

## Product Highlights

### HIGH SPEED

Total wireless connection rate up to 750Mbps

### USB PORT

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

### IPV6 SUPPORT

All needed functions for up-to-date networking



## DIR-816L

### Wireless AC750 Dual Band Router & Access Point with 3G/LTE Support and USB Port

#### 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.

#### Wireless Interface

Using the DIR-816L 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 733Mbps<sup>1</sup>).

#### TX Beamforming Support

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

#### Secure Wireless Connection

The router supports multiple functions for the wireless interface: several security standards (WEP, WPA/WPA2), 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.

#### Router Mode

You are able to connect DIR-816L switched to the router mode to a cable or DSL modem or to a private Ethernet line and use a high-speed Internet connection to successfully fulfill a wide range of professional tasks.

#### Access Point Mode

You are able to use DIR-816L switched to the access point mode to create a wireless network or to connect to a wired router.

#### “Client” Function

The “client” function in the router mode allows using DIR-816L as a WISP repeater, in the access point mode as a wireless client and a wireless repeater.

<sup>1</sup> Up to 300Mbps for 2.4GHz and up to 433Mbps for 5GHz.

#### Security

The wireless router DIR-816L 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.

In addition, the router supports IPsec and allows to create secure VPN tunnels.

Yandex.DNS service protects against malicious and fraudulent web sites and helps to block access to adult content on children's devices.

#### Easy configuration and update

You can configure the settings of the wireless router DIR-816L via the user-friendly web-based interface (the interface is available in several languages).

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"> <li>RTL8881AQ (520MHz)</li> </ul>
RAM	<ul style="list-style-type: none"> <li>128MB, DDR2</li> </ul>
Flash	<ul style="list-style-type: none"> <li>16MB, SPI</li> </ul>
Interfaces	<ul style="list-style-type: none"> <li>10/100BASE-TX WAN port</li> <li>4 10/100BASE-TX LAN ports</li> <li>USB 2.0 port</li> </ul>
LEDs	<ul style="list-style-type: none"> <li>Power</li> <li>Internet</li> <li>WLAN / WPS</li> <li>4 LAN LEDs</li> </ul>
Buttons	<ul style="list-style-type: none"> <li>ON/OFF button to power on/power off</li> <li>RESET button to restore factory default settings</li> <li>WPS button to set up secure wireless connection and enable/disable wireless network</li> </ul>
Antenna	<ul style="list-style-type: none"> <li>Two external dual band antennas (5dBi gain for 2.4GHz and for 5GHz)</li> </ul>
MIMO	<ul style="list-style-type: none"> <li>2 x 2</li> </ul>
Power connector	<ul style="list-style-type: none"> <li>Power input connector (DC)</li> </ul>

Software	
Operation Modes	<ul style="list-style-type: none"> <li>Router mode</li> <li>Access point mode</li> </ul>
WAN connection types	<ul style="list-style-type: none"> <li>LTE</li> <li>3G</li> <li>PPPoE</li> <li>IPv6 PPPoE</li> <li>PPPoE Dual Stack</li> <li>Static IP / Dynamic IP</li> <li>Static IPv6 / Dynamic IPv6</li> <li>PPPoE + Static IP / Dynamic IP</li> <li>PPTP/L2TP + Static IP</li> <li>PPTP/L2TP + Dynamic IP</li> </ul>
Network functions	<ul style="list-style-type: none"> <li>Support of IEEE 802.1X for Internet connection</li> <li>DHCP server/relay</li> <li>DHCPv6 server (Stateful/Stateless), IPv6 prefix delegation</li> <li>DNS relay</li> <li>Support of DNSv6 AAAA records</li> <li>Dynamic DNS</li> <li>Static IP routing</li> <li>Static IPv6 routing</li> <li>IGMP Proxy</li> <li>RIP</li> <li>Support of UPnP IGD</li> <li>Support of VLAN</li> <li>WAN ping respond</li> <li>Support of SIP ALG</li> <li>Support of RTSP</li> <li>WAN reservation</li> <li>Autonegotiation of speed, duplex mode, and flow control/Manual speed and duplex mode setup for each Ethernet port</li> </ul>

