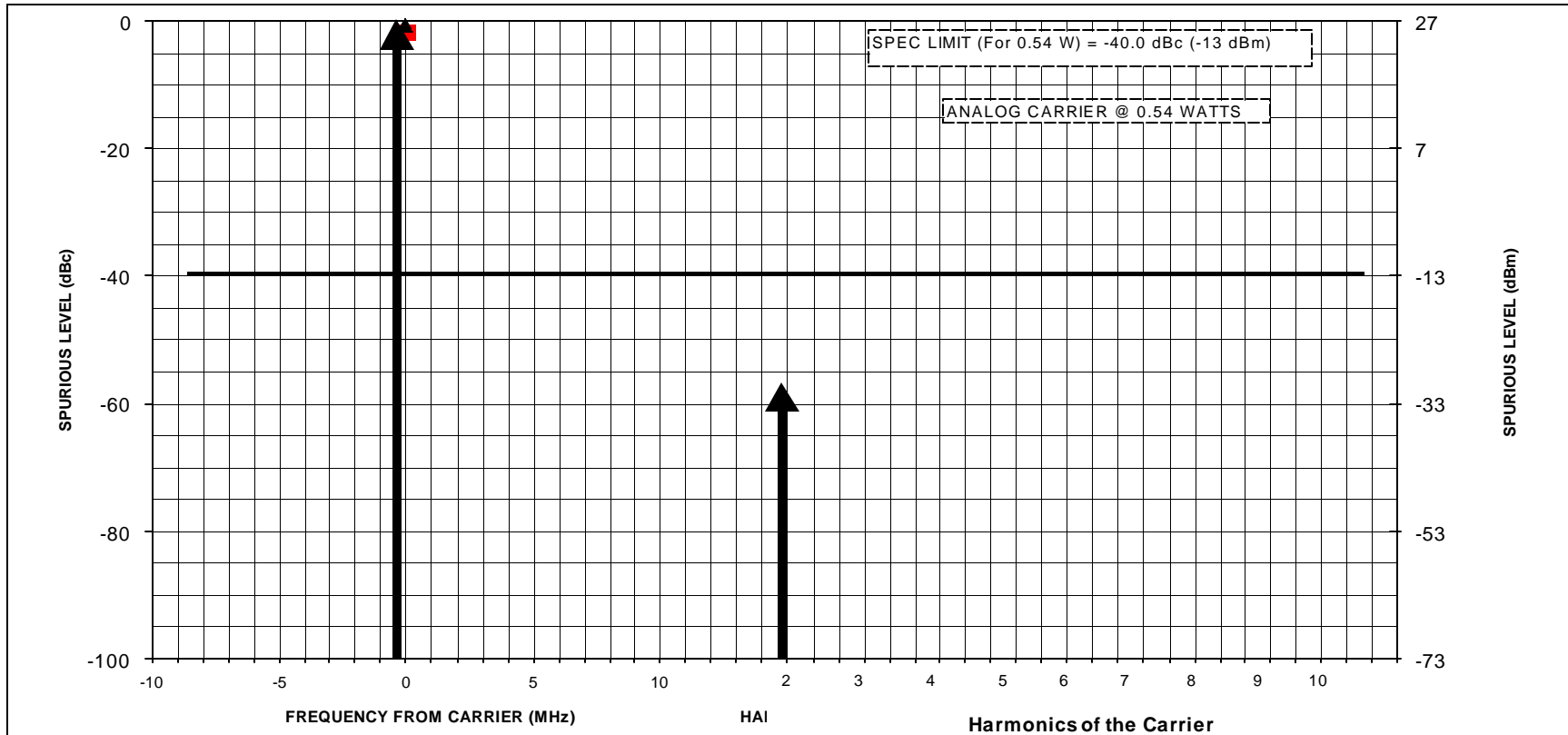


Occupied Bandwidth,
Wideband Data
Ch. 322

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 $63 + 10\log(\text{mean output power in Watts})$ dB, whichever is the smaller attenuation

