

# **Product Highlights**

#### **2 FXS PORTS**

Support of 2 analog phones, good quality of voice transmission

#### **HIGH SPEED**

Gigabit SFP port,
Gigabit Ethernet ports,
total wireless connection rate up to
1200Mbps<sup>1</sup>

#### **IPV6 SUPPORT**

All needed functions for up-to-date networking

#### **USB PORT**

Support of USB modem for Internet connection via 4G/3G/2G network, USB storage, and printer



# **DVG-5402G/GF**

# Wireless AC1200 Wave 2 MU-MIMO Dual Band Gigabit Router with Fiber WAN Port, 3G/LTE Support, 2 FXS Ports, and USB Port

#### Voice

The device is equipped with two FXS ports which allow connection of analog phones for calls via Internet.

#### **USB Port**

The router is equipped with a USB port for connecting a USB modem, which can be used to establish connection to the Internet. In addition, to the USB port of the router you can connect a USB storage device, which will be used as a network drive, or a printer. In order to use the multifunction USB port effectively, the router supports simultaneous operation of several USB devices. For example, you can access multimedia content of the connected HDD storage and at the same time share a USB printer.<sup>2</sup>

#### **Ethernet WAN**

Any Ethernet port of the device can be configured to connect to a private Ethernet line.

#### Wireless Interface

Using the DVG-5402G/GF 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, and 802.11ac (at the wireless connection rate up to 1167Mbps¹).

#### **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/on. 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.

 $<sup>1\</sup>quad \mbox{ Up to }300\mbox{Mbps}$  for 2.4GHz and up to 867Mbps for 5GHz.

<sup>2</sup> When using a USB hub with external power supply.



Wireless AC1200 Wave 2 MU-MIMO Dual Band Gigabit Router with Fiber WAN Port, 3G/LTE Support, 2 FXS Ports, and USB Port

#### **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 and maximum rate limitation. 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.

#### Security

The wireless router DVG-5402G/GF includes a built-in firewall. The advanced security functions minimize threats of hacker attacks, 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, to automatically save the configuration of the router to a connected USB storage, to set rules for limitation of wireless client maximum bandwidth, 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 DVG-5402G/GF via the user-friendly web-based interface (the interface is available in several languages).

The configuration wizard allows you to quickly switch DVG-5402G/GF 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 DVG-5402G/GF 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	· RTL9607C (900MHz)
RAM	· 256MB, DDR3, built in processor
Flash	· 128MB, SPI NAND
Interfaces	<ul> <li>1000BASE-X SFP WAN port</li> <li>4 10/100/1000BASE-T LAN ports</li> <li>2 RJ-11 FXS ports</li> <li>USB 2.0 port</li> </ul>
LEDs	<ul> <li>Power</li> <li>SFP</li> <li>Internet</li> <li>LAN 1-4</li> <li>WLAN 2.4G/5G</li> <li>WPS</li> <li>USB</li> <li>FXS 1-2</li> </ul>
Buttons	<ul> <li>ON/OFF button to power on/power off</li> <li>RESET button to restore factory default settings</li> <li>WLAN button to enable/disable wireless network</li> <li>WPS button to set up wireless connection</li> </ul>
Antenna	· Four external non-detachable antennas (5dBi gain)
МІМО	· 2 x 2, MU-MIMO
Power connector	· Power input connector (DC)

