

APPLICATION FOR FCC CERTIFICATION
 BZ5MX10V
 MODULATOR INPUT
 10 WATT VHF TRANSLATOR

EXHIBIT 6

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ACTIVE DEVICES AND FUNCTION LIST

MODULE: PHASE SHIFTER #10A1354G5 (LOW BAND)

DEVICE	TYPE	FUNCTION
U2	MHW6185	Hybrid Amplifier
U3	MC7824CT	Voltage Regulator

MODULE: PHASE SHIFTER #10A1354G4 (HIGH BAND)

DEVICE	TYPE	FUNCTION
U2	MHW6185	Hybrid Amplifier
U3	MC7824CT	Voltage Regulator
U4	MWA330	RF Amplifier

MODULE: PA MODULE #30C1054G3 (LOW BAND)

DEVICE	TYPE	FUNCTION
Q1	SRF3943-2	Class A Transistor

MODULE: PA MODULE #20B1226G1 (HIGH BAND)

DEVICE	TYPE	FUNCTION
Q1	SRF3943-2	Class A Transistor

MODULE: POWER METERING BOARD #20B1235G7

DEVICE	TYPE	FUNCTION
Q1,Q2	MPS8598	Amplifier
U2,U3,U4	LM358N	Operational Amplifier

MODULE: CONTROL BOARD #30C1829G2

DEVICE	TYPE	FUNCTION
K1	DS1E0SL20DC12V	Latching Relay
U3	ILQ1	Optical Isolator

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FCC IDENTIFICATION LABEL

LARCAN INC			
TV TRANSMITTER			
MODEL NO.		S/N	
RATED PWR		TPO	
VOLTS	120	KVA	
HERTZ	60	P.F.	
D.O.C. TYPE APPROVAL			
FCC ID: BZ5			
MADE IN CANADA			

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Power requirements for the 10 Watt VHF Translator were determined as follows:

1. The translator's visual power meter measures the peak visual power by reading the average levels of a detected sample of the output. The meter is calibrated by multiplying the above visual power reading by 168%. The visual metering circuitry has a negligible response to the aural power due to the large (>10MHz) detector bandwidth. When the detector bandwidth is this large, the detector does not peak detect the intercarrier beat product.
2. The aural power is measured by reading the peak level of the detected 4.5MHz intercarrier product. The level of this product has a direct correspondence to the aural power level and is independent of the visual power as long as the peak visual power exceeds the aural power. This is always true for normal operation.

BZ5MX10V
POWER MEASUREMENTS

MEASURED VISUAL POWER	MEASURED AURAL POWER	SUPPLY CURRENT TO OUTPUT DEVICES VISUAL ONLY	SUPPLY CURRENT TO OUTPUT DEVICES VISUAL & AURAL
NOTE 1	NOTE 2	NOTE 3	NOTE 3
5.95 WATTS	1.0 WATTS	2.2 AMPS	2.25 AMPS

NOTE 1: Measured on the Model 43 Bird Wattmeter with the visual carrier modulated by the standard synchronizing signal at 75% of peak amplitude and the aural carrier disabled.

NOTE 2: Measured on the Model 43 Bird Wattmeter with the visual carrier disabled.