ANALOG CONDUCTED SPURIOUS AND HARMONIC EMISSIONS – GRAPH

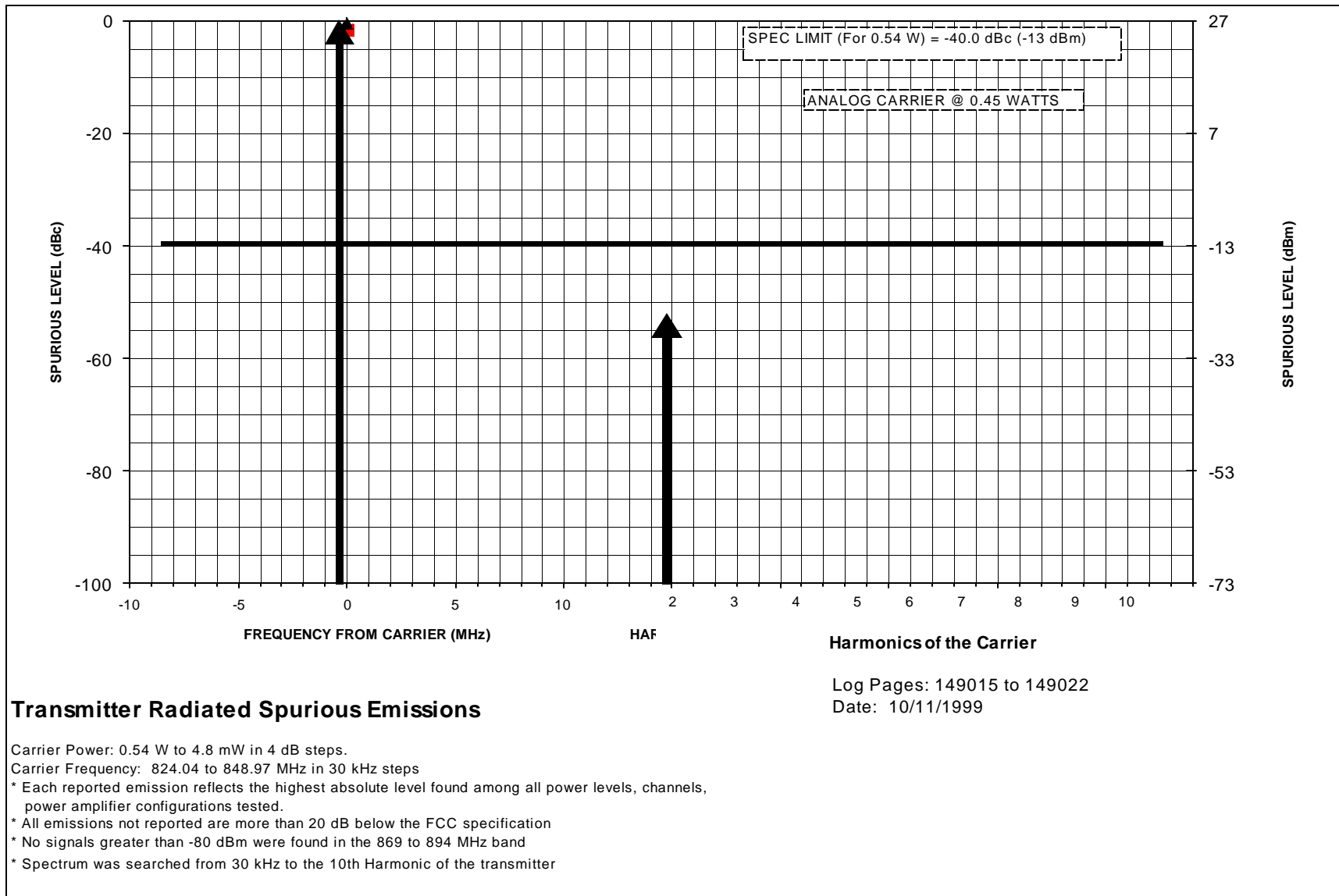


Transmitter Radiated Spurious Emissions

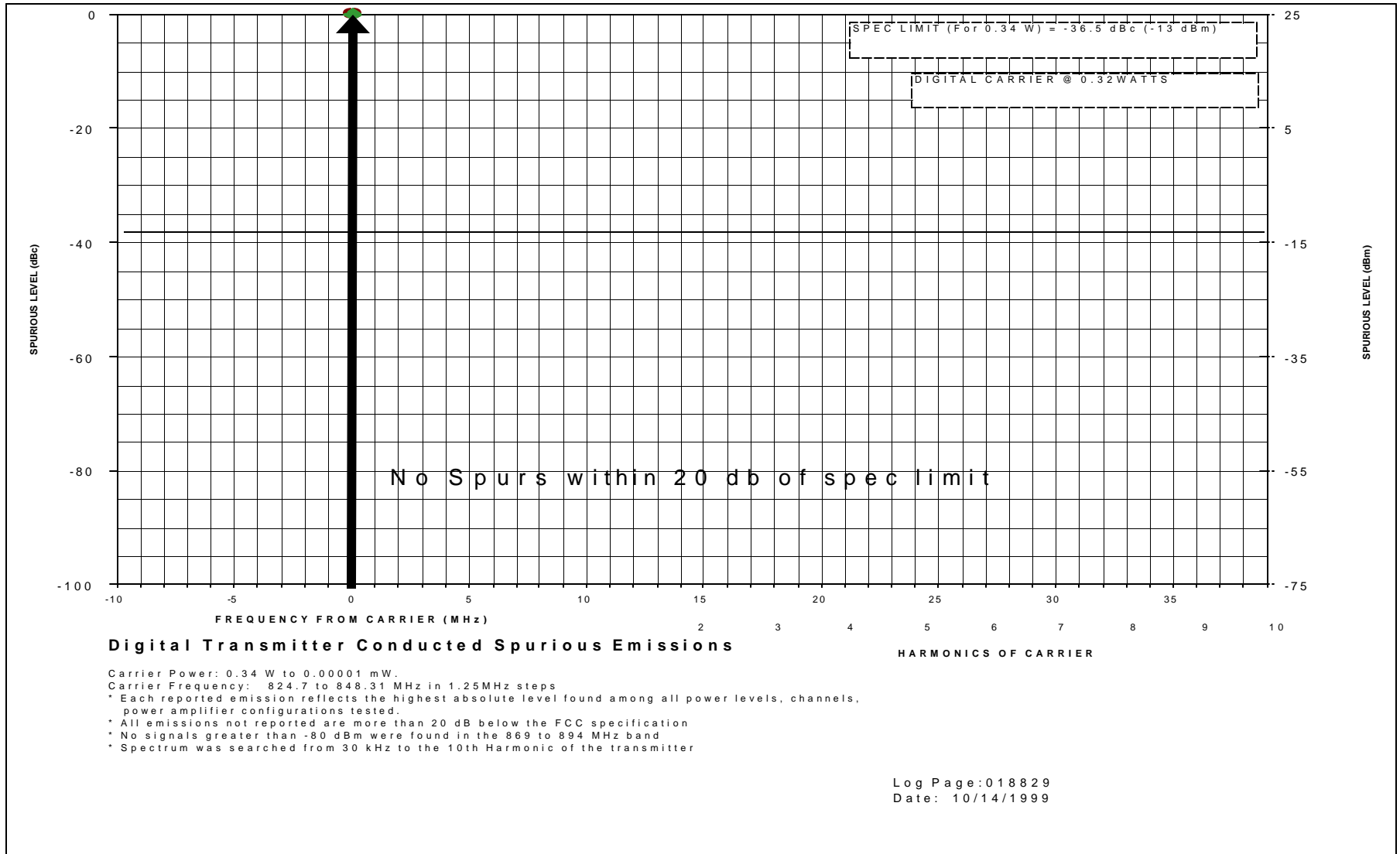
Log Pages: 018829
Date: 10/14/1999

- Carrier Power: 0.54 W to 4.8 mW in 4 dB steps.
- Carrier Frequency: 824.04 to 848.97 MHz in 30 kHz steps
- * Each reported emission reflects the highest absolute level found among all power levels, channels, power amplifier configurations 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

