

Monitoring made easy - with touchscreen operation

Observe areas with up to 16 cameras at a glance and enlarge every camera image by the touch of your fingers. The high frame rate means that you will never lose sight of things. Combined with a large hard disk it can record video signals over a long period so that the recorded material can also be watched afterwards. The VGA-output also connects the D 1416 to large screens. Its slim dimensions enable this system to be used in the smallest of spaces.

Feature Highlights

Video in	<ul style="list-style-type: none"> 16x BNC connectors for CCTV cameras PAL or NTSC, FBAS/CVBS with 1 Vss, 75 Ohm
Video out	<ul style="list-style-type: none"> 7" front display, 800x480, touch screen VGA connector for optional second display
Maximum Framerate	<ul style="list-style-type: none"> PAL Mode, resolution 704x576: 25fps/4ch, 8.3fps/8ch, 4.1fps/16ch NTSC Mode, resolution 704x480: 30fps/4ch, 10fps/8ch, 5fps/16ch
Compression	<ul style="list-style-type: none"> MPEG4 video format, CIF or D1 resolution
User Input Control	<ul style="list-style-type: none"> Simple control by embedded touchscreen Optional mouse/keyboard (USB or PS/2)
Recording Schedule	<ul style="list-style-type: none"> Weekly recording schedule (weekday/hour) Setting: on, off, by motion detection
Reliable	<ul style="list-style-type: none"> Watch Dog: reboot after malfunction Restart after power failure Barracuda ES.2 series SATA 3 Gb/s hard disk for 24x7 enterprise storage applications
Storage	<ul style="list-style-type: none"> Seagate Barracuda ES.2 ST3500320NS 500 GB, SATA2, 32MB cache, 7200rpm, 24x7
Camera properties	<ul style="list-style-type: none"> For each camera: brightness, contrast, saturation, hue, sharpness and sensitivity of motion detection
Dimensions	<ul style="list-style-type: none"> 30.5 x 20 x 18.5 cm (LWH) = 11.3 litres
PC features	<ul style="list-style-type: none"> Shuttle Barebone D10 with 7" touchscreen Windows Vista Home Basic operating system Shuttle PV416 Videograbber card, PCIe X1 4 chip solution: TechWell 6805 Shuttle SecurityCenter Surveillance Software Intel Core 2 Duo E7400 (2.8GHz) 1 GB Memory, 500 GB hard disk, DVD writer

Shuttle Surveillance System

D 1416S



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Shuttle Surveillance System D 1416S – Special Product Features



Touchscreen

The touchscreen is one of the easiest PC interfaces to use, making it the interface of choice for a wide variety of applications to improve human-computer interaction. It can help make any information more easily accessible by allowing users to navigate by simply touching the display screen. When used in conjunction with software such as on-screen keyboards or other assistive technology, it can help make computing resources more available to both, experienced and novice users. A PC system with touchscreen can even do without a physical keyboard and mouse and all their wires.



PCIe x1 Video Framegrabber Card

The Shuttle D 1416S comes with a PCIe x1 based video surveillance card which can handle the input signals from up to 16 CCTV cameras in 4-to-16 split mode in 704x576 D1 resolution. The Shuttle surveillance card deploys four of the innovative Techwell 6805 Video Decoders for high quality video processing. It is flexible and a superb solution for building cost-effective video surveillance systems for offices, factories, warehouses and so on.



Shuttle SecurityCenter Surveillance Software

The monitoring software is probably one of the most intuitive programs ever seen. It shows 1, 4, 8 or 16 camera views at once. Supporting up to 16 channels of real-time recording, the Shuttle D1416 is designed to offer the utmost in flexibility to make surveillance operation easy for home users. Users can set a weekly, personalised recording schedule and mark which hours of the day should be recorded or not recorded (full time or motion detection). The selected video clips are all time stamped for future searching and playback.



Reliable hard disk

The Shuttle D1416S is equipped with a Seagate Barracuda ES.2 series hard disk drive. This 7200-RPM drive with best-in-class reliability (1.2M hours MTBF) and rotational vibration tolerance was developed for 24x7 availability in high-density storage applications. The drive's integrated workload management feature aids in drive cooling during periods of prolonged activity. The integrated PowerTrim™ technology optimizes power consumption during operation and idle without any host interaction or performance loss. The drive is covered by a 5-year limited manufacturer warranty.



Watchdog Function

The Shuttle D1416S includes a watchdog timer which is a computer hardware timing device that triggers a system reset if the main program, due to some fault condition, such as a hang, neglects to regularly service the watchdog.

