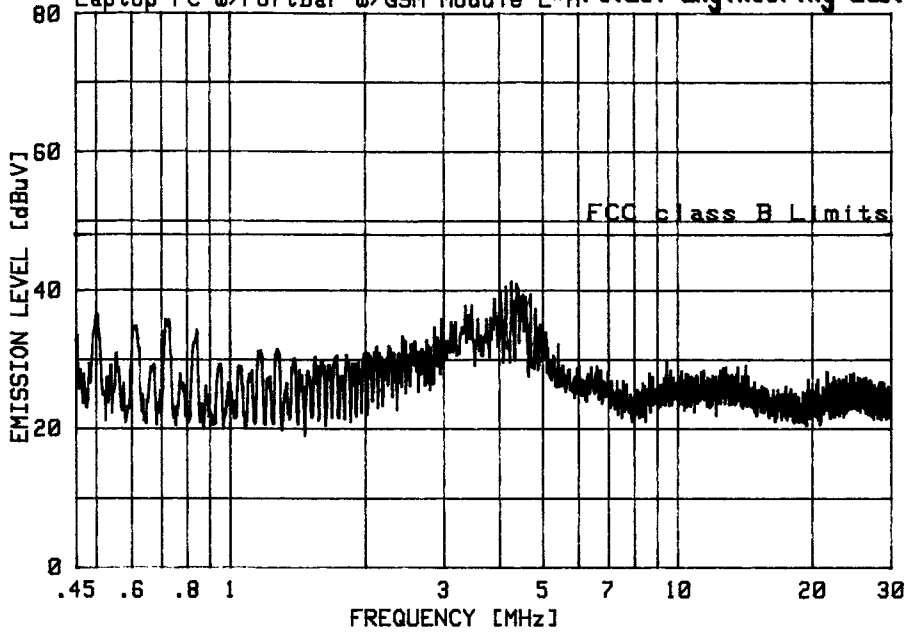


ATTACHMENT D – TEST PLOTS

PANASONIC FCC ID: ACJ9TGCF-27GSM

Laptop PC w/PortBar w/GSM Module L-A

PCTEST Engineering Lab.

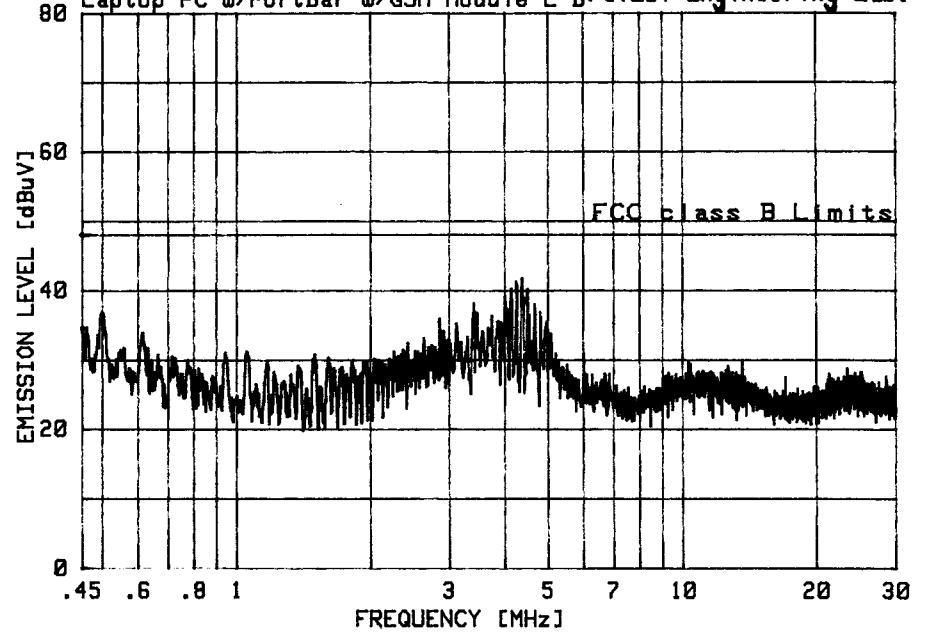


No.	Freq. [MHz]	Quasi-Pk [dBuV]	Average [dBuV]	QP-AV [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
1	4.241	39.45	-	-	39.45	48.00	-8.55
2	4.352	39.56	-	-	39.56	48.00	-8.44
3	4.130	38.64	-	-	38.64	48.00	-9.36
4	4.016	37.69	-	-	37.69	48.00	-10.31
5	4.690	37.49	-	-	37.49	48.00	-10.51
6	4.467	39.04	-	-	39.04	48.00	-8.96
7	4.578	38.63	-	-	38.63	48.00	-9.37
8	3.903	36.75	-	-	36.75	48.00	-11.25
9	3.457	33.78	-	-	33.78	48.00	-14.22
10	4.797	34.90	-	-	34.90	48.00	-13.10

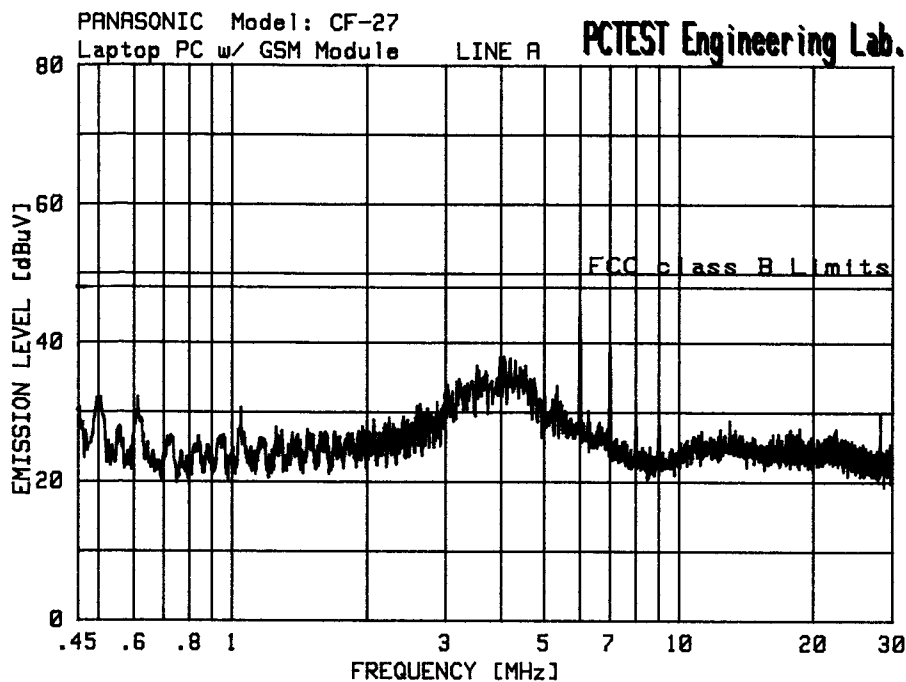
PANASONIC FCC ID: ACJ9TGCF-27GSM

Laptop PC w/PortBar w/GSM Module L-B

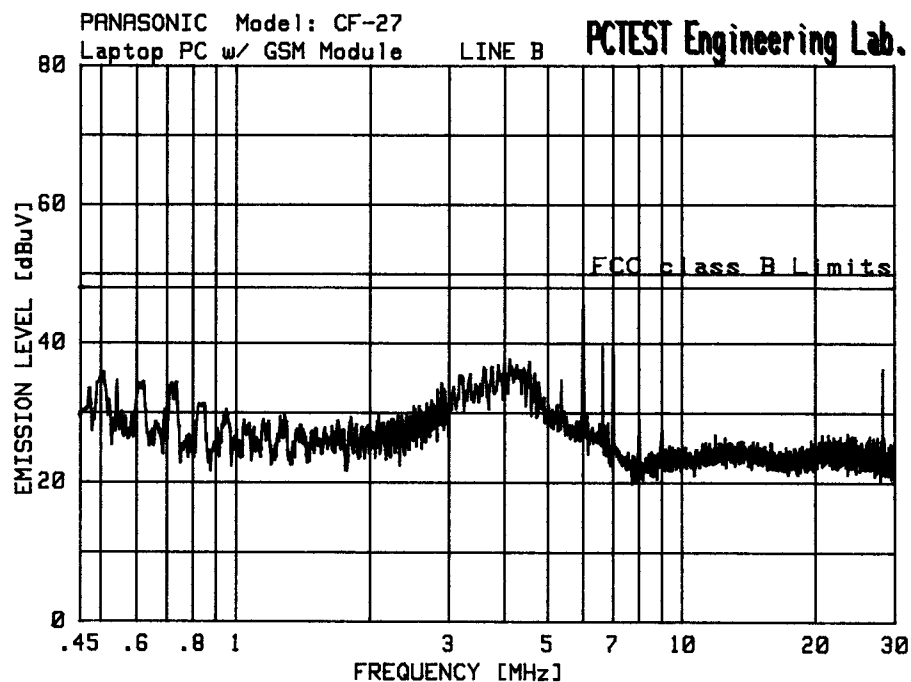
PCTEST Engineering Lab.



