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RF POWER OUTPUT DATA

The input supply to the transmitter was set at 3.6 Volts. The voltage at the final amplifying device voltage was 6.0V, which is generated by a switching power regulator in the radio. 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: 0.55 Watts

Measured DC Voltage: 6.0V

Measured DC Current: 772 mA

Measured RF Input: 0.5 mW

DIGITAL MODE:

In Digital Mode the values measured for RF Output, DC Current and RF Input Power are all average values which reflect the 1/3 duty cycle of TDMA operation.

Measured RF Output: 0.182 Watts

Measured DC Voltage: 6.0 Volts

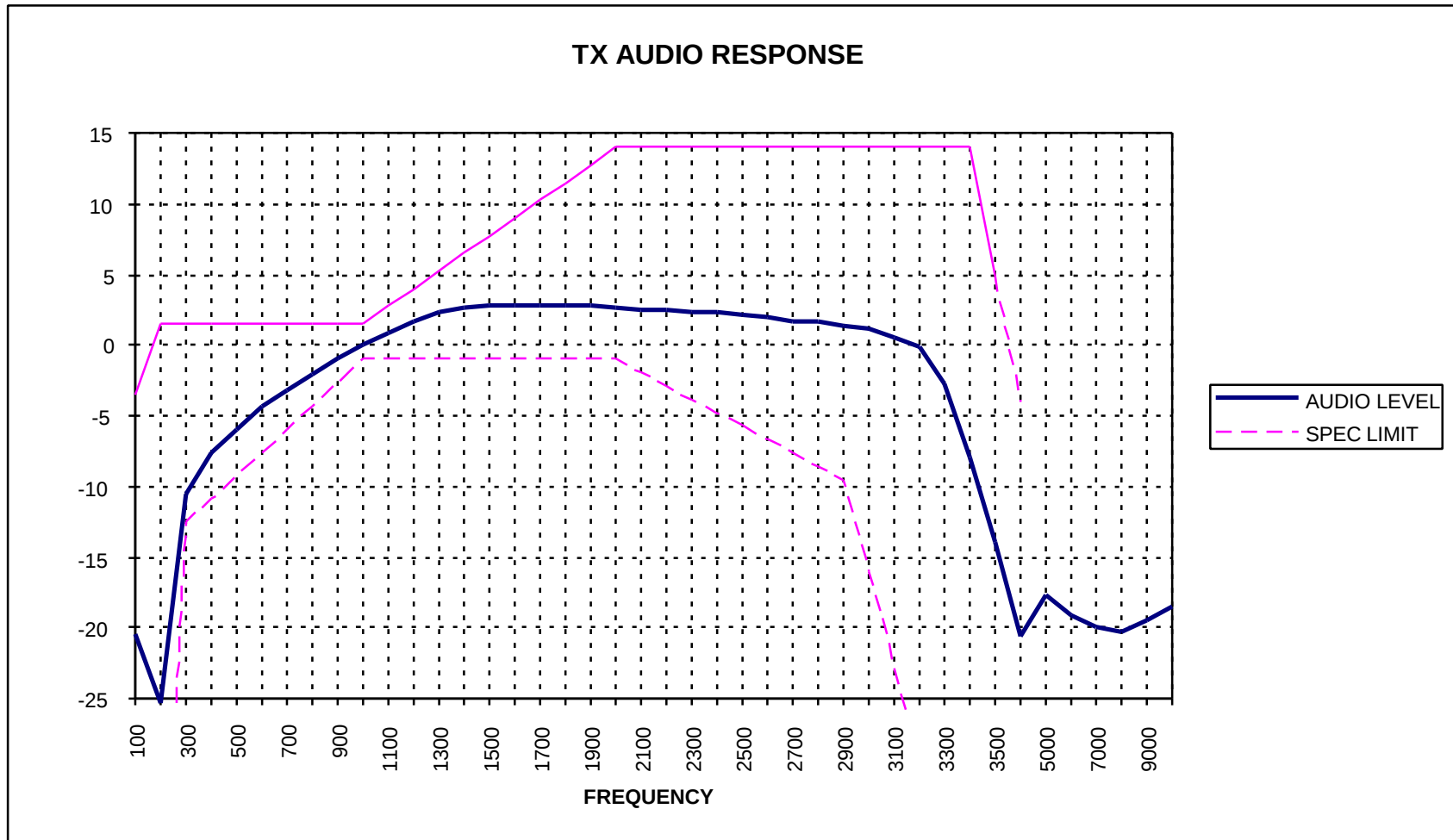
Measured DC Current: 261 mA

Measured RF Input: 0.106 mW

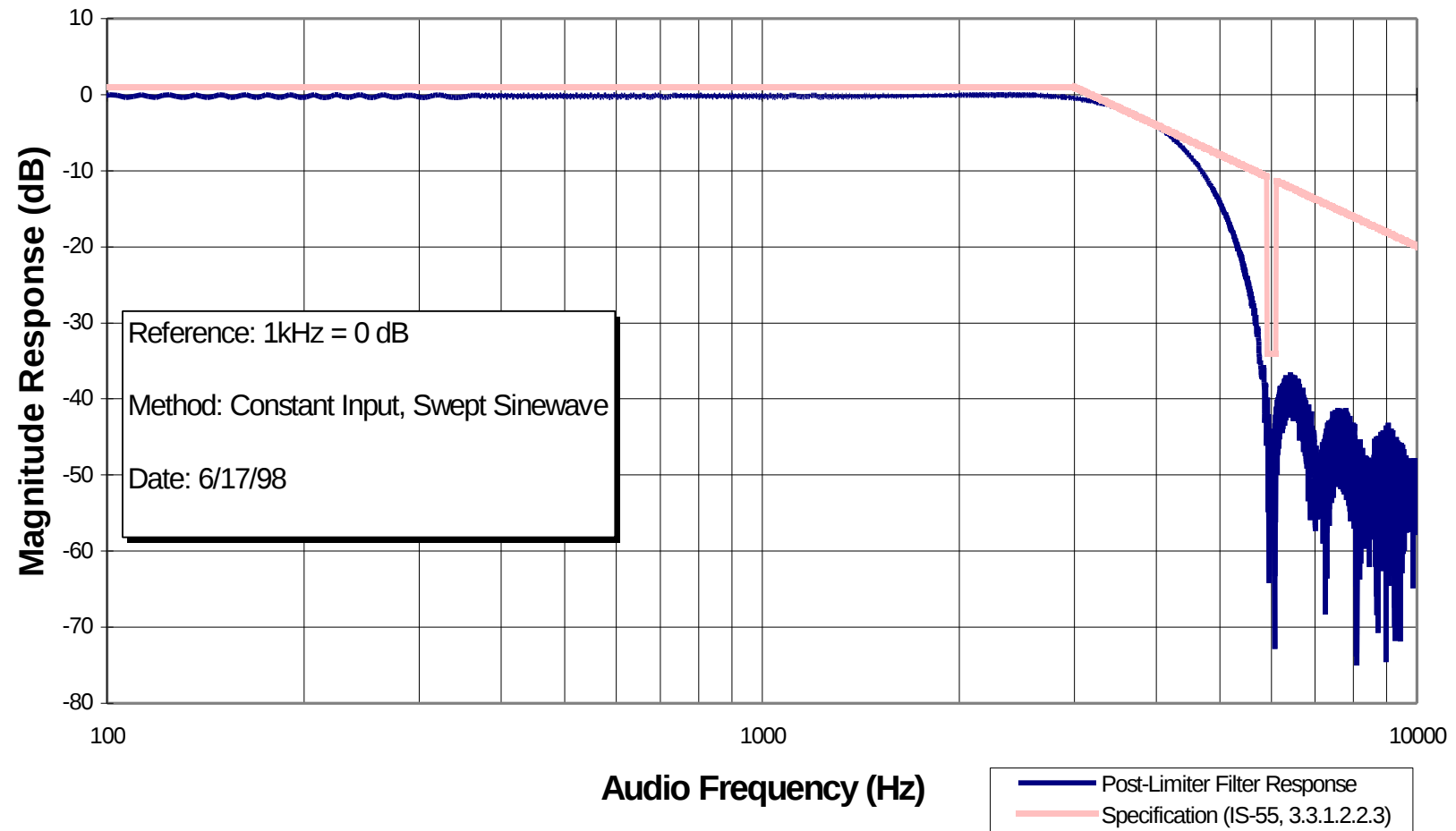
ERP:

The input supply to the transmitter was set at 3.6 Volts. The transmitter power was measured with the antenna in the extended position. Measurements were made relative to a dipole with a known gain of 2.15dB relative to an isotropic source.

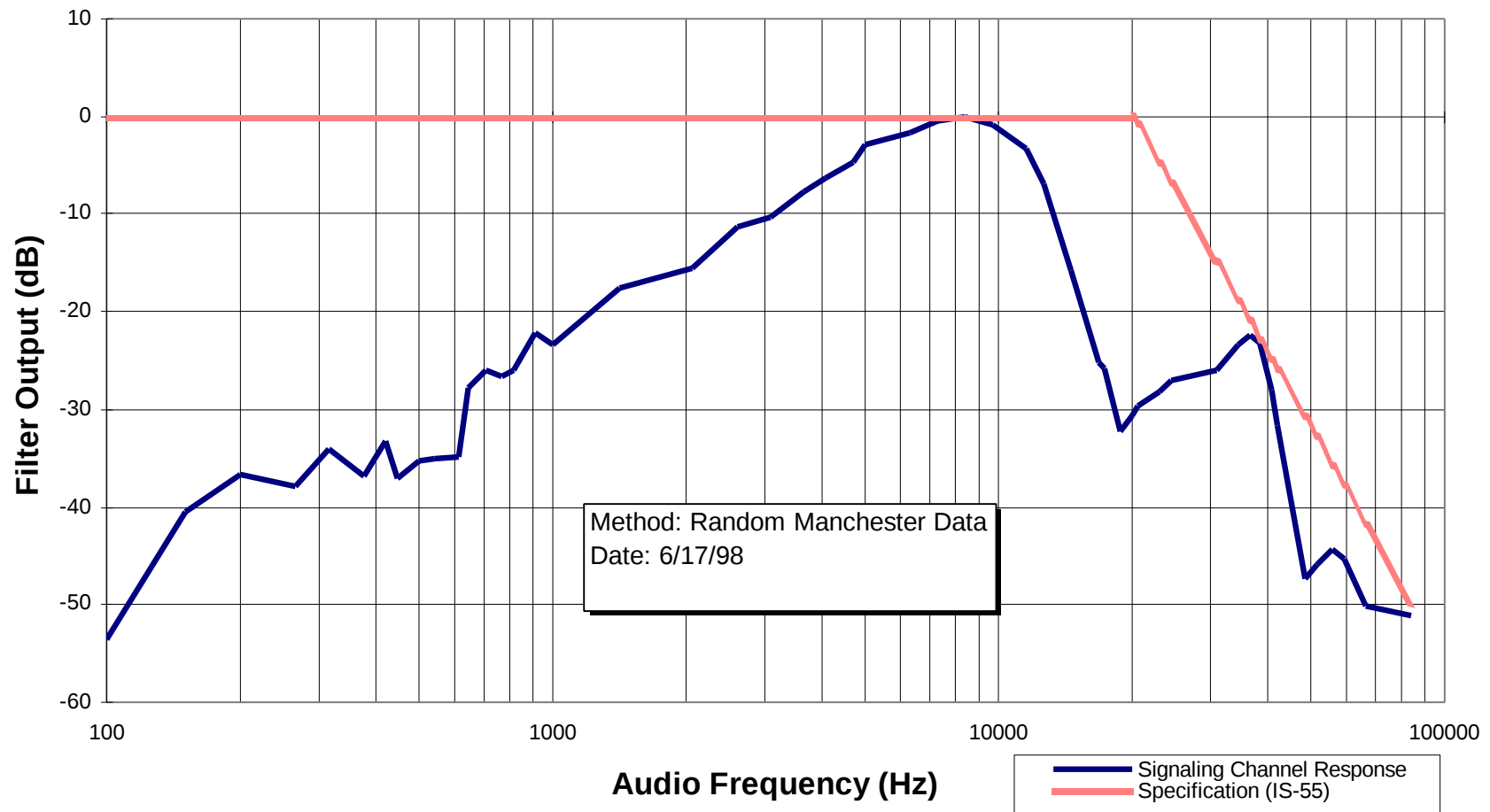
Measured ERP (Relative to an Isotropic Source): 0.7 Watts

