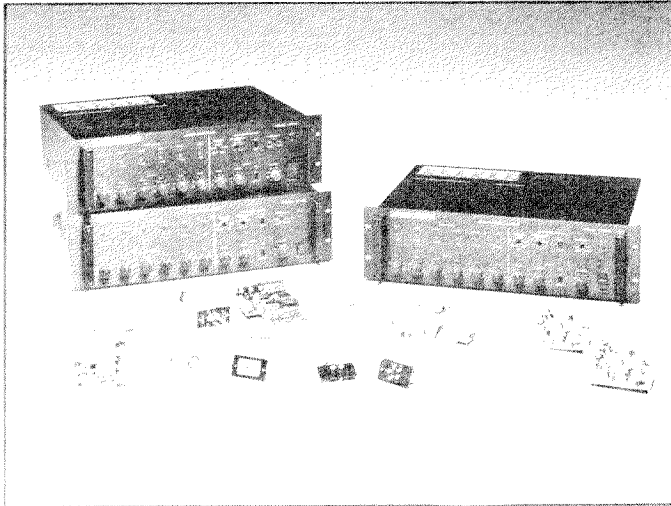




# 1700C Six Channel Mainframe Mixer/Preamplifier



## KEY FEATURES

- ★ Six ports for inputs or outputs
- ★ Offers systemwide remote muting
- ★ Built-in compressor/limiter

The Altec Lansing 1700C Mixer/Preamplifier is a six channel user-configurable mainframe preamplifier. By selecting from the large array of system component options, the 1700C can become a six-in/one-out microphone mixer or a one-in/six-out distribution preamplifier.

The basic mainframe has six ports which can be input or output. When configuring with Altec Lansing's 1780A/AT or 1781A/AT Programmable Input modules, the mainframe becomes a powerful six channel mixer. Multiple 1700C mainframes can be linked together for situations where more than six input/output ports are required.

Built-in features include a top panel trap-door for easy access into the unit, compressor/limiter, low and high frequency shelving equalizers, muting, remote volume control capability, and a tone generator which produces four different sounds.

## KEY SYSTEM SPECIFICATIONS

### Frequency Response: (Ref. 1 kHz)

Main Output:  $\pm 1$  dB, 20 Hz - 20 kHz  
(Ref. 1 kHz, +10 dBm output)

Preamp Output:  $\pm 1$  dB, 20 Hz - 20 kHz  
(Ref. 1 kHz, 0.775 Vrms, 10 k $\Omega$  load)

Link Output:  $\pm 1$  dB, 20 Hz - 20 kHz  
(Ref. 1 kHz, 100 mVrms, 10 k $\Omega$  load)

### Total Harmonic Distortion (THD):

Main Output: <0.03%, 20 Hz - 20 kHz  
(Ref. +10 dBm output, EQ flat, compressor/limiter off, 30 kHz low-pass filter)

Preamp Output: <0.03%, 20 Hz - 20 kHz  
(Ref. 1 kHz, 0.775 Vrms output, 10 k $\Omega$  load, EQ flat, compressor/limiter off, 30 kHz, low-pass filter)

Link Output: <0.03%, 20 Hz - 20 kHz  
(Ref. 1 kHz, 100 mVrms output, 10 k $\Omega$ , 30 kHz low-pass filter)

## DESCRIPTION

**Input Modules:** The Altec Lansing 1780A/1780AT Input module and the 1781A/1781AT Programmable Input module accept either mic or line level signals through a wide variety of connector interfaces. Further detail on these modules is given later in this document.

**Output Modules:** The Altec Lansing 1783 Line Output module allows the user to interface with other professional equipment. Further detail on this module is given later in this document.

The Altec Lansing model 1700C mixer/preamplifier systems respond to most design tasks with the ease and versatility of systems costing much more. As a result, it is *the choice* for use in professional installations requiring high quality, flexibility in design, and low cost.

