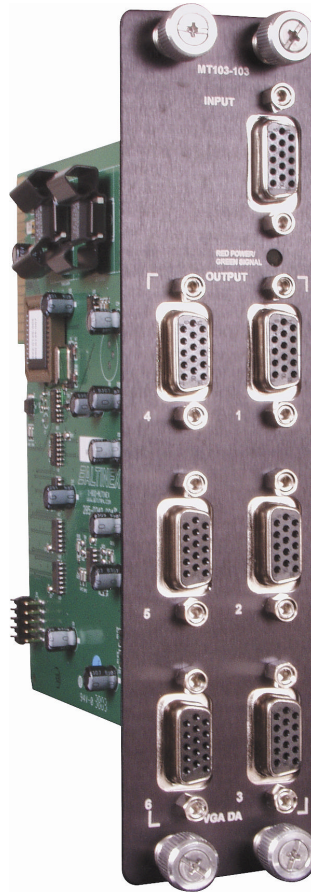


**Mult  
Tasker®**



MANUAL PART NUMBER: 400-0089-005

## MT103-103 & MT103-108

# 1-IN, 6-OUT VGA DISTRIBUTION AMPLIFIER CARD USER'S GUIDE

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT103-103/108** and keep it handy for future reference. These safety instructions are to ensure the long life of your **MT103-103/108** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

### 1.1 GENERAL

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

### 1.2 HANDLING

- Handle the **MT103-103/108** carefully. Dropping or jarring can damage the card.
- The **MT103-103/108** contains components that are sensitive to electrostatic discharge (ESD). Always use ESD safety precautions when touching the card.
- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the **MT103-103/108** in direct sunlight, near heaters, or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Do not pull any cables that are attached to the **MT103-103/108**.

### 1.4 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.

### 1.5 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 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.

## ABOUT YOUR MT103-103/108 2

### MT103-103/108 1-In, 6-Out VGA Distribution Amplifier

These 1-In 6-Out VGA DA cards enable a single computer video source to connect to six or more monitors or projectors. The **MT103-103** and **MT103-108** both support resolutions from VGA through UXGA, and the **MT103-103** also supports resolutions through QXGA. Each output is buffered, and does not require a termination if unused.

Female 15-pin HD (VGA-type) connectors are provided for each input and output. If used with 15-pin HD to 5 BNC adapter cables available from ALTINEX, the 1-In, 6-Out DA cards can also pass RGBHV format computer video signals.

For maximum power and flexibility, the **MT103-103** offers extended performance through QXGA resolution and the ability to turn each output on or off through RS-232 control. On-off control is augmented by screen blanking which eliminates annoying signal-loss messages by maintaining the sync signal on all attached projectors and monitors. This card can be connected to one of the VGA DA Expansion cards that offer 6 additional VGA output connectors to expand the number of outputs. *For more information on expansion cards, see the MT103-104 and MT103-109 product descriptions.*

The **MT103-108** offers solid performance through UXGA resolutions, the standard features of Plug & Play compatibility, and a power LED for the most economical configurations.

## TECHNICAL SPECIFICATIONS 3

Specifications are subject to change. See [www.altinex.com](http://www.altinex.com) for up-to-date information.

FEATURES/DESCRIPTION	MT103-103/108
<b>GENERAL</b>	
<b>Inputs</b>	1
Input Connector	15-pin HD female
<b>Outputs</b>	6
Output Connectors	15-pin HD female
<b>Compatibility</b>	
Signal Types	VGA / MAC / SUN / SGI / UXGA RGBHV, RGBS with adapter cables
Resolutions MT103-103	VGA through QXGA
Resolutions MT103-108	VGA through UXGA

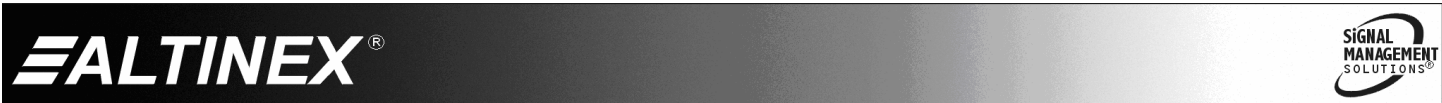
Table 1. **MT103-103/108** General

MECHANICAL	MT103-103/108
Enclosure Slots Required	Two
Weight	1.0 lb (0.45 kg)
Connector Panel	Black
T° Operating	10°C-40°C
T° Maximum	0 to 50°C
Humidity	90% non-condensing
MTBF (calc.)	40,000 hrs

