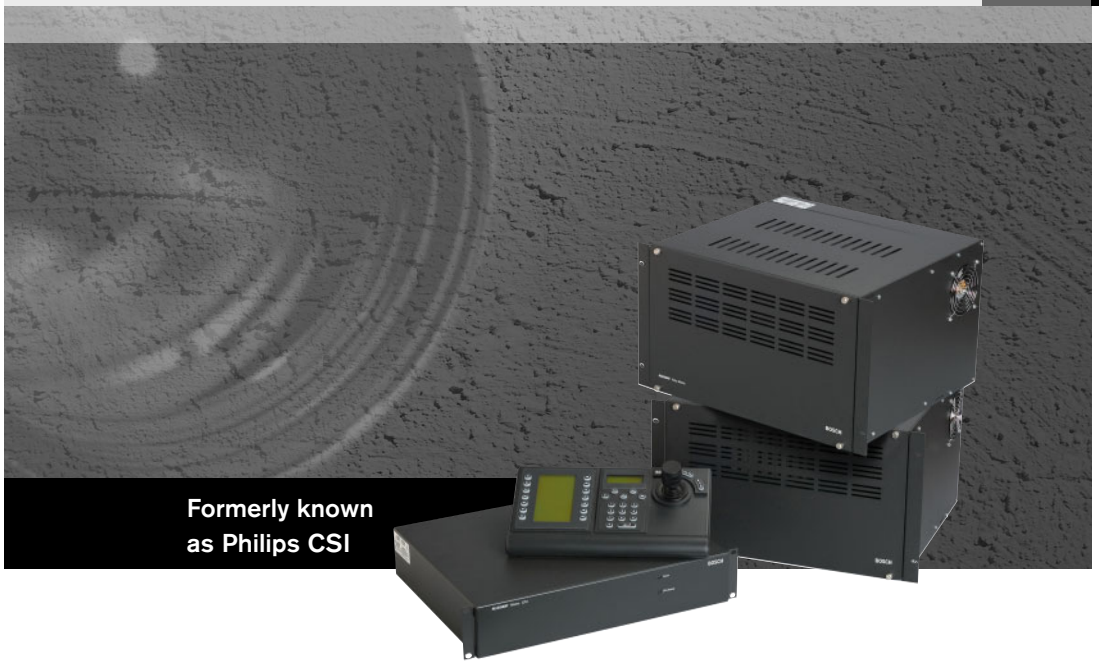
LTC 8900 Series
Allegiant® Video Switcher/Control Systems

Security Systems



Formerly known as Philips CSI

- 4096 Camera by 512 Monitor Switching
- Modular Construction
- Powerful Alarm Handling Capabilities
- SalvoSwitching® and SatelliteSwitch® Capability
- Includes Windows®-based Configuration Software

ADDITIONAL FEATURES OF REDUNDANT SYSTEM CONFIGURATIONS

- Includes System Controller PC and SVGA Monitor
- Preloaded Programming and Diagnostic Software
- Dual, Redundant CPU/Power Supply

The LTC 8900 Series Allegiant Video Switcher/Control Systems are powerful full matrix switchers, capable of displaying video from any camera on any monitor, either manually or via independent automatic switching sequences. By using the LTC 8901 Series CPU and the LTC 8943 Series PC, the standard system can be enhanced to include dual/redundant CPU/power supply with automatic hot-switchover capabilities.

General Construction

The LTC 8900 Series provides versatile modular construction, accommodating up to 4096 camera inputs, 512 monitor outputs, 64 keyboards, 1024 alarm points, and a computer interface port. The robust design utilizes a separate CPU bay with its own power supply.

Dual/Redundant System

For situations where complete system failure cannot be tolerated, we offer the dual redundant LTC 8901 CPU. This CPU unit incorporates a secondary CPU/power supply. In the event of a primary CPU or power supply failure, the system will automatically switch over to the backup CPU or power supply. The system uses an independent PC that continuously monitors the CPUs for failure, and performs a hot-switchover if needed. You can also manually change CPUs using the preloaded software or via a front panel slide switch.

Sequencing Capabilities

These systems can be programmed with up to 256 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 supplied software, sequences can automatically activate and deactivate based upon the day or time of day.

Camera Control
On-site receiver/drivers permit control of pan, tilt, zoom, multiple pre-positions, four auxiliaries, autopan, and random scan. An integral local test function is also a standard feature, greatly simplifying installation.

The LTC 8900 Series also supports the AutoDome® Series of integral pan/tilt/zoom dome cameras, providing full proportional variable speed control. In addition, all AutoDomes allow setup programming directly from the Allegiant system keyboards.

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 embedded in the video signal of Bosch Dinion™ and AutoDome CCTV cameras. In addition, Bilinx uses the standard video cable to transmit alarm and staus messages from the cameras, providing superior performance without the need for separate data transmission cables.

Macro Capabilities
The LTC 8900 system provides powerful macro capabilities. Macros can be activated using Allegiant Series system keyboards, timed event functions, and alarm activations. Macros can also be activated via function icons when using the optional LTC 8850/00 GUI Software.