Software	
WAN connection types	<ul> <li>Mobile Internet (via supported USB modem)</li> <li>PPPOE</li> <li>IPv6 PPPOE</li> <li>PPPOE Dual Stack</li> <li>Static IPv4 / Dynamic IPv4</li> <li>Static IPv6 / Dynamic IPv6</li> <li>PPPOE + Static IP (PPPOE Dual Access)</li> <li>PPPOE + Dynamic IP (PPPoE Dual Access)</li> <li>PPTP/L2TP + Static IP</li> <li>PPTP/L2TP + Dynamic IP</li> <li>L2TP Dual Stack</li> <li>IPIP6 in DSLite mode</li> <li>6in4</li> <li>6to4</li> <li>6rd</li> </ul>
Network functions	<ul> <li>DHCP server/relay</li> <li>Advanced configuration of built-in DHCP server</li> <li>Stateful/Stateless mode for IPv6 address assignment, IPv6 prefix delegation</li> <li>Automatic obtainment of LAN IP address (for access point/repeater/client modes)</li> <li>DNS relay</li> <li>Dynamic DNS</li> <li>Static IPv4/IPv6 routing</li> <li>IGMP Proxy</li> <li>RIP</li> <li>Support of UPnP</li> <li>Support of VLAN</li> <li>WAN ping respond</li> <li>Support of SIP ALG</li> <li>Support of RTSP</li> <li>WAN failover</li> <li>LAN/WAN conversion</li> <li>Autonegotiation of speed, duplex mode, and flow control / Manual speed and duplex mode setup for each Ethernet port</li> <li>Built-in UDPXY application</li> <li>XUPNPD plug-in</li> <li>Equal load distribution while using several WAN connections (traffic balancing)</li> <li>Port mirroring</li> </ul>



Software	
Firewall functions	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
VPN	<ul> <li>IPsec/PPTP/L2TP/PPPoE pass-through</li> <li>PPTP/L2TP servers</li> <li>PPTP/L2TP tunnels</li> <li>L2TP over IPsec client</li> <li>GRE/EoGRE/EoIP/IPIP tunnels</li> <li>IPsec tunnels</li> <li>Transport/Tunnel mode</li> <li>IKEv1/IKEv2 support</li> <li>DES encryption</li> <li>NAT Traversal</li> <li>Support of DPD (Keep-alive for VPN tunnels)</li> </ul>
USB interface functions	USB modem Auto connection to available type of supported network (4G/3G/2G) Auto configuration of connection upon plugging in USB modem Enabling/disabling PIN code check, changing PIN code³ Sending/receiving/reading/removing SMS messages³ Support of USSD requests³ USB storage File browser Print server Access to storage via accounts Built-in Samba/FTP/DLNA server Built-in Transmission torrent client; uploading/downloading files from/to USB storage
Management and monitoring	<ul> <li>Local and remote access to settings through SSH/TELNET/WEB (HTTP/HTTPS)</li> <li>Multilingual web-based interface for configuration and management</li> <li>Support of D-Link Assistant application for Android and iPhone smartphones</li> <li>Notification on connection problems and auto redirect to settings</li> <li>Firmware update via web-based interface</li> <li>Automatic notification on new firmware version</li> <li>Saving/restoring configuration to/from file</li> <li>Support of logging to remote host/connected USB storage</li> <li>Automatic synchronization of system time with NTP server and manual time/date setup</li> <li>Ping utility</li> <li>Traceroute utility</li> <li>TR-069 client</li> <li>Schedules for rules and settings of firewall, automatic reboot and saving a configuration backup to a connected USB storage, limitation of wireless client maximum bandwidth, and enabling/disabling wireless network and Wi-Fi filter</li> <li>Automatic upload of configuration file from ISP's server (Auto Provision)</li> <li>Configuration of action for hardware buttons</li> </ul>

Wireless Module Parameters	
Standards	<ul> <li>IEEE 802.11ac Wave 2</li> <li>IEEE 802.11a/b/g/n</li> <li>IEEE 802.11w</li> </ul>
Frequency range  The frequency range depends upon the radio frequency regulations applied in your country	<ul> <li>2400 ~ 2483.5MHz</li> <li>5150 ~ 5350MHz</li> <li>5650 ~ 5850MHz</li> </ul>
Wireless connection security	<ul> <li>WEP</li> <li>WPA/WPA2 (Personal/Enterprise)</li> <li>WPA3 (Personal)</li> <li>MAC filter</li> <li>WPS (PBC/PIN)</li> </ul>



