MT105-130 is shown above.

MT105-130/131/132

8X8 CAT5 - 4TP/3TP/2TP

MATRIX SWITCHER CARDS

FOR MULTI-TASKER

USER'S GUIDE

ALTINEX

SiGNAL MANAGEMENT SOLUTIONS™

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PRECAUTIONS / SAFETY WARNINGS   1

Please read this manual carefully before using your **MT105-130**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT105-130** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

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

1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **MT105-130** 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 **MT105-130** carefully. Dropping or jarring can damage the card.

- Do not pull the cables that are attached to the **MT105-130.**

- Insert the card carefully into the slots of the Multi-Tasker™ 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 / CE NOTICE

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

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

- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

MULTI-TASKER™

MT105-130
8x8 TWISTED PAIR SWITCHER VGA or COMPONENT + STEREO AUDIO

The **MT105-130** is a CAT-5 video+audio switcher designed to switch Altinex Standard Twisted Pair (TP) signals. This card has eight fixed inputs and eight fixed outputs using RJ45 connectors.

Signal detection circuitry is built in for both inputs and outputs. This feature enables easy remote diagnostics throughout RS-232 commands, from the source all the way to the output connectors. Additional diagnostic tools include self-test of internal memory IC's.

The matrix switcher may be configured to any 8x8 input and output combination through easy-to-use standard MultiTasker™ ASCII commands. Several input to output combinations may be preprogrammed and then switched all at the same time with a single command.

Three different 8x8 matrix switcher cards are available:

MT105-130   4TP   RGBHV + Stereo Audio
                             or
                    Component + Stereo Audio
                             or
                    S-Video + Stereo Audio
                             or
                    Composite + Stereo Audio

MT105-131   3TP   S-Video + Stereo Audio
                             or
                    Composite + Stereo Audio

MT105-132   2TP   Composite + Stereo Audio

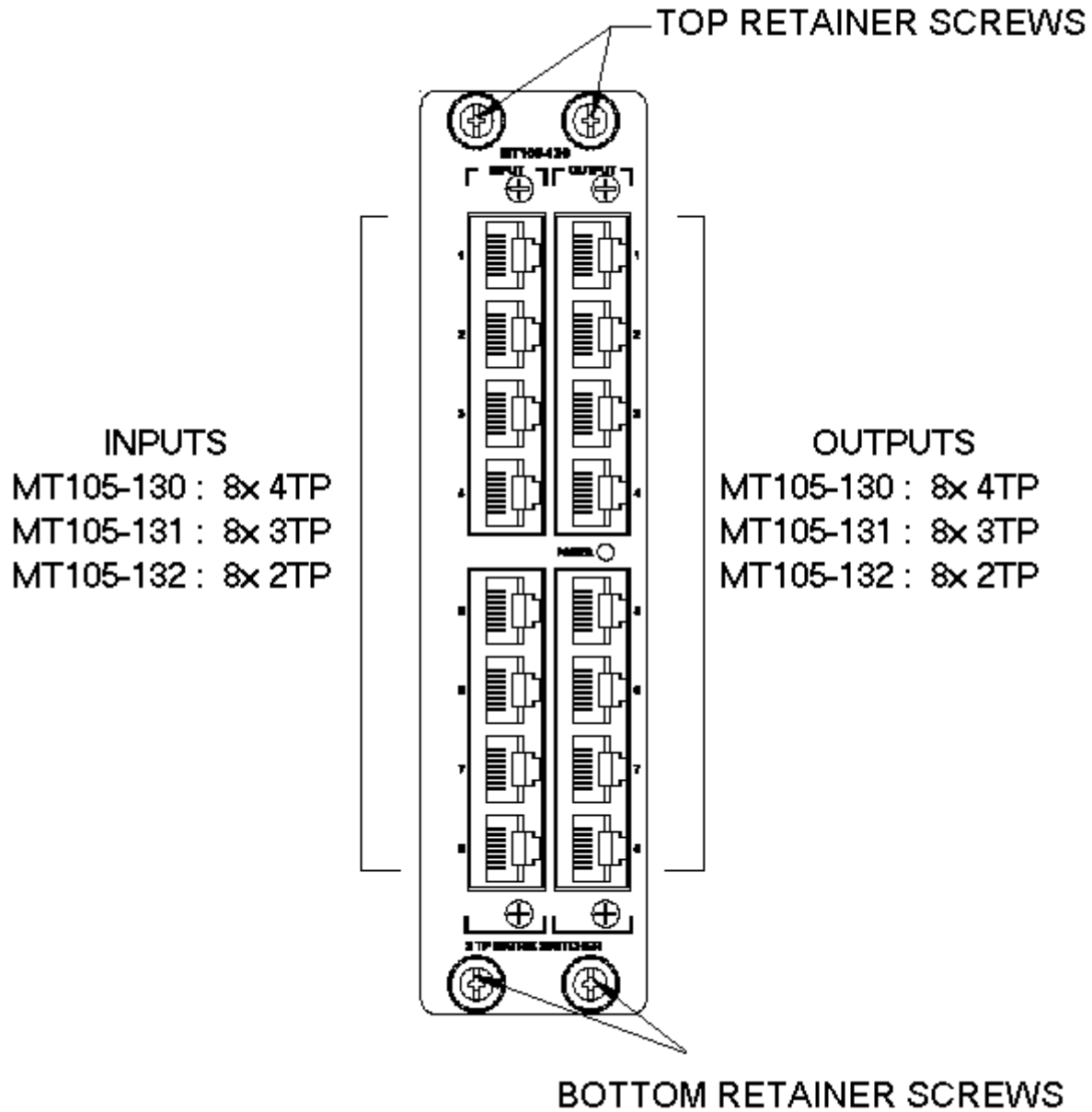| FEATURES/ DESCRIPTION	MT105-130/131/132
GENERAL	
Inputs	
Main Inputs	RJ-45 Female (8)
Outputs	
Main Output	RJ-45 Female (8)
Compatibility	
MT105-130	VGA thru UXGA, Stereo Audio
	Component, Stereo Audio
	S-Video, Stereo Audio
	CompositeVideo, Stereo Audio
MT105-131	S-Video, Stereo Audio
	Composite Video, Stereo Audio
MT105-132	Composite Video, Stereo Audio
Approvals	CE/FCC

