DR-2316P

Architectural and Engineering Specifications

Version 1.0

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PART 2 - PRODCUTS

Division 28 – Electric Safety and Security

Section 28.23.19 – Video Surveillance – Digital Video Recorder and Analog Recording Devices

Section 28.23.12 - Video Surveillance – System Infrastructure

2.1.0 Manufacturer

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2.2.0 General

2.2.1 Product Description

DR-2316P is a Network Video Recorder (NVR) designed and manufactured by IDIS. The NVR is a 16 Channel unit and supports up to Full HD 480ips (images per second) with H.265 and H.264 codec. The NVR provides the maximum network throughput of 300Mbps and supports up to 12MP recording resolution (Depending on IP camera). The NVR is equipped with 8 Channel PoE ports, 2 internal HDD ports and 1 eSATA ports.

The NVR is an integrated security system, capable of time division multiplexing and real time recording of multiple cameras and storing their digitized and compressed images on embedded hard disk drives for fast search and retrieval either locally at the unit, or from a remote workstation using a Graphical User Interface (GUI). The NVR is equipped with technology that allows connected cameras to be discovered and configured automatically. The NVR is fully compatible with IDIS products across different platforms such as TVI solution and Video Management System.

2.2.2 General Specification

1. The NVR shall be a Linux embedded unit with 16 Channel IP network video recording capability.
2. The NVR shall be equipped with 1 Gigabit Ethernet (Client) port, 8 Fast Ethernet (IP Camera) ports and 1 Gigabit Ethernet (Ext) port.
3. The NVR shall have 2 internal SATA ports and 1 eSATA ports.
4. The NVR shall have 1 HDMI output and 1 VGA output.
5. The NVR shall have 4 alarm inputs, 1 alarm output.
6. The NVR shall have 1 RCA audio output, 1 HDMI audio output.
7. The NVR shall have 1 USB 2.0 port and 1 USB 3.0 port.
8. The NVR shall have 1 RS-232 terminal block.
9. The NVR shall have 1 internal buzzer.
10. The NVR shall support up to live 480ips (Image per Second).
11. The NVE shall support simultaneous live view, record, play back, data transmission in real time.
12. The NVR shall support up to 300Mbps maximum network throughput.

13. The NVR shall support recording resolution up to 160Mbps, Full HD 480ips and 4K (UHD) 120ips.
14. The NVR shall support H.265 and H.264 codec.
15. The NVR shall provide Graphical User Interface (GUI) with multi lingual support.
16. The NVR shall support 2X – 12X digital zoom in live view mode.
17. The NVR shall provide time lapse, event, time lapse + event, pre / post-event, panic recording schedule.
18. The NVR shall support recording bitrate control mode: CBR and VBR.
19. The NVR shall provide up to 16 video profiles in conjunction with DirectIP cameras.
20. The NVR shall adjust DirectIP camera's configuration.
21. The NVR shall support alarm, audio, motion, trip zone, video loss, text-in, system event triggering, face detection, fan error, record failure, storage related alerts and alarm in error.
22. The NVR shall support email, remote notification (call back) to remote work stations, mobile device push and SNS (Twitter) notification.
23. The NVR shall provide Time-lapse, Event log, Motion, Thumbnail, Text-in search options.
24. The NVR shall support 16 channels Full HD synchronous and 4 channels 4K playback.
25. The NVR shall support 2X – 12X digital zoom in playback mode.
26. The NVR shall be equipped with Chained-Fingerprint™, SSL, Password encryption options.
27. The NVR shall support FEN service (A name resolution service equivalent to DDNS), Bonjour, DNS-SD (DNS Service Directory).
28. The NVR shall be equipped with dynamic remote streaming option mode for enhanced remote access experience.
29. The NVR shall be compatible with IDIS Center, IDIS Solution Suite, Mobile and Web Client.
30. The NVR shall be compatible with network accessory: analog encoder, decoder, network keyboard, network switch, media converter, EoC converter, etc.
31. The NVR shall be controlled by network keyboard with USB mouse support and remote control.

2.3.0 Technical Specification

2.3.1 Video Specification

1. Network Video Inputs: up to 16 IP cameras
   A. Built-in 8 channel PoE Switch and expandable up to 16 Channel using DirectIP™ Gigabit PoE Switch
   B. PoE(IEEE 802.3at class 4) supported 8 ports, 50W
2. Maximum Incoming Throughput: 300Mbps
   A. Max. Incoming Throughput means maximum incoming network throughput for live monitoring, recording and remote stream.
3. Supported Camera protocol: DirectIP, AXIS, PANASONIC, ONVIF™ (Profile S)
   A. The NVR supports integrated third party cameras with Axis, Panasonic and ONVIF protocol as well as DirectIP cameras.
   B. Analog Encoder can be attached via network to work with analog cameras.

