



Amb-OS Media, LLC
AMR-100-I

Operations Manual
Firmware 2.03

Version 1
01/12/12

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CONTENTS OF PACKAGE

- 1 – AMR-100-I AMB-OS Receiver
- 1 – AC power cable
- 1 – Quick Installation Guide

INTRODUCTION

General Information

Help

If you experience a problem with your installation or just need technical help, call:

1-877-AMBOS2U
1-877-262-6728

or visit:

www.amb-os.com

Support questions:

support@amb-os.com

Program requests:

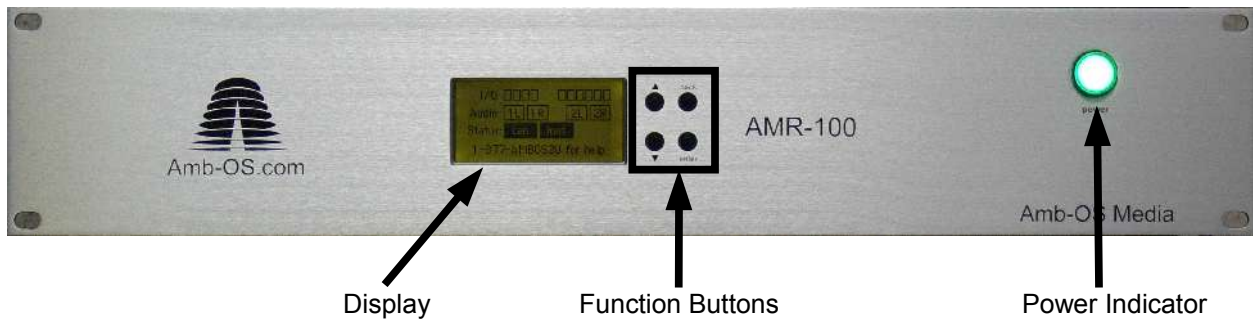
programs@amb-os.com

WARNING

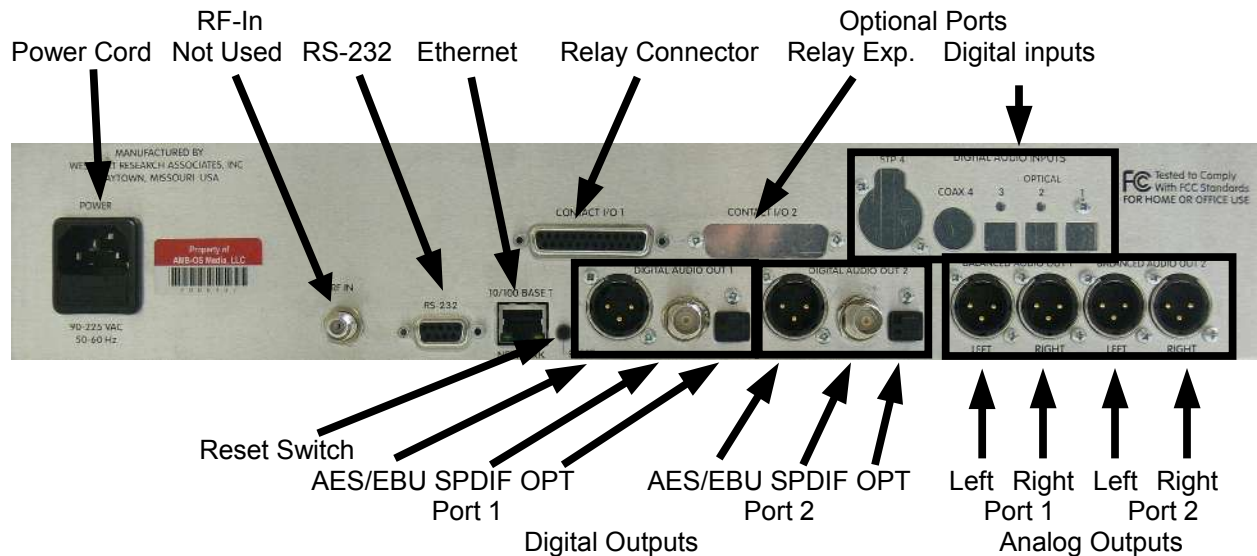
You must send an email to programs@amb-os.com or you will not receive any programs for your AMR-100-I.

Overview of Connections and controls

Front



Back



Getting Started

To begin receiving files, you need to connect the Ethernet cable and the power. To play audio, the audio outputs must also be connected. For detailed instructions, please go to the [Installation Section](#). To have programs permissioned for your receiver, send an email to programs@amb-os.com with the list of the programs you want to receive.

The Ethernet cable should not be plugged into the AMR-100-I until after the first boot so you can configure the [IP Address](#) and the [DHCP](#) setting.

1. Plug the power cord into the power connector
2. Plug the power cord into the AC outlet
3. After the AMR-100-I boots, configure the [IP Address](#) and the [DHCP](#) setting

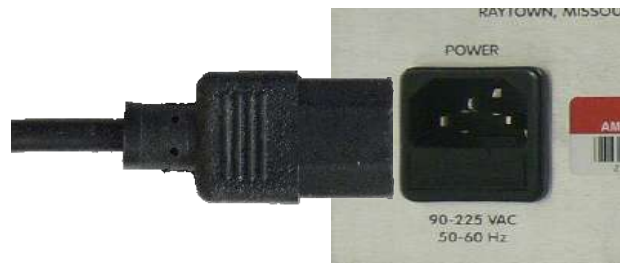
Audio

The most commonly used audio connections will be the XLR type low impedance analog audio. Plug the cables into the [port or target](#) you want to use. A detailed description of the ports can be found in the [Audio Installation](#) section. If you connect one of the digital outputs, you will need the appropriate connector. Please go to the [Digital Audio](#) installation section.



Power

When you plug in the power cord, the unit will begin its [power up sequence and initialization process](#). This takes about 20 seconds and the light on the front will light. Remember, this is *not* a power switch. It is only a power indicator.



NOTE

There is no power switch, the front panel light is only an indicator of power.

Boot Process

After the AMR-100-I receives power, it begins its startup process.

1. Reset the drive



2. Initialize the drive



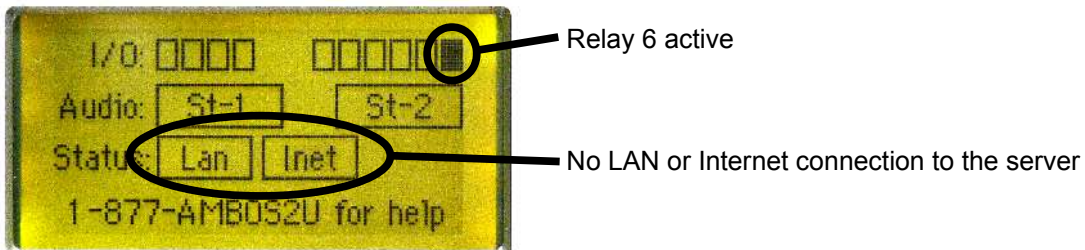
3. Scanning the file system



4. Initialize the receiver

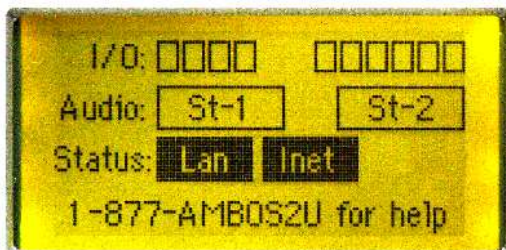


5. Finished booting



Because the Ethernet cable is not connected on the first boot, the “Lan” and “Inet” boxes will be clear and relay 6 indicator will be dark.

At this point, setup the [IP Address](#) and the [DHCP](#) setting. Once the Ethernet settings are correct, plug in the [Ethernet cable](#). The receiver should now be setup correctly and The “Lan,” and “Inet” boxes should be black and all the relay indicator boxes should be clear.



1. The “Lan” box means the receiver is communicating with your local network.
2. The “Inet” box means the receiver is communicating with the uplink server through the Internet.
3. With no audio playing the “St-1” and “St-2” should be clear.
4. All of the “I/O” boxes on the top line should be clear (no alarms).

WARNING

To preserve the AMR-100-I status logs, always use the reset switch to reset the receiver. Never unplug the receiver to reboot it.

Ethernet Connection

After the receiver has finishing booting and you have properly configured the [IP Address](#) and the [DHCP](#) setting, plug in the Ethernet cable into the 10/100 Base T Network connection on the back of the receiver. Improperly configuring the [IP Address](#) could result in duplicate [IP Addresses](#) on your network and cause a network failure.



WARNING

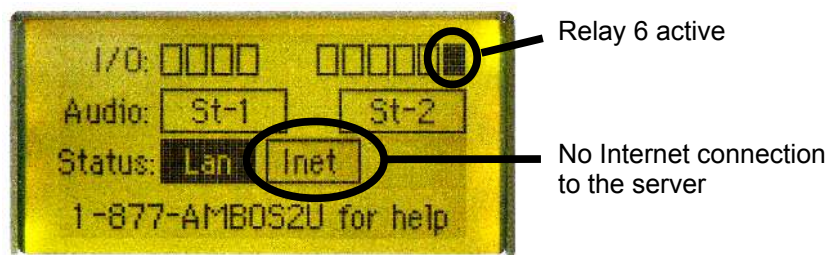
Be sure you configure the network settings before plugging in the Ethernet cable. Verify the IP address and the DHCP settings. Improperly setting the IP Address, can cause duplicate [IP Address](#) on the network and cause a network failure. A complete discussion of these settings can be found in the [Ethernet](#) section.

The Ethernet connection allows The AMR-100-I to receive programs from the uplink servers and also allows copying files from the AMR-100-I to another computer.

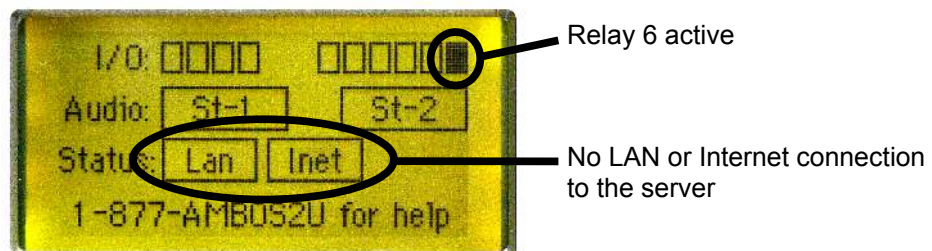
It is possible to use only the Ethernet connection for file copying and never play programs out the audio ports. Before connecting the Ethernet cable make sure you have correctly set you IP address and DHCP settings. The details for these settings are found in the [Ethernet](#) section.

Error Conditions

If the Ethernet cable has been connected and there is a valid IP address, but no connection to the Internet, the “Lan” box will be dark and relay #6 (network error) will also be dark. To properly set the IP addresses and server ports for to connect to the Internet, see the [Installation](#) section and the [Ethernet](#) section.



If the Ethernet cable is not connected or the IP address is incorrect, relay 6 should be dark. To set the IP address correctly, see the [Ethernet](#) section.



GENERAL DESCRIPTION

File Reception

The AMR-100-I receives programs as audio files via the Internet and stored on an internal hard drive. The audio files must either be scheduled to played out the audio ports or copied to your automation system. Please see the Amb-OS User Interface to schedule and copy programs. Download the Amb-OS User Interface manual at www.amb-os.com/support.html.

NOTE

In order to receive files, you must send an email to programs@amb-os.com with a list of the programs you want to receive. Include your station call letters and receiver serial number.

After the file is successfully received, the station may play the file out the analog and digital ports for a program to air or to record for later playback. The file also can be copied from the receiver to an automation system through a local network at the station. The Amb-OS Interface Utility does this for you. Download this program at www.amb-os.com/support.html.

The AMR-100-I verifies the integrity of the received file and communicates back to the uplink server to receive any missing packets or even reload a complete file. The [IP Address Change](#) section describes how to set up the AMR-100-I to a proper internal network address and has the correct address to communicate with the uplink server. Files are automatically deleted at some time after their air date, as specified by the program producer.

File Playback

Targets

General Description of Targets

The audio outputs are called “[Targets](#)” and there are only three types of targets. Each target begins with the letter “T.”

1. The audio outputs are T1 and T2 (Target 1 and 2) and include the digital outputs (see the [digital output](#) description). These can be addressed as separate mono left and right ports: T1L, T1R, T2L and T2R. Without the “L” or “R” designations, the output is in stereo.
2. The receiver can create an Ethernet stream that can be decoded by another computer or by an appliance dedicated to decoding streams. The Ethernet stream must have an IP address and a port. T224.0.0.1:5004 means the target is IP address 224.0.0.1 and port 5004. Your network engineer must give you an IP address that allows for a multicast stream on your local network.
3. A file can be recorded to allow a receiver to take a live program and record for later playback. The name of the file must have a “T” before the name (Trecordedprogram.MP2). TFOCUS_DAILY.MP2, where “T” means the target and “FOCUSDAILY.MP2” would be the file name on the receiver.

