

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
Tx Frequency: 896 MHz
Max. Power Input: 10 dBm, Max Power Output: 38.8 dBm

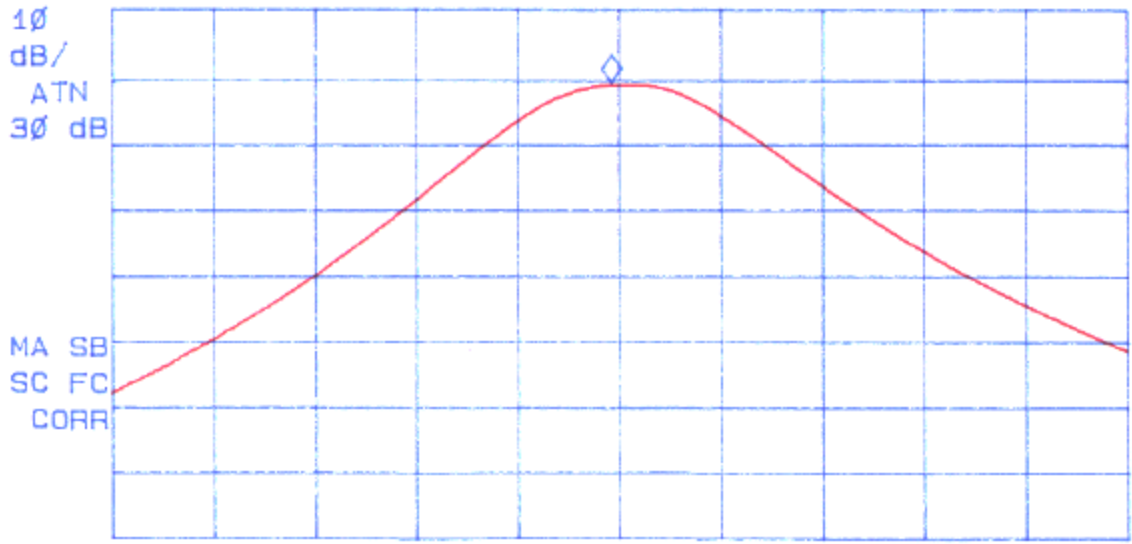
Date: Nov.: 02, 2000
Tested by: Hung Trinh

CENTER
896.000 MHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 895.963 MHz
38.83 dBm

No user
Menu

REF OFFST 30.9 dB
LOG REF 50.0 dBm



CENTER 896.000 MHz SPAN 5.000 MHz
#IF BW 1.0 MHz #AVG BW 1 MHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
Tx Frequency: 902 MHz
Max. Power Input: 10 dBm, Max Power Output: 38.8 dBm

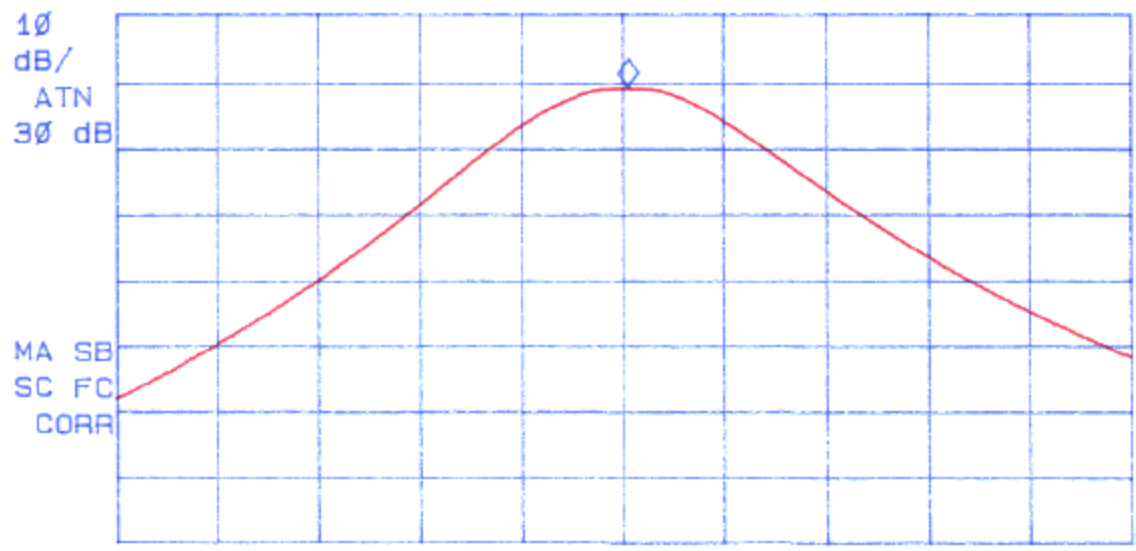
Date: Nov.: 02 2000
Tested by: Hung Trinh

CENTER
902.000 MHz

ACTV DET: PEAK
MEAS DET: PEAK GP AVG
MKR 902.025 MHz
38.84 dBm

No user
Menu

REF OFFST 30.9 dB
LOG REF 50.0 dBm



CENTER 902.000 MHz SPAN 5.000 MHz
#IF BW 1.0 MHz #AVG BW 1 MHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



UltraTech
Engineering Labs Inc.

KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
RF Output at 896 - 902 MHz Output Port

Date: Nov. 28, 2000
Tested by: Hung Trinh

hp

MARKER
902.00 MHz
36.85 dBm

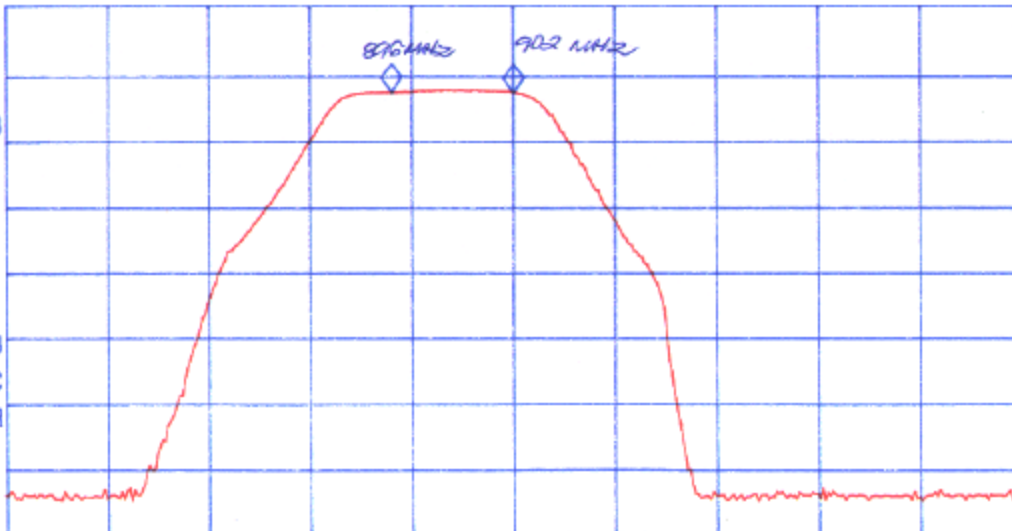
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 902.00 MHz
36.85 dBm

No user
Menu

REF OFFST 30.9 dB
REF 50.0 dBm

LOG
10
dB/
ATN
30 dB

VA SB
SC FC
CORR



CENTER 902.00 MHz SPAN 50.00 MHz
#IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 RF Tracking Signal at 896-902 MHz Input Port

