TiL

A790
LOUD HAILER CONTROLLER

Operating Instructions

TiL Document No. 09RE409
Revision D

MARCH 2012

Technisonic Industries Limited
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		REVISION HISTORY [09RE409]		
REV	SECTION / PAGE	DESCRIPTION	DATE	EDITED BY
n/c		Original document released	17 Aug 2009	
A	1-1 2-1	Added Model PSAIR42 to paragraph 1.2. Section 2 title typo corrected "Installation" to "Operating". Title page changed to reflect new document format/layout. Correct other typos as found in TOC and Section 2.	19 Oct 2009	FM
B	 2-4	Added edited by column in this page ADDED configuration mode into section 2 Para 2.4 re-sequenced as paragraph 2.5	28 Oct 2010	FM
C	1-1	Para 1.2 Power Sonix AIR42 model number added in Rev A above should be PSAir22 not PSAIR42		
D	Sect 2 Sect 3	Para 2.4 moved to Sect 3 updated description of configuration Mode	20 Mar 2012	FM

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INFORMATION NOTES

ESD CAUTION

This unit contains static sensitive devices. Wear a grounded wrist strap and/or conductive gloves when handling printed circuit boards.

WARNING

Changes or modifications not expressly approved by Technisonic Industries could void the user's authority to operate the equipment.

WARRANTY INFORMATION

The Model A790 is under warranty for one year from date of purchase. Failed units caused by defective parts, or workmanship should be returned to:

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Mississauga, Ontario L4Z 1W7

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SUMMARY OF DO-160C

Summary of DO-160C Environmental Testing for Technisonic Model A790 Loud Hailer Controller:

CONDITIONS	SECTION	DESCRIPTION OF CONDUCTED TESTS
Temperature and Altitude	4.0	Equipment tested to categories C4 and D1.
Vibration	8.0	Equipment is tested without shock mounts to categories B, M and N.
Magnetic Effect	15.0	Equipment is class Z.
Power Input	16.0	Equipment tested to category B.
Voltage Spike	17.0	Equipment tested to category B.
RF Emission	21.0	Equipment tested to category Z.

INSTALLATION APPROVAL NOTE

Presently, no TSO standard exists for airborne loud hailer equipment. To make it easier for installation agencies to provide their customers with an approved installation supported by an effective Airworthiness Approval, Technisonic has secured Supplemental Type Certificate (STC) Approvals (both US and Canadian) on its Airborne products for many helicopters currently being delivered in the US and Canada, as well as a number of single engine fixed wing aircraft. The above referenced DO-160C test data is also on file and available from Technisonic to support approval requirements in airframes for which Technisonic does not possess an STC.

Approved aircraft types are listed in the attachments to the formal STC documents. These STCs are the exclusive property of Technisonic and require the written authority of Technisonic for their use. To assist Factory Authorized Technisonic Dealers in the certification process, we have placed copies of our Canadian and US STCs on our web site along with a letter of authorization for their use. These documents may be downloaded and used as support for the technical submission to FAA or Transport Canada. Only factory authorized dealers/installers are permitted to download and make use of these documents on behalf of their customers (end users) in support of regulatory agency approval. Please refer to the Technisonic web site www.til.ca for the latest issue of available STCs and letter of authorization for use.

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SECTION 1 - GENERAL DESCRIPTION

1.1 INTRODUCTION

The following document covers both the operation of the A790 Loud Hailer Controller.

1.2 DESCRIPTION

The A790 is designed to work in conjunction with a high power public address system such as the Power Sonics Model PSAIR22.

1.3 PURPOSE OF EQUIPMENT

The A790 Loud Hailer Controller is designed to control an airborne public address system adding features such as pre-recorded sounds and messages.

1.4 MODEL VARIATION

There is only one version of the Model A790, P/N 081250-1. All units support both 5 and 28 volt back lighting and all are NVG compatible.

1.5   TECHNICAL CHARACTERISTICS

Characteristics	Specification
Mic Audio input:	0.145vrms (-10 dBm) nominal
Audio output:	2.1vrms (8.7dBm) max @ 600Ω
Physical Dimensions:	Approx. 5.6" X 1.125" X 5.75"
Weight:	Approx. 13.4 oz. (375 g)
Mounting:	Panel Mount via Dzus fasteners
Operating Temperature Range:	-30°C to +70°C

Power Requirement:
        Voltage:
        Current:
	
	28.0 VDC, ± 15%
	500 mA max.

Back Lighting:	28 Volts or 5 Volts @ 2mA max.
Display Colour:	NVG Compatible Green

TABLE 1.1 Model A790 – General Characteristics

SECTION 2 – OPERATING INSTRUCTIONS

2.1 FEATURES

The A790 provides the following features to an airborne PA system installation:

1. The user can use the PA system directly with the headset mic.
2. A message can be pre-recorded in the A790 to be played over the PA system.
3. A siren or a trill sound can be played through the PA.
4. An auxiliary input jack allows for an input from an external source such as an MP3 player to be routed to the PA system or to the A790 message recorder.
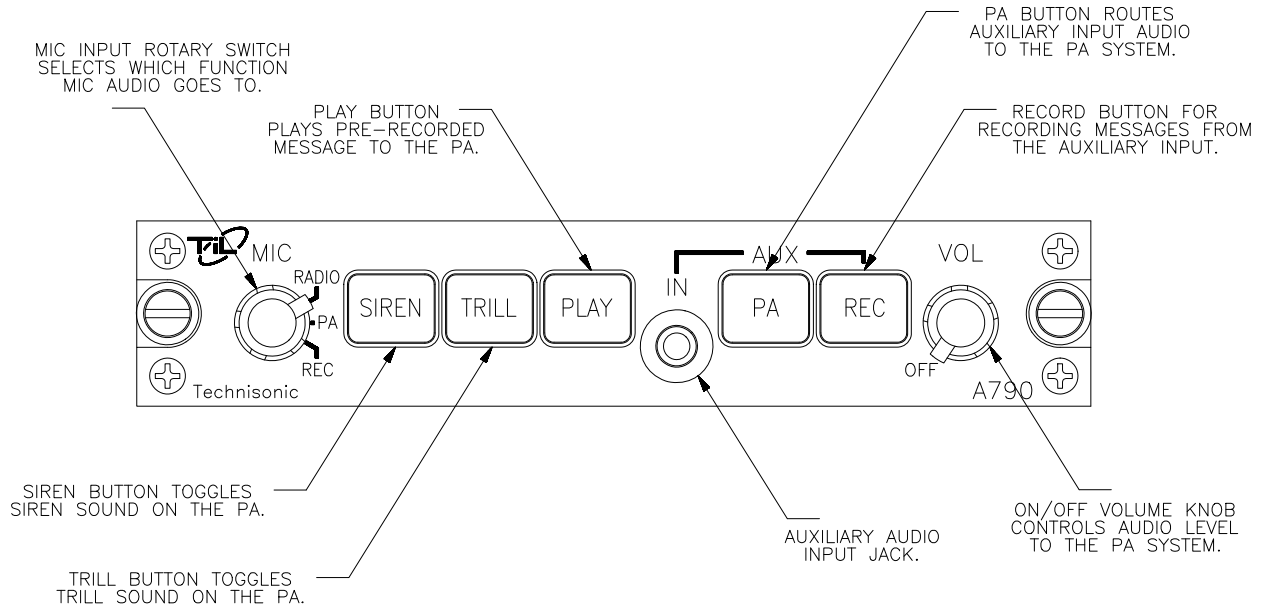

FIGURE 2.1 A790 Operator's Controls and Indicators

2.2   OPERATING INSTRUCTIONS

The A790 Loud Hailer Controller can be wired such that it is in line between the headset and the audio panel. This method would only be used when there are no more positions available on the audio panel. The second method is to connect the A790 to one of the positions on the aircraft audio panel. This is would be a standard installation (recommended).
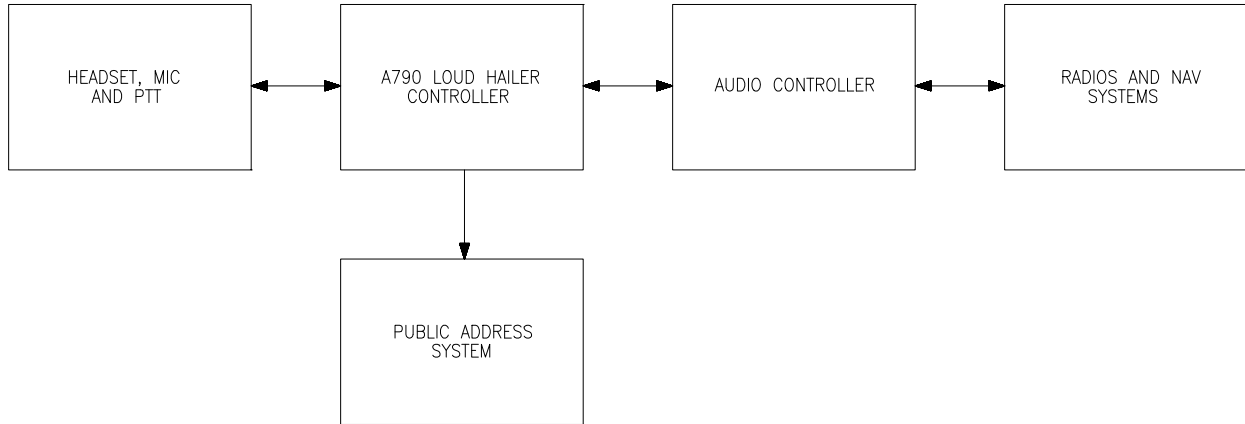

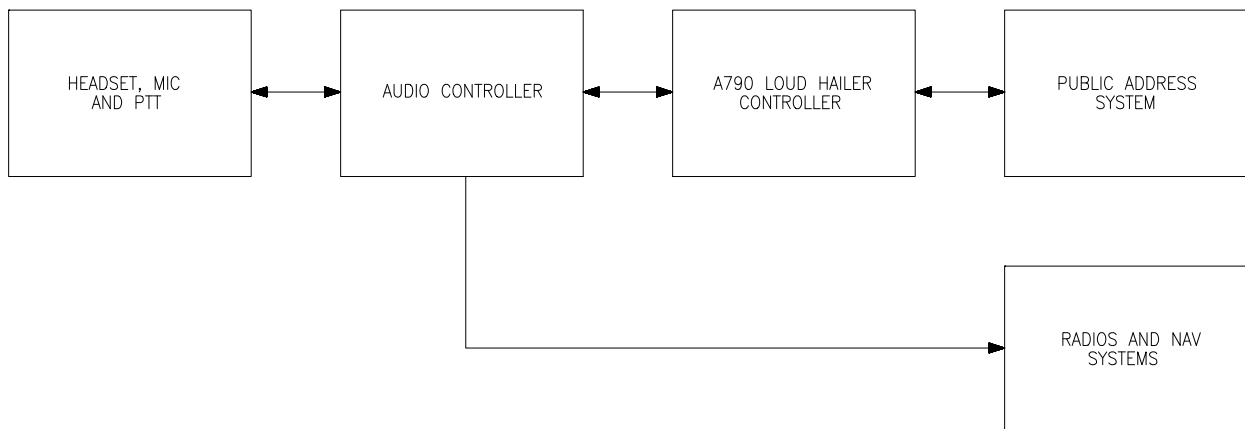**FIGURE 2.2** Configuration #1 (Special)

FIGURE 2.3 Configuration #2 (Standard)

2.2.1   MIC ROTARY SWITCH

The MIC rotary switch has 3 positions:

- RADIO – The radio position is only used in special configuration (#1) and allows the user to operate radios and equipment through the aircraft audio panel.
- PA – Switching to the PA setting connects the mic and the PTT line to control the PA system. This is the normal position of this switch when installed in the standard configuration (#2).
- REC – Setting the rotary switch to this position routes the mic audio and PTT line to the A790's internal message recorder. Pressing PTT starts the recording and releasing PTT will stop the recording. This setting works the same in configuration #1 or #2.

