MultiTasker®

MANUAL PART NUMBER: 400-0186-003

MT103-117

1-IN, 6-OUT
S-VIDEO DISTRIBUTION AMPLIFIER
USER'S GUIDE

ALTINEX®

SIGNAL MANAGEMENT SOLUTIONS®

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT103-117**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT103-117** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel or their authorized representatives must perform all service.

1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the **MT103-117** 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 **MT103-117** carefully. Dropping or jarring can damage the card.
- Do not pull any cables that are attached to the **MT103-117**.
- Insert the card carefully into the slots of the MultiTasker without bending any edges.

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 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 instructions found herein, 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.

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ABOUT YOUR MT103-117 2

MT103-117
1-In, 6-Out S-Video Distribution Amp

The **MT103-117** S-Video Distribution Amplifier (DA) enables the connection of one S-Video device to several S-Video displays or recording devices. This DA is compatible with NTSC, PAL, or SECAM video signals and can handle video signals with levels up to 1.5 Vp-p.

The **MT103-117** has one S-Video input and six S-Video outputs and employs signal detection circuitry. The Power LED is red with power applied and green when an input signal is present.

TECHNICAL SPECIFICATIONS 3

Specifications are subject to change.
See www.altinex.com for up-to-date information.

FEATURES/ DESCRIPTION	MT103-117
Inputs	
Connectors	(1) 4-pin Mini DIN
Outputs	
Connectors	(6) 4-pin Mini DIN
Compatibility	NTSC, PAL, and SECAM
Power	MultiTasker

Table 1. **MT103-117** General

MECHANICAL	MT103-117
Enclosure Slots	One
Weight	0.43lb (0.19kg)
Shipping Weight	1 lb. (0.42kg)
Connector Panel	Black
T° Operating	10°C to 40°C
T° Maximum	0 to 50°C
Humidity	90% non-condensing
MTBF (calc.)	55,000 hrs

Table 2. **MT103-117** Mechanical

ELECTRICAL	MT103-117
Input Signals	
Analog	1.5 Vp-p max.
Impedance	75Ω
Output Signals	
Gain	0 dB +/-0.5 dB
Impedance	75Ω
Power (from enclosure)	
+6V	225 mA (1.4 W)
-6V	225 mA (1.4 W)

