



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz

Tx Freq.: MHz, RF Output at antenna: Watts

Modulation: RF In level of dBm @ 849 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 20 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.4 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 849.0025 MHz
-7.57 dBm

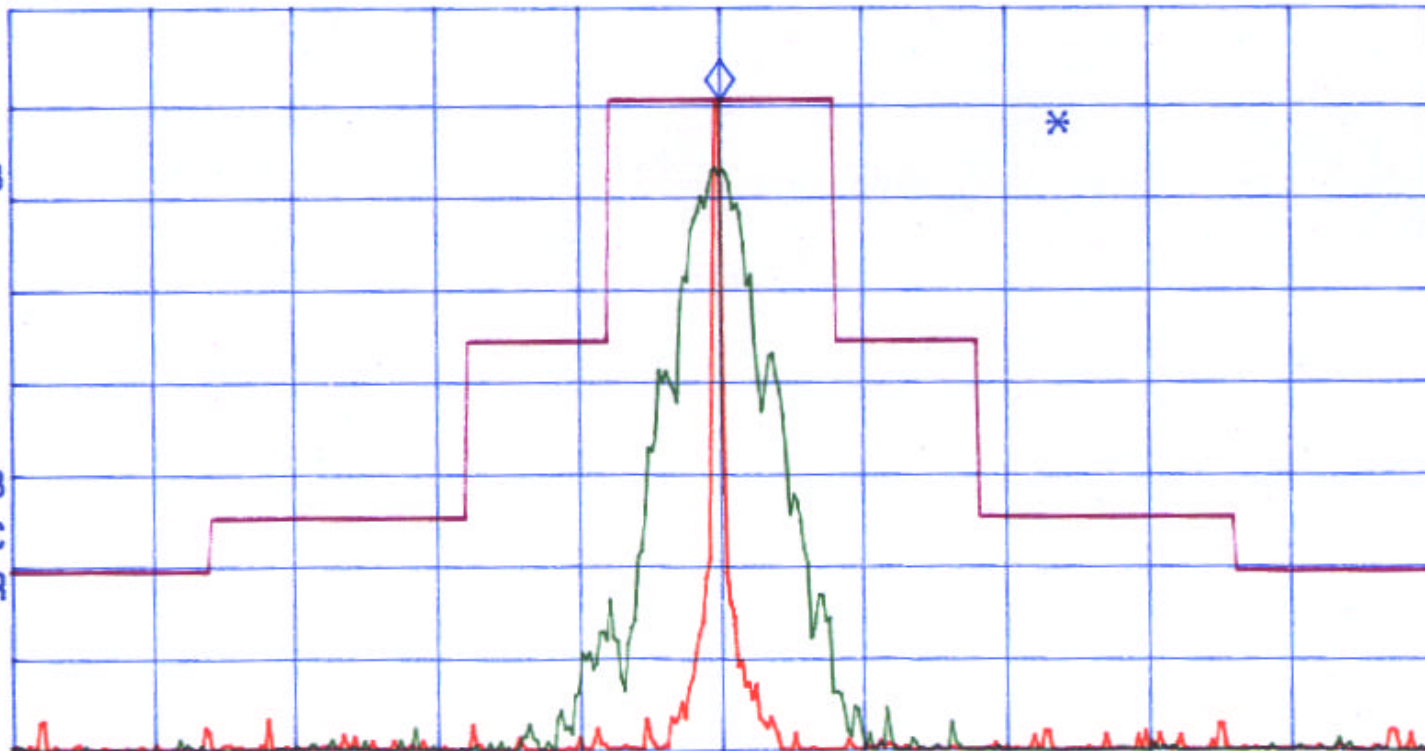
PLOT #1

REF OFFST 31.2 dB

LOG REF 2.4 dBm RF IN SIGNAL FITTED IN THE MASK

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 849.0025 MHz

SPAN 250.0 kHz

#IF BW 300 Hz

AVG BW 300 Hz

SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz
Tx Freq.: 824 MHz, RF Output at antenna: 6.3 Watts
Modulation: RF In level of -40 dBm @ 824 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
47.0 dBm

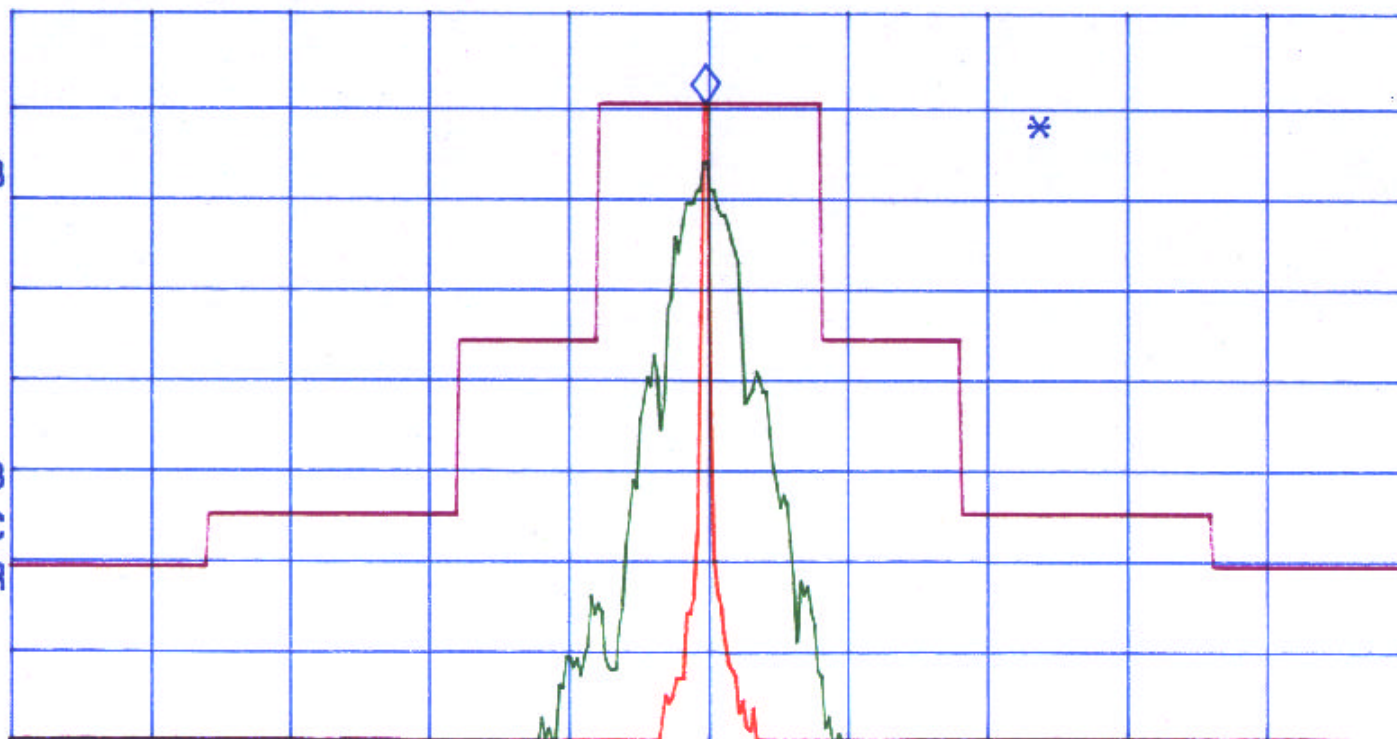
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 824.0019 MHz
36.98 dBm

PLOT #2
REF OFFST 31.2 dB
REF 47.0 dBm

LOG
10
dB/
ATN
30 dB

RF OUT

VA VB
SC FC
CORR



CENTER 824.0025 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz

Tx Freq.: MHz, RF Output at antenna: Watts

Modulation: RF In level of dBm @ 836.5 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

h7

REF LEVEL
2.5 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 836.5025 MHz
-7.49 dBm

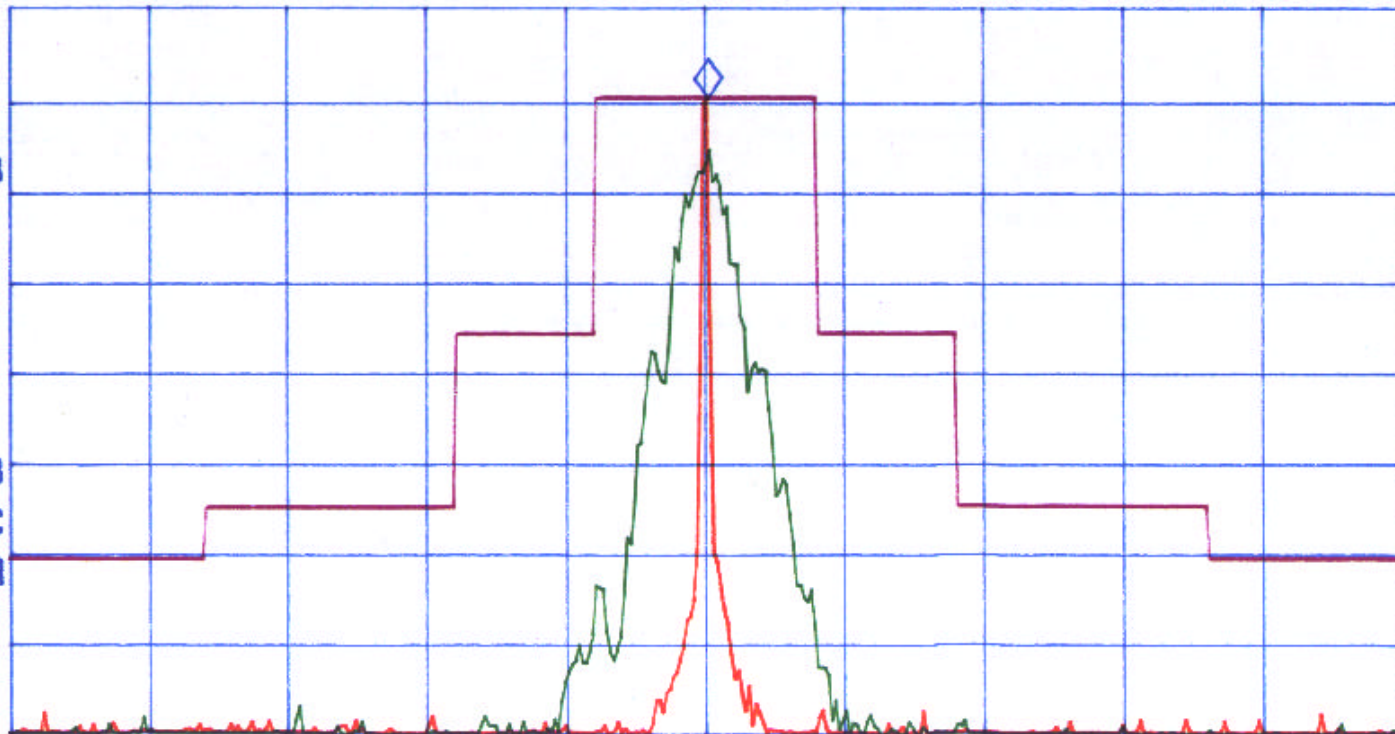
PLOT#3

REF OFFST 31.2 dB

LOG REF 2.5 dBm *RF IN SIGNAL FITTED IN THE MASK*

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 836.5019 MHz

#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz

SWP 8.33 sec



UltraTech
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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz
 Tx Freq.: 836.5 MHz, RF Output at antenna: 7.0 Watts
 Modulation: RF In level of -40 dBm @ 836.5 MHz, FM Modulated with an
 external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
 Tested by: Hung Trinh

