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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 ANT port via 50ohm cable.

ANALOG MODE

Measured RF output: 0.437W

Measured DC voltage: 3.6V

Measured DC current: 725mA

Measured RF input: 3mW

800 Mhz Digital CDMA

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: 0.230W

Measured DC voltage: 3.6V

Measured DC current: 615mA.

Measured RF input: 0.5mW

1900 Mhz Digital CDMA

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: 0.245W

Measured DC voltage: 3.6V

Measured DC current: 625mA.

Measured RF input: 0.5mW

EFFECTIVE RADIATED POWER

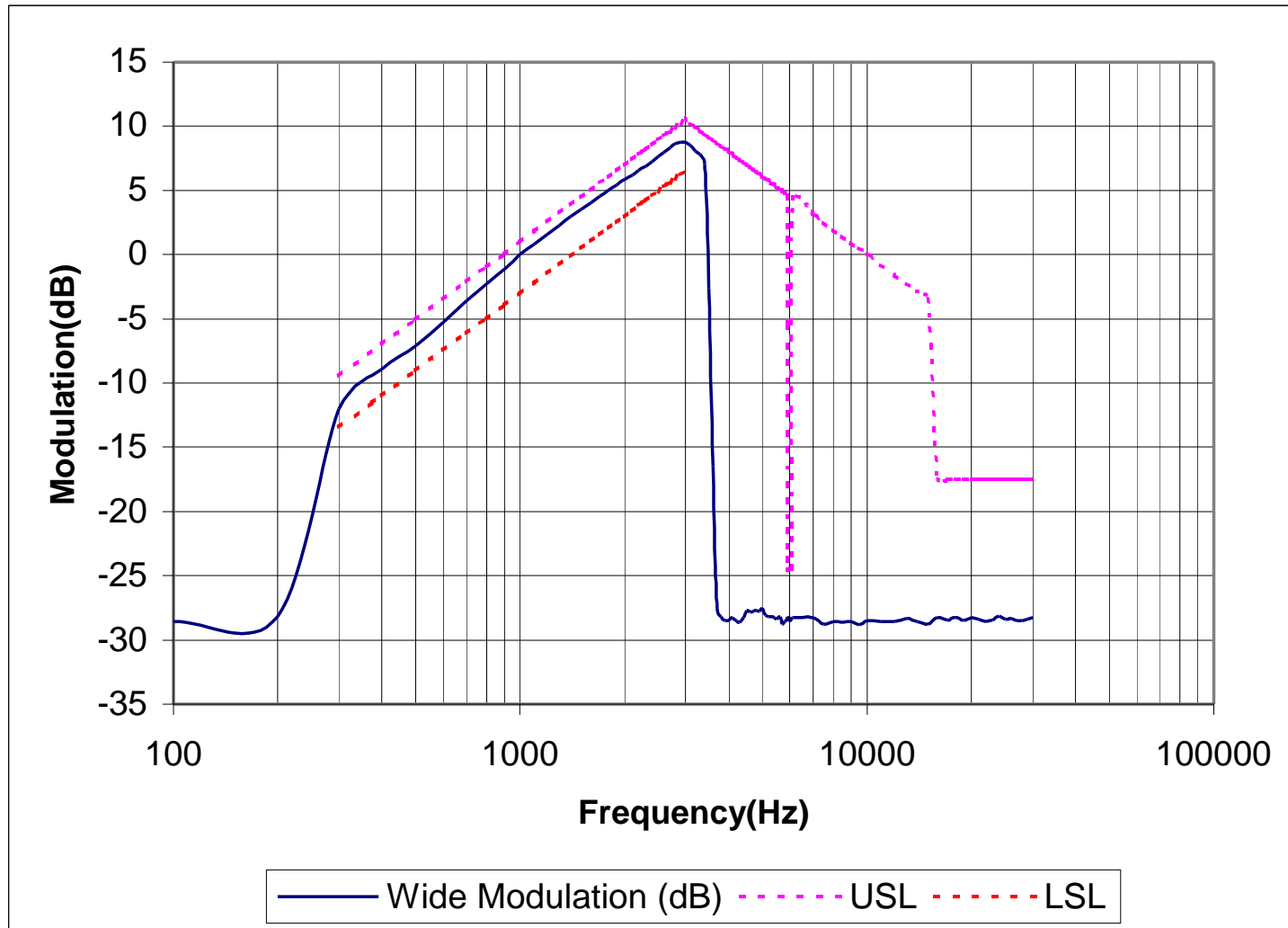
Since the unit is intended for use with a provided antenna (and “non standard” RF connector), ERP is measured. The dipole antenna substitution method was used. The result indicated is the maximum ERP found over the channels and radio orientations tested.