WARNING

A stream or filename target must also have a an audio port as the primary target to function.

All targets need to use the audio ports as the primary target. If you want to stream a program on your internal network on target T224.0.0.1:5004, the program also will have to use an audio port. The AMB-OS transfer program will require you to enter which audio port you want to use. It is possible to have four streams and use each of the audio targets as a separate source. Thus you can have the following:

1. T224.0.0.1:5004 and using T1L as the main output
2. T224.0.0.2:5004 and using T1R as the main output
3. T224.0.0.3:5004 and using T2L as the main output
4. T224.0.0.4:5004 and using T2R as the main output

The audio coming out the mono analog targets will be summed, but the stream still will be in stereo. This also is true for recording a live stream. To specify a target with a filename (Tfilename.mp2) also will have to have an analog target.

Files can be played back on the audio output ports (targets) in stereo, mono, or in a combination of that. The two stereo analog output targets can be used as described (two stereo), as four individual mono outputs, or one stereo and two mono outputs. A stereo program that is sent as a mono feed out either the left or right side of a target is summed into a mono feed. Thus by sending two stereo programs out Target 1 (T1) as mono feeds (one stereo program on the left and another stereo program on the right), the feeds would have the left and right channel of each program summed together and then sent out the left or right side of the port. The first stereo program would be sent out the left channel on T1L as a summed mono program and the other stereo program would be sent out T1R as a different summed mono program. This list provides the possible combinations.

1. Target 1 (T1) and Target 2 (T2) used a true stereo outputs.
2. T1 as a stereo output and T2 as two mono output ports (T2L and T2R).
3. T1 as two mono outputs (T1L and T1R) and T2 as a stereo output.
4. T1 as two mono outputs (T1L and T1R) and T2 as two mono outputs (T2L and T2R).

Target Maps

Mapped targets use one of six physical outputs, but can be addressed by a single name. A network controlled program may have a target of TMAP1 and the station can assign that to any of the six analog targets: T1, T2, T1L, T1R, T2L or T2R.

A seventh mapped target, TMAP7, is reserved for [*emergency or ad hoc*](#) broadcasts sent by the Amb-OS network. If it is left on its default (T2-Stereo), the AMR-100 will put this program out on T2 in stereo. Even when TMAP7 is [*assigned*](#) to a port, it also has to be enabled from the front panel. See the Emergency Enable in the [*Front Panel*](#) section.

Setting TMAP targets can be done through the front panel menu, see [*Target map section*](#), or through the HTML command interface, see the [*Target map section*](#) in the HTML command interface section.

The mapped names are with their default mapping:

- TMAP1 – T1 (stereo)
- TMAP2 – T2 (stereo)
- TMAP3 – T1L (mono)
- TMAP4 – T1R (mono)
- TMAP5 – T2L (mono)
- TMAP6 – T2R (mono)
- TMAP7 – T2 (stereo) [[*Emergency or ad hoc*](#) program target]

Programs normally played by a [*playlist*](#) can use the hardware port (T1, T2, T1L, etc.), because the connections to the air chain stay the same. However, if different configurations

would be used, you can specify a mapped target in the [playlist](#) and it stays the same even if the external cabling is changed. If the TMAP1 is mapped to T1L, then when the TMAP1 target is specified in a [playlist](#), it will play out T1L (mono). However, if you change the mapping of TMAP1 to T2 (stereo), then TMAP1 stays the same in the [playlist](#), but the output goes out the second port in stereo. Using this method, the [playlist](#) would not have to be changed to change the output port target.

Mainly, Target Maps allow network controlled programs to be sent to the same target for all stations and the stations assign the Target Map to a specific port or target for their use. The head-end of the program delivery system, does not know what port a station wants the receiver to use for airing. The program producer communicates to the station what TMAP port they will use and the station assigns that TMAP to a physical port. For example, The program producer will use TMAP2 for their program and the station will map that to the physical port they want to use for the program. If the station wants that program to come out T1, then they would map TMAP2 to T1. However, another station uses a mono feed and wants the same program to come out T2R. That station would map TMAP2 to T2R. When the program is sent, each station would get the same program out the ports they assigned. See the [Target Map](#) section to program the ports.

Digital Ports

The digital ports mirror the analog targets and cannot be addressed separately from the analog ports. Whatever is played on T1 also is played on Port 1 of the digital outputs (AES-EBU, SPDIF, Optical). All of the outputs on a target (digital and analog) are always the same. If two different programs are played out a target on the left and the right, the digital output ports also have the different programs playing out the left and the right.

Example:

Program 1: *Adventures in Odyssey*

Program 2: *Grace to You*

Program 1 is sent out T1L and Program 2 is sent out T1R

Program 1 is summed as mono and sent out T1L

Program 2 is summed as mono and sent out T1R

T1L has the summed audio of *Adventures in Odyssey* program

T1R has the summed audio of *Grace to You* program

The analog T1L has *Adventures in Odyssey* on the left channel as does the AES-EBU, SPDIF and Optical output ports as assigned to T1.

The analog T1R has *Grace to You* on the right channel as does the same AES-EBU, SPDIF and Optical outputs ports assigned to T1.

If you have an AES-EBU input to your board and both channels go to air on a stereo station, the left channel of your station will have *Adventures in Odyssey* summed to mono and the right channel will have *Grace to You* summed to mono.

Playlist

The AMR-100-I has a playlist that controls when files are played and what can trigger a file playback. It also works with live feeds to insert spots and produce relay closures. The playlist is managed by the AMB-OS User Interface (UI) that transfers programs. Download The Amb-OS User Interface (UI) software, documentation and the playlist manual at www.amb-os.com/support.html to get the complete explanation of the playlist features.

Triggers

Triggers initiate an action on the AMR-100-I receiver. An input closure can be used to start a file playing and another input closure can cause the file to stop playing. Wiring a switch to a start button on the board can be wired to input closure #1. A trigger can be set up to play a file whenever that button is pressed. Thus, if *Insight for Living* is assigned to play when input closure #1 is pressed, whenever that switch is pressed, *Insight for Living* is played.

A series of programs can be assigned to an input closure. For example, if you played 10 programs during the day, all of them could be assigned to play when that switch is pressed. By putting the programs in the order they play, each one would play in the order they are listed. The first time the switch is pressed the first program plays. The next time the switch is pressed the second program plays and so forth. Thus one switch on the board could play all the programs assigned to that switch during a broadcast day.

Another switch could be used to stop the program. This would be similar to the “PLAY” and “STOP” remote switches used for a CD player.

A text trigger can be sent by an automation program through an RS-232 serial port with a specific instruction to start a program. Again, the same text can be sent and the programs would play in the order they are listed. However, text commands can be more specific and call an exact program. A text string can be as specific as PLAY-TTT5-11-11-11 or as general as PLAY. The AMB-OS User Interface (UI) transfer program can build that list for you.

Timed Playback

A schedule can be set up to play a file at a specific time for recording or going live to air. Thus if you played *Back to the Bible* right after the news at 10:04:30, a schedule can be setup to play the program for that day at 10:04:30. The same thing can be done for playing back a file for recording overnight. You can have the AMB-OS Utility Interface (UI) software transfer program build a list of files that you want to record and then have your automation record them at the time you selected.

Relay Description

General description

The output relays can be customized to your needs, but by misusing this feature, you can experience unexpected results. This section describes how the relays are used. The wiring for the relay closures can be found in [Relay Specifications](#) and the assignment of relays can be found in [Closure Map](#) section.

WARNING

Whenever you begin a new program that uses relay closures, be sure you get a specification of how the program provider intends on using the closures.

Relays are sent by program providers and can be embedded in recorded programs and interfaced with an automation system. The default configuration for the AMR-100-I has four relays used for programming functions and two assigned to specific functions. Relays #1-#4 are for general programming use, relay #5 is used as the clock sync pulse for setting clocks and relay #6 is used to indicate a failure in the receiver.

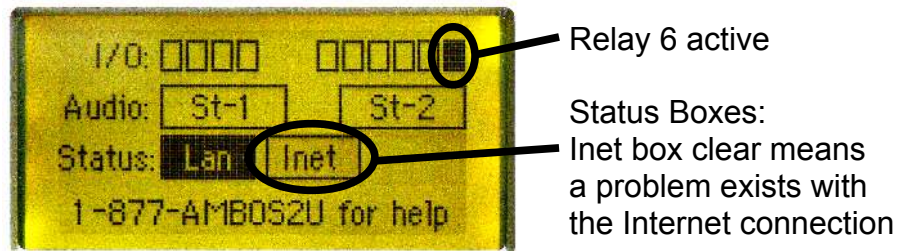
Fault Indications by Relay #6

By default, two fault conditions are monitored and activates relay #6:

1. Ethernet connection to the local network is lost
2. Internet connection to the uplink server is lost

When either of these conditions happen, relay #6 is triggered and the front panel shows the relay #6 active (dark box) and the cleared status boxes indicate where the problem is. The last of the relay boxes is dark and one or more of the boxes in the middle of the screen, as described in the [Front Panel Description](#) section, are clear. For example, if relay #6 was triggered and the front panel indicated a loss of connectivity to the Internet, you would know that the receiver still had the local network was still connected to your local network.

The front panel here shows relay #6 active and the “Inet” box is clear indicating a problem with the Internet connection.



An alarm (aural or visual) can be attached to any relay to indicate a fault.

Time Sync by Relay #5

To keep clocks synchronized at your station, a time pulse can be used from the AMR-100-I. Every hour, relay #5 can close for one second as a time sync pulse. This can be at any minute and second of the hour. The pulse can happen at HH:56:30 or HH:00:00. Setting this is done through the front panel menu and can be found in the [Clock Interval](#) section.

Program use of Relays #5 and #6

Relays #5 and #6 can also be used for programming functions, but then they cannot be used for alarms or time syncing your clock. You can use #6 for an alarm and not use the clock sync function and have relays #1-#5 available for programming functions (see [Closure Map](#)). The same thing is true if you use #5 for time syncing and do not use #6 for alarms. That would give you relays #1-#4 and #6 for programming functions (see [Closure Map](#)).

WARNING

If you assign relays #5 or #6 to a programming function and then turn on the alarm or Time Interval, you must go back to the Relay Map and change the assignment to another available relay or you will get unpredictable results. The Relay Map does NOT change automatically when the alarm or Time Intervals are activated.

If you *do not* use the Time Interval relay (#5) to set your clocks or the alarm relay (#6) for network failures, then you can assign these two relays (#5 and #6) to one of the programming functions (see [Closure Map](#) section). Relays #5 and #6 can be used to send closures to your automation system. However, if you decide to make use of the alarm or [Time Interval](#) later, you must change the relay function assigned to #5 or #6 to another available relay. If you do not do this, if a program provider sends a command that closes one of them, your alarm

would trigger or it would set your time. You must go back to the [Relay Map](#) area and change that function from relay #5 to another available relay.

Closure Map definitions

The following table describes the default mapped relays.

Relay names and Default assignments:

Descriptions	Name	Relay #	State – Off, Pulse, On (default listed)
Program Start, Port 1 Left:	P1LS	None	Off
Program End, Port 1 Left:	P1LE	1	Pulse
Break Start, Port 1 Left:	B1LS	None	OFF
Break End, Port 1 Left:	B1LE	2	Pulse
Program Start, Port 2 Left:	P2LS	None	Off
Program End, Port 2 Left:	P2LE	3	Pulse
Break Start, Port 2 Left:	B2LS	None	Off
Break End, Port 2 Left:	B2LE	4	Pulse
Program Start, Port 1 Right:	P1RS	None	Off
Program End, Port 1 Right:	P1RE	None	Off
Break Start, Port 1 Right:	B1RS	None	Off
Break End, Port 1 Right:	B1RE	None	Off
Program Start, Port 2 Right:	P2RS	None	Off
Program End, Port 2 Right:	P2RE	None	Off
Break Start, Port 2 Right:	B2RS	None	Off
Break End, Port 2 Right:	B2RE	None	Off

When assigning functions to specific relay closures, remember that the “Left” assignment should be used for stereo programs. Thus, playing a program out (live or prerecorded) port 1 in stereo or out port 1 in mono on the left channel, use the “Left” assignment. When playing a mono program out the right channel of a port, use the “Right” assignments.

The state of the relay determines what happens when a command is sent. When a program sends a command to the relay, here is what happens with each state.

1. OFF: The relay maintains its current state. If it was closed, it will stay closed.
2. ON: The relay will close stay that way until a release command is sent. If it was already closed, then it will stay closed.
3. PULSE: The relay will close for one second and then release. If the relay was closed, it will open one second after receiving the command.

