

Product Highlights

Wi-Fi 6 (802.11ax)

Less network congestion and faster speed – total wireless connection rate up to 1800Mbps¹

SECURITY

Multiple firewall functions, several security standards for wireless connection

IPV6 SUPPORT

All needed functions for up-to-date networking



DIR-X1860

AX1800 Wi-Fi 6 Gigabit Router

Wireless Interface

Support of Wi-Fi 6 (802.11ax) standard provides faster speeds, greater capacity, and less network congestion for high-performance device-dense environments. It ensures connection of more devices and prevents weakening wireless connectivity by wall obstruction and interference from other appliances.

Using the DIR-X1860 device, you are able to quickly create a high-speed wireless network at home or in your office, which lets computers and mobile devices access the Internet virtually anywhere (within the operational range of your wireless network). Simultaneous activity of 2.4GHz band and 5GHz band allows performing a wide range of tasks. The router can operate as a base station for connecting wireless devices of the standards 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, and 802.11ax (at the wireless connection rate up to 1775Mbps¹).

Secure Wireless Connection

The router supports multiple functions for the wireless interface: several security standards (WEP, WPA/WPA2/WPA3), MAC address filtering, WPS, WMM.

In addition, the device is equipped with a button for switching the Wi-Fi network off/on². If needed, for example, when you leave home, you can easily switch the router's WLAN by pressing the button, and devices connected to the LAN ports of the router will stay online.

Advanced Capabilities of Wireless Network

Multi-user MIMO technology allows to distribute the router's resources to let multiple wireless clients use the Wi-Fi network efficiently, keeping high rates for HD media streaming, lag-free gaming, and fast transfer of large files.

Transmit Beamforming technology allows to flexibly change the antennas' radiation pattern and to redistribute the signal directly to wireless devices connected to the router.

Support of guest Wi-Fi network allows you to create a separate wireless network with individual security settings. Devices connected to the guest network will be able to access the Internet, but will be isolated from the devices and resources of the router's LAN.

LAN/WAN Conversion, WAN Failover

You can use any Ethernet port of the router as LAN or WAN port. The new-generation firmware supports assigning several WAN ports, for example, in order to configure the primary and backup WAN connection of different ISPs.

¹ Up to 574Mbps for 2.4GHz and up to 1201Mbps for 5GHz.

² Disabling/enabling the Wi-Fi network via the hardware button will be implemented in future software versions.

Security

The wireless router DIR-X1860 includes a built-in firewall. The advanced security functions minimize threats of hacker attacks and prevent unwanted intrusions to your network, and block access to unwanted websites for users of your LAN.

The SSH protocol support provides more secure remote configuration and management of the router due to encryption of all transmitted traffic, including passwords.

In addition, the router supports IPsec and allows to create secure VPN tunnels. Support of the IKEv2 protocol allows to provide simplified message exchange and use asymmetric authentication engine upon configuration of an IPsec tunnel.

The router also supports the SkyDNS web content filtering service, which provides more settings and opportunities for safer Internet experience for home users of all ages and for professional activities of corporate users.

Now the schedules are also implemented; they can be applied to the rules and settings of the firewall and used to reboot the router at the specified time or every specified time period and to enable/disable the wireless network and the Wi-Fi filter.

The new ad blocking function effectively blocks advertisements which appear during web surfing.

Easy configuration and update

You can configure the settings of the wireless router DIR-X1860 via the user-friendly web-based interface (the interface is available in several languages).

The configuration wizard allows you to quickly switch DIR-X1860 to one of the following modes: router (for connection to a wired or wireless ISP), access point, repeater, or client, and then configure all needed setting for operation in the selected mode in several simple steps.

Also DIR-X1860 supports configuration and management via mobile application for Android and iPhone smartphones.

You can simply update the firmware: the router itself finds approved firmware on D-Link update server and notifies when ready to install it.

