

PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

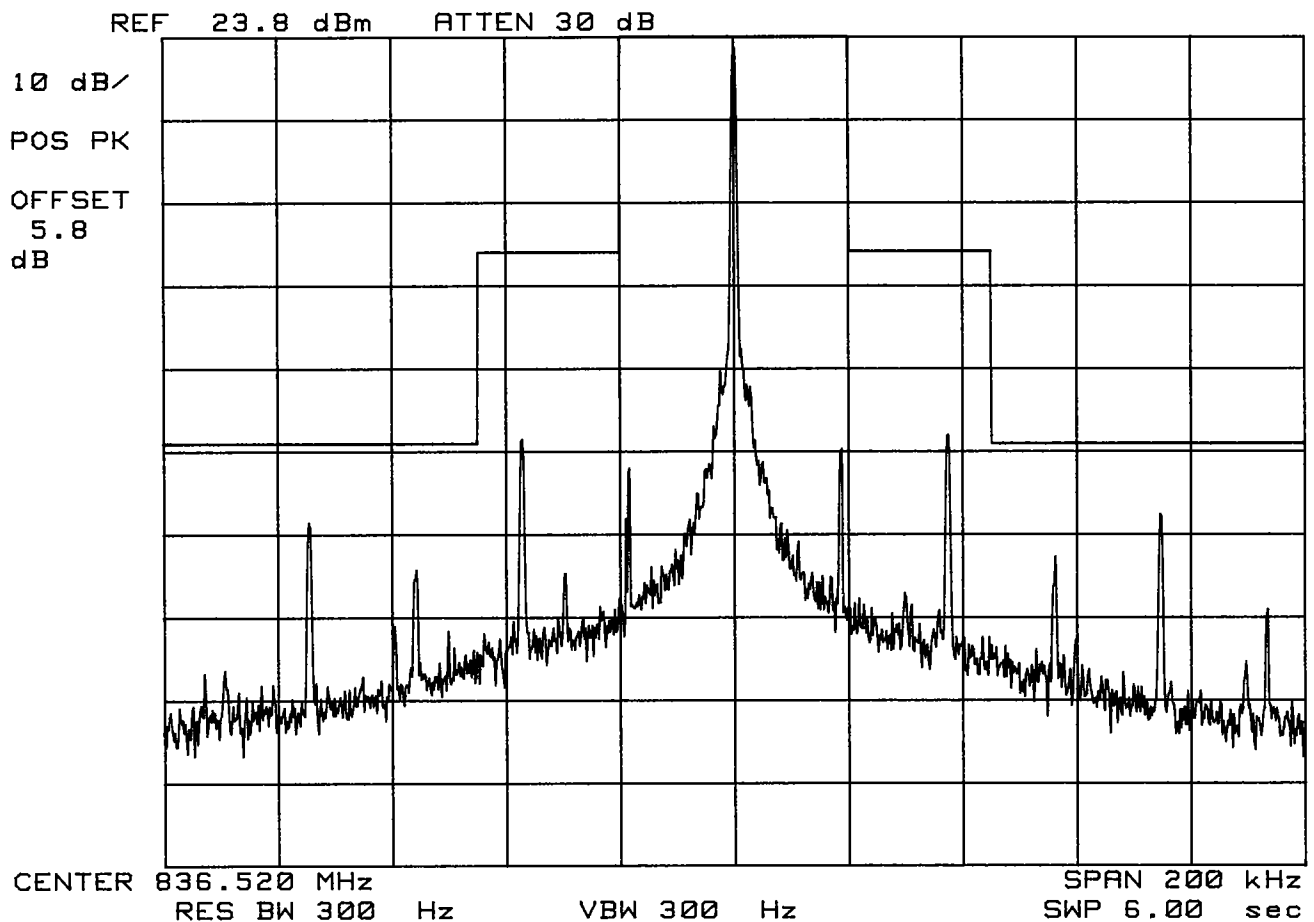
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:Unmodulated Signal



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

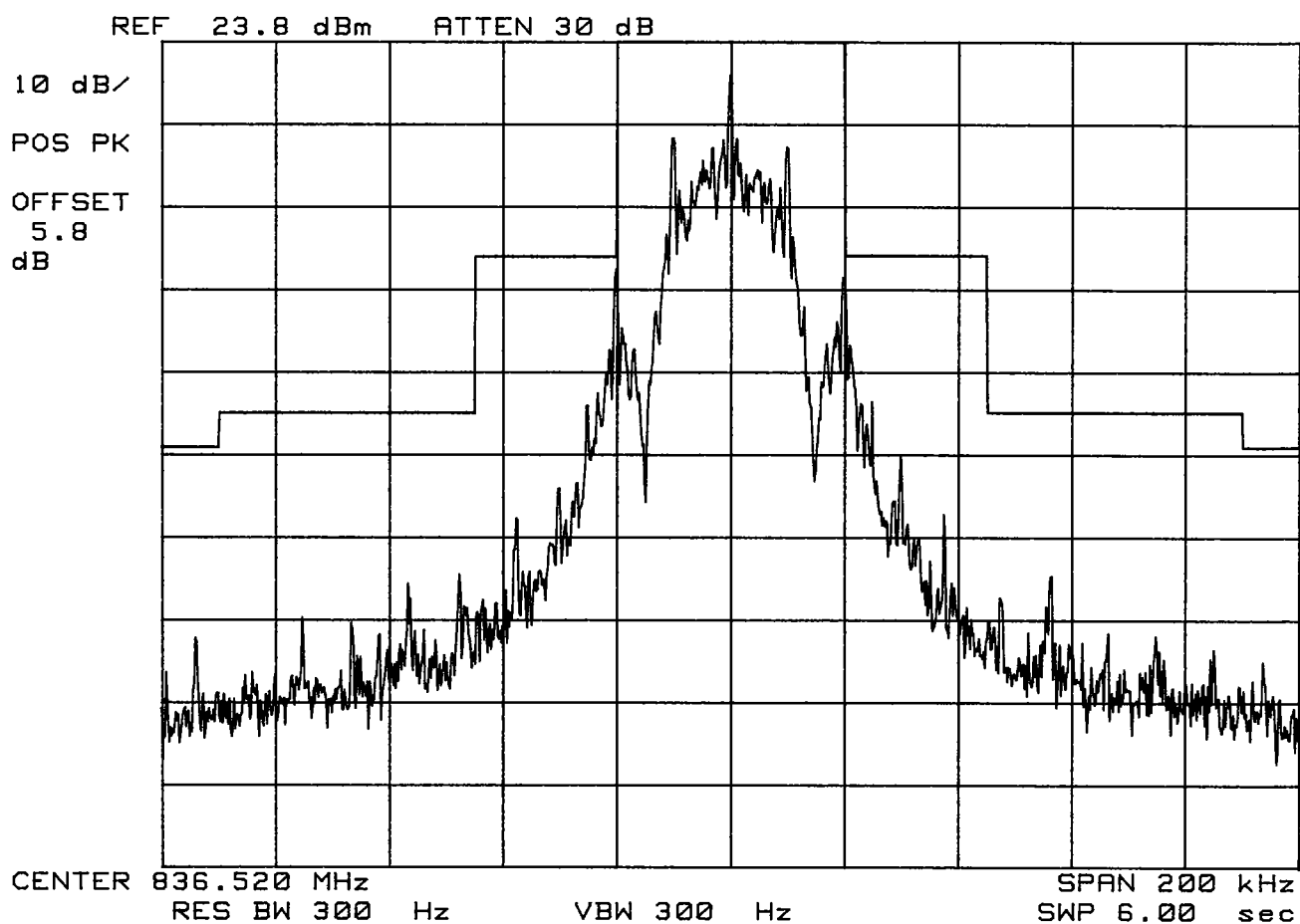
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:Wide Band Data



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

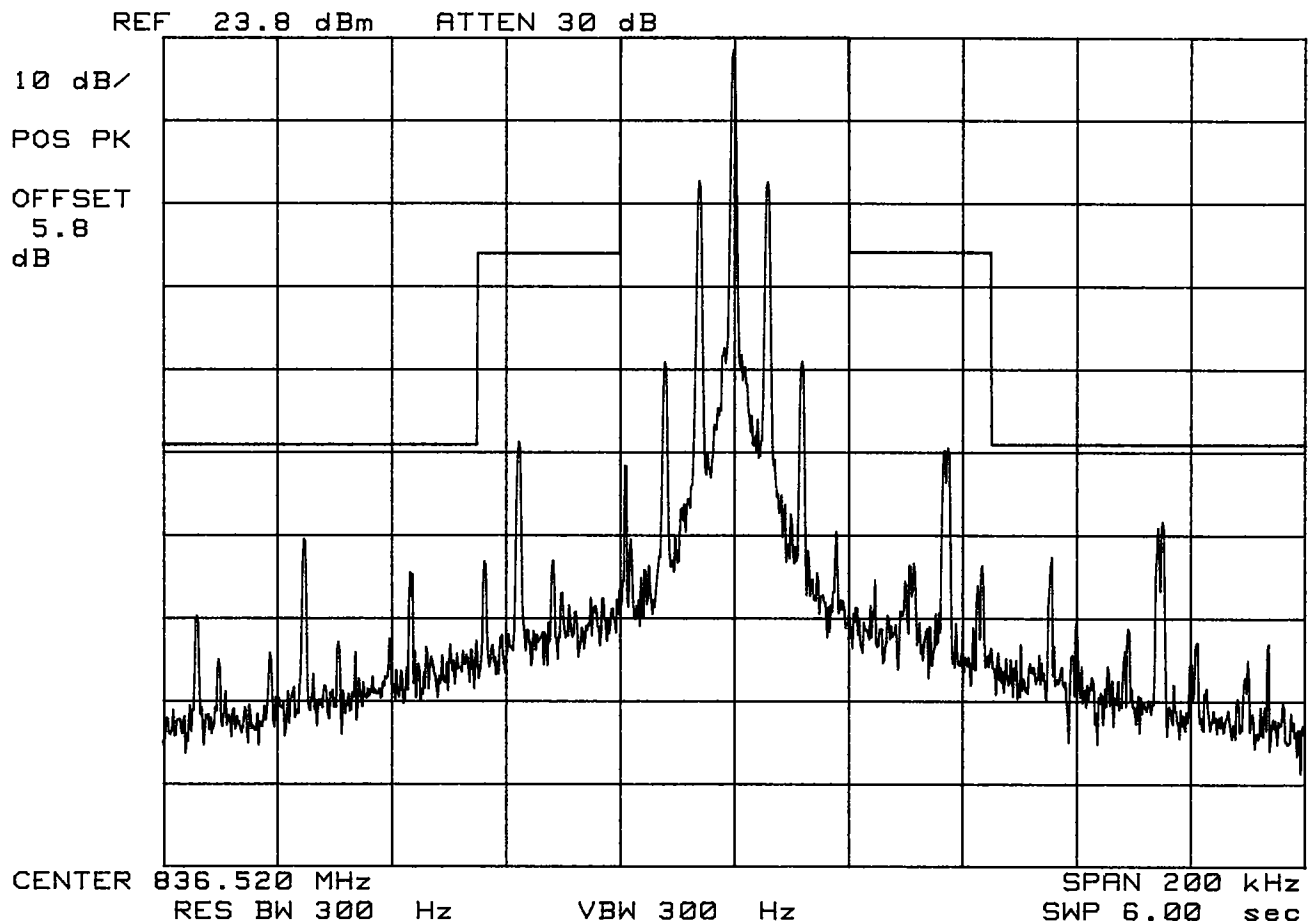
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

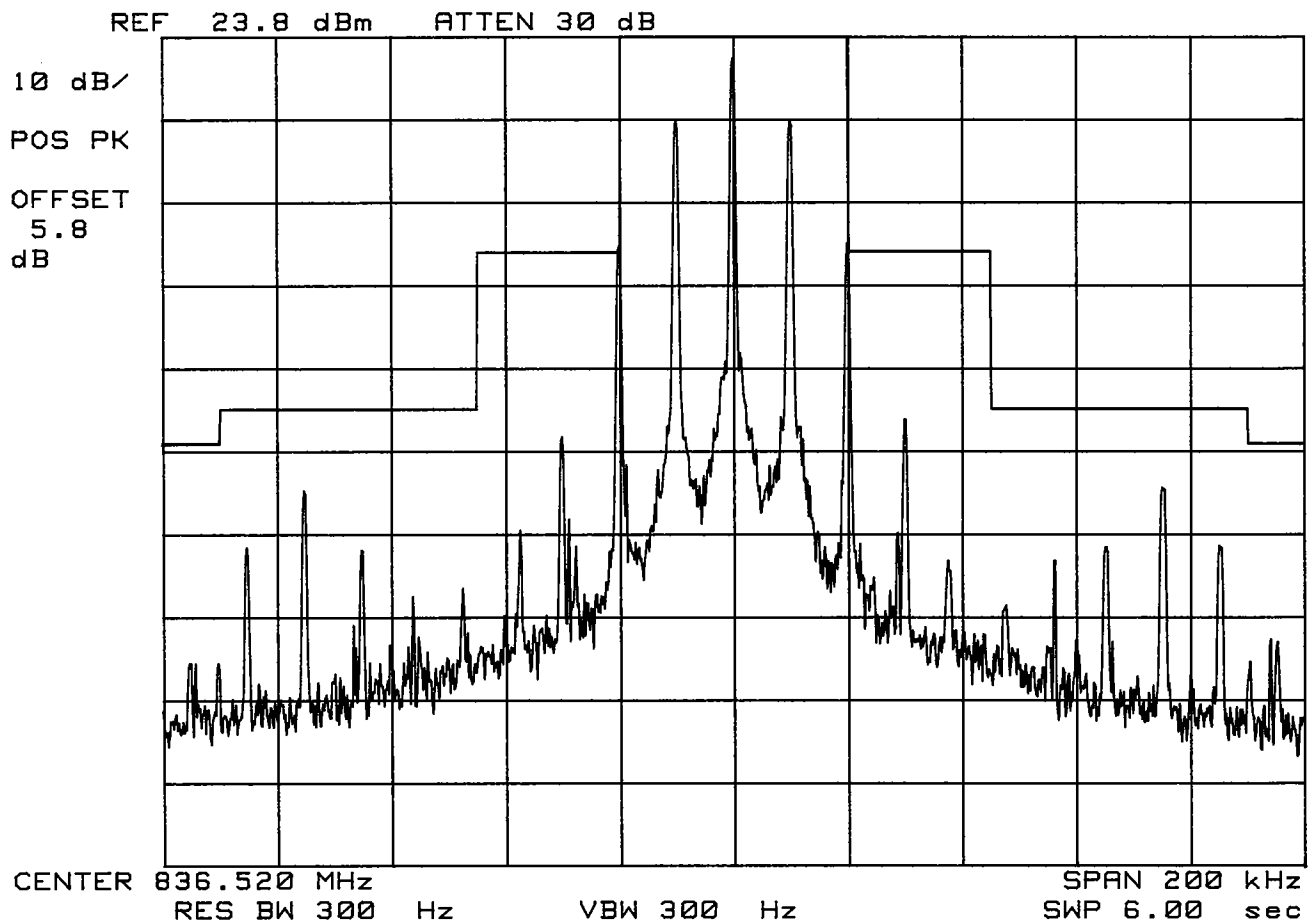
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