Alarm Capabilities
The LTC 8540/00 alarm interface unit allows external contact closure or logic level input to automatically display cameras on a monitor or group of monitors. The supplied PC software includes the ability to combine multiple alarm operating modes within the same system. Alarm video may be selected to reset either manually or automatically. In addition, 16-character alarm titles can be customized to designate the specific alarm condition.

System Operation
System operation and programming is accomplished via a full-function, ergonomically designed keyboard. Up to 64 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 8900 Series includes a black outlined 48-character on-screen display for time/date, camera number, camera ID (16-characters), and monitor (12-characters) or status information. Over 1,000 characters covering a multitude of languages, (including several hundred Chinese symbols) are available to help program camera ID and monitor titles. Using the supplied PC software, enhanced programming and switching features can be obtained. A user-friendly spreadsheet format allows one to easily enter/change camera titles, operator names, timed events (128), system parameters, camera sequences, lockouts, and advanced alarm response programming. The software also provides the ability to enable an on-screen indicator for easy identification of controllable cameras. Another useful feature of the software is its ability to store or print (in real time) programming information, system events, alarms, switching functions, sequence events, keyboard actions, and video loss information.

Expansion Capabilities
The LTC 8900 Series can serve as the Master or Slave Switcher in a SatelliteSwitch configuration. This innovative SatelliteSwitch feature enables a single LTC 8900 system to communicate with remotely located Satellite systems. Any Allegiant system model can serve as a master or remote Satellite Switcher. This powerful feature permits the design of large distributed type systems. 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 8900 system can access up to 256 Satellite sites.

Configuration Ordering Information
Please contact your local Bosch Security Systems, Inc. Sales office.

LTC 8900 Series System Specifications

Capacities	
Video Inputs	4096
Video Outputs	512
Keyboards	64
Alarm Inputs	1024
Receiver/Drivers	4096

Electrical

Input Voltage Level	0.5 Vp-p to 2 Vp-p (Composite Negative Sync)		
Gain	Unity ± 2% (75Ω terminated)		
Pulse/Bar Ratios[1]	**Min**	**Nom**	**Max**
	94%	98%	106%
2T Pulse K Factor[1]	**Min**	**Nom**	**Max**
	---	0.2%	2.5%
Bar Amplitude (IRE)[1]	**Min**	**Nom**	**Max**
	96	98	104
Sync Amplitude (% Bar)[1]	**Min**	**Nom**	**Max**
	36%	39%	44%
Field Time Waveform Distortion[1]	2% maximum		
Line Time Waveform Distortion[1]	1% maximum		
Short Time Waveform Distortion[1]	2% maximum		
Long Time Waveform Distortion[1]	0.8% maximum		
Video Bandwidth (-3dB)	25MHz		
Frequency Response	± 0.5dB to 12MHz		
Signal-to-noise[1]	70dB at 3.58MHz unified unweighted minimum		
Crosstalk (at 3.58MHz)			
Typical	-72dB		
Adjacent Channel	-50dB (Typical)		
Hum	60dB below the composite 1Vp-p video signal from 60Hz to 6MHz		
Differential Gain[1]	**Min**	**Nom**	**Max**
	---	0.6%	2%
Differential Phase[1]	**Min**	**Nom**	**Max**
	---	0.6°	1.3°
Chrominance Luminance			
Gain	**Min**	**Nom**	**Max**
	94%	100%	109%
Chrominance Luminance			
Delay[1]	**Min**	**Nom**	**Max**
	-33 ns	+3 ns	+33 ns
Luminance Nonlinearity[1]	**Min**	**Nom**	**Max**
	---	0.3%	4%
Switching	Crosspoint matrix		
DC Output	0V		

[1]Meets EIA/TIA - 250C Medium Haul Standard for 1024 cameras x 64 monitors.

Environmental

Temperature	
Operating	0°C to +50°C (32°F to +122°F)
Storage	-40°C to +60°C (-40°F to +140°F)
Altitude	4500m (15,000ft)
Humidity	0% to 95% relative, noncondensing
Vibration	3g swept sine wave, 15Hz to 2000Hz
Shock	50g, 11ms, 1/2sine wave

LTC 8904 CPU Equipment Bay

The LTC 8904/60 and LTC 8904/50 include the equipment rack, LTC 8910/00 microprocessor module, LTC 8905/90 power supply, and LTC 8917/00 relay module.

Electrical

Model No.	**Rated Voltage**	**Voltage Range**	**Nominal Power**[1]
LTC 8904/60	120VAC, 50/60Hz	100 to 140	30W
LTC 8904/50	220-240VAC, 50/60Hz	198 to 264	30W

[1]Power at rated voltage fully loaded.

