

TruVision DVR 46 A&E Specifications, Division 28 00 00 Electronic Safety and Security



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This A&E Specification conforms to CSI MasterFormat 2016 guidelines.

28 01 00 Operation and Maintenance of Electronic Safety and Security

28 01 20 Operation and Maintenance of Video Surveillance

# Operations

## The Digital Video Hybrid Streaming Recorder with Ethernet connectivity shall be as manufactured by Interlogix or an approved equal. The recorder shall require minimal training for the end user. The unit shall be operated like a conventional multiplexer and VCR with local display monitors for live and playback viewing while the system continues to record new images. It shall be an integrated security system, capable of real time recording multiple cameras, and storing their digitized and compressed images on internal hard drives for fast search and retrieval either locally at the unit, or from a remote workstation using a Graphical User Interface (GUI). The recorder shall be able to record any combination of standard analog cameras and HD-TVI cameras from the BNC connectors on the rear of the recorder. The recorder shall use the HD-TVI standard to record 720p, 1080p, 3MPX, 5MPX or 8MPX (4K) TVI high definition cameras. The recorder shall be able to trade off all of the analog channels for IP channels.

## Additionally, the system shall provide automated alarm handling. Upon receipt of an alarm, the system shall be able to automatically change display and record speed, provide relay output operation, and provide data transfer to a host. The system shall be able to determine alarm change of state (COS) conditions from integral motion detection, hard-wired alarm inputs, or data transfer from a host. During investigations, it shall be possible to search and retrieve stored video data by date, time, camera, and alarm.

28 01 20.17 Revisions and Upgrades of Video Surveillance

# Upgrades

## The system shall be upgraded through flash programming upgrades of software, using either a USB drive or TCP/IP.

28 05 00 Common Work Results for Electronic Safety and Security

28 05 19 Storage Appliances for Electronic Safety and Security

28 05 19.13 Hybrid Digital Video Recorders

# Hardware:

## The recorder shall be able to record and play back IP cameras up to the full number of analog channels.

## The recorder shall be able to record and playback standard analog, HD-TVI, or IP cameras or any combination thereof.

## The recorder shall support 8MPX (4K), 5MPX, 4MPX, 3MPX,1080p, and 720p resolution HD-TVI coax cameras.

## The recorder shall function as a standalone unit. It shall not require the use of a personal computer, special monitors, or other peripheral devices for either programming or operation. Live and recorded playback of video images shall display on a VGA or HDMI monitor.

## The recorder shall be capable of displaying on-screen text and menus in more than one language. This shall be user selectable via the menu system.

## The recorder shall have robust buttons integrated into the front panel of the unit, used for menu navigation, setup, and control of the unit, with no need for an external control device.

## The recorder shall have robust buttons integrated into the front panel of the unit for each camera, display, sequence, live, playback, archive, pause, alarm, and a multifunction navigation.

### An alarm indication light shall visualize an alarm, additionally the causing criterion shall be shown by alarm indication lights for:

#### HDD

#### Network

#### Technical alarm

#### Event alarm

## The comprehensive search function shall be activated by using the search button.

## The recorder shall support one-button quick archive, auto detecting the storage media inserted and the maximum storage capacity.

## The recorder shall have a USB port at the front panel supporting a mouse or memory sticks for archiving video and audio files for evidence. The recorder shall also have a USB port at the back panel.

## The recorder shall provide external keyboard support. All DVR and PTZ control functions shall be supported.

## The recorder shall use an easy-to-read, on-screen menu system of icons and pop-up selections.

## The recorder shall use a battery to back up memory that stores the time, date, and all internal programming functions.

## The recorder shall have log view screens to show the entire system status at a glance.

## The recorder shall support Auto Install to do the following:

### Automatically detect loss of video sync, with on-screen indicators. If video loss is detected during recording, the recorder will warn by on-screen, send message to remote, buzzer will sound and a relay will be switched.