# 1700C Specifications (cont'd)

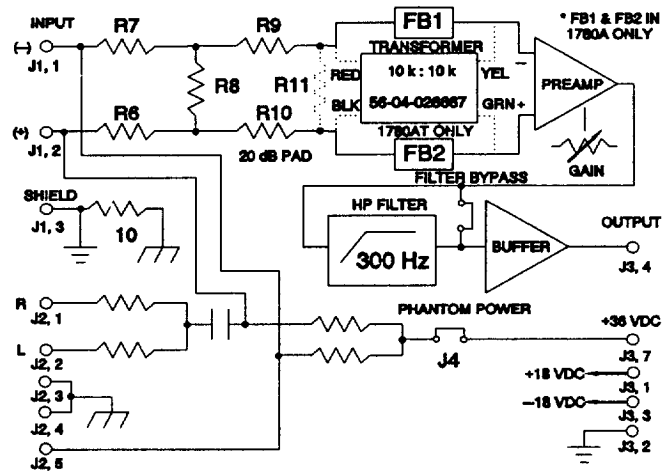
<b>Rated Output Level:</b>	(Ref. 1 kHz)	<b>Rear Panel Controls:</b>	
Main Output:	(balanced, LINE position) +10 dBm (balanced, MIC position) -40 dBm	Tone Generator:	1 - Output Level adjust (screwdriver slotted)
Preamp Output:	(unbalanced) 0 dBm	Output:	1 - Output level select switch (MIC or LINE)
Link Output:	(unbalanced) 100 mVrms (-18 dBu), 10 k $\Omega$ load	<b>Indicators:</b>	
<b>Signal-to-Noise Ratio:</b>		Front Panel:	6 - Green LED's (Nominal Input level) 6 - Red LED's (Peak Input level) 1 - Red LED (Main Output clip) 1 - AC Power ON
Main Output:	>85 dB (rated output, A-weighted, EQ defeated, compressor/limiter off)	<b>Connectors:</b>	
Preamp Output:	>75 dB (rated output, A-weighted, EQ defeated, compressor/limiter off)	Inputs:	
Link Output:	>75 dB (rated output, A-weighted)	Link Input:	1 - RCA phono receptacle
<b>Minimum Load Impedance:</b>		Battery:	1 - 3-terminal barrier strip
Main Output:		Outputs:	
Line Level balanced:	600 $\Omega$ minimum	Main Output:	1 - Male XLR connector 1 - 3-terminal barrier strip
Mic Level balanced:	600 $\Omega$ minimum	Preamp Output:	1 - RCA phono receptacle
Preamp Output:		Control:	
unbalanced:	600 $\Omega$ minimum	Mute and Tone Generator:	Screw terminals (7)
Link Output:		<b>Power Requirements:</b>	(Ref. 1 kHz, rated output with no modules installed)
unbalanced:	2 k $\Omega$ minimum	AC Mains:	100, 120, 200, 220 or 240 VAC, 50/60 Hz
<b>Equalization:</b>	(Shelving type)	Battery:	$\pm$ 48 VDC bipolar, 0.5 amps maximum
Bass:	$\pm$ 12 dB at 100 Hz	<b>Power Consumption and Heat Produced:</b>	17 watts consumed, 57.5 BTU/hour
Treble:	$\pm$ 12 dB at 10 kHz	<b>Operating Temperature Range:</b>	Up to 50°C (122°F)
<b>Compressor/Limiter:</b>	Feedforward Topology	<b>Dimensions:</b>	
Threshold:	-20 dB to +20 dB Continuously variable (Ref. 100 mVrms on Link input)	Width:	19 inches (48.3 cm)
Compression Ratio:	1:1 to $\infty$ :1 Continuously variable	Height:	5¼ inches (13.3 cm) (3 standard rack units)
Release Time:	50 msec to 5 sec. Continuously variable	Depth:	13 inches (33.0 cm)
<b>Tone Generator:</b>	Electronically produced	<b>Net Weight:</b>	15 lbs. (6.8 kg)
Tones:	Buzzer, siren, single-tone chime, and repeating tone chime	<b>Finish Color:</b>	Black
Control:	All tones are initiated by external switch closures	<b>Accessories Included with Mainframe:</b>	
Level Adjustment:	Rear panel	1 - Operating/Service Instructions for Mainframe, 1780A/AT, 1781A/AT and 1783	
<b>Front Panel Controls:</b>		4 - Rubber Feet (installed)	
Input:	6 - Input Level adjust	1 - System Configuration Label installed on top cover	
EQ Controls:	1 - Bass adjust 1 - Treble adjust 1 - EQ In/Defeat switch	1 - International 220/240 VAC voltage decal	
Output:	1 - Master Level adjust	1 - International Fuse decal	
Compressor/Limiter:	1 - Release Time adjust (screwdriver slotted) 1 - Threshold adjust (screwdriver slotted) 1 - Compression Ratio adjust (screwdriver slotted) 1 - On/Off switch	1 - Fuse for International use	
Miscellaneous:	1 - AC Power switch	1 - Rack mount hardware kit	