Hardware	
Processor	<ul style="list-style-type: none"> MT7621AT (880MHz, dual core)
RAM	<ul style="list-style-type: none"> 256MB, DDR3L SDRAM
Flash	<ul style="list-style-type: none"> 128MB, NAND
Interfaces	<ul style="list-style-type: none"> 10/100/1000BASE-T WAN port 3 10/100/1000BASE-T LAN ports
LEDs	<ul style="list-style-type: none"> Power Internet WLAN 2.4G WLAN 5G
Buttons	<ul style="list-style-type: none"> POWER button to power on/power off RESET button to restore factory default settings WPS button to set up wireless connection and enable/disable wireless network³
Antenna	<ul style="list-style-type: none"> Two external non-detachable antennas for 2.4GHz band (5dBi gain) Two external non-detachable antennas for 5GHz band (5dBi gain)
MIMO	<ul style="list-style-type: none"> 2 x 2, MU-MIMO
Power connector	<ul style="list-style-type: none"> Power input connector (DC)

Software	
WAN connection types	<ul style="list-style-type: none"> PPPoE IPv6 PPPoE PPPoE Dual Stack Static IPv4 / Dynamic IPv4 Static IPv6 / Dynamic IPv6 PPPoE + Static IP (PPPoE Dual Access) PPPoE + Dynamic IP (PPPoE Dual Access) PPTP/L2TP + Static IP PPTP/L2TP + Dynamic IP L2TP Dual Stack 6in4 6to4 6rd
Network functions	<ul style="list-style-type: none"> DHCP server/relay Advanced configuration of built-in DHCP server Stateful/Stateless mode for IPv6 address assignment, IPv6 prefix delegation Automatic obtainment of LAN IP address (for access point/repeater/client modes) DNS relay Dynamic DNS Static IPv4/IPv6 routing IGMP/MLD Proxy RIP Support of UPnP Support of VLAN WAN ping respond Support of SIP ALG Support of RTSP WAN failover LAN/WAN conversion Multi-WAN support Autonegotiation of speed, duplex mode, and flow control / Manual speed and duplex mode setup for each Ethernet port Built-in UDPXY application Equal load distribution while using several WAN connections (traffic balancing) Support of VRRP Port mirroring
Firewall functions	<ul style="list-style-type: none"> Network Address Translation (NAT) Stateful Packet Inspection (SPI) IPv4/IPv6 filter MAC filter URL filter Ad blocking function DMZ Virtual servers Built-in SkyDNS web content filtering service

³ Disabling/enabling the Wi-Fi network via the hardware button will be implemented in future software versions.

Software	
VPN	<ul style="list-style-type: none"> IPsec/PPTP/L2TP/PPPoE pass-through PPTP/L2TP servers PPTP/L2TP tunnels L2TP over IPsec GRE/EoGRE/EoIP/IPIP tunnels IPsec tunnels <ul style="list-style-type: none"> Transport/Tunnel mode IKEv1/IKEv2 support DES encryption NAT Traversal Support of DPD (Keep-alive for VPN tunnels)
Management and monitoring	<ul style="list-style-type: none"> Local and remote access to settings through SSH/TELNET/WEB (HTTP/HTTPS) Multilingual web-based interface for configuration and management Support of D-Link Assistant application for Android and iPhone smartphones Notification on connection problems and auto redirect to settings Firmware update via web-based interface Automatic notification on new firmware version Saving/restoring configuration to/from file Support of logging to remote host Automatic synchronization of system time with NTP server and manual time/date setup Ping utility Traceroute utility TR-069 client SNMP agent Schedules for rules and settings of firewall, automatic reboot, and enabling/disabling wireless network and Wi-Fi filter Automatic upload of configuration file from ISP's server (Auto Provision)

