

User Manual

4G LTE M2M Modem

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
3.01	April 24, 2018	• Updated with US technical support information

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Package Contents



DWM-311 4G LTE M2M Modem



Mini-USB AC adaptor



RJ-45 cable



[2] Interchangeable blade antennas



[2] Magnetic antenna mounts



Quick Installation Guide

If any of the above items are missing, please contact your reseller.

System Requirements

- An active LTE service plan from a compatible carrier.*
- Computer with Windows or Linux-based operating system with an installed Ethernet adapter or compatible USB port.
- Java-enabled browser such as Internet Explorer 11, Chrome 20.0, or Firefox 7 or above (for configuration).

* Subject to services and service terms available from your carrier.

Introduction

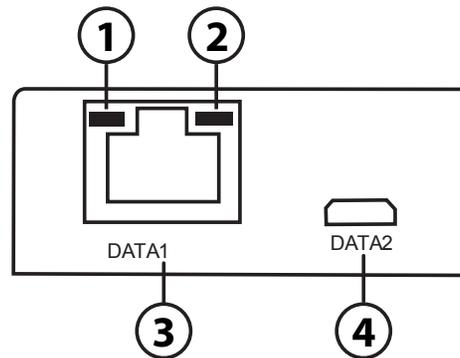
D-Link's DWM-311 4G LTE M2M Modem is a robust 4G LTE modem that provides blazing fast connection speeds for embedded Machine-to-Machine (M2M) applications. The single mode LTE modem provides an economical and reliable high-speed connection suitable for the most demanding Internet of Things (IoT) applications. This cost-effective device is pre-configured to provide a complete connectivity solution out of the box.

The industrial-grade casing means the DWM-311 provides reliable high-speed connectivity in extreme conditions. The corrosion-resistant zinc-plated steel case and wide operating temperature and humidity tolerance mean that the DWM-311 is ready for the most demanding M2M applications in virtually any environment. Wall mounts and flexible interfaces allow the DWM-311 to be mounted virtually anywhere for optimal connectivity.

The DWM-311's USB and Ethernet interfaces allow connectivity to be added to virtually any device. Ethernet means driverless, instant access for any Ethernet-enabled device, without the need for pre-configuration or special software. Standard USB protocols allow you to add high-speed Internet access to devices not traditionally equipped with network adapters. Ethernet makes the DWM-311 a true plug-and-play solution, suitable for mass deployment or small scale use. Should unique settings be required, the easy-to-use web interface can be configured through any web browser.

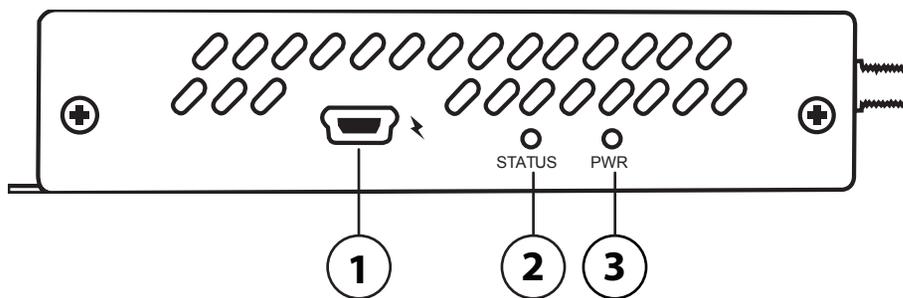
Hardware Overview

Front View



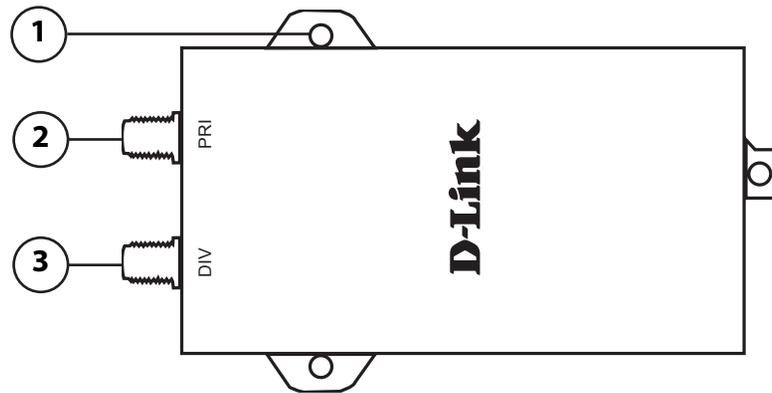
1	Ethernet Activity	Flashes yellow when there is Ethernet traffic.	
2	Link Status	Solid Green	Indicates active links
		Off	No active links
3	Ethernet Port	This is a standard 10/100 Mbps Ethernet port to connect any device via a Cat 5/5e/6 RJ-45 cables.	
4	Micro-USB 2.0 Port	This is a micro-USB 2.0 port for connecting any device via a standard micro-USB cable.	