Altec Lansing continually strives to improve their products and performance. Therefore, specifications are subject to change without notice.

# 1780A/1780AT

## Description

The **Altec Lansing 1780A/1780AT** Mic/Line Input modules combine basic microphone preamplification with true line level input capability. The module has a built-in resistive pad to permit levels in excess of 0 dBu and its high input impedance easily allows sixteen modules to be driven from a single low impedance source. Also, the module offers a 300 Hz high-pass filter, phantom power capability, L + R stereo summing, and 0 to 50 dB of continuously variable gain. Included in the **1780AT** version is a 10 k $\Omega$  input bridging transformer for those who prefer transformer isolation.



Block Diagram of the 1780A/1780AT Input Module

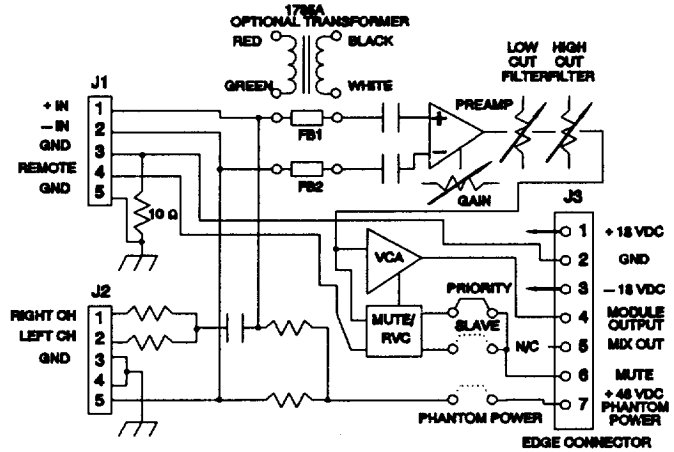
## 1780A/1780AT Specifications

<b>Gain:</b>	0 - 50 dB, continuously variable	<b>High Pass Filter:</b>	
		<b>Corner Frequency:</b>	300 Hz
		<b>Slope:</b>	12 dB/octave
<b>Input Sensitivity:</b>		<b>Controls:</b>	1 - Gain, continuously variable
Without Pad:	-68 dBu to -18 dBu (.3 mVrms to 100 mVrms)		
With Pad:	-48 dBu to +2 dBu (3 mVrms to 1 Vrms)		
<b>Input Impedance:</b>		<b>Weight (Net):</b>	
1780A:	10 k $\Omega$	1780A:	2.5 oz. (70 g)
1780AT:	10 k $\Omega$	1780AT:	3.0 oz. (85 g)
With 1793 Dual Phono:	40 k $\Omega$	<b>Power Supply Requirements:</b>	$\pm$ 18 VDC at 15 ma DC (supplied by mainframe)
<b>Frequency Response:</b>	50 Hz - 20 kHz, $\pm$ 1 dB	<b>Included Accessories:</b>	1 - 2-pin female jumper (for phantom power) 2 - mounting screws (for potentiometer bracket) 1 - Operating Instructions
<b>Total Harmonic Distortion:</b>	(Ref. minimum gain, 50 Hz - 20 kHz measurement bandwidth, 30 kHz low-pass filter)		
1780A:	<0.01%		
1780AT:	<0.025%		
<b>Equivalent Input Noise:</b>	<-120 dBr (Ref. 0 dBr = 100 mVrms out- put, 10 k $\Omega$ load, 200 $\Omega$ input termination, maximum gain, A-weighted)		

