VDR-408/VDR-416 Series
Digital Video Recorder

- **8- or 16-channel digital recorder with MPEG-4 compression**
- **Quadplex operation mode: simultaneous record, playback, backup and network streaming**
- **Multi-channel record, playback and backup**
- **Live remote recording, on-the-fly recording and control over the network**
- **Live monitoring and remote playback by web browser**
- **Motion detection, video loss and sensor alarm function; pre- and post-alarm recording**
- **Alarm triggered email function**
- **User defined settings for recording frame rate and resolution**
- **Convenient search by time, date or alarm**
- **Audio recording**
- **Playback and field-by-field viewing with JOG/Shuttle dial**
- **PTZ control through RS-422/485; quick easy setup through RS-232**
- **100-240 VAC power input; NTSC/PAL**
- **Various backup methods**
- **Supports static or dynamic IP (DHCP/PPPoE)**
- **Video loop through output with auto termination**

The VDR-408-500 and VDR-416-1000 are ideal for CCTV users who require an easy to use high-quality standalone 8-channel or 16-channel digital video recorder with the benefit of additional remote PC access via a network/Internet; live monitoring and remote playback are available by web browser. Incorporating high-quality MPEG-4 video and audio encoding and compression technology, these feature-rich DVRs are designed for use with industry standard composite video output CCTV cameras using BNC connectors.

The DVRs are operated and controlled by simple front panel controls. All CCTV video recording takes place on the unit's hard disk drive. Backup can be to a CD, through the network, or from the USB port to a memory stick. Multiple DVRs can be used for greater camera coverage.

Two models are available. The VDR-408-500 provides a 500 GB hard drive and VDR-416-1000 offers a hard drive of 1000 GB. The VDR-408 has a maximum recording speed of 240 fps (@1/2D1) total over all channels (200 fps PAL); the VDR-416 has a maximum recording speed of 480 fps (@CIF) total over all channels (400 fps PAL); there is a real time view for each input. The models are NTSC/PAL compatible. Refer to Table 1.

Multiple recording modes are offered, schedule, event (motion detection, sensor), manual or continuous. There are 4 levels of recording quality, normal, enhanced, fine or superfine. All units have Quadplex simultaneous record, playback, backup and network streaming. The units allow multi-channel record, playback and backup. Refer to Table 2 for Estimated Number of Days of Recording.

The DVRs provide a convenient search by alarm, time or date. The JOG/Shuttle dial provides quick and responsive playback and field-by-field viewing. Motion detection can be programmed for sensitivity and specific area. Sensors (alarms) can be programmed, N.O./N.C. Still image recording and playback and search functions, including calendar, are provided. Pre-alarm and post-alarm recording functions are available for recording before and after an alarm occur.

Vicon strongly recommends the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation, cause video loss and damage to the equipment.

ASSOCIATED EQUIPMENT AND ACCESSORIES
NETSWITCH-16, Product Code 8495-00: 16-port network switch, includes 10/100Mbps ports, desktop/wall mount, 120 VAC.
NETSWITCH-24, Product Code 8495-10: 24-port network switch includes 10/100/1000Mbps ports, rack mount, 120 VAC.
Uninterruptible Power Supplies: 725 and 1000 VA units with DB9 (RS-232) and USB ports; 120 VAC input/output. Product Specification V147.

Table 1: Models and Descriptions

Model Number	Product Code	Description
VDR-408-500	9559-00	8-Channel Digital Video Recorder with 500 GB hard drive; 240 fps total (real time) (@1/2D1) across all channels, CD/RW, PTZ control, audio, NTSC/PAL
VDR-416-1000	9563-00	16-Channel Digital Video Recorder with 1000 GB hard drive; 480 fps total (real time) (@CIF)across all channels, CD/RW, PTZ control, audio, NTSC/PAL

ELECTRICAL

Input Power Source: 100 - 240 VAC, 50/60 Hz.

Current: 640 mA, nominal.

Power Consumption: 70 W.

Heat Equivalent: 3.98 btu/min (1.0 kg-cal/min). Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

Radio-Frequency Emission Standard: FCC Class A; CE.

Safety Standard: UL 2044.

RECORDING/PLAYBACK/ARCHIVING

Recording Resolution: Full D1.
NTSC:
360x240//720x240/720x480.
PAL:
360x288/720x288/720x576.

Recording Quality: 4 levels, normal, enhanced, fine, super fine (super fine only at 720x480/720x576).

Recording Capacity: 500 or 1000 GB, model dependant. CD/RW and USB memory stick drives.

Recording Modes: Schedule, event (motion detection, sensor), manual, continuous, continuous+event.

Recording Speed: VDR-408: 120 fps (at D1);
240 fps (at ½ D1).
VDR-416: 120 fps (at D1);
240 fps (at ½ D1);
480 fps (at CIF) total over all channels,
(100/200/400 fps PAL).

Display Speed (max): VDR-408: 240 fps (real time).
VDR-416: 480 fps (real time).

Time-Lapse Recording Interval: 10 steps
NTSC: 1, 2, 3, 4, 5, 6, 8, 10, 15, 30 fps.
PAL: 1, 2, 3, 4, 5, 7, 9, 13, 20, 25 fps.

Playback Speed: Forward/Backward: X1, X2, X4, X8, X16, X32, X64, X128, field by field.

Slow Motion Speed: Forward: X1/4, X1/2.

Multi-Viewer: 128 channels.

Pre- and Post-Alarm Recording: Pre-Alarm: Start recording up to 5 seconds before an alarm occurs.
Post-Alarm: Continue recording from 10 to 60 seconds after an alarm occurs.

