TRUVISION DVR 31 (TVR31) JUNE 2012

A&E SPECIFICATIONS

|  |  |
| --- | --- |
| **DIVISION 28** | **ELECTRONIC SAFETY AND SECURITY** |
| LEVEL 1 | 28 20 00 | ELECTRONIC SURVEILLANCE |
| LEVEL 2 | 28 23 00 | VIDEO SURVEILLANCE |
| **LEVEL 3** | **28 23 19** | **DIGITAL VIDEO RECORDERS AND ANALOG RECORDING DEVICES** |
| LEVEL 4 | 28 23 19.00 | NOT APPLICABLE |
| LEVEL 5 | 28 23 19.00.TVR30 | FILE REFERENCE ONLY |

This A&E Specification conforms to CSI MasterFormat 2004 guidelines.

The **bold** highlighted level above identifies the level this specification meets in the CSI MasterFormat hierarchy.

Feel free to consult with Interlogix regarding specific project requirements. For information and assistance contact:

Interlogix (UTC Climate, Controls & Security)

791 Park of Commerce Blvd., Suite 100

Boca Raton, FL 33487

Tel: (561) 998-6100

U.S.A. Toll Free: (800) 428-2733

Fax: (561) 994-6572

Internet: <http://www.interlogix.com>

DOCUMENT NOTES

Warranty Information: Product is warranted by the manufacturer for 36 months from the date of shipment to the dealer or integrator from the manufacturer. The warranty statement provided in Part 1 is an example of requirements to the installing contractor and may not directly represent the product.

This document was created in Word 2007 and may lose some formatting when converted to earlier versions or to other programs. Please review the PDF version should formatting errors appear.

To delete this cover page (Word 2007 or later):

Click the Insert tab, click **Cover Page** in the **Pages** group, and then click **Remove Current Cover Page**.

TABLE OF CONTENTS

[PART 1 GENERAL 1](#_Toc260420574)

[1.1 SUMMARY 1](#_Toc260420575)

[1.2 REFERENCES 1](#_Toc260420576)

[1.3 SUBMITTALS 1](#_Toc260420577)

[1.4 CLOSE-OUT SUBMITTALS 1](#_Toc260420578)

[1.5 WARRANTY 2](#_Toc260420579)

[PART 2 PRODUCTS 3](#_Toc260420580)

[2.1 OWNER FURNISHED EQUIPMENT 3](#_Toc260420581)

[2.2 EQUIPMENT 3](#_Toc260420582)

[2.3 PRODUCT MODEL NUMBERS 7](#_Toc260420583)

[2.4 PRODUCT ACCESSORY MODEL NUMBERS 8](#_Toc260420584)

[PART 3 EXECUTION 9](#_Toc260420585)

[3.1 INSTALLERS 9](#_Toc260420586)

[3.2 EXAMINATION 9](#_Toc260420587)

[3.3 PREPARATION 9](#_Toc260420588)

[3.4 INSTALLATION 9](#_Toc260420589)

[3.5 QUALITY CONTROL 10](#_Toc260420590)

[3.6 SYSTEM STARTUP 11](#_Toc260420591)

[3.7 CLOSEOUT ACTIVITIES 11](#_Toc260420592)

SECTION 28 23 19

# GENERAL

# SUMMARY

# Section Includes

* + - 1. Digital Video Recorder Performance Requirements
			2. Digital Video Recorder Technical Requirements

# Related Requirements

* + - 1. Integrated Systems and Options
				1. 28 06 00 Schedules for Electronic Safety and Security
				2. 28 20 00 Electronic Surveillance
				3. 28 23 00 Video Surveillance (exclusive of this section)
			2. Related Sections
				1. 26 33 53 Static Uninterruptible Power Supply
				2. 27 20 00 Data Communications

# REFERENCES

# NFPA 70 - National Electrical Code.

# UL 2044 – Commercial Closed-Circuit Television Equipment.

# FCC

# SUBMITTALS

# Single-line block diagram showing all related equipment interfaces.

# Manufacturer technical data sheets.

# Shop Drawings

# Software: 1 set of fully functional software in manufacturer’s original media packaging, temporarily licensed for a (30) day evaluation period.