Date: Nov., 2000
 Tested by: Hung Trinh

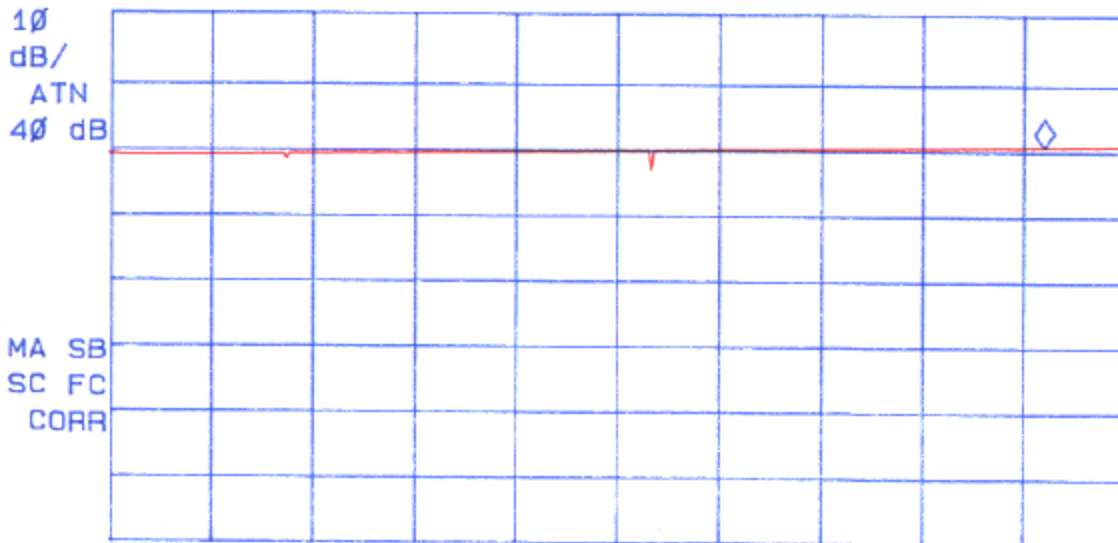
hp

MARKER
 923.00 MHz
 10.00 dBm

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 923.00 MHz
 10.00 dBm

No user
 Menu

LOG REF 30.0 dBm



CENTER 902.00 MHz SPAN 50.00 MHz
 #IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
896-902 MHz Amplifier Gain Response within $F_0 \pm 2.5 B$

Date: Nov. 2000
Tested by: Hung Trinh

hp

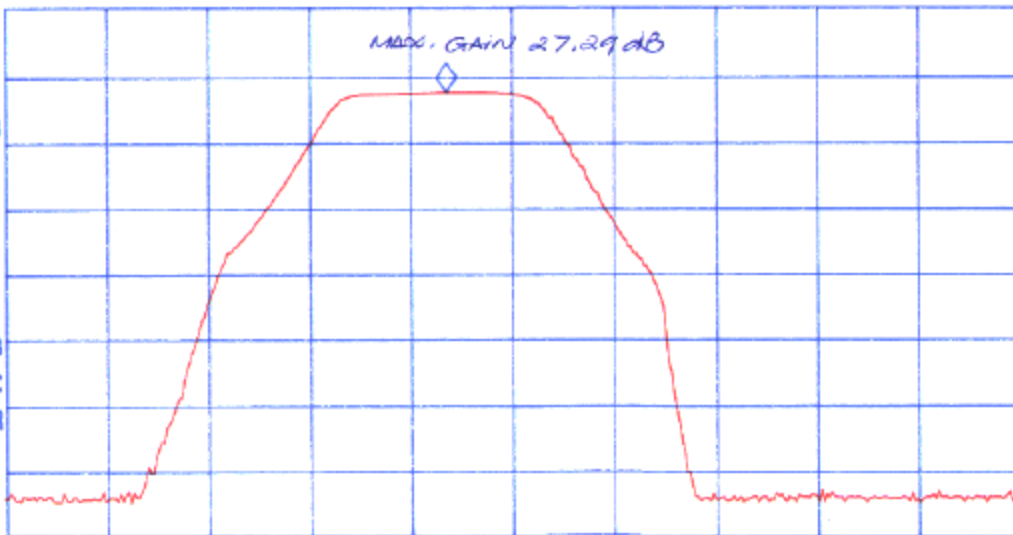
REF LEVEL
50.0 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 898.75 MHz
37.29 dBm

No user
Menu


REF OFFST 30.9 dB
LOG REF 50.0 dBm

10 dB/ATN
30 dB
VA SB
SC FC
CORR



CENTER 902.00 MHz SPAN 50.00 MHz
#IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics

 **UltraTech**
Engineering Labs Inc.

KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
Tx Frequency: 935 MHz
Max. Power Input: 10 dBm, Max Power Output: 39.5 dBm

