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ХХК-ИЙН ГҮЙЦЭТГЭХ ЗАХИРАЛ



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2024 ОН

## ДОТООД СҮЛЖЭЭНИЙ ТОНОГ ТӨХӨӨРӨМЖ, ХЯНАЛТЫН КАМЕРЫН ТЕХНИКИЙН ТОДОРХОЙЛОЛТ

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### **Шаардлагатай төхөөрөмжүүдийн төрөл, тоо хэмжээ**

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## ТЕХНИКИЙН ШААРДЛАГА

### 1. Камер /Дотор/ – 51 ШИРХЭГ

- Нийлүүлэгдэх камер нь Hikvision брэндийн DS-2CD1143G0-I 4MP загвар эсхүл түүнтэй дүйцэх байх.

<b>Camera</b>	
<b>Image sensor</b>	1/3" progressive scan CMOS
<b>Min. Illumination</b>	Color: 0.01 Lux @(F2.0, AGC ON), B/W: 0 Lux with IR
<b>Shutter Speed</b>	1/3 s to 1/100, 000 s
<b>Slow Shutter</b>	Yes
<b>Wide Dynamic Range</b>	120 dB
<b>Day &amp; Night</b>	IR cut filter
<b>Angle Adjustment</b>	Pan: 0° to 355°, tilt: 0° to 75°
<b>Lens</b>	
<b>Focal Length &amp; FOV</b>	2.8 mm, horizontal FOV 98.0°, vertical FOV 53.1°, diagonal FOV 114.7° 4 mm, horizontal FOV 78.7°, vertical FOV 43.1°, diagonal FOV 92.3°
<b>Lens Mount</b>	M12
<b>Focus</b>	Fixed
<b>Aperture</b>	F2.0
<b>Illuminator</b>	
<b>IR Wavelength</b>	850 nm
<b>IR Range</b>	Up to 30 m
<b>Video</b>	
<b>Max. Resolution</b>	2560 × 1440
<b>Main Stream</b>	50 Hz: 20 fps (2560 × 1440) 25 fps (1920 × 1080, 1280 × 720) 60 Hz: 20 fps (2560 × 1440) 30 fps (1920 × 1080, 1280 × 720)
<b>Sub-Stream</b>	50 Hz: 25 fps (640 × 480, 640 × 360) 60 Hz: 30 fps (640 × 480, 640 × 360)
<b>Video Compression</b>	Main stream: H.265/H.264 Sub-stream: H.265/H.264/MJPEG
<b>Video Bit Rate</b>	32 Kbps to 8 Mbps
<b>Network</b>	
<b>Protocols</b>	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, NTP, UPnP™, SMTP, IGMP, 802.1X, QoS, IPv6, Bonjour, IPv4, UDP, SSL/TLS
<b>Simultaneous Live View</b>	Up to 6 channels
<b>API</b>	Open Network Video Interface, ISAPI
<b>User/Host</b>	Up to 32 users. 3 levels: administrator, operator and user
<b>Client</b>	iVMS-4200, Hik-Connect
<b>Web Browser</b>	Plug-in required live view: IE 10+ Plug-in free live view: Chrome 57.0+, Firefox 52.0+ Local service: Chrome 57.0+, Firefox 52.0+
<b>Image</b>	
<b>Image Settings</b>	Saturation, brightness, contrast, sharpness, AGC, white balance adjustable by client software or web browser
<b>Day/Night Switch</b>	Auto, Schedule, Day, Night
<b>Image Enhancement</b>	BLC, 3D DNR
<b>Interface</b>	
<b>Ethernet interface</b>	1 RJ45 10 M/100 M self-adaptive Ethernet port