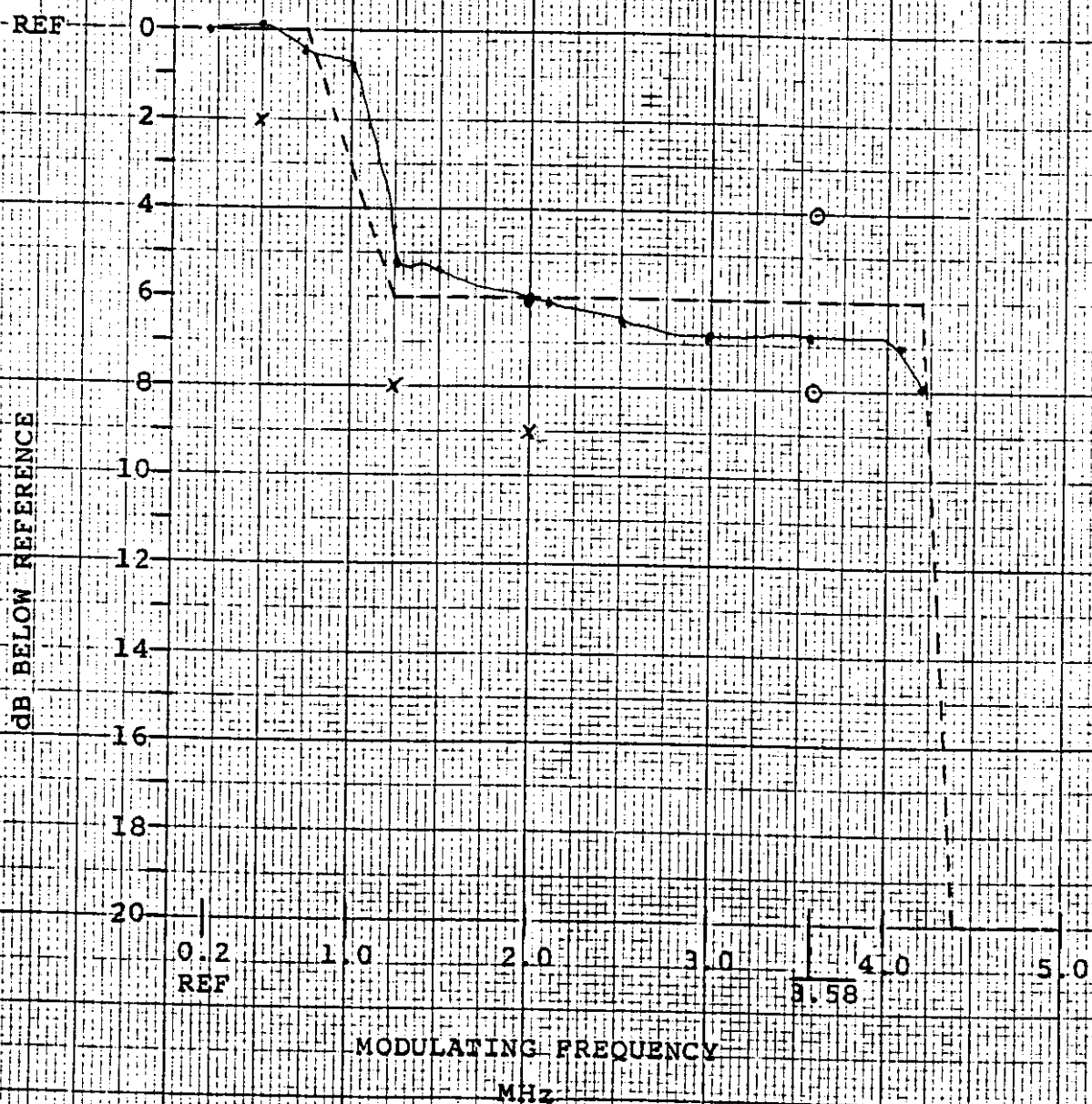
NOTE 3: The voltage across the output devices on all models is +48 volts. The output devices are operated Class AB.

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EXHIBIT 9a
 OVERALL ATTENUATION CHARACTERISTIC

MODULATING FREQUENCY (MHz)	DETECTED OUTPUT (dB)	FCC LIMIT RELATIVE TO 0.2 MHz	FCC LIMIT RELATIVE TO 3.58 MHz
0.2	0 REF	_____	_____
0.5	+0.1	< -2	_____
0.75	-0.4	_____	_____
1.0	-0.7	_____	_____
1.25	-5.2	< -8	_____
1.5	-5.4	_____	_____
2.0	-6.0	< -9	_____
2.1	-6.1	_____	< ± 2
2.5	-6.5	_____	< ± 2
3.0	-6.8	_____	< ± 2
3.58	-6.8	-6 ± 2	REF
4.1	-7.0	_____	< ± 2
4.18	-7.9	_____	< -4

OVERALL ATTENUATION CHARACTERISTIC

MODEL NUMBER: BZ5MX10V

- 1) Dashed Line = Assumed Ideal Detector Output
- 2) X = Lower Limit Indicated Frequency
- 3) O = ± 2 dB Limit of 3.58 MHz Relative to 200kHz
- 4) Frequency Between 2.1 & 4.1 MHz Shall Not Vary More Than ± 2 dB Relative 3.58MHz
- 5) 4.18MHz Must Be Less Than 4dB Below 3.58MHz

