



Pilot Ultra V1599 Network Video Switching Control System

- Supports up to 8192 cameras and 512 monitors
- Central Processing Unit (CPU) includes internal graphic configurator
- True network connectivity from CPU to existing Vicon video products through Communication Distribution Unit (CDU)
- Multiple levels of CPU redundancy, both local and remote, with instant switchover and no loss of operation over LAN/WAN environment
- Network architecture places remote switching systems in any location with the use of CDU
- Hot swappable application cards within the CDU provide internal redundancy and allow system maintenance without loss of operation
- Replace existing Vicon CPUs without changing other system components (keypads, PTZ units, matrix switchers, etc.)

The Pilot Ultra™ V1599 CPU Control System was developed to satisfy the needs of large-scale and distributed matrix system users. The Pilot Ultra System incorporates LAN communication in a standard, open-architecture design that lends itself to simple expansion. This open-architecture design permits the easy addition of keypads, receivers, alarm devices, video switching units, and host RS-232 controllers.

The Pilot Ultra System is comprised of three main items: the Pilot V1599 CPU (Central Processing Unit) that stores all system configuration information; the Pilot V1599 CDU (Communication Distribution Unit) that can be configured in multiple ways to act as a gateway from the network environment to conventional non-network products; and the Pilot 66/99 Card Cage, which connects the cameras and monitors to the system.

The Pilot V1599 CPU and CDU can each be configured with hot standby capability. This capability will allow redundant components to take over in the event of a primary system failure. The system is capable of supporting a maximum of 8192 cameras and 512 monitors.

PILOT V1599 CPU (CENTRAL PROCESSING UNIT)

The CPU is a rack-mount, industrial PC running the Windows® Embedded XP Operating System, serving as a matrix controller that provides all switching, alarm processing, keypad/receiver communications and titling. The programming of these functions is performed using pre-loaded Configurator software. The Configurator software provides the following functions:

- Network Configuration
- Event Programming
- Keypad Profiling and Partition Configuration
- Receiver Profile Configuration
- Camera Setup and Partition Configuration
- Monitor Setup Configuration
- Salvo Configuration
- Tour Configuration
- Alarm Processing Configuration

The CPU is connected to the system via 10/100 BaseT Ethernet connection in a LAN/WAN system. It requires connection to a local monitor, keyboard and mouse.

Entity	Quantity	Action
Cameras	1	System Parameters
Keypads	8	System Matrix
Alarm Inputs	16	System Receivers
Monitors	64	System Alarm Inputs
Time/Live/PTZ	64	System Tour Profiles
Trigger Events	16	System Default Events
Sequence Tours	256	System Trigger Events
Host Host	1	System Sequence Tours
		System Host CPU Input
Communication Distribution Unit		
CDU	1	Network Communication Distribution Unit
Receiver Port	2	Network Receiver Ports (Serial Adapter)
Host RS-232 Port	2	Network Receiver Ports (Serial Adapter)
Video Switcher Port	2	Network Host RS-232 Ports (Serial Adapter)
Video Port	2	Network Video Switchers (Parallel Adapter)
Host Port	2	Network Alarm Ports (Parallel Adapter)
Host Port	2	Network Video/PTZ/Host Ports (Parallel Adapter)



Product Specification

PILOT V1599 CDU (COMMUNICATION DISTRIBUTION UNIT)

The CDU is a rack-mount component that connects to the V1599 CPU via a network interface. This unit serves as the network interface between the V1599 CPU and the CCTV components. The CDU is comprised of a card cage, backplane, network adapter, slots for up to 2 power supplies, slots for up to 2 network interface cards and slots for up to 11 application cards as described in Table 1. Each CDU is equipped with a single network interface card and power supply. There are 11 chassis slots for custom configuration of alarm, time/date/titling, video switching, keypad, receiver and host PC control. The configuration is defined by the adapters installed on the rear of the chassis and the Configurator software. The CDU has front panel access to all modules which can be swapped without the need of powering down (hot-swappable).

The CDU is also available with built-in hot standby redundancy that can be configured by adding a second network interface card. All hot standby modules provide immediate switchover support in the event of active module failure. The chassis is also capable of accepting a backup power supply. Any or all of the supported functions (alarm, TDT, video switching, etc.) can be configured for hot standby protection. All cards can be hot-swapped.

