

**Mult  
Tasker®**



MANUAL PART NUMBER: 400-0394-007

**MT106-103**

**VIDEO SCALER CARD  
USER'S GUIDE**

**ALTINEX®**

**SIGNAL  
MANAGEMENT  
SOLUTIONS®**

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT106-103**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT106-103** 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 **MT106-103** 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 **MT106-103** carefully. Dropping or jarring can damage the card.
- Do not pull any cables that are attached to the **MT106-103**.
- 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 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 MT106-103

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### MT106-103

#### Video Scaler Card

The **MT106-103** Scaler converts composite video (C-Video), S-Video, and component video into a high-resolution RGBHV/component video output.

A VGA through SXGA computer signal input can be switched to the output via a pass-through input. The C-Video and S-Video inputs accept NTSC and PAL standards. These inputs are scaled to VGA through SXGA computer video resolutions or component video output resolutions 480p, 567p, 720p, or 1080i.

The **MT106-103** is controlled using the MultiTasker command language. Available commands allow input selection, image control/adjustment including contrast, brightness, color, tint, and sharpness. In addition, the **MT106-103** incorporates noise reduction filters and sophisticated 3D comb filtering.

The HelpInside feature allows programmers to have access to command structures and control of the **MT106-103** from any terminal. This technology provides easier-than-ever control of the **MT106-103** card with simple keyboard commands. No typing of long keyboard strings is necessary.

The **MT106-103** also has menu-driven protocol implemented for easier RS-232 control, eliminating the need to type lengthy commands for video signal adjustments.

## TECHNICAL SPECIFICATIONS

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

| FEATURES/DESCRIPTION | MT106-103  |
|----------------------|--|
| <b>GENERAL</b>       |  |
| <b>Inputs</b>        |  |
| PC Bypass            | 15-pin HD female (1)                               |
| S-Video              | 4-pin Mini DIN (1)                                 |
| Composite Video      | BNC female (1)                                     |
| Component Video      | 15-pin HD female (1)                               |
| <b>Output</b>        |  |
|                      | 15-pin HD female (1)                               |
| <b>Compatibility</b> | C-Video/S-Video (NTSC/PAL), Component Video (480i) |
| <b>Output Range</b>  | VGA through SXGA, 480p, 567p, 720p, 1080i          |