Table 1. **MT105-130/131/132** General

MECHANICAL	MT105-130/131/132
Enclosure Slots Required	2
Weight	1.1 lb (0.5 kg)
Connector Panel	Black Anodized
T° Operating	10°C-50°C
T° Maximum	75°C
Humidity	90% non-condensing
MTBF (calc.)	50,000 hrs

Table 2. **MT105-130/131/132** Mechanical

ELECTRICAL	MT105-130/131/132		
Input Signals			
CAT-5/6 Twisted Pair Input	Video + Audio Signals, Altinex Standard		
Output Signals			
CAT-5/6 Twisted Pair Output	Video + Audio Signals, Altinex Standard		
Power (from Enclosure)	**+6V**	**-6V**	**Power**
MT105-130	873mA	290mA	7.0 watts
MT105-131	620mA	206mA	5.0 watts
MT105-132	467mA	155mA	3.7 watts

Table 3. **MT105-130/131/132** Electrical

ALTINEX

SIGNAL MANAGEMENT SOLUTIONS

PRODUCT DESCRIPTION　　　　4

TOP RETAINER SCREWS

INPUTS
MT105-130 : 8x 4TP
MT105-131 : 8x 3TP
MT105-132 : 8x 2TP

OUTPUTS
MT105-130 : 8x 4TP
MT105-131 : 8x 3TP
MT105-132 : 8x 2TP

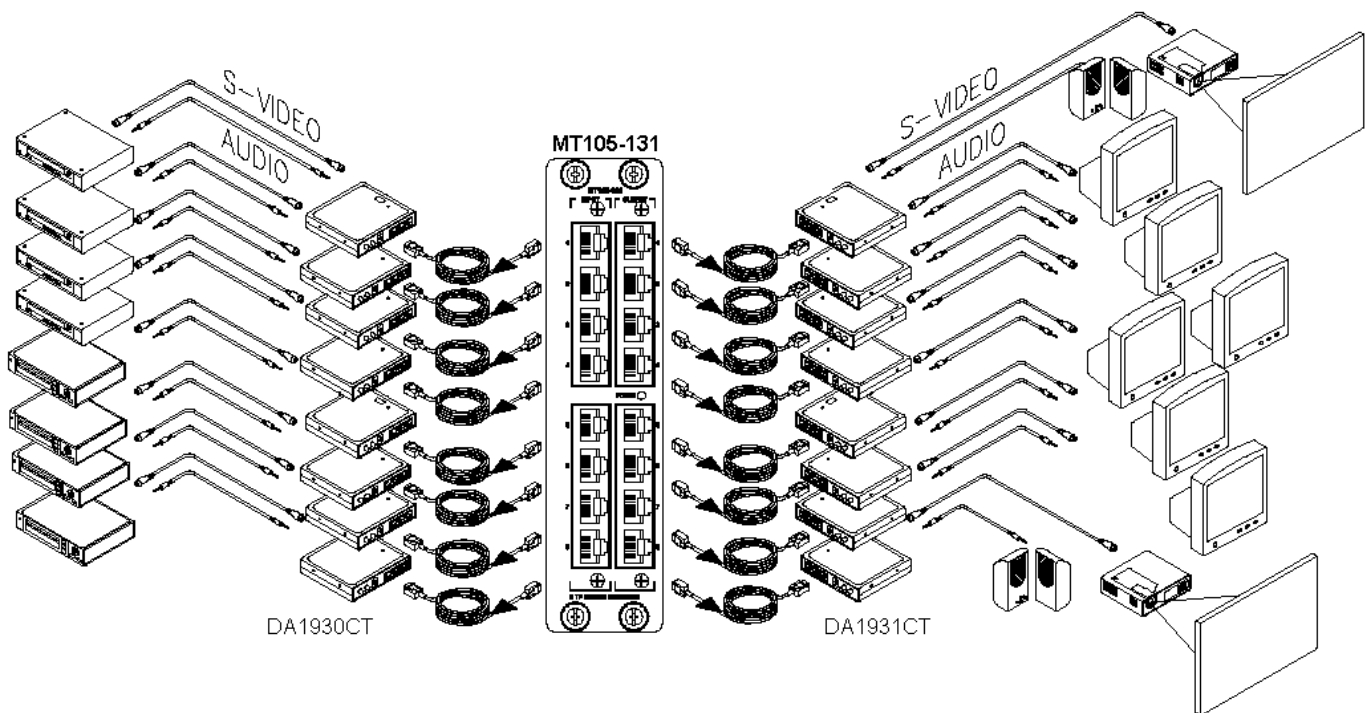BOTTOM RETAINER SCREWS

APPLICATION DIAGRAM   5
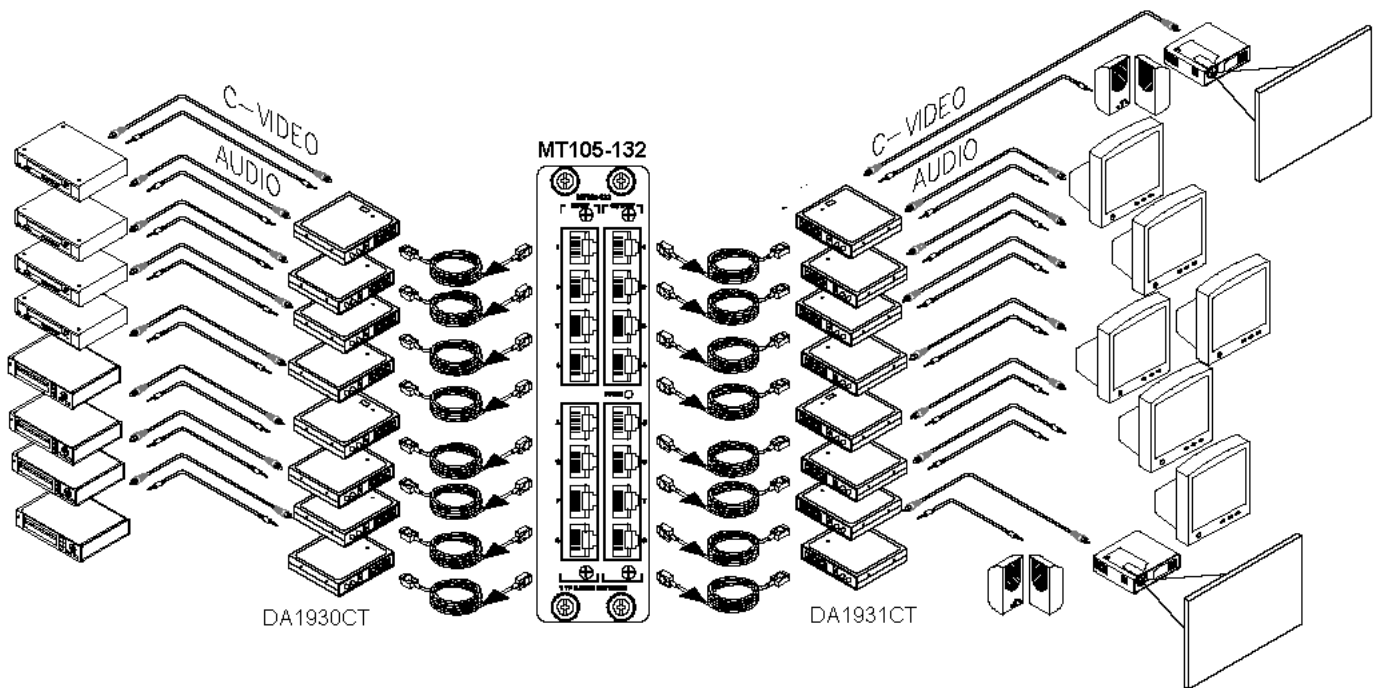
DIAGRAM 1: MT105-130 TYPICAL SETUP
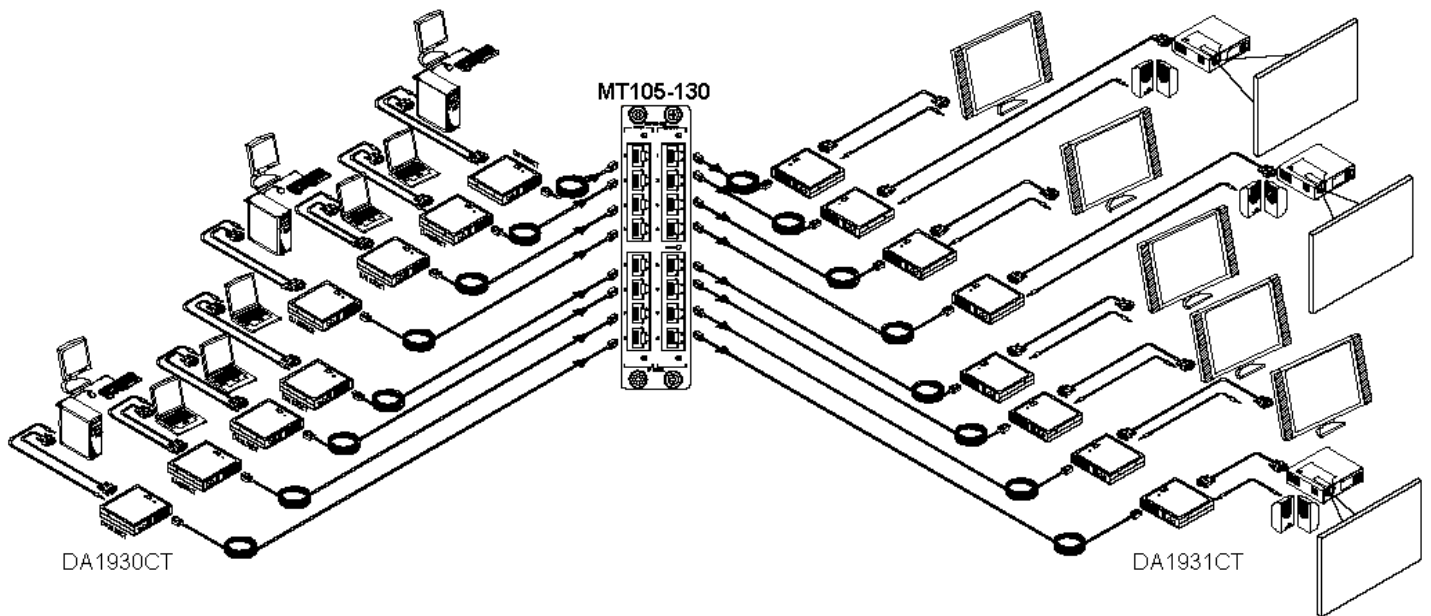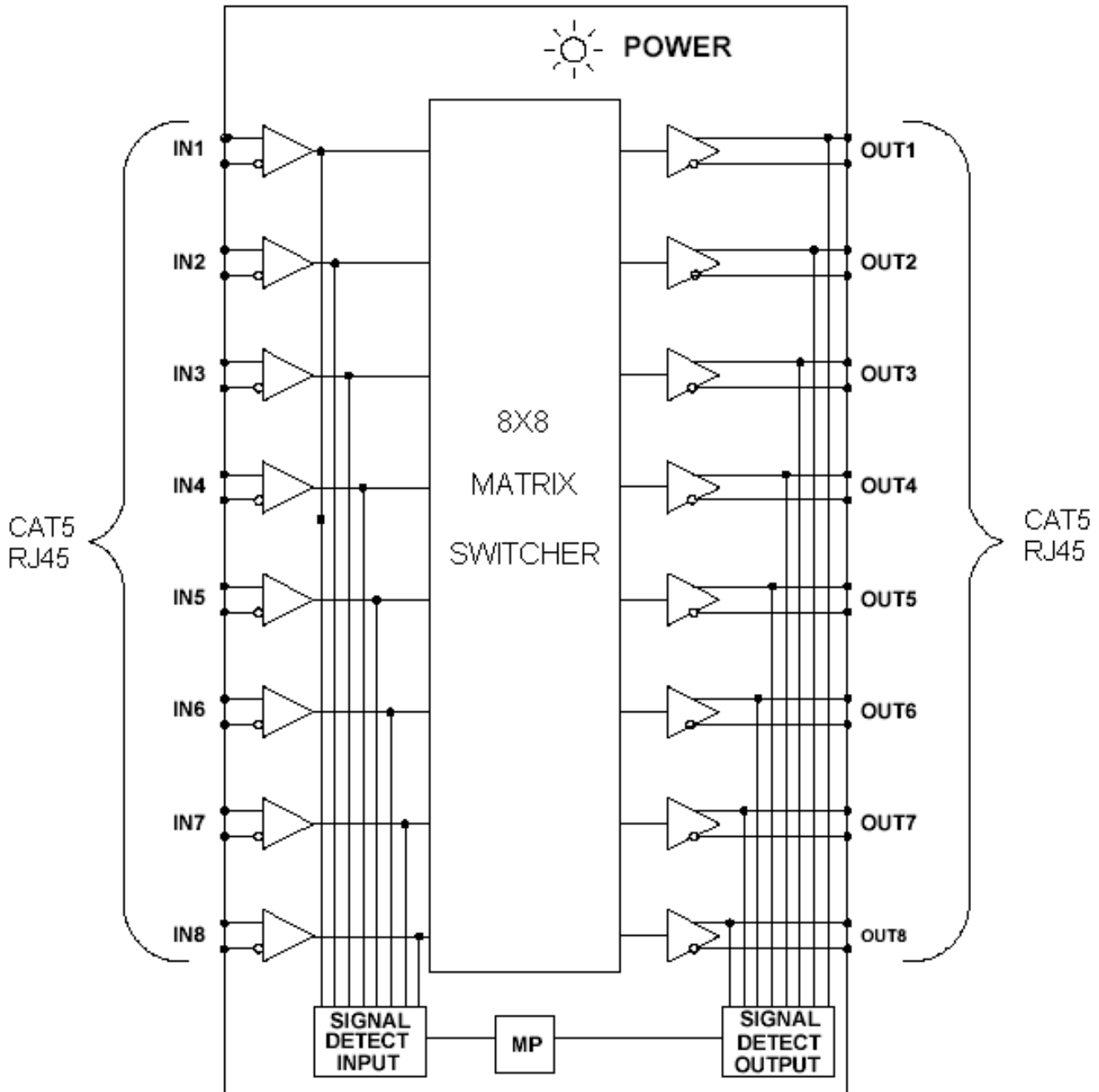
DIAGRAM 2: MT105-131 TYPICAL SETUP

