MT112-106 is shown above.

MANUAL PART NUMBER: 400-0366-001

MT112-105/106

1-IN, 3-OUT / 1-IN, 6-OUT POWER DISTRIBUTION WITH CURRENT SENSE CARDS FOR MULTI-TASKER™ ENCLOSURES

USER'S GUIDE

TABLE OF CONTENTS

PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT112-105/106**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT112-105/106** 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 **MT112-105/106** 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 **MT112-105/106** carefully. Dropping or jarring can damage the card.
- Do not pull the cables that are attached to the **MT112-105/106**.
- Insert the card carefully into the slots of the Multi-Tasker™ without bending any edges.
- When removing a card, please make sure that the card to which it is attached is also pulled out simultaneously.

1.3 CLEANING

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

1.4 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR MT112-105/106 2

MT112-105 & MT112-106

1-In, 3-Out and 1-In, 6-Out MT Power Distribution with Current Sense Cards

The **MT112-105** is a 1-In, 3-Out AC power distribution card. The **MT112-106** is a 1-In, 6-Out AC power distribution card.

The **MT112-105/106** distributes AC power from a single AC power source to multiple AC outlets. These outlets can be connected to any type of audio/video equipment. The total current supplied to all outlets should be less than 10 amps. A special sensor will alert the user by flashing the LED's when the load is greater than 9.5A, and a warning will be sent over the RS-232 bus indicating the total current draw is near maximum.

When audio/video equipment connected to the **MT112-105/106** draws 11.5A for more than 3 seconds, the microprocessor will start turning outlets OFF, starting from the highest outlet number first. Additionally, a message will be sent over the RS-232 bus informing the user that outputs are being shutdown.

The **MT112-105/106** is able to turn ON/OFF audio/video equipment in a sequential order, which may be defined using RS-232 protocol commands. The time delay between switching is also programmable in a range between zero and 50 seconds.

The **MT112-105/106** has built in current measuring circuits to detect load levels. The value of these loads may be read through the Multi-Tasker™ RS-232 port. The measurement is made in amps and can be used to monitor the load level on all outputs.

The threshold level for the ON/OFF detect feature is adjustable to accommodate different loads and determine when AV equipment is ON or OFF. This feature is especially important for VCRs and DVD players or any other equipment that has only IR control capabilities. Using this feature, the control system can determine if the VCR is ON or OFF.

TECHNICAL SPECIFICATIONS 3

FEATURES/ DESCRIPTION	MT112-105/106
GENERAL	
Inputs	
MT112-105/106	(1) IEC Power Entry - Male
Outputs	
MT112-105	(3) AC Receptacle, Female
MT112-106	(6) AC Receptacle, Female
Approvals	CE/FCC

Table 1. **MT112-105/106** General

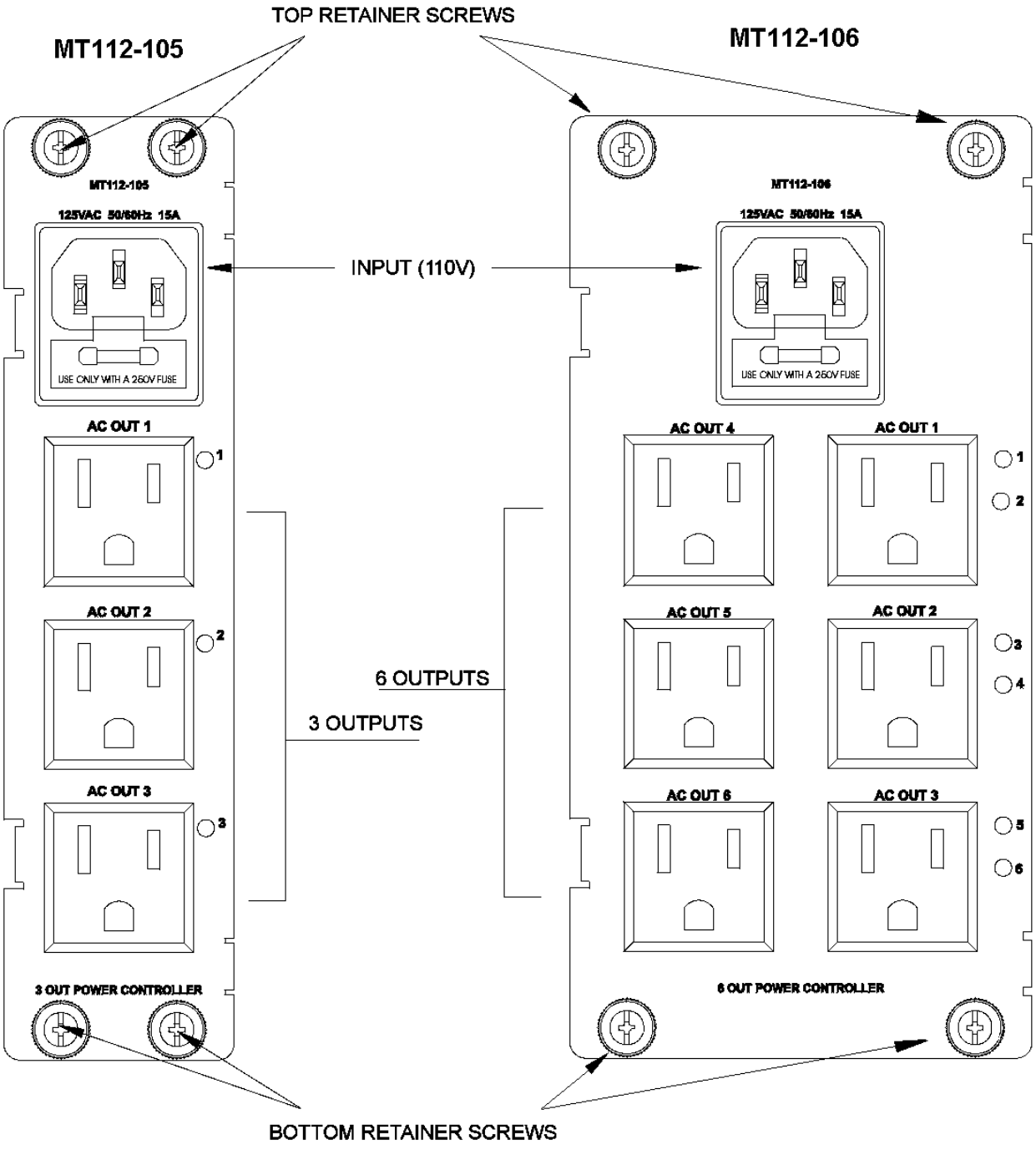
MECHANICAL	
	MT112-105
Enclosure Slots	Two
Weight	1.28lb (0.58kg)
Shipping Weight	1.75 lb. (0.79kg)
	MT112-106
Enclosure Slots	Four
Weight	1.83lb (0.83kg)
Shipping Weight	2.3 lb. (1.04kg)
	MT112-105/106
Connector Panel	Black
T° Operating	10°C-75°C
T° Maximum	0 to 75°C
Humidity	90% non-condensing
MTBF (calc.)	40,000 hrs

