



A790

LOUD HAILER CONTROLLER



Operating Instructions

TiL Document No. 09RE409
Revision D

MARCH 2012

Technisonic Industries Limited

240 Traders Boulevard, Mississauga, Ontario L4Z 1W7

Tel: (905) 890-2113 Fax: (905) 890-5338

www.til.ca

Copyright by Technisonic Industries Limited. All rights reserved.

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

This page left intentionally blank.

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:

Technisonic Industries Limited
240 Traders Boulevard
Mississauga, Ontario L4Z 1W7

Tel: (905) 890-2113

Fax: (905) 890-5338

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.

TABLE OF CONTENTS

SECTION	TITLE	PAGE
SECTION 1 GENERAL DESCRIPTION		
1.1	INTRODUCTION	1-1
1.2	DESCRIPTION	1-1
1.3	PURPOSE OF EQUIPMENT	1-1
1.4	MODEL VARIATION	1-1
1.5	TECHNICAL CHARACTERISTICS	1-2
SECTION 2 OPERATING INSTRUCTIONS		
2.1	Features	2-1
2.2	OPERATING INSTRUCTIONS	2-2
2.3	OPERATION	2-3
SECTION 3 CONFIGURATION OPTIONS		
3.1	INTRODUCTION	3-1
3.2	CONFIGURATION MODE OPERATION	3-1
3.2.1	SIREN – Select the Backlight Voltage	3-1
3.2.2	TRILL – Select the Amplifier Test	3-1
3.2.3	PLAY – Set the Side-tone Level	3-1
3.2.4	PA – Select the wav File Loader	3-2
3.2.5	REC – Exit Configuration Mode	3-2

LIST OF FIGURES

FIGURE	TITLE	PAGE
2.1	A790 Operator’s Controls and Indicators	2-1
2.2	Special Installation Configuration Diagram.....	2-2
2.3	Standard Installation Configuration Diagram.....	2-2

LIST OF TABLES

TABLE	TITLE	PAGE
1.1	Model A790 General Characteristics	1-2

TECHNISONIC INDUSTRIES LIMITED

www.til.ca

This page left intentionally blank.

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.

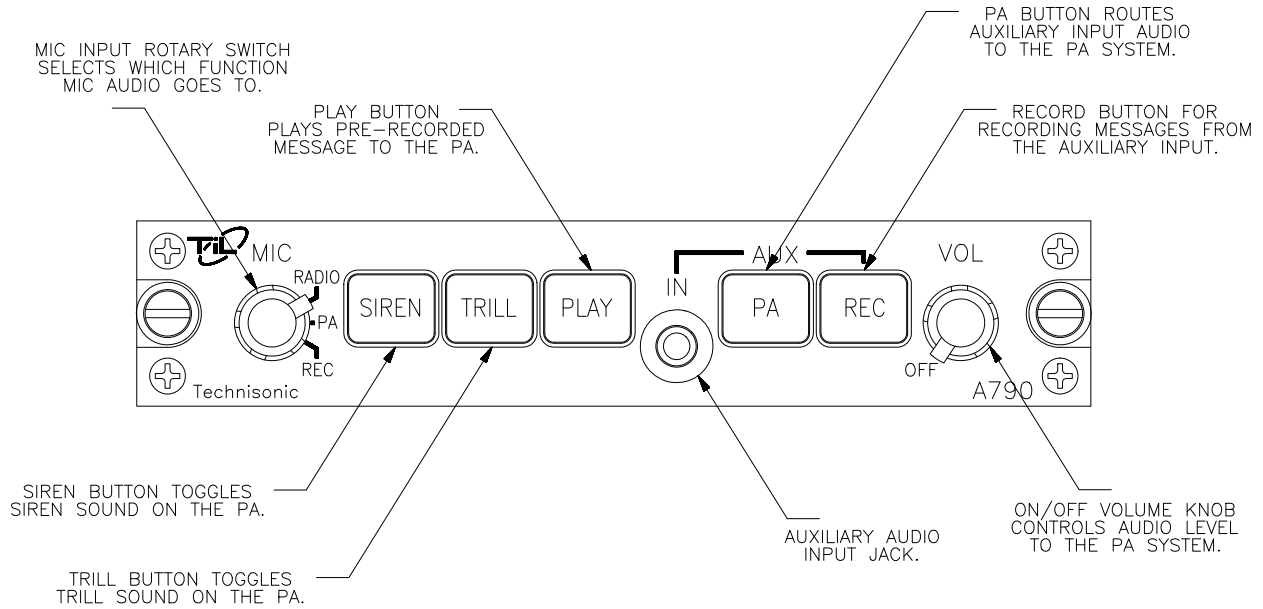


FIGURE 2.1 A790 Operator's Controls and Indicators

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).