DIAGRAM 3: MT105-132 TYPICAL SETUP

DIAGRAM 4: INTERNAL VIEW

MT105-130 : 4 TWISTED PAIR (TP) MATRIX SWITCHER
MT105-131 : 3 TWISTED PAIR (TP) MATRIX SWITCHER
MT105-132 : 2 TWISTED PAIR (TP) MATRIX SWITCHER

INSTALLING YOUR MT105-130/131/132   6

Step 1. Slide the **MT105-130/131/132** into an available slot in the Multi-Tasker™ Enclosure in order to connect to the bus. Make sure that the card fits into place. Secure the card to the Multi-Tasker™ by tightening the retainer screws located on the top and bottom of the card.

Step 2. Connect a CAT-5/6 cable from a CAT-5 Transmitter to one of the input connectors of the **MT105-130/131/132**.

Step 3. Connect one of the output connectors of the **MT105-130/131/132** the input of a CAT-5 Receiver.

Step 4. Starting from the left, identify the slot number where the **MT105-130/131/132** card is plugged into the Enclosure and note that it is for RS-232 control.

OPERATION   7

7.1 RS-232 CONTROL

When used in the Multi-Tasker™ Enclosure, the **MT105-130** has many advanced remote control capabilities, which are accessible through standard RS-232 communication. The actual controlling can be accomplished through a computer control system or any other device capable of sending RS-232 commands.

7.1.1 RS-232 INTERFACE

The RS-232 commands, for the **MT105-130/131/132**, are in a simple ASCII character format.

1. **Square brackets "[ ]" are part of the command.**

2. **Use uppercase letters for all commands.**

After processing a command, an OK or ER 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

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

The Card ID is an assigned value. It is equal to the enclosure slot number in which the card is installed. The value can range from 1 to 4 up to 1 to 20 depending on the enclosure.

Card ID 0 (C0) is used for the controller. See the MT100-100 User's Guide for details.

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.

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]

1. **[VER]**

   This command displays the software version and card type for the **MT105-130** card.

   Command Format: [VERCnUi]

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

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

   Example:

   An **MT105-130** card is in slot #2. Send the command [VERC2], and the Multi-Tasker™ Enclosure will return the following feedback:

   MT105-130 690-0191-001

   MT105-130   = the card model

   690-0191-001= the software version

2. **[C]**

   This command displays the status of the card's connections and whether Matrix Blocking mode is set.

   Command Format: [CnUi]

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

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

   Example:

   One **MT105-130** card is in slot #2. Input 1 is connected to all the outputs, and Outputs 1-3 are ON. Check the status by sending the command [C2] and receiving feedback similar to the following:

   Blocking Matrix
   In1 Out1 ON
   In1 Out2 ON
   In1 Out3 ON
   In1 Out4 OFF
   In1 Out5 OFF
   In1 Out6 OFF
   In1 Out7 OFF
   In1 Out8 OFF

   Note: If there is no card in slot #2, sending the [C2] command will not return any feedback.

3. **[CnS]**

   This command saves the input to output connections, the blocking mode setting and the on/off status of the outputs.

