# D-Link®

Building Networks for People

## Product Highlights

**Comprehensive Management Solution**

Active-Active WAN port features such as auto WAN failover and load balancing, ICSA-certified firewall, and D-Link Green Technology make this a reliable, secure and economic choice to manage your network

**Complete VPN Features**

With fully featured VPN as well as IPSec Hub and Spoke technology, secure communication between mobile employees and offices can be easily configured and guaranteed in any environment

**Web Authentication Capabilities**

Captive portal allows employees and guest users to be easily authenticated and authorised by accessing customised landing pages

## DSR Series
# Unified Services Routers

## Features

**High-Performance VPN**

- Protocols
  - IPSec
  - PPTP/L2TP
  - GRE
  - SSL
- VPN Tunnels
  - DSR-150N: Up to 26 tunnels
  - DSR-250N: Up to 65 tunnels
  - DSR-500N: Up to 85 tunnels
  - DSR-1000N: Up to 135 tunnels
- DES, 3DES, AES

**Enhanced Network Services**

- IPv6[2]
- IEEE 802.1q VLAN
- Multiple SSIDs
- Port Monitoring/Bandwidth Control
- srTCM, trTCM, & policing

**Wireless Access and Security**

- IEEE 802.11 a[5]/b/g/n (2.4 GHz, 5 GHz[5])
- IEEE 802.1x RADIUS Authentication with EAP-TLS, EAP-TLLS, EAP-PEAP
- WPS, WEP, WPA-PSK, WPA-EAP, WPA2-PSK, WPA2-EAP

**Fault Tolerance[3]**

- WAN Traffic Failover & Outbound Load Balancing

The D-Link DSR Series Unified Services Routers, high-performance networking solutions to address the growing needs of small and medium businesses. The integrated high-speed IEEE 802.11n wireless technology in the D-Link DSR Series Unified Services Routers offers comparable performance to traditional wired networks, but with fewer limitations. Each router provides optimal network security via features such as Virtual Private Network (VPN) tunnels, IP Security (IPSec), Point-to-Point Tunnelling Protocol (PPTP), Layer 2 Tunnelling Protocol (L2TP), Generic Routing Encapsulation (GRE)[1], and Secure Sockets Layer (SSL). These routers also allow you to empower your road warriors with clientless remote access anywhere and anytime using SSL VPN tunnels.

## Comprehensive Management Capabilities

The DSR-500N and DSR-1000N include dual-WAN Gigabit Ethernet that provides policy-based service management to ensure maximum productivity for your business operations. The failover feature maintains data traffic without disconnecting when a landline connection is lost. The Outbound Load Balancing feature adjusts outgoing traffic across two WAN interfaces and optimises system performance, resulting in high availability. The second WAN port can be configured as a DMZ port, allowing you to isolate servers from your LAN.

## Superior Wireless Performance

The D-Link DSR Series Unified Services Routers include 802.11a[5]/b/g/n, allowing for operation on either the 2.4 GHz or 5 GHz[5] wireless LAN radio bands. Multiple In Multiple Out (MIMO) technology allows the DSR-150N, DSR-250N, DSR-500N, and DSR-1000N to provide high data rates and a wide wireless coverage area with minimised "dead spots."

## Flexible Deployment Options

The DSR Series supports Third Generation (3G) networks via an extendable USB 3G dongle[4]. This 3G network capability offers an additional data connection for critical or backup services. For the DSR-1000N, a 3G USB dongle can be configured as a third WAN port, performing Traffic Load Balancing and executing automatic failover whenever the primary WAN link gets lost. For the DSR-500N,[1] the second WAN port could be a dedicated WAN2 or 3G dongle, performing Traffic Load Balancing and executing automatic failover whenever the primary WAN link gets lost. For the DSR-150N/250N[1], the 3G dongle could be configured as a backup link when the primary WAN link is down or configured as the primary WAN port.