V1599 CDU Components

V1599 CDU-CC: The V1599 CDU-CC communication distribution unit comes with one internal power supply and one network interface module. The CDU can be populated with different combinations of serial and parallel modules depending on system/site requirements.

Network Module

This module provides a link between LAN communications and the Serial/Parallel modules. It contains three LEDs to display power, communication and hot-standby status. All network addressing is set by DIP switches or software. Each CDU comes with one network module.

Serial Module

This module provides two ports that provide for serial communications to keypads, receivers, host CPUs and other devices. The ports can be configured for RS-232 or RS-422 protocols. This module contains three LEDs to display power, communication and hot standby status.

Parallel Module

This module provides two ports for parallel communication to alarm, time/date/titling, and video switching equipment. The function is defined by attaching the appropriate adapter to the rear of the CDU IP card slot. The module has three LEDs to display power, communication, and hot standby status.

Compatibility

The V1599 System was designed for backward compatibility with other Vicon systems. Contact Product Support for specific systems.

PILOT 66/99 CARD CAGE

Cameras and monitors are connected to the Pilot 66/99 card cage. System expansion is accomplished by connecting additional card cages to the system. Typically these will be added in pairs with one card cage being designated as the Primary cage and the other designated as the Secondary cage.

Table 1: Models, Product Codes and Descriptions

Model	Product Code	Description
Pilot V1599 CPU Configuration		
V1599CPU	9318-00	Pilot V1599 Central Processing Unit. Includes internal graphic configurator, capable of addressing over 8000 cameras and 500 monitor and keypad stations. Use with companion Pilot-CDU Communication Distribution Unit and Matrix Switching System
Pilot V1599 CDU Configurations		
V1599CDU-1	9319-00	Pilot V1599 Communication Distribution Unit. Configured to address 2046 cameras, 128 monitors, 512 receivers, 16 keypads, one RS-232 port and monitor titling. Includes one network interface card and one power supply module.
V1599CDU-H-1	9320-00	Pilot V1599 Communication Distribution Unit, internal redundant configuration for automatic switchover. Configured to address 2046 cameras, 128 monitors, 512 receivers, 16 keypads, one RS-232 port and monitor titling. Includes redundant personality modules, power supplies and network cards.
Pilot V1599 CDU Components		
V1599CDU-CC	9321-00	Pilot V1599 CDU Chassis. Includes one network interface card and power supply module. Must be populated with CDU personality modules.
V1599CDU-ALRM	9322-00	Pilot V1599 CDU Alarm Module. Provides communication from Pilot V1599CDU to Vicon® alarm devices.
V1599CDU-TDT	9323-00	Pilot V1599 CDU Time/date/titler Module. Provides control communication between V1599CDU and matrix time/date/ titling devices.
V1599CDU-VID	9324-00	Pilot V1599 Video Module. Provides control communication between V1599CDU and matrix video switcher.

Product Specification

Table 1: Models, Product Codes and Descriptions (Cont)