   Command Format: [CnUiS]

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

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

   S = Save settings

   Example:

   Input 1 is connected to all 8 outputs, but only 1 thru 4 are ON. The card is in Matrix Non-Blocking mode, see [MODE] command for details. The feedback after sending the command [C4S], for slot 4, would be:

   Non-Blocking Matrix
   In1 Out1 ON
   In1 Out2 ON
   In1 Out3 ON
   In1 Out4 ON
   In1 Out5 OFF
   In1 Out6 OFF
   In1 Out7 OFF
   In1 Out8 OFF

   In Matrix Non-Blocking mode, the entire configuration will be restored after the system is reset or powered off then on. The output enable settings will be set to the saved values, 1 thru 4 ON and 5 thru 8 OFF.

   In Matrix Blocking mode, the connection settings will be restored after reset or power up, but only one output enable setting will be restored per input. For example, Input 1 is connected to outputs 1-4 and Input 2 is connected to Outputs 5-8 and all the outputs are ON when the configuration is saved. After reset or power up, Input 1 will be connected to Outputs 1-4, and Input 2 will be connected to Outputs 5-8, but only Outputs 1 and 5 will be enabled.

4. **[CLR]**

This command is used to clear the card and return it to its factory settings. In Matrix Blocking mode, that is Input 1 connected to all outputs and Output 1 ON. In Matrix Non-Blocking mode, Input 1 will be connected to all outputs and all outputs will be ON.

Command Format: [CLRCnUi]

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

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

Example:

Send the command [CLRC8] to restore the card in slot #8 to its factory defaults. The following message will be displayed at the start.

PLEASE WAIT
CARD IS PERFORMING FACTORY RESET

When the reset is complete, the following message will be displayed.

FACTORY RESET COMPLETED

5. **[?]**

This command will return general information about the card and the status.

Command Format: [?CnUi]

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

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

Example:

Send the command [?C5] to receive the feedback for the MT105-130 in slot #5. Each status field begins with a '+' and ends with the card slot number (ex: C05). The feedback will be similar to the following:

[+MT105-130C05+VR690-0191-001C05
+MA21111111C05+ON10000000C05]

MT105-130   = Card Type
VR690-0191-001 = Firmware version

MA11111112   = Matrix Connections
    Left to right, each location represents an output, 1-8. Each digit is the input connected to that output. In this example, Input 1 is connected to outputs 2-7 and Input 2 is connected to Output 8.
ON10000000   = ON/OFF Status
    Left to right, each location is an output, 1-8. A '1' indicates the output is ON and a '0' indicates OFF. In this example, Input 1 is ON and the rest are OFF.

6. **[STA]**

This command enables/disables automatic feedback from the front panel. The feedback will be displayed following the command sent. The command affects any card with auto-feedback capability, not just the **MT105-130**. The default at power on or reset is STA0, OFF.

Command Format [STA1] = ON
Command Format [STA0] = OFF

Feedback Prefix Definitions:
+MT =   Multi-Tasker Card
+VR =   Firmware Version
+MA =   Matrix Configuration
+ON =   Output ON/OFF Status

Example 1:

Command =   [ON1C5]
Feedback =   +ON11110000C05
   +ON   =   Output Status
   11110000 =   Outputs 1-4 are ON.
                  Outputs 5-8 are OFF
   C05   =   Card slot number

Example 2:

Command =   [I1O1C5]
Feedback =   +MA11111111C05
   +MA   =   Matrix Configuration
   11111111 =   Input 1 to all outputs
   C05   =   Card slot number

NOTE: See the [?] command for further details.

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SIGNAL
MANAGEMENT
SOLUTIONS

7. [TEST]

This command performs a test on the internal memory. Upon completion, the system will display the results. If there are no problems, the system will display the following:

MEMORY IC TEST RESULTS:
MEMORY IC PASS

Otherwise, failures will be indicated.

Command Format: [TESTCnUi]

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

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

Example:

There is an **MT105-130** in slot #10. In order to test the internal memory, send the command [TESTC10].

8. [ON]

This command will enable one output or all outputs for a single card, or a group of cards.

SINGLE CARD OPERATION

Command Format: [ONmCnUi] - one output

Command Format: [ONCnUi] - all outputs

m = Output (m = # from 1 to 8)

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

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

Example:

There is an **MT105-130** card in slot #5. All of the outputs on the card are OFF.

    1) [ON1C5]: Turns ON only Output 1.

    2) [ONC5]: Turns ON all outputs.

GROUP OPERATION

Command Format: [ONmGkUi] - one output

Command Format: [ONGkUi] - all outputs

This command enables output "m" for each card in group "k" of unit "i".

m = Output (m = # from 1-8)

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

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

Example:

[ON1G1]: Turns ON Output 1 for each card in Group 1. See the GROUP commands for a detailed explanation.

PATH OPERATION

Command Format: [ONmCnUiP]

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 may be preloaded.

m = Output number (m = # from 1 to 8)

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

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

P = Path

Example:

There are two **MT105-130** cards in slots 6 and 7. Enable Output 1 of card 6 and Output 3 of card 7 simultaneously. To do this, send the following commands:

[ON1C6P] , [ON3C7P] , [SW]

If "F" is included, use the [ONmCnPF] command or the [ONmCnFP] command.

FEEDBACK OPERATION

Command Format: [ON…..F]

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

Example:

[ON1C2F]: if path is not set
[ON1C2PF]: if path is set

9. **[OFF]**

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

SINGLE CARD OPERATION

Command Format: [OFFmCnUi] - one output

Command Format: [OFFCnUi] - all outputs

m = Output (m = # from 1 to 8)

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

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

Example:

Card 5 has Output 1 ON. The following commands may be used to turn OFF the output.

1) [OFF1C5]: Turns OFF only Output 1.
2) [OFFC5]: Turns OFF all outputs.

GROUP OPERATION

Command Format: [OFFmGkUi] - one output

Command Format: [OFFGkUi] - all outputs

This command disables output "m" for each card in group "k" of unit "i".

m = Output (m = # from 1-8)

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

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

Example:

1. [OFF1G1]: Turns OFF Output 1 for each card in group 1.
2. [OFFG1]: Turns OFF all outputs for each card in group 1.