# CLOSE-OUT SUBMITTALS

# Maintenance Contracts

# Operation and Maintenance Data/Manuals

# Warranty Documentation

# Record Documentation

# Software

# Commissioning Documentation and Check-Off List

# As-Built Drawings

# Training Course Materials

# Training Presentations

# Training Class Video Files

* 1. WARRANTY
		1. Warranty
			1. Warrant system against defects and workmanship for one (1) year, covering all parts and labor, after Owner acceptance.
			2. Assign all manufacturer warranties beyond the initial one year period to the Owner.
			3. Guarantee all application software/firmware is manufacturer supported.
			4. Perform all manufacturer recommended preventative maintenance on all related components and/or devices.
			5. The Security Contractor shall be the primary contact and respondent for all service and support and officially recognized and backed by the system manufacturer.
		2. Contractor Provided Extended Correction Period
			1. Guarantee all system corrections for six (6) months after Owner acceptance.
			2. Guarantee all application software/firmware remains current at all times during the manufacturer warranty period.
		3. Special Warranty
			1. Provide a separate proposal for extended warranty and maintenance service contract for Owner consideration.
			2. One (1) year agreement.
			3. Submit payment terms and conditions with proposal

.

# PRODUCTS

# OWNER FURNISHED EQUIPMENT

# Web Browser Workstation (minimum requirements)

* + - 1. Intel compatible, 700 MHz
			2. 1 GB RAM
			3. 10/100/1000MB Ethernet Network Interface Card

# Web Browser Workstation Software:

* + - 1. Operating System: Microsoft Windows XP, Vista or 7
			2. Web Browser: Microsoft Internet Explorer 7.x, 8.x or 9.x

# EQUIPMENT

# Manufacturer

* + - 1. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer’s system.
			2. All systems and components shall have been thoroughly tested and proven in actual use.
			3. Controlled devices, such as video cameras, PTZ controllers, etc. are specified elsewhere.
			4. This specification is based on the TruVision DVR 31 (TVR 31) by Interlogix; 791 Park of Commerce Boulevard, Boca Raton, FL 33487 USA. Tel: (561) 998-6100. Fax: (561) 994-6572 [www.interlogix.com](http://www.interlogix.com)

# Product Options.

* + - 1. Eight (8) video input model
			2. Sixteen (16) video input model

# Description

* + - 1. The equipment is a digital video recorder that provides storage and playback of images from up to 16 camera inputs simultaneously.
			2. Manageable locally by onboard controls or remotely by browser based interface or video management software program interface.
			3. Integrate to related software and hardware
			4. Setup and configure communication between the equipment, operator workstations, and downstream devices.
			5. Setup and configure equipment application parameters.

# Performance Criteria

* + - 1. The DVR shall be based on a Linux® operating system and incorporate real-time live viewing, playback viewing, and search viewing based on camera, date and time, motion, and alarm functions.
				1. Utilize H.264 compression, allowing viewing and controlling the DVR across a local or wide area network.
				2. Bandwidth throttle management to control network data from the DVR
				3. Dual streaming to enable low bit rate for low bandwidth networks
				4. Support from 1 GB to 6 TB of hard disk drive internal storage.
			2. Live View
				1. View real-time live video on all video channels
				2. View live and recorded video simultaneously while continuing to record without interruption.
				3. VGA or composite main monitor output

Display full size, 2x2, 3x3, and 4x4 image formats

Sequence live video in full size and 2x2 image formats

Customize sequencing by camera order

Dwell time of 1 to 120 seconds

* + - * 1. Composite spot monitor

Display full format live video

Sequence live video in full size image formats

Customize sequencing by camera order

Dwell time of 1 to 120 seconds

* + - 1. Recording
				1. Record and store images from one (1) to 16 camera inputs at a simultaneous recording rate up to 480 frames per second.
				2. Record resolutions CIF, 2CIF and D1.
				3. Record full-motion video, dependent on fps allocation

480 fps at CIF, NTSC (400 fps, PAL)

240 fps at 2CIF, NTSC (200 fps, PAL)

120 fps at D1, NTSC (100 fps, PAL)

* + - * 1. Allow individual adjustments per video input to meet a given installation requirement for video retention.
				2. Motion detection recording
				3. Automatic video watermark (via video authentication)
				4. Export recorded video to portable storage media.
				5. One button archive video
				6. Record audio from one (1) to 16 channels
			1. Playback Viewing
				1. Search and playback recorded video
				2. Video authentication

A viewer shall be able to play back video exported from the DVR server and recognize and verify the digital watermark embedded in the native video

Video authentication shall be performed using the Browser software to verify video data files on the remote client PC.

