

PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA520

SAMSUNG

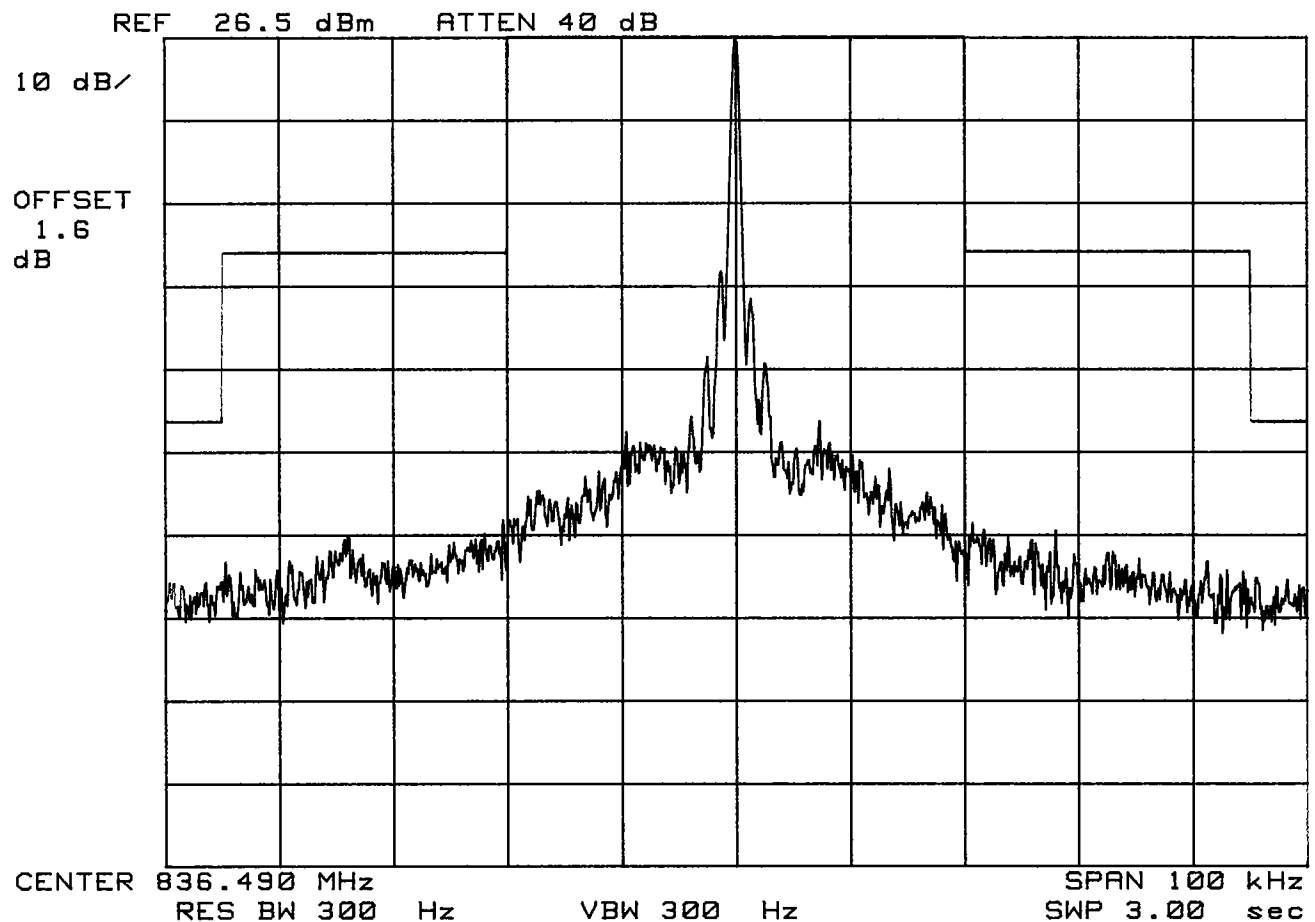
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:Unmodulated Signal



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHHA520

SAMSUNG

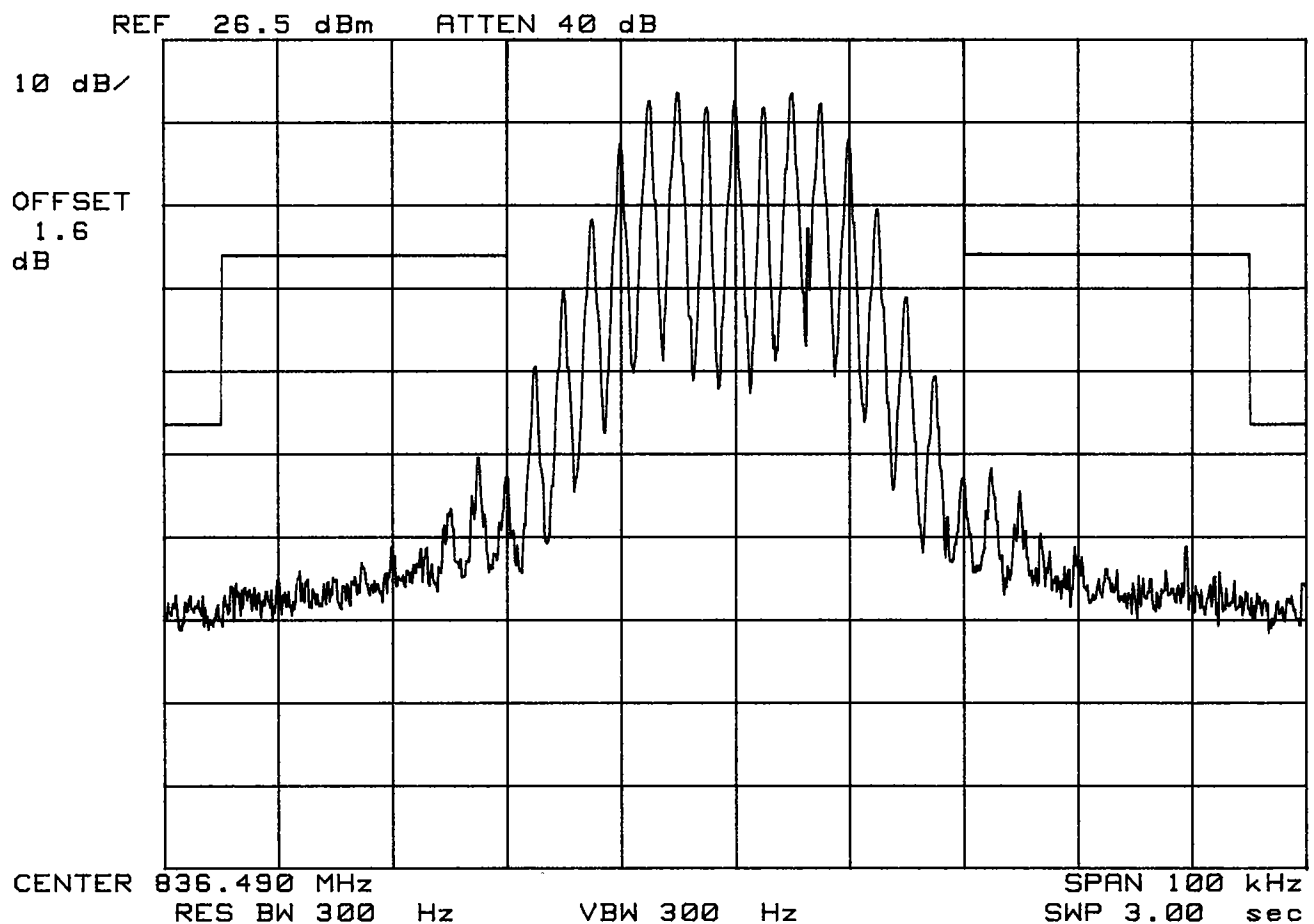
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA520

SAMSUNG

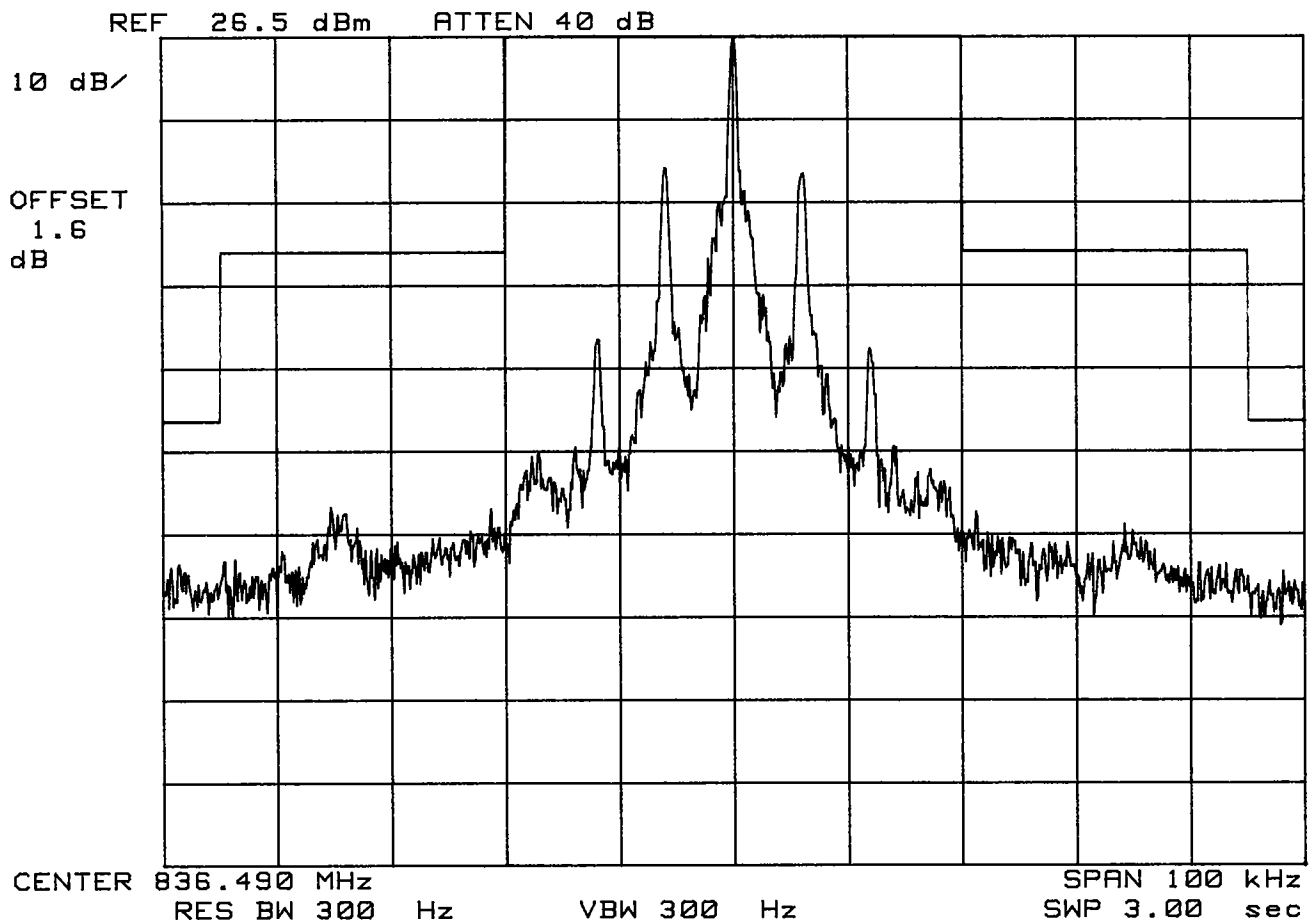
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:SAT



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA520

SAMSUNG

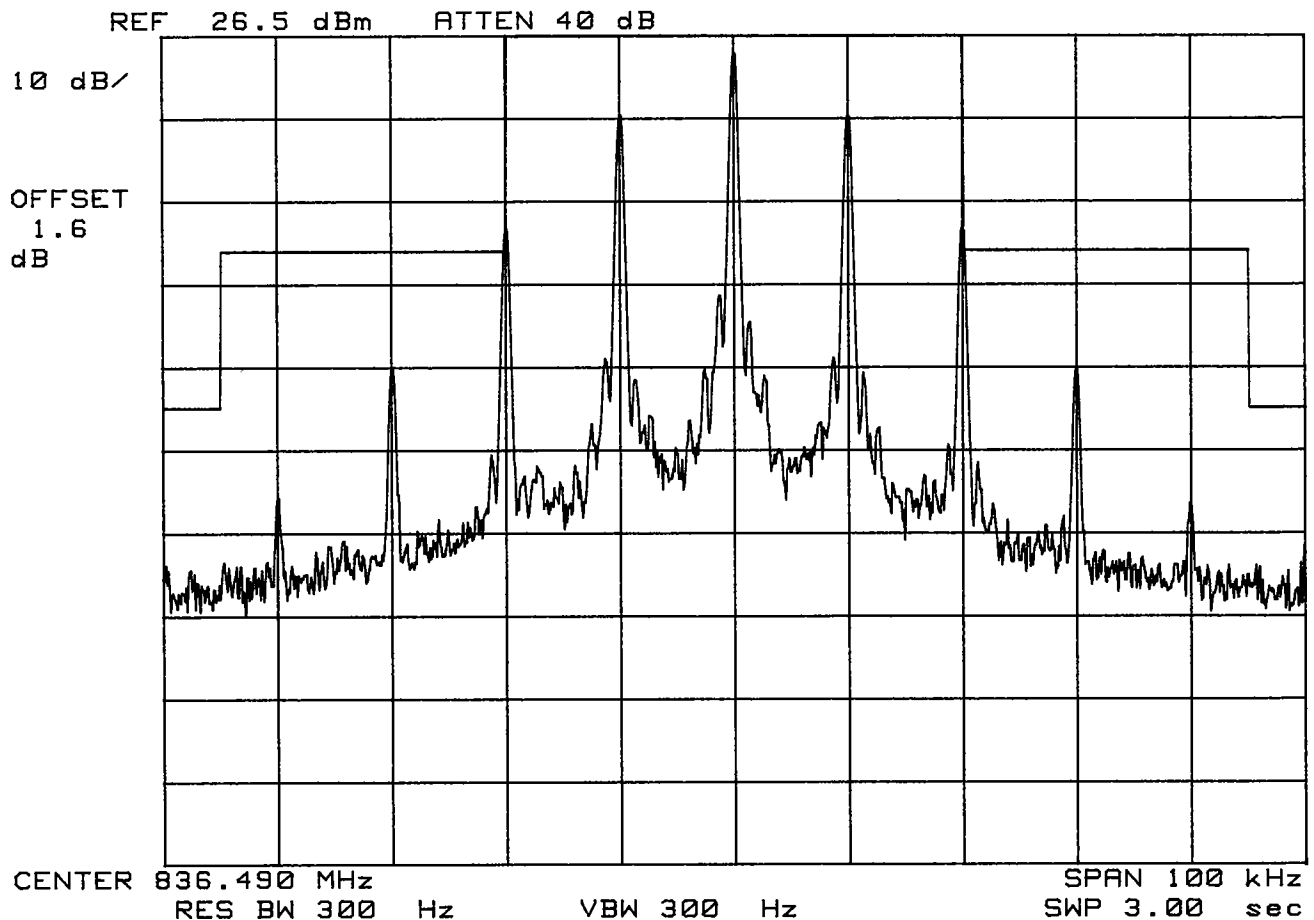
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:ST



