SC4812ET @800 MHz CDMA BTS FRAME

TEST REPORT EXHIBIT

Index

MOTOROLA

Network Systems Group
CDMA Systems Division

FCC ID: IHET5ZR1

SECTION A

SUMMARY OF RF MEASUREMENTS

APPLICANT: MOTOROLA **TRANSCEIVER TYPE: IHET5ZR1**

Summary of Conducted RF Measurements

SPUR LEVEL MEASURED (dBm)	FREQUENCY (GHz)	SPUR LEVEL SPEC (dBm Max)
-25.95	8.03979	-13.0

Huy Tong 8/19/99

Conducted Engineer Date

APPLICANT: MOTOROLA **TRANSCEIVER TYPE: IHET5ZR1**

Summary of Radiated RF Measurements

WORST TRANSMIT RADIATED RF SPUR LEVEL
FOR SC4812ET @800 MHz

SPUR FREQUENCY (GHz)	DISTANCE MEASURED (meters)	SPUR LEVEL MEASURED (dBµV/meter)	SPUR LEVEL MEASURED (dBm)	FCC MAX LIMIT dBm
1.739	3	43.92	-51.31	-13

FCC Max. Limit Per 47 CFR 22.917:

" =Transmitted Power ($10 \text{Log}_{10} (P_{watt})$) - ($43 + 10 \text{Log}_{10} (P_{watt})$)dBW

" =$10 \text{Log}_{10} (P_{watt})$ - ($43 + 10 \text{Log}_{10} (P_{watt})$)dBW

" =-43 dBW

" =-13 dBm

Larry J. Collins 8-20-99

Engineer Date

MOTOROLA

Network Systems Group
CDMA Systems Division

FCC ID: IHET5ZR1

SECTION B

MODULATION CHARACTERISTICS

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CDMA Systems Division

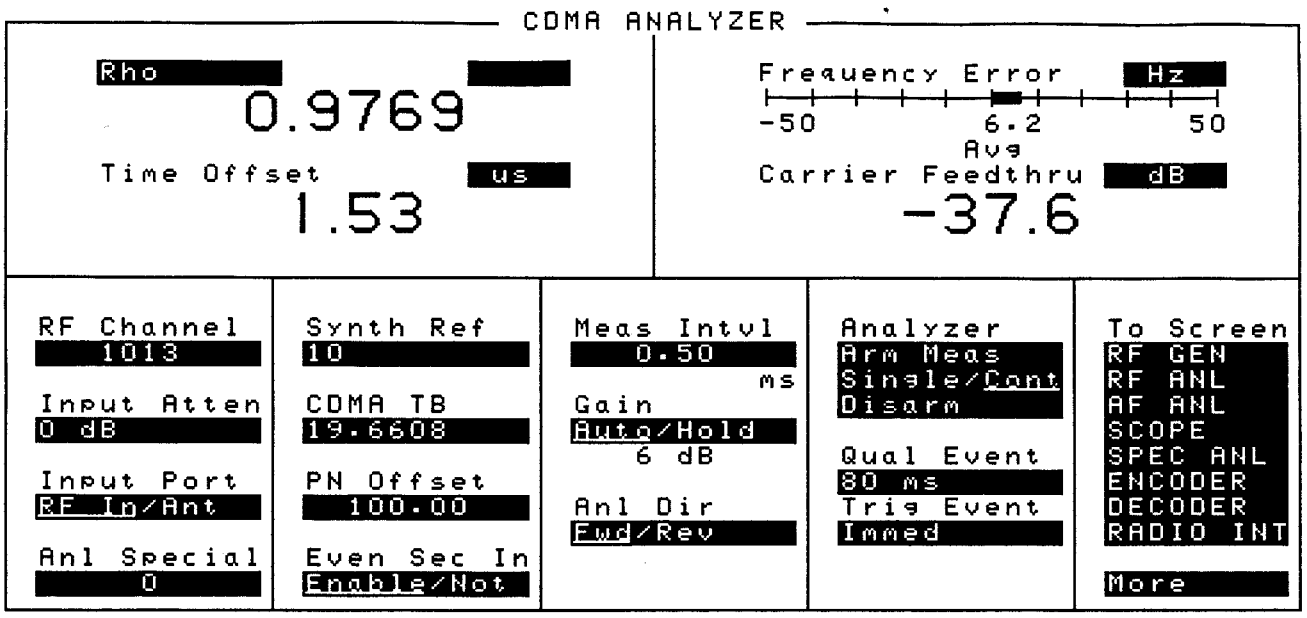
SECTION B **FCC ID: IHET5ZR1**

MODULATION CHARACTERISTICS

Maximum Power

HP 8921A Cell Site Test Set: 08/11/99 04:01:00 pm

C



Channel 1013
869.70 MHz
Maximum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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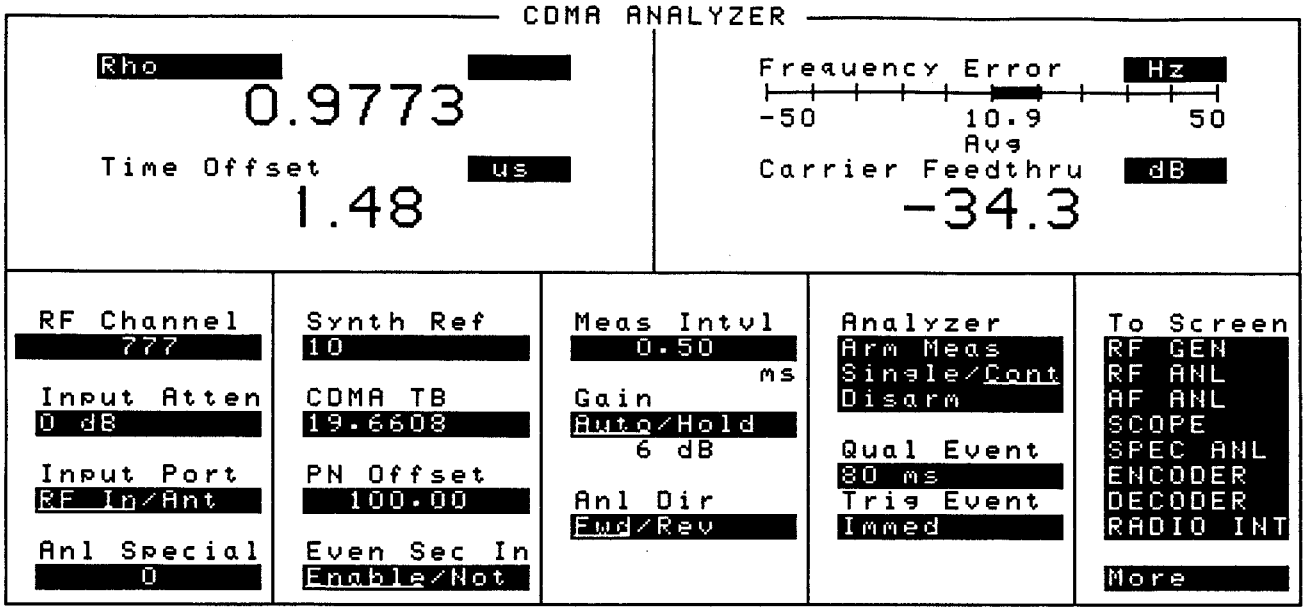

Channel 777
893.31 MHz
Maximum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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CDMA Systems Division

SECTION B **FCC ID: IHET5ZR1**

MODULATION CHARACTERISTICS

Minimum Power

HP 8921A Cell Site Test Set: 08/11/99 04:00:00 pm

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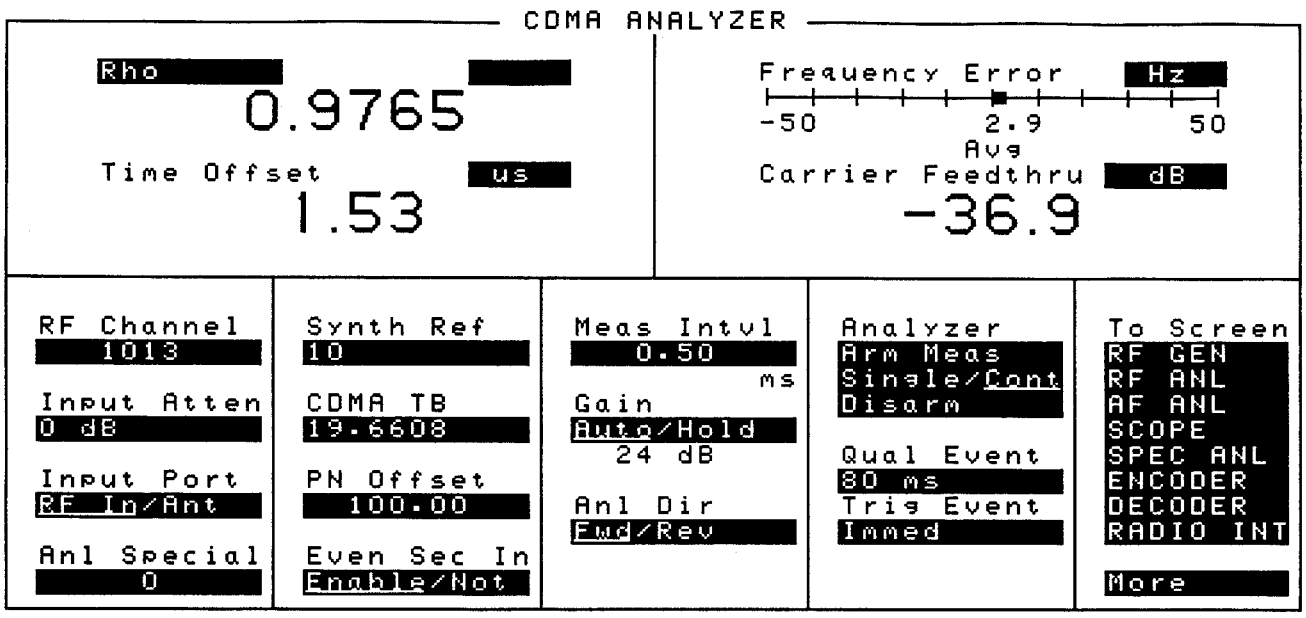

Channel 1013
869.70 MHz
Minimum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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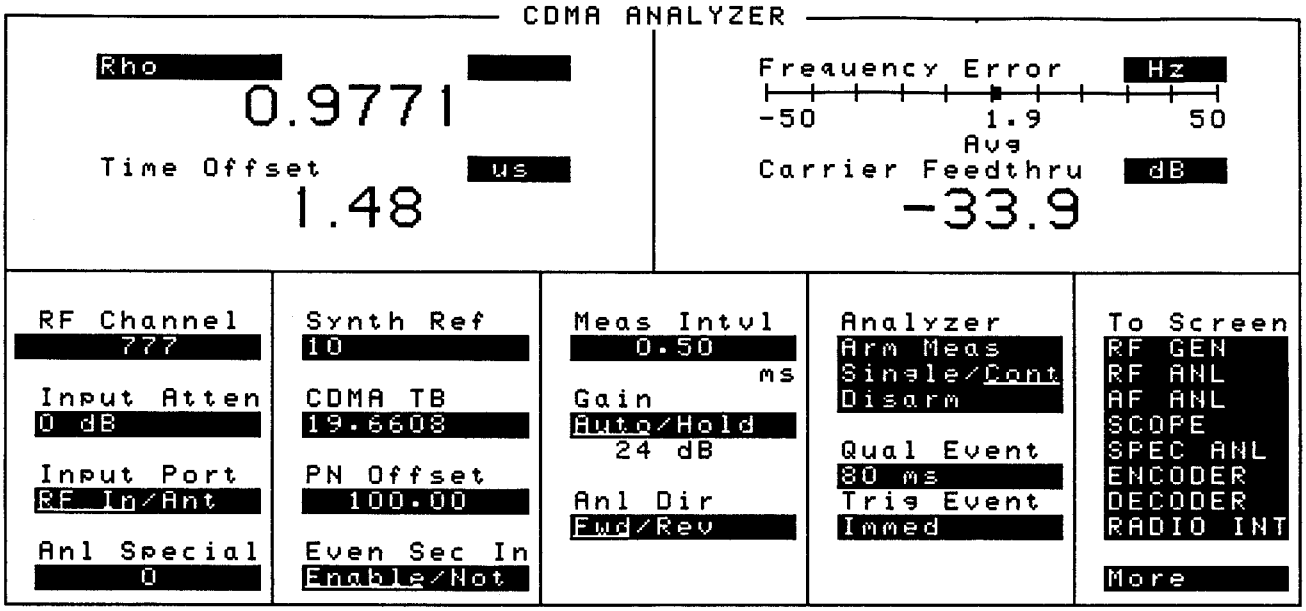

Channel 777
893.31 MHz
Minimum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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CDMA Systems Division

FCC ID: IHET5ZR1

SECTION C

SPURIOUS & HARMONIC EMISSIONS RADIATED

APPLICANT: MOTOROLA **TRANSCEIVER TYPE: IHET5ZR1**

Radiated RF Measurements

WORST RADIATED RF SPUR LEVEL FOR SC4812ET @800 MHz

TRANSMIT CHANNEL	SPUR FREQUENCY (GHz)	MEASURED SIGNAL LEVEL dBuV/meter	MEASURED Signal Level (dBm)	FCC, Part 22 MAX LIMIT (dBm)
1013V 1013H	8.697 1.739	38.86 43.92	-56.37 -51.31	-13 -13
777V 777H	8.933 8.933	39.53 39.50	-55.70 -55.73	-13 -13

Converting dBuV/meter to dBm when Part 22 is done at 3 meters.

1. (dBuV/M / 20) *(Inverse Log) = uV/M
2. Log(uV/M /57735) * 20 = dBm

Example 43.92 dBuV/m to dBm

(43.92 dBuV/m / 20) * (Inverse Log) = 157.09 uV/M

Log (157.09 uV/m/ 57735) * 20 = -51.31 dBm

If the test is done at 10 meters, the first formula would remain the same. The 2nd is as follows

Log[(uV/m * 1/ (3 * 57735)/10)] * 20 dBm

Larry J. Collins 8-20-99

Radiated Engineer Date

MOTOROLA

Network Systems Group
CDMA Systems Division

FCC ID: IHET5ZR1

SECTION D

SPURIOUS & HARMONIC

EMISSIONS CONDUCTED

NOTE: The plots for conducted spurious and harmonic emissions are measured in peak mode. The higher (than 46.0 dBm) levels measured in peak mode are expected, due to typical CDMA peak to average performance. The average power level was set to 46.0 dBm using an HP438A power meter.