Maximum Effective Radiated Power: Analog Mode: 25.94 dBm (0.393W)

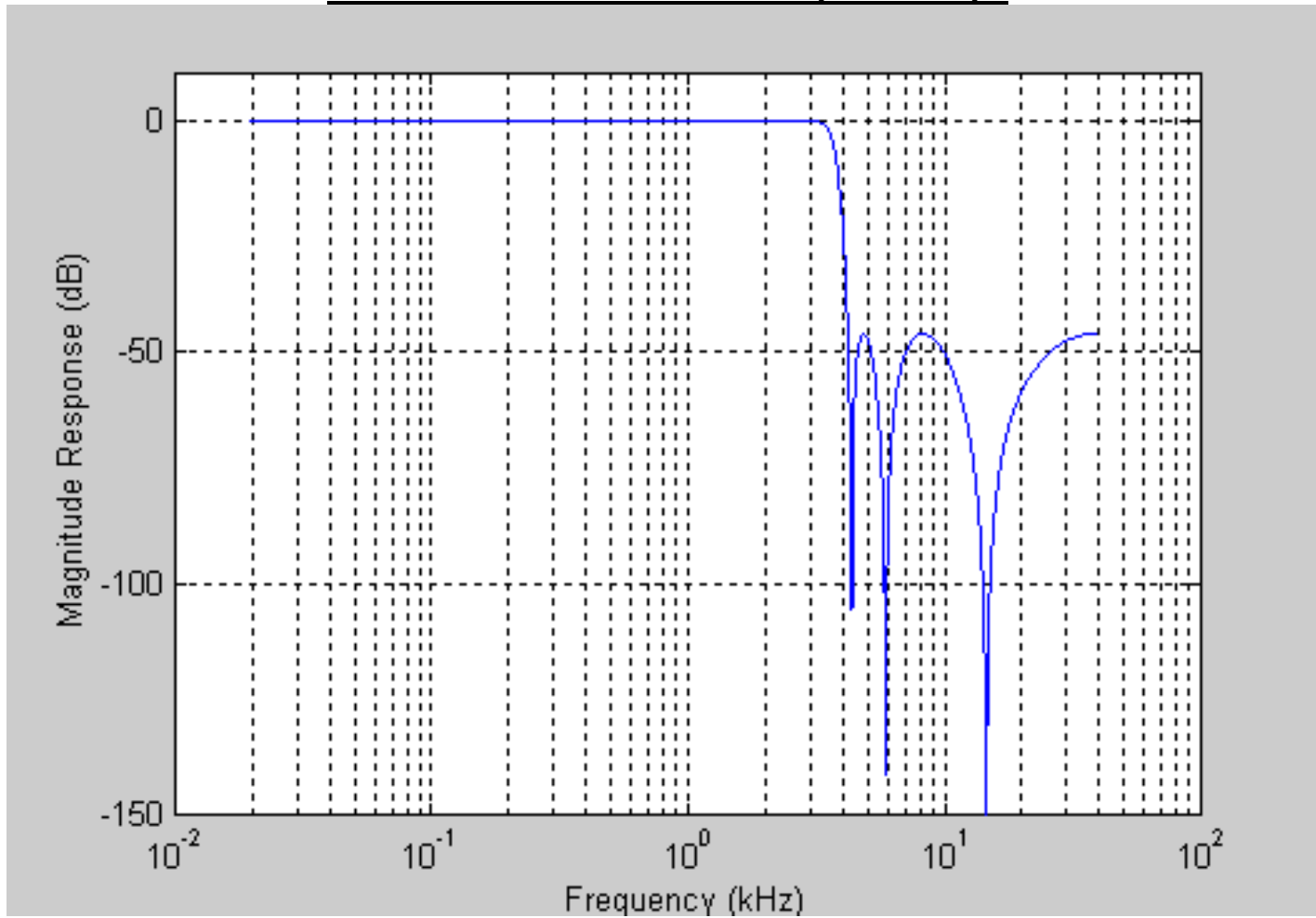
Maximum Effective Radiated Power: 800 Digital CDMA Mode: 21.7 dBm (0.148 W)