Table 2. **MT112-105/106** Mechanical

ELECTRICAL	**MT112-105/106**			
Input Signals				
AC	125VAC/10A Maximum			
Output Signals				
AC	125VAC/10A Maximum			
Warning Level	9.5 Amps			
Shutdown Level	11.5 Amps > 3sec			
Shutdown Sequence	Output 6,5,4,3,2,1			
Power				
Power (from Enclosure)	**+13V**	**+6V**	**-6V**	**TOTAL Power**
MT112-105	1.7W	0.7W	0.2W	2.6 watts
MT112-106	2.9W	1.2W	0.2W	4.3 watts

Table 3. **MT112-105/106** Electrical

PRODUCT DESCRIPTION 4



APPLICATION DIAGRAM 5

DIAGRAM 1 : TYPICAL SETUP - MT112-105

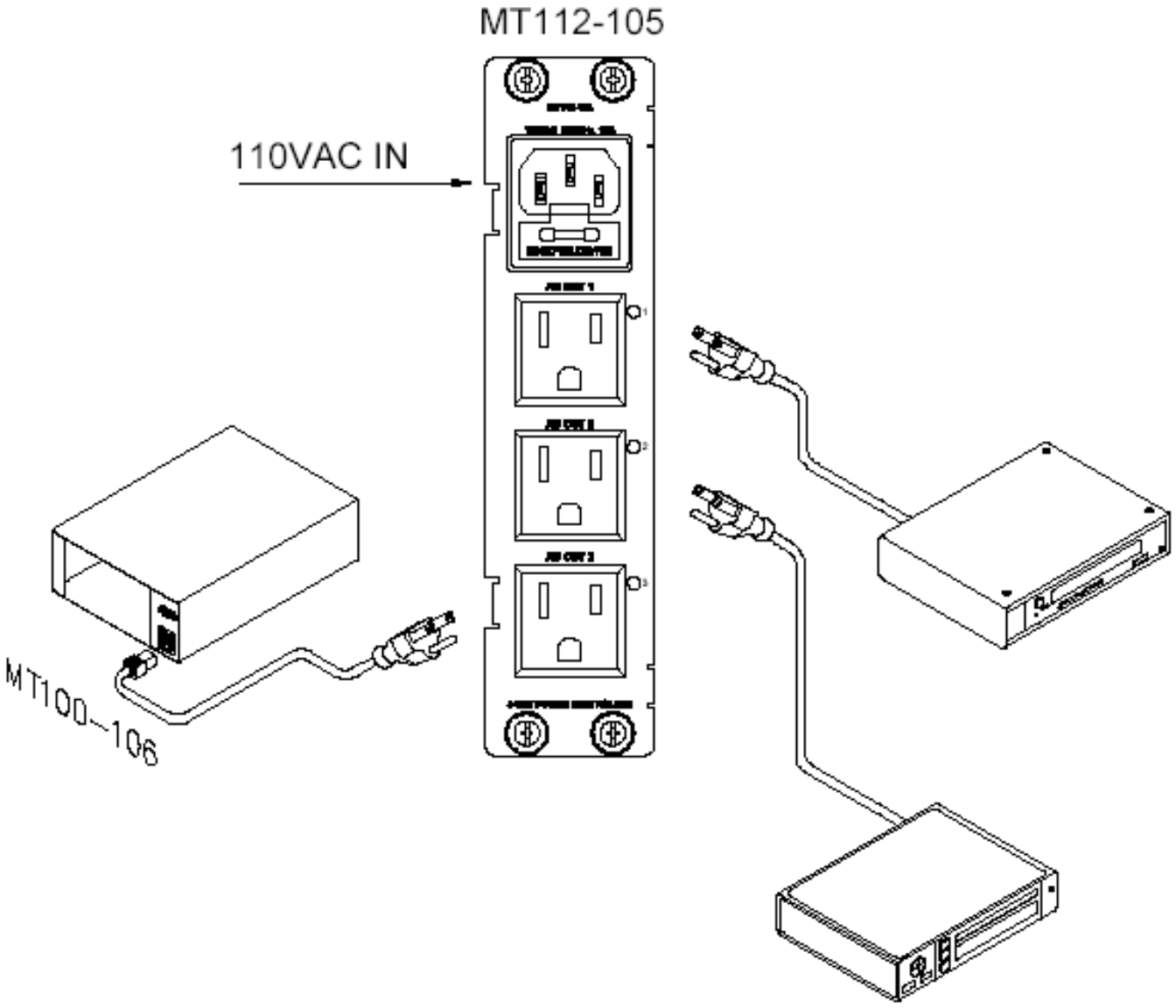


DIAGRAM 2 : TYPICAL SETUP - MT112-106

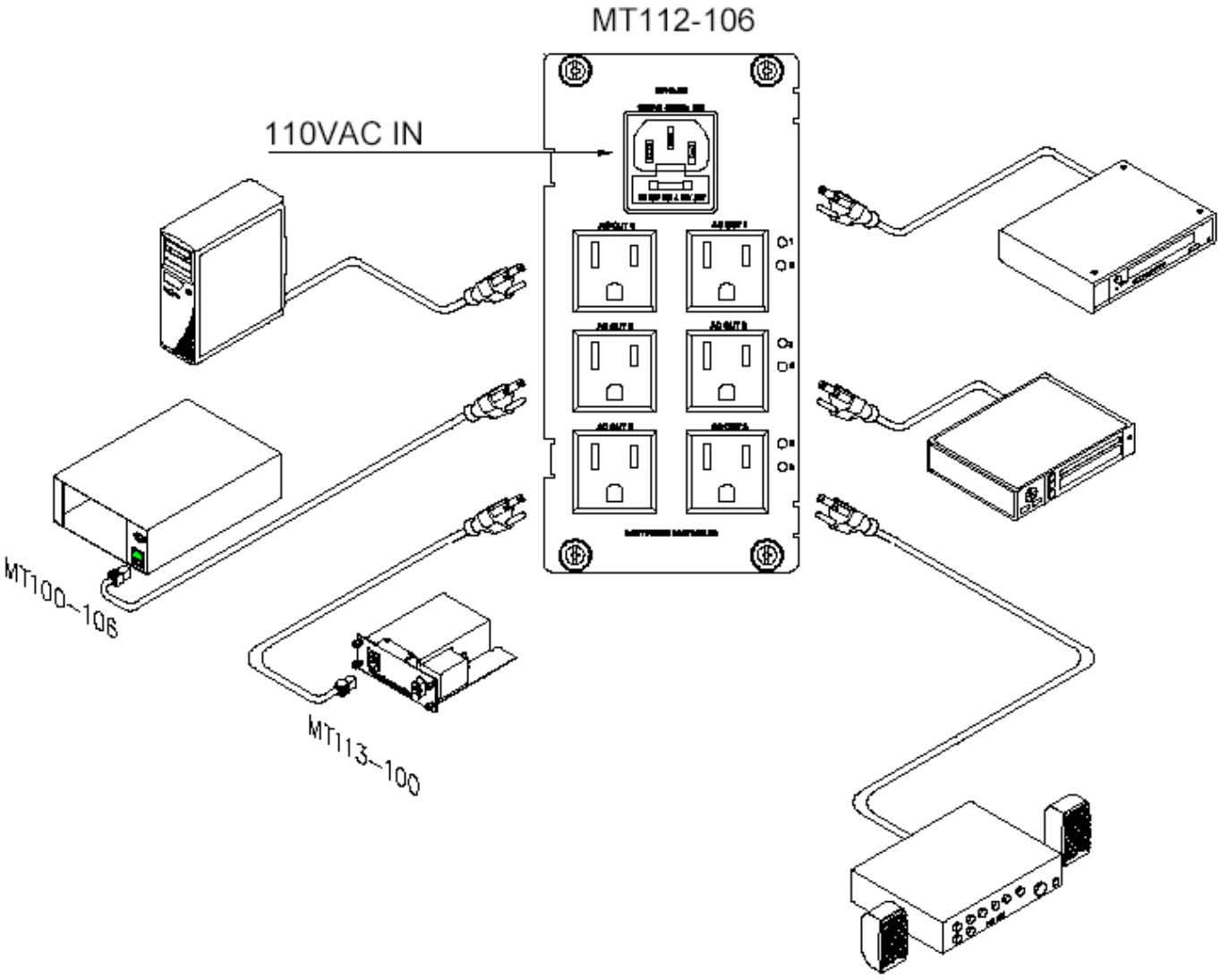
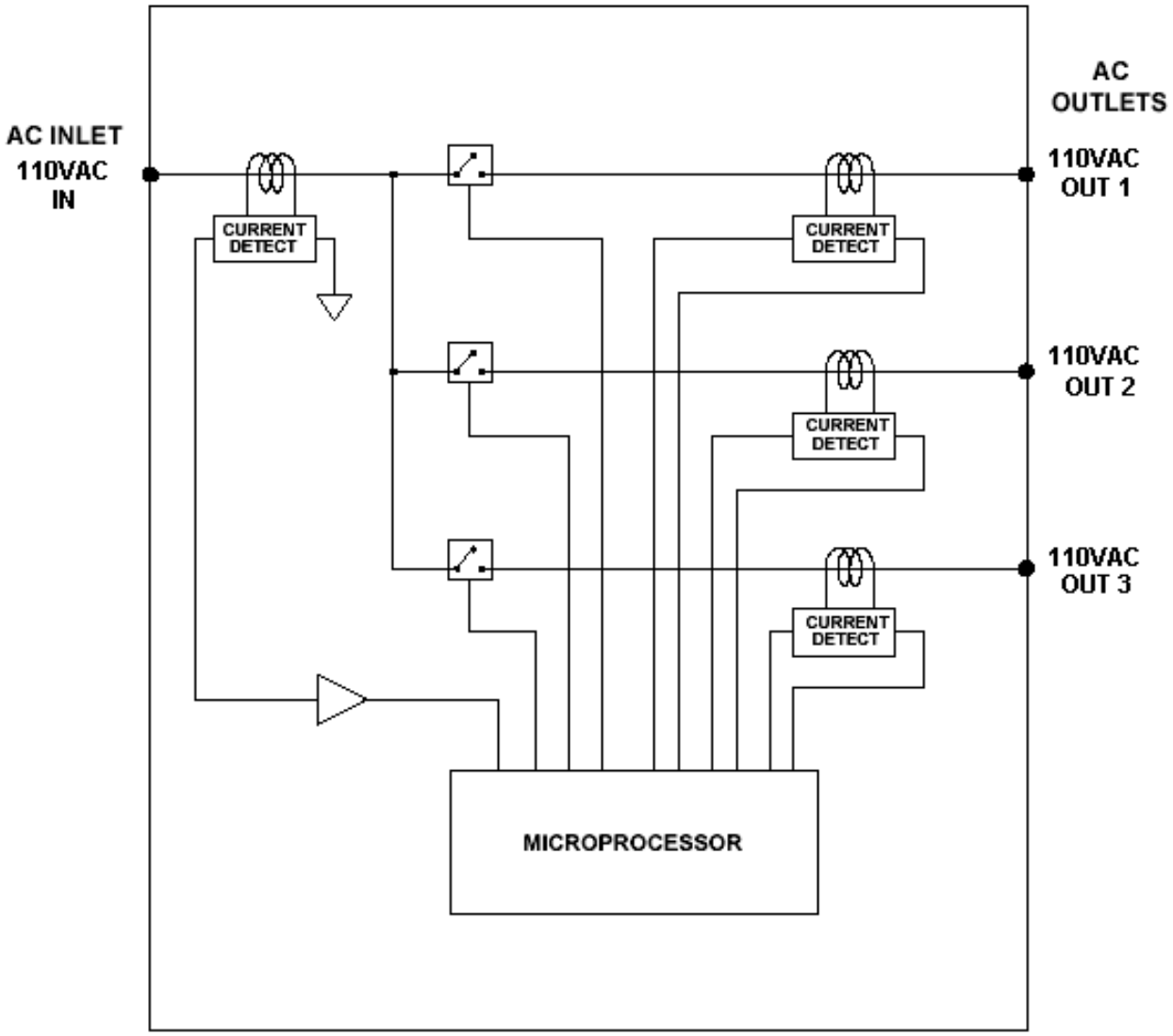