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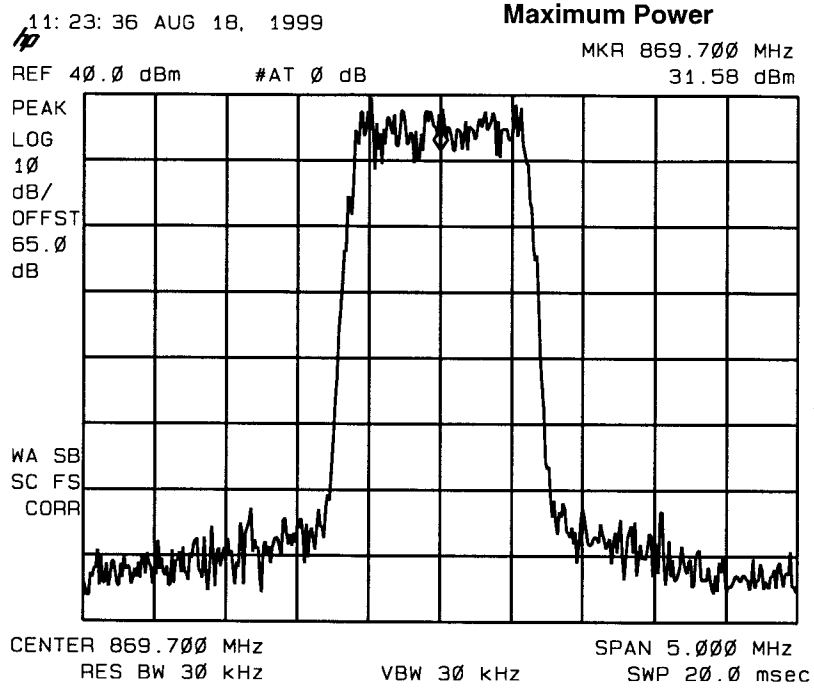
SECTION D **FCC ID: IHET5ZR1**

SPURIOUS & HARMONIC EMISSIONS CONDUCTED

CDMA Transmitter Channel 1013

Maximum Power

Channel 1013
869.70 MHz
Maximum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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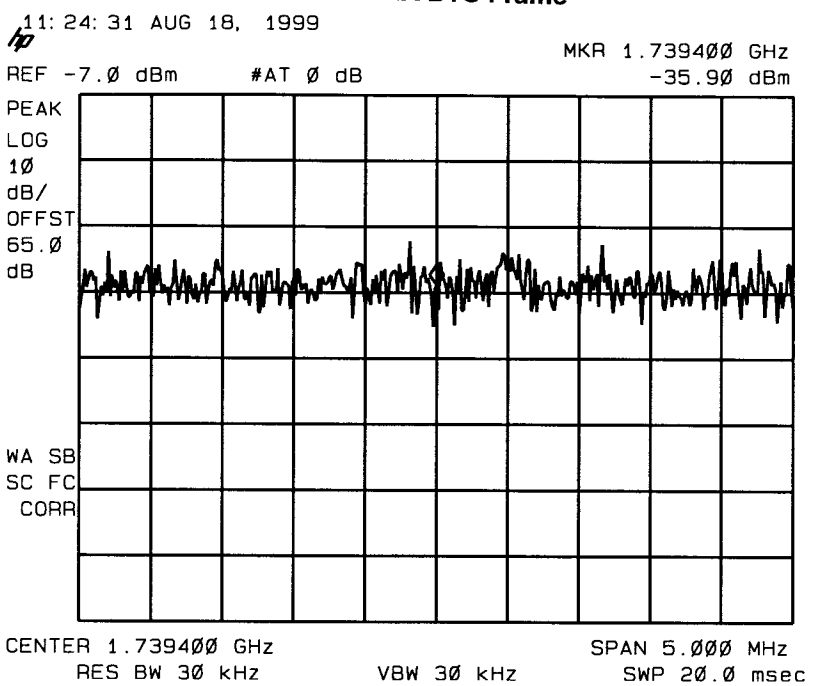
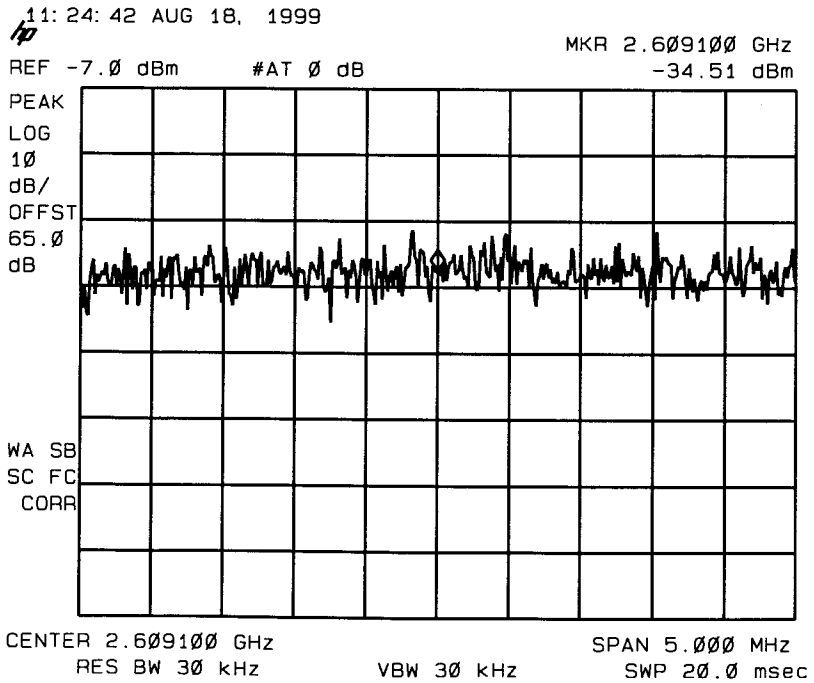
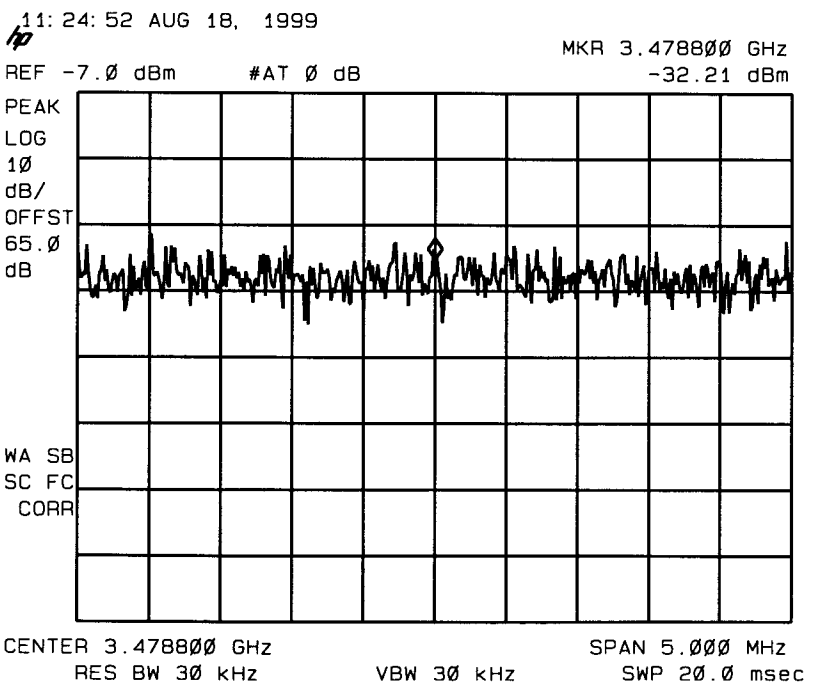
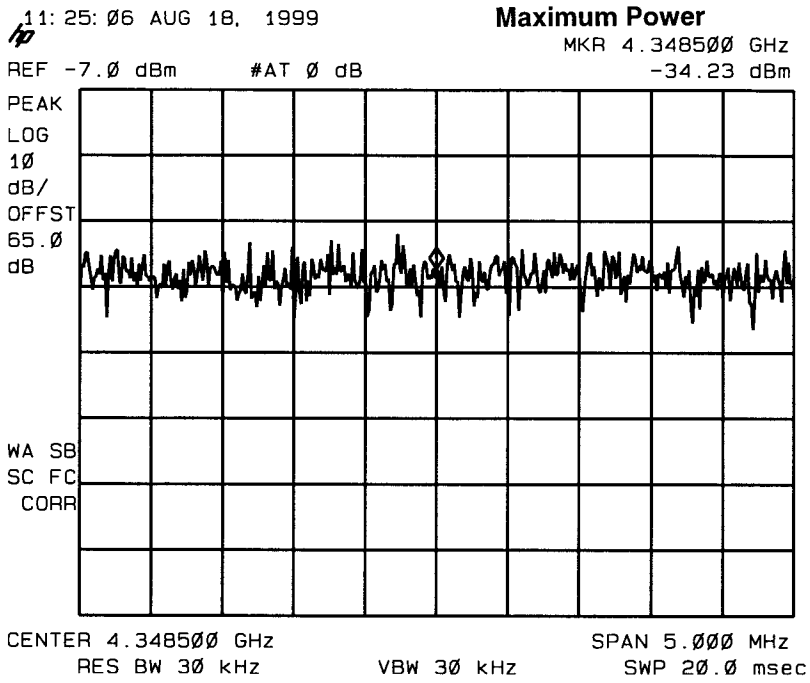






Channel 1013
869.70 MHz
Maximum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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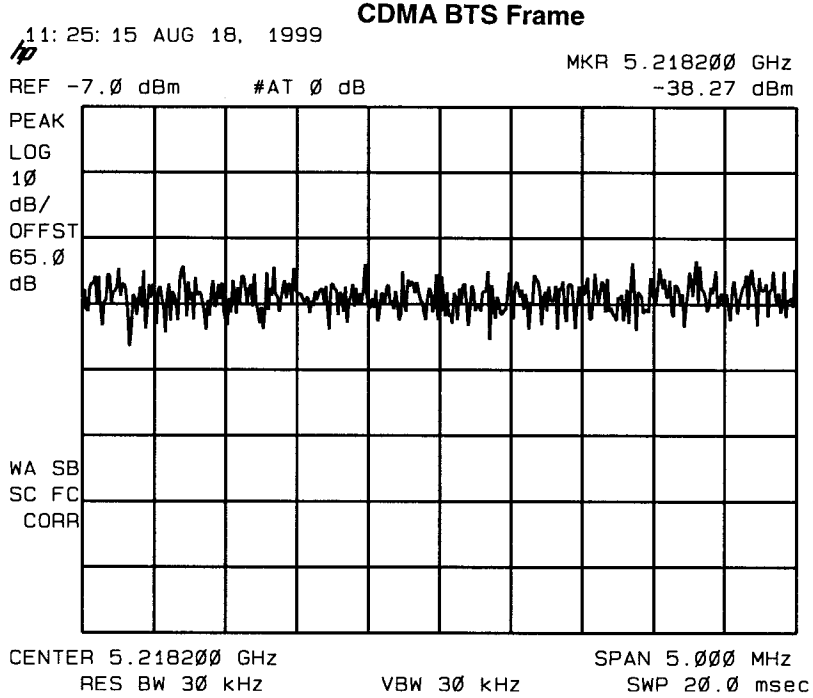
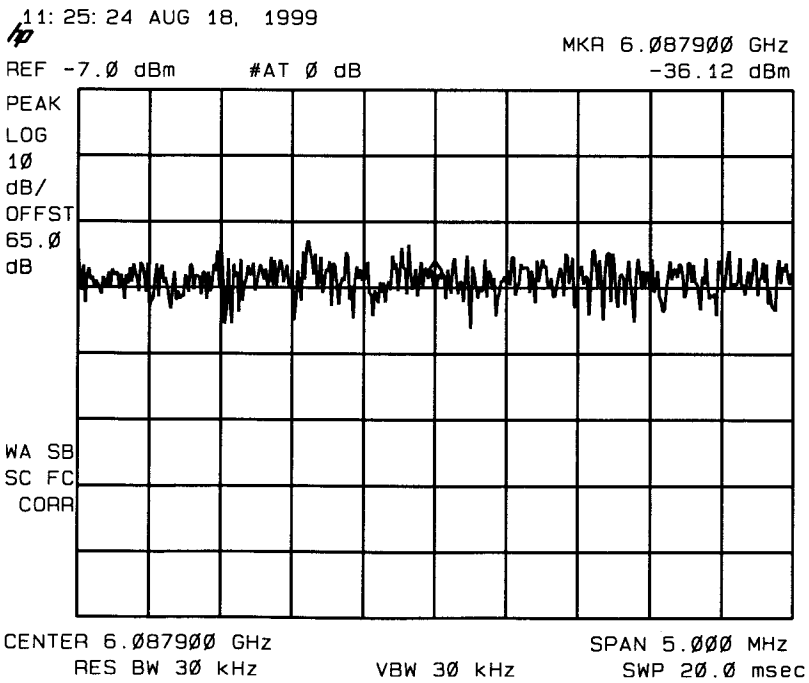
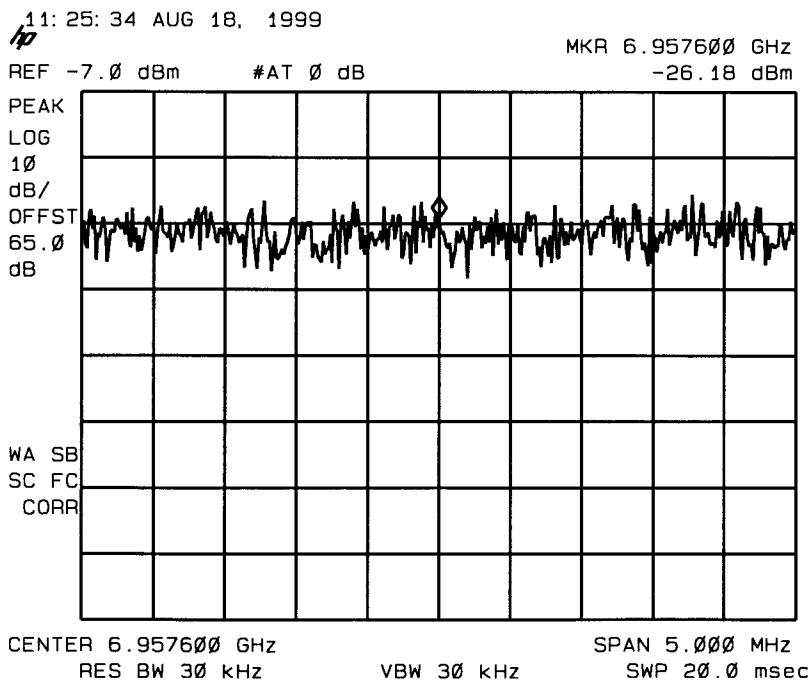
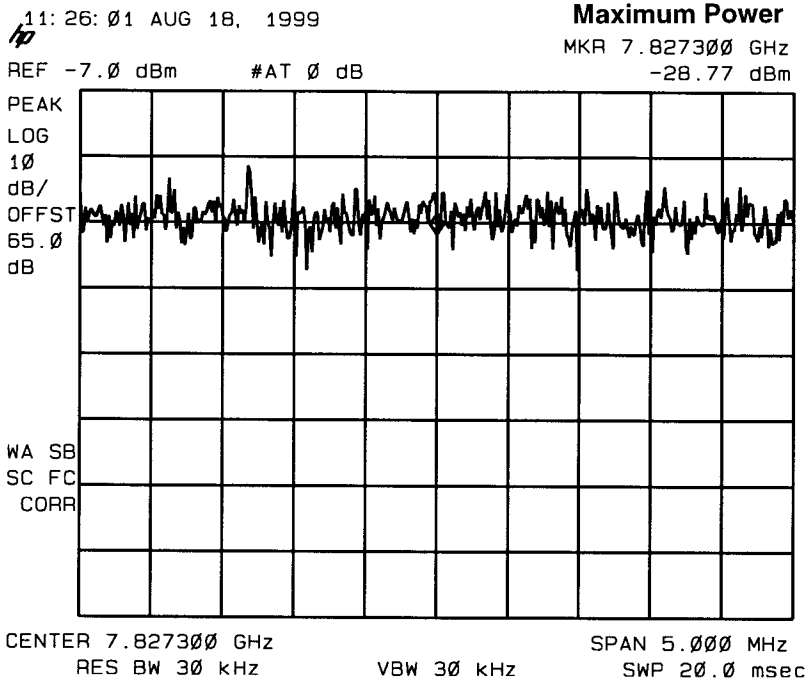