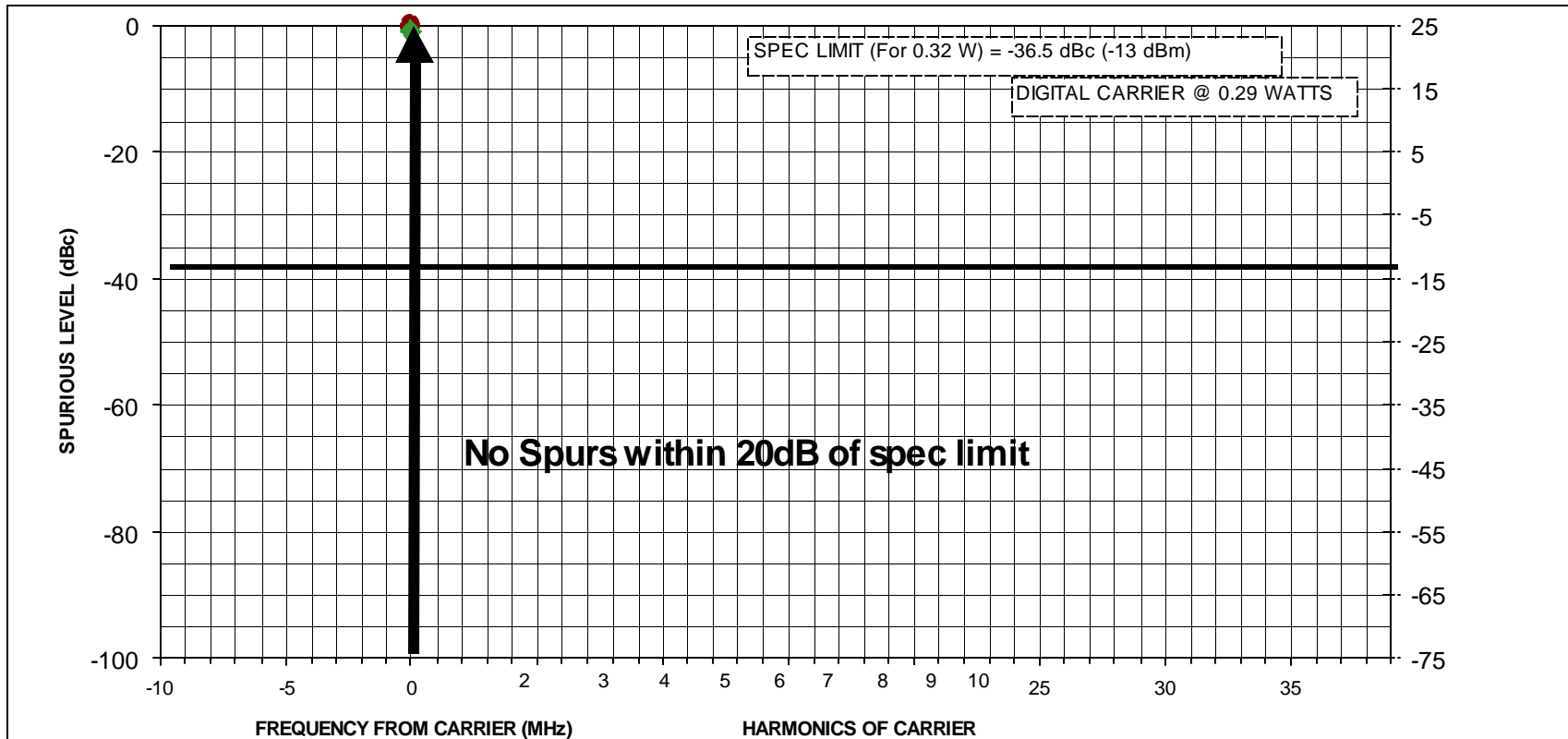
DIGITAL CONDUCTED SPURIOUS AND HARMONIC EMISSIONS – GRAPH



ANALOG RADIATED SPURIOUS AND HARMONIC EMISSIONS - GRAPH



DIGITAL RADIATED SPURIOUS AND HARMONIC EMISSIONS –GRAPH



Transmitter Radiated Spurious Emissions

Log Pages:149031 to
149045
Date: 10/12/99

Carrier Power: 0.29 W to 0.00001 mW.