Connectors	
CONTROLLER PORT	RS-232 port for external PC or computing device
CONSOLE	RS-232 port for external computer or computing device (Default = 19,200 baud)
ALARM	RS-232 port for Allegiant alarm accessory unit (Default = 19,200 baud)
BIPHASE	TTL level, hi-speed control data output (biphase) for interface to Allegiant series signal distribution units (Data clock rate = 31.25 kHz)
COM PORTS	Two RS-485 port for external Allegiant accessory use
Keyboards	Eight 6-pin RS-485 ports for Allegiant keyboard use (Default = 9600 baud)
LAN	RJ-45 High-speed LAN port for interface to LTC 8902 Series and LTC 8903 Series bays via LTC 8946/90 LAN Hub

Components

Equipment Rack	
Dimensions	EIA 19in rack. 440W x 394D x 86H mm (17.3 x 15.5 x 3.4in)
Weight	7.2kg (15.85lb)
Construction	Metal case with plastic panel
Finish	Charcoal

Microprocessor Module (LTC 8910/00)

Dimensions	300D x 250H mm (11.8 x 9.8in)
Weight	0.5kg (1.1lb)

Power Supply (LTC 8905/90)

Relay Module (LTC 8917/00)

Dimensions	300D x 250Hmm (11.8 x 9.8in)
Front Panel Indicators	Power
	CPU Activity

LTC 8901 Series CPU Equipment Bay

The LTC 8901/60 and LTC 8901/50 include the equipment rack, dual LTC 8910/00 microprocessor modules, dual LTC 8905/90 power supplies, and one LTC 8917/00 relay module.

Electrical

Model No.	Rated Voltage	Voltage Range	Nominal Power[1]
LTC 8901/60	120VAC, 50/60Hz	100 to 140	30W
LTC 8901/50	220-240VAC, 50/60Hz	198 to 264	30W

[1]Power at rated voltage fully loaded.

Connectors

CONTROLLER PORTS	Two RS-232 ports for LTC 8943 PC controller interface
CONSOLE	RS-232 port for external computer or computing device (Default = 19,200 baud)
ALARM	RS-232 port for Allegiant alarm accessory unit (Default = 19,200 baud)
SWITCH CTRL	Digital interface port for LTC 8943 PC controller
BIPHASE	TTL level, hi-speed control data output (biphase) for interface to Allegiant series signal distribution units (Data clock rate = 31.25kHz)
COM PORTS	Two RS-485 port for external Allegiant accessory use
KEYBOARDS	Eight 6-pin RS-485 ports for Allegiant keyboard use (Default = 9600 baud)
LAN	Two RJ-45 High-speed LAN ports for interface to LTC 8902 Series and LTC 8903 Series bays via LTC 8944/92 and LTC 8945/92 LAN Switches

Components

Equipment Rack

Dimensions	EIA 19in rack. 440W x 394D x 86Hmm (17.3 x 15.5 x 3.4in)
Weight	8kg (17.6lb)
Construction	Metal case with plastic panel
Finish	Charcoal

Microprocessor Modules (Two - LTC 8910/00)

Dimensions	300D x 250H mm (11.8 x 9.8in)
Weight	0.5kg (1.1lb)

Power Supplies (Two - LTC 8905/90)

Relay Module (LTC 8917/00)

Dimensions	300D x 250H mm (11.8 x 9.8in)
Front Panel Indicators	
Primary Power	
Primary Fault	
Back-up Power	
Back-up Fault	
Primary CPU In-use	
Controller Activity	
Back-up CPU In-use	
Auto-select Mode	
Primary CPU Activity	
Fault buzzer	
Back-up CPU Activity	
Rear Panel Indicators	
Relay Outputs[1]	
Primary CPU Fault	
Back-up Power Supply Failure	
Back-up CPU Fault	
Any Failure	
Primary Power Supply Failure	

[1]Relay Contacts: 24VAC, 40V peak, 1A.

LTC 8902 Series Monitor Output Bays

The LTC 8902/60 and LTC 8902/50 include the equipment rack, LTC 8916/00 data receiver module, and LTC 8906 Series power supply.

Electrical

Model No.	Rated Voltage	Voltage Range	Nominal Power[1]
LTC 8902/60	120VAC, 50/60Hz	100 to 140	160W
LTC 8902/50	220-240VAC, 50/60Hz	198 to 264	160W

[1]Power at rated voltage fully loaded.

Connectors

Video Outputs	Four 34-pin ribbon connectors used in conjunction with the LTC 8808/00 video interconnect panel
Video Bus Connections	Sixteen 34-pin ribbon connectors interconnect with LTC 8903 Series Camera Input bays using LTC 8809/00 ribbon cables
CONSOLE	Port reserved for future use
COMM 1	Port reserved for future use
COMM 2	Port reserved for future use
EXT SYNC	BNC input used to synchronize unit to external sync signal. Accepts composite video, composite sync, or the V SYNC output provided from another LTC 8900 Series matrix bay
V SYNC	BNC connector provides output signal to synchronize an additional LTC 8900 Series matrix bay via its EXT SYNC input
External Data Interface	Two RJ-45 High-speed LAN port for interface to LTC 8901 Main CPU bay via system LAN Switches. (Connected in parallel; one is used, one is reserved for future use)

Components	
Equipment Rack	
Dimensions	EIA 19in rack. 483W x 420D x 267Hmm (19 x 16.5 x 10.5in)
Weight	11.1kg (24.5lb)
Construction	Metal cabinet
Finish	Charcoal