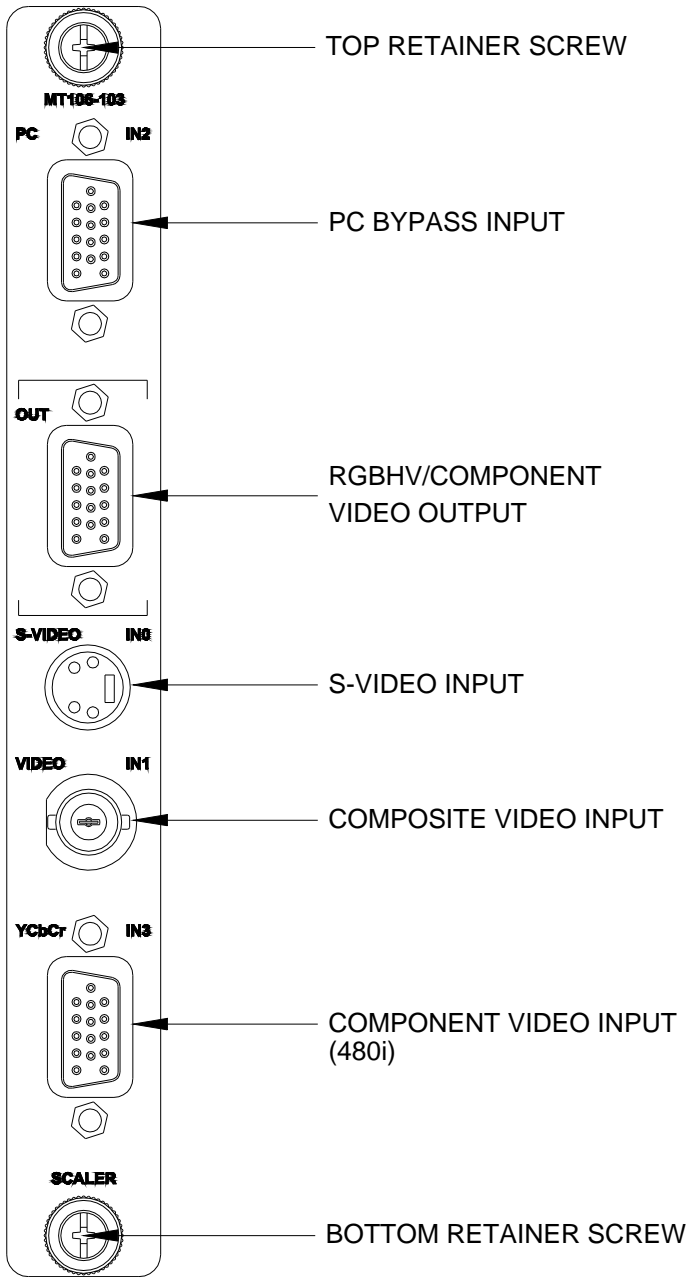
Table 1. **MT106-103** General

| MECHANICAL      | MT106-103          |
|-----------------|--------------------|
| Enclosure Slots | One                |
| Weight          | 1.0 lb (0.45 kg)   |
| Connector Panel | Black              |
| T° Operating    | 10°C to 35°C       |
| T° Maximum      | 0°C to 50°C        |
| Humidity        | 90% non-condensing |
| MTBF (calc.)    | 40,000 hrs         |

Table 2. **MT106-103** Mechanical

| ELECTRICAL                    | MT106-103     |
|-------------------------------|---------------|
| <b>Input C-Video/S-Video</b>  |               |
| Analog                        | 1 Vp-p        |
| Impedance                     | 75 ohms       |
| <b>Output Signals</b>         |               |
| RGB Analog                    | 0.7 Vp-p max. |
| Impedance                     | 75 ohms       |
| Horiz., Vert. Sync            | TTL (+/-)     |
| <b>Power (from enclosure)</b> |               |
| +6V                           | 1 A (6.0 W)   |
| -6V                           | 50 mA (0.3 W) |

