DR-8364

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-8364 is a Network Video Recorder (NVR) designed and manufactured by IDIS. The NVR is a 64 Channel unit and supports up to Full HD 1920 ips (images per second) with H.264/H.265 compression. The NVR provides the maximum network throughput of 800 Mbps and supports up to 8MP recording resolution. The NVR is equipped with 4 Gigabit Ethernet/2 SFP ports, 8 internal HDD ports, 4 eSATA ports and internal HDD Raid 1, 5, 10 support.

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 64 Channel IP network video recording capability.
2. The NVR shall be equipped with 1 Gigabit Remote Client port, 3 Gigabit video in port, 2 SFP video in ports.
3. The NVR shall have 8 internal SATA ports and 4 eSATA ports.
4. The NVR shall support RAID (1, 5, 10) on internal SATA.
5. The NVR shall have 1 HDMI output and 1 VGA output.
6. The NVR shall have 4 alarm inputs, 1 alarm output, 1 alarm reset (relay).
7. The NVR shall have 1 RCA audio input, 1 RCA audio output, 1 HDMI audio output.
8. The NVR shall have 2 USB 2.0 ports, 1 USB 3.0
9. The NVR shall have 1 RS-232 terminal block, 1 RS-485 terminal block.
10. The NVR shall have 1 internal buzzer
11. The NVR shall support up to live 1920 ips (Image per Second).
12. The NVR shall support simultaneous live view, record, play back, data transmission in real time.

13. The NVR shall support up to 800 Mbps maximum network throughput.
14. The NVR shall support recording resolution up to 400 Mbps, Full HD 1920 ips.
15. The NVR shall support H.264/H.265 compression.
16. The NVR shall provide Graphical User Interface (GUI) with multi lingual support.
17. The NVR shall support 2X – 12X digital zoom in live view mode.
18. The NVR shall provide time lapse, event, time lapse + event, pre / post-event, panic recording schedule.
19. The NVR shall support recording bitrate control mode: CBR and VBR.
20. The NVR shall provide up to 4 video profiles in conjunction with DirectIP cameras.
21. The NVR shall adjust DirectIP camera's configuration.
22. 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.
23. The NVR shall support email, remote notification (call back) to remote work stations, mobile device push and SNS (Twitter) notification.
24. The NVR shall provide Time-lapse, Event log, Motion, Thumbnail, Text-in search options.
25. The NVR shall support 4 channels Full HD synchronous playback.
26. The NVR shall support 2X – 12X digital zoom in playback mode.
27. The NVR shall be equipped with Chained-Fingerprint™, SSL, Password encryption options.
28. The NVR shall support FEN service (A name resolution service equivalent to DDNS), Bonjour, DNS-SD (DNS Service Directory).
29. The NVR shall be equipped with dynamic remote streaming option mode for enhanced remote access experience.
30. The NVR shall be compatible with IDIS Center, IDIS Solution Suite, Mobile and Web Client.
31. The NVR shall be compatible with network accessory: analog encoder, decoder, network keyboard, network switch, media converter, EoC converter, etc.
32. 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 64 IP cameras
   A. Built-in 3 Gigabit Ethernet / 2 SFP ports
2. Maximum Incoming Throughput: 800Mbps
   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, 5x5, 6x6, 1+5, 1+7.
   B. The NVR supports dynamic streaming feature. High resolution video (Live 1) is used for full or 2x2 screen layout, and low resolution video (Live 2) is used for 3x3 or more screen layout.
5. Display Resolution: 3840x2160, 1920 x 1200, 1920 x 1080, 1680 x 1050, 1600 x 1200
6. Maximum Live Display Speed: Up to 1920ips
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: 1 RCA
   B. IP Camera: 64 (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: 64 (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 1920@Full HD recording with 400 Mbps incoming throughput
2. Recording Resolution: Up to 8MP (Camera specific)
3. Video Compression: 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 64 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 playback.
   B. 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