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Supports Dual Display

The dual display technology offers convenient visual experience and better work efficiency. It allows live and video playback to be viewed on separate monitors. Moreover, Shuttle's application menu also offers a variety of multimedia functions, including video, music, photography and much more to spice up monotonous surveillance tasks without missing any moments.



All-in-1 Gadget

It can't be a more tempting offer that the D1416S is not only a reliable surveillance hardware, it also works as a standalone computer. Based on the Intel G31 chipset, the Shuttle D 1416S features Intel's performance-packed and energy-efficient Intel® Core™ 2 Duo processor with 45nm technology. Without any keyboard, mouse, monitor and other accessories, users can run the D1416S as a PC to handle daily operations.



Custom User Interface

User-friendliness is always a major concern of Shuttle's design. The D1416S supports up to four personalised items on the application menu so that users are able to have quick access to programs according to actual needs.

Shuttle Surveillance System D 1416S – Specifications

<i>Basis</i>	System based on the Shuttle Barebone D10																																																																											
<i>Operating system</i>	Microsoft Windows Vista Home Basic 9 languages available: German, English, French, Dutch, Italian, Spanish, Swedish, Finnish, Danish																																																																											
<i>Chassis</i>	D-type aluminum chassis, black color Storage bays: 2x 3.5" internal, 1 x 5.25" external Dimensions: 30.5 x 20 x 18.5 cm (LWH) = 11.3 litres																																																																											
<i>Integrated 7" Display</i>	Active area: 152.4 x 91.44 mm (7 inch) Resolution: 800x480 pixels, Color depth: 262144 (18 bits) Backlight unit: High power LED OSD (On Screen Display): 3 Buttons																																																																											
<i>Touchscreen</i>	Touchscreen function support fingertip input Electric capacity solution																																																																											
<i>16-ch video grabber card</i>	<p>Shuttle PV416 Surveillance card for PCIe x1 slot 4 chip solution (TechWell 6805) 4-to-16 split, 10 bit AD converter, Watchdog function Video in: PAL/NTSC, FBAS/CVBS with 1 Vss, 75 Ohm, BNC connector Support 16 CCTV cameras with Composite video output PAL mode: 704x576 (D1) and 352x288 (CIF) NTSC mode: 704x480 (D1) and 352x240 (CIF)</p> <table border="1"> <tr> <td rowspan="2"></td> <td colspan="4">Max. refresh rate in frames per sec. (fps):</td> <td colspan="2">Approximately required disk space for each camera</td> </tr> <tr> <td>Mode</td> <td colspan="2">PAL</td> <td colspan="2">NTSC</td> </tr> <tr> <td></td> <td>Resolution</td> <td>D1</td> <td>CIF</td> <td>D1</td> <td>CIF</td> <td></td> </tr> <tr> <td>1~4 channels</td> <td></td> <td>25,0</td> <td>25,0</td> <td>30,0</td> <td>30,0</td> <td>D1 (704x480)</td> </tr> <tr> <td>5~8 channels</td> <td></td> <td>8,3</td> <td>12,5</td> <td>10,0</td> <td>15,0</td> <td>CIF (352x240)</td> </tr> <tr> <td>9~16 channels</td> <td></td> <td>4,2</td> <td>6,3</td> <td>5,0</td> <td>7,5</td> <td>5 fps: 108 MB/h</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7.5 fps: 258 MB/h</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>10 fps: 300 MB/h</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>15 fps: 390 MB/h</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>30 fps: 1140 MB/h</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>30 fps: 780 MB/h</td> </tr> </table> <p>Windows Direct Show driver, Stable function after lost signal Including 2x Surveillance adapter cable (15pol D-sub to 8x BNC) Including Shuttle SecurityCenter Surveillance Software</p>		Max. refresh rate in frames per sec. (fps):				Approximately required disk space for each camera		Mode	PAL		NTSC			Resolution	D1	CIF	D1	CIF		1~4 channels		25,0	25,0	30,0	30,0	D1 (704x480)	5~8 channels		8,3	12,5	10,0	15,0	CIF (352x240)	9~16 channels		4,2	6,3	5,0	7,5	5 fps: 108 MB/h							7.5 fps: 258 MB/h							10 fps: 300 MB/h							15 fps: 390 MB/h							30 fps: 1140 MB/h							30 fps: 780 MB/h
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<i>Mainboard</i>	Proprietary Shuttle mainboard form factor, Dimensions: 25.4 x 18.5 cm Chipset: Intel G31 Express (Bearlake-G) + ICH7																																																																											
<i>Power Supply</i>	100 Watt Flex ATX power supply unit PC36 Input voltage range: 100~240V AC, 47~63 Hz Active PFC (Power Factor Correction) EMI Certified: FCC, CE, BSMI, C-tick; Safety Certified: UL, TÜV, CB, BSMI ATX power connectors: 2x10 pin and 2x2 pins (for 12V) Power plug region specific, 40 mm cooling fan sensor control																																																																											