hp

REF LEVEL
 47.6 dBm

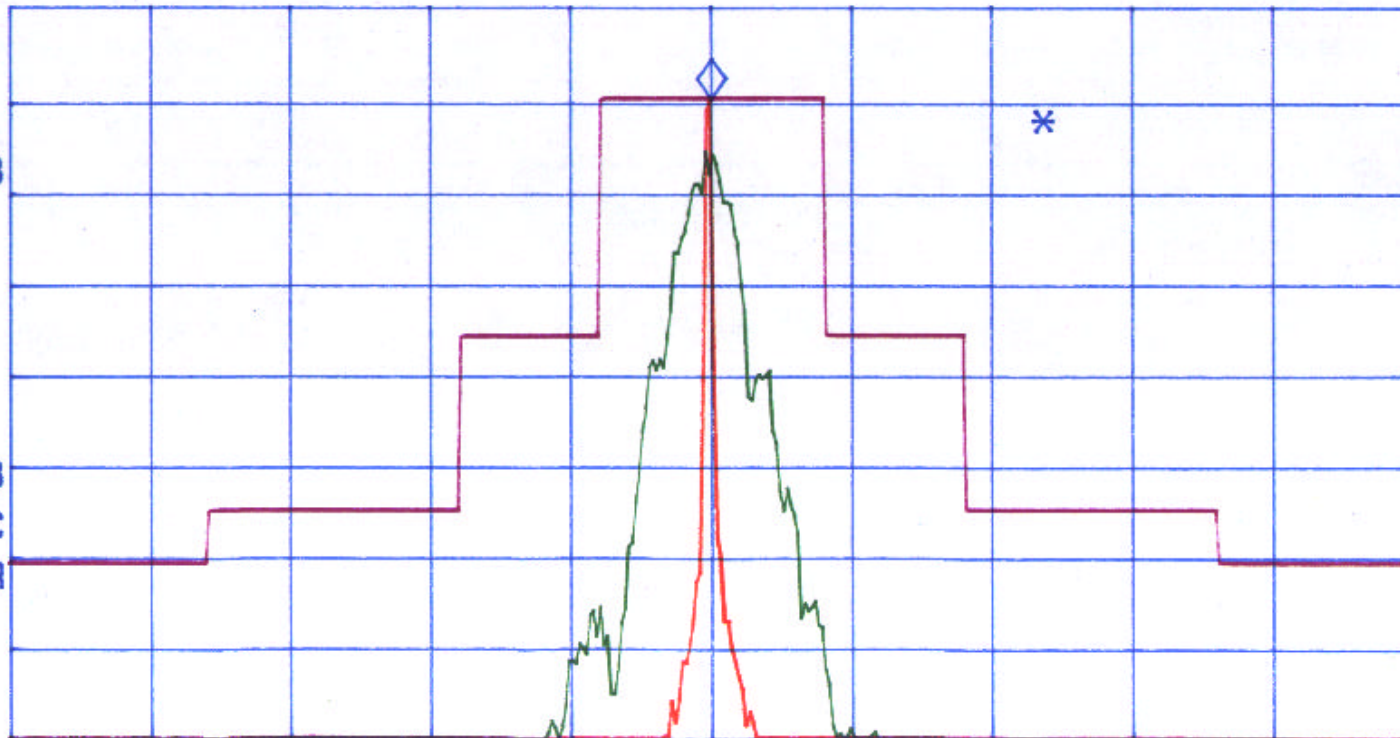
ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 836.5025 MHz
 37.55 dBm

PLOT #4
 REF OFFST 31.2 dB
 REF 47.6 dBm

RF OUT

LOG
 10
 dB/
 ATN
 30 dB

VA VB
 SC FC
 CORR



CENTER 836.5025 MHz
 #IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
 SWP 8.33 sec



UltraTech
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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz
 Tx Freq.: MHz, RF Output at antenna: Watts
 Modulation: RF In level of dBm @ 824 MHz, FM Modulated with an
 external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
 Tested by: Hung Trinh

hp

REF LEVEL
2.6 dBm

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 824.0019 MHz
 -7.36 dBm

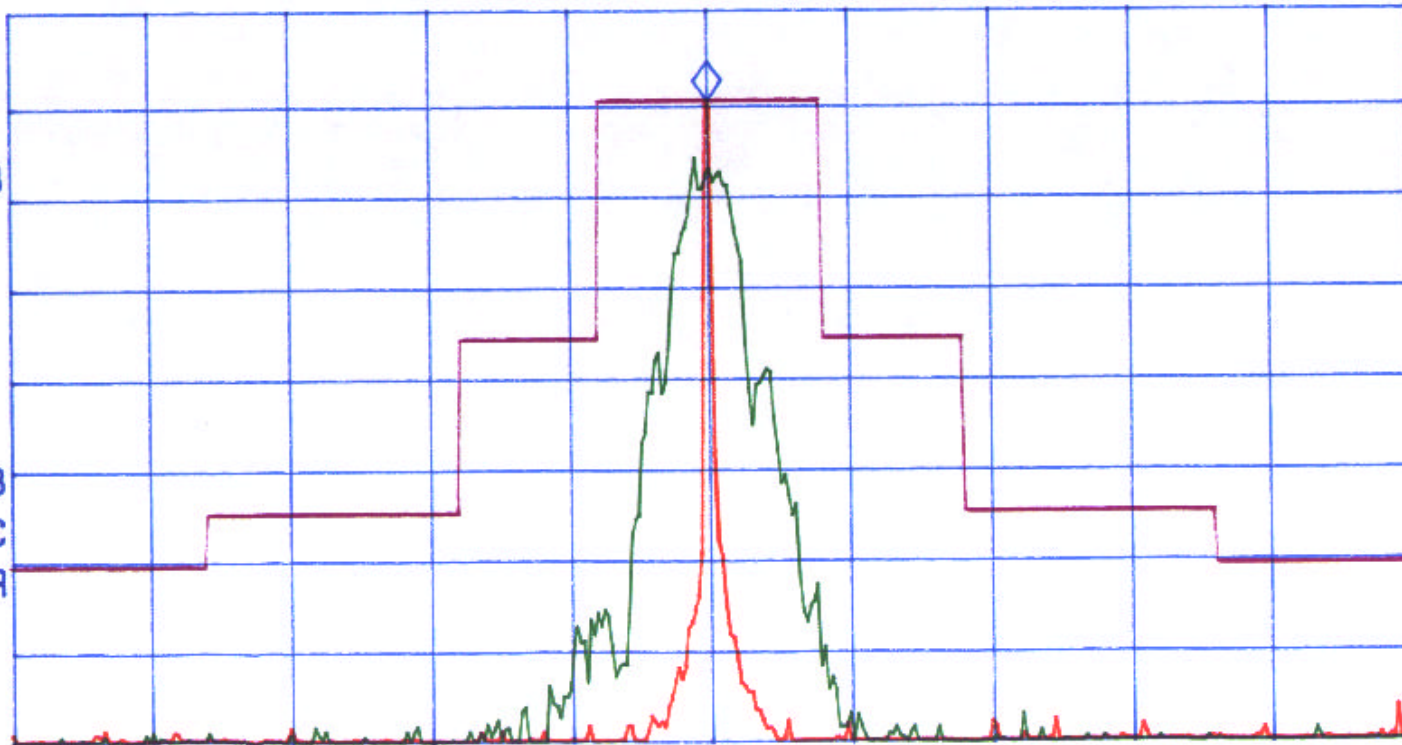
PLOT #5

REF OFFST 31.2 dB

LOG REF 2.6 dBm *RF IN SIGNAL FITTED IN THE MASK*

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 824.0019 MHz
 #IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
 SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz
Tx Freq.: 849 MHz, RF Output at antenna: 5.0 Watts
Modulation: RF In level of -40 dBm @ 849 MHz, FM Modulated with an
external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
46.2 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 849.0025 MHz
36.24 dBm

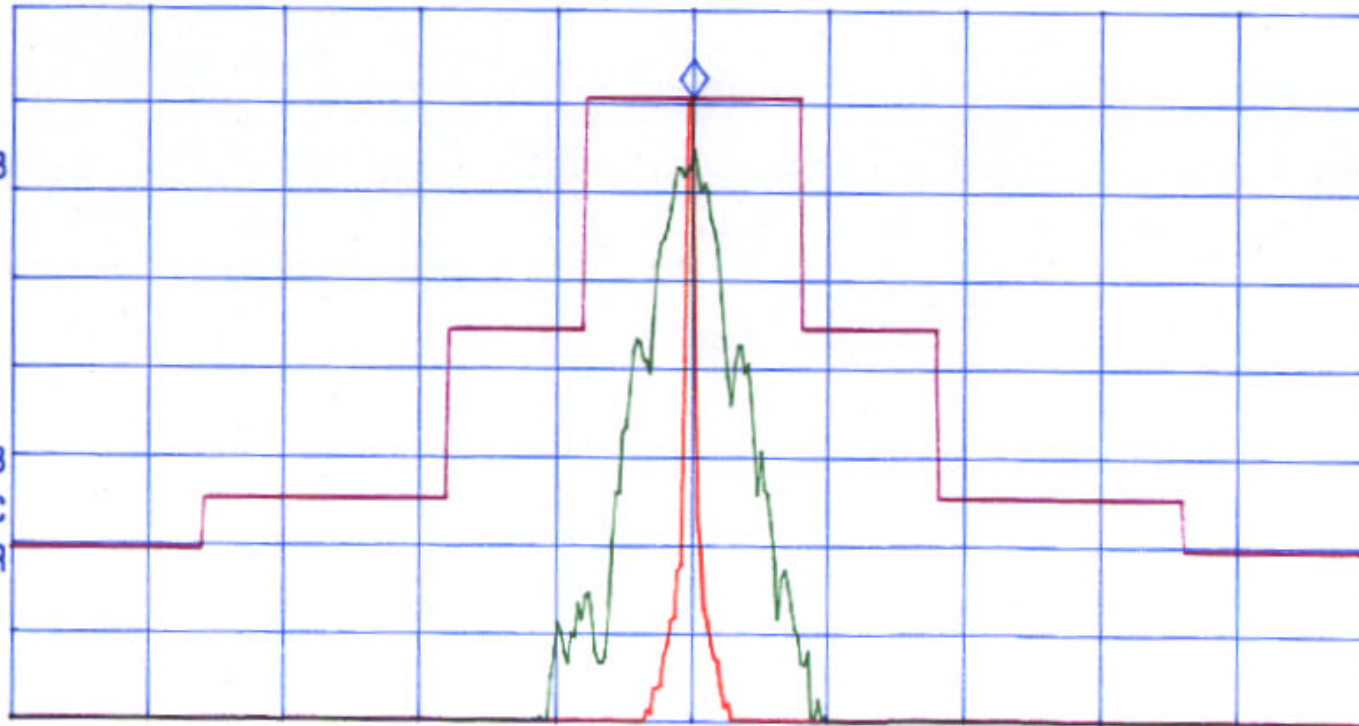
PLOT #6

REF OFFST 31.2 dB
REF 46.2 dBm

LOG
10
dB/
ATN
30 dB

RF OUT

VA VB
SC FC
CORR



CENTER 849.0025 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN-250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz

Tx Freq.: MHz, RF Output at antenna: Watts

Modulation: RF In level of dBm @ 824 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 824.0019 MHz
-7.36 dBm