Side View



1	Mini-USB Power	The DWM-311 accepts power through a mini-USB coonector.	
2	Status LED	Solid green	Indicates strong signal.
		Flashing	Indicates weak signal.
		Off	Indicates no signal.
3	Power LED	Solid green indicates the modem is receiving power.	

Top view



1	Wall Mounts	Wall mounts for standard 8 gauge (4 mm) screws.
2	SMA Connector PRI	SMA female connector - Primary antenna.
3	SMA Connector DIV	SMA female connector - Antenna Diversity.

Installation

This section will guide you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in an attic or garage.

Before You Begin

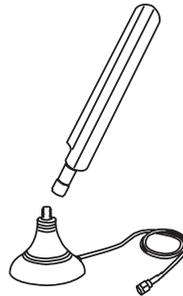
Observe the following precautions to help prevent shutdowns, equipment failures, and personal injury:

- Install the DWM-311 in a cool and dry place. Refer to the technical specifications in the user manual for the acceptable operating temperature and humidity ranges.
- Install the modem in a site free from strong electromagnetic sources, vibration, dust, excessive moisture, and direct sunlight.
- Place antennas in an unobstructed area with clear LTE signal. Avoid metal boxes, brick walls, and other dense materials. Use the web interface to confirm signal strength before permanent installation.
- Visually inspect the power connector and make sure that it is fully secure.
- Do not stack any devices on top of the modem.

Attach the External Antennas

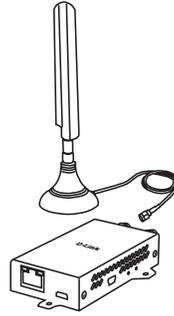
The DWM-311 requires two external antennas to function correctly. The included antennas are interchangeable, but third party antennas may require connection to specific ports.

1. Attach the antennas to the included magnetic mounts. Turn the hex nut clockwise to fasten the antenna.



2. Place antennas where they will receive optimal signal. Arrange them so they point upward.

3. Once the antennas are placed, attach both antenna cables to the DWM-311's external SMA connectors, labelled DIV and PRI. Turn the hexnut clockwise to secure the cables.



Note: The included antennas are interchangeable. Third party antennas may require connection to specific ports.

Powering the Modem

The modem can be powered either directly via mini-USB or via Power over Ethernet (PoE) using a PoE splitter.

Using included Mini-USB cable

Use the included mini-USB AC adaptor to power the modem. Attach the USB connector to the included AC adaptor. Attach the AC adaptor to a wall socket. Insert the mini-USB connector into the port on the modem labelled with the  symbol. The power LED will turn green to indicate the modem is receiving power.

Using Power over Ethernet (PoE)

The DWM-311 can be powered via Power over Ethernet (PoE) (sold separately) by connecting a 5.5 mm DC to mini-USB adaptor (sold separately) to a PoE splitter. This may be useful when long cable lengths required. Standard PoE has a range of up to 330 ft (100 m). The following steps outline setting up the modem with a PoE Splitter/Injector kit.

1. Verify your PoE splitter is set to output 5 volts.

Warning: Higher voltages may damage the DWM-311.

2. Attach the PoE splitter's DC-OUT to the DWM-311's mini-USB power input using the DC-to-Mini-USB adaptor (sold separately). The power input is labelled with the  symbol.

3. Attach the PoE splitter's LAN OUT to the DWM-311's DATA1 port on the DWM-311.
4. Finally, connect the PoE injector's LAN-IN port to an available Ethernet port on your end device and plug in the injector's power cord into a power outlet as shown in the diagram.

Note: the above case assumes you are using a D-Link DPE-301GI 1-Port Gigabit PoE Injector and D-Link DPS-301GS 1-Port Gigabit 30W PoE Splitter (sold separately). Other PoE configurations may vary.