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<i>Processor</i>	<p>Intel® Core 2 Duo E7400 (Dual Core), Socket 775 Core clock frequency: 2x 2.8 GHz Front side bus frequency (FSB): 1066 MHz (quad-pumped) L2 cache: 2x 1536kB, L1 cache: 2x 32kB Instruction sets: MMX, SSE, SSE2, SSE3, SSE4.1, Execution-Disable (XD-Bit) Thermal-Monitor 2, Enhanced Halt State (C1E), Speedstep (EIST), 64 Bit (EM64T) Processor core: "Wolfdale", 45nm production process Max. power consumption (TDP): 65 Watts</p>
<i>Processor Cooling</i>	<p>I.C.E. Genie Heat-pipe cooling With temperature-controlled RPM fan speed by the BIOS.</p>
<i>Memory</i>	<p>1 GB (2x 512MB) 240 pin DDR2-667 SDRAM system memory Supports Dual Channel</p>
<i>Hard disk</i>	<p>Barracuda ES.2 ST3500320NS 500GB capacity, 32-MB cache, 7200 rpm, SATA 3.0-Gb/s interface Perpendicular recording technology for maximum capacity 24x7 operation and 1.2 M hrs. MTBF Dynamic power saving using Seagate PowerTrim™ technology Superior rotational vibration tolerance Error recovery control - quick error resolution to prevent system timeouts Workload management to ensure operational reliability 5-year limited manufacturer warranty</p>
<i>DVD writer</i>	<p>5.25" multi-format DVD writer</p>
<i>Integrated Graphics</i>	<p>Intel Graphics Media Accelerator 3100 (GMA 3100) 256bit 3D engine with a powerful 400MHz core DirectX 9.0 support, Dynamic Video Memory Technology (DVMT) 3.0 Shared Memory size up to 384MB Dual View - two displays can be used at the same time: Analog D-Sub VGA and integrated 7" display. Analog D-Sub Output: max. 2048x1536 pixels with 32-bit color at 75 Hz</p>
<i>5.1-channel Audio</i>	<p>Audio Realtek® ALC 662 6-channel High-Definition Audio Three analog audio connectors (3.5mm) at the Back-Panel: 1) Front Line out (head phone) 2) Rear Surround line-out (shared with microphone input) 3) Center line-out (shared with Line in)</p>
<i>Gigabit-LAN Controller</i>	<p>Marvell 88E8056 Ethernet network controller (Gigabit) Supports 100 / 1.000 MBit/s operation Supports Wake-on-LAN (WOL)</p>
<i>Front panel devices</i>	<p>Power button, Power LED, HDD LED 7" Touchscreen Display 3 buttons for On-Screen-Display settings (for 7" display)</p>

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<p><i>Back panel connectors</i></p>	<p>VGA output (D-sub, analog) 16x BNC connectors for video cameras 4x USB 2.0 GigaBit LAN (RJ45) PS/2 keyboard PS/2 mouse Audio Line-in, Audio Line-out, Audio Mic-in Serial port (RS232)</p>
<p><i>Optional Accessories</i></p>	<p>Wireless LAN module and antenna (PN20) Parallel port (PC8)</p>
<p><i>Accessories</i></p>	<p>XPC Manual, XPC Quick User Guide Driver CDROM for Windows XP/Vista 32/64-bit Shuttle PV416 Surveillance 16 channels card (PCIe x1) Shuttle SecurityCenter Video Surveillance Software 2x Surveillance adapter cable (15pol D-sub to 8x BNC) Serial ATA and IDE cable, Power cord, Screws, Front Feet</p>

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Shuttle D 1416S – Connectors