Maximum Effective Isotropic Radiated Power: 1900 Digital CDMA Mode: 25.1 dBm (0.325 W)

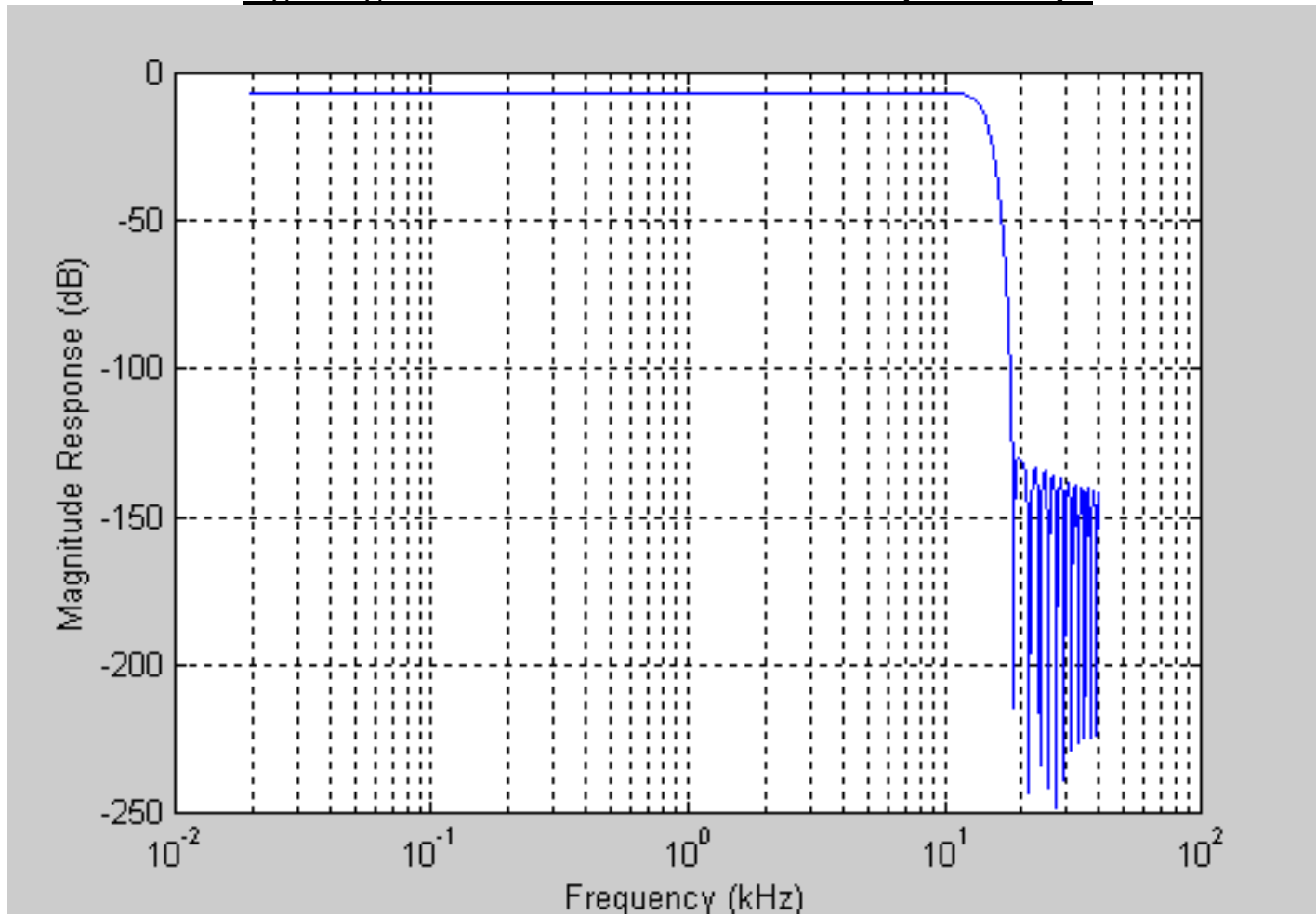
Audio Frequency Response



Post Limiter Low Pass Filter Response Graph



Signaling Channel Audio Roll-Off Filter Response Graph



Modulation Limiting (Componder In)