No.	Freq. [MHz]	Quasi-Pk [dBuV]	Average [dBuV]	QP-AV [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
1	4.353	39.39	-	-	39.39	48.00	-8.61
2	4.242	39.23	-	-	39.23	48.00	-8.77
3	4.132	38.31	-	-	38.31	48.00	-9.69
4	4.469	38.95	-	-	38.95	48.00	-9.05
5	4.020	37.47	-	-	37.47	48.00	-10.53
6	3.412	33.19	-	-	33.19	48.00	-14.81
7	4.581	38.22	-	-	38.22	48.00	-9.78
8	4.806	35.28	-	-	35.28	48.00	-12.72
9	.496	35.23	-	-	35.23	48.00	-12.77
10	3.684	35.45	-	-	35.45	48.00	-12.55



No.	Freq. [MHz]	Quasi-Pk [dBuV]	Average [dBuV]	QP-RV [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
1	6.002	43.67	-	-	43.67	48.00	-4.33
2	7.002	39.02	-	-	39.02	48.00	-8.98
3	4.078	34.34	-	-	34.34	48.00	-13.66
4	3.966	33.69	-	-	33.69	48.00	-14.31
5	4.187	34.06	-	-	34.06	48.00	-13.94
6	3.626	33.98	-	-	33.98	48.00	-14.02
7	4.513	32.98	-	-	32.98	48.00	-15.02
8	4.405	34.24	-	-	34.24	48.00	-13.76
9	4.736	30.08	-	-	30.08	48.00	-17.92
10	3.178	29.42	-	-	29.42	48.00	-18.58



No.	Freq. [MHz]	Quasi-Pk [dBuV]	Average [dBuV]	QP-RV [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
1	6.002	44.64	-	-	44.64	48.00	-3.36
2	7.002	39.65	-	-	39.65	48.00	-8.35
3	6.603	25.99	-	-	25.99	48.00	-22.01
4	4.093	34.61	-	-	34.61	48.00	-13.39
5	4.542	33.72	-	-	33.72	48.00	-14.28
6	3.978	33.87	-	-	33.87	48.00	-14.13
7	3.864	33.06	-	-	33.06	48.00	-14.94
8	3.627	33.20	-	-	33.20	48.00	-14.80
9	3.712	34.48	-	-	34.48	48.00	-13.52
10	28.226	32.51	-	-	32.51	48.00	-15.49

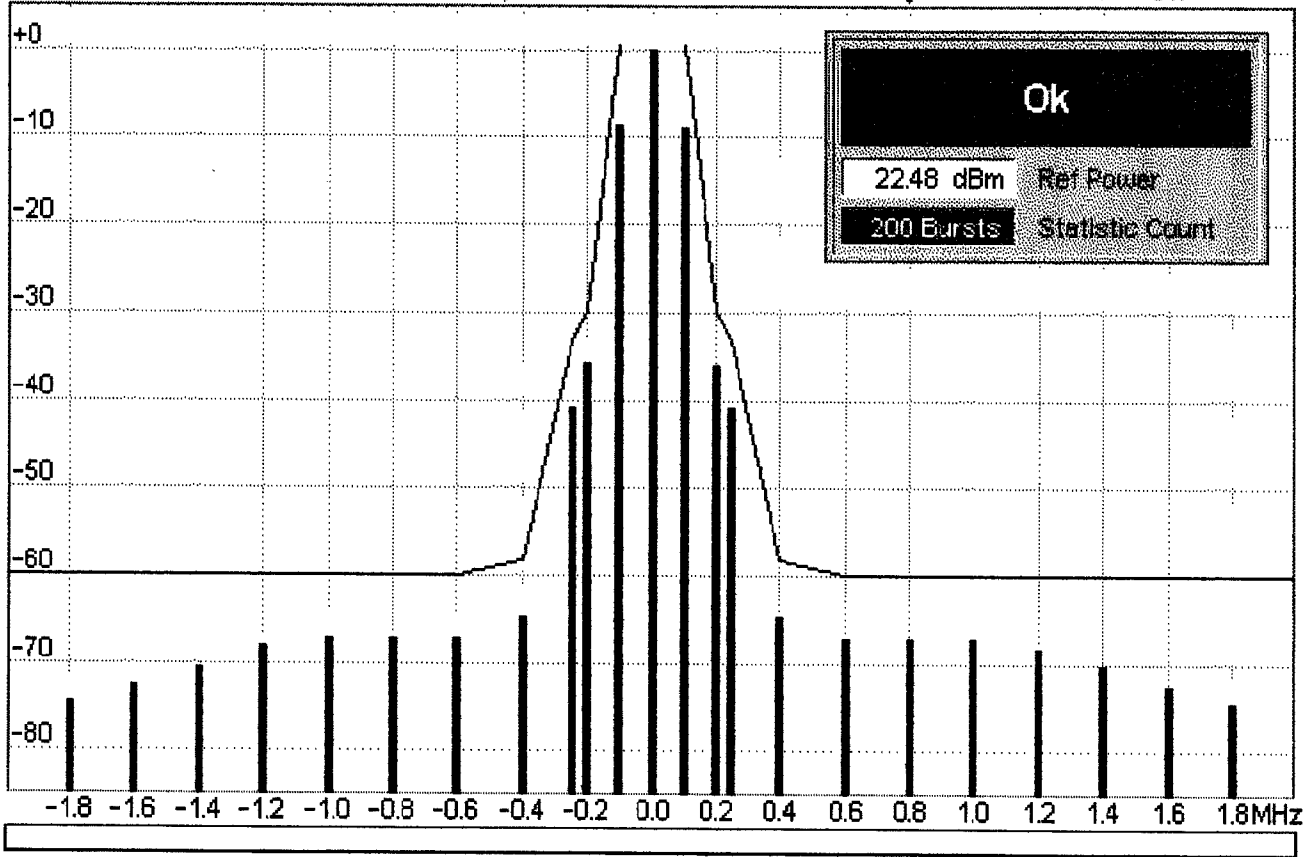
Group
Config

GSM 1900 Spectrum



Connect.
Control

dBc Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 512 / 1850.2 MHz
↓: --- / Off ↓: --- / Off ↓: --- / Off



due to
Mod.

Appli-
cation

PCL /
Channel

Input
Level

Marker

Trigger /
Statistics

Overview

Power

Modulation

Spectrum

Receiver
Quality

Menus

Group Config.

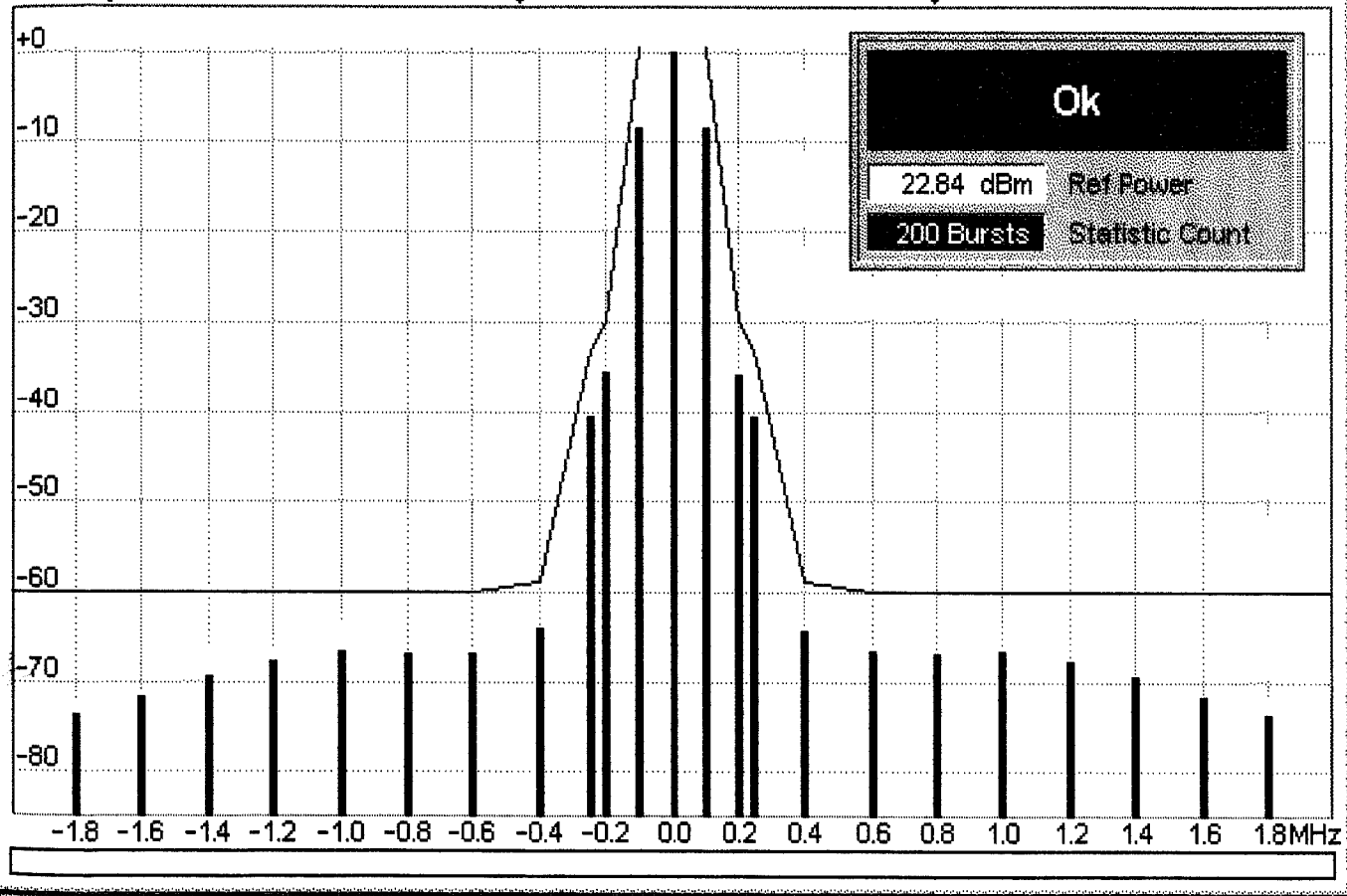
GSM 1900 Spectrum



Connect. Control

dBc Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 649 / 1877.6 MHz

↓: --- / Off ↓: --- / Off ↓: --- / Off



Ok

22.84 dBm Ref Power

200 Bursts Statistic Count

due to Mod.