2.2.2 SIREN
Pressing this button will activate the PA system and play a siren sound until the SIREN button is pressed again. The button will light up while this function is activated.

2.2.3 TRILL
Pressing this button will activate the PA system and play the trill sound until the TRILL button is pressed again. The button will light up while this function is activated.

2.2.4 PLAY
Pressing this button will play the pre-recorded message through the PA system. The message will play over and over again until the PLAY button is pressed again. The button is lit while this function is active.

2.2.5 AUX IN
The auxiliary input is a 1/8" jack allowing an external audio source such as an MP3 player to be played through the PA system or to be recorded on the A790's message recorder.

2.2.6 PA
Pressing this button will activate the PA system and route audio from the auxiliary input to the PA. Pressing the button again will switch off the auxiliary audio and deactivate the PA system. The button will light up while this function is activated.

2.2.7 REC
Pressing this button once arms the message recorder causing the button to blink. If the button is pressed again within 4 seconds, audio from the auxiliary input will be recorded until the REC button is pressed a final time.

2.2.8 ON/OFF VOL
The volume knob adjusts the volume level of the audio going to the PA system only and does not affect the sidetone level to the headset. The main power switch is incorporated into the knob as well. If the A790 is installed in the standard configuration #1, switching off the power automatically routes the headset, mic and PTT directly to the aircraft audio panel. This will also happen if power to the unit is lost for some other reason.

2.3 OPERATION
Covered below are step by step instructions for each feature of the A790.

2.3.1 PA ANOUNCEMENT FROM THE HEADSET MIC
The MIC rotary switch has 3 positions:

- Select the PA on the aircraft audio panel if in a standard installation (#2).
- Select PA on the MIC rotary switch on the A790.
- Key PTT and speak. Adjust volume if necessary. Note: Volume control only adjusts the audio level to the PA, not what is heard in the headset.
- Release PTT when done.

2.3.2 SIREN OR TRILL ANNUNCIATION
- Press the SIREN or TRILL button as desired.
- Press the previous button again to stop the annunciation.

2.3.3 PLAYING A PRE-RECORDED MESSAGE
- Press the PLAY button.
- Adjust volume as necessary.
- The message will continue to repeat.
- Press the PLAY button again to stop the message.

2.3.4 RECORDING A MESSAGE
- Select the PA on the aircraft audio panel if in a standard installation (#2).
- Select REC on the MIC rotary switch on the A790.
- Press PTT and speak.
- Release PTT when finished. The recording is now stored in the A790.

2.3.5 PLAYING AN EXTERNAL AUDIO SOURCE THROUGH THE PA
- Plug the external audio source (MP3 Player, Cell Phone, Etc) into the 1/8" jack on the A790. The input will accept either a mono or stereo plug.
- Press the PA button.
- Start the audio source.
- Adjust volume as necessary.
- Press the PA button again when finished.

2.3.6 RECORDING A MESSAGE FROM AN EXTERNAL SOURCE
- Plug the external audio source into the 1/8" jack on the A790.
- Have the external source ready to play.
- Press the REC button. The button will start to blink indicating the record mode is armed.
- Press the REC button again within 4 seconds.
- Immediately start the audio source.
- When the audio source is done, press the REC button again. The recording is now stored in the A790.

SECTION 3 – CONFIGURATION MODE

3.1   INTRODUCTION

The A790 can be put into a mode that allows four features of the unit to be configured, these are:

1.   Configuring the unit for the backlight bus voltage used in the airframe.
2.   Enabling or disabling a Power On Test of the PA system.
3.   Setting the sidetone level to the operator's headset.
4.   Download Siren and Trill sound files.

NOTE: These options are typically configured once — items 1-3 at install time, item 4 at the factory.

To *enter* the configuration mode: with the unit OFF press and hold the SIREN, TRILL and PLAY keys, turn on the A790, now release the keys.

To *exit* configuration mode: either press the 'REC' button, or turn the power off.

3.2   CONFIGURATION MODE OPERATION

When in configuration mode, the front panel buttons are re-mapped to the various functions as described in the following sections.

3.2.1 SIREN – Select the Backlight Voltage

The MIC rotary switch has 3 positions:

Pressing the SIREN button will toggle the configuration of the A790 backlight system to work with either 28 VDC or 5 VAC systems.

The button is lit to indicate 28V configuration, and unlit to indicate 5V configuration. Factory default is: 28V.

3.2.2 TRILL – Select the Amplifier Test

Pressing the TRILL button toggles the amplifier test tone feature between enabled or disabled. When enabled the unit will produce a three second test tone each time the unit is powered up. As of this writing only the Powersonix Inc. PA systems are known to support this feature. Ensure that you know if this feature is supported before enabling it.

The button is lit when the test tone is enabled. Factory default is: disabled.

3.2.3 PLAY – Set the Side-tone Level

Pressing the PLAY button toggles between set or store the side-tone level. When the button is lit the unit is in side-tone set mode, the side-tone level can be set using the volume knob. When the button is pressed again (to unlit), the setting will be stored into memory.

3.2.4 PA − Select the wav File Loader

NOTE: This is NOT a user function.

Pressing the PA button starts the wav file loader. All functions of the wave file loader are controlled via an externally connected computer. No harm will occur if you accidentally invoke this function, to exit this feature, simply power off the unit and start again.