Channel 1013
869.70 MHz
Maximum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

btsate
08-18-99
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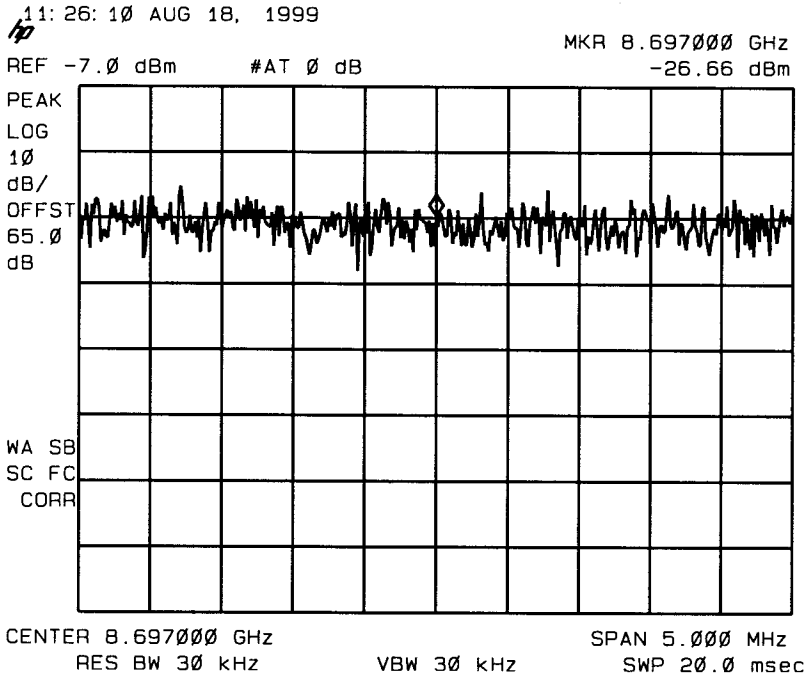

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Network Systems Group
CDMA Systems Division

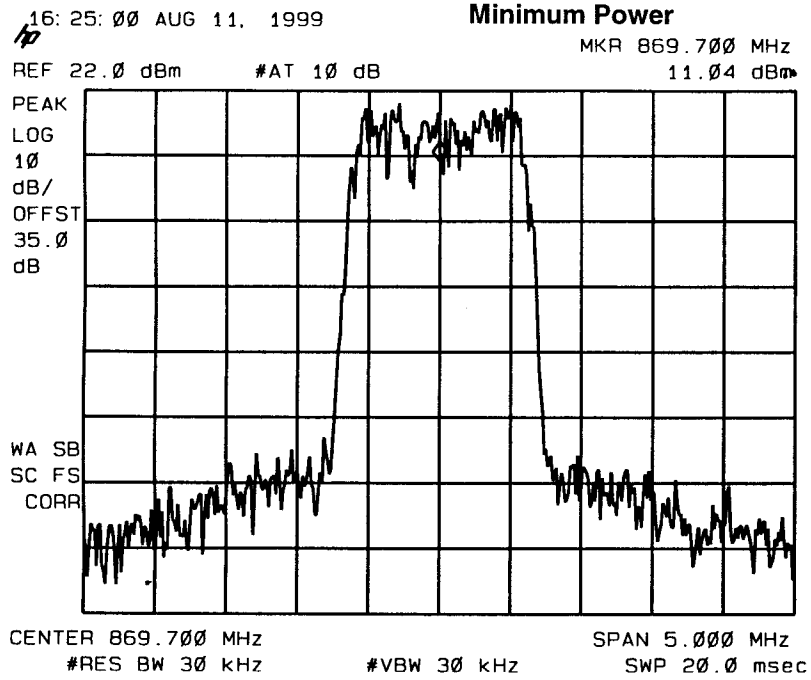
SECTION D **FCC ID: IHET5ZR1**

SPURIOUS & HARMONIC EMISSIONS CONDUCTED

CDMA Transmitter Channel 1013

Minimum Power

Channel 1013
869.70 MHz
Minimum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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08-11-99
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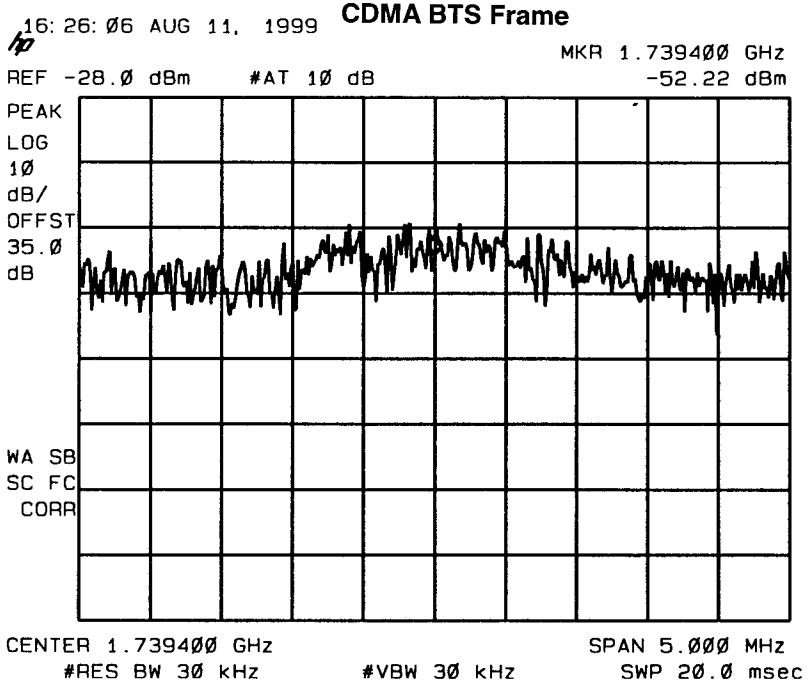
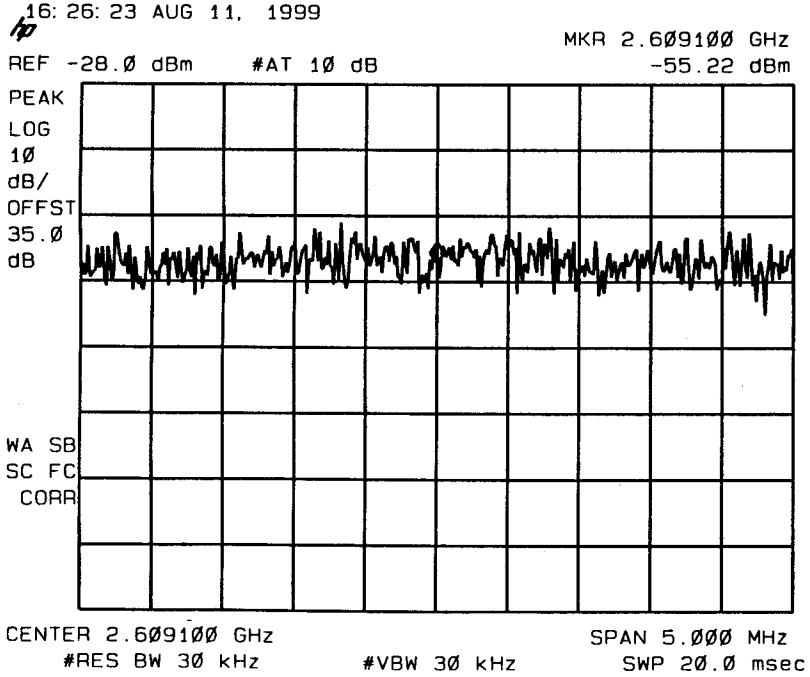
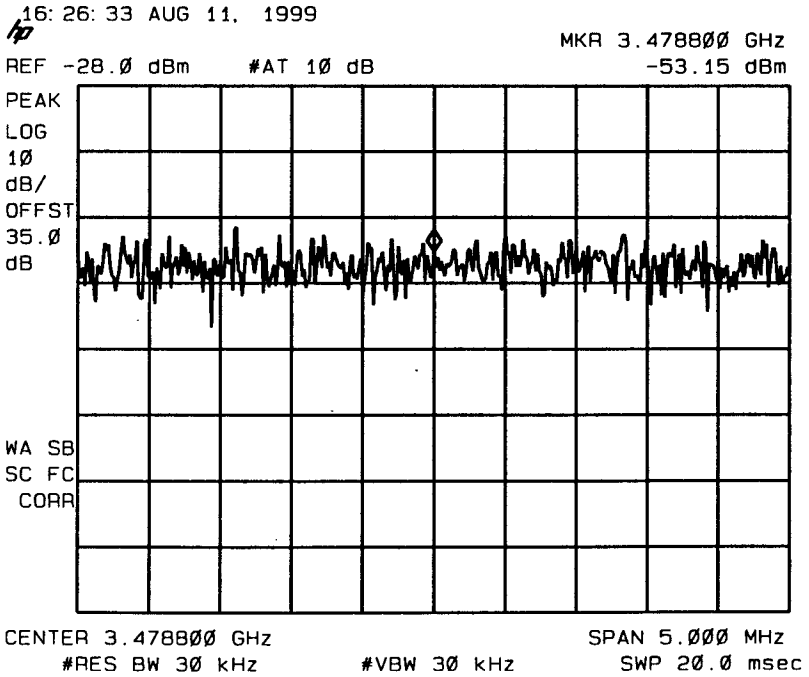
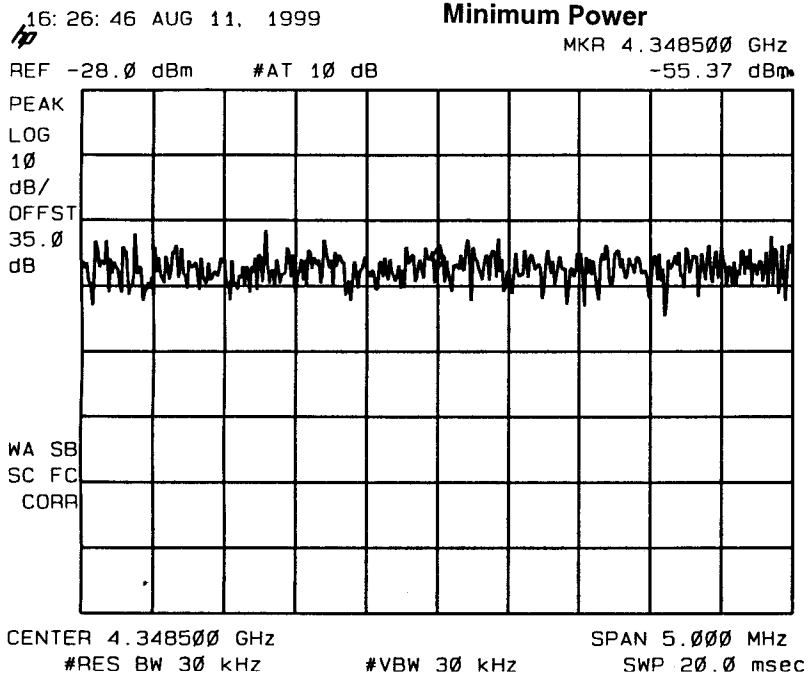






Channel 1013
869.70 MHz
Minimum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