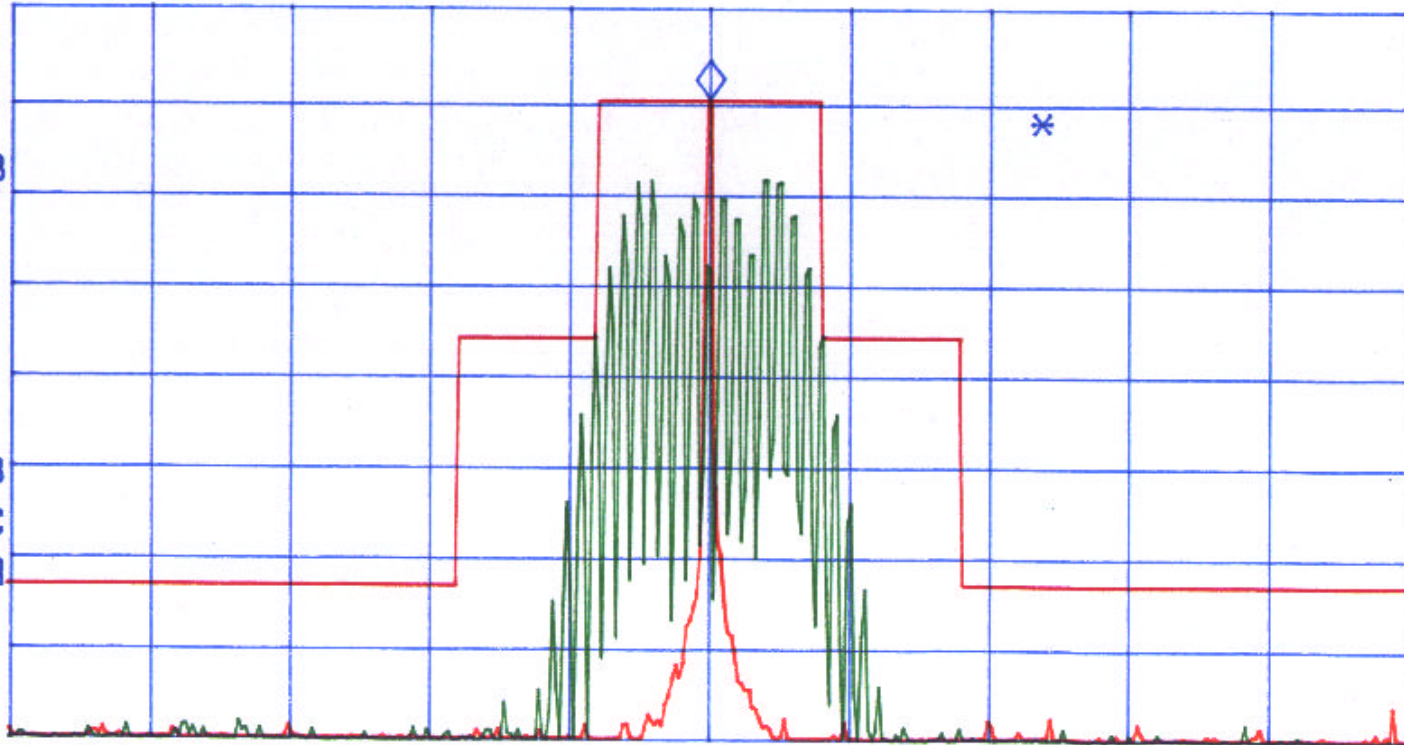
PLOT #7

REF OFFST 31.2 dB

LOG REF 2.6 dBm RF IN SIGNAL FITTED IN THE MASK

10 dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 824.0019 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz

Tx Freq.: 849 MHz, RF Output at antenna: 5.0 Watts

Modulation: RF In level of -40 dBm @ 849 MHz, FM Modulated with 2.5 kHz Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
46.2 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 849.0006 MHz
36.21 dBm

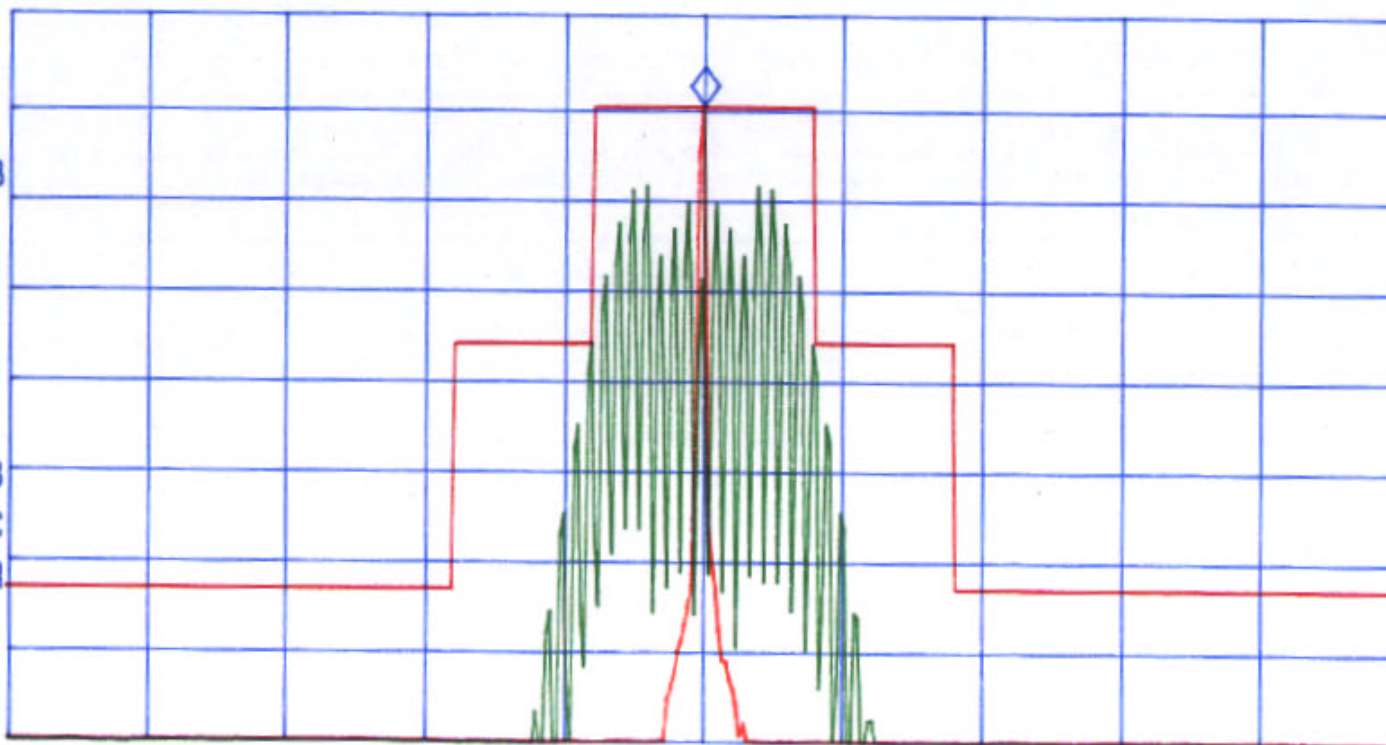
PLOT # 8

REF OFFST 31.2 dB
REF 46.2 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 849.0006 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz
Tx Freq.: MHz, RF Output at antenna: Watts
Modulation: RF In level of dBm @ 836.5 MHz, FM Modulated with 2.5 kHz
Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.5 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 836.5019 MHz
-7.49 dBm

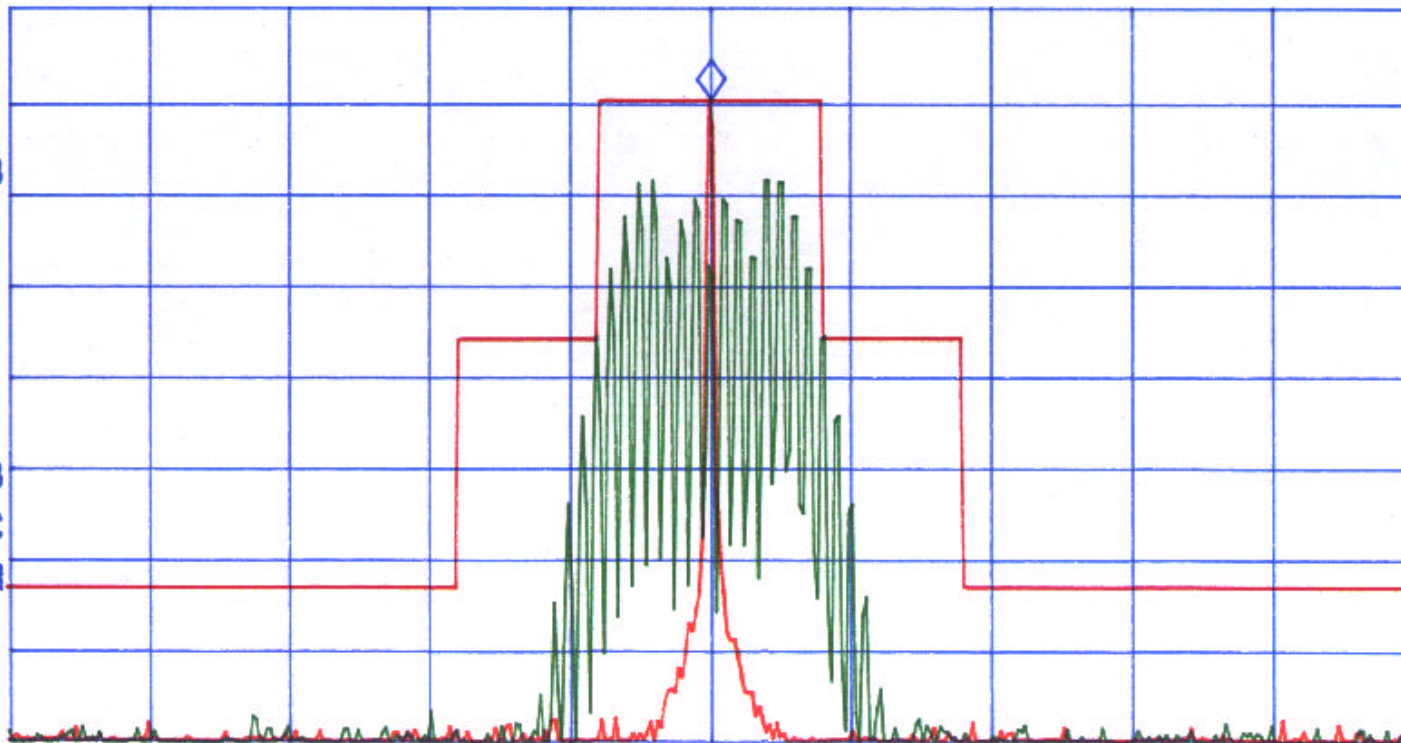
PLOT#9

REF OFFST 31.2 dB

LOG REF 2.5 dBm *RF IN SIGNAL FITTED IN THE MASK*

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 836.5019 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz
Tx Freq.: 836.5 MHz, RF Output at antenna: Watts
Modulation: RF In level of -40 dBm @ 7.0 MHz, FM Modulated with 2.5 kHz
Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
47.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 836.5000 MHz
37.57 dBm