The button is lit when the wav file loader is running.

3.2.5 REC − Exit Configuration Mode

Pressing the REC button will exit the configuration mode.

NOTE: If you configured Amp Test Enabled, it will immediately begin.

A790
LOUD HAILER CONTROLLER

Installation Instructions

TiL Document No. 09RE410
Revision A
Issue 5

JULY 2010

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REVISION HISTORY [09RE410]				
REV	SECTION - PAGE -	DESCRIPTION	DATE	Edited by
n/c		Original document released	Oct 19/2009	
Issue 1		Correct typo in Table of Contents line in Table 1.1. Added paragraph 1.3.0 Installation Kit Contents	Dec 15/2009	FM
Rev A		CR#10072 Audio Output was listed as a single ended output at pin 13 on the airframe connector In fact it should be a differential pair:" PA Audio Out +" on pin 13 and "PA Audio Out -" on pin 12. All occurrences of pin 12 as ground should be removed and replaced with pin 12 being "PA Audio Out -", this includes tables and diagrams. All occurrences of pin 13 as Audio Out should be removed and replaced with pin 13 being "PA Audio Out+", this includes tables and diagrams. Added edited by column in Revision History Page. Added Warranty Page	Jul 28/2010	FM
Rev A Issue 1		Removed PA system from wiring diagram parts list and added configuration instructions.	Dec 21/2010	SM
Rev A Issue 2		Standard and special wiring diagrams were labeled incorrectly.	Jan 12/2011	SM
Rev A Issue 3		Changed mating connector to Positronics tool free V lock assembly.	Jan 28/2011	SM
Rev A Issue 4	Figure 1-3 Figure 1-4	Remove duplicate pin 12 from ground which appeared in Rev A Issue 1	Oct 03/2011	FM
Rev A Issue 5	Page 1-4	Clarify description of "AMP TEST" configuration option	Feb 06/2012	AM

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WARNING AND DISCLAIMER

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This manual is designed to provide information about the A790. Every effort has been made to make this manual as complete and accurate as possible.

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SECTION 1 − INSTALLATION INSTRUCTIONS

1.1   GENERAL

This section contains information and instructions for the correct installation of the A790 Loud Hailer Controller.

1.2   EQUIPMENT PACKING LOG

Unpack the equipment and check for any damage that may have occurred during transit. Save the original shipping container for returns due to damage or warranty claims. Check that each item on the packing slip has been shipped in the container. Verify that the equipment display and backlighting configuration are the same as those ordered.

1.3   INSTALLATION

The A790 can be installed such that it is placed between the operator's headset and the audio panel (special installation) or as one of the positions on the audio panel (standard installation).

1.3.0   INSTALLATION KIT - CONTENTS

The IN-A790 installation kit (P/N 099968-1) consists of:

1. One Positronics one hand, tool free, V-lock type 25 pin D connector (female) complete with crimp pins and hood.

1.3.1   SPECIAL INSTALLATION

This type of installation is recommended where there are no positions available on the audio panel. The operator's microphone and PTT are connected directly to the A790. Controls on the A790 allow the operator to select the PA or the aircraft audio panel. The audio panel is automatically selected in the case of a failure or power loss to the A790. Only one operator can be connected to the A790 in the special installation.
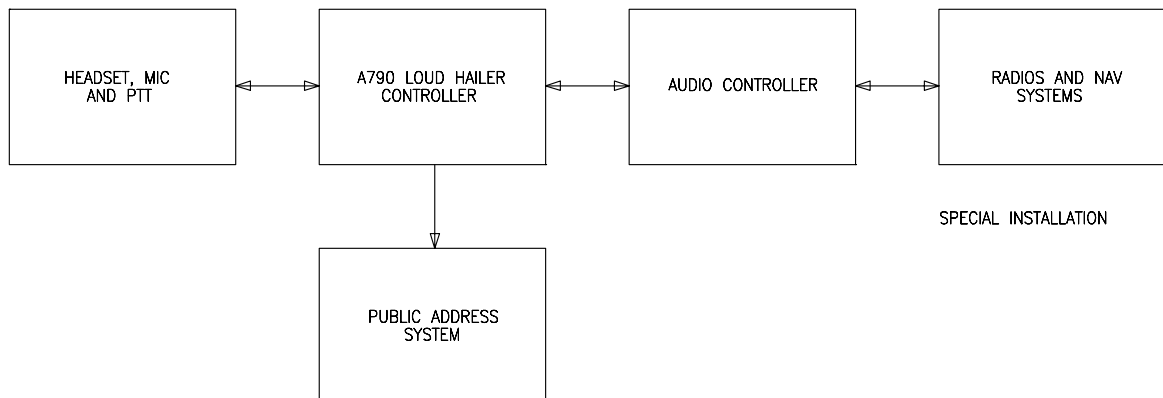
FIGURE 1.1 Special Installation

1.3.2 STANDARD INSTALLATION

In this installation, the A790 is connected to one of the com positions on the aircraft audio panel. Any of the operators connected to the audio panel can use the PA system.
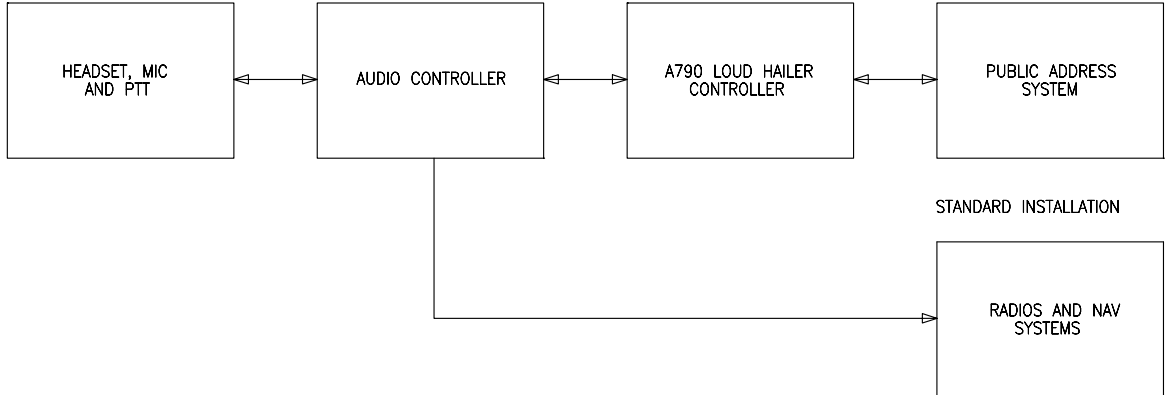
FIGURE 1.2 A790 Standard Installation