Basic Event	Motion detection, video tampering alarm, exception
<b>General</b>	
Linkage Method	Upload to FTP, notify surveillance center, send email
Storage Conditions	-30 °C to 60 °C (-22 °F to 140 °F). Humidity: 95% or less (non-condensing)
Startup and Operating Conditions	-30 °C to 60 °C (-22 °F to 140 °F). Humidity: 95% or less (non-condensing)
Web Client Language	English
General Function	Anti-flicker, heartbeat, mirror, password protection, privacy mask, watermark, IP address filter
Power Consumption and Current	12 VDC, 0.4 A, max. 5 W PoE: (802.3af, 36 V to 57 V), 0.2 A to 0.15 A, max. 6.5 W
Power Supply	12 VDC ± 25% PoE: 802.3af, Class 3
Power Interface	Ø 5.5 mm coaxial power plug
Environment	CE-RoHS (2011/65/EU); WEEE (2012/19/EU); Reach (Regulation (EC) No 1907/2006)
Protection	IP67 (IEC 60529-2013), IK10 (IEC 62262:2002)

## 2. Камер /Гадна/ – 38 ШИРХЭГ

- Нийлүүлэгдэх камер нь Hikvision брэндийн DS-2CD2T43G0-I5 загвар эсхүл түүнтэй дүйцэх байх.

<b>Image sensor</b>	1/3" Progressive Scan CMOS
<b>Min.Illumination</b>	Color:0.01 Lux @(F1.2,AGC ON), 0.018 Lux @(F1.6,AGC ON),0 Lux with IR
<b>Shutter speed</b>	1/3 s to 1/100,000 s
<b>Slow shutter</b>	Yes
<b>Wide dynamic range</b>	120dB
<b>Day &amp; Night</b>	IR Cut Filter
<b>Angle Adjustment</b>	Pan: 0° to 360°, tilt: 0° to 100°, rotate: 0° to 360°
<b>Focus</b>	Fixed
<b>Lens Type</b>	2.8/4/6/8 mm, horizontal FOV: 103°, vertical FOV: 58°, diagonal FOV: 123°;4 mm, horizontal FOV: 83°, vertical FOV: 45°, diagonal FOV: 99°;6 mm, horizontal FOV: 51°, vertical FOV: 29°, diagonal FOV: 58°;8 mm, horizontal FOV: 39°, vertical FOV: 22°, diagonal FOV: 45°
<b>Aperture</b>	F1.6
<b>Lens mount</b>	M12
<b>IR Range</b>	-I5: Up to 50 m,-I8: Up to 80 m
<b>Wavelength</b>	850 nm
<b>Max. Resolution</b>	2688 × 1520
<b>Main Stream</b>	50Hz:25fps (2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080, 1280 × 720) 60Hz: 30fps (2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080, 1280 × 720)