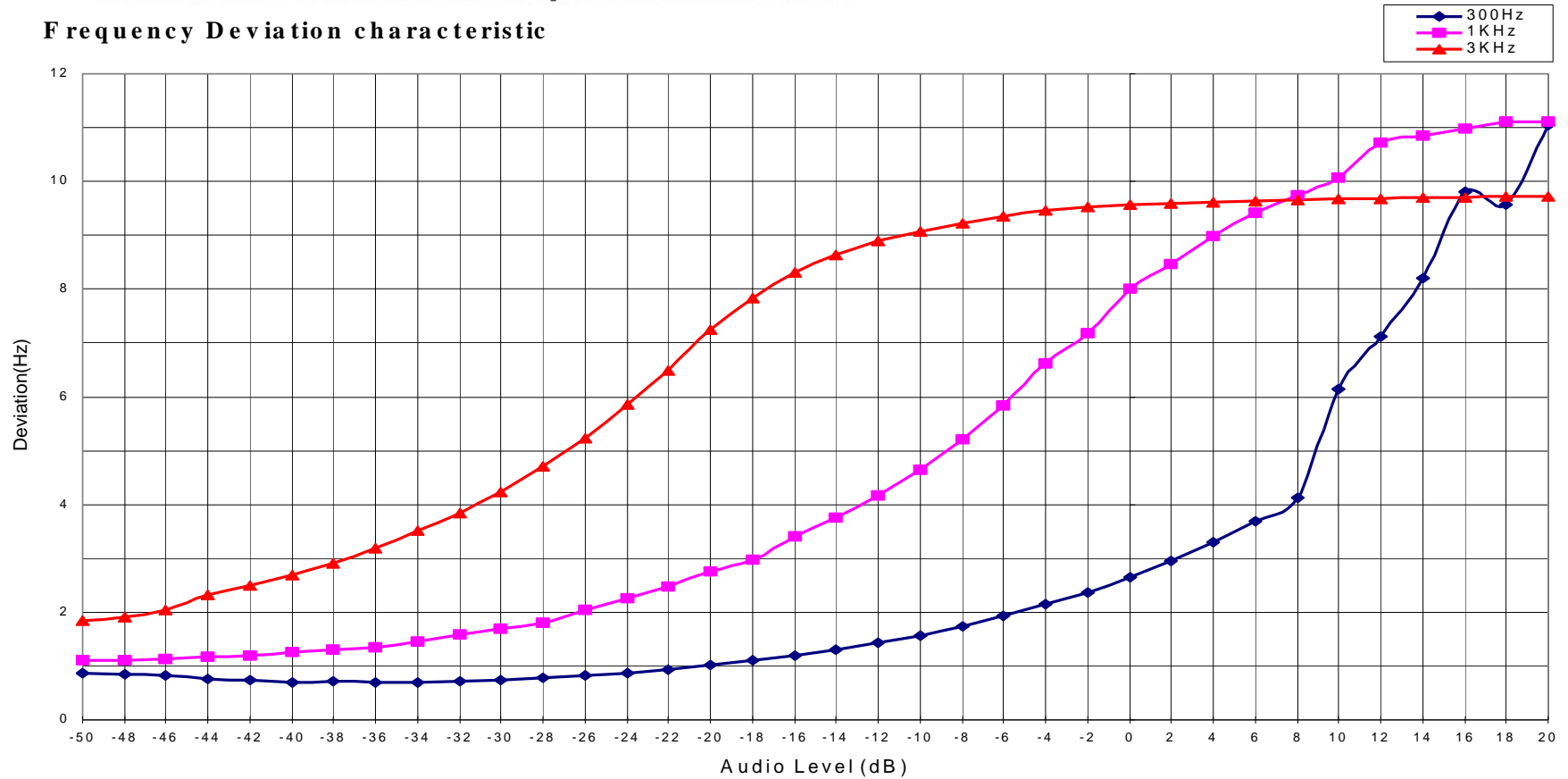
Frequency Deviation characteristic

Compondor ON AMPS Mode

Channel 384 Power Level 2

0 dB Reference : 1004 Hz,250 mV at input with 8.0KHz deviation

Frequency Deviation characteristic



Modulation Limiting (Componder out)