Playback Search: Date/Time by calendar GUI; Event (motion detection, sensor) or still image.

Multi-Tasking: Quadplex: concurrent operation of Record, Play, Network Access and Backup.

VIDEO

Video Input Channels: 8 or 16 channels, model dependent.

Image System: NTSC/PAL, selectable.

Video Input: 8 or 16 channels composite, 8 or 16 channels loop through, model dependant.

Video Output: 1 channel composite BNC, 1 channel Spot, 1 VGA, 1 S-Video.

Video Compression: MPEG-4.

OPERATION

PTZ Control: Pan/Tilt/Zoom via RS-422/485.

Digital Zoom: X2.

Timer: Built-in real time clock with programmable start/end dates for daylight saving time.

Sensor Input: 8 or16, N.O./N.C. selectable.

Alarm Output: 1 relay, N.O./N.C. selectable.

Aux Control In/Out: 2/3. Selectable function menu: Record Start in, Alarm Reset in, Record Start out, Disk Full alarm out, Alarm out, Error out, one short Record in.

Audio: 4 channels, mono.

Motion Detection: 12x12 8 level sensitivity.

Watermarking: Still image backup.

System Log: Video loss, power On/Off, HDD full, HDD fail, menu called, reset HDD format, reset SW upgrade, email fail.

Password Function: Power on/off, menu, record off, key lock.

SYSTEM FEATURES

Network Interface: 10/100-Base-T; (static IP, DHCP, PPPoE, email).

Operating System: Embedded Linux™.

CPU: Proprietary CPU.

Internal Hard Drive: 500 or 1000 GB, model dependant.

Backup Options: CD-RW, via network connection, or via USB flash memory.

Language: English, Korean, Japanese, French, Spanish, German, Italian, Polish and Russian.

CONNECTORS

Video Input:	8 or 16 BNCs with loop through to 8 or 16 BNCs for video output.
Video Output:	2 BNC (1 composite, 1 Spot), 1 VGA 15-pin D type, 1 S-Video.
Audio:	4 phono, inputs.
Serial:	RS-232, 9-pin D-type; local DVR control via PC or for quick setup.
Alarm/AUX:	25-pin D type, alarm relay N.O./N.C., up to 16 sensors N.O./N.C.
PTZ:	4-pin Phoenix (screw terminal) for PTZ control via RS-422/485.
Network:	RJ-45 CAT5, connects to ADSL modem/hub.
USB:	USB socket(s) for backup peripherals.

MECHANICAL

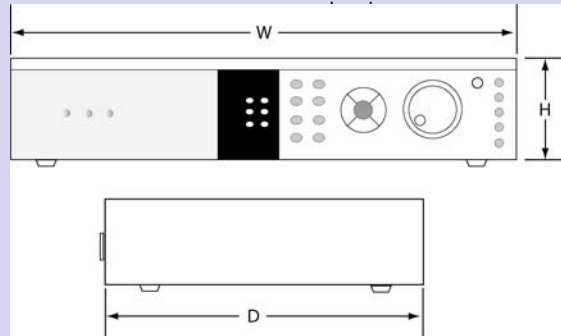|	
Dimensions:	See Figure. Height (H): 3.5 in. (88 mm). Width (W): 17.0 in. (433 mm), excluding rack mount brackets. Depth (D): 15.2 in. (385 mm).
Weight:	15.4 lb (7 kg), excluding hard drive; 18.1 lb (8.2 kg), including hard drive.
Mounting:	Desk-top or 19-in. rack mount (mounting brackets included).
Shipping Dimensions:	Height: 7.0 in. (178 mm). Width: 21.5 in. (546 mm). Length: 20.0 in. (508 mm).
Shipping Weight:	19.4 lb (8.8 kg), excluding hard drive; 22 lb (10 kg), including hard drive.
Shipping Volume:	1.7 ft^3 (0.05 m^3).

ENVIRONMENTAL

Operating Temperature Range:	41 to 104° F (5 to +40° C).
Humidity:	Up to 90% relative,

VDR-408/VDR-416 (NTSC)												
Quality	Hard Drive (GB)	360 x 240 (days)					720 x 480 (days)				
		1 fps	5 fps	10 fps	15 fps	30 fps	1 fps	5 fps	10 fps	15 fps	30 fps
Superfine	500/1000	80.6	15.1	8.4	6.1	3.7	31	5.8	3.2	2.2	1.3
Fine	500/1000	105	22.1	12.7	9.5	5.9	37	7.8	4.4	3.2	1.9
Enhanced	500/1000	137	29.2	17.1	13.4	8.2	47.25	10.3	5.7	4.1	2.5
Normal	500/1000	195.8	36.1	21.2	15.8	10.5	52.7	11.6	6.5	4.8	3

VDR-408/VDR-416 (PAL)												
Quality	Hard Drive (GB)	360 x 288 (days)					720 x 576 (days)				
		1 fps	5 fps	9 fps	20 fps	25 fps	1 fps	5 fps	9 fps	20 fps	25 fps
Superfine	500/1000	66.8	13.9	9	4.5	3.8	26.3	5.4	3.2	1.6	1.3
Fine	500/1000	91.4	19	12.9	7.1	6	35.1	7.1	4.4	2.2	1.9
Enhanced	500/1000	119.2	26	17.1	9.8	8.3	40	9.3	5.6	3	2.5
Normal	500/1000	130.5	31.5	20.6	11.8	10	49	10.2	6.5	3.4	2.8

Table 2: Estimated Days of Recording
(Based on recording on all channel)