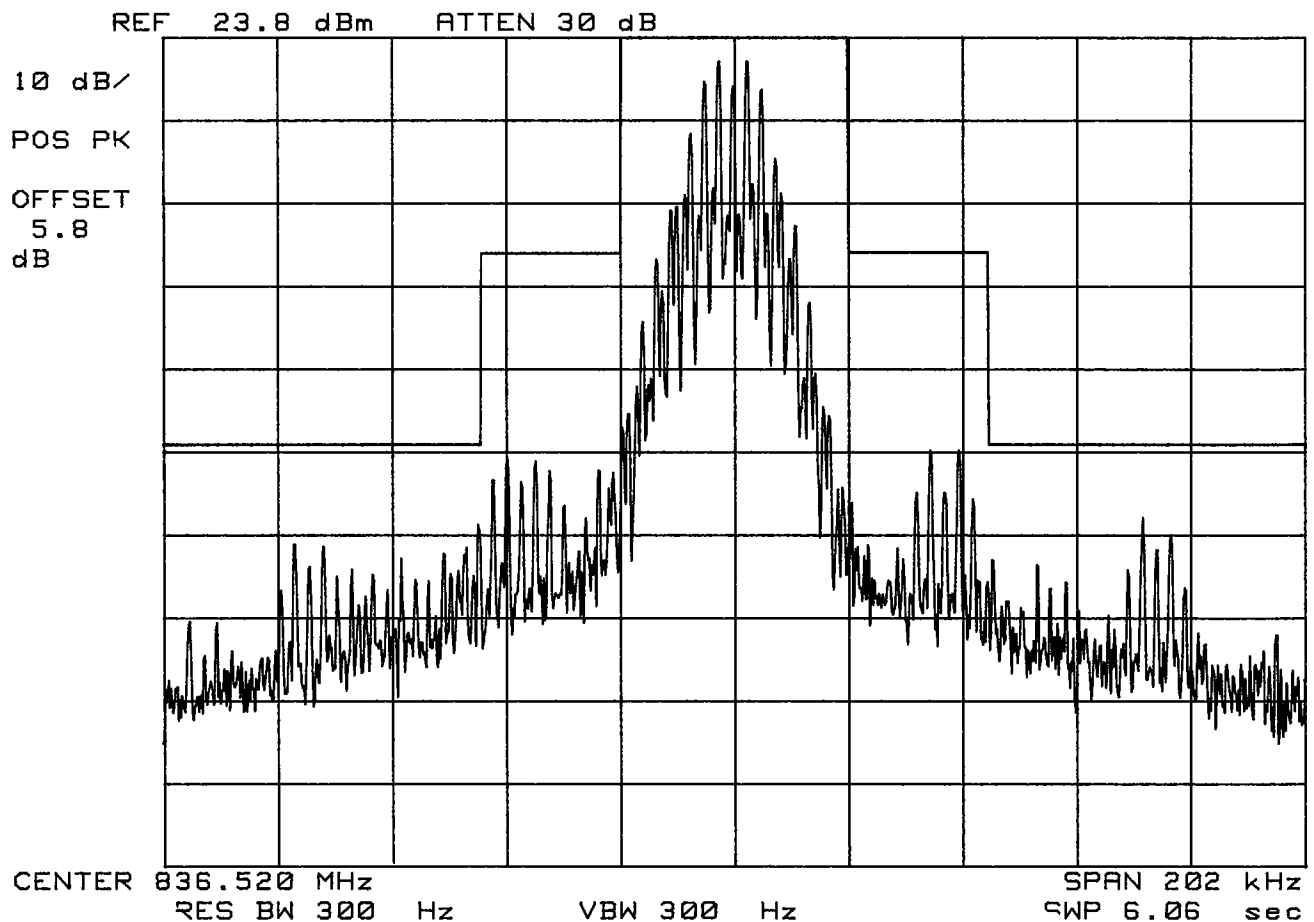
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT + Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

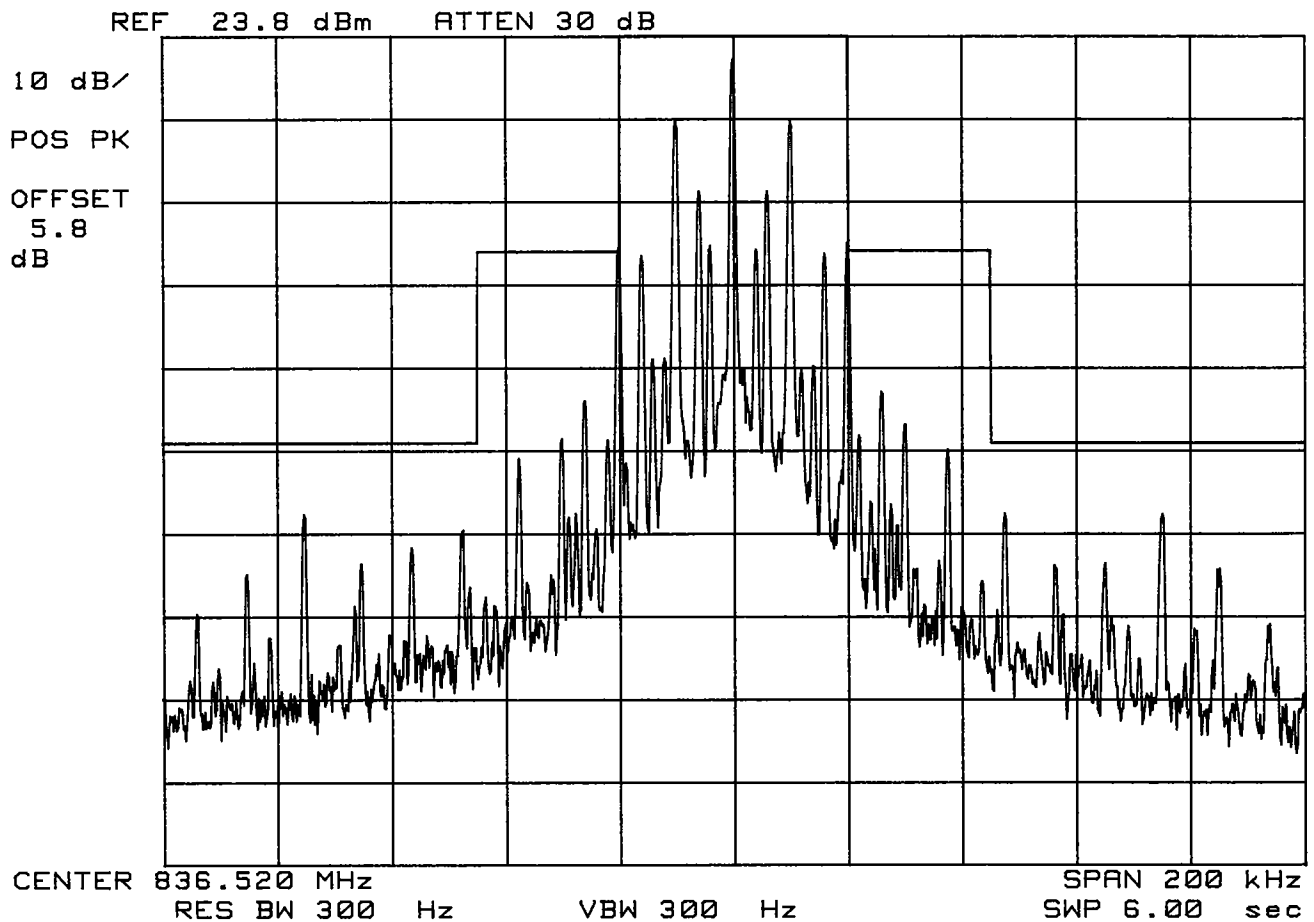
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT + ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

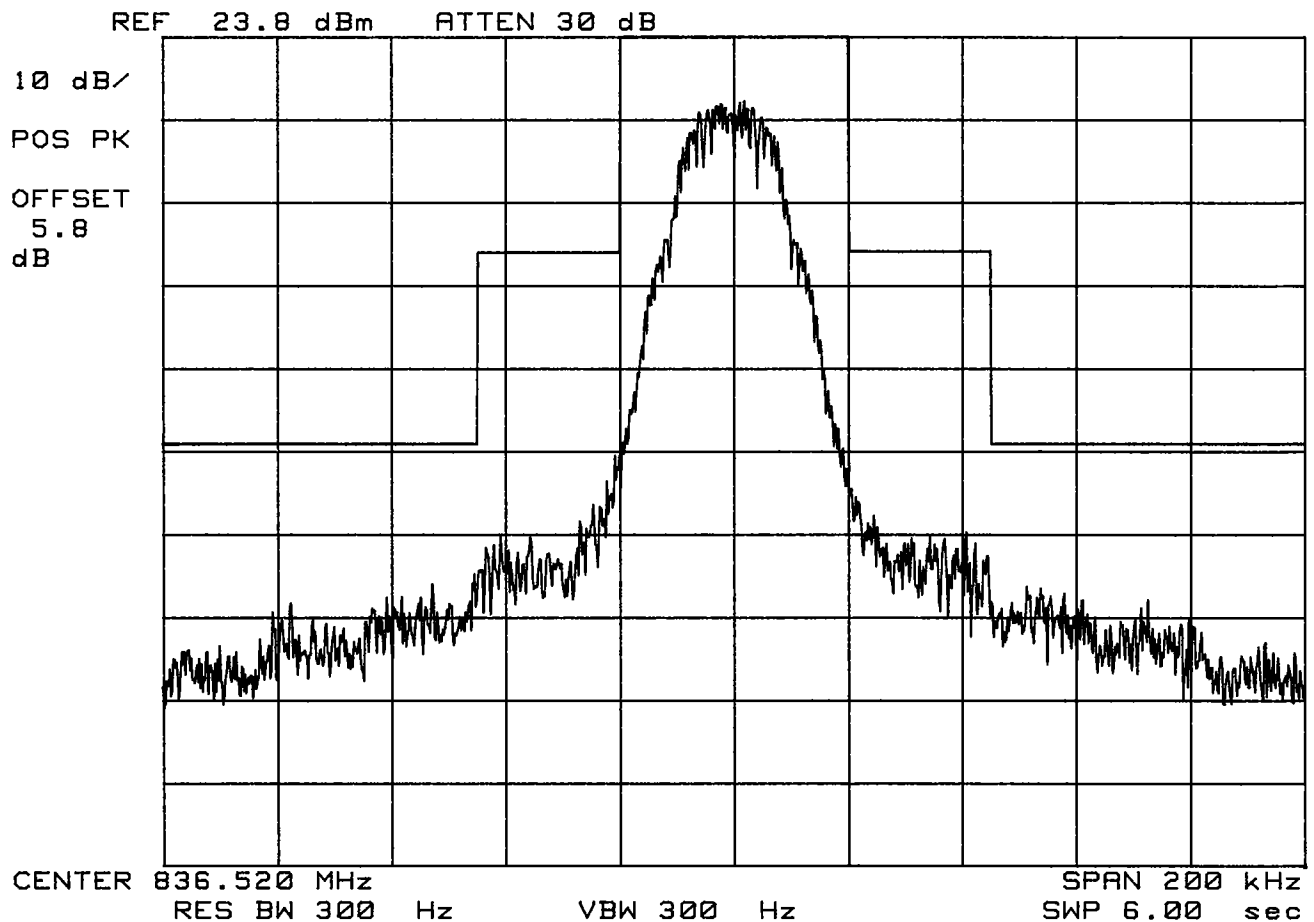
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT + DTMF



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

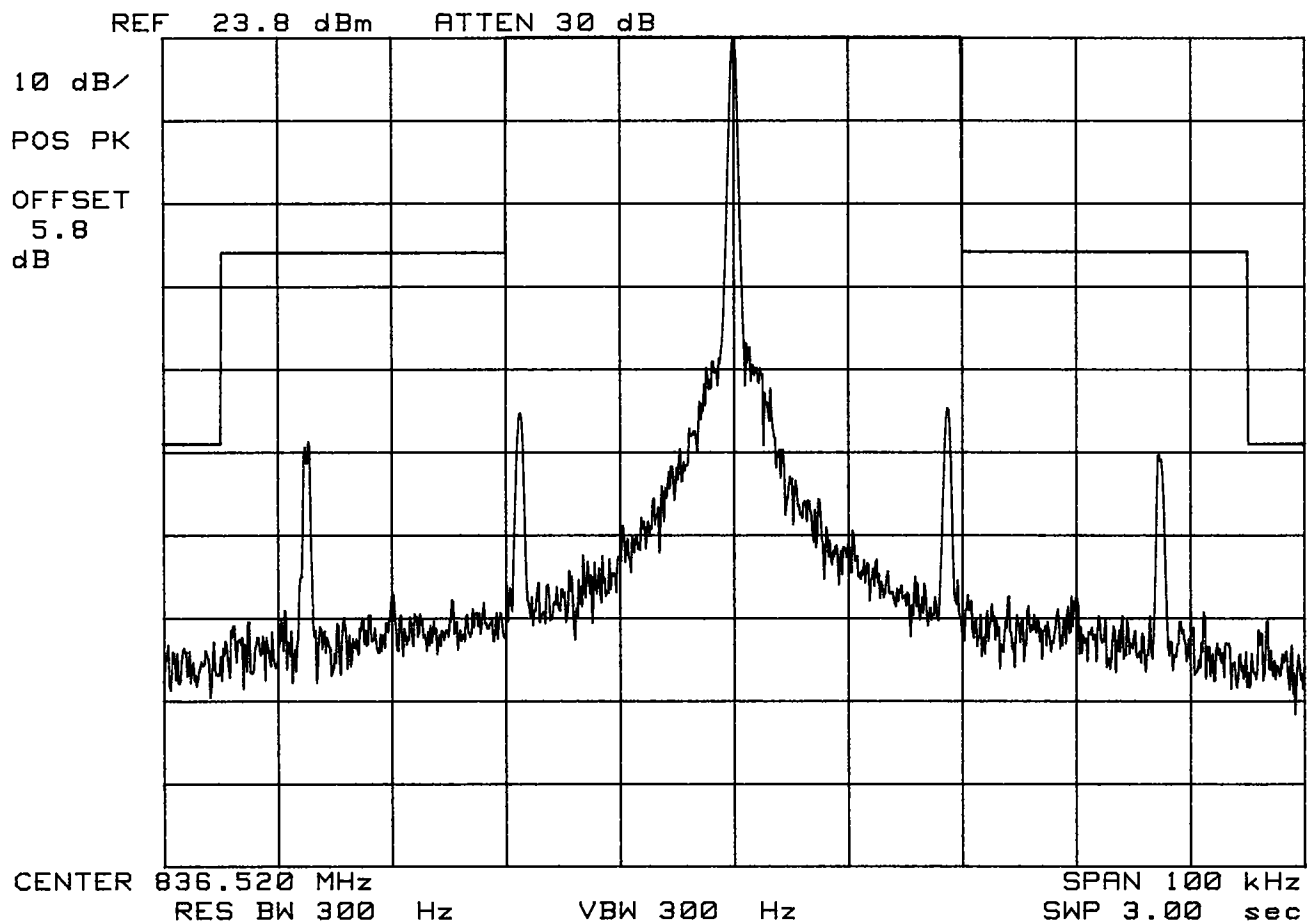
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:Unmodulated Signal



