

DESCRIPTION

Output Module. The ALTEC LANSING **1783** line output module 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 at maximum, 100 mVrms input) independent adjustment of each line output.

SPECIFICATIONS

1783 LINE OUTPUT MODULE

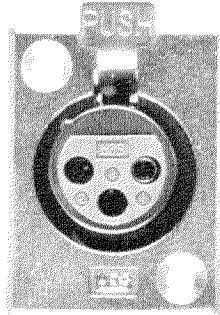
Output Type: Electronically balanced
Output Source Impedance: <50Ω
Nominal Output Level/Load Impedance: +8 dBm/600Ω
 (Ref. 1 kHz, 0 dBm = 0.775 Vrms across 600 Ω load, output level control at maximum, 100 mVrms input)
Maximum Output Level: +24 dBm
Frequency Response (Ref. 1 kHz, +8 dBm output)
 Without **1786**
 ±1 dB 20 Hz - 25 kHz
 ±3 dB 10 Hz - 50 kHz
 Without **1786**
 ±1 dB 30 Hz - 20 kHz
 ±3 dB 15 Hz - 40 kHz
Total Harmonic Distortion (THD): (Ref. 1 kHz, +8 dBm output, output level control at maximum, 30 kHz low pass filter)
 Without **1786**
 20 Hz - 20 kHz <0.05%
 Without **1786**
 20 Hz - 20 kHz <0.1%
Signal-to-Noise Ratio: >88 dBm
 (Below +8 dBm output, output level control at maximum, A-weighted)

Control: 1 - Output level control
Weight (Net): 2.2 oz (63 gr)
Power Requirements: ±18 VDC at 20 MA.
 (Supplied by mainframe)
Included Accessories: 2 - mounting screws
 (for potentiometer bracket)
Optional Accessories: **1786** Output Isolation Transformer

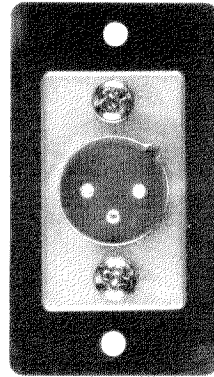
1786 OUTPUT ISOLATION TRANSFORMER

Impedance Ratio: 600Ω:600Ω
 (Primary: Secondary)
Frequency Response: (Ref. 1 kHz, +18 dBm output)
 ±1 dB 20 Hz - 20 Hz
 ±3 dB 10 Hz - 40 Hz
Total Harmonic Distortion (THD): (Ref. 1 kHz, +18 dBm output)
 20 Hz - 20 Hz <0.5%
 50 Hz - 20 Hz <0.1%
Insertion Loss: <1 dB
 (Ref. 1 kHz, +18 dBm output)
 ALTEC LANSING continually strives to improve their products and performance. Therefore specifications are subject to change without notice.

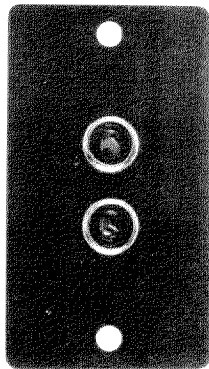
CONNECTORS FOR USE WITH 1783



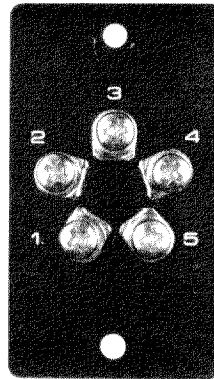
4E



4F



4G



4H

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The line output module shall have a low source impedance, continuous variable gain, and the capability for adding a 1786 output isolation transformer. In addition, the module shall be fully compatible with the 1700-series mixer/preamplifier and mixer/power amplifier mainframes, and accept any one of the 1790-series input connectors.

The line output module shall meet the following per-

formance criteria. Gain: 26 dB, continuously variable. Frequency response: 50 Hz to 20 kHz, ± 1 dB. Output source impedance: $< 50\Omega$. Noise floor: < -80 dBm. Total Harmonic Distortion (THD): $< .05\%$, ($< .1\%$ with 1786), Ref. 1 kHz, +8 dBm output, 30 kHz low pass filter.

The line output module shall be the ALTEC LANSING Model **1783**.

