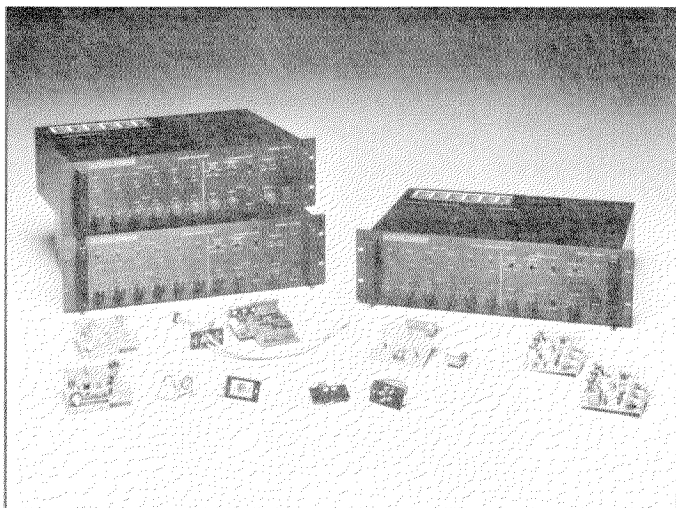




# 1707C/1715C Six Channel Mainframe Mixer/Power Amplifier



## KEY FEATURES

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

## KEY SYSTEM SPECIFICATIONS

<b>Frequency Response:</b>	(Ref. 1 kHz)
Direct Output:	±1 dB, 20 Hz - 20 kHz (1 watt output)
Preamp Output:	±1 dB, 20 Hz - 20 kHz (0.775 Vrms output, 600 Ω load)
<b>Total Harmonic Distortion (THD):</b>	(Ref 1 kHz)
Direct Output:	<0.05%, 20 Hz - 20 kHz (rated output power, 30 kHz low-pass filter)
Preamp Output:	<0.05%, 20 Hz - 20 kHz (0.775 Vrms output, 600 Ω load, EQ flat, compressor/-limiter off, 30 kHz low-pass filter)
<b>Signal-to-Noise Ratio:</b>	
Direct Output:	>80 dB below rated output power, A-weighted (master at maximum)
Preamp Output:	>75 dB below 0.775 Vrms output, A-weighted, EQ off, compressor/limiter off

## DESCRIPTION

The **Altec Lansing 1707C/1715C** Mixer/Power Amplifier is a six channel user-configurable mainframe amplifier. By selecting from the large array of system component options, the **1707C/1715C** can become a six-in/one-out microphone mixer/amplifier or a one-in/six-out distribution preamplifier.

The basic mainframe combines a fully protected 75-watt (for the **1707C**) or 150-watt (for the **1715C**) power amplifier with six ports which can be input or output. Multiple **1707C/1715C** mainframes can be linked together for situations where more than six input/output ports are required.

Built-in features include a trap-door on the top panel 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.

**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.

**Output Modules:** The **Altec Lansing 1783** Line Output module allows the user to interface with other professional equipment.

The **Altec Lansing** model **1707C/1715C** mixer/power amplifier 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.

