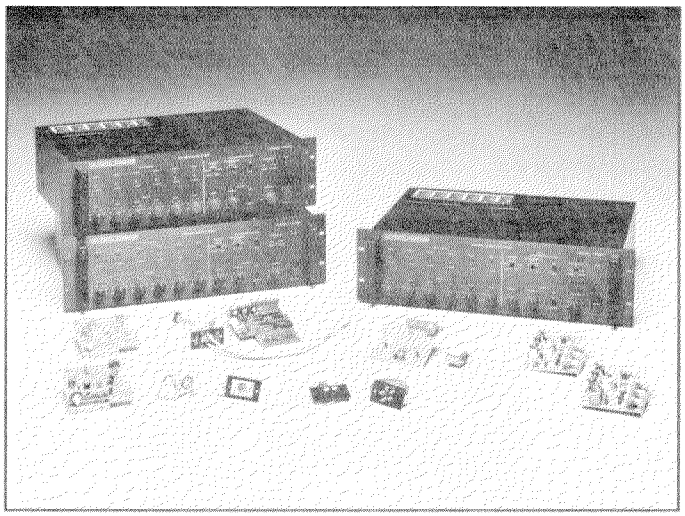
1707C/1715C
Six Channel Mainframe Mixer/Power Amplifier



KEY FEATURES

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

KEY SYSTEM SPECIFICATIONS

Frequency Response:	(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)
Total Harmonic Distortion (THD):	(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)
Signal-to-Noise Ratio:	
Direct Output: (master at maximum)	>80 dB below rated output power, A-weighted
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 then 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)

Continuous Average Power:	
1707C:	75 watts
1715C:	150 watts
Maximum Midband Output Power:	(Ref. 1 kHz at 1% THD)
1707C:	100 watts
1715C:	175 watts
Power Bandwidth:	(Ref. 1 kHz at rated output)
Direct Output:	>20 Hz - 20 kHz
Intermodulation Distortion:	(SMPTE 4:1)
Direct Output:	<0.1% at rated power
Damping Factor:	
Direct Output:	>40, 20 Hz - 1 kHz
Rated Output Level:	(Ref. 1 kHz)
Direct Output:	(unbalanced)
1707C:	24.5 Vrms/8 Ω load
1715C:	24.5 Vrms/4 Ω load
Preamp Output:	(unbalanced)
	0 dBm, 600 Ω min. load
Transformer Output:	(balanced)
1707C:	17.4 Vrms/4 Ω load
	25.0 Vrms/8 Ω load
	70.7 Vrms/66.6 Ω load
1715C:	25.0 Vrms/4.2 Ω load
	34.6 Vrms/8 Ω load
	70.7 Vrms/33.3 Ω load
Equalization:	(Shelving type)
Bass:	±12 dB at 100 Hz
Treble:	±12 dB at 10 kHz
Compressor/Limiter:	Feedforward Topology
Threshold:	-20 dB to +20 dB
	Continuously variable
	(Ref. 100 mVrms on Link input)
Compression Ratio:	1:1 to ∞:1
	Continuously variable
Release Time:	50 msec to 5 sec.
	Continuously variable
Tone Generator:	Electronically produced
Tones:	Buzzer, siren, single-tone chime, and repeating tone chime
Control:	All tones are initiated by external switch closures
Level Adjustment:	Rear panel
Protection System:	
Amplifier:	• Short circuit current limiting • Over voltage limiting • Thermal sensing • Spurious oscillatory protection • Low AC line sensing
Load:	• Output DC detection • Subsonic detection • Turn-on/off transients (≈3 secs)
Front Panel Controls:	
Input:	6 - Input Level adjust
Compressor/Limiter:	1 - Release Time adjust 1 - Threshold adjust 1 - Compression Ratio adjust
	1 - On/Off switch
EQ Controls:	1 - Bass adjust
	1 - Treble adjust
	1 - EQ In/Defeat switch
Output:	1 - Master Level adjust
Miscellaneous:	1 - AC Power switch
Rear Panel Controls:	
Tone Generator:	1 - Output Level adjust
Front Panel Indicators:	6 - Green LED's (Nominal Input) 6 - Red LED's (Peak Input) 1 - Red LED (Main Output clip) 1 - AC Power ON
Connectors:	
Amplifier Input:	1 - RCA phono receptacle
Link Input:	1 - RCA phono receptacle
Battery:	1 - 3-terminal barrier strip
Amplifier Output:	1 - 7-terminal barrier strip
Preamp Output:	1 - RCA phono receptacle
Link Output:	1 - RCA phono receptacle
Mute and Tone Generator:	7 - Screw terminals
Power Requirements:	(Ref. 1 kHz, rated output with no modules installed)
AC Mains:	100/120/200/220/240 VAC, 50/60 Hz.
Battery:	±48 VDC bipolar
1707C:	1.5 amps maximum
1715C:	3.0 amps maximum
Power Consumption and Heat Produced:	
1707C:	
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
Operating Temperature Range:	Up to 50°C (122°F)
Dimensions:	
Width:	19 inches (48.3 cm)
Height:	5¼ inches (13.3 cm)
Depth:	13 inches (33.0 cm)
Net Weight:	
1707C:	25 lbs. (11.4 kg)
1715C:	32 lbs. (14.5 kg)
Finish Color:	Black