Table 3. **MT103-117** Electrical

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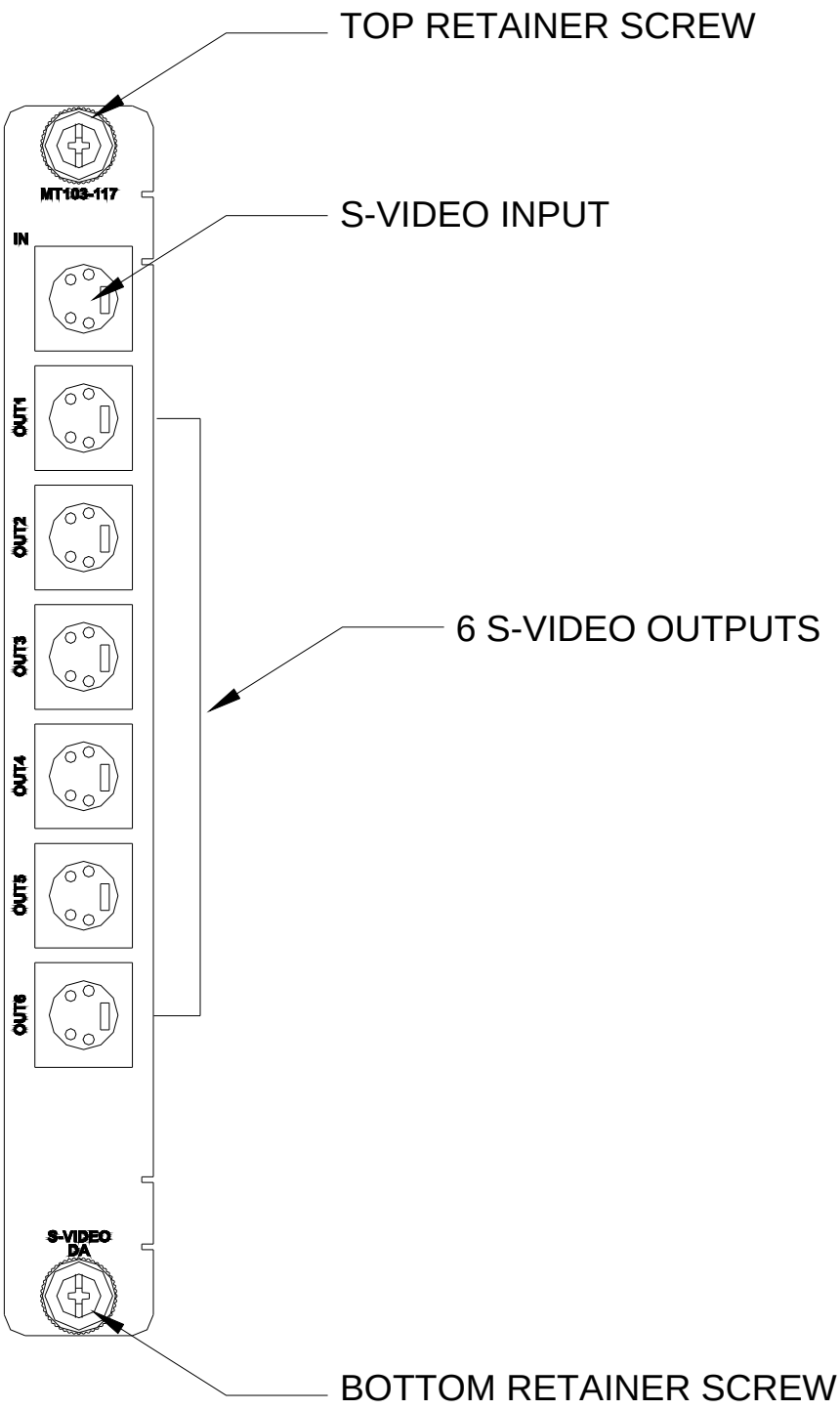
PRODUCT DESCRIPTION 4