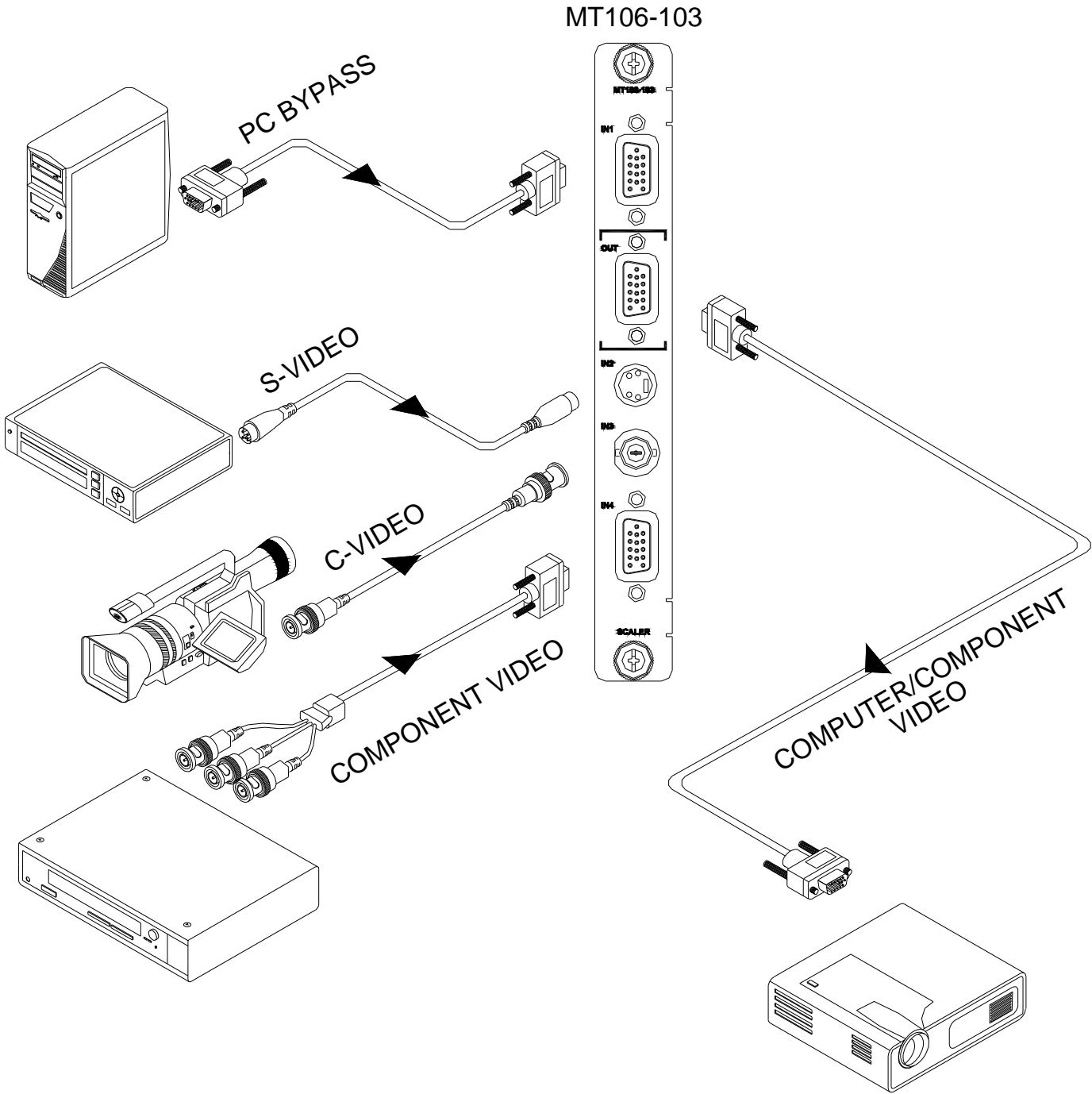
Table 3. **MT106-103** Electrical



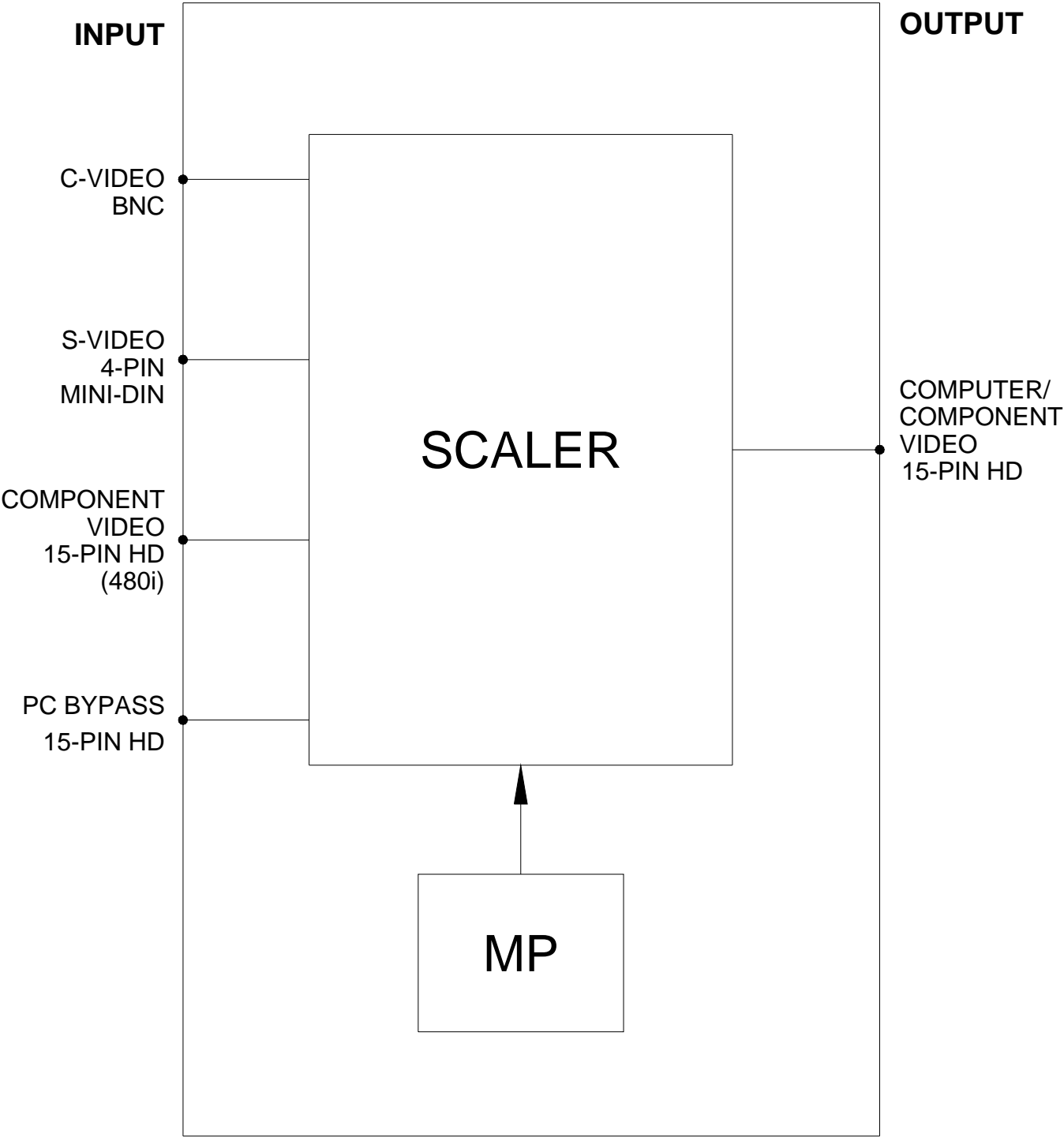
**APPLICATION DIAGRAMS**

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**DIAGRAM 1: TYPICAL SETUP**