1.3.3 A790 25-PIN CONNECTOR PINOUTS (J1)

The following are the pinouts for the 25-pin connector (J1) and the function of each pin.

A790 J1(25-Pin D Connections)			
Pin #	Description	Pin #	Description
1	+28VDC	14	+28VDC
2	PA Power Control	15	PA Power Control
3	Mic Input	16	Aux In Left
4	Aux In Right	17	Backlight
5	PA Power Level Monitor	18	PTT Input
6	PTT Output	19	Ground
7	Control Out	20	Control In
8	RX Data	21	TX Data
9	Ground	22	Ground
10	Mic Output	23	Ground
11	Ground	24	Sidetone Output
12	PA Audio Output (−)	25	Ground
13	PA Audio Output (+)		

TABLE 1.1 Wire connections on the 25-Pin MALE D Connector (J1)

DETAILED DESCRIPTION OF THE 25-PIN MALE D CONNECTOR

1.3.4 +28VDC - Pins 1 & 14

These are the main power pins to the A790. Both pins should be connected to +28 VDC.

1.3.5 PA Power Control - Pins 2 & 15

Both pins are connected together through a dry relay contact when the A790 is switched on. These pins can be used to power up the PA system with either a control input on the amplifier (if supplied) or through another relay controlling the main power to the PA amplifier.

1.3.6 Mic Input - Pins 3

In a special installation, the operator's mic would be connected directly to this pin. In the standard installation, this pin is connected to the mic signal output from the audio panel.

1.3.7 Auxiliary Input Right and Left - Pins 4 & 16

These pins are internally connected in parallel to the stereo aux input jack on the front of the A790. These inputs can be used as another audio source for the PA. For example, the output from one of the radios can be connected allowing an operator on the ground with a handheld to use the aircraft's PA system.

1.3.8 PA Power Level Monitor – Pin 5

This input is specifically intended to be used as part of the power up test on the Powersonix PA systems. The pin should be left unconnected otherwise.

1.3.9 PTT Output - Pin 6

This output is only used in the special installation configuration were it is connected to the PTT input on the audio panel. Leave unconnected in the standard installation.

1.3.10 Control Input / Output - Pins 7 & 20

Do not connect. For factory use only.

1.3.11 PTT Input - Pins 8 & 21

Do not connect. For factory use only.

1.3.12 Ground - Pins 9, 11, 19, 22, 23, & 25

Connect to aircraft ground.

1.3.13 Mic Output - Pin 10

This output is only used in the special installation configuration where it is connected to the microphone input on the audio panel. Leave unconnected in the standard installation.

1.3.14 PA Audio Output - Pins 12 & 13

PA Audio Output is a differential pair (+ and −)
Pin 13 is positive and pin 12 is negative.
Connect to the audio input of the PA system.

1.3.15 Backlight - **Pin 17**

Back lighting input. Can be configured for 0-5VAC or 0-28VDC dimmer bus operation (selecting the wrong voltage will not result in damage). See 1.4 for configuration instructions.

1.3.16 PTT Input - **Pin 18**

In the special installation, the operator's PTT is connected here. In the standard installation, the PTT output from the audio panel is connected to this pin.

1.3.17 Sidetone Output - **Pin 24**

This pin is connected to an auxiliary input on the audio panel such as a NAV or MUSIC input when in the special installation configuration. Otherwise in the standard installation, this pin is connected to the selected com audio input on the audio panel.

NOTE: See Figure 1.3 for special wiring installation and Figure 1.4 for standard wiring installation.

1.4   CONFIGURATION INSTRUCTIONS

The A790 has two configurable features:

1.   **Backlight Voltage Select.** The backlighting voltage can be set for either a 5VAC or 28VDC lighting bus.

2.   **Amplifier Test.** The A790 can be set to provide a 3 second test tone to the PA amplifier, read back an output level and temporarily display the results whenever the A790 is switched on. As of this writing, only the Powersonix PA system is known to implement this feature. This setting should be toggled off otherwise.

3.   **Side Tone Level.** The PLAY button is used to select or store the side tone level set by the volume knob. When the PLAY button is lit, the level can be set. When the button is pressed to unlit, the setting will be stored in memory.

4.   **Load SIREN & TRILL Wav Files.** The PA button starts the wav file loader, this is a factory use function. All functions of the wave file loader are controlled via an externally connected computer. No harm will occur if you accidentally invoke this function, to exit this feature, simply power off the unit and start again.

The button is lit when the wav file loader is running.
NOTE: This is NOT a user function.

To invoke the configuration mode, with the unit OFF press and hold the SIREN, TRILL and PLAY keys, turn on the A790, now release the keys. In configuration mode, the keys are re-mapped as follows:

SIREN – **Select the Backlight Voltage.** Pressing the SIREN button toggles the 5V/28V backlight selection. The button is lit for 28V and unlit for 5V. Factory default is: 28V.

TRILL – **Select the Amplifier Test.** Pressing the TRILL button toggles the test tone feature enabled or disabled. When enabled the unit will produce a three second test tone each time the unit is powered up.