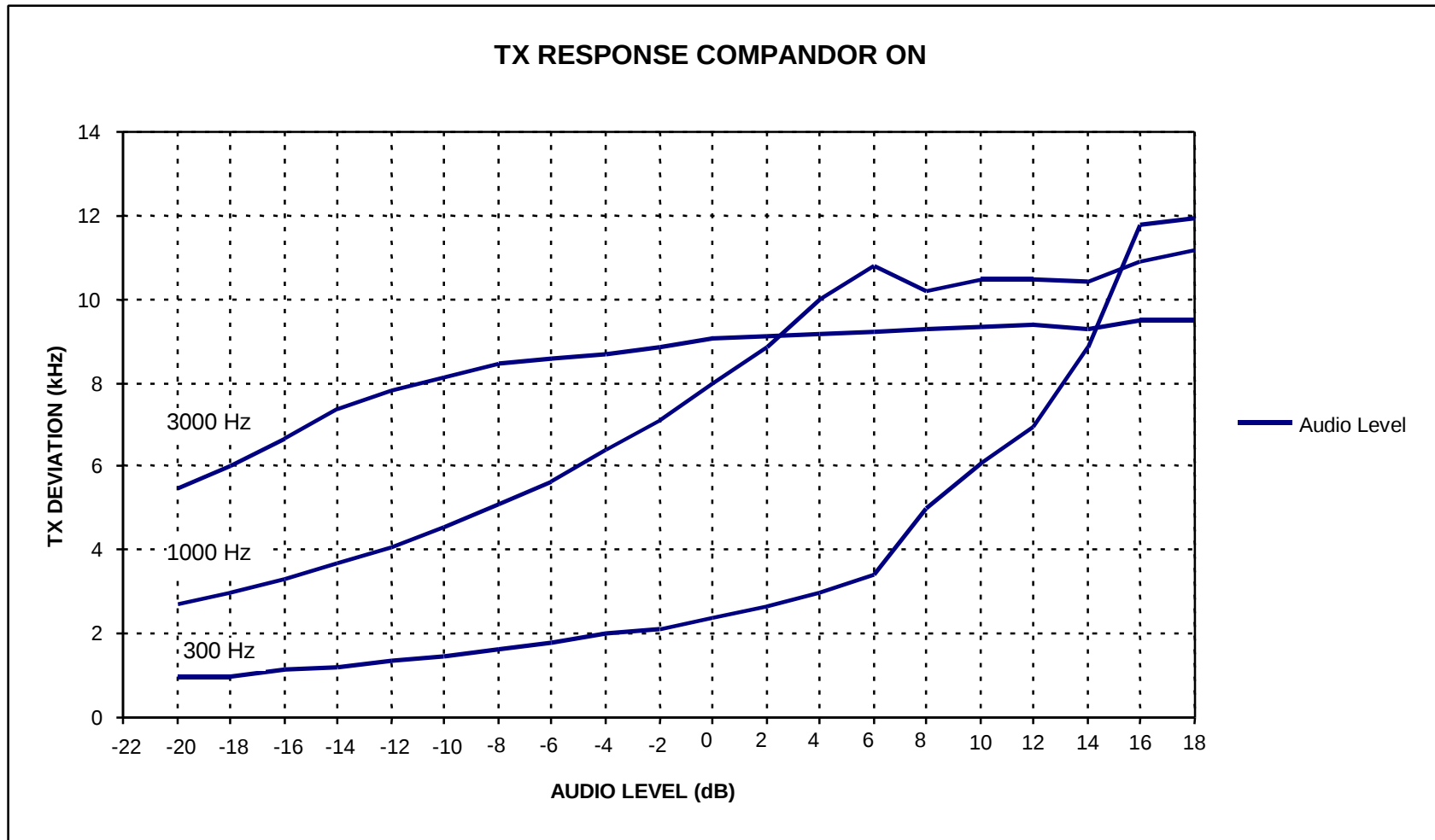


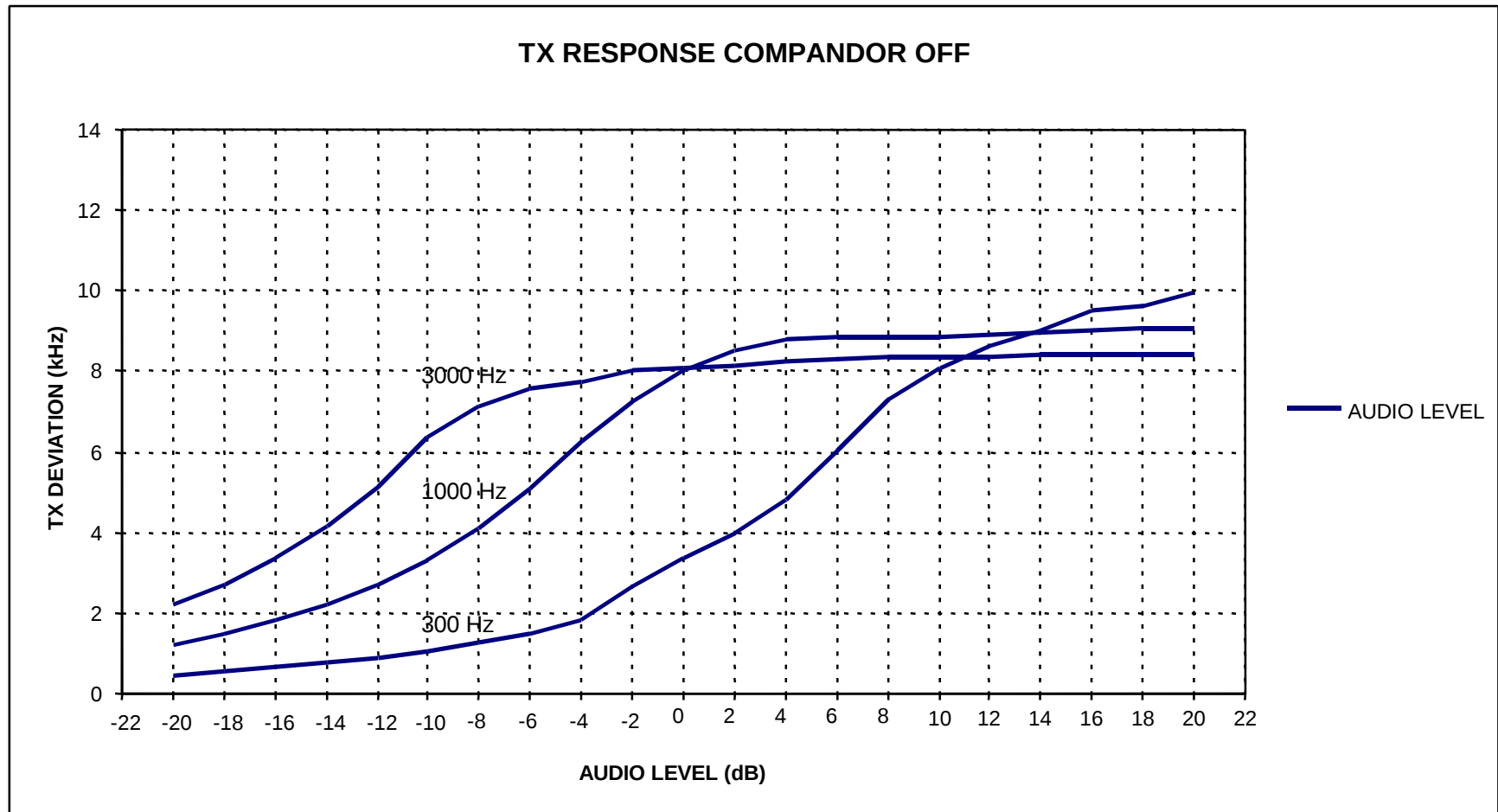
Tx Post-Limiter Lowpass Filter Response



Tx Signaling Channel Audio Roll-Off Filter Response





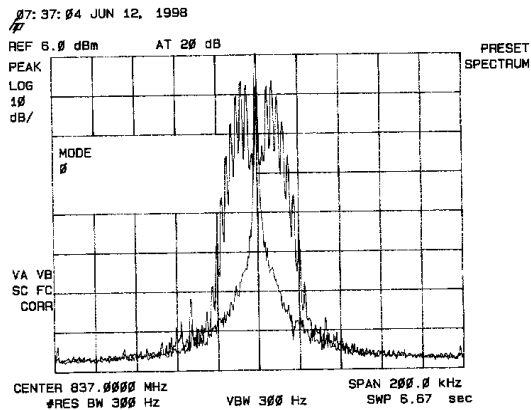


BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F8W

DEVIATION OF THE CARRIER WITH 2500 Hz AUDIO MODULATION

HORIZONTAL SCALE = 20 kHz/ DIVISION
 VERTICAL SCALE = 10 dB/ DIVISION (ATTENUATION)
 RESOLUTION BANDWIDTH = 300 Hz
 AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO
 PRODUCE +/- 6 kHz
 POWER LEVEL = 0.6 W

MEASURED DATA:



1. Instantaneous Deviation Control set for a maximum of +/- 12 kHz.
2. Tune and adjust to obtain unmodulated carrier on the analyzer scope. Save trace of unmodulated carrier.
3. Modulate the Transmitter with the 2.5 kHz 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:

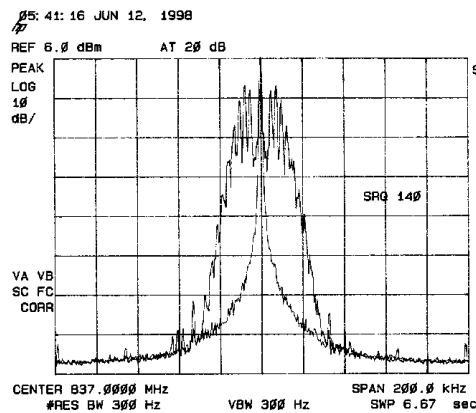
- a. On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.