Table 2. **MT103-103/108** Mechanical

<b>ELECTRICAL</b>	<b>MT103-103/108</b>
<b>Input Video Signals</b>	
Analog	1.7 Vp-p max.
Impedance	75 ohms
<b>Input Sync Signal</b>	
Horizontal, Vertical	TTL (+/-)
Impedance	10 kohms
<b>Output Video Signals</b>	
Analog	1.7 Vp-p max.
Impedance	75 ohms
<b>Output Sync Signals</b>	
Horizontal, Vertical	TTL (+/-)
<b>Power</b>	
MT103-103	
+6V	520 mA (3.1 W)
-6V	250 mA (1.5 W)
Total Power	4.6 W
MT103-108	
+6V	250 Ma (1.5 W)
-6V	150 mA (0.9 W)
Total Power	2.4 W

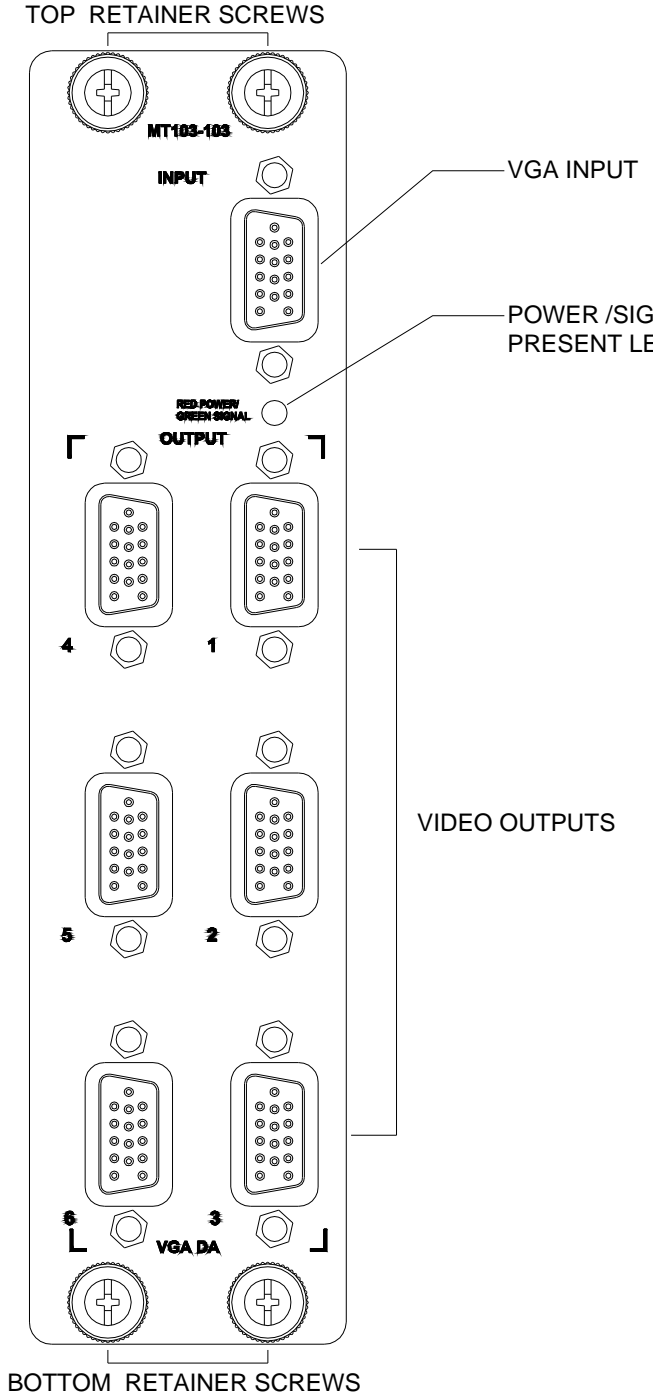
Table 3. **MT103-103/108** Electrical



## PRODUCT DESCRIPTION

4

The MT103-103 and MT103-108 share the same panel features.