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA520

SAMSUNG

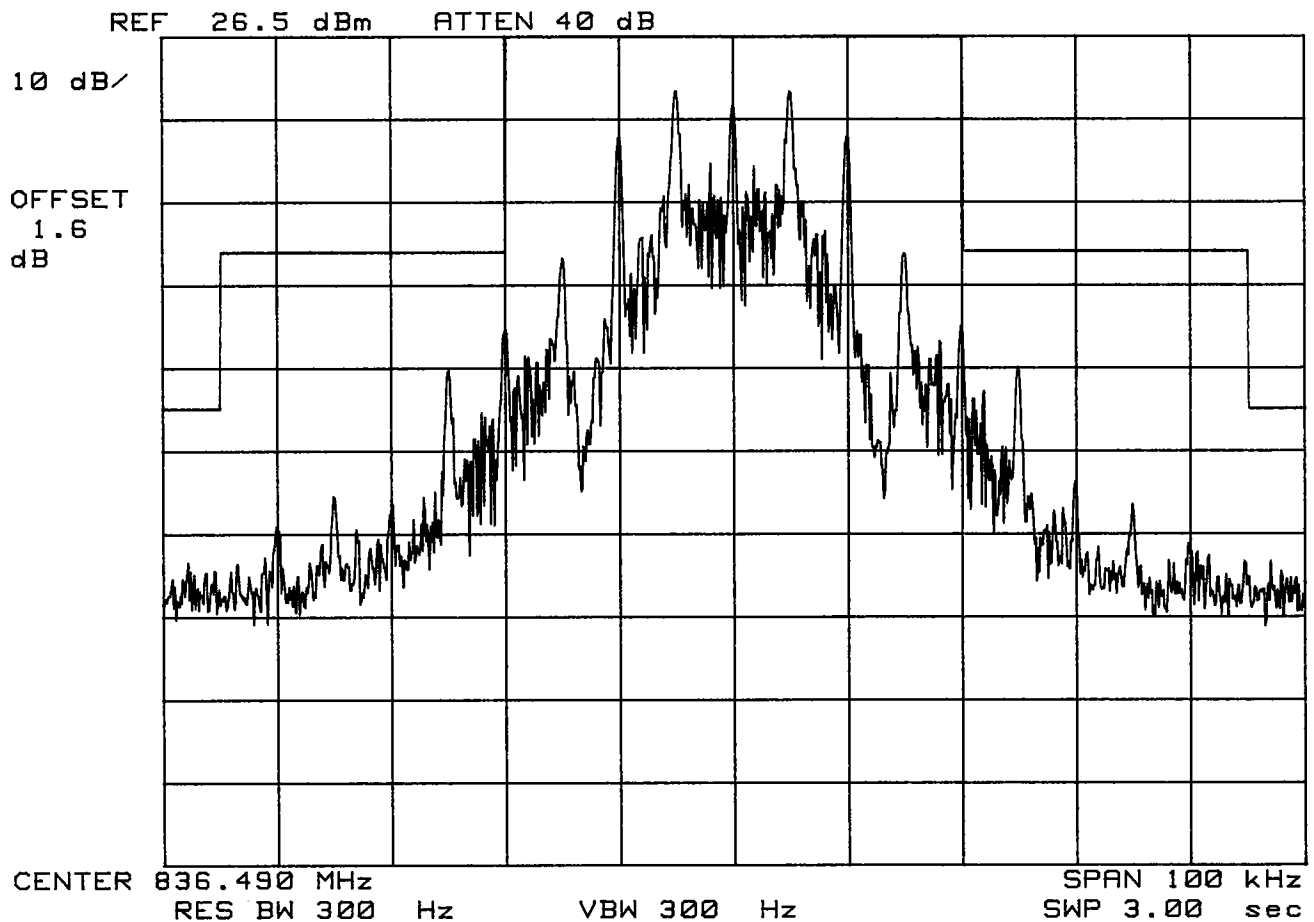
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:Wide Band Data



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHHA520

SAMSUNG

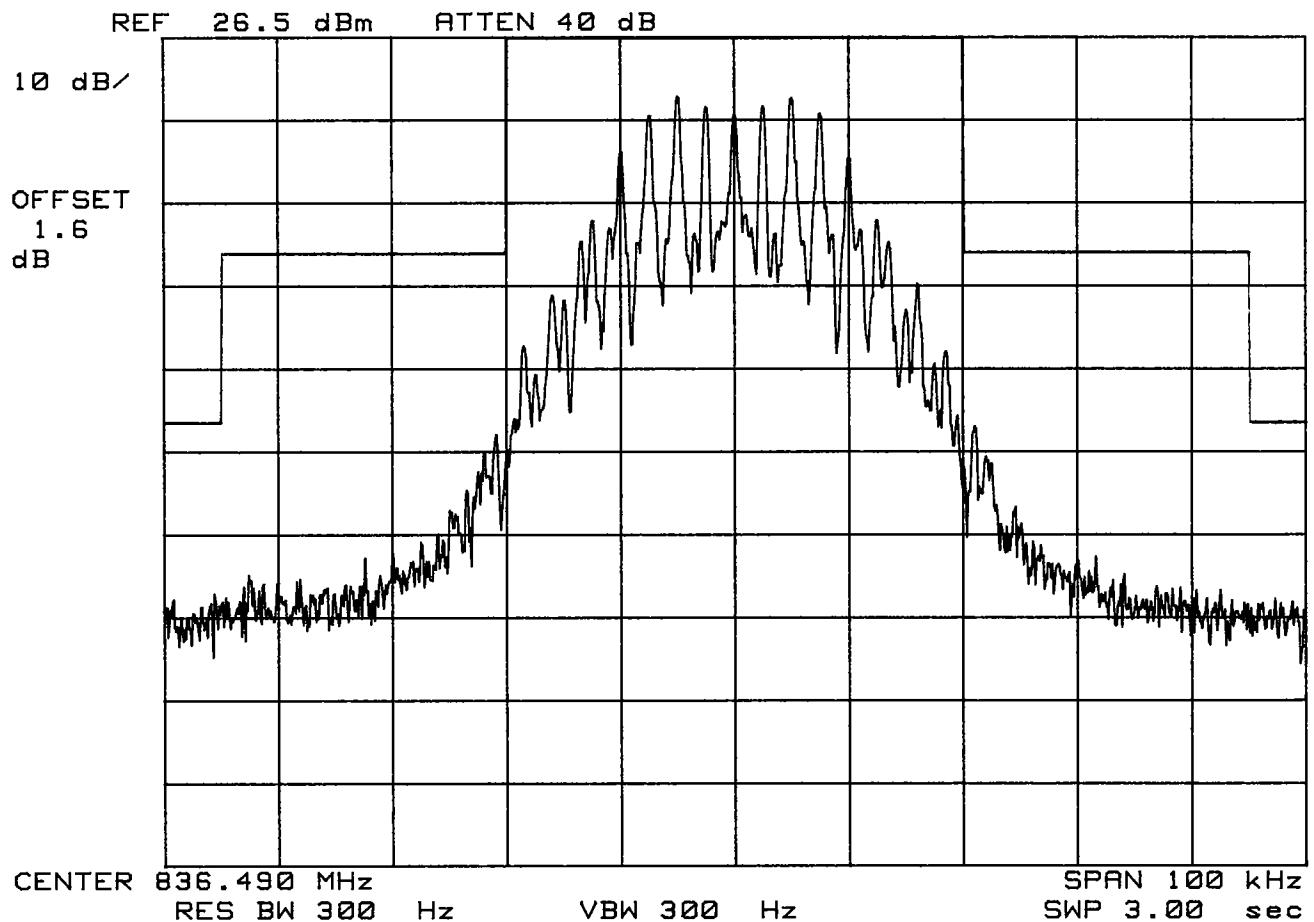
Tri-Mode Phone

FM Channel 383

Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:SAT + Voice



PCTEST Engineering Lab.

SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHHA520

SAMSUNG

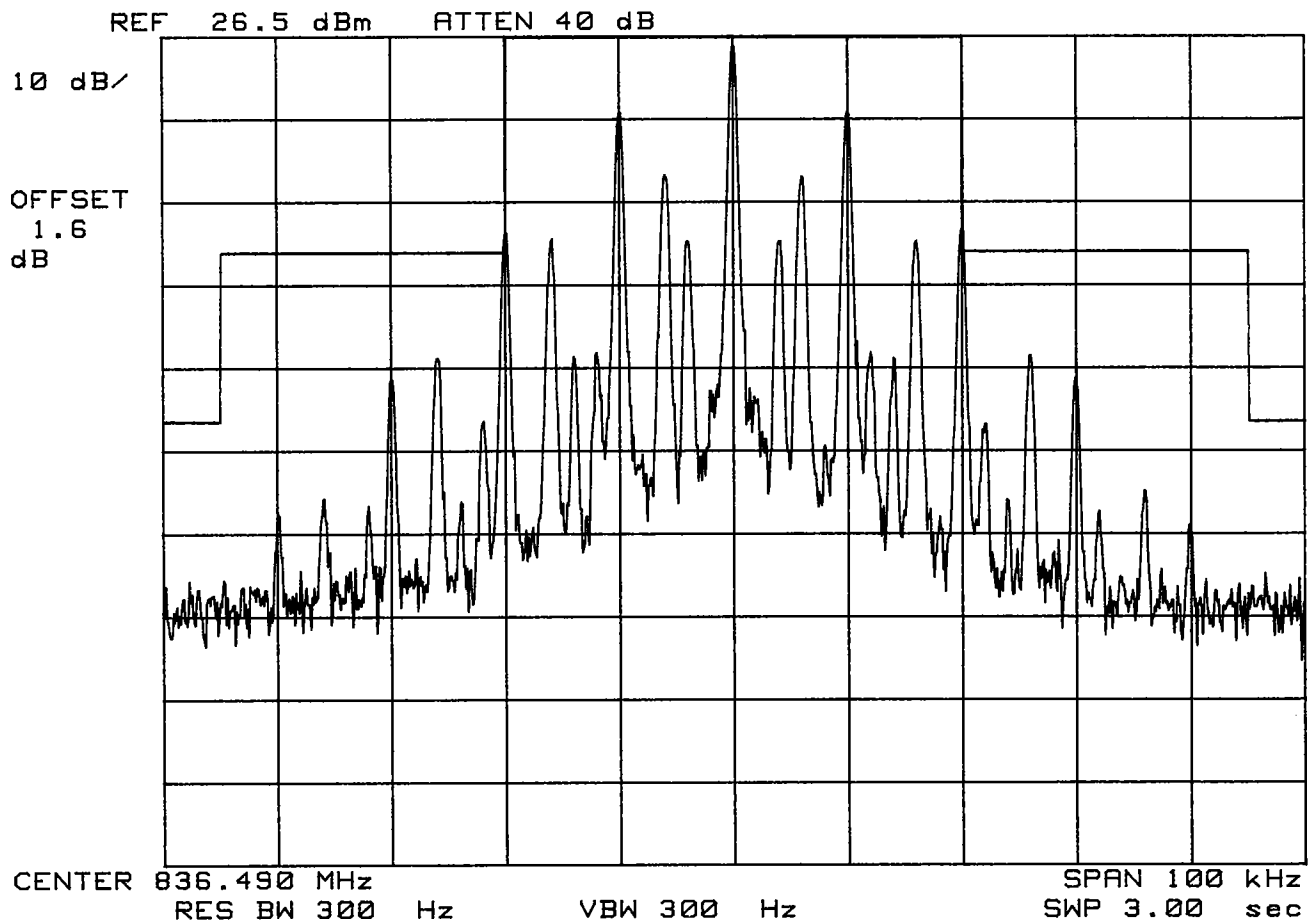
Tri-Mode Phone

FM Channel 383

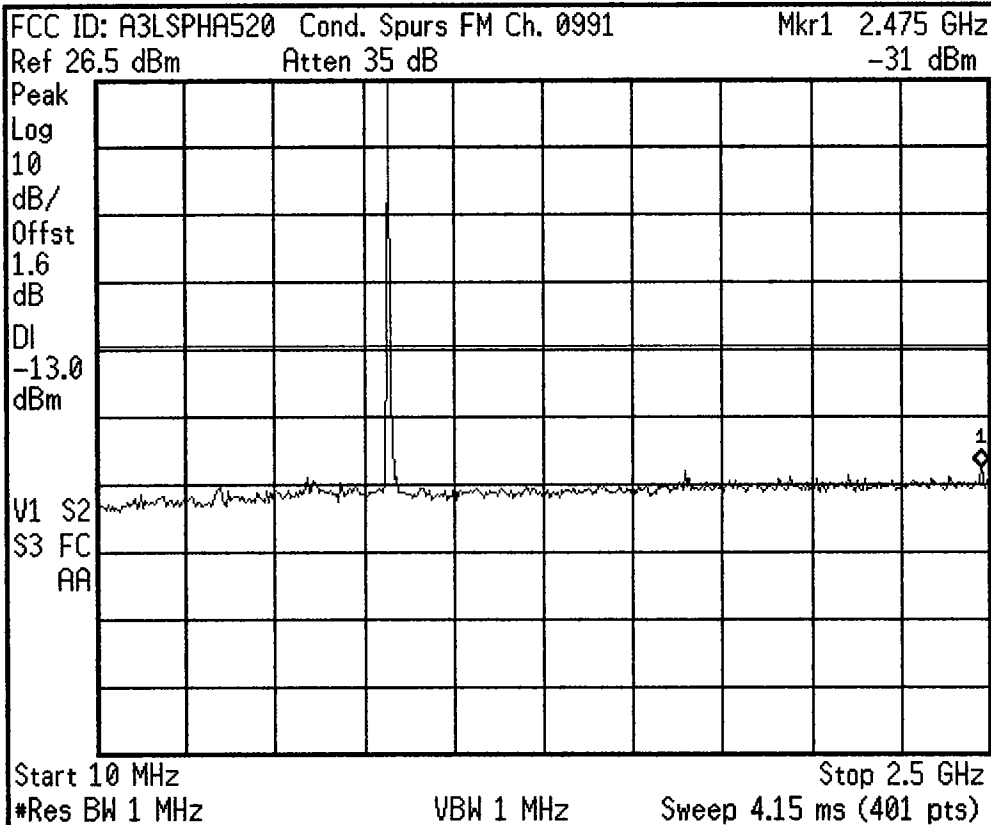
Operating Frequency: 836.490 MHz

Output Power : 26.5 dBm

Test Mode:SAT + ST



* Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

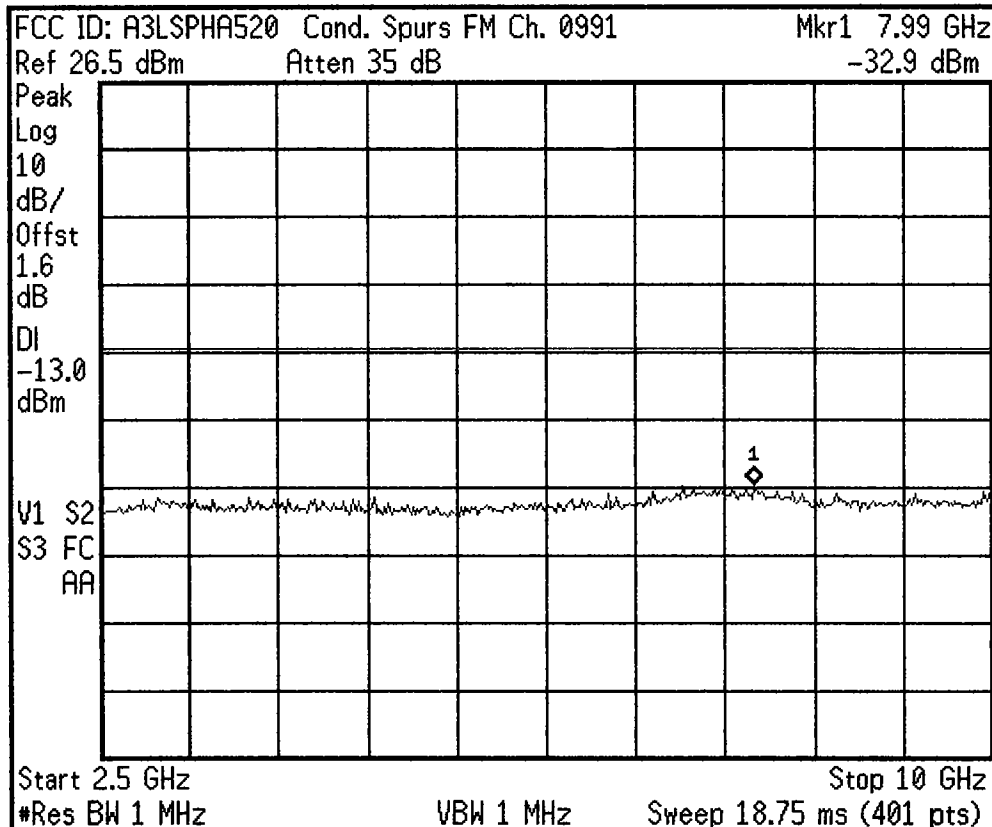
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Peak Search