PATH OPERATION

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 may be preloaded.

Command Format: [OFFmCnUiP]

m = Output (m = # from 1 to 8)

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

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

P = Path

Example:

There are two **MT105-130** cards in slots 6 and 7. Disable Output 1 of card 6 and Output 3 of card 7 simultaneously using the following commands:

[OFF1C6P] , [OFF3C7P] , [SW]

If "F" is included, use the [OFFmCnPF] command or the [OFFmCnFP] command.

FEEDBACK OPERATION

Command Format: [OFF…..F]

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

Example:

[OFF1C2F]: if path is not set
[OFF1C2PF]: if path is set

10. **[IO]**

This command will connect a single input with one or all outputs.

If the card is in Matrix Non-Blocking mode, the [ON] command must be used to enable the output if the output is off. The IO command will not automatically turn the outputs on.

If the card is in Matrix Blocking mode, only the first output will be turned on automatically. If there are other oututs ON, they will be turned OFF. See the [MODE] command for more details.

Command Format: [IxOyCnUi]

x = Input (x = # from 1 to 8)

y = Output (y = # from 1 to 8, or [for all)

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

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

Example:

An **MT105-130** is in slot #4 and Matrix Blocking mode is set. Connect Input 1 to all outputs by sending the command [I1O[C4]. After the command is sent, Input 1 will be connected to all outputs, but only Output number 1 will be turned on. If outputs 2 thru 8 were on prior to the command, they will be turned off.

11. **[…S]** – SAVE

This command will save the configuration command being sent in memory. When sending the command [I1O8C4S], after reset or power up, Input 1 will be connected to Output 8 on C4.

12. **[…F]** – FEEDBACK

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

13. **[…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.

14. **[SW]** – SWITCH

This command immediately connects inputs and outputs previously set with the PATH command. All paths set on this card and all other cards in the enclosure will be switched.

Example:

The following commands set the path for turning on Output 1 of the card in slot #6 and turning off Output 3 of the card in slot #7. Nothing happens until the [SW] command is sent. At that time, Output 1 is enabled and Output 3 is disabled.

[ON1C6P]
[OFF3C7P]
[SW]

15. **[SDI]**

The Input Signal Detect command tests for the presence of an input signal on one or all inputs. The Multi-Tasker™ returns feedback indicating the input signal number and the status ON/OFF.

Command Format: [SDImCnUi] - one input

Command Format: [SDICnUi] - all inputs

m   = Input (m = # from 1 to 8)

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

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

Example 1:

A properly formatted input signal is applied to Input 1 of the card in slot #4. Verify the input signal is detected by sending the command [SDI1C4] and receiving the following feedback:

In1 Signal ON

Example 2:

Only one input signal is applied to the **MT105-130**. Send the command [SDIC4] to check all inputs. The feedback will be:

In1 Signal ON
In2 Signal OFF
In3 Signal OFF
In4 Signal OFF
In5 Signal OFF
In6 Signal OFF
In7 Signal OFF
In8 Signal OFF

16. [SDO]

The Output Signal Detect command tests for the presence of an output signal on one or all outputs. The Multi-Tasker™ returns feedback indicating the output signal number and the status ON/OFF.

Command Format: [SDOmCnUi] - one output

Command Format: [SDOCnUi] - all outputs

m   = Output (m = # from 1 to 8)

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

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

Example 1:

The card in slot #4 has Input 1 is connected to Output 1 and Output 1 is turned ON. Verify the output signal is detected by sending the command [SDO1C4] and receiving the following feedback:

Out1 Signal ON

Example 2:

Input 1 is connected to all outputs, but only outputs 1-4 are enabled. Verify the output signals are detected by sending the command [SDOC4] and receiving the following feedback:

Out1 Signal ON
Out2 Signal ON
Out3 Signal ON
Out4 Signal ON
Out5 Signal OFF
Out6 Signal OFF
Out7 Signal OFF
Out8 Signal OFF

17. [MODE]

This command sets the Matrix Switch Mode to Blocking or Non-Blocking.

Command Format: [MODEmCnUi]

m   = 1 = ON, 0 = OFF

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

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

NON-BLOCKING

Example:

Send the command [MODE0C4] to turn OFF Blocking Matrix for the card in slot #4. Next, send the command [I1O*C4] to connect Input 1 to all outputs. In Non-Blocking mode, the inputs will be switched and the output enable settings will not be changed. If the outputs are on, they remain on.

BLOCKING

Example:

Send the command [I1O*C4] to connect Input 1 to all outputs. With Blocking ON, Input 1 will be connected to all outputs, but only Output 1 will be enabled. The remaining outputs will need to be enabled using the [ON] command.

Connecting a single output will result in the output being switched and enabled. For example, with Blocking ON, sending the command [I2O2C4] will result in Input 2 being connected to Output 2 and Output 2 will be turned on.

18. [HELP]

This command displays information available for the Multi-Tasker interface commands.

Command Format: [HELPCnUi]

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

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

Example:

In order to display the RS-232 commands available for the **MT105-130** card in slot #2, send the command [HELPC2]. The commands along with a brief description will be displayed in the Terminal Window.

19. [WR]

This command groups multiple cards in the enclosure allowing all the group members to be controlled simultaneously with the same command. Each unit may define a maximum of eight groups.

In Multi-Tasker™ systems with audio and video cards, boards are typically grouped as follows:

Group 1 = Video Cards
Group 2 = Audio Cards
Group 3 = Video and Audio Cards

If assigning group commands to button functions, it is best to use the "Press and Hold on Power Up" to make group settings.

Command Format: [WRCn…GkUi]

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

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

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

Example:

To group cards 1, 2, and 3 as group 5 of Unit ID 1, send the command [WRC1C2C3G5U1]. After executing this command, cards 1, 2 and 3 will be grouped together as group 5 of Unit ID 1. The system will return the following feedback:

G1=C1C2C3

Now, when a command is sent to G1, each board in G1 will execute the same command.