Carrier Frequency: 824.7 to 848.31 MHz in 1.25MHz steps

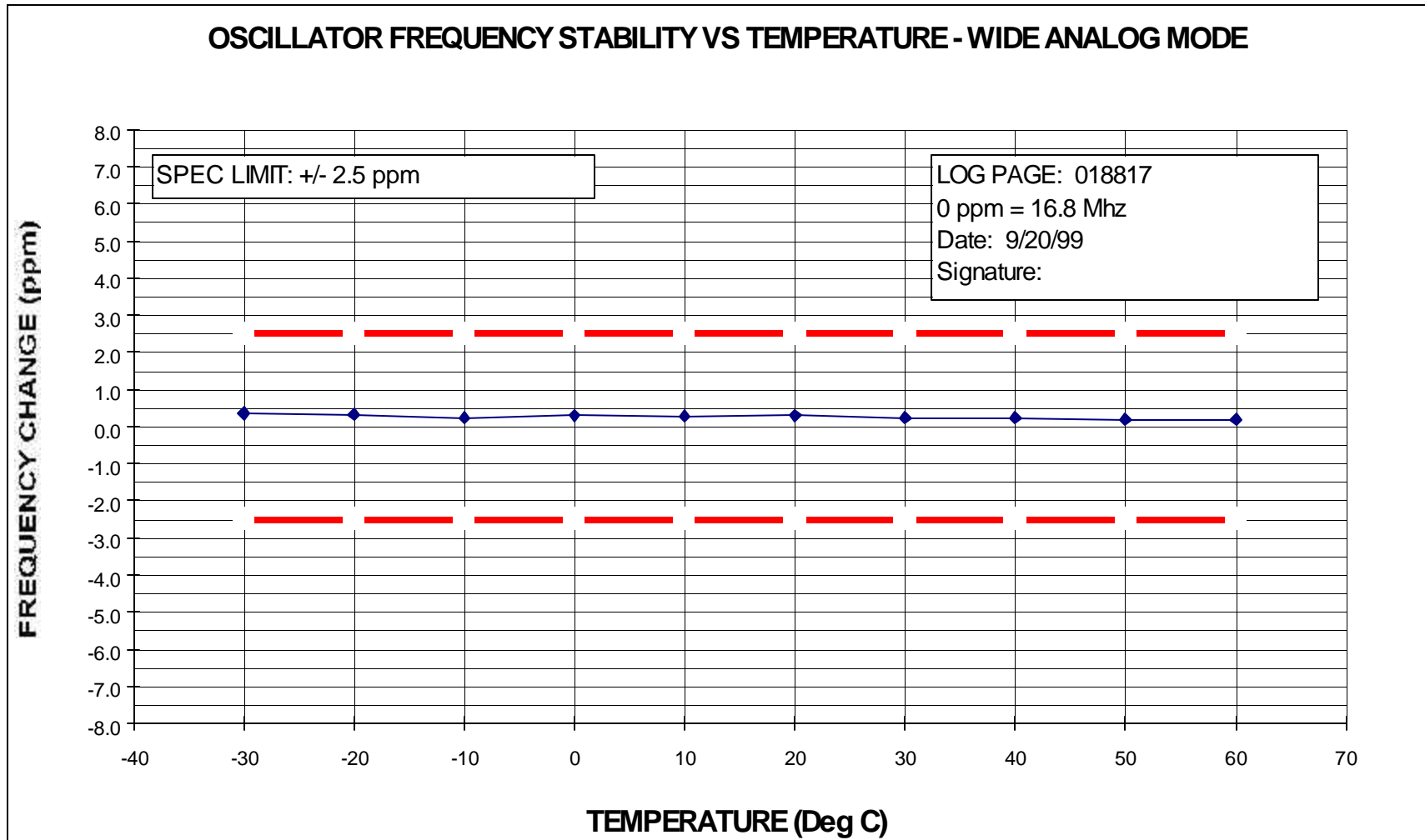
* Each reported emission reflects the highest absolute level found among all power levels, channels, power amplifier configurations tested.