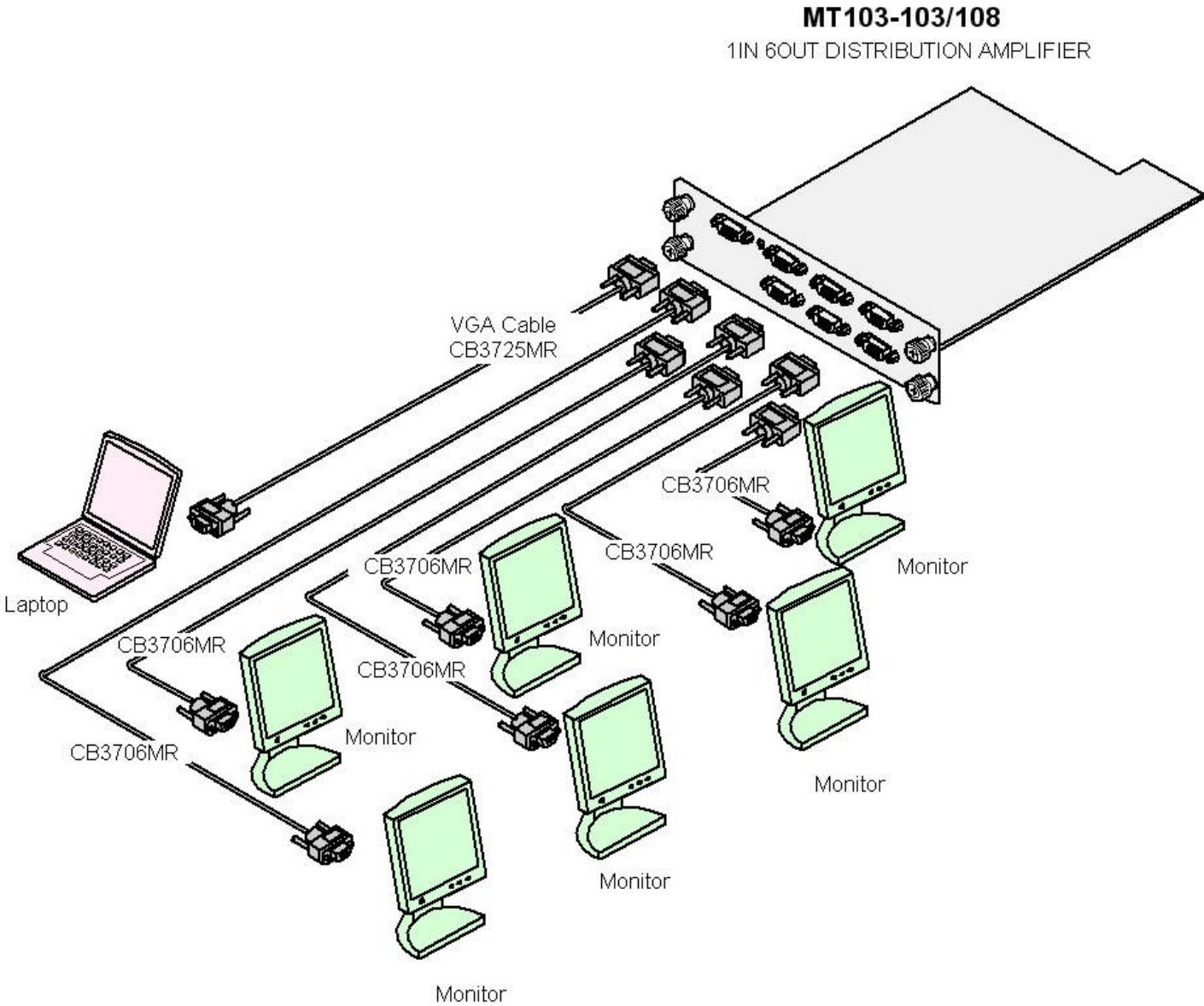


**APPLICATION DIAGRAMS**

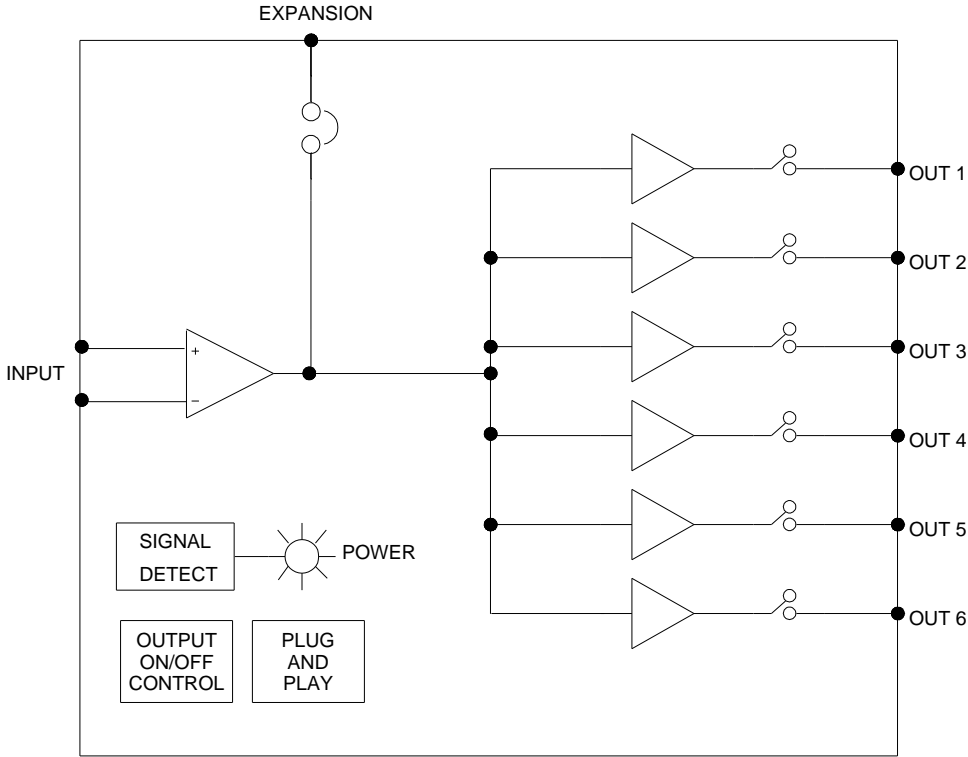