* + - 1. Export Video
				1. Export recorded video in a proprietary format to CD, DVD, USB drive
				2. Automatically export player software
			2. Remote Control
				1. Monitoring, searching, playback
				2. Incorporate PTZ dome control via on board communication ports
				3. Using a standard web browser, an installed ActiveX control shall provide capability to operate the DVR

Configure the DVR

View live video

Alarm notification

Play back video

Search recorded video

Archiving

Firmware upgrades

Control PTZ cameras

Allow bi-directional audio

* + - 1. Allow POS and ATM text insertion
				1. Integrated support for one (1) input associated with one camera
				2. Support additional inputs with optional test insertion module (see product accessories below).
			2. Automatic programming of daylight saving time updates each year.

# Functional Controls

* + - 1. On-screen programming and operation
			2. PTZ Control
				1. Full remote control operation of PTZ functions
				2. Web browser enabled
				3. PTZ keyboard controller (optional)
			3. Multiple Recording Modes
				1. Schedule
				2. Continuous
				3. Motion detection
				4. Alarm activation
			4. Video Recording Quality
				1. Seven (7) present settings
				2. Record wizard

Calculate programming requirements of desired storage needs

* + - * 1. Expert mode
			1. Password Protection
				1. Eight (8) user levels for setup functions and operation
				2. Administrator level
			2. Motion Detection
				1. Built-in motion detection for each camera to start recording

Selectable 12x16 grid detection motion areas

Sensitivity for each camera

Walk test motion sensitivity indicator

Adjustable trigger

* + - 1. Alarm Activation
				1. Alarm input will start the recording
				2. Pre-Alarm Recording

Records images for up to 30 seconds

* + - * 1. Post-Alarm Recording

Record all cameras up to 999 seconds after alarm event is cleared

* + - * 1. Remote Alert

Send alarm notification to a remote PC using compatible monitoring software

Send DVR active signal to a remote PC every two minutes

* + - 1. Bandwidth Throttling
				1. 192 Kbps
				2. 384 Kbps
				3. 768 Kbps
				4. 960 Kbps
			2. Dual Streaming (live video to remote client)
				1. 192 Kbps
				2. 384 Kbps
				3. 576 Kbps
				4. 768 Kbps
			3. Alarm History Log
			4. Instant Video Playback
				1. Playback video from selected camera from last recorded minute
			5. Audio listen-in
				1. Allows client to listen to playback audio.

# Physical Criteria

* + - 1. Electrical
				1. Internal Power Supply
				2. Universal, Auto-Switching, 100-240VAC, 50/60Hz
				3. Power Consumption: 100W, 340 BTU/H
			2. Environmental
				1. Operating Temperature: 32° to 104°F (0° to 40°C)
				2. Relative Humidity: 10-90% relative, non-condensing
			3. Structural
				1. Steel cabinet
				2. 17.3” W x 3.54” H x 16.3” D (440 x 90 x 413 mm)
				3. 2RUs
				4. 15.42 lb (7 kg) with 1 HDD and DVD-RW optical drive
			4. Connectors
				1. Video Inputs

Composite BNC,

Loop through

75 ohms, 1 V, p-p

Manual termination (software)

* + - * 1. Video Outputs

Main

VGA, DB-15

S-video

Composite BNC

HDMI

Spot

Composite BNC

* + - 1. Alarm Inputs
				1. 16 (user selectable, N.O/N.C.), terminal block
			2. Audio
				1. Input: Terminal Block, 1 input per camera
				2. Output: RCA
			3. Auxiliary Interface
				1. 4 high-speed USB 2.0 ports (2 front, 2 back)
			4. Network Interface
				1. 10/100/1000 Mbps, Ethernet, RJ-45 port
			5. Serial Interface
				1. RS-232C, D-Sub-9 pin male
			6. PTZ Control Interface
				1. RS-422/RS-485 terminal block ports

# Technical Criteria

* + - 1. System
				1. Embedded Linux Operating System
				2. Network Protocols

DHCP

Static

PPPOE

DDNS

* + - * 1. CD/DVD burner
				2. SATA hard disk drive

1TB

2TB

4TB

6TB

* + - 1. User Interface
				1. Front panel
				2. IR remote
				3. USB mouse
				4. Remote control keyboard
			2. Video
				1. Standards