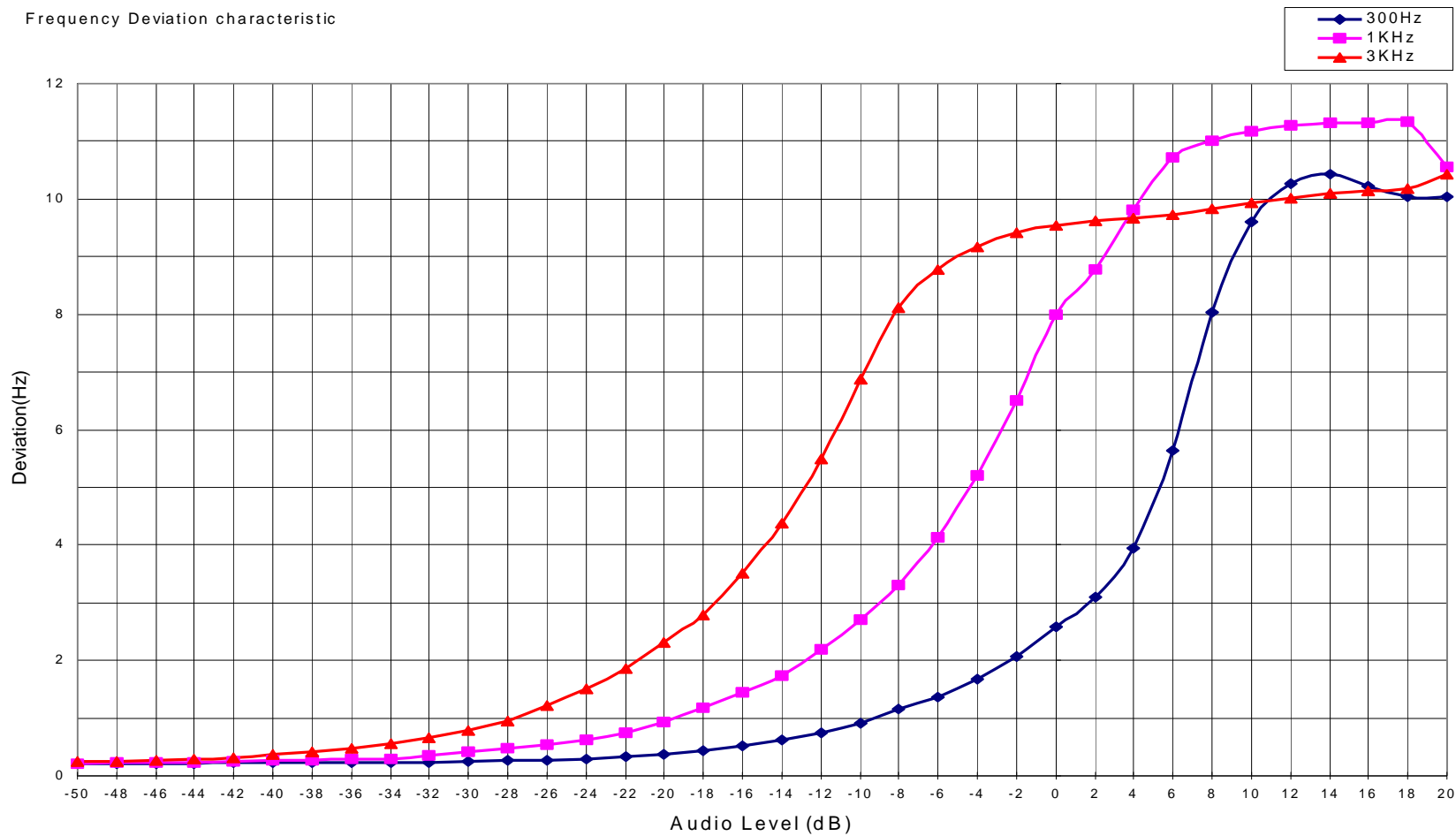
Frequency Deviation characteristic

Compondor OFF AMPS Mode

Channel 384 Power Level 2

0 dB Reference : 1004 Hz, 80 mV at input with 8.0KHz deviation

Frequency Deviation characteristic



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 = 30.5 dBm)

