

MANUAL PART NUMBER: 400-0209-001

MT113-100/101

3-IN MIXER 1-OUT, + 15W

STEREO AUDIO POWER AMPLIFIER CARD

FOR MULTI-TASKER.

USER'S GUIDE

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT113-100/101**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT113-100/101** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel, or their authorized representatives must perform all service.
- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **MT113-100/101** in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **MT113-100/101** carefully. Dropping or jarring can damage the card.
- Do not pull the cables that are attached to the **MT113-100/101**.
- Insert the card carefully into the slots of the Multi-Tasker™ without bending any edges.
- When removing a card, pull it halfway through to avoid damage to internal cables. If an expansion card is being removed, please make sure that the Main card to which it is attached is also pulled out simultaneously.

1.3 CLEANING

- Clean only the connector area with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the card. Do not clean or touch any component or PCB.

1.4 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR MT113-100/101 2

MT113-100/101 3 in Mixer, 1 fixed line level output and 30W amplifier Card

The **MT113-100/101** is a Stereo Audio Power Amplifier Card designed for use with the MultiTasker™. When installed in the Basic Enclosure (MT100-100), This card allows connection of up to two line level balanced/unbalanced inputs and 1 microphone. The Card has a built in dual 15W power amplifier. The **MT113-100** has 70 Volt output for Sound reinforcement speakers and **MT113-101** has Stereo Output to drive 8 Ohms speakers direct.

Mixing is of input is selected via easy-to-use ASCII commands from a control system or computer connected to the RS-232 port of the MultiTasker™ Basic Enclosure. The **MT113-100/101** can accept balanced or unbalanced audio inputs and the output can be wired for either balanced or unbalanced audio output.

The **MT113-100** is primarily designed to utilize the 70 Volt speaker system. It has on board Transformer to convert low impedance signal to high voltage, high impedance output signal. This card can supply tot al of 30 Watts of power to the speakers.

The **MT113-101** is primarily designed to utilize the standard 8 Ohms stereo speaker systems. This card can deliver full 15 Watts of power to each speaker.

The **MT113-100/101** has separate power supply that is used to drive output of the power audio amplifier. This power supply has universal power input and can operat from 90 to 240 volts AC.

Through RS-232 control, the **MT113-100/101** can be controlled to adjust signal level of each input in 32 steps. In addition the volume, treble and bass of the output amplifier can be adjusted in 32 steps.

All three inputs to the amplifier are mixing inputs and can be adjusted from 0db to -60db.

TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	MT113-100/101
GENERAL	
Inputs	
Input Connectors	(3) Terminal Blocks
Input 1	Balanced/Unbalanced Microphone Input
Input 2	Line level Balanced/Unbalanced
Input 3	Line Level Balanced/Unbalanced
Outputs	
Fixed Output	Line Level Balanced/Unbalanced
Speaker Output	MT113-100 70V 30Watts
Speaker Output	MT113-101 8 ohms stereo 15 Wattas each speaker output
Compatibility	Stereo or Mono Audio

Table 1. **MT113-100/101** General

MECHANICAL	MT113-100/101
Basic Enclosure Slots Required	Three
Weight	2.0 lb (0.45 kg)
Connector Panel	Black
T° Operating	10°C-50°C
T° Maximum	75°C
Humidity	90% non-condensing
MTBF (calc.)	55,000 hrs