P.O. BOX 26105, OKLAHOMA CITY, OK 73126-0105, U.S.A.
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the sound of experience

1783 Line Output Module

Operating and Service Instructions



ALTEC LANSING CORPORATION

a MARK IV company

P.O. Box 26105 • Oklahoma City, OK • 73126-0105 USA • Tel: (405) 324-5311 • FAX: (405) 324-8981

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Operating and Service Instructions for the Altec Lansing 1783 Line Output Module

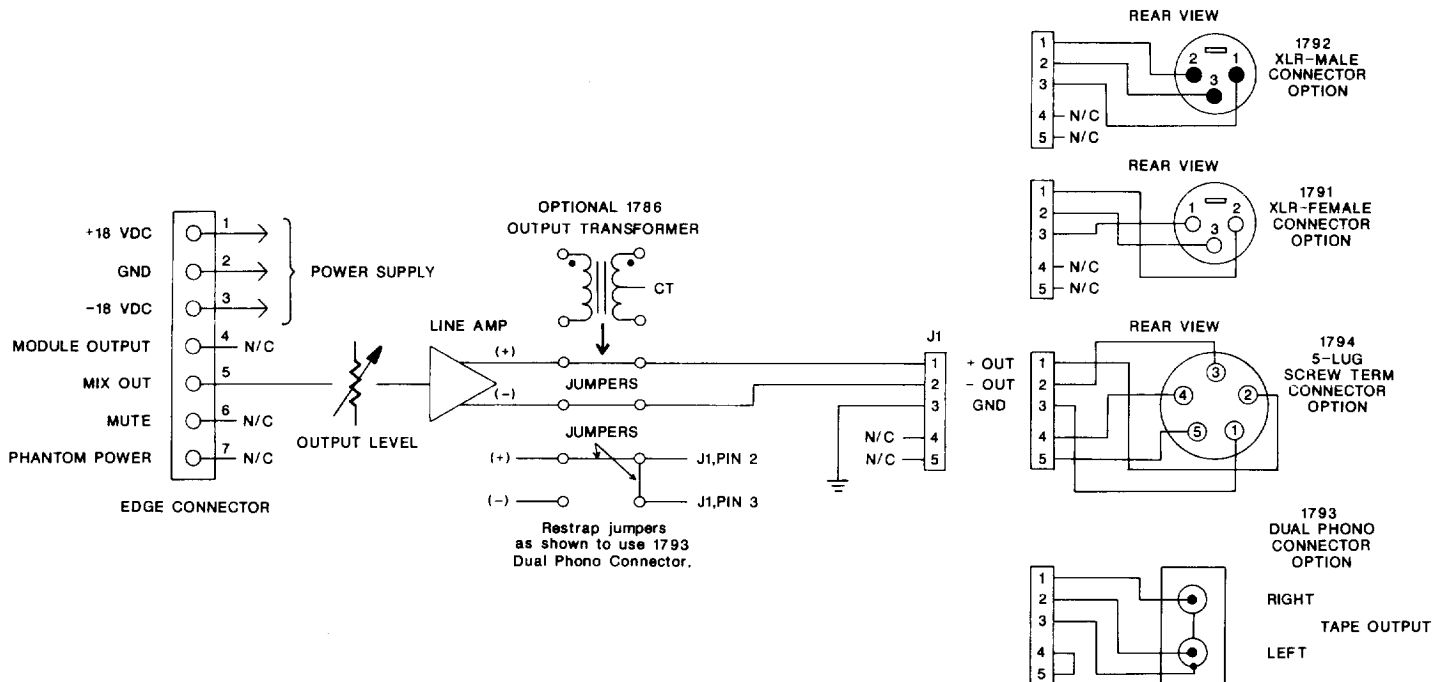


Figure 1 Block Diagram of the 1783 Line Output Module

1 CONFIGURING THE 1783

A block diagram of the 1783 line output module is shown in Figure 1. Study and refer to the diagram as needed during the following sections.

1.1 Connector Options for the 1783 Line Output Module

The 1783 line output module can use any of the 1790-series connector assemblies. The connector assembly wiring is shown in Table 1. A detailed drawing showing typical output module connections to external equipment is shown in Figure 2.

Pin No.	1791 XLR-F	1792 XLR-M	1794 5-LugTerm
1	Gnd (shield)	Gnd (shield)	Gnd (shield)
2	+ In (Hi)	+ In (Hi)	+ In (Hi)
3	- In (Lo)	- In (Lo)	- In (Lo)
4	Shell (Chas)	Shell (Chas)	RVC
5	N/A	N/A	RVC Gnd

Table I Connector Assembly Wiring

The 1783 line output module has an electronically-balanced (differential) output providing high drive capability with low distortion.