- b. On a any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or $43 + \log_{10}(\text{mean power output in Watts})$ dB, whichever is 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 (ATTENUATION)
 RESOLUTION BANDWIDTH = 300 Hz
 AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO
 PRODUCE +/- 6 kHz
 POWER LEVEL = 0.6 W

MEASURED DATA:



1. Instantaneous Deviation Control set for a maximum of +/- 12 kHz.
2. Tune and adjust to obtain unmodulated carrier on the analyzer scope. Save trace of unmodulated carrier.
3. Modulate the Transmitter with the 2.5 kHz tone, 16 dB greater than that required to produce +/- 6 kHz modulation and add SAT with +/- 2 kHz deviation. Photograph the sideband display while it is superimposed upon the unmodulated carrier.

SPEC LIMITS:

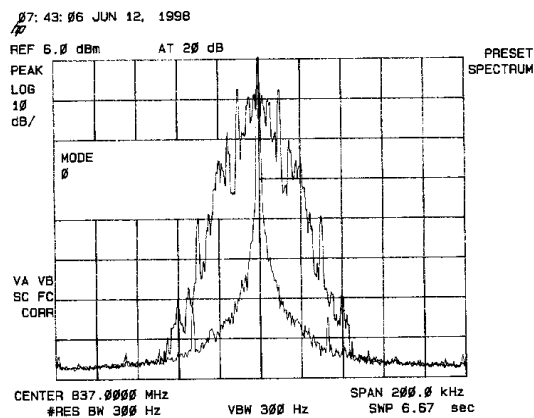
- a. On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.
- b. On a any frequency removed from the assigned carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or $43 + \log_{10}(\text{mean power output in Watts})$ dB, whichever is smaller attenuation.

BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F1D

DEVIATION OF THE CARRIER WITH 10 KBIT/ SECOND DATA

HORIZONTAL SCALE = 20 kHz/ DIVISION
VERTICAL SCALE = 10 dB/ DIVISION (ATTENUATION)
RESOLUTION BANDWIDTH = 300 Hz
POWER LEVEL = 0.6 W

MEASURED DATA:



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

SPEC LIMITS:

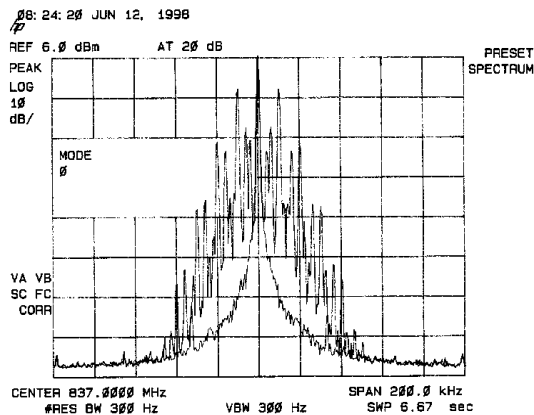
- a. On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.
- b. On a any frequency removed from the assigned carrier frequency by more than 45 kHz, up to and including 90 kHz, the sideband is at 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 43 + log10(mean power output in Watts) dB, whichever is 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 (ATTENUATION)
RESOLUTION BANDWIDTH = 300 Hz
POWER LEVEL = 0.6 W

MEASURED DATA:



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

SPEC LIMITS:

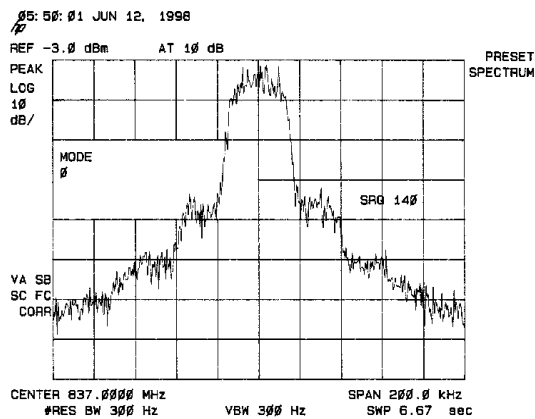
- a. On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45 kHz, the sideband is at least 26 dB below the carrier.
- b. On a any frequency removed from the assigned carrier frequency by more than 45 kHz, up to and including 90 kHz, the sideband is at 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 43 + log10(mean power output in Watts) dB, whichever is smaller attenuation.

BANDWIDTH MEASUREMENT DATA
FOR TRANSMITTER TYPES DXW

DEVIATION OF THE CARRIER WITH $\pi/4$ DQPSK
MODULATION

HORIZONTAL SCALE = 20 kHz/ DIVISION
VERTICAL SCALE = 10 dB/ DIVISION (ATTENUATION)
RESOLUTION BANDWIDTH = 300 Hz
POWER LEVEL = 0.6 W

MEASURED DATA:

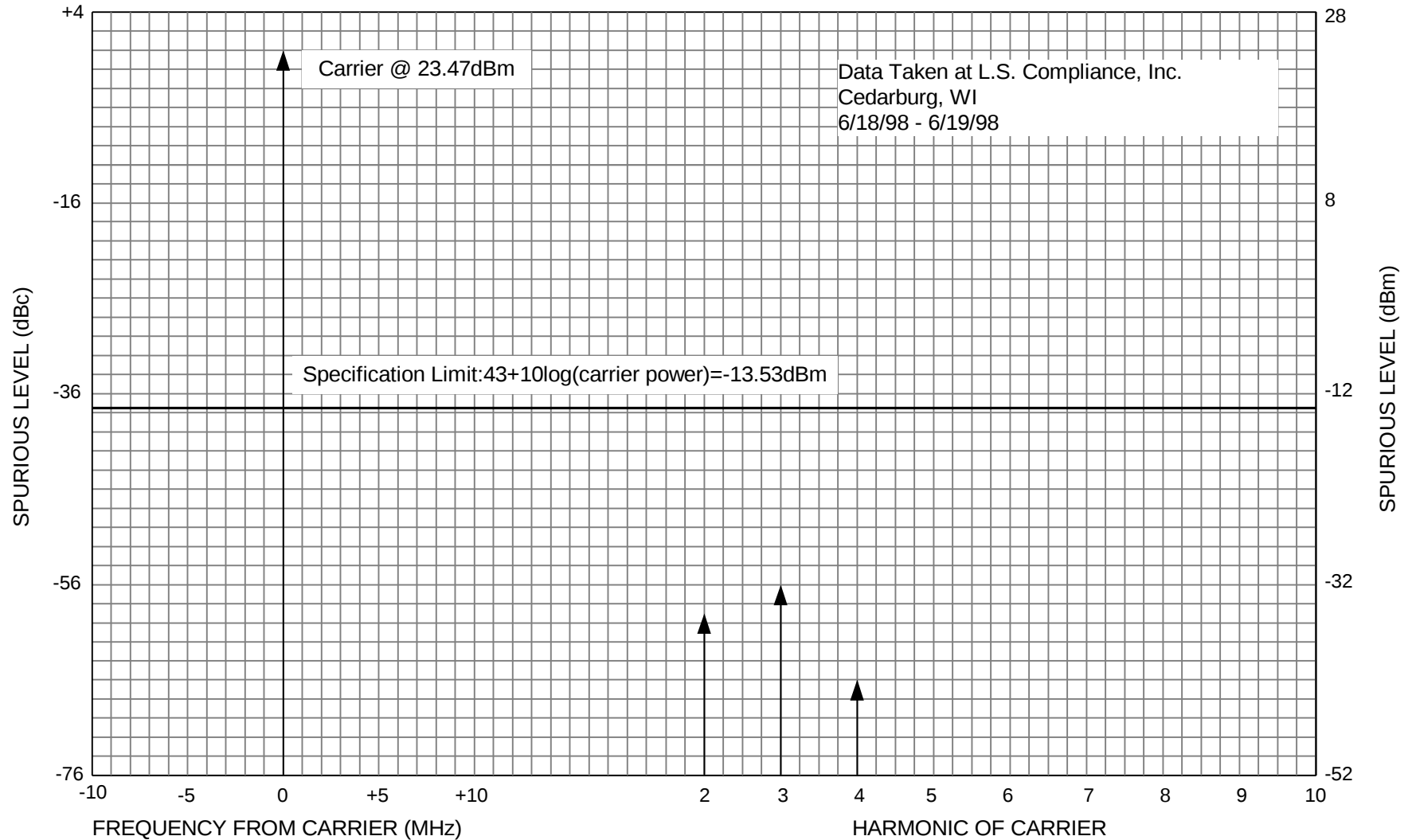


1. Modulate the transmitter with $\pi/4$ DQPSK modulation, using pseudo random data. Obtain image on spectrum analyzer.

SPEC LIMITS:

The emission power in either adjacent channel centered ± 30 kHz from the center frequency, shall not exceed a level of 26 dB below the mean power. The emission power in either alternate channel, centered ± 60 kHz from the center frequency, shall not exceed a level of 45 dB below the mean output power. The emission power in either channel centered ± 90 kHz from center frequency, shall not exceed a level of - 13 dBm.

TRANSMITTER CONDUCTED SPURIOUS EMISSIONS



Carrier Power: 0.6W to 4.8mW in 4dB steps.

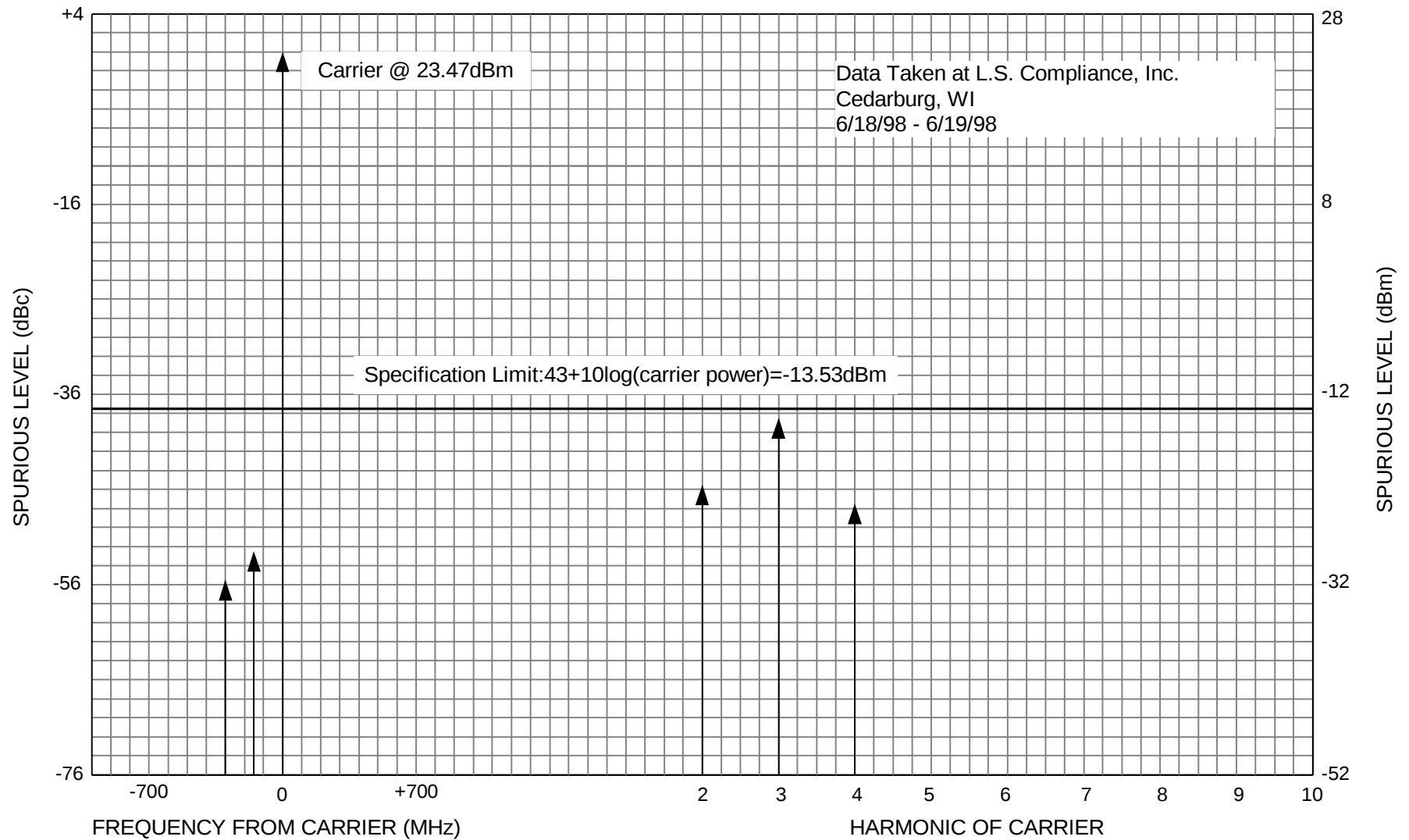
Carrier Frequency: 824.04 to 848.97 MHz in 30kHz steps.

Each reported emission reflects the highest absolute level found among all power levels, channels, and operating mode (Analog or Digital)

All emissions not reported were greater than 45dB below the FCC specification.

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

Spectrum was searched from 2.1MHz to the 10th harmonic of the transmitter.

TRANSMITTER RADIATED SPURIOUS EMISSIONS

Carrier Power: 0.6W to 4.8mW in 4dB steps.

Carrier Frequency: 824.04 to 848.97 MHz in 30kHz steps.