Wireless Module Parameters	
Advanced functions	<ul> <li>Support of client mode</li> <li>WMM (Wi-Fi QoS)</li> <li>Information on connected Wi-Fi clients</li> <li>Advanced settings</li> <li>Guest Wi-Fi / support of MBSSID</li> <li>Rate limitation for wireless network/separate MAC addresses</li> <li>Periodic scan of channels, automatic switch to least loaded channel</li> <li>Support of 2.4GHz/5GHz TX Beamforming</li> <li>Autonegotiation of channel bandwidth in accordance with environment conditions (20/40 Coexistence)</li> <li>Support of STBC</li> <li>CoovaChilli authentication portal</li> </ul>
Wireless connection rate	<ul> <li>IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, and 54Mbps</li> <li>IEEE 802.11b: 1, 2, 5.5, and 11Mbps</li> <li>IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54Mbps</li> <li>IEEE 802.11n (2.4GHz/5GHz): from 6.5 to 300Mbps (from MCS0 to MCS15)</li> <li>IEEE 802.11ac (5GHz): from 6.5 to 867Mbps (from MCS0 to MCS9)</li> </ul>
Transmitter output power  The maximum value of the transmitter output power depends upon the radio frequency regulations applied in your country	<ul> <li>802.11a (typical at room temperature 25 °C) 15dBm at 6, 9, 12, 18, 24, 36, 48, 54Mbps</li> <li>802.11b (typical at room temperature 25 °C) 15dBm at 1, 2, 5.5, 11Mbps</li> <li>802.11g (typical at room temperature 25 °C) 15dBm at 6, 9, 12, 18, 24, 36, 48, 54Mbps</li> <li>802.11n (typical at room temperature 25 °C) 2.4GHz, HT20/HT40 15dBm at MCS0/8~7/15 5GHz, HT20/HT40 15dBm at MCS0/8~7/15</li> <li>802.11ac (typical at room temperature 25 °C) VHT20/VHT40/VHT80 15dBm at MCS0~9</li> </ul>
Receiver sensitivity	<ul> <li>802.11a (typical at PER &lt; 10% at room temperature 25 °C)</li> <li>-82dBm at 6Mbps</li> <li>-81dBm at 9Mbps</li> <li>-79dBm at 12Mbps</li> <li>-77dBm at 18Mbps</li> <li>-74dBm at 24Mbps</li> <li>-66dBm at 48Mbps</li> <li>-65dBm at 54Mbps</li> <li>-802.11b (typical at PER = 8% at room temperature 25 °C)</li> <li>-82dBm at 1Mbps</li> <li>-80dBm at 2Mbps</li> <li>-78dBm at 5.5Mbps</li> <li>-76dBm at 11Mbps</li> <li>802.11g (typical at PER &lt; 10% at room temperature 25 °C)</li> <li>-82dBm at 6Mbps</li> <li>-81dBm at 6Mbps</li> <li>-81dBm at 9Mbps</li> <li>-79dBm at 12Mbps</li> <li>-77dBm at 18Mbps</li> <li>-74dBm at 24Mbps</li> <li>-70dBm at 36Mbps</li> <li>-66dBm at 48Mbps</li> <li>-66dBm at 48Mbps</li> <li>-65dBm at 48Mbps</li> <li>-65dBm at 54Mbps</li> </ul>