Meas Tools

Next Peak

Next Pk Right

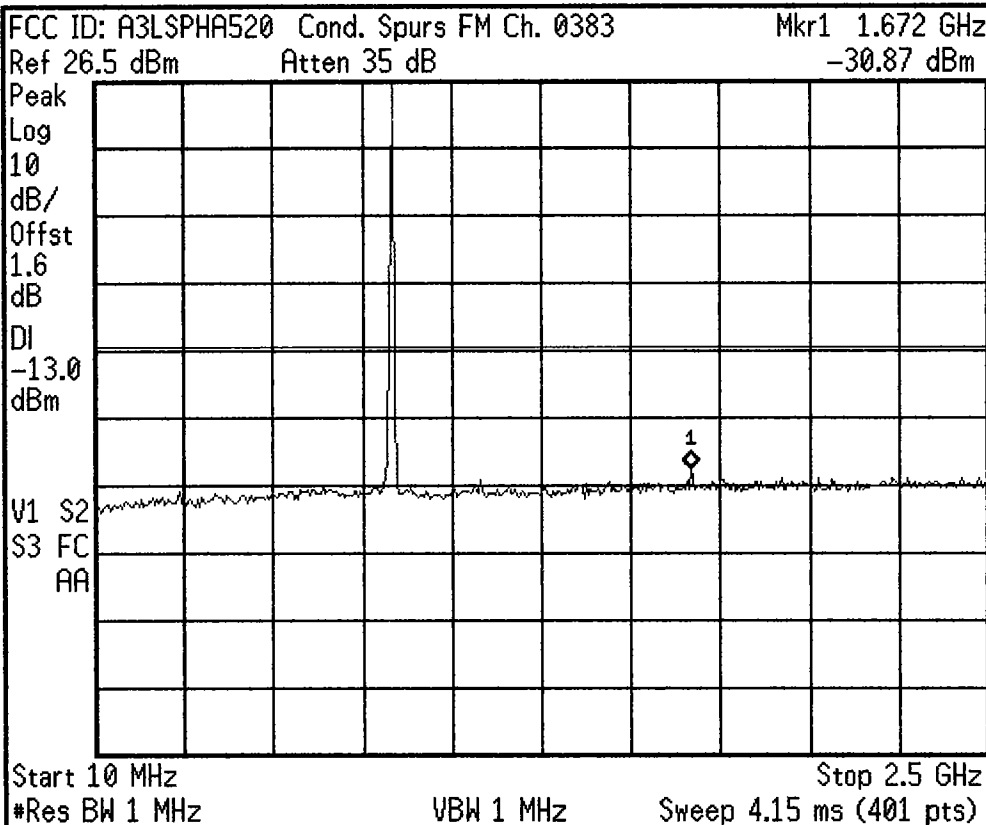
Next Pk Left

Min Search

Pk-Pk Search

More
 1 of 2

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

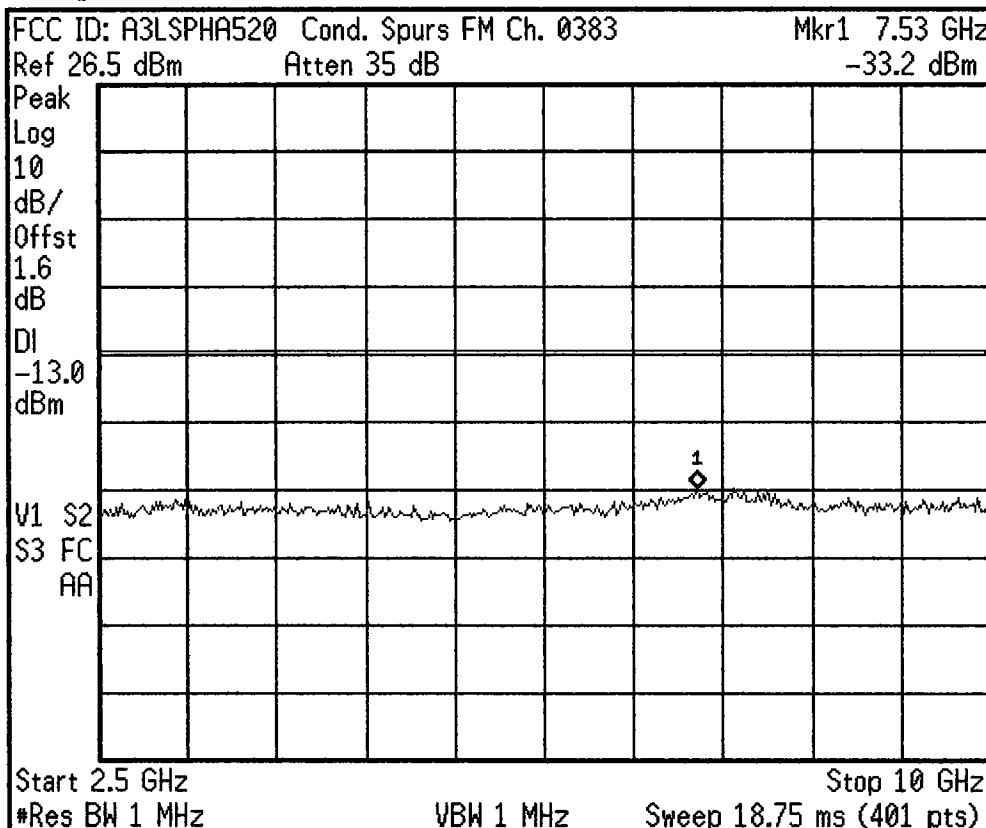
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

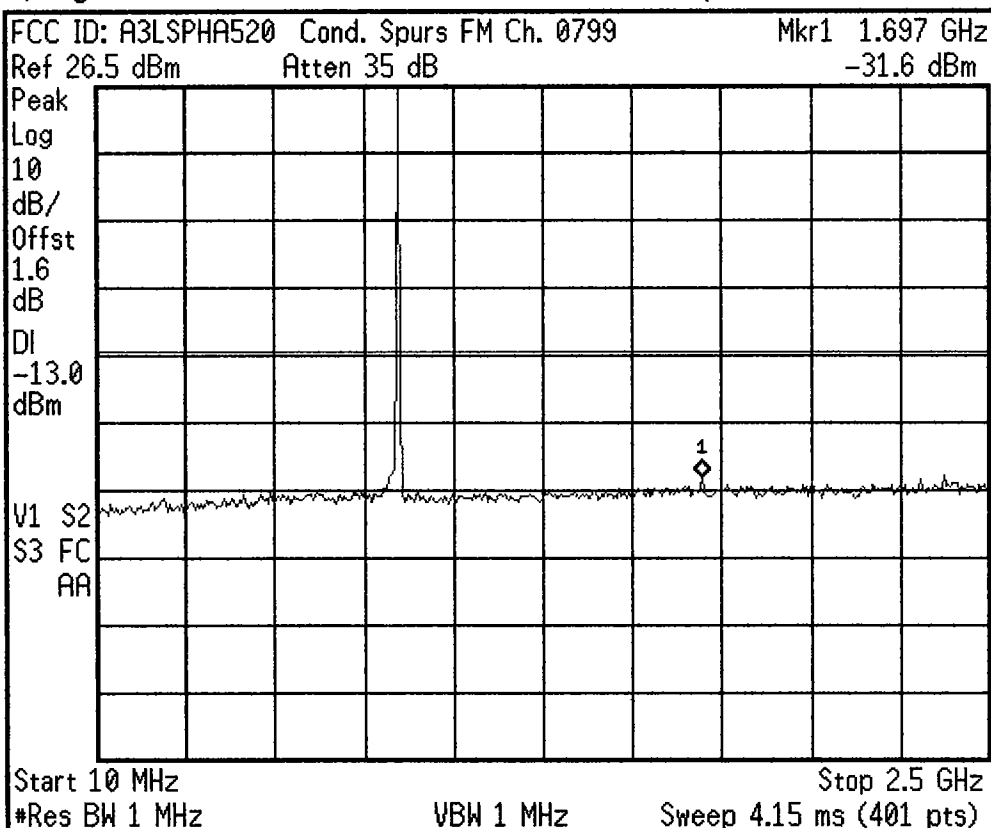
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

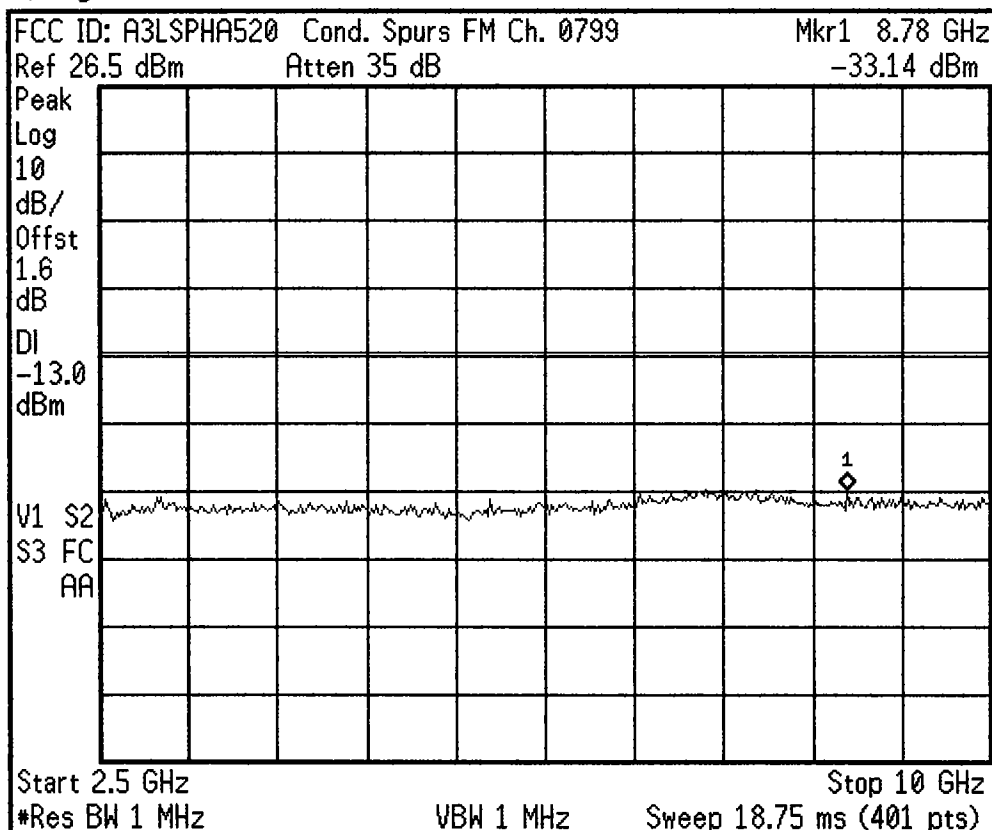
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

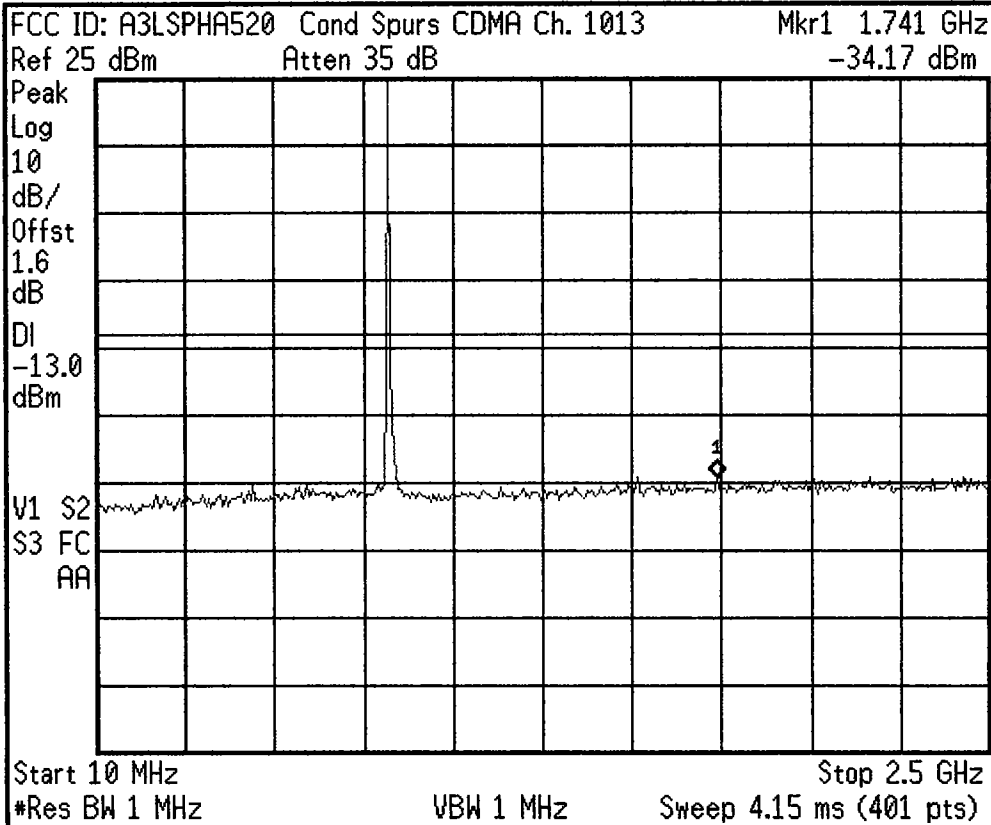
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
1.25500000 GHz

Start Freq
10.0000000 MHz

Stop Freq
2.50000000 GHz

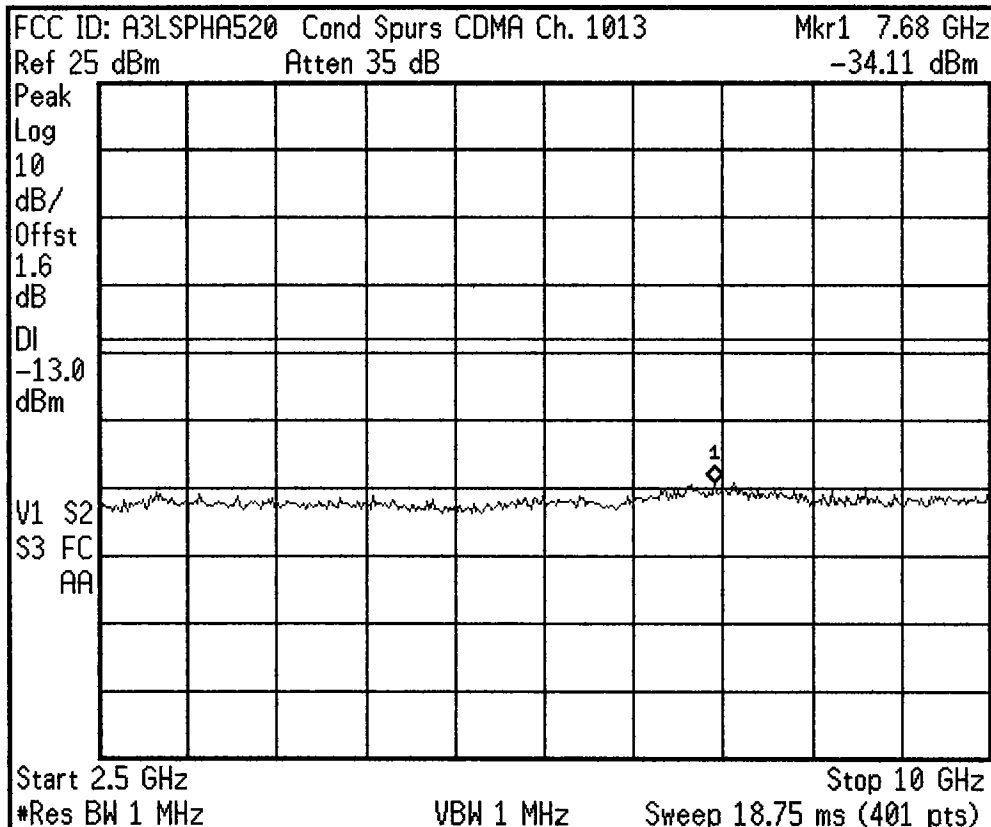
CF Step
249.000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Scale Type
Log Lin