Date: Nov.: 01 2000
Tested by: Hung Trinh

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 935.025 MHz
39.54 dBm

No user
Menu

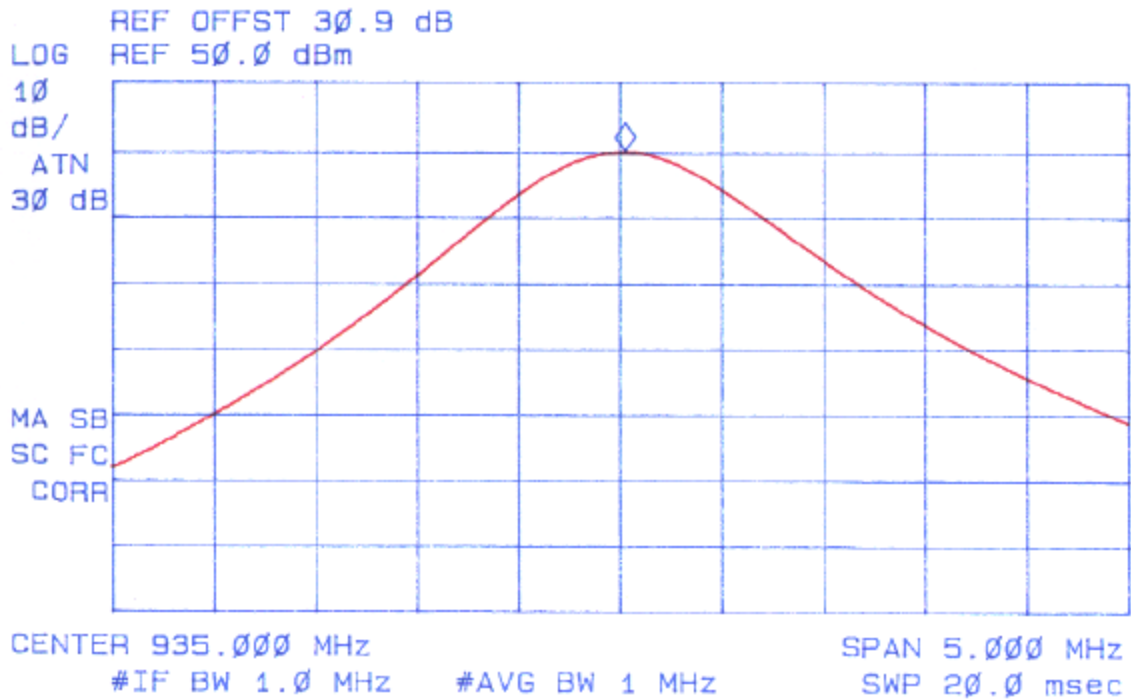


Exhibit 9A – Amplifier Gain Frequency Response Characteristics

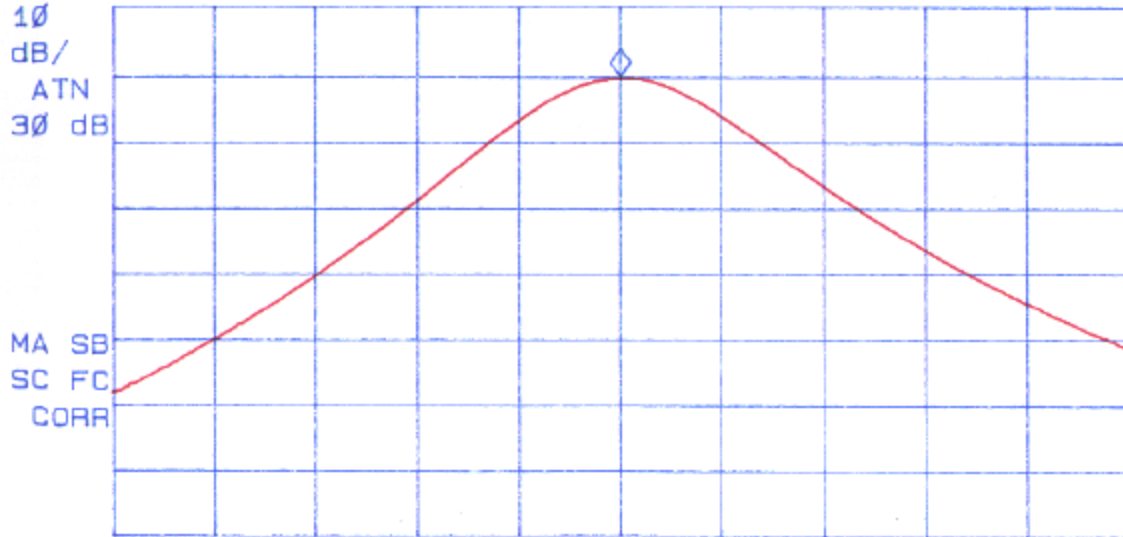
	KAVAL TELECOM INC. BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200 Tx Frequency: <u>941</u> MHz Max. Power Input: <u>10</u> dBm, Max Power Output: <u>39.4</u> dBm	Date: Nov.: <u>01</u> 2000 Tested by: Hung Trinh
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CENTER
941.000 MHz

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 941.000 MHz
 39.38 dBm

No user
Menu

REF OFFST 30.9 dB
 LOG REF 50.0 dBm



CENTER 941.000 MHz SPAN 5.000 MHz
 #IF BW 1.0 MHz #AVG BW 1 MHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
RF Output at 935 -941 MHz Output Port

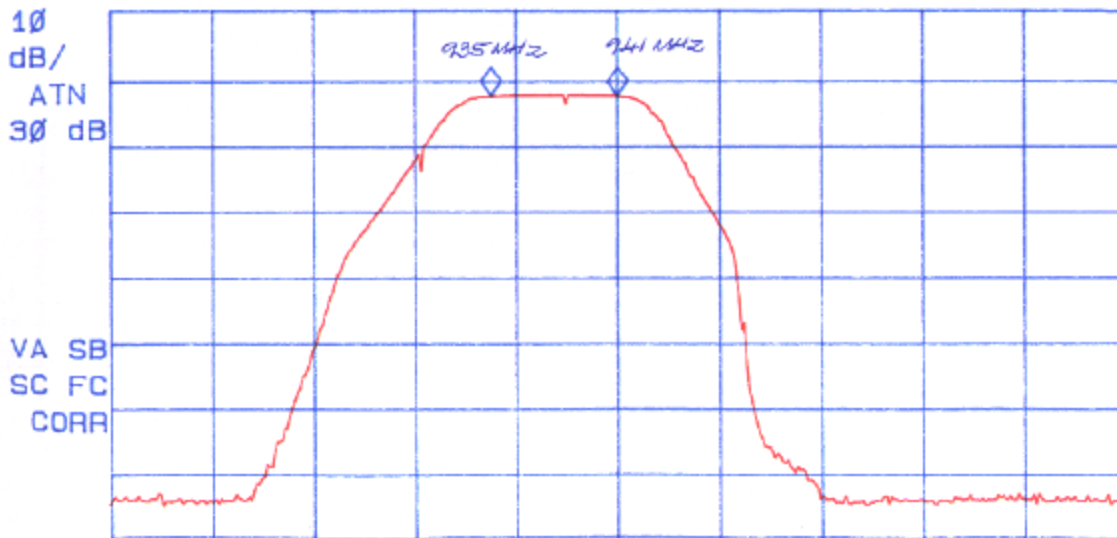
Date: Nov. 08 2000
Tested by: Hung Trinh

MARKER
941.00 MHz
37.07 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 941.00 MHz
37.07 dBm

No user
Menu

LOG REF OFFST 30.9 dB
REF 50.0 dBm



CENTER 941.00 MHz SPAN 48.00 MHz
#IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
RF Tracking Signal at 935.441 MHz Input Port

Date: Nov. 28 2000
Tested by: Hung Trinh

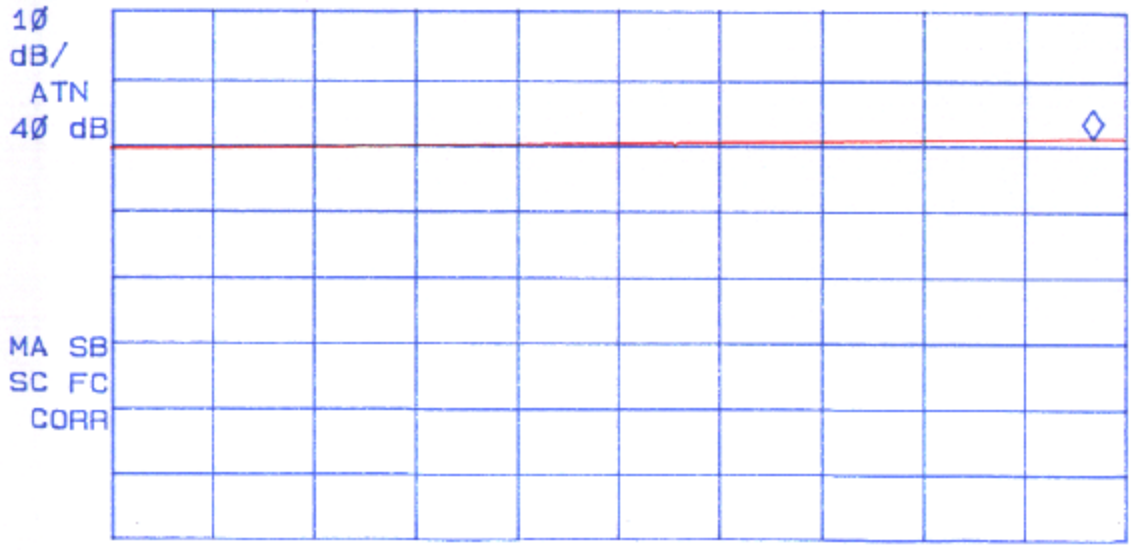
1/4

SPAN
50.00 MHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 964.38 MHz
10.72 dBm

No user
Menu

LOG REF 30.0 dBm



CENTER 941.00 MHz SPAN 50.00 MHz
#IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics

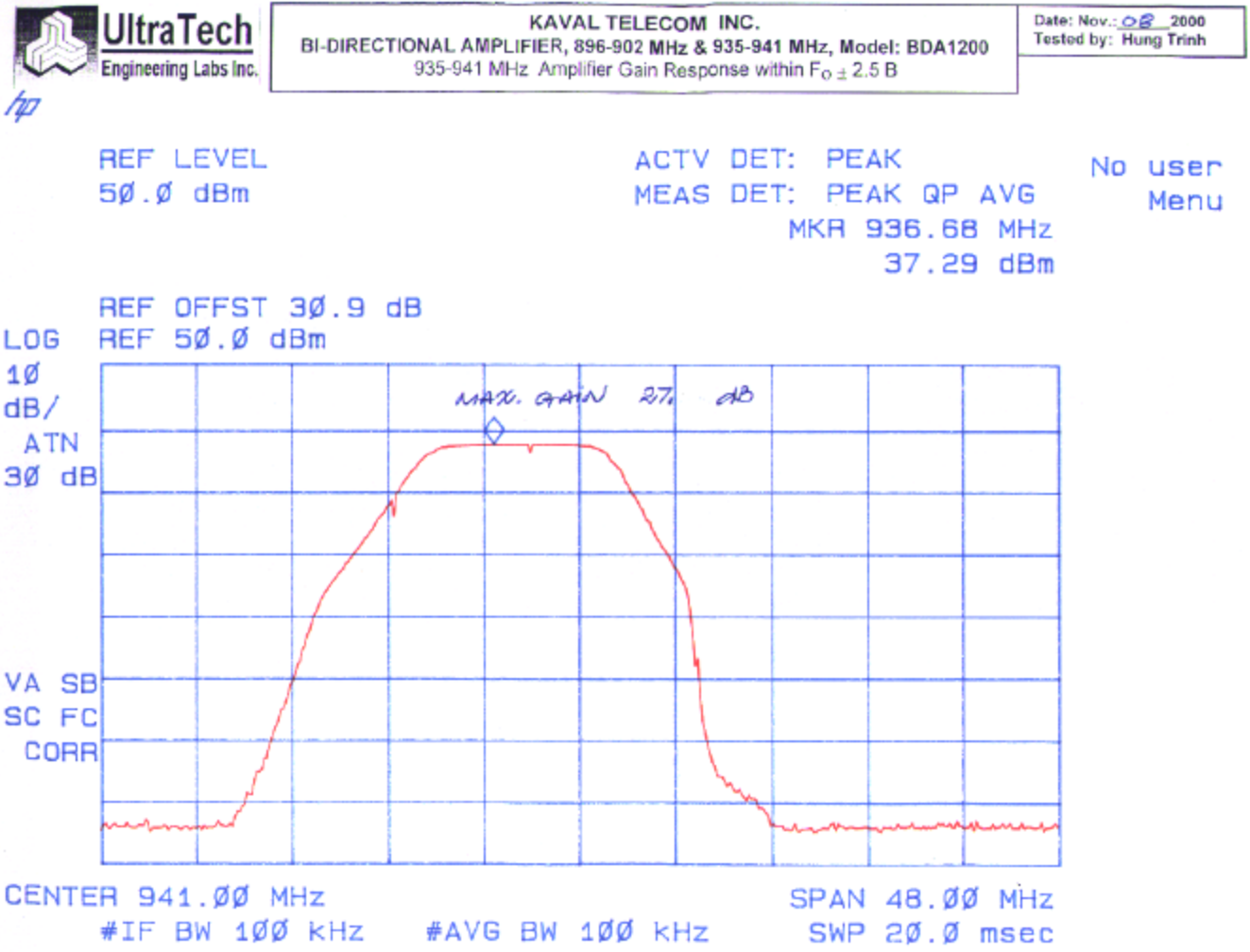


Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 20 dB Bandwidth of the 896 - 902 MHz Band Pass Gain

Date: Nov.: 2000
 Tested by: Hung Trinh

hp

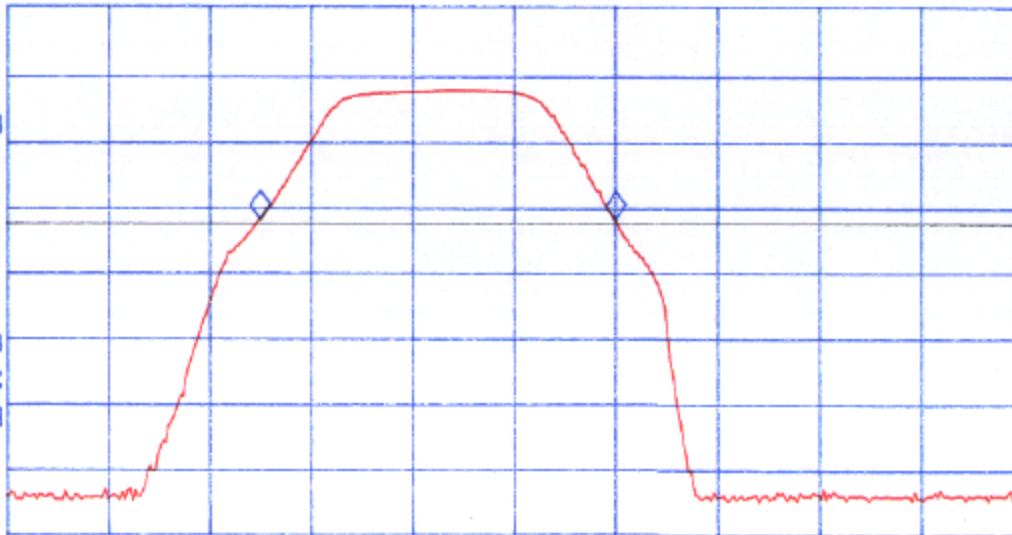
MARKER Δ
 17.50 MHz
 -.03 dB

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 17.50 MHz
 -.03 dB

No user
 Menu

REF OFFST 30.9 dB
 REF 50.0 dBm

LOG
 10
 dB/
 ATN
 30 dB
 DL
 17.3
 dBm
 VA SB
 SC FC
 CORR



CENTER 902.00 MHz SPAN 50.00 MHz
 #IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
20 dB Bandwidth of the 935 - 941 MHz Band Pass Gain

Date: Nov. 28, 2000
Tested by: Hung Trinh

hp

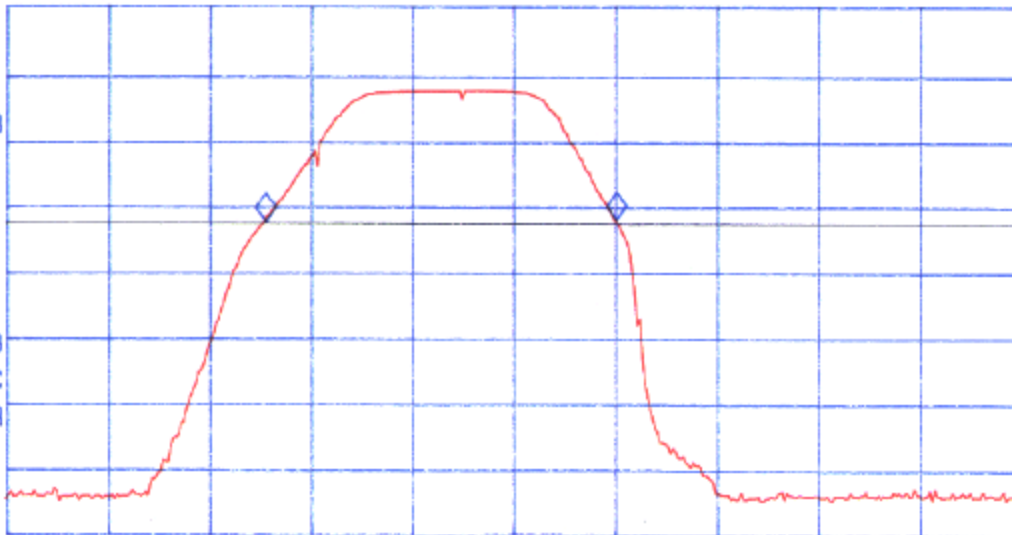
MARKER Δ
16.56 MHz
.29 dB

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 16.56 MHz
.29 dB

No user
Menu

REF OFFST 30.9 dB
REF 50.0 dBm

LOG
10
dB/
ATN
30 dB
DL
17.3
dBm
VA SB
SC FC
CORR



CENTER 941.00 MHz SPAN 48.00 MHz
#IF BW 100 kHz #AVG BW 100 kHz SWP 20.0 msec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