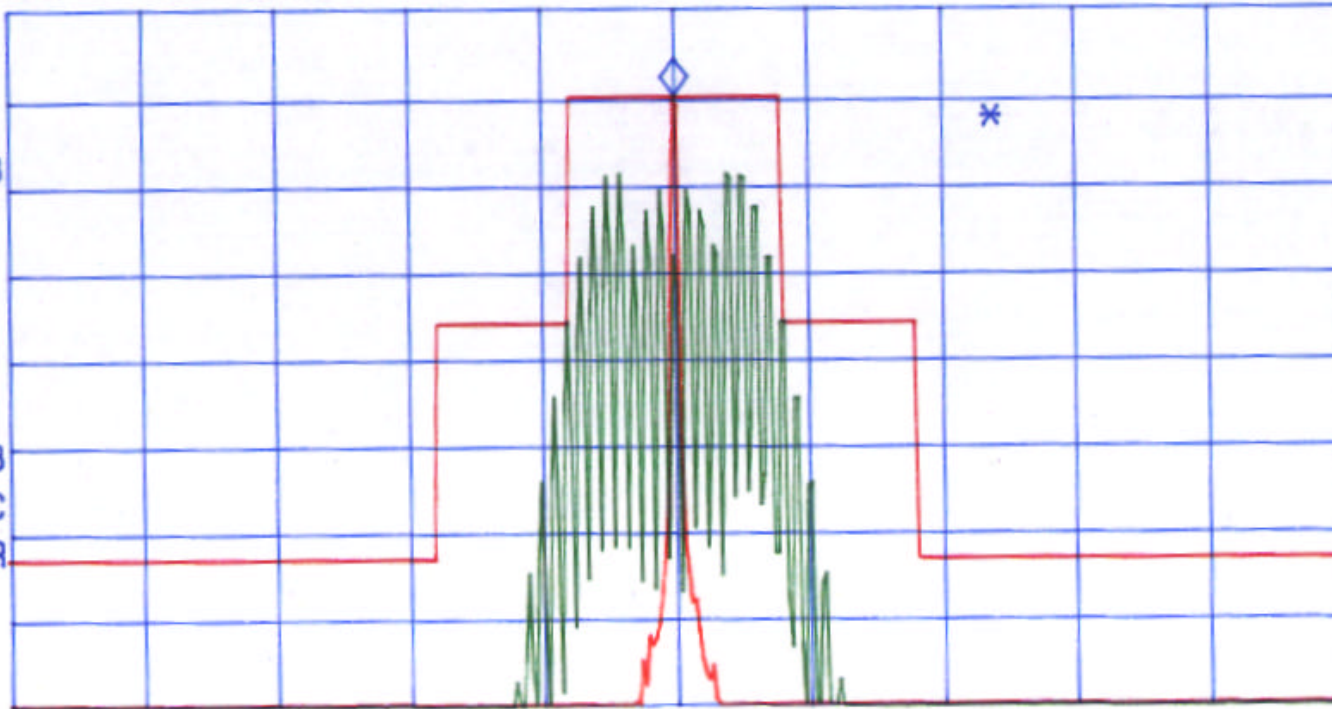
PLOT #10

REF OFFST 31.2 dB
REF 47.6 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 836.5000 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824-849 MHz

Tx Freq.: MHz, RF Output at antenna: Watts

Modulation: RF In level of dBm @ 849 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

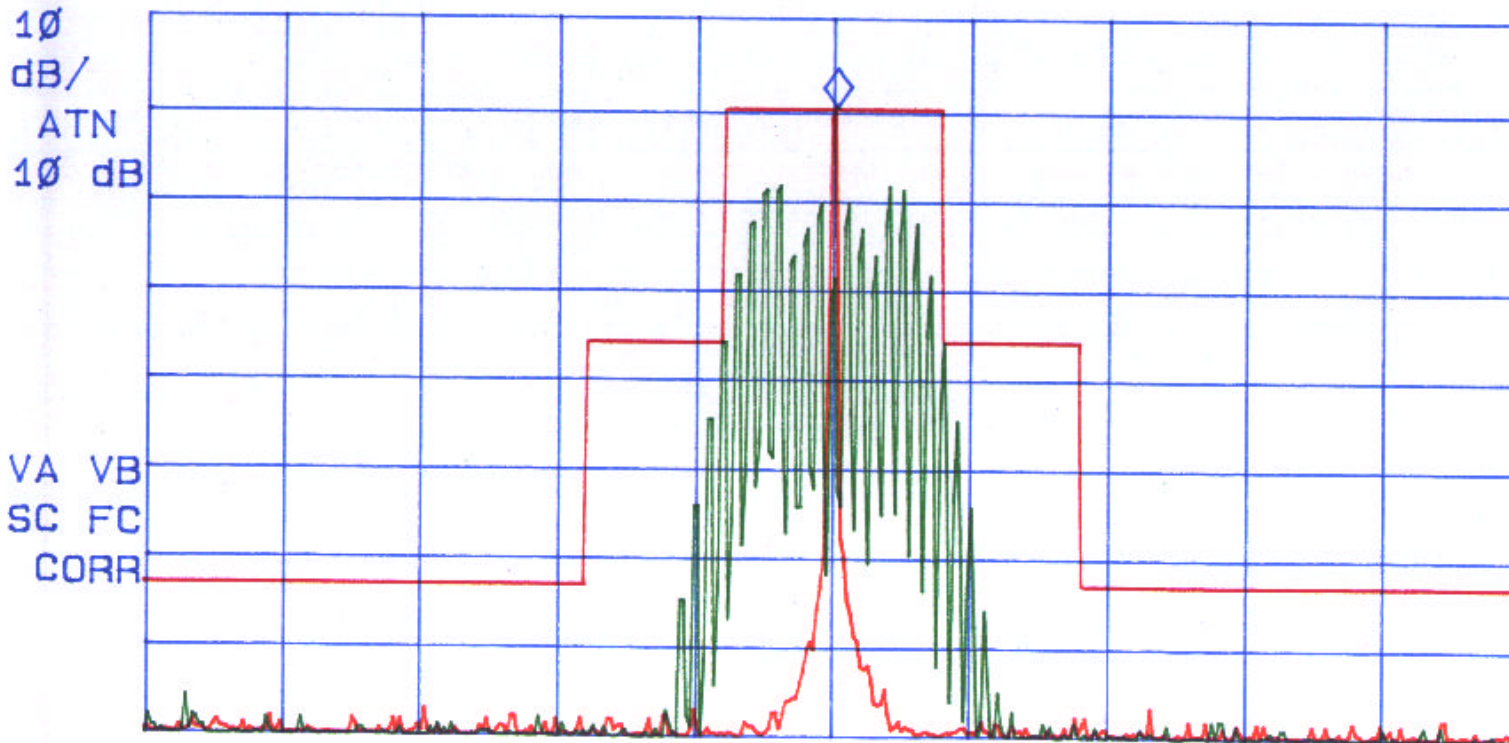
REF LEVEL
2.4 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 849.0019 MHz
-7.54 dBm

PLOT # 11

REF OFFST 31.2 dB

LOG REF 2.4 dBm *RF IN SIGNAL FITTED IN THE MASK*



CENTER 849.0013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz

Tx Freq.: 824 MHz, RF Output at antenna: 6.3 Watts

Modulation: RF In level of -40 dBm @ 824 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 24 1999
Tested by: Hung Trinh

hp

REF LEVEL
47.2 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 824.0000 MHz
37.17 dBm

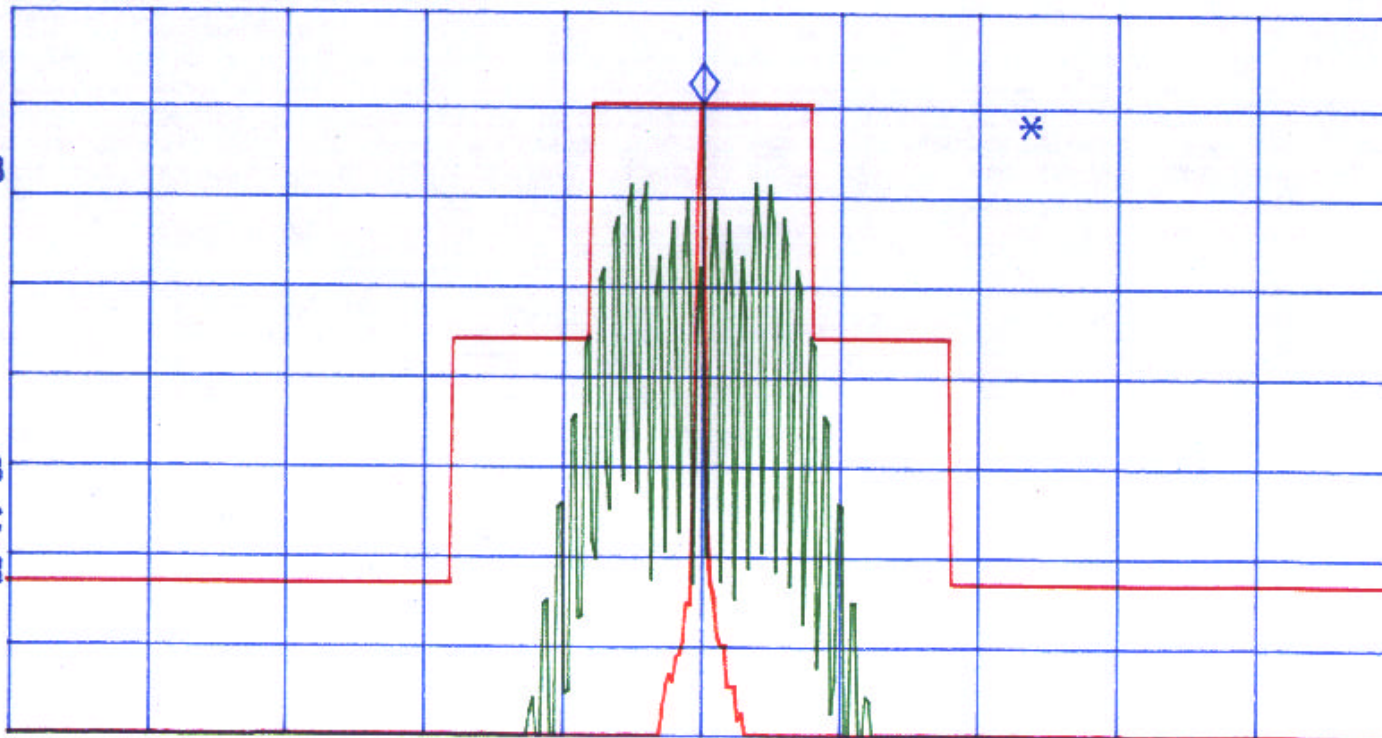
PLOT #12

REF OFFST 31.2 dB
REF 47.2 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 824.0000 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz

Tx Freq.: MHz, RF Output at antenna: 12.5 Watts

Modulation: RF In level of dBm @ 881.5 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999