**DIAGRAM 2: INTERNAL VIEW**





## INSTALLING YOUR MT106-103 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 **MT106-103** into the MultiTasker enclosure in order to connect it to the bus. Make sure that the card fits into place and then secure the card by tightening its retainer screws.
- Step 4.** Make one or more of the following input video connections:
- § Connect a BNC-type cable from the video source (camera, VCR, etc.) to the Video input connector.
  - § Connect an S-Video cable from the S-Video source (DVD, laptop, etc.) to the S-Video input connector.
  - § Use one of the two RCA to 15-pin HD cables included with the **MT106-103** to connect the component video source (DVD, satellite, media player, etc.) to the component video input connector.
  - § Connect the RGBHV video output of a computer to the PC Bypass input.
- Step 5.** Connect the output connector of the **MT106-103** to the display device through a VGA-type (15-pin HD) cable. If the output of the **MT106-103** will be component video, use the second RCA to 15-pin HD cable included with the **MT106-103** to connect the output of the Scaler to the input of the display.
- Step 6.** Restore power to the MultiTasker system.
- Step 7.** The default input is the Video input port. Use AVSnap<sup>®</sup> or other communication software to change the **MT106-103** input. See the [IN] command in section 7.2 or section 7.4 for Menu Mode to change the selection.

## OPERATION 7

### 7.1 RS-232 CONTROL

The **MT106-103** has many advanced remote-control capabilities accessible through standard RS-232 communication. Control may be accomplished through a computer control system or any other device capable of sending RS-232 communication.

#### 7.1.1 RS-232 INTERFACE

The control commands for the **MT106-103** 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 system 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 about the status of 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 of “[ERR001]”.

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-to-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 manual, cards will be referenced by their ID (C1, C2...C99). Typically, the ID number will be equivalent to the slot number. Groups will be referenced by their ID (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 value from 0 to 9. Unit ID 0 should be used for single unit operation. If the unit ID is set to zero, each command may be used without Ui. Use the command [SETU0], as explained in the MT100-100 User's Guide.

Example:

[VERC3]: For Unit ID Zero

[VERC3Ui]: For Unit ID other than Zero

[VERC3]: Equivalent to [VERC3U0]

## BASIC COMMANDS

### 1. [C]

This command displays the status of the card.

Command Format: [Cn]

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

Example:

There is an **MT106-103** card in slot 4. Sending the command [C4] to the MultiTasker will yield feedback similar to the following:

Input: Composite Video

Output Resolution: 1024x768

Brightness: 24

Contrast: 40

Color: 24

Sharpness: 10

Hue: 0

3D Filter OFF

NR ON

Aspect Ratio 4:3

Freeze OFF

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

### 2. [CnS]

This command saves the card settings. This configuration will be restored after the system is reset or powered-up.

Command Format: [CnS]

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

S = Save configuration

Example:

The **MT106-103** has been set to a resolution of 1024x768 with Composite Video as the active input. Send [C4S] and receive feedback similar to the following:

Input: Composite Video  
Output Resolution: 1024x768  
Brightness: 24  
Contrast: 40  
Color: 24  
Sharpness: 10  
Hue: 0  
3D Filter OFF  
NR ON  
Aspect Ratio 4:3  
Freeze OFF  
[SAVED]

### 3. [CLR]

Reset the card to its last saved settings.

Command Format: [CLRCn]

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

Example:

Send the command [CLRC4] to reset the card in slot 4 to its last saved settings.

### 4. [FRESET]

This command clears the card's memory and returns the card to its factory default settings. The factory defaults are as follows:

|              |          |              |    |
|--------------|----------|--------------|----|
| In =         | S-Video  | Brightness = | 24 |
| Res. =       | 1024x768 | Contrast =   | 40 |
| 3D Filter =  | Off      | Color =      | 24 |
| Noise Red. = | On       | Sharpness =  | 10 |
| Freeze =     | Off      | Hue =        | 00 |
| Aspect Ratio | 4:3      |              |    |

Command Format: [FRESETCn]

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

Example:

Send the command [FRESETC4] to reset C4 to the settings described above. Use the command [C4S] to save the settings so they will be recalled upon power-up, reset, or [CLRC4].

### 5. [VER]

This command displays the software version and model number for the card.

Command Format: [VERCn]

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

Example:

Send the command [VERC4] to check the version of the **MT106-103** in slot 4. The system will return the following feedback:

```
[MT106-103 690-0187-006 C04]
```

```
MT106-103 = Model Number
```

```
690-0187-006 = Firmware Version
```

```
C04 = Card ID
```

### 6. [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 **MT106-103** card in slot 4, send the command [HELPC4]. The commands along with a brief description will be displayed in the Terminal Window.