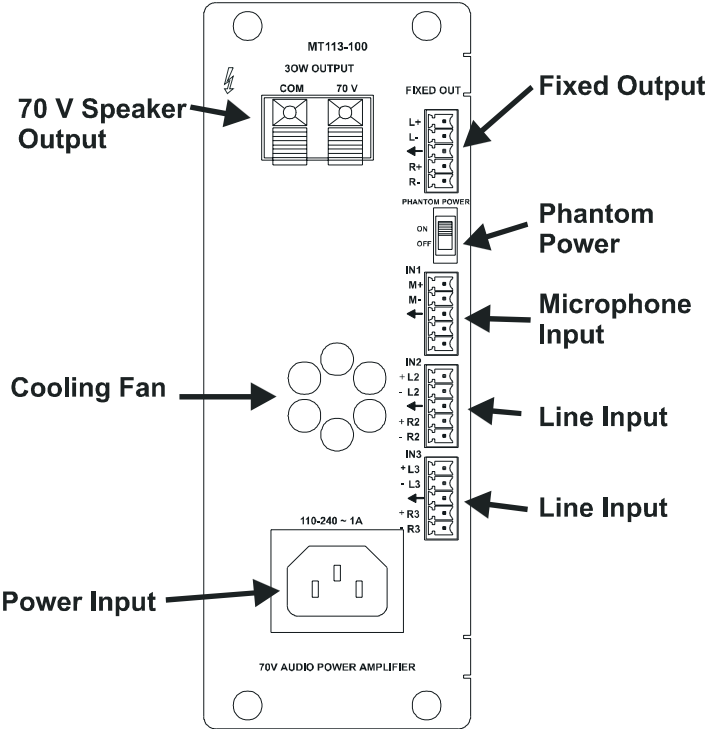
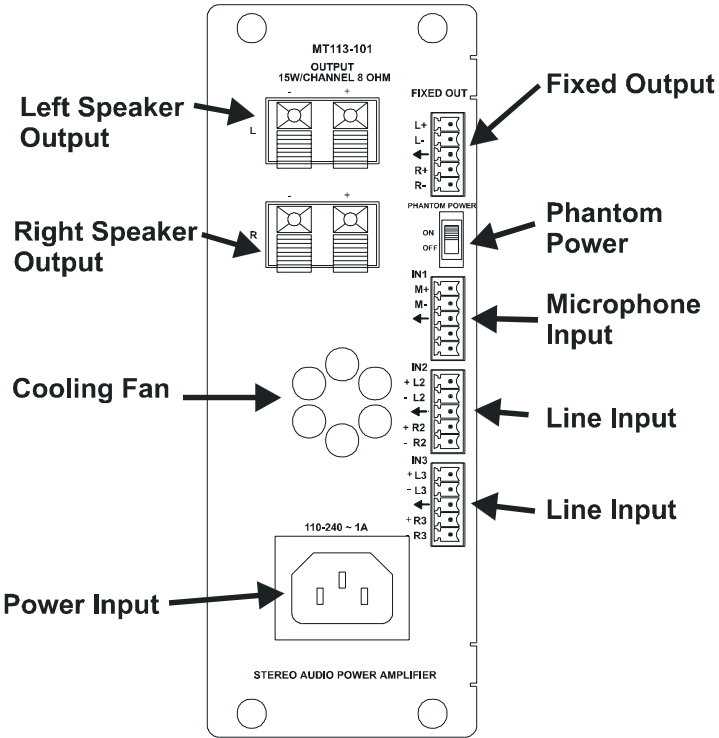
Table 2. **MT113-100/101** Mechanical

ELECTRICAL	MT113-100/101
Input Signals	
Max Line Level Input	0 dBu (.7V p-p) 10k Ohms
Max microphone Input	-20dBu (70mv) 47 Kohm
Power Amplifier	
Output Power	Stereo 15 Watts per channel
	Mono 30 Watts 70V output
Frequency Response	10 Hz to 20 kHz (+/- 0.5 dB)
Noise Floor	-97 dB @ 20 kHz