The intent of the relay mapping is to allow you to assign a relay to a specific port. For example, if you want a relay #2 to close only at the end of programming material when you’re getting live programs on port 1, then you would map P1LE to relay #2.

Setting the relay mapping is done in the front panel menu under the [Closure Map](#) section.

Internal Clock

The internal clock is incredibly accurate because it is set by the GPS time standard at the server facility. It automatically adjusts for the new Daylight Saving Time rules that went into effect in 2007, with Daylight Saving Time beginning on the second Sunday in March and ending on the first Sunday in November. The local time zone can also be set.

Because the clock is accurate, a relay, typically relay #5 can be used to keep your local clocks in sync. The time sync (see [Clock Interval](#) section) can be set for any minute and second.

Resetting the receiver's display to its default setting

At times it may be necessary to reset your receiver to the factory settings. If you change the display contrast setting (see [LCD Settings](#) section) and make the display unreadable, you must reset the receiver.

1. Unplug the receiver
2. Hold [ENTER] as you plug in the receiver
3. Release the [ENTER] after the splash screen becomes visible

This will not change your IP settings.

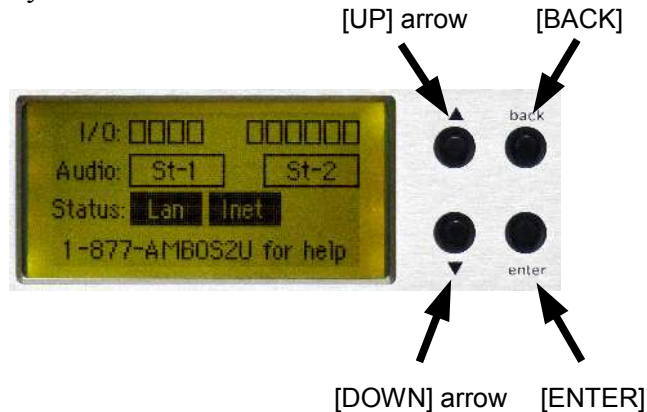
DETAILED DESCRIPTION AND OPERATIONS

Front Panel Description

The front panel display gives the status of the receiver. The main screen shows relays, audio output, and the status of the RF and Ethernet (see [Front Panel](#) section).

Front Panel Buttons

To the right of the display are four buttons:



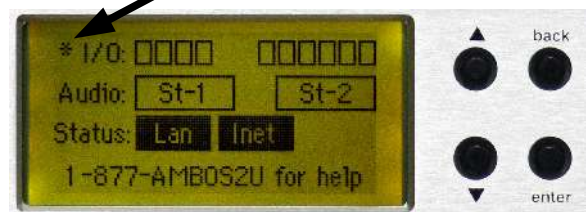
The [UP] and [DOWN] arrow changes the display from its status screen to informational and setup screens. Pressing [ENTER] will put you to a settings screen. Pressing the [UP] and [DOWN] arrows will show you the current settings. Pressing [ENTER] will allow you to change settings and [BACK] will return to the previous screen. It also will save any changes you made.

Emergency or “one off” program arming

To be able to receive an emergency or a special “one off” programs, TMAP7 must be armed and [assigned](#). To arm it, press and hold the [BACK] button until an “*” appears in the upper left of the screen. You must do this from main screen.

TMAP7 must also be [assigned](#) to a physical [Target](#) and not used as a target in a playlist.

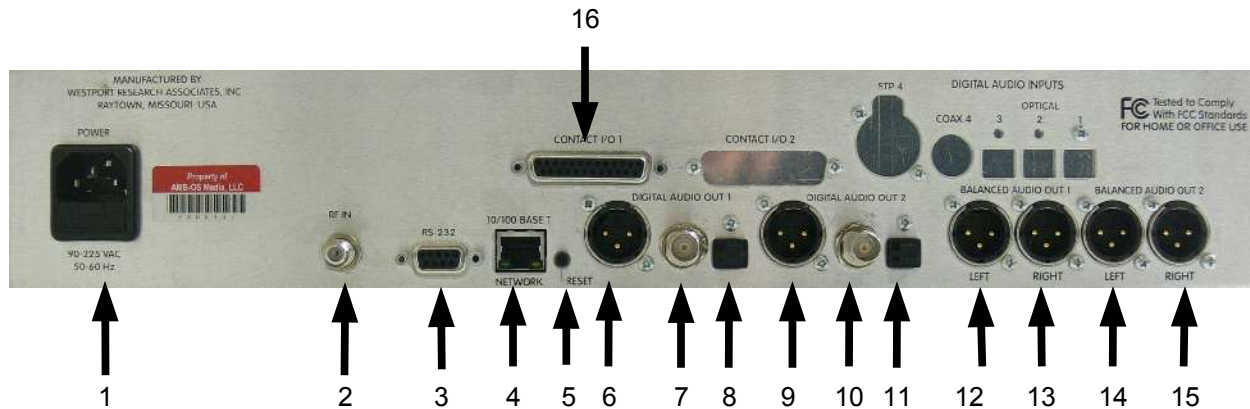
To release it, press and hold the [BACK] button until the “*” goes away.



Rear Panel Description

Connections

The AMB-OS AMR-100-I Receiver has several connections to facilitate program playback and transfers. The connectors are:



1. Power – A standard computer type power cable is used
2. RF – F-type Connector: **Not used in the AMR-100-I**
3. RS-232 – 9-pin sub-d female (DTE) connector for serial communication (a modem cable is needed to connect to a computer)
4. Ethernet – Standard RJ-45 Ethernet network cable connection
5. Reset Switch

Reboots the receiver without performing a power recycle.

Audio outputs:

There are two sets of digital outputs that correspond to the two stereo analog outputs.

They are listed in the same order as you see them on the back of the receiver from left to right.

Digital – Port 1

6. AES-EBU – XLR type connector
7. SPDIF – BNC connector
8. Optical – standard optical cable

Digital – Port 2

9. AES-EBU – XLR type connector
10. SPDIF – BNC connector
11. Optical – standard optical cable

Analog – Port 1

12. XLR connector – Left channel
13. XLR connector – Right channel

Analog – Port 2

14. XLR connector – Left channel
15. XLR connector – Right channel

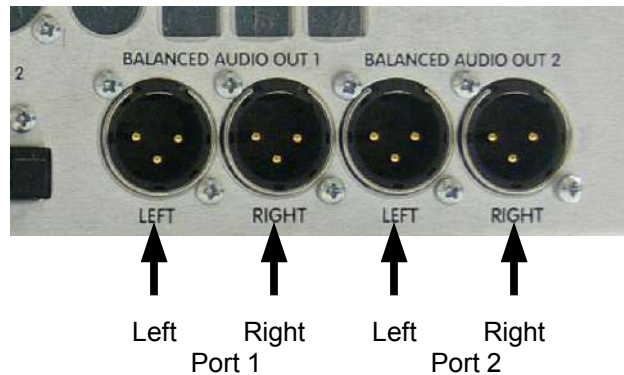
16. Relays – 25-pin sub-d connector (the connector pinout is described in the [Relay Specifications](#) section)

INSTALLATION

Audio

Analog

The analog audio connectors are standard XLR connectors. Remember, there are two stereo ports or targets on the receiver. The output of these will be discussed in detail later, but each of the two ports can be played in stereo (2 stereo ports), all mono (4 mono ports) or mixed (1 port stereo and the other 2 mono channels).



XLR Pinout:

Pin 1: Ground

Pin 2: Lo

Pin 3: High

Digital

The digital connectors are labeled Port 1 and Port 2. There are three digital outputs for each port, but they all will have the same audio on them as the analog Port 1. These digital outputs are at 48K. Connect these to your digital equipment.

At this point, the receiver will receive programs and can play programs in timed events so you can record the programs at the same time you get them currently.

Ethernet

Description

The Ethernet connection takes a standard network cable and should be on the same network as your automation to simplify copying programs. That network must access the Internet to receive programming from the Amb-OS network

WARNING

The [IP Address](#) settings used here are just examples and may not work with your network.

Setting the IP address

The IP address of the receiver should be set to something compatible with your local network. The default address is assigned by [DHCP](#) (Dynamic Host Configuration Protocol). If your network administrator wants to assign a specific address, that must be done by the front panel. A

one or two digit subnet addresses should have leading 0's. For Example: 192.168.1.20 should be entered as: 192.168.001.020.

WARNING

If you put in an IP address manually, you must also put in the subnet mask and the default gateway. If not, you cannot exit the IP Address menu.

IP Address Change

1. Press [ENTER] and you will see a menu bar with "Setup" highlighted.
2. Press [ENTER] then press [DOWN] until "IP Addr: DHCP" is highlighted; then press [ENTER].
3. Press [DOWN] until "DHCP" is highlighted; then press [ENTER] to select "NO" as the option. "NO" and "YES" are the only two options
4. Press [BACK] to save that setting.
5. Press [DOWN] until "IP Addr:" is highlighted; then press [ENTER]. The first digit will be highlighted as seen in the figure to the right.
6. Press [UP] or [DOWN] until you get the first digit correct and press [ENTER]. That will take you to the next digit. Repeat this step until you have the desired IP address. You may press [BACK] to return to a previous value that was entered incorrectly. The last digit's [ENTER] command will exit the address-setting dialog.
7. Press [DOWN] to highlight "Gateway".
8. Using the method as described in #7, enter the gateway IP address.
9. Press [DOWN] to highlight "Netmask". If the default (255.255.255.0) is correct for your local network, press [BACK] to save any previous changes or wait approximately 15 seconds for any changes to be saved automatically. If the default values are not correct for your local network repeat the method as described in #7 above until the Netmask is correct. After selecting the last digit, pressing [ENTER] will exit the Netmask setting dialog and once again highlight "Netmask". Now you may manually press [BACK] to save any changes made or wait approximately 15 seconds for the changes to be saved automatically. The remaining IP menu items ("Server1" and all after) do not need to be changed at this time.

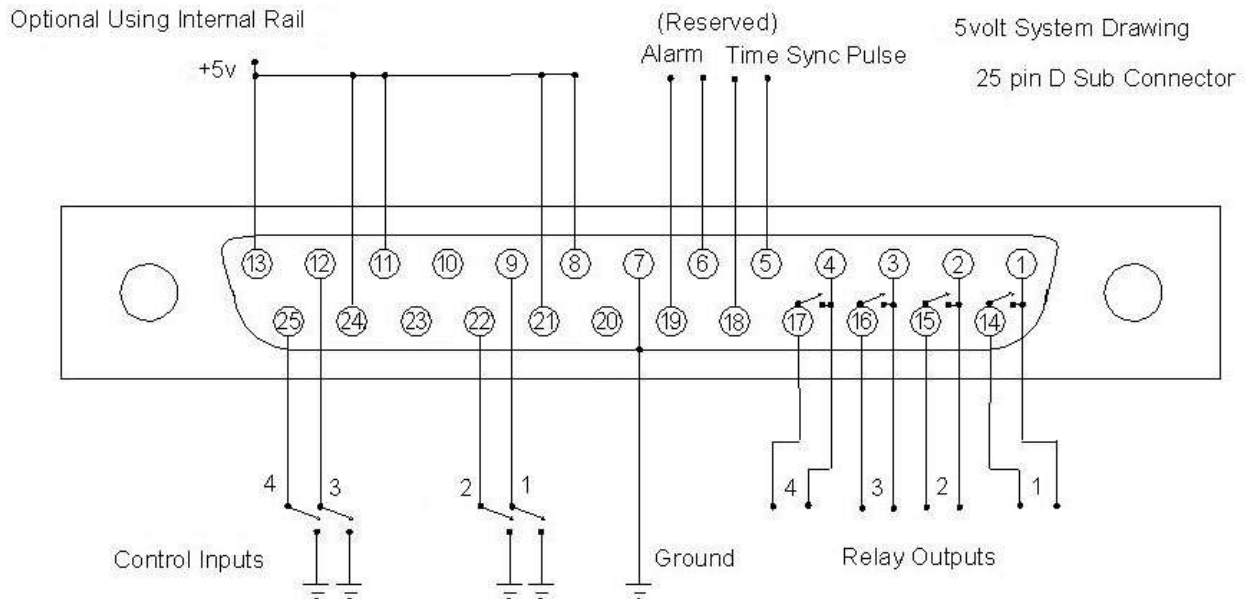
```
Setup Date
Firmware: 2.03
Serial No: 2001000
IP Addr: DHCP
Clock Interval
```

```
DHCP: NO
IP Addr: 192.168.001.100
Gateway: 192.168.001.001
Netmask: 255.255.255.000
```

With the correct IP address, Default Gateway and Subnet Mask entered, you can run the supplied program to create playlists, transfer files and play programs.