## The recorder shall prevent unauthorized program tampering through the use of at least 16 users and passwords, with settings including:

### Local user privileges

### Remote user privileges

### Local play privileges

### Remote play privileges

### Remote view privileges

## The recorder shall be one and a half unit of rack space in height (1.5 U) and capable of being rack mounted (EIA 19-inch standard) with rack-mount hardware that was designed by the manufacturer to support the units.

## The recorder shall support Digital Zoom in a user defined area.

## The video player shall be available in the recorder.

## The recorder shall support an easy-to-use Internet Explorer based web browser. The supported features shall be:

### Camera live view with up to 16 cameras simultaneously

#### Capability to switch between Main stream and Sub stream per individual camera and all cameras at once

### PTZ functionality with Preset call up.

### Playback of recorded video.

### Archiving of recorded video.

### Comprehensive remote configuration.

# Hybrid Digital Video Recorder Features

## Recording

### The recorder shall support user programmable stored video frame rates that can be programmed on a per-camera basis. All cameras shall be programmable to record videos in one of the following operating modes:

#### Constant

#### Time Lapse

#### Manual

#### Motion

#### Event

#### Alarm

### At a minimum, the recorder shall support the following stored video frame rates per camera:

#### Real-time (30 fps NTSC / 25 fps PAL)

#### 22 fps

#### 20 fps

#### 18 fps

#### 16 fps

#### 15 fps

#### 12 fps

#### 8 fps

#### 6 fps

#### 4 fps

#### 2 fps

#### 1 fps

#### 1/2 fps

#### 1/4 fps

#### 1/8 fps

#### 1/16 fps

### The recorder shall support an alarm record mode that is user programmable. At a minimum, the recorder shall support the following alarm mode stored video frame rates:

#### Real-time (30 fps NTSC / 25 fps PAL)

#### 22 fps

#### 20 fps

#### 18 fps

#### 16 fps

#### 15 fps

#### 12 fps

#### 8 fps

#### 6 fps

#### 4 fps

#### 2 fps

#### 1 fps

#### 1/2 fps

#### 1/4 fps

#### 1/8 fps

#### 1/16 fps

### The recorder shall allow the user to select whether the hard drive recording should automatically overwrite data (starting with the oldest data first) or if the user must confirm overwriting before recording will continue when the hard drive is full.

### The recorder shall have image quality settings that are adjustable on a per-camera basis by the end user, including the following:

#### Main stream

##### Resolutions8MPX (4K), 5MPX, 4MPX (IP only), 3MPX, 1080P, 720P, 960H, VGA, 4CIF, DCIF, 2CIF, CIF, QCIF

##### Streaming bandwidth16384 (IP only), 8192, 6144, 4096, 3072, 2048, 1792, 1536, 1280, 1024, 896, 768, 640, 512, 448, 384, 320, 256, 224, 192, 160,128, 96, 80, 64, 48, 32 and by User

##### Frame rates: See list in section c above. Not all frame rates can be achieved with all resolutions.

#### Substream

##### Resolutions

##### 960H, 4CIF, CIF

##### Streaming bandwidth 16384 (IP only), 8192, 6144, 4096, 3072, 2048, 1792, 1536, 1280, 1024, 896, 768, 640, 512, 448, 384, 320, 256, 224, 192,160,128, 96, 80, 64, 48, 32 and by User

##### Frame rates: See list in section c above. Not all frame rates can be achieved with all resolutions.

### The maximum incoming/outgoing bandwidth shall be:

#### 16 ch: 260 Mbps (combined in/out)

#### 32 ch: in: 260 Mbps; out: 200 Mbps

### The recorder shall support from 5 to 30 seconds of pre-event recording maintained in a buffer, and shall append this buffer to the beginning of all recorded events. The recorder shall continue to record at the event rate until the programmed event duration (from 5 seconds to 10 minutes) expires.

### The recorder shall allow the user to manually or automatically customize the record rates per camera for events and activity detection.