btsate
08-11-99
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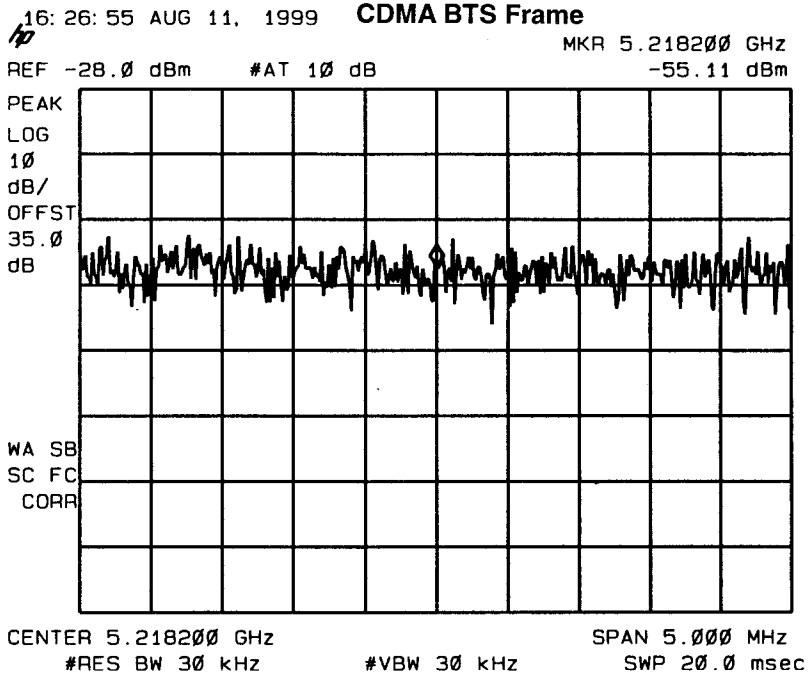
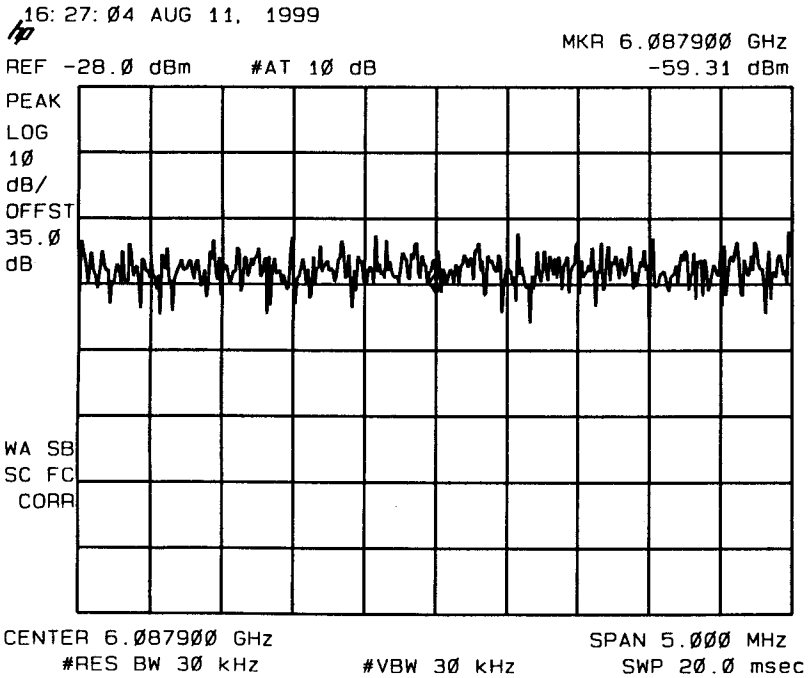
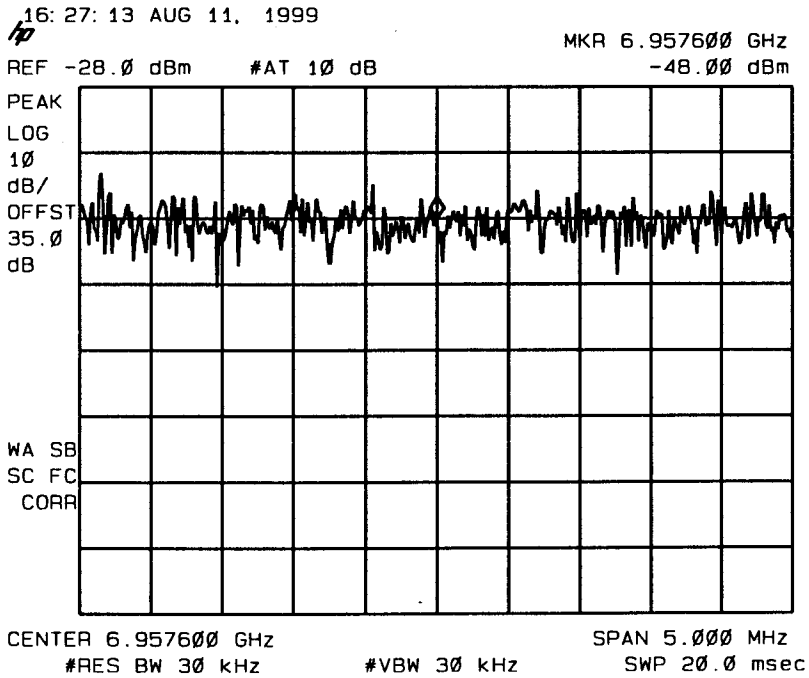
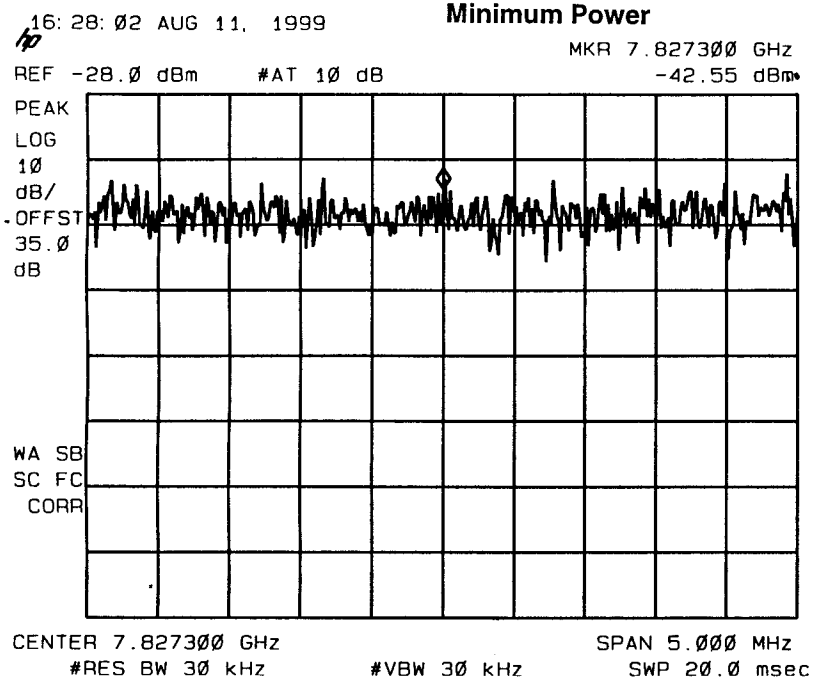






Channel 1013
869.70 MHz
Minimum Power



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SC4812ET @800 MHz
CDMA BTS Frame

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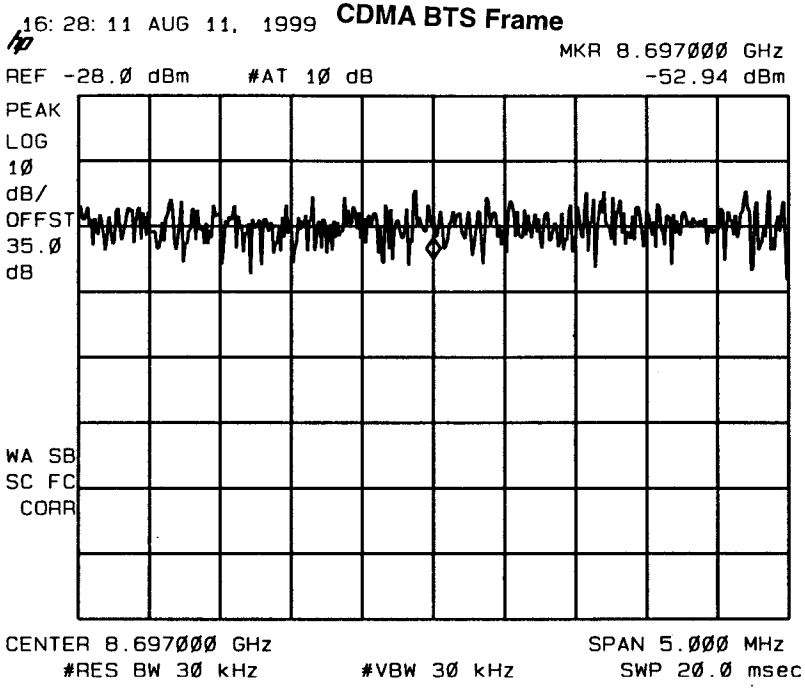

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Network Systems Group
CDMA Systems Division

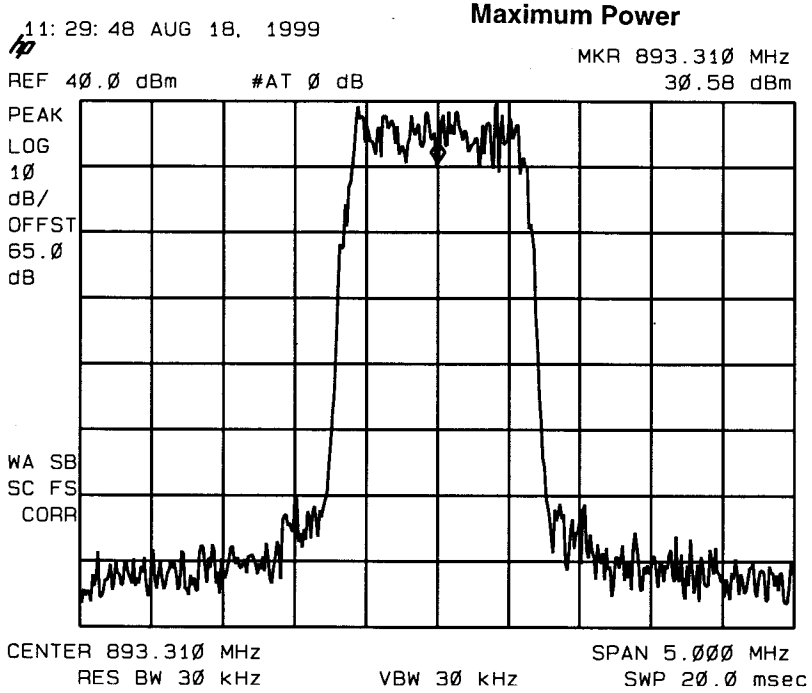
SECTION D **FCC ID: IHET5ZR1**

SPURIOUS & HARMONIC EMISSIONS CONDUCTED

CDMA Transmitter Channel 777

Maximum Power

Channel 777
893.31 MHz
Maximum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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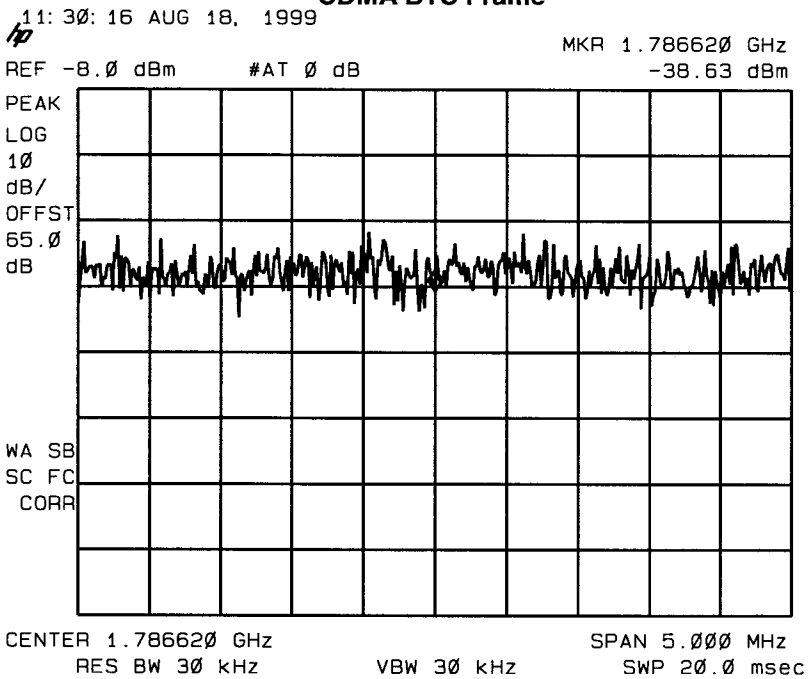
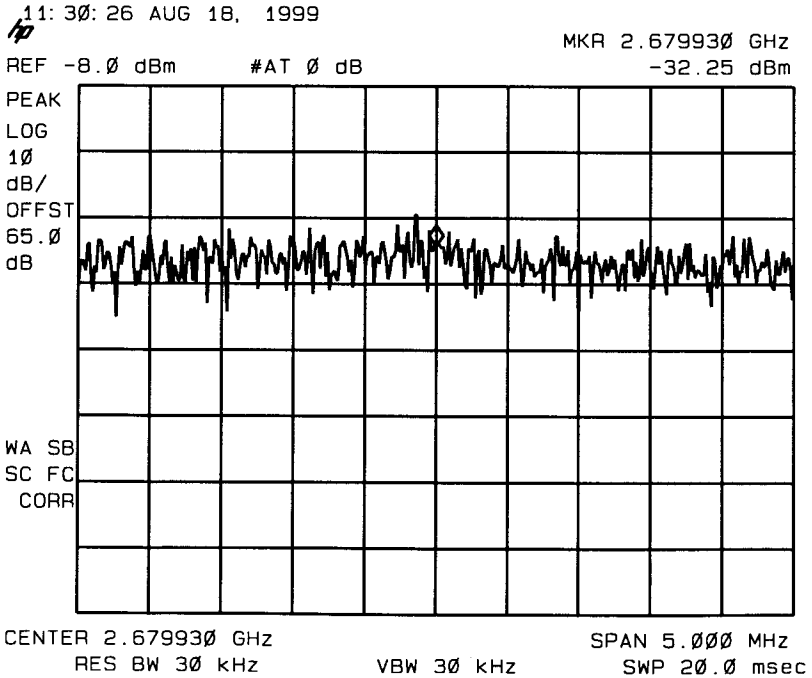
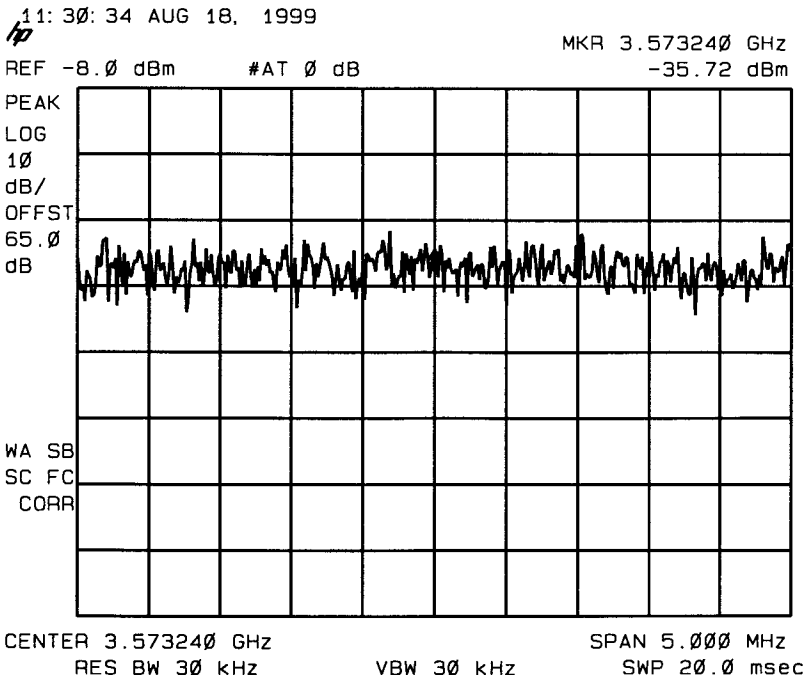
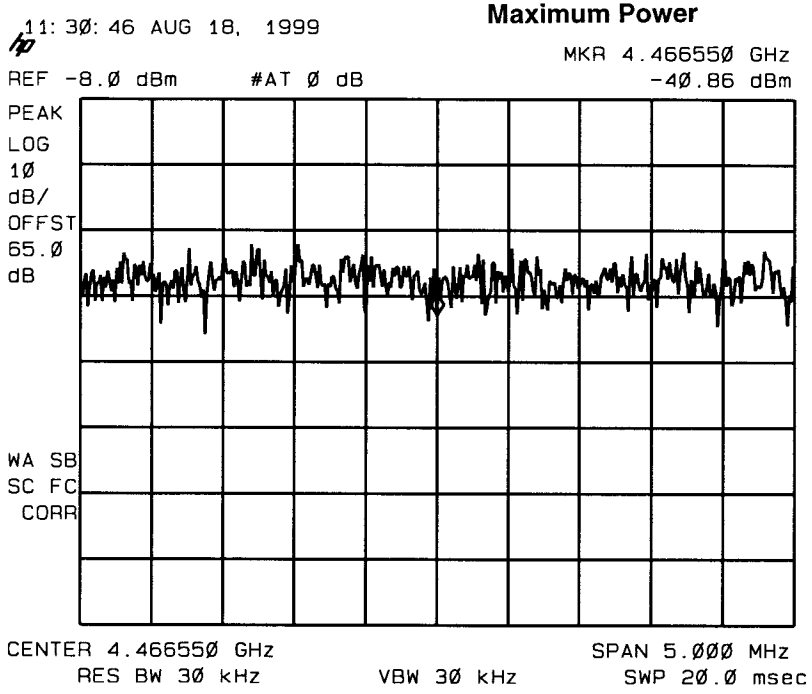