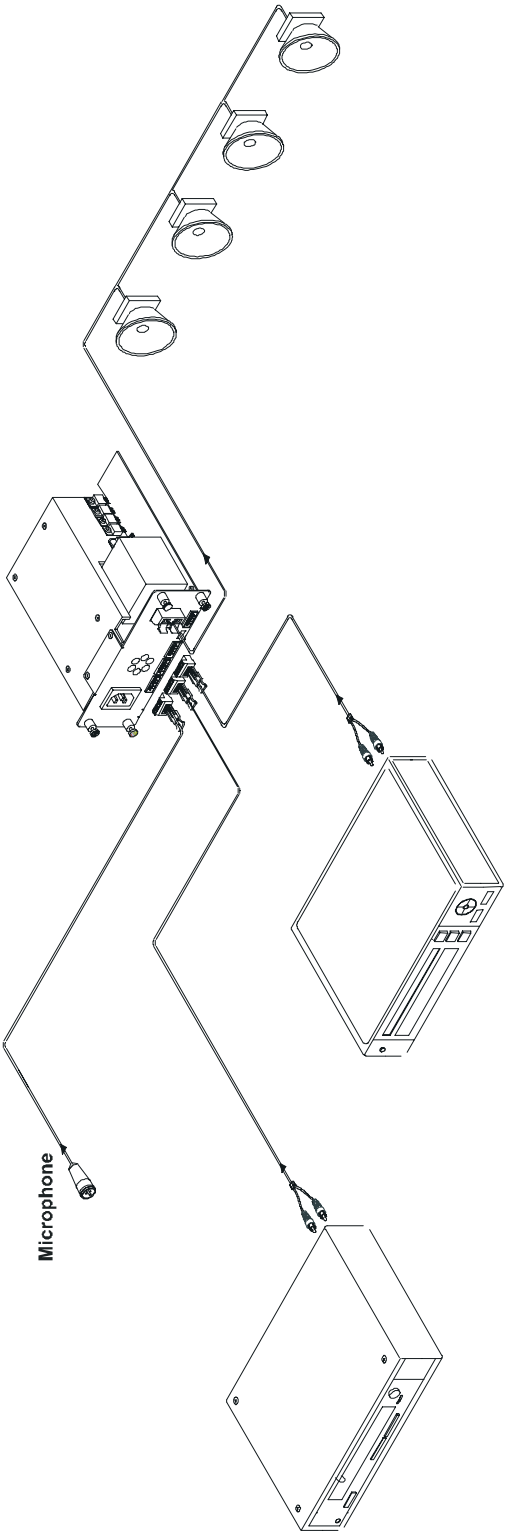
Table 3. **MT113-100/101** Electrical

DESCRIPTION OF MT113-100/101 4

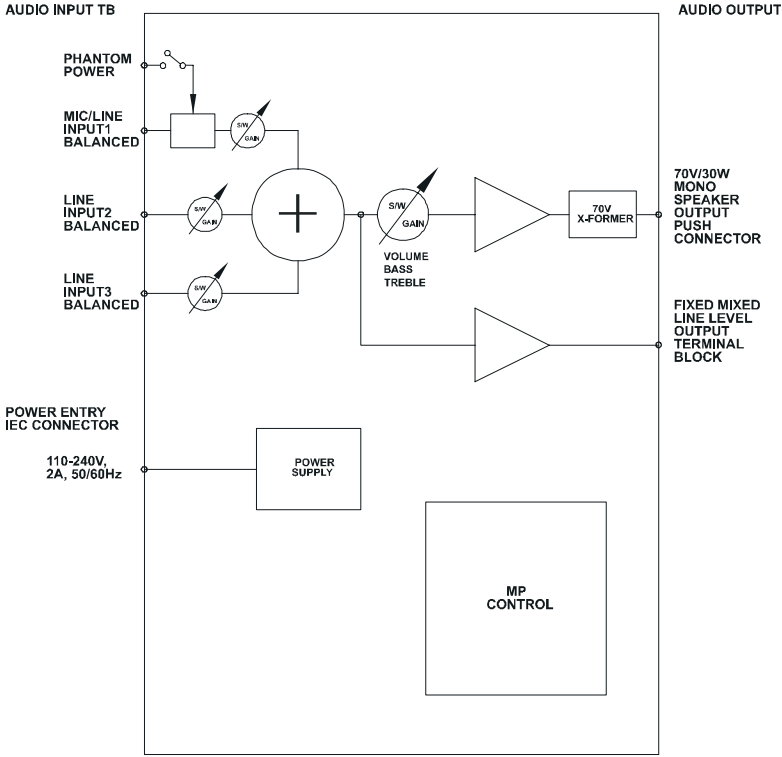
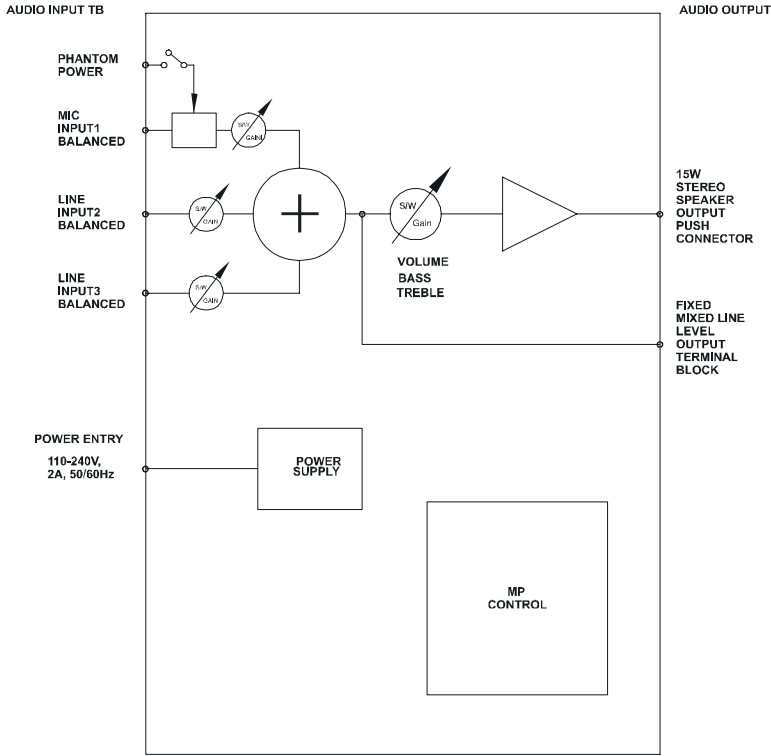
APPLICATION DIAGRAM 5



Application 1



Block Diagrams: Internal View of MT113-100/101



INSTALLING YOUR MT113-100/101 6

- Step 1.** Slide the **MT113-100/101** into an available slot in the Multi-Tasker™ Basic Enclosure in order to connect to the bus. Make sure that the **MT113-100/101** card fits into place. Secure the card to the Multi-Tasker™ by tightening the retainer screws located on the top and bottom of the **MT113-100/101** card.
- Step 2.** The LED on the card panel will turn red indicating that the card is in full operation. A green LED indicates that a signal is present. An LED that is blinking red indicates that the card is experiencing a problem. If the LED is blinking, see Troubleshooting Guide in section 8.
- Step 3.** Connect audio cables from the audio source to the input connector of the **MT113-100/101**. Connect the output connectors of the **MT113-100/101** to the audio equipment through an audio cable.
- Step 4.** Starting from the left, identify the slot number where the **MT113-100/101** card is plugged into the Enclosure and note that it is for RS-232 control.