Relay Specifications

One side of each of the utilized input closures needs to be shorted to ground, pin 7, to create a closure circuit. A rail voltage, pin 13, is supplied to pull up the other side of the input. The shield is also a ground connection.



Input Closure Pin Numbers

Tie pins 8, 21, 11 and 24 to the pin 13 (rail voltage)

- #1 – Pin 9 should short to ground (Pin 7) for a closure
- #2 – Pin 22 should short to ground (Pin 7) for a closure
- #3 – Pin 12 should short to ground (Pin 7) for a closure
- #4 – Pin 25 should short to ground (Pin 7) for a closure

Output Relay Closures Pin Numbers

- #1 – Pin 1 and 14
- #2 – Pin 2 and 15
- #3 – Pin 3 and 16
- #4 – Pin 4 and 17
- #5 – Pin 5 and 18 (reserved for Time Sync pulse)
- #6 – Pin 6 and 19 (reserved for Alarm)

The time sync pulse settings are under the [Clock Interval](#) settings section.

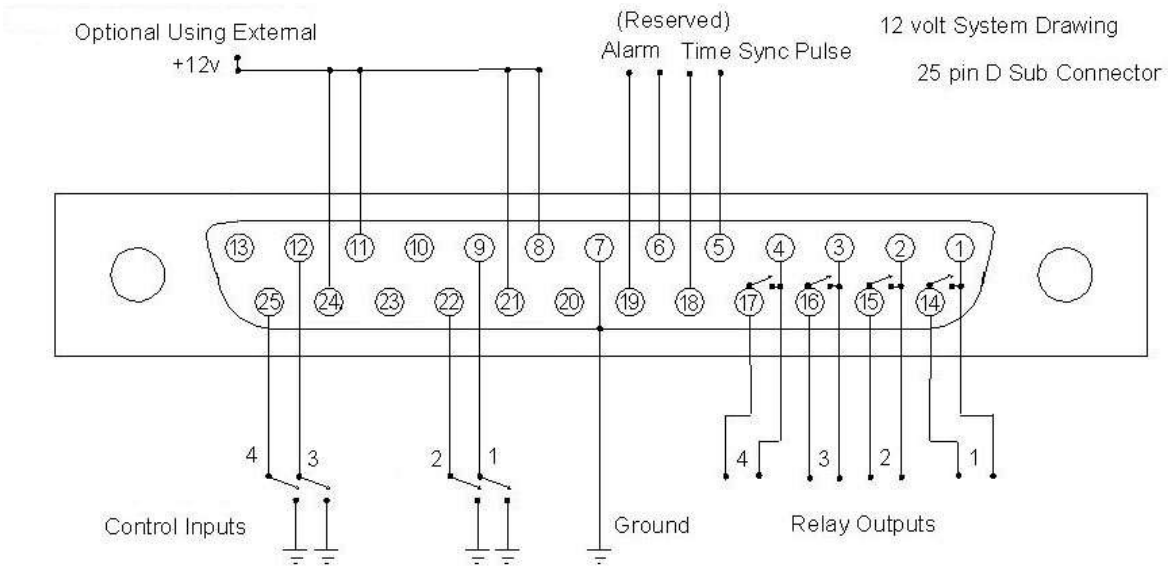
The alarm relay (#6) will close on the following conditions:

- No Ethernet connection
- No connection to the Internet and the AMB-OS server

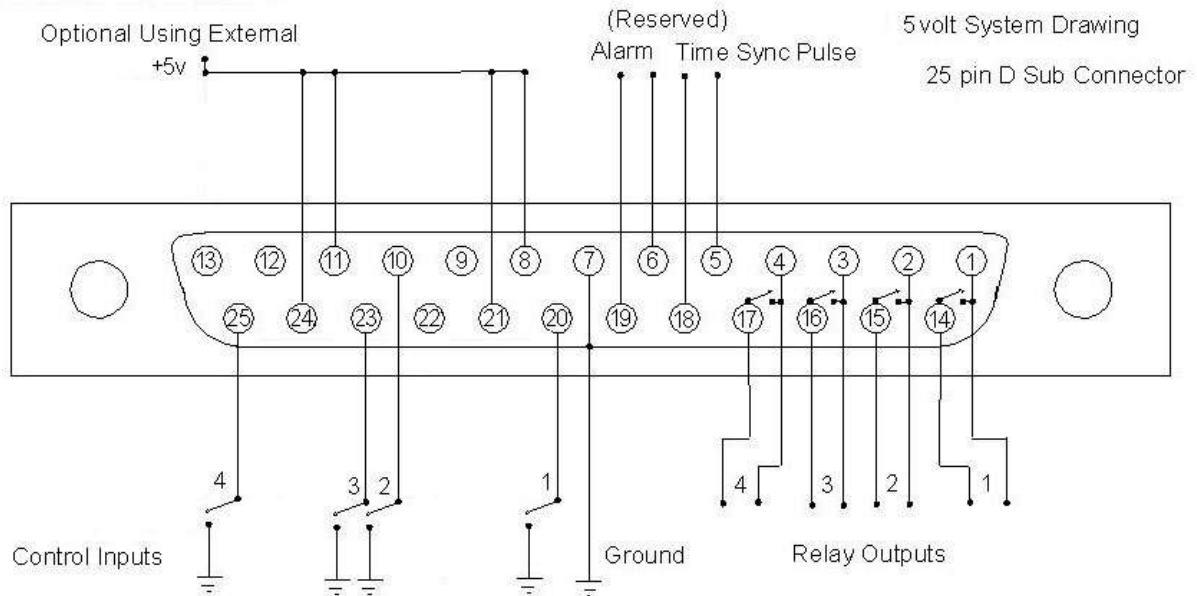
The [Network Alarm Settings](#) are under the [IP Address](#) submenu.

The output closures are Form A type closures and need a pull up to create the closure. You can use the provided rail voltage on Pin 13.

The following diagram shows the use of a +12V external pull-up source. Pin 13 is not connected to anything and the +12V source connects to pins 24, 11, 21 and 8.



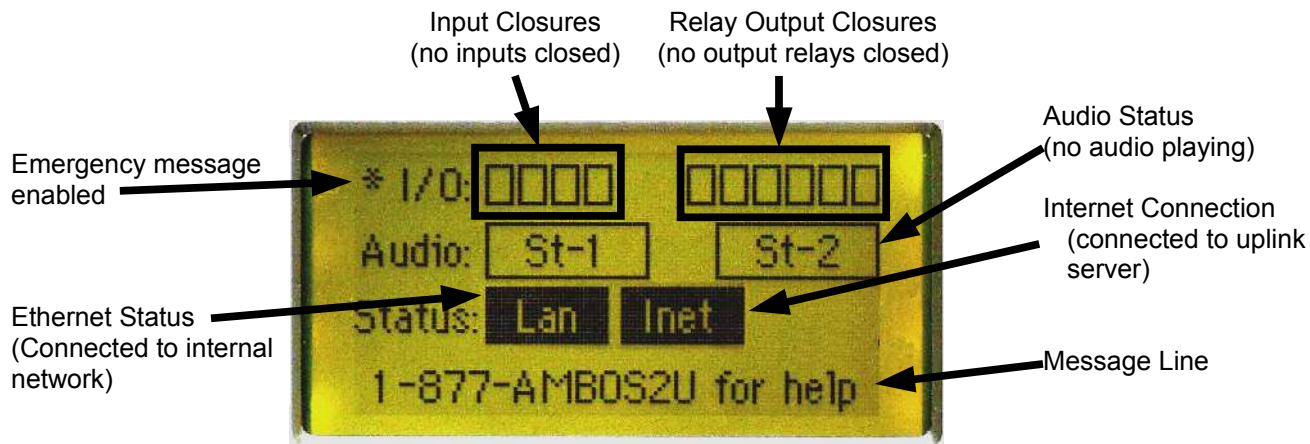
The following diagram shows the use of a +5V external pull-up source.



OPERATIONS

Front Panel Description

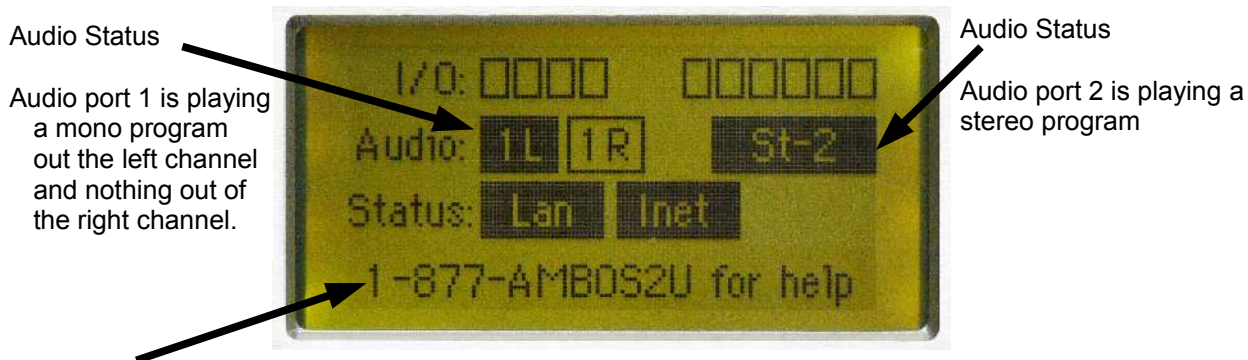
Display



Emergency Message Enabled: This indicates whether the AMR-100-I will receive a broadcast on [TMAP7](#). This enables the AMR-100-I to receive a special broadcast or if there is an emergency broadcast for the entire network. To receive these broadcasts, TMAP7 must have an assigned audio port and the "*" must be visible on the screen. The status of TMAP7 can be seen with the other [TMAPs](#) when looking at the [System Statistics](#) from the [HTML Command Interface](#).

Closure Indicators: The small boxes at the top of the screen indicate a relay output closure or input closure. The group of four boxes in the center display input closures and the group of six boxes on the right display the output closures. A clear box means the input closure or output relay is open. A black box means the input or relay is closed.

Audio Status Indicators: On power-up, there are two boxes under the relay indicators. They are labeled St-1 and St-2. When clear, no audio is playing out the audio ports. When they turn black, it means audio is coming out that port. The boxes split into two individual boxes when two mono programs play out a port and they are labeled 1L and 1R or 2L and 2R. Again, when clear, there is no audio and when black, there is audio.



Message Line: The last line on the display is black and it is the message window. Text messages sent by the satellite uplink are displayed on this line.

Pressing any button will change the screen to display the [Settings](#) and [Date](#).

Deauthorized Message:

The Amb-OS system administrators can disable a receiver. If that happens, the following message appears on the screen with only the message line below it: Deauthorized

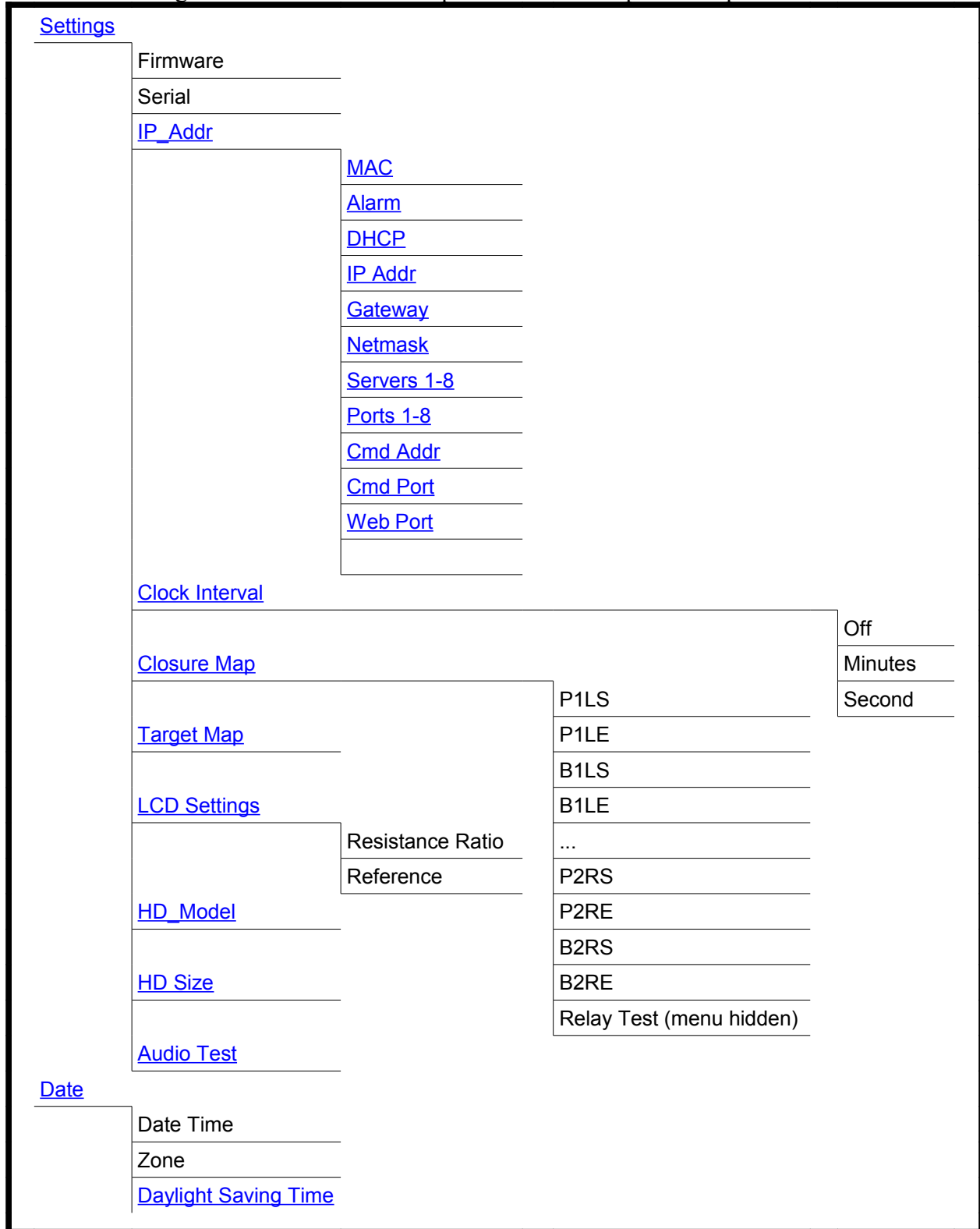
In the event your receiver becomes “Deauthorized,” you need to call AMB-OS to have it restored to normal operation.