Appli- cation

PCL / Channel

Input Level

Marker

Trigger / Statistics

Menus

PCL

Channel



ROHDE & SCHWARTZ

CMU 200, Serial No. 835371, 098, SN: V2.12

FCC ID: ACPJ16CF-2765N CH-649

FCC ID: ACPJ16CF-2765N

2000-11-14, 12:41:43

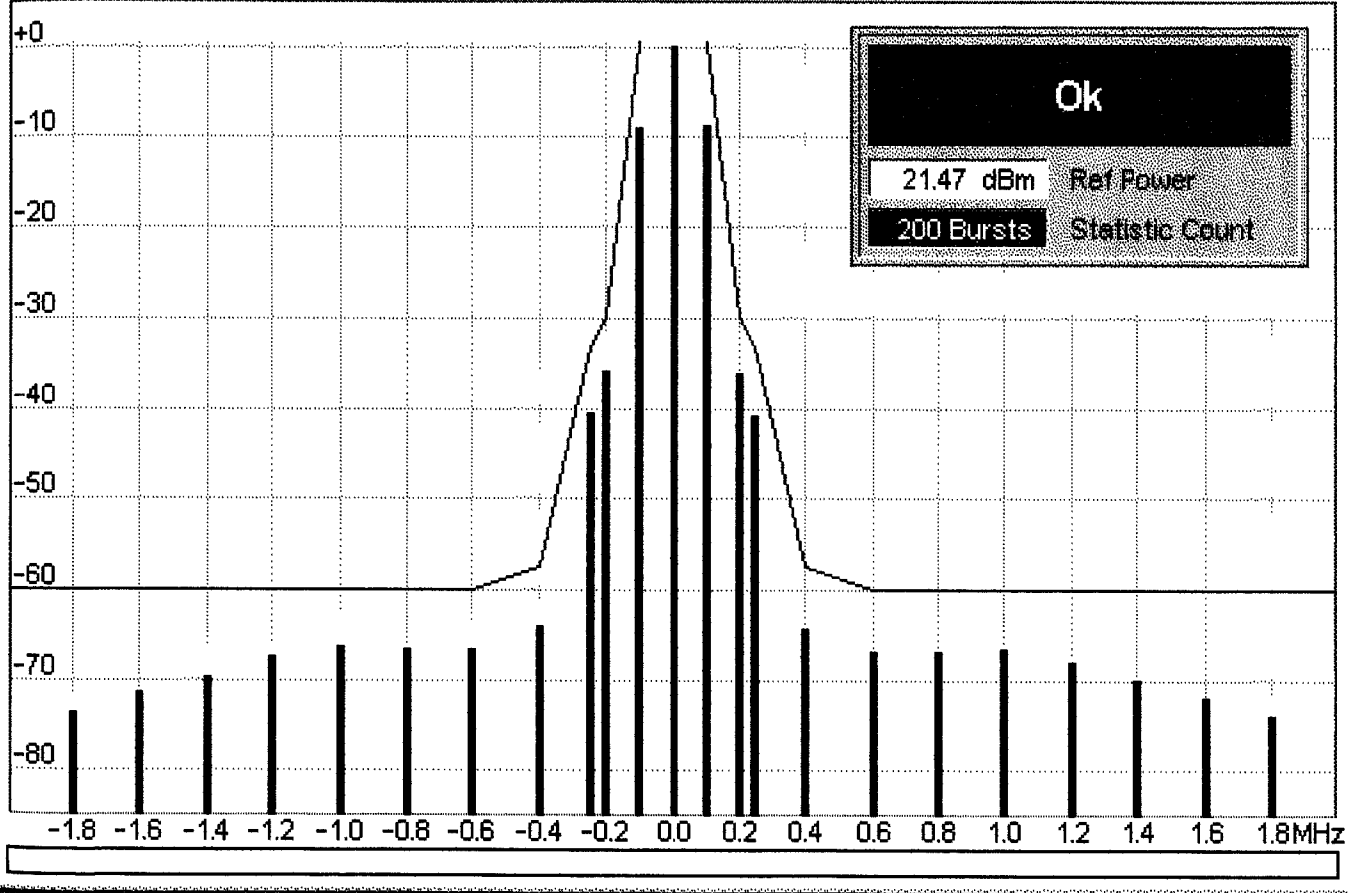
Group Config

GSM 1900 Spectrum



Connect. Control

dBc Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 810 / 1909.8 MHz
↓: --- / Off ↓: --- / Off ↓: --- / Off



Ok

21.47 dBm Ref Power

200 Bursts Statistic Count

due to Mod.

Appli- cation

PCL / Channel

Input Level

Marker

Trigger / Statistics

Menus

PCL Channel



ROIDEA SCHWANZ

CMU 200, Serial No. B36374/088, SM V2.12

FCC ID: ACJ9TBCF-276SM CH-810

FCC ID: ACJ9TBCF-276SM

2000-11-14, 12:38:56

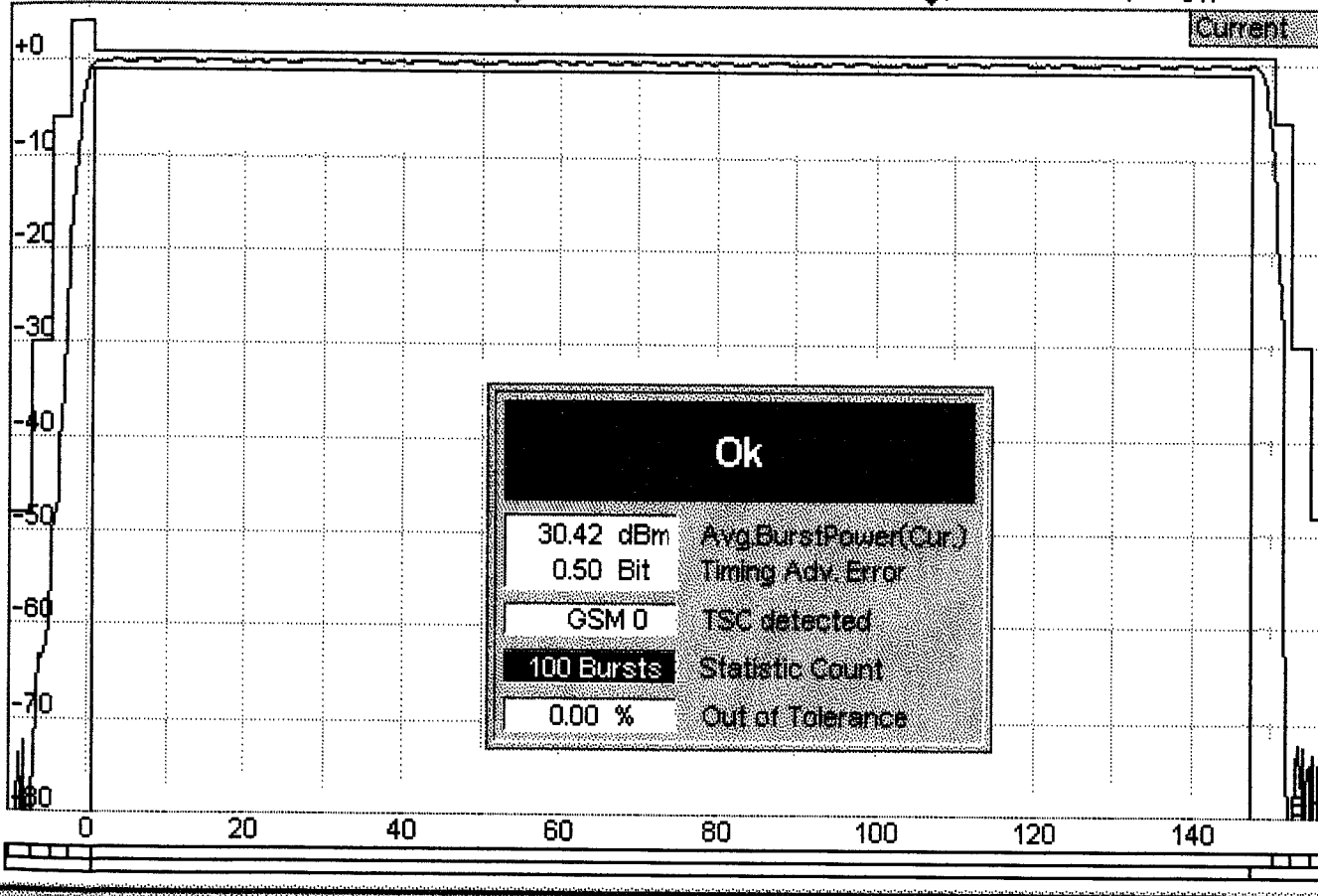
Group
Config

GSM 1900 Power



Connect.
Control

dB Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 810 / 1909.8 MHz
B: --- / Off Q: --- / Off R: --- / Off



Ok	
30.42 dBm	Avg.BurstPower(Cur.)
0.50 Bit	Timing Adv. Error
GSM 0	TSC detected
100 Bursts	Statistic Count
0.00 %	Out of Tolerance