APPLICATION DIAGRAMS 5

DIAGRAM 1: TYPICAL SETUP

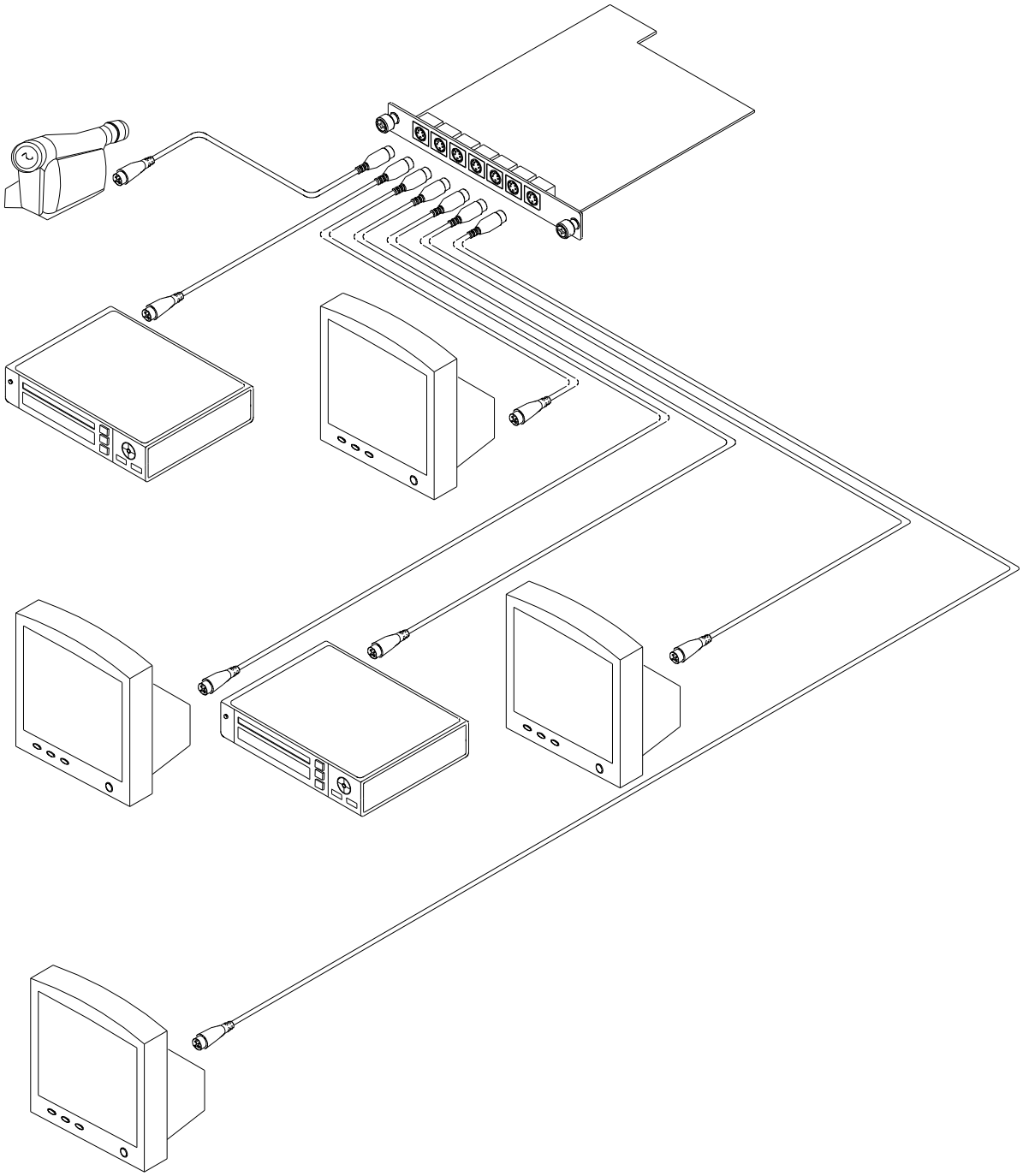
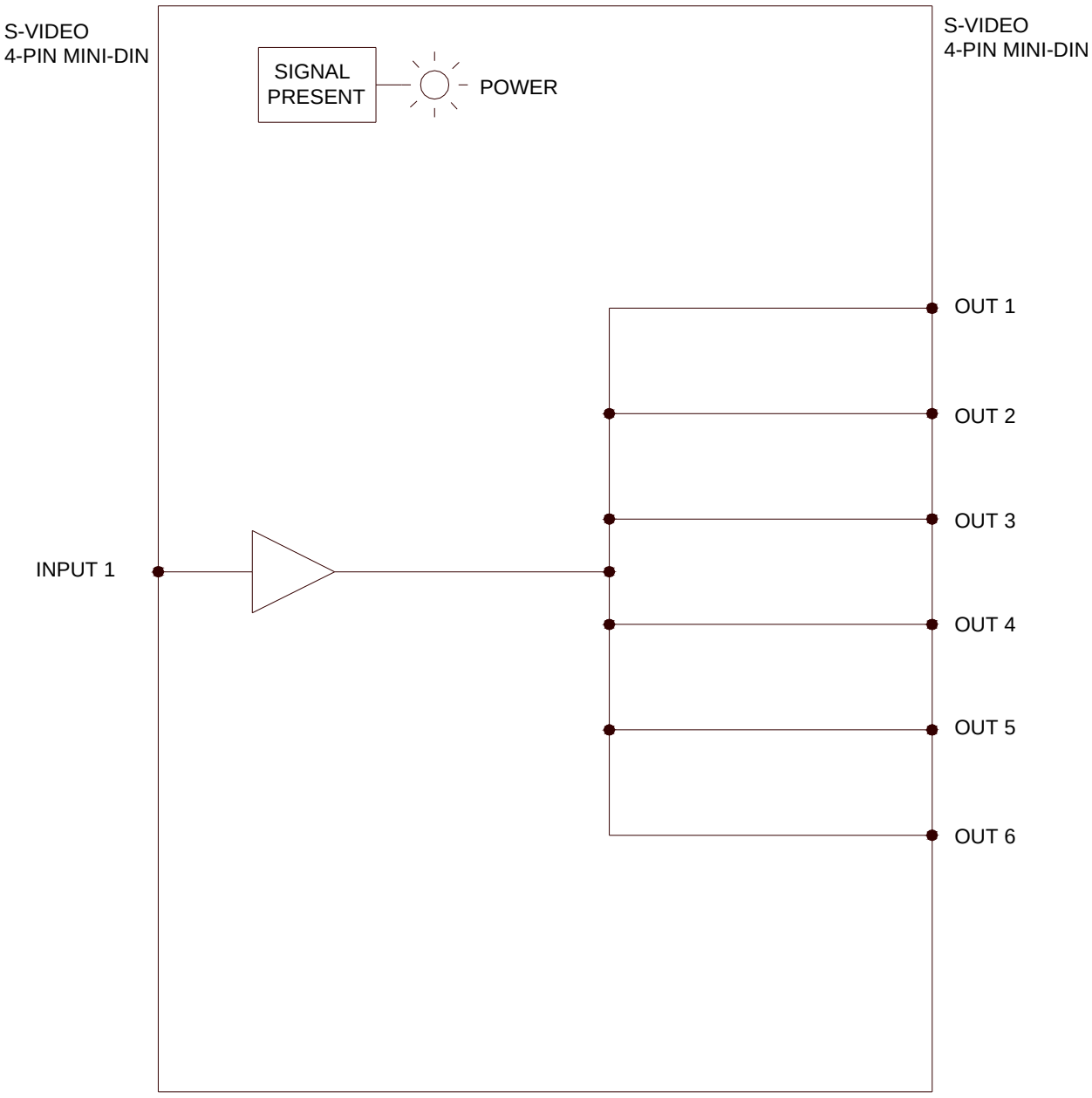