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

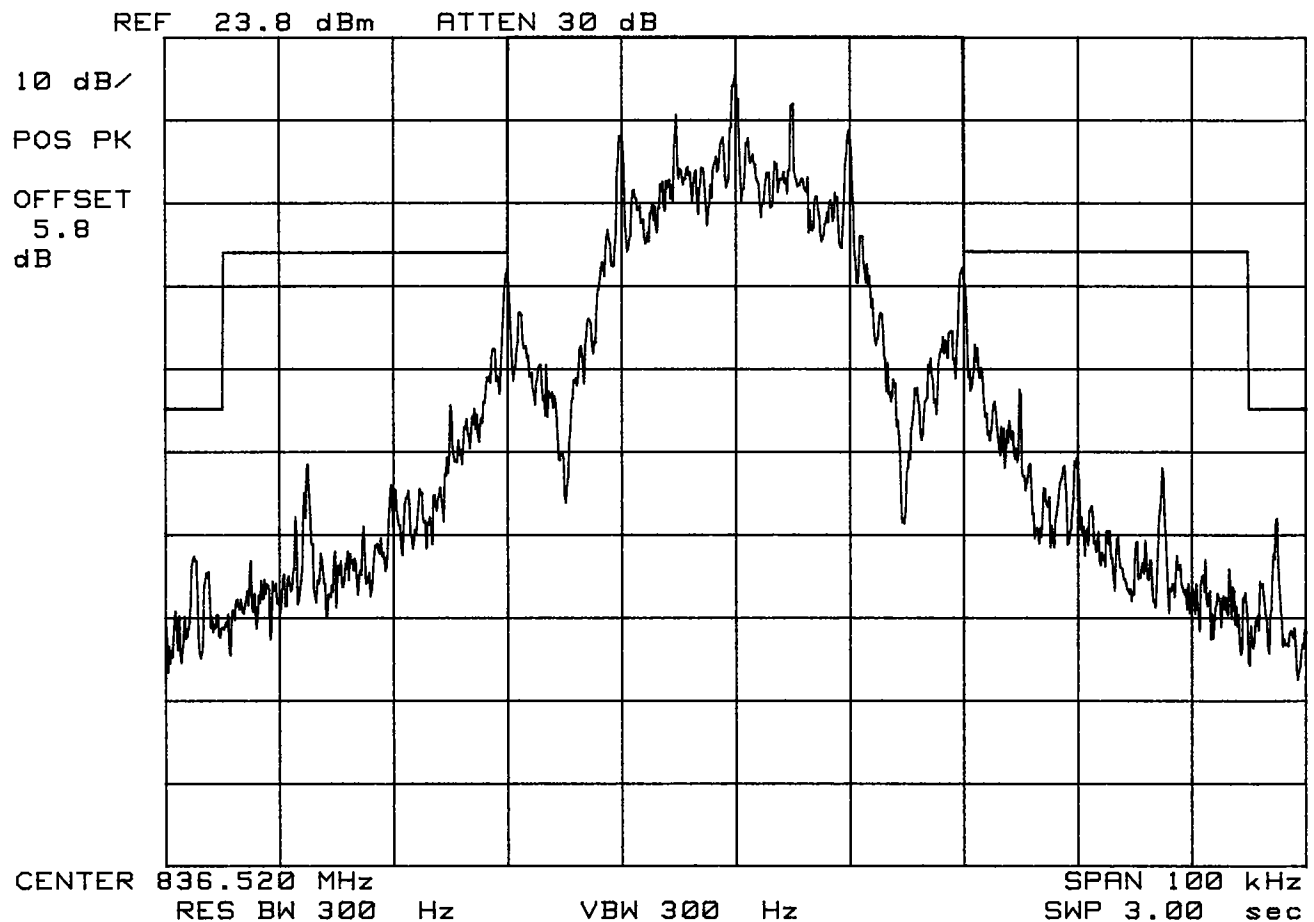
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:Wide Band Data



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

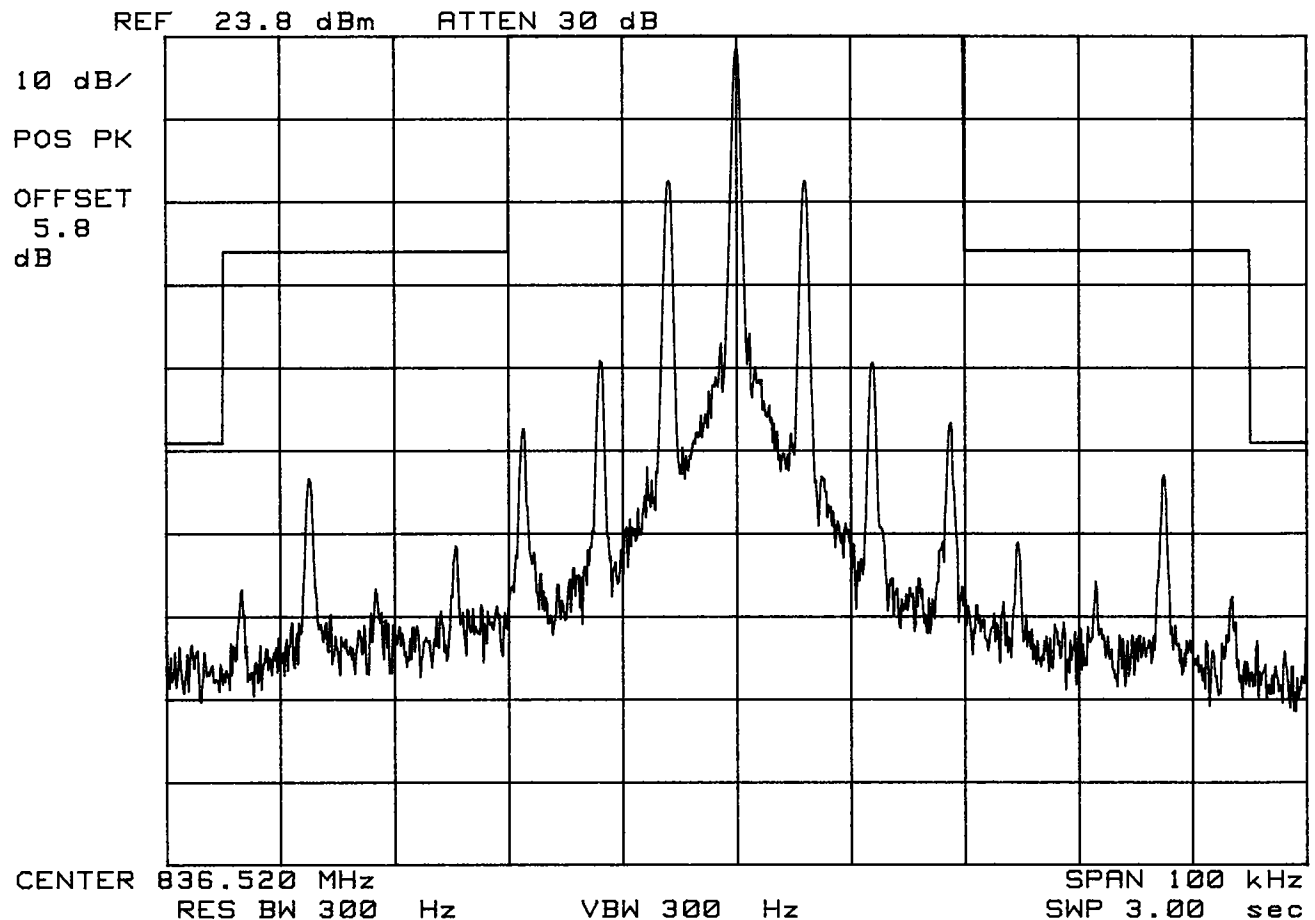
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

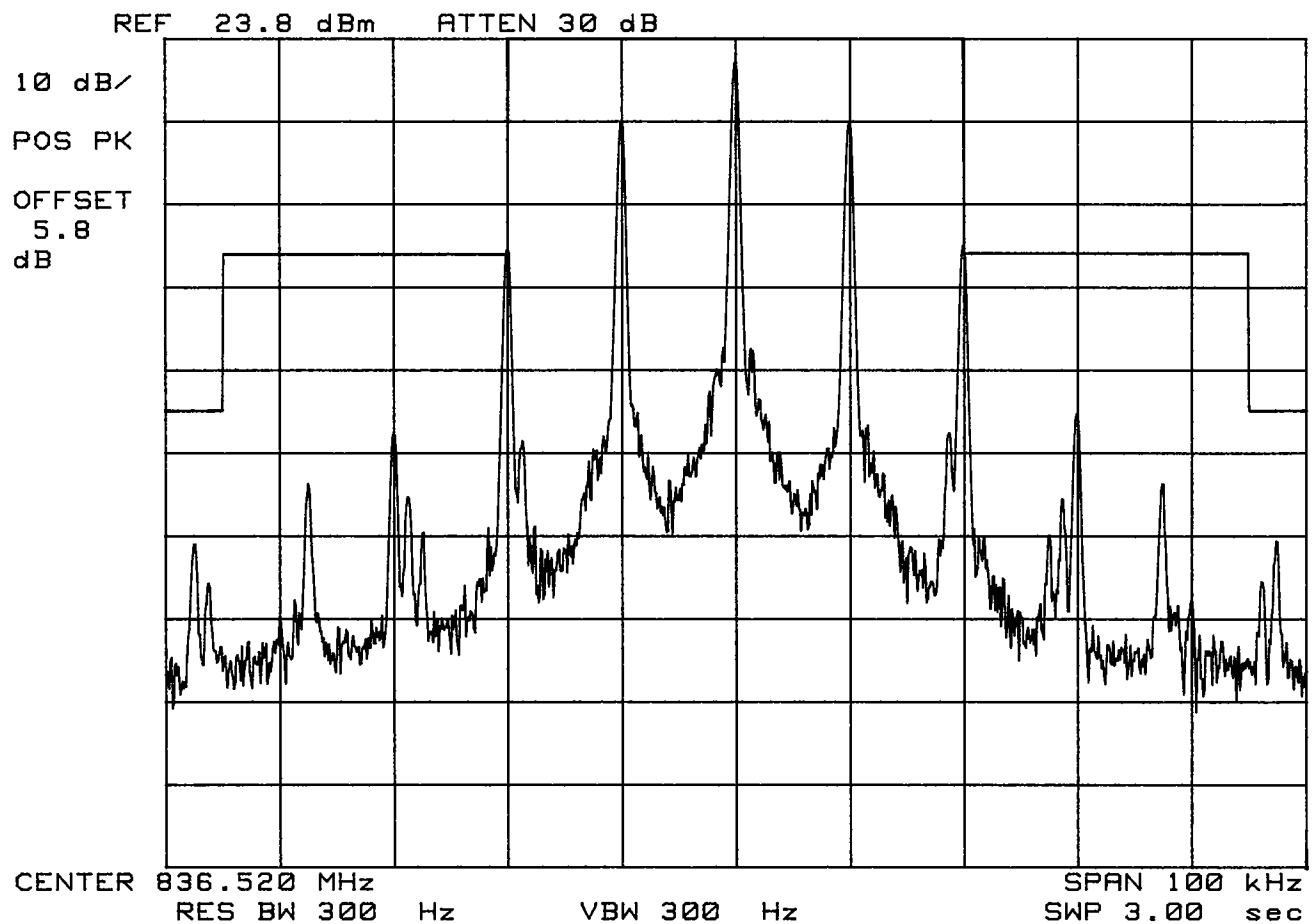
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

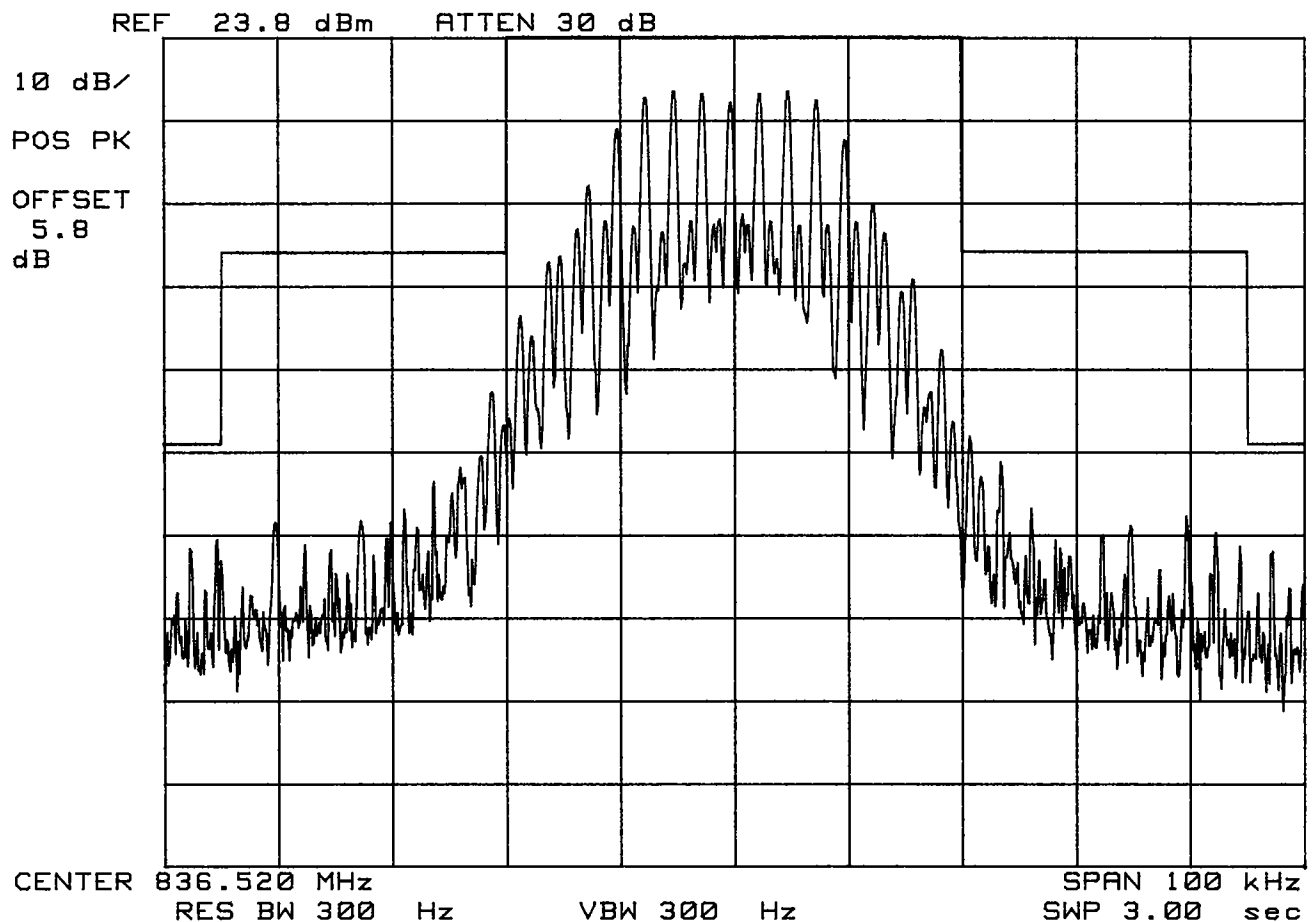
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT + Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