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EXHIBIT 10

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ATTENUATION VS. FREQUENCY

MODULATING FREQUENCY REF=VISUAL CARRIER(MHz)	UPPER SIDE BAND		LOWER SIDE BAND	
	FCC LIMIT(dB)		FCC LIMIT(dB)	
+ 0.2	0	Reference	-	-
- 0.5	-0.5		-	-
+ 0.5	-0.1		-	-
+ 1.25	-0.3		-25	>-20
+ 2.0	-0.4		-27.5	>-20
+ 2.5	-0.4		-39	>-20
+ 3.0	-0.3		-46	>-20
+ 3.5	-0.3		-54	>-20
+ 3.58	-0.2		-56	>-42
+ 4.1	-0.3		-64	>-20
+ 4.18	-0.2		-70	>-20
+ 4.75	-27.2	>-20	-71	>-20
+ 5.0	-27.7	>-20	-74	>-20
+ 6.0	-63	>-20	-76	>-20
+ 7.0	-71	>-20	-77	>-20
+ 8.0	-89	>-20	-80	>-20
+ 9.0	-98	>-20	-84	>-20
+10.0	-105	>-20	-85	>-20

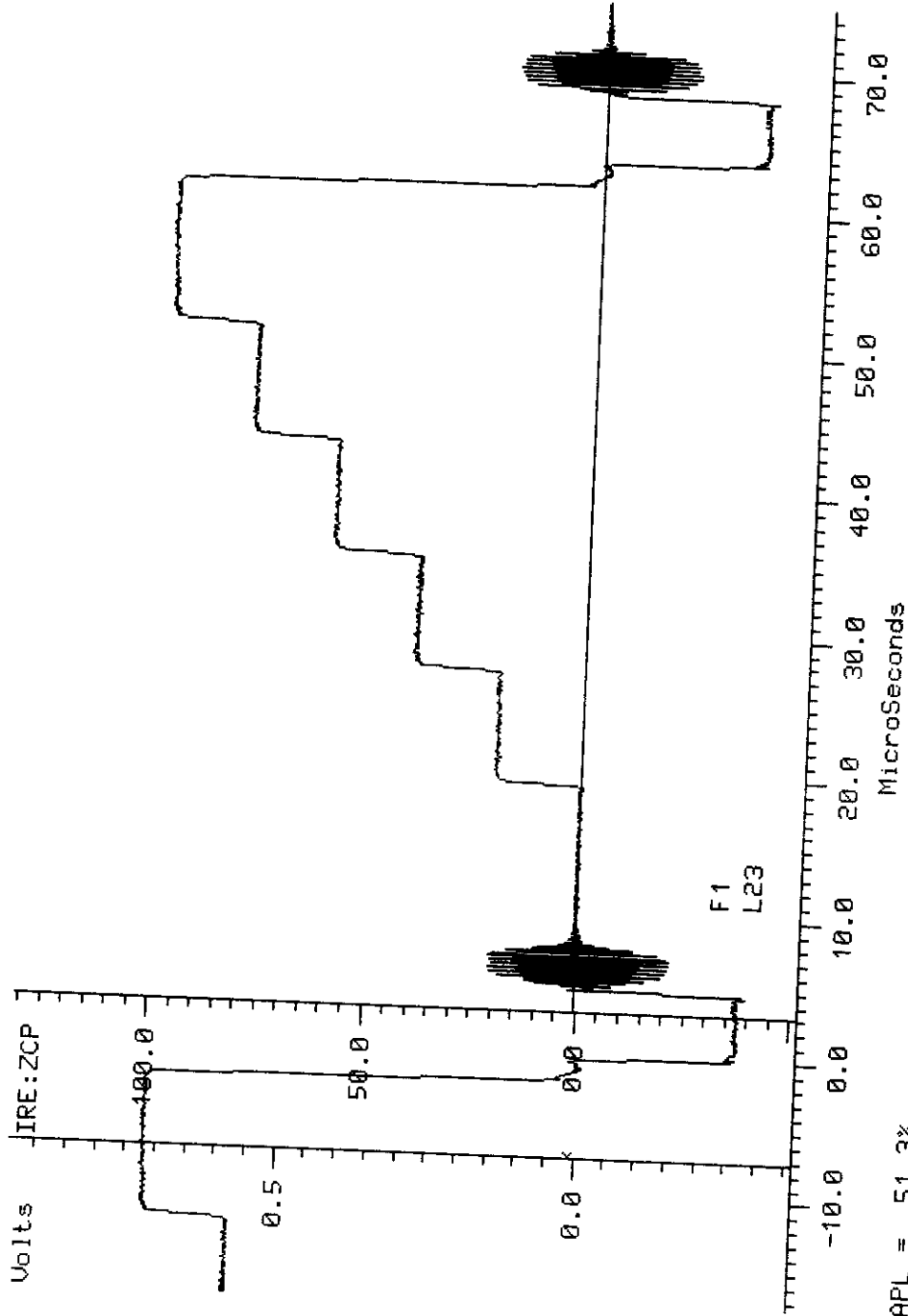
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EXHIBIT 11a