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### FEEDBACK COMMANDS

---

The next several commands are a function of both the card and the front panel and are only available with MultiTasker Front Panel systems that have the following firmware:

```
690-0122-015 = Version 015 or later.
```

```
690-0123-004 = Version 004 or later.
```

```
690-0124-018 = Version 018 or later.
```

Send the command [VER] to the system and the feedback will include the following:

```
690-0122-015 690-0123-004 690-0124-018
```

Check the last three digits against the numbers above to determine if the option is available.

## 7. [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.

## 8. [?]

This command will return general information about the MultiTasker and cards installed in the unit.

Command Format: [?Ui]

Ui = Unit ID (i = from 0 to 9)

Example:

A MultiTasker with unit ID 1 has a front panel with part number MT101-101 and contains an MT103-122, MT103-123, and MT106-103. Send the command [?U1] and receive the following feedback:

```
[(MT101-101U1)(MT103-122C01)
(MT103-123C02)(MT106-103C04)]
```

MT101-101U1 = Panel model number/unit ID

MT103-122C01 = MT103-122 is in slot 1

MT103-123C02 = MT103-123 is in slot 2

MT106-103C04 = MT106-103 is in slot 4

## 9. [?C]

This command will display general information about the card and its status.

Command Format: [?Cn]

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

Example:

The **MT106-103** in slot 4 has the S-Video input selected with an output resolution set to 1024x768. Send the command [?C4] to receive feedback status similar to the following.

```
[(MT106-103C04)(VR690-0187-006C04)
(IN00C04)(RS03C04)(BR24C04)(CN40C04)
(CL24C04)(SH10C04)(HU00C04)(CF0C04)
(NR1C04)(AR1C04)(FZ0C04)]
```

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 and the last three the card's ID.

MT106-103 = Card model number

VR690-0187-007 = Firmware version

IN00 = Active input number

RS03 = Active resolution

BR24 = Brightness level

CN40 = Contrast level

CL24 = Color level

SH10 = Sharpness setting

HU00 = Hue setting

CF = Comb filter on/off

NR = Noise reduction

AR = Aspect ratio

FZ = Freeze output image

The IN status line is a 2-digit number representing inputs 00-03 from the [IN] command. The RS line reads the resolution setting 0-9 from the [MODER] command.

The next 5 lines are the image settings for brightness, contrast, color, sharpness, and hue. The last 2 digits in each line show the actual value.

The last 4 lines give the status of the remaining output image settings. These features are either on or off and do not have numerical values. A “1” will be displayed if the feature is on; a “0” will be displayed if the feature is off.

## 10. [STA1]

This command enables automatic feedback from the front panel. The command affects any card with auto-feedback capability, not just the **MT106-103**. The default at power on or reset is STA0, off. For more details, see the [?Cn] command definition.

Command Format: [STA1]

|    |                   |
|----|-------------------|
| MT | Card Model Number |
| VR | Firmware Revision |
| RS | Resolution        |
| BR | Brightness        |
| CN | Contrast          |
| CL | Color             |
| SH | Sharpness         |
| HU | Hue               |
| CF | Comb Filter       |
| NR | Noise Reduction   |
| AR | Aspect Ratio      |
| FZ | Freeze            |

Example 1:

Command = [MODER4C4]  
Feedback = (RS04C04)  
RS = Resolution  
04 = 1280x1024  
(settings are 00-09)  
C04 = Card ID/slot number

Example 2:

Command = [MODEA1C4]  
Feedback = (AR0C04)  
AR = Aspect Ratio  
0 = Wide 16:9 (1 = 4:3)  
C04 = Card ID/slot number

## 11. [STA0]

This command disables automatic feedback from the card and front panel. The command affects any card with auto-feedback capability, not just the **MT106-103** card. The default at power on or reset is STA0, OFF.

Command Format: [STA0]

## CARD CONTROL

### 12. [IN]

This command selects the input port on the card to be used as the source. The current image properties, like brightness and color, do not change when the input is selected.

Command Format: [INyCn]

y = Resolution (y = # from 0 to 3)  
0 = S-Video  
1 = Composite Video  
2 = PC Bypass  
3 = Component Video

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

Example:

Send the command [IN0C4] to select the S-Video input.

### 13. [INR]

This command selects the input port on the card to be used as the source and recalls its previously saved settings.

Command Format: [INyRCn]

y = Resolution (y = # from 0 to 3)  
0 = S-Video  
1 = Composite Video  
2 = PC Bypass  
3 = Component Video

R = Recall video adjustment settings

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

Example:

Send the command [IN0RC4] to select the S-Video input and recall the settings saved for the S-Video input. For example, any changes made to the brightness, hue etc. that were saved will be recalled.