P/t Norm.
GMSK

Appli-
cation

PCL /
Channel

Input
Level

Time

Marker

Trigger /
Statistics

Menus

PCL

Channel



ROHDE & SCHWARZ

CMU 200, Serial No: 936371/088, SH: V2.12

FCC ID: ACJ9TBCF-2765M OH-810

FCC ID: ACJ9TBCF-2765M

2000-11-11, 12:49:05

Group Config

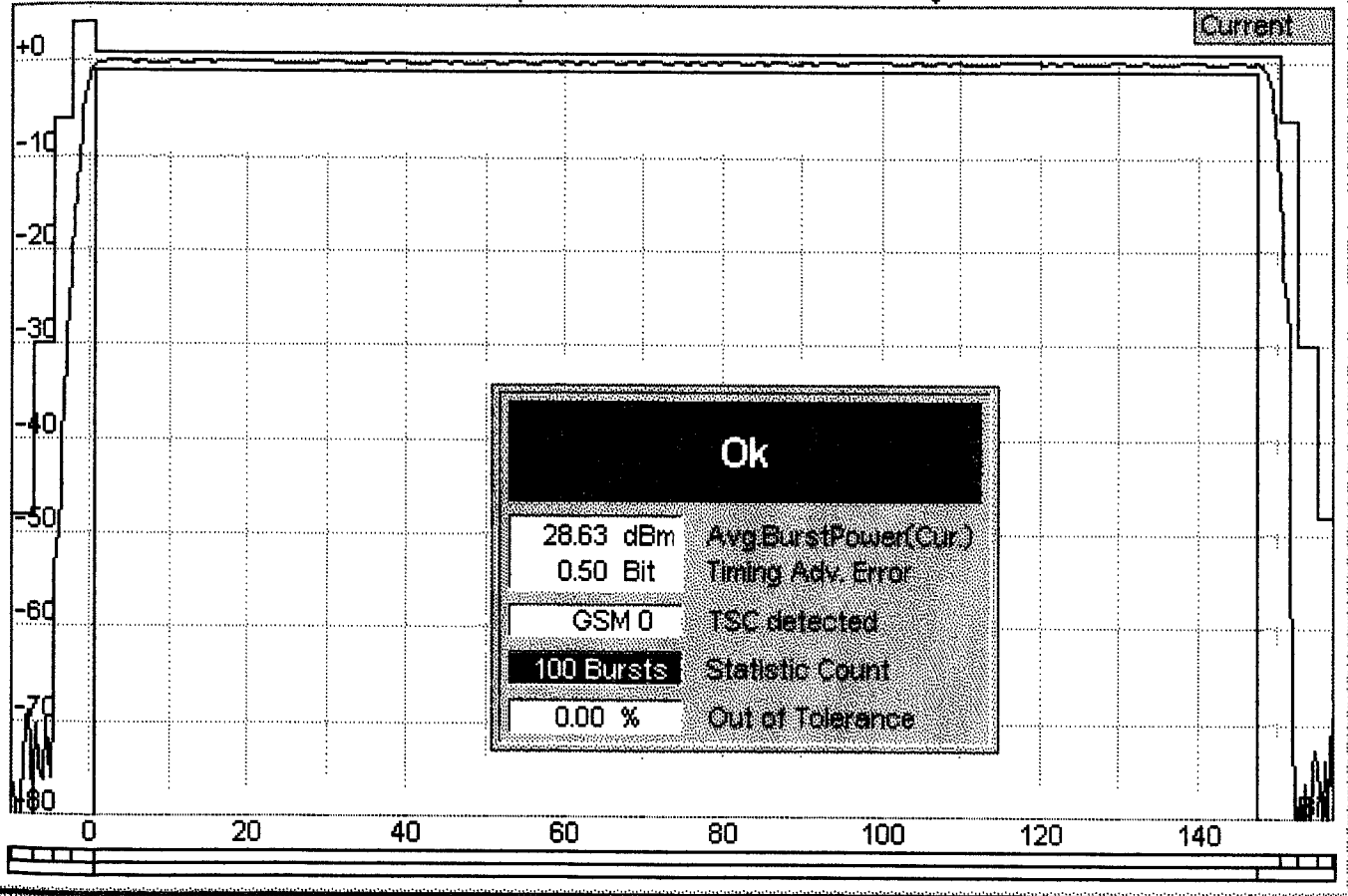
GSM 1900 Power



Connect. Control

dB Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 512 / 1850.2 MHz

↓: --- / Off ↓: --- / Off ↓: --- / Off



P/t Norm. GMSK

Application

PCL / Channel

Input Level

Time

Marker

Trigger / Statistics

Menus

PCL

Channel



ROHDE & SCHWARTZ

CMU 200, Serial No. 036971, 088, SM, V2.12

FCC ID: ACJ9TBCF-2765M CH-512

FCC ID: ACJ9TBCF-2765M

2000-11-14, 12:52:43

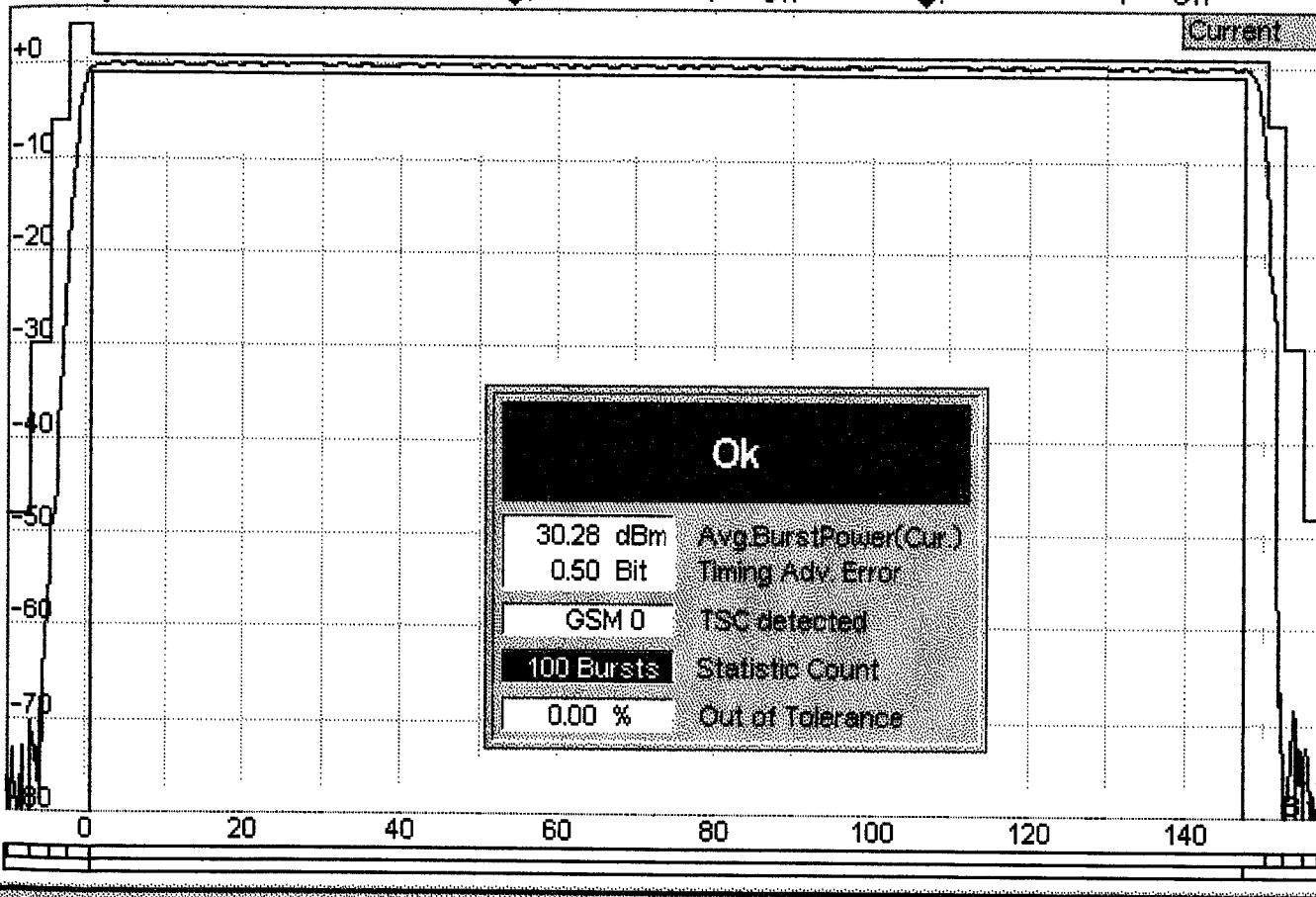
Group
Config

GSM 1900 Power



Connect.
Control

dB Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 649 / 1877.6 MHz
Q: --- / Off Q: --- / Off Q: --- / Off



Ok

30.28 dBm	Avg.BurstPower(Cur.)
0.50 Bit	Timing Adv. Error
GSM 0	TSC detected
100 Bursts	Statistic Count
0.00 %	Out of Tolerance

- RECEIVER
- P/t Norm. GMSK
- Appli-cation
- PCL / Channel
- Input Level
- Time
- Marker
- Trigger / Statistics
- Menus