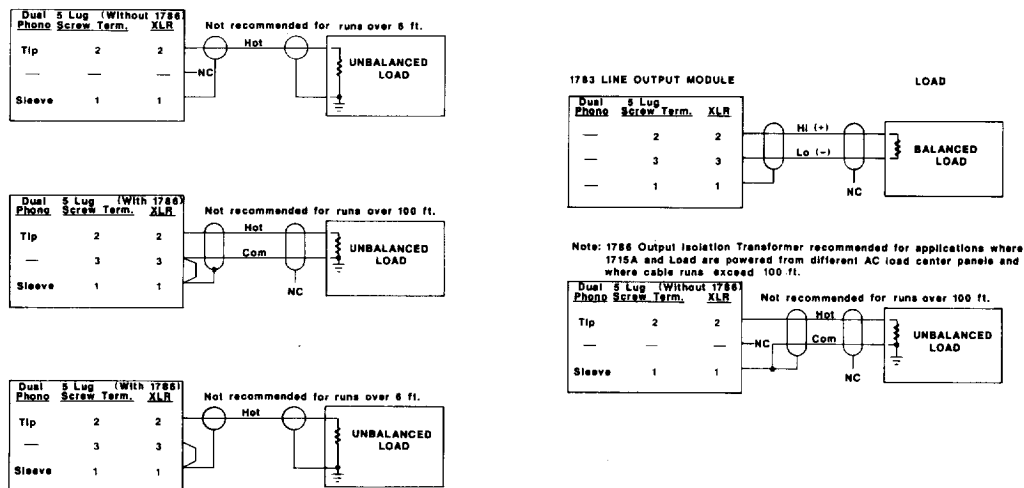


Figure 2 Typical Output Module Connections

It resembles a power amplifier's output in the bridge mode. If the output module is required to drive an unbalanced load, **DO NOT** strap the low side of the output (Pin 3 of 1791, 1792 and 1794) to ground. This could cause overheating and possible damage to the integrated circuit. Connect only between the "+" output (Pin 2) and ground (Pin 1). This will result in a 6 dB decrease in output level (or a 3 dB decrease in output power). However, the output level control can easily compensate for the loss.

When using the 1793 dual phono connector, it is necessary to restrap the inverting "-" output jumper wire (connected to the operational amplifier's inverting output) to the amp's non-inverting output. This will put the same polarity signal on both phono connectors. Refer to Figures 1 and 3 for additional information.

1.2 Installation of Optional 1786 Output Isolation Transformer

The following outlines the installation of the 1786 transformer:

1. Remove the two wire jumpers near the lower left corner of the module. Refer to Figure 3.
2. Install the 1786 output isolation transformer in the position shown in Figure 3.
3. Lay the module on the component side (circuit side up) and solder the transformer in place.