DIAGRAM 2: INTERNAL VIEW



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INSTALLING YOUR MT103-117 6

Step 1. Turn off power to the MultiTasker system and disconnect from AC power.

Step 2. Remove a slot cover (MT200-101) from one of the unused slots. Identify the slot number and note that it is for RS-232 control.

Step 3. Slide the **MT103-117** into an available slot in the MultiTasker enclosure in order to connect to the bus. Make sure that the card fits into place. Secure the card to the MultiTasker by tightening the retainer screws located on the top and bottom of the card.

Step 4. Restore power to the MultiTasker system.

Step 5. If the power is ON, the LED on the card panel will turn red indicating that the card is in full operation. A green LED indicates that an input signal is present. An LED that is blinking red indicates that the card is experiencing a problem.

NOTE: The LED is visible through the front card face-plate, between the IN and OUT1 connectors.

Step 6. Connect an S-Video cable from the video source to the input connector of the card.

Step 7. Connect the output connectors to the display devices using S-Video cables.

Step 8. The MT103-117 is now operational.

OPERATION 7

7.1 RS-232 CONTROL

The **MT103-117** has several remote-control capabilities accessible through standard RS-232 communication. Control may be accomplished through a computer, control system, or any device capable of RS-232 communication.

7.1.1 RS-232 INTERFACE

The control commands for the **MT103-117** are in a simple ASCII character format.

1. **Square brackets "[ ]" are part of the command.**
2. **Use uppercase letters for all commands.**
3. **Spaces are not legal characters.**

The cards in a MultiTasker are capable of performing various functions, as well as providing feedback to the user or control system. Commands instruct a card to perform specific actions or request information from the card. Some commands do both simultaneously.

A command that instructs the card only to perform an action will generate feedback of "[ ]". The open bracket immediately followed by a closed bracket indicates the card received a valid command. If the command requested information from the card, the feedback generated by the card is the acknowledgement of having received a valid command. Invalid commands generate feedback that includes "ERR" plus an error code.

Example: [ERR001]

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 or Group ID

U2 = Unit ID (optional for Unit ID 0)

For Function, see a detailed explanation under each command description.

The card ID is a unique identifier. It is equal to the enclosure slot number, or it may be an assigned value. As the slot number, the value can range from 1-4 up to 1-20 depending on the enclosure. If the value is assigned, the ID may be a maximum of 99. Card ID 0 (C0) is used for the controller and cannot be reassigned.