Data Receiver Module (LTC 8916/00)	
Dimensions	EIA 19in rack. 483W x 420D x 267H mm (19 x 16.5 x 10.5in)
Weight	0.5kg (1.1lb)

Power Supply (LTC 8906/60 or LTC 8906/50)	
Dimensions	67W x 360D x 247Hmm (2.63 x 14.2 x 9.7in)
Weight	5.2kg (11.5lb)
Indicators	Power On/Off, and fuse alert LEDs

LTC 8903 Series Camera Input Bays

The LTC 8903/60 and LTC 8903/50 include the equipment rack, LTC 8918/00 data receiver module, and LTC 8805 Series power supply

Electrical

Model No.	Rated Voltage	Voltage Range	Nominal Power[1]
LTC 8903/60	120VAC, 50/60Hz	100 to 140	85W
LTC 8903/50	220-240VAC, 50/60Hz	198 to 264	85W

[1]Power at rated voltage fully loaded.

Connectors	
Video Inputs	Sixteen 34-pin ribbon connectors used in conjunction with the LTC 8808/00 video interconnect panel
Looping Video Input Connections	Sixteen 34-pin ribbon connectors used with LTC 8809/00 ribbon cables (supplied as required to loop to additional LTC 8903 Series bays)
Video Bus Connections	Four 34-pin ribbon connectors interconnect with LTC 8903 Series Camera Input bays using LTC 8809/00 ribbon cables
CONSOLE	Port reserved for future use
COMM 1	Port reserved for future use
COMM 2	Port reserved for future use
EXT SYNC	BNC input used to synchronize unit to external sync signal. Accepts composite video, composite sync, or the V SYNC output provided from another LTC 8900 Series matrix bay
V SYNC	BNC connector provides output signal to synchronize an additional LTC 8900 Series matrix bay via its EXT SYNC input
External Data Interface	Two RJ-45 High-speed LAN port for interface to LTC 8901 Main CPU bay via system LAN Switches (Connected in parallel; one is used, one is reserved for future use)

Components	
Equipment Rack	
Dimensions	EIA 19in rack. 483W x 420D x 267mm (19 x 16.5 x 10.5in)
Weight	11.1kg (24.5lb)
Construction	Metal cabinet
Finish	Charcoal

Data Receiver Module (LTC 8918/00)	
Dimensions	EIA 19in rack
Size	EIA 19in rack. 483W x 420D x 267Hmm (19 x 16.5 x 10.5in)
Weight	0.5kg (1.1lb)

Power Supply (LTC 8805/60 or LTC 8805/50)	
Size	67W x 360D x 247Hmm (2.63 x 14.2 x 9.7in)
Weight	5.2kg (11.5lb)
Indicators	Power On/Off, and fuse alert LEDs

LTC 8921/00 Video Input Module	
Use up to sixteen per LTC 8903 Series camera input bays	
Camera Inputs	32
Size	300D x 250Hmm (11.8 x 9.8in)
Weight	0.41kg (0.9lb)

LTC 8934/00 Video Output Module	
Use up to eight per LTC 8902 Series monitor output bays	
Monitor Outputs	8
Dimensions	300D x 250Hmm (11.8 x 9.8in)
Weight	0.41kg (0.9lb)

LTC 8941/91 System Controller	
(Redundant System Configurations Only)	
Includes LTC 8943/93 PC, LTC 8944/92 Primary LAN Switch and LTC 8945/92 Backup LAN Switch	
LTC 8943/93 PC	Rack-mount industrial-grade Pentium® PC, 256MB RAM (minimum), 40GB hard drive (minimum), CD-ROM drive, floppy drive, keyboard, mouse, keyboard/mouse rack-mount shelf, and Windows 2000; 120/220VAC, 50/60Hz.
Monitor	17in SVGA with rack-mount hardware; 120/220VAC, 50/60Hz
LTC 8944/92 Primary LAN Switch	12 port 10/100BaseT Ethernet Switch with SNMP Module, programmed with Primary IP Address; 120/220VAC, 50/60Hz
LTC 8945/92 Back-Up LAN Switch	12 port 10/100BaseT Ethernet Switch with SNMP Module, programmed with Back-up IP Address; 120/220VAC, 50/60Hz