Overview Power Modulation Spectrum Receiver Quality



ROIDEA SCHWAB

CMU 200, Serial No 836971/008, SM V2.1.2

FCC ID: ACJ9TBCF-2765H CH-649

FCC ID: ACJ9TBCF-2765H

2000-11-11, 12:43:09

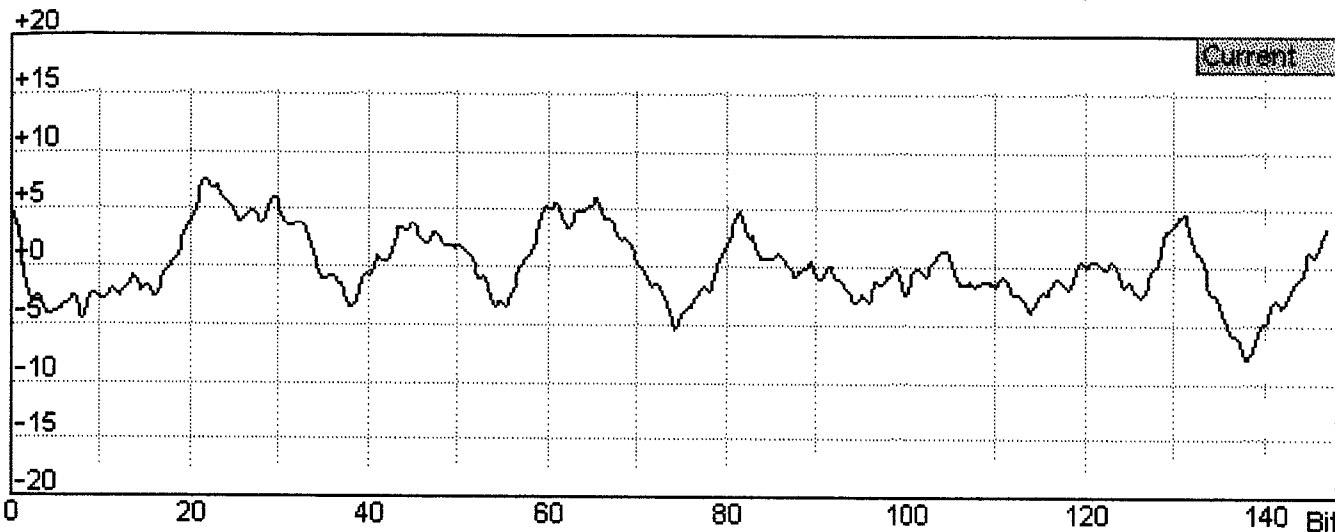
Group
Config.

GSM 1900 Modulation



Connect.
Control

Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 810 / 1909.8 MHz



Phase /
Freq. Err

PCL /
Channel

Input
Level

Time

Trigger /
Statistics

Menus

	Current	Average	Max / Min
Phase Error (Peak)	-8.0 °	7.7 °	11.8 °
Phase Error (RMS)	3.0 °	2.8 °	3.8 °
Frequency Error	13 Hz	8 Hz	36 Hz

30.4 dBm
Avg. Burst Power

100 Bursts
Statistic Count

0.00 %
Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver
Quality

ROHDE & SCHWARTZ

CMU 200, Serial No. 836371/088, SN: V212

FCC ID: ACJ9TBCF-276SM CH-810

2000-11-14, 12:50:14



FCC ID: ACJ9TBCF-276SM

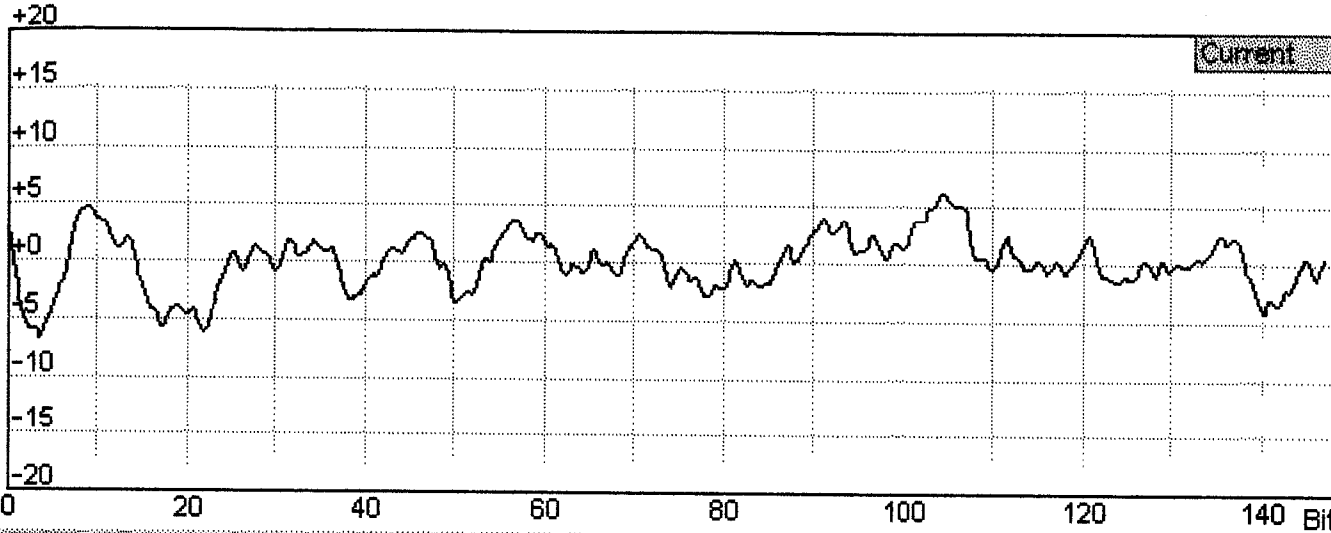
Group
Config

GSM 1900 Modulation



Connect.
Control

Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 649 / 1877.6 MHz



Phase /
Freq. Err

PCL /
Channel

Input
Level

Time

Trigger /
Statistics

Menus

	Current	Average	Max / Min
Phase Error (Peak)	-6.9 °	7.3 °	12.1 °
Phase Error (RMS)	2.4 °	2.6 °	4.0 °
Frequency Error	28 Hz	27 Hz	55 Hz

30.3 dBm
Avg. Burst Power

100 Bursts
Statistic Count

0.00 %
Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver
Quality



ROHDE & SCHWARZ

CMU 200, Serial No. B36371/088, SM V2.12

FCC ID: ACJ9TBCF-2765H CH-649

FCC ID: ACJ9TBCF-2765H

2000-11-11, 12:44:49

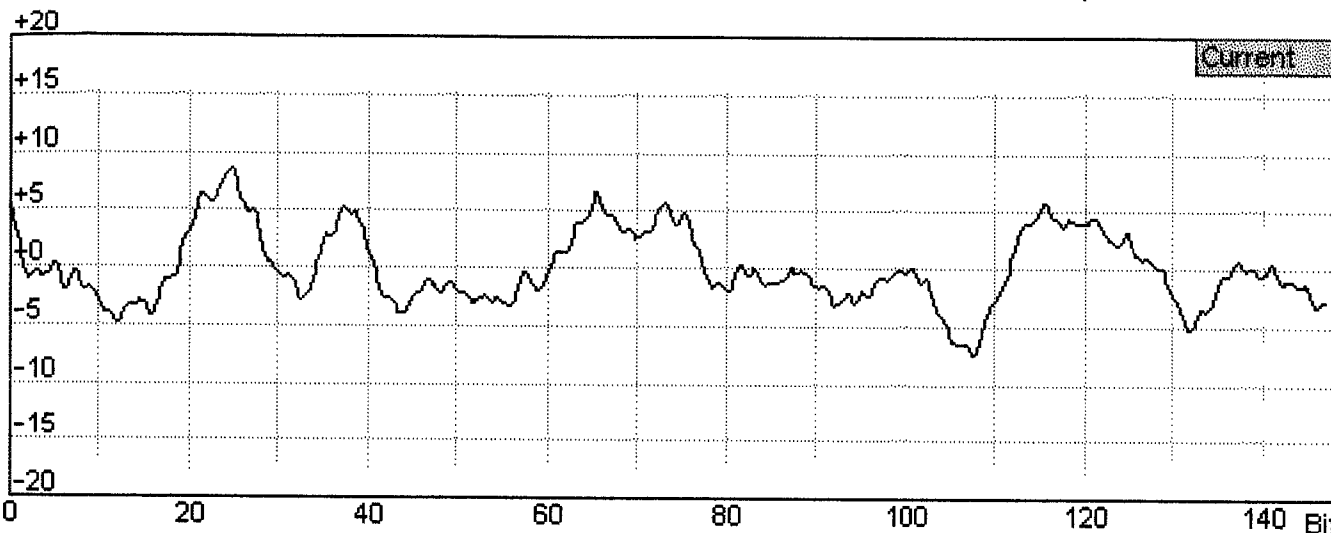
Group
Config.

GSM 1900 Modulation



Connect.
Control

Max. Level: Auto Low Noise PCL: 0 / 30.0 dBm Chan./Freq.: 512 / 1850.2 MHz



Phase /
Freq. Err

PCL /
Channel

Input
Level

Time

Trigger /
Statistics

Menus

	Current	Average	Max / Min
Phase Error (Peak)	8.5 °	7.2 °	11.6 °
Phase Error (RMS)	3.2 °	2.6 °	3.6 °
Frequency Error	24 Hz	16 Hz	45 Hz