### The user shall be able to play back images smoothly at normal or fast speeds and in forward modes, without distortion.

### The unit shall provide full media search capabilities for archiving, restoring, and playback operations. Search capabilities shall include filters for start/stop times, start/stop dates, alarm and event occurrences, inserted text, and camera number.

### The unit shall use H.264 and H.265 technology to compress and store pictures prior to recording.

### The recorder shall support the recording of all images with a digital watermark. The verification of watermarked images shall reside solely with the manufacturer.

## Dual streaming and V-streaming

### The recorder shall allow the installer to set up a sub stream for streaming live Video and Audio over the network without affecting the record rate, quality, and resolution of recorded video.

### The recorder shall allow the installer to set up a V-stream that allows the Web browser or remote client to view several channels (up to 16) in one stream, thereby saving network bandwidth.

## Multiview

### The recorder shall be a triplex type unit, allowing simultaneous recording, playback, and live multivew viewing at the unit, with no need for additional hardware.

### The recorder shall provide the following displays in live mode: full screen, sequencing, 4-way, 6-way, 8-way, 9-way, 16-way, or (for 32-channel version only) 25-way or 32 cameras.

### The recorder shall provide the following Triplex displays in playback mode: full screen, 2-way, 4-way, 9-way, or 16-way.

### The recorder shall allow the user to rearrange cameras in any multivew display in live mode.

### The recorder shall incorporate the following display options:

#### Camera titling with a minimum of up to 16 alphanumeric characters

#### Title display enable/disable, per channel

#### Time/date formatting

#### Time/date enable/disable, per channel

### The recorder shall provide image update rates for live and record modes of up to 30 unique pictures per second for NTSC or up to 25 unique pictures per second for PAL per channel.

#### The recorder shall have three monitor outputs as follows:

##### One analog multiview monitor

###### Composite video, BNC connector

###### NTSC/EIA or PAL/CCIR compatible

###### Shall display events/alarms or a fixed user-defined layout

#### One digital HDMI multiview monitor output

##### HDMI connector

###### Shall display live, playback, event and programming functions

HDMI1 mirrors the content of the VGA port

HDMI2 is an independent output

#### One analog VGA multiview monitor output

##### VGA connector

###### Shall display live, playback, event and programming functions.The monitor type for showing the events/alarms shall be set up in the configuration.

## Video motion detection

### The recorder shall support the following video motion detection, with on-screen indications when motion is occurring:

#### Activity detection, which shall be treated as an alarm.

##### The recorder shall support an on-screen setup scale to determine the optimum sensitivity setting for each camera input.

##### The recorder shall have 396 zones per camera, arranged in a 22 by 18 grid.

##### The recorder shall have 5 levels of sensitivity.

##### The recorder shall have 255 levels for size discrimination.

## Intelligent Event Detection

The recorder shall support Intelligent Event Detection on analog, HD-TVI and IP cameras. Intelligent Event Detection shall be possible on maximum two analog (or HD-TVI) camera channels.

The following types of Intelligent Event Detection shall be supported for analog/HD-TVI cameras:

* Cross-line detection
* Intrusion detection

The Intelligent Event Detection types for IP cameras depend on what the IP cameras support.

## Masking / Privacy zones

### The recorder shall support video masking.

### The user can define four different areas (rectangles).

### The recorder shall have four mask areas per camera.

## Tampering

### The recorder shall support video tampering.

### The recorder shall have three levels of sensitivity.

## Alarms

### The recorder shall support up to 4, 8, or 16 alarm inputs (for 4, 8, 16 ch recorder), programmable as normally open or normally closed from within the menus.

### The recorder shall support four form-C relays as alarm outputs, each programmable as normally open or normally closed from within the menus, and rated for 0.5 A continuous, 1.0 A momentary.

### The recorder shall have a fully programmable additional audible device to alert the user to alarms, motion detection, and video loss occurrences or operation failure.

