



MegaPower™ 48

MATRIX SWITCHER/CONTROLLER SYSTEM

The MegaPower 48 Matrix Switcher/Controller System incorporates the high-end features of our largest systems into a cost-effective switcher/controller that's optimized for small to mid-sized applications – at an attractive price. In addition to the standard matrix switcher features offered with our largest systems (such as macro control, recorder control, choice of keyboards, and a complete offering of programmable features), MegaPower 48 introduces several exciting enhancements.

The system's modular, space-saving wall-mount design enables it to be installed in the most centralized location with respect to the video inputs. The system can also be mounted behind other equipment in the rear of the rack at 90° to conserve space for other products or it can be rack mounted at other angles to facilitate easy cable connections.

One of the unit's RS-232 ports can be configured for an external modem, enabling wireless text message paging upon alarm. Users can define up to 250 unique text messages.

The system features a flash memory module for data backup without a PC (separate from the main electronics unit). Using this feature a system can be replaced and have its programming restored in less than one minute.

FEATURES

- Modular microprocessor-based, high-density matrix
- 48 video inputs by 16 video outputs
- 8 video outputs with text overlay
- Slim, vertical wall-mount design; optional rack mount kit available
- No tools removal of Main Electronics Unit (MEU) allows systems wiring to remain intact
- Full embedded system menus for easy system setup
- Windows® 95/98 and NT® 4.0-based system setup software
- Removable flash memory module for data backup without a PC
- Recorder control (VCRs and digital recorders)
- User-defined macros
- Supports wireless text messaging on alarm for pagers and cellular phones
- 4090 preset titles, 250 alarm titles
- Dedicated alarm programming tables that differentiate between alarm sources
- Eight flexible RS-232 inputs, expandable to 32
- 64 system tours and 64 salvos

FEATURES

Slim, Vertical Wall-Mount Design

MegaPower 48 has a unique, space-saving, wall-mount design that enables it to be installed in the most centralized location with respect to the video inputs. Because the system does not have to be rack mounted in a control room, it can be installed anywhere in the facility (for example, in an electrical closet), saving on cabling costs. The optional rack mount kit allows for several different mounting methods, including angled mounting.

System Configuration

Modular, high-density system with 48 video inputs and 16 video outputs (eight with text overlay, eight without for recording or public view monitors). The system is comprised of two main modules; a patch panel for all system wiring, and a removable main electronics unit (MEU) which contains the micro processor.

Camera Site Control

Users can control fixed and variable-speed domes, pan/tilts, motorized lenses, auxiliary outputs, Presets and Patterns at suitably-equipped camera sites via the patch panel SensorNet RS-422 and Manchester outputs.

System Programming

On-screen menus enable you to use any full-system keyboard to program system features. Operators can use any of the first eight monitors that have text overlay to program the system. In addition, the system setup software enables you to custom-configure all system parameters. For use with computers running Windows 95/98 or NT 4.0, this software package provides simplified setup, archiving and retrieval of setup data, and uploading and downloading of that data to the system's main electronics unit, all via RS-232.

RS-232 Communications

Eight ports allow standard communication with keyboards, alarm interface units, recorder control devices, computers, third party devices, a modem for text message paging, etc. Each port is individually programmable for data rates of 1200, 2400, 4800, 9.6k, 19.2k, or 38.4k baud. Each port can expand to four ports with an optional port expander. This expands the available RS-232 ports to a maximum of 32.

Selectable On-Screen Text

Each of the first eight monitors can display the date/time, video input number, 16-character user-definable video input or Preset title, alarm title, and monitor status. The onscreen text uses white characters with black outline to optimize viewing on diverse contrast scenes. For increased visibility, all alarm titles appear on a color background. The user can turn the following displays on and off: video input number and monitor status, video input/Preset title, and date/time. In addition, users can incrementally adjust the horizontal/vertical positioning of on-screen text. Six date formats are provided:

- MM/DD/YY
- DD/MM/YYYY
- MM/DD/YYYY
- YY/MM/DD
- DD/MM/YY
- YYYY/MM/DD

Macro Control

The system's powerful macros allow each operator to customize his or her own AD2088 workstation to perform a multitude of tasks via simple, easy to remember keystrokes that are intuitive to that operator. Once macros have been programmed for a keyboard, that set of macros is stored locally. Each keyboard can be programmed differently to accommodate individual user preferences, needs and requirements. Alternatively, a set of macros can also be "copied" from one keyboard to another. Macros allow for unsurpassed ease of use, even with the most complex and demanding installations.

Recorder Control

Users can control all of the standard recorder functions directly from any suitably equipped keyboard — play, stop, pause, record, rewind, fast forward and eject — for both VCRs and digital recorders.

Pseudo Camera Numbers

For each video input, users can assign a four-digit number to replace the default video input number. This can aid operators in identification, such as in the case of multiple level buildings.

Monitor Tours

A Tour is comprised of a sequence of up to 64 video inputs. Users can define a Tour for any video output at any time. The same video input may be inserted multiple times in the same Tour. Tours can be run forward or in reverse. Video inputs partitioned from a monitor are automatically skipped.

System Tours

Sixty-four Tours of video inputs or Salvos may be established for call-up to monitors at any time. Each Tour provides 64 positions for insertion of video inputs — each with an individual dwell time, a Preset, a Pattern, and an auxiliary action. Tours can be run forward or in reverse. They can include the same video input multiple times and/or multiple Presets and Patterns from a single camera. Tours can be connected together to form Sequences of more than 64 video inputs. Video inputs partitioned from a monitor are automatically skipped. "Tour indexing" enables users to designate, by video input number, where the tour will begin. The currently-displayed camera is earmarked as the starting point of the tour, and the "next" and "last" buttons operate relative to that camera.

Event Timers

There are 35 user-programmable times available. These times may be independently designated for multiple days of the week to automatically call up System Tours to video output(s). Event timers also enable you to activate and deactivate alarm contacts based on time of day.

Salvo Switching

Salvo switching allows multiple video inputs to be called simultaneously to multiple contiguous video outputs. Sixty-four individual groups (Salvos), consisting of up to 16 video inputs (each with a Preset, Pattern, and/or auxiliary action), can be called either manually or as part of a System Tour.

Automatic Alarm Callup

Alarm inputs can be programmed to call any video input or group of video inputs (Salvo) to any one or more video outputs. For each alarm input, users can define a camera, Preset, Pattern, wireless text message, Salvo, alarm message, and/or auxiliary action (with individual dwell time for each to accommodate sequencing alarms). In addition, two local patch panel relays can be triggered upon any alarm event. Any combination of 25 alarm display/clearance methods may be selected independently for each video output.

Dedicated Alarm Contact Tables for Integration

The system provides separate alarm contact tables for the different types of alarms the system can accommodate (i.e., 16 local patch panels, 192 domes, 512 RS-232 communications, 48 video loss). Alarms are broken down by physical categories, so it's easy for the installer to know where a potential alarm is generated from, making for easier programming. These dedicated alarm programming options allow for seamless integration to peripheral devices, such as access control systems. Ten monitor/contact association tables are available for inclusion in the 35 event timers to activate/deactivate alarm inputs.

Alarm Display Modes

- **Hold:** Displays initial alarm until cleared. Queues subsequent alarms.
- **Sequence:** Sequences multiple alarms with individual dwell times until cleared.
- **Sequence and Display:** Displays initial alarm on one video output until alarm is cleared. Subsequent alarms are sequenced on the next video output (while they are active).
- **Block Hold:** Alarms are displayed on blocks (groups) of contiguous video outputs. A block may consist of up to 16 contiguous monitors. Multiple blocks can be defined.
- **Block Sequence:** Alarms are sequenced on blocks (groups) of contiguous video outputs. A block may consist of up to 16 contiguous monitors. Multiple blocks can be defined.

Alarm Clearance Methods

- **Manual:** Removes an alarm only after the alarm has been manually acknowledged by an operator.
- **Auto Clear:** Automatically removes an alarm approximately 20 seconds after the alarm input deactivates (if the alarm has not already been manually acknowledged). As a security measure, manual acknowledgment may be disabled.
- **Instant Clear:** Automatically removes an alarm when an input deactivates (if the alarm has not already been manually acknowledged). As a security measure, manual acknowledgment may be disabled.

Status Output

System status output (via an RS232 printer port) may be programmed to output both occurrence of, and clearance of, all alarms, as well as power status and monitor messages. An alarm event message includes date/time of event, type of alarm, contact number, video input number, and alarm status.

System Partitioning

System flexibility is further enhanced by defining authorized access to keyboards, video inputs and video outputs. System partitioning includes the following:

- **Keyboard-to-Monitor Access:** Restricts selected keyboards from accessing selected video outputs.
- **Monitor-to-Camera Access:** Restricts selected video outputs from displaying selected video inputs.
- **Keyboard-to-Camera Access:** Restricts selected keyboards from calling or controlling selected video inputs.
- **Keyboard-to-Camera Control Access:** Allows selected keyboards to view certain cameras, but restricts those keyboards from controlling the cameras.

Password and Priority Operation

Keyboards or users can be assigned one of eight levels of priority control of remote camera sites. Up to 64 user codes, each with a unique password, can be assigned to operators. Access to certain system features may be restricted depending on a user's priority level.

Internal Video Loss Detection

Video loss detection is standard on all video inputs. Upon video loss, a system alarm is generated. The system's programmable video loss detection feature means that if a camera unexpectedly loses video, a second camera in the same vicinity will automatically call up a Preset of the first camera's field of view, ensuring that video coverage is never lost. Enabling video loss detection eliminates video output 16.

On-Board Diagnostics

The system's built-in diagnostics allow the user to determine the status of the system's internal components. Local patch panel LEDs clearly indicate power status and system health.

Flash Memory Module for Data Backup

The MegaPower 48 hardware contains a flash memory module for automatic data backup, without the need for a PC. This module is separate from the main electronics unit (MEU). This means that the system can be replaced and have all its data restored in less than one minute.

Text Message Paging On Alarm

In the event of an alarm, MegaPower 48 can transmit wireless text messages to pagers and cellular phones. These pages will alert users of the alarm, and can provide a detailed description of the alarm, as well as instructions for how to respond to the alarm — even if the user is off-site. Using the alarm programming; a single event can generate multiple unique messages to one or more recipients. Up to 64 pager profiles can be programmed. Users can then define up to 250 unique text messages that can be transmitted to pagers and cellular phones anywhere in the world. Up to 64 unique profiles can be defined. The paging feature supports the TAP protocol via an external modem (not supplied).

OPTIONAL ACCESSORIES

AD2088, AD2088R, AD2088-1, AD2088R-1 ☺☺

Full system keyboards allow for video switching, pan/tilt control, dome control, auxiliary control, macro control, recorder control, and system programming. The keyboards support bi-directional communication with the CPU via RS-232 ASCII commands.

AD1981, AD1981X Port Expander

Expands one RS-232 port on a system into four ports. This provides connections to multiple system keyboards.

AD1691, AD1691F-1 Manchester Code

Distributor ☺☺

The distributor interfaces with the matrix switcher/controller system via the Manchester port to provide 64 Manchester code outputs for use by receiver/drivers and suitably-equipped pan/tilts and domes.

AD2096A, AD2096-1 Alarm Interface ☺☺

Supervises up to 64 alarm inputs and provides RS-232 ASCII alarm commands to the system. Alarm inputs can be programmed to call any video input, display any preset, or to initiate any auxiliary action. Up to 8 units can be cascaded on a single RS-232 line.

AD2031, AD2031-1 Switcher Follower ☺☺

Activates relays when designated video inputs are called to designated video outputs. It interfaces with the matrix switcher/controller system and provides up to 32 Form A relays, via Manchester, that can be grouped in series and addressed to a single video output, or in two groups of 16 relays for two specific video outputs.

AD2032, AD2032-1 Alarm Responder ☺☺

Activates relays when associated video outputs are in their alarming condition. Interfaces with matrix switcher/controllers and provides up to 32 Form A relays via Manchester.

AD2033, AD2033-1 Auxiliary Follower ☺☺

Activates relays when a specific auxiliary is triggered (either manually or automatically) for an associated video input. Interfaces with matrix switcher/controllers and provides up to 32 Form A relays via Manchester. Multiple units can be cascaded together.

AD1983, AD1983X Code Converter

Converts Manchester code to two bytes of RS-232 control code for transmission on standard RS-232 links. RS-232 receiver/drivers may be connected directly to the link (a separate RS-232 distributor may be required), or a receiving AD1983 Code Converter may be used to convert the signal back to Manchester code for use by standard receiver/drivers.

Recorder Control Devices ☺☺

The series of recorder control devices allow for remote control of VCRs and digital recorders via the AD2088 Full System Keyboard. This enables users to have integrated control of the most popular types of recorders.

- The AD100XA/AD100XA-1A Recorder Controller is the CPU of the recorder interface network. Just one recorder controller can accommodate the entire network, and it enables the programming of the various recorder control devices.
- The AD100IR16/AD100IR16-1A IR Interface Module controls any recorder that has IR capability and is supplied with an IR remote (used to learn the IR commands).
- The AD100RL8/AD100RL8-1 Resistive Ladder Module controls recorders that can be controlled via resistive ladder.
- The AD100RS8/AD100RS8-1 RS-232 Module controls RS-232 VCRs and digital recorders.

VR48RKIT Rack Mount Kit

This enables the MegaPower 48 system to be rack mounted in a standard 19-inch EIA rack mount.

VRCMKIT Cable Brackets

Each kit contains three additional cable management brackets.

SPECIFICATIONS

Model Numbers

Each MegaPower 48 system consists of a wall mount assembly (bracket and patch panel assembly), the main electronics unit (NTSC or PAL specified at time of order), pre-wired transformer assembly (USA or International), and documentation kit in specified language (choice of six languages). In addition, users can specify keyboard of preference via the model number:

VR48NC	MegaPower 48 configured without a keyboard
VR48TT	MegaPower 48 configured with ADTTE keyboard
VR48KB	MegaPower 48 configured with AD2088 keyboard

Operational

Bandwidth	10 MHz
Frequency Response	± 1.0 dB to 6 MHz
S/N Ratio	-60 dB (Vp-p vs. Vrms noise)
Crosstalk	
Adjacent Channels	-55 dB (at 3.58 MHz)
Input to Input	-70 dB (at 3.58 MHz)
Differential Delay	± 1.0°
Differential Phase	≤ 0.5°
Differential Gain	≤ 1.5%
Tilt	≤ 2.0%
Gain	Unity ± 1 dB
Return Loss	
(Input/Output)	≥ 40 dB
DC Level (Video Signal)	0 Volts (± 0.1 V typical)
Switching	Complete switching of crosspoint matrix. EIA RS-170 and NTSC, CCIR and PAL
Switching Speed	Less than 20 ms (typical)
Non-Volatile Memory	Setup information saved for a minimum of five years
On-Screen Text	
(outputs 1-8)	Date/time, video input number, video input or preset title 16 characters, monitor status, alarm title (48 characters)
Character Set	English, French, Italian, German, Spanish, Portuguese

Connectors

Video Inputs	0.5 to 2.0 Vp-p, BNC composite
Video Outputs	1.0 Vp-p, BNC composite (with nominal input)
RS-232	Eight 8-pin modular RJ-45 jacks (expandable) optional port expander extends each RS-232 port to four (32 ports maximum)
External Modem	
(Hayes AT compatible)	One DB9 connector
SEC RS-422	Six ports through terminal screw connector
Manchester	One port through terminal screw connector
Alarm Inputs	16 inputs through two 16-pin terminal screw connectors
Relay Outputs	Two Form-C relays through two 3-pin terminal screw connectors
Power	One 3-pin terminal screw connector
Flash Memory Module	One 8-pin header
SensorNet	Six ports through terminal screw connectors

Daisy chain	
Manchester	3 domes at a maximum distance of 1,500 meters (5,000 ft) on one 18 AWG shielded twisted pair (STP)
RS-422	10 domes per port at a maximum distance of 1.0 km (3,000 ft) on two 22 AWG shielded twisted pairs (STP)
SensorNet	32 devices per port at a maximum distance of 1.0 km (3,000 ft) on one 22 AWG unshielded twisted pair (UTP)

Electrical

Power Source	24 VAC external transformer
Supply Voltage	90-132 VAC, 47-63 Hz
	195-253 VAC, 47-63 Hz
Power Requirements	30 watts maximum

Mechanical

Mounting	Vertical wall or 19-inch EIA rack mount
Dimensions (H x W x D)	50.8 x 43.8 x 8.9 cm (20 x 17.3 x 3.5 in)

Unit Weight

Wall Bracket	1.54 kg (3.4 lbs)
Patch Panel Assembly	1.72 kg (3.8 lbs)
Main Electronics Unit	2.72 kg (6.0 lbs)
Total	5.97 kg (13.2 lbs)
Transformer Weight	2.17 kg (4.8 lbs)
Color	Black

Environmental

Operating Temperature	0° to 50° C (32° to 122° F)
Humidity	5 to 95% RH (non-condensing)
Storage Temperature	-40° to 70° C (-40° to 155° F)

Regulatory

Emissions	FCC Part 15, Class A EN55022 (CE)
Immunity	EN50130-4 (CE)
Safety	UL1950 CSA 22.2, No. 950 (cUL) EN60950 (CE)

BASIC SYSTEM DIAGRAM