RESOLUTION BANDWIDTH = 1000 Hz

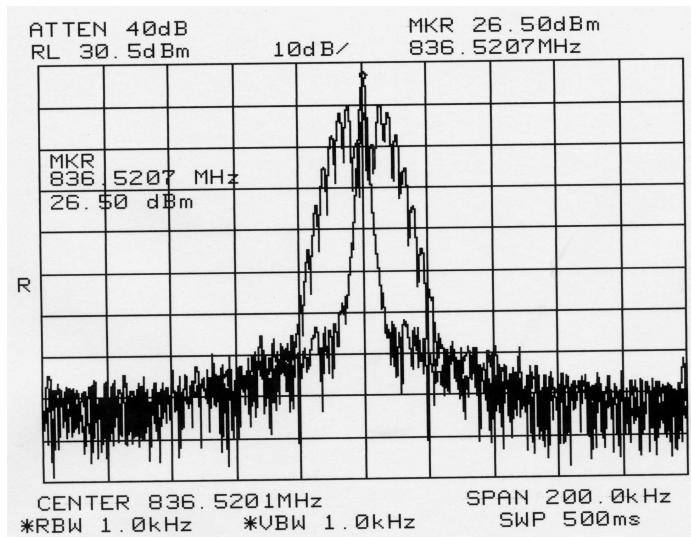
VIDEO BANDWIDTH = 1000 Hz

AUDIO LEVEL = 16 dB GREATER THAN LEVEL REQUIRED TO PRODUCE +/- 6 kHz

POWER LEVEL = 0.454W

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

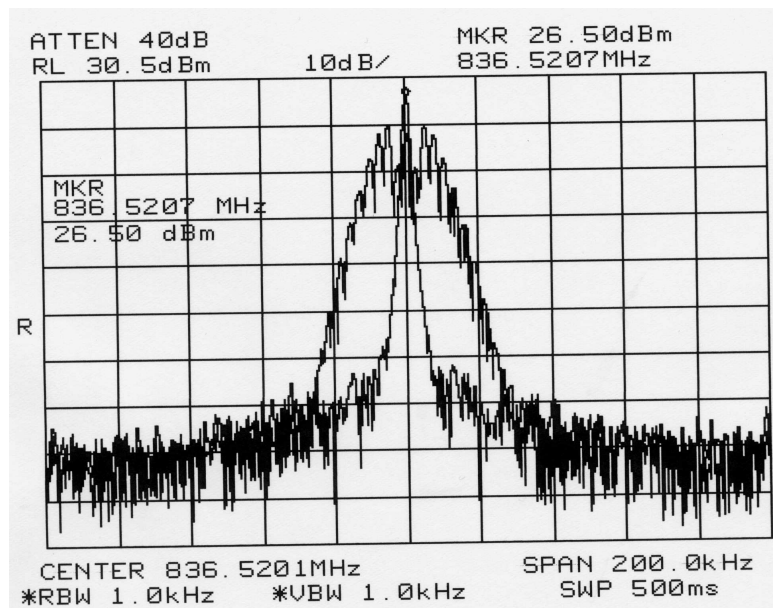
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F8W

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 = 30.5 dBm)
 RESOLUTION BANDWIDTH = 1000 Hz
 VIDEO BANDWIDTH = 1000 Hz
 POWER LEVEL = 0.454W

MEASURED DATA:

1. Instantaneous Deviation Control set for a maximum of +/- 12 kHz
2. Tune and adjust to obtain the 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 +/- 6kHz of 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 the first multiple of the carrier frequency, the sideband is at least 60 dB below the carrier or 63 + 10 log10 (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 = 30.5 dBm)

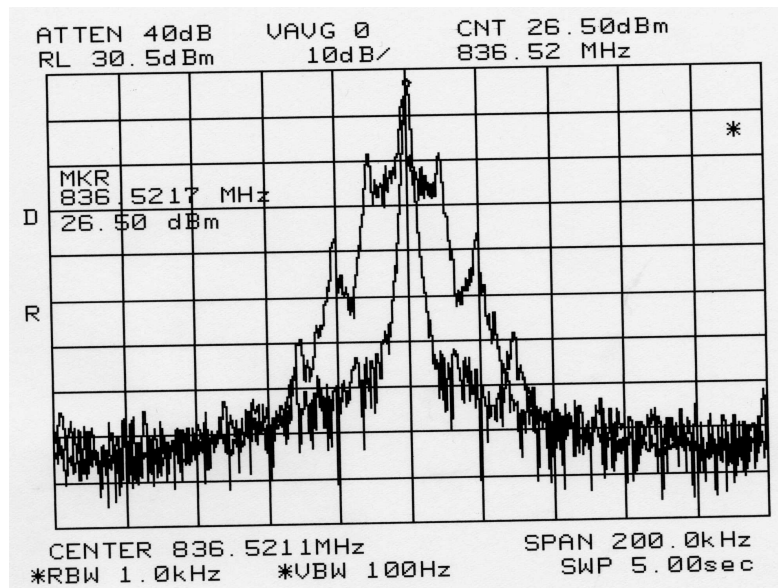
RESOLUTION BANDWIDTH = 1000 Hz

VIDEO BANDWIDTH = 100 Hz

POWER LEVEL = 0.454W

MEASURED DATA:

1. Instantaneous Deviation Control set for a maximum of +/- 12 kHz
2. Tune and adjust to obtain the 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 $63 + 10 \log_{10}$ (mean output power in Watts) dB, whichever is the smaller attenuation.

BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F1D

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

HORIZONTAL SCALE = 20 kHz / DIVISION

VERTICAL SCALE = 10 dB / DIVISION (REFERENCE LEVEL = 30.5 dBm)

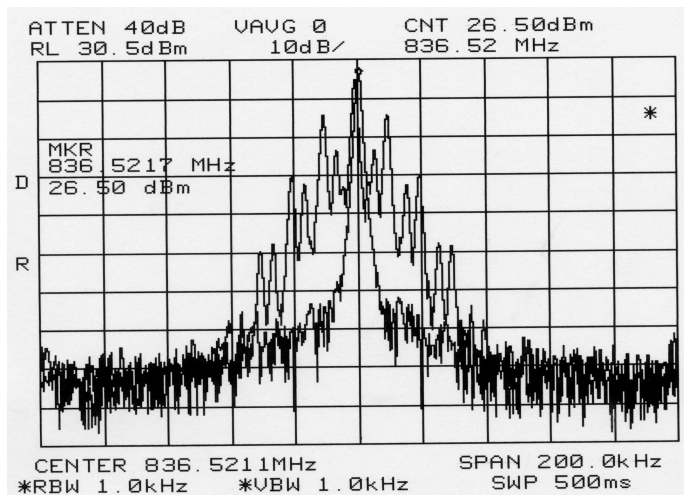
RESOLUTION BANDWIDTH = 1000 Hz

VIDEO BANDWIDTH = 1000 Hz

POWER LEVEL = 0.454W

MEASURED DATA:

1. Instantaneous Deviation Control set for a maximum of +/- 12 kHz
2. Tune and adjust to obtain the 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.

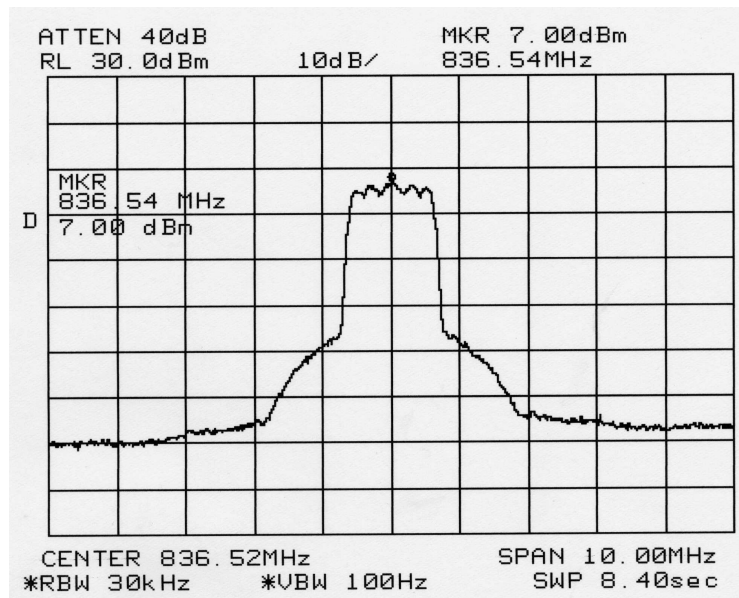
BANDWIDTH MEASUREMENT DATA FOR TRANSMITTER TYPES F9W

DEVIATION OF THE CARRIER WITH OQPSK MODULATION

HORIZONTAL SCALE = 1MHz / DIVISION
 VERTICAL SCALE = 10 dB / DIVISION (ATTENUATION)
 RESOLUTION BANDWIDTH = 30 kHz
 VIDEO BANDWIDTH = 100 Hz
 POWER LEVEL = 0.263W (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 +/- 900KHz from the channel center frequency should be at least 45 dB and should be at least 42 dB below the mean output power level.