OPERATION 7

7.1 RS-232 CONTROL

When used in the Multi-Tasker™ Enclosure, the **MT113-100/101** has many advanced remote control capabilities, which are accessible through standard RS-232 communication. The actual controlling can be accomplished through a computer control system or any other device capable of sending RS-232 commands.

7.1.1 RS-232 INTERFACE

The RS-232 commands for the **MT113-100/101** are in a simple ASCII character format.

1. Square brackets “[]” are part of the command.
2. Use uppercase letters for all commands.
3. Commands may be executed with or without a space.

After processing a command, an OK or ER will be returned as feedback if "F" is included at the end of a command string or if the unit ID is zero.

7.2 DESCRIPTION OF COMMANDS

Each command consists of three parts: function, card ID, and unit ID. [Function, Card ID, Unit ID]

Example:

```
[VERC3U2]
VER = Function
C3 = Card ID
U2 = Unit ID
```

For detailed information regarding function, see each command description.

Card ID is an assigned value from 1 to 19, which represents the number of slots. Card ID 0 (C0) is used for the controller (see user's guide for the MT100-100). Changing the position of a card will significantly affect the commands recorded on software definitions or a third party control system.

Unit ID has a value from 0 to 9. Unit ID 0 should be used for single unit operation. If the Unit ID is set to 0, then each command can be used without Ui (use command [SETU0]; see user's guide for the MT100-100).

Example:

```
[VERC3]: for unit ID zero
[VERC3Ui]: for unit ID other than zero
[VERC3]: equivalent to [VERC3U0]
```

1. [VERCnUi]

This command receives the software version and card type for the **MT113-100/101** card.
Cn = card ID number (n = # from 1 to 19)

Ui = Unit ID (i = # from 0 to 9) (*refer to the MT100-100 user's guide for explanation*)

Example:

If one **MT113-100/101** card is in slot #2 of unit 3:

To send command [VERC2U3], the Multi-Tasker™ Enclosure will return:
[Ver A1 MT113-100_101 C02]

2. [CnUi]

This command receives the status of the card.

Command Format: [CnUi]

Cn = card id (n = 1 to 19)

Ui = unit id (i = from 0 to 9) (*refer to the MT100-*

100 user's guide for explanation)

Example:

If one **MT113-100/101** card is in slot #2 of unit 3

with input 1 ON:

To send command [C2U3], the Multi-Tasker™

Enclosure will return feedback as [On1 C02]

or [On1 ER03 C02] if there is an error number 3 (see error code list).

If there is no card in slot #2 of unit 3, sending the [C2U3] command will not return any feedback.

ERROR CODES

ER01: CPU Error

This error indicates that the CPU is not working properly.

ER02: I²C Communication Error

This means that the communication between the **MT113-100/101** card and its serial device has failed.

ER03: RS485 Communication Error

This type of error is a communication error between the **MT113-100/101** card and the controller of the Multi-Tasker™ Enclosure.

3. [ONmCnUi]

This command enables one input of a single card or a group of cards.

• [ONmCnUi]: for a single card

This command enables input “m” and disables all other inputs.

Default when plugged in = ALL OFF

m = Input number (m = 1 to 8)

n = Card ID No. (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

Example:

If all of the inputs on the **MT113-100/101** card are

OFF and the card is in slot #5 of unit 3:

1) [ON1C5U3]: Turns ON only input 1 of the MT113-100/101 card.

2) [ON3C5U3]: Turns ON only input 3

4. [OFFmCnUi]

This command disables one or all inputs of a single card or a group of cards.

[OFFmCnUi]: for a single card

This command disables input “m” or all inputs.

[OFFC5CnUi]: Turns OFF all inputs of the **MT113-100/101** card.

m = Input number (m = 1 to 8)

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

Example:

If card 5 of unit 3 has input 1 ON, the following

commands can be used to turn OFF the input.

1) [OFF1C5U3]: Turns OFF only input 1.

5. [SELMCnUi]

This command sets path to adjust the individual volume level for single card.

Command Format: [SELMCnUi] [-] [-] [-] [-] or [+] [+] [+] [+]

m = Input number (m = 1 to 3)

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

+ = increases volume. (maximum of 15 levels for audio).

- = decreases volume. (maximum of 15 levels for audio).