# 1781A/1781AT

## Description

The Altec Lansing 1781A/1781AT Programmable Input modules accept either mic or line level signals through a wide variety of connector interfaces. Standard features include an electronically balanced input stage with adjustable gain, continuously variable high and low pass filters, RFI protection, 48 volt phantom powering two levels of muting, and remote volume control capability. Programming with plug-in jumpers which may select phantom power (on or off), mute priority or slave, or remote volume control. The 1781AT module also comes equipped with a 1785A Input Isolation Transformer which provides an additional 10 dB of gain for improved sensitivity.



Block Diagram of the 1781A/1781AT Input Module

## 1781A/1781AT Specifications

<b>Gain:</b>		<b>Total Harmonic Distortion (THD):</b>	
1781A:	0 dB - 50 dB, continuously variable	20 Hz - 20 kHz:	(Ref. 1 kHz, 100 mVrms output, minimum gain, 10 kΩ load, 30 kHz low pass filter) <0.03%
1781AT:	10 dB - 60 dB, continuously variable		
<b>Input Sensitivity:</b>	(Ref. 1 kHz, 10 kΩ load)	<b>Equivalent Input Noise:</b>	(Ref. 0 dBr = 100 mVrms output, 10 kΩ load, 200 Ω input termination maximum gain, A-weighted) <-120 dBr
1781A:	-61 dBu to -18 dBu (0.3 mVrms - 100 mVrms)		
1781AT:	-78 dBu to -28 dBu (0.1 mVrms - 30 mVrms)		
<b>Input Impedance:</b>	(Ref. 1 kHz)	<b>High Pass Filter (Low Cut):</b>	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
Electronically balanced:	>8 kΩ	Corner Frequency:	320 Hz
Transformer balanced:	200 Ω - 600 Ω	Slope:	(>10 dB at 100 Hz) 6 dB/oct (20 dB/dec)
With 1793 Dual Phono Connector Installed:	>39 kΩ		
<b>Frequency Response:</b>	(Ref. 1 kHz, 100 mVrms output, 10 kΩ load)	<b>Low Pass Filter (High Cut):</b>	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
1781A:		Corner Frequency:	5 kHz
±1 dB (minimum gain):	20 Hz - 20 kHz	Slope:	(>6 dB at 10 kHz) 6 dB/oct (20 dB/dec)
±1 dB (maximum gain):	50 Hz - 20 kHz		
1781AT:		<b>Attenuation:</b>	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
±1 dB (minimum gain):	20 Hz - 20 kHz	Mute:	>60 dB (10 kΩ remote)
±1 dB (maximum gain):	50 Hz - 15 kHz		

# 1783

## Description

The **Altec Lansing 1783** Line Output modules provides the drive capability necessary to interface with other professional equipment. The electronically balanced output stage provides a low source impedance to drive subsequent stages. If transformer isolation is necessary, the module's circuit board accommodates the optional PC-mount **1786** Output Isolation Transformer. The continuously variable output level control is local to the module permitting independent adjustment of each line output.