Wireless Module Parameters	
Standards	<ul style="list-style-type: none"> IEEE 802.11ax IEEE 802.11ac Wave 2 IEEE 802.11a/b/g/n
Frequency range <i>The frequency range depends upon the radio frequency regulations applied in your country</i>	<ul style="list-style-type: none"> 2400 ~ 2483.5MHz 5150 ~ 5350MHz 5650 ~ 5850MHz
Wireless connection security	<ul style="list-style-type: none"> WEP WPA/WPA2 (Personal/Enterprise) WPA3 (Personal) MAC filter WPS (PBC/PIN)
Advanced functions	<ul style="list-style-type: none"> Support of client mode WMM (Wi-Fi QoS) Information on connected Wi-Fi clients Advanced settings Guest Wi-Fi / support of MBSSID Periodic scan of channels, automatic switch to least loaded channel Support of 2.4GHz/5GHz TX Beamforming Autonegotiation of channel bandwidth in accordance with environment conditions (20/40 Coexistence) Support of STBC CoovaChilli authentication portal
Wireless connection rate⁴	<ul style="list-style-type: none"> IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, and 54Mbps IEEE 802.11b: 1, 2, 5.5, and 11Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54Mbps IEEE 802.11n (2.4GHz/5GHz): from 6.5 to 300Mbps (MCS0–MCS15) IEEE 802.11ac (5GHz): from 6.5 to 867Mbps IEEE 802.11ax (2.4GHz): from 6.5 to 574Mbps IEEE 802.11ax (5GHz): from 6.5 to 1201Mbps

⁴ Maximum wireless signal rate is derived from IEEE standard 802.11ax and 802.11ac specifications. In order to get the rate of 574Mbps in the 2.4GHz band, a Wi-Fi client should support 802.11ax, HE40 mode with MIMO 2x2, and 1024-QAM modulation. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

Wireless Module Parameters

Transmitter output power

The maximum value of the transmitter output power depends upon the radio frequency regulations applied in your country

- 802.11a (typical at room temperature 25 °C)
15dBm at 6, 9, 12, 18, 24, 36, 48, 54Mbps
- 802.11b (typical at room temperature 25 °C)
15dBm at 1, 2, 5.5, 11Mbps
- 802.11g (typical at room temperature 25 °C)
15dBm at 6, 9, 12, 18, 24, 36, 48, 54Mbps
- 802.11n (typical at room temperature 25 °C)
2.4GHz, HT20
15dBm at MCS0/8~7/15
2.4GHz, HT40
15dBm at MCS0/8~7/15
5GHz
15dBm at MCS0/8~7/15
- 802.11ac (typical at room temperature 25 °C)
VHT20
15dBm at MCS0~8
VHT40/VHT80
15dBm at MCS0~9
- 802.11ax (typical at room temperature 25 °C)
2.4GHz, HE20/HE40
15dBm at HE0~11
5GHz, HE20/HE40/HE80
15dBm at HE0~11

Receiver sensitivity

- 802.11a (typical at PER < 10% (1000-byte PDUs) at room temperature 25 °C)
-92dBm at 6Mbps
-90dBm at 9Mbps
-89dBm at 12Mbps
-87dBm at 18Mbps
-84dBm at 24Mbps
-80dBm at 36Mbps
-76dBm at 48Mbps
-74dBm at 54Mbps
- 802.11b (typical at PER = 8% (1000-byte PDUs) at room temperature 25 °C)
-96dBm at 1Mbps
-94dBm at 2Mbps
-91dBm at 5.5Mbps
-88dBm at 11Mbps
- 802.11g (typical at PER < 10% (1000-byte PDUs) at room temperature 25 °C)
-92dBm at 6Mbps
-90dBm at 9Mbps
-89dBm at 12Mbps
-87dBm at 18Mbps
-84dBm at 24Mbps
-80dBm at 36Mbps
-77dBm at 48Mbps
-75dBm at 54Mbps

Wireless Module Parameters

- 802.11n (typical at PER = 10% (1000-byte PDUs) at room temperature 25 °C)
 - 2.4GHz, HT20
 - 92dBm at MCS0/8
 - 89dBm at MCS1/9
 - 87dBm at MCS2/10
 - 84dBm at MCS3/11
 - 80dBm at MCS4/12
 - 76dBm at MCS5/13
 - 75dBm at MCS6/14
 - 73dBm at MCS7/15
 - 2.4GHz, HT40
 - 89dBm at MCS0/8
 - 86dBm at MCS1/9
 - 83dBm at MCS2/10
 - 80dBm at MCS3/11
 - 78dBm at MCS4/12
 - 74dBm at MCS5/13
 - 72dBm at MCS6/14
 - 70dBm at MCS7/15
 - 5GHz, HT20
 - 92dBm at MCS0/8
 - 89dBm at MCS1/9
 - 86dBm at MCS2/10
 - 83dBm at MCS3/11
 - 79dBm at MCS4/12
 - 76dBm at MCS5/13
 - 74dBm at MCS6/14
 - 72dBm at MCS7/15
 - 5GHz, HT40
 - 88dBm at MCS0/8
 - 85dBm at MCS1/9
 - 83dBm at MCS2/10
 - 80dBm at MCS3/11
 - 76dBm at MCS4/12
 - 72dBm at MCS5/13
 - 70dBm at MCS6/14
 - 68dBm at MCS7/15