Connecting Devices

After the DWM-311 has been successfully installed, the modem can be connected to the end device via either of the following connection methods:

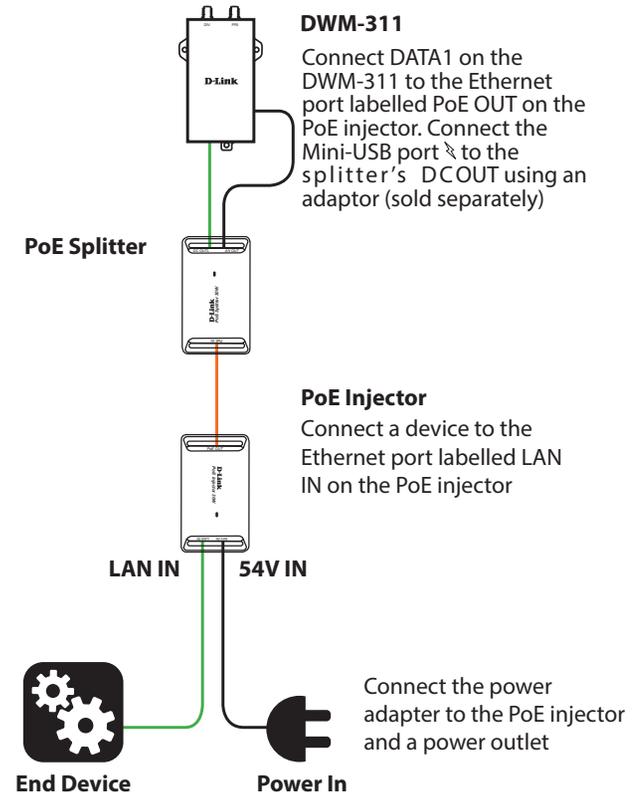
Over Ethernet

The Ethernet port can be connected to an end device. Use a standard Category 5/5e/6 RJ-45 Ethernet cable to connect the end device to the modem. The port will auto-negotiate to the highest possible port speed based on the connected device. Note that the DWM-311 supports a maximum transfer speed over Ethernet of 100 Mbps.

Over USB 2.0

To connect the modem over USB, connect a micro-USB cable (not included) to the port marked DATA2 on the back panel. Insert the other end of the cable into a free USB port of the device you wish to connect.

Note: The modem cannot accept power over micro-USB, only over mini-USB through the port labelled with the  symbol.



Powering the modem using a PoE Kit (sold separately)

Configuration

Getting Started

To access the configuration utility, open a web browser such as Internet Explorer and enter the address of the router (**192.168.17.1** by default for connections over Ethernet, and **192.168.15.1** for connections over micro-USB).

To login to the configuration utility, **admin** is the default username and the default password is printed on the label on the back of the modem. The **Reset** button causes the password field to be reset to blank.

Note: *If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.*

Once you have successfully logged in, you will see the **Home** page. On this page you can view information about your LTE connection and system information. The LTE **Signal Strength** indicator can be used to place your device. The IMEI and ICCID are unique identifiers for your device and may be required by your service provider.

At the bottom of the page, **Device Reset** allows you to reboot the device, while **Diagnostics** brings up diagnostic and advanced configuration options. The **Diagnostics** panel is intended for advanced users and debugging, and should not be necessary in the course of normal usage.

Authorization Required
Please enter your username and password.

Name

Password

Sign in

Reset

D-Link 4G LTE M2M Modem

4G LTE Modem Connection Manager

▼ Information

Device Name	/	DWM-311
FW Version	/	4.1.2.2-25168D
Modem Status	/	Disconnected
SIM Card Status	/	Ready
Signal Strength	/	(e) A Band: - RSRP: -
IMEI	/	
ICCID	/	
MTN	/	-

▼ Command

Auto Connected This device will try to rebuild the Internet connection automatically when connection is lost.

Device Reset This action will help to reboot the operating system of the device.

Diagnostics This button will allow you configure or view system detail information

Diagnostics

Status

The diagnostics screen has a read bar with different sections along the side. Subsections are listed as tabs across the top

Overview

System

Hostname: The Network Hostname as it will appear on a LAN. This setting is configurable in the admin panel and discussed on page 19.

Firmware

Version: Current firmware version. This is upgraded via Firmware Over the Air (FOTA) or manually using the **Upgrade** tab on the Admin Page. If the device malfunctions, you may need to provide this number to your support representative.

Kernel Version: Current Linux Kernel version of your DWM-311. This may be needed for debugging purposes.

Local Time: Lists current time according to the modem's internal clock. If this is incorrect, it can be configured in the **Admin** section. See page 19.

Uptime: The amount of time since the last reboot.

Note: This is not the amount of time connected to the Internet, only since last reboot.