## 1783 Specifications

<b>Output Source Impedance:</b>	<50 $\Omega$
<b>Nominal Output Level /Load Impedance:</b>	+8 dBm (Ref. 1 kHz, 0 dBm = 0.775 Vrms with 600 $\Omega$ load, output level control at maximum, 100 mVrms input)
<b>Maximum Output Level:</b>	+24 dBm
<b>Frequency Response:</b> $\pm 1$ dB:	(Ref. 1 kHz, +8 dBm output) 20 Hz - 25 kHz
<b>Total Harmonic Distortion (THD):</b> 20 Hz - 20 kHz:	(Ref. 1 kHz, +8 dBm output, output level control at maximum, 30 kHz low pass filter) <0.05%
<b>Signal to Noise Ratio:</b>	>88 dBm (Below +8 dBm output, output level control at maximum, A-weighted)
<b>Power Requirements:</b>	$\pm 18$ VDC at 20 mA (supplied by mainframe)
<b>1786 Output Isolation Transformer</b>	
<b>Impedance Ratio:</b>	1:1 (600 $\Omega$ :600 $\Omega$ )
<b>Frequency Response:</b> $\pm 1$ dB:	(Ref 1 kHz, +18 dBm output) 20 Hz - 20 kHz
<b>Total Harmonic Distortion (THD):</b> 20 Hz - 20 kHz: 50 Hz - 20 kHz:	Ref 1 kHz, +18 dBm output) <0.5% <0.1%

## Special Ordering Instructions

**NOTE:** The modules listed below are required for use with the **1700C** and must be ordered separate from the mainframe.

### Plug-in Input Modules:

- 1780A** Mic/Line Input module
- 1780AT** Mic/Line Input module with 10 k $\Omega$  bridging transformer installed
- 1781A** Programmable Input module
- 1781AT** Programmable Input module with model **1785A** 600  $\Omega$  to 10 k $\Omega$  isolation transformer installed
- 1785A** 600  $\Omega$  to 10 k $\Omega$  Input Isolation Transformer for installation on existing model **1781A**

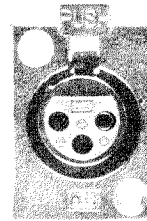
### Plug-in Output Module:

- 1783** Line Output module
- 1786** Output Isolation Transformer

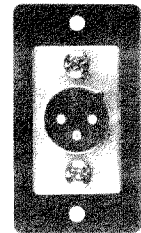
### Plug-in EQ Module:

- 8751A** Programmable 14-Band EQ module

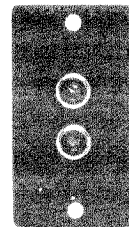
**NOTE:** Each module selected requires one of the following connectors also be ordered:



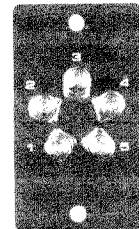
1791  
Female XLR



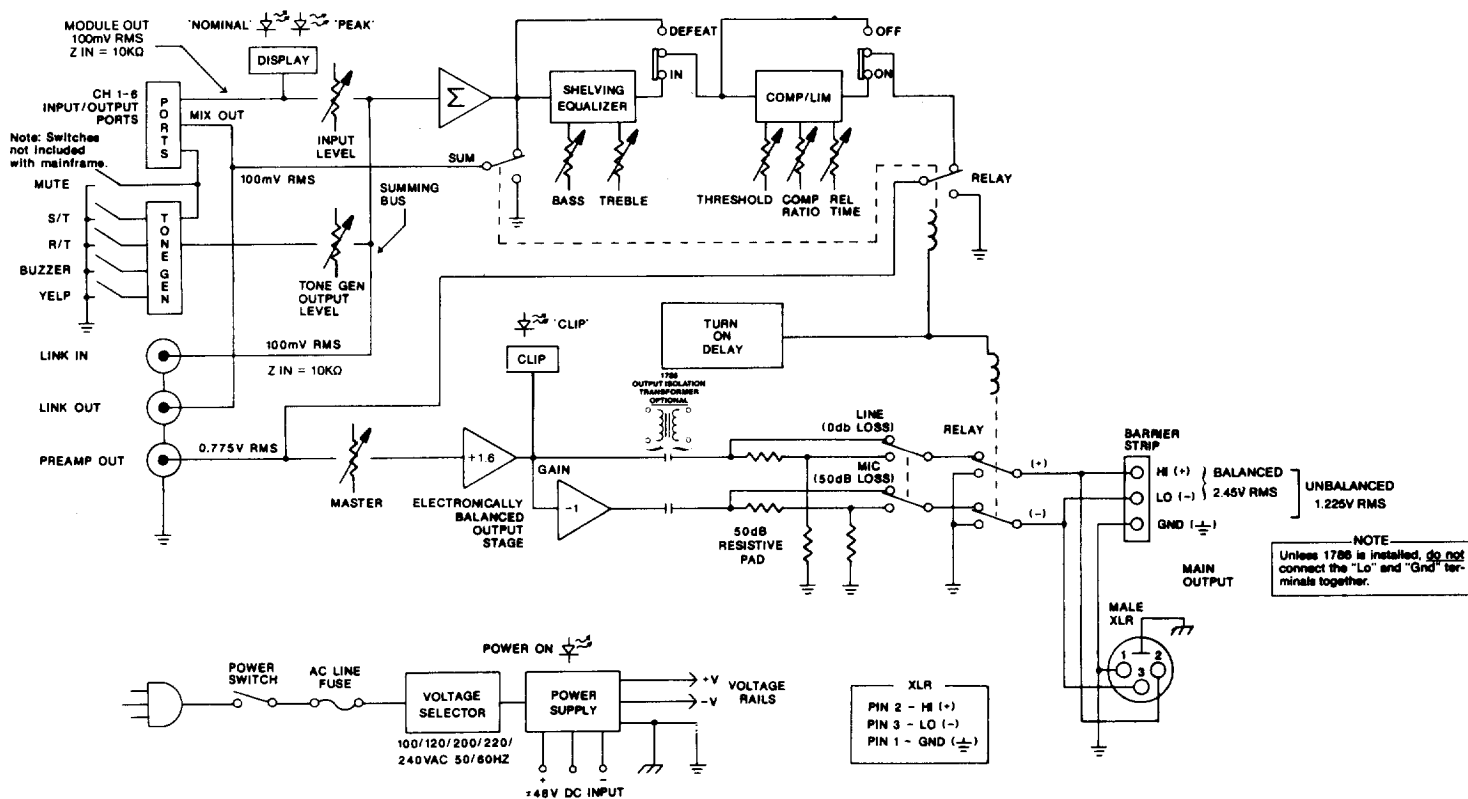
1792  
Male XLR



1793  
Dual RCA Phono



1794  
5-Lug Terminal



1700C System Block Diagram

## ARCHITECT'S and ENGINEER'S SPECIFICATION

The mixer/preamplifier shall have six configurable ports and be capable of operating from 100, 120, 200, 220, or 240 Vac, 50/60 Hz line, or from  $\pm 48$  VDC. Each port shall be usable with a microphone or other high level device. The mixer/preamplifier mainframe shall include a compressor/limiter, low and high frequency shelving equalizers, and a tone generator capable of producing general purpose and emergency warning signals.

The preamplifier shall meet the following performance criteria: Frequency Response: 30 Hz to 20 kHz,  $\pm 1$  dB (main output). Source Impedance: 150  $\Omega$  to 250  $\Omega$  nominal with a microphone preamplifier, 600  $\Omega$  with a bridging transformer, 150  $\Omega$  to 600  $\Omega$  with a line matching transformer, and greater than 30 k $\Omega$  with a tape preamplifier. Equivalent Input Noise:  $< -120$  dB with a low impedance microphone

preamplifier. Output Noise:  $< -85$  dBm (with all controls off).

The mixer/preamplifier shall be rack mountable and finished in black. The amplifier's dimensions shall be 5 $\frac{1}{4}$ " (H) x 19" (W) x 12 $\frac{1}{4}$ " (D) and its net weight shall be 24.2 lbs.

The plug-in accessory modules shall be the 1780A/AT and the 1781A/AT Input modules and the 1783 Line Output module. The accessory transformers usable with the modules shall be the 1785A Input Isolation transformer and the 1786 Output Isolation transformer. The connector subassemblies shall be the 1791 female XLR, 1792 male XLR, 1793 dual phono, and the 1794 5-lug screw terminal connector.

The mixer/preamplifier shall be the Altec Lansing Model 1700C.



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