* Agilent



Freq/Channel

Center Freq
6.25000000 GHz

Start Freq
2.50000000 GHz

Stop Freq
10.0000000 GHz

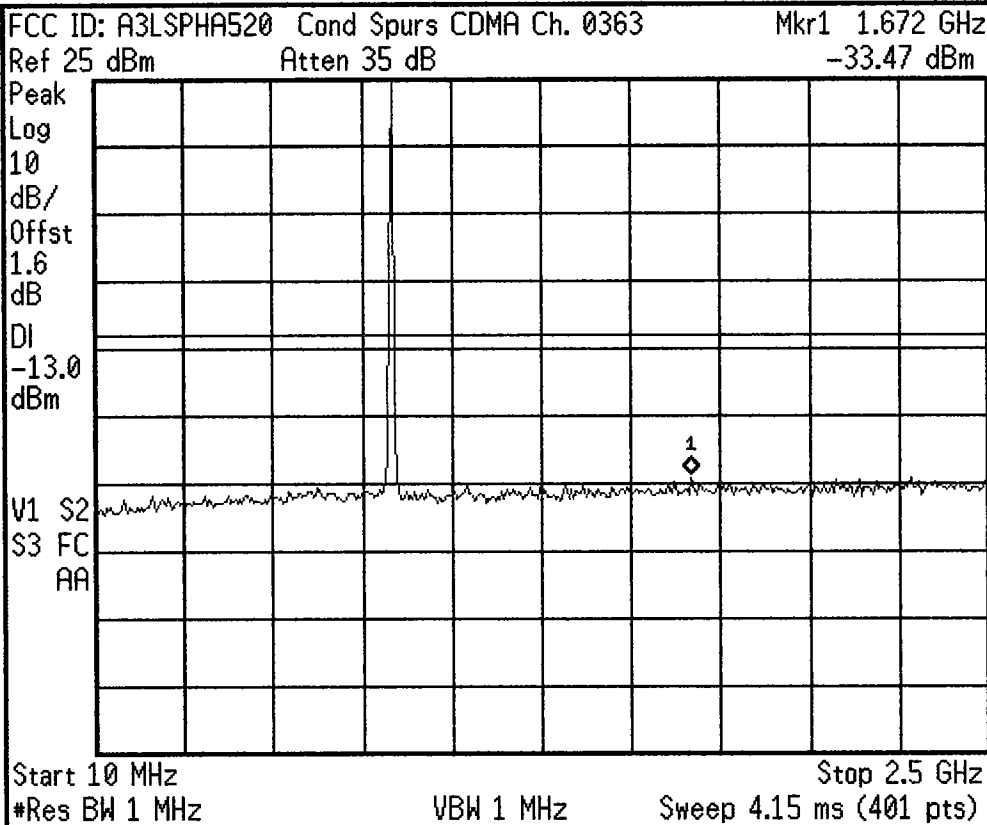
CF Step
750.000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Scale Type
Log Lin

* Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

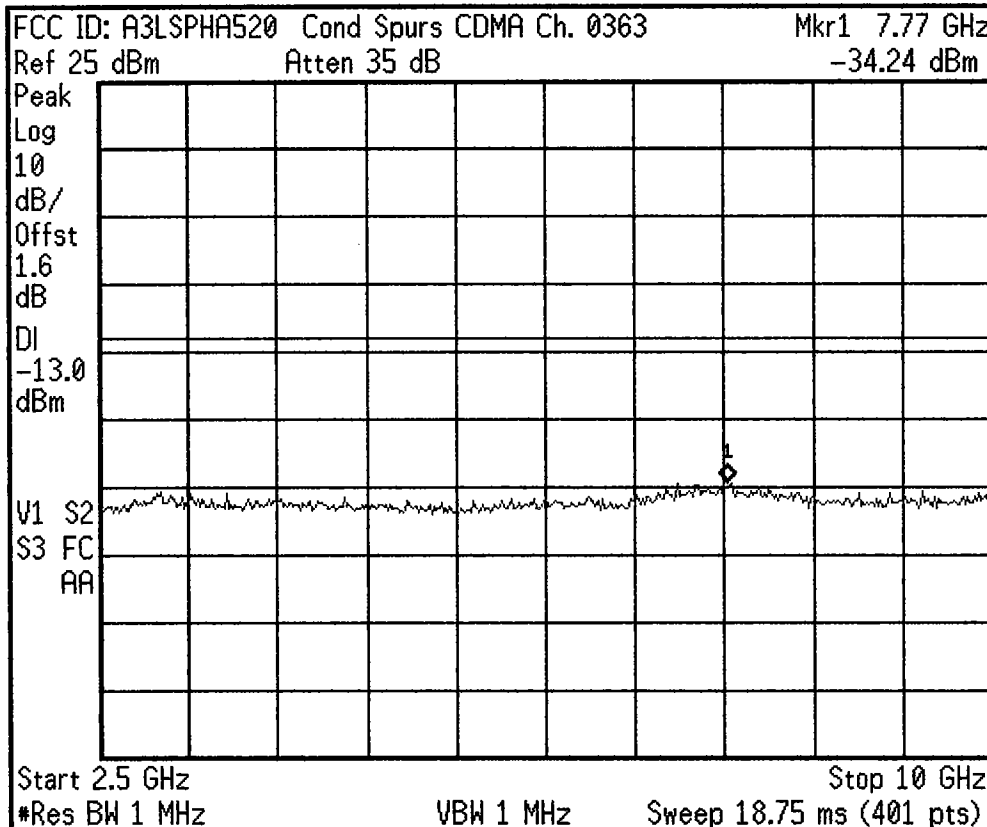
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 6.25000000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 10.0000000 GHz

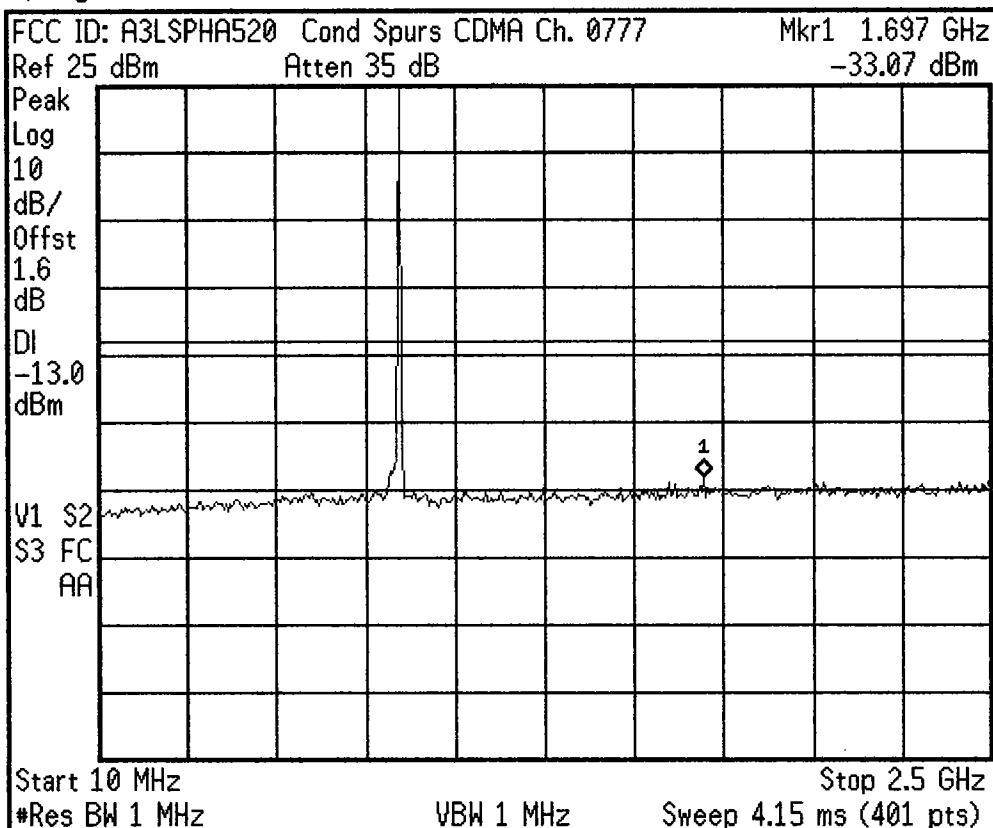
CF Step
 750.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

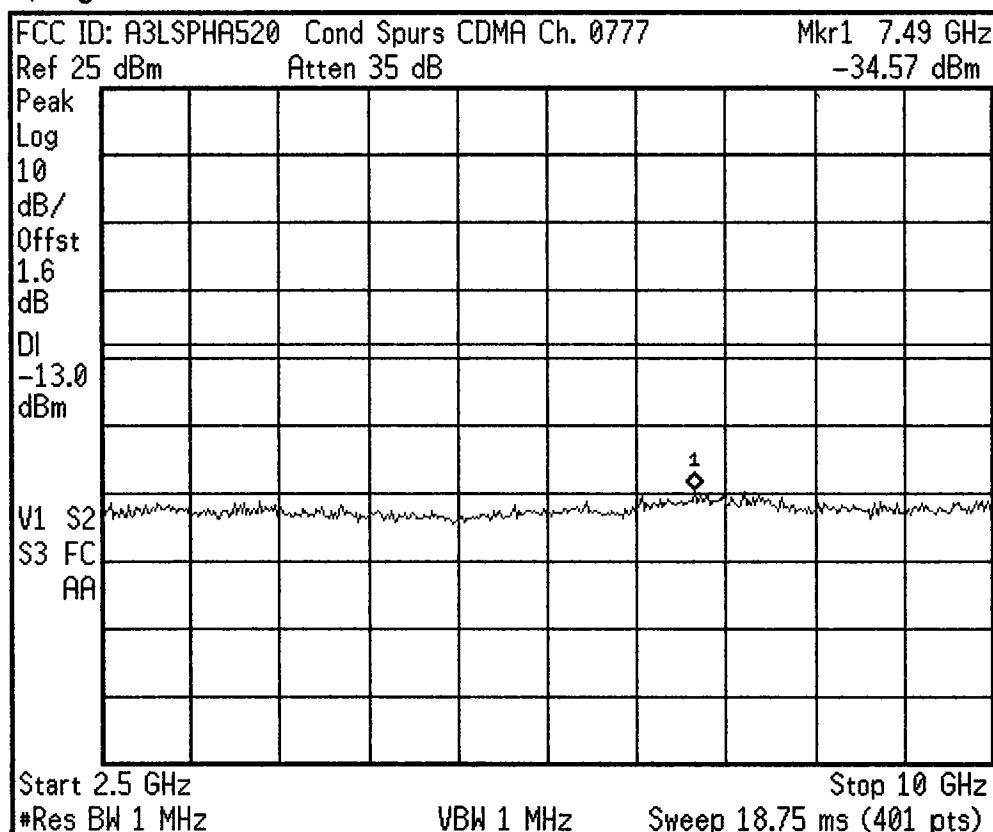
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



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

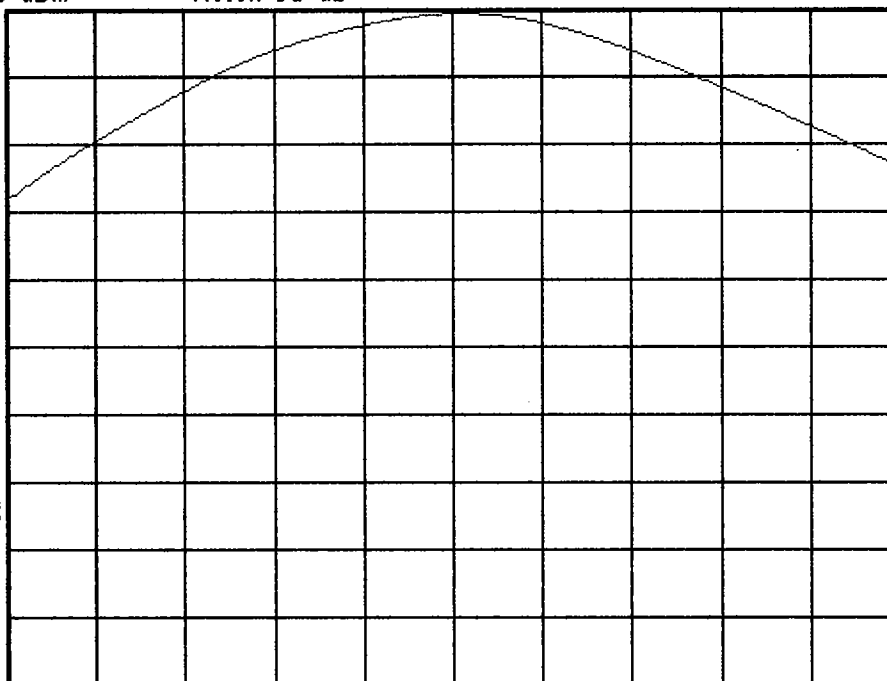
FCC ID: A3LSPA520 POWER OUT CDMA Ch. 1013

Ref 25 dBm

Atten 35 dB

Samp
Log
10
dB/
Offst
1.6
dB

VAvg
100
V1 S2
S3 FC
AA



Center 824.7 MHz

Span 10 MHz

*Res BW 3 MHz

VBW 3 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

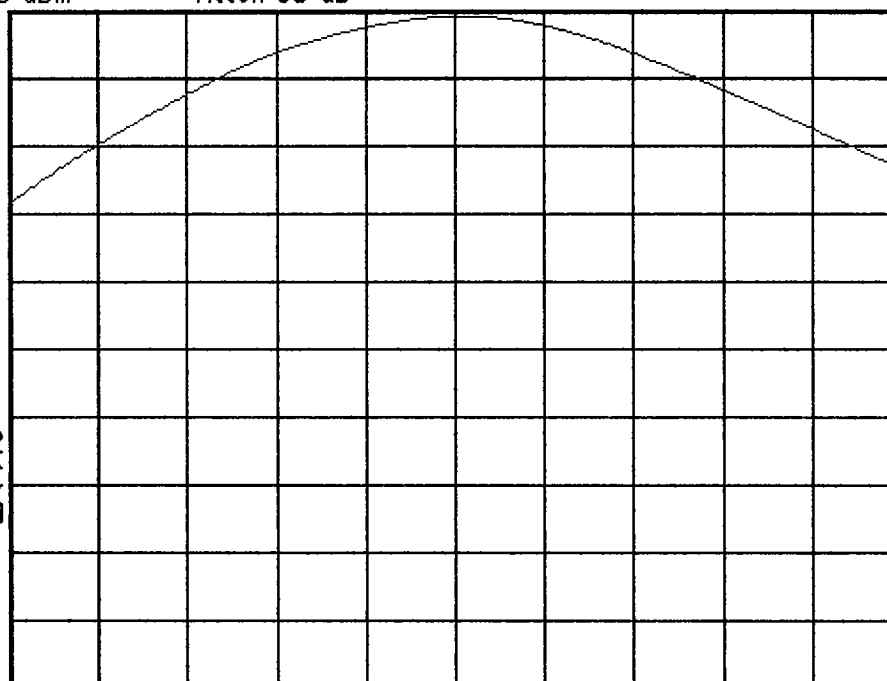
FCC ID: A3LSPA520 POWER OUT CDMA Ch. 0777

Ref 25 dBm

Atten 35 dB

Samp
Log
10
dB/
Offst
1.6
dB

VAvg
100
V1 S2
S3 FC
AA



Center 848.3 MHz

Span 10 MHz

*Res BW 3 MHz

VBW 3 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

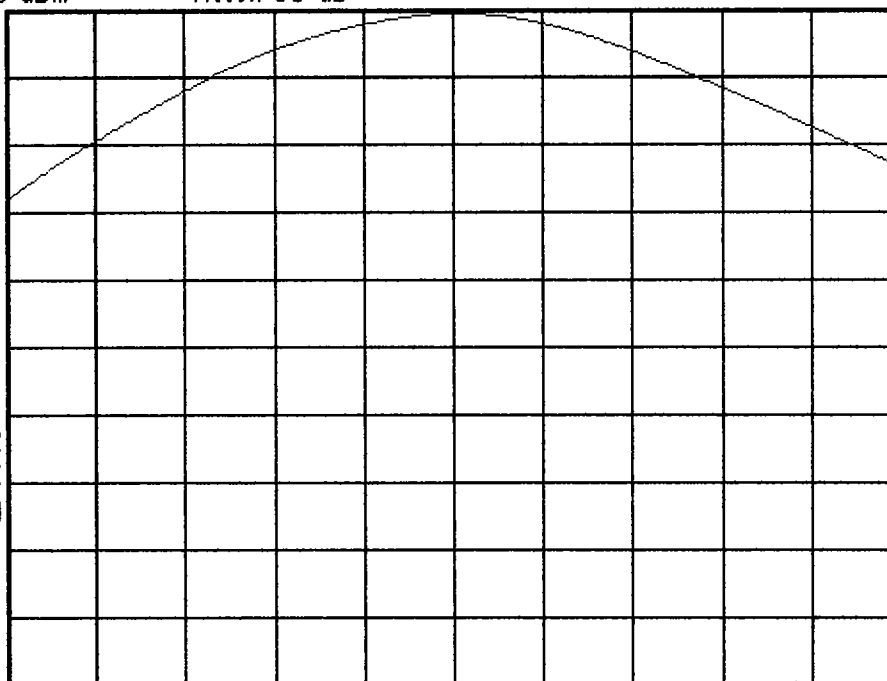
Agilent

FCC ID: A3LSPA520 POWER OUT CDMA Ch. 0363

Ref 25 dBm Atten 35 dB

Samp
Log
10
dB/
Offst
1.6
dB

VAvg
100
V1 S2
S3 FC
AA



Center 835.9 MHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz

Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

835.900000 MHz

Start Freq

830.900000 MHz

Stop Freq

840.900000 MHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

Agilent

Ch Freq 835.9 MHz

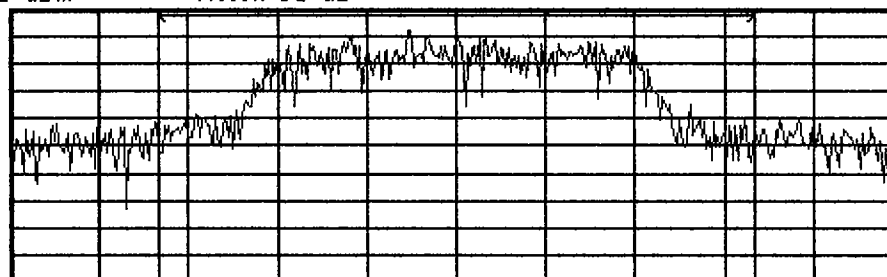
Trig Free

Channel Power

FCC ID: A3LSPA520 POWER OUT CDMA Ch. 0363

Ref 25 dBm Atten 35 dB

*Avg
Log
10
dB/
Offst
1.6
dB



Center 835.9 MHz

Res BW 30 kHz

VBW 300 kHz

Span 3 MHz

Sweep 8 ms (401 pts)