## Robust VPN Features

A fully featured virtual private network (VPN) provides your mobile workers and branch offices with a secure link to your network. The D-Link DSR Series Unified Services Routers are capable of simultaneously managing 1, 5, 10, or 20 Secure Sockets Layer (SSL) VPN tunnels respectively, as well as 5, 10, 15, or 20 Generic Routing Encapsulation (GRE) tunnels[1], empowering your mobile users by providing remote access to a central corporate database. Site-to-site VPN tunnels use IP Security (IPSec) Protocol, Point-to-Point Tunnelling Protocol (PPTP), or Layer 2 Tunnelling Protocol (L2TP) to facilitate branch office connectivity through encrypted virtual links. The DSR-150N simultaneously supports up to 10 IPSec VPN tunnels plus 10 additional PPTP/L2TP tunnels. The DSR-250N, DSR-500N, and DSR-1000N simultaneously support up to 25, 35, and 70 IPSec VPN tunnels respectively, and 25 additional PPTP/L2TP tunnels.

## Efficient Green Technology

D-Link Green Wi-Fi and D-Link Green Ethernet features save power and help cut energy usage costs. The D-Link Green WLAN Scheduler shuts down your wireless network automatically according to a schedule you define, allowing you to turn off your wireless network during off-peak hours, saving energy and keeping your network secure. The D-Link Green Ethernet feature can detect if a link is down on a port, and automatically puts that port into a sleep mode that drastically reduces the amount of power used. In addition, compliance with RoHS (Restriction of Hazardous Substances) and WEEE (Waste Electrical and Electronic Equipment) directives make D-Link Green-certified devices an environmentally responsible choice.

If the worst should happen to your network you need the very best support and fast. Downtime costs your business money. D-Link Assist maximises your uptime by solving technical problems quickly and effectively. Our highly trained technicians are on standby around the clock, ensuring that award-winning support is only a phone call away.

With a choice of three affordable service offerings covering all D-Link business products, you can select the package that suits you best:

### D-Link Assist Gold - for comprehensive 24-hour support

D-Link Assist Gold is perfect for mission-critical environments where maximum uptime is a high priority. It guarantees four hour around-the-clock response. Cover applies 24/7 for every day of the year including holidays.

### D-Link Assist Silver - for prompt same-day assistance

D-Link Assist Silver is designed for 'high availability' businesses that require rapid response within regular working hours. It provides a four hour response service Monday to Friday from 8am to 5pm, excluding holidays.

### D-Link Assist Bronze - for guaranteed response on the next business day

D-Link Assist Bronze is a highly cost-effective support solution for less critical environments. Response is guaranteed within eight business hours Monday to Friday from 8am to 5pm, excluding holidays.

D-Link Assist can be purchased together with any D-Link business product. So whether you're buying switching, wireless, storage, security or IP Surveillance equipment from D-Link, your peace of mind is guaranteed. D-Link Assist also offers installation and configuration services to get your new hardware working quickly and correctly.
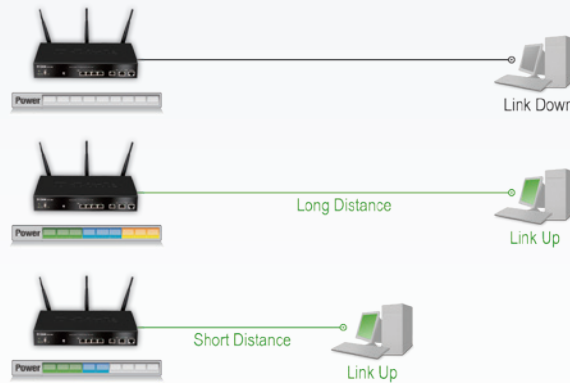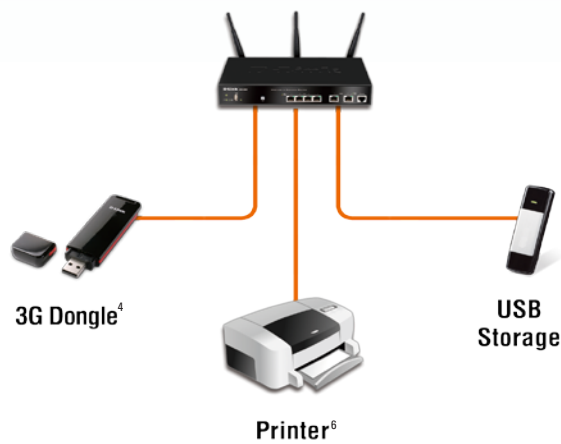
DSR-150N