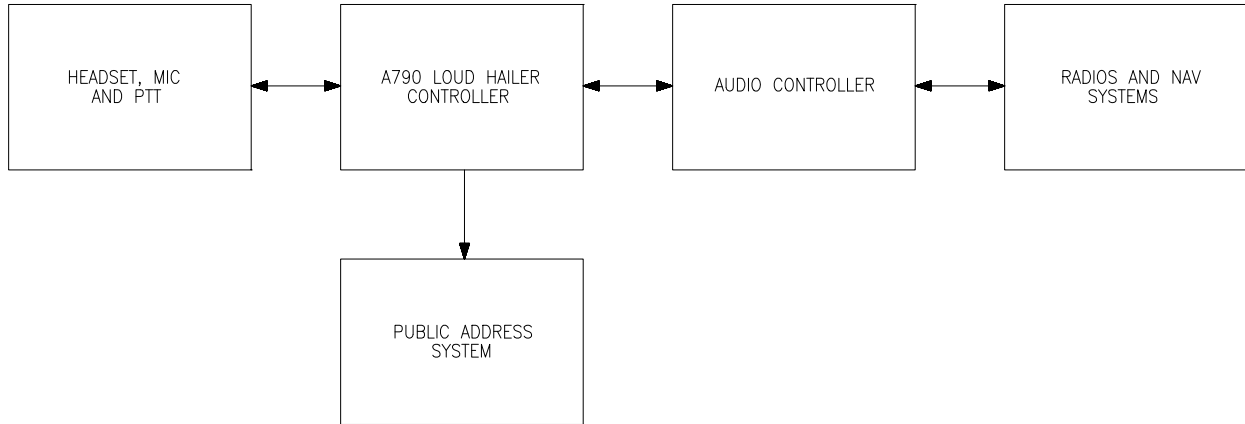


FIGURE 2.2 Configuration #1 (Special)

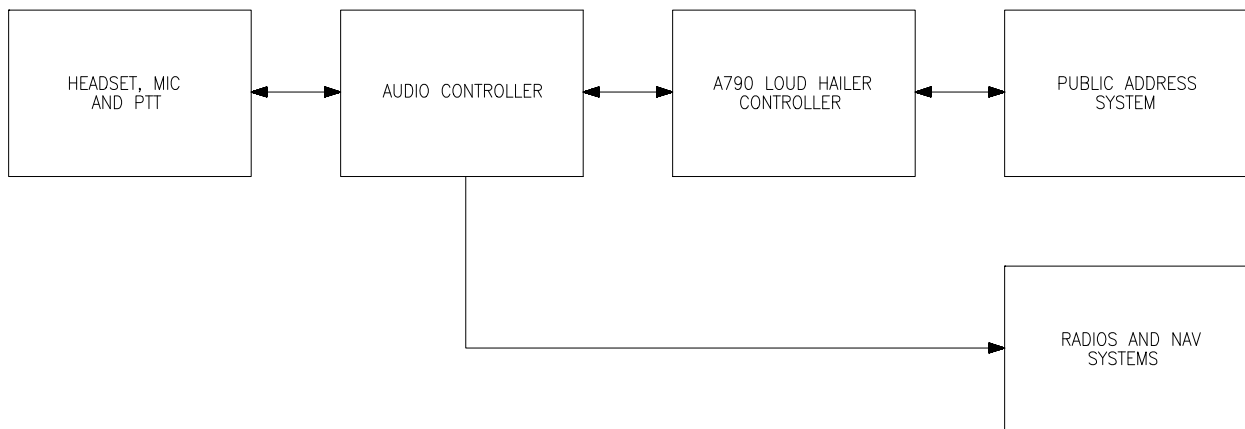


FIGURE 2.3 Configuration #2 (Standard)

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 ANNOUNCEMENT 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.