When the Amp Test is running, the relative power is indicated by a simple 'bar graph' created by controlling the button lighting, the indicator runs from left to right, and each button lit corresponds to 0.25V at the Amp Test input.

As of this writing, the Powersonix PA systems indicate power output of 300W for each 250mV generated. See the Powersonix documentation for your PA system for current information.

The button is lit when the test tone is enabled. Factory default is: disabled.

PLAY – **Set the Side Tone Level.** The PLAY button is used to select or store the side tone level set by the volume knob. When the PLAY button is lit, the level can be set. When the button is pressed to unlit, the setting will be stored in memory.

Turn the unit off when complete and turn on again for normal use.

PA - **Select the wav File Loader.**

Note: This is NOT a user function.

Pressing the PA button starts the wav file loader. All functions of the wave file loader are controlled via an externally connected computer. No harm will occur if you accidentally invoke this function, simply power off the unit and start again.
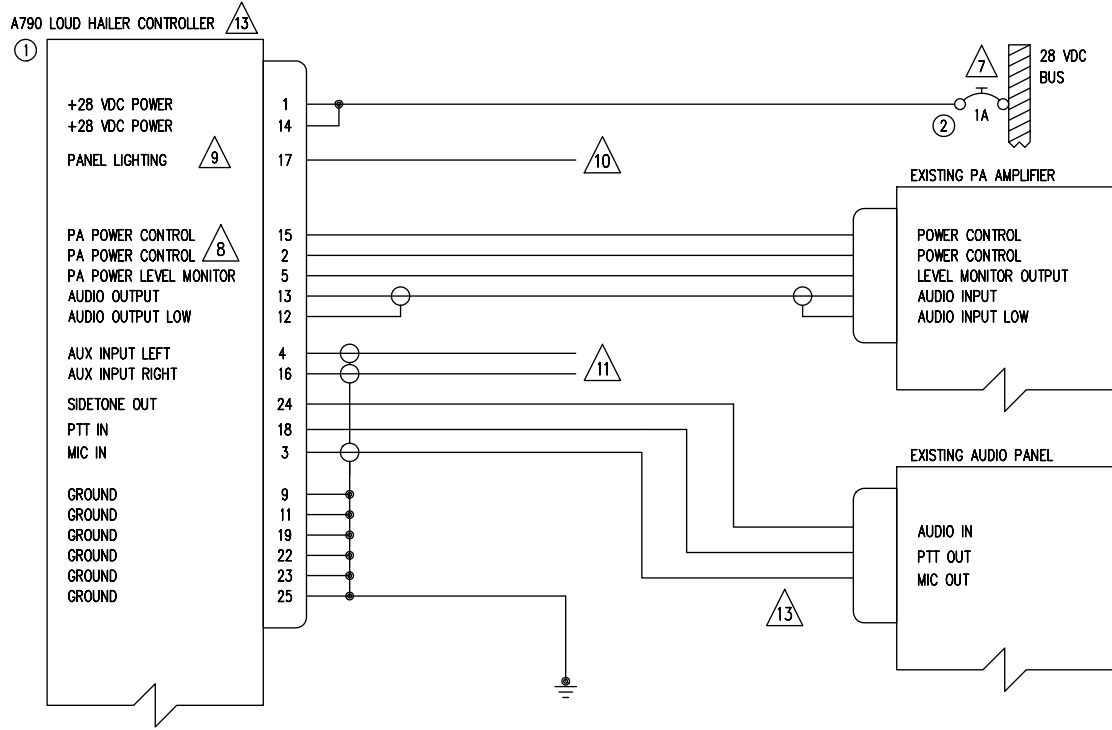
The button is lit when the wav file loader is running.

REC – **Exit Configuration Mode.**

Pressing the REC button will exit the configuration mode.

NOTE: if you configured Amp Test to enabled, it will immediately begin.

NOTE: at any time you can power off the unit to exit configuration mode.
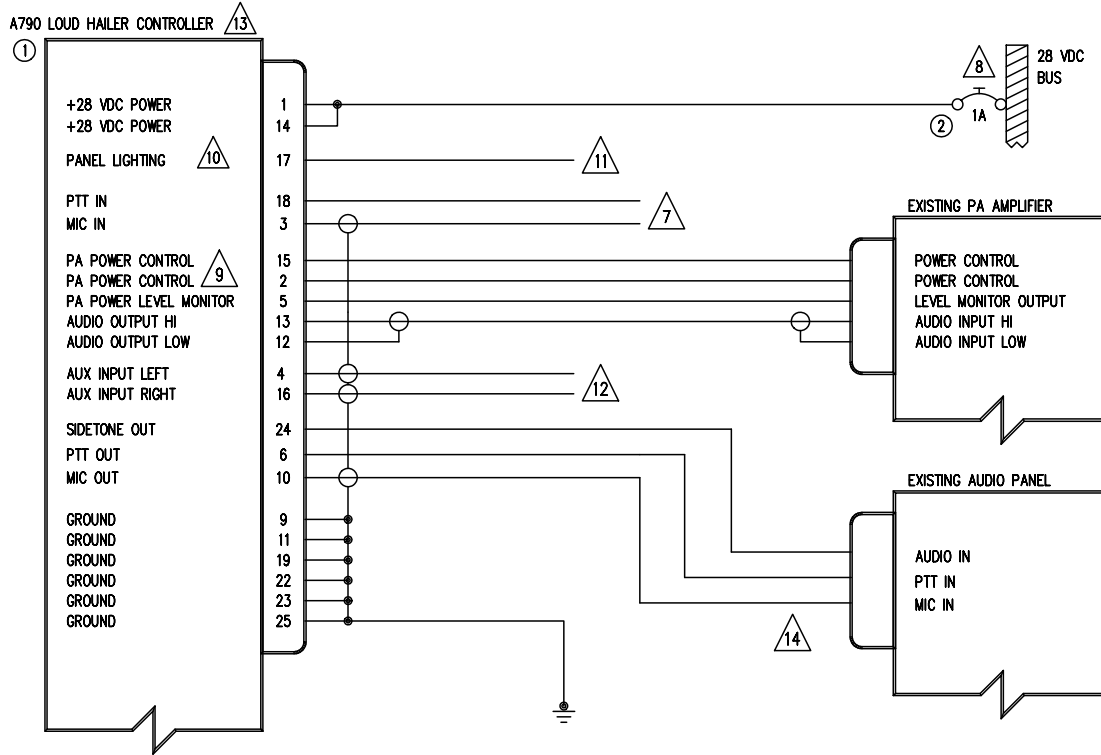
QTY	ITEM	PART NUMBER	DESCRIPTION	SPEC	MATERIAL
1	1	A790	LOUD HAILER CONTROLLER	TECHNISONIC INDUSTRIES LIMITED	
1	2	7274-11-1	CIRCUIT BREAKER, 1 AMP	KLIXON	