The screenshot shows the D-Link Status page. At the top, there is a navigation bar with tabs for Status, Overview, System Log, Kernel Log, and Processes. The Overview tab is selected. Below the navigation bar, there is a sidebar with icons for Home, Status, Network, Admin, and a help icon. The main content area displays system and network information.

System	
Hostname	/ DWM-311
Firmware Version	/ 4.1.2.2-25168D
Kernel Version	/ 3.7.6
Local Time	/ Tue Oct 7 00:03:51 2003
Uptime	/ 0h 3m 53s

Memory	
Total Available	/ 20704 kB / 38052 kB (54%)
Free	/ 5468 kB / 38052 kB (14%)
Cached	/ 12496 kB / 38052 kB (32%)
Buffered	/ 2740 kB / 38052 kB (7%)

Network	
IPv4 WAN Status	/ ✘ Not connected

Memory

This section provides details about firmware memory usage. Memory management will not be necessary for normal usage and is beyond the scope of this manual.

Network

IPv4 WAN Status: When connected, this will list the external IP address from your LTE network provider. This may be necessary for certain advanced applications such as private networking, diagnostics, or VPNs.

System Log

This section provides a full log of system events, including information about WAN connectivity and LTE Module status. The logging features are intended for diagnostics and advanced users only, and are beyond the scope of this manual. Log entries are time stamped based on the modem's internal clock. The level of detail in the system log and the size of the log buffer can be adjusted in the **Admin** panel, and is discussed in "System: Log Settings" on page 20.



Status

- Overview
- System Log
- Kernel Log
- Processes

▼ **System**

- Hostname / DWM-311
- Firmware Version / 4.1.2.2-25168D
- Kernel Version / 3.7.6
- Local Time / Tue Oct 7 00:03:51 2003
- Uptime / 0h 3m 53s

▼ **Memory**

- Total Available / 20704 kB / 38052 kB (54%)
- Free / 5468 kB / 38052 kB (14%)
- Cached / 12496 kB / 38052 kB (32%)
- Buffered / 2740 kB / 38052 kB (7%)

▼ **Network**

- IPv4 WAN Status / **✗ Not connected**



Status

- Overview
- System Log
- Kernel Log
- Processes

```

Oct 6 17:28:50 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:28:50 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:28:51 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:28:51 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:28:52 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:28:52 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
Oct 6 17:28:53 DWM-311 daemon.info dnsmasq-dhcp[938]: DHCPACK(emmo0) 192.168.17.209 70:f3:95:0e:5c:41
Oct 6 17:28:53 DWM-311 daemon.info dnsmasq-dhcp[938]: DHCPACK(emmo0) 192.168.17.209 70:f3:95:0e:5c:41 08307PCWINTX
Oct 6 17:28:53 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:28:53 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:28:54 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:28:54 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:28:55 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:28:55 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
Oct 6 17:28:56 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:28:56 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:28:57 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:28:57 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:28:58 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:28:58 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
Oct 6 17:28:59 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:28:59 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:29:00 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:29:00 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:29:01 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:29:01 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
Oct 6 17:29:02 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:29:02 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:29:03 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:29:03 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:29:04 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:29:04 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
Oct 6 17:29:05 DWM-311 daemon.notice netifd: wan2 (715): udhcpo: sendto: Network is down
Oct 6 17:29:05 DWM-311 daemon.notice netifd: wan2 (715): Read error: Network is down, reopening socket
Oct 6 17:29:06 DWM-311 daemon.notice netifd: wan4 (824): udhcpo: sendto: Network is down
Oct 6 17:29:06 DWM-311 daemon.notice netifd: wan4 (824): Read error: Network is down, reopening socket
Oct 6 17:29:07 DWM-311 daemon.notice netifd: wan1 (823): udhcpo: sendto: Network is down
Oct 6 17:29:07 DWM-311 daemon.notice netifd: wan1 (823): Read error: Network is down, reopening socket
    
```

Kernel Log

The Kernel log provides a full log of kernel level events. Kernel events are time stamped based on number of seconds from boot. The logging features are intended for diagnostics and advanced users only, and are beyond the scope of this manual.