The group ID is a number representing a group of cards defined with the [WR] command. When using the group ID, all cards in the group will perform the given instruction.

NOTE: In this guide, cards are referenced by their IDs (C1, C2...C99). Typically, the ID number will be equivalent to the slot number. Groups will be referenced by their IDs (G1-G8).

Changing the position of a card will significantly affect the commands recorded on software definitions or third-party control systems.

The unit ID has a range from U0 to U20. U0 should be used for single unit operation. If the ID is set to U0, each command may be used without Ui. Use the command [SETU0], as explained in the MT101-101 User's Guide.

Example:

[VERC3]: For U0

[VERC3Ui]: For ID other than U0

[VERC3]: Equivalent to [VERC3U0]

COMMANDS

The COMMAND SUMMARY (Section 7.3) gives one-line descriptions of each command. Commands in this section are in 4 groups:

Basic Commands

Feedback Control

Card IDs

Groups

BASIC COMMANDS

The basic commands are used to provide general information about the card and are most useful during set up of the card and system.

1. **[VER]**

   This command displays the software version and card type for the **MT103-117** card.

   Command Format: [VERCn]

   Cn = Card ID (n = slot # from 1 to max slots)

   Example:

   An **MT103-117** card is in slot 4. Send the command [VERC4], and the system will return feedback similar to the following:

   [MT103-117 690-0125-013]

   MT103-117 = the card model

   690-0125-013 = the software version

2. **[C]**

   This command receives the status of the card.

   Command Format: [Cn]

   Cn = Card ID (n = # from 1 to max slots)

   Example:

   Send [C4] to the **MT103-117** in slot 4 and receive the status. In the case of the **MT103-117**, the outputs are always on.

   ON: 1,2,3,4,5,6 C04 P=7,8

   If there is no card in slot #4, sending the [C4] command will not return any feedback.

3. **[HELP]**

   This command displays information available for the MultiTasker interface commands.

   Command Format: [HELPCn]

   Cn = Card ID (n = # from 1 to max slots)

   Example:

   Send [HELPC4] to display the RS-232 commands for the **MT103-117** in slot 4. The commands with a brief description will display.

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FEEDBACK COMMANDS

The next few commands are a function of both the card and the front panel and provide information about the card and its status.

4. **[FBD]**

   This command turns feedback delay on or off. It is necessary when installing some newer cards in older systems. If the system does not receive all of the feedback from the card, the card may be communicating too fast. This command will slow down the card's communication rate.

   Command Format: [FBDm]

   m = Delay (0= no delay, 1= delay 100mS)

   Example:

   The command [HELPC4] is sent to the card in slot 4. Some of the HELP file is displayed on the screen, but most is missing. Send the command [FBD1] to slow down the rate at which the card sends feedback to the system.

5. **[?]**

   This command displays general information about a MultiTasker and its installed cards.

   Command Format: [?Ui]

   Ui = Unit ID (i = from 0 to 20)

   Example:

   A MultiTasker with unit ID 1 has a front panel with part number MT101-101 and contains an MT103-122, MT103-123, and MT103-117. Send the command [?U1] and receive the following feedback:

   [(MT101-101U1)(MT103-122C01)
   (MT103-123C02)(MT103-117C04)]

   MT101-101U1 = Panel model/unit ID
   MT103-122C01 = MT103-122 is in slot 1
   MT103-123C02 = MT103-123 is in slot 2
   MT103-117C03 = MT103-117 is in slot 4

6. **[?C]**

   This command displays general information about a card and its status.

   Command Format: [?Cn]

   Cn = Card ID (n = # from 1 to max slots)

   Example:

   Send the command [?C4] and receive feedback similar to the following for an **MT103-117** in slot 4.

   [(MT103-117C04)(VR690-0125-013C04)
   (ON111111C04)]

   All status feedback is enclosed in brackets, "[ ]". Each data field within the status is enclosed in parentheses. The first two characters identify the status type. The last three characters are the card's ID.

   MT103-117 = Card model number

   VR690-0125-013 = Firmware version

   ON111111 = Output ON/OFF status

   The ON/OFF status line is read from left to right as Outputs 1-6. A "1" indicates the output is on and a "0" indicates the output is off. In the case of the **MT103-117**, the outputs are always on.