UM700A Video Measurement Set

18-Apr-32 00:45:44

Channel A System Default



APL = 51.3%
525 line NTSC No Filtering
Slow clamp to 0.00 V at 6.63 uS

Precision Mode Off
Synchronous Sync = Source
Frames selected: 1 2

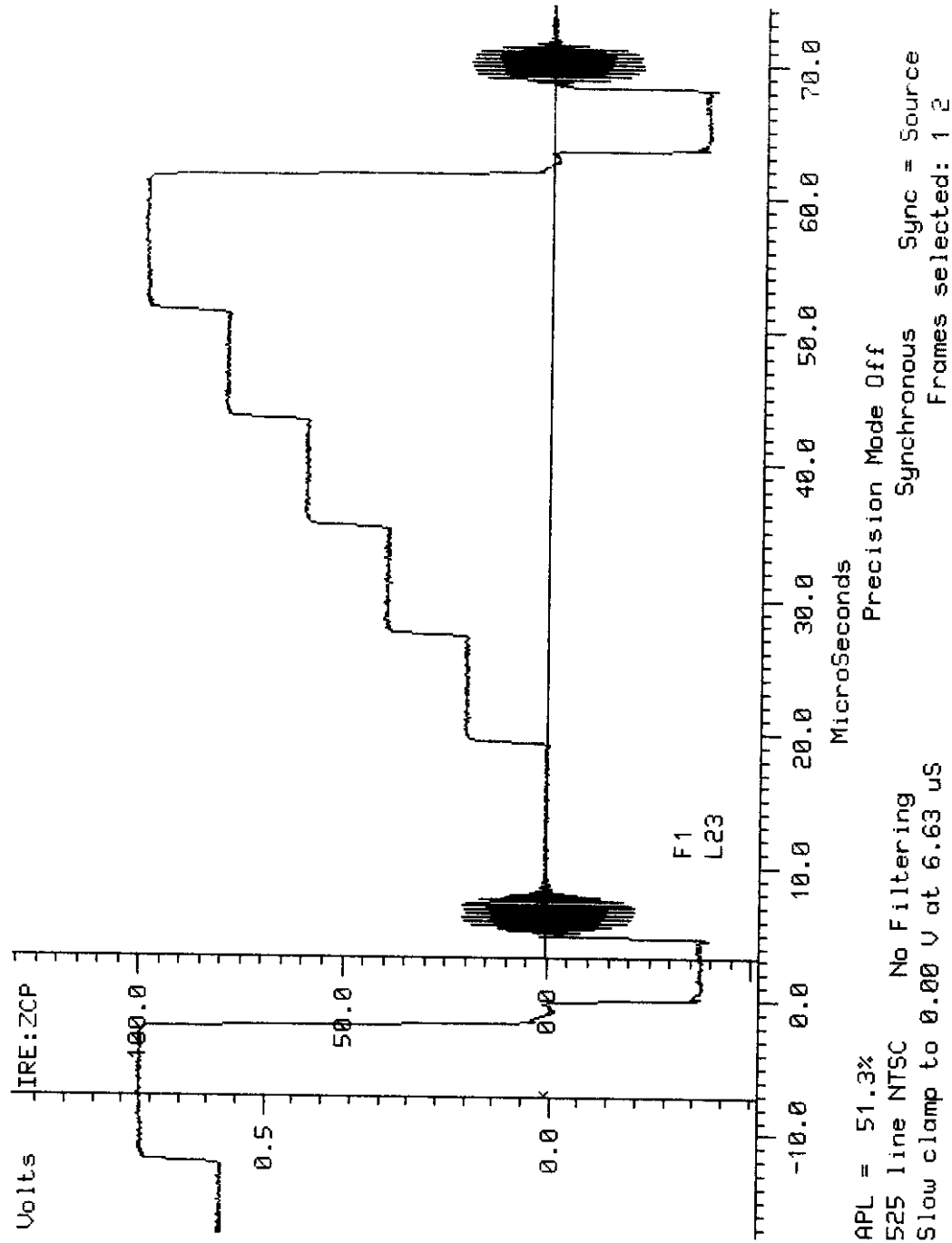
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EXHIBIT 11b