DSR-500N

DSR-250N

DSR-1000N

## Green Wi-Fi

**WLAN ON**

**WLAN OFF**

The WLAN Scheduler shuts down the WLAN during off-peak hours to enhance network security and save power.
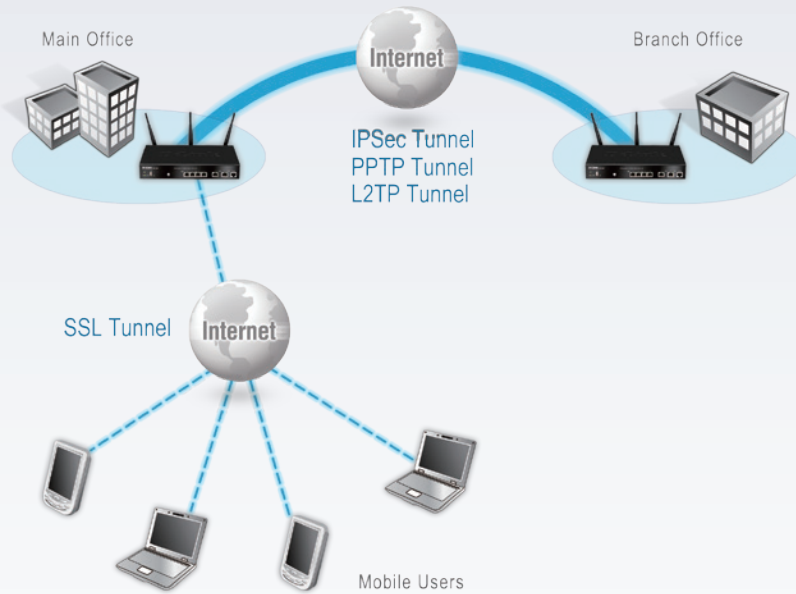
## Green Ethernet

Link Down

Long Distance
Link Up

Short Distance
Link Up

D-Link Green Ethernet detects link status and cable length and adjusts power usage accordingly.
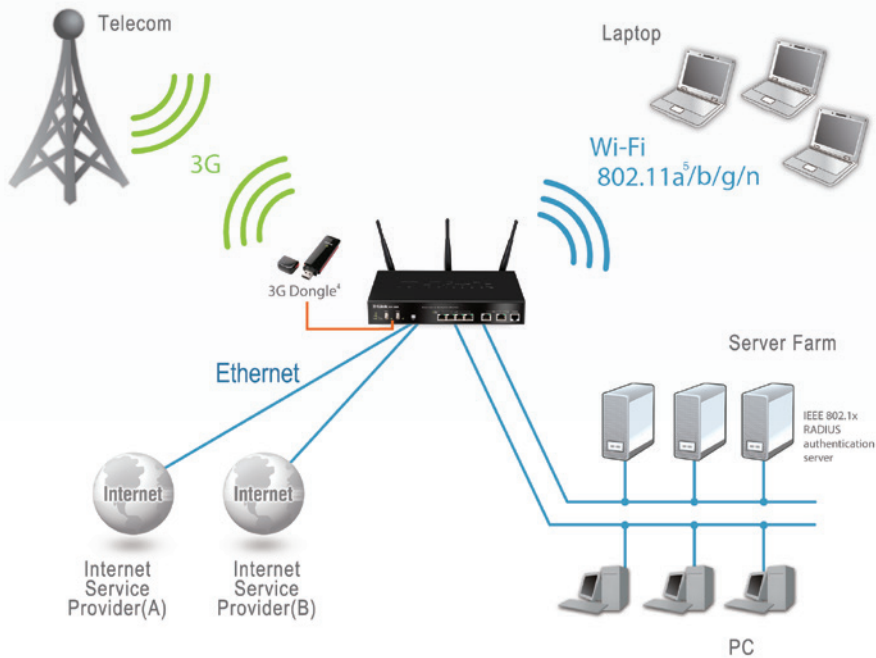
## USB 2.0 Extension

3G Dongle[4]

Printer[6]

USB Storage

Supports one (DSR-150N/250N/500N) or
two (DSR-1000N) USB 2.0 devices to extend functionality.