DIAGRAM 3 : INTERNAL VIEW MT112-105

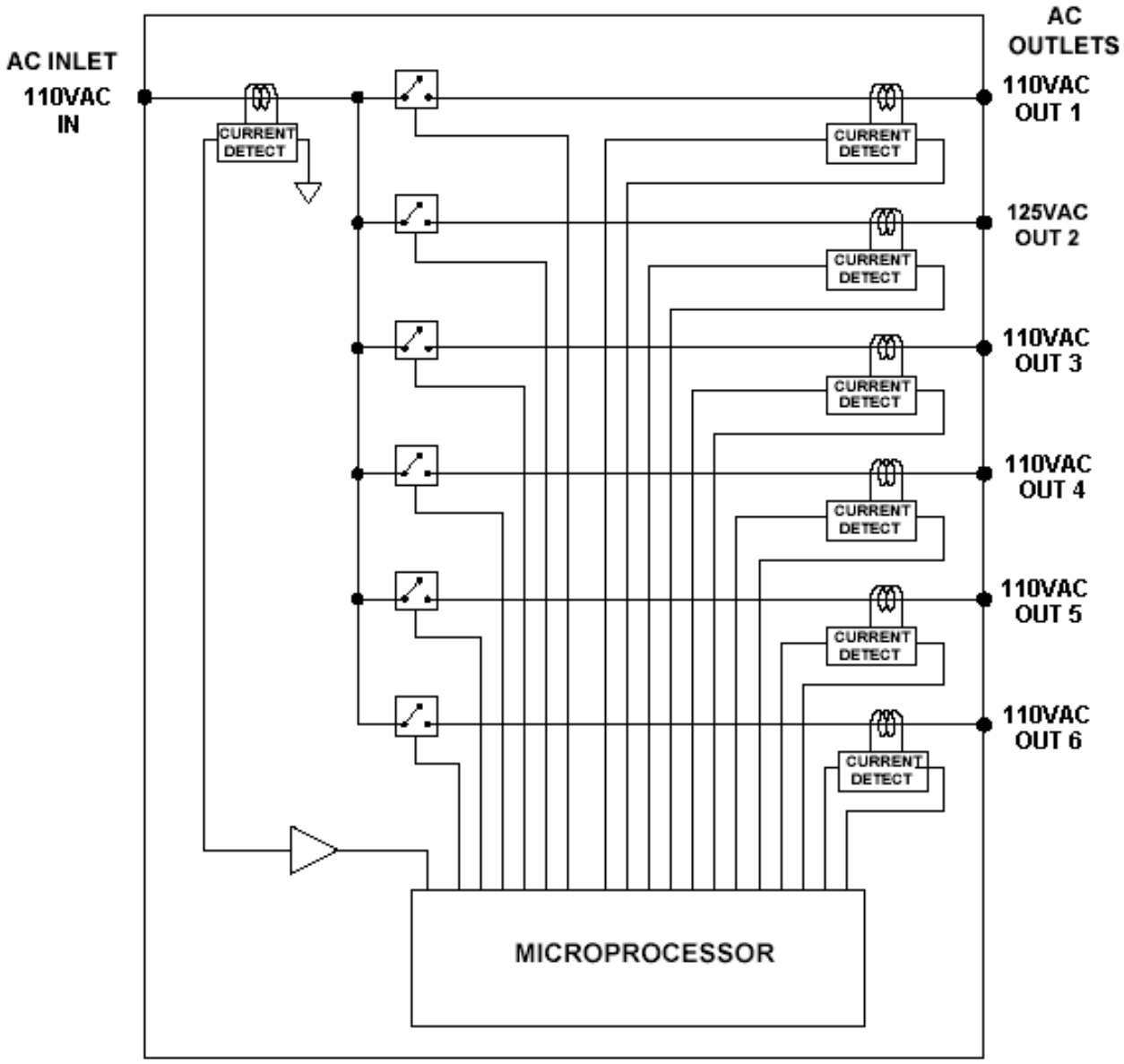
MT112-105 : 1 IN, 3 OUT



ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

DIAGRAM 4 : INTERNAL VIEW MT112-106

MT112-106 : 1 IN, 6 OUT



ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

INSTALLING YOUR MT112-105/106 6

Step 1. Slide the **MT112-105/106** into an available slot in the Multi-Tasker™ Enclosure in order to connect to the bus. Make sure that the **MT112-105/106** card fits into place. Secure the card to the Multi-Tasker™ by tightening the retainer screws located on the top and bottom of the **MT112-105/106** card.

Step 2. Turn ON enclosure power. If the outputs are enabled, the LED's should be ON and RED.

Step 3. Connect AC power to the card input power using the standard power cord provided.

Step 4. Starting from the left, identify the slot number where the **MT112-105/106** 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 **MT112-105/106** 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 **MT112-105/106**, 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
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, 1 to 8, or 1 to 19 depending on the enclosure.

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

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 **MT112-105/106** card.

Command Format: [VERCnUi]

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

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

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

Example:

An **MT112-105** card is in slot #2. Send the command [VERC2], and the Multi-Tasker™ Enclosure will return feedback as:

MT112-105 690-0189-001

MT112-105 = card type
690-0189-001 = software version

2. **[C]**

This command displays the status of the card.

Command Format: [CnUi]

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

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

Example Feedback:

Out1:On Sig:On 1.50A

Out2:On Sig:Off 0.00A

Out3:On Sig:Off 0.20A

Out4:Off Sig:Off 0.00A

Out5:Off Sig:Off 0.00A

Out6:On Sig:Off 0.00A

In the above example, Relay 1 is on (Out1:On), the load is on (Sig:On), and the load current is 1.5A. The load is considered on if the measured current is greater than its threshold. See [THR] command for details on threshold setting.

In the above example, relay 2 is on (Out2:On), but there is no load. Relay 3 is on (Out3:On), and there is some load (0.2A). However, Sig is considered OFF since it is less than its threshold current of 0.3A.

3. **[CnS]**

This command saves the card's settings. This configuration will be restored after system is reset or powered off then on.

Command Format: [CnS]

Cn = card number

S = save configuration

Example:

Send the command [C10S] to save the settings for the card in slot #10. The feedback will be in the following format:

Out1:On Sig:On 0.00A

Out2:Off Sig:Off 0.00A

Out3:On Sig:Off 0.00A

Out4:Off Sig:Off 0.00A

Out5:On Sig:Off 0.00A

Out6:Off Sig:Off 0.00A

Saved

Outputs 1, 3 and 5 are enabled. The information for Sig:On/Sig Off and the measured current are displayed, but are not saved because they are measured values. Additionally, the card also saves the threshold values and ON/OFF sequence information.