4. Video Outputs: 1 HDMI, 1 VGA OUT
    A. The NVR shows live video through VGA and HDMI monitor. It supports various camera display formats; Full-screen, Quad (2x2), 3x3, 4x4, 1p5, 1p7, 1x3
    B. The NVR supports dynamic streaming feature. High resolution video (Live 1) is used for full or 2x2, 3x3 screen layout, and low resolution video (Live 2) is used for more screen layout.
5. Display Resolution: 3840x2160, 1920x1200, 1920x1080, 1680x1050, 1600x1200
6. Maximum Live Display Speed: Up to 480ips
7. Live Digital Zoom: x2 ~ x12
8. PTZ Control and Setup
    A. The NVR shall allow control of PTZ cameras to authorized users and be used to maneuver a PTZ camera using Built-in GUI PTZ control; Pan, Tilt and Zoom, Focus Near / Far, Set / Move to Preset, Advanced PTZ capabilities. When PTZ capable camera is connected, this function shall be enabled automatically.
    B. Network Keyboard shall be supported with USB mouse.
9. Image Authentication: Chained Finger Print
10. Additional Information
    A. The NVR shall support the following features: Sequence Monitoring, Screen Freeze, Covert cameras, Privacy Mask, Color Control (Brightness, Contrast, Saturation, Hue), event monitoring.
    B. The NVR shall display camera ID, recording status and recording mode information on the screen.
    C. The NVR shall display advance information such as information port such as port number, resolution, codec and IP camera connection number.

2.3.2 Audio Specifications

1. Audio Input: (line level)
    A. NVR: N/A
    B. IP Camera: 16 (Depending on IP Camera)
    C. The NVR shall support recording and re-broadcasting of audio inputs from audio equipped cameras and audio input connected.
    D. The NVR shall stream live and recorded audio to connected local speaker / amplifier and remote clients such as IDIS Center, IDIS Solution Suite, Windows / MAC Workstations and Mobile Devices.
2. Audio Output
    A. NVR: 1 RCA + 1 HDMI
    B. IP Camera: 16 (Depending on IP Camera)
    C. Audio signal can be transferred to the audio output devices such as a speaker via RCA or HDMI port.
3. Audio Codec Format: G.711, G.726
4. Audio Data Size: 64 Kbps (per channel)

5. Two-way (Bidirectional) Audio:
    A. Audio equipped IP camera and IDIS Center
    B. Audio equipped IP camera and NVR

2.3.3 Recording Specifications

1. Maximum Recording throughput
    A. The NVR shall support up to 480ips@Full HD and 120ips@4K recording with 160Mbps incoming throughput
2. Recording Resolution: Up to 12MP (Depending on IP camera)
3. Video Compression Codec: H.264, H.265
4. Recording Schedule
    A. The NVR shall allow camera-by-camera configuration of the following recording modes:
        i. Time Lapse Recording (Continuous), Event-Based Recording, Time Lapse with Event-based Recording, Panic Recording, Pre / Post Event Recording
    B. The NVR shall support the configuration of the following video parameters for each available stream on connected cameras.
        i. Frame Rate, Resolution, Quality
    C. The NVR shall allow the user to create and edit video recording schedules for each connected camera
        i. Basic Schedule
        ii. Advanced Schedule which includes different profiles and dwell timer per each occurred event
    D. The NVR shall include the ability for Pre-Event recording, which records video for a specified time before an event or alarm has occurred. The allowed time Pre-Event recording is from 5 seconds to 30 minutes.
5. Bitrate Control Mode: CBR (Constant Bit Rate) / VBR (Variable Bit Rate)
6. Additional Information
    A. The NVR shall support individual camera Recording profile Setup.
    B. The NVR shall be able to configure the camera's live and recording resolution, compression method, picture quality, transfer speed, frame rate settings in Stream setup. In recording mode, the factory default resolution is set at the maximum of the camera’s capability. This is adjustable parameter according to custom configuration.
    C. NVR shall record up to 16 inputs if the connected cameras and devices support audio feature.

2.3.4 Playback Specifications

1. Performance
    A. The NVR shall support 16 channels Full HD synchronous and 4 channels 4K playback.
2. Display Format
    A. The NVR shall offer multi-screen playback (single-screen, quad or multiple layouts), series

display (displaying images from one camera image by image), and full-screen display.