28.6 dBm
Avg. Burst Power

100 Bursts
Statistic Count

0.00 %
Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver
Quality

ROHDE & SCHWARTZ

CNU 2000, Serial No. B36371/088, SN: V2.1.2

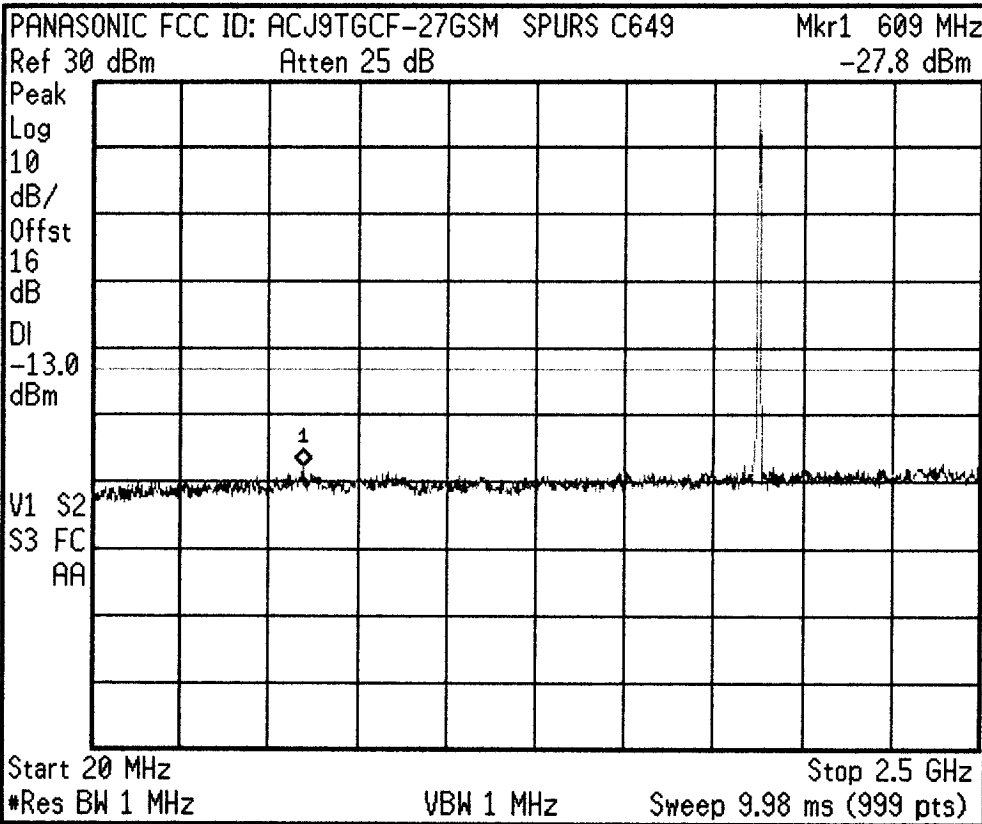
FCC ID: ACJ91BCF-2765H CH-512

2000-11-11, 12:53:44



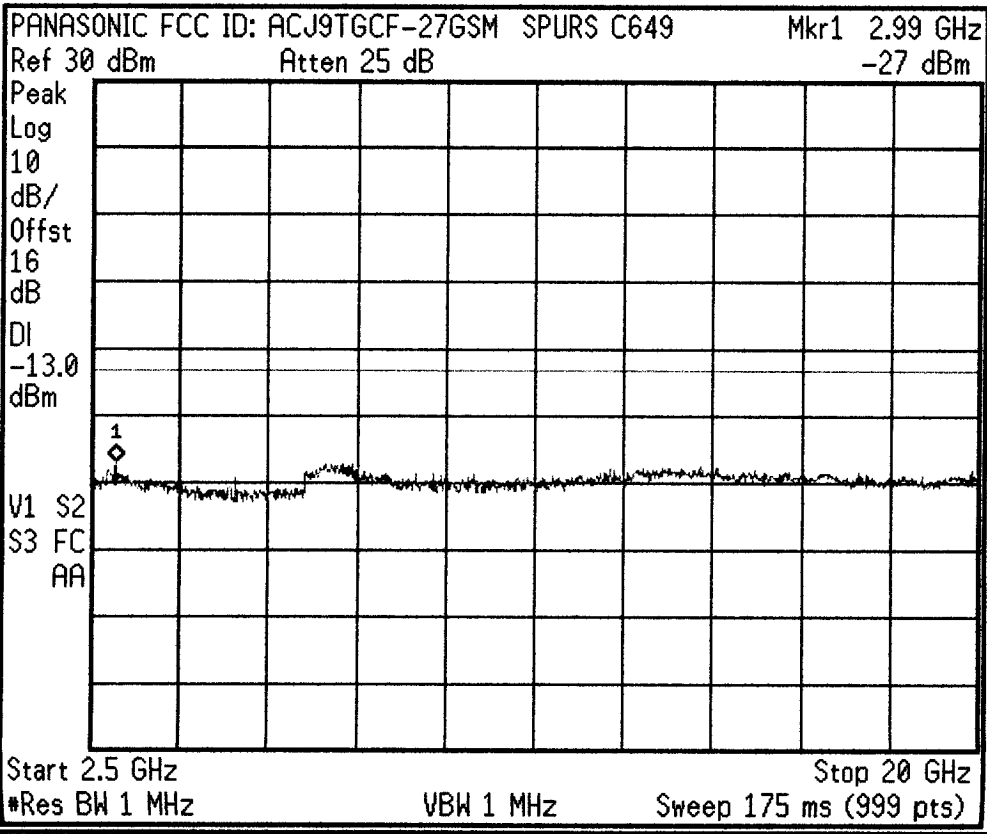
FCC ID: ACJ91BCF-2765H

Agilent 14:32:18 Nov 11, 2000



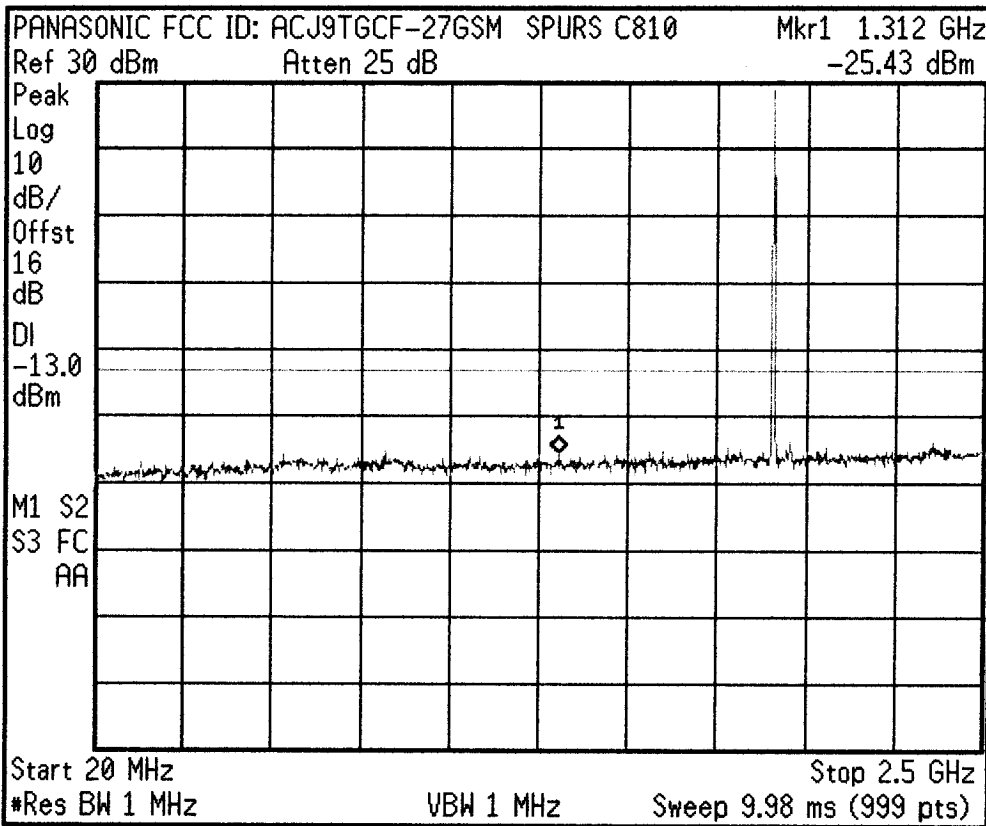
Freq/Channel	
Center Freq	1.26000000 GHz
Start Freq	20.0000000 MHz
Stop Freq	2.50000000 GHz
CF Step	248.000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

Agilent 14:33:14 Nov 11, 2000



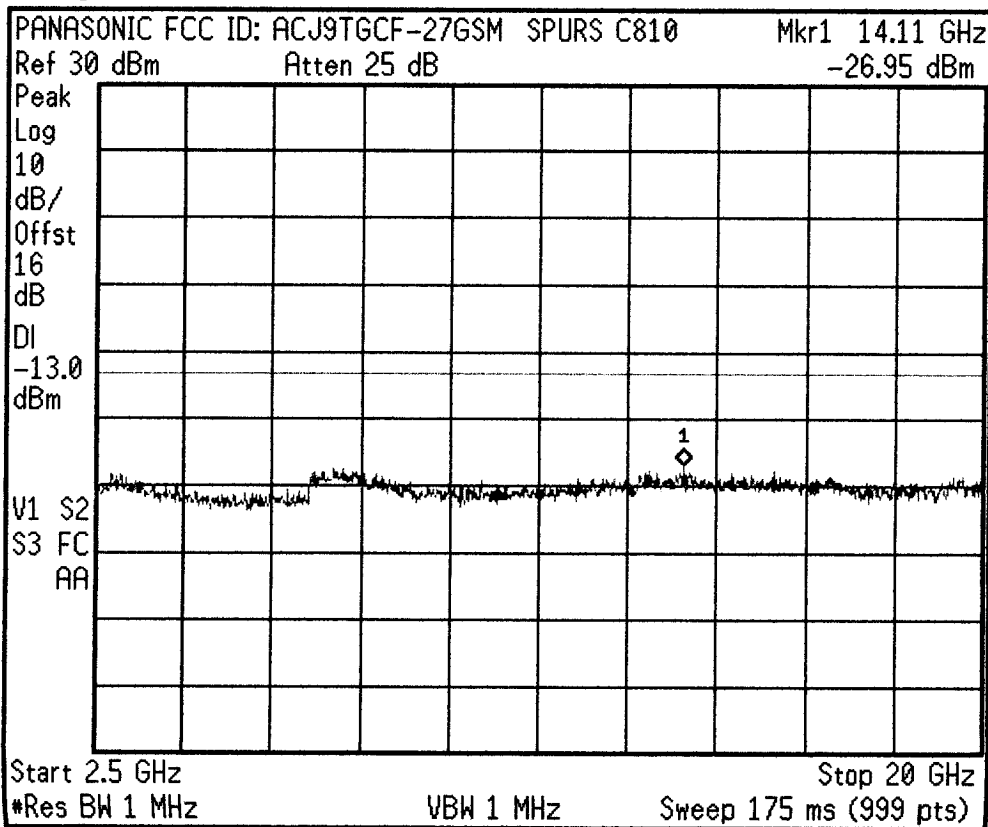
Freq/Channel	
Center Freq	11.2500000 GHz
Start Freq	2.50000000 GHz
Stop Freq	20.0000000 GHz
CF Step	1.75000000 GHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