Channel 777
893.31 MHz
Maximum Power



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SC4812ET @800 MHz
CDMA BTS Frame

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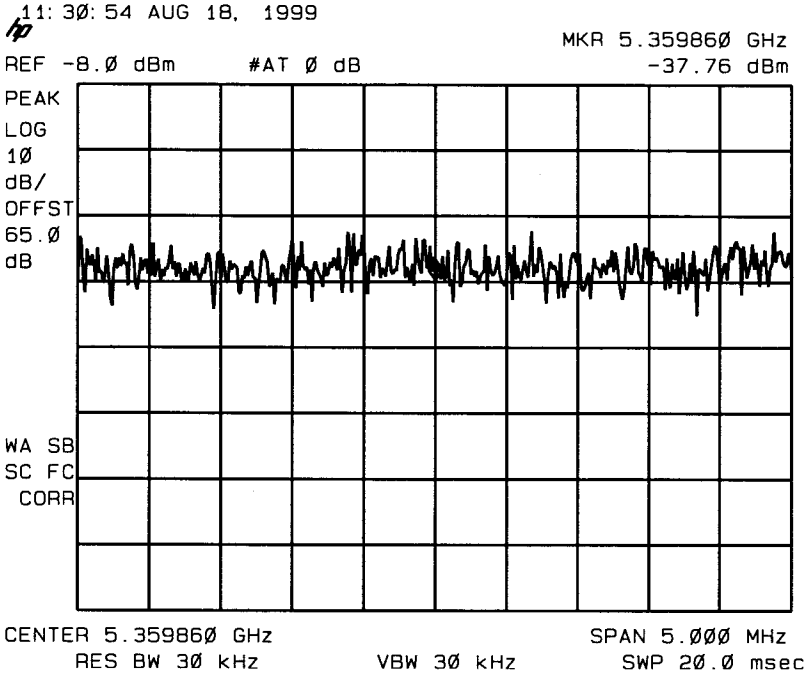
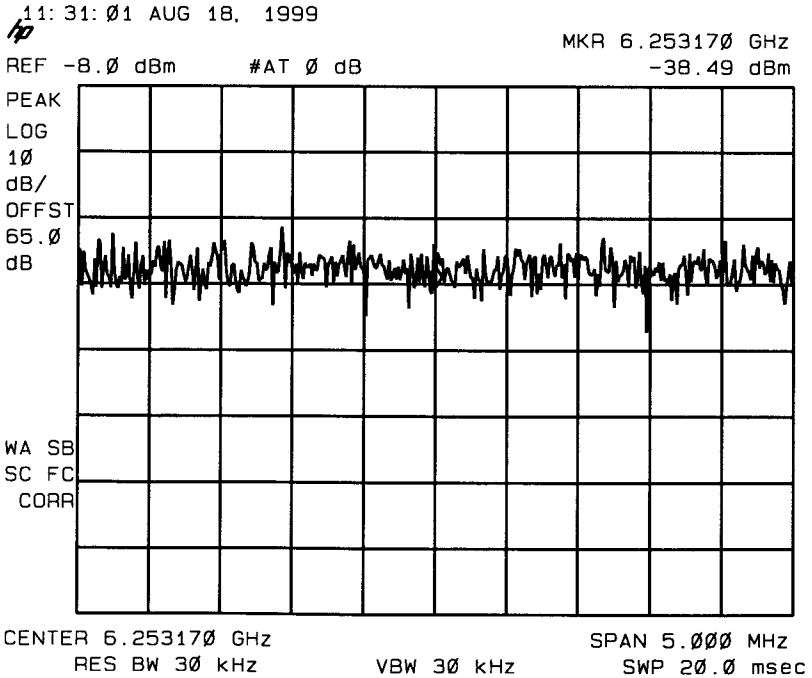
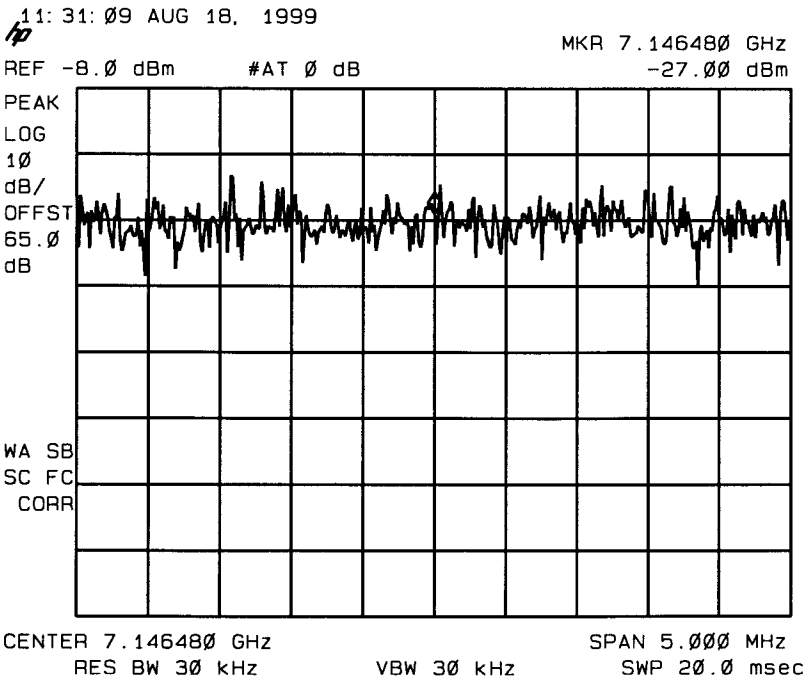
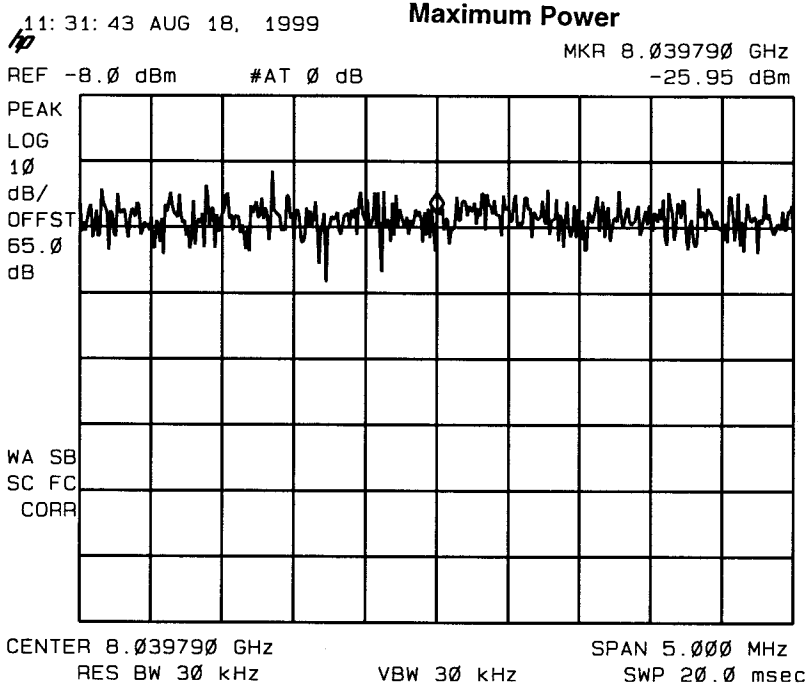






Channel 777
893.31 MHz
Maximum Power



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SC4812ET @800 MHz
CDMA BTS Frame

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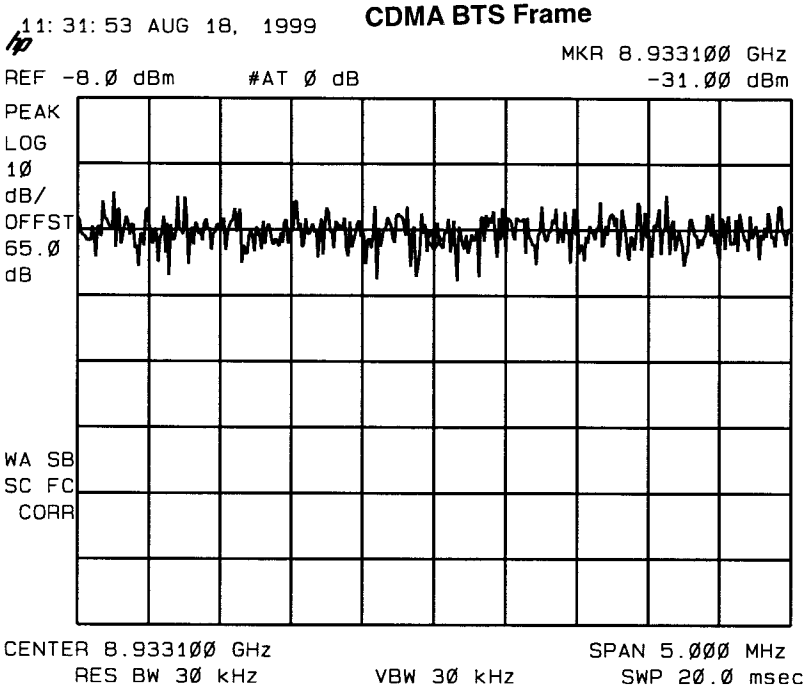