1-877-AMBOS2U
1-877-262-6728

Front Panel Menu Options

The following chart is a tree of all the options in the front panel setup.



The SETTINGS display shows the following options and the “*” indicates setting has optional parameters, but the “*” is not on the screen.

Firmware: 2.03 (or current version)

Serial No: 2001000 (your serial number)

*[IP Addr](#): 192.168.1.100 (an example of an internal IP address only)

*[Clock Interval](#)

*[Closure Map](#)

*[Target Map](#)

*[LCD Settings](#)

HD Model: ST38021 5A

HD Size: 76319meg

*[Audio Test](#)

Settings Menu

IP Address Submenu

MAC XXXXXXXXXXXX (unique to each receiver and cannot be changed)

*Alarm: ON (default – assigned to Relay #6)

The alarm closes on the following conditions:

1. Loss of Ethernet connectivity to the network
2. Loss of connection the server

To change the setting, follow this procedure.

1. Press [ENTER] – ON is highlighted as the default
2. Press [ENTER] to change it to OFF
3. Press [BACK] to return to the IP Address submenu

If you are not going to connect your receiver to your internal network or to the Internet, turn the alarm setting to OFF.

*DHCP: YES

1. Press [ENTER] – YES is highlighted as the default
2. Press [ENTER] to change to NO
3. Press [BACK] to return to the IP Address submenu

*IP Addr: XXX.XXX.XXX.XXX (See [IP Address Change](#) section) – Remember 1 and 2 digit subnet addresses have leading 0's (.002. for .2. and .030. for .30).

If you use a manual (static) IP address (DHCP = No), you must enter a subnet mask and default gateway to be able to exit the menu.

1. Press [ENTER] – first digit is selected
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] when have the number you want (it will move to the next digit)
4. Press [UP] or [DOWN] to select next digit
5. Press [BACK] to go back to the previous digit to correct it, if necessary
6. Do this for all 12 digits, then press [ENTER] to save and return to the IP Address submenu

*Gateway: 192.168.1.1 (This is your network's Internet gateway and provided by your network administrator. This number is for illustration purposes only.) – Remember 1 and 2 digit subnet addresses have leading 0's (.002. for .2. and .030. for .30).

1. Press [ENTER] – First digit is selected
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] when have the number you want (it will move to the next digit)
4. Press [UP] or [DOWN] to select next digit
5. Press [BACK] to go back to the previous digit to correct it, if necessary
6. Do this for all 12 digits, then press [ENTER] to save and return to the IP Address submenu

IP Addr	
	MAC
	Alarm
	DHCP
	IP Addr
	Gateway
	Netmask
	RpSvr1
	RpPort1
	RpSvr2
	RpPort2
	RpSvr3
	RpPort3
	RpSvr4
	RpPort4
	LdSvr1
	LdPort1
	LdSvr2
	LdPort2
	LdSvr3
	LdPort3
	LdSvr4
	LdPort4
	Cmd Addr
	Cmd Port
	Web Port

*Netmask: 255.255.255.0 (Normally, this should not be changed) – *Remember 1 and 2 digit subnet addresses have leading 0's (.002. for .2. and .030. for .30).*

1. Press [ENTER] – First digit is selected
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] when have the number you want (it will move to the next digit)
4. Press [UP] or [DOWN] to select next digit
5. Press [BACK] to go back to the previous digit to correct it, if necessary
6. Do this for all 12 digits, then press [ENTER] to save and return to the IP Address submenu

*RpSrvr/LdSrvr: The eight server entries in this section reflect a mirrored server configuration at the uplink sites with diverse Internet routes to each server. The report servers 1-4 represent the reporting servers (were data and reports are sent). The load servers 1-4 represent the backfill servers.

WARNING

Never change the IP addresses of the servers or the ports unless you are instructed to do so by Amb-OS support personnel. Changing the ports can cause the AMR-100-I to miss programs.

The default IP addresses for each server is:

RpSrvr 1: 72.159.94.35
RpSrvr 2: 209.169.52.43
RpSrvr 3: 72.159.94.36
RpSrvr 4: 64.27.12.136

LdSrvr 1: 64.27.12.136
LdSrvr 2: 72.159.94.36
LdSrvr 3: 209.169.52.44
LdSrvr 4: 72.159.94.35

Changing the IP addresses for each server is the same. Scroll down to the server you want to change and follow the instructions below.

1 and 2 digit subnet addresses have leading 0's (.002. for .2. and .030. for .30).

1. Press [ENTER] – First digit is selected
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] when have the number you want (it will move to the next digit)
4. Press [UP] or [DOWN] to select next digit
5. Press [BACK] to go back to the previous digit to correct it, if necessary
6. Do this for all 12 digits, then press [ENTER] to save and return to the IP Address submenu

*RpPort/LdPort: 25000 This is always 25000. *If you change this port number, your receiver will not communicate with the AMB-OS servers.*

The process for changing the port is the same for all eight ports. Scroll down to the port you want to change and press [ENTER]

1. Press [ENTER] to select 2
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] to move to the next one
4. Press [BACK] to return to a previous digit to correct it
5. Press [ENTER] to go to each digit. When you press [ENTER] at the last digit, it will save your new port number and return to the IP Address submenu

*CmdAddr: 239.239.239.128 (This should never be changed unless instructed to do so by Amb-OS support personnel. It is the port used to send commands to the AMR-100-I receiver. *Remember 1 and 2 digit subnet addresses have leading 0's (.002. for .2. and .030. for .30.).*

1. Press [ENTER] – First digit is selected
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] when have the number you want (it will move to the next digit)
4. Press [UP] or [DOWN] to select next digit
5. Press [BACK] to go back to the previous digit to correct it, if necessary
6. Do this for all 12 digits, then press [ENTER] to save and return to the IP Address submenu

*CmdPort: 23456 (This should not be changed unless instructed to do so by support personnel. If you change this port number, your receiver will not accept commands.

1. Press [ENTER] to select 2
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] to move to the next one
4. Press [BACK] to return to a previous digit to correct it
5. Press [ENTER] to go to each digit. When you press [ENTER] at the last digit, it will save your new port number and return to the IP Address submenu

*WebPort: 80 (Normally, this does not need to be changed..) If you have multiple web access pages at your location, you may need to change this. You change this port number through 'html' interface – see the [HTML Interface](#) section.

1. Press [ENTER] to select 0 – the display will change to 00080
2. Press [UP] or [DOWN] to change the digit to the desired value
3. Press [ENTER] to move to the next one
4. Press [BACK] to return to a previous digit to correct it
5. Press [ENTER] to go to each digit. When you press [ENTER] at the last digit, it will save your new port number and return to the IP Address submenu.
6. To change the port to 8080
 - a. Press [ENTER] at the first 0 to move to the second 0.
 - b. Press [UP] to change the number to 8 – the display will read 08080
 - a. Press [BACK] to save the setting

*Alarm: ON (default)

Relay #6 closes on any of the following conditions:

1. Loss of a local area network connection
2. Loss of Internet connection to the uplink server

To turn the alarm off, use the following procedure.

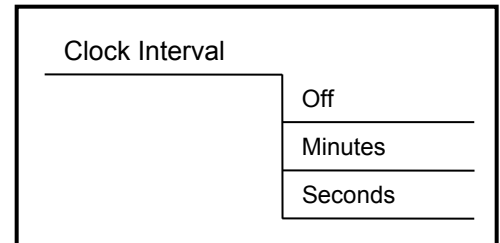
1. Press [ENTER] to access the menu.
2. Press [ENTER] to edit the menu.
3. Press [DOWN] to get to the RECEIVER UTILITIES
4. Press [ENTER] to edit the utilities
5. Press [DOWN] to get to ALARM
6. Press [ENTER] to set it to OFF
7. Press [BACK] to save the changes
8. Press [BACK] until you are back to the main screen

*Clock Interval (Time sync relay) – default: OFF

This selects the minutes and seconds when relay #5 closes to synchronize your clocks. This can be set to any minutes or seconds you desire. The time sync used on the Wegener Unity 4000® is at 54:30. The following procedure sets the time sync relay on and the relay closure at 54:30. The receiver comes shipped with this function off.

1. Press [ENTER] to access the menu
2. Press [ENTER] to edit the menu
3. Press [DOWN] to get to the CLOCK INTERVAL
4. Press [ENTER] to edit the settings
5. Press [ENTER] to turn the relay ON
6. Press [DOWN] to get to MINUTES:
7. Press [ENTER] to set it to 54
8. Press [DOWN] to get to SECONDS:
9. Press [ENTER] to set it to 30
10. Press [BACK] to save the changes
11. Press [BACK] until you are back to the main screen

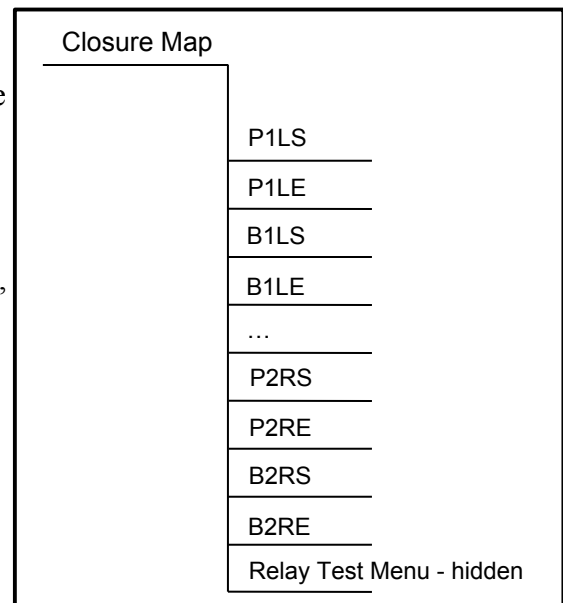
The Time Sync relay closes for one second at the MM:SS setting. With the example listed above, relay #5 would close every hour at XX:54:30 and open at XX:54:31.



*Closure Map

This allows you to change the relay assignments. The [Relay Specification](#) section lists the different functions and states. The names are listed in the illustration to the right. The numbers are the relay numbers. All six relays can be used if the time sync and the alarm functions are not used. If they are used, however, only the first four relays are available. This section assumes that the alarm (#6) and time sync (#5) functions are used and only relays #1-#4 are available. A full description of the relays is found in the [Closure Map Definitions](#) section.

The Relay Test Menu is only accessible by holding down the [UP] and [DOWN] at the same time while in this menu.



General instructions:

1. [ENTER] moves between fields and accepts changes
2. [BACK] goes to a previous field and saves the setting only when you are on the name of the relay (P1LS, P1LE, etc.)
3. [UP] and [DOWN] change values

Changing settings:

1. Press [ENTER] to edit the closure map and highlight P1LS
2. Press [ENTER] to move to the relay – this will be 1 in the default settings
3. Press [UP] or [DOWN] to change this to any of the available relays (in the default setting, only relays #1-#4 are available)
4. Press [ENTER] to move to the state – in the default settings, this will be ON
5. Press [UP] or [DOWN] to change the setting from ON to OFF or PULSE
6. Press [ENTER] to highlight P1LS
7. Press [BACK] to save your setting

Until you press [BACK] you will rotate through the NAME, RELAY and STATE.