NOTES:
1) ALL WIRE IAW MIL-W-22759 UNLESS OTHERWISE SPECIFIED.
2) ALL CABLE IAW MIL-C-27500 UNLESS OTHERWISE SPECIFIED.
3) COAXIAL CABLE IAW MIL-C-17 UNLESS OTHERWISE SPECIFIED. DO NOT USE COAX WITH PVC INSULATION.
4) FABRICATION & INSTALLATION OF WIRING HARNESS IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 445 TO 462 AND SECTION 7.
5) GROUNDING AND BONDING IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 452.
6) ALL SINGLE WIRE TO BE #22 AWG MINIMUM AND ALL SHIELDED WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.

$\triangle$7 AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.

$\triangle$8 THESE PINS CONNECT TOGETHER WHEN THE A790 IS SWITCHED ON AND ARE FLOATING WHEN THE A790 IS OFF.

$\triangle$9 THE A790 IS AVAILABLE WITH 28V OR 5V PANEL LIGHTING. SET THE CONFIGURATION FOR THE CORRECT VOLTAGE.

$\triangle$10 CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.

$\triangle$11 OPTIONAL AUXILIARY INPUTS CAN BE CONNECTED TO ANOTHER AUDIO SOURCE.

$\triangle$12 INSTALLATION OF A790 IAW AC 43.13-1A CHAPTER 2, SECTION 3 AND AC 43.13-2A, CHAPTER 2. PR 3 1/2 DZUS RAIL OR EQUIVALENT MAY BE USED.

$\triangle$13 CONNECT TO AN APPROPRIATE SPARE INPUT ON THE EXISTING AUDIO PANEL.

14) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.

FIGURE 1.3 A790 Wiring Standard Installation

A790 LOUD HAILER CONTROLLER △13

Pin	Signal
1	+28 VDC POWER
14	+28 VDC POWER
17	PANEL LIGHTING △10
18	PTT IN
3	MIC IN
15	PA POWER CONTROL △9
2	PA POWER CONTROL
5	PA POWER LEVEL MONITOR
13	AUDIO OUTPUT HI
12	AUDIO OUTPUT LOW
4	AUX INPUT LEFT
16	AUX INPUT RIGHT
24	SIDETONE OUT
6	PTT OUT
10	MIC OUT
9	GROUND
11	GROUND
19	GROUND
22	GROUND
23	GROUND
25	GROUND

28 VDC BUS △8 1A

EXISTING PA AMPLIFIER
- POWER CONTROL
- POWER CONTROL
- LEVEL MONITOR OUTPUT
- AUDIO INPUT HI
- AUDIO INPUT LOW

EXISTING AUDIO PANEL
- AUDIO IN
- PTT IN
- MIC IN

| QTY	ITEM	PART NUMBER	DESCRIPTION	SPEC	MATERIAL
1	1	A790	LOUD HAILER CONTROLLER	TECHNISONIC INDUSTRIES LIMITED	
1	2	7274-11-1	CIRCUIT BREAKER, 1 AMP	KLIXON	

NOTES:
1) ALL WIRE IAW MIL-W-22759 UNLESS OTHERWISE SPECIFIED.
2) ALL CABLE IAW MIL-C-27500 UNLESS OTHERWISE SPECIFIED.
3) COAXIAL CABLE IAW MIL-C-17 UNLESS OTHERWISE SPECIFIED. DO NOT USE COAX WITH PVC INSULATION.
4) FABRICATION & INSTALLATION OF WIRING HARNESS IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 445 TO 462 AND SECTION 7.
5) GROUNDING AND BONDING IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 452.
6) ALL SINGLE WIRE TO BE #22 AWG MINIMUM AND ALL SHIELDED WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.

△7 CONNECT TO OPERATORS HEADSET MIC AND PTT.

△8 AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.

△9 THESE PINS CONNECT TOGETHER WHEN THE A790 IS SWITCHED ON AND ARE FLOATING WHEN THE A790 IS OFF.

△10 THE A790 IS AVAILABLE WITH 28V OR 5V PANEL LIGHTING. SET THE CONFIGURATION FOR THE CORRECT VOLTAGE.

△11 CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.

△12 OPTIONAL AUXILIARY INPUTS CAN BE CONNECTED TO ANOTHER AUDIO SOURCE.

△13 INSTALLATION OF A790 IAW AC 43.13-1A CHAPTER 2, SECTION 3 AND AC 43.13-2A, CHAPTER 2. PR 3 1/2 DZUS RAIL OR EQUIVALENT MAY BE USED.

△14 CONNECT TO AN APPROPRIATE SPARE INPUT ON THE EXISTING AUDIO PANEL.

15) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.