20. **[CLRG]**

This command clears the members for a single group or for all groups. The clear command restores the cards to default settings.

Command Format: [CLRGkUi]

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

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

Example:

1) To clear group 1, send the [CLRG1U1] command. This command clears the members for the specified group only.

2) To clear all groups of Unit ID 1, send the [CLRG[U1] command.

NOTE: Since this command is sending the [CLR] command to its group members, each card will display its own reset message.

21. **[RD]**

This command displays the members in each group.

Command Format: [RDGkUi]

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

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

Example:

The cards in slots 1, 2 and 19 are part of group 5 in Unit ID 1. Read the member data for group 5 of Unit ID 1, by sending the command [RDG5U1]. The system will return feedback as follows:

G1=C1C2C19

The feedback shows G1 (Group 1) and then the cards that make up Group 1. In this case, Group 1 includes C1, C2 and C19.

22. **[CLM]**

This command removes the members in a group and leaves the group empty.

Command Format: [CLMGkUi]

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

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

Example:

Group 5 of Unit ID 1 contains the cards in slots 1, 2 and 19. Read the member data for group 5 of Unit ID 1. Send the command [RDG5U1] and receive the following feedback:

G1=C1C2C19

Now, clear group 5 by sending the command [CLMG5U1]. Reread the member data as above and note the following feedback:

G1=EMPTY - PLEASE RESET THE SYSTEM WHEN FINISHED

7.3 SUMMARY OF COMMANDS

Card Commands

1) **[VER]**   **Receives software version**

2) **[C]**   **Receives status of the card**

3) **[CnS]**   **Saves card settings**

4) **[CLR]**   **Reset card to default values**

5) **[?]**   **Show status/ general information**

6) **[STA]**   **Enable/disable auto feedback**

7) **[TEST]** **Test internal memory IC's**

8) **[ON]**   **Turns on one or all outputs**

9) **[OFF]**   **Turns off one or all outputs**

10) **[IO]**   **Connects inputs to outputs**

11) **[…S]**   **Save the command configuration**

12) **[…F]**   **Provides feedback upon sending**

13) **[…P]**   **Set the path, preload for [SW]**

14) **[SW]**   **Switch preloaded output buffer**

15) **[SDI]**   **Input Signal Detect**

16) **[SDO]**   **Output Signal Detect**

17) **[MODE]** **Set matrix blocking on/off**

18) **[HELP]** **Display all available commands**

Group Commands

19) **[WR]**   **Groups multiple cards**

20) **[CLRG]** **Clears group members**

21) **[RD]**   **Displays group members**

22) **[CLM]**   **Removes members from group.**

7.4 MENU MODE

MENU MODE commands are RS-232 commands that allow virtually the same functionality as programming commands. Unlike the programming commands in the previous sections, 7.2 and 7.3, MENU commands prompt the user to select from a list of available options. The system then responds based upon selections made by the user.

MENU commands may be issued in response to prompts from within MTSetup™ or other RS-232 communication software.

The MENU driven commands are only available with Multi-Tasker™ Front Panel systems that have the following firmware:

690-0122-015 = Version 015 or later.
690-0123-004 = Version 004 or later.
690-0124-015 = Version 018 or later.

NOTE: In MTSetup™, send the command [VER] from the Terminal Window. The system will respond with feedback similar to the following:

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

Check the last three digits against the numbers above to determine if the MENU MODE option 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 mode sections versus commands.

MENU	COMMAND
Matrix	[MODE]
I/O Connection	[..P], [IO], [SW]
Output ON/OFF	[ON], [OFF]
Signal Detect	[SDI], [SDO]
Save Configuration	[CnS]
Reset Configuration to Default	[CLR]
Version	[VER]
Status	[C]
Help	[HELP]
Not Available	[?], [STA], […S], [...F], [TEST], [WR], [CLRG], [RD], [CLM]

7.4.2 USING MENU MODE

SUGGESTION: Before using the menu mode, it is best to disable the automatic feedback feature. The values and current settings will be displayed in the menu mode, but the automatic feature will display after each setting change making the menus difficult to read.

1. In order to enter MENU mode, the system needs to be connected to a computer running MTSetup™ or other RS-232 control software.

2. Insert the card into an empty slot and push in all the way for a secure fit.

3. Reset the system or power the system OFF and then ON.

4. In MTSetup™, click the cursor in the Terminal Window and press the ENTER key.

5. The system will interrogate the enclosure and return a list of cards installed and their slot locations.

   Example: 8 (Slot 8): **MT105-130**

   NOTE: Only cards supporting the MENU feature will be displayed.

5. Find the alphanumeric character representing the card whose setup requires changing. It will be the first character in the line.

6. Press the number or letter associated with the card, and a menu with options available for that card will appear on the screen. In the example above, press "8".

   WARNING: Do NOT enter any characters except the one relating to the desired menu. Pressing ENTER or RETURN after "8" will force the system back to the original prompt.

7. After selecting the **MT105-130** as described above, the system will prompt for selections specific to that card.

8. Read each menu carefully, and continue selecting keys as prompted for further functions.

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 main functions related to the card. Press the key representing the menu item for access. A sub menu will appear next.

2. SUB MENUS

   Each sub menu will display either another menu (sub menu) or a list of available options or settings. Press the key corresponding to the menu choice to change a setting or select the next menu.

   NOTE: Pressing the ESCAPE (ESC) key in most menus will take you up to the previous menu.

7.4.4 MT105-130/131/132 MENUS

Following are the menus available to the **MT105-130/131/132**. The first menu is the Main Menu only. The second listing is an expansion of all the menu items available.

The expanded menu contains values in parentheses that indicate the current setting or value of that parameter. In some areas, additional comments are provided for clarification.

Some menu settings act as toggle features. For example, if the MODE is set to Non-Blocking, the only option will be '1'. Pressing 1 will change the mode to Blocking, the value displayed in parentheses will show "BLOCKED". The new option displayed will be '1' for "Non-Blocking". In short, pressing 1 repeatedly will toggle between Blocking and Non-Blocking modes.