4. **[?]**

This command will return general information about the card and its 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 [?C10] to receive the feedback for the **MT112-106** in slot #10. Each status field begins with a '+' and ends with the card slot number (ex: C10). The feedback will be similar to the following:

[+MT112-106C10+VR690-0189-001C10
+ON111111C10]

MT112-106 = Card No/Slot No
VR690-0189-001 = Firmware version
ON111111 = Output Status (1-6)
1= ON, 0= OFF

Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

5. **[ON]**

This command enables one or all outputs.

The LED for each enabled output will be RED, unless the current draw is greater than the threshold value [THR]. In that case, the LED will be GREEN.

ONE OUTPUT

Command Format: [ONmCnUi]

m = Output number (m = 1 to 6)

Cn = Card ID number (n = 1 to max slots)

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

Example:

Send the command [ON2C6] to enable output 2 of card 6. The LED for output 2 should be ON and RED.

ALL OUTPUTS

Command Format: [ONCnUi]

Cn = Card ID number (n = 1 to max slots)

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

Example:

Send the command [ONC6] to enable all outputs of card 6. The outputs will be turned on in the sequence defined by the [SON] command.

6. **[OFF]**

This command disables one or all outputs.

The LED for each disabled output will be OFF.

ONE OUTPUT

Command Format: [OFFmCnUi]

m = Output number (m = 1 to 6)

Cn = Card ID number (n = 1 to max slots)

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

Example:

Send the command [OFF2C6] to disable output 2 of card 6.

ALL OUTPUTS

Command Format: [ONCnUi] ALL OUTPUTS

Cn = Card ID number n = 1 to max slots)

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

Example:

Send the command [OFFC6] to disable all outputs of card 6. The outputs will be turned off in the sequence defined by the [SOFF] command.

7. **[SON]**

This command sets the sequence and delay time between enabling outputs. It is used by the [ON] command when turning on all outputs.

Command Format: [SON^^^^^^TyyCnUi]

^^^^^^ = Sequence (^ = output numbers 1-6)
yy = Delay Time Multiple of 0.5 seconds (yy = 00-99)
Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

Sending the command [SON654321T2C6] turns ON the outputs in the order 6, 5, 4, 3, 2 and 1 with a delay time of 1 second between turning ON each output.

8. **[SOFF]**

This command sets the sequence and delay time between disabling outputs. It is used by the [OFF] command when turning off all outputs.

Command Format: [SOFF^^^^^^TyyCnUi]

^^^^^^ = Sequence (^ = output numbers 1-6)
yy = Delay Time Multiple of 0.5 seconds (yy = 00-99)
Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

Sending the command [SOFF654321T2C6] turns OFF the outputs in the order 6, 5, 4, 3, 2 and 1 with a delay time of 1 second between turning OFF each output.

9. **[THR]**

This command is used to set the current threshold of an output or to read the settings. The threshold level is used to indicate if a load is present on the output. If the load is greater than the threshold, the feedback from the status command [C] will indicate "Sig:On".

READ THRESHOLDS

Command Format: [THRCnUi]

Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

Send the command [THRC10] and the system will return feedback similar to the following:

THR1=0500mA
THR2=0500mA
THR3=0500mA
THR4=0500mA
THR5=0500mA
THR6=0500mA

In this example, all the thresholds are set to 500mA and the card is in slot #10.

SET THRESHOLDS

Command Format: [THRx=yCnUi]

x = Output number (x = 1 to 6, [for all)
y = Threshold current in mA (y = 0 to 9999)
Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

There is an **MT112-105** in slot #10. Send the command [THR1=1000C10] to set the current threshold of Input 1 to 1.0 amp.

10. **[…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 on C4 will be enabled.

11. **[CLR]**

This command performs a reset on the card and forces all settings to factory defaults.

Command Format: [CLRCnUi]

Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

Send the command [CLRC10] to reset the board in slot #10 to its factory defaults. After clearing the card, all outputs will be enabled and all thresholds will be set to zero.

12. **[SIG]**

This command returns the load measured on a single output or all outputs and displays the load level in amps.

SINGLE OUTPUT

Command Format: [SIGxCnUi]

x = Output Number (x = 1-6)
Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

There is an **MT112-105** in slot #10. Output 1 is drawing 550mA of current. Send the command [SIG1C10] to read the current. The system will return the following feedback:

0.55A

If the threshold for output 1 is less than 550mA, then the board status will show that a load is present on the output. Sending the command [C10] will yield feedback similar to the following:

Out1:On Sig:On 0.55A
Out2:Off Sig:Off 0.00A
Out3:Off Sig:Off 0.00A
Out4:Off Sig:Off 0.00A
Out5:Off Sig:Off 0.00A
Out6:Off Sig:Off 0.00A

ALL OUTPUTS

Command Format: [SIGCnUi]

Cn = Card ID number (n = 1 to max slots)
Ui = Unit ID number (i = 0 to 9)

Example:

There is an **MT112-105** in slot #10. Output 1 is drawing 500mA, Output 2 is 1A and Output 6 is 2A. Send the command [SIGC10] to read the total current to all outputs. The system will return the following feedback:

3.50A

13. **[TEST]**

This command performs a test on the internal memory.