MOTOROLA

Network Systems Group
CDMA Systems Division

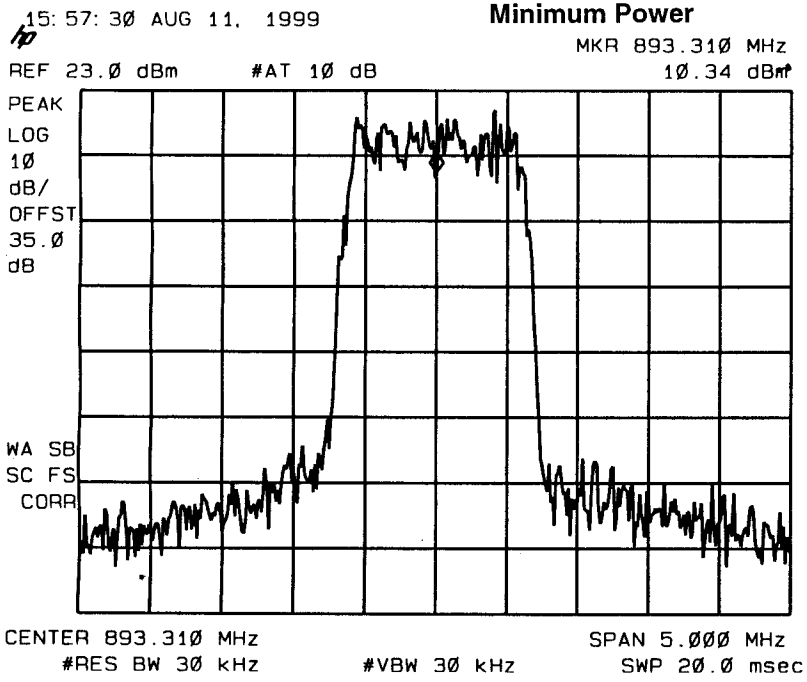
SECTION D **FCC ID: IHET5ZR1**

SPURIOUS & HARMONIC EMISSIONS CONDUCTED

CDMA Transmitter Channel 777

Minimum Power

Channel 777
893.31 MHz
Minimum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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08-11-99
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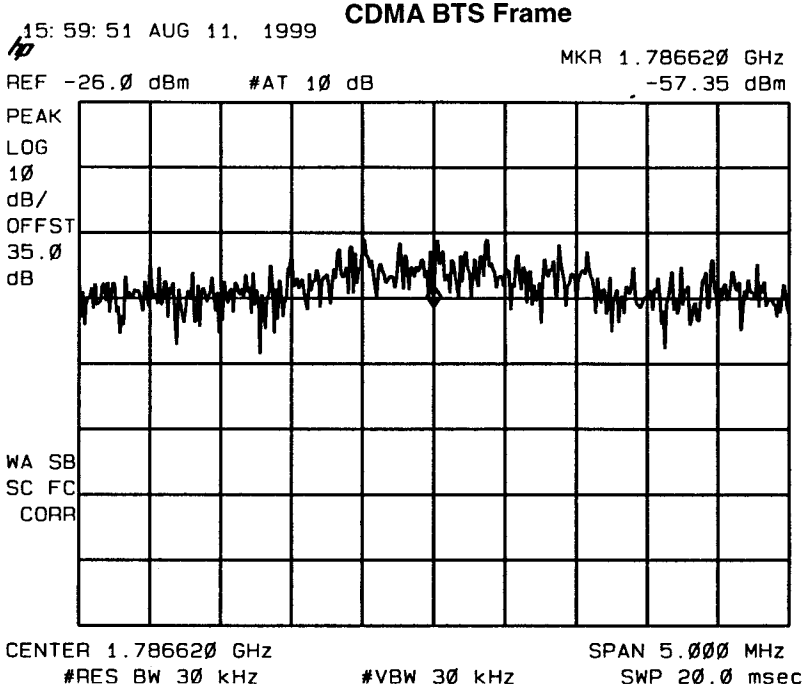
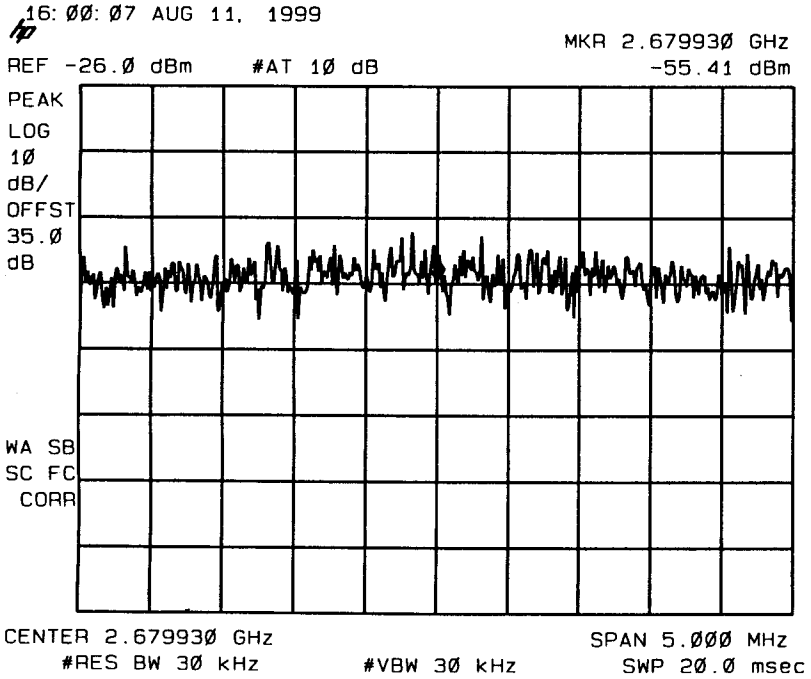
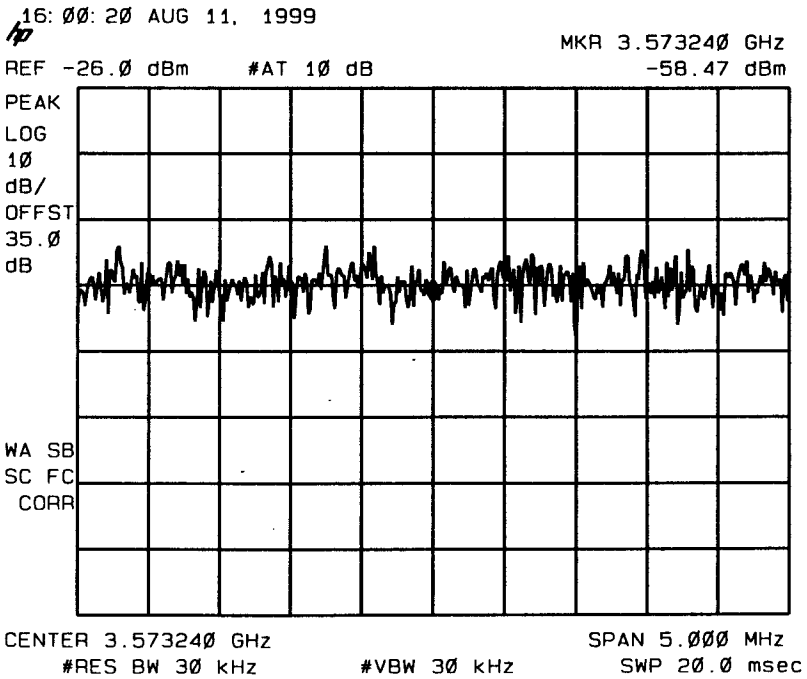
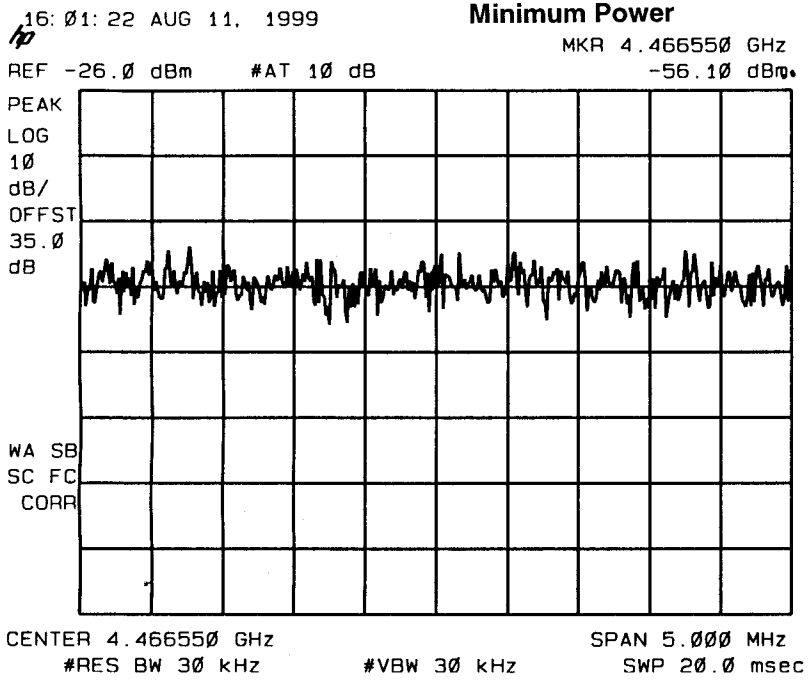






Channel 777
893.31 MHz
Minimum Power



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

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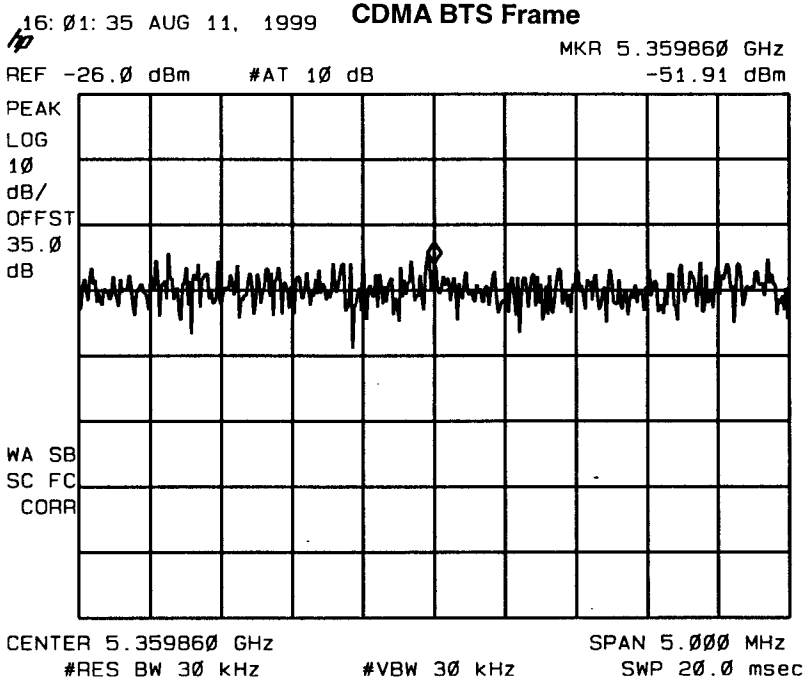
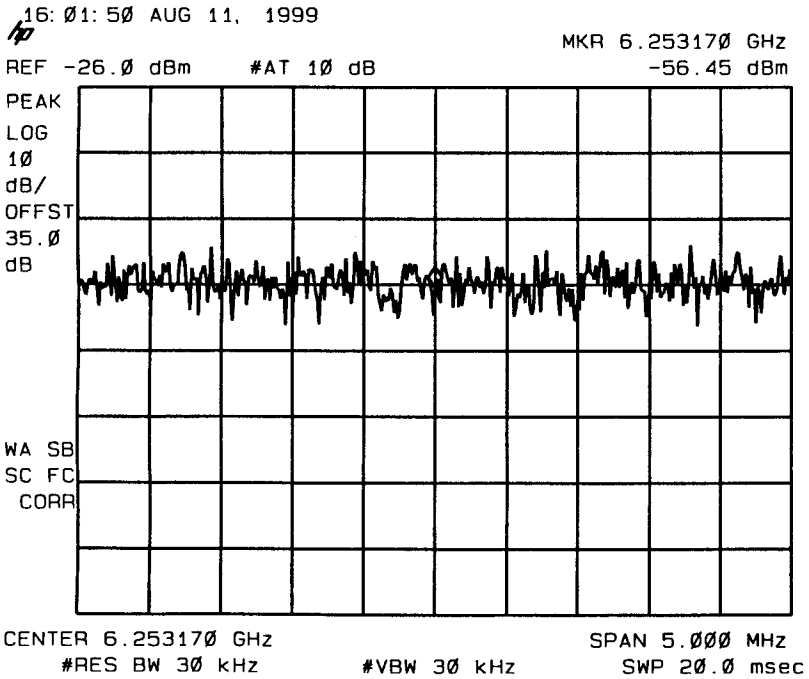
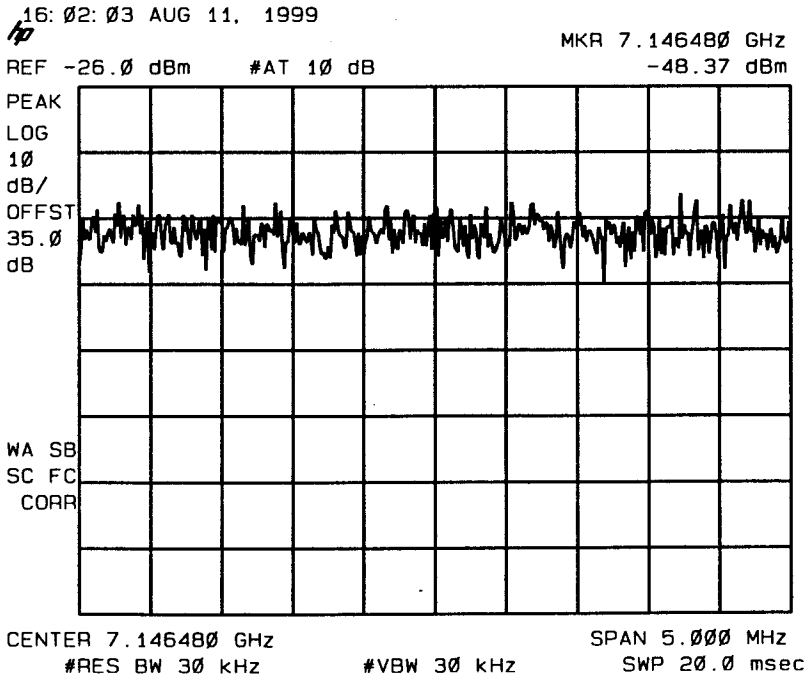
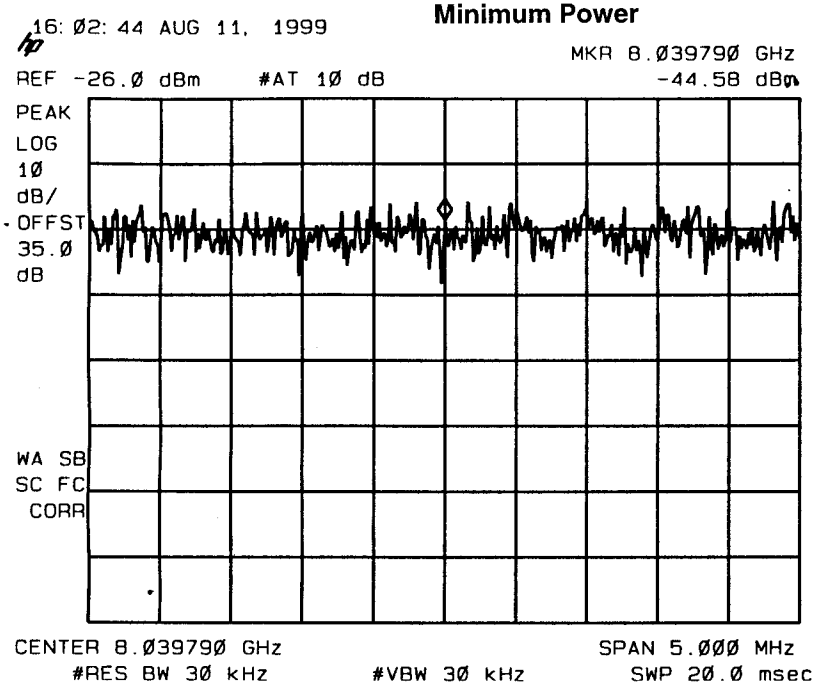






Channel 777
893.31 MHz
Minimum Power



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CDMA BTS Frame

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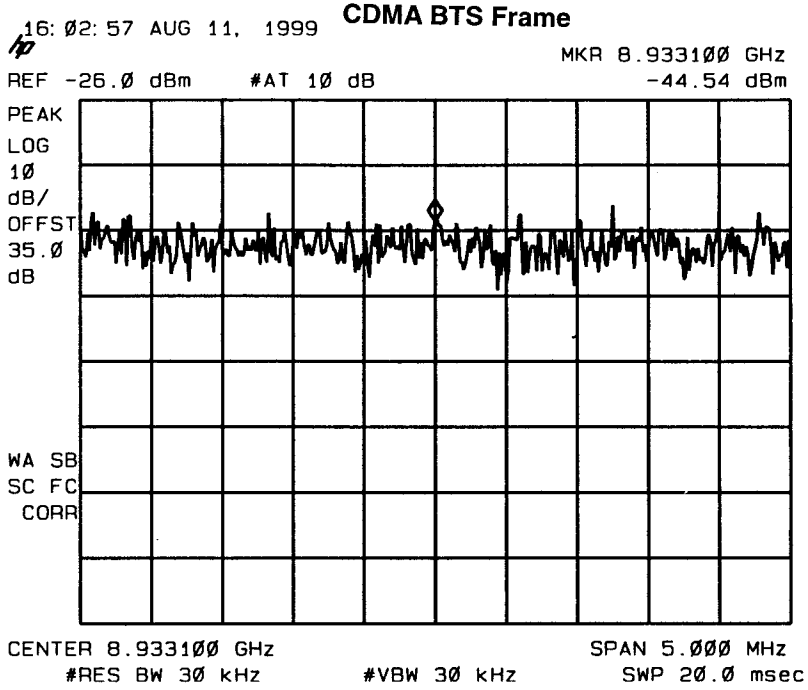


MOTOROLA

Network Systems Group
CDMA Systems Division

FCC ID: IHET5ZR1

SECTION E

OCCUPIED BANDWIDTH

MOTOROLA

Network Systems Group
CDMA Systems Division

SECTION E **FCC ID: IHET5ZR1**

OCCUPIED BANDWIDTH

Maximum Power

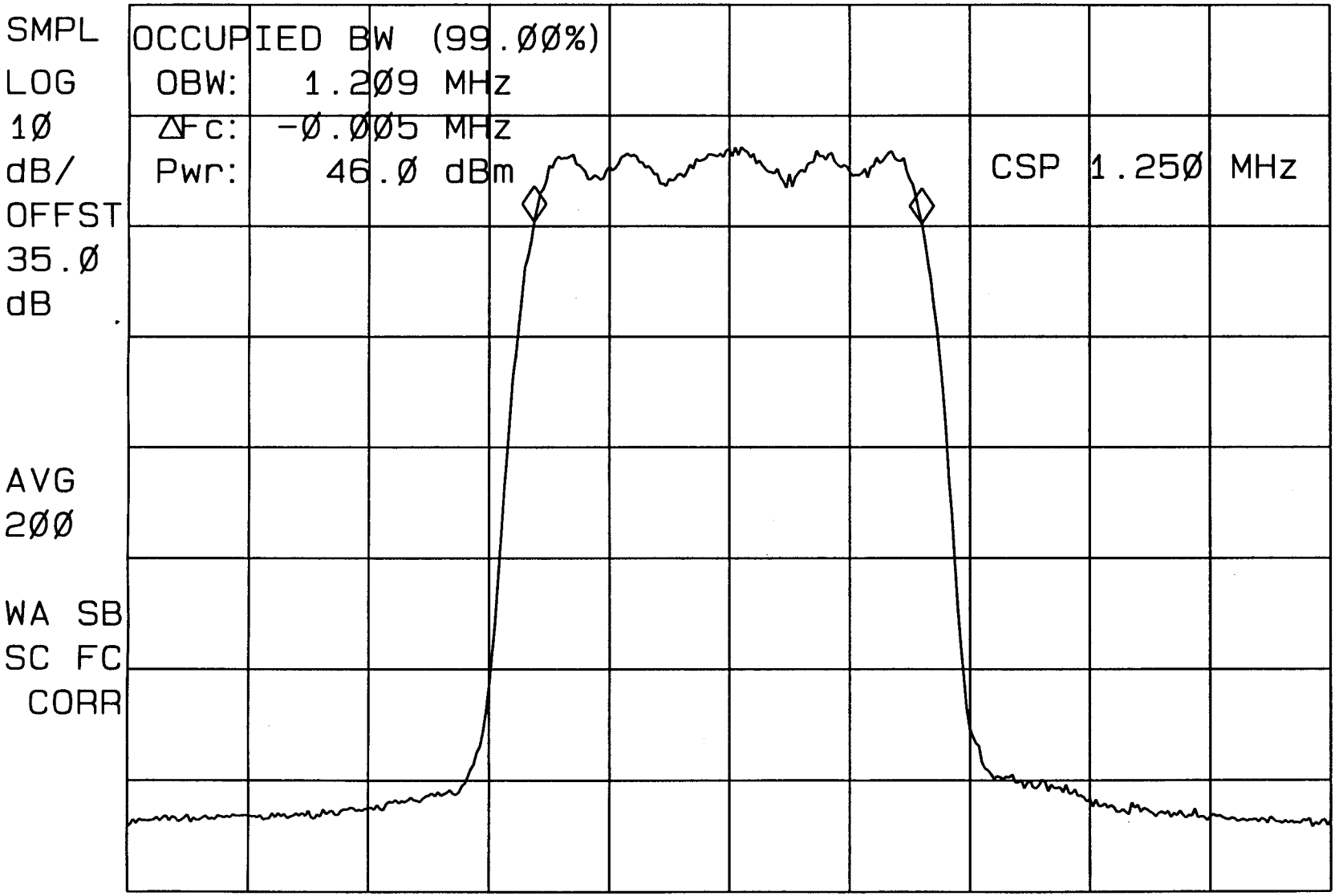
btsate
08-11-99
16:52:59

16: 53: Ø7 AUG 11, 1999

Channel 1013
869.70 MHz
Maximum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