Model	Product Code	Description
V1599CDU-SER	9325-00	Pilot V1599CDU Serial Module. Provides control communication between V1599CDU and Vicon system keypads/PTZ receivers or host RS-232 devices.
V1599CDU-RCP	9326-00	Pilot V1599CDU Rear Closure Panel. Blank rear closure panel for unused card slots in V1599 chassis.
V1599CDU-HSB-POW	9327-00	Pilot V1599CDU Redundant Power Supply Module. Provides internal power redundancy for the V1599CDU.
V1599CDU-HSB-NET	9328-00	Pilot V1599CDU Redundant Network Interface Module. Provides internal network communication redundancy for the V1599CDU
V1599CDU-HSB-ALRM	9329-00	Pilot V1599CDU Redundant Alarm Module. Provides internal redundant communication from V1599 CDU to alarm devices.
V1599CDU-HSB-TDT	9330-00	Pilot V1599CDU Redundant Time/Date/Title Module. Provides internal redundant communication from V1599CDU to time/date/title device.
V1599CDU-HSB-VID	9331-00	Pilot V1599CDU Redundant Video Module. Provides internal redundant communication from V1599CDU to video matrix switcher.
V1599CDU-HSB-SER	9332-00	Pilot V1599CDU Redundant Serial Module. Provides internal redundant communication from V1599CDU to system keypads, receivers and host RS-232 devices.
Pilot 66/99 Card Cage		
V1580SCC	6020-80	Pilot66/99 card cage (256x16 or 256x32). Accepts up to 8 switcher boards. Includes motherboard, line sync board and universal power supply.
V1516-AMP	6024-20	Video amplifier board with outputs for monitors 1-16.
V1532-AMP	6024-30	Video output amplifier board with outputs for monitors 1-32.
V1510S-16	6023-20	Video Switcher Board. Provides video switching for up to 32 cameras and 16 monitors.
V1510S-32	6023-30	Video Switcher Board. Provides video switching for up to 32 cameras and 32 monitors.
V1599-PKA	8234-10	Programming Keyboard for V1522CPU, V1544SCPU, V1566BSCPU, and V1599CPU.
V1566DB	4807-90	V1599 Interface Board. Required in Primary cages for use with an external CPU controller configuration (V1599 systems). Required in Secondary cages for V1566 systems.
V1510RP32-I	4628-25	32-Channel Camera Input Panel. Contains 32 BNC connectors.
V1510RP32-O	4628-45	32-Channel Camera Output Panel. Contains 32 BNC connectors.
V1510RP32-L	4629-20	32-Channel Camera Looping Panel. Contains 8 D-shell cable connectors.
V1550RCP	4471-20	Blank rear closure panel for unused card positions.
V15RCB-24	7867-05	24-inch coaxial cable for looping video inputs from a switcher card to external devices. D-shell connector on one end, 8 BNC connectors on the other end.
V1566RC-36	4472-25	36-inch coaxial cable for looping video inputs from a switcher card to external devices. D-shell on each end.
V75TR-SHD	4479-00	75-ohm terminator for D-shell outputs.
V75T	3260-00	75-ohm terminator for BNC outputs.
Time/Date/Title		
V1599X-TCC	9312-00	Card Cage: holds up to 16 V1599X-TDT circuit cards, each titles 2 monitors (32 monitors total per card cage)
V1599X-TC-PS	9313-00	Power Supply; used in V1599X-TCC, 1 per card cage - 120 V input
V1599X-TC-PS-230	9313-01	Power Supply; used in V1599X-TCC, 1 per card cage - 230 V input
V1599X-TDT-MA	9314-00	Master Module; addresses up to 32 monitors and loop-through signaling for additional V1599X-TCC card cage
V1599X-TDT-SL-1	9315-00	Slave Module; addresses up to 32 monitors in additional V1599X-TCC card cage
V1599X-TDT	9316-00	Time/Date/Title Assembly; circuit card provides time/date/titles for 2 monitors
V1599X-RCT	9317-00	Blank Rear Closure Panel for V1599X-TCC
Optional V1599KVM Components		
V1599-KVM-R	9333-00	Multi-input VGA Monitor/Keyboard. Used with V1599CPU, accepts 8 VGA inputs from multiple PC's, includes 2 PC cables. Rack mount only.
V1599-KVM-CAB3	9334-00	Cable. For use with V1599-KVM-R. Connects additional PC's to V1599-KVM-Rs.
Optional V1599 Network Components		
NETSWITCH-16	8495-00	16 Port, 10/100 Autosensing Network Switch, stackable.
CAT5e-PATCH-6	7788-00	CAT5e Patch Cable, 6 ft, blue, preterminated with RJ-45 booted connectors.
CAT5e-PATCH-10	7789-00	CAT5e Patch Cable, 10 ft, blue, preterminated with RJ-45 booted connectors.

Product Specification

ELECTRICAL (V1599CPU)

Input Voltage:	Selectable 120/230 VAC, 50/60 Hz.
Current:	6A nominal.
Power Consumption:	300 W nominal
Heat Equivalent:	17.0 btu/min (4.3 kg-cal/min) max.
CPU:	Intel® Celeron 3.06 GHz.
RAM Memory:	512 MB.
Hard Drive:	80 GB.
Operating System:	Windows XP Embedded.
Display Adapter:	1024 × 768 pixels, 16-bit color.
LAN Interface:	10/100 BaseT Ethernet interface on main board.
CD Drive:	Internal CD-RW drive.
Front Panel Controls/Indicators:	Power on/off/reset switch, power on, network and hard drive activity LEDs.
Radio Frequency Emission Rating:	FCC Class A.