Freq/Channel

Center Freq

835.900000 MHz

Start Freq

834.400000 MHz

Stop Freq

837.400000 MHz

CF Step

300.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

Channel Power

25.00 dBm /2.0000 MHz

Power Spectral Density

-38.01 dBm/Hz

* Agilent

FCC ID: A3LSPA520 BAND EDGE CDMA Ch. 1013

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

1.6

dB

DI

-13.0

dBm

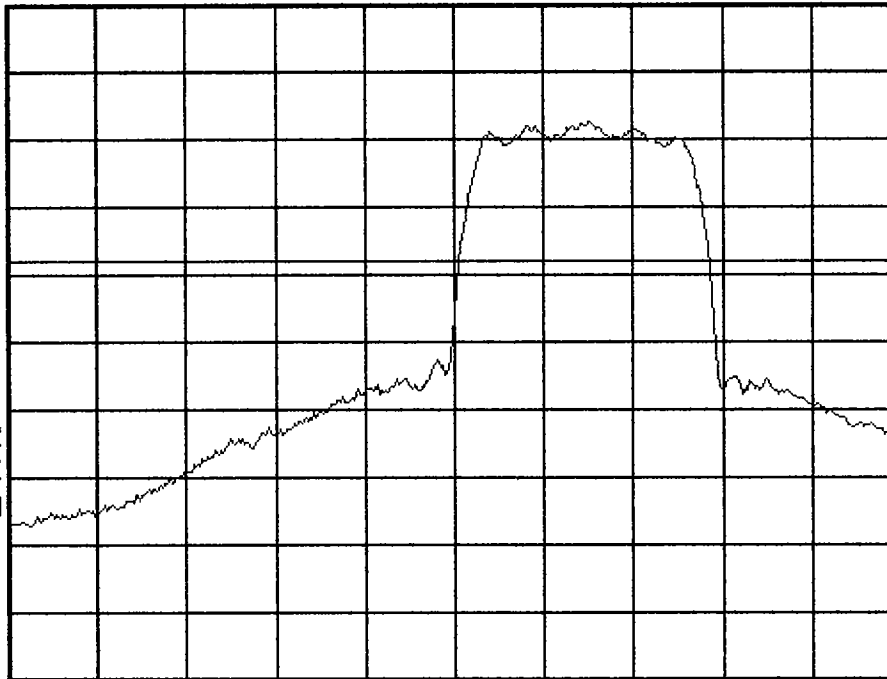
VAvg

100

V1 S2

S3 FC

AA



Center 824 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

FCC ID: A3LSPA520 BAND EDGE CDMA Ch. 0777

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

1.6

dB

DI

-13.0

dBm

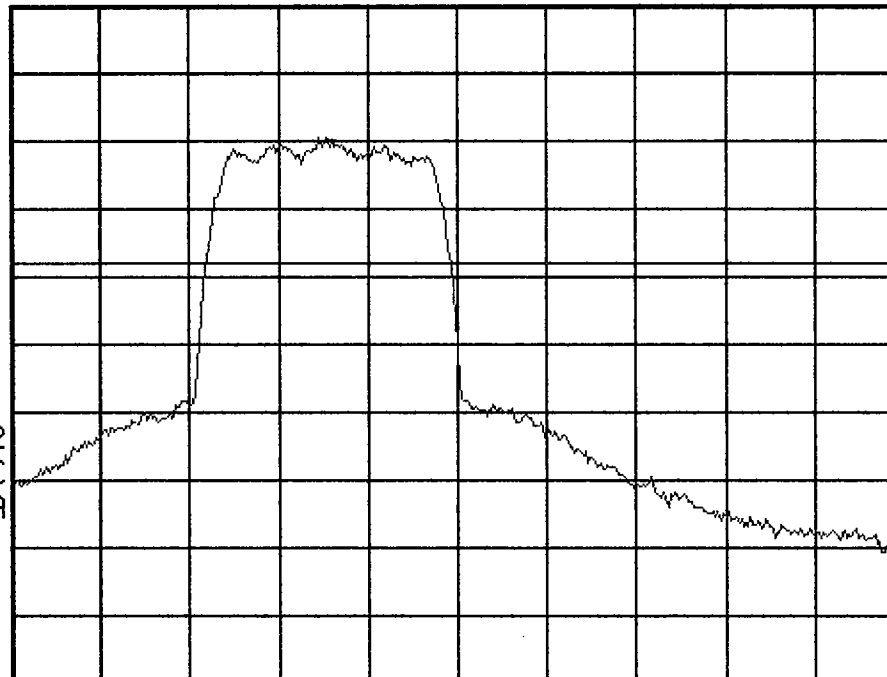
VAvg

100

V1 S2

S3 FC

AA



Center 849 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

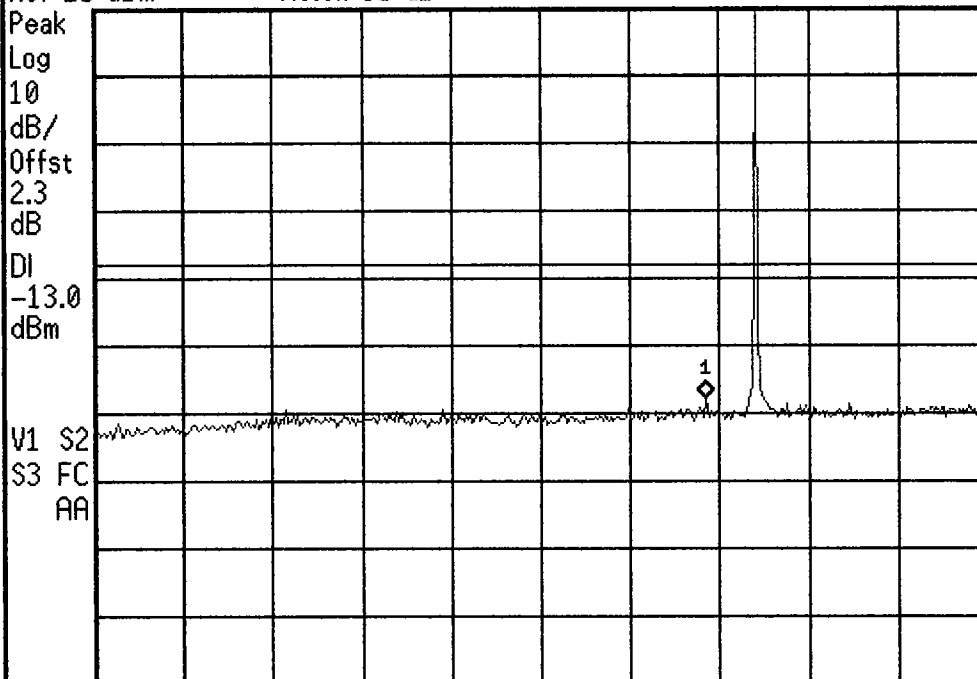
Scale Type

Log Lin

Agilent

FCC ID: A3LSPA520 Cond Spurs PCS Ch. 0025 Mkr1 1.716 GHz

Ref 25 dBm Atten 35 dB -32.81 dBm



Start 10 MHz Stop 2.5 GHz
*Res BW 1 MHz VBW 1 MHz Sweep 4.15 ms (401 pts)

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

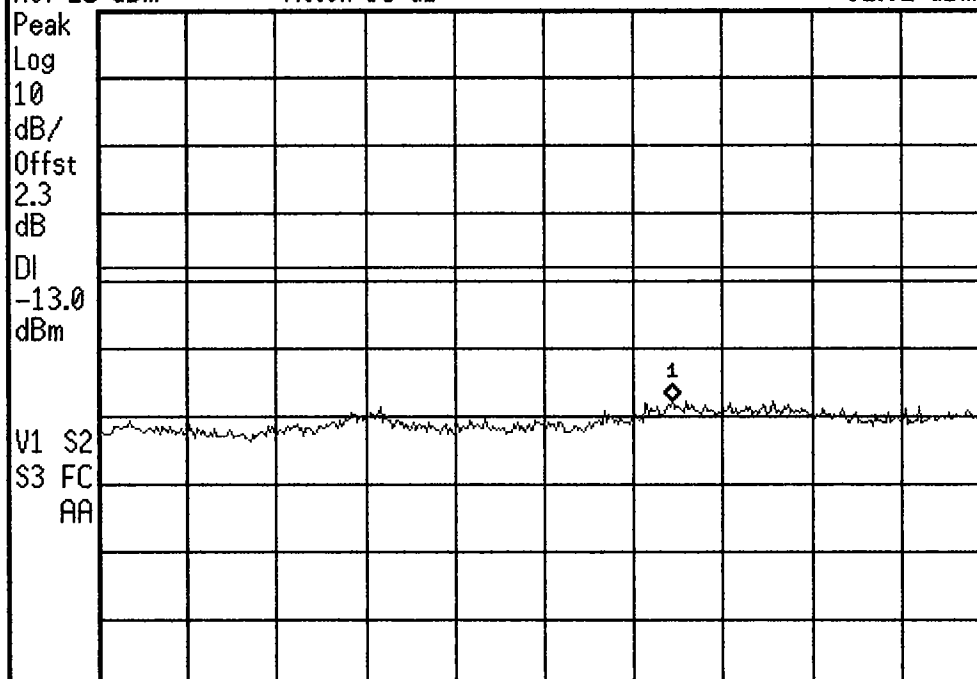
Scale Type

Log Lin

Agilent

FCC ID: A3LSPA520 Cond Spurs PCS Ch. 0025 Mkr1 13.74 GHz

Ref 25 dBm Atten 35 dB -32.62 dBm



Start 2.5 GHz Stop 20 GHz
*Res BW 1 MHz VBW 1 MHz Sweep 175 ms (401 pts)

Freq/Channel

Center Freq

11.2500000 GHz

Start Freq

2.50000000 GHz

Stop Freq

20.0000000 GHz

CF Step

1.75000000 GHz

Auto Man

Freq Offset

0.00000000 Hz

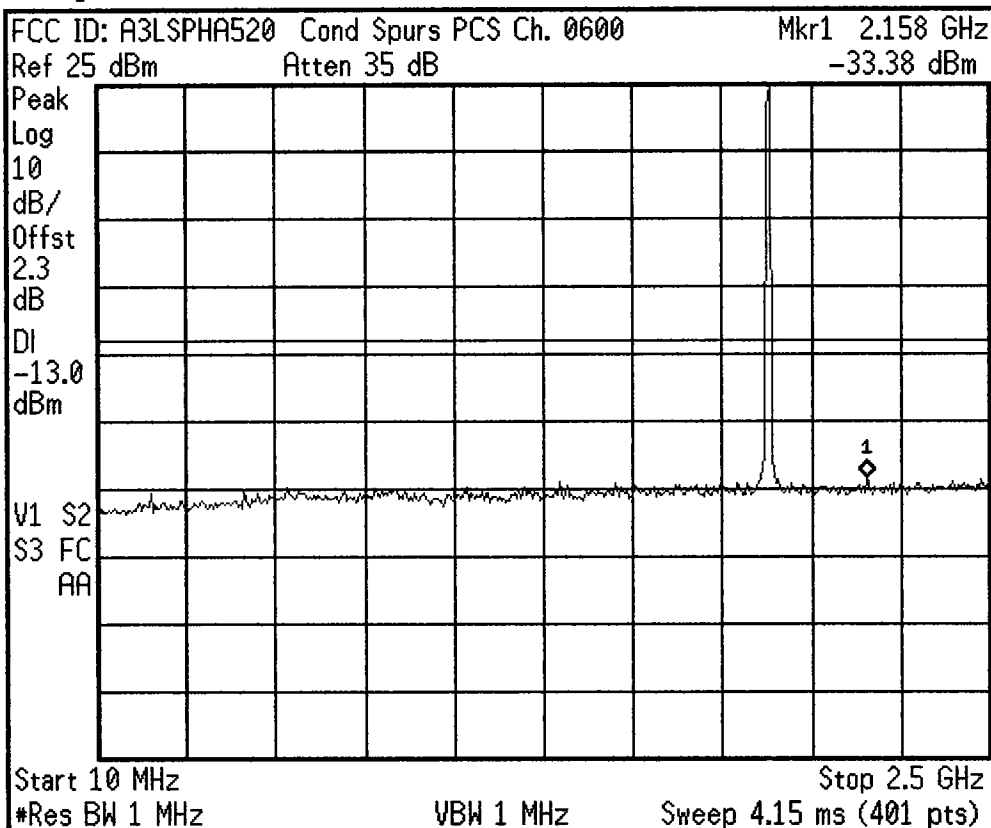
Signal Track

On Off

Scale Type

Log Lin

* Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

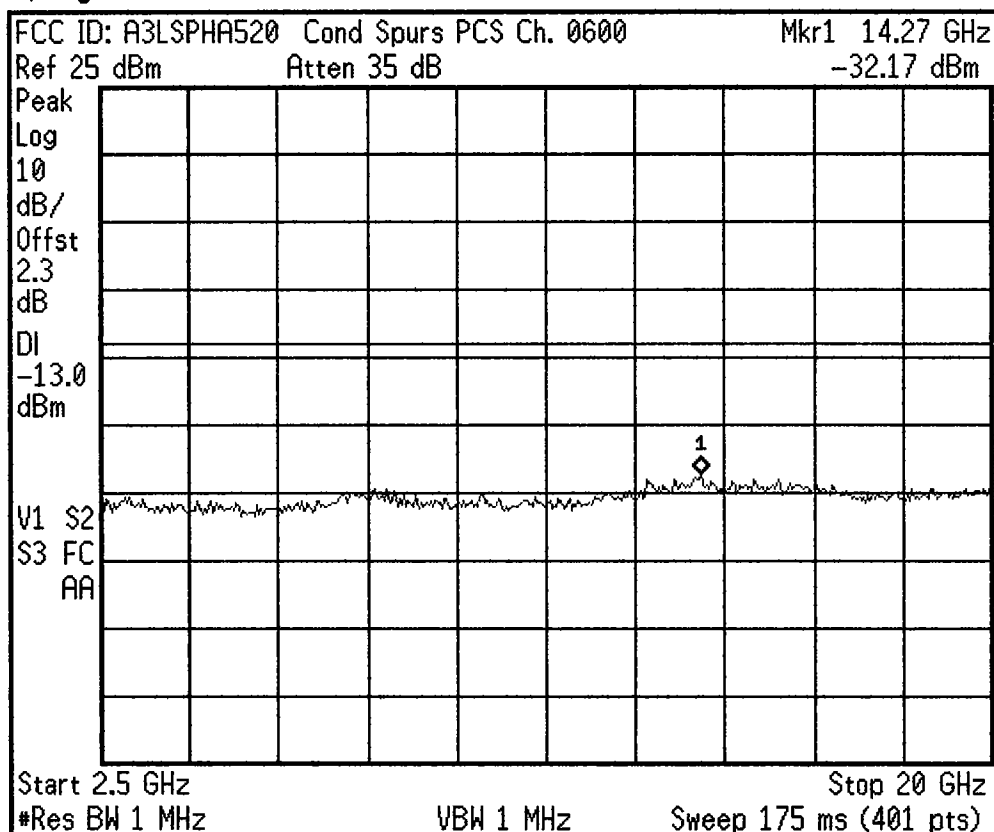
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 11.2500000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 20.0000000 GHz