## Secure VPN Network Implementation



Main Office

Internet

Branch Office

IPSec Tunnel
PPTP Tunnel
L2TP Tunnel

SSL Tunnel    Internet

Mobile Users

## Dual WAN for Redundant Internet



Telecom

Laptop

3G

Wi-Fi
802.11a[5]/b/g/n

3G Dongle[4]

Ethernet

Server Farm

Internet

Internet

IEEE 802.1x
RADIUS
authentication
server

Internet
Service
Provider(A)

Internet
Service
Provider(B)

PC

## Technical Specifications

| General | DSR-150N | DSR-250N | DSR-500N | DSR-1000N |
|---|---|---|---|---|
| Ethernet Interface | 10/100 Mbps WAN Port<br>8 10/100 Mbps LAN Ports | 10/100/1000 Mbps WAN Port<br>8 10/100/1000 Mbps<br>LAN Ports | 2 10/100/1000 Mbps<br>WAN Ports<br>4 10/100/1000 Mbps<br>LAN Ports | 2 10/100/1000 Mbps<br>WAN Ports<br>4 10/100/1000 Mbps<br>LAN Ports |
| Wireless Interface | 802.11b/g/n (Single Band)<br>2 Internal 2dBi Omni-<br>Directional Antennas | 802.11b/g/n (Single Band)<br>2 Detachable 2 dBi Omni-<br>Directional Antennas | 802.11b/g/n (Single Band)<br>3 Detachable 2 dBi Omni-<br>Directional Antennas | 802.11a/b/g/n<br>(Selectable Dual Band)<br>3 Detachable 2 dBi Omni-<br>Directional Antennas |
| USB 2.0 Ports | 1 | | | 2 |
| Console Port | RJ-45 | | | |
| **Performance[8]** | | | | |
| Firewall Throughput[7] | 95 Mbps | 750 Mbps | 950 Mbps | 950 Mbps |
| VPN Throughput (3DES)[9] | 40 Mpps | 50 Mpps | 70 Mpps | 100 Mpps |
| Concurrent Sessions | 20,000 | | 30,000 | 60,000 |
| New Sessions (per second) | 200 | | 300 | 600 |
| Firewall Policies | 200 | | 300 | 600 |
| **Internet Connection Type** | | | | |
| Static/ Dynamic IP | ✓ | | | |
| PPPoE/ L2TP/ PPTP | ✓ | | | |
| Multiple PPPoE | ✓ | | | |
| **Firewall System** | | | | |
| Static Route | ✓ | | | |
| Dynamic Route | — | | RIPv1, RIP v2, OSPF[1] | |
| Dynamic DNS | ✓ | | | |
| Inter-VLAN Route | ✓ | | | |
| NAT, PAT | ✓ | | | |
| Web Content Filtering | Static URL, Keywords | | | |
| Intrusion Prevention System (IPS) | — | Signature Package Included in Firmware | | |

## Technical Specifications

| Networking | DSR-150N | DSR-250N | DSR-500N | DSR-1000N |
|---|---|---|---|---|
| DHCP Server/ Client | | ✓ | | |
| DHCP Relay | | ✓ | | |
| IEEE802.1q VLAN | | ✓ | | |
| VLAN (Port-Based) | | ✓ | | |
| IP Multicast | | IGMP Proxy | | |
| IPv6[2] | | ✓ | | |
| Route Failover | — | | ✓ | |
| Outbound Load Balancing | — | | ✓ | |
| 3G Redundancy | | ✓ | | |