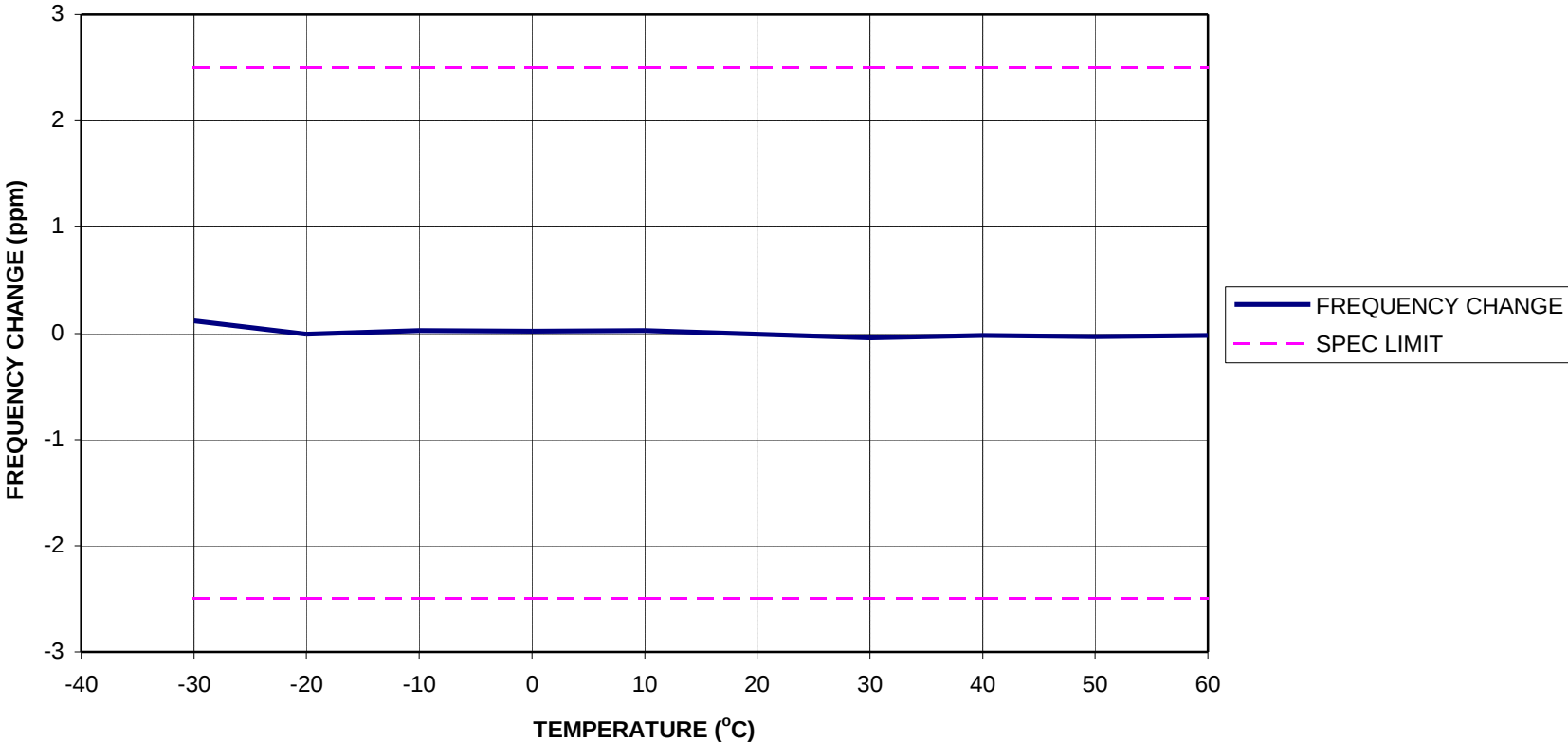
Each reported emission reflects the highest absolute level found among all power levels, channels, and operating mode (Analog or Digital)

All emissions not reported were greater than 20dB below the FCC specification.

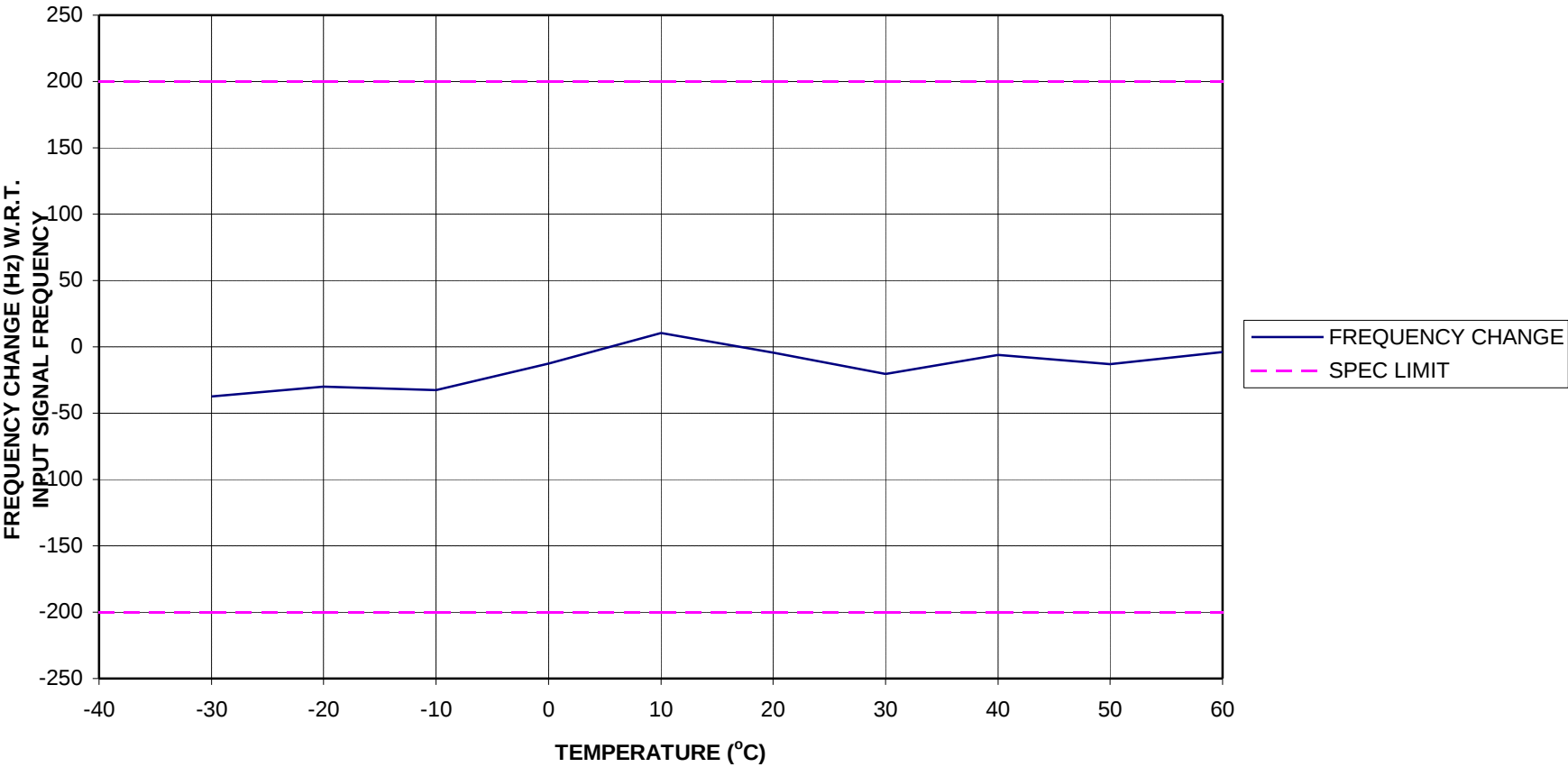
No signals greater than -80dBm were found in the 869 to 894 MHz band.