Example:

If the status of audio card 5 of unit zero is as follows:

VOLIN1:16

VOLIN2:16

VOLIN3:32

VOLOUT:12

BASS:8
 TREBLE:14
 LOUDNESS:ON
 Send commands [SEL2C5] [+] [+] [+] [+] [+].
 After executing that command, send [C5] to get
 the new status of card 5:
 VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:12
 BASS:8
 TREBLE:14
 LOUDNESS:ON

[SELMGkUi]

This command sets path to adjust the individual volume level for a group of cards. Command Format: [SELMGkUi] [-] [-] [-] [-] or [+] [+] [+] [+]

m = Input number (m = 1 to 3)
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for audio).
 - = decreases volume. (maximum of 15 levels for audio).

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [SEL1G5U1] [-] [-] [-] command to decrease the volume for card 1, 2, and 3 simultaneously.

6. [SELMcniUi]

This command sets path to adjust the individual volume level for single card. Command Format: [SELMcniUi] [-] [-] [-] or [+] [+] [+] [+]

m = Input number (m = 1 to 3)
 n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for audio).
 - = decreases volume. (maximum of 15 levels for audio).

Example:

If the status of audio card 5 of unit zero is as follows:

VOLIN1:16
 VOLIN2:16
 VOLIN3:32
 VOLOUT:12
 BASS:8
 TREBLE:14
 LOUDNESS:ON
 Send commands [SEL2C5] [+] [+] [+] [+] [+].
 After executing that command, send [C5] to get
 the new status of card 5:
 VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:12
 BASS:8
 TREBLE:14
 LOUDNESS:ON

• [SELMGkUi]

This command sets path to adjust the individual volume level for a group of cards. Command Format: [SELMGkUi] [-] [-] [-] [-] or [+] [+] [+] [+]

m = Input number (m = 1 to 3)
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for audio).
 - = decreases volume. (maximum of 15 levels for audio).

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [SEL1G5U1] [-] [-] [-] command to decrease the volume for card 1, 2, and 3 simultaneously.

7. SLOCnUi]

This command sets path to adjust the output volume level for single card. Command Format: [SLOCnUi] [-] [-] [-] [-] or [+] [+] [+] [+]

n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for audio).
 - = decreases volume. (maximum of 15 levels for audio).

Example:

If the status of audio card 5 of unit zero is as follows:

VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:12
 BASS:8
 TREBLE:14
 LOUDNESS:ON
 Send commands [SLOC5] [+] [+] [+] [+] [+].
 After executing that command, send [C5] to get the new status of card 5:
 VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:17
 BASS:8
 TREBLE:14
 LOUDNESS:ON

• **[SELMGkUi]**

This command sets path to adjust the individual volume level for a group of cards. Command Format: [SLOGkUi] [-] [-] [-] [-] or [+] [+] [+] [+]
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for audio).
 - = decreases volume. (maximum of 15 levels for audio).

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [SEL1G5U1] [-] [-] [-] command to decrease the volume for card 1, 2, and 3 simultaneously.

8. VLmAyCnUi]

This command sets absolute individual volume level for single card. Command Format: [VLmAyCnUi]
 m = Input number (m = 1 to 3)
 y = Absolute audio level (y = 1 to 32)
 n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)

Example:

If the status of audio card 2 of unit zero is as follows:

VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:17
 BASS:8
 TREBLE:14
 LOUDNESS:ON
 Send commands [VL1A2CnUi], [VL2A12CnUi], [VL3A18CnUi]. After executing the above commands, send [C2] to get the new status of card 2:
 VOLIN1:2
 VOLIN2:12
 VOLIN3:18
 VOLOUT:17
 BASS:8
 TREBLE:14
 LOUDNESS:ON

• **[VLmAyGkUi]**

This command sets absolute individual volume level for a group of cards. Command Format: [VLmAyGkUi]
 m = Input number (m = 1 to 3)
 y = Absolute audio level (y = 1 to 15)
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [VL2A32G5U1] command to set maximum volume for card 1, 2, and 3 simultaneously.

9. [VLOAyCnUi]

This command sets absolute individual volume level for single card. Command Format: [VLOAyCnUi]
 y = Absolute audio level (y = 1 to 32)
 n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)

Example:

If the status of audio card 2 of unit zero is as follows:
 VOLIN1:16
 VOLIN2:21
 VOLIN3:32
 VOLOUT:17
 BASS:8
 TREBLE:14

LOUDNESS:ON

Send commands [VLOA8CnUi]. After executing this command, send [C2] to get the new status of card 2:

VOLIN1:2

VOLIN2:12

VOLIN3:18

VOLOUT:8

BASS:8

TREBLE:14

LOUDNESS:ON

• [VLmAYGkUi]

This command sets absolute individual volume level for a group of cards. Command Format:

[VLOAyGkUi]

y = Absolute audio level (y = 1 to 15)

k = group number (k = # from 1-9)

i = Unit ID number (i = 0 to 9)

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [VLOA32G5U1] command to set maximum volume for card 1, 2, and 3 simultaneously.

10. [SEBCnUi]

This command sets path to adjust the bass level for single card. Command Format: [SEBCnUi] [-] [-] [-] [-] or [+] [+] [+] [+]

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

+ = increases volume. (maximum of 15 levels for bass).