**5**

**DIAGRAM 1: TYPICAL SETUP**

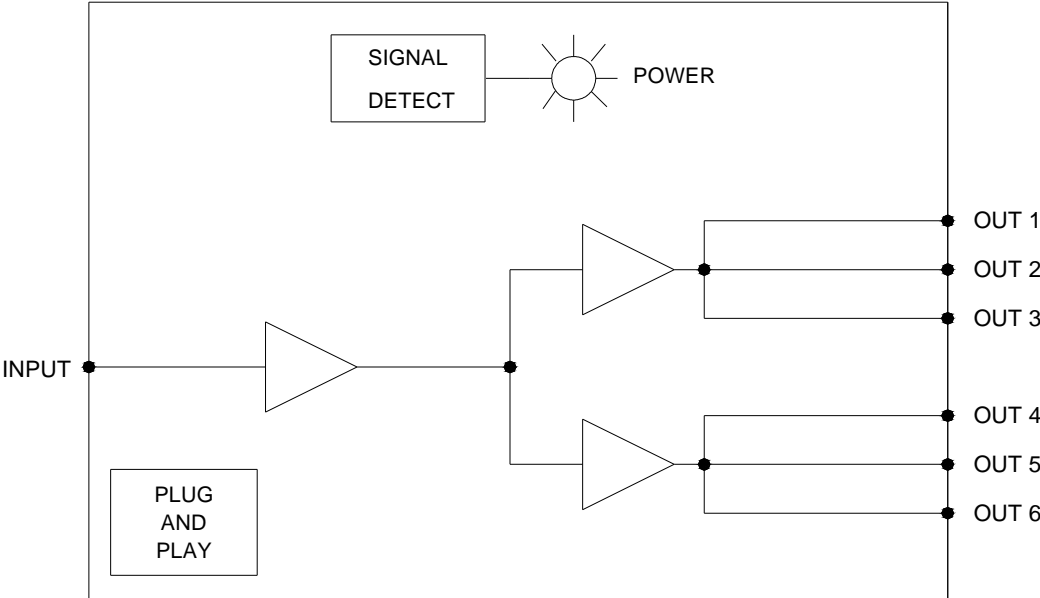
MT103-103: VGA-QXGA with ON/OFF Control  
MT103-108: VGA-UXGA