| Wireless[2] | | | | |
|---|---|---|---|---|
| Multiple Service Set Identifier (SSID) | | ✓ | | |
| Service Set Identifier (SSID) to VLAN Mapping | | ✓ | | |
| Standards | | 802.11b/g/n | | 802.11a/b/g/n |
| Wireless Security | | Wired Equivalent Privacy (WEP)<br>Wi-Fi Protect Setup (WPS)<br>Wi-Fi Protected Access – Personal (WPA-PSK)<br>Wi-Fi Protected Access – Enterprise (WPA-EAP)<br>Wi-Fi Protected Access version 2 – Personal (WPA-PSK)<br>Wi-Fi Protected Access version 2 – Enterprise (WPA-EAP) | | |

| Virtual Private Network (VPN) | | | | |
|---|---|---|---|---|
| VPN Tunnels | 26 | 65 | 85 | 135 |
| IPSec Tunnels | 10 | 25 | 35 | 70 |
| SSL VPN Tunnels | 1 | 5 | 10 | 20 |
| PPTP/L2TP Clients | 10 | 25 | | |
| GRE[1] | 5 | 10 | 15 | 20 |
| Encryption Methods | | DES, 3DES, AES, Twofish, Blowfish, CAST-128, NULL | | |
| SSL Encryption Methods | | RC4-128, 3DES, AES | | |
| IPSec/PPTP/L2TP Server | | ✓ | | |
| IPSec NAT Traversal | | ✓ | | |
| Dead Peer Detection | | ✓ | | |
| IP Encapsulating Security Payload (ESP) | | ✓ | | |
| IP Authentication Header (AH) | | ✓ | | |
| VPN Tunnel Keep Alive | | ✓ | | |
| Hub and Spoke | | ✓ | | |

## Technical Specifications

| Bandwidth Management | DSR-150N | DSR-250N | DSR-500N | DSR-1000N |
|---|---|---|---|---|
| Maximum Bandwidth Control | ✓ | | | |
| Priority Bandwidth Control | Port-based QoS<br>3 Classes | | | |
| **System Management** | | | | |
| Web-based User Interface | HTTP, HTTPS | | | |
| Command Line | ✓ | | | |
| SNMP | v1, v2c, v3 | | | |
| **Physical & Environment** | | | | |
| Power Supply | External Power Supply Unit<br>DC 12 V/1.5 A | | Internal Power Supply Unit<br>DC 12 V/2.5 A | |
| Max. Power Consumption | 10.5 W | 12.6 W | 16.8 W | 19.3 W |
| Dimensions (L x W x H) | 208 x 118 x 35 mm<br>(8.19 x 4.65 x 1.38 inches) | 140 x 203 x 35 mm<br>(5.51 x 8.0 x 1.38 inches) | 180 x 280 x 44 mm<br>(7.09 x 11.02 x 1.73 inches) | |
| Operation Temperature | 0 to 40 ℃ (32 to 104 °F) | | | |
| Storage Temperature | -20 to 70 ℃ (-4 to 158 °F) | | | |
| Operation Humidity | 5% to 95% non-condensing | | | |
| EMI/EMC | FCC Class B, CE Class B, C-Tick, IC | | | FCC Class B, CE Class B,<br>C-Tick, IC, VCCI[2] |
| Safety | cUL, LVD (EN60950-1) | | | |
| 3rd Party Certification | IPv6 Ready[2], Wi-Fi, ICSA-Certified Firewall, VPNC AES Interop, VPNC Basic Interop | | | |
| MTBF | 240,000 hours | 250,000 hours | 260,000 hours | |

[1] Available through future firmware upgrade.
[2] IPv6 Ready Logo (Core) is available for DSR-500N and DSR-1000N.
[3] DSR-500N/1000/1000N only.
[4] The following 3G dongles are supported: DWM-152 A1/A2/A3, DWM-156 A1/A2/A3/A5*/A6*, DWM-157*, Huawei E1550, E173, and EC306.* The dongles marked with * will be supported through firmware upgrades.
[5] DSR-1000N only.
[6] Printer support list can be referred to at http://www.openprinting.org/printers.
[7] Firewall throughput is measured using UDP traffic with a 1,518 bytes packet size, adhering to RFC2544.
[8] Actual performance may vary depending on network conditions and activated services.
[9] VPN throughput is measured using UDP traffic with the packet size 1420 bytes and encryption method 3DES plus SHA-1, adhering to PFC2544.

**For more information: www.dlink.com**

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