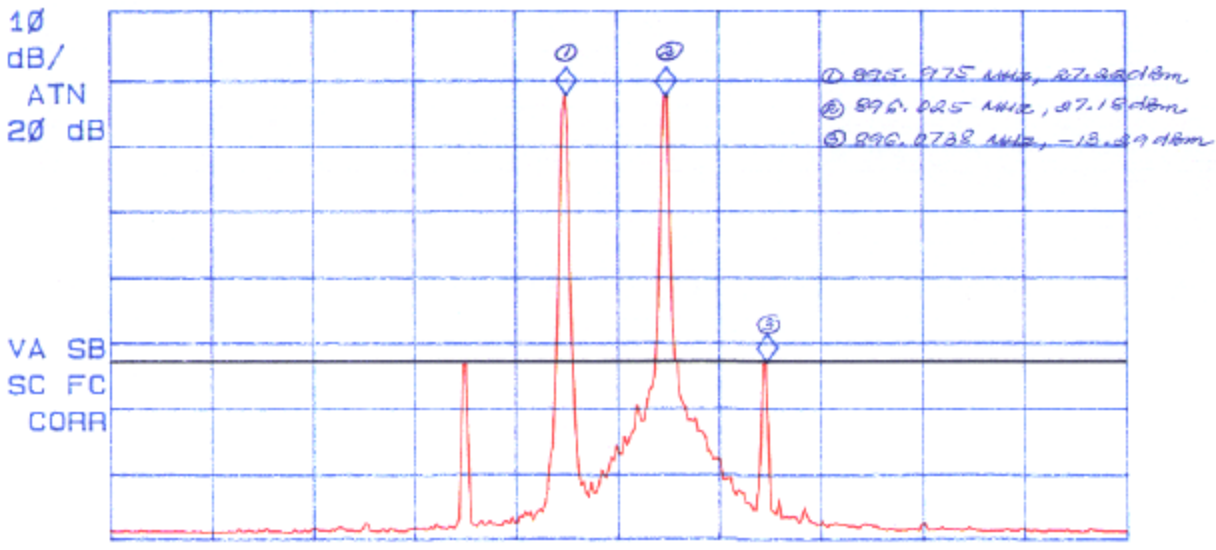
KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 2 RF Input Signals in 896-902 MHz Band

Date: Nov.: 05 2000
 Tested by: Hung Trinh

1/7

896 MHz
 MARKER 896.0738 MHz -13.29 dBm
 ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 896.0738 MHz -13.29 dBm
 No user Menu

REF OFFST 30.9 dB
 LOG REF 40.0 dBm



CENTER 896.0000 MHz SPAN 500.0 kHz
 #IF BW 1.0 kHz #AVG BW 1 kHz SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 3 RF Input Signals in 896-902 MHz Band

Date: Nov. 03, 2000
 Tested by: Hung Trinh

170

MARKER
 896.0500 MHz
 -13.49 dBm

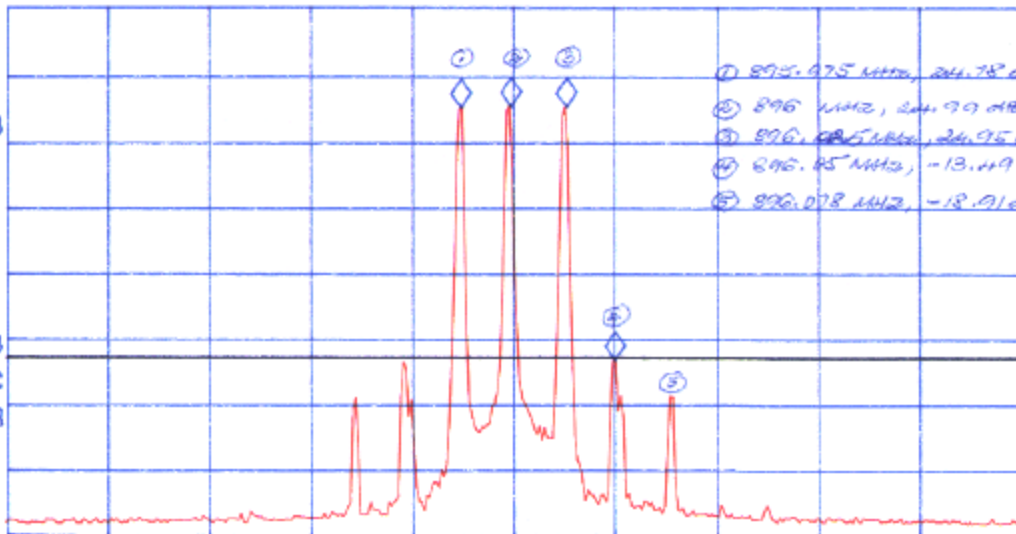
896 MHz

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 896.0500 MHz
 -13.49 dBm

No user
 Menu

REF OFFST 30.9 dB
 LOG REF 40.0 dBm

LOG
 10
 dB/
 ATN
 20 dB



VA SB
 SC FC
 CORR

CENTER 896.0000 MHz SPAN 500.0 kHz
 #IF BW 1.0 kHz #AVG BW 1 kHz SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 4 RF Input Signals in 896-902 MHz Band

Date: Nov.: 03, 2000
 Tested by: Hung Trinh

hp

MARKER
 896.0513 MHz
 24.48 dBm

896 MHz

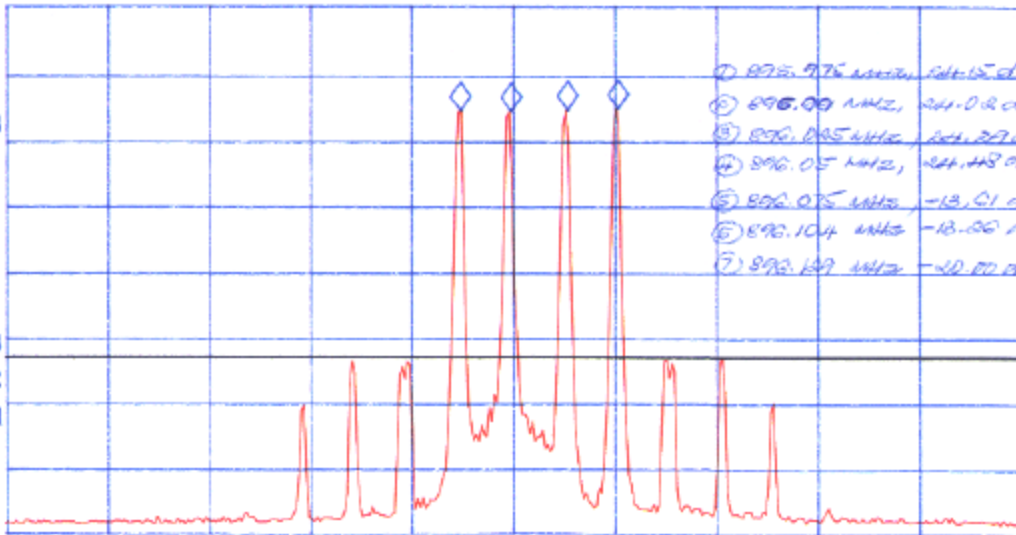
ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 896.0513 MHz
 24.48 dBm

No user
 Menu

REF OFFST 30.9 dB

LOG REF 40.0 dBm

10
 dB/
 ATN
 20 dB



- ① 896.976 MHz, 24.15 dBm
- ② 896.00 MHz, 24.02 dBm
- ③ 896.005 MHz, 24.27 dBm
- ④ 896.05 MHz, 24.48 dBm
- ⑤ 896.075 MHz, -13.51 dBm
- ⑥ 896.104 MHz, -13.00 dBm
- ⑦ 896.139 MHz, -12.02 dBm