Tested by: Hung Trinh

hp

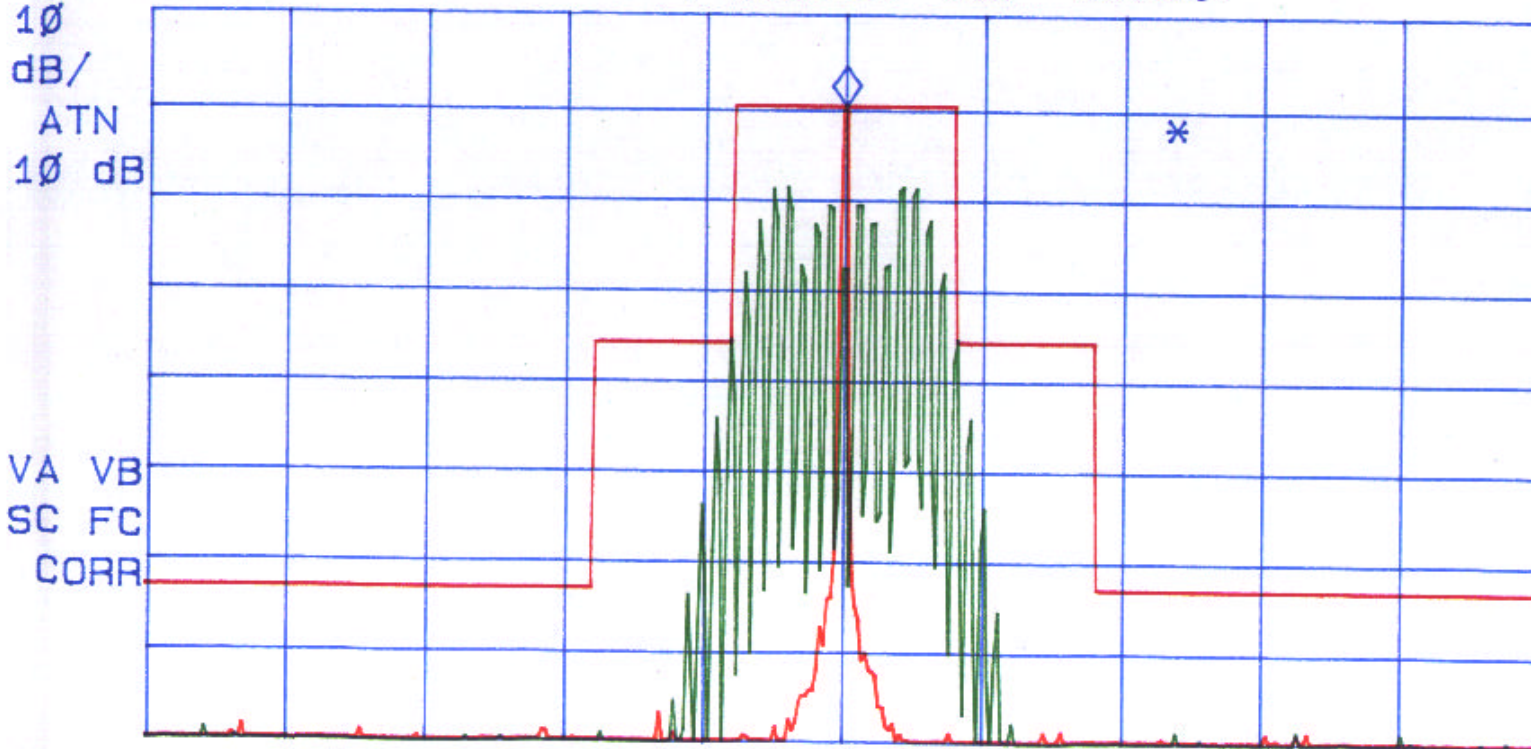
REF LEVEL
2.9 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 881.5013 MHz
-7.16 dBm

PLOT#13

REF OFFST 31.2 dB

LOG REF 2.9 dBm *RF IN FITTED IN THE MASK*



CENTER 881.5013 MHz

#IF BW 300 Hz

AVG BW 300 Hz

SPAN-250.0 kHz

SWP 8.33 sec



UltraTech
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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869.1 - 894 MHz

Tx Freq.: 881.5 MHz, RF Output at antenna: 12.3 Watts

Modulation: RF In level of -40 dBm @ 881.5 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
50.7 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 881.5013 MHz
40.74 dBm

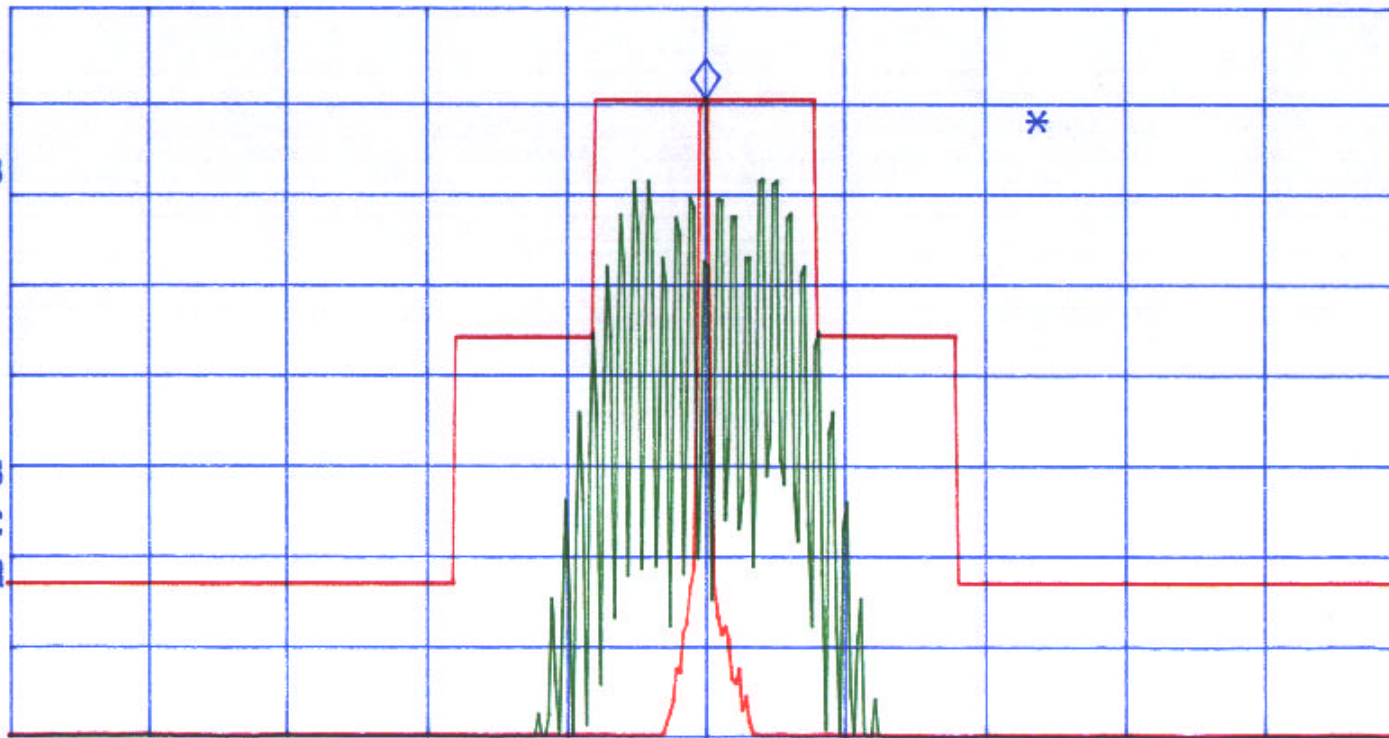
PLOT #14

REF OFFST 31.2 dB
REF 50.7 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 881.5013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 824 - 849 MHz
Tx Freq.: / MHz, RF Output at antenna: / Watts
Modulation: RF In level of / dBm @ 824 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec. 23 1999
Tested by: Hung Trinh

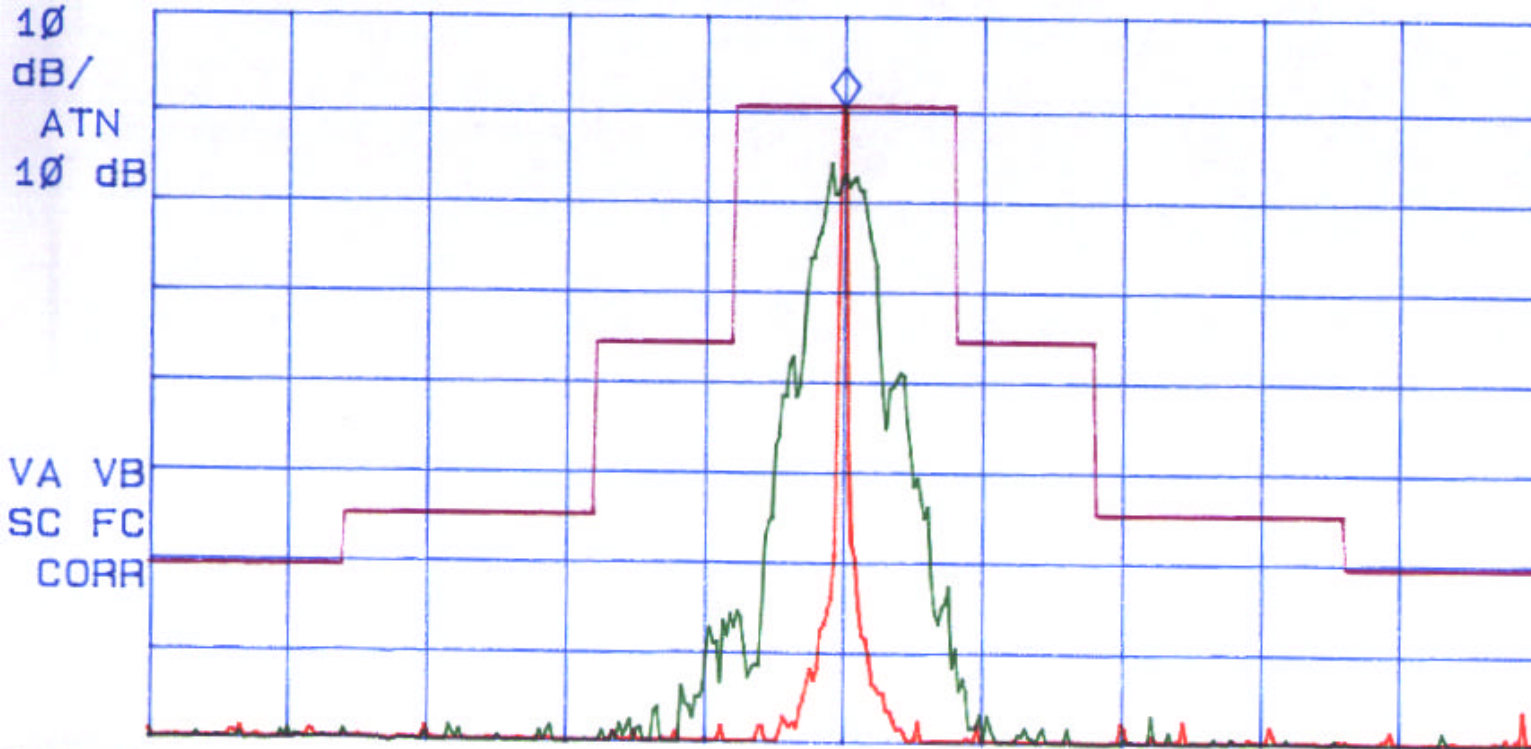
h/p

REF LEVEL
2.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 824.0019 MHz
-7.36 dBm

PLOT #5
REF OFFST 31.2 dB

LOG REF 2.6 dBm *RF IN SIGNAL FITTED IN THE MASK*



CENTER 824.0019 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz
Tx Freq.: 869 MHz, RF Output at antenna: 10.3 Watts
Modulation: RF In level of -40 dBm @ 869 MHz, FM Modulated with 2.5 kHz
Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