* Agilent 14:29:29 Nov 11, 2000



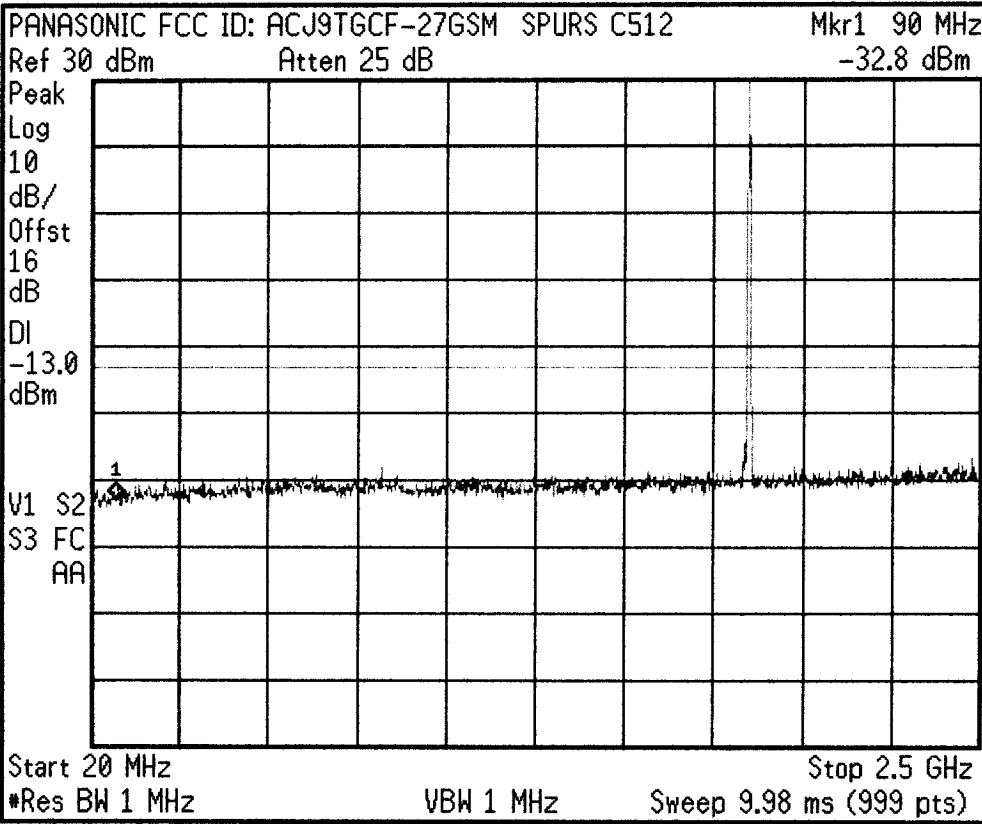
Freq/Channel
Center Freq 1.26000000 GHz
Start Freq 20.0000000 MHz
Stop Freq 2.50000000 GHz
CF Step 248.000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

* Agilent 14:30:15 Nov 11, 2000



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

Agilent 14:35:14 Nov 11, 2000



Trace

Trace 1 2 3

Clear Write

Max Hold

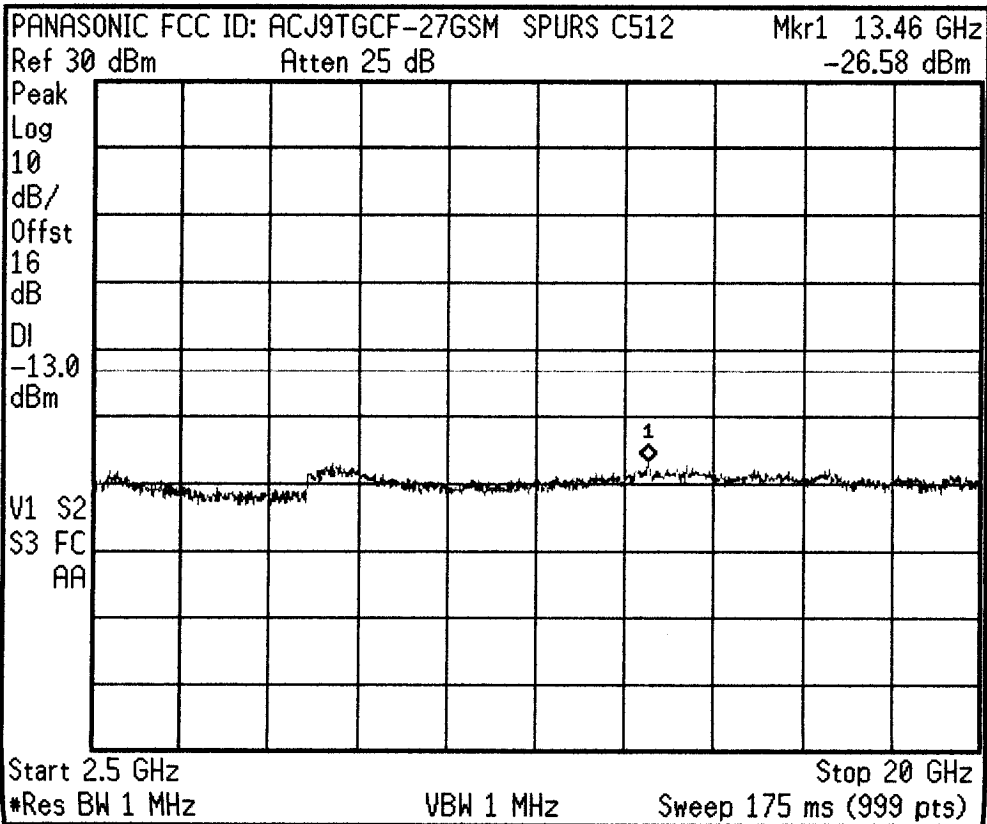
Min Hold

View

Blank

More 1 of 2

Agilent 14:36:14 Nov 11, 2000



Freq/Channel

Center Freq 11.2500000 GHz

Start Freq 2.5000000 GHz

Stop Freq 20.0000000 GHz

CF Step 1.7500000 GHz
 Auto Man

Freq Offset 0.0000000 Hz

Signal Track On Off

MODEL-CF-27 C-810

MKR Δ 314 kHz

hp

REF 30.0 dBm ATTEN 20 dB + 40 dB

-0.90 dB

10 dB/

POS PK

OFFSET

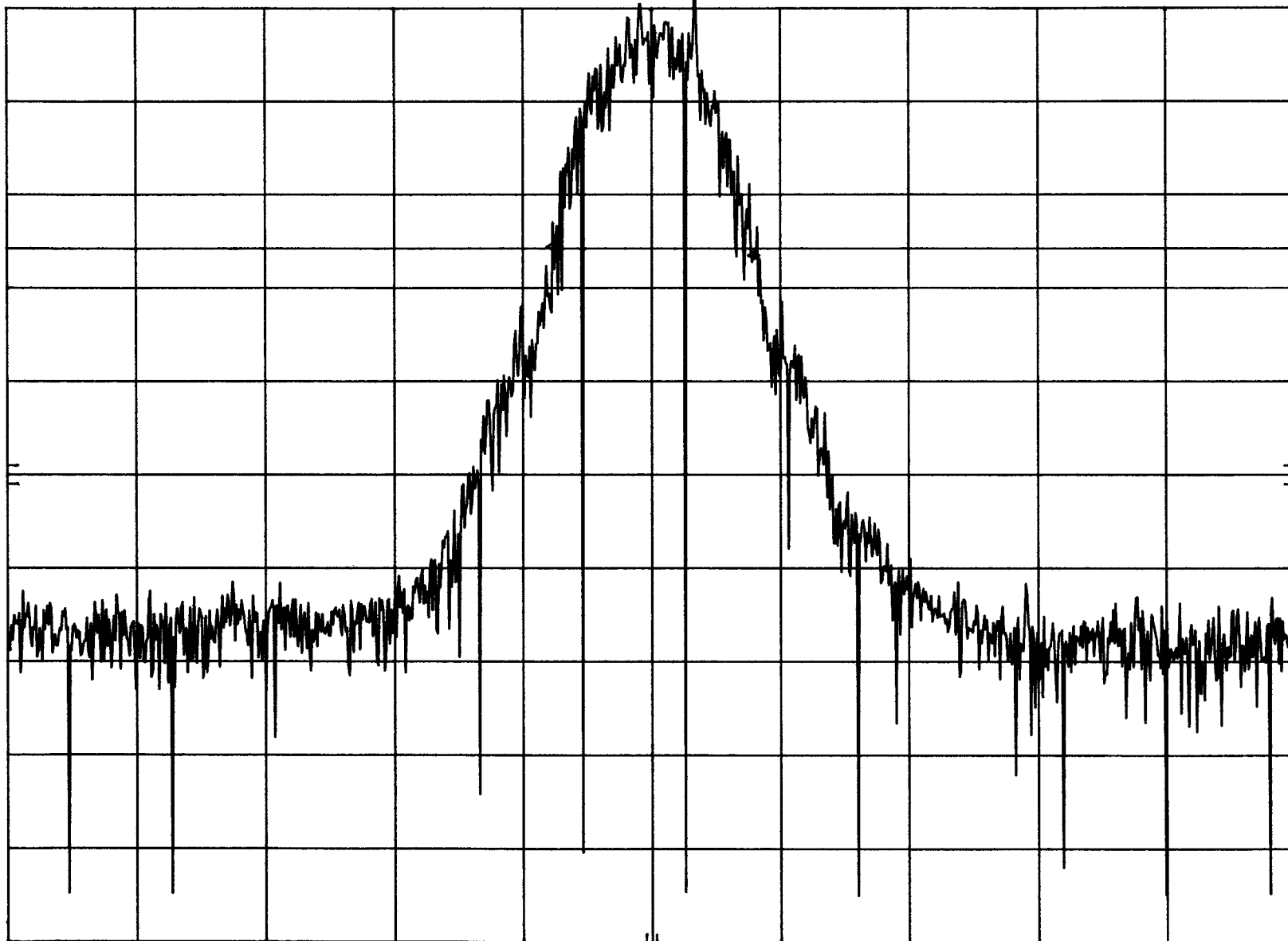
20.0

dB

DL

4.2

dBm



CENTER 1.909 80 GHz

SPAN 2.00 MHz

RES BW 3 kHz (i)