**DIAGRAM 2: MT103-103 INTERNAL VIEW**



**DIAGRAM 3: MT103-108 INTERNAL VIEW**





## INSTALLING YOUR 103-103/108 6

- Step 1.** Turn off power to the MultiTasker system and disconnect from AC power.
- Step 2.** Remove an unused slot cover (MT200-101) from the enclosure.
- Step 3.** Slide the **MT103-103/108** 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.** Identify the slot number and note that it is for RS-232 control.
- Step 5.** Restore power to the MultiTasker system.  
NOTE: The power LED should be on and red.
- Step 6.** 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.
- Step 7.** Connect a VGA cable from the video source to the input connector of the **MT103-103/108**. Connect the output connectors of the **MT103-103/108** to the display devices through VGA cables.
- Step 8.** The **MT103-103/108** is now operational.
- Step 9.** See the RS-232 Control commands in the next section to use the on/off features of the **MT103-103**.

## OPERATION 7

### 7.1 RS-232 CONTROL

The **MT103-103/108** has many advanced 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 **MT103-103/108**, 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 1: [ERR001] Error number

Example 2: [ERRC04] Card error C4

After processing a command, an “OK” or error will be returned as feedback if “F” is included at the end of a command string.

Commands ending in “S” will be saved into memory. Commands not ending in “S” will still be executed, but will not be restored when the system is reset or powered off, then on.

## 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]

## COMMAND ORGANIZATION

The RS-232 commands in this section are organized into the following 5 categories:

Basic Commands

Feedback Control

Card Control

Card IDs

Groups

See the SUMMARY OF COMMANDS (Section 7.3) for one-line descriptions of each command.

## BASIC COMMANDS

The basic commands are used to provide general information about the card. These commands are most useful during the initial stages of setting up and operating the card.

### 1. [VER]

This command displays the software version and card type.

Command Format: [VERCn]

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

Example:

An **MT103-103** card is in slot 4. Send the command [VERC4], and the system will return feedback similar to the following:

[MT103-103 690-0125-013 C04]

MT103-103 = the card model

690-0125-013 = the software version

### 2. [C]

This command displays the status of the card.

Command Format: [Cn]

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

Example:

There is one **MT103-121** card in slot 4. Send [C4] to receive feedback similar to the following:

ON: 1,2,3,4,5,6 C04

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

### 3. [CnS]

This command saves the output on/off status settings. This configuration will be restored after the system is reset or powered off then back on.

Command Format: [CnS]

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

S = Save configuration

Example:

If All Outputs are on, the feedback after sending the command [C4S], for slot 4, would be:

ON: 1,2,3,4,5,6 C04 [SAVED]

### 4. [TEST]

This command performs a series of tests on the internal memory and displays a pass message if successful.

MEMORY IS GOOD

Otherwise, failures will be indicated.

Command Format: [TESTCn]

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

Example:

There is an **MT103-103** in slot 4. In order to test the internal memory, send the command [TESTC4].

### 5. [HELP]

This command displays information available for the MultiTasker interface commands.

Command Format: [HELPCn]

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

Example:

In order to display the RS-232 commands available for the **MT103-103** card in slot 4, send the command [HELPC4]. The commands along with a brief description will be displayed.

## FEEDBACK CONTROL

The next commands are a function of both the card and the front panel and allow flexibility over when and how card information is displayed.

### 6. [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.

### 7. [?]

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 MT103-103. Send the command [?U1] and receive the following feedback:

```
[(MT101-101U1)(MT103-122C01)
(MT103-123C02)(MT103-103C04)]
```

MT101-101U1 = Panel number/unit ID  
MT103-122C01 = MT103-122 is in slot 1  
MT103-123C02 = MT103-123 is in slot 2  
MT103-103C04 = MT103-103 is in slot 4

### 8. [?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:

The **MT103-103** in slot 4 has Output 1 on and the rest are off. Send the command [?C4] and receive feedback status similar to the following.

```
[(MT103-103C04)(VR690-0125-013C04)
(ON100000C04)]
```

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.