- = decreases volume. (maximum of 15 levels for bass).

Example:

If the status of audio card 5 of unit zero is as follows:

VOLIN1:2

VOLIN2:12

VOLIN3:18

VOLOUT:8

BASS:8

TREBLE:14

LOUDNESS:ON

Send commands [SEBC5] [+] [+] [+] [+] [+].

After executing that command, send [C5] to get the new status of card 5:

VOLIN1:2

VOLIN2:12

VOLIN3:18

VOLOUT:8

BASS:13

TREBLE:14

LOUDNESS:ON

• [SEBGkUi]

This command sets path to adjust the bass level for a group of cards. Command Format:

[SEBGkUi] [-] [-] [-] [-] or [+] [+] [+] [+]

k = group number (k = # from 1-9)

i = Unit ID number (i = 0 to 9)

+ = increases volume. (maximum of 15 levels for bass).

- = decreases volume. (maximum of 15 levels for bass).

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [SEB1G5U1] [-] [-] [-] command to decrease the volume for card 1, 2, and 3 simultaneously.

11. [VBLyCnUi]

This command sets absolute bass level for single card. Command Format: [VBLyCnUi]

y = Absolute bass level (y = 1 to 15)

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

Example:

If the status of audio card 2 of unit zero is as follows:

VOLIN1:2

VOLIN2:12

VOLIN3:18

VOLOUT:8

BASS:8

TREBLE:14

LOUDNESS:ON

After sending a command [VBL2CnUi] on request [C2] we will the new status of card 2:

VOLIN1:2

VOLIN2:12

VOLIN3:18

VOLOUT:8

BASS:2

TREBLE:14

LOUDNESS:ON

• [VBLyGkUi]

This command sets absolute bass level for a group of cards. Command Format: [VBLyGkUi]
 y = Absolute bass level (y = 1 to 15)
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [VBLFG5U1] command to set maximum volume of bass for card 1, 2, and 3 simultaneously.

12. [STBCnUi]

This command sets path to adjust the treble level for single card. Command Format: [STBCnUi] [-] [-] [-] [-] or [+] [+] [+] [+]
 n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for treble).
 - = decreases volume. (maximum of 15 levels for treble).

Example:

If the status of audio card 5 of unit zero is as follows:

```
VOLIN1:2
VOLIN2:12
VOLIN3:18
VOLOUT:8
BASS:8
TREBLE:14
LOUDNESS:ON
```

Send commands [STBC5] [-] [-] [-] [-]. After executing that command, send [C5] to get the new status of card 5: [On123C5]

```
VOLIN1:2
VOLIN2:12
VOLIN3:18
VOLOUT:8
BASS:8
TREBLE:10
LOUDNESS:ON
```

• [STBGkUi]

This command sets path to adjust the bass level for a group of cards. Command Format: [STBGkUi] [-] [-] [-] [-] or [+] [+] [+] [+]
 k = group number (k = # from 1-9)
 i = Unit ID number (i = 0 to 9)
 + = increases volume. (maximum of 15 levels for treble).
 - = decreases volume. (maximum of 15 levels for treble).

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [STB1G5U1] [-] [-] [-] command to decrease the treble volume for card 1, 2, and 3 simultaneously.

13. [VTLyCnUi]

This command sets absolute treble level for single card. Command Format: [VTLyCnUi]
 y = Absolute treble level (y = 1 to 15)
 n = Card ID number (n = slot # from 1 to 19)
 i = Unit ID number (i = 0 to 9)

Example:

If the status of audio card 2 of unit zero is as follows:

```
VOLIN1:2
VOLIN2:12
VOLIN3:18
VOLOUT:8
BASS:8
TREBLE:14
LOUDNESS:ON
```

After sending a command [VTL2CnUi] on request [C2] we will the new status of card 2:

```
VOLIN1:2
VOLIN2:12
VOLIN3:18
VOLOUT:8
BASS:8
TREBLE:2
LOUDNESS:ON
```

• [VTLYGkUi]

This command sets absolute treble level for a group of cards. Command Format: [VTLYGkUi]
 Y = Absolute treble level (Y = 0 to F in hex format)
 k = group number (k = # from 1-9)

i = Unit ID number (i = 0 to 9)

Example:

If card 1, 2, and 3 are grouped as group 5 of unit 1, send the [VTLFG5U1] command to set maximum volume of treble for card 1, 2, and 3 simultaneously.

13. [LOD0CnUi]

This command turns OFF loudness feature for single card.

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

• **[LOD1CnUi]**

This command turns ON loudness feature for group of cards simultaneously.

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

• **[LOD1GkUi]**

This command turns ON loudness feature for single card.

k = group number (k = # from 1-9)

i = Unit ID number (i = 0 to 9)

• **[LOD0GkUi]**

This command turns OFF loudness feature for group of cards simultaneously.

k = group number (k = # from 1-9)

i = Unit ID number (i = 0 to 9)

14. [MUT0CnUi]

This command turns ON speaker output.