Software	
<b>Firewall functions</b>	<ul style="list-style-type: none"> <li>· Network Address Translation (NAT)</li> <li>· Stateful Packet Inspection (SPI)</li> <li>· IP filter</li> <li>· IPv6 filter</li> <li>· MAC filter</li> <li>· URL filter</li> <li>· DMZ</li> <li>· Prevention of ARP and DDoS attacks</li> <li>· Virtual servers</li> <li>· Built-in Yandex.DNS web content filtering service</li> </ul>
<b>VPN</b>	<ul style="list-style-type: none"> <li>· IPSec/PPTP/L2TP/PPPoE pass-through</li> <li>· IPSec tunnels</li> </ul>
<b>USB interface functions</b>	<ul style="list-style-type: none"> <li>· USB modem</li> <li>· Auto connection to available type of supported network (4G/3G/2G)</li> <li>· Enabling/disabling PIN code check, changing PIN code<sup>2</sup></li> <li>· USB storage</li> <li>· File browser</li> <li>· Print server</li> <li>· Access to storage via accounts</li> <li>· Built-in Samba server</li> <li>· Built-in FTP server</li> <li>· Built-in DLNA server</li> <li>· Built-in Transmission torrent client; uploading/downloading files from/to USB storage</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>· Local and remote access to settings through TELNET/WEB (HTTP/HTTPS)</li> <li>· Multilingual web-based interface for configuration and management</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 remote logging</li> <li>· Automatic synchronization of system time with NTP server and manual time/date setup</li> <li>· Ping function</li> <li>· Traceroute utility</li> <li>· TR-069 client</li> </ul>

Wireless Module Parameters	
<b>Standards</b>	<ul style="list-style-type: none"> <li>· IEEE 802.11a/n/ac</li> <li>· IEEE 802.11b/g/n</li> </ul>
<b>Frequency range</b>	<ul style="list-style-type: none"> <li>· 2400 ~ 2483.5MHz</li> <li>· 5150 ~ 5350MHz</li> </ul>
<b>Wireless connection security</b>	<ul style="list-style-type: none"> <li>· WEP</li> <li>· WPA/WPA2 (Personal/Enterprise)</li> <li>· MAC filter</li> <li>· WPS (PBC/PIN)</li> </ul>
<b>Advanced functions</b>	<ul style="list-style-type: none"> <li>· Support of MBSSID</li> <li>· "Client" function in the router mode (WISP repeater)</li> <li>· "Client" function in the access point mode (wireless network client, wireless network repeater)</li> <li>· WMM (Wi-Fi QoS)</li> <li>· Information on connected Wi-Fi clients</li> <li>· Advanced settings</li> <li>· Support of 802.11ac (5GHz) and 802.11n (2.4GHz) TX Beamforming</li> </ul>
<b>Wireless connection rate</b>	<ul style="list-style-type: none"> <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 433Mbps (from MCS0 to MCS9)</li> </ul>

<b>Wireless Module Parameters</b>	
<p><b>Transmitter output power</b></p> <p><i>The maximum value of the transmitter output power depends upon the radio frequency regulations applied in your country</i></p>	<ul style="list-style-type: none"> <li>· 802.11a (typical at room temperature 25 °C) 15dBm (+/-2dB) at 6, 9, 12, 18, 24, 36Mbps 14dBm (+/-2dB) at 48, 54Mbps</li> <li>· 802.11b (typical at room temperature 25 °C) 15dBm (+/-2dB) at 1, 2, 5.5, 11Mbps</li> <li>· 802.11g (typical at room temperature 25 °C) 15dBm (+/-2dB) at 6, 9, 12, 18, 24, 36, 48Mbps 14dBm (+/-2dB) at 54Mbps</li> <li>· 802.11n (typical at room temperature 25 °C) 2.4GHz, HT20 15dBm (+/-2dB) at MCS0/1/2/3/4/5, MCS8/9/10/11/12/13 14dBm (+/-2dB) at MCS6/7, MCS14/15 2.4GHz, HT40 15dBm (+/-2dB) at MCS0/1/2/3/4/5, MCS8/9/10/11/12/13 14dBm (+/-2dB) at MCS6/7, MCS14/15 5GHz, HT20 15dBm (+/-2dB) at MCS0/1/2/3/4/5 14dBm (+/-2dB) at MCS6/7 5GHz, HT40 15dBm (+/-2dB) at MCS0/1/2/3/4/5 14dBm (+/-2dB) at MCS6/7</li> <li>· 802.11ac (typical at room temperature 25 °C) HT20 15dBm (+/-2dB) at MCS0/1/2/3/4/5 14dBm (+/-2dB) at MCS6/7 12dBm (+/-2dB) at MCS8 HT40 15dBm (+/-2dB) at MCS0/1/2/3/4/5 14dBm (+/-2dB) at MCS6/7 12dBm (+/-2dB) at MCS8 11dBm (+/-2dB) at MCS9 HT80 15dBm (+/-2dB) at MCS0/1/2/3/4/5 14dBm (+/-2dB) at MCS6/7 12dBm (+/-2dB) at MCS8 11dBm (+/-2dB) at MCS9</li> </ul>
<p><b>Receiver sensitivity</b></p>	<ul style="list-style-type: none"> <li>· 802.11a (typical at PER = 10% (1000-byte PDUs) at room temperature 25 °C) -82dBm at 6Mbps -81dBm at 9Mbps -79dBm at 12Mbps -77dBm at 18Mbps -74dBm at 24Mbps -70dBm at 36Mbps -66dBm at 48Mbps -65dBm at 54Mbps</li> <li>· 802.11b (typical at PER = 8% (1000-byte PDUs) at room temperature 25 °C) -79dBm at 11Mbps -82dBm at 5.5Mbps -84dBm at 2Mbps -84dBm at 1Mbps</li> <li>· 802.11g (typical at PER = 10% (1000-byte PDUs) at room temperature 25 °C) -82dBm at 6Mbps -81dBm at 9Mbps -79dBm at 12Mbps -77dBm at 18Mbps -74dBm at 24Mbps -70dBm at 36Mbps -66dBm at 48Mbps -65dBm at 54Mbps</li> </ul>