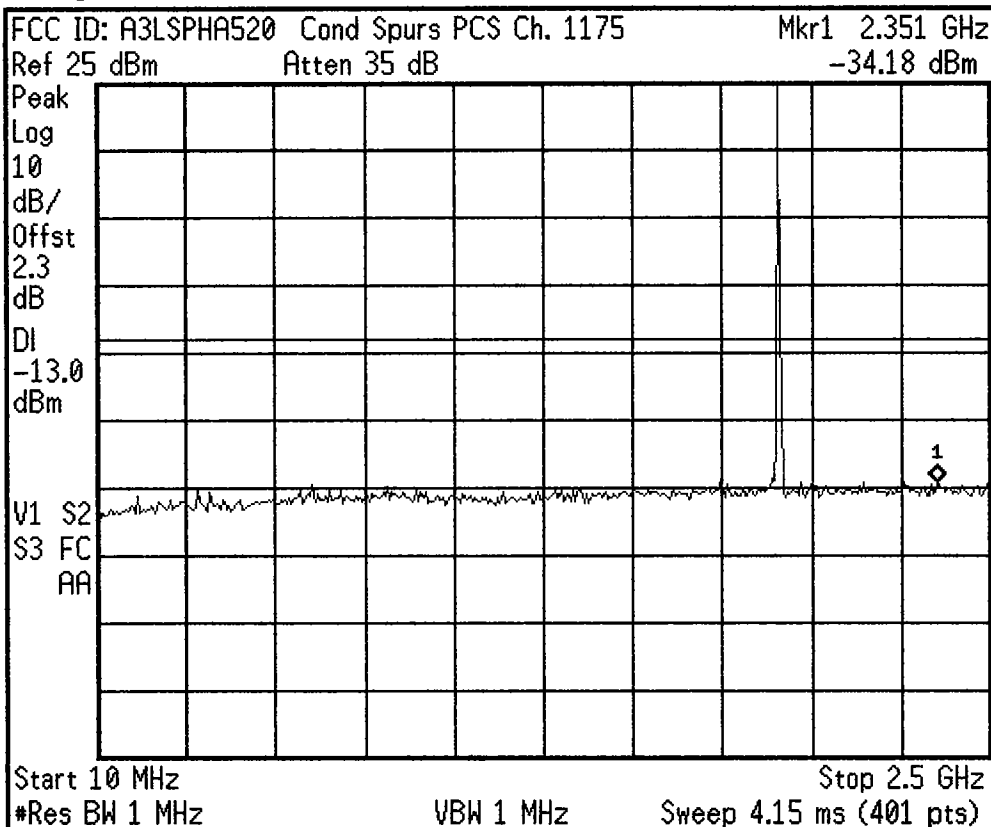
CF Step
 1.75000000 GHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 1.25500000 GHz

Start Freq
 10.0000000 MHz

Stop Freq
 2.50000000 GHz

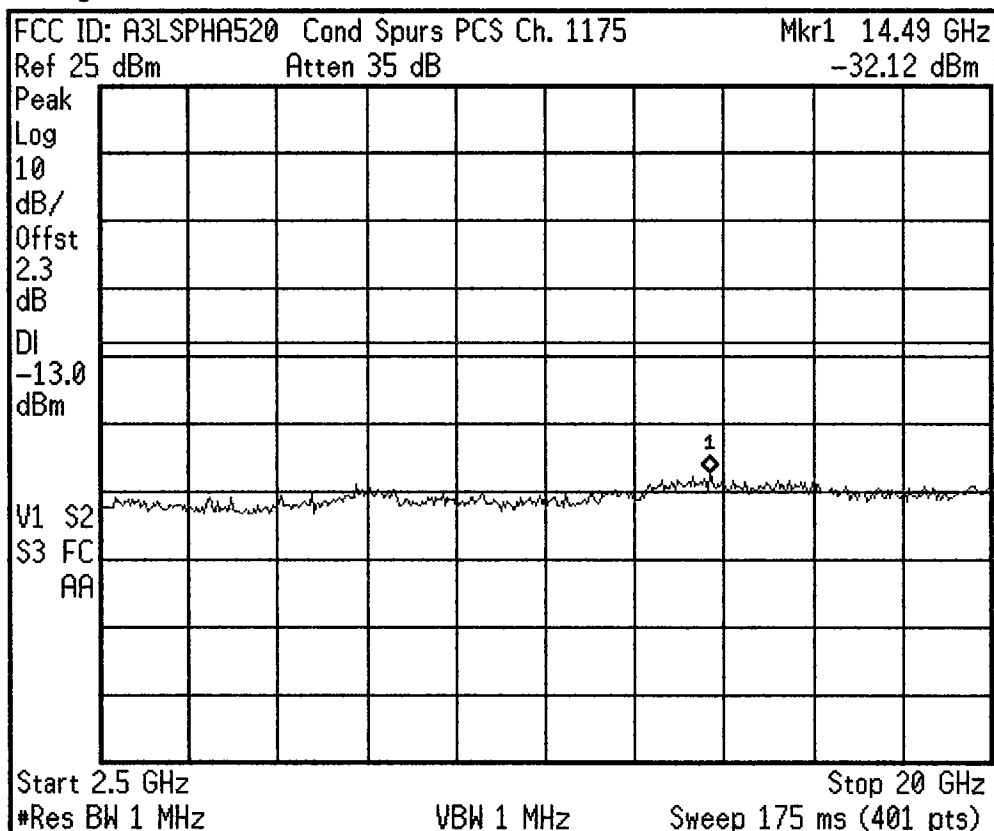
CF Step
 249.000000 MHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 11.2500000 GHz

Start Freq
 2.50000000 GHz

Stop Freq
 20.0000000 GHz

CF Step
 1.75000000 GHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent

FCC ID: A3LSPA520 POWER OUT PCS Ch. 0600

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

2.3

dB

VAvg

100

V1 S2

S3 FC

AA

Center 1.88 GHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz

Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

1.88000000 GHz

Start Freq

1.87500000 GHz

Stop Freq

1.88500000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

✱ Agilent

FCC ID: A3LSPA520 POWER OUT PCS Ch. 1175

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

2.3

dB

VAvg

100

V1 S2

S3 FC

AA

Center 1.909 GHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz

Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

1.90900000 GHz

Start Freq

1.90400000 GHz

Stop Freq

1.91400000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

✱ Agilent

FCC ID: A3LSPHA520 POWER OUT PCS Ch. 0025

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

2.3

dB

VAvg

100

V1 S2

S3 FC

AA

Center 1.851 GHz

*Res BW 3 MHz

VBW 3 MHz

Span 10 MHz

Sweep 4 ms (401 pts)

Freq/Channel

Center Freq

1.85125000 GHz

Start Freq

1.84625000 GHz

Stop Freq

1.85625000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

✱ Agilent

Ch Freq 1.85125 GHz

Trig Free

Channel Power

FCC ID: A3LSPHA520 POWER OUT PCS Ch. 0025

Ref 25 dBm

Atten 35 dB

*Avg

Log

10

dB/

Offst

2.3

dB

Center 1.851 GHz

Res BW 30 kHz

VBW 300 kHz

Span 3 MHz

Sweep 8 ms (401 pts)

Freq/Channel

Center Freq

1.85125000 GHz

Start Freq

1.84975000 GHz

Stop Freq

1.85275000 GHz

CF Step

300.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

Channel Power

25.03 dBm /2.0000 MHz

Power Spectral Density

-37.98 dBm/Hz

Agilent

Ch Freq 1.88 GHz Trig Free
Occupied Bandwidth

FCC ID: A3LSPHA520 POWER OUT PCS Ch. 0600

Ref 25 dBm

Atten 35 dB

*Samp

Log

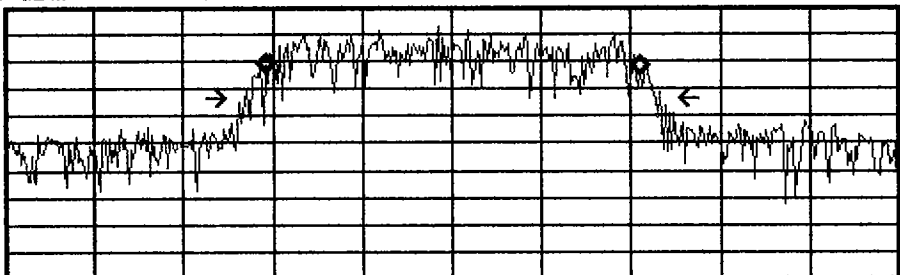
10

dB/

Offst

2.3

dB



Center 1.88 GHz

Span 3 MHz

*Res BW 30 kHz

*VBW 300 kHz

Sweep 5.288 ms (401 pts)

Occupied Bandwidth

1.2505 MHz

Occ BW % Pwr 99.00 %

x dB -26.00 dB

Transmit Freq Error

6.152 kHz

x dB Bandwidth

1.396 MHz*

Freq/Channel

Center Freq

1.88000000 GHz

Start Freq

1.87850000 GHz

Stop Freq

1.88150000 GHz

CF Step

300.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

Agilent

FCC ID: A3LSPA520 BAND EDGE PCS Ch. 1175

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

2.3

dB

DI

-13.0

dBm

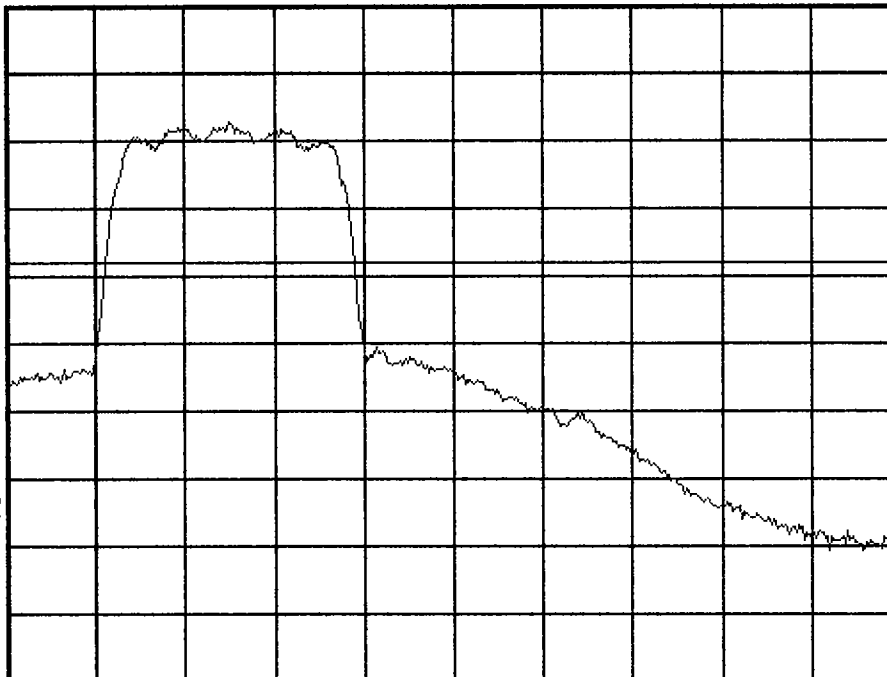
VAvg

100

V1 S2

S3 FC

AA



Center 1.91 GHz

Span 5 MHz

#Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq

1.91000000 GHz

Start Freq

1.90750000 GHz

Stop Freq

1.91250000 GHz

CF Step

500.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Scale Type

Log

Lin

Agilent

FCC ID: A3LSPA520 BAND EDGE PCS Ch. 0025

Ref 25 dBm

Atten 35 dB

Samp

Log

10

dB/

Offst

2.3

dB

DI

-13.0

dBm

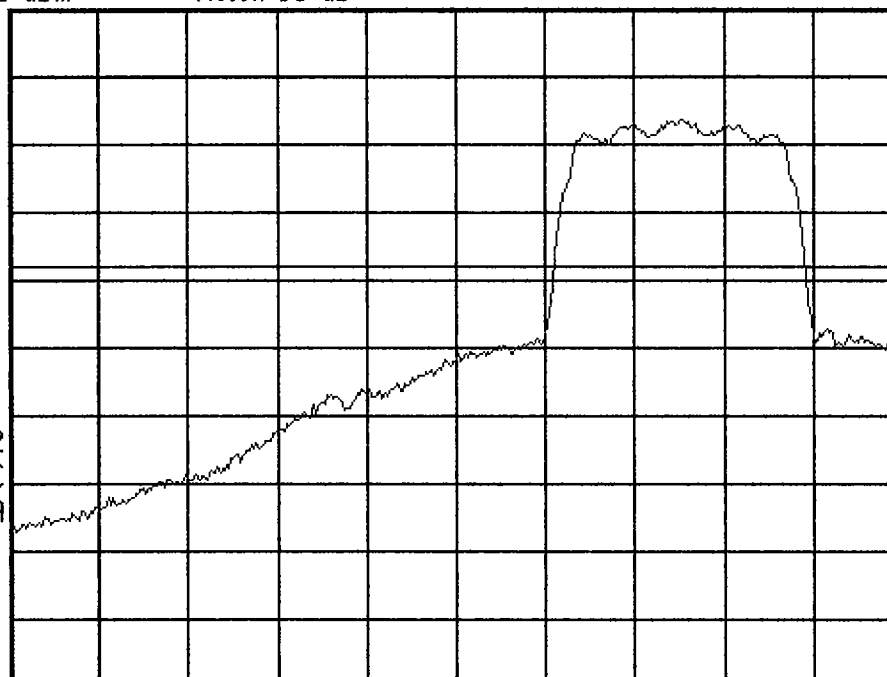
VAvg

100

V1 S2

S3 FC

AA



Center 1.85 GHz

Span 5 MHz

#Res BW 30 kHz

VBW 30 kHz

Sweep 11.32 ms (401 pts)