Upon completion, the system will display the following:

MEMORY IC IS GOOD

Otherwise, failures will be indicated.

14. **[STA]**

This command enables/disables automatic feedback from the front panel. The command affects any card with auto-feedback capability, not just the **MT112-105/106**.

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

Feedback Prefix Definitions:
+VR = Firmware Version
+ON = Output Enable
+SI = Signal/Load Present

Example:

Command = [OFF1C10]
Feedback = +ON011111C10
+ON = Output Enable
011111 = 1 off, 2-6 on
C10 = Card slot number

15. **[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 **MT112-105/106** card in slot #2, send the command [HELPC2]. The commands along with a brief description will be displayed in the Terminal Window.

7.3 SUMMARY OF COMMANDS

Card Commands

1) [VER] Receives software version
2) [Ci] Receives status of the card
3) [CiS] Saves card settings
4) [?] Show status/ general information
5) [ON] Turns ON one or more outputs
6) [OFF] Turns OFF one or more outputs
7) [SON] Set turn on sequence
8) [SOFF] Set turn off sequence
9) [THR] Display/set current threshold
10) […S] Save the command configuration
11) [CLR] Reset card to default values
12) [SIG] Check for load on output
13) [TEST] Test internal memory IC
14) [STA] Enable/disable auto feedback
15) [HELP] Display available commands

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 commands. 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 programming commands.

MENU	COMMAND
Control	[ON], [OFF]
Setup	
P/ON SEQ	[SON]
P/OFF SEQ	[SOFF]
RD LOAD LEVEL	[THR], [SIG]
SET LOAD DETECT	[THR]
Status	[VER], [C]
Help	[HELP]
Not Available	[?], [CnS], [CLR], [STA], […S], [TEST]

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. The system must be connected to a computer running MTSetup™ or other RS-232 control software for Menu Mode.
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 ENTER.
5. The system will interrogate the enclosure and return a list of cards installed and their slot locations.

   Example: 8 (Slot 8): **MT112-105**

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

5. Find the alphanumeric character representing the desired card. 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 those relating to the menus. Pressing ENTER after "8" will force the system back to the original prompt.

7. After selecting the **MT112-105** 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 card's main functions. Press the key representing the menu item to 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 without making changes in the current menu. In the some menus, the ESC key is used to confirm a setting.

7.4.4 MT112-105/106 MENUS

Following are the menus available to the **MT112-105/106**. The first menu is the Main Menu only. The second listing is an expansion of all the menu items available. The only difference between the menus for the **MT112-105** and **MT112-106** are the three additional outputs on the **MT112-106**.

The expanded menu contains values in parentheses that indicate the current setting or value of that parameter. These numbers will vary depending on the card settings.

In some areas, additional comments are provided for clarification and are not part of the menu.

Some menu settings act as toggle features. For example, in the CONTROL menu, pressing '1' turns output 1 ON if it is off and OFF if it is on. In short, pressing 1 repeatedly will toggle output 1 OFF and ON.

System prompts requiring specific values for threshold level, card number etc… are not shown. See the examples following the menus for details.

MT112-105/106 MAIN MENU

```
1: CONTROL
2: SETUP
3: STATUS
4: HELP
ESC: GO BACK
```

MT112-105/106 EXPANDED MENUS

```
1: CONTROL
  CONTROL: PRESS KEY TO TOGGLE PORTS
  1: 1 (ON)
  2: 2 (ON)
  3: 3 (ON)
  4: 4 (ON)
  5: 5 (ON)
  6: 6 (ON)
  7: ALL ON
  8: ALL OFF
  ESC: GO BACK
2: SETUP
  1: POWER ON SEQUENCE
     SET POWER ON SEQ & DELAY TIME
     1: ON SEQUENCE: 123456
     2: DELAY TIME : 02
     ESC: ACCEPT & GO BACK
  2: POWER OFF SEQUENCE
     SET POWER OFF SEQ & DELAY TIME
     1: OFF SEQUENCE: 123456
     2: DELAY TIME  : 00
     ESC: ACCEPT & GO BACK
  3: READ LOAD LEVEL
     READ LOAD LEVEL
     OUTLOAD 1: 0.00 A
     OUTLOAD 2: 0.00 A
     OUTLOAD 3: 0.00 A
     OUTLOAD 4: 0.00 A
     OUTLOAD 5: 0.00 A
     OUTLOAD 6: 0.00 A
     1  : REFRESH
     ESC: GO BACK
```


ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

4: SET LOAD DETECT

SET LOAD DETECT (THRESHOLD)

1: THRESHOLD 1 (2000mA)

2: THRESHOLD 2 (0000mA)

3: THRESHOLD 3 (1000mA)

4: THRESHOLD 4 (0000mA)

5: THRESHOLD 5 (0000mA)

6: THRESHOLD 6 (0000mA)

ESC: ACCEPT & GO BACK

After selecting 1 through 6 above, the system will prompt for a value in mA. Press ESC to go back.