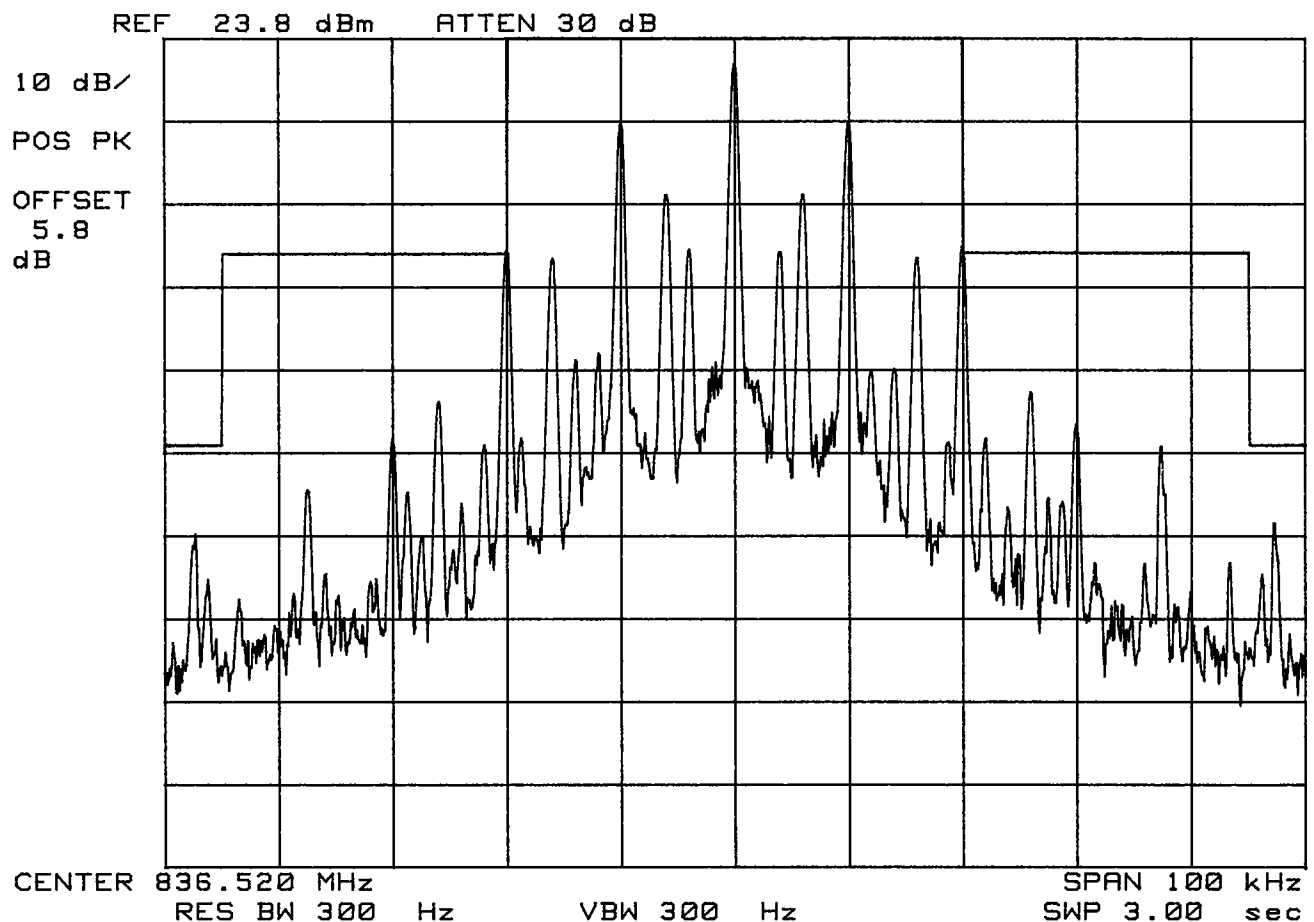
Dual-Mode Phone

FM Channel 384

Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

Test Mode:SAT + ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:GMLRH-10

NOKIA

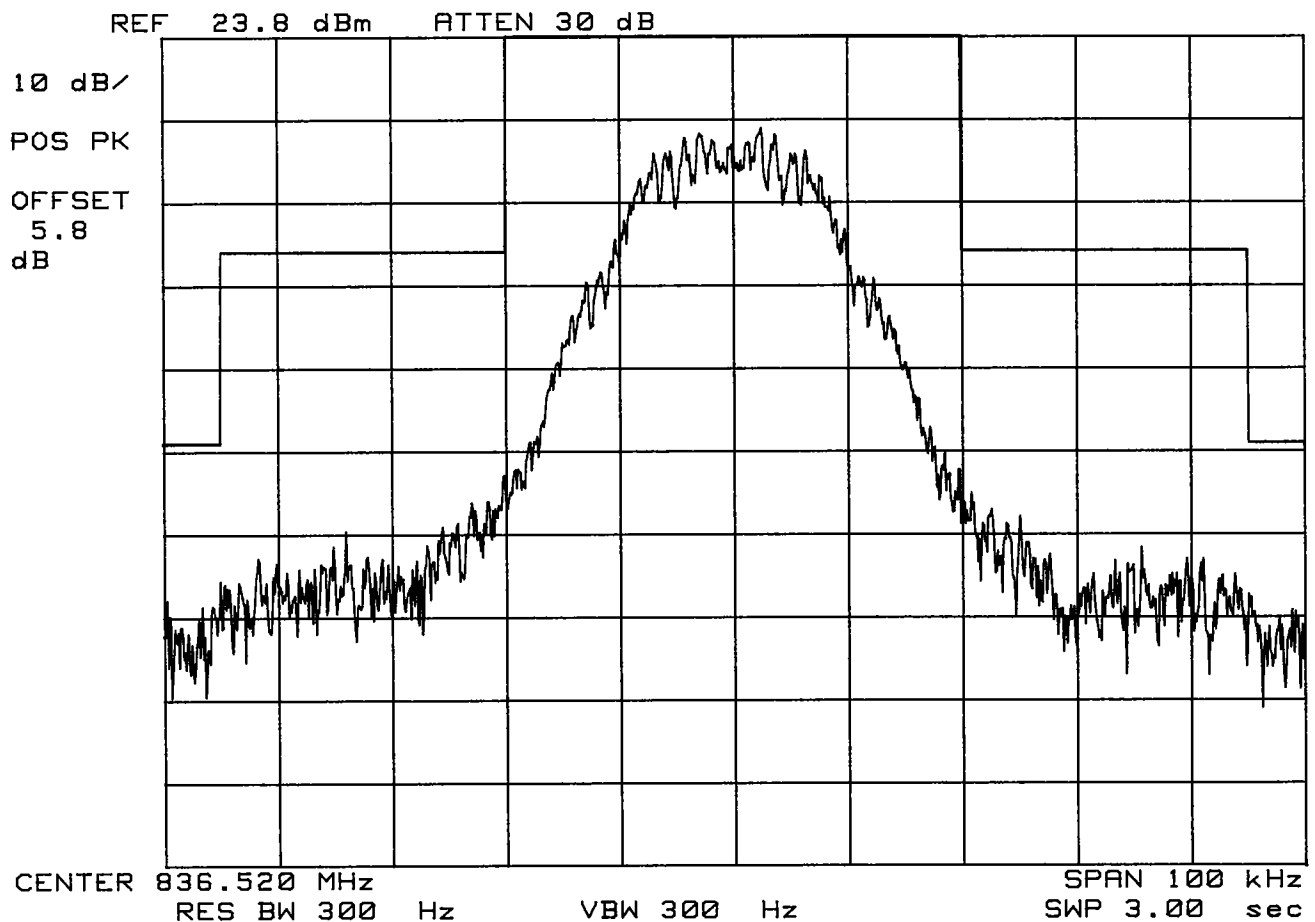
Dual-Mode Phone

FM Channel 384

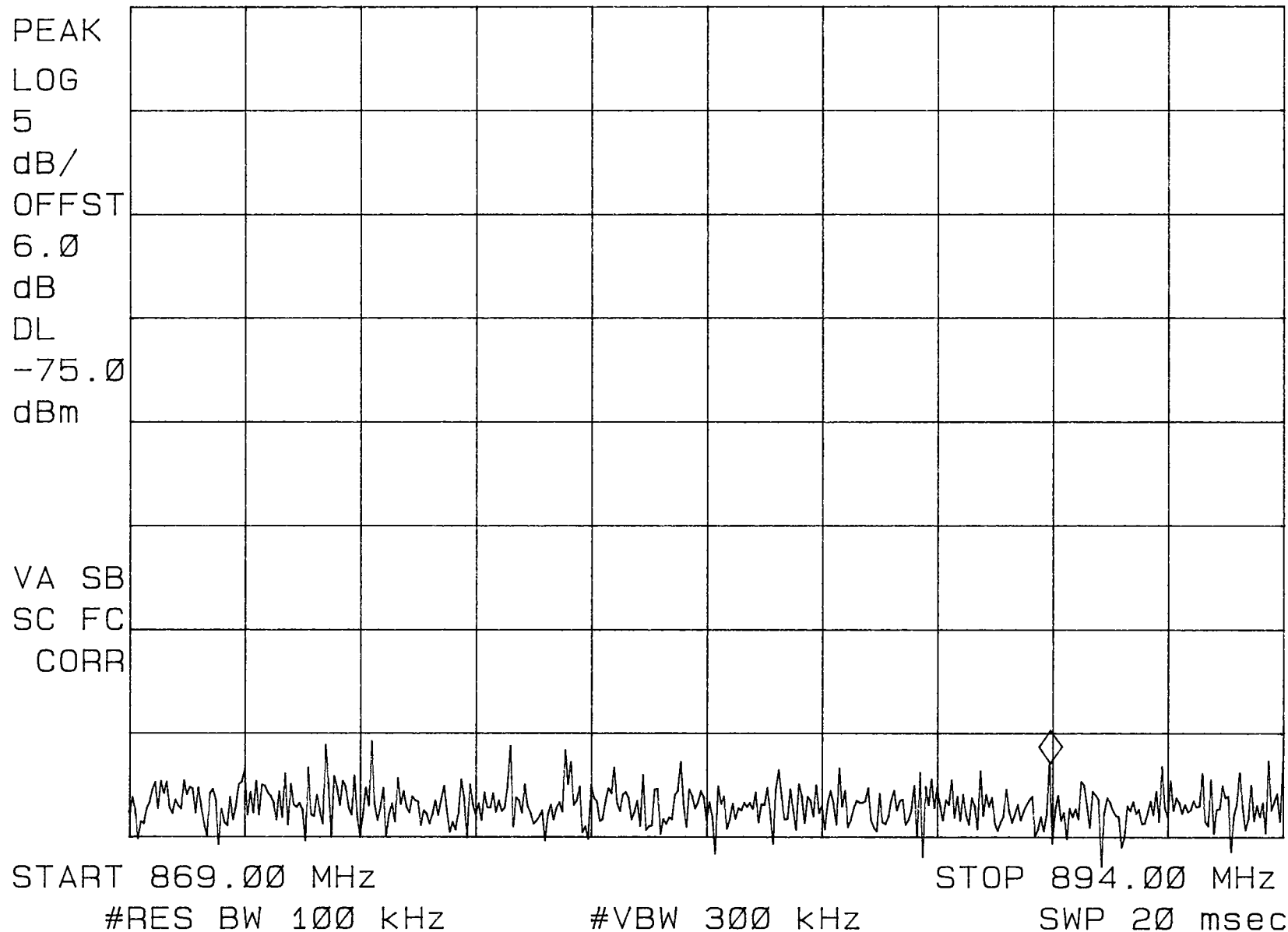
Operating Frequency: 836.520 MHz

Output Power : 23.8 dBm

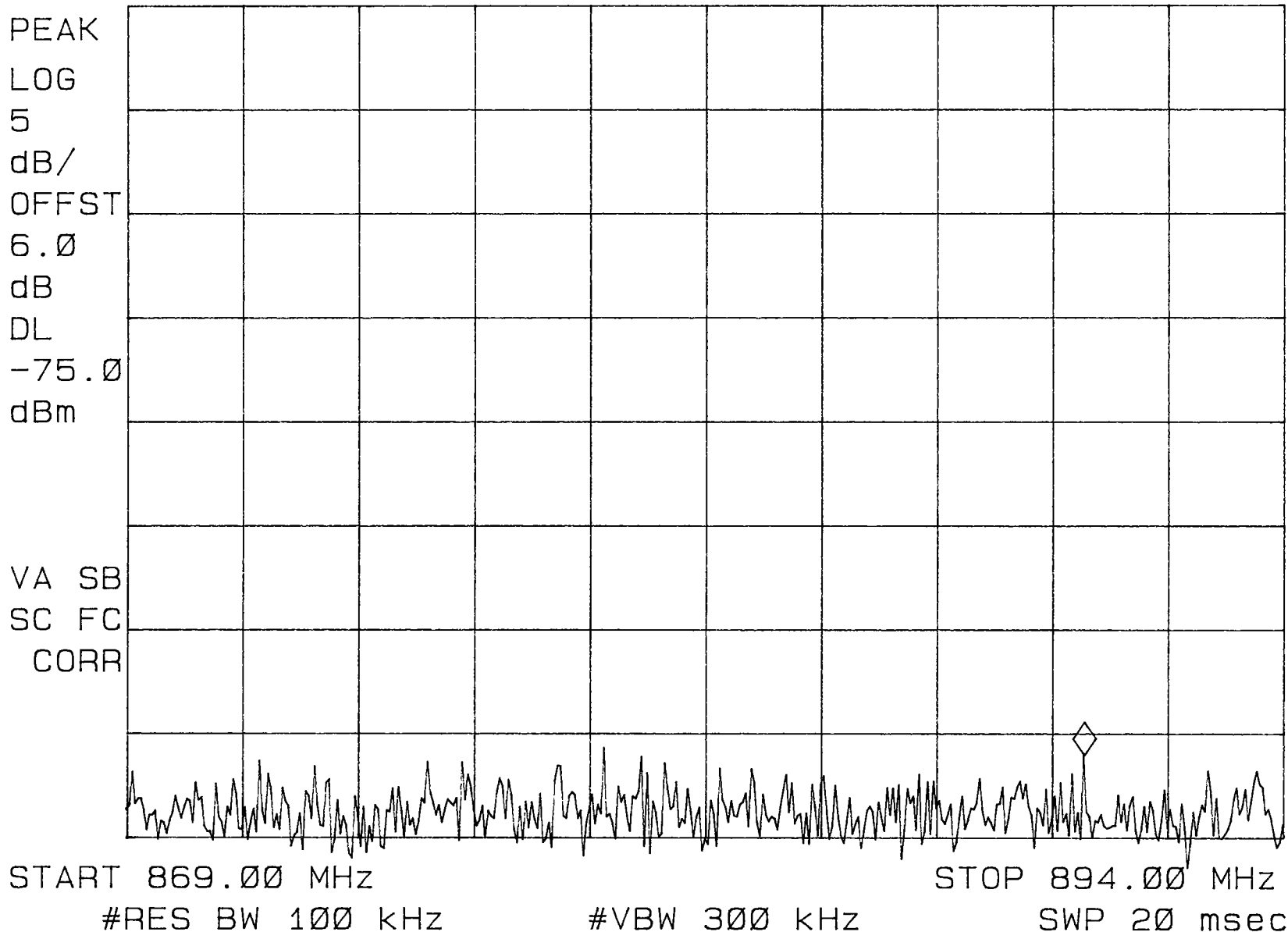
Test Mode:SAT + DTMF



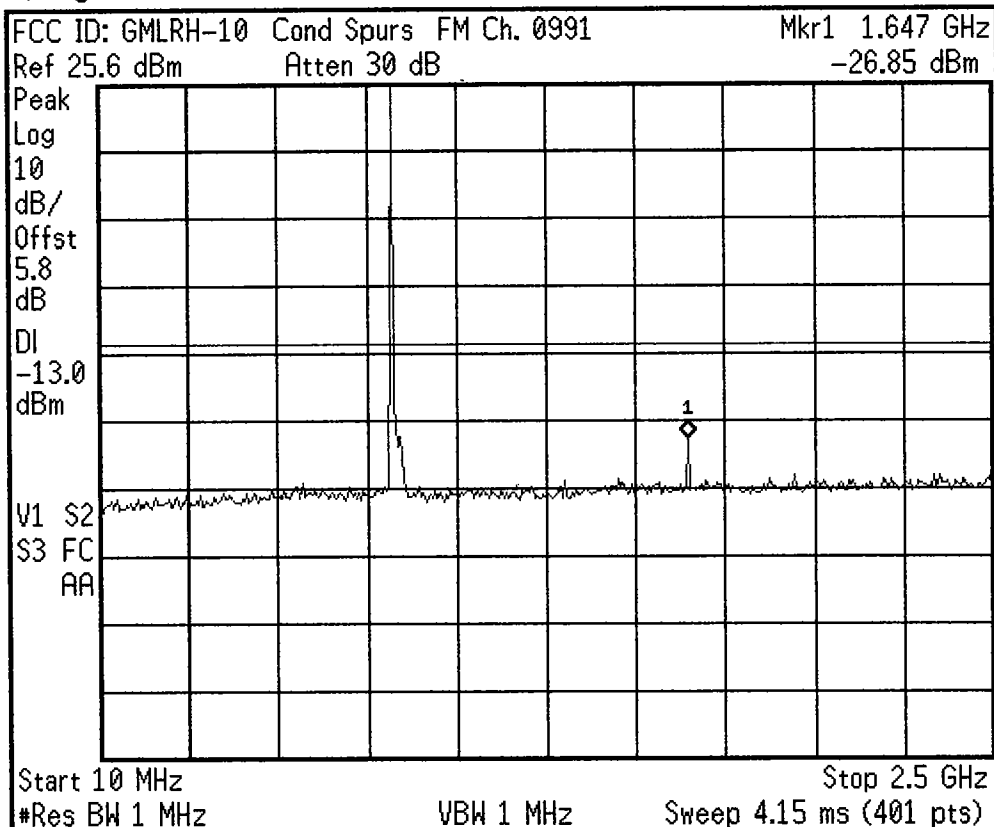
~~10~~ FCC ID: GMLRH-10 FM MODE MKR 888.94 MHz
REF -60.0 dBm ATTEN 10 dB PG 25.0 dB -96.44 dBm