CENTER 896.0000 MHz
 #IF BW 1.0 kHz

#AVG BW 1 kHz

SPAN 500.0 kHz
 SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics

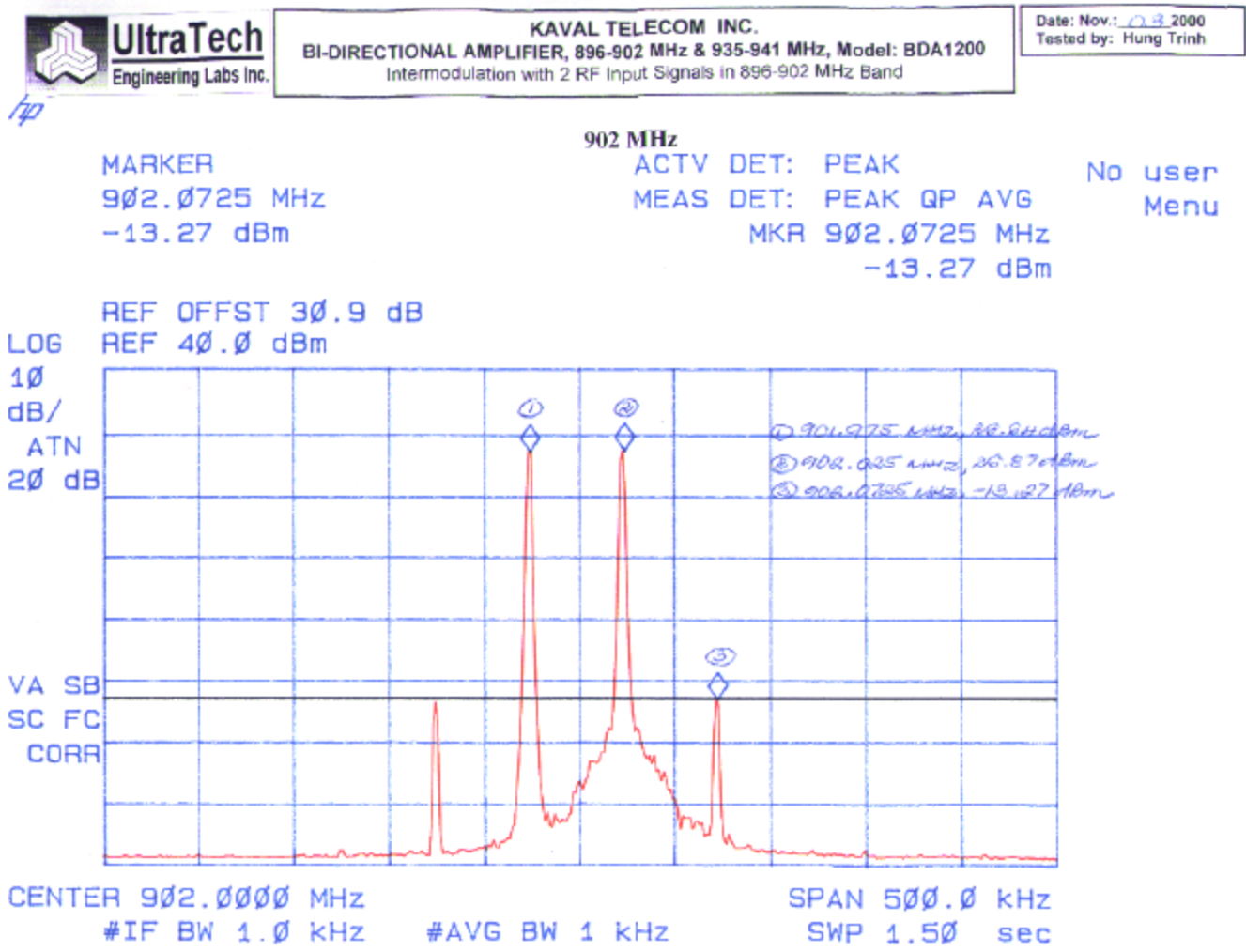


Exhibit 9A – Amplifier Gain Frequency Response Characteristics



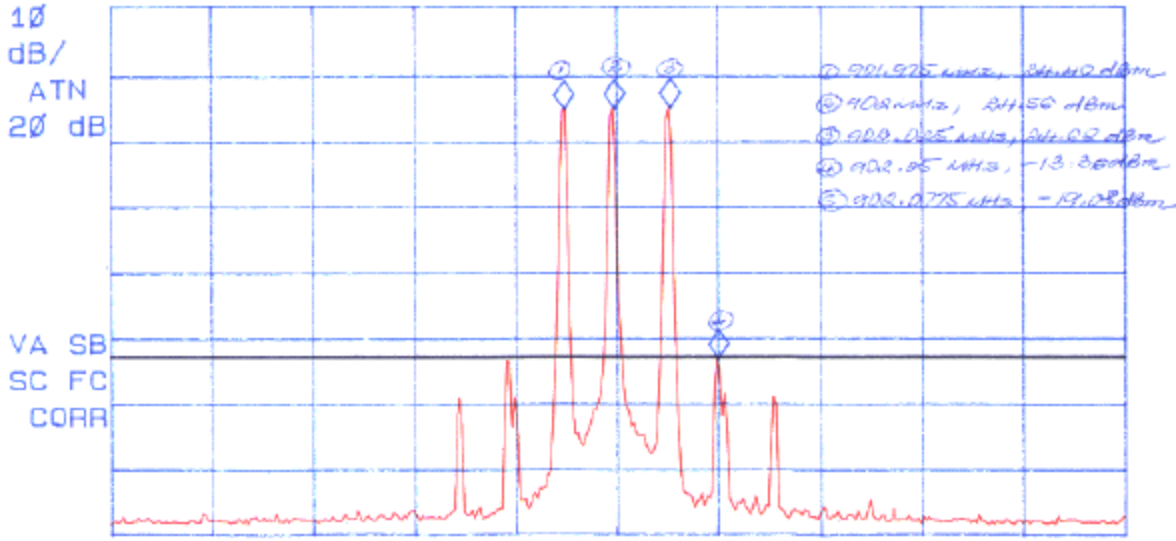
KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 3 RF Input Signals in 896-902 MHz Band

Date: Nov.: 03, 2000
 Tested by: Hung Trinh

h/p

902 MHz
 MARKER 902.0500 MHz -13.36 dBm
 ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 902.0500 MHz -13.36 dBm
 No user Menu

REF OFFST 30.9 dB
 LOG REF 40.0 dBm



CENTER 902.0000 MHz SPAN 500.0 kHz
 #IF BW 1.0 kHz #AVG BW 1 kHz SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 4 RF Input Signals in 896-902 MHz Band

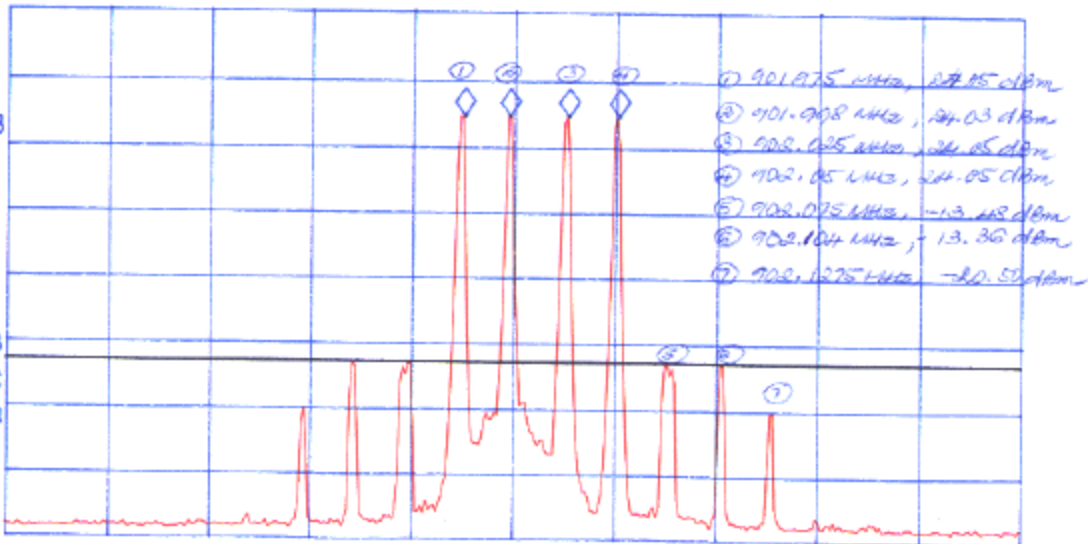
Date: Nov.: 03, 2000
 Tested by: Hung Trinh

hp

902 MHz
 MARKER 902.0513 MHz 24.05 dBm
 ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 902.0513 MHz 24.05 dBm
 No user Menu