REF 45.Ø dBm #AT 4Ø dB



CENTER 869.7ØØ MHz SPAN 3.75Ø MHz

#RES BW 3Ø kHz #VBW 3Ø kHz SWP 2Ø.Ø msec

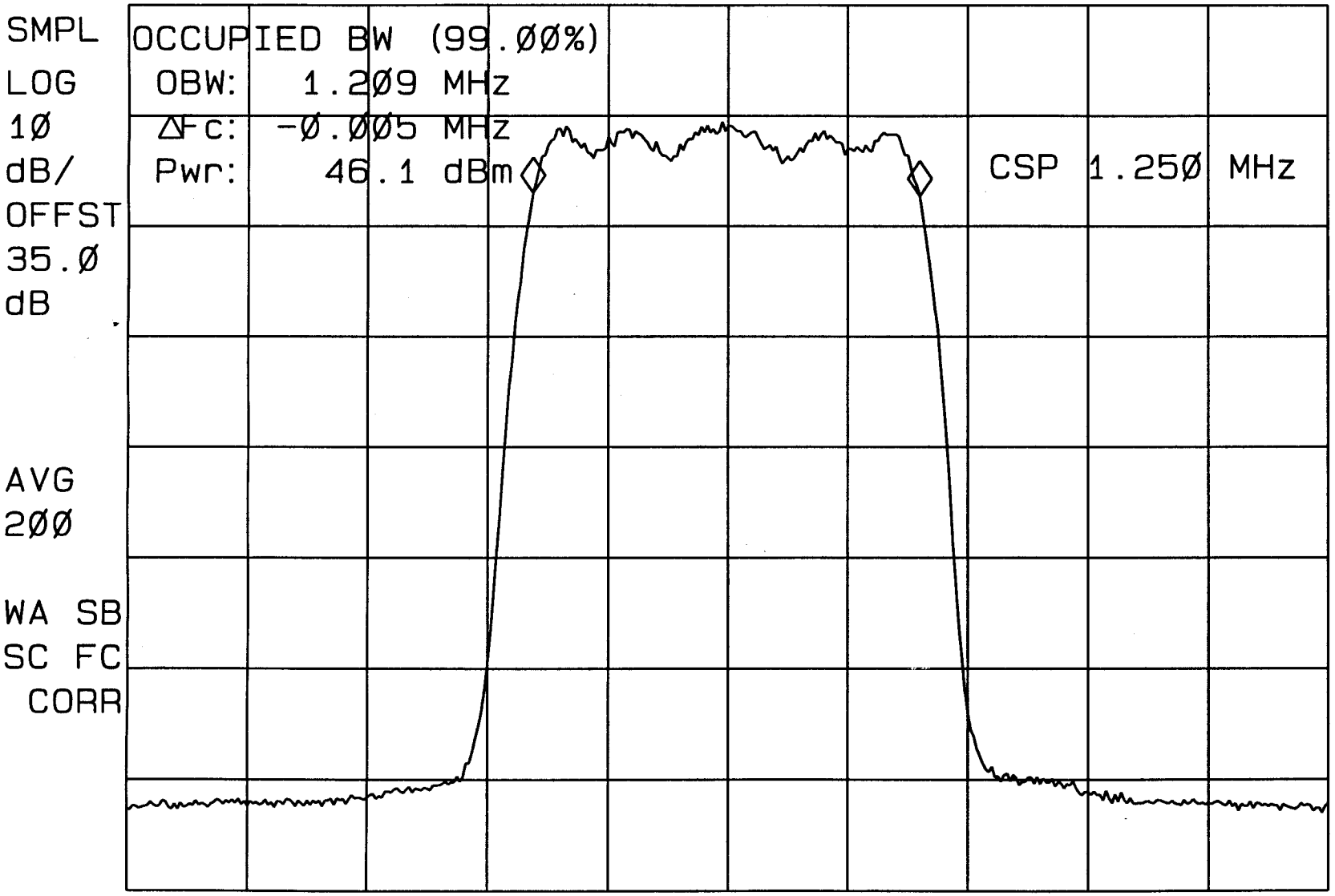
btsate
08-11-99
13:57:31

13: 57: 4Ø AUG 11, 1999

Channel 777
893.31 MHz
Maximum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

REF 43.Ø dBm #AT 4Ø dB



CENTER 893.31Ø MHz SPAN 3.75Ø MHz

#RES BW 3Ø kHz #VBW 3Ø kHz SWP 2Ø.Ø msec

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Network Systems Group
CDMA Systems Division

SECTION E **FCC ID: IHET5ZR1**

OCCUPIED BANDWIDTH

Minimum Power

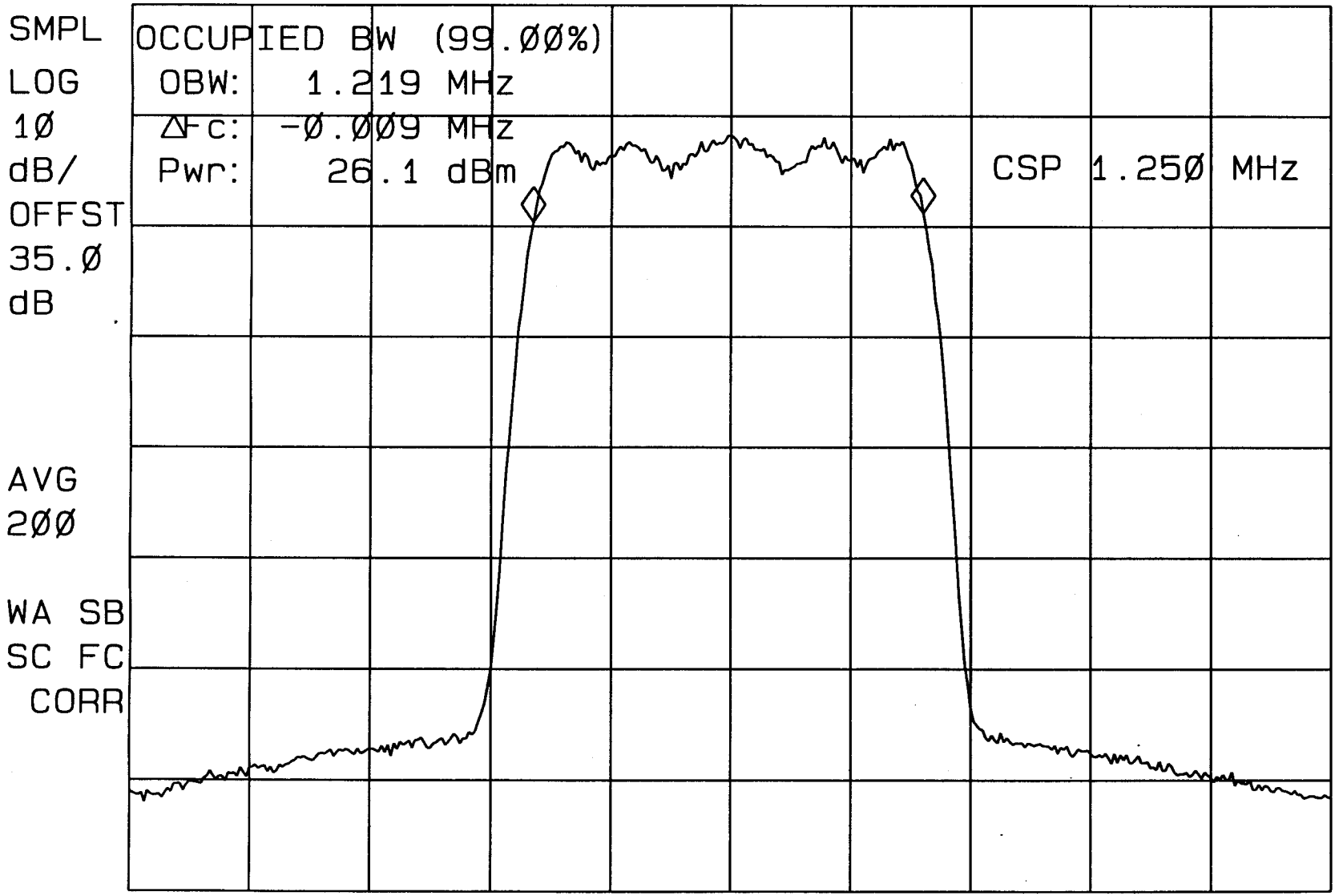
btsate
08-11-99
16:54:56

16: 55: Ø5 AUG 11, 1999

Channel 1013
869.70 MHz
Minimum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

REF 24.Ø dBm #AT 1Ø dB



CENTER 869.7ØØ MHz SPAN 3.75Ø MHz

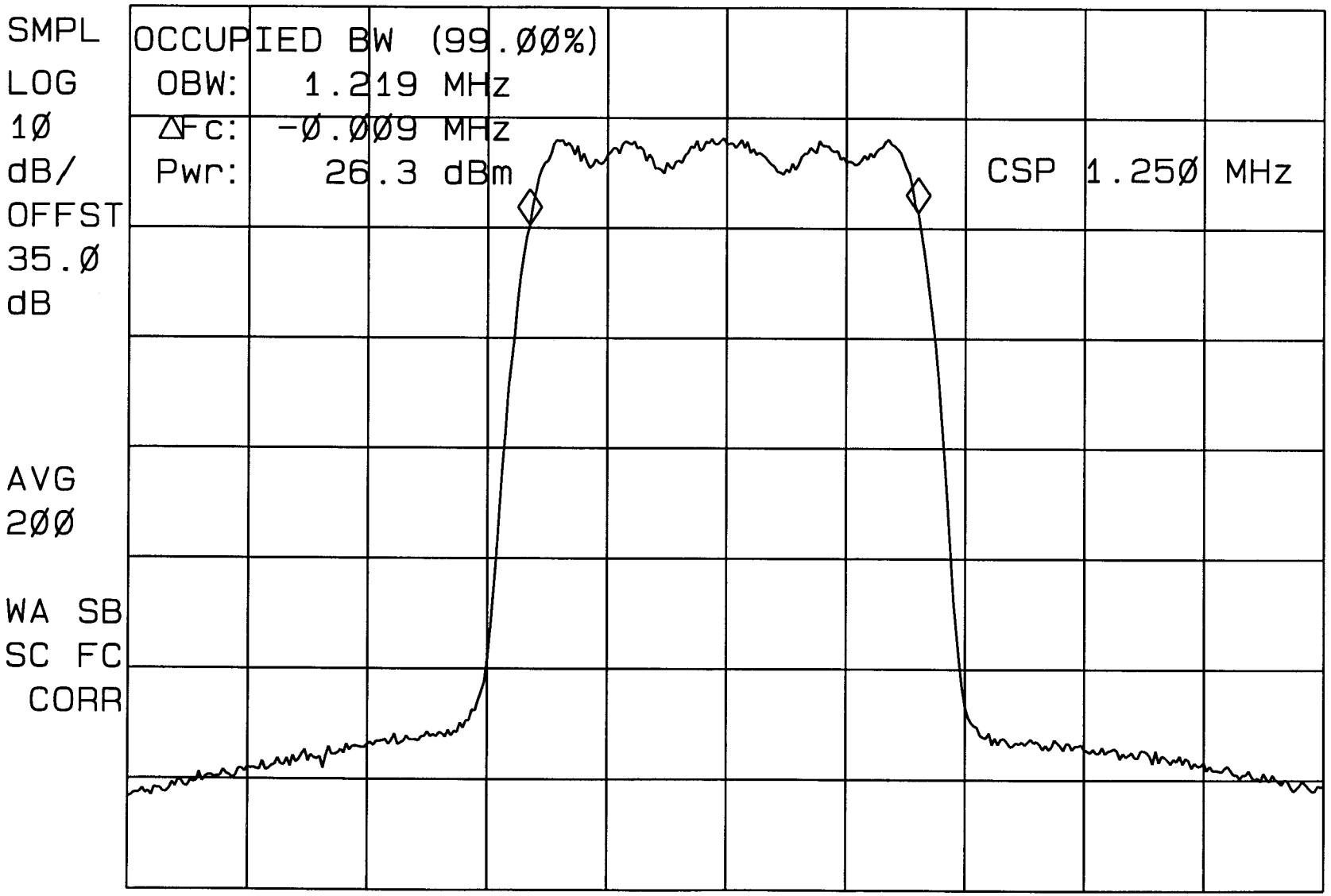
#RES BW 3Ø kHz #VBW 3Ø kHz SWP 2Ø.Ø msec