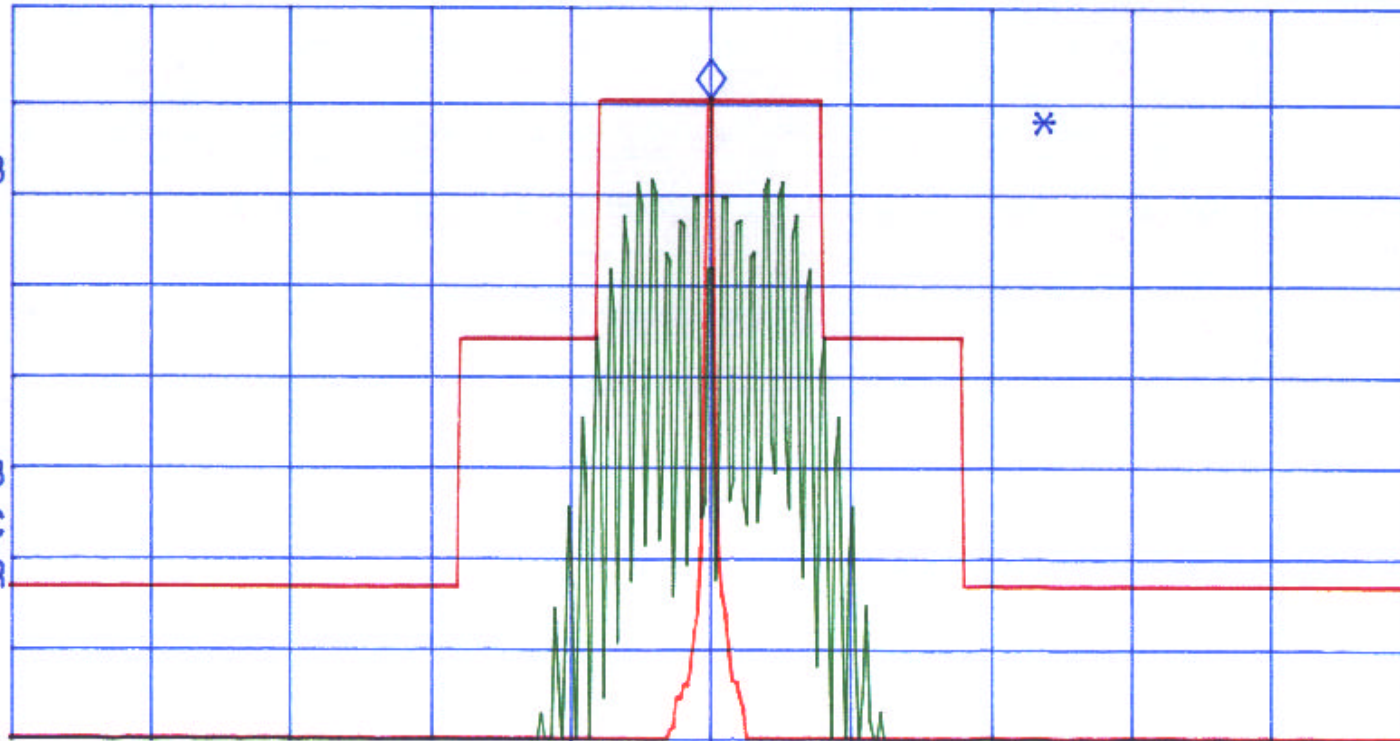
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 869.0013 MHz
40.09 dBm

PLOT #16

REF OFFST 31.2 dB RF OUT
REF 50.1 dBm

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 869.0013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869 - 894 MHz

Tx Freq.: MHz, RF Output at antenna: Watts

Modulation: RF In level of dBm @ 894 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec. 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.1 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 894.0013 MHz
-7.04 dBm

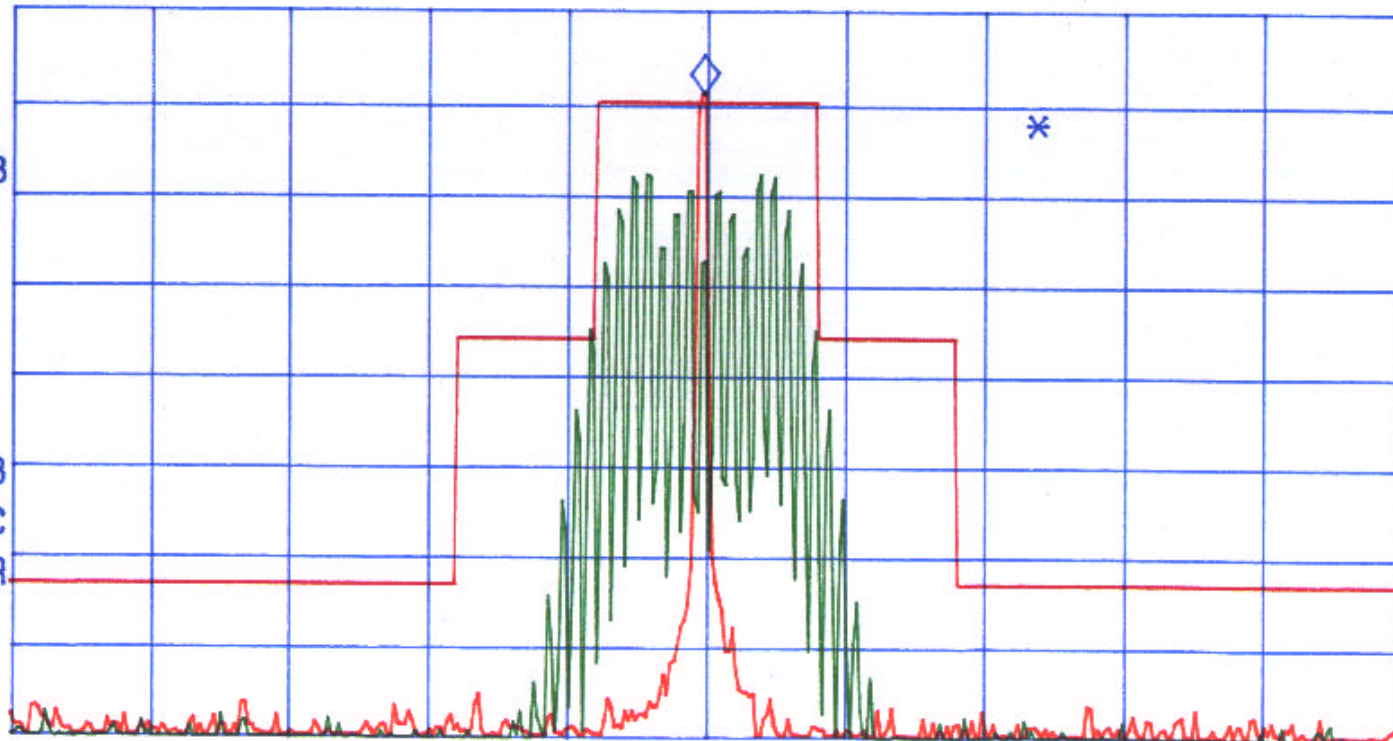
PLOT #17

REF OFFST 31.2 dB

LOG REF 2.1 dBm *RF IN SIGNAL FITTED IN THE MASK*

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 894.0019 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz

Tx Freq.: 894 MHz, RF Output at antenna: 11.1 Watts

Modulation: RF In level of -40 dBm @ 894 MHz, FM Modulated with 2.5 kHz

Sine Wave signal, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
50.4 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 894.0013 MHz
40.37 dBm

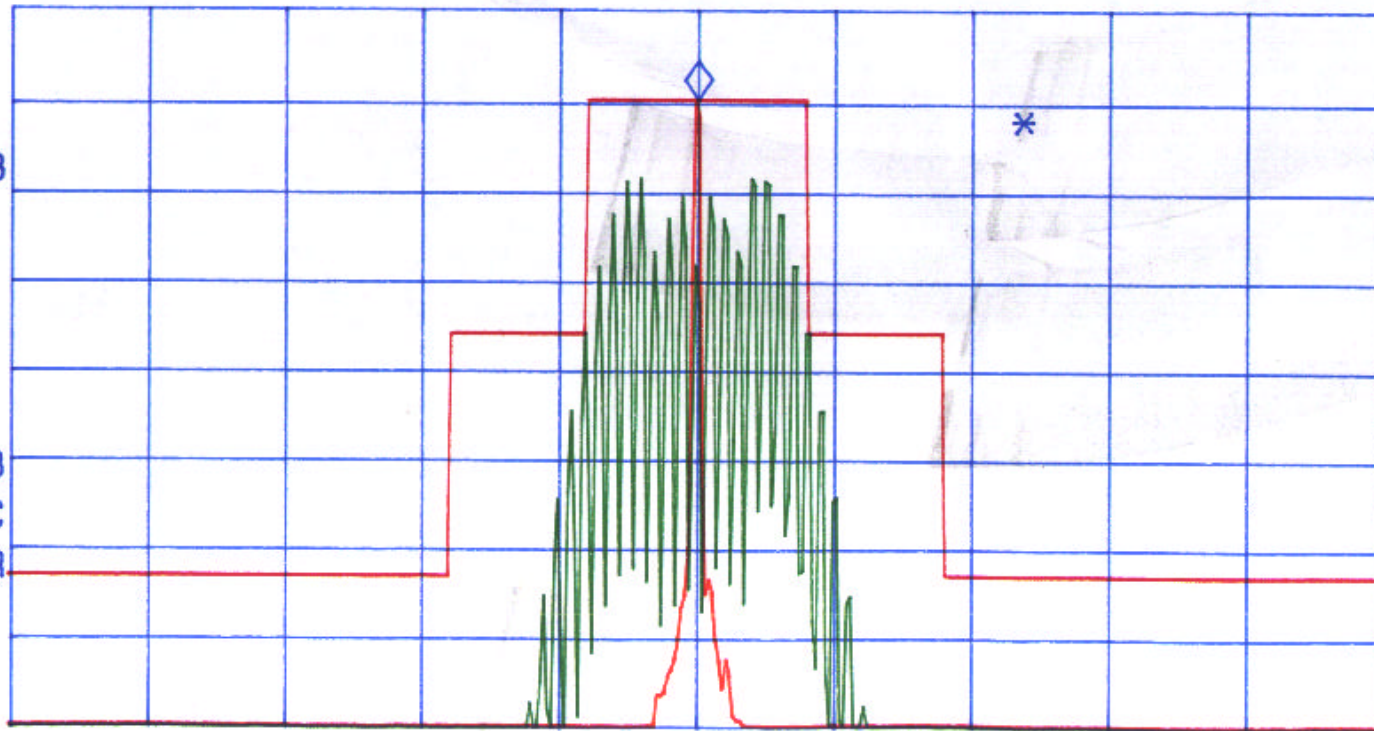
PLOT #18

REF OFFST 31.2 dB
REF 50.4 dBm

LOG
10
dB/
ATN
30 dB

RF OUT

VA VB
SC FC
CORR



CENTER 894.0013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz
Tx Freq.: MHz, RF Output at antenna: Watts
Modulation: RF In level of dBm @ 869 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 869.0019 MHz
-7.42 dBm