Freq/Channel

Center Freq

1.85000000 GHz

Start Freq

1.84750000 GHz

Stop Freq

1.85250000 GHz

CF Step

500.000000 kHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

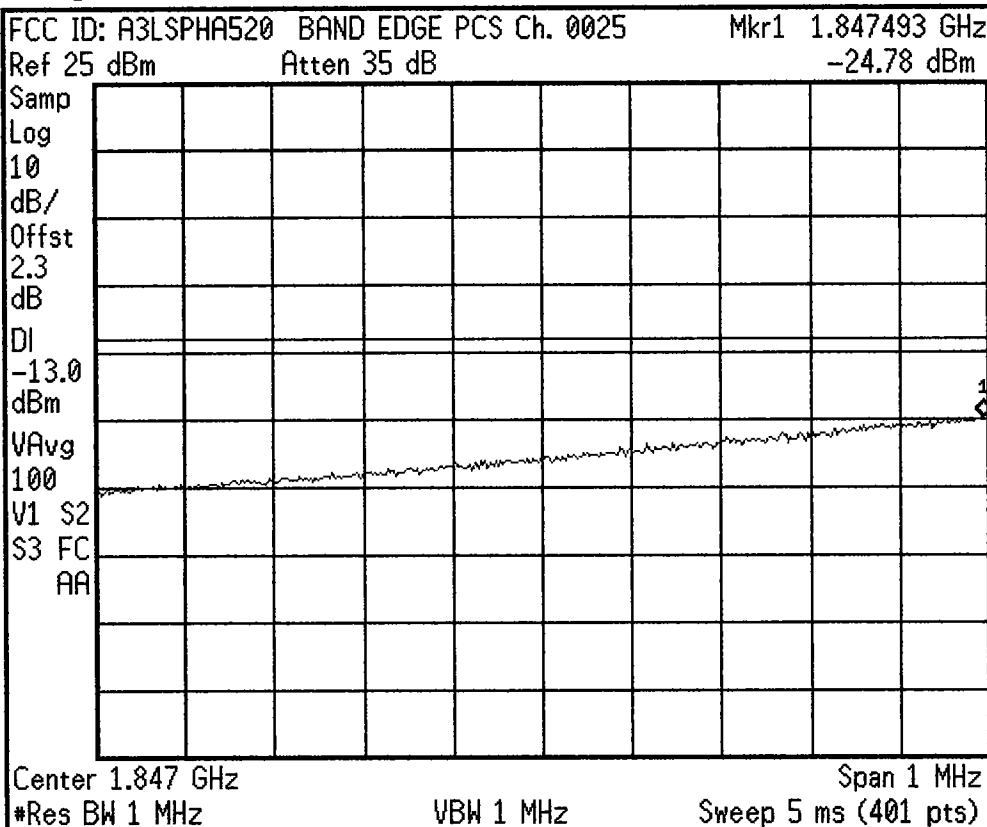
Off

Scale Type

Log

Lin

Agilent



Freq/Channel

Center Freq
 1.84700000 GHz

Start Freq
 1.84650000 GHz

Stop Freq
 1.84750000 GHz

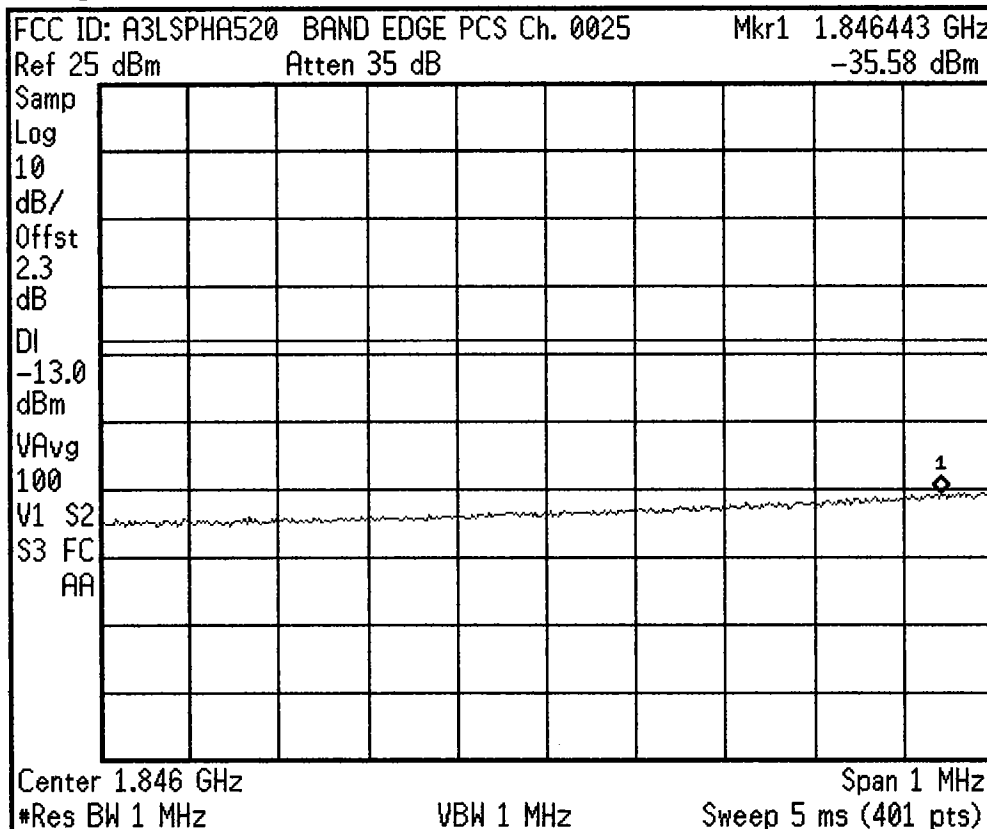
CF Step
 100.000000 kHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

Agilent



Freq/Channel

Center Freq
 1.84600000 GHz

Start Freq
 1.84550000 GHz

Stop Freq
 1.84650000 GHz

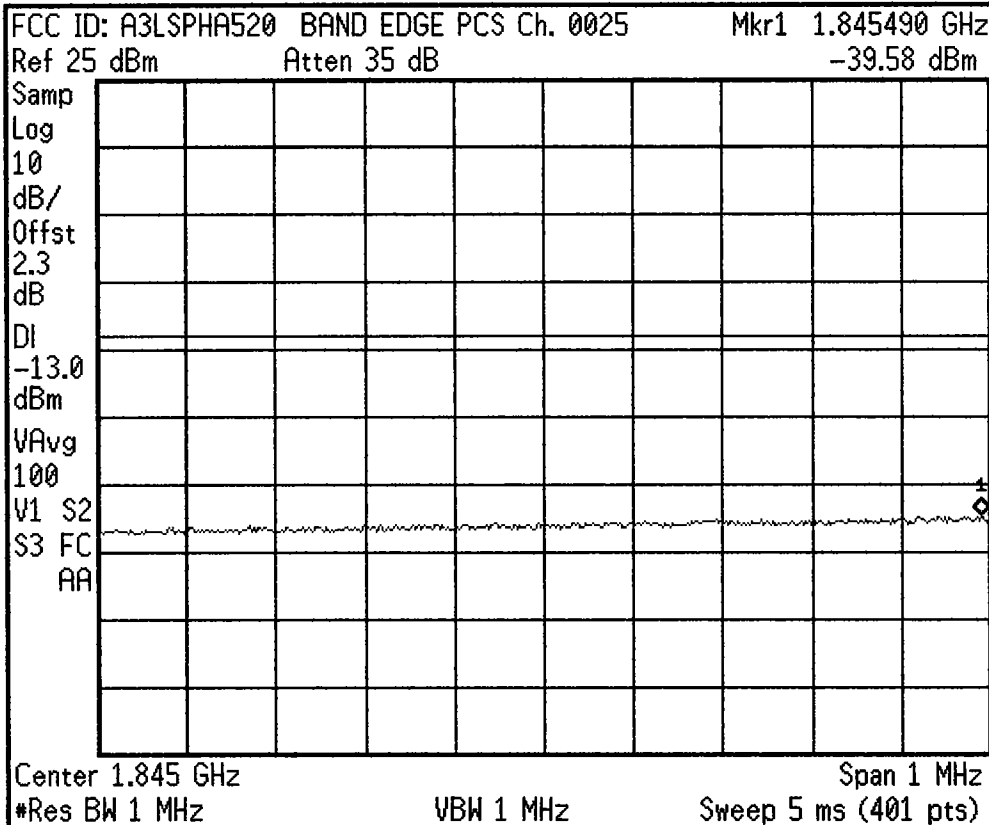
CF Step
 100.000000 kHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