3: STATUS

Equivalent to the [VER] and [C] commands.

Returns the card status.

4: HELP

Equivalent to the [HELP] command.

Displays a list of commands available for the MT112-105/106 along with a brief description.

ESC

Returns to the parent menu.

7.4.5 MENU MODE EXAMPLES

All MENU MODE examples assume an **MT112-105/106** is installed in slot #10. Start by clicking the mouse in the Terminal window. Press ENTER and a list of available cards will be displayed.

NOTE: When entering numeric values (not selecting menu items) the system may echo each character as it is typed. For example, entering a delay time of 03 may appear as 0033 on the screen.

1. Turn An Input ON

Follow the keystrokes below to turn ON output port 3.

Enter	List available cards
A	Select MT109-100 in slot #10
1	Select CONTROL Menu
3	Turn port 3 ON
NOTE:	Repeatedly pressing key 3 will toggle output 3 on and off.
ESC	Return to the MAIN Menu

2. Set the Power ON Sequence

Starting from the main menu, set the power ON sequence to 1-2-3-4-5-6 and the delay time to 3 seconds between each output. Follow the keystrokes below.

2	Select SETUP Menu
1	Select Power ON Sequence
1	ON Sequence
123456	Enter 123456
ESC	Return to previous menu. The new sequence will be displayed in the menu listing.
2	Select Delay Time
06	Enter 06 (6 x 0.5 = 3 seconds) The new delay time will be displayed in the menu listing.
ESC	Return to previous menu
ESC	Return to SETUP menu
ESC	Return to the MAIN Menu

3. Set Load Detect Level

Starting from the main menu, set load detect for all outputs to 1A. Follow the keystrokes below.

2	Select SETUP Menu
4	Select Set Load Detect
1	Select Threshold 1
1000	Enter 1000
ESC	Return to previous menu The new threshold will be displayed in the menu listing.
ESC	Return to SETUP menu
ESC	Return to the MAIN Menu

4. Display Card Status

Starting from the Main Menu, follow the keystrokes below.

3	Displays card status The status will be displayed.
NOTE:	The Main Menu is still active even though it may not be displayed.

7.5 INDICATORS and WARNINGS

The **MT112-105/106** is capable of a maximum current output of 11.5A and has built-in protection in the case of over current. Each output has its own LED indicator. The LED status indicators and Shut Down control are as follows:

1. If the LED is OFF, the output is OFF or disabled.
2. If the LED is RED, the output is ON, but is drawing less current than the threshold current for that output.
3. If the LED is GREEN, the output is ON and drawing more than the threshold current.
4. If the LED is flashing RED, the total output current exceeds 9.5A. This is a warning that 90% of the maximum load capacity has been reached. The card will provide feedback similar to the following:

   ALARM C4

   In this example, C4 is refers to the card in slot number 4.
5. The SHUT DOWN procedure begins when the total current draw exceeds 11.5A for more than 3 seconds. The card will turn off the highest numbered output first. If the load still exceeds 11.5A after 3 seconds, the next output will be turned off. This process repeats until the current draw is below 11.5A or all outputs are off. Feedback similar to the following will be sent to the RS-232 bus:

   OUTPUT6:OFF C4
   OUTPUT5:OFF C4
   NO ALARM C4

   The ATTENTION message is sent when over current is sensed. After three seconds, output 6 is shut down. After three more seconds, output 5 is shut down. In this case, the current draw is now within limits and the "NO ALARM" message is sent.

TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT112-105/106**; however, we would like to offer suggestions for the following:

8.1 LED'S DO NOT ILLUMINATE

Cause 1: Card cage is not plugged in.

Solution: Plug card cage in. If the LED's light, the problem is solved. If the LED's are 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's are still not lit, see Cause 3.

Cause 3: Outputs are not enabled.

Solution: Use MTSetup to enable the outputs. If the outputs are enabled and the LED's are still not lit, see Cause 4.

Cause 4: 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's light, 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's are 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 another 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.

ALTINEX
SIGNAL MANAGEMENT SOLUTIONS
Tel: 714-990-2300 • Toll-Free: 1-800-ALTINEX • FAX: 714-990-3303 • E-mail: solutions@altinex.com • Web: www.altinex.com

8.2 NO OUTPUT POWER

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is AC voltage present and that the power cable is securely installed in the input socket. If the source is working and there is still no power, see Cause 2.

Cause 2: The card output is not selected.

Solution: Turn ON the card outputs. See RS-232 accessible commands in section 7. If there is still no power, see Cause 3.

Cause 3: Relays are not closing.

Solution: Use the RS-232 commands, [ON] and [OFF], in section 7 to repeatedly turn each output off and then on. There should be an audible "click" each time a relay is opened or closed. If the relays are working, see Cause 4.

Cause 4: There is excessive current draw.

Solution: Remove all power cables attached to the **MT112-105/106** Output ports. If the LED's turn ON, one of the devices may be bad or drawing too much current.

Plug in one at a time to find the problem device. If all devices are operating normally, 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

ALTINEX, INC

592 Apollo street

Brea, CA 92821 USA

TEL: 714 990-2300

TOLL FREE: 1-800-ALTINEX

WEB: www.altinex.com

E-MAIL: solutions@altinex.com