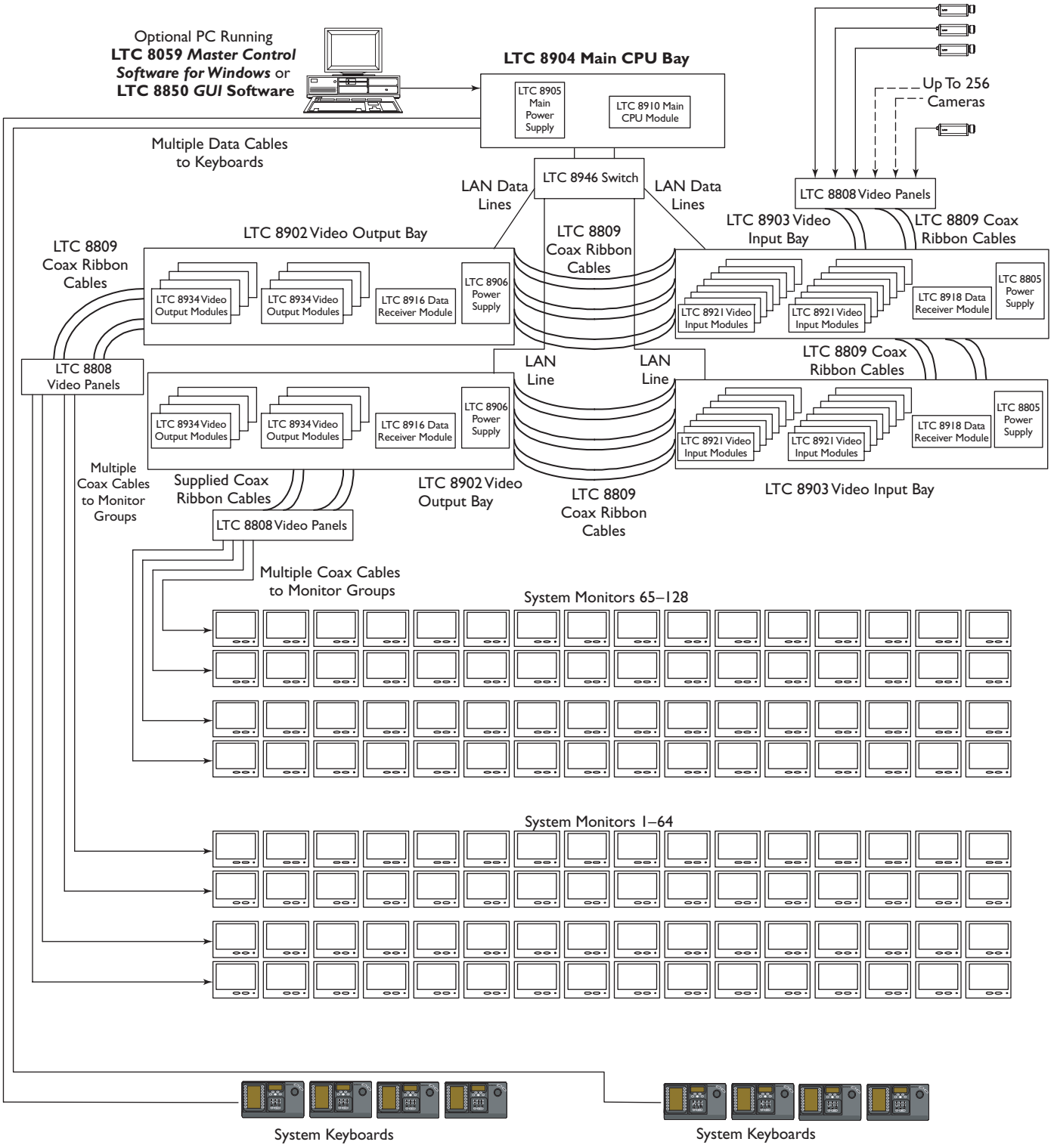
LTC 8946/92 Expansion LAN Switch	
	12 port 10/100BaseT Ethernet Switch, no SNMP module; 120/220VAC, 50/60Hz

LTC 8808/00 Video Interconnect Panel	
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 coaxial ribbon cables (LTC 8809/00), designed especially for use with video signals, are then used to interconnect the video between the panel and the LTC 8900 system. Use of the LTC 8808/00 assemblies are required for all external video input and output connections. In addition to being used for video inputs and monitor outputs, the LTC 8808/00 assembly is also used to provide looping capability. One LTC 8808/00 (includes panel and two ribbon cables) is required for each group of 32 system cameras or 32 monitors.	
Dimensions	EIA 19in rack. 483W x 42D x 44Hmm (19 x 1.65 x 1.75in)
Weight	
Panel	0.54kg (1.2lb)
Ribbon Cables (2)	0.3kg (0.7lb)
Construction	Metal
Finish	Charcoal