To reset the closure map to its default settings, you must enter the Relay Test Menu (pressing [UP] and [DOWN] at the same time) and then press [UP] and [DOWN] at the same time while in the Relay Test Menu. The following section describes that procedure.

Resetting to Default Closures

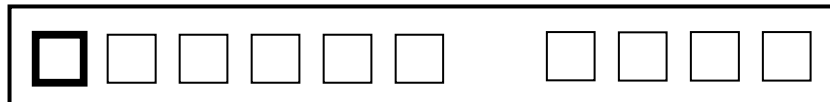
When you are in the [Relay Test](#) menu, you can press [UP] and [DOWN] at the same time to reset the closure map to its default setting.

Relay Test Menu

This menu allows you to verify input closures and close the relays to verify connections. The menu item is not listed and is activated by pressing [UP] and [DOWN] at the same time while you are in the Closure Map submenu.

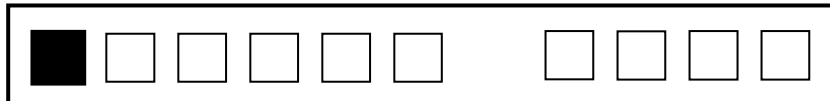
Closure Test

1. Press [ENTER] to enter the closure test
2. Press [UP] or [DOWN] to select the relay you want to test



Relay #1 selected, but not activated

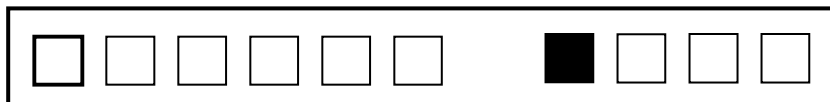
3. Press [ENTER] to activate a relay – the box of the selected relay will darken



Relay #1 Activated

4. Press [ENTER] to clear the relay – the box of the selected relay will lighten
5. Press [BACK] to exit the closure test and return to the Settings submenu

When an input closure is closed, the appropriate box goes black and then clears after it is released.



Input #1 closed, inputs #2, #3 and #4 open

*Target Map

This menu allows you to change a [target map](#) to any of the analog targets. The default mappings are:

- TMAP1 = T1 (stereo)
- TMAP2 = T2 (stereo)
- TMAP3 = T1L (mono)
- TMAP4 = T1R (mono)
- TMAP5 = T2L (mono)
- TMAP6 = T2R (mono)
- TMAP7 = T2 (stereo) [[Emergency or "one off"](#) program target]

To access the target menu:

General instructions:

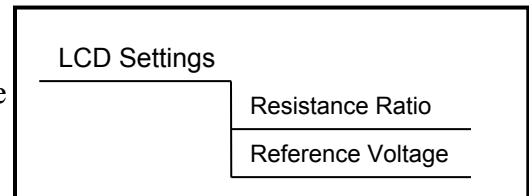
1. [ENTER] changes the mapping of the highlighted Target Map
2. [BACK] goes to the previous menu and saves the settings
3. [UP] and [DOWN] moves between the Target Maps

Changing settings:

1. Press [ENTER] twice to enter the edit mode of the front panel settings (the Firmware X.XX should be highlighted)
2. Press [DOWN] until Target Map is highlighted
3. Press [ENTER] to edit the target map and highlight TMAP1
4. Press [ENTER] to change the mapping
5. Press [UP] or [DOWN] to move to the next Target Map
6. Press [BACK] to save your setting

*LCD Settings

This changes the contrast of the display. Be very careful, because you can make the display unreadable and you will have to reset the receiver to its default settings (see [Resetting the Receiver's Display to the Default Settings](#) section).



1. Press [ENTER] to edit the Resistance Ratio
2. Press [UP] or [DOWN] to change the settings – this makes “coarse” adjustments to the contrast of the display
3. Press [ENTER] to move to Reference Voltage
4. Press [UP] or [DOWN] to change the settings – this makes “fine” adjustments to the contrast of the display
5. Press [ENTER] to save your settings and return to the Settings submenu

WARNING

If you adjust the display to an unreadable condition, you can restore the display by using a “Cold Boot.” This is done by unplugging the AMR-100-I receiver and press and hold the [ENTER] button as you plug in the AMR-100-I. This will reset the display to its normal settings.

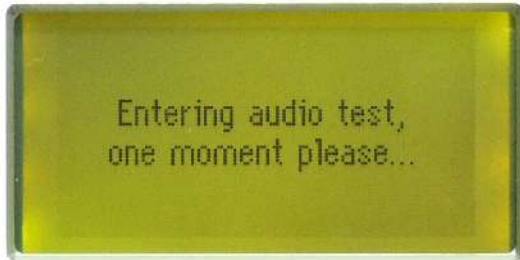
A Cold Boot will stop the audio playback and it must be rebooted to restore the audio playback!

HD Model: ST38021 5A (This is the model number of the OEM internal hard drive)

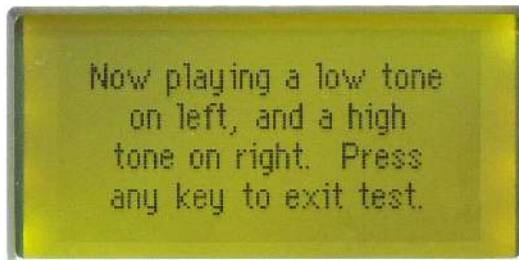
HD Size: 76319meg (This is the size of the OEM internal hard drive – approximately 80 GB)

***Audio Test**

1. Press [ENTER] to start the test. It will generate two different tones (a lower tone on the left channel and a higher tone on the right channel). The display will say:
2. Press any key to exit the test (as described on the display)



Preparing for Audio Test



Playing the Audio Test

DATE MENU

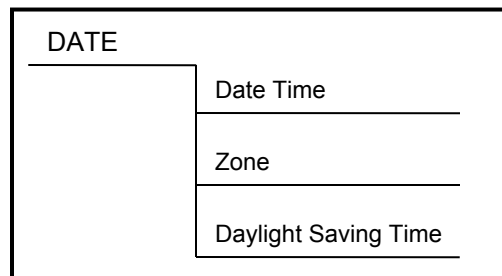
Only three options exist on the Date Menu:

Date and time

Zone

[Daylight Saving Time](#)

After connecting to the Internet, the AMR-100-I will sync its time to UTC. The server sends GMT and the receiver changes the hours to reflect the Zone and Daylight Saving Time setting.



After the time has synced, you **CANNOT** change the date and time. When you enter the edit mode in this menu, you will be taken to the Zone setting and **NOT** be able to change the date or time. If the month is highlighted when you press [ENTER], then you either have entered the menu before the time has synced.

Date Time:

The receiver wakes up based on the time setting it had during testing at the factory. You may change this only before the AMR-100-I syncs its time.

Time Zone:

Zone: Eastern (default)

The zone can be set to any time zone. When changing the Time Zone setting, the hour display will change automatically to reflect the new time zone. Only eight zones are named. The other zones are reflected in hours to or from GMT (GMT-1, GMT+12, etc.). The named zones are

Atlantic (-4 GMT)	Pacific (-8 GMT)
Eastern (-5 GMT)	Alaska (-9 GMT)
Central (-6 GMT)	Hawaii (-10 GMT)
Mountain (-7 GMT)	

In addition to the GMT hour settings, it is possible to change the GMT by minutes using the Zmins (Zone Minutes) setting. If your time zone does not fall on the exact hour, you can change the minutes of your time zone by using the up and down arrows.

After the clock has received its time sync, the time immediately changes to reflect a change in the zone. Thus, changing the zone from Eastern to Central at 11:34:35 will cause the time to change to 10:34:35 immediately.

Daylight Saving Time

Daylight Saving Time: Yes (default)

This tells the receiver to make the change to and from Daylight Saving Time each year. If the setting is “No” then the receiver will not change the time at the start or end of Daylight Saving Time. If Daylight Saving Time is in effect, changing this from NO to YES will cause the hour to change appropriately. If Daylight Saving Time is not in effect, changing this setting will have no affect on the hour. If your locality does not observe Daylight Saving Time, change the setting to “No” so it will not change the time. The new rules for Daylight Saving Time have been incorporated in the receiver (**DST begins on the 2nd Sunday in March and ends on the 1st Sunday in November**).

General setting procedure:

[ENTER] moves from each element to the next and saves the settings after the last option (Daylight Saving Time) is selected.

[UP] and [DOWN] changes the settings

[BACK] moves the selection backwards, for example, if you are changing the minutes and press [BACK], you will move to the hours.

The following procedure takes you through setting all the options.

The month is the first setting you highlight if the receiver has not synced its time with the RF carrier or to the Zone setting if it has synced to the RF carrier.

[ENTER] highlights month (only if the time has not synced to the RF carrier)

[UP] and [DOWN] changes the month

[ENTER] highlights day of the month

[UP] and [DOWN] changes the day

[ENTER] highlights the year

[UP] and [DOWN] changes the year

[ENTER] highlights the hour (in 24 hour format)

[UP] and [DOWN] changes the hour

[ENTER] highlights minutes

[UP] and [DOWN] changes the minutes

If the receiver has synced its time with the RF carrier, when you press [ENTER] to enter the edit mode, this is your first setting.

[ENTER] highlights Zone (is the first setting if the time has been synced to the RF carrier)

[UP] and [DOWN] changes the Zone

[ENTER] highlights the Zmins setting

[UP] and [DOWN] changes the Zmins settings in 1-minute increments

[ENTER] highlights Daylight Saving Time

[UP] and [DOWN] changes the setting from YES to NO

[ENTER] saves the settings and returns you to the DATE status screen

Audio Playback Description

Analog

NOTE

All audio playback must done by an internal playlist or a trigger (see Playlist). There is no method to playback audio from the front panel.

The analog outputs are the main outputs and all other outputs (digital and IP streaming) are paired to the analog outputs. That means you cannot have any more than four mono programs playing. With mono programs playing on Port 1-L and Port 1-R, all three digital outputs for Port 1 will have the mono program playing on Port 1-L on its left channel and the mono program on Port 1-R on the right channel. Port 2 does the same. With a stereo program playing out the analog port, all three digital outputs for that port will have the same stereo program playing.

You can have the following configurations:

Stereo (Port 1-L&R, Port 2-L&R)

1 stereo program on Port 1-L&R and 2 mono programs: 1 on Port 2-L and 1 on Port 2-R

2 mono programs: 1 on Port 1-L and 1 on Port 1-R and 1 stereo program on Port 2-L&R

4 mono programs: 2 on each port – 1 on Port 1-L, 1 on Port 1-R, 1 on Port 2-L and 1 on Port 2-R

The AMR-100-I will mix a stereo program to mono when you send it out a mono port. A stereo program sent out Port 1-L will have the left and right mixed to mono on that port.

NOTE

All the outputs for each port (analog and digital) are always the same. Whatever comes out of Port 1 analog (stereo or mono) comes out the digital ports (AES-EBU, SPDIF and OPTICAL for Port 1. You CANNOT have one thing come out of the digital ports for Port 1 and something else come out of the analog for Port 1.

Digital

The digital outputs mirror the analog outputs. Whatever comes out the analog comes out on all the digital ports. So, two mono programs coming out Port 1-L and Port 1-R will come out the AES-EBU, SPDIF, and OPTICAL as two programs, one on the left and one on the right. Also, you cannot send any audio out the digital without it going out the analog ports. Port 1 and Port 2 can be different programming, but the audio coming out the analog outputs of Port 1 also will come out the digital outputs (AES-EBU, SPDIF, and OPTICAL) of Port 1. The same is true for Port 2.

Streaming

The AMR-100-I can stream audio out the Ethernet port, but, like the digital outputs, they must have an associated analog output. The Ethernet stream is always in stereo, which means you can play a program out Port 1-L and stream that same program out the Ethernet port. The analog output on Port 1-L will be mono and mix the stereo to a mono signal, but the output of the Ethernet will be in stereo.

The streaming audio cannot be decoded by Windows Media Player®. However, a program called VideoLAN® (www.videolan.org) can be used to decode the Ethernet stream.

Playback after a power loss

Audio will resume after a power loss to the receiver. The audio will NOT resume from where it was at the time of the power loss, but rather where it would be if the power had not been lost. The following is an example of what you would hear.

1. A program was started at 9:00:00
2. At 9:09:45 power was lost to the receiver and audio terminated
3. Power was restored at 9:11:20
4. The AMR-100-I, after rebooting, will resume audio at approximately 9:11:50
5. The audio will play what was supposed to be playing at 9:11:50 had the power not been lost

Thus, the audio playing after power is restored, would be 11:50 into the program and the program will end at its scheduled time. A 25-minute program will end at 11:25.