~~/P~~ FCC ID: GMLRH-10 CDMA MODE MKR 889.69 MHz
REF -60.0 dBm ATTEN 10 dB PG 25.0 dB -96.02 dBm



✱ Agilent 06:44:09 Jun 17, 2002



Freq/Channel

Center Freq

1.25500000 GHz

Start Freq

10.0000000 MHz

Stop Freq

2.50000000 GHz

CF Step

249.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

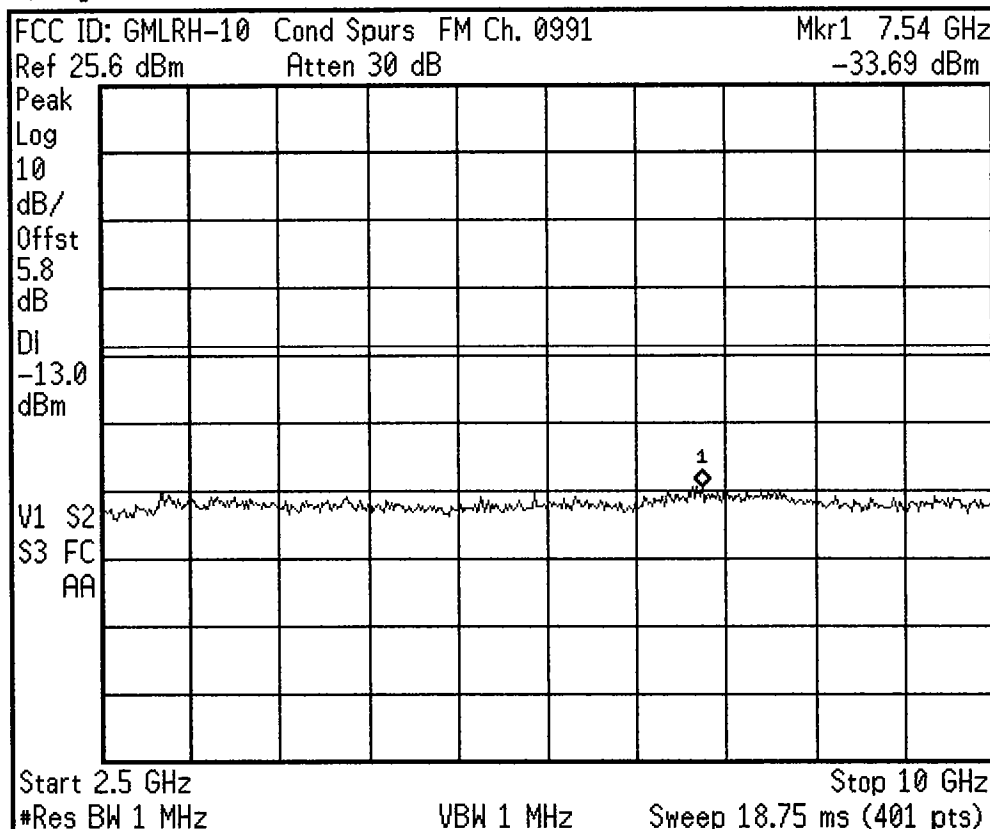
Signal Track

On Off

Scale Type

Log Lin

✱ Agilent 06:45:26 Jun 17, 2002



Freq/Channel

Center Freq

6.25000000 GHz

Start Freq

2.50000000 GHz

Stop Freq

10.0000000 GHz

CF Step

750.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

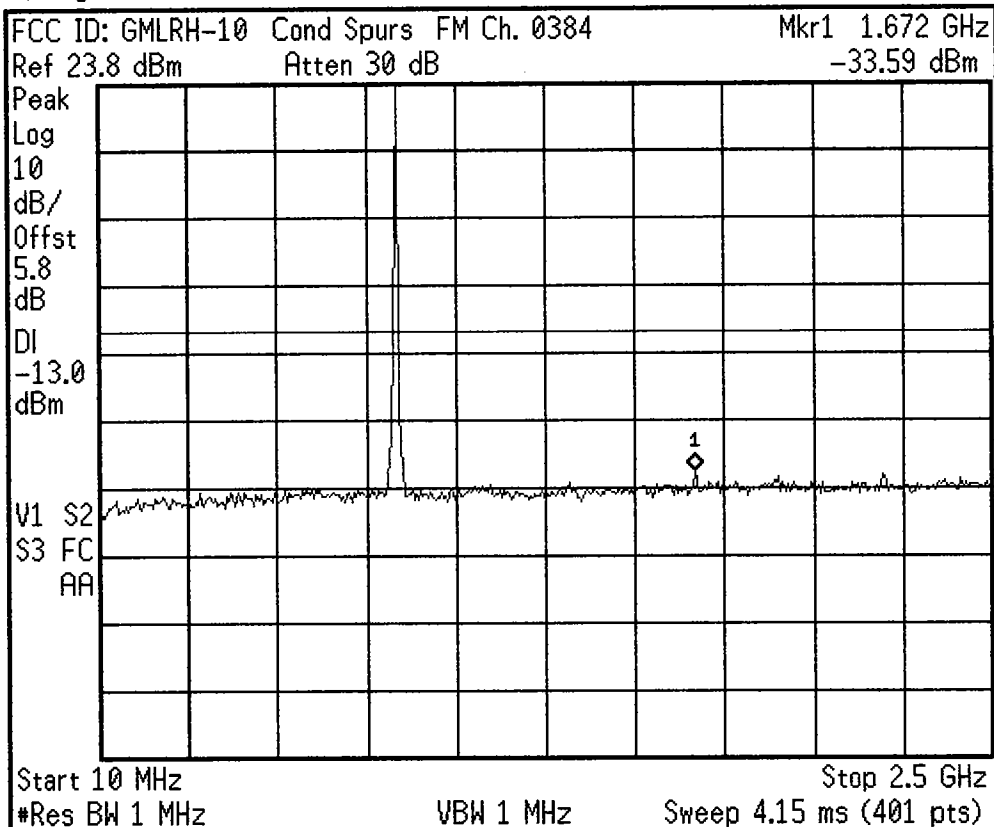
Signal Track

On Off

Scale Type

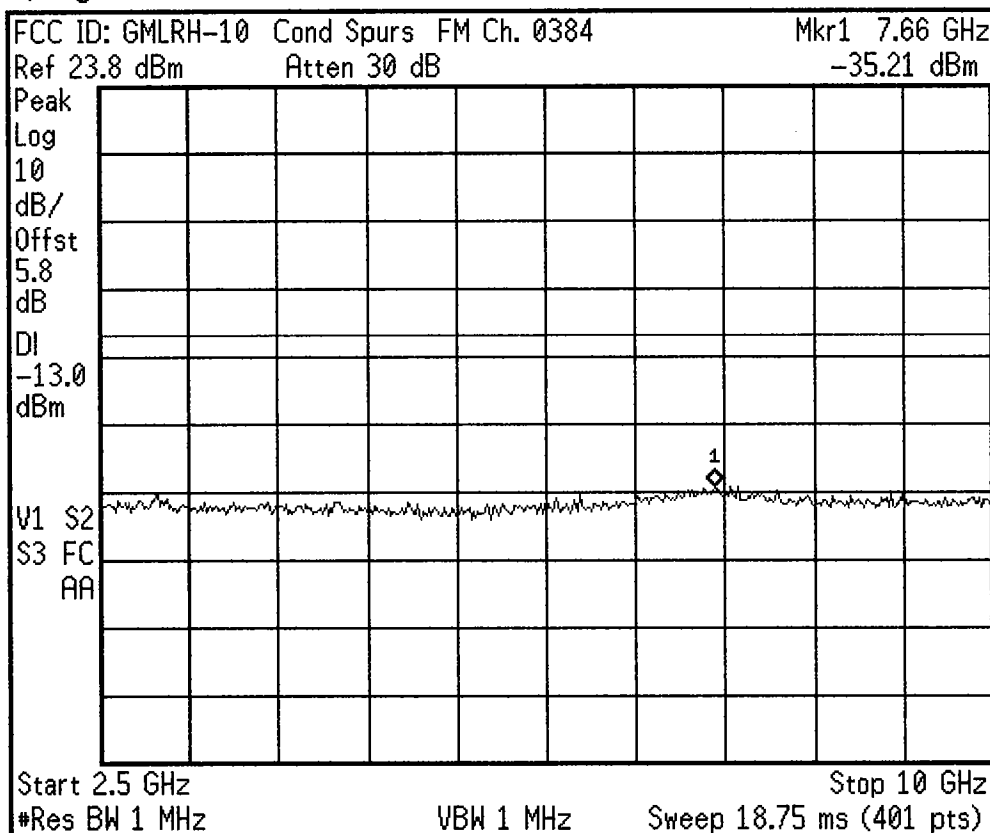
Log Lin

✱ Agilent 06:47:27 Jun 17, 2002



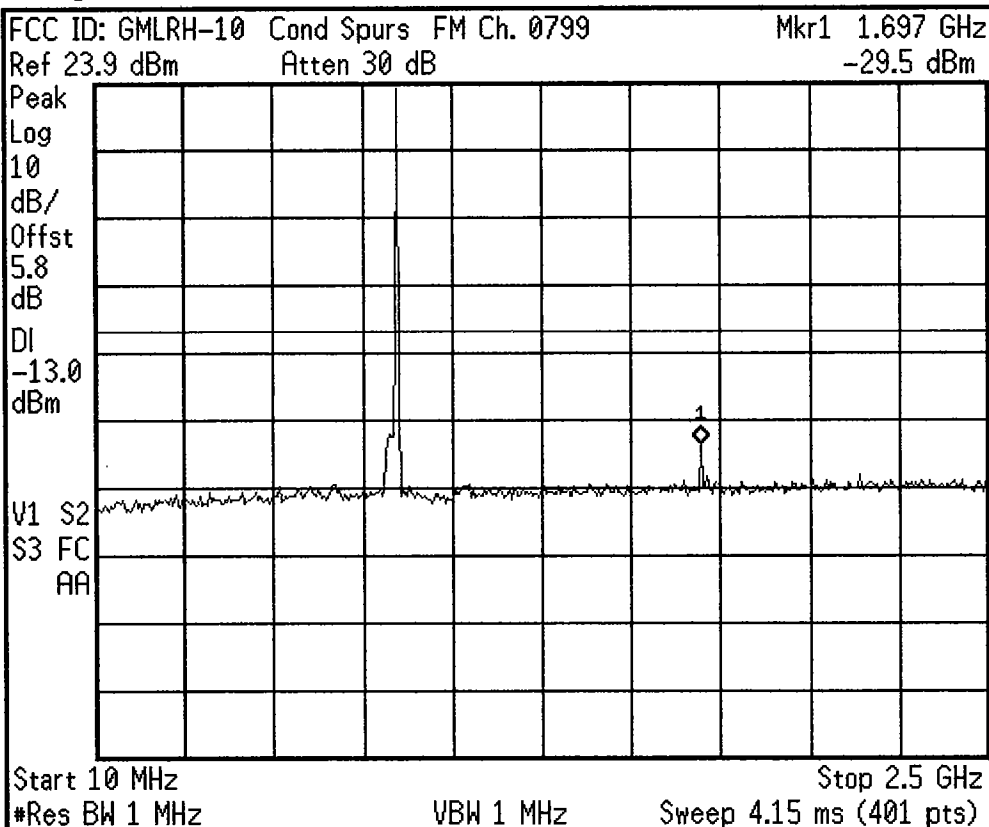
Marker
Select Marker 1 2 3 4
Normal
Delta
Delta Pair (Tracking Ref) Ref Delta
Span Pair Span Center
Off
More 1 of 2

✱ Agilent 06:48:16 Jun 17, 2002



Freq/Channel
Center Freq 6.25000000 GHz
Start Freq 2.50000000 GHz
Stop Freq 10.00000000 GHz
CF Step 750.000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off
Scale Type Log Lin

* Agilent 06:50:04 Jun 17, 2002



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

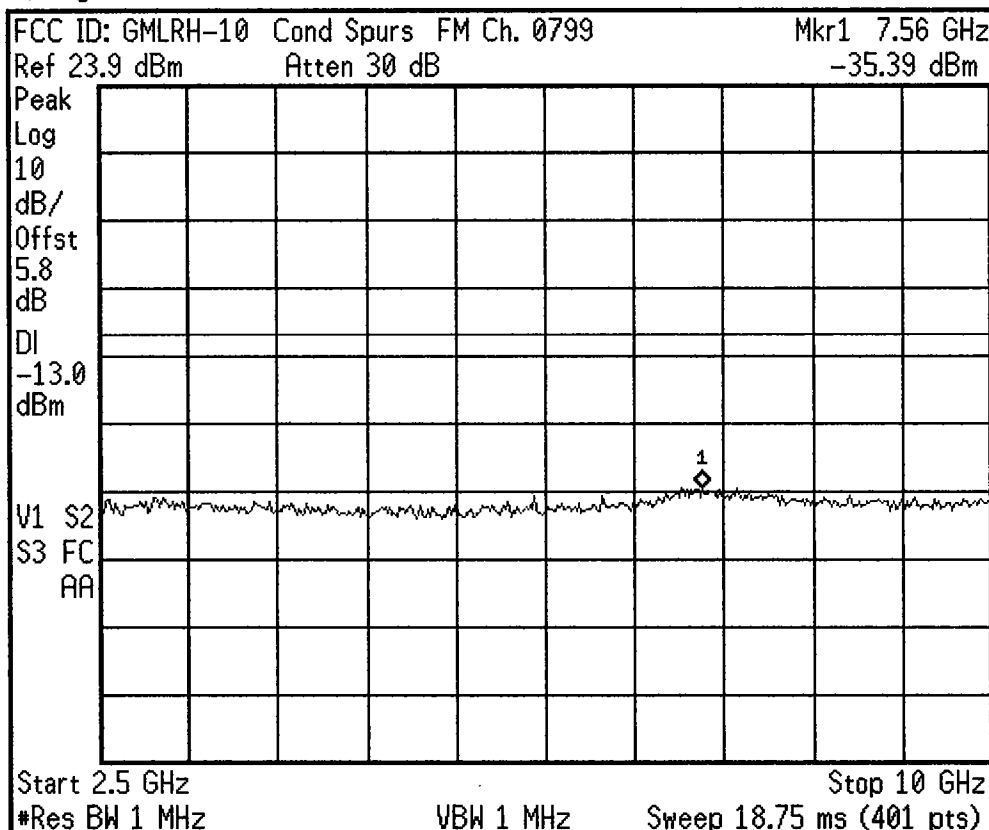
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent 06:51:40 Jun 17, 2002