Wireless Module Parameters	
	<ul style="list-style-type: none"> <li>· 802.11n (typical at PER = 10% (1000-byte PDUs)) 2.4GHz/5GHz, HT20 -82dBm at MCS0 -79dBm at MCS1 -77dBm at MCS2 -74dBm at MCS3 -70dBm at MCS4 -66dBm at MCS5 -65dBm at MCS6 -64dBm at MCS7 2.4GHz/5GHz, HT40 -79dBm at MCS0 -76dBm at MCS1 -74dBm at MCS2 -71dBm at MCS3 -67dBm at MCS4 -63dBm at MCS5 -62dBm at MCS6 -61dBm at MCS7</li> <li>· 802.11ac (typical at PER = 10% (1000-byte PDUs)) HT20 -82dBm at MCS0 -79dBm at MCS1 -77dBm at MCS2 -74dBm at MCS3 -70dBm at MCS4 -66dBm at MCS5 -65dBm at MCS6 -64dBm at MCS7 -59dBm at MCS8 -57dBm at MCS9 HT40 -79dBm at MCS0 -76dBm at MCS1 -74dBm at MCS2 -71dBm at MCS3 -67dBm at MCS4 -63dBm at MCS5 -62dBm at MCS6 -61dBm at MCS7 -56dBm at MCS8 -54dBm at MCS9 HT80 -76dBm at MCS0 -73dBm at MCS1 -71dBm at MCS2 -68dBm at MCS3 -64dBm at MCS4 -60dBm at MCS5 -59dBm at MCS6 -58dBm at MCS7 -53dBm at MCS8 -51dBm at MCS9</li> </ul>
<b>Modulation schemes</b>	<ul style="list-style-type: none"> <li>· 802.11a: BPSK, QPSK, 16QAM, 64QAM with OFDM</li> <li>· 802.11b: DQPSK, DBPSK, DSSS, CCK</li> <li>· 802.11g: BPSK, QPSK, 16QAM, 64QAM with OFDM</li> <li>· 802.11n: BPSK, QPSK, 16QAM, 64QAM with OFDM</li> <li>· 802.11ac: BPSK, QPSK, 16QAM, 64QAM, up to 256QAM with OFDM</li> </ul>

Physical Parameters	
<b>Dimensions (L x W x H)</b>	· 151.6 x 112 x 30.5 mm (6 x 4.4 x 1.2 in)
<b>Weight</b>	· 204 g (0.5 lb)

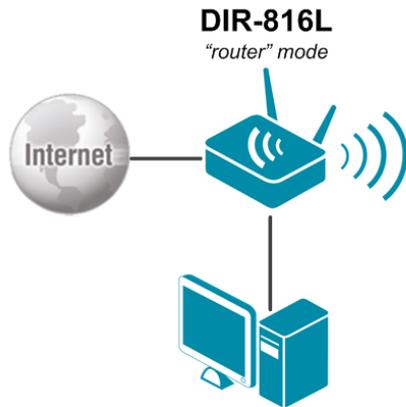
Operating Environment	
Power	<ul style="list-style-type: none"> <li>Output: 12V DC, 1A</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>Operating: from 0 to 40 °C</li> <li>Storage: from -20 to 65 °C</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>Operating: from 10% to 90% (non-condensing)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