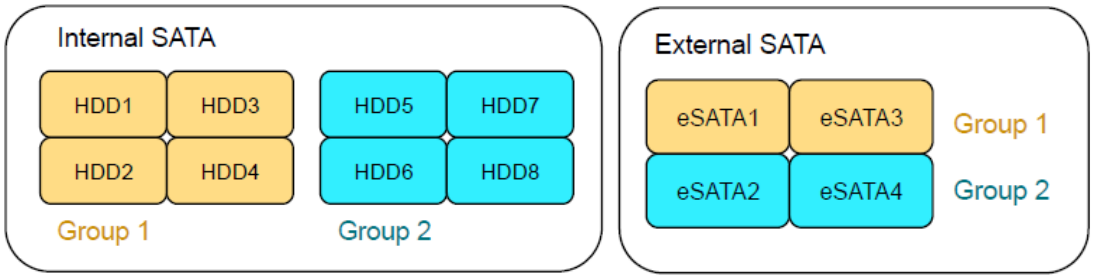
2.3.5 Storage Specifications

1. HDD:
    A. Internal: SATA x8,
    B. External: eSATA x4,(Up to 6TB capacity for each disk),
2. RAID: Internal SATA support RAID 1, 5, and10
3. Total Capacity: 144TB = 6TB x (8 Internal + 4x4 eSATA option)
    A. The NVR shall support increased recording storage capability if direct attached storage device such as eSATA storage unit is connected
4. 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.
5. 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 Disk Groups

DR-8364D has its unique storing mechanism to provide 64 channel real-time recording.

1. Internal/External SATA structure



2. Summary of SATA structure

- Disk Group 1
  - Slot: Internal - 1,2,3,4 / eSATA - 1,3
  - Recording channel (Camera number): Odd number
- Disk Group 2
  - Slot : Internal - 5,6,7,8 / eSATA - 2,4
  - Recording channel (Camera number): Even number
- Explanation of SATA Structure
  - Storage is divided into two groups.
  - Group1 records odd numbered camera channels such as 1,3,5,7…
  - Group2 records even numbered camera channels such as 2,4,6,8…
  - So, basically, HDDs will be allocated to either group 1 or 2.

3. RAID Type

- DR-8364 supports RAID1, 10(1 + 0), 5 and the NVR can have RAID compositions listed below.
  - R1 (1,2) , R1 (5,6)
  - R1 (1,2) , R1 (3,4) , R1 (5,6) , R1 (7,8)
  - R10 (1,2,3,4) R10 (5,6,7,8)
  - R5 (1,2,3,4,) R5 (5,6,7,8)
- **NOTES**:
  - The RAID Type of Group1 and 2 should be same.
  - Installing the same model HDD is required. (HDD for Cloud record is recommended)

There is no limitation to install new HDD in the NVR, but ‘RAW format’ is necessary before installing a HDD.

2.3.7 Network Specifications

1. Video Input Connection:
   A. 2 Gigabit Ethernet(Video-In) + 2 SFP (Video-In) ports
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: 300Mbps (Normal mode) / 400Mbp (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: 2 Gigabit Ethernet + 2 SFP ports
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 and Windows Mobile platform
   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)

2.3.8 Alarm and Event Specifications

1. Alarm Input / Output (terminal block)
   A. Local(NVR): 4 / 1
   B. IP Camera: 64 / 64 (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, NC / NO , 2A@125V AC, 1A@30V DC
2. Alarm Reset Input: 1
   A. Input Type: 1 TTL, terminal block
3. Internal Buzzer: Yes
4. 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: 64
5. 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.

2.3.9 External Interface Specifications

1. Serial Interface: RS232 (Terminal Block), RS485 (Terminal Block)
2. User Control Interface: Front Buttons, Mouse, IR Remote Control, Network Remote Keyboard, RS232C / 485 Command Interface
3. USB Interface: USB 2.0 x 2, USB 3.0 x 1

2.4.0 Mechanical Specifications

1. Operating System: Embedded Linux
2. Unit Dimensions (W x H x D): 482.6 mm x 88 mm x 523.3 mm (19" x 3.5" x 20.6")
3. Unit Weight: 9.9 kg (21.8 lb) (without 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: AC 100-240V, 50 / 60Hz, 3.0 ~ 1.5A
2. Power Consumption: Max. 120W (with 8HDDs)
3. Regulatory Approvals:
   A. Electrical: FCC, UL, CE, CB, KC

Version History

Version	Writer	Revision Date	Remarks
1.0	Roy Lee	May. 12.2016	Initial Release
1.0	Glen Oh	Aug. 18.2016	Added “Disk Groups”