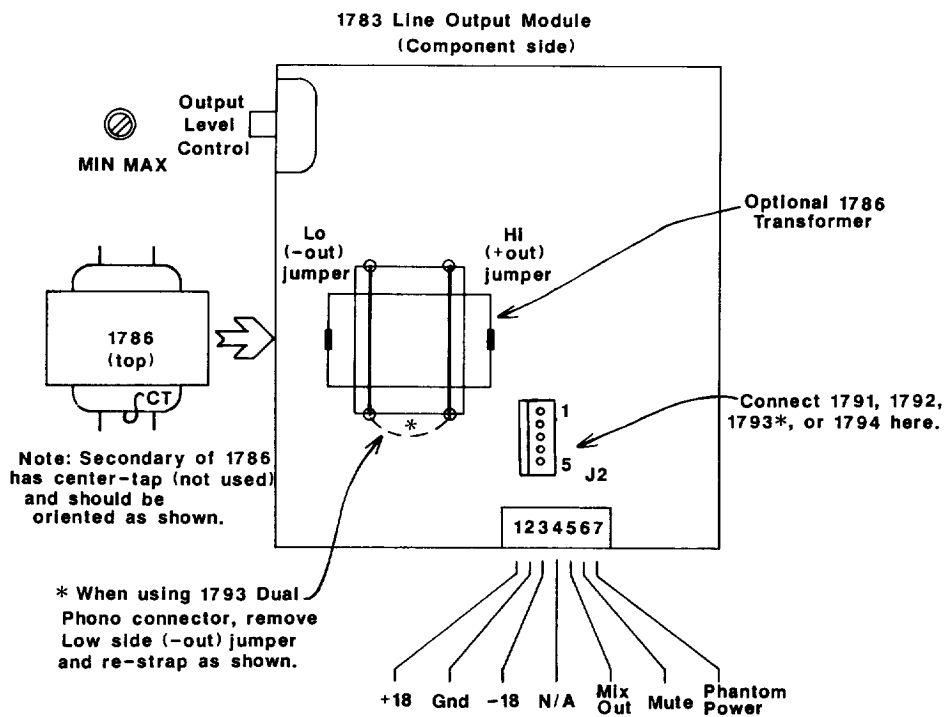


Figure 3 Optional 1783 Configuration Layout Guide

2 SPECIFICATIONS

1783 LINE OUTPUT MODULE

Output Type: Electronically-balanced

Output Source Impedance:
< 50 Ω

Nominal Output Level/Load Impedance:
(Ref. 1 kHz, 0 dBm=0.775 Vrms across 600 Ω load,
output level control at max., 100 mVrms input)
+8 dBm/600 Ω

Maximum Output Level:
+24 dBm

Frequency Response:
(Ref. 1 kHz, +8 dBm output)
With 1786,
 ± 1 dB: 20 Hz - 25 kHz
 ± 3 dB: 10 Hz - 50 kHz

Without 1786,
 ± 1 dB: 30 Hz - 20 kHz
 ± 3 dB: 15 Hz - 40 kHz

Total Harmonic Distortion (THD):
(Ref. 1 kHz, +8 dBm output, output level control at
maximum, 30 kHz low pass filter)

With 1786,
20 Hz - 20 kHz: <0.05%

Without 1786,
20 Hz - 20 kHz: <0.1%

Signal-to-Noise Ratio:
(Below +8 dBm output, output level control at
maximum, A-weighted)
>88 dBm

Control: 1 - Output level control

Weight (Net): 2.2 oz. (63 g)

Power Requirements:
 ± 18 VDC at 20 mA
(supplied by mainframe)

Included Accessories:
2 - Mounting screws
(for potentiometer bracket)

Optional Accessories:
1786 Output Isolation
Transformer

1786 OUTPUT ISOLATION TRANSFORMER

Impedance Ratio: 600 Ω :600 Ω
(Primary:Secondary)

Frequency Response:
(Ref. 1 kHz, +18 dBm output)
 ± 1 dB: 20 Hz - 20 kHz
 ± 3 dB: 10 Hz - 40 kHz

Total Harmonic Distortion (THD):
(Ref. 1 kHz, +18 dBm output)
20 Hz - 20 kHz: <0.5%
50 Hz - 20 kHz: <0.1%

Insertion Loss: <1 dB
(Ref. 1 kHz, +18 dBm output)

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3 SERVICE INFORMATION

CAUTION: *No user serviceable parts inside. Hazardous voltages and currents may be encountered within the chassis. The service information contained within this document is for use only by ALTEC LANSING authorized warranty stations and qualified service personnel. To avoid electric shock DO NOT perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Otherwise, refer all servicing to qualified service personnel.*

NOTE: *Modifications to ALTEC LANSING products are not recommended. Such modifications shall be at the sole expense of the person(s) or company responsible, and any damage resulting therefrom shall not be covered under warranty or otherwise.*

3.1 Parts Ordering

To order replacement parts, look up the ordering number from the parts list and write or call:

ALTEC LANSING Parts Sales
P.O. Box 26105
Oklahoma City, OK 73126-0105
U.S.A.
Phone: (405) 324-5311
FAX: (405) 324-8981

3.2 Factory Service

If factory service is required, ship the unit prepaid to:

ALTEC LANSING Customer
Service/Repair
10500 W. Reno
Oklahoma City, OK 73128 U.S.A.

Enclose a note describing the problem in as much detail as possible. Include other helpful information such as test conditions, where used, how used, etc.

3.3 Technical Assistance

For applications assistance/technical information, write or call:

ALTEC LANSING Technical Assistance
P.O. Box 26105
Oklahoma City, OK 73126-0105
U.S.A.
(405) 324-5311
FAX(405) 324-8981