MT103-103 = Card model number  
VR690-0125-013 = Firmware version  
ON100000 = 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.

### 9. [STA1]

This command enables automatic feedback from the front panel. The command affects any card with auto-feedback capability, not just the **MT103-103/108**. The default at power on or reset is STA0, off. For more details, see the [?Cn] command definition.

Command Format: [STA1]

Feedback Prefix Definitions:

MT Card model number  
VR Firmware version  
ON Output on/off status

Example 1:

Command = [ON1C4]  
Feedback = (ON11111C04)  
ON = Output on/off status  
111...1 = Outputs 1-6 are on  
C04 = Card/Slot number

### 10. [STA0]

This command disables automatic feedback from the card. The command affects any card with auto-feedback capability, not just the **MT103-103/108** card. The default at power on or reset is STA0, OFF.

Command Format: [STA0]

### 11. [...F] – FEEDBACK

After processing a command, an “OK” or “[ERR001]” will be returned as feedback if ‘F’ is included at the end of a command string.

## CARD CONTROL

Card control commands allow the main functions of the card to be executed over the RS-232 bus, or from the front panel’s programmable keys.

### 12. [...S] – Save

This command will save the configuration command being sent in memory. When sending the command [ON1C4S], after reset or power up, Output 1 will be enabled on C4.

### 13. [SIG]

The Signal Present command tests for the presence of an input signal. The card returns either a "1" or a "0" as feedback.

1 = Signal detected  
0 = No signal detected

Command Format: [SIGCn]

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

Example:

There is a properly formatted input signal being applied to the card in slot 4. Check for the presence of an input signal by sending the command [SIGC4]. The feedback will be a "1" immediately following the command sent:

[SIGC4] 1  
[SIGC4] = command sent  
1 = feedback, signal is present

## 14. [ON]

MT103-103 ONLY

This command enables one or more outputs of a single card or group of cards. If there is an expansion card attached to the **MT103-103**, the expansion card must be controlled separately.

### SINGLE CARD

Command Format: [ONmCn]

This command enables output "m" without affecting any other outputs. If "m" is blank, all outputs are turned on.

m = Output number (m = # from 1 to 6)

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

Example:

- 1) [ON12C4]: Turn on Outputs 1 and 2 of C4.
- 2) [ON3C4]: Turn on Output 3 of C4
- 3) [ONC4]: Turn on all the outputs on C4.

### GROUP OF CARDS

Command Format: [ONmGk]

This command enables output "m" of group "k" without affecting any other outputs. If "m" is blank, all outputs are turned on.

m = Output number (m = # from 1 to 6)

k = Group ID (k = # from 1 to 8)

Example:

1. [ON1G5]: Turns on Output 1 for each card in group 5.
2. [ONG5]: Turns on all outputs for each card in group 5.

### USING THE PATH COMMAND

[ON.....P]: sets path

This command will set the path for the output, but it is not active until the switch command is executed, [SW]. Commands ending in "P" are not executed immediately. The path for outputs on multiple cards or the same card can be preloaded.

Command Format: [ONmCnP]

m = Output number (m =# from 1 to 6)

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

P = Path

Example:

There is an **MT103-103** in slot 2 (C2) and another **MT103-103** in slot 4 (C4). In order to enable Output 1 of C2 and Output 3 of C4 simultaneously, use the following commands:

[ON1C2P]

[ON3C4P]

[SW]

## 15. [OFF]

MT103-103 ONLY

This command disables one or more outputs of a single card or group of cards. If there is an expansion card attached to the **MT103-103**, the expansion card must be controlled separately.

### SINGLE CARD

Command Format: [OFFmCn]

This command disables output "m" without affecting any other outputs. If "m" is blank, all outputs are turned off.

m = Output number (m = # from 1 to 6)

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

Example:

- 1) [OFF12C4]: Turn off Outputs 1 and 2 of C4.
- 2) [OFF3C4]: Turn off Output 3 of C4
- 3) [OFFC4]: Turn off all outputs of the C4.