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

15. [MUT1CnUi]

This command turns OFF speaker output.

n = Card ID number (n = slot # from 1 to 19)

i = Unit ID number (i = 0 to 9)

16. [SIVmCnUi]

This command saves audio input level. So on the next power up this settings will be activated.

Command Format:

m = Input number (m = 1 to 3)

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To save setting for audio input 1 for card in slot 8 send command [SIV1C8U1].

17. [SOVCnUi]

This command saves audio output level. So on the next power up this settings will be activated.

Command Format:

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To save setting for audio output on card in slot 8 send command [SOVC8U1].

18. [SBVCnUi]

This command saves audio bass level. So on the next power up this settings will be activated.

Command Format:

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To save setting for audio bass level on card in slot 2 send command [SBVC2U1].

19. [STVCnUi]

This command saves audio treble level. So on the next power up this settings will be activated.

Command Format:

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To save setting for audio treble level on card in slot 4 send command [STVC4U1].

20. [SLVCnUi]

This command saves state of loudness function. So on the next power up this settings will be activated.

Command Format:

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To save setting loudness on card in slot 10 send command [SLVC10U1].

21. [WR....GkUi]

This command groups multiple cards in the MT100-100 Enclosure. Each unit contains a maximum of nine groups. Command Format: [WRCn...GkUi]

n = card ID No. (n = slot # from 1 to 19)

k = group number (k = # from 1-9)

i = unit number (i = # from 0-9)

Example:

To group card #1, 2, and 3 as group 5 of unit #1, send the [WRC1C2C3G5U1] command. After executing this command, cards 1, 2, and 3 of unit 1 will be grouped together as group 5.

22. [CLR]

This command clears the members for a single group or for all nine groups. Command Format: [CLRGkUi]

k = group number (k = # from 1-9)

i = unit number (i = # from 0-9)

Example:

- a) To clear group #1, send the [CLR1U1] command. This command clears the members for the specified group only.
- b) To clear all groups of unit 1, send the [CLR G...U1] command.

23. [GkUi]

This command is used to request group data. With the command, the user can identify which input or output of a particular group is on.

Command Format: [GkUi]

k = group number (k = # from 1-9)

i = unit number (i = # from 0-9)

Example:

If group 1 has DA Cards with output 1 and 2 on, while group 2 has SW Cards with input 2 on:

- 1) [G1]: will return feedback as [On12G1].
- 2) [G2]: will return feedback as [On2G2].

24. [RDXX]

This command reads card memory at address **XX**. Command Format: [RDXXCnUi]
XX = data address (XX = # from 60-FF in hex format)

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To read memory at address 0x0A card 2 of unit 1, send the [RD0AC2U1] command. The system will return feedback as RD0A1DC2, if data at address 0x0A is 0x1D.

25. [WRXXYY]

This command writes data YY into card memory at address **XX**. Command Format:

[RDXXYYCnUi]

XX = data address (XX = # from 60-FF in hex format)

YY = data (YY = # from 00-FF in hex format)

n = card ID No. (n = slot # from 1 to 19)

i = unit number (i = # from 0-9)

Example:

To write data 0x2B into memory at address 0x10 card 5 of unit 1, send the [RD102BC5U1] command. The system will return feedback as OK.

26. [WRCn...GkUi]

This command groups multiple cards in the MT100-100 Enclosure. Each unit contains a maximum of nine groups.

n = card ID No. (n = slot # from 1 to 19)

k = group number (k = # from 1-9)

i = unit number (i = # from 0-9)

Example:

To group card #1, 2, and 3 as group 5 of unit #1, send the [WRC1C2C3G5U1] command. After executing this command, cards 1, 2, and 3 of unit 1 will be grouped together as group 5.

27. [CLRGkUi]

This command clears the members for a single group or for all nine groups.

Command Format: [CLRGkUi]

k = group number (k = # from 1-9)

i = unit number (i = # from 0-9)

Example:

- a) To clear group #1, send the [CLRG1U1] command. This command clears the members for the specified group only.
- b) To clear all groups of unit 1, send the [CLR G*U1] command.

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT113-100/101**; however, we would like to offer suggestions for the following:

- 8.1 LED IS NOT LIT
- 8.2 LED IS BLINKING RED
- 8.3 NO SOUND
- 8.4 SOUND DISTORTION
- 8.5 SOUND LEVEL IS LOW

8.1 LED IS NOT LIT

A) Cause 1: Card cage is not plugged in.

Solution: Plug card cage in. If the LED lights, the problem is solved. If the LED is still not lit, see Cause 2.

B) Cause 2: Card is not plugged in all the way.

Solution: Push the card in all the way. If the LED is still not lit, see Cause 3.