## 14. [MODER]

This command sets the resolution of the video output.

Command Format: [MODERxCn]

x = Resolution (x = # from 0 to 7)

0 = 640x480 (VGA)

1 = 480p

2 = 800x600 (SVGA)

3 = 1024x768 (XGA)

4 = 1280x1024 (SXGA)

5 = 567p

6 = 720p

7 = 1080i

8 = 1280x768 (WXGA)

9 = 852x480 (WVGA)

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

Example:

Send the command [MODER4C4] to set the resolution of the card in slot 4 to 1280x1024.

## 15. [BRIGHTm]

This command sets the brightness level to an absolute value.

Command Format: [BRIGHTmCn]

m = Level (m = # from 0 to 48, default=24)

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

Example:

Send the command [BRIGHT12C3] to set the output brightness to 12 on the card in slot 4.

## 16. [BRIGHT]

This command displays the brightness setting and makes the brightness function active for use with the [+] and [-] commands.

Command Format: [BRIGHTCn]

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

Example:

Send the command [BRIGHTC4] to select the brightness function on C4. Then use the [+] and [-] commands to increase or decrease the brightness level as desired.

## 17. [CONTRm]

This command sets the contrast level to an absolute value.

Command Format: [CONTRmCn]

m = Level (m = # from 0 to 48, default=40)

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

Example:

Send the command [CONTR30C4] to set the output contrast to 30 on the card in slot 4.

## 18. [CONTR]

This command displays the contrast setting and makes the contrast function active for use with the [+] and [-] control commands.

Command Format: [CONTRCn]

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

Example:

Send the command [CONTRC4] to select the contrast function on C4. Then use the [+] and [-] commands to increase or decrease the contrast level as desired.

## 19. [COLORM]

This command sets the color level to an absolute value.

Command Format: [COLORMCn]

m = Level (m = # from 0 to 48, default=24)

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

Example:

Send the command [COLOR12C4] to set the output color level to 12 on the card in slot 4.



## 20. [COLOR]

This command displays the color setting and makes the color function active for use with the [+] and [-] control commands.

Command Format: [COLORCn]

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

Example:

Send the command [COLORC4] to select the color function on C4. Then use the [+] and [-] commands to increase or decrease the color level as desired.

## 21. [SHARPM]

This command sets the sharpness level to an absolute value.

Command Format: [SHARPMcn]

m = Level (m = # from 0 to 48, default=10)

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

Example:

Send the command [SHARP05C4] to set the output sharpness to 5 on the card in slot 4.

## 22. [SHARP]

This command displays the sharpness setting and makes the sharpness function active for use with the [+] and [-] control commands.

Command Format: [SHARPCn]

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

Example:

Send the command [SHARPC4] to select the sharpness function on C4. Then use the [+] and [-] commands to increase or decrease the sharpness level as desired.

## 23. [HUEm]

This command sets the hue level to an absolute value.

NOTE: The Hue adjustment does not apply to Component Video.

Command Format: [HUEmCn]

m = Level (m = # from 0 to 48, default=0)

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

Example:

Send the command [HUE30C4] to set the output hue level to 30 on the card in slot 4.

## 24. [HUE]

This command displays the hue setting and makes hue the active function for use with the [+] and [-] controls.

NOTE: The Hue adjustment does not apply to Component Video.

Command Format: [HUECn]

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

Ui = Unit ID (i = # from 0 to 9)

Example:

Send the command [HUEC4] to select the hue function on C4. Then use the [+] and [-] commands to increase or decrease the hue level as desired.

## 25. [MODET]

This command is used to turn the 3D Comb Filter, Y/C Separator either on or off. The filter should be on when using a VCR input and off when using other formats.

Command Format: [MODETpCn]

p = Filter ON/OFF (p = 0 or 1)

0 = OFF (default)

1 = ON (VCR Mode)

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

Example:

A VCR will be used to play a video tape. Send the command [MODET1C4] to turn on the 3D Comb Filter for the **MT106-103** in slot 4.

## 26. [MODEN]

This command is used to turn the digital noise reduction feature on and off.

Command Format: [MODENpCn]

p = Noise Reduction ON/OFF (p = 0 or 1)

0 = OFF

1 = ON

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

Example:

Send the command [MODEN1C4] to turn on noise reduction for the **MT106-103** in slot 4.

## 27. [MODEA]

This command is used to change the aspect ratio between wide and standard formats.

Command Format: [MODEApCn]

p = Aspect Ratio (p = 1 or 2)

1 = Wide 16:9

2 = Standard 4:3

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

Example:

Send the command [MODEA1C4] to set the aspect ratio to Wide format on the **MT106-103** in slot 4.