Delivery Package
<ul style="list-style-type: none"> <li>Router DIR-816L</li> <li>Power adapter DC 12V/1A</li> <li>Ethernet cable</li> <li>“Quick Installation Guide” (brochure)</li> </ul>

Supported USB modems <sup>3</sup>	
<b>GSM</b>	<ul style="list-style-type: none"> <li>Alcatel X500</li> <li>D-Link DWM-152C1</li> <li>D-Link DWM-156A6</li> <li>D-Link DWM-156A7</li> <li>D-Link DWM-156C1</li> <li>D-Link DWM-157B1</li> <li>D-Link DWM-157B1 (Velcom)</li> <li>D-Link DWM-158D1</li> <li>D-Link DWR-710</li> <li>Huawei E150</li> <li>Huawei E1550</li> <li>Huawei E156G</li> <li>Huawei E160G</li> <li>Huawei E169G</li> <li>Huawei E171</li> <li>Huawei E173 (Megafon)</li> <li>Huawei E220</li> <li>Huawei E352 (Megafon)</li> <li>ZTE MF112</li> <li>ZTE MF192</li> <li>ZTE MF626</li> <li>ZTE MF627</li> <li>ZTE MF652</li> <li>ZTE MF667</li> <li>ZTE MF668</li> <li>ZTE MF752</li> </ul>
<b>LTE</b>	<ul style="list-style-type: none"> <li>Huawei E3131</li> <li>Huawei E3272</li> <li>Huawei E3351</li> <li>Huawei E367</li> <li>Huawei E392</li> <li>Megafon M100-1</li> <li>Megafon M100-2</li> <li>Megafon M100-3</li> <li>Megafon M100-4</li> <li>Megafon M150-1</li> <li>MTS 824F</li> <li>Quanta 1K6E (Beeline 1K6E)</li> <li>Yota LU-150</li> <li>Yota WLTUBA-107</li> <li>ZTE MF823</li> <li>ZTE MF827</li> </ul>
<b>Smartphones in USB tethering mode</b>	<ul style="list-style-type: none"> <li>Some models of Android smartphones</li> </ul>

<sup>3</sup> The manufacturer does not guarantee proper operation of the router with every modification of the firmware of USB modems.

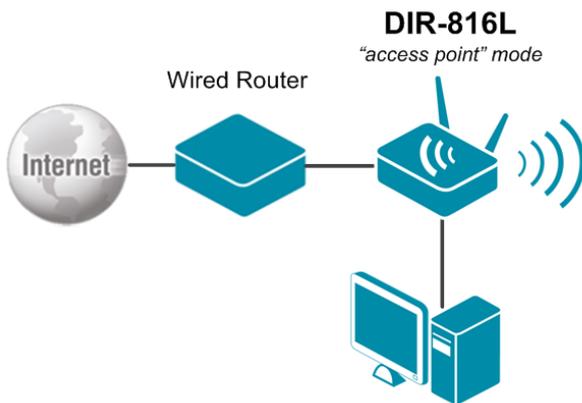
*Router*



The DIR-816L device in the "router" mode is connected to a private Ethernet line or to a cable or DSL modem. Computers connect to DIR-816L via wireless or wired connection.

It is necessary to specify the same encryption parameters and the channel of the wireless network for DIR-816L and computers with Wi-Fi adapters. In addition, it is necessary to configure a WAN connection for DIR-816L.

*Access Point*



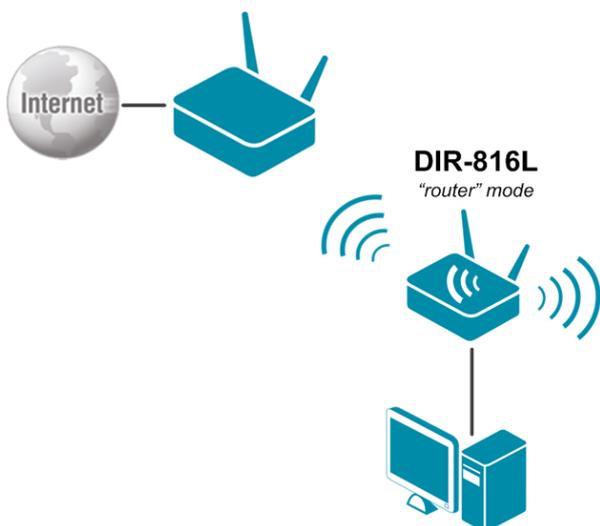
The DIR-816L device in the "access point" mode is connected to the wired router. Computers connect to DIR-816L via wireless or wired connection.