Peak Search

Meas Tools

Next Peak

Next Pk Right

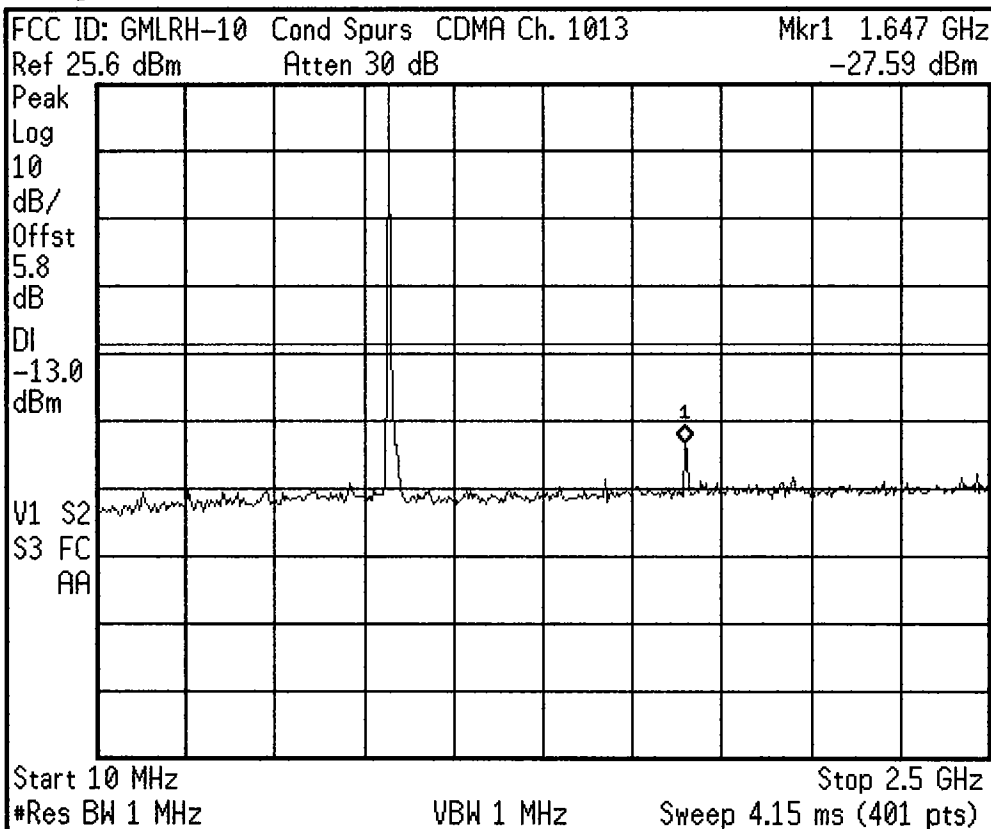
Next Pk Left

Min Search

Pk-Pk Search

More
 1 of 2

* Agilent 07:04:41 Jun 17, 2002



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

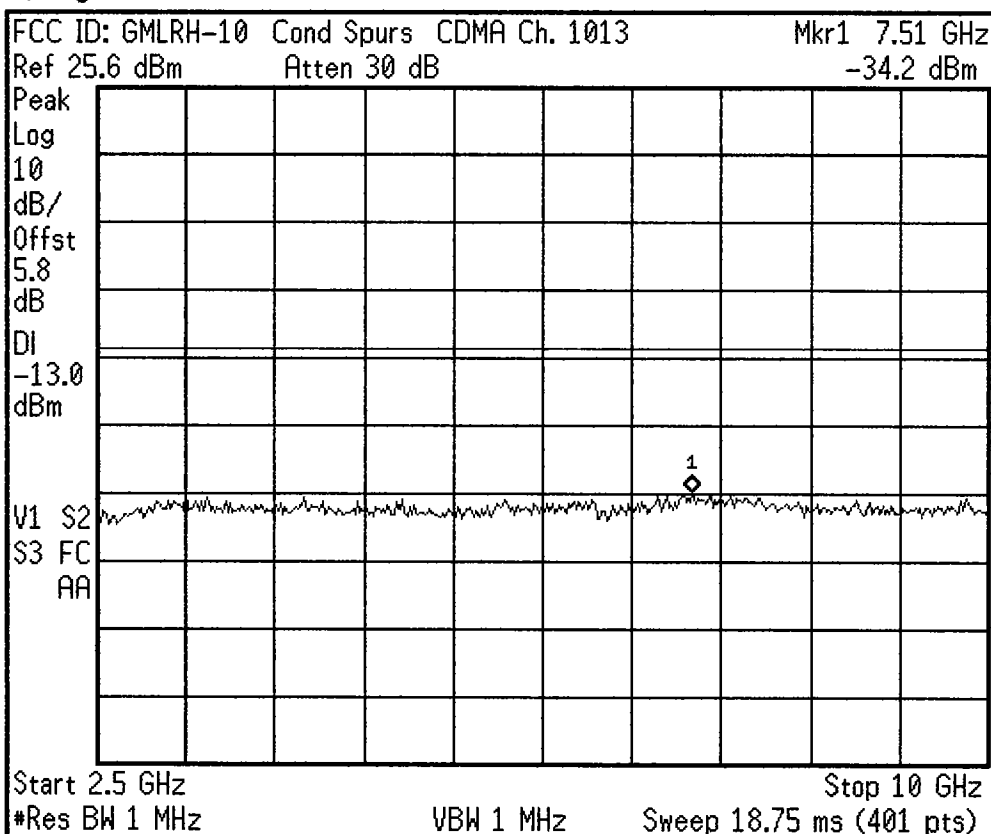
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent 07:05:28 Jun 17, 2002



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

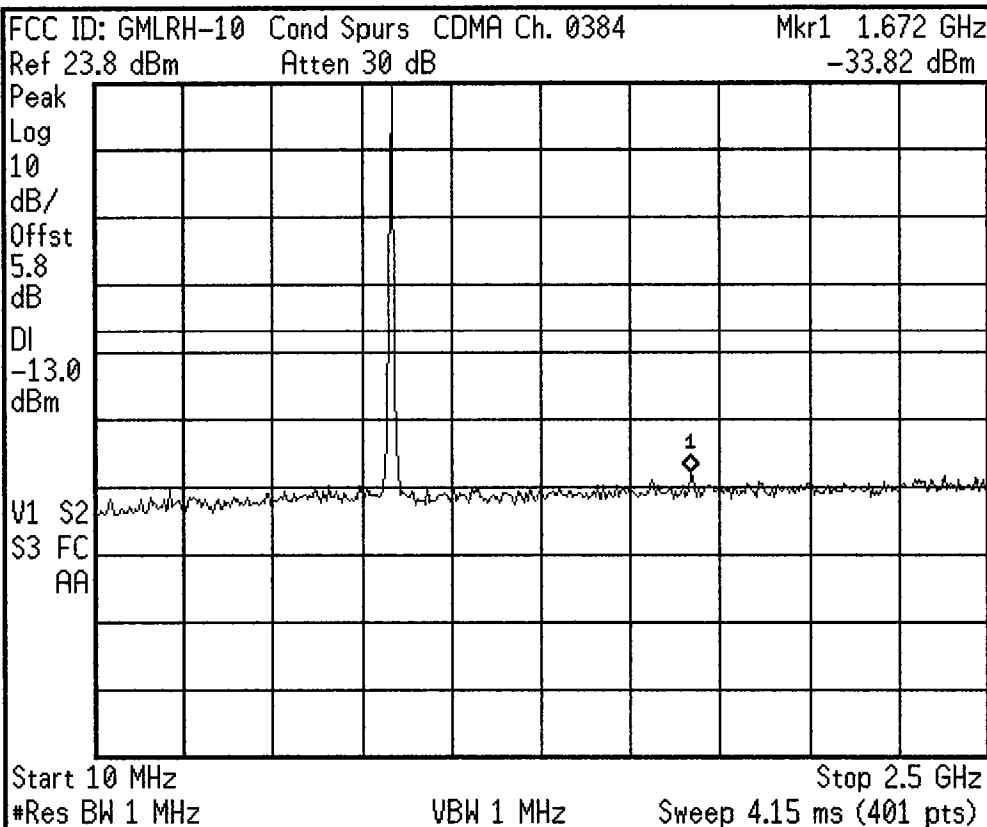
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent 07:02:26 Jun 17, 2002