CAUTION: Pay special attention to the top of the menus in the IO CONNECTION menus. If the PATH option is ON, it will be necessary to use the SWITCH option to complete the connection. Additionally, after selecting the input to connect, the active input number will be displayed at the top of the list of available outputs.

MT105-130/131/132 MAIN MENU
   1: MATRIX MODE (0)
   2: IO CONNECTION
   3: OUTPUT ON/OFF
   4: SIGNAL DETECT
   5: SAVE CONFIGURATION
   6: RESET CONFIGURATION TO DEFAULT
   7: VERSION
   8: STATUS
   9: HELP
   ESC: GO BACK

MT105-130/131/132 EXPANDED MENUS

1. MATRIX MODE

   MATRIX MODE (NON-BLOCKED)

   1: BLOCKED

   ESC: GO BACK

2. IO CONNECTION

   IO CONNECTION

   1: PATH SWITCHING (ON)
      PATH SWITCHING (ON)
      The value in parentheses is the current value. See the [..P] and [SW] commands for details.
      1: OFF
      ESC: GO BACK

   2: CONNECT IO (IN2OUT1)
      CONNECT IO
      First, the system will prompt for the input number. Select from the list provided and then the output list will be displayed.

1: SELECT INPUT1
2: SELECT INPUT2
3: SELECT INPUT3
4: SELECT INPUT4
5: SELECT INPUT5
6: SELECT INPUT6
7: SELECT INPUT7
8: SELECT INPUT8
ESC: GO BACK

After selecting the input, the system will prompt for the output. In this case, it shows INPUT2 at the top of the list. Select the output to connect to Input 2.

CONNECT IO

INPUT2
1: SELECT OUTPUT1
2: SELECT OUTPUT2
3: SELECT OUTPUT3
4: SELECT OUTPUT4
5: SELECT OUTPUT5
6: SELECT OUTPUT6
7: SELECT OUTPUT7
8: SELECT OUTPUT8
9: ALL OUTPUTS
ESC: GO BACK

   3: SWITCH

   ESC: GO BACK

3. OUTPUT ON/OFF

   OUTPUT ON/OFF

   After a selection, the same menu will be redisplayed with the update value in parentheses.
   1: OUTPUT1 (ON)
   2: OUTPUT2 (OFF)
   3: OUTPUT3 (OFF)
   4: OUTPUT4 (OFF)
   5: OUTPUT5 (OFF)
   6: OUTPUT6 (OFF)
   7: OUTPUT7 (OFF)
   8: OUTPUT8 (ON)
   9: ALL OUTPUTS ON
   A: ALL OUTPUTS OFF
   ESC: GO BACK

4. SIGNAL DETECT
   SIGNAL DETECT
   After the selection, the signal status will be displayed and then an option to refresh the status.
   1: INPUT SIGNAL DETECT
   2: OUTPUT SIGNAL DETECT
   ESC: GO BACK

5: SAVE CONFIGURATION

   SAVE CURRENT CONFIGURATION?

   1: YES

   2: NO

   ESC: GO BACK

6: RESET CONFIGURATION TO DEFAULT
   RESET CARD TO FACTORY DEFAULT?
   This is equivalent to the [CLR] command.
   1: YES
   2: NO
   ESC: GO BACK

7: VERSION

   Equivalent to the [VER] command.

   Returns the card firmware version.

8: STATUS

   Equivalent to the [C] command.

   Returns the card status.

9: HELP

   Equivalent to the [HELP] command.

   Displays a list of commands available for the **MT105-130/131/132** along with a brief description.

ESC

   Returns to the parent menu.

7.4.5 MENU MODE EXAMPLES

All MENU MODE examples assume an **MT105-130** is installed in slot #1. Start by clicking the mouse in the Terminal window. Press ENTER and a list of available cards will be displayed.

1. **Connect Input 1 to Outputs 1 and 2 using the PATH connection.**
   Follow the keystrokes below:

Enter	List available cards
1	Select MT105-130 in slot #1
2	Select IO CONNECTION Menu
1	Select PATH Switching
	If the value for PATH in "( )" shows ON, skip this step and the next two.
1	Set PATH ON (ESC if already ON)
	Path is ON. Input to output connections will be preset and will not actually be connected until the SWITCH command is sent.
ESC	Return to previous menu
2	Select CONNECT IO
1	Select INPUT 1
1	Select OUTPUT 1
2	Select CONNECT IO
1	Select INPUT 1
2	Select OUTPUT 2
3	Select SWITCH (this connects the input to the outputs)
ESC	Return to the MAIN Menu

2. **Turn ON output 8**
   Starting from the main menu, follow the keystrokes below.

3	Select OUTPUT ON/OFF
	If the value in "( )" for Output 8 shows ON, then Output 8 is already ON. Press ESC to return to the Main Menu. Done.
8	Select Output 8
	This will toggle the status for Output 8 to ON.
ESC	Return to the Main Menu

3. **Check for valid input signals**

Starting from the main menu, follow the keystrokes below.

4   Select SIGNAL DETECT
1   Select INPUT SIGNAL DETECT
       The status of each input will be displayed. Those with good inputs will show ON, those with no input signal will show OFF.
ESC   Return to SIGNAL DETECT menu
ESC   Return to the MAIN Menu

4. **Display Card Status**

Starting from the Main Menu, follow the keystrokes below.

8   Displays card status

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

TROUBLESHOOTING GUIDE   8

We have carefully tested and have found no problems in the supplied **MT105-130/131/132**; 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 correct path is not selected.**

Solution: Select the card input to output connection for the proper source to display connection. See RS-232 accessible commands, [IO] and [ON], 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 receiver or transmitter has a problem.**

Solution: Connect the transmitter directly to the receiver. If the display is working, see Cause 5.

Cause 5:   **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 POLICY   9

9.1 LIMITED WARRANTY/RETURN POLICY

Please see the Altinex website at www.altinex.com for details on warranty and return policy.

9.2 CONTACT INFORMATION

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