UM700A Video Measurement Set

Channel A System Default

18-Apr-32 00:45:43



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UM700A Video Measurement Set

Channel A System Default

18-Apr-32 00:39:57

DG DP (NTSC)

Field = 1 Line = 23 (Synchronous)

Differential Gain (%)

0.00 0.09 1.11 1.53 1.85 1.95 1.88 1.72 1.34 0.64 -0.40

Wfm --> Mod Ramp

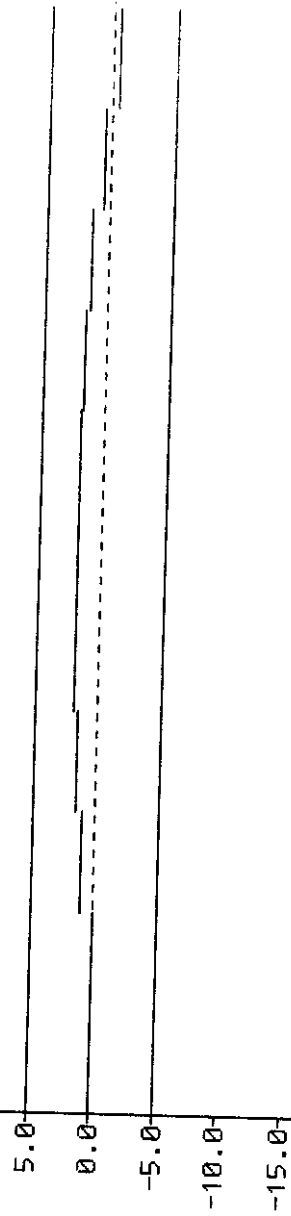


EXHIBIT 11c

Differential Phase (deg)

0.00 0.08 -0.17 0.02 0.03 0.25 0.53 0.74 1.13 1.48 2.62

min = -0.17 max = 2.62 pk-pk = 2.78

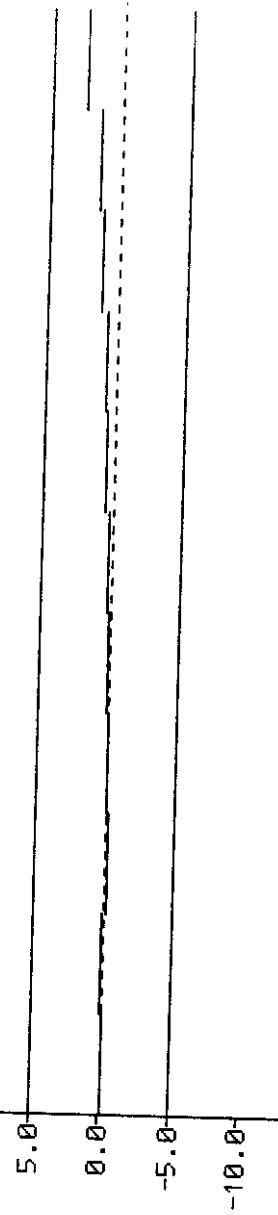


EXHIBIT 11d

1st. 2nd. 3rd. 4th. 5th. 6th. 7th. 8th. 9th. 10th. 11th.
 Average 32 -> 32

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EXHIBIT 12a

OVERALL GROUP DELAY	
FREQUENCY(MHz)	OVERALL DELAY(ns)
0.20	0
0.40	0
0.60	-30
0.80	-10
1.00	0
1.20	0
1.40	+10
1.60	-10
1.80	0
2.00	-20
2.20	+10
2.40	+30
2.60	+10
2.80	0
3.00	-10
3.20	-50
3.40	-130
3.58	-150
3.80	-260
4.00	-290
4.18	-300