## 28. [FREEZ]

This command is used to freeze the image displayed on the display.

Command Format: [FREEZpCn]

p = Freeze value (p = 0 or 1)

0 = OFF

1 = ON

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

Example:

Send the command [FREEZ1C4] to freeze the image generated by the **MT106-103** in slot 4.

## 29. [+]

This command increments a selected property to be adjusted from the keyboard or front panel.

Command Format: [+] or [+k]

[+] = Increment by one

[+k] = Increment by "k"

Example:

Select the brightness command for the card in slot 4. The current brightness level is 10, but it is not the optimal value. After sending the following commands, an optimum level of 15 is obtained:

1. [BRIGHTC4]

The current brightness level is 10.

2. [++++] or [+5]

The level is now 15 and no further adjustments are required.

## 30. [-]

This command decrements a selected property to be adjusted from the keyboard or front panel.

Command Format: [-] or [-k]

[-] = Decrement by one

[-k] = Decrement by "k"

Example:

Select the sharpness command for the card in slot 4. The current sharpness level is 30, but it is not the optimal value. After sending the following commands, an optimum level of 25 is obtained:

1. [SHARPC4]

The current sharpness level is 30.

2. [-----] or [-5]

The level is now 25 and no further adjustments are required.



## 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.

The ID commands work with all MultiTasker systems. However, front panels that have firmware releases prior to the following will not be able to address card IDs greater than the number of slots in the system:

690-0122-019 = Version 019 or later.

690-0123-005 = Version 005 or later.

690-0124-019 = Version 019 or later.

Send the command [VER] to the system and the feedback will include the following:

690-0122-019 690-0123-005 690-0124-019

Check the last three digits against the numbers above to determine if the card ID commands can address all 99 card IDs.

### 31. [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.

### 32. [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.

### 33. [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.

## 34. [SID+]

This command sets the 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 [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.

## 35. [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 **MT106-103**.

## 36. [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<sub>1</sub>Cn<sub>2</sub>...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]

## 37. [RMC]

This command removes one or more cards from a group.

Command Format: [RMCn<sub>1</sub>Cn<sub>2</sub>...Gk]

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

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

Example:

G5 consists of the 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]

## 38. [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

## 39. [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.

## Feedback Commands

- |            |                          |
|------------|--------------------------|
| 7) [FBD]   | Feedback delay           |
| 8) [?]     | Display system cards     |
| 9) [?C]    | Display card information |
| 10) [STA1] | Enable auto feedback     |
| 11) [STA0] | Disable auto feedback    |

## Card Control

- |               |                           |
|---------------|---------------------------|
| 12) [IN]      | Select input port         |
| 13) [INR]     | Select input and recall   |
| 14) [MODER]   | Set output resolution     |
| 15) [BRIGHTm] | Set/select brightness     |
| 16) [BRIGHT]  | Display/select brightness |
| 17) [CONTRm]  | Set/select contrast       |
| 18) [CONTR]   | Display/select contrast   |
| 19) [COLORM]  | Set/select color          |
| 20) [COLOR]   | Display/select color      |
| 21) [SHARPM]  | Set/select sharpness      |
| 22) [SHARP]   | Display/select sharpness  |
| 23) [HUEm]    | Set/select hue            |
| 24) [HUE]     | Display/select hue        |
| 25) [MODET]   | 3D comb filter            |
| 26) [MODEN]   | Noise reduction           |
| 27) [MODEA]   | Aspect ratio              |
| 28) [FREEZ]   | Freeze image              |
| 29) [ + ]     | Increment property by 1   |
| 30) [ - ]     | Decrement property by 1   |

## ID Commands

- |              |                               |
|--------------|-------------------------------|
| 31) [RSI]    | Reset Card IDs to defaults    |
| 32) [SIDn]   | Set all Card IDs              |
| 33) [SIDnCi] | Set one Card ID               |
| 34) [SID+]   | Set all Card IDs to an offset |
| 35) [RSN]    | Display card slot number      |

## 7.3 SUMMARY OF COMMANDS

### Basic Commands

- |             |                            |
|-------------|----------------------------|
| 1) [C]      | Display card status        |
| 2) [CnS]    | Save card settings         |
| 3) [CLR]    | Restore saved settings     |
| 4) [FRESET] | Reset to factory defaults  |
| 5) [VER]    | Display software version   |
| 6) [HELP]   | Display available commands |

## Group Commands

- 36) [WR]      Add card(s) to a group
- 37) [RMC]    Remove card(s) from group
- 38) [RMG]    Delete group
- 39) [RD]     Display group members

## 7.4 MENU MODE

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

The menu-driven commands are only available with MultiTasker systems that have the following front panel firmware:

690-0122-015 = Version 015 or later.