Spectrum was searched from 2.1MHz to the 10th harmonic of the transmitter.

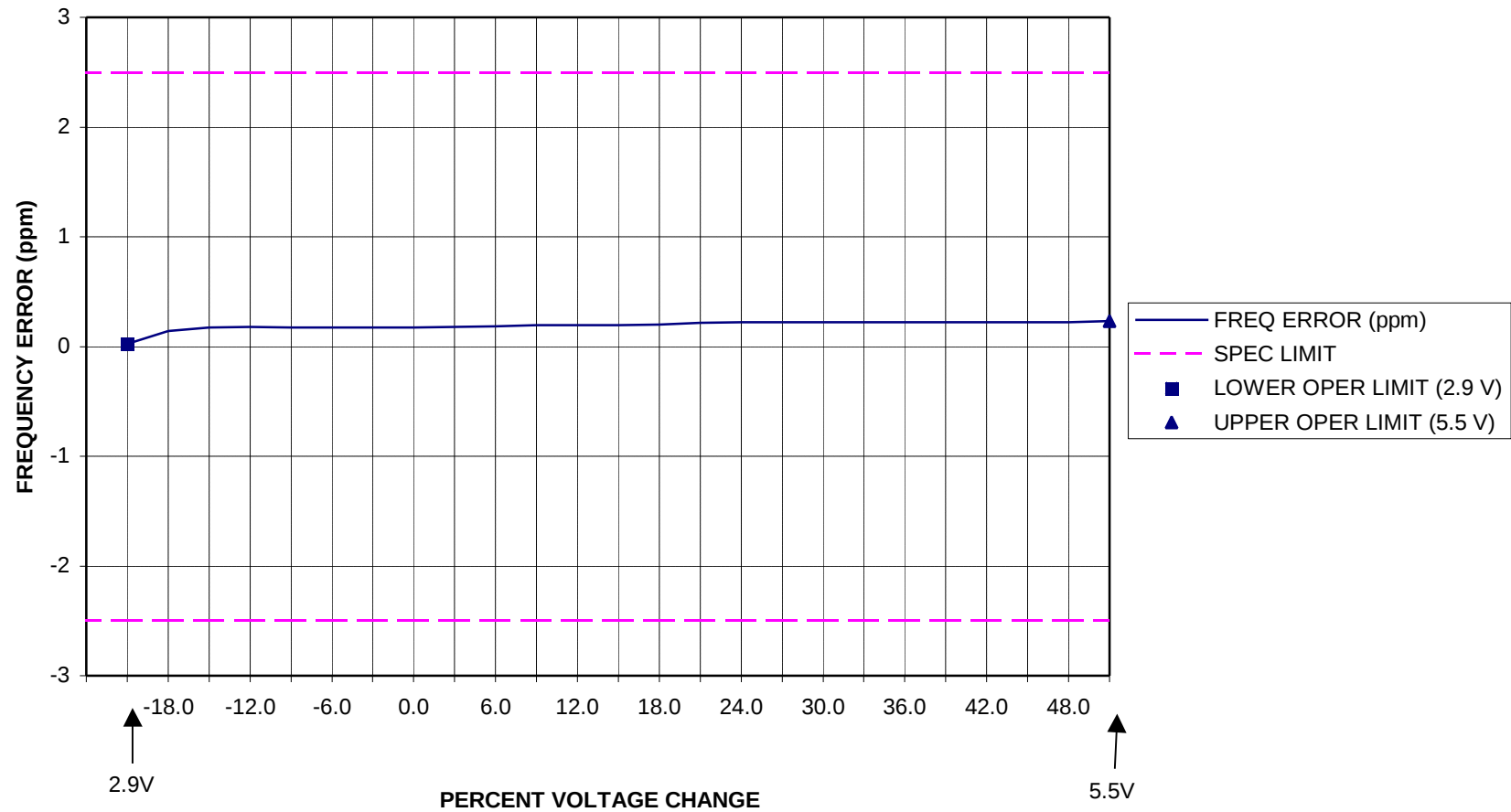
REFERENCE OSCILLATOR FREQUENCY STABILITY VS TEMPERATURE
ANALOG MODE



REFERENCE OSCILLATOR FREQUENCY STABILITY VS TEMPERATURE
DIGITAL MODE



REFERENCE OSCILATOR STABILITY VS VOLTAGE CHANGE ANALOG MODE



REFERENCE OSCILLATOR FREQUENCY STABILITY VS VOLTAGE DIGITAL MODE