HTML INTERFACE

Access to the AMR-100-I Web page

To access the receiver remotely, you need to have it connected to your internal Ethernet network.

Open an Internet browser window and enter the IP Address of the receiver into the address line of the browser. Your IP Address was set at the beginning of the installation. However, if you do not remember what that was, go to the AMR-100-I and press the [DOWN] arrow and it will be next to the IP Addr: line.


```
Firmware: 2.03
Serial No: 2001000
IP Addr: 192.168.1.100
Clock Interval
```

1. Open your default browser
2. Enter the IP Address of the receiver (for this example it is 192.168.1.100)
3. Press GO on the address line of the browser


You will get the following screen:

Amb-OS AMR-100 SFT Receiver/Server

General Diagnostics
[System Statistics](#)
[Application Trace Log](#)
[Scheduled Event List](#)
[Trigger Event Lists](#)
[Command Interface](#)



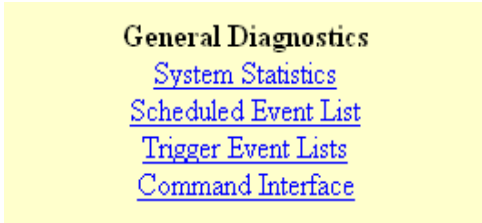
[Click here to download manual \(PDF\)](#)



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The menu in the middle has the following:

[General Diagnostics](#) has:
[System Statistics](#)
[Scheduled Event List](#)
[Trigger Event Lists](#)
[Command Interface](#)



General diagnostics

System Statistics

This shows the settings of the receiver. They are the same as the listings described in the [Front Panel](#) section.

General Statistics:

```
GENERAL STATISTICS
-----
Firmware Ver:                2.03
      TID:                    2000000
Processor Speed:             600Mhz
      Bus Speed:              120Mhz
Ethernet Addr:              00a0e12e8480
      DHCP:                   No
      IP Address:             192.168.1.100
      Netmask:                255.255.255.0
      Gateway:                192.168.1.1
Report Server 1:             72.159.94.35:25000
Report Server 2:             209.169.52.43:25000
Report Server 3:             72.159.94.36:25000
Report Server 4:             64.27.12.136:25000
Load Server 1:               64.27.12.136:25000
Load Server 2:               72.159.94.36:25000
Load Server 3:               209.169.52.44:25000
Load Server 4:               72.159.94.35:25000
Free Memory:                 19506176
      Time:                   09:03 07/01/10
      Zone:                   Mountain
      DST:                    YES
      GMT Time:               15:03 07/01/10
      Eastern Time:           11:03 07/01/10
Time Running:                148:37
```

Description of items:

Firmware Ver gives the current firm level of the operating system

TID is the AMR-100-I's ID number or serial number

Processor Speed is the speed of the processor

Bus Speed is the speed of the data/address bus

Ethernet Addr is MAC address of the AMR-100-I

*DHCP describes is the IP address is selected automatically

*IP Address is the internal network address of the AMR-100-I

*Netmask is the network mask

*Gateway is the address of the Internet gateway of your internal network

Report Servers 1-4 are the address:port of the AMB-OS uplink servers

Load Servers 1-4 are the address:port of the Internet backfill AMB-OS servers

Free Memory describes the amount of unused internal memory for the operating system

- *Time is the time (without seconds) and the date
- *Zone is the time zone
- *DST is whether Daylight Saving Time is in effect or not
- GMT Time is the current [Greenwich Mean Time](#)
- Eastern Time is the current Eastern Time and it reflects DST.
- Time Running is the amount of the time the receiver has been running

The “*” items can be changed and they can be done by the front panel (see [Front Panel](#) section). They can also be changed through the Command Interface (see [Command Interface](#) section below).

Audio Statistics

```
AUDIO STATISTICS
-----
Playing Audio:                NO
Audio IRQs:                   73060454
```

Playing Audio reports whether audio is playing out a port.
 Audio IRQs (Interrupt Requests) count the number of times the audio playback system requested an interrupt from the process.

Target Mapping

```
TARGET MAPPING SETTINGS
-----
TMAP1:      Stereo 1 (T1)
TMAP2:      Stereo 2 (T2)
TMAP3:      Mono 1 Left (T1L)
TMAP4:      Mono 1 Right (T1R)
TMAP5:      Mono 2 Left (T2L)
TMAP6:      Mono 2 Right (T2R)
TMAP7:      Stereo 2 (T2)
TMAP7 Armed:                No
```

[Target Maps \(TMAP\)](#) allow the AMR-100-I to use a different physical output for the same name. Live streams can send a program to a TMAP number and the station can have the program come out their port or target. TMAP7 is reserved for [emergency or ad hoc](#) broadcasts. For a description of the TMAP specification, see the [TMAP Command](#) under the [HTML Command](#) Interface section.

Ethernet Statistics

```
ETHERNET STATISTICS
-----
Connections:                 1
IP Datagrams:                1918634
IP Fragments:                0
```

Connections show the number of units connected to the Ethernet port on the receiver.
 IP Datagrams count the number of IP packets coming to the AMR-100-I.
 IP Fragments are the number of packets that were incomplete in the network and coming to the AMR-100-I

Drive Statistics

DRIVE STATISTICS

Open Files:	0
Space Used:	2221Mb
Space Left:	74078Mb

Open Files reports the number of files open for playback on the AMR-100-I. If you had four mono files playing, that number would be 4.

Space Used reports the amount of drive space with data (used space).

Space Left reports the amount of free space on the drive. If there is not enough drive space available for an incoming file, the file will not be stored. All files are automatically deleted after their air date from the hard drive on the receiver.

Scheduled Event List

This page shows the scheduled timed events in the playlist (see [Playlist](#) section). When you first install your receiver, this will have no entries as shown below.

AmbOS Event Listing

Action	Time	Source	Target	Level	Ramp	Output	State
--------	------	--------	--------	-------	------	--------	-------

Action is the type of event that will happen.

Time is time and/or date when the event will happen.

Source is what file or program will be played.

Target is where the output has been addressed.

Level shows how much the signal has been attenuated by showing its relative volume. A setting of 0dB means there is no attenuation and a reading of -inf means it is completely off.

Ramp shows the fade listed in playlist file for that file or event. It shows how many seconds of fade the program will have at the end of the file.

Output Target shows you which output Port is being used

State shows whether the output is active or not. When it is blank, the output is not being used for that action and a "1" means the output is active.

The following shows several files and they begin playing 23:32:30 local time or the time on the receiver as determined by the [time zone](#) setting.

General Diagnostics

[System Statistics](#)

[Scheduled Event List](#)

[Trigger Event Lists](#)

[Command Interface](#)

Amb-OS Event Listing

Files not yet available
FOTF_PI2W_05-07-09_01-01.MP2

Action	Time	Source	Target	Level	Ramp	Output	State
OPEN/SEEK	5/7/2009 23:32:29:000000	IFLM_IFL5_05-07-09_01-01.MP2	/Mono1R	-inf	0ms		
PLAY	5/7/2009 23:32:30:000000	IFLM_IFL5_05-07-09_01-01.MP2	/Mono1R	0dB	0ms		
STOP	5/8/2009 00:00:00:000000	IFLM_IFL5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
OPEN/SEEK	5/8/2009 00:00:01:000000	FOTF_N5A5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
PLAY	5/8/2009 00:00:02:000000	FOTF_N5A5_05-08-09_01-01.MP2	/Mono1R	0dB	0ms		
STOP	5/8/2009 00:04:32:000000	FOTF_N5A5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
OPEN/SEEK	5/8/2009 00:59:59:000000	FOTF_N5B5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
PLAY	5/8/2009 01:00:00:000000	FOTF_N5B5_05-08-09_01-01.MP2	/Mono1R	0dB	0ms		
STOP	5/8/2009 01:04:30:000000	FOTF_N5B5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
OPEN/SEEK	5/8/2009 02:00:01:000000	IFLM_IFL5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
PLAY	5/8/2009 02:00:02:000000	IFLM_IFL5_05-08-09_01-01.MP2	/Mono1R	0dB	0ms		
STOP	5/8/2009 02:27:32:000000	IFLM_IFL5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		
OPEN/SEEK	5/8/2009 02:29:00:000000	FAMX_FLT5_05-08-09_01-01.MP2	/Mono1R	-inf	0ms		

The column labeled Action has the following entries:

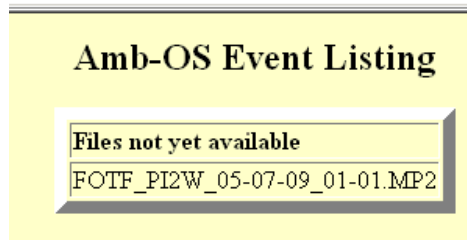
OPEN/SEEK is when the AMR-100-I "cues" the file. It does that one second before it plays.

PLAY shows that it will play at 01:30:00.

STOP shows when the file will end at 01:52:00.

The Time column shows when each event will happen. The Source column shows the exact name of the file that will play. Target shows the port that will be used to play the file. Level shows the starting, playing and ending volume (-inf = off, 0dB = full volume). The Ramp shows how the file will be faded.

The box at the top shows a file that is suppose to play, but is not on the receiver. This can be normal for files delivered at the last minute and you check the events before the file arrives. If the file is delivered early and it is not there, you should check the RSS feed on www.amb-os.com/support.html for an a news bulletin or call the help line (877-2622728) to make sure there is not a problem with the file transmission. To subscribe to the RSS feed, goto www.amb-os.com/rss.html.



Trigger Event Lists

This link takes you to a page listing events that happen on an input closure or on a command sent by satellite or serial port. The system calls these trigger events. If an event happens on a closure sent by a program producer, then it will have a serial string that causes a program or spot to air. This text is listed. If an input closure is used, they are described as Input 1, Input 2, Input 3 or Input 4. There can be a maximum of 100 triggers, but only those that are used are listed. The example to the right shows six trigger events.

Amb-OS AMR-100 SFT Receiver/Server

Trigger Event Lists

[Trigger 4001](#)

[Trigger 4002](#)

[Trigger 7001](#)

[Trigger 7002](#)

[Trigger 7003](#)

Clicking on one of the events is shown in the following illustrations. The first one shows a trigger based upon a text command sent to the receiver. Notice that it has the same information as the Scheduled event. However, the chart does not populate until the text has been sent and the trigger has caused a file to play.

Trigger Listing

Active all day

Trigger Input	Command
CHSTART	play
CHSTOP	stop

Action	Time	Source	Target	Level	Ramp	Output	State
--------	------	--------	--------	-------	------	--------	-------

The following illustration shows an input closure trigger.

Trigger Listing

Active all day

Trigger Input	Command
Input 1 ON	play
Input 4 ON	stop

Action	Time	Source	Target	Level	Ramp	Output	State
--------	------	--------	--------	-------	------	--------	-------

Command Interface

This page allows you to send commands to the receiver. The image below has the list of commands and a brief description of those commands. The window is where the command is typed then you press Execute. For example to close Relay #1, you type “relay 1 on” and then press Execute. The window will change and repeat the command saying it was executed. To get back to the Command page, press the backspace key or the press the back arrow in your browser. To open the relay, type “relay 1 off” and press Execute. The case of the command doesn’t matter, but the illustrations show them in upper case to highlight them. Only 60 characters can be entered into the Command Interface window. After that, it will scroll to the left.

Amb-OS Command Interface

NOTE: The command will be executed immediately upon clicking the Execute button.

General Commands	
REBOOT	Reboots the system.
RELAY # ON/OFF	Sets the state of relays 1-6.
RELAY var	Activates the mapped relay named 'var'
SET ZONE #	Sets the zone (-4 to 20, 0=Pacific, 1=Mountain, 2=Central..).
SET DST #	Sets daylight saving time participation (0 or 1).
Network Commands	
DHCP YES/NO	Turns on or off the DHCP client
NEWIP #####	Changes the IP to a static address #####
NEWNETMASK #####	Changes the net mask to #####
NEWGATEWAY #####	Changes the gateway to #####
WEBPORT #	Changes the HTTP port for browser access
Audio Control Commands	
AUDPLAY Source on Target(s)	Auditions the source (file, PID, stream) on a target list. Example: AUDPLAY FILE.MP2 ON T1
AUDSTOP	Stops playback of the audition.
AUDFADE	Fades out and stops playback of the audition.
ALLSTOP	Immediately stops all audio playback.
TSTOP Target	Stops audio playback on a single target. Example: TSTOP T1
TMAP# Target	Sets TMAP1 through TMAP7 to the target. Example: TMAP3 T1L
TMAP7ARM ON/OFF	Sets the arming of TMAP7 for one-shot targeting.
TONE ON/OFF	Turns the internal tone generator on or off.