REF OFFST 30.9 dB
 REF 40.0 dBm

LOG 10 dB/ATN 20 dB



VA SB SC FC CORR

CENTER 902.0000 MHz SPAN 500.0 kHz
 #IF BW 1.0 kHz #AVG BW 1 kHz SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 2 RF Input Signals in 935-941 MHz Band

Date: Nov.: 01 2000
 Tested by: Hung Trinh

935 MHz

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp
1	934.973544	27.2	27.1	27.1
2	935.022317	27.2	27.2	27.2
3	935.071206	-13.1	-13.7	-13.7

No user
Menu

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 935.0713 MHz
 -15.58 dBm

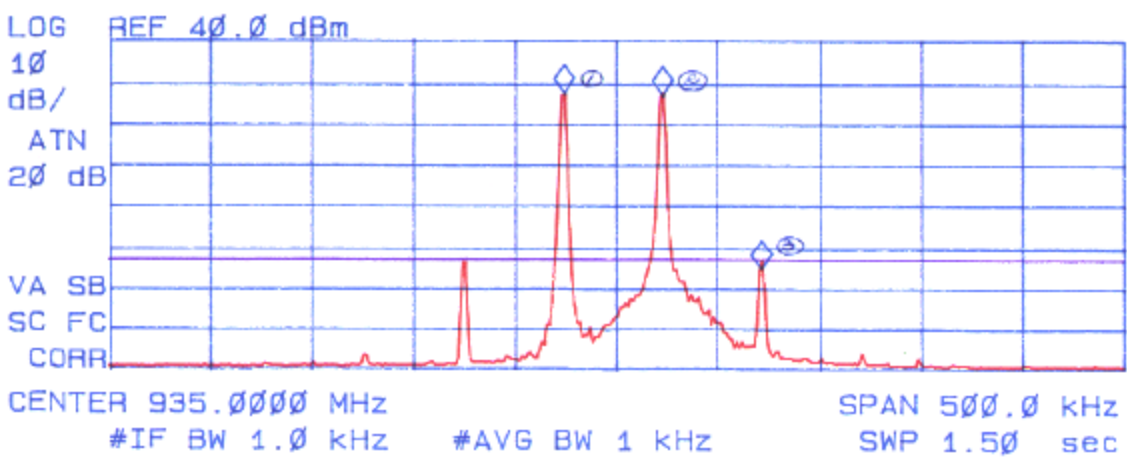


Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 3 RF Input Signals in 935-941 MHz Band

Date: Nov. 01, 2000
 Tested by: Hung Trinh

hp

935 MHz

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp
1	934.973286	24.9	24.9	24.9
2	934.997307	24.8	24.8	24.8
3	935.024969	24.9	24.9	24.9
4	935.049098	-13.7	-14.4	-14.4
5	935.0788	-20.6		