FIGURE 1.4 A790 Wiring Special Installation

1.5 HARDWARE INSTALLATION

The A790 is designed to mount in a standard 5.75" DZUS rail rack. See Figure 1.5 for physical dimensions. As with all avionics installations, be sure to provide sufficient cooling or ventilation.
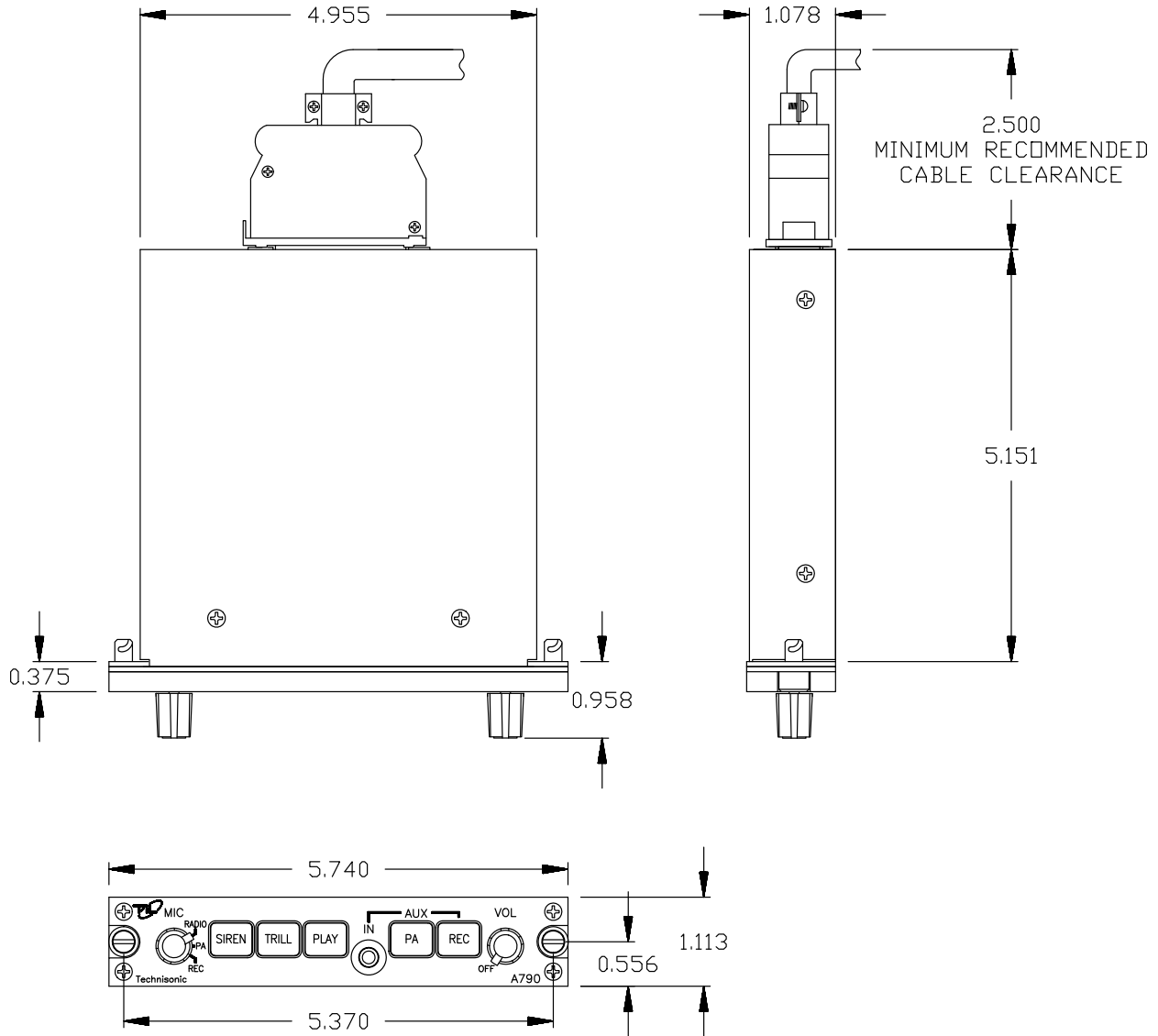
FIGURE 1.5 A790 Outline Drawing

1.6 POST INSTALLATION TEST PROCEDURE

Follow the post installation procedure outlined in the PA System Installation Instructions. Check each feature of the A790 for proper function. Confirm there is no interference from or to other equipment in the aircraft.

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IMPORTANT
WARRANTY

All communication equipment manufactured by Technisonic Industries Limited is warranted to be free of defects in Material or Workmanship under normal use for a period of one year from Date of Purchase by the end user.

Warranty will only apply to equipment installed by a factory approved and/or authorized facility in accordance with Technisonic published installation instructions. Equipment falling under the following is not covered by warranty:

- equipment that has been repaired or altered in any way as to affect performance,
- equipment that has been subject to improper installation,
- equipment that has been used for purposes other than intended,
- equipment that has been involved in any accident, fire, flood, immersion or subject to any other abuse.

Expressly excluded from this warranty are changes or charges relating to the removal and re-installation of equipment from the aircraft. Technisonic will repair or replace (at Technisonic's discretion) any defective transceiver (or part thereof) found to be faulty during the Warranty Period.

Faulty equipment must be returned to Technisonic (or its authorized Warranty Depot) with transportation charges prepaid. Repaired (or replacement) equipment will be returned to the customer with collect freight charges. If the failure of a transceiver occurs within the first 30 days of service, Technisonic will return the repaired or replacement equipment prepaid.

Technisonic reserves the right to make changes in design, or additions to, or improvements in its products without obligation to install such additions and improvements in equipment previously manufactured. This Warranty is in lieu of any and all other warranties express or implied, including any warranty of merchantability or fitness, and of all other obligations or liabilities on the part of Technisonic.

This Warranty shall not be transferable or assignable to any other persons, firms or corporations.

For warranty registration please complete the on-line
Warranty Registration Form found at www.til.ca.