- 802.11ac (typical at PER = 10% (1000-byte PDUs) at room temperature 25 °C)
 - VHT20
 - 91dBm at MCS0
 - 89dBm at MCS1
 - 87dBm at MCS2
 - 84dBm at MCS3
 - 80dBm at MCS4
 - 76dBm at MCS5
 - 74dBm at MCS6
 - 72dBm at MCS7
 - 68dBm at MCS8
 - VHT40
 - 90dBm at MCS0
 - 86dBm at MCS1
 - 84dBm at MCS2
 - 81dBm at MCS3
 - 77dBm at MCS4
 - 73dBm at MCS5
 - 72dBm at MCS6
 - 70dBm at MCS7
 - 67dBm at MCS8
 - 65dBm at MCS9

Wireless Module Parameters

VHT80
 -86dBm at MCS0
 -83dBm at MCS1
 -81dBm at MCS2
 -78dBm at MCS3
 -74dBm at MCS4
 -70dBm at MCS5
 -68dBm at MCS6
 -66dBm at MCS7
 -63dBm at MCS8
 -61dBm at MCS9

· 802.11ax (typical at PER = 10% (1000-byte PDUs) at room temperature 25 °C)

2.4GHz, HE20
 -90dBm at HE0
 -89dBm at HE1
 -85dBm at HE2
 -83dBm at HE3
 -80dBm at HE4
 -78dBm at HE5
 -76dBm at HE6
 -73dBm at HE7
 -72dBm at HE8
 -68dBm at HE9
 -64dBm at HE10
 -61dBm at HE11

2.4GHz, HE40
 -90dBm at HE0
 -88dBm at HE1
 -85dBm at HE2
 -83dBm at HE3
 -80dBm at HE4
 -76dBm at HE5
 -74dBm at HE6
 -72dBm at HE7
 -69dBm at HE8
 -67dBm at HE9
 -64dBm at HE10
 -61dBm at HE11

5GHz, HE20
 -89dBm at HE0
 -88dBm at HE1
 -86dBm at HE2
 -83dBm at HE3
 -80dBm at HE4
 -78dBm at HE5
 -76dBm at HE6
 -74dBm at HE7
 -70dBm at HE8
 -68dBm at HE9
 -65dBm at HE10
 -63dBm at HE11

5GHz, HE40
 -88dBm at HE0
 -86dBm at HE1
 -84dBm at HE2
 -81dBm at HE3
 -78dBm at HE4
 -74dBm at HE5
 -73dBm at HE6
 -71dBm at HE7
 -67dBm at HE8
 -65dBm at HE9
 -62dBm at HE10
 -60dBm at HE11

Wireless Module Parameters

	<ul style="list-style-type: none"> 5GHz, HE80 -84dBm at HE0 -81dBm at HE1 -79dBm at HE2 -75dBm at HE3 -73dBm at HE4 -71dBm at HE5 -70dBm at HE6 -68dBm at HE7 -63dBm at HE8 -61dBm at HE9 -59dBm at HE10 -56dBm at HE11
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Physical Parameters

Dimensions (L x W x H)	· 174 x 139 x 60 mm (6.85 x 5.47 x 2.36 in)
Weight	· 280 g (0.62 lb)

Operating Environment

Power	· Output: 12V DC, 1A
Temperature	<ul style="list-style-type: none"> · Operating: from 0 to 40 °C · Storage: from -20 to 65 °C
Humidity	<ul style="list-style-type: none"> · Operating: from 10% to 90% (non-condensing) · Storage: from 5% to 95% (non-condensing)

Delivery Package

<ul style="list-style-type: none"> · Router DIR-X1860 · Power adapter DC 12V/1A · Ethernet cable · "Quick Installation Guide" (brochure)
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