### The recorder shall support alarm latching with two settings, which shall be programmable from the menus as follows:

#### Manual acknowledge - When an alarm is activated, the recorder shall be manually acknowledged to reset the COS back to normal condition.

#### Timed out – The alarm shall automatically reset after a user-defined elapsed time.

### The recorder shall have automatic full screen associated alarm display that shall change as incoming alarms continue to arrive. As additional alarms arrive, the display monitor shall sequence between the cameras in alarm. It shall be possible, using the telemetry preset control, to utilize presets with associated alarm display to show the alarmed scene and surrounding escape paths during a high level alarm condition.

### The recorder shall provide status relays that shall link to alarms, motion detection, and video loss.

### The recorder shall have an alarm history display capable of showing the last 100 alarms received by the system.

### The recorder shall be supplied with push-in wire terminal connections to facilitate easy connection of alarms and other input/output signals.

### The recorder shall support notification on alarm to user accounts. The recorder shall allow the user to program notification in response to any of the following conditions:

#### Hard disk full

#### Hard disk error

#### Input/recording resolution mismatch

#### Illegal access

#### IP Address conflict

#### Network disconnected

#### Abnormal video signal

#### Abnormal record

## RS-232 communications

### The recorder shall support RS-232 communications and control to facilitate:

#### Technical support purposes

## Ethernet communications

### The recorder shall support LAN/WAN Ethernet access.

### The recorder shall have two physical network connections.

### The recorder shall support Ethernet bandwidths of 10 Mb,100 Mb, or 1Gb on the 16 and 32 channel models.

### The recorder shall support simultaneous Ethernet access by not less than 16 workstations connected to the LAN/WAN.

### The recorder shall support in real time viewing graphically the incoming and outgoing network traffic from the OSD.

### The recorder shall be provided with a Graphical User Interface (GUI) software for remote playback and viewing that shall support the Windows 7, Windows 8, and Windows 10 operating systems and full searching capabilities. It shall be possible to remotely set up the recorder unit using the remote viewing software.

### The recorder shall not stop recording during any Ethernet access, nor shall it be possible to remotely issue a command via Ethernet to stop the recording.

### The recorder shall allow the user to disable all Ethernet access from the menus by limiting the Total Net Bandwidth which functions as throttle.