Input

NTSC/PAL, switchable

Output

NTSC/PAL, composite

VGA

HD

800 x 600 Resolution

* + - * 1. Decoding

H.264

* + - * 1. Resolution

NTSC

D1: 704 x 480

2CIF: 704 x 240

CIF: 352 x 240

PAL

D1: 704 x 576

2CIF: 704 x 288

CIF: 352 x 288

* + - * 1. Frame Rate

Maximum frames per second, 16 channel model

NTSC

120 fps at D1 resolution

240 fps at 2CIF resolution

480 fps at CIF resolution

PAL

100 fps at D1 resolution

200 fps at 2CIF resolution

400 fps at CIF resolution

Average frames per second, per channel, 16 channel model

NTSC

7.5 fps at D1 resolution

15 fps at 2CIF resolution

30 fps at CIF resolution

PAL

6 fps at D1 resolution

12.5 fps at 2CIF resolution

25 fps at CIF resolution

# PRODUCT MODEL NUMBERS

# TruVision DVR 31

* + - 1. All models include DVD/CD
			2. 16 Channel
				1. TVR-3116-2T: 2TB Storage
				2. TVR-3116-4T: 4TB Storage
				3. TVR-3116-6T: 6TB Storage
			3. 8 Channel
				1. TVR-3108-1T: 1TB Storage
				2. TVR-3108-2T: 2TB Storage
		1. Provide system components and documentation with DVR
			1. System components
				1. 120VAC grounded USA power cord
				2. IR remote control with batteries
				3. Rack mount ears with screws
			2. Documentation
				1. CD

User Manual

Quick Start Guide for installers

Quick Chart for end users

Bit-rate calculator

DVR player

FFDShow for AVI player support

* + - * 1. Printed

Quick Start Guide for installers

Quick Chart for end users

# PRODUCT ACCESSORY MODEL NUMBERS

# Keyboard Controller (Option)

* + - 1. UTC Fire & Security KTD-405

# Test Insertion (Option)

* + - 1. UTC Fire & Security ProBridge 3
				1. CBR-PB3-ATM: ATM Interface
				2. CBR-PB3-POS: Point of Sale Interface
				3. CBR-PBe: Ethernet model

# EXECUTION

# INSTALLERS

# Contractor requirements:

* + - 1. Factory authorized representative for no less than two (2) years, recognized by the manufacturer of the specified system
			2. Local installation and service organization
			3. Provide three (3) references (minimum) whose systems are of similar complexity
				1. Installed by this contractor in the last five (5) years
				2. Presently maintained by the this contractor
			4. Provide satisfactory evidence of liability insurance and Workmen's Compensation coverage for employed personnel as required by law.

# Assure that all personnel working on the project are registered with the state or local jurisdiction licensing board as provided for by current state/municipal statutes.

* + - 1. At time of bid, the contractor shall be licensed by the state or local jurisdiction to perform security work within the state.
			2. Contractors who have security licenses or permits pending shall not be considered acceptable for bidding on this project.

# Installer and technician requirements:

* + - 1. Must be experienced and qualified to accomplish all work promptly and satisfactorily
			2. Provide proof that designated service and support personnel have successfully completed the appropriate manufacturer offered hardware and software training and certification for installation, service and maintenance of the specified system.
			3. Advise Owner in writing of all designated service and support personnel responsible for installation as well as pre and post warranty service.

# EXAMINATION

# Inspect the installation site prior to bidding the job.

# Report any discrepancies between the project specification and bid documents and the site examination prior to the bid opening date.

# PREPARATION

# Order all required parts and equipment upon notification of award.

# Bench test all equipment prior to delivery to the job site.

# Verify the availability of power where required. If a new source of power is required, a licensed electrician shall be used to install it.

# Verify the availability of communication infrastructure where required.

# Arrange for obtaining all programming information from the Owner’s Representative.

# INSTALLATION

# Requirements

* + - 1. Install all system components and appurtenances in accordance with the manufacturer’s specifications, referenced practices, guidelines, and applicable codes.
			2. Furnish all necessary interconnections, services, and adjustments required for a complete and operable system as specified.
			3. Install control signal, communication, and data transmission line grounding to preclude ground loops, noise, and surges from adversely affecting system operation.
			4. Carefully follow the instructions in the manufacturers’ installation manual to ensure all steps have been taken to provide a reliable, easy to operate system.
			5. Perform all work as indicated in the project specifications and bid documents.