btsate
08-18-99
14:06:07

14: Ø6: 17 AUG 18, 1999

Channel 777
893.31 MHz
Minimum Power

IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame



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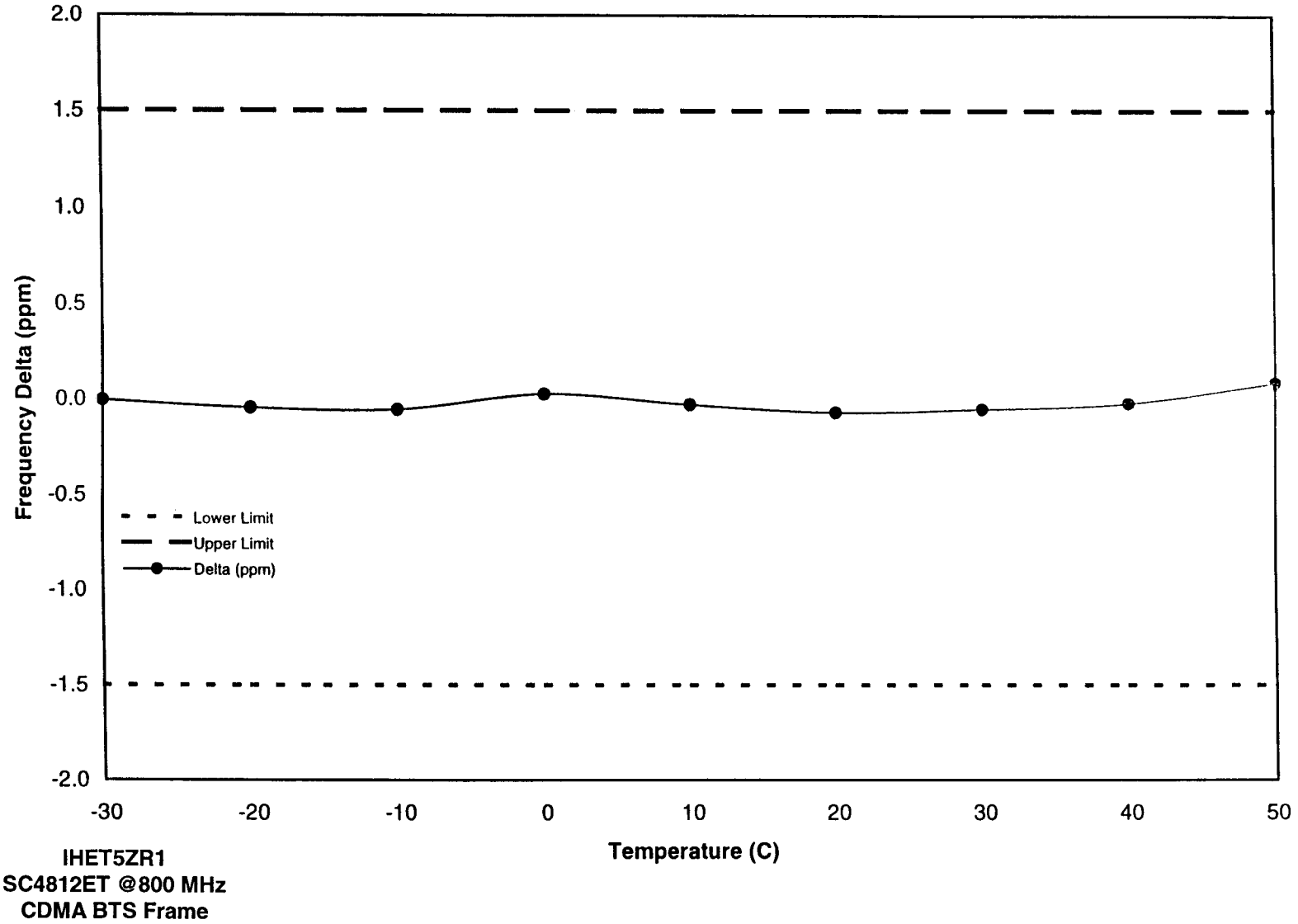
CDMA Systems Division

FCC ID: IHET5ZR1

SECTION F

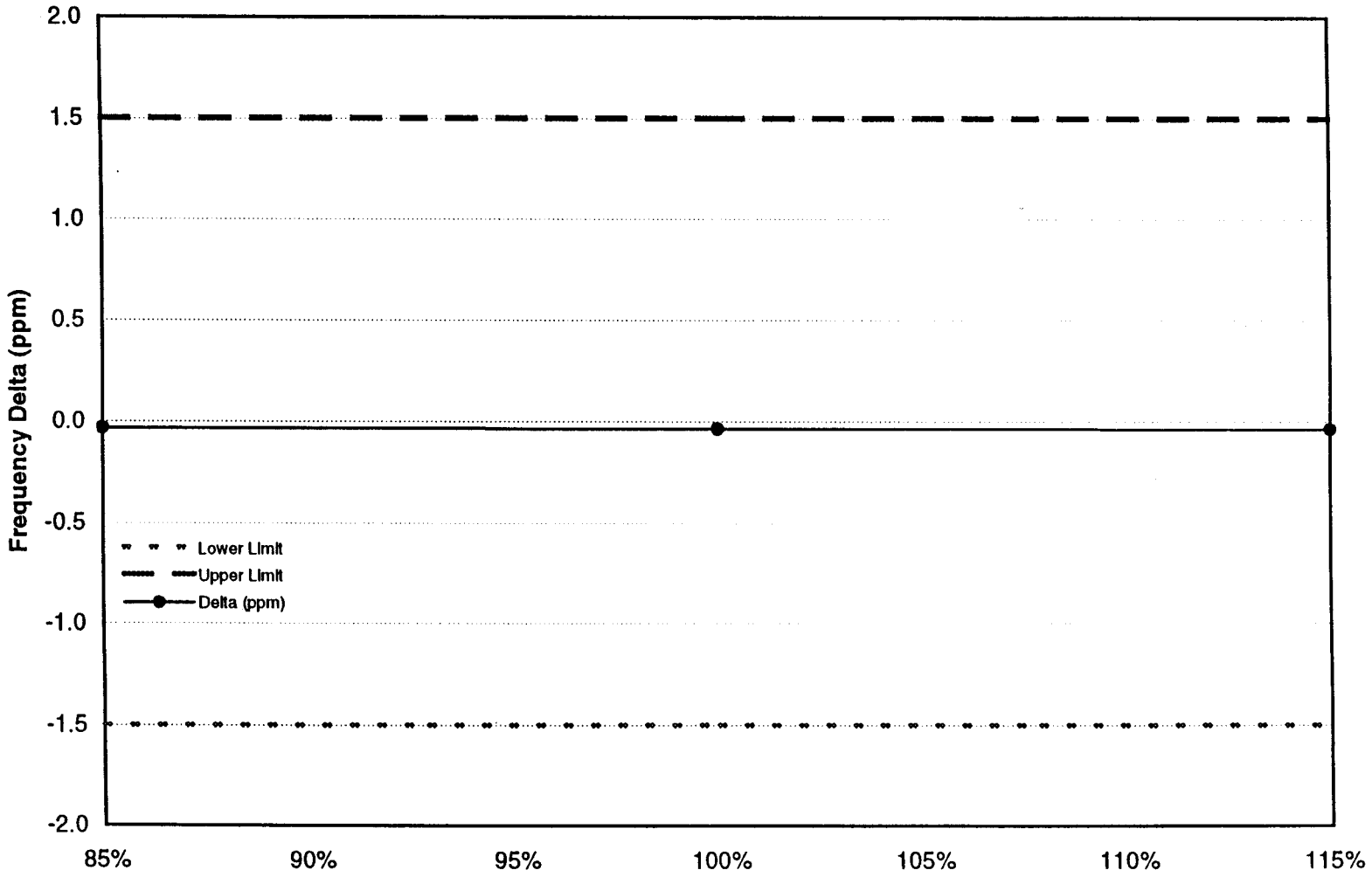
FREQUENCY STABILITY

Frequency Stability Over Temperature - CSM1



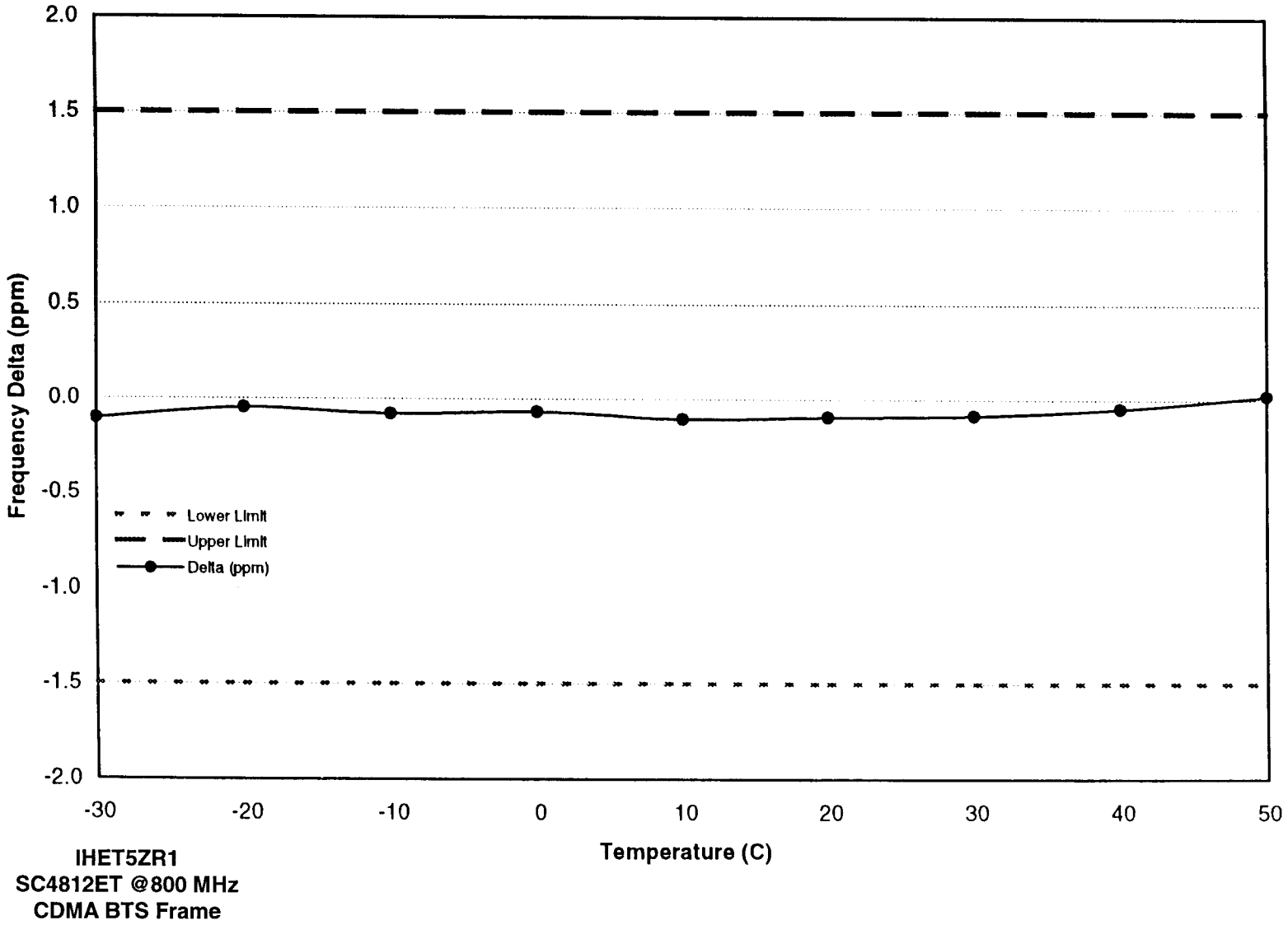
IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

Frequency Stability with Varying Supply Voltage - CSM1



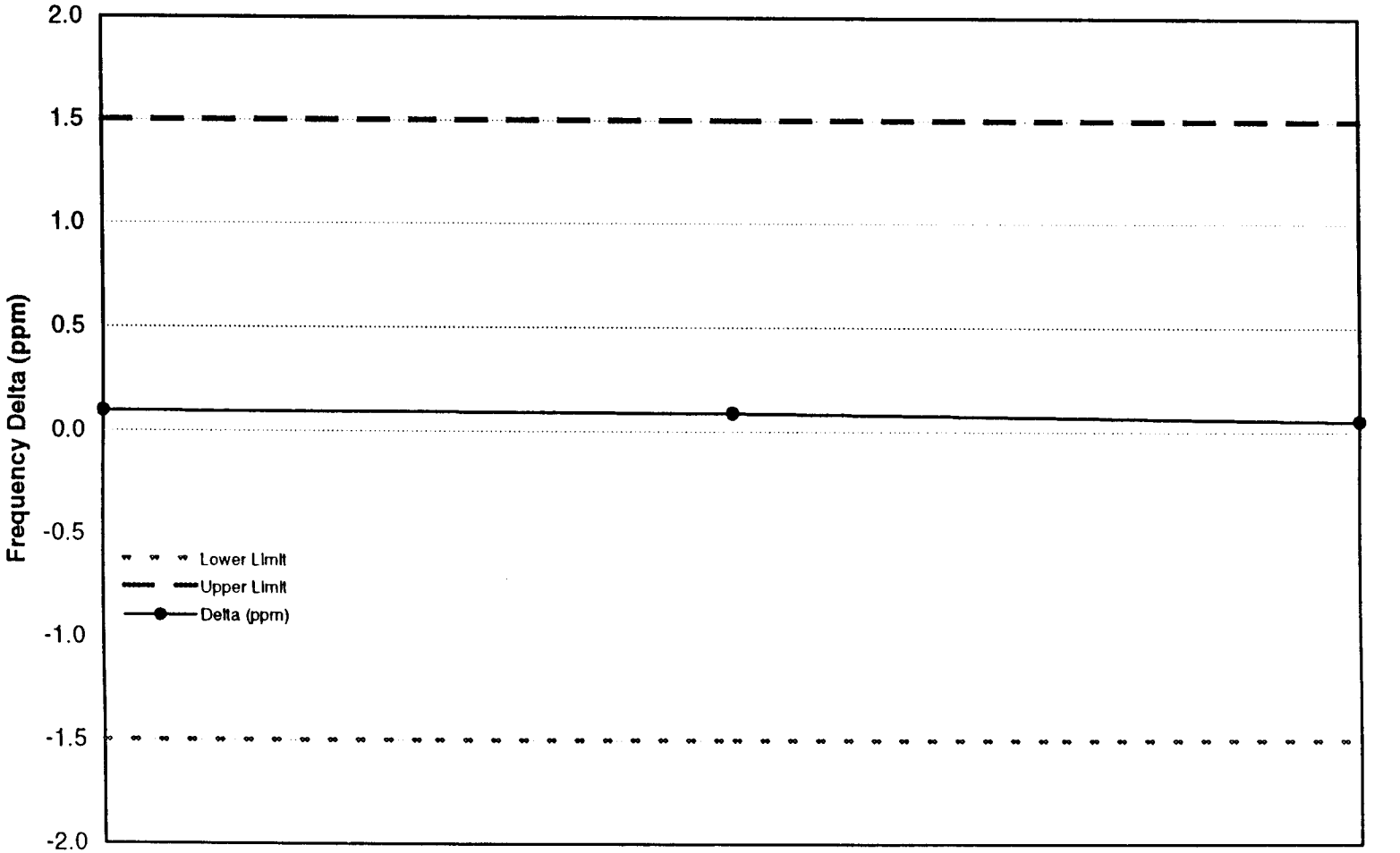
IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

Frequency Stability Over Temperature - CSM2



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame

Frequency Stability with Varying Supply Voltage - CSM2



IHET5ZR1
SC4812ET @800 MHz
CDMA BTS Frame