ELECTRICAL (V1599CDU)

Input Voltage:	Universal 85-265 VAC, 50/60 Hz.
Current:	300 mA nominal.
Power Consumption:	36 W nominal.
Heat Equivalent:	2.0 btu/min (0.5 kg-cal/min) max.
Rear Panel Controls/Indicators:	Network: Two RJ-45 connectors. Video: Two 25-pin D-shell connectors and one BNC-F connector. Alarm: Two 37-pin D-shell connectors. Serial: Two RJ-45 connectors. TDT: Two DB-25.
Radio Frequency Emission Rating:	FCC Class B and EN55022.

ELECTRICAL (Pilot 66/99 Card Cage)

Input Voltage:	120 to 230 VAC, 50/60 Hz Auto range.
Current:	0.5 A RMS max. Fully loaded card cage.
Power Consumption:	60 W max. Fully loaded card cage.
Heat Equivalent:	3.1 btu/min (0.85 kg-cal/min). Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

Line Cord: 3-wire grounded detachable IEC-320 standard power cord.

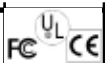
Fuse: 120 V/230 V, 1.25 A, 20 mm.
Radio Frequency Emission Rating: FCC Class A.

MECHANICAL (V1599CPU)

Application:	Indoor.
Mounting:	Rack mounted in a standard EIA compliant rack, 19 in. (483 mm) wide opening. Rack height is 4 in. (102 mm) or 2U.
Drive Bays:	Three (3) total shock mount bays. Two (2) bays are 5.25 in. (133 mm) or 3.5 in. (89 mm) external access and one (1) 3.5 in. (89 mm) internal.
Dimensions:	Width (W): 19.0 in. (483 mm). Depth (D): 17.7 in. (450 mm). Height (H): 3.5 in. (89 mm).
Weight:	21.8 lb (9.8 kg).
Shipping Dimensions:	Width: 23.5 in. (597 mm). Height: 8.5 in. (203 mm). Depth: 23.5 in. (597 mm).
Shipping Weight:	27.2 lb (12.3 kg).
Construction:	Heavy duty steel.
Color:	Front Panel: gray; Case: matte black finish.

MECHANICAL (V1599CDU)

Application:	Indoor.
Mounting:	Rack mounted in a standard EIA compliant rack, 19 in. (483 mm) wide opening. Rack height is 5.25 in. (133 mm) or 3U.
Configuration:	Application and power modules are front panel accessible. The card cage is fitted with a hinged front cover, upper and lower card guides and manual ejectors for easy card mounting. Connector modules are accessible through the rear and independently serviceable.
Dimensions:	Width (W): 19.0 in. (483 mm). Height (H): 5.25 in. (133 mm). Depth (D): 14.0 in. (355.5 mm) with external hardware.
Weight:	21.2 lb (9.6 kg) standard configuration.
Shipping Dimensions:	Width: 22.5 in. (571.5 mm). Height: 9.75 in. (248 mm). Depth: 20.75 in. (527 mm).
Shipping Weight:	28.7 lb (13.0 kg).
Construction:	Sheet steel with galvanized plating.
Color:	Front Panel: gray; Case: matte black finish..



Product Specification

MECHANICAL (Pilot 66/99 Card Cage)

Construction: Steel chassis with aluminum front panel.
Finish: Chassis: zinc plated clear chromate.
Front panel: Gray.
Dimensions: Height (H): 14.0 in. (356 mm).
 Width (W): 19.0 in. (483 mm).
 Depth (D): 8.5 in. (216 mm).
Weight: Approximately 27 lb (12.27 kg).

OPERATIONAL

Compatibility: Compatible with all generations of V1500, V1400 and V1300 matrix system components, Pilot, NOVA and Surveyor™ product lines.

Maximum Component Configurations:
 Video Inputs: 8192.
 Monitor Outputs: 512.
 Receiver/Dome Support: 8192.
 XIA Alarm Inputs: 8192.
 Keypad/Console/Host RS-232 Support: 512.
 Time/Date/Title Outputs: 512.
 Video Tour Patterns: 256.
 Salvo Switch Configurations: 128.

Camera/Alarm Title Configuration: One (1) line of 20 characters per camera/alarm.

ENVIRONMENTAL (V1599CPU and V1599CDU)

Operating Temperature Range: 32 to 113° F (0 to 45° C).
Operating Humidity Range: 10 to 90%, noncondensing.