690-0123-004 = Version 004 or later.

690-0124-018 = Version 018 or later.

Send the command [VER] to the system and the feedback will include the following:

690-0122-015 690-0123-004 690-0124-018

Check the last three digits against the numbers above to determine if Menu Mode is available.

### 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 sections versus programming commands.

| MENU                          | COMMAND   |
|-------------------------------|---|
| Input Select                  | [IN], [INR]   |
| Setup<br>Output<br>Properties | [MODER], [BRIGHTm],<br>[CONTRm], [COLORM],<br>[SHARPm], [HUEm],<br>[MODEA], [MODET],<br>[MODEN], [FREEZ],[+], [-] |
| Version                       | [VER]   |
| Status                        | [C]   |
| Help                          | [HELP]  |

## 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: MT106-103**

6. Enter the 2-digit ID and a menu for the card will be displayed. In the example above, enter "04" for the **MT106-103**.
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 without making changes.

## 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 MT106-103 MENUS

Following are the menus available to the **MT106-103**. The first menu is the Main Menu only. The second listing is an expanded view of the menu items.

The expanded menu contains 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.

### MT106-103 MAIN MENU

- 1: INPUT SELECT
- 2: SETUP
- 3: VERSION
- 4: STATUS
- 5: HELP

### MT106-103 EXPANDED MENUS

#### 1. INPUT SELECT (0)

- 1: INPUT 0 (S-VIDEO)
- 2: INPUT 1 (COMPOSITE VIDEO)
- 3: INPUT 2 (PC BYPASS)
- 4: INPUT 3 (YCbCr)
- 5: RECALL INPUT 0 (S-VIDEO)
- 6: RECALL INPUT 1 (COMPOSITE VIDEO)
- 7: RECALL INPUT 2 (PC BYPASS)
- 8: RECALL INPUT 3 (YCbCr)

#### 2. SETUP

##### 1: OUT RESOLUTION (1024x768)

- 1: 640x480
- 2: 480p
- 3: 800x600
- 4: 1024x768
- 5: 1280x1024
- 6: 576p
- 7: 720p
- 8: 1080i
- 9: 1280x768

##### 2: BRIGHTNESS (24)

- 1: +
- 2: -

##### 3: CONTRAST (40)

- 1: +
- 2: -

##### 4: COLOR (24)

- 1: +
- 2: -

##### 5: SHARPNESS (10)

- 1: +
- 2: -



6: HUE (0)

1: +

2: -

7: ASPECT RATIO (4:3)

1: 16:9

8: 3D COMB FILTER (ON)

1: OFF

9: NOISE REDUCTION (ON)

1: OFF

A: FREEZE (OFF)

1: ON

3: VERSION

*This selection displays the model number and firmware revision, and then redisplay the Main Menu.*

4: STATUS

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

5: HELP

*This selection displays a list of commands available for the **MT106-103** 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 **MT106-103** 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. Change Output Resolution

An **MT106-103** is in slot 4. Change the output resolution to 1280x1024. Start by clicking the mouse in the Terminal Window. Follow the keystrokes below:

|       |                            |
|-------|----------------------------|
| Enter | List of systems            |
| 1     | Select unit ID 1           |
| 04    | Select MT106-103 in slot 4 |
| 2     | Select Setup Menu          |
| 1     | Select OUT RESOLUTION      |
| 5     | Select 1280x1024           |
| ESC   | Return to Setup Menu       |
| ESC   | Return to the Main Menu    |

## 2. Adjust Brightness

Increase the brightness on the output of the **MT106-103** in slot 4. Starting from the **MT106-103**'s Main Menu, follow the keystrokes below:

|     |   |
|-----|---|
| 2   | Select SETUP  |
| 2   | Select BRIGHTNESS                                       |
| 1   | Increment by one  |
|     | <i>Repeat until the desired brightness is achieved.</i> |
| ESC | Return to SETUP   |
| ESC | Return to the Main Menu                                 |

## 3. Display Card Status

Display the status of the **MT106-103** in slot 4 starting from its Main Menu.

|   |                     |
|---|---------------------|
| 4 | Display card status |
|---|---------------------|

NOTE: The Main Menu will be redisplayed after the status is displayed.

## TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT106-103**. However, we would like to offer suggestions for the following:

### 8.1 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 not selected.

*Solution:* Select the card output. See RS-232 accessible commands in Section 7. If no display is present, see Cause 3.

Cause 3: 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 4.

Cause 4: The display has a problem.

*Solution:* Make sure the display is powered and is turned on. If there is still no display, please 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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