<b>Sub stream</b>	50Hz: 25fps (640 × 480, 640 × 360, 320 × 240);60Hz: 30fps (640 × 480, 640 × 360, 320 × 240)
<b>Third Stream</b>	50Hz: 25fps (1280 × 720, 640 × 360, 352 × 288);60Hz: 30fps (1280 × 720, 640 × 360, 352 × 240)
<b>Video Compression</b>	Main stream: H.265/H.264;Sub-stream: H.265/H.264/MJPEG;Third stream: H.265/H.264
<b>Video Bit Rate</b>	32 Kbps to 16 Mbps
<b>H.264 Type</b>	Main Profile/High Profile
<b>H.265 Type</b>	Main Profile
<b>Simultaneous Live View</b>	Up to 6 channels
<b>API</b>	ONVIF (PROFILE S, PROFILE G), ISAPI
<b>Protocols</b>	TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, UDP, Bonjour, SSL/TLS, WebSocket, WebSockets
<b>User/Host</b>	Up to 32 users, 3levels: Administrator, Operator and User
<b>Security</b>	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS 1.2, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for ONVIF, TLS1.2
<b>Network Storage</b>	Support micro SD/SDHC/SDXC card (128G) local storage, NAS (NFS,SMB/CIFS), ANR
<b>Client</b>	iVMS-4200, Hik-Connect, Hik-Central
<b>Web Browser</b>	Plug-in required live view: IE8+ Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Safari 11+ Local Service: Chrome 41.0+, Firefox 30.0+
<b>Alarm Trigger</b>	Motion detection, tampering alarm, network disconnected, IP address conflict, illegal login, HDD full, HDD error
<b>Day/Night Switch</b>	Day/Night/Auto/Schedule
<b>DNR</b>	3D DNR
<b>Image Enhancement</b>	BLC/3D DNR/HLC
<b>Image Settings</b>	Rotate mode, saturation, brightness, contrast, sharpness, AGC, and white balance are adjustable by client software or web browser
<b>On-Board Storage</b>	Built-in micro SD/SDHC/SDXC slot, up to 128 GB
<b>Hardware Reset</b>	Yes
<b>Communication Interface</b>	1 RJ45 10M/100M self-adaptive Ethernet port
<b>Basic Event</b>	Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error)
<b>Smart Event</b>	Line crossing detection, intrusion detection, face detection
<b>Face Detection</b>	Yes
<b>Linkage Method</b>	Trigger recording: memory card, network storage, pre-record and post-record Trigger captured pictures uploading: FTP, HTTP, NAS, Email Trigger notification: HTTP, ISAPI, Email
<b>Web Client Language</b>	English
<b>General Function</b>	Anti-flicker, three streams, heartbeat, mirror, privacy masks, password reset via e-mail, pixel counter, HTTP listening
<b>Startup And Operating Conditions</b>	-30 °C to +60 °C (-22 °F to +140 °F), humidity 95% or less (non-condensing)
<b>Power Supply</b>	12 VDC ± 25%, 5.5 mm coaxial power plug,PoE (802.3af, class 3)

<b>Power Consumption And Current</b>	-I5:12 VDC, 0.6 A, max. 7.5 W, PoE (802.3af, 36 V to 57 V), 0.2 A to 0.1 A, max. 9.5 W ;-I8: 12 VDC, 0.95 A, max. 11.5 W, PoE (802.3af, 36 V to 57 V), 0.35 A to 0.1 A, max. 12.5 W
<b>Protection</b>	IP67

### 3. NVR Бичигч төхөөрөмж – 7 ШИРХЭГ

- Нийлүүлэгдэх бичигч төхөөрөмж нь Hikvision брэндийн DS-7616BNI-Q2/16P загвар эсхүл түүнтэй дүйцэх байх.

<b>Human/Vehicle Analysis</b>	4
<b>IP Video Input</b>	16-ch
<b>HDMI Output</b>	1-ch, 4K (4096 x 2160)/30 Hz, 4K (3840 x 2160)/30 Hz, 2K (2560 x 1440)/60 Hz, 1920 x 1080/60 Hz, 1600 x 1200/60 Hz, 1280 x 1024/60 Hz, 1280 x 720/60 Hz
<b>VGA Output</b>	1-ch, 1920 x 1080/60 Hz, 1280 x 1024/60 Hz, 1280 x 720/60 Hz
<b>Video Output Mode</b>	HDMI/VGA simultaneous output
<b>Incoming Bandwidth</b>	160 Mbps
<b>Outgoing Bandwidth</b>	80 Mbps
<b>Audio Output</b>	1-ch, RCA (Linear, 1 K $\Omega$ )
<b>Two-Way Audio</b>	1-ch, RCA (2.0 Vp-p, 1 k $\Omega$ )
<b>Decoding Format</b>	H.265+,H.265,H.264+,H.264
<b>Decoding Capability</b>	1-ch@8 MP (30 fps)/5-ch@1080p (30 fps)
<b>Synchronous Playback</b>	16-ch
<b>Recording Resolution</b>	8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA /720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF
<b>Network Protocol</b>	TCP/IP, DHCP, Hik-Connect, DNS, DDNS, NTP, SADP, SMTP, NFS, iSCSI, UPnP™, HTTPS
<b>Network Interface</b>	1, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface
<b>PoE Interface</b>	16-ch;16, RJ-45 10/100 Mbps self-adaptive Ethernet interface
<b>Power</b>	≤ 150W
<b>Standard</b>	IEEE 802.3 af/at
<b>RAID Type</b>	NO
<b>SATA</b>	2 SATA interfaces
<b>Capacity</b>	Up to 8TB capacity for each disk
<b>USB Interface</b>	2 x USB 2.0
<b>Power Supply</b>	100-240V ~ , 50/60Hz, 3.2A MAX
<b>Consumption</b>	≤ 15W
<b>Working Temperature</b>	-10 to +55° C (+14 to +131° F)
<b>Working Humidity</b>	10 to 90%
<b>Chassis</b>	1U chassis