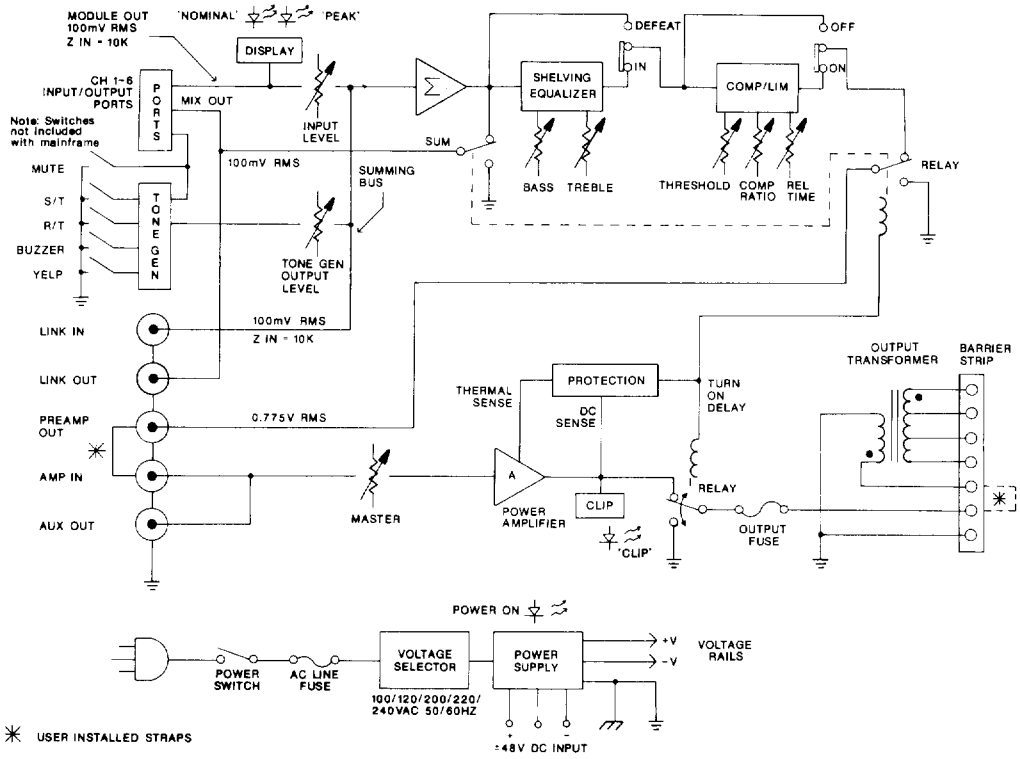
Accessories Included with Mainframe:

- 1 - Operating/Service Instructions for Mainframe, 1780A/AT, 1781A/AT and 1783
- 1 - Preamp Out to Amp In "U" Shorting Bar
- 1 - Direct Output to OT in Shorting Bar
- 1 - System Configuration Label
- 1 - International 220/240 VAC voltage decal
- 1 - International Fuse decal and fuse
- 1 - Rack mount hardware kit

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

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 ±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 Ω direct output), or 150 watts (**1715C**) at less than 0.05% THD from 20 Hz to 20 kHz (4 Ω direct output). Frequency Response: 20 Hz to 20 kHz, ±1 dB (direct output). Source Impedance: 150 Ω to 250 Ω nominal with a microphone preamplifier, 600 Ω with a bridging transformer, 150 Ω to 600 Ω with a line matching transformer, and greater than 30 kΩ with a tape preamplifier. Equivalent Input Noise: <-120 dBr 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 5¼" (H) x 19" (W) x 12¼" (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**.

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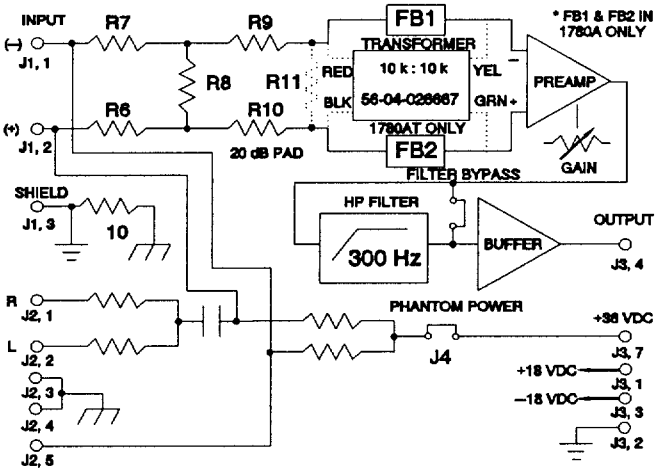
1780A/1780AT

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 kΩ input bridging transformer for those who prefer transformer isolation.



Block Diagram of the 1780A/1780AT Input Module

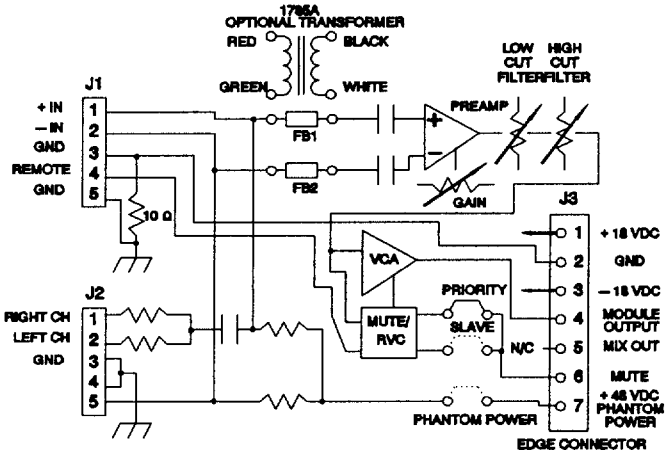
1780A/1780AT Specifications

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

1781A/1781AT

Description

The **Altec Lansing 1781A/1781AT** Programmable Input modules accepts 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