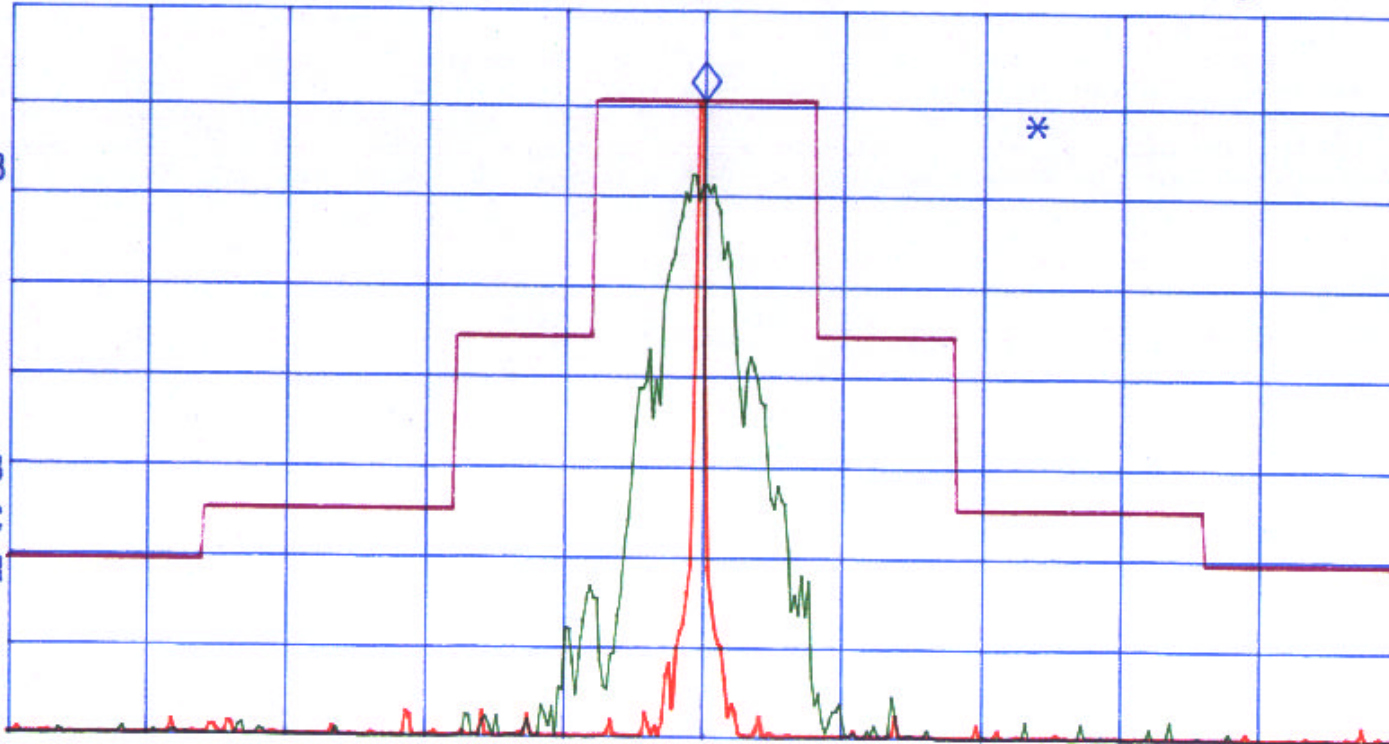
PLOT #19

REF OFFST 31.2 dB

LOG REF 2.6 dBm *RF IN SIGNAL FITTED IN THE MASK*

10 dB/ATN
10 dB

VA VB
SC FC
CORR



CENTER 869.0019 MHz

#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz

SWP 8.33 sec



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KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz
Tx Freq.: 894 MHz, RF Output at antenna: 11.1 Watts
Modulation: RF In level of -40 dBm @ 894 MHz, FM Modulated with an
external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
50.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 894.0013 MHz
40.58 dBm

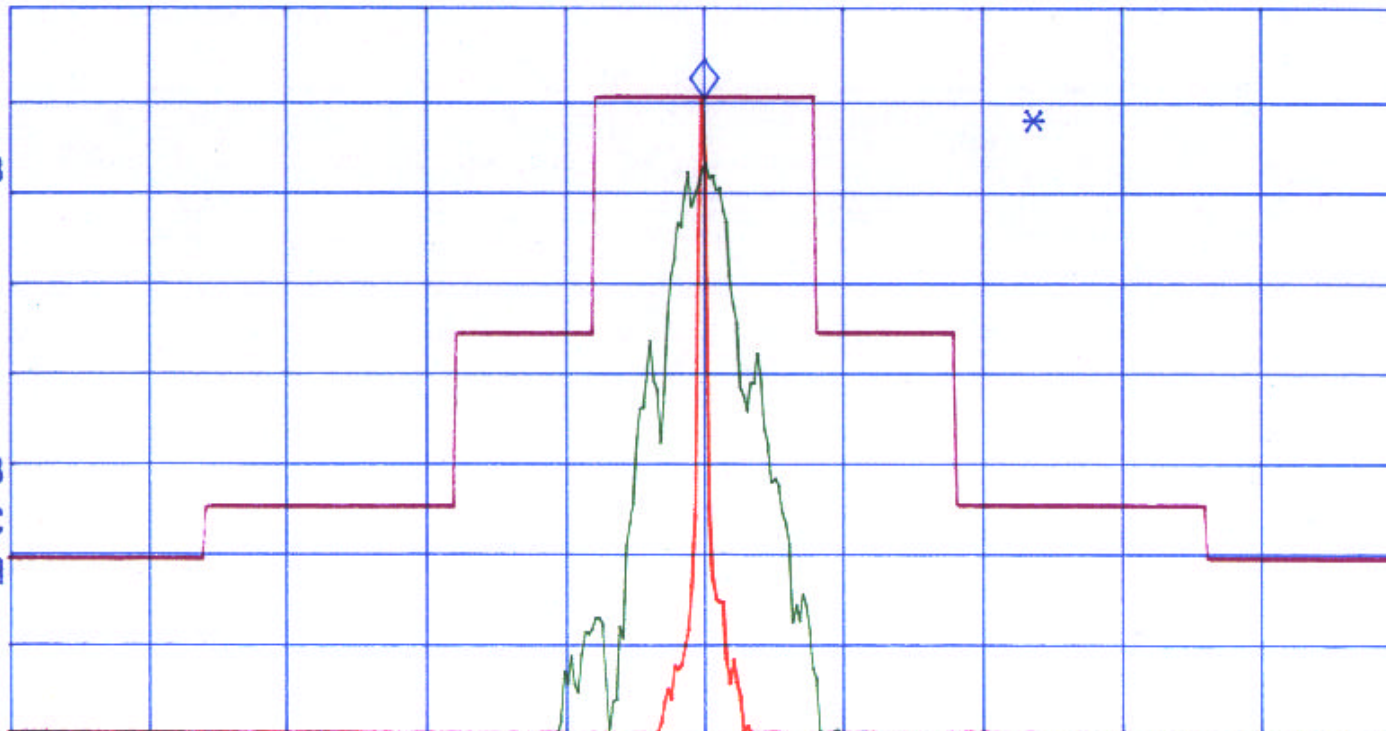
PLOT #20

REF OFFST 31.2 dB
REF 50.6 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 894.0013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN-250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz
Tx Freq.: MHz, RF Output at antenna: Watts
Modulation: RF In level of dBm @ 881.5 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

SPAN
250.0 KHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 881.5013 MHz
-7.21 dBm

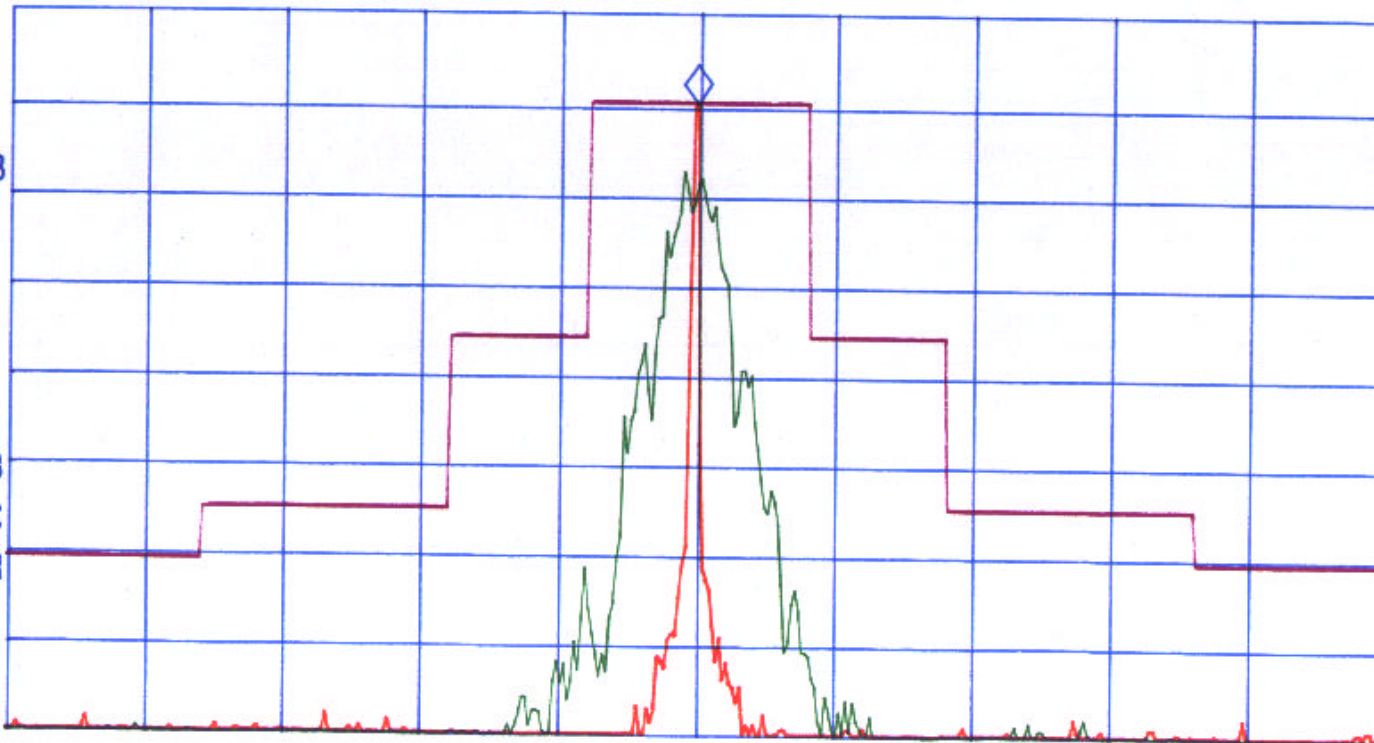
PLOT #21

REF OFFST 31.2 dB

LOG REF 2.8 dBm *RF IN SIGNAL FITTED IN THE MASK.*

10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 881.5019 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 KHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz

Tx Freq.: 881.5 MHz, RF Output at antenna: 12.3 Watts

Modulation: RF In level of -40 dBm @ 881.5 MHz, FM Modulated with an external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
48.5 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 881.5013 MHz
38.46 dBm