### 4. PoE switch – 7 ШИРХЭГ

- Нийлүүлэгдэх төхөөрөмж нь Hikvision брэндийн DS-3E1526P-SI загвар эсхүл түүнтэй дүйцэх байх.

<b>Shell</b>	Metal material
<b>Operating Temperature</b>	-10 °C to 55 °C (14 °F to 131 °F)
<b>Storage Temperature</b>	-40 °C to 85 °C (-40 °F to 185 °F)
<b>Operating Humidity</b>	5% to 95% (no condensation)
<b>Relative Humidity</b>	5% to 95% (no condensation)
<b>Power Supply</b>	100 to 240 VAC, 50/60 Hz, Max. 6.3 A
<b>Max. Power Consumption</b>	400W
<b>Shell</b>	Metal material
<b>Operating Temperature</b>	-10 °C to 55 °C (14 °F to 131 °F)
<b>Storage Temperature</b>	-40 °C to 85 °C (-40 °F to 185 °F)
<b>Operating Humidity</b>	5% to 95% (no condensation)
<b>Relative Humidity</b>	5% to 95% (no condensation)
<b>Power Supply</b>	100 to 240 VAC, 50/60 Hz, Max. 6.3 A
<b>Max. Power Consumption</b>	400W
<b>Power Consumption In Idle</b>	30W
<b>Ports</b>	24 × 1 Gigabit PoE port, 2 × 1 Gigabit fiber optical port
<b>Port Type</b>	RJ45 port, full duplex, MDIMDI-X adaptive
<b>Standard</b>	IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3ab, IEEE 802.3z
<b>Forwarding Mode</b>	Store-and-forward switching
<b>Working Mode</b>	Standard mode (default), Extend mode
<b>MAC Address Table</b>	8 K
<b>Switching Capacity</b>	52 Gbps
<b>Packet Forwarding Rate</b>	36.688 Mpps
<b>Internal Cache</b>	4.1 Mbits
<b>PoE Standard</b>	IEEE 802.3af, IEEE 802.3at
<b>PoE Power Pin</b>	End-span: 1/2(-), 3/6(+)
<b>PoE Port</b>	PoE: Ports 1 to 24
<b>Max. Port Power</b>	30 W
<b>PoE Power Budget</b>	370 W
<b>Device Maintenance</b>	Support remote upgrade, default parameter restoration, logs viewing, basic network parameter configuration, import and export configuration, and time synchronization
<b>Port Configuration</b>	Support port rate configuration, flow control, and ports enabling
<b>Long Range</b>	Up to 300 m transmission
<b>PoE Configuration</b>	PoE watchdog: Ports 1 to 24 auto detect and restart the cameras that do not respond PoE enabling: supported
<b>Port Rate-Limiting</b>	Rate-limiting for ingress and egress ports
<b>Storm Control</b>	Storm control of unknown unicast, multicast, and broadcast
<b>Port Mirroring</b>	Supported
<b>Link Aggregation</b>	Support static link aggregation
<b>Port Isolation</b>	Ports in an isolation group cannot communicate with each other
<b>QoS</b>	WRR and SP scheduling and port priority
<b>VLAN</b>	4094 VLANs
<b>STP</b>	STP and RSTP