### The recorder shall allow the user full programming of Ethernet parameters, including the following:

#### Ethernet (enable/disable)

#### Host name

#### DHCP (enable/disable)

#### DDNS

#### IP address (IPv4, IPv6)

#### Default gateway

#### Subnet mask

#### Name server

#### HTTP port

#### HTTPS

#### Main port

#### UPnP

# Specifications:

## Video

### Total available video memory shall be at least 1 GB.

#### Live/playback display memory shall be at least 128 MB.

#### Record memory shall be at least 72 MB.

### Video sampling rate shall be at least 27 MHz.

### Available colors shall be to specification YUV 4:2:2, providing up to 65K colors.

### There shall be 256 grayscale levels.

### Horizontal resolution shall be 960 pixels.

### Vertical resolution shall be:

#### 480 active lines NTSC/EIA

#### 576 active lines PAL/CCIR

## Inputs

### Camera

#### There shall be 16 or 32 camera inputs.

#### Inputs shall use BNC connectors.

#### Inputs shall be TVI-HD, NTSC/EIA or PAL/CCIR compatible.

## Audio

### There shall be four audio inputs

### One bidirectional audio line input

### The audio inputs shall use RCA connectors

#### Signal conditioning

##### All inputs shall have automatic gain control.

## Outputs

### The recorder shall have three monitor outputs as follows:

#### One analog multiview monitor

##### Composite video, BNC connector

##### NTSC/EIA or PAL/CCIR compatible

##### Shall display events

#### Two digital HDMI multiview monitor outputs

##### HDMI connector

##### Shall display live, playback, and programming functions

#### One analog VGA multiview monitor output

##### VGA connector

##### Shall display live, playback, and programming functions

## The recorder shall have a RS-232 serial data port to support the following functionality:

### Remote communications for technical support purposes

## The recorder shall have three USB ports for:

### USB memory key archiving devices.

### USB HDD or CD/DVD archiving devices.

### Mouse control functions.

## The recorder shall have a removable strip for input/output connector to support the following functionality:

### Alarm inputs

### Relay outputs

## Remote control

### The recorder shall have an IR-remote (optional in the EMEA region) that will emulate the front panel keys

## Mouse: The recorder shall provide mouse control support for:

### All menu settings and navigation functions.

### Control functions: Live, playback, PTZ, and archive.

28 05 27 Archival Systems for Electronic Safety and Security

# Archiving

## The recorder shall support archiving of recorded images through a USB memory stick.

## The recorder shall support archiving of recorded video and audio data through an optional external USB connected CD/DVD burner.

## The recorder shall have an option to select the type of archiving device connected when interfaced to the devices specified or approved equals.

## The recorder shall support selective archiving.

## The recorder shall have an on-screen progress indicator when selective archiving or restoration operations are accessing the archive device.

## The recorder shall have an Automatic Delete Mode (ADM) that may be enabled or disabled, preventing any video that is older than a user-defined period from being viewed or archived, when the unit is used in jurisdictions that mandate a finite storage time.

28 05 27.13 Storage Media

# Recorder hard drives

## The recorder shall record video on a hard drive. No videotape or videotape recorders shall be required.

### The recorder shall support both internal and external hard drive configurations.

### Internal storage configurations shall be 2 TB, 4 TB, 8 TB, 12 TB, 16TB, 18TB, 24TB or 32 TB.

### The utilized hard drives shall support the latest SATA technology including SMART reporting.

### The recorder shall support RAID configuration. RAID level 0, 1, 5, 6 and 10 shall be supported.

## The utilized hard drives shall be specially developed for the Digital Video Archiving Industry.

28 05 45 Systems Integration and Interconnection Requirements

# Intrusion integration

## The recorder shall integrate the intrusion integration alarm receiver software module.

## The recorder will be able to receive SIA or XSIA events from Interlogix alarm panels.

## The recorder is able to receive events from a maximum of three alarm panels and a maximum of 32 alarm zones per panel.

## The recorder will display the events in the alarm center via the web page and will register the events in the log file.

## The following events can be received by the recorder:

### Arming events (“C” events)

### Disarming events (“O” events)

### Alarm events (“A” as second character in the SIA/XSIA code)

### Heartbeat alarms (intrusion integration & recorder)

## The following actions can be linked to each event

### Sound buzzer of the recorder

### Show assigned camera in full screen on the event monitor

### Trigger a relay output

### Trigger recording for one or more cameras (alarm recording)

### Call a preset, shadow tour, or preset tour

### Send an email

### Upload snapshots to a FTP server

### Notify a VMS

28 05 45.11 Mechanical

# Mechanical

## 432 x 381 x 51 mm .

## Weight shall be 7.7 kg maximum without hard drive.

28 05 45.13 Electrical

# Electrical

## Input voltage: AC 100-240 V

## Power: Less than <= 65 W (16ch) or <= 74 W.

28 05 45.15 Information

# Environmental

## Operating temperature range -10 to +55°C (14~131℉).

## Relative humidity: 10 to 90% non-condensing.

# Compliance

## FCC

## CE

## UL

28 05 53 Identification for Electronic Safety and Security

# Identification

## The Digital Video HD Hybrid Streaming Recorder with Ethernet connectivity shall be as manufactured by Interlogix or an approved equal.

Contacting Support

Web site:

[www.interlogix.com/support](http://www.interlogix.com/support)

North America:

1-855-286-8889

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Latin America:

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EMEA:

See specific country listings at:

<https://firesecurityproducts.com/en/contact>

Australia/New Zealand

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