Status | Overview | System Log | **Kernel Log** | Processes

```

0.000000 Linux version 3.7.6 (sequane@x1100-ProLiant-814600-07) (gcc version 4.6.4 (OpenWrt/Linaro GCC 4.6-2012.12) ut
0.000000 FFF used
0.000000 Block : 0
0.000000 B index : 8
0.000000 A index : 8
0.000000 Attempt : 0
0.000000 bootconsole [early0] enabled
0.000000 CPU revision is: 0021855 (MIPS 24Kc)
0.000000 SQUASHIC rev 0, CPU:968.640 MHz, ARB:122.880 MHz
0.000000 Determined physical RAM map:
0.000000 Memory: 02a00000 @ 00000000 (usable)
0.000000 initrd not found or empty - disabling initrd
0.000000 Zone ranges:
0.000000 Normal [mem 0x00000000-0x028fffff]
0.000000 Movable zone start for each node
0.000000 Early memory node ranges
0.000000 node 0: [mem 0x00000000-0x029fffff]
0.000000 On node 0 totalpages: 10792
0.000000 free_area_init_node: node 0, paddr 0x417100, node_mem_map 81000000
0.000000 Normal zone: 14 pages used for memmap
0.000000 Normal zone: 0 pages reserved
0.000000 Normal zone: 10669 pages, L1RU barch:1
0.000000 Primary instruction cache 64kB, VFP, 4-way, linesize 32 bytes.
0.000000 Primary data cache 32kB, 4-way, PIPT, no aliases, linesize 32 bytes
0.000000 pcpu-alloc: #0:0 432768 us2768 alloc=1*32768
0.000000 pcpu-alloc: [0] 0
0.000000 Built 1 zonelists in Zone order, mobility grouping on. Total pages: 10668
0.000000 Kernel command line: rootfstype=squashfs root=sdio,max_freq=6000000 debug
0.000000 PID hash table entries: 256 (order: -2, 1024 bytes)
0.000000 Dentry cache hash table entries: 8192 (order: 3, 32768 bytes)
0.000000 Inode-cache hash table entries: 4096 (order: 2, 16384 bytes)
0.000000 sw table already sorted, skipping sort
0.000000 Writing ErrCtl register=0007b593
0.000000 Readback ErrCtl register=0007b593
0.000000 Memory: 37800k/43008k available (3237k kernel code, 5208k reserved, 660k data, 252k init, 0k highmem)
0.000000 SLUB: Genslab=>9, Hwalign=3d, Order=0-3, MinObjects=0, CPU=1, Nodes=1
0.000000 NR_IRQS:142
0.000000 Calibrating delay loop... 244.53 BogomIPS (lpj=1222656)
    
```

Processes

The Processes screen lists all running processes on the modem's internal operating system. This may be useful when testing experimental software or troubleshooting. This feature is intended for diagnostics and advanced users only, and is beyond the scope of this manual.



Status | Overview | System Log | Kernel Log | **Processes**

PID	Owner	Command	CPU usage (%)	Memory usage (%)
1	root	[init]	0%	2%
2	root	[kthreadd]	0%	0%
3	root	[ksmirqd/0]	0%	0%
4	root	[kworker/0:0]	0%	0%
5	root	[kworker/0:0H]	0%	0%
6	root	[kworker/u:0]	0%	0%
7	root	[kworker/u:0H]	0%	0%
8	root	[khelper]	0%	0%
9	root	[kdevtmpfs]	0%	0%
10	root	[kworker/u:1]	0%	0%
85	root	[bdm-default]	0%	0%
87	root	[kblockd]	0%	0%
95	root	[khubd]	0%	0%
119	root	[kswapd0]	0%	0%
163	root	[fshotify_mark]	0%	0%
180	root	[serial8250.0]	0%	0%
192	root	[son-spi-0]	0%	0%
199	root	[mtdblock0]	0%	0%
302	root	[irq/20-spi-umt_1]	0%	0%
334	root	[irq/111-usb]	0%	0%
339	root	[mtdblock1]	0%	0%
344	root	[mtdblock2]	0%	0%
349	root	[mtdblock3]	0%	0%
354	root	[mtdblock4]	0%	0%
359	root	[mtdblock5]	0%	0%
364	root	[mtdblock6]	0%	0%
369	root	[mtdblock7]	0%	0%
375	root	[deferwal]	0%	0%
376	root	[kworker/0:1]	0%	0%
405	root	[jffs2_gcd_mtd7]	0%	0%
407	root	[flush-mtd-ummap]	0%	0%
422	root	/sbin/getty 0 /dev/ttyS0	0%	2%
552	root	/sbin/syslogd -C16	0%	2%
554	root	/sbin/klogd	0%	2%

Network Overview

System Information

Manufacturer Lists the modem's manufacturer.

Board name: Lists the type of LTE module used in the DWM-311.

Serial number: Lists the device's serial number. This may be required for warranty claims.