ENVIRONMENTAL (Pilot 66/99 Card Cage)

Operating Temperature Range: 32 to 122°F (0 to 50°C).
Operating Humidity Range: Up to 95% relative, non-condensing.

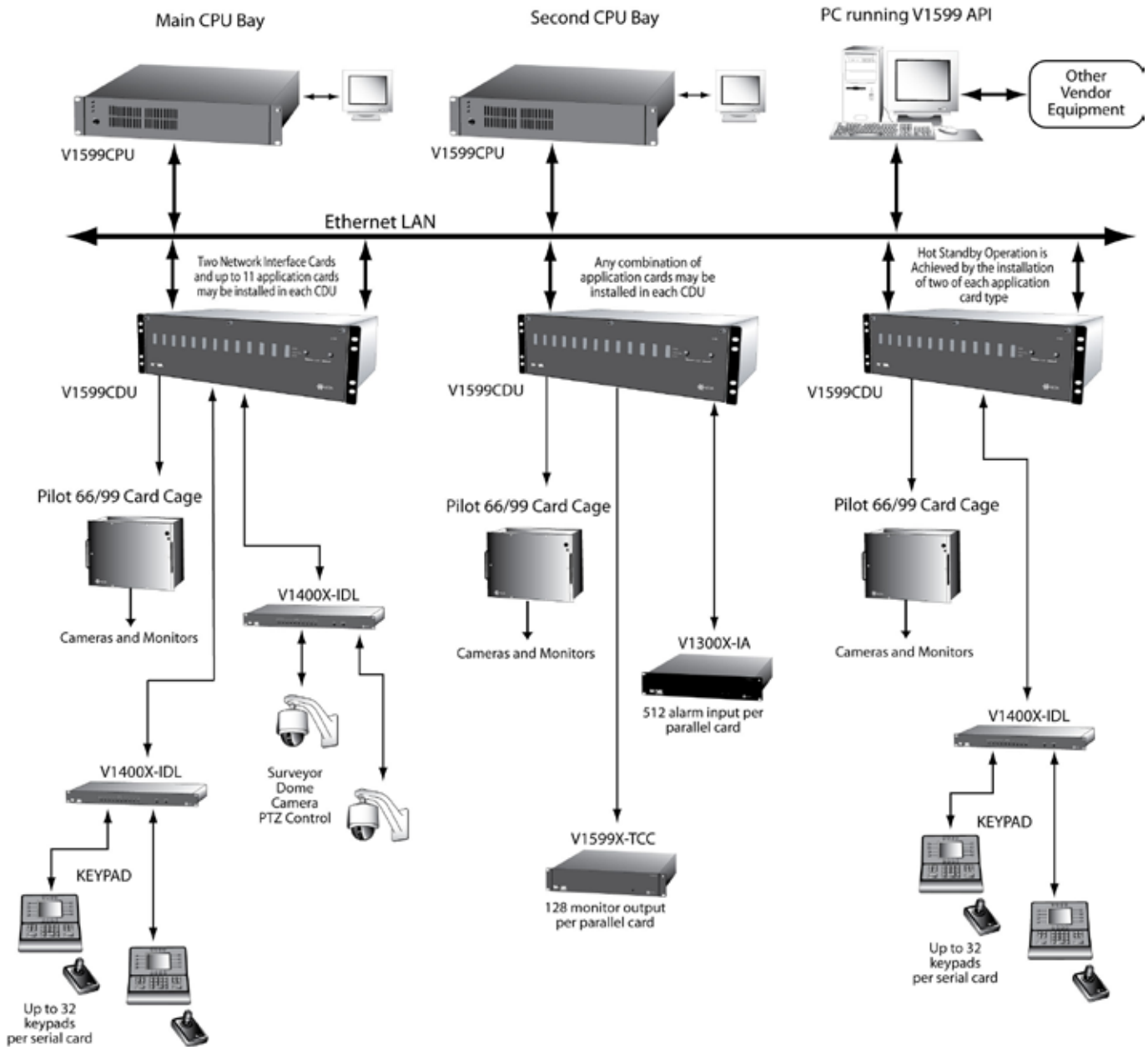
ADDITIONAL COMPLIANCE (Main CPU and CDU)

Vibration Testing, Unit packed: Complies with MIL-STD-202F.
 Complies with method 2 of ASTM D999.

Drop Test: Complies with ASTM D775.

Stack Height Test: Complies with ASTM D999.

Product Specification



Typical System Setup

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