* All emissions not reported are more than 20 dB below the FCC specification

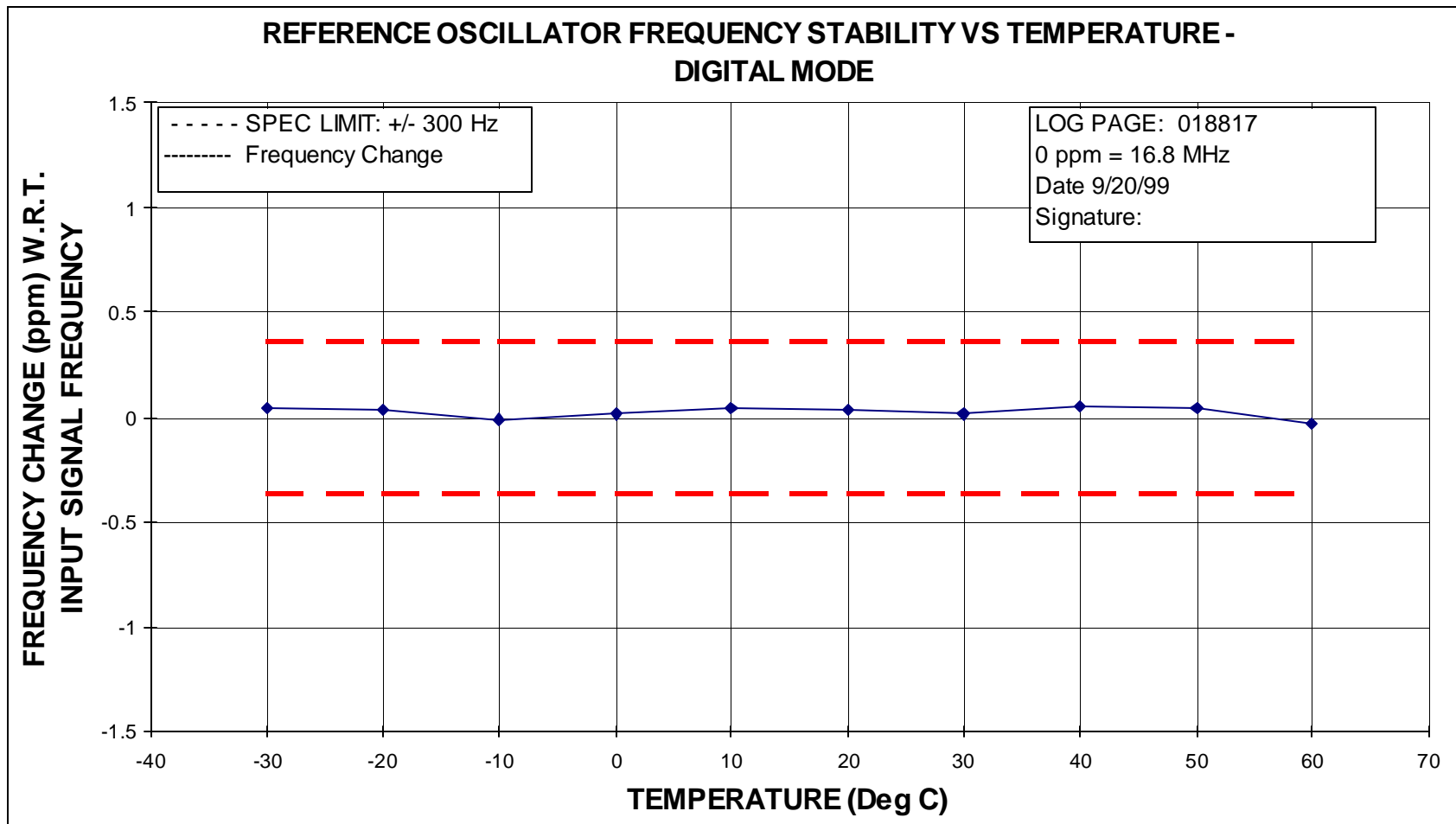
* No signals greater than -80 dBm were found in the 869 to 894 MHz band