## 1707C/1715C Specifications (cont'd)

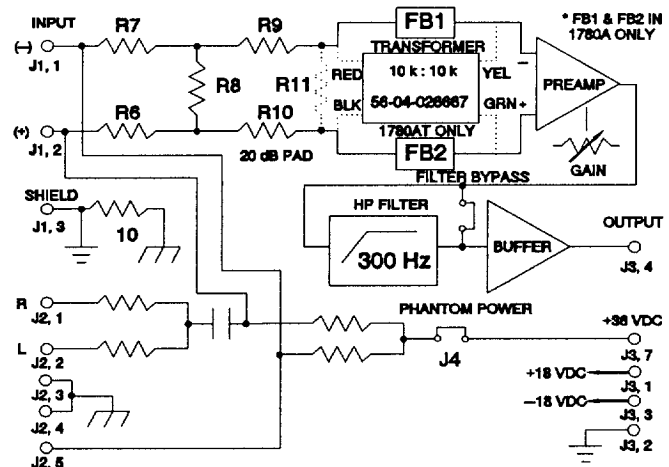
<b>Continuous Average Power:</b>					
1707C:	75 watts		EQ Controls:	1 - On/Off switch	
1715C:	150 watts			1 - Bass adjust	
				1 - Treble adjust	
			Output:	1 - EQ In/Defeat switch	
<b>Maximum Midband Output Power:</b>	(Ref. 1 kHz at 1% THD)		Miscellaneous:	1 - Master Level adjust	
1707C:	100 watts			1 - AC Power switch	
1715C:	175 watts		<b>Rear Panel Controls:</b>		
			Tone Generator:	1 - Output Level adjust	
<b>Power Bandwidth:</b>	(Ref. 1 kHz at rated output)		<b>Front Panel Indicators:</b>	6 - Green LED's (Nominal Input)	
Direct Output:	>20 Hz - 20 kHz			6 - Red LED's (Peak Input)	
				1 - Red LED (Main Output clip)	
				1 - AC Power ON	
<b>Intermodulation Distortion:</b>	(SMPTE 4:1)		<b>Connectors:</b>		
Direct Output:	<0.1% at rated power		Amplifier Input:	1 - RCA phono receptacle	
			Link Input:	1 - RCA phono receptacle	
			Battery:	1 - 3-terminal barrier strip	
<b>Damping Factor:</b>			Amplifier Output:	1 - 7-terminal barrier strip	
Direct Output:	>40, 20 Hz - 1 kHz		Preamp Output:	1 - RCA phono receptacle	
			Link Output:	1 - RCA phono receptacle	
<b>Rated Output Level:</b>	(Ref. 1 kHz)		Mute and Tone Generator:	7 - Screw terminals	
Direct Output:	(unbalanced)		<b>Power Requirements:</b>	(Ref. 1 kHz, rated output	
1707C:	24.5 Vrms/8 $\Omega$ load			with no modules installed)	
1715C:	24.5 Vrms/4 $\Omega$ load		AC Mains:	100/120/200/220/240 VAC,	
Preamp Output:	(unbalanced)			50/60 Hz.	
Transformer Output:	(balanced)		Battery:	$\pm$ 48 VDC bipolar	
1707C:	17.4 Vrms/4 $\Omega$ load		1707C:	1.5 amps maximum	
	25.0 Vrms/8 $\Omega$ load		1715C:	3.0 amps maximum	
	70.7 Vrms/66.6 $\Omega$ load		<b>Power Consumption</b>		
1715C:	25.0 Vrms/4.2 $\Omega$ load		<b>and Heat Produced:</b>		
	34.6 Vrms/8 $\Omega$ load		1707C:		
	70.7 Vrms/33.3 $\Omega$ load		75 watts output:	165 w consumed, 306 BTU/hour	
			25 watts output:	130 w consumed, 357 BTU/hour	
			1715C:		
			150 watts output:	320 w consumed, 578 BTU/hour	
			50 watts output:	230 w consumed, 612 BTU/hour	
<b>Equalization:</b>	(Shelving type)				
Bass:	$\pm$ 12 dB at 100 Hz		<b>Operating</b>		
Treble:	$\pm$ 12 dB at 10 kHz		<b>Temperature Range:</b>	Up to 50°C (122°F)	
<b>Compressor/Limiter:</b>	Feedforward Topology				
Threshold:	-20 dB to +20 dB		<b>Dimensions:</b>		
	Continuously variable		Width:	19 inches (48.3 cm)	
	(Ref. 100 mVrms on Link input)		Height:	5¼ inches (13.3 cm)	
Compression Ratio:	1:1 to $\infty$ :1		Depth:	13 inches (33.0 cm)	
	Continuously variable				
Release Time:	50 msec to 5 sec.		<b>Net Weight:</b>		
	Continuously variable		1707C:	25 lbs. (11.4 kg)	
			1715C:	32 lbs. (14.5 kg)	
<b>Tone Generator:</b>	Electronically produced		<b>Finish Color:</b>	Black	
Tones:	Buzzer, siren, single-tone chime,				
	and repeating tone chime				
Control:	All tones are initiated by		<b>Accessories Included</b>		
	external switch closures		<b>with Mainframe:</b>		
Level Adjustment:	Rear panel		1 - Operating/Service Instructions for Mainframe,		
			1780A/AT, 1781A/AT and 1783		
<b>Protection System:</b>			1 - Preamp Out to Amp In "U" Shorting Bar		
Amplifier:	<ul style="list-style-type: none"><li>• Short circuit current limiting</li><li>• Over voltage limiting</li><li>• Thermal sensing</li><li>• Spurious oscillatory protection</li><li>• Low AC line sensing</li></ul>		1 - Direct Output to OT in Shorting Bar		
			1 - System Configuration Label		
Load:	<ul style="list-style-type: none"><li>• Output DC detection</li><li>• Subsonic detection</li><li>• Turn-on/off transients (<math>\approx</math>3 secs)</li></ul>		1 - International 220/240 VAC voltage decal		
			1 - International Fuse decal and fuse		
			1 - Rack mount hardware kit		
<b>Front Panel Controls:</b>					
Input:	6 - Input Level adjust				
Compressor/Limiter:	1 - Release Time adjust				
	1 - Threshold adjust				
	1 - Compression Ratio adjust				