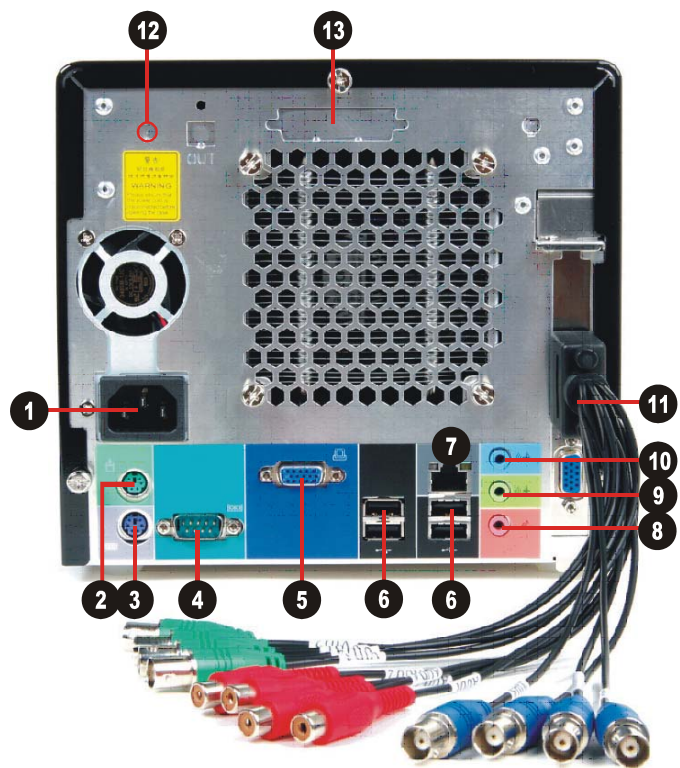
Front View



Front view

- 1 Power button
- 2 Power LED
- 3 Hard disk LED
- 4 7" Touchscreen
- 5 3 On-Screen-Display buttons
- 6 5.25" bay for optical drive
- 7 Eject button for optical drive

Rear View



Rear view

- 1 AC Power Plug
- 2 PS/2 mouse connector
- 3 PS/2 keyboard connector
- 4 Serial port
- 5 Sub-D VGA connector
- 6 4x USB 2.0 ports
- 7 Gigabit LAN port
- 8 Microphone input
- 9 Audio Line output
- 10 Audio Line input
- 11 PCIe x1 Video Surveillance card with adapter
- 12 Optional WLAN (PN20)
- 13 Optional parallel port (PC8)



Inside view

- 1 Video Framegrabber Card with 4 converter chips (2 on each side)
- 2 Connector for surveillance adapter cable (please don't confuse with VGA connector)
- 3 Watchdog connector
- 4 Heat-pipe cooling system for the processor

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Shuttle D 1416S – Refresh rates per channel

Mode	PAL		NTSC	
	704x576 (D1)	352x288 (CIF)	704x480 (D1)	352x240 (CIF)
1~4 channels	3.125	3.125	3.750	3.750
	6.250	6.250	7.500	7.500
	12.500	12.500	15.000	15.000
	25.000	25.000	30.000	30.000
5~8 channels	2.500	3.125	3.000	3.750
	5.000	6.250	6.000	7.500
	8.333	12.500	10.000	15.000
9~16 channels	2.500	3.125	3.000	3.750
	4.147	6.250	5.000	7.500

Shuttle D 1416S – Camera Inputs

The Camera & Channel antithesis list in different channel/chipset settings

Please check the list and follow the below picture to connect

Channels	16	8		4		
	4	4	2	4	2	1
CH01	A-Green VID 1	A-Green VID 1	A-Green VID 1	A-Green VID 1	A-Green VID 1	A-Green VID 1
CH02	A-Blue VID 1	A-Blue VID 1	A-Blue VID 1	A-Green VID 2	A-Blue VID 1	A-Blue VID 1
CH03	B-Green VID 1	A-Green VID 2	B-Green VID 1	A-Green VID 3	A-Green VID 2	B-Green VID 1
CH04	B-Blue VID 1	A-Blue VID 2	B-Blue VID 1	A-Green VID 4	A-Blue VID 2	B-Blue VID 1
CH05	A-Green VID 2	A-Green VID 3	A-Green VID 2			
CH06	A-Blue VID 2	A-Blue VID 3	A-Blue VID 2			
CH07	B-Green VID 2	A-Green VID 4	B-Green VID 2			
CH08	B-Blue VID 2	A-Blue VID 4	B-Blue VID 2			
CH09	A-Green VID 3					
CH10	A-Blue VID 3					
CH11	B-Green VID 3					
CH12	B-Blue VID 3					
CH13	A-Green VID 4					
CH14	A-Blue VID 4					
CH15	B-Green VID 4					
CH16	B-Blue VID 4					