General Commands

General Commands	
REBOOT	Reboots the system.
RELAY # ON/OFF	Sets the state of relays 1-6.
RELAY var	Activates the mapped relay named 'var'
SET ZONE #	Sets the zone (-4 to 20, 0=Pacific, 1=Mountain, 2=Central...).
SET DST #	Sets daylight saving time participation (0 or 1).

REBOOT

This causes the system to be rebooted. Audio playing from a timed event (see **Schedules**) will restart at the point it would have been had the system not been rebooted.

WARNING
Rebooting will cause the receiver to quit playing audio!

Syntax: REBOOT

RELAY # ON/OFF

This will close the relay specified in the command. The command RELAY 1 ON will close relay #1. This is extremely useful in testing relays. Closing relays #5 and #6 should be used with extreme caution after completing wiring. If your alarm has been wired and you issue “RELAY 6 ON,” your alarms will activate. Likewise, if you have wired your clock synchronization circuit and issue the command “RELAY 5 ON,” this will cause your clocks to sync to the time described in the [Clock Interval](#) section. For example, if you have set the [Clock Interval](#) (Time Sync) to 54:30 and you tell the receiver to close relay #5 at XX:11:45, your system will be sync to 54:30 at 11:45.

Syntax: RELAY 1 ON or RELAY 1 OFF

RELAY var

This sends a command to the mapped relay (see [Relay Description](#) section). If you are using relay #1 as the PILE (Program End, Port 1 Left) and you want to verify the relay will respond correctly, you can send the command to that map. If you have mapped PILE to relay #1 as a pulse, then when you execute RELAY PILE, the relay should close for one second and then open. The “var” are all the mapped names in [Relay Description](#).

Syntax: RELAY PILE

SET ZONE #

Allows you to set the receiver to your local time zone or to any time zone. If you need to sync your time to your network headend, you can set the time zone to that. It can be set to any time zone, but the common ones are:

- 3 = Eastern
- 2 = Central
- 1 = Mountain
- 0 = Pacific
- 1 = Alaska
- 2 = Hawaii

Syntax: SET ZONE 3

SET DST #

Sets the receiver to Daylight Saving Time or to Standard Time.

0 = Standard Time (No DST) – used for those who do not participate in DST, e.g. Arizona. The time will not change when DST goes into effect or when it ends.

1 = If your locality observes Daylight Saving Time (DST) and your receiver needs to adjust for that.

Syntax: SET DST 0

Network Commands

Network Commands	
DHCP YES/NO	Turns on or off the DHCP client
NEWIP ###.#	Changes the IP to a static address ###.#
NEWNETMASK ###.#	Changes the net mask to ###.#
NEWGATEWAY ###.#	Changes the gateway to ###.#
WEBPORT #	Changes the HTTP port for browser access

DHCP ON/OFF

This turns DHCP ON or OFF. When DHCP is on the IP address of the receiver is selected automatically by a DHCP Router. That is usually in a router or high-speed (DSL or cable) modem.

Syntax: DHCP ON or DHCP OFF

NEWIP ###.#

This allows you to set the IP address of the AMR-100-I receiver. Your network administrator must provide this address if DHCP is set to OFF.

Syntax: NEWIP 192.168.1.145

NEWNETMASK ###.#

The Netmask is a filter that rejects or accepts communications from other computers on the network. Normally this is 255.255.255.0 and it accepts all communication with the first three set of numbers that match the computers IP address. Thus an IP address of 192.168.1.100 with a Netmask of 255.255.255.0 will accept communication from any computer on the network that has an IP address in the range of 192.168.1.0 to 192.168.1.255.

Syntax: NEWNETMASK 255.255.255.0

NEWGATEWAY ###.#

Sets the Internet gateway of your network. This is usually the address of the router or high-speed modem. Your network administrator needs to provide that information if DHCP is OFF.

Syntax: NEWGATEWAY 192.168.1.1

WEBPORT #

Sets the Web or HTTP port number. This is normally set to 80, but at times an installation will have more than web interface device and another port may be needed. The other typical number is 8080.

Syntax: WEBPORT 8080

Audio Control Commands

Audio Control Commands	
AUDPLAY Source on Target(s)	Auditions the source (file, PID, stream) on a target list. Example: AUDPLAY FILE.MP2 ON T1
AUDSTOP	Stops playback of the audition.
AUDFADE	Fades out and stops playback of the audition.
ALLSTOP	Immediately stops all audio playback.
TSTOP Target	Stops audio playback on a single target. Example: TSTOP T1
TMAP# Target	Sets TMAP1 through TMAP7 to the target. Example: TMAP3 T1L
TMAP7ARM ON/OFF	Sets the arming of TMAP7 for one-shot targeting.
tone ON/OFF	Turns the internal tone generator on or off.

AUDPLAY

Plays a specified file on a target on the receiver. This function needs the exact file name to play correctly. It will not mix two programs together, but it will sum a program to a mono source. By specifying T1, the program will play in stereo out audio port 1. T1L will send the file out the left side of *target* 1 (audio port 1) and sum it to mono. If you send the command before a previous command completed, the first audio will stop and the second piece will play.

Syntax AUDPLAY filename.mp2 ON T1
AUDPLAY FOTF_FOF5_01-01-09_01-01.MP2 ON T1

AUDSTOP

This stops playing the audio that was initialized by the AUDPLAY command.

Syntax: AUDSTOP

AUDFADE

This will stop the audio playing, but fade it out rather than just shutting it off.

Syntax: AUDFADE

ALLSTOP

This command will stop all audio playing on all ports. Normally, whatever starts the audio playing has to stop it. An AUDPLAY command normally needs an AUDSTOP or AUDFADE command to stop the audio. This command will stop all audio, regardless of what started it playing.

Syntax: ALLSTOP

WARNING

If you are playing audio out any target directly to air, ALLSTOP will stop the audio from playing and take it off the air! TSTOP will stop the audio on specific target and if that is going to directly to air, it will also take you off the air!

TSTOP

This command is similar to ALLSTOP, but it allows you stop a specific target from playing regardless of what started it. Use this command with caution. It can be used to stop only the left or the right channel. However, if the audio was started as stereo on the target (AUDPLAY filename.mp2 ON T1), it will not stop the audio. If two programs are playing separately on T1L and T1R, you can stop one or the other by specifying the appropriate target (T1L or T1R). If T1R is targeted to stop, T1L will continue playing. The command to stop T1 (no L or R parameter) will only stop the left channel.

Syntax: TSTOP T1
TSTOP T1L
TSTOP T1R

TMAP# Target

This commands allows you to change the *TMAP* to another target. The defaults are listed in the *TMAP* section. A section under the *system statistics* shows the current mapping on the AMR-100-I receiver. The target can be any one of seven targets:

T1 = Port 1 stereo
T1L = Port 1 mono – left side only
T1R = Port 1 mono – right side only
T2 = Port 2 stereo
T2L = Port 2 mono – left side only
T2R = Port 2 mono – right side only
None = No target – a file will NOT play

Seven TMAPs exist: TMAP1, TMAP2, TMAP3, TMAP4, TMAP5, TMAP6 and TMAP7. TMAP7 is for *emergency broadcasts or ad hoc* programs.

Syntax: TMAP1 T1
TMAP1 T2L

TMAP7ARM

This command duplicates pressing the [BACK] button to arm the *emergency or ad hoc* program function. The “*” in the upper right of the front panel screen will come on when issuing “TMAPARM7 ON” command. “TMAPARM OFF” will turn off the function and the “*” on the front panel screen will be off.

Syntax: TMAP7ARM ON
TMAP7ARM OFF

TONE

This turns the internal tone generator on or off for testing purposes.

Syntax: TONE ON
TONE OFF

TROUBLESHOOTING CHART

The following chart shows basic problems and solutions. For troubleshooting trees go to the following web site. www.amb-os.com/trouble.html

Symptom	Cause	Solution
No power indicator light	No power applied to the unit	<ol style="list-style-type: none"> 1. Verify the AC cable is properly inserted 2. Verify the AC cable is not bad 3. Verify there is AC at the receptacle 4. If the power cable is properly inserted and there is AC, call the support line for technical assistance (1-877-262-6728)
Front Panel Screen is blank	<p>If there is no power indicator, no power is coming to the unit</p> <p>If just the screen is blank, the display could be maladjusted or faulty</p>	<ol style="list-style-type: none"> 1. If there is no power indicator, verify AC power 2. Reset the screen to its default state 3. Contact the Amb-OS support line for technical assistance (1-877-262-6728)
No “Inet” indication	No connection to the uplink server.	<ol style="list-style-type: none"> 1. Verify the IP address setting for the server 2. Verify the server port is set correctly 3. Make sure the receiver is connected to a network with Internet access 4. Contact the Amb-OS support line for technical assistance (1-877-262-6728)
No “Lan” indication	No connection to a local area network (LAN) – normally the “Inet” indicator is also clear	<ol style="list-style-type: none"> 1. Verify the Ethernet cable is plugged into the Ethernet port 2. Verify that the Ethernet cable is not a “cross over” type 3. Verify the IP address settings on the receiver 4. Verify the network settings on the router or switch connected to the receiver 5. Contact the Amb-OS support line for technical assistance (1-877-262-6728)
No files being received	Files are not being sent or there is no connectivity to the Internet	<ol style="list-style-type: none"> 1. Email programs@amb-os.com to verify you are permitted for the programs that have not been received 2. Email support@amb-os.com to verify if the program has been sent 3. If only the “Inet” indicator is clear, verify the Ethernet connections and IP addresses 4. If the “Lan” indicator is clear, check the Ethernet connections, the IP addresses and your local network 5. Contact the Amb-OS support line for technical assistance (1-877-262-6728)
No Audio playback	Files are not on the receiver Audio improperly connected Audio not being monitored	<ol style="list-style-type: none"> 1. If the file is not on the receiver, check the “No files being received” 2. Check the audio connections

	correctly Playlist is incorrect	<ol style="list-style-type: none"> 3. Verify the proper audio port or target is being used 4. Verify the proper audio channel is being monitored on the board 5. Verify the proper audio target is selected in the playlist (see the Amb-OS User Interface Manual or the Playlist Manual available on www.amb-os.com/support.html) 6. Contact the Amb-OS support line for technical assistance (1-877-262-6728)
No file transfer	Files are not on the receiver Files are scheduled too soon for transfer Transfer directory does not exist	<ol style="list-style-type: none"> 1. If the file is not on the receiver, check the “No files being received” 2. Check the log on the Amb-OS User Interface to see when files are received and verify the transfer is after that time (see the Amb-OS User Interface Manual available on www.amb-os.com/support.html) 3. Check the settings window of the Amb-OS User Interface to verify the target directory (see the Amb-OS User Interface Manual available on www.amb-os.com/support.html) 4. Contact the Amb-OS support line for technical assistance (1-877-262-6728)

DEFINITIONS

Daylight Saving Time – The practice of changing the time during the summer by one hour to have more daylight during waking hours. www.nist.gov/physlab/div847/localtime.cfm

DHCP or Dynamic Host Configuration Protocol – A system of assigning IP addresses to computers on a network to avoid conflicts of having more than one computer having the same IP address.

DSL or Digital Subscriber Line – A method of providing high-speed access to the Internet through a telephone line.

DST – See Daylight Saving Time

GMT – See Greenwich Mean Time

Greenwich Mean Time – The time measured at the Greenwich Meridian Line at the Royal Observatory in Greenwich. www.greenwichmeantime.com/what-is-gmt.htm

HTML or HyperText Markup Language – This is the standard language used for web pages. A browser translates the text page to the graphical representation displayed by the computer.

IP Address or Internet Protocol Address – Assigns a unique number to computers on a network. No computers can have the same IP address in a given network.

MP2 – A standard of video compression used in DVB (Digital Video Broadcast), DVD disks and professional audio. This has fewer issues with multiple compression steps and retains its quality, so it works better in professional audio applications. It is MPEG-1 Layer 2.

MP3 – A standard of audio compression designed to improve compression and retain quality audio. It is used primarily for personal audio and is subject to severe recompression anomalies. It is commonly understood as MPEG-1 Layer 3.

MPEG or Motion Picture Engineers Group – This is the body that creates the data standards for audio and video compression. File formats sometimes shorten this to MPG (www.mpeg.org).

MPG – See MPEG

Multicast – An Ethernet stream that can be captured by more than just one computer.

Targets – The port that will output the audio. It is referred to in reference the place the decoded audio is sent or targeted to play. The targets refer directly to the output ports. Target 1 equates to the analog output port 1.

Triggers – Text commands or input closures that cause the receiver to initiate an action. A trigger may cause a program to begin playing or stop a program from playing.