Components Listing for the 1783 Line Output Module

Reference Designator	Ordering Number	Name and Description
C100, 103, 105	15-02-124808	Capacitor, 0.1 μ f, 100 V
C101	15-02-124498	Capacitor, 47 pf, 1 kV
C106	15-02-100024	Capacitor, 100 pf, 500 V
C102, 104	15-01-026639	Capacitor, 100 μ f, 25 V
C107, 108	15-01-124502	Capacitor, 10 μ f, 50 V
R101, 102, 106, 108	47-01-102030	Resistor, 10 Ω , 5%
R103, 104, 107, 111	47-01-102102	Resistor, 10 k Ω , 5%
R105, 109	47-01-102054	Resistor, 100 Ω , 5%
R112	47-01-102078	Resistor, 1 k Ω , 5%
R113	47-01-102127	Resistor, 100 k Ω , 5%
R114	47-01-102100	Resistor, 8.2 k Ω , 5%
VR101	47-06-026627	Potentiometer, 50 k Ω , linear
J1, 2, 5J1	21-01-110310	Jumper, 0 Ω
IC101	17-01-027463	IC, RC4558
CON1	21-01-026622	Header, 5 pin
CON2	21-01-026623	Connector, 7 pin
	14-08-026632	Bracket, potentiometer mounting
	28-01-124701	Rolox, 4-40 x 1/4"

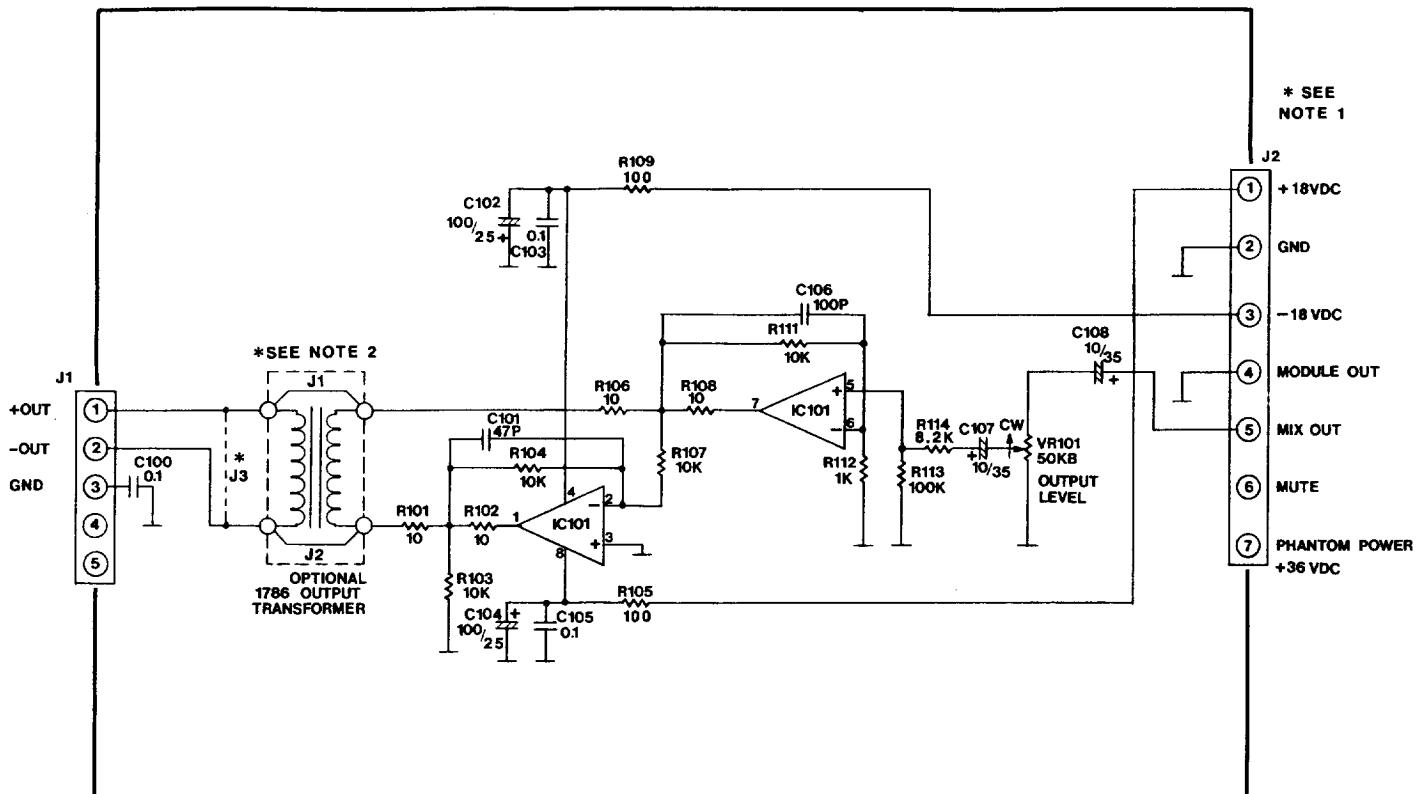


Figure 4 Schematic (11C143) of the 1783