# Installation Environment

* + - 1. Ventilation
				1. Do not block any ventilation openings.
				2. Ensure that the location planned for the installation of the unit is well ventilated
				3. Do not remove rubber feet from unit.
				4. Ensure sufficient fan ventilation for installations in closed racks.
			2. Temperature
				1. Install equipment in temperate environment, within unit’s operating temperature and humidity limits.
				2. Do not install the TVR 31 on top of other hot equipment.
				3. Leave 1.75 inches (44 mm) of space between rack mounted units.
			3. Install in a horizontal position only
			4. Support all cabling to unit to remove stress from connectors
			5. Protect unit from dust
			6. Do not store/place items on rack mounted units
			7. Do not install near water
			8. Do not install outdoors

# Systems Integration

* + - 1. Coordinate with the Owner’s IT Department prior to connecting to the Owner’s network.
			2. Work in harmony with all other trades.
			3. Integrate related systems, components, and sub-systems.

# QUALITY CONTROL

# Workmanship

* + - 1. Comply with highest industry standards, except when specified requirements indicate more rigid standards or more precise workmanship.
			2. Perform work with persons experienced and qualified to produce workmanship specified.
			3. Maintain quality control over suppliers and subcontractors.
			4. Quality of workmanship is considered important. Owner’s Representative will have the authority to reject work which does not conform to the project documents.

# Site Tests and Inspections

* + - 1. Execute adequate testing of the system to insure proper operation.
			2. Upon reaching Substantial Completion, perform a complete test and inspection of the system. If found to be installed and operating properly, notify Owner’s Representative of your readiness to perform the formal Test & Inspection of the complete system.
			3. Submit the Record Drawings (as-built) to Owner’s Representative for review prior to inspection.
			4. During the formal Test & Inspection (Commissioning) of the system, have personnel available with tools and equipment to remove devices from their mounts to inspect wiring connections. Provide wiring diagrams and labeling charts to properly identify all wiring.
			5. If corrections are needed, the contractor will be provided with a punch-list of all discrepancies. Perform the needed corrections in a timely fashion.
			6. Notify Owner when ready to perform a re-inspection of the installation.

# SYSTEM STARTUP

# Provide initial programming and configuration of the system.

# Programming shall include defining cameras, recording parameters, input points and output relays, user permissions, and the like. Input of all program data shall be by Contractor. Consult with Owner’s Representative to determine operating parameters.

# Maintain hard copy worksheets which fully document the system program and configuration

* + - 1. Worksheets shall be kept up to date on a daily basis until final acceptance by Owner.
			2. Worksheets shall be subject to inspection and approval by Owner.
			3. Provide final copies to Owner prior to project close-out.

# Provide follow-up assistance with system configuration sixty (60) days after start-up of system as requested by Owner. Include a labor allowance for follow-up assistance in base bid price.

# CLOSEOUT ACTIVITIES

# Commissioning

* + - 1. Place entire system into full and proper operation as designed and specified.
			2. Verify that all hardware components are properly installed, connected, communicating, and operating correctly.
			3. Verify that all system software is installed, configured, and complies with specified functional requirements.
			4. Perform final acceptance testing in the presence of Owner’s Representative, executing a point by point inspection against a documented test plan that demonstrates compliance with system requirements as designed and specified:
			5. Submit documented test plan to Owner at least (14) days in advance of acceptance test, inspection and check-off.
			6. Conduct final acceptance tests in presence of Owner’s Representative, verifying that each device point and sequence is operating correctly and properly reporting back to control panel and control center.
			7. Acceptance by Owner is contingent on successful completion of check-off; if check-off is not completed due to additional work required, re-schedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by additional work.
			8. System shall not be considered accepted until all acceptance test items have been successfully checked-off. Beneficial use of part or all of the system shall not be considered as acceptance.

# Training

* + - 1. Provide system operations, administration, and maintenance training by factory trained personnel qualified to instruct.
				1. Training shall be oriented to the specific system being installed under this contract as designed and specified.
				2. Provide training sessions at Owner’s facility, and schedule at the Owner’s convenience.
				3. Provide written training outline and agenda for each training session prior to scheduling.
				4. Record and provide copies of training programs for Owner knowledgebase.
			2. Owner will designate personnel to be trained.
				1. Provide classroom instruction for people selected by Owner
				2. Provide two (2) hours of individual hands-on training for each person.
				3. Hands-on training shall include the opportunity for each person to operate the system
				4. Hands-on training shall include practice of each operation that an operator would be expected to perform.
				5. Provide printed training materials for each trainee including product manuals, course outline, workbook or student guides, and written examinations for certification.
				6. Cover all operating features of the system.

 END OF SECTION