3. Search Mode: Time-lapse, Event log, Motion, Text-in, Thumbnail
   A. The NVR shall provide various search filters for fast retrieval; Calendar Search, Go To Search, Record table search, Search by Event, Motion, Text-in, Bookmark and Museum Search.
4. Playback Digital Zoom: x2 ~ x12

2.3.5 Storage Specifications

1. HDD: Internal SATA x2, eSATA x1(Up to 8TB capacity for each disk)
2. Total Capacity: 48TB = 8TB x (2 Internal + 4x1 eSATA option)
   A. The NVR shall support increased recording storage capability if direct attached storage device such as eSATA storage unit is connected
3. Data Export
   A. Device: USB Storage Device (USB HDD, USB Memory, etc.)
   B. Data Export with Audio: Supported
   C. Multichannel Data Export: Supported
   D. The NVR shall have the ability to save the current images to Bitmap, JPEG and video clip as an ".exe" (IDIS Player) file. The IDIS Player (ClipPlayer) is a self-executable file (Single / Multi Channel with compressed video and audio), which requires no additional program to play back on any compatible Windows PCs. The exported file can be saved using USB thumb drives.
4. Additional Information
   A. The NVR shall be equipped with Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.), incorporating a suite of advanced diagnostics that monitor the internal operation of hard drives and provide early warning for many types of potential problems.

2.3.6 Network Specifications

1. Video Input Connection:
   A. 8 Fast Ethernet (IP Camera) PoE ports + 1 Gigabit Ethernet video input (Ext) port
2. Client Connection: Gigabit Ethernet(Client) x 1 port
   A. Client connection is used for connecting the remote client software in LAN or WAN environment
3. Remote Data Throughput: 50Mbps (Normal mode) / 100Mbp (BRP mode)
   A. BRP Mode: Increases remote data throughput by reducing live streaming
   B. By enabling BRP, Live audio output and video viewing will be disabled.
4. Camera Power: PoE(IEEE 802.3at class 4) supported 8 ports, 50W
5. Remote Data Export: IDIS Player, AVI, JPG
   A. The still or moving images can be captured using remote client software as a JPG, AVI, CBF or EXE file format.(dynamic remote application)
   B. File Printer Interface: PDF file printer
6. Remote Client Viewer application: IDIS Center, Solution Suite, Mobile, Web
   A. IDIS Center: Windows and Mac OS (Note: IDIS Center for Mac OS is limited in functionality)

i. IDIS Center (for Windows only) supports simultaneous firmware upgrade on multiple NVRs

B. IDIS Solution Suite: Windows OS

C. IDIS Mobile: iOS, Android

D. IDIS Web works with NVR's embedded web server using a Web Browser with ActiveX plug-in.

7. Maximum Client Connections
   A. Remote connection : 10 (Search : 2)

2.3.7 Alarm and Event Specifications

1. Alarm Input / Output (terminal block)
   A. Local(NVR): 4 / 1
   B. IP Camera: 16 / 16 (Depending on IP Camera)
   C. Alarm Input Type: 4 TTL, NC / NO Programmable, 2.4V(NC) or 0.3V(NO) threshold, 5V DC
   D. Alarm Output Type: 1 relay output, 2A@125V AC, 1A@30VDC (NO)
2. Internal Buzzer: Yes
3. Trigger Events: Alarm in, Audio detection, Motion detection, Trip-zone, Tampering, Video loss, Text-in, Face detection and System events
   A. The NVR shall support alarm sensor trigger in and relay out functions in such event of motion detection, video loss detection, video obscuring, tampering and abnormal system reboot.
   B. Maximum Channels of Text Input: 16
4. Event Notification: Email, notification Remote S/W, Push notification (IDIS Mobile), SNS (Twitter) face detection
   A. The NVR shall support e-mail notification when events occur: sensor, motion, video loss, camera obscuration, Text-in and / or stop recording
   B. SNS and Mobile device push notification: Twitter is supported and users can receive push notification on their phone when an event is triggered.
   C. The NVR shall include a system log report support that records and displays information relating to alarm events, reboots, and other system information. The user shall receive event notification.

2.3.8 External Interface Specifications

1. Serial Interface: RS232 (Terminal Block)
2. User Control Interface: Mouse, IR Remote Control, Network Remote Keyboard
3. USB Interface: USB 2.0 x 1, USB 3.0 x 1.

2.4.0 Mechanical Specifications

1. Operating System: Embedded Linux
2. Unit Dimensions (W x H x D): 300mm x 62mm x 231 mm (11.8" x 2.4" x 9.1")
3. Unit Weight: 2.3 kg (5.1 lb) (with 1 HDD)

2.5.0 Environmental Specifications

1. Working Temperature: 0°C to 40°C (32℉ ~ 104℉)
2. Operating Humidity: 0% ~ 90%

2.6.0 Electrical Specifications

1. Power Input:
   A. NVR: 100-240V AC, 50/60Hz, 1.6A, Output : 12V DC, 5A
   B. PSE: 100-240V AC, 50/60Hz, 1.4A, Output : 48V DC, 1.36A
2. Power Consumption: Max. 21.12W (for NVR), Max. 52.8W (for PSE)
3. Regulatory Approvals:
   A. Electrical: FCC, CE, KC

Version History

Version	Writer	Revision Date	Remarks
1.0	Brandon Jo	April 13, 2017	Initial Release