✱ Agilent



Freq/Channel

Center Freq

1.84500000 GHz

Start Freq

1.84450000 GHz

Stop Freq

1.84550000 GHz

CF Step

100.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

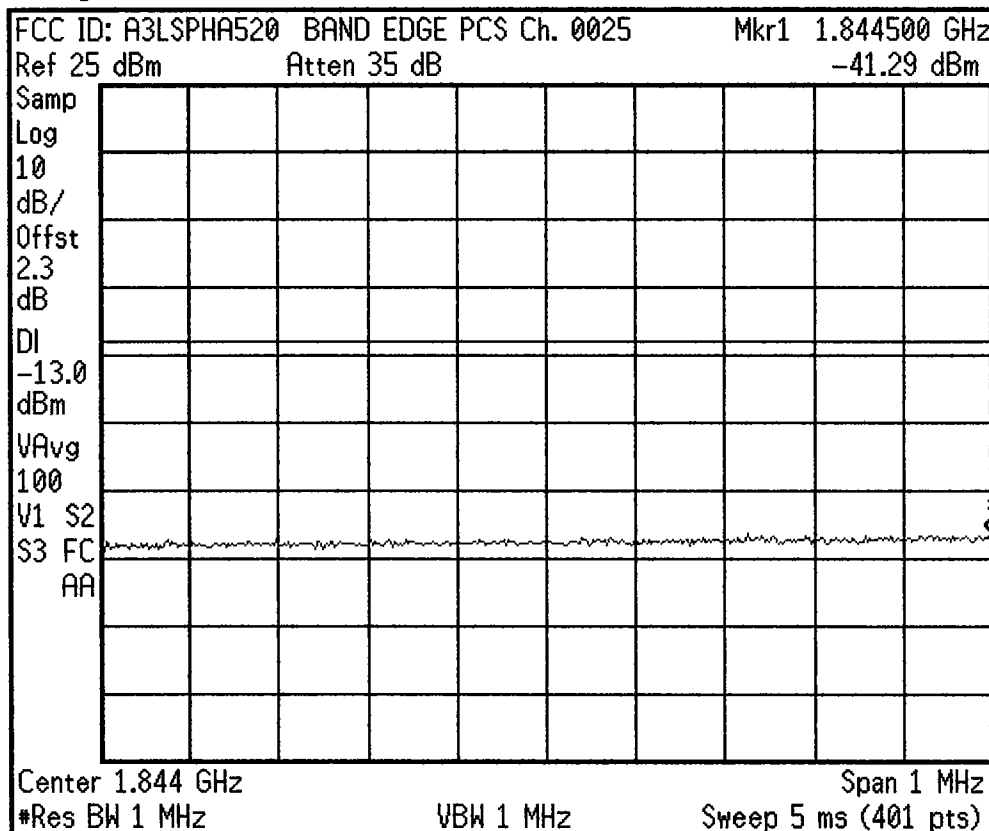
Signal Track

On Off

Scale Type

Log Lin

✱ Agilent



Freq/Channel

Center Freq

1.84400000 GHz

Start Freq

1.84350000 GHz

Stop Freq

1.84450000 GHz

CF Step

100.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

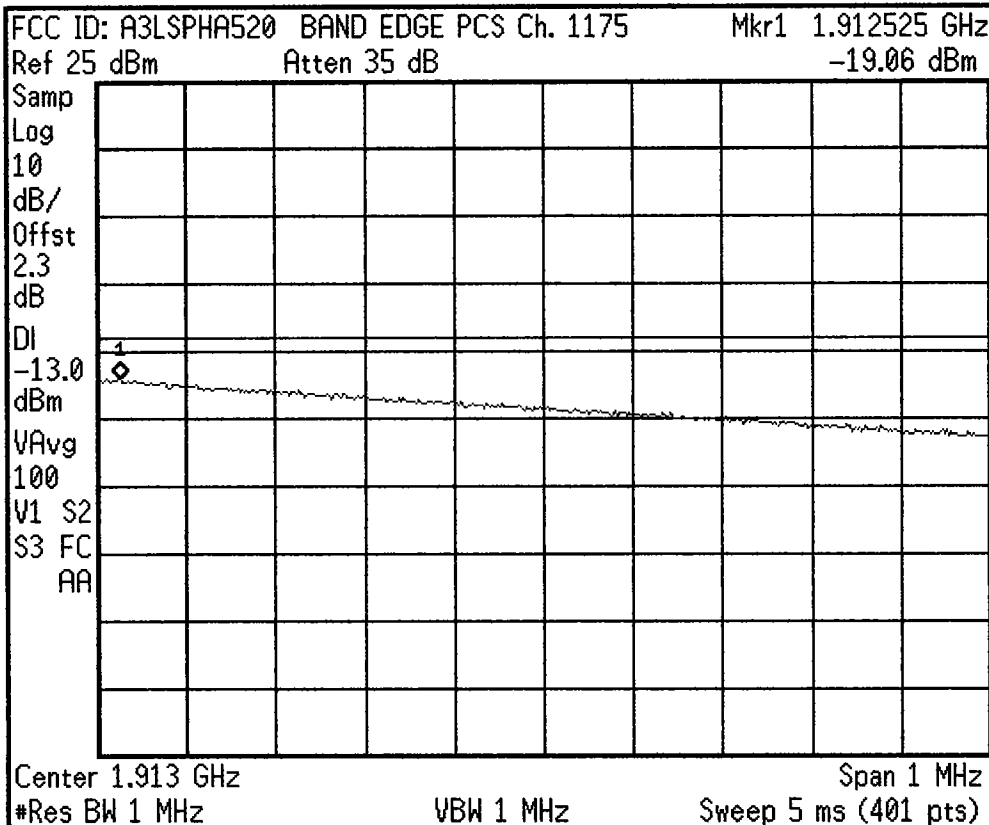
Signal Track

On Off

Scale Type

Log Lin

✱ Agilent



Freq/Channel

Center Freq

1.91300000 GHz

Start Freq

1.91250000 GHz

Stop Freq

1.91350000 GHz

CF Step

100.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

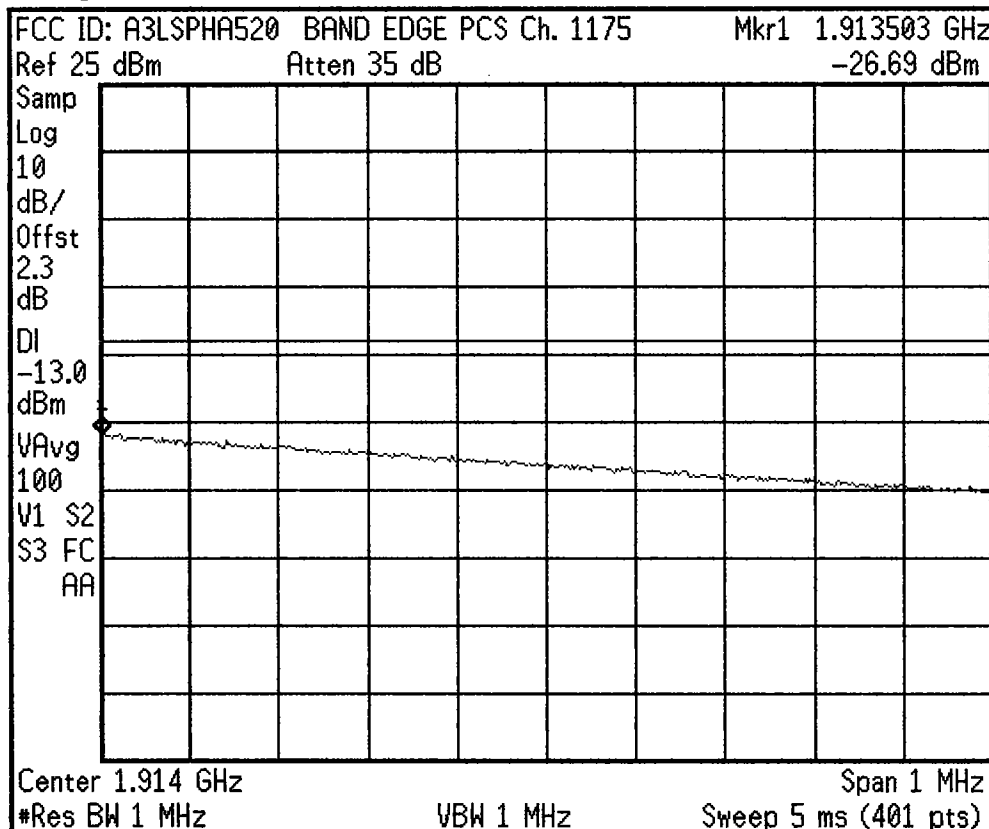
Signal Track

On Off

Scale Type

Log Lin

✱ Agilent



Freq/Channel

Center Freq

1.91400000 GHz

Start Freq

1.91350000 GHz

Stop Freq

1.91450000 GHz

CF Step

100.000000 kHz

Auto Man

Freq Offset

0.00000000 Hz

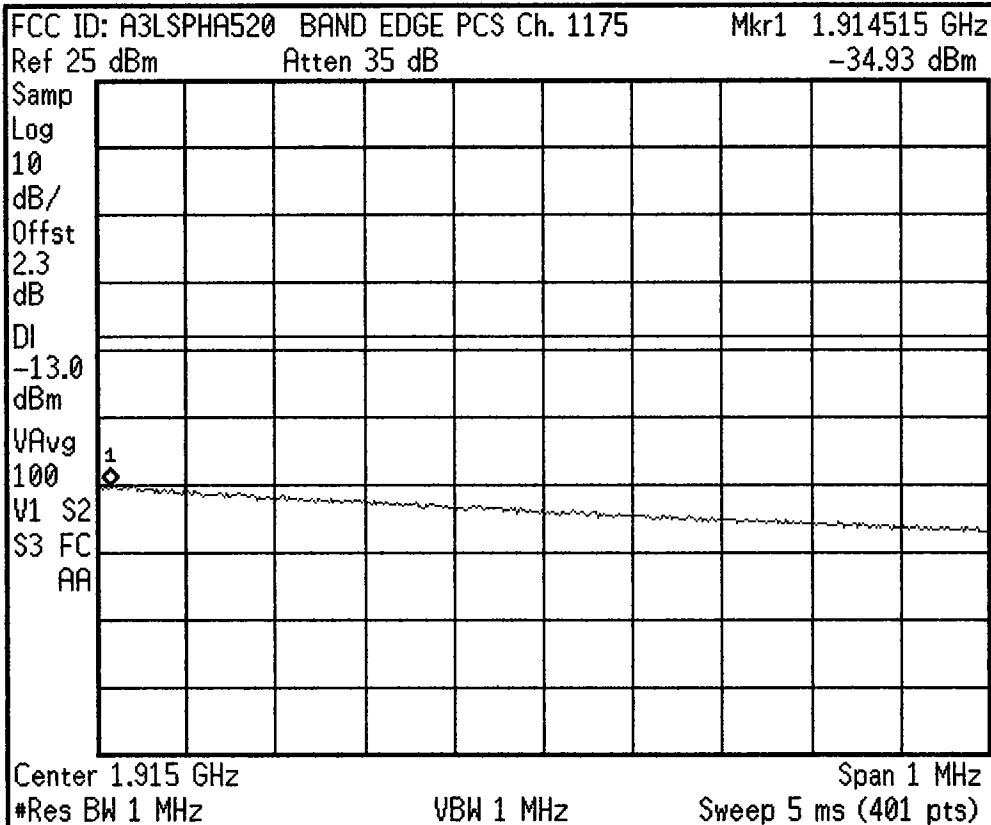
Signal Track

On Off

Scale Type

Log Lin

* Agilent



Freq/Channel

Center Freq
 1.91500000 GHz

Start Freq
 1.91450000 GHz

Stop Freq
 1.91550000 GHz

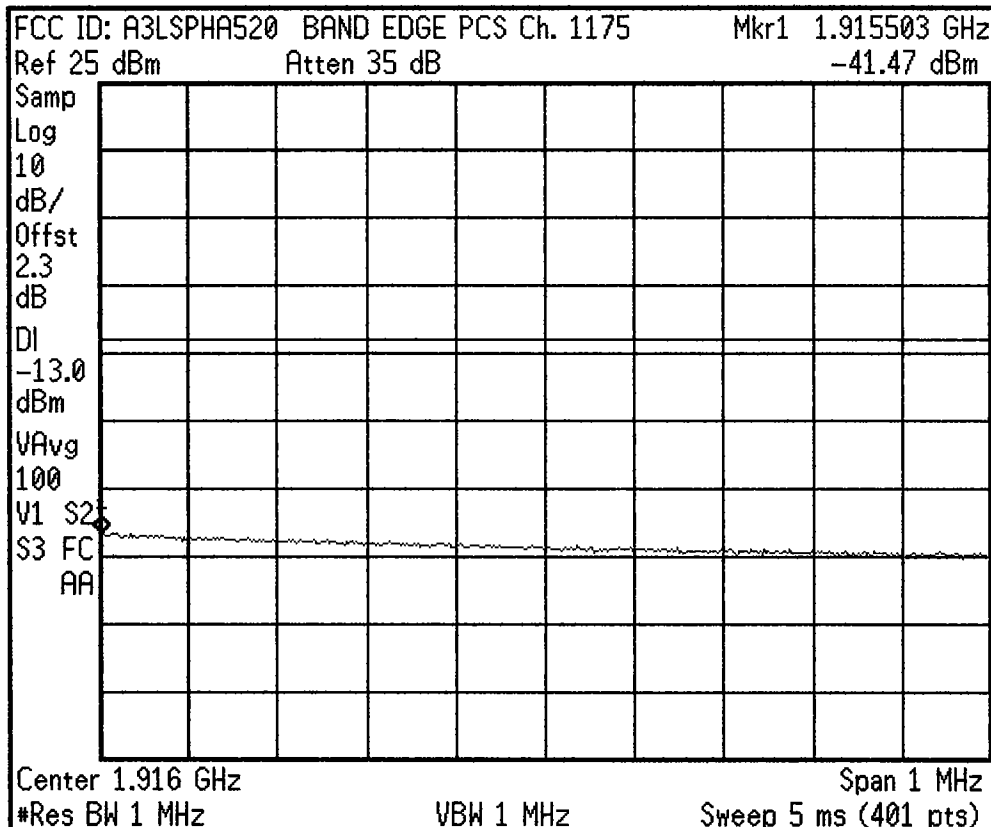
CF Step
 100.000000 kHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

* Agilent



Freq/Channel

Center Freq
 1.91600000 GHz

Start Freq
 1.91550000 GHz

Stop Freq
 1.91650000 GHz

CF Step
 100.000000 kHz
 Auto Man

Freq Offset
 0.00000000 Hz

Signal Track
 On Off

Scale Type
 Log Lin

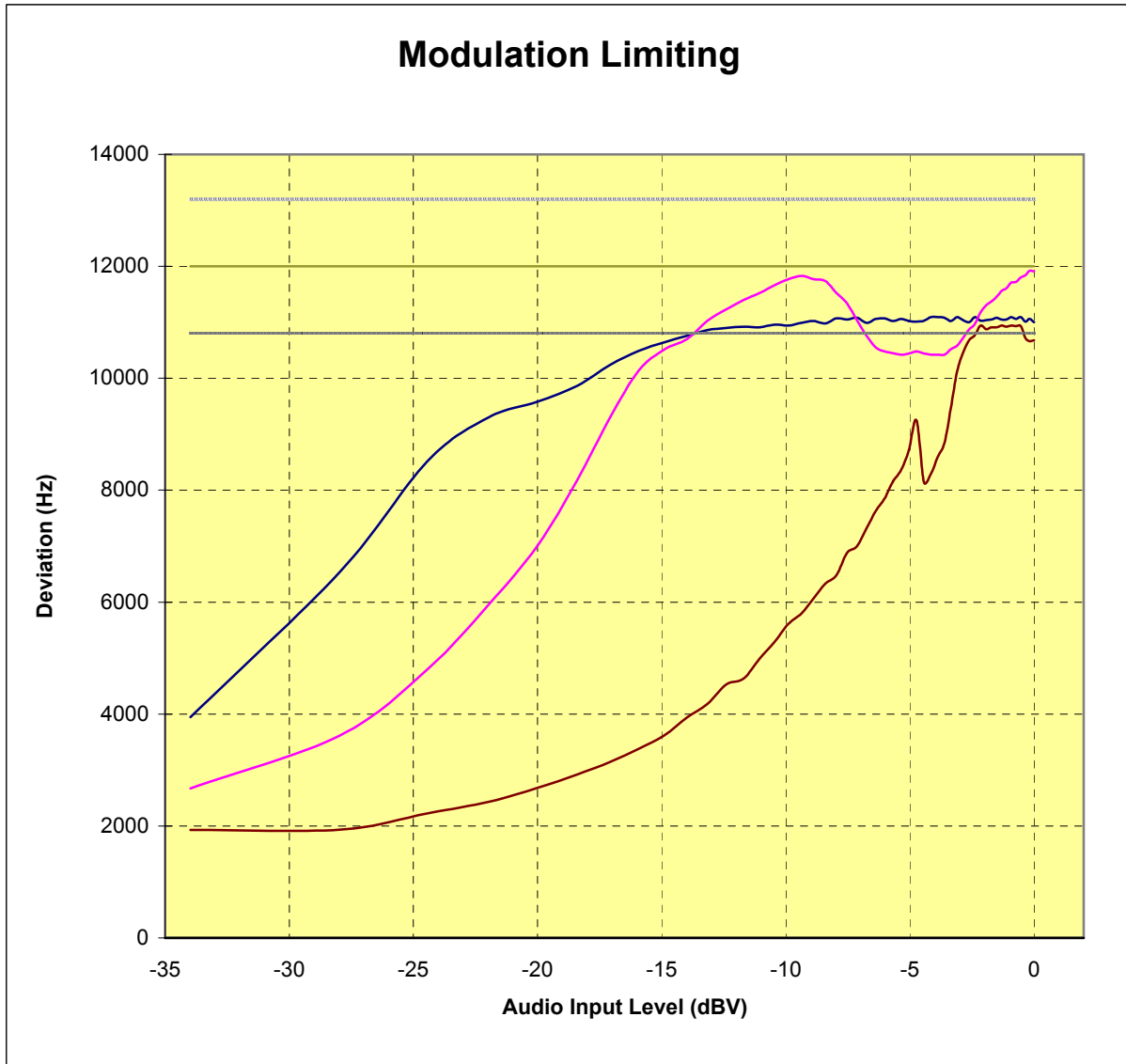
PCTEST Engineering Lab., Inc.

SUBJECT: Modulation Characteristics
FCC Part 24/22

Test Report No.: 22/24.220408155.A3L
Test Date: 04.08.2002

EUT: SAMSUNG Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)
Model: SPH-A520
FCC ID: A3LSPHA520

REFERENCE: 1 kHz = 0 dB



SAMSUNG Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)
FCC ID: A3LSPHA520

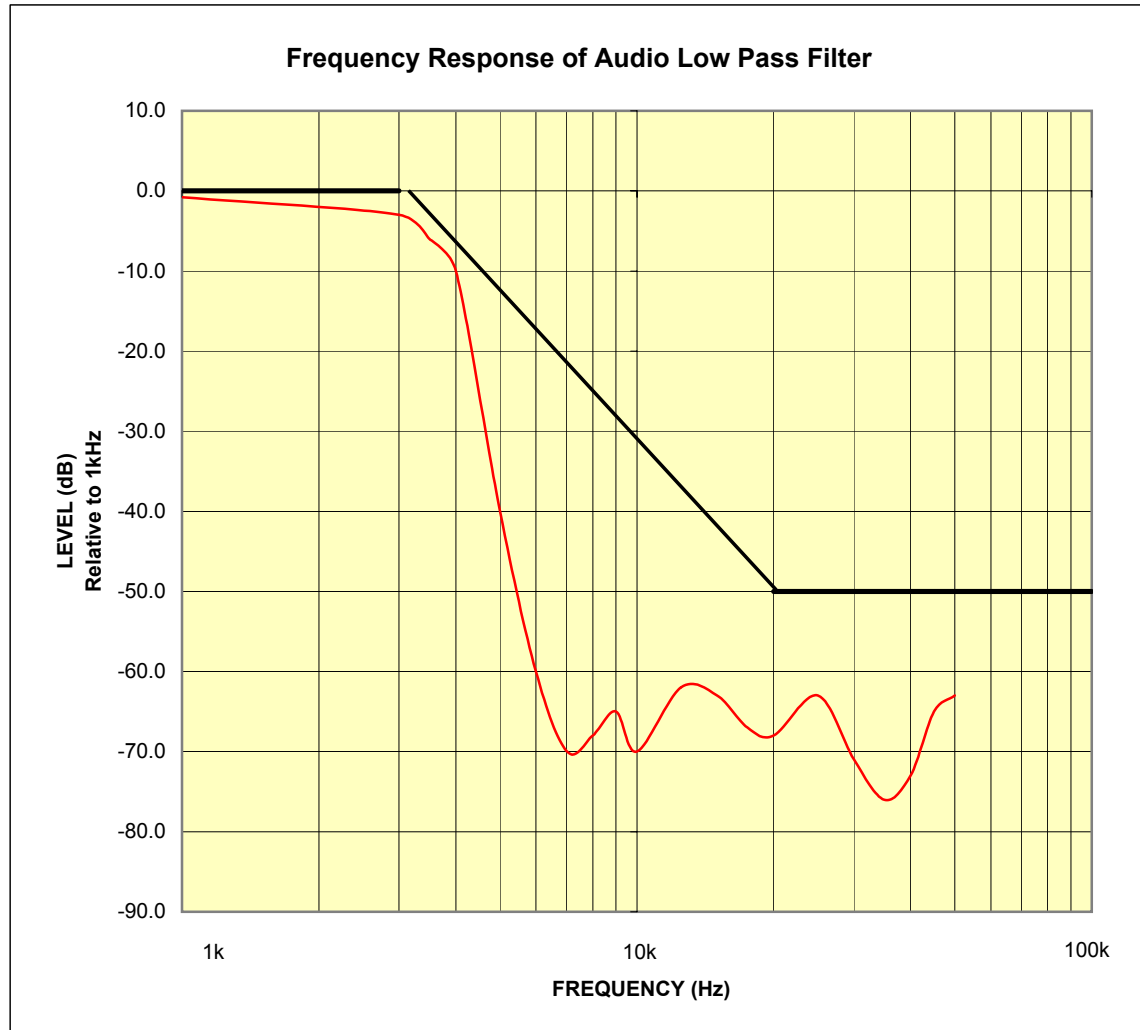
PCTEST Engineering Lab., Inc.

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SAMSUNG Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)
FCC ID: A3LSPHA520

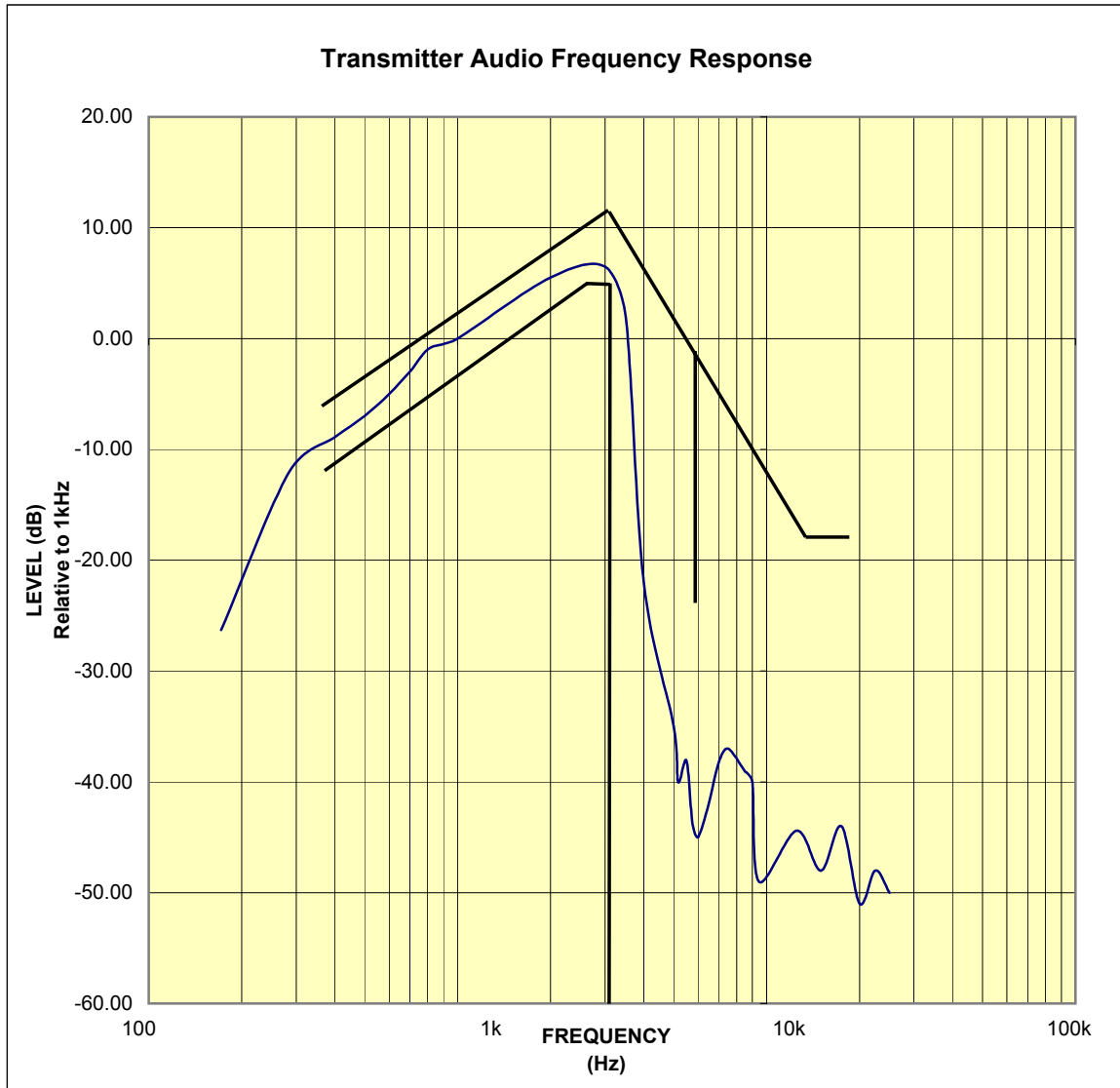
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SAMSUNG Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)
FCC ID: A3LSPHA520