<b>SNMP</b>	SNMPv1 and SNMPv2c supported for obtaining node information of the system and interfaces
<b>LLDP</b>	LLDP supported for port configuration, global configuration, and neighbor discovery
<b>DHCP</b>	Supported
<b>EMC</b>	FCC (47 CFR Part 15, Subpart B); CE-EMC (EN 55032: 2015, EN IEC 61000-3-2: 2019, EN 61000-3-3: 2013+A1: 2019, EN 50130-4: 2011 +A1: 2014, EN 55035: 2017); IC (ICES-003: Issue 6); RCM (AS/NZS CISPR 32: 2015)
<b>Safety</b>	UL (UL 60950-1); CB (IEC 60950-1:2005, AMD1:2009, AMD2:2013, IEC 62368-1: 2014 (Second Edition); CE-LVD (EN 60950-1: 2006 + A11: 2009 +A1: 2010+A12: 2011+A2: 2013, EN 62368-1: 2014+A11: 2017)
<b>Chemistry</b>	CE-RoHS (2011/65/EU); WEEE (2012/19/EU); Reach (Regulation (EC) No.1907/2006)

#### 5. HDD (NVR бичигч төхөөрөмжид зориулсан хатуу диск)– 7 ШИРХЭГ

- Нийлүүлэгдэх хатуу диск нь Seagate брэндийн ST4000DM004 загвар эсхүл түүнтэй дүйцэх байх.

Capacity	4TB / 4,000GB
Bytes per Sector	4096
Interface	SATA 6Gb/s
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5
Max. Sustained Transfer Rate OD (MB/s)	190MB/s
Cache, Multisegmented (MB)	256
Cache, Multisegmented (MB)	5400
Load/Unload Cycles	600,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E15
Power-On Hours per Year (24×7)	2400
Workload Rate Limit (TB/Year)	55
Limited Warranty (years)	2
Startup Power (A)	2.0
Operating Mode, Typical (W)	3.7
Idle Average (W)	2.5W
Operating (ambient, min)	0°C
Operating (drive case, max)	60°C
Nonoperating (ambient)	-40°C – 70°C
Halogen Free	Yes
RoHS Compliance	Yes



6. Managed switch – 21 ШИРХЭГ

- Нийлүүлэгдэх төхөөрөмж нь Tr-Link брэндийн TL-SG1024 загвар эсхүл түүнтэй дүйцэх байх.

Number of ports	24
Port functions	<ul style="list-style-type: none"> <li>• IEEE 802.3 for Ethernet</li> <li>• IEEE 802.3u for Fast Ethernet</li> <li>• IEEE 802.3ab for Gigabit Ethernet</li> <li>• IEEE 802.3z for Gigabit fiber</li> <li>• IEEE 802.3af/at (DGS-1100-24PV2 ports 1 to 12 only)</li> <li>• IEEE 802.3az compliant</li> <li>• Auto-negotiation</li> <li>• Auto MDI/MDIX</li> <li>• IEEE 802.3x Flow Control supports full-duplex mode</li> <li>• Supports half/full-duplex operation (full/half at 10/100 Mbps, full at 1000 Mbps)</li> </ul>
Switching Capacity	48 Gbps
Maximum Forwarding Rate	35.71 Mpps
MAC Address Table Size	8K Entries
Packet Buffer	4.1 Mbytes
Flash Memory	32 Mbytes
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring	TX/RX/Both Many-to-1 monitor
VLAN	802.1Q tag-based VLAN Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN VLAN Translation Voice VLAN MVR (Multicast VLAN Registration) GVRP Up to 4K VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP / static trunk Supports 10 trunks groups with 4 ports per trunk group
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol
QoS	Traffic classification based, strict priority and WRR 8-Level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet

IGMP Snooping	IPv4 IGMP Snooping (v1/v2/v3) IPv4 IGMP Querier mode support Up to 255 multicast groups
MLD Snooping	IPv6 MLD Snooping ((v1/v2) IPv6 MLD Querier mode support Up to 255 multicast groups
Bandwidth Control	Per port bandwidth control Ingress: 10Kbps~3276Mbps Egress: 10Kbps~3276Mbps
Basic Management Interfaces	Console; Telnet; Web Browser; SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	Firmware upgrade by HTTP protocol through Ethernet network Configuration upload/download through HTTP Remote Syslog System log LLDP protocol NTP PLANET Smart Discovery Utility
Event Management	Remote Syslog Local System log SMTP
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Power supply	100-240VAC, 50/60Hz

## 7. VPN Router – 11 ШИРХЭГ

- Нийлүүлэгдэх төхөөрөмж нь Cisco брэндийн RV320 загвар эсхүл түүнтэй дүйцэх байх.

Dual WAN	<ul style="list-style-type: none"> <li>• Dual Gigabit Ethernet Ports</li> <li>• Failover</li> <li>• Load balancing</li> </ul>
Standards	<ul style="list-style-type: none"> <li>• 802.3, 802.3u</li> <li>• IPv4 (RFC 791)</li> <li>• IPv6 (RFC 2460)</li> </ul>
WAN connectivity	<ul style="list-style-type: none"> <li>• Dynamic Host Configuration Protocol (DHCP) server, DHCP client, DHCP relay agent</li> <li>• Static IP</li> <li>• Point-to-Point Protocol over Ethernet (PPPoE)</li> <li>• Point-to-Point Tunneling Protocol (PPTP)</li> <li>• Transparent bridge</li> <li>• DNS relay, Dynamic DNS (DynDNS, 3322)</li> <li>• IPv6</li> </ul>
Routing protocols	<ul style="list-style-type: none"> <li>• Static</li> <li>• Routing Information Protocol (RIP) v1, v2, and RIP for IPv6 (RIPng)</li> </ul>

Network Address Translation (NAT)	<ul style="list-style-type: none"> <li>• Port Address Translation (PAT)</li> <li>• One-to-one NAT</li> <li>• NAT traversal</li> </ul>
Protocol binding	Protocols can be bound to a specific WAN port for load balancing
Network edge (DMZ)	DMZ port DMZ host
Dual USB port	3G/4G modem support
Firewall	<ul style="list-style-type: none"> <li>• SPI firewall</li> <li>• Denial of service (DoS), ping of death, SYN flood, land attack, IP spoofing, email alert for hacker attack</li> </ul>
Access rules	<ul style="list-style-type: none"> <li>• Schedule-based access rules</li> <li>• Up to 50 entries</li> </ul>
Port forwarding	Up to 30 entries
Port triggering	Up to 30 entries
Blocking	Java, cookies, ActiveX, HTTP proxy
Secure management	<ul style="list-style-type: none"> <li>• HTTPS web access to device manager</li> <li>• Username/password complexity enforcement</li> </ul>
VLAN	802.1Q VLAN RV320: 7 VLANs supported RV325: 17 VLANs supported
IP Security (IPsec)	<ul style="list-style-type: none"> <li>• 25 IPsec site-to-site tunnels for branch office connectivity</li> <li>• 25 IPsec VPN tunnels via third-party clients such as "The GreenBow" for remote-access VPN connectivity</li> </ul>
SSL VPN	10 SSL VPN tunnels for remote client access
PPTP	10 PPTP tunnels for remote access
Encryption	<ul style="list-style-type: none"> <li>• Data Encryption Standard (DES)</li> <li>• Triple Data Encryption Standard (3DES)</li> <li>• Advanced Encryption Standard (AES) encryption: AES-128, AES-192, AES-256</li> </ul>
Authentication	MD5/SHA1 authentication
IPsec NAT traversal	Supported for gateway-to-gateway and client-to-gateway tunnels
VPN pass-through	PPTP, Layer 2 Tunneling Protocol (L2TP), IPsec
Advanced VPN	<ul style="list-style-type: none"> <li>• Dead peer detection (DPD)</li> <li>• Split DNS</li> <li>• VPN backup</li> <li>• Internet Key Exchange (IKE) with certificate</li> </ul>
Prioritization types	Supports rate control or priority
Rate control	Upstream/downstream bandwidth can be configured per service
Priority	Each service can be mapped to one of 3 priority levels
IPsec VPN throughput	100mb
SSL VPN throughput	20mb
Web user interface	Simple browser-based device manager (HTTP/HTTPS)