It is necessary to specify the same encryption parameters and the channel of the wireless network for DIR-816L and computers with Wi-Fi adapters.

*Client*

**WISP Repeater**

WISP Access Point

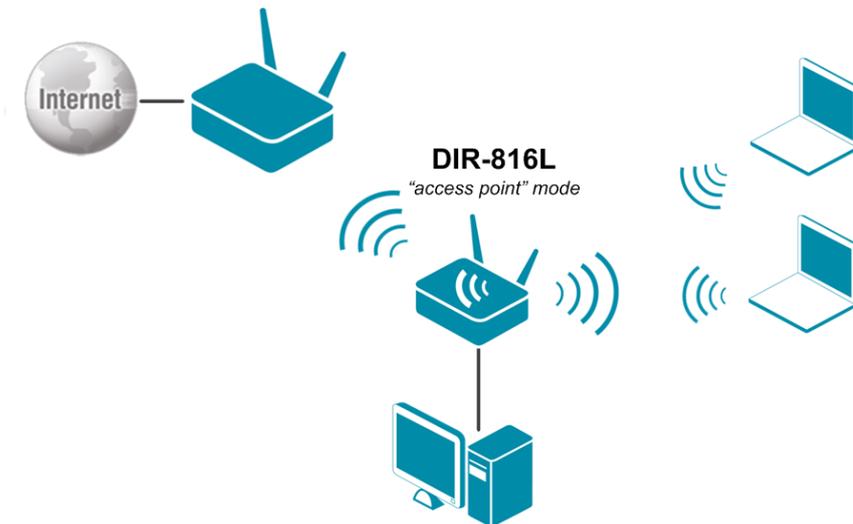


The DIR-816L device in the "router" mode is connected to a WISP access point via wireless connection. Computers connect to DIR-816L via wireless or wired connection.

It is necessary to configure the same channel of the wireless connection for DIR-816L and the WISP access point. Other parameters of the wireless network of DIR-816L do not depend upon the settings of the WISP access point. In addition, it is necessary to configure a WAN connection for DIR-816L.

#### Wireless Network Client

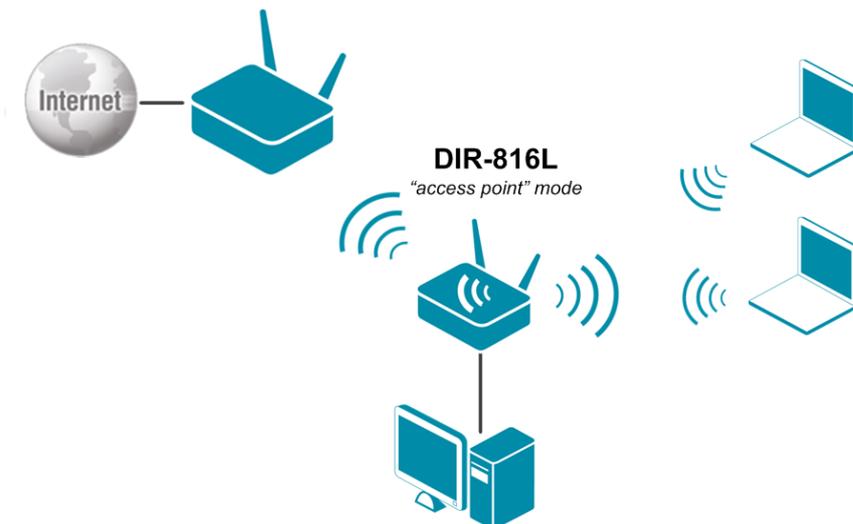
Wireless Access Point



The DIR-816L device in the "access point" mode is connected to an access point via wireless connection. Computers connect to DIR-816L via wireless or wired connection. It is necessary to configure the same channel of the wireless connection for DIR-816L and the remote access point. Other parameters of the wireless network of DIR-816L do not depend upon the settings of the remote access point.

#### Wireless Network Repeater

Wireless Access Point



The DIR-816L device in the "access point" mode is connected to an access point via wireless connection. Computers connect to DIR-816L via wireless or wired connection. It is necessary to configure the same parameters of the wireless connection (the name of the wireless network, encryption parameters, and the channel) for DIR-816L and the remote access point.