IMEI International Mobile Equipment Identifiers, a unique number that identifies your modem to your operator. This is confidential information and should not be shared except with your operator.

Duplexing Scheme The type of LTE duplexing scheme supported by the LTE chipset. Currently, only Frequency Division Duplex (FDD) is supported.

Supported bands. Lists bands supported by the LTE module. Currently bands 2, 4, and 13 are supported.

Radio Information

RSRP: Reference Signal Received Power, a measure of signal strength.

CINR: Carrier to Interference Noise Ratio, a measure of signal clarity.

Band: Currently used LTE frequency band. This is managed by your ISP.

Bandwidth: Width of current channel (in Mhz). Wider channels have higher theoretical maximum speeds.



Network | Overview | Port Forwards

System Information

Hardware	
Manufacturer	D-Link
Board Name	DWM-311
Serial Number	
IMEI	
Duplexing Scheme	FDD
Supported Bands	Band 2, Band 4, Band 13

Radio Information

Signal Level	
RSRP	-
CINR	0 dB
Band	
Band	-
Bandwidth	-
Frequency (Earfcn)	
Downlink	-
Uplink	-

Connection

Media State	DISCONNECTED
SIM card state	Error
Signal Quality	0 %
Network Description	-
Physical Address	8C:57:9B:90:36:D1

Activity

	Bytes	Packets
Sent	876	3
Received	0	0

Overview (continued)

Radio Information Continued

Frequency (EARFCN): EUTRA Absolute radio-frequency channel number, a measure of the center of an LTE carrier signal. Used for network diagnostics.

Downlink: The downlink frequency used to calculate EARFCN.

Uplink: The uplink frequency used to calculate EARFCN.

Connection

The connection information in this section refers only to cellular status, not to Ethernet or USB networking.

Media State: Connected or Disconnected to cellular network.

SIM card state: Displays the status of the integrated SIM card.

Signal Quality: Displays the LTE signal quality as a simple percentage.

Network

Description: Description of the connected network.

Physical

Address: The MAC Address of the modem for IP routing purposes.

Activity

Sent: Displays the number of bytes and packets sent over LTE.

Received: Displays the number of bytes and packets received over LTE.



Network | Overview | Port Forwards

System Information

Hardware	
Manufacturer	D-Link
Board Name	DWM-311
Serial Number	
IMEI	
Duplexing Scheme	FDD
Supported Bands	Band 2, Band 4, Band 13

Radio Information

Signal Level	
RSRP	-
CINR	0 dB
Band	
Band	-
Bandwidth	-
Frequency (Earfcn)	
Downlink	-
Uplink	-

Connection

Media State	DISCONNECTED
SIM card state	Error
Signal Quality	0 %
Network Description	-
Physical Address	8C:57:9B:90:36:D1

Activity

	Bytes	Packets
Sent	876	3
Received	0	0

Port Forwards

This section is only available in **Router Mode**. To enable **Router Mode**, see “Router Mode” on page 23.

By default, Network Address Translation (NAT) blocks all remote requests. For cases where remote requests are needed, such as for remote access or servers, port forwarding allows specific ports and protocols to travel from the Internet to specifically designated hosts on the private network. The device accepts remote requests for these services at your global IP address. It uses the specified TCP or UDP protocol and port number, and redirects these requests to the server on your LAN with the LAN IP address you specify.

On each screen, click **Apply** to save changes or **Reset** to revert changes.

Port Forwards:

If port forwards have been set up, they will be listed here.

Name: Indicates the user-specified name of the port forward.

Match: Indicates the criteria that must be met for traffic to be forwarded to the specified IP address on the local network.

Forward to: Indicates the IP address, port, and interface to which the matched traffic will be forwarded.

Enable: Check this box to enable this port forward. Uncheck this box to disable it.

Sort: When multiple port forwards with overlapping criteria are enabled, the user can specify the order which the rules are applied.

Edit: Clicking this button will allow detailed modifications of the port forward. For details, see “Edit a Port Forward” on page 17.

Delete: Clicking this button will delete the associated port forward.