7. **[STA1]**

   This command enables automatic feedback from the front panel. The command affects any card with auto-feedback capability, not just the **MT103-107**. The default at power on or reset is STA0, off. For more details, see the [?Cn] command definition.

   Command Format: [STA1]

8. **[STA0]**

   This command disables automatic feedback from the card and front panel. The command affects any card with auto-feedback capability, not just the **MT103-117** card. The default at power on or reset is STA0, OFF.

   Command Format: [STA0]

ID COMMANDS

The default card ID is the same as the card slot number. The next several commands allow the user to change the card ID to a value other than the slot number. Once the ID is changed, moving the card to another slot will not change the card ID. If a card in slot 4 is set to ID 1, then moved to slot 10, its ID will remain 1. The [RSI] command forces each installed card to take its slot number as its ID number, regardless of the slot in which it is installed.

Some cards require more than one slot in the MultiTasker system. As an example, some matrix switcher cards require 4 slots. If 5 of these cards are installed, they would be numbered C4, C8, C12, C16, and C20. Changing the ID allows the user to define the cards as C1, C2, C3, C4, and C5.

Another use for changing the card ID is to be able to use multiple systems without having to set each unit to a different unit ID. All systems may be left as unit ID 0 for ease of programming. The cards in the first unit may be numbered 1-10 and in the second unit 11-20.

9. **[RSI]**

   This command resets the card IDs in the system. After sending this command, each card ID in the system will match the slot number of the card. If the card is moved to another slot, its ID number will be the new slot number.

   Command Format: [RSI]

   Example:

   Send the command [RSI] to the system with Unit ID 0. The card in slot 1 will have ID 1, the card in slot 2 will have ID 2, and so on. If the card in slot 1 is then moved to slot 4, the card ID will then be 4.

10. **[SIDn]**

    This command sets all the cards installed in the MultiTasker system to the same card ID. After sending this command, all cards will be addressed with the same ID. Use caution when sending this command to a system with multiple board types.

    Command Format: [SIDn]

    n = Card ID (n = # from 1 to 99)

    Example:

    Send the command [SID1] to the system. All the cards in the system now have ID 1. Any commands that are sent to card ID 1 will be received and executed by each card.

11. **[SIDnCi]**

    This command sets the card ID of a single card to a number from 1 to 99.

    Command Format: [SIDnCi]

    n = Card ID (n = # from 1 to 99)
    Ci = Slot Number (i = # from 1 to max slots)

    Example:

    Send the command [SID50C10] to set the ID of the card in slot 10 to an ID of 50.

12. **[SID+]**

    This command sets the card ID of all the cards in a system to their slot number plus the offset value.

    Command Format: [SID+n]

    n = Offset amount (n = # from 0 to 99) The maximum card ID is 99, so subtract the highest slot number from 99 to find the maximum offset. For example, in an 8-slot enclosure, the maximum offset would be 91. The slot number (8) plus the offset (91) equals 99.

Example:

There are two 20-slot enclosures to be connected together during normal operation. The first unit will use the default IDs where the card ID is equal to the slot number. The second unit will have the same unit ID, but each card ID will be offset by 20.

Connect the computer to the second unit only and send the command [SID+20] to set the ID of all the cards in the second enclosure to their slot number plus 20. Reconnect both units to the computer.

The cards in the first unit will be referenced as card IDs 1-20 and the cards in the second unit will be referenced by card IDs 21-40.

13. **[RSN]**

This command displays the slot number of a card with a specified ID number. If more than one card has the same ID, each slot number will be displayed.

Command Format: [RSNCi]

Ci = Card ID (i = # from 1 to 99)

Example:

The card in slot 4 takes up four slots in the enclosure. Its ID was set to 1 since it is the first card installed in the system, reading from left to right. Send the command [RSNC1] to find the slot number of this card. The system responds with the following feedback:

[4]

GROUP COMMANDS

Group commands allow several cards with the same functions to be controlled simultaneously with a single command. Up to 8 groups (G1-G8) may be defined. Although they are not designed for the **MT103-117**, they are provided here for use with other cards.