No user
Menu

MARKER
 935.0488 MHz
 -18.71 dBm

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 935.0488 MHz
 -18.71 dBm

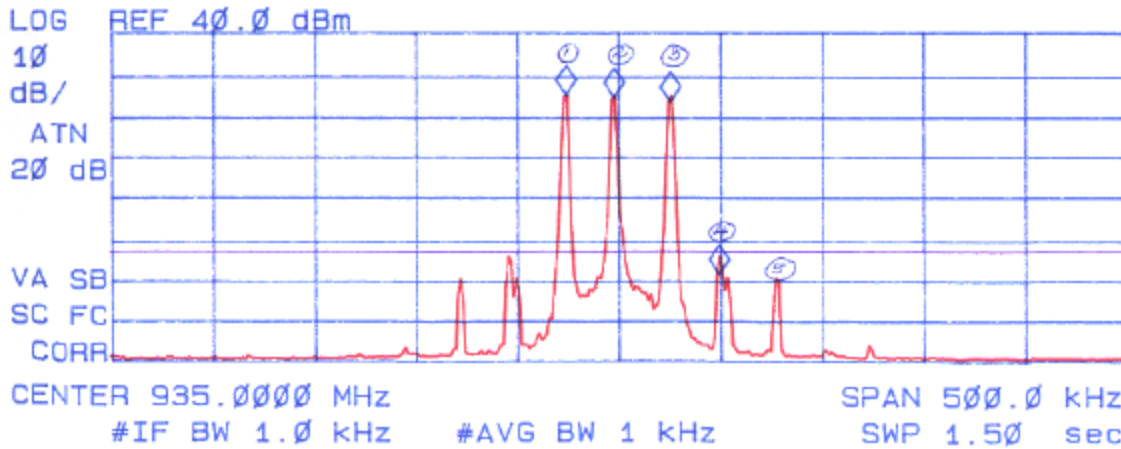


Exhibit 9A – Amplifier Gain Frequency Response Characteristics

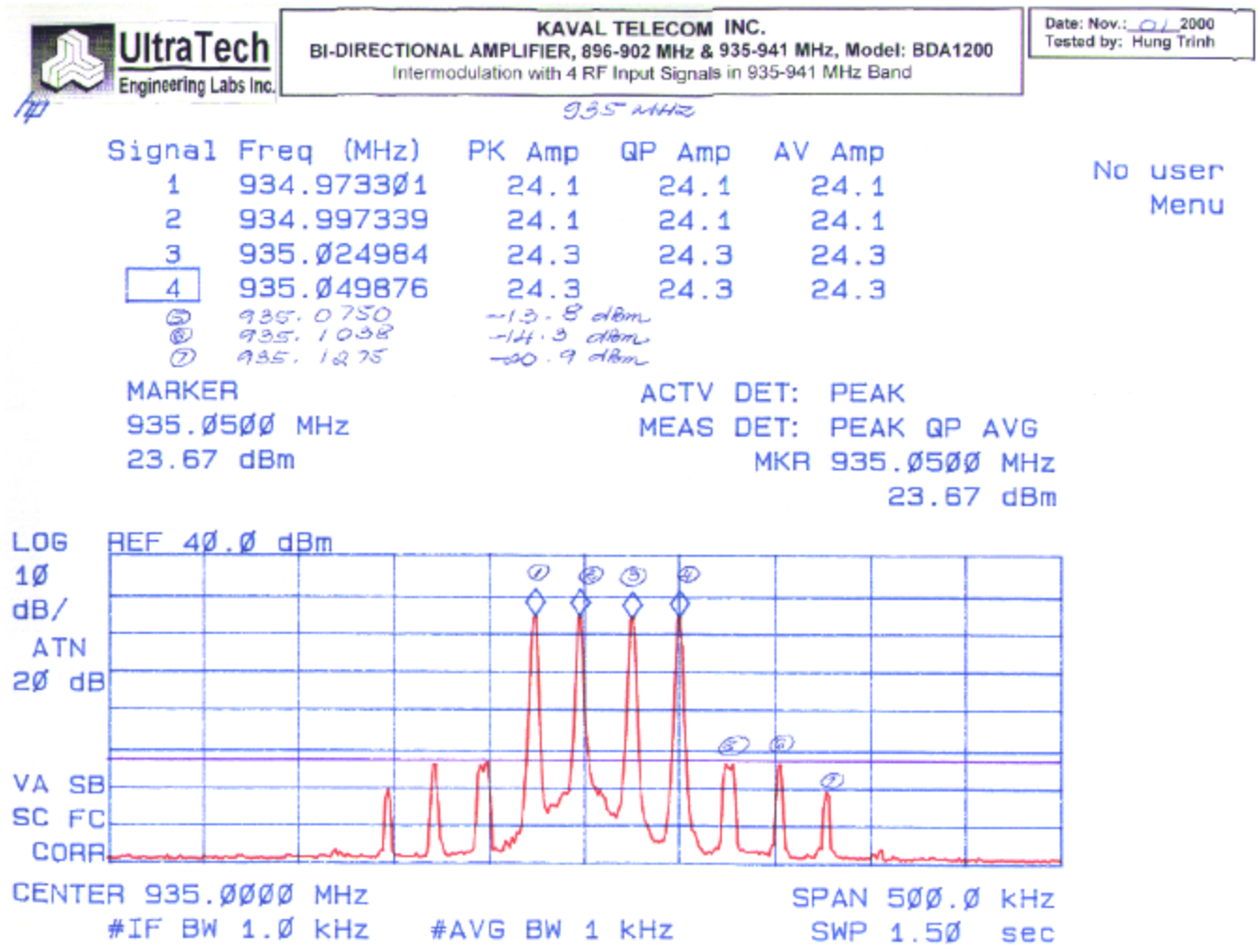


Exhibit 9A – Amplifier Gain Frequency Response Characteristics



KAVAL TELECOM INC.
 BI-DIRECTIONAL AMPLIFIER, 896-902 MHz & 935-941 MHz, Model: BDA1200
 Intermodulation with 2 RF Input Signals in 935-941 MHz Band

Date: Nov. 03, 2000
 Tested by: Hung Trinh

1/4

941 MHz

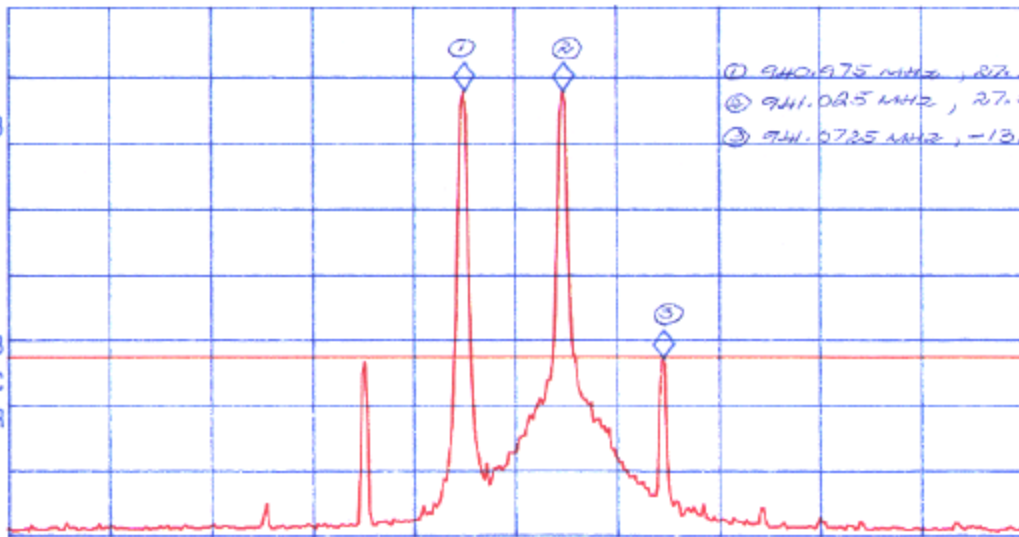
MARKER
 941.0725 MHz
 -13.20 dBm

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 941.0725 MHz
 -13.20 dBm

No user
 Menu

REF OFFST 30.9 dB
 REF 40.0 dBm

LOG
 10
 dB/
 ATN
 20 dB



CENTER 941.0000 MHz
 #IF BW 1.0 kHz

#AVG BW 1 kHz

SPAN 500.0 kHz
 SWP 1.50 sec

Exhibit 9A – Amplifier Gain Frequency Response Characteristics

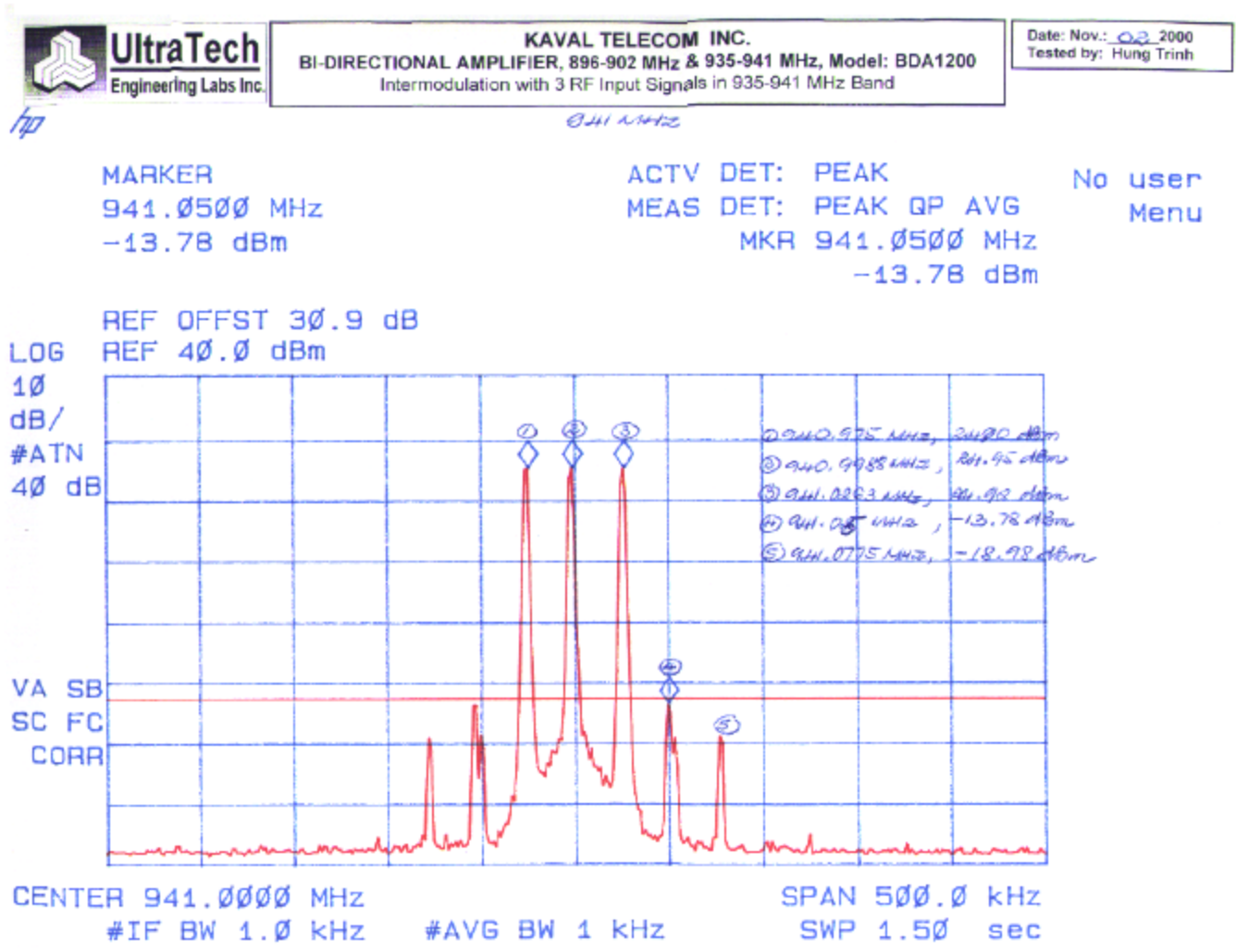


Exhibit 9A – Amplifier Gain Frequency Response Characteristics