Management protocols	<ul style="list-style-type: none"> <li>• Web browser (HTTP/HTTPS)</li> <li>• Simple Network Management Protocol (SNMP) v1, v2c, and v3</li> <li>• Bonjour</li> </ul>
Event logging	<ul style="list-style-type: none"> <li>• Local log</li> <li>• Syslog</li> <li>• Email alert</li> <li>• Short Message Service (SMS)</li> </ul>
Upgradability	<ul style="list-style-type: none"> <li>• Firmware upgradable through web browser</li> <li>• Imported/exported configuration file</li> </ul>
Ports	<p>RV320: Four 10/100/1000 RJ-45 ports, one 10/100/1000 RJ-45 Internet port, one 10/100/1000 RJ-45 DMZ/Internet port</p> <p>RV325: Fourteen 10/100/1000 RJ-45 ports, one 10/100/1000 RJ-45 Internet port, one 10/100/1000 RJ-45 DMZ/Internet port</p>
Operating temperature	0° to 40°C (32° to 104°F)
Storage temperature	0° to 70°C (32° to 158°F)
Operating humidity	10% to 85% noncondensing
Storage humidity	5% to 90% noncondensing

#### 8. Access point – 11 ШИРХЭГ

- Нийлүүлэгдэх төхөөрөмж нь Unifi брэндийн U7 Pro загвар эсхүл түүнтэй дүйцэх байх Мен Poe adapter дагалдах

<b>Networking interface</b>	(1) 1/2.5 GbE RJ45 port
<b>Management interface</b>	Ethernet
<b>Power method</b>	PoE+
<b>Supported voltage range</b>	44—57V DC
<b>Max. power consumption</b>	21W
<b>Max. TX power</b> 2.4 GHz 5 GHz 6 GHz	22dBm 26dBm 23dBm
<b>Throughput rate</b> 2.4 GHz 5 GHz 6 GHz	688 Mbps 2882 Mbps 5765 Mbps
<b>Button</b>	Factory reset

<b>Mounting</b>	Wall/ceiling (Included)
<b>Operating temperature</b>	-30 to 60° C (-22 to 140° F)
<b>Operating humidity</b>	5 to 95% noncondensing
<b>Certifications</b>	CE, FCC, IC
<b>WiFi standards</b>	802.11a/b/g/n/ac/ax/be
<b>Wireless security</b>	WPA-PSK, WPA-Enterprise (WPA/WPA2/WPA3/PPSK)
<b>BSSID</b>	8 per radio
<b>VLAN</b>	802.1Q
<b>Advanced QoS</b>	Per-user rate limiting
<b>Guest traffic isolation</b>	Supported
<b>Concurrent clients</b>	300+

9. Media converter – 22 ШИРХЭГ

- Нийлүүлэгдэх төхөөрөмж нь Planet брэндийн GT-806 загвар эсхүл түүнтэй дүйцэх байх

<b>Port</b>	1 x 10/100/1000BASE-T port:
<b>Speed</b>	10/100Tx to 100Fx
<b>Power Consumption</b>	4.6 watts/15 BTU(maximum)
<b>Power Input</b>	DC 5V/2A
<b>Mode</b>	Single mode WDM
<b>Wavelength</b>	Tx: 1550nm Rx1310nm
<b>Distance</b>	20km
<b>Fiber Connection</b>	SC