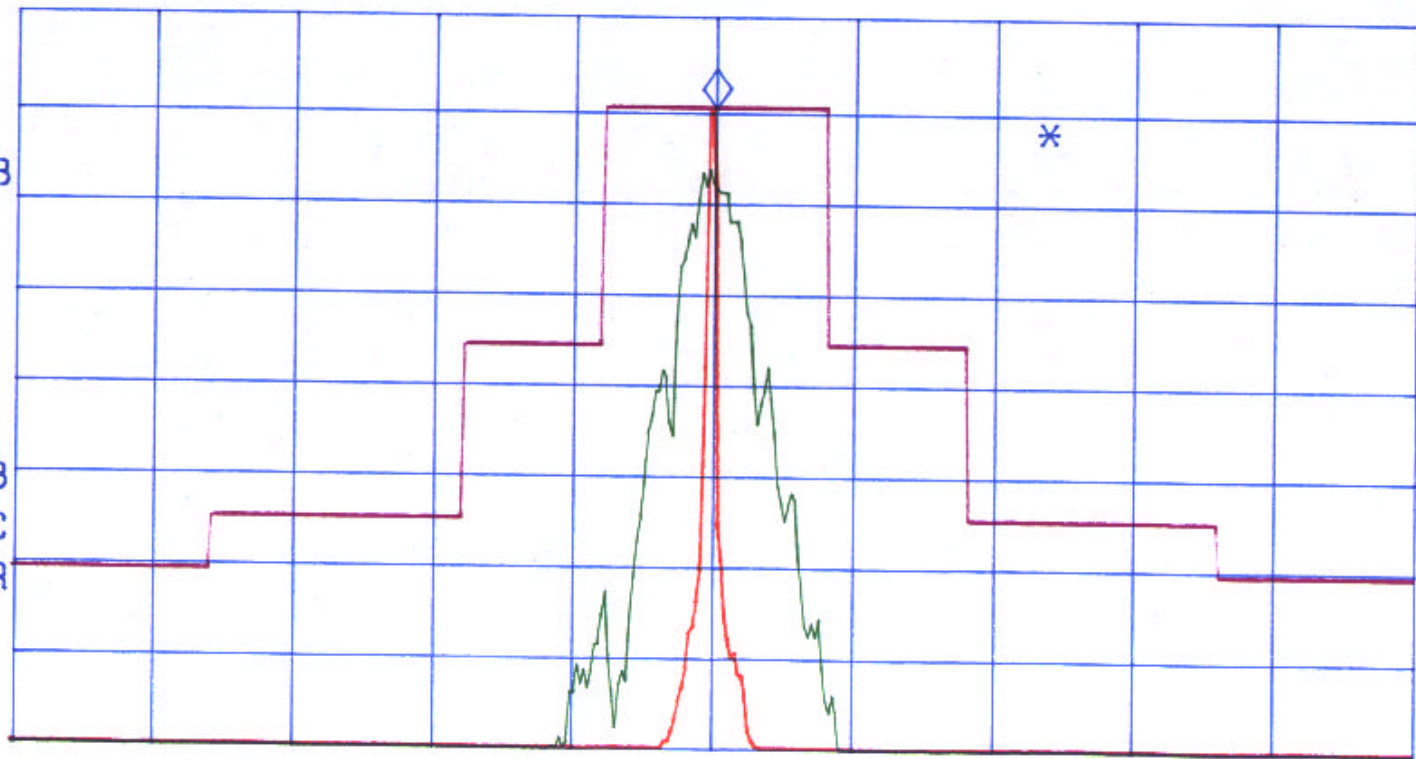
PLOT # 22

REF OFFST 31.2 dB
REF 48.5 dBm

RF OUT

LOG
10
dB/
ATN
30 dB

VA VB
SC FC
CORR



CENTER 881.5013 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869-894 MHz
Tx Freq.: MHz, RF Output at antenna: Watts
Modulation: RF In level of dBm @ 894 MHz, FM Modulated with an
external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec.: 23 1999
Tested by: Hung Trinh

hp

REF LEVEL
2.8 dBm

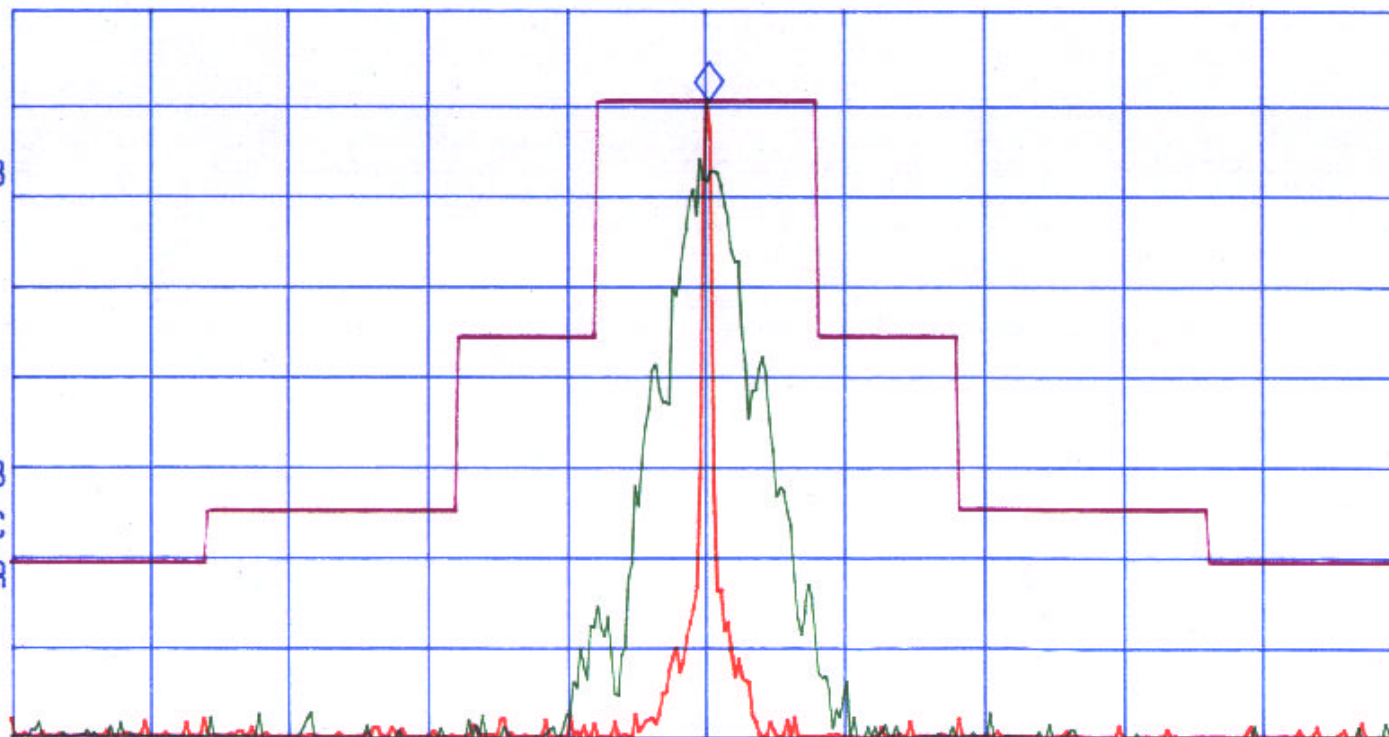
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 894.0013 MHz
-7.20 dBm

PLOT # 23

REF OFFST 31.2 dB *RF IN SIGNAL FITTED IN THE MASK*
REF 2.8 dBm

LOG
10
dB/
ATN
10 dB

VA VB
SC FC
CORR



CENTER 894.0006 MHz
#IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
SWP 8.33 sec



UltraTech
Engineering Labs Inc.

KAVAL TELECOM INC.

BI-DIRECTIONAL AMPLIFIER- 869 - 894 MHz
 Tx Freq.: 869 MHz, RF Output at antenna: 10.3 Watts
 Modulation: RF In level of -40 dBm @ 869 MHz, FM Modulated with an
 external 9600 b/s random data source, Freq. Dev.: 4 kHz

Date: Dec: 23 1999
 Tested by: Hung Trinh

hp

SPAN
 250.0 kHz

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 869.0015 MHz
 37.73 dBm

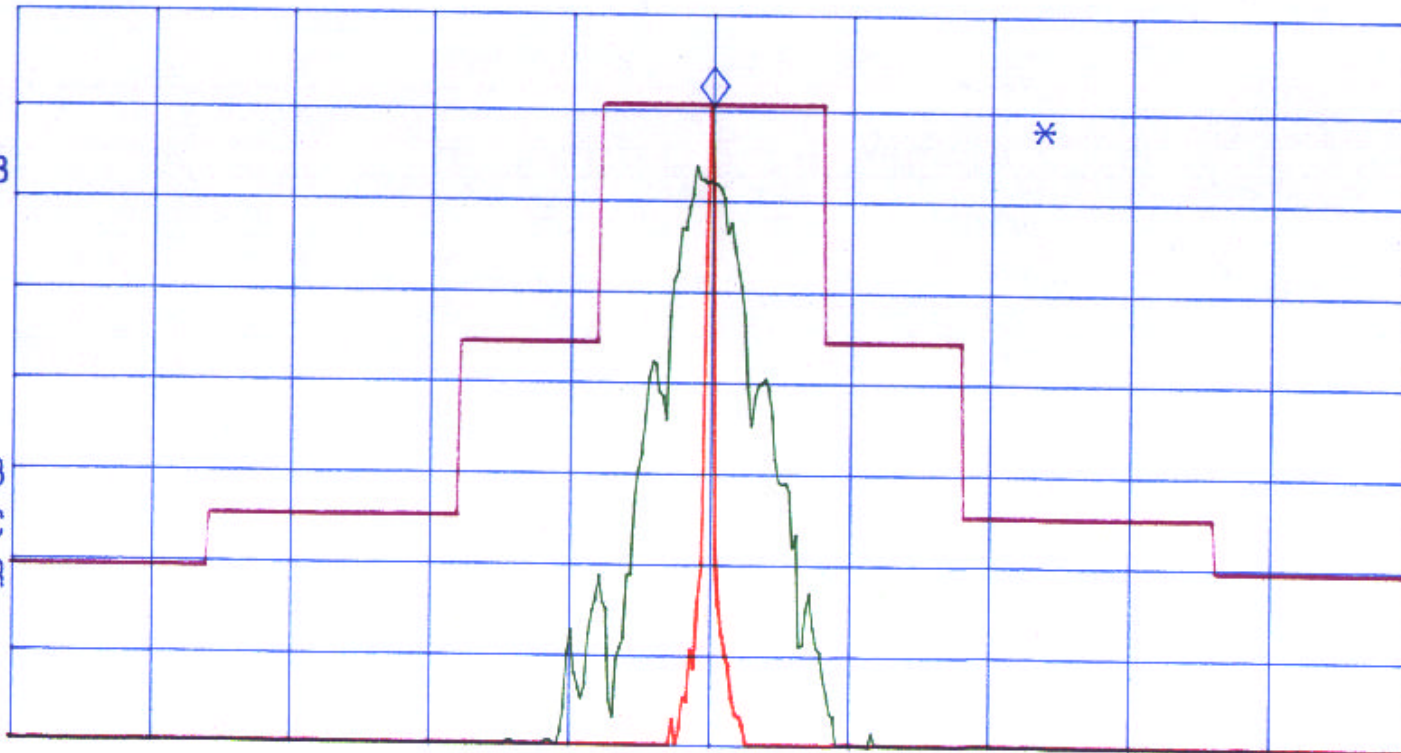
PLOT #24

REF OFFST 31.2 dB
 REF 47.8 dBm

RF OUT

LOG
 10
 dB/
 ATN
 30 dB

VA VB
 SC FC
 CORR



CENTER 869.0015 MHz
 #IF BW 300 Hz

AVG BW 300 Hz

SPAN 250.0 kHz
 SWP 8.33 sec