Freq/Channel

Center Freq

1.25500000 GHz

Start Freq

10.0000000 MHz

Stop Freq

2.50000000 GHz

CF Step

249.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

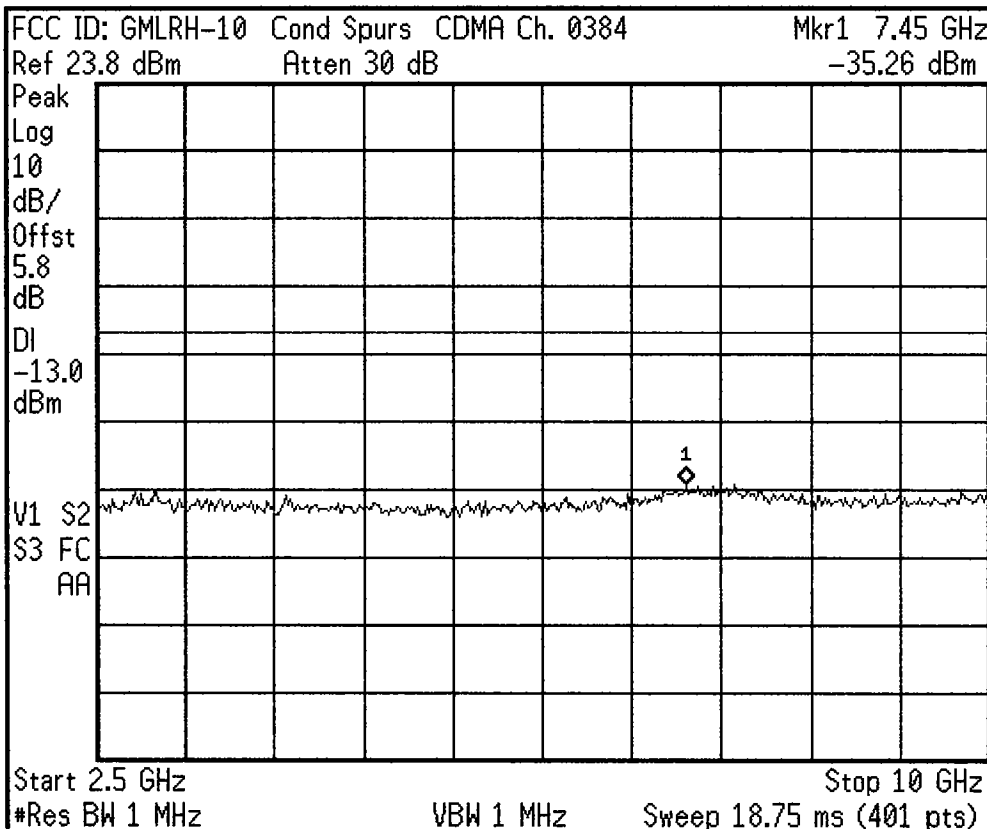
Signal Track

On Off

Scale Type

Log Lin

* Agilent 07:03:19 Jun 17, 2002



Freq/Channel

Center Freq

6.25000000 GHz

Start Freq

2.50000000 GHz

Stop Freq

10.0000000 GHz

CF Step

750.000000 MHz

Auto Man

Freq Offset

0.00000000 Hz

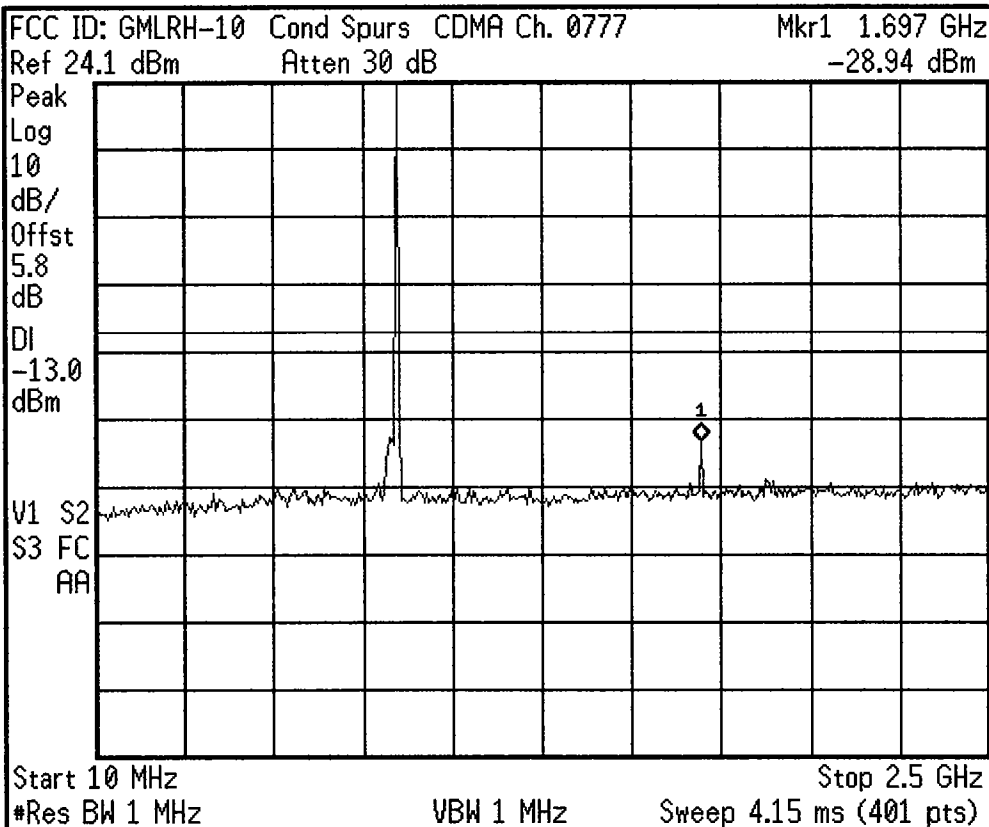
Signal Track

On Off

Scale Type

Log Lin

* Agilent 07:06:43 Jun 17, 2002



Freq/Channel

Center Freq

1.25500000 GHz

Start Freq

10.0000000 MHz

Stop Freq

2.50000000 GHz

CF Step

249.000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

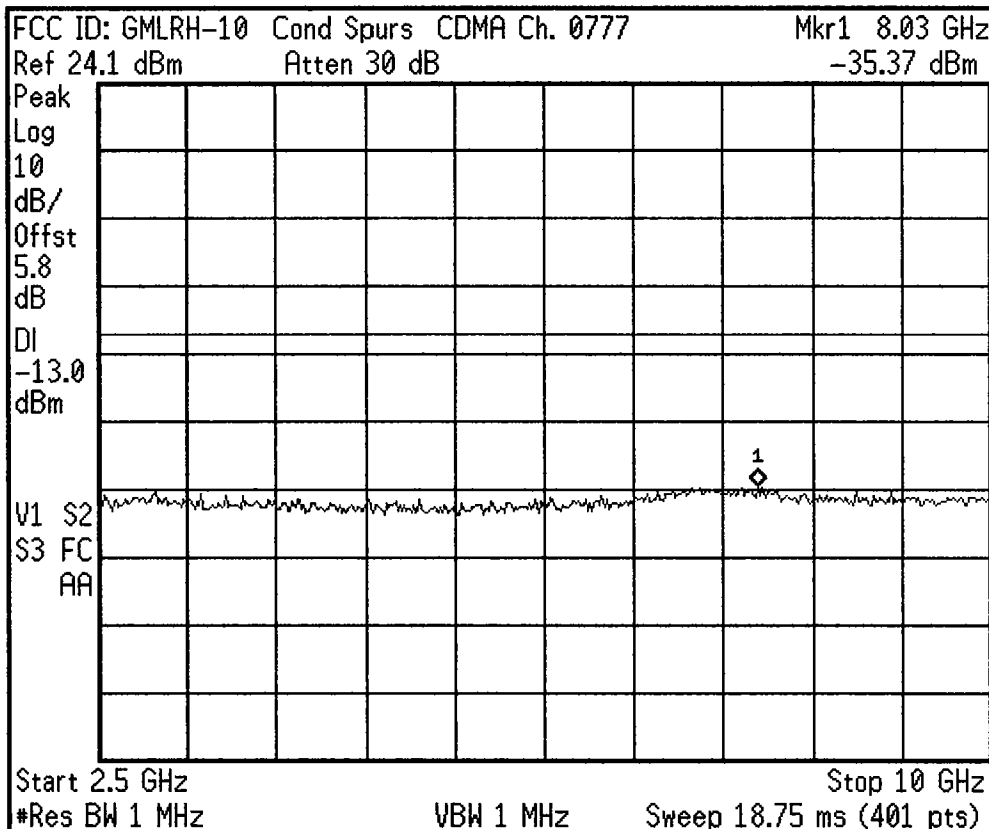
Off

Scale Type

Log

Lin

* Agilent 07:08:20 Jun 17, 2002



Freq/Channel

Center Freq

6.25000000 GHz

Start Freq

2.50000000 GHz

Stop Freq

10.0000000 GHz

CF Step

750.000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

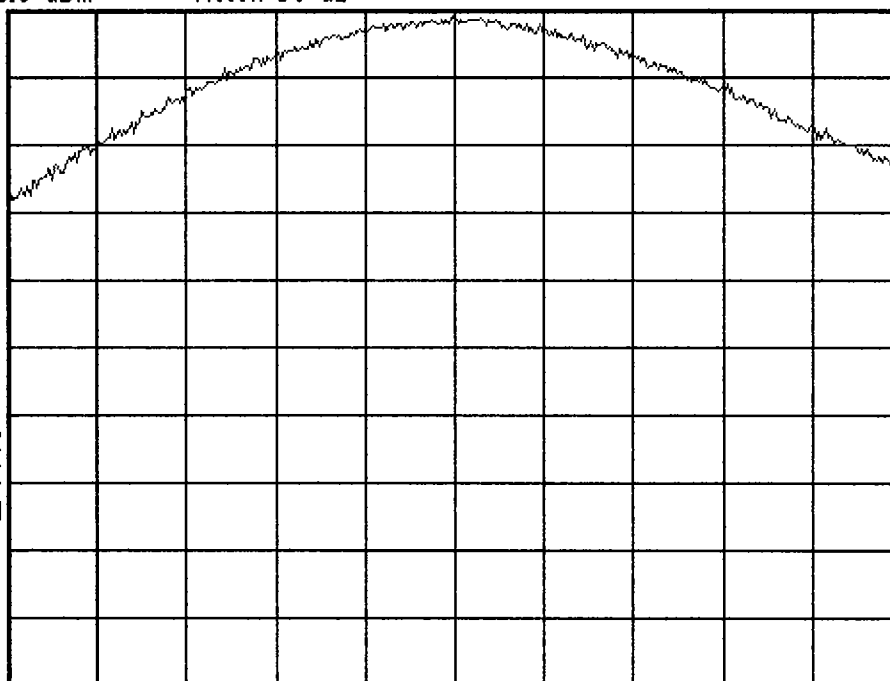
Lin

* Agilent 07:11:30 Jun 17, 2002

FCC ID: GMLRH-10 POWER OUT CDMA Ch. 1013
Ref 25.6 dBm Atten 30 dB

Samp
Log
10
dB/
Offst
5.8
dB

VAvg
100
V1 S2
S3 FC
AA



Center 824.7 MHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz
Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

824.700000 MHz

Start Freq

819.700000 MHz

Stop Freq

829.700000 MHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

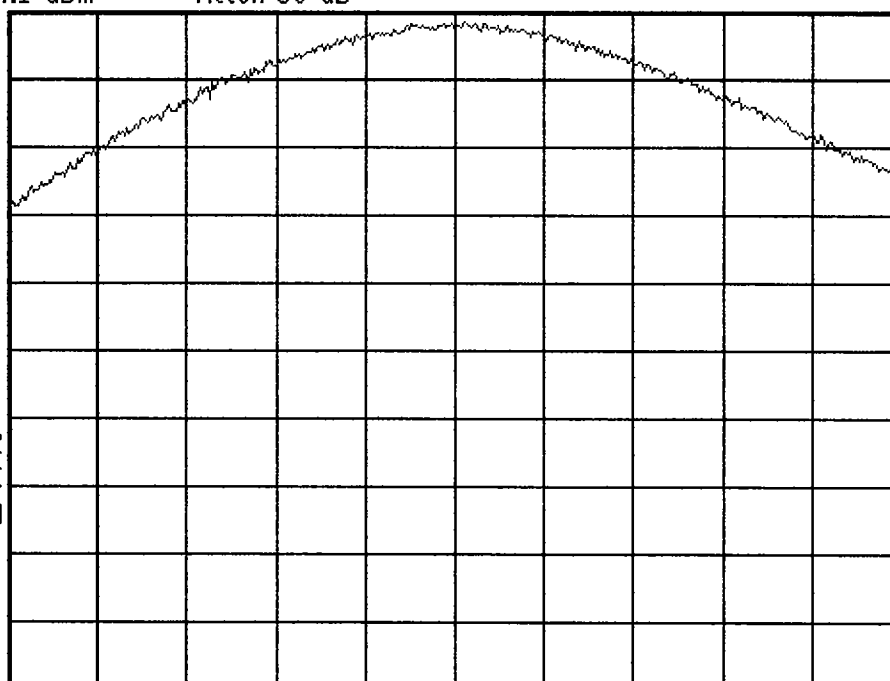
Lin

* Agilent 07:16:24 Jun 17, 2002

FCC ID: GMLRH-10 POWER OUT CDMA Ch. 0777
Ref 24.1 dBm Atten 30 dB

Samp
Log
10
dB/
Offst
5.8
dB

VAvg
100
V1 S2
S3 FC
AA



Center 848.3 MHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz
Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

848.300000 MHz

Start Freq

843.300000 MHz

Stop Freq

853.300000 MHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

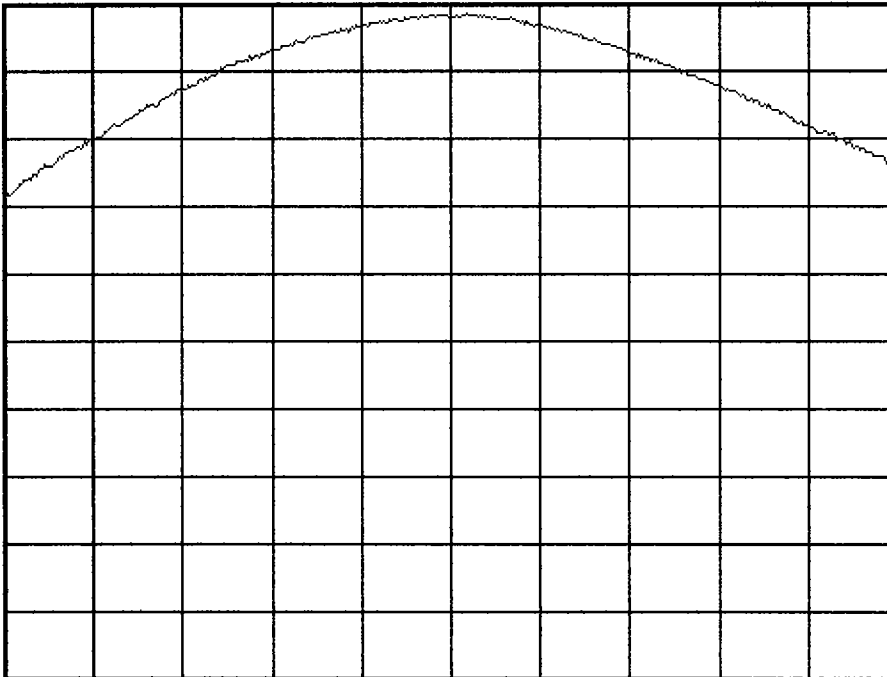
Lin

✱ Agilent 07:18:10 Jun 17, 2002

FCC ID: GMLRH-10 POWER OUT CDMA Ch. 0384
 Ref 23.8 dBm Atten 30 dB

Samp
 Log
 10
 dB/
 Offst
 5.8
 dB

VAvg
 100
 V1 S2
 S3 FC
 AA



Center 836.5 MHz Span 10 MHz
 #Res BW 3 MHz VBW 3 MHz Sweep 4 ms (401 pts)

Freq/Channel

Center Freq
 836.520000 MHz

Start Freq
 831.520000 MHz

Stop Freq
 841.520000 MHz

CF Step
 1.00000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

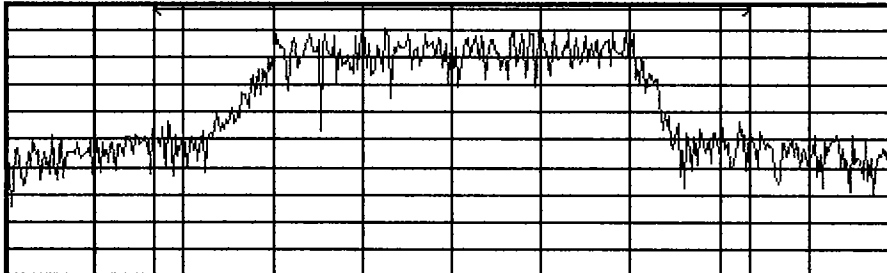
✱ Agilent 07:19:55 Jun 17, 2002

Ch Freq 836.52 MHz Trig Free

Channel Power

FCC ID: GMLRH-10 POWER OUT CDMA Ch. 0384
 Ref 23.8 dBm Atten 30 dB

#Avg
 Log
 10
 dB/
 Offst
 5.8
 dB



Center 836.5 MHz Span 3 MHz
 Res BW 30 kHz VBW 300 kHz Sweep 8 ms (401 pts)

Channel Power

23.83 dBm /2.0000 MHz

Power Spectral Density

-39.18 dBm/Hz

Freq/Channel

Center Freq
 836.520000 MHz

Start Freq
 835.020000 MHz

Stop Freq
 838.020000 MHz

CF Step
 300.000000 kHz
 Auto Man

Freq Offset
 0.00000000 Hz

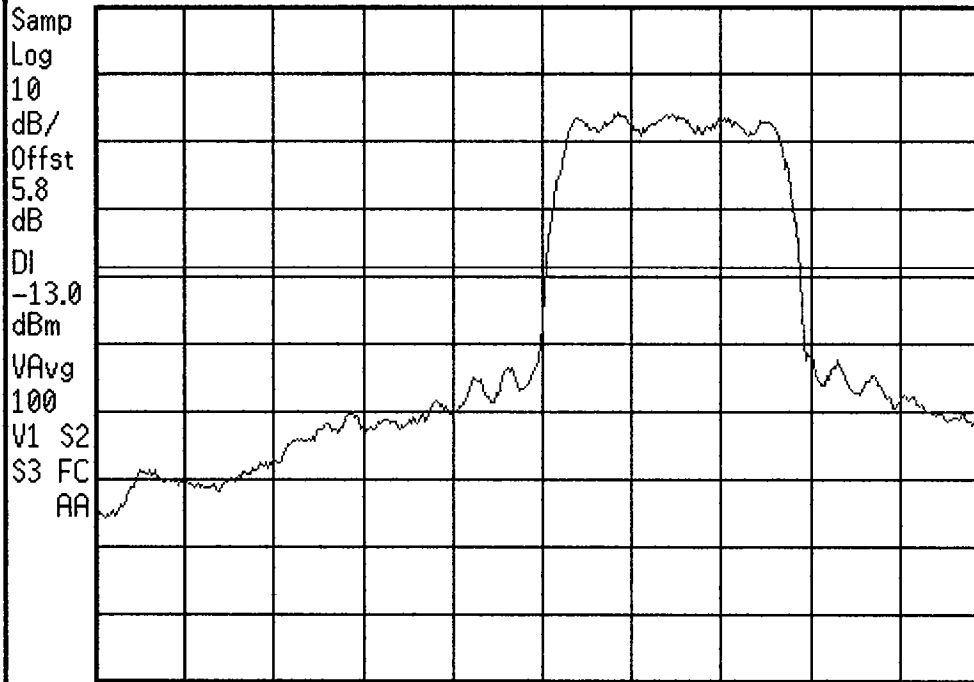
Signal Track
 On Off

Scale Type
 Log Lin

* Agilent 07:33:46 Jun 17, 2002

FCC ID: GMLRH-10 RC3 CDMA1X Ch. 1013

Ref 25.6 dBm Atten 30 dB



Center 824 MHz Span 5 MHz
*Res BW 30 kHz VBW 30 kHz Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq
824.000000 MHz

Start Freq
821.500000 MHz

Stop Freq
826.500000 MHz

CF Step
500.000000 kHz
Auto Man

Freq Offset
0.00000000 Hz

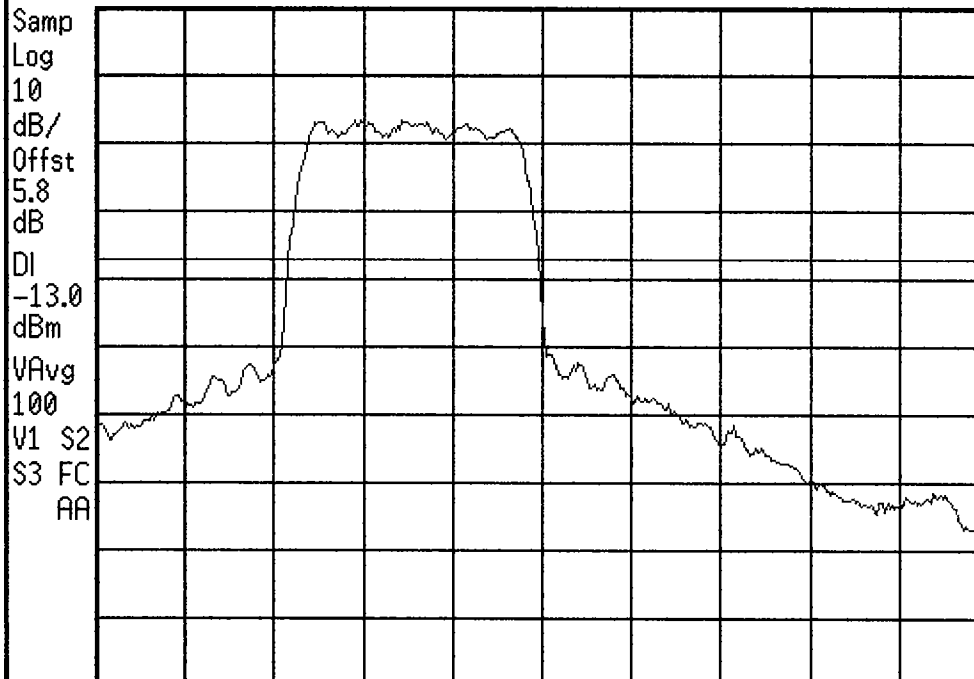
Signal Track
On Off

Scale Type
Log Lin

* Agilent 07:34:29 Jun 17, 2002

FCC ID: GMLRH-10 RC3 CDMA1X Ch. 0777

Ref 24.1 dBm Atten 30 dB



Center 849 MHz Span 5 MHz
*Res BW 30 kHz VBW 30 kHz Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq
849.000000 MHz