VBW 10 kHz

SWP 1.50 sec

MODEL-CF-27 C-649

MKR Δ 314 kHz

hp

REF 30.0 dBm ATTEN 20 dB + 40 dB

-0.90 dB

10 dB/

POS PK

OFFSET

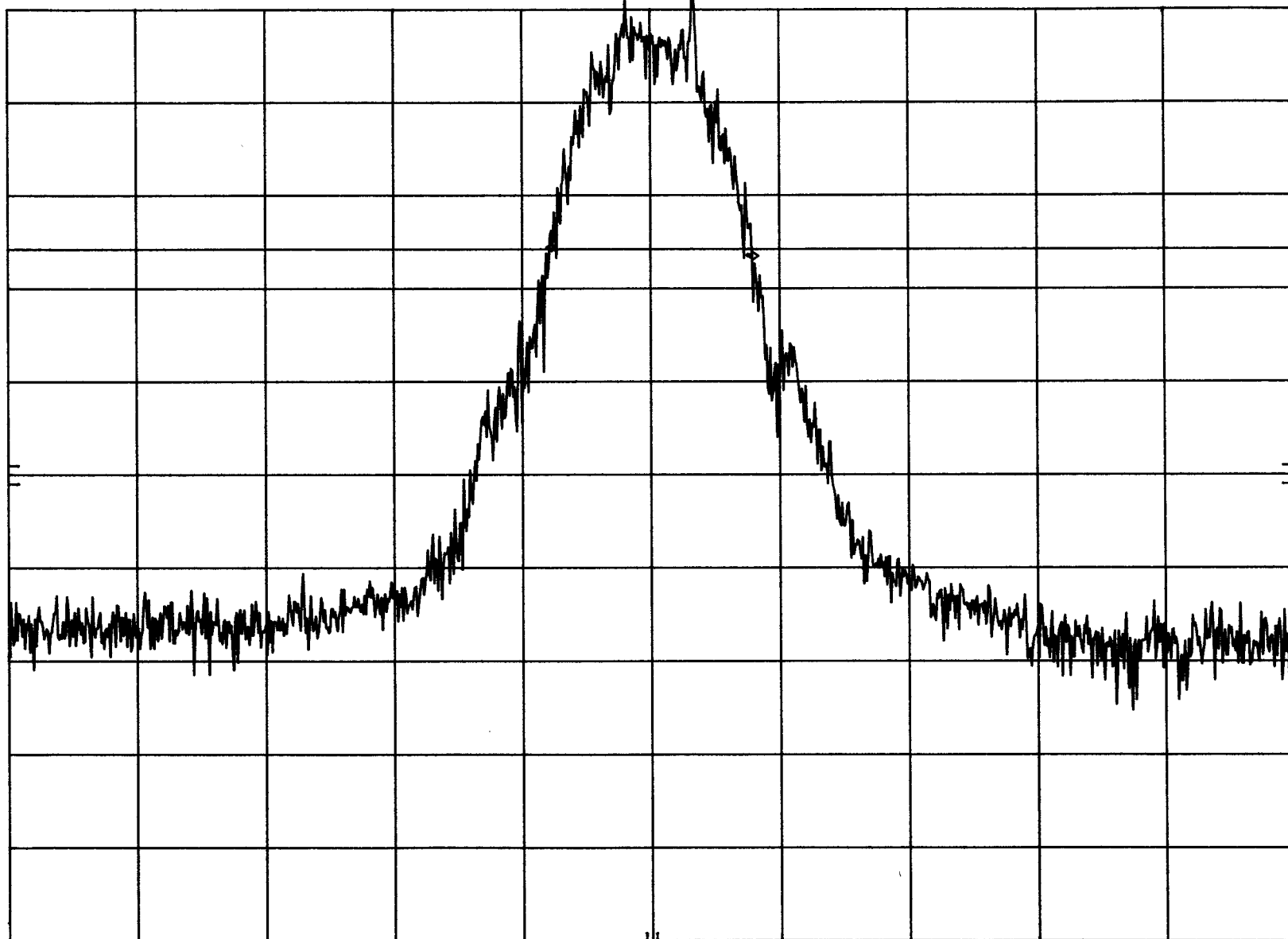
20.0

dB

DL

4.2

dBm



CENTER 1.877 60 GHz

SPAN 2.00 MHz

RES BW 3 kHz (i)

VBW 10 kHz

SWP 1.50 sec

MODEL-CF-27 C-512

MKR Δ 308 kHz

hp

REF 30.0 dBm

ATTEN 20 dB + 40 dB

-0.20 dB

10 dB/

POS PK

OFFSET

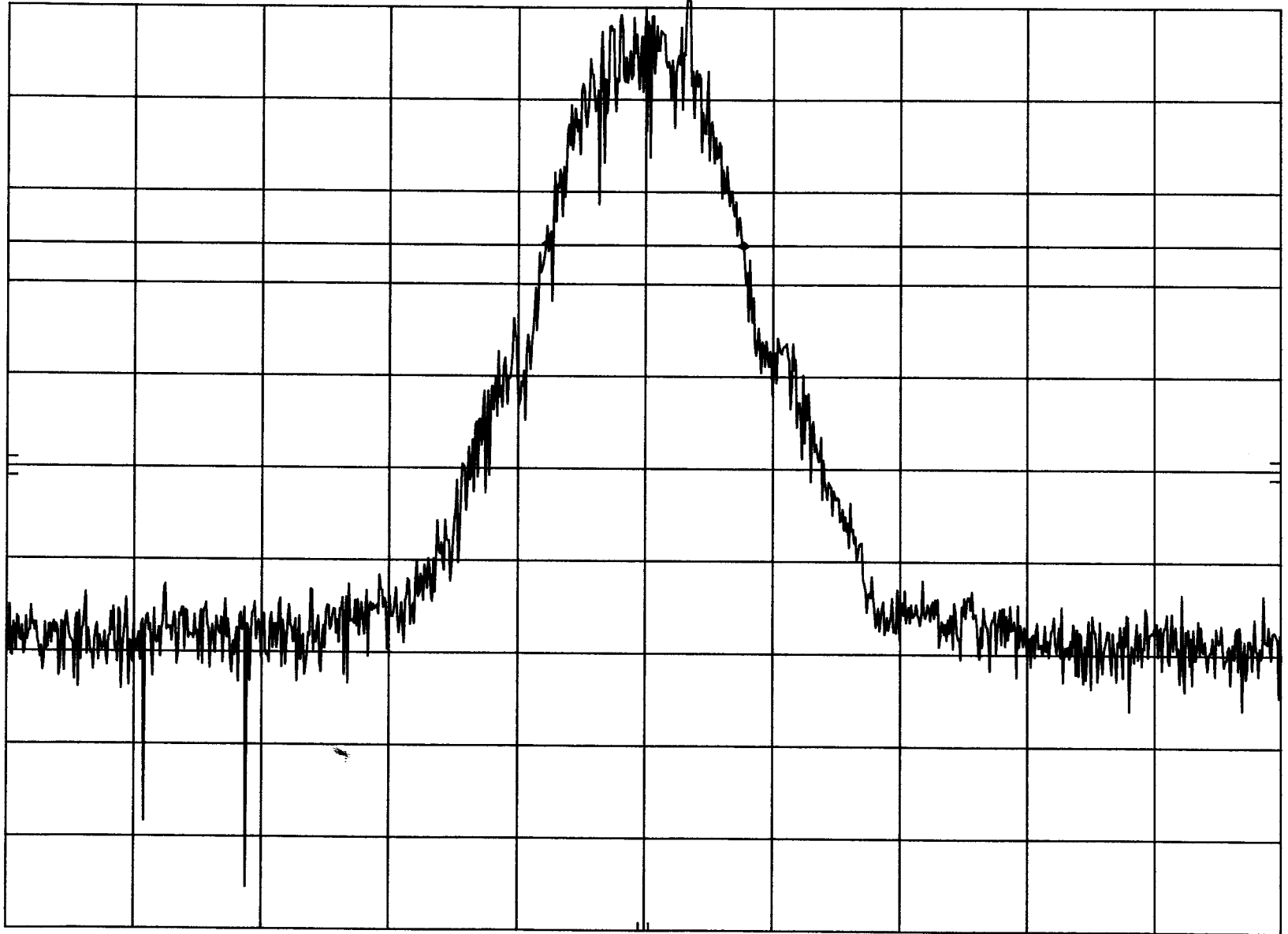
20.0

dB

DL

4.2

dBm



CENTER 1.850 20 GHz

RES BW 3 kHz (i)

VBW 10 kHz

SPAN 2.00 MHz

SWP 1.50 sec