---

## GROUP OF CARDS

---

Command Format: [OFFmGk]

This command disables output "m" of group "k" without affecting any other outputs. If "m" is blank, all outputs are turned off.

m = Output number (m = # from 1 to 6)

k = Group ID (k = # from 1 to 8)

Example:

1. [OFF1G5]: Turn off Output 1 for each card in group 5.
2. [OFFG5]: Turn off all outputs for each card in group 5.

---

## USING THE PATH COMMAND

---

[OFF.....P]: sets path

This command will set the path for the output, but it is not active until the switch command is executed, [SW]. Commands ending in "P" are not executed immediately. The path for outputs on multiple cards or the same card can be preloaded.

Command Format: [OFFmCnP]

m = Output number (m =# from 1 to 6)

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

P = Path

Example:

There is an **MT103-103** in slot 2 (C2) and another **MT103-103** in slot 4 (C4). In order to disable Output 1 of C2 and Output 3 of C4 simultaneously, use the following commands:

[OFF1C2P]

[OFF3C4P]

[SW]

## 16. [...P] – Path

This command will set the path for the output, but it is not active until the switch command, [SW], is executed. Commands ending in "P" are not executed immediately. The path for outputs on multiple cards or the same card can be loaded. See examples in ON and OFF commands.

## 17. [SW] – Switch

The switch command immediately connects inputs and outputs, which were previously set with the path command on this card and all other cards in the enclosure.

---

## 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.

## 18. [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.

## 19. [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.

## 20. [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.

## 21. [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.

## 22. [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. These commands apply to all cards, not only the **MT103-103/108**.

### 23. [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: [WRC<sub>n1</sub>C<sub>n2</sub>...Gk]

C<sub>n</sub> = 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]

### 24. [RMC]

This command removes one or more cards from a group.

Command Format: [RMC<sub>n1</sub>C<sub>n2</sub>...Gk]

C<sub>n</sub> = 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]

### 25. [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

### 26. [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) [CnS]     Save card settings
- 4) [TEST]    Test internal memory ICs
- 5) [HELP]    Display available commands

#### Feedback Commands

- 6) [FBD]     Feedback delay on/off
- 7) [?]        Display system cards
- 8) [?C]      Display card information
- 9) [STA1]    Auto-feedback on
- 10) [STA0]   Auto-feedback off
- 11) [...F]    Display OK after command

#### Card Control Commands

- 12) [...S]    Save command being sent
- 13) [SIG]     Test for an input signal
- 14) [ON] \*    Enable one or more outputs
- 15) [OFF] \*   Disable one or more outputs
- 16) [...P]    Sets the path, [SW] preload
- 17) [SW]      Switch preloaded outputs

#### ID Commands

- 18) [RSI]     Reset Card IDs to defaults
- 19) [SIDn]    Set all Card IDs
- 20) [SIDnCi] Set one Card ID
- 21) [SID+]    Set all Card IDs to an offset
- 22) [RSN]     Display card slot number

#### Group Commands

- 23) [WR]      Add card(s) to a group
- 24) [RMC]    Remove card(s) from group
- 25) [RMG]    Delete group
- 26) [RD]      Display group members

### 7.4 MENU MODE

Menu Mode commands allow virtually the same functionality as programming commands. Unlike the programming commands in the previous sections, menu commands prompt the user to select from a list of available options. The system then responds based upon selections made by the user.

#### 7.4.1 MENU COMMAND DEFINITIONS

Refer to section 7.2 for details on card functions and examples. Following is a cross-reference of menu mode sections versus programming commands.

MENU	COMMAND
Control	
Select	n/a
Save	[CnS]
Clear	[CLR]
On/Off	[ON], [OFF]
Setup	
Group	[WR], [RMC]
Status	
	[VER], [C]
Help	
	[HELP]

\* MT103-103 ONLY

## 7.4.2 USING MENU MODE

Do NOT press any keys except those relating to the current menu. If you press the ENTER key after entering a letter or digit, the original list of systems will be displayed.

1. In order to enter Menu Mode, the system needs to be connected to a computer running RS-232 control software.
2. In the Terminal Window, press the ENTER key on the keyboard.
3. The system checks all MultiTaskers on the RS-232 bus and displays a list of available systems.

