LTC 8800 Series Allegiant Matrix/Control Systems - Modular

www.boschsecurity.com

The LTC 8800 Series Allegiant Video Switcher/Control Systems combine both switching and computer technology to provide powerful performance and unique system features for the security user. Offering full matrix switching capability, these systems can be programmed to display the video from any camera on any monitor, either manually or via independent automatic switching sequences.

Functions

General Construction
The LTC 8800 Series provide versatile modular construction, accommodating up to 256 camera inputs, 64 monitor outputs, 32 keyboards, 1024 alarm points, a computer interface port, and a logging printer port.

Sequencing Capabilities
These systems can be programmed with up to 60 sequences which can be run independently of each other in either a forward or reverse direction. Any of the sequences can utilize the SalvoSwitching capability, where any number of system monitors may be selected to switch as a group. Using the optional LTC 8059/00 master control software package, sequences can be made to activate and deactivate automatically based upon the time of day and the day of the week.

Camera Control
The LTC 8800 Series support variable speed operation and full programming access for AutoDome and AutoDome Easy II Series cameras. In addition, on-site receiver/drivers are available to provide operator control of pan, tilt, zoom, pre-positions, auxiliaries, auto-pan, and random scan functions when used with conventional pan/tilt devices. An integral local test function is also a standard feature.

The LTC 8800 Series include an impressive user-based priority system and a series of programmable lockout tables to limit operator access of remotely controlled devices. Operators can restrict control from lower priority operators either manually or automatically. When enabled to operate automatically, a built-in time-out period is user programmable.

Bilinx® Capability
When combined with an LTC 8016 Allegiant Bilinx Data Interface unit, these switcher/controllers support operations using Bilinx communication. With Bilinx, PTZ control is accomplished using a bidirectional communication protocol.
communication protocol embedded in the video signal of Bosch Dinion, AutoDome, and AutoDome Easy II CCTV cameras. In addition, Bilinx uses the standard video cable to transmit alarm and status messages from the cameras, providing superior performance without the need for separate data transmission cables.

**Alarm Capabilities**

With the addition of the LTC 8540/00 Series alarm interface accessory unit, an external contact closure or logic level can be used to automatically activate any camera to be displayed. Any monitor or group of monitors can be set to display cameras under alarm conditions. The base system contains three built-in alarm response modes: basic, auto-build, and sequence and display. In addition to these three modes, the PC-based software packages now include the ability to combine any or all the three standard modes within the same system. Alarm video may be selected to reset either manually or automatically. In addition, a 16-character alarm title can be selected to appear instead of the camera title during alarm conditions.

System operation and programming is accomplished using a full-function, ergonomically designed keyboard. Up to 32 keyboards may be used in the system. Built-in operator priority levels and the ability to restrict certain operators from controlling designated functions provide maximum flexibility.

**Programming/Software Capabilities**

The LTC 8800 Series include a black outlined 48 character on-screen display for time/date, camera number, camera ID (16 characters), an icon to identify controllable cameras, and monitor (12 characters) or status information. A user selectable option provides the ability to display a third line of on-screen text. This third line can be configured to display up to 24 additional camera title characters (40 characters total) or a 12-character monitor title.

The on-screen display is also user selectable to operate in "6-digit Camera ID" mode. When enabled, 2-digit "site numbers" are displayed in addition to the 4-digit camera number. The 2-digit site number feature is especially useful when groups of cameras are located in separate buildings, floors, or other common areas. Over 1000 characters are available when programming camera ID and monitor titles.

Utilizing a standard Windows-based PC and the optional LTC 8059/00 Master Control Software package, enhanced programming and switching features can be obtained. A user friendly spreadsheet format provides the ability to enter camera titles, operator names, or 64 timed events; change system parameters; program camera sequences; install lockouts; and access the advanced alarm handling screens with speed and efficiency. The programmed information may then be transferred into the Allegiant system, stored on disk, or printed out directly from a printer connected to the PC.

The LTC 8800 Series contain a logging printer output port. This RS-232 serial interface can be connected to the serial port of a PC to provide a permanent record of system status showing the time and date of changes such as incoming alarms, acknowledgment of alarms, loading of sequences, user log-on to keyboard, transfer of system tables and sequences, video loss messages, and a power up reset message. In addition, lists of the system’s configuration tables and sequences can be sent to the printer port.

The LTC 8800 system provides powerful macro capabilities. The macros can be activated using Allegiant System keyboards, system time event functions, and alarm activations.

**Expansion Capabilities**

The LTC 8800 Series can serve as the master switcher in a SatelliteSwitch configuration. This innovative SatelliteSwitch feature enables a single LTC 8800 system to communicate with remotely located "Satellite" systems. Any Allegiant system model can serve as a remote Satellite switcher. This powerful feature permits the design of a large distributed type system with control at one central location and individual control at the local sites. The main control site can view/control local cameras plus cameras located at any of the remotely distributed Satellite sites. The Satellite sites can view/control only cameras associated with their own site. When used in this type of configuration, the main LTC 8800 system can access up to 2048 cameras located anywhere in the system.

**Certifications and approvals**

<table>
<thead>
<tr>
<th>Electromagnetic Compatibility (EMC)</th>
<th>Complies with FCC Part 15, ICES-003, and CE regulations. This product also complies with EN 50121-4 railway application standards. Refer to <a href="http://www.boschsecurity.com">www.boschsecurity.com</a> website for link to applicable documents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Safety</td>
<td>Complies with CE regulations, UL, CSA, EN, and IEC Standards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>CE</td>
</tr>
</tbody>
</table>
Installation/configuration notes

LTC 8800 Series Configuration Diagram
(256 Cameras by 32 Monitors)

1. Video Coax
2. 256 Camera Inputs Maximum
3. Additional System Cameras
4. Input Cards (max. 8)
5. Output Cards (max. 8)
6. CPU Module
7. Power Supply Module
8. Series Main CPU Bay
9. 3 m (10 ft) Interconnect Cable Supplied with Keyboard
10. 32 Monitor Output Capacity
11. 32 Full Matrix Monitor Outputs Maximum, 32 Full Function Keyboards Maximum

LTC 8800 Series Dual-bay System (256 Cameras by 64 Monitors)

1. Coax Ribbon Jumper Cables (Supplied)
2. Up to 256 Cameras Total
3. 8 x 32 Channel Input Cards (max. 8, each bay)
4. 8 x 4 Channel Output Card (max. 8, each bay)
5. CPU Module
6. Power Supply Module
7. Data Receiver Module
8. Main CPU Bay
9. Monitor Expansion Bay
10. Monitor Outputs 1 to 32
11. Monitor Outputs 33 to 64
12. Maximum of 32 Full-function Keyboards up to 1.5 km (5000 ft)

away Using Optional Remote Hookup Kit
Technical specifications

LTC 8800 Series System Specifications

Capacities

<table>
<thead>
<tr>
<th>Video Inputs</th>
<th>Standard: 256 Satellite configuration: 2048</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Outputs</td>
<td>64</td>
</tr>
<tr>
<td>Keyboards</td>
<td>32</td>
</tr>
<tr>
<td>Alarm Inputs</td>
<td>1024</td>
</tr>
<tr>
<td>Receiver Drivers</td>
<td>Standard: 256 Satellite configuration: 2048</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Input Voltage Level</th>
<th>0.5 Vp-p to 2 Vp-p (composite negative sync)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>Unity ± 4% (75 Ohm terminated)</td>
</tr>
<tr>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>2T Pulse K Factor¹</td>
<td>Min.</td>
</tr>
<tr>
<td></td>
<td>0.2%</td>
</tr>
<tr>
<td>Bar Amplitude (IRE)¹</td>
<td>Min.</td>
</tr>
<tr>
<td></td>
<td>96</td>
</tr>
<tr>
<td>Sync Amplitude (% Bar)¹</td>
<td>Min.</td>
</tr>
<tr>
<td></td>
<td>36%</td>
</tr>
</tbody>
</table>

² Field Time Waveform Distortion² | 2% maximum |
² Line Time Waveform Distortion² | 1% maximum |
² Short Time Waveform Distortion² | 2% maximum |
² Long Time Waveform Distortion² | 0.8% maximum |
### LTC 8800 Series Allegiant Matrix/Control Systems - Modular

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Bandwidth (-3 dB)</td>
<td>15 MHz</td>
</tr>
<tr>
<td>Frequency Response (± 0.5 dB)</td>
<td>12 MHz</td>
</tr>
<tr>
<td>Signal-to-Noise-Ratio</td>
<td>70 dB at 3.58 MHz unified, unweighted minimum</td>
</tr>
<tr>
<td>Crosstalk (at 3.58 MHz)</td>
<td>Input to input: -60 dB, Adjacent channel: -50 dB (typical)</td>
</tr>
<tr>
<td>Hum</td>
<td>60 dB below the composite 1 Vp-p video signal from 60 Hz to 6 MHz</td>
</tr>
<tr>
<td></td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>96%</td>
</tr>
<tr>
<td>Chrominance Luminance Delay</td>
<td>Min.</td>
</tr>
<tr>
<td></td>
<td>-33 ns</td>
</tr>
<tr>
<td>Luminance Nonlinearity</td>
<td>Min.</td>
</tr>
<tr>
<td></td>
<td>---</td>
</tr>
<tr>
<td>Switching</td>
<td>Crosspoint matrix</td>
</tr>
<tr>
<td>DC Output</td>
<td>0.34 V</td>
</tr>
<tr>
<td>Transient Protection (VIM Cards)</td>
<td>350 W Peak Pulse Power (tp = 8/20 µs)</td>
</tr>
</tbody>
</table>


2. One camera to one monitor.

### Environmental

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Operating: 4°C to 50°C (40°F to 122°F)</td>
</tr>
<tr>
<td></td>
<td>Storage: -40°C to 60°C (-40°F to 140°F)</td>
</tr>
<tr>
<td>Altitude</td>
<td>4500 m (15,000 ft)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0% to 95% relative, non-condensing</td>
</tr>
<tr>
<td>Vibration</td>
<td>3 g swept sine wave, 15 Hz to 2000 Hz</td>
</tr>
<tr>
<td>Shock</td>
<td>50 g, 11 m/s, ½ sine wave</td>
</tr>
</tbody>
</table>

### LTC 8801 Series Main CPU Bay

Includes equipment rack, LTC 8810/01 microprocessor module, and LTC 8805 Series power supply.

#### Power

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Rated Voltage</th>
<th>Voltage Range</th>
<th>Nominal Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTC 8801/60</td>
<td>120 VAC, 50/60 Hz</td>
<td>100 to 140</td>
<td>200 W</td>
</tr>
</tbody>
</table>

3. Power at rated voltage fully loaded.

### Connectors

<table>
<thead>
<tr>
<th>Connector Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Inputs</td>
<td>One (1) sync Input, and 32 monitor outputs BNC</td>
</tr>
<tr>
<td>Video Connections</td>
<td>Ten (10), 34-pin ribbon connectors used in conjuction with the LTC 8808/00 video interconnect panel (purchased separately)</td>
</tr>
<tr>
<td>Looping Video Connections</td>
<td>Sixteen (16), 34-pin ribbon connectors used in conjuction with the LTC 8808/00 video interconnect panel (purchased separately)</td>
</tr>
</tbody>
</table>

### External Accessory Interfaces

<table>
<thead>
<tr>
<th>Interface</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Console</td>
<td>9-pin D-type RS-232 port for external PC or control interface (default = 19,200 baud)</td>
</tr>
<tr>
<td>Alarm</td>
<td>9-pin D-type RS-232 port for Allegiant alarm accessory unit (default = 19,200 baud)</td>
</tr>
<tr>
<td>Printer</td>
<td>9-pin D-type RS-232 port for system logging printer (default = 19,200 baud)</td>
</tr>
<tr>
<td>SDA</td>
<td>9-pin D-type TTL level, high-speed control data output (Bi-Phase) for interface to Allegiant series signal distribution units (data clock rate = 31.25 kHz)</td>
</tr>
<tr>
<td>COMM Port</td>
<td>9-pin D-type RS-485 port for interbay communication use (default = 125,000 baud)</td>
</tr>
<tr>
<td>COMM Port</td>
<td>9-pin D-type RS-485 port for external Allegiant accessory use (default = 125,000 baud)</td>
</tr>
<tr>
<td>Keyboards</td>
<td>Eight (8), 6-pin RS-485 ports for Allegiant keyboard use (default = 9600 baud)</td>
</tr>
</tbody>
</table>

### Equipment Rack (LTC 8801)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (W x D x H)</td>
<td>EIA 48 cm (19 in.) rack 483 x 420 x 267 mm (19 x 16.5 x 10.5 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>11.1 kg (24.5 lb)</td>
</tr>
</tbody>
</table>

### Construction/Finish

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top and Bottom</td>
<td>Steel</td>
</tr>
<tr>
<td>Front, Sides, and Back</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Finish</td>
<td>Charcoal</td>
</tr>
</tbody>
</table>

### Microprocessor Module (LTC 8810/01)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (D x H)</td>
<td>300 x 250 mm (11.8 x 9.8 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5 kg (1.1 lb)</td>
</tr>
</tbody>
</table>
**Power Supply (LTC 8805/60–120 VAC, LTC 8805/50–220–240 VAC)**

| Size (W x D x H) | 67 x 360 x 247 mm (2.63 x 14.2 x 9.7 in.) |
| Weight | 5.2 kg (11.5 lb) |
| Indicators | One power On/Off, ten fuse alert, and one external sync LED |

**LTC 8802 Series Monitor Expansion Bay**

Includes equipment rack, LTC 8816/01 data receiver module, and LTC 8805 Series power supply.

**Power**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Rated Voltage</th>
<th>Voltage Range</th>
<th>Nominal Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTC 8802/60</td>
<td>120 VAC, 50/60 Hz</td>
<td>100 to 140</td>
<td>200 W</td>
</tr>
<tr>
<td>LTC 8802/50</td>
<td>220–240 VAC, 50/60 Hz</td>
<td>198 to 264</td>
<td>200 W</td>
</tr>
</tbody>
</table>

4. Power at rated voltage fully loaded.

**Connectors**

- **Video Inputs**: 1 to 96, and 32 monitor outputs BNC
- **Sync Input**: Not used
- **Video Connections: 97 to 256**: Ten (10), 34-pin ribbon connectors used in conjunction with the LTC 8808/00 video interconnect panel (purchased separately)
- **Looping Video Connections: 1 to 256**: Sixteen (16), 34-pin ribbon connectors used in conjunction with the LTC 8808/00 video interconnect panel

**External Accessory Interfaces**

- **Console**: 9-pin D-type connector, not used
- **Alarm**: 9-pin D-type connector, not used
- **Printer**: 9-pin D-type connector, not used
- **SDA**: 9-pin D-type connector, not used
- **COM Port**: 9-pin D-type connector RS-485 port for interbay communication use (default = 125,000 baud)
- **COM Port**: 9-pin D-type connector, not used
- **Keyboards**: Eight (8), 6-pin RS-485 ports for Allegiant keyboard use (default = 125,000 baud)

**Equipment Rack (LTC 8802 Series)**

| Size (W x D x H) | EIA 48 cm (19 in.) rack, 483 x 420 x 267 mm (19 x 16.5 x 10.5 in.) |
| Weight | 11.1 kg (24.5 lb) |

**Construction/Finish**

| Top and Bottom | Steel |
| Front, Sides, and Back | Aluminum |
| Finish | Charcoal |

**Data Receiver Module (LTC 8816/01)**

| Size (W x D x H) | EIA 48 cm (19 in.) rack, 483 x 420 x 267 mm (19 x 16.5 x 10.5 in.) |
| Weight | 0.5 kg (1.1 lb) |

**Power Supply (LTC 8805/60–120 VAC, LTC 8805/50220–240 VAC)**

| Size (W x D x H) | 67 x 360 x 247 mm (2.63 x 14.2 x 9.7 in.) |
| Weight | 5.2 kg (11.5 lb) |
| Indicators | One power On/Off, ten fuse alert, and one external sync LED |

**LTC 8821/00 Camera Input Module**

Use up to eight per bay in main CPU bay. If monitor expansion bay is being used, equip with duplicate number of modules.

- **Camera Inputs**: 32
- **Size (D x H)**: 300 x 250 mm (11.8 x 9.8 in.)
- **Weight**: 0.41 kg (0.9 lb)

**LTC 8834/00 Monitor Output Module**

Use up to eight per bay in main CPU or monitor expansion bay.

- **Monitor Outputs**: 4
- **Size (D x H)**: 300 x 250 mm (11.8 x 9.8 in.)
- **Weight**: 0.41 kg (0.9 lb)

**LTC 8808/00 Video Interconnect Panel**

NOTE: Use of the LTC 8808/00 assemblies are required for system video inputs 97 to 256 and must be purchased separately. The LTC 8808/00 assembly contains an interconnect panel which is used to convert 32 BNC connectors into two 16-channel ribbon cable connectors. The two, 16-conductor ribbon cables (LTC 8809/00), designed especially for use with video signals, and are then used to interconnect the video between the panel and the LTC 8800 Series system. In addition to being used for video inputs 97 to 256, the LTC 8808/00 assembly can also be ordered as an option to provide looping output capability. For looping purposes, one LTC 8808/00 (includes one panel and two ribbon cables) is required for each group of 32 cameras.

The following table can be used to determine the number of LTC 8808/00 assemblies that must be purchased:

<table>
<thead>
<tr>
<th>Number of System Cameras</th>
<th>Number of LTC 8808 Assemblies Required for Camera Input Connections Only</th>
<th>Number of LTC 8808 Required for Inputs and Looping Video Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (W x D x H)</td>
<td>EIA 48 cm (19 in.) rack, 483 x 42 x 44 mm (19 x 1.65 x 1.75 in.)</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Panel</td>
<td>0.54 kg (1.2 lb)</td>
<td></td>
</tr>
<tr>
<td>Ribbon Cables (2)</td>
<td>0.3 kg (0.7 lb)</td>
<td></td>
</tr>
</tbody>
</table>

### Allegiant Accessories

The LTC 8800 Series accessory products provide many optional features to the base Allegiant switching systems. Accessory products include keyboard extension kits, Allegiant Bilinx Data Interface unit, receiver/driver units, switcher/followers, code merger units, the video ribbon cable and keyboard expansion units. All accessory products are designed to be installer-friendly and compatible throughout Allegiant series systems. See the Allegiant Accessories datasheet.

### Ordering Information

**LTC 8801/50 Allegiant Matrix Switcher**
Includes equipment rack, LTC 8810/01 microprocessor module and LTC 8805 Series power supply; 220-240 VAC, 50/60 Hz
Order number LTC 8801/50

**LTC 8801/60 Allegiant Matrix Switcher**
Includes equipment rack, LTC 8810/01 microprocessor module and LTC 8805 Series power supply; 120 VAC, 50/60 Hz
Order number LTC 8801/60

**LTC 8802/50 Monitor Expansion Bay**
Includes equipment rack, LTC 8816/01 data receiver module and LTC 8805 Series power supply; 220–240 VAC, 50/60 Hz
Order number LTC 8802/50

**LTC 8802/60 Monitor Expansion Bay**
Includes equipment rack, LTC 8816/01 data receiver module and LTC 8805 Series power supply; 120 VAC, 50/60 Hz
Order number LTC 8802/60

**LTC 8821/00 Video Input Module**
for LTC 8800, 32 video inputs per card
Order number LTC 8821/00

**LTC 8834/00 Video Output Module**
for LTC 8600 and LTC 8800, 4 video outputs per card
Order number LTC 8834/00

**Accessories**

**LTC 8810/00 Spare CPU Module**
for LTC 8801/00 bay
Order number LTC 8810/00

**LTC 8805/50 Spare Power Supply**
for LTC 8601/50 bay, 220-240 VAC, 50 Hz
Order number LTC 8805/50

**LTC 8805/60 Spare Power Supply**
for LTC 8601/60 bay, 120 VAC, 60 Hz
Order number LTC 8805/60

**LTC 8810/01 Spare CPU Module**
for LTC 8801 bay
Order number LTC 8810/01

**LTC 8816/00 Data Receiver Module**
for LTC 8802/00, 0.5 kg (1.1 lb)
Order number LTC 8816/00

**LTC 8816/01 Data Receiver Module**
REP data RX module, LTC 8802 Series
Order number LTC 8816/01

**Software Options**

**SFT-VASA Hybrid IP - Analog/Matrix Video over IP Integration Software**
Order number SFT-VASA

**LTC 8059/00 Allegiant Master Control Software**
Order number LTC 8059/00

**LTC 8850/00 GUI Allegiant Single User Software Package**
Order number LTC 8850/00

**SFT-INTSRV Integration Server Software**
Allegiant integration software package
Order number SFT-INTSRV