* Spectrum was searched from 30 kHz to the 10th Harmonic of the transmitter

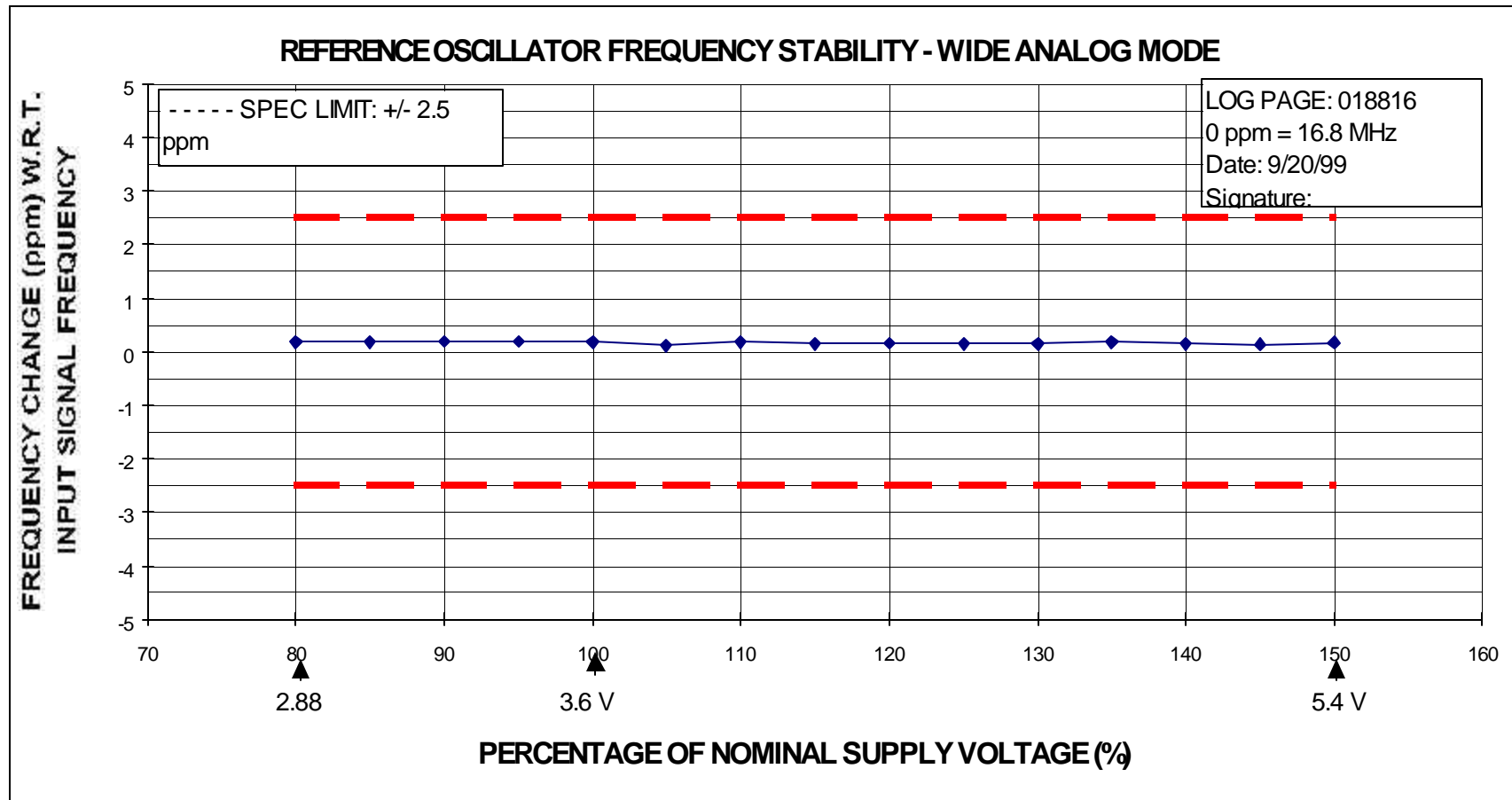
Frequency Change vs. Temperature (Wide Mode)-Graph



Frequency Change vs. Temperature (Digital Mode)-Graph



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



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