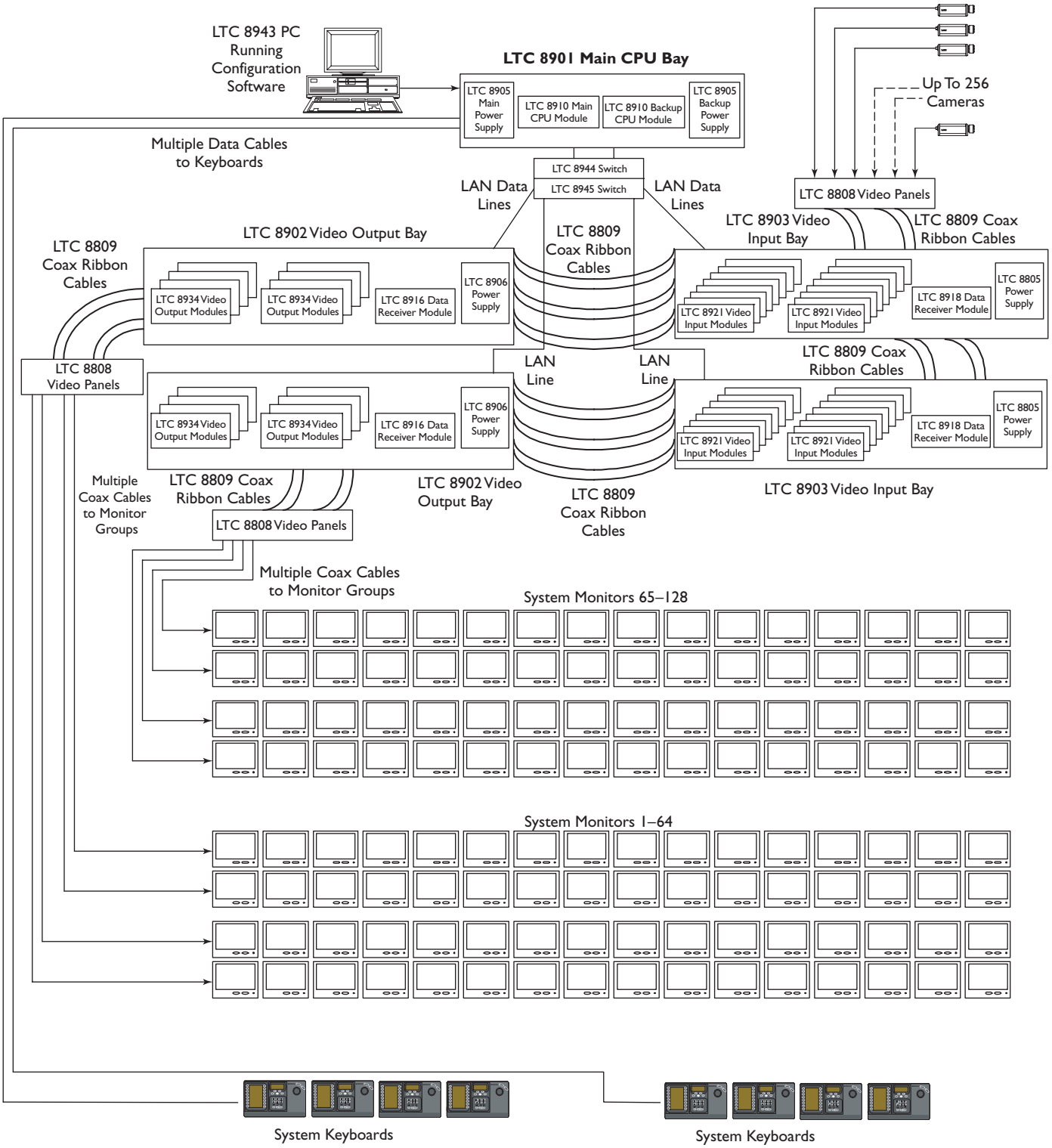
Product Regulatory Compliance	
Electromagnetic Compatibility (EMC)	
	Complies with FCC Part 15, ICES-003, and CE regulations
Product Safety	Complies with CE regulations, UL, CSA, EN, and IEC Standards

Allegiant Accessories
The LTC 8900 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, and keyboard expansion units. All accessory products are designed to be installer-friendly and compatible throughout the Allegiant series systems. See Allegiant accessories data sheet.