Example:     1: U1  
              2: U2  
              3: U3

4. Enter the ID number of the desired system. In the example above, enter a "1" for the MultiTasker with unit ID 1.
5. The system then interrogates all the cards available in its enclosure and displays a list of available cards.

Example:     01: MT103-122  
              02: MT103-123  
              **04: MT103-103**

6. Enter the 2-digit ID and a menu for the card will be displayed. In the example above, enter "04" for the **MT103-103**.
7. The system will prompt for selections specific to the selected card.
8. Read each menu carefully, and continue selecting keys as prompted.

NOTE: Menus for data entry have two prompts: "Key=" and "ESC" (escape). Press the escape key to return to the previous menu.

## 7.4.3 MENU TYPES

### 1. MAIN MENU

The first menu displayed after selecting the card is the Main Menu. This menu provides access to the key functions related to the card. Press the key representing the menu item for access and a sub-menu will appear.

### 2. SUB-MENU

Each menu item will display either a sub-menu, or a list of options. Press the key corresponding to the desired choice.

## 7.4.4 MT103-103/108 MENUS

Following are the menus available to the **MT103-103/108**. The first menu is the Main Menu only. The second listing is an expanded view of the menu items.

Subsequent menus can contain values that indicate the current setting or value of a parameter. The value is usually in parentheses, or otherwise indicated at the top of a sub-menu. In some cases, additional comments are provided for clarification and are not part of the menu feedback.

**CAUTION:** Pay special attention to the top of each menu. After selecting the CONTROL menu, THIS CARD or a group will be identified at the top of the sub-menu. Since group functions may be modified from this menu, make sure the desired card or group is selected.

### MT103-103/108 MAIN MENU

PRESS KEY TO SELECT

1: CONTROL

2: SETUP

3: STATUS

4: HELP

ESC: GO BACK

KEY =

## MT103-103/108 EXPANDED MENUS

### 1. CONTROL: THIS CARD

- 1: SELECT (Card/Group for Control)
- 2: SAVE (Card Settings)
- 3: CLEAR (Set to Defaults)
- 4: ON/OFF (Turn Outputs On/Off)

### 2: SETUP

#### 1. SET GROUP ID

### 3: STATUS

*This selection displays the card status, version, and then redisplay the Main Menu.*

### 4: HELP

*This selection displays a list of commands available for the **MT103-103/108** along with a brief description.*

### ESC

*This selection returns you to the parent menu with the listing of all cards.*

## 7.4.5 MENU MODE EXAMPLES

All Menu Mode examples assume an **MT103-103** is installed in slot 4 of unit ID 1.

NOTE: The communication software you use may echo each character as it is typed when entering numeric values (not selecting menu items). For example, entering a value of 03 may appear as 0033 on the screen.

### 1. Select THIS CARD for Menu Mode.

Follow the keystrokes below to select Input 3 as the source input.

- Enter List available systems
- 1 Select unit ID 1
- 04 Select **MT103-103** in slot 4
- 1 Select CONTROL Menu
- 1 Select Card/Group Select
- 0 Select This Card (C4)
- ESC Return to CONTROL Menu
- ESC Return to the MAIN Menu

### 2. Turn off Output 1.

Start from the Main Menu, set Output 1 off using the keystrokes below.

- 1 Select CONTROL menu
- 4 Select the ON/OFF menu
- 1 Toggle Output 1 from on to off.
- NOTE Repeatedly pressing key "1" will toggle Output 1 on and off.
- ESC Return to CONTROL Menu
- ESC Return to the MAIN Menu

### 3. Display card's status.

Start from the Main Menu and follow the keystrokes below.

- 3 Displays card status

NOTE: The status will be displayed, followed by the Main Menu being redisplayed.

## TROUBLESHOOTING GUIDE 8

We have carefully tested and found no problems in the supplied **MT103-103/108**; 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 card cage in. If the LED lights the problem is solved. If the LED is still not lit, 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 lit, 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 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 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: The card output is turned OFF.**

Solution: Turn on the card output that is used. See RS-232 accessible commands in section 7. If no display is present, see Cause 3.

**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 display present, see Cause 4.

**Cause 4: The display has a problem.**

Solution: Make sure that the display is powered. 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](http://www.altinex.com) for details on warranty and return policies.

### 9.2 CONTACT INFORMATION

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