Gain:	
1781A:	0 dB - 50 dB, continuously variable
1781AT:	10 dB - 60 dB, continuously variable
Input Sensitivity:	(Ref. 1 kHz, 10 kΩ load)
1781A:	-68 dBu to -18 dBu (0.3 mVrms - 100 mVrms)
1781AT:	-78 dBu to -28 dBu (0.1 mVrms - 30 mVrms)
Input Impedance:	(Ref. 1 kHz)
Electronically balanced:	>8 kΩ
Transformer balanced:	200 Ω - 600 Ω
With 1793 Dual Phono Connector Installed:	>39 kΩ
Frequency Response:	(Ref. 1 kHz, 100 mVrms output, 10 kΩ load)
1781A:	
±1 dB (minimum gain):	20 Hz - 20 kHz
±1 dB (maximum gain):	50 Hz - 20 kHz
1781AT:	
±1 dB (minimum gain):	20 Hz - 20 kHz
±1 dB (maximum gain):	50 Hz - 15 kHz
Total Harmonic Distortion (THD):	(Ref. 1 kHz, 100 mVrms output, minimum gain, 10 kΩ load, 30 kHz low pass filter)
20 Hz - 20 kHz:	<0.03%
Equivalent Input Noise:	(Ref. 0 dBr = 100 mVrms output, 10 kΩ load, 200 Ω input termination maximum gain, A-weighted) <-120 dBr
High Pass Filter (Low Cut):	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
Corner Frequency:	320 Hz (>10 dB at 100 Hz)
Slope:	6 dB/oct (20 dB/dec)
Low Pass Filter (High Cut):	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
Corner Frequency:	5 kHz (>6 dB at 10 kHz)
Slope:	6 dB/oct (20 dB/dec)
Attenuation:	(Ref. 100 mVrms output, minimum gain, 10 kΩ load)
Mute:	>60 dB (10 kΩ remote)

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 accomodates 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

Output Source Impedance:	<50 Ω
Nominal Output Level /Load Impedance:	+8 dBm (Ref. 1 kHz, 0 dBm = 0.775 Vrms with 600 Ω load, output level control at maximum, 100 mVrms input)
Maximum Output Level:	+24 dBm
Frequency Response:	(Ref. 1 kHz, +8 dBm output)
±1 dB:	20 Hz - 25 kHz
Total Harmonic Distortion (THD):	(Ref. 1 kHz, +8 dBm output, output level control at maximum, 30 kHz low pass filter)
20 Hz - 20 kHz:	<0.05%
Signal to Noise Ratio:	>88 dBm (Below +8 dBm output, output level control at maximum, A-weighted)
Power Requirements:	±18 VDC at 20 mA (supplied by mainframe)
1786 Output Isolation Transformer	
Impedance Ratio:	1:1 (600 Ω:600 Ω)
Frequency Response:	(Ref 1 kHz, +18 dBm output)
±1 dB:	20 Hz - 20 kHz
Total Harmonic Distortion (THD):	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 kΩ bridging transformer installed
- **1781A** Programmable Input module
- **1781AT** Programmable Input module with model **1785A** 600 Ω to 10 kΩ isolation transformer installed
- **1785A** 600 Ω to 10 kΩ Input Isolation Transformer for installation on existing model 1781A

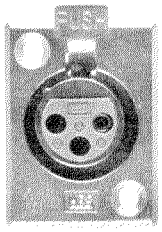
Plug-in Output Module:

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

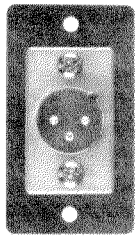
Plug-in EQ Module:

- **8751A** Programmable 14-Band EQ module

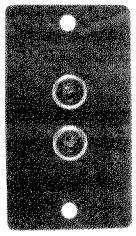
NOTE: *Each module selected requires one of the following connectors also be ordered:*



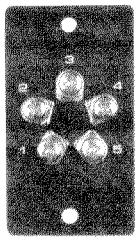
1791
Female XLR



1792
Male XLR



1793
Dual RCA Phono



1794
5-Lug Terminal

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1707C & 1715C
Mixer/Power Amplifiers

Operating and Service Instructions

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