Start Freq
846.500000 MHz

Stop Freq
851.500000 MHz

CF Step
500.000000 kHz
Auto Man

Freq Offset
0.00000000 Hz

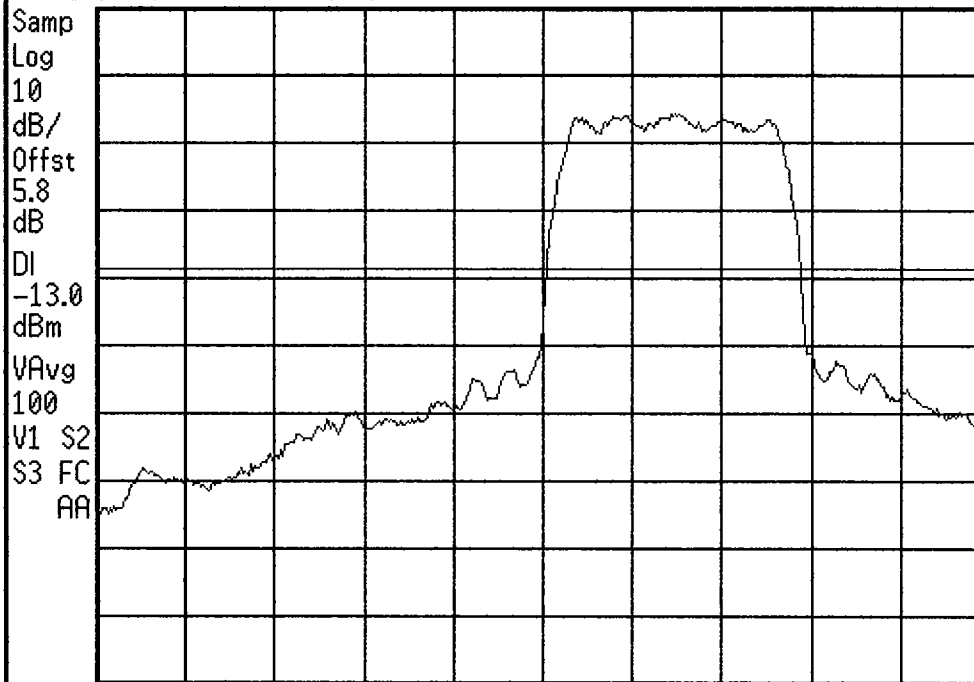
Signal Track
On Off

Scale Type
Log Lin

* Agilent 07:36:19 Jun 17, 2002

FCC ID: GMLRH-10 BAND EDGE CDMA Ch. 1013

Ref 25.6 dBm Atten 30 dB



Center 824 MHz

*Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Span 5 MHz

Freq/Channel

Center Freq

824.000000 MHz

Start Freq

821.500000 MHz

Stop Freq

826.500000 MHz

CF Step

500.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

Signal Track

On Off

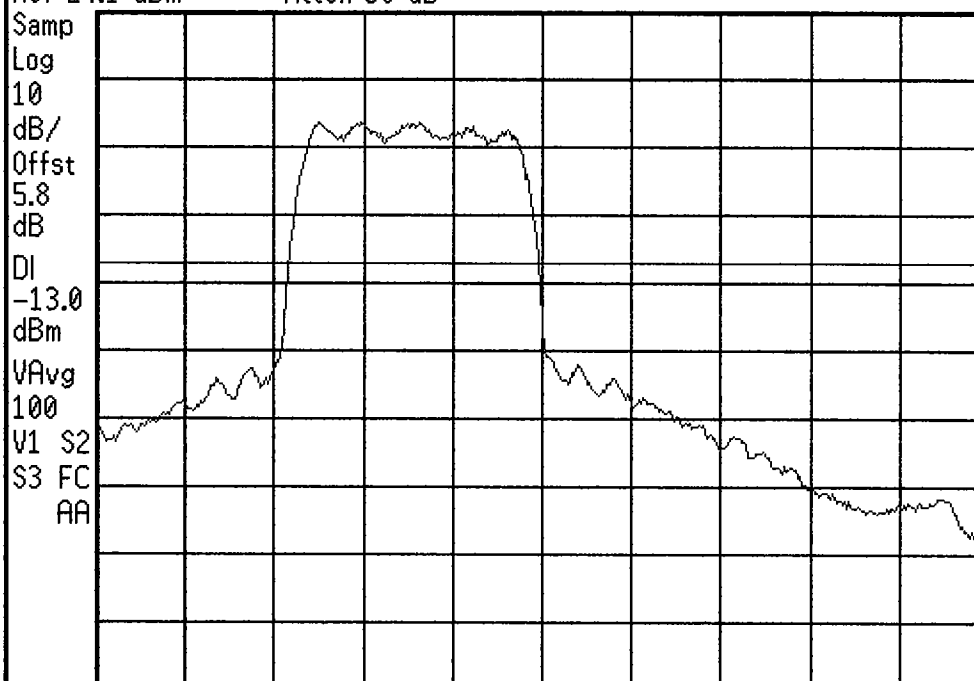
Scale Type

Log Lin

* Agilent 07:38:09 Jun 17, 2002

FCC ID: GMLRH-10 BAND EDGE CDMA Ch. 0777

Ref 24.1 dBm Atten 30 dB



Center 849 MHz

*Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Span 5 MHz

Freq/Channel

Center Freq

849.000000 MHz

Start Freq

846.500000 MHz

Stop Freq

851.500000 MHz

CF Step

500.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

Signal Track

On Off

Scale Type

Log Lin

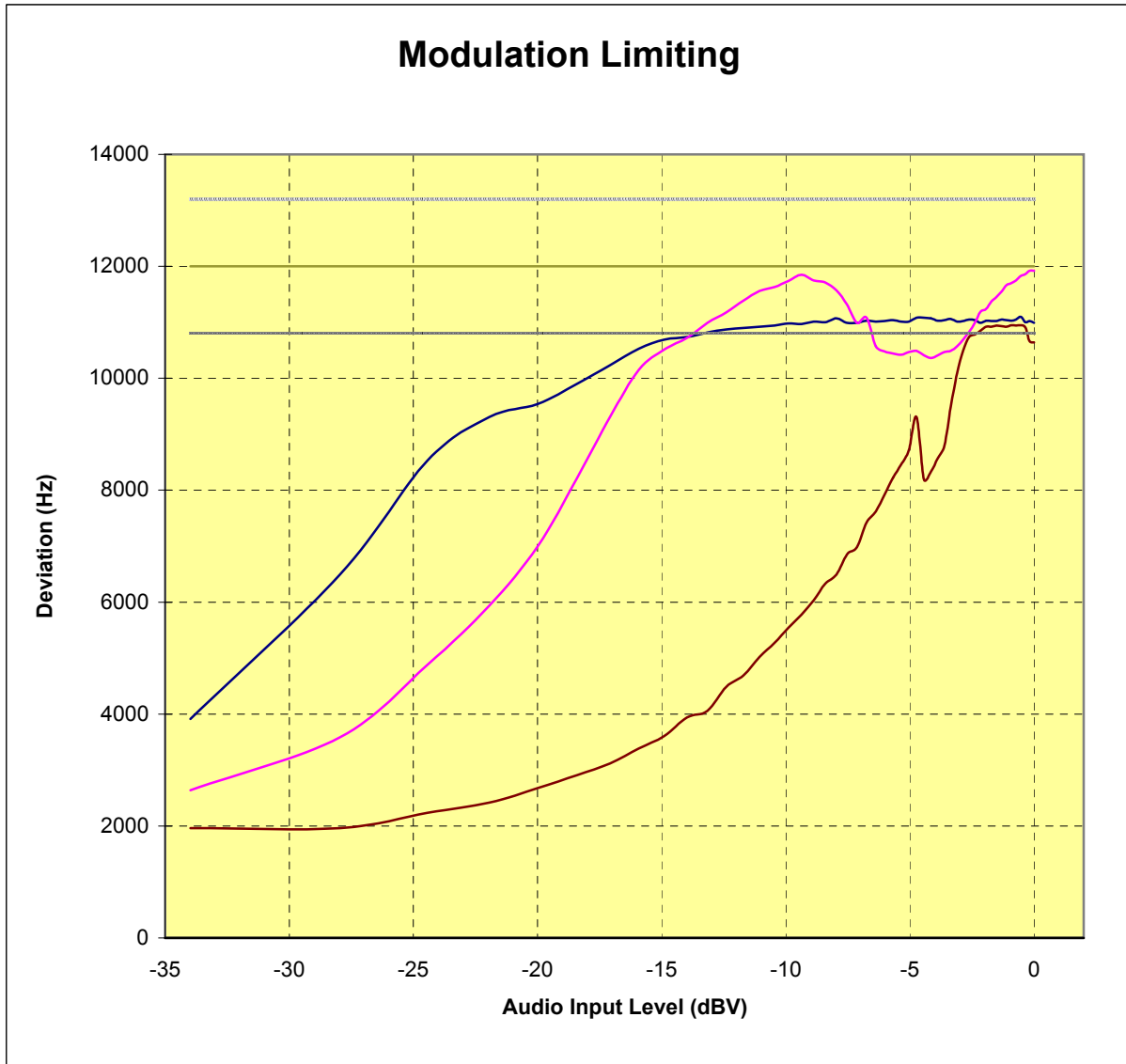
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.220617319.GML
Test Date: 06.17.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 8280
FCC ID: GMLRH-10

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: GMLRH-10

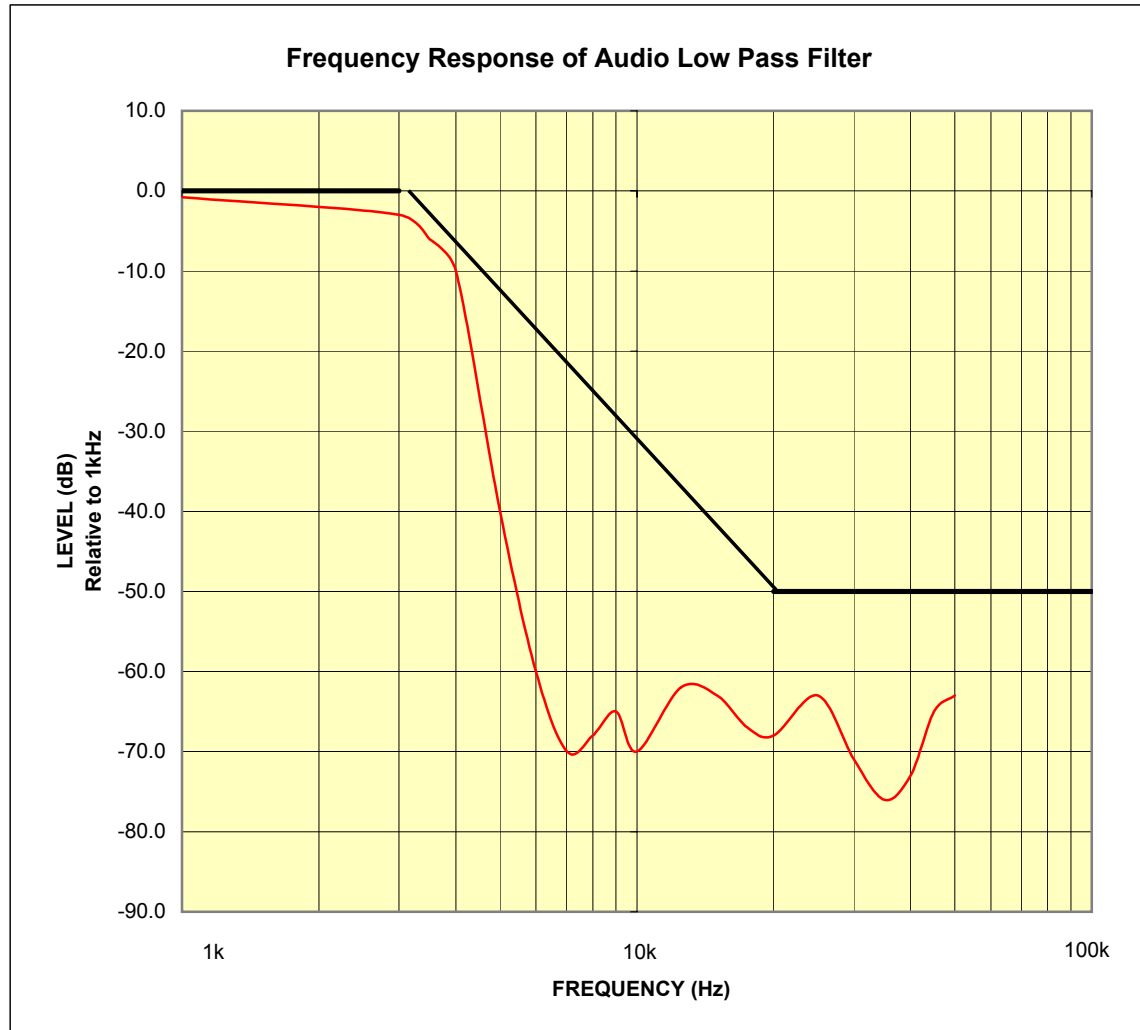
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.220617319.GML
Test Date: 06.17.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 8280
FCC ID: GMLRH-10

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: GMLRH-10

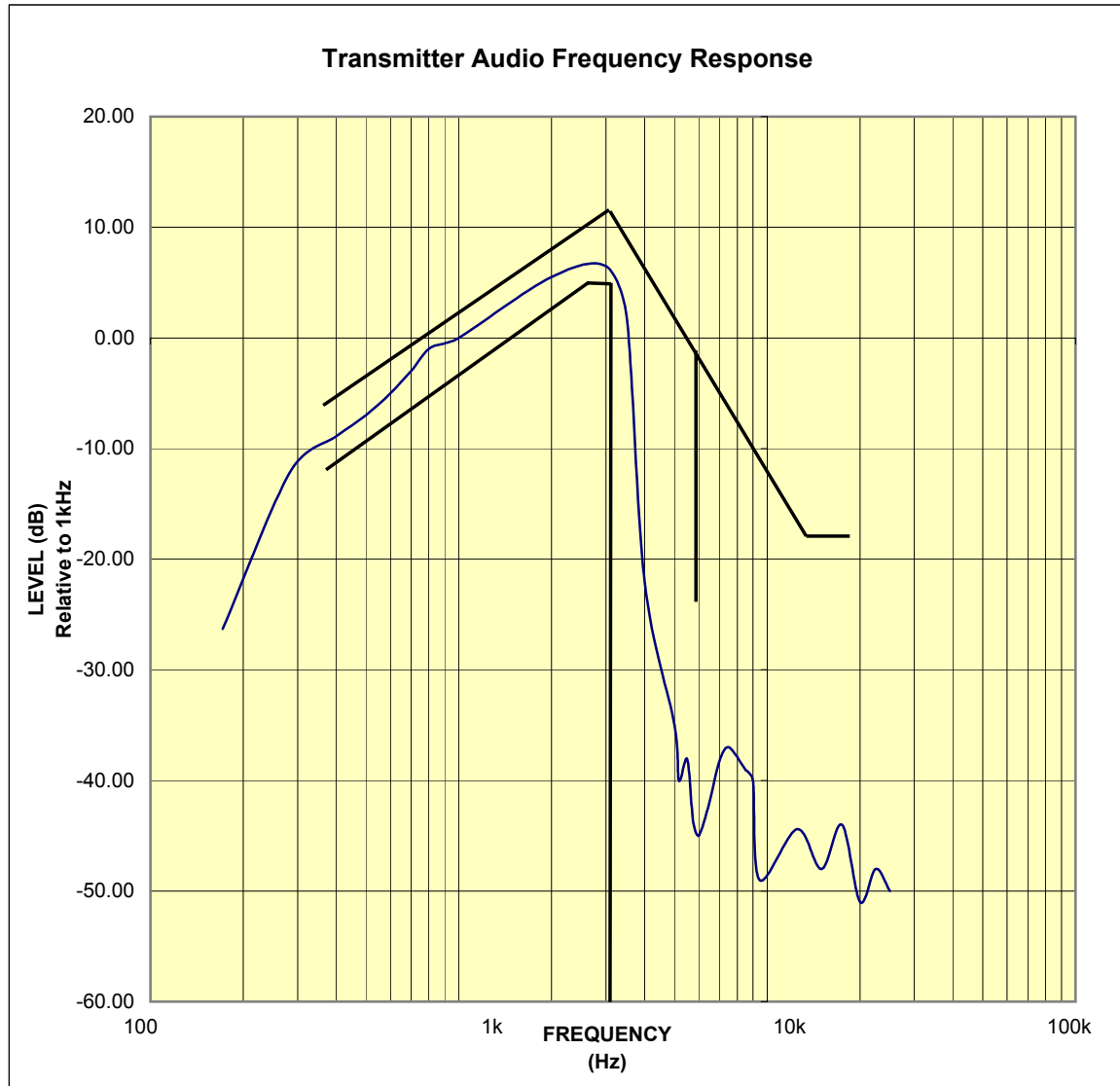
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 22

Test Report No.: 22.220617319.GML
Test Date: 06.17.2002

EUT: NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
Model: 8280
FCC ID: GMLRH-10

REFERENCE: 1 kHz = 0 dB



NOKIA Dual-Mode Cellular Phone (AMPS/CDMA)
FCC ID: GMLRH-10