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

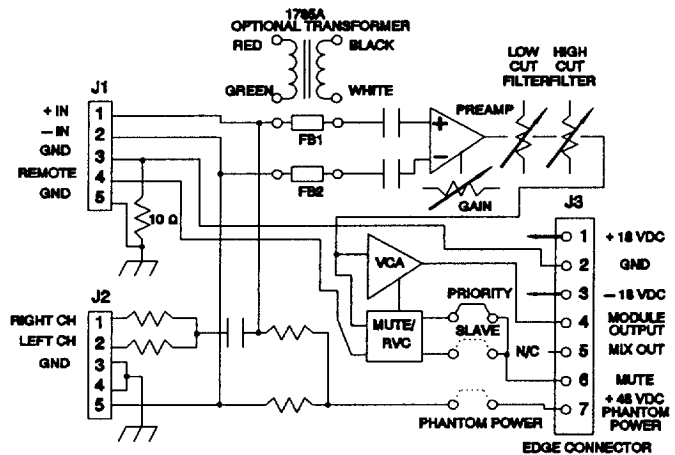
## 1780A/1780AT Specifications

<b>Gain:</b>	0 - 50 dB, continuously variable	<b>High Pass Filter:</b>	
<b>Input Sensitivity:</b>		Corner Frequency:	300 Hz
Without Pad:	-68 dBu to -18 dBu (.3 mVrms to 100 mVrms)	Slope:	12 dB/octave
With Pad:	-48 dBu to +2 dBu (3 mVrms to 1 Vrms)	<b>Controls:</b>	1 - Gain, continuously variable
<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 dB = 100 mVrms output, 10 kΩ load, 200 Ω input termination maximum gain, A-weighted) <-120 dBr
1781A:	-68 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 (>10 dB at 100 Hz)
Transformer balanced:	200 Ω - 600 Ω	Slope:	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 (>6 dB at 10 kHz)
±1 dB (minimum gain):	20 Hz - 20 kHz	Slope:	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>	(Ref. 1 kHz, +8 dBm output, output level control at maximum, 30 kHz low pass filter)
20 Hz - 20 kHz:	<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>	Ref 1 kHz, +18 dBm output)
20 Hz - 20 kHz:	<0.5%
50 Hz - 20 kHz:	<0.1%

## Special Ordering Instructions

**NOTE:** The modules listed below are required for use with the 1707C/1715C 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

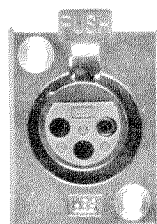
### Plug-in Output Module:

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

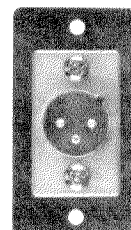
### Plug-in EQ Module:

- 8751A** Programmable 14-Band EQ module

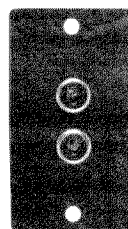
**NOTE:** Each module selected requires one of the following connectors also be ordered:



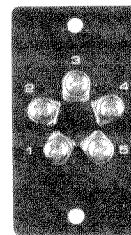
1791  
Female XLR



1792  
Male XLR



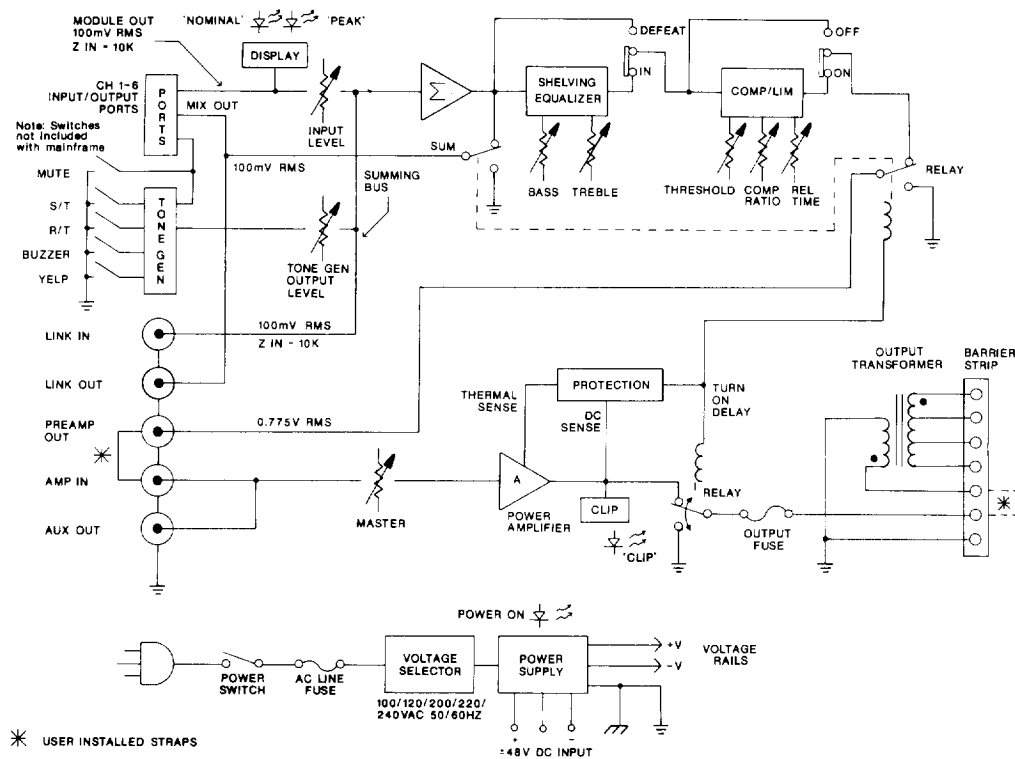
1793  
Dual RCA Phono



1794  
5-Lug Terminal

## CONFIGURING THE MAINFRAME

### The Mainframe's Inner Workings



1707C/1715C System Block Diagram

## ARCHITECT'S and ENGINEER'S SPECIFICATION

The mixer/power amplifier 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/power amplifier 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 power amplifier shall meet the following performance criteria: Power Output: 75 watts (1707C) at less than 0.05% THD from 20 Hz to 20 kHz (8  $\Omega$  direct output), or 150 watts (1715C) at less than 0.05% THD from 20 Hz to 20 kHz (4  $\Omega$  direct output). Frequency Response: 20 Hz to 20 kHz,  $\pm 1$  dB (direct 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/power amplifier 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. (1707C), or 30.8 lbs. (1715C).

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/power amplifier shall be the Altec Lansing Model 1707C/1715C.



a MARK IV company

P.O. BOX 26105 • OKLAHOMA CITY, OK 73126-0105 • U.S.A. • 405/324-5311 or FAX: 405/324-8981

© 1992 ALTEC LANSING CORPORATION