Wireless Module Parameters			
	· 802.11n (typical at PER = 1	802.11n (typical at PER = 10% at room temperature 25 °C)	
	2.4GHz/5GHz, HT20		5GHz, HT40
	-82dBm at MCS0/8		at MCS0/8
	-79dBm at MCS1/9	-76dBm	at MCS1/9
	-77dBm at MCS2/10	-74dBm	at MCS2/10
	-74dBm at MCS3/11	-71dBm	at MCS3/11
	-70dBm at MCS4/12	-67dBm	at MCS4/12
	-66dBm at MCS5/13	-63dBm	at MCS5/13
	-65dBm at MCS6/14	-62dBm	at MCS6/14
	-64dBm at MCS7/15	-61dBm	at MCS7/15
	· 802.11ac (typical at PER =	802.11ac (typical at PER = 10% at room temperature 25 °C)	
	VHT20	VHT40	VHT80
	-82dBm at MCS0	-79dBm at MCS0	-76dBm at MCS0
	-79dBm at MCS1	-76dBm at MCS1	-73dBm at MCS1
	-77dBm at MCS2	-74dBm at MCS2	-71dBm at MCS2
	-74dBm at MCS3	-71dBm at MCS3	-68dBm at MCS3
	-70dBm at MCS4	-67dBm at MCS4	-64dBm at MCS4
	-66dBm at MCS5	-63dBm at MCS5	-60dBm at MCS5
	-65dBm at MCS6	-62dBm at MCS6	-59dBm at MCS6
	-64dBm at MCS7	-61dBm at MCS7	-58dBm at MCS7
	-56dBm at MCS8	-56dBm at MCS8	-53dBm at MCS8
		-54dBm at MCS9	-51dBm at MCS9
Modulation schemes	· 802.11a: BPSK, QPSK, 16		
	· 802.11b: DQPSK, DBPSK,		
	· 802.11g: BPSK, QPSK, 16		
	· 802.11n: BPSK, QPSK, 16	QAM, 64QAM with OFDM	
	<ul> <li>802.11ac: BPSK, QPSK, 1</li> </ul>	6QAM, 64QAM, up to 256QAM	with OFDM

Phone	
General SIP Features	<ul> <li>Support of several SIP profiles</li> <li>Individual account per port</li> <li>Invite with Challenge</li> <li>Register by IP address or domain name of SIP server</li> <li>Backup proxy support</li> <li>Support of DHCP option 120</li> <li>RFC3986 SIP URI format support</li> <li>Outbound proxy support</li> <li>STUN client</li> <li>NAT public IP address</li> <li>NAT keep-alive</li> <li>Session timer (re-invite/update)</li> <li>Call types: voice/modem/fax</li> <li>User programmable Dial Plan</li> <li>Manual peer table (for P2P calls)</li> <li>Handling numbers in E.164 format</li> </ul>
Call Features	<ul> <li>Direct IP-to-IP call without SIP proxy (P2P)</li> <li>Call hold/retrieve</li> <li>Call awaiting</li> <li>Forwarding (unconditional, busy, no answer)</li> <li>Do Not Disturb</li> <li>Anonymous call blocking</li> <li>Speed/abbreviated dialing</li> <li>PIN code before dialing</li> <li>Hotline</li> <li>Vertical service codes</li> <li>CLIR</li> <li>Intercom (internal calls without SIP server)</li> <li>Filtering SIP packets by IP address/domain name (white/black list)</li> <li>Alarm clock</li> <li>Logging calls</li> <li>Sending text messages to VoIP gateways/IP phones</li> </ul>



Wireless AC1200 Wave 2 MU-MIMO Dual Band Gigabit Router with Fiber WAN Port, 3G/LTE Support, 2 FXS Ports, and USB Port

Phone	
Voice Features	Codecs: G.711 a/µ-law, G.729A, G.726, G.722, G.723.1  DTMF detection and generation In-band DTMF, out-of-band DTMF (RFC2833, SIP-INFO) Comfort Noise Generation (CNG) Voice Activity Detection (VAD) Dynamic Jitter Buffer Echo Cancellation (LEC/NLP) Call progress tone generation (FXS) DTMF/PULSE dial support Caller ID detection and generation T.30 FAX bypass to G.711, T.38 Real Time FAX Relay, V.152 Adjustable Flash Time Advanced call transfer, three-party calls Volume control (speaker/microphone)

Physical Parameters	
Dimensions (L x W x H)	· 206 x 123 x 32 mm (8.1 x 4.8 x 1.3 in)
Weight	· 330 g (0.73 lb)

