

Longwatch Surveillance System

Micro Video Engine



Micro Product Overview

The Longwatch Micro Video Engine is an extremely compact, fully sealed unit comprised of a robust embedded computer. It is designed for space critical applications that require low power consumption. All electronics are protected in a ruggedized, aluminum sealed housing that can be conveniently mounted for many different applications.

The Micro unit continuously records high quality video from up to 2 IP camera inputs. The Micro generates and transmits live video as well as video event clips from remote sites back to a central location. The video clips can be triggered from multiple physical event triggers, such as door switches, motion detectors, PLC outputs, SCADA based alarms, or manually initiated from the SCADA system. Additionally, the Micro can perform video image analysis which transforms any camera connected to the system into a motion detection device. Furthermore, integrated Access Control peripherals such as HID card readers and keypads enable central management of employee access permissions and can remotely monitor and unlocks entry points.

The Micro communicates by emulating a Programmable Logic Controller or Remote Terminal Unit and appears to the SCADA system as another PLC on the network. The Micro can also communicate over any TCP/IP (Ethernet, LAN or WAN) network or on a dedicated serial communications network. The Micro is designed to leverage existing communication networks, operating effectively on 2400 baud networks as well as high speed networks. Micros can be deployed in mixed environments allowing for seamless migration to higher speed networks as they become available



Capabilities

- Live video transmission
- 3 days Flash DVR storage (expandable)
- Low Power for Solar Applications
- Environmentally Rugged (-40 to +70C)
- Easy access to DVR video
- Guard Tour Video Updates
- Automated Video Event Clip generation, including pre- and post- event video
- Ability to communicate over existing PLC networks, serial connections, or TCP/IP networks
- Communications Method Indifferent
 - Radio, Telephone, Satellite, Fiber-Optic, Frame Relay, T1, Cellular, etc.
- Scalable from 2400 baud to Gigabit Ethernet
- Supports up to 2 Axis IP cameras
- Remotely Distributed - Centrally or Remotely Managed
- Advanced Security Capability
- Windows Security Integration
 - RIJNDAEL-AES 128 bit encryption
- Optional Card Access Control

Applications

- Water Distribution
- Wastewater Systems
- Oil and Gas Transmission and Distribution
- Distributed Power Generation
- Electric Power Transmission and Distribution
- Remote Site Equipment Management
- Railroad Facilities Monitoring

The Longwatch Surveillance System is comprised of two components: a software component called the Longwatch Video Control Center (VCC) and one of three types of video collection engines.

- **Remote Video Engine (RVE)**
Industrial DVR packaging supporting up to 6 cameras
- **Micro Video Engine (Micro)**
Industrial, Compact, Low-power DVR (up to 2 cameras)
- **Longwatch Video Engine (LVE)**
Software Only Engine (up to 12 cameras)

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SYSTEM SPECIFICATIONS

VIDEO

Camera Support: Axis IP cameras, Analog cameras using Axis video servers

IP Camera Acquisition Speed: 30 Frames/Second, 150 total fps

The Micro stores to DVR at the above maximum rates. It will also transmit Live and Event video to the VCC, depending on available bandwidth, up to the above rates, but normally at a rate appropriate to the communications network.

Storage: 4GB of standard storage/Unlimited expandable storage. Up to 5 days of standard storage depending on resolution and frame rate speeds and unlimited storage capacity with expandable storage option.

EVENT DETECTION

Inputs: When paired with the Adam-6050 I/O module, the Micro can utilize 8 optically isolated input channels.

- Input Range, ± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, 0-20 mA, 4-20 mA
- Fault Protection, overvoltage up to ± 35 V
- Optical Isolation, 5000V RMS

Outputs: When paired with the Adam-6050 I/O module, the Micro can utilize 6 optically isolated output channels.

- Externally powered
- Voltage between terminals, +10 to 30VDC
- Output current, 200mA(Max per Channel)
- Optical Isolation, 5000V RMS
- Turn-on time (off to on), 7ms (Typ)
- Turn-off time (on to off), 3ms (Typ)

Notification: Event Notification is performed via the Longwatch VCC

Access Control Components (Optional):

HID-Compatible Proximity Card Readers (up to 4 per remote) and an Essex Electronics Keypad (for user PIN entry)

SYSTEM CONTROLLER

Connectivity: Four USB 2.0 Compliant Ports, One Internal 50-pin socket Type I/II Compact Flash, One 10BaseT/100BaseT Ethernet Port, One PCMCIA Cardbus port

Local Access: 15-Pin VGA, PS/2 type Mini-DIN for Keyboard and Mouse Connection
(Unit is normally locally accessed via the Ethernet port to a technician computer via built-in Web server)

PHYSICAL COMMUNICATIONS

Leased Telephone lines, Licensed or Unlicensed Radio, Cellular, Satellite, Frame Relay, T1, Fiber-Optic cable, Cellular Networks, etc.

PROTOCOLS SUPPORTED

Allen-Bradley DF1, Modbus/RTU, Modbus/ASCII, Bristol Babcock BSAP, TCP, UDP, Phone Dialer, SIO* (Modbus/TCP, Modbus/RTU, Modbus/ASCII, Allen-Bradley DH+ SLC, Allen-Bradley Ethernet SLC, Phone Dialer, TCP and UDP are supported at the Longwatch VCC.)

* SIO is the native Longwatch Serial Protocol for use on dedicated serial networks.

ENVIRONMENTAL

Cooling Type: Passive, Fanless Cooling in an Aluminum Sealed Construction. No Forced Air Required

Operating Temperature: -40° to +160° F (-40 to +70° C)

Humidity: 10 - 95% RH (non-condensing)

POWER

Input Voltages: 9-35VDC Nominal Voltage: 12VDC Power

Consumption: 10 Watts - Internally Fused 7A@125V

MOUNTING

Supports 4-VESA Mounting

Supports Desktop/Wall/Din Rail Mounting under space critical conditions.

Dimensions:

189 x 41 x 136.5mm (7.44" x 1.61" x 5.37")

About Longwatch

Longwatch was founded by a team of industry veterans with the goal of providing video over existing SCADA communication networks. The result was the development of the Longwatch Video Surveillance System. Advanced technology incorporated in the system allows SCADA system operators the ability to utilize video to monitor and verify alarms at remote sites utilizing the existing communications infrastructure.

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