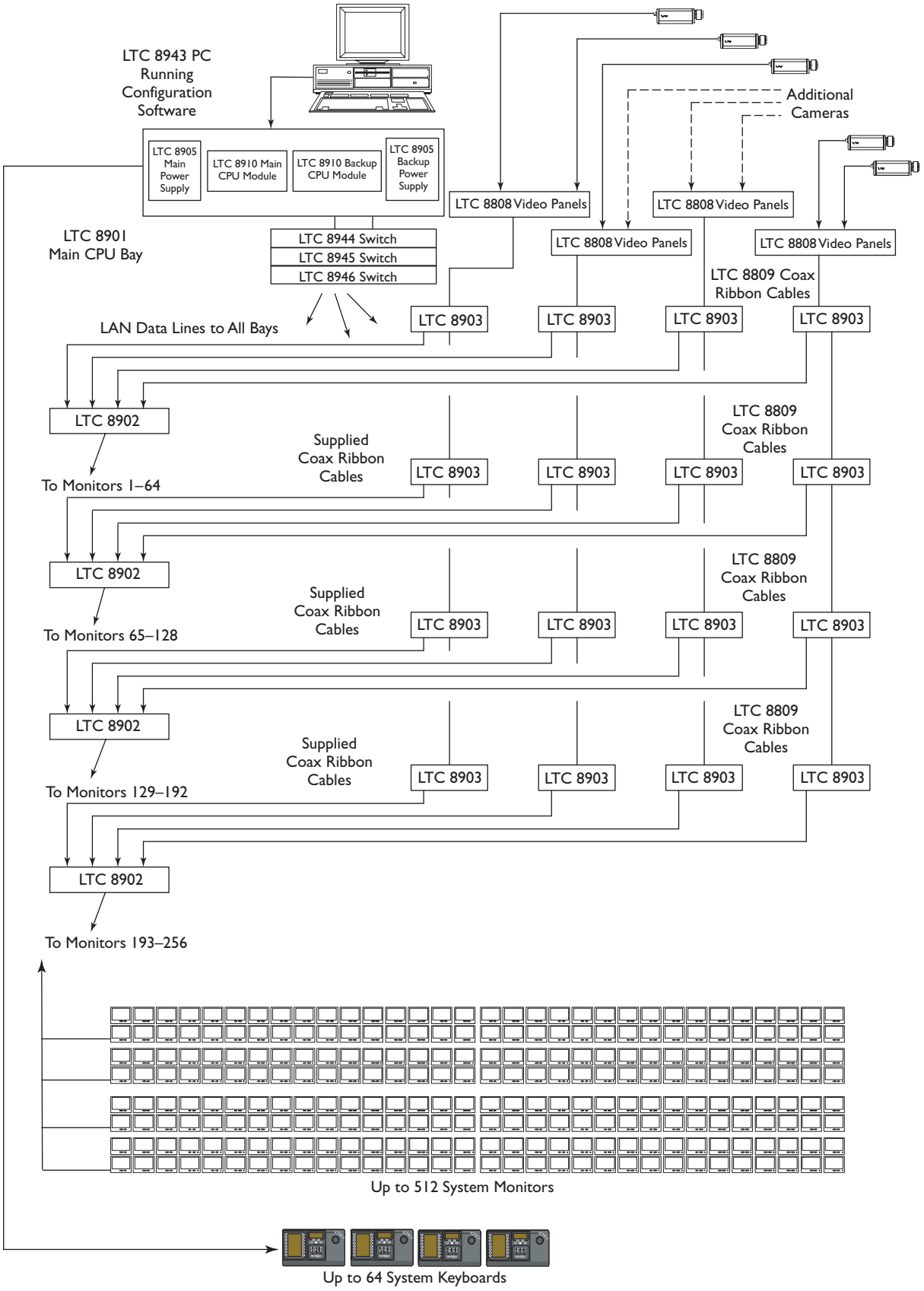
Typical Diagram of LTC 8904 Series System Configuration (256 Cameras by 128 Monitors)



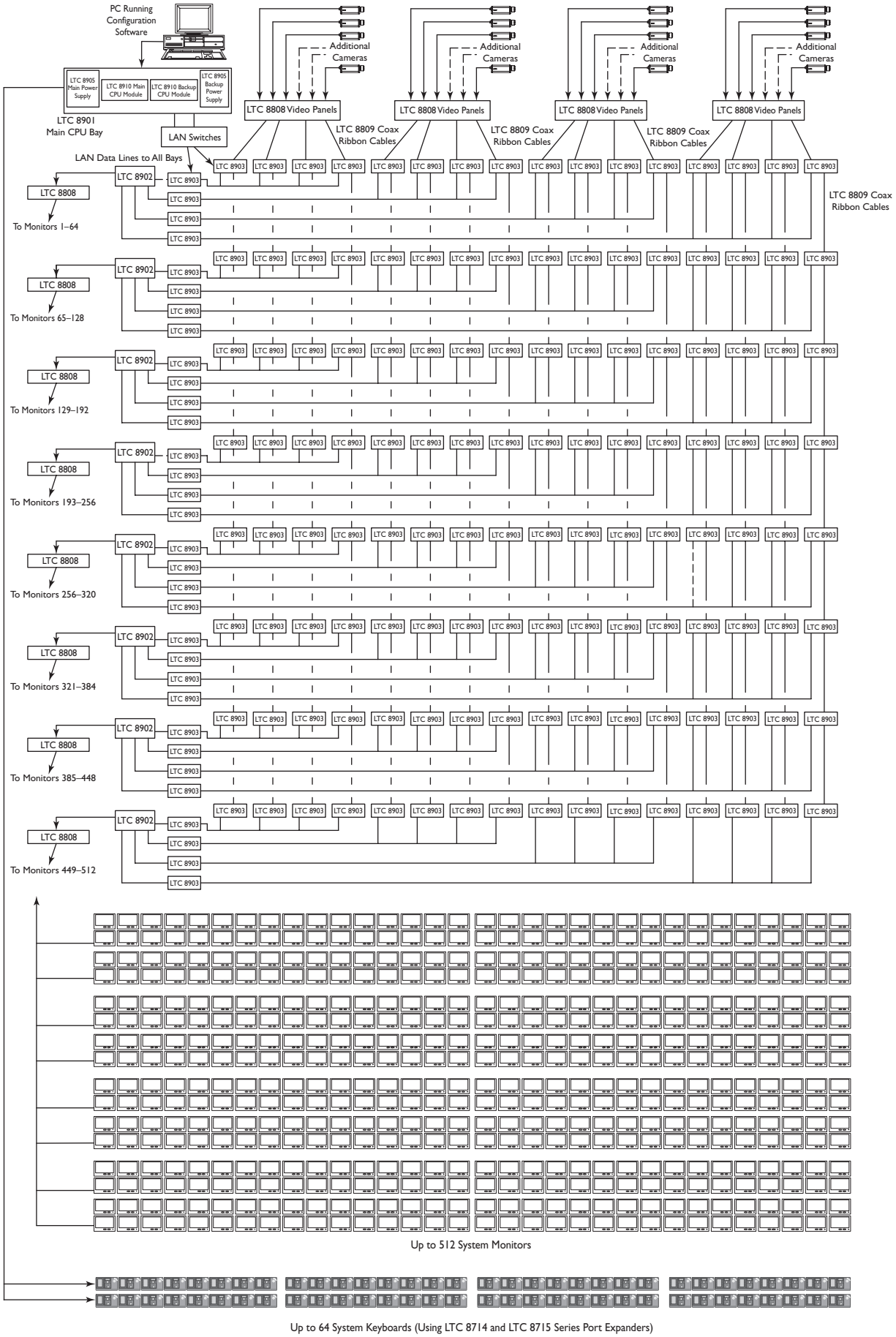
Typical Diagram of LTC 8901 Series Redundant System Configuration (256 Cameras by 128 Monitors)