UM700A Video Measurement Set

Channel A System Default

18-Apr-32 00:53:21

Group Delay & Gain (NTSC)

Field = 1 Line = 23 (Synchronous)

Amplitude (dB) (Ref. at 0.20 MHz)

Ufm --> Sin X/X

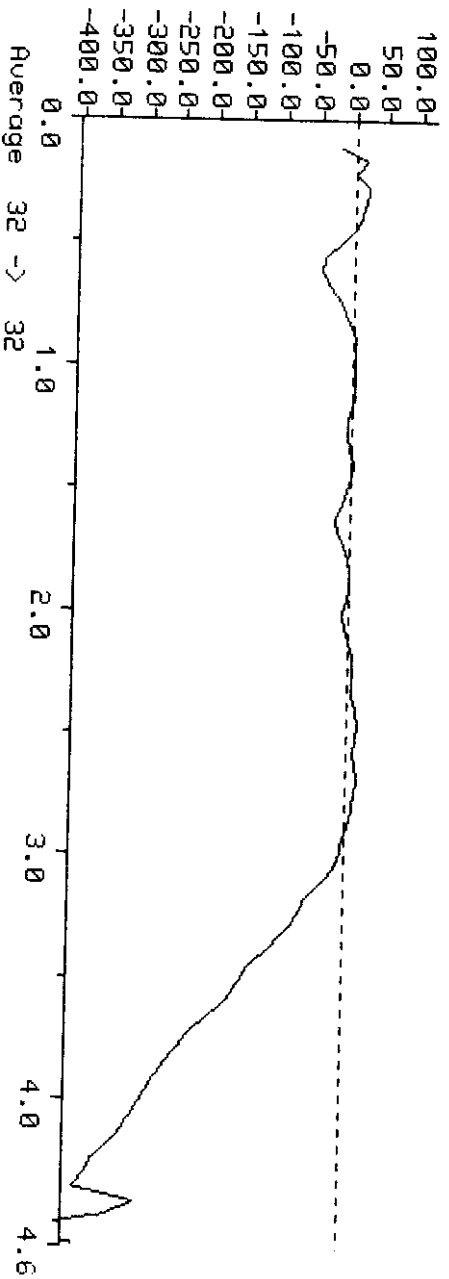
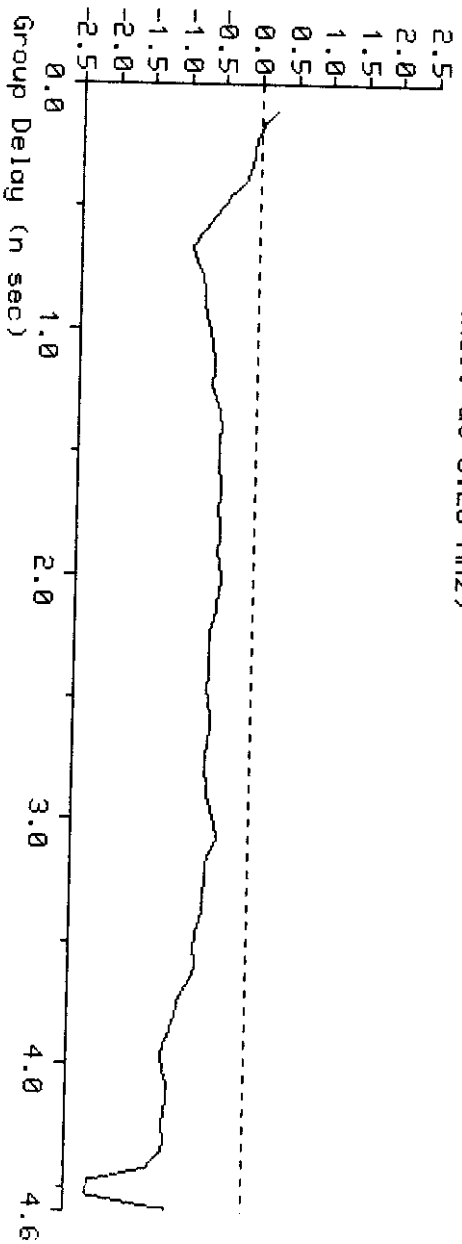


EXHIBIT 12b