C) Cause 3: Card cage slot has a problem.

Solution 1: Test the card in other slots of the card cage. If the slot was damaged, the card may work in other slots. If other slots work and the LED lights, the problem is the card cage slot. The card cage may require service. Call ALTINEX at (714) 990-2300. If the other slots do not work and the LED is still not lit, see Solution 2.

Solution 2: Take any other known good card with an LED and verify that

the slot used is good by seeing if the other card's LED lights in that slot. If it lights, then the original card may be the source of the problem. Call ALTINEX at (714) 990-2300.

8.2 LED IS BLINKING RED

If the LED on the card is blinking red, find the error code. For example, if you are using card 5 of unit 1, send the [C5U1] command to see the status and error code. Note that card 5 refers to slot 5.

A) Cause 1: The CPU on the card is not working properly.

- If the CPU is not working, you will receive an ER01 message. The system will return feedback as [On1 ER01 C05] when using card 5 of unit 1.
- ER01 Code: CPU error

Solution 1: Look at the card and verify that there is no damage. If there is no damage, see Solution 2.

Solution 2: Verify that all IC's are seated in their sockets. If the LED is still blinking red, see Solution 3.

Solution 3: Call ALTINEX at (714) 990-2300.

B) Cause 2: The MT113-100/101 card and its serial device are not communicating.

- If there is no communication between the **MT113-100/101** card and its serial device, you will receive an ER02 message. The system will return feedback as [On1 ER02 C05] when using card 5 of unit 1.
- ER02 Code: Communication error between the **MT113-100/101** card and its serial device.

Solution 1: Turn the system OFF and then ON again. If there is still an error message, see Solution 3.

Solution 2: Call ALTINEX at (714) 990-2300.

C) Cause 3: RS485 communication error

- If there is an RS485 communication error, you will receive an ER03 message. The system will return feedback as [On1 ER03 C05] when using card 5 of unit 1.
- ER03 Code: RS485 communication error

Solution 1: Make sure that the card is pushed all the way into the slot. If there is still an ER03 message, see Solution 2.

Solution 2: Turn the system OFF and then ON again. If there is still an error message, see Solution 3.

Solution 3: If there is still a problem, call ALTINEX at (714) 990-2300.

8.3 NO SOUND

A) Cause 1: The source has a problem.

Solution: Check the source and make sure that it is working at an appropriate volume level and all source connections are correct. If the source is working and there is still no sound, see Cause 2.

B) Cause 2: The proper card input may not be selected.

Solution: Select the card input that is used, by RS-232 accessible commands in section 7. If no sound is present, see Cause 3.

C) Cause 3: Cable connections to the destination are incorrect.

Solution: Make sure that cables are connected properly. Also, make sure that the continuity and

wiring are good. If there is still no sound present, see Cause 4.

D) Cause 4: The destination amplifier has a problem.

Solution 1: Make sure that the destination amplifier is powered. If there is still no sound, see Solution 2

Solution 2: Set the volume of the destination amplifier to a reasonable level. If there is still no sound, call ALTINEX at (714) 990-2300.

8.4 SOUND DISTORTION

A) Cause 1: The source level is above 1V p-p.

Solution 1: Make sure that the source level is below 1V p-p. If the sound is still distorted, see Cause 2.

Solution 2: Call ALTINEX at (714) 990-2300.

8.5 SOUND LEVEL IS LOW

A) Cause 1: The volume levels are inappropriate.

Solution 1: Turn up the source volume. If sound level is still low, see Solution 2.

Solution 2: Turn up the destination amplifier volume. If the sound level is still low, see Cause 2.

B) Cause 2: Poor signal transmission.

Solution: Check the cables for continuity and make sure that connections are wired properly to verify that there is good signal transmission.

Note: Test the system by removing the card from between the source and the destination amplifier. If problem persists, call ALTINEX at (714) 990-2300.

ALTINEX POLICY

9

9.1 LIMITED WARRANTY

ALTINEX warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges pre-paid within 2 years (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. ALTINEX neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence or accident.

9.2 RETURN POLICY

It is very important to ALTINEX that you receive the products that you have ordered and that this product fulfills your need. In the unlikely event, that an ALTINEX product needs to be returned please follow the policies below:

ALTINEX will accept product returns for a period of 30 days from authorized ALTINEX dealers. Products must be returned in an unopened package.

If a product has been opened, the restocking fees will apply. For the restocking fee amount, please contact an ALTINEX Sales Representative.

If the product is in your possession for more than 30 days, the restocking fees will apply.

ALTINEX will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the ALTINEX Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the ALTINEX Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the actual repairs are done.

9.3 CONTACT INFORMATION

ALTINEX, INC.

592 Apollo Street
Brea, CA 92821 USA

TEL: 714-990-2300

TOLL FREE: 1-800-ALTINEX

WEB: www.altinex.com

E-MAIL: solutions@altinex.com

FAX: 714-990-3303