14. **[WR]**

This command adds cards to a group. In MultiTasker systems with audio and video cards, the groups are typically as follows:

Group 1 = Video Cards

Group 2 = Audio Cards

Group 3 = Video and Audio Cards

Command Format: [WRCn_1Cn_2…Gk]

Cn = Card ID (n = slot # from 1 to max slots)

Gk = Group ID (k = # from 1-8)

Example:

Add C2, C4, and C6 to G5 by sending the command [WRC2C4C6G5]. After executing this command, G5 will consist of C2, C4, and C6.

Now add C8 to G5 by sending [WRC8G5]. C8 is added to G5, and G5 is not overwritten. View the contents of G5 by sending [RDG5] and receiving the following feedback:

[G5=C2C4C6C8]

15. **[RMC]**

This command removes one or more cards from a group.

Command Format: [RMCn_1Cn_2…Gk]

Cn = Card ID (n= # from 1 to max slots)

Gk = Group ID (k = # from 1-8)

Example:

G5 consists of C2, C4, C6, and C8. Remove C6 and C8 by sending [RMC6C8G5]. View the contents of G5 by sending [RDG5] and receiving the following feedback:

[G5=C2C4]

16. **[RMG]**

This command deletes one or all groups.

Command Format: [RMGk]

Gk = Group ID (k = # from 1-8, * for all)

Example:

Remove all cards from G52 by sending [RMG5]. The system will return the following feedback:

[G5=0]

Example 2:

Remove all cards from all groups, effectively deleting all groups, by sending [RMG*]. The system will return the following feedback:

G1-G8: EMPTY

17. **[RD]**

This command reads and then displays the members in a group.

Command Format: [RDGk]

Gk = Group ID (k = # from 1-8)

Example:

C2, C4, and C6 make up G5. Read the member data for G5 by sending the command [RDG5]. The system will return feedback as follows:

[G5=C2C4C6]

The feedback shows G5 and then the cards that make up G5. In this case, G5 includes C2, C4, and C6.

7.3. SUMMARY OF COMMANDS

Basic Commands

1)	**[VER]**	**Display firmware version**
2)	**[C]**	**Display card status**
3)	**[HELP]**	**Display available commands**

Feedback Commands

4)	**[FBD]**	**Feedback delay on/off**
5)	**[?]**	**Display system cards**
6)	**[?C]**	**Display card information**
7)	**[STA1]**	**Auto-feedback on**
8)	**[STA0]**	**Auto-feedback off**

ID Commands

9)	**[RSI]**	**Reset card IDs to defaults**
10)	**[SIDn]**	**Set all card IDs**
11)	**[SIDnCi]**	**Set one card ID**
12)	**[SID+]**	**Set all card IDs to an offset**
13)	**[RSN]**	**Display card slot number**

Group Commands

14)	**[WR]**	**Add card(s) to a group**
15)	**[RMC]**	**Remove card(s) from group**
16)	**[RMG]**	**Delete group**
17)	**[RD]**	**Display group members**

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT103-117**. However, we would like to offer suggestions for the following:

8.1 LED IS NOT LIT

Cause 1: Card cage is not plugged in.

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

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

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

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 works, the problem is the card cage slot. The card cage may require service. Please call ALTINEX at (714) 990-2300. If the other slots do not work and the LED is still not on, 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 works in that slot. If it does, then the original card may be the source of the problem. Call ALTINEX at (714) 990-2300.

8.2 LED IS BLINKING RED

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

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 ICs are seated in their sockets. If the LED is still blinking red, see Cause 2.

Cause 2: The card and its serial device are not communicating.

Solution 1: Turn the system off and then on again. If there is still an error, call ALTINEX at (714) 990-2300.

8.3 NO DISPLAY

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no display, see Cause 2.

Cause 2: Cable connections are incorrect.

Solution: Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no display present, see Cause 3.

Cause 3: The display has a problem.

Solution: Make sure that the display is powered and is turned on. If there is still no display, call ALTINEX at (714) 990-2300.

ALTINEX POLICIES 9

9.1 LIMITED WARRANTY/RETURN POLICIES

Please see the ALTINEX website at www.altinex.com for details on warranty and return policies.

9.2 CONTACT INFORMATION

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