The screenshot shows the D-Link router's web interface for configuring port forwards. On the left is a navigation sidebar with icons for Home, Status, Network, and Admin. The main content area is titled 'Network' and 'Port Forwards'. Below this is a 'Firewall - Port Forwards' section with a brief description: 'Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.' A table lists existing port forwards:

Name	Match	Forward to	Enable	Sort
Test Port Forward	IPv4-TCP, UDP From any host in wan Via any router IP at port 8998	IP 192.168.15.153, port 8998 in lan	<input checked="" type="checkbox"/>	< > Edit Delete

Below the table is a 'New port forward:' form with the following fields:

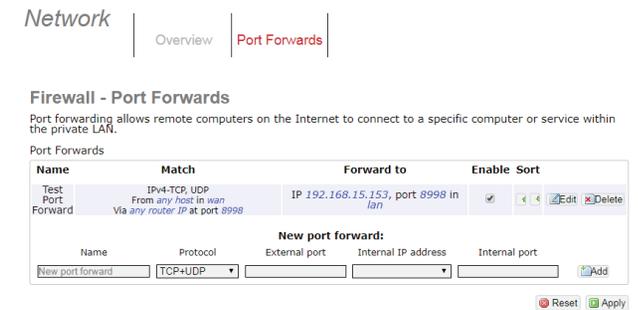
- Name:
- Protocol:
- External port:
- Internal IP address:
- Internal port:

Buttons for 'Add', 'Reset', and 'Apply' are located at the bottom right of the form.

Port Forwards (Cont)

New port forward:

- Name:** Select a name for the new port forward. This does not affect functionality.
- Protocol:** Select which protocol the port forwarding rule will be applied to. Select **TCP+UDP**, **TCP**, or **UDP**. If you need a protocol which isn't listed, select any protocol here and then edit the corresponding rule as detailed in "Edit a Port Forward" on page 17.
- External port:** Select the external port used by the incoming service. The external port will be exposed directly to the internet.
- Internal IP address:** Specify the IP of the LAN-connected host to which traffic will be forwarded using this rule.
- Internal port:** Specify the internal port to forward to. This is the port to which the LAN-connected client should be listening.
- Add:** Once the information has been entered, click **Add** to add the port forward to the list.
- Click **Apply** to save changes or **Reset** to revert changes.



Port Forwards (Cont)

Edit a Port Forward

Rule is enabled: If the port forward rule is enabled, click **Disable** to disable it. If the rule is disabled, click **Enable** to enable it. Note that only one button appears at a time.

Name: Displays the current name assigned to the port forward and allows the name to be changed.

Protocol: Select the protocols affected by the port forward rule. Choose **TCP+UDP**, **TCP**, **UDP**, **ICMP**, or select **-- custom --** to enter a protocol manually. This setting is required.

Source MAC address: Allows the user to apply the rule based on the source MAC address. Users can enter MAC addresses manually by selecting **-- custom --**. Users can add multiple MAC address by clicking the  button. Leaving this blank applies the rule to incoming packets from all MAC addresses. This setting is optional.

Source IP address: Allows the user to apply the rule based on the source IP address or source IP address range to apply the rule to. This setting is optional. Leave blank to allow any IP.

Source port: Allows the user to apply the rule based on the port used by the source of the packet. Note that this is not the same as the external port. Leave this blank to forward packets from any source port.

External IP address: Allows the user to apply the rule based on the external IP address or "target IP address" of the packet. Leave this set to **any** to apply the rule regardless of external IP address. The default setting is **any**.

External Port: Select the external port used by the incoming service. The external port will be exposed directly to the internet. This setting is required.



Network | Overview | Port Forwards

Firewall - Port Forwards - Test Port Forward

This page allows you to change advanced properties of the port forwarding entry. In most cases there is no need to modify those settings.

Rule is enabled	<input checked="" type="radio"/> Disable
Name	Test Port Forward
Protocol	TCP+UDP
Source MAC address	<input type="text"/>
	<small>Only match incoming traffic from these MACs.</small>
Source IP address	any
	<small>Only match incoming traffic from this IP or range.</small>
Source port	any
	<small>Only match incoming traffic originating from the given source port or port range on the client host</small>
External IP address	any
	<small>Only match incoming traffic directed at the given IP address.</small>
External port	8080
	<small>Match incoming traffic directed at the given destination port or port range on this host</small>
Internal IP address	192.168.15.153 (08307PCWINTE)
	<small>Redirect matched incoming traffic to the specified internal host</small>
Internal port	8080
	<small>Redirect matched incoming traffic to the given port on the internal host</small>
Extra arguments	<input type="text"/>
	<small>Passes additional arguments to iptables. Use with care!</small>

[Back to Overview](#)

[Reset](#) [Apply](#)

Port Forwards (Cont)

Edit a Port Forward (cont)

Internal IP address: Specify the IP of the LAN-connected host to which traffic will be forwarded using this rule. This setting is required.

Internal Port: Specify the internal port to forward to. This is the port to which the LAN-connected client should be listening. This setting is required.

Extra arguments: Specify “extra arguments” according to the OpenWRT *iptables* command. This setting is optional and is recommended for advanced users only.

Click **Apply** to save changes or **Reset** to revert changes. Click **Back to Overview** to return to the previous screen.



Network | Overview | **Port Forwards**

Firewall - Port Forwards - Test Port Forward

This page allows you to change advanced properties of the port forwarding entry. In most cases there is no need to modify those settings.

Rule is enabled	<input type="checkbox"/> Disable
Name	Test Port Forward
Protocol	TCP+UDP
Source MAC address	any <small>Only match incoming traffic from these MACs.</small>
Source IP address	any <small>Only match incoming traffic from this IP or range.</small>
Source port	any <small>Only match incoming traffic originating from the given source port or port range on the client host</small>
External IP address	any <small>Only match incoming traffic directed at the given IP address.</small>
External port	8998 <small>Match incoming traffic directed at the given destination port or port range on this host</small>
Internal IP address	192.168.15.153 (08307PCWIN7E) <small>Redirect matched incoming traffic to the specified internal host</small>
Internal port	8998 <small>Redirect matched incoming traffic to the given port on the internal host</small>
Extra arguments	 <small>Passes additional arguments to iptables. Use with care!</small>

[Back to Overview](#)

[Reset](#) [Apply](#)

Admin Config

The Admin panel allows the user to change time settings, the administrator password, log settings, auto-reboot settings, and manually upgrade the firmware. On each screen, click **Apply** to save changes or **Reset** to revert changes.

System: General Settings

Hostname The host name of the modem over LAN connections.

Local Time: Displays time according to the modem's internal clock. Click **Sync with Browser** to automatically set the modem's clock based on the client's current time. **Note:** this function only sets UTC time. For the time to be correct, the user must specify the correct time zone.

Timezone: Set the current time zone. This must be correctly set for **Sync with Browser** and automatic Daylight Savings Time settings to function.

Use LTE Network Time: Check this box to automatically synchronize time settings with the LTE network operator.

Enable NTP Client: Enabling NTP Client allows the modem to sync its clock with a time server.

NTP servers: If **Enable NTP Client** is selected, input NTP server addresses here. By default, OpenWRT's servers are used.

Date and Time: Configure date and time manually. DST is adjusted based on time zone.

Click **Apply** to save changes or **Reset** to revert changes.



Admin | **Config** | Upgrade

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

General Settings	Log Settings	Schedule Reboot	Manual APN	Router Mode
Hostname	<input type="text" value="DWM-311"/>			
Local Time	Tue Oct 7 00:59:27 2003			<input type="checkbox"/> Sync with browser
Timezone	UTC			
Use LTE Network Time	<input type="checkbox"/>			
Enable NTP client	<input checked="" type="checkbox"/>			
NTP server 1	<input type="text" value="0.openwrt.pool.ntp.org"/>			
NTP server 2	<input type="text" value="1.openwrt.pool.ntp.org"/>			
Date And Time	Year <input type="text" value="2003"/>	Month <input type="text" value="10"/>	Date <input type="text" value="7"/>	Hour <input type="text" value="0"/> Minute <input type="text" value="32"/> Second <input type="text" value="43"/> <input type="checkbox"/> Set Time

Router Password

Changes the administrator password for accessing the device

Password	<input type="password"/>
Confirmation	<input type="password"/>

Admin Config (Continued)

System: Log Settings

Note: Logging features intended for diagnostics and advanced users, and should not be necessary for normal operation.

System Log Buffer Size (KB): Set the system log buffer size in kilobytes.

Log output level: Set level of detail in system logs.

Cron Log Level: Set level of detail in Cron logs.

Click **Apply** to save changes or **Reset** to revert changes.

System: Scheduled Reboot

Auto reboot time (Days): Select a time in days for the modem to automatically reboot. This may be useful for experimental software or unusual connectivity circumstances.

Click **Apply** to save changes or **Reset** to revert changes.



Admin | **Config** | Upgrade

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

General Settings	Log Settings	Schedule Reboot	Manual APN	Router Mode
System log buffer size(KB)	<input type="text" value="16"/>			
Log output level	<input type="text" value="Debug"/>			
Cron Log Level	<input type="text" value="Normal"/>			

Router Password

Changes the administrator password for accessing the device

Password	<input type="text"/>
Confirmation	<input type="text"/>

Admin | **Config** | Upgrade

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

General Settings	Log Settings	Schedule Reboot	Manual APN	Router