Operating Environment	
Power	· Output: 12V DC, 1.5A
Temperature	<ul> <li>Operating: from 0 to 40 °C</li> <li>Storage: from -20 to 65 °C</li> </ul>
Humidity	<ul> <li>Operating: from 10% to 90% (non-condensing)</li> <li>Storage: from 5% to 95% (non-condensing)</li> </ul>

### **Delivery Package**

- · Router DVG-5402G/GF
- Power adapter DC 12V/1.5A
- · Ethernet cable
- RJ-11 telephone cable
- "Quick Installation Guide" (brochure)



Supported USB modems⁴	
GSM	. Alcatel X500 . D-Link DWM-15C1 . D-Link DWM-156A6 . D-Link DWM-156A7 . D-Link DWM-156A8 . D-Link DWM-156C1 . D-Link DWM-157B1 . D-Link DWM-157B1 (Velcom) . D-Link DWM-157B1 (Velcom) . D-Link DWR-710 . Huawei E150 . Huawei E150 . Huawei E156G . Huawei E166G . Huawei E169G . Huawei E171 . Huawei E173 (Megafon) . Huawei E331 (MTS 420S) . Huawei E3531 . Prolink PHS600 . Prolink PHS901 . ZTE MF12 . ZTE MF192 . ZTE MF626 . ZTE MF666 . ZTE MF6667 . ZTE MF6668 . ZTE MF6668 . ZTE MF6668 . ZTE MF6668 . ZTE MF752
LTE	Alcatel IK40V     D-Link DWM-222     Huawei E3131     Huawei E3272     Huawei E3372     Huawei E3372s     Huawei E3372h-153     Huawei E3372h-320     Huawei E392     Huawei E392     Megafon M100-1     Megafon M100-2     Megafon M100-3     Megafon M100-4     Megafon M150-1     Megafon M150-2     Megafon M150-3     Quanta 1K6E (Beeline 1K6E)     MTS 824F     MTS 827F     Yota LU-150     Yota WLTUBA-107     ZTE MF823     ZTE MF823D     ZTE MF823T     ZTE MF833T     ZTE MF833T
Smartphones in USB tethering mode	· Some models of Android smartphones

The manufacturer does not guarantee proper operation of the router with every modification of the firmware of USB modems.



Compatible Equipment	
DEM-210	100BASE-LX Single-Mode SFP transceiver (up to 15km)
DEM-220R	100Base-BX-U Single-Mode WDM SFP transceiver (up to 20 km), Tx:1310 nm, Rx:1550 nm
DEM-220T	100Base-BX-D Single-Mode WDM SFP transceiver (up to 20 km), Tx:1550 nm, Rx:1310 nm
DGS-712	1000Base-T Copper SFP Transceiver (up to 100 m)
DEM-302S-LX	1000Base-LX Single-Mode SFP transceiver (up to 2 km)
DEM-310GT	1000Base-LX Single-Mode SFP transceiver (up to 10 km)
DEM-311GT	1000Base-SX Multi-Mode SFP transceiver (up to 550 m)
DEM-330T/10KM	1000Base-BX-D Single-Mode WDM SFP transceiver (LC connector, up to 10 km), Tx:1550 nm, Rx:1310 nm
DEM-330R/10KM	1000Base-BX-U Single-Mode WDM SFP transceiver (LC connector, up to 10 km), Tx:1310 nm, Rx:1550 nm
DEM-432XT	10GBase-LR Single-Mode SFP+ transceiver (up to 10 km)
DEM-433XT	10GBase-ER Single-Mode SFP+ transceiver (up to 40 km)
DEM-436XT-BXD	10GBase-LR Single-Mode WDM SFP+ transceiver (up to 20 km), Tx:1330 nm, Rx:1270 nm)
DEM-436XT-BXU	10GBase-LR Single-Mode WDM SFP+ transceiver (up to 20 km), Tx:1270 nm, Rx:1330 nm