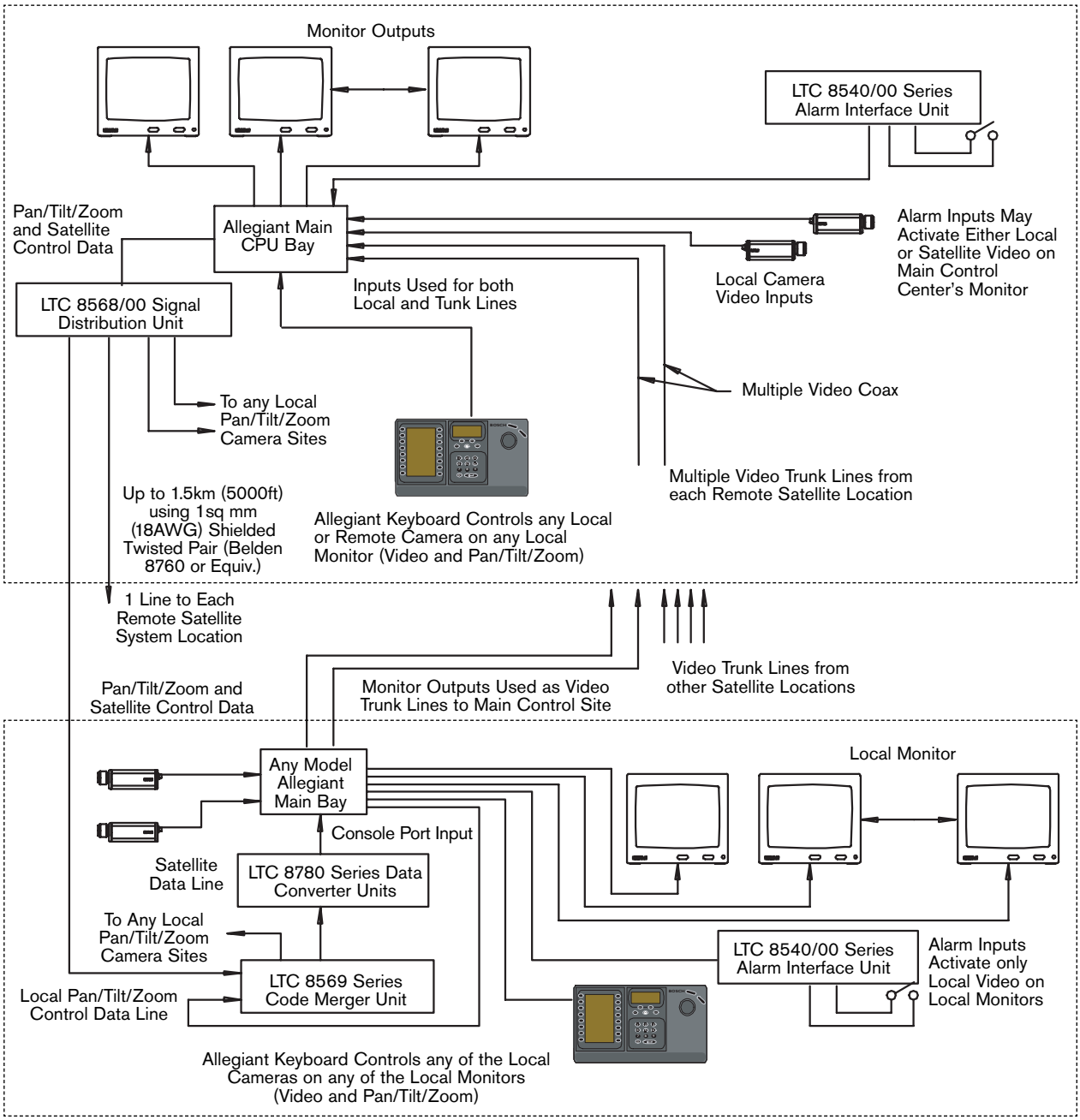
Typical Diagram of LTC 8901 Series Redundant System Configuration (1024 Cameras by 256 Monitors)



Typical Diagram of LTC 8901 Series Redundant System Configuration (4096 Cameras by 512 Monitors)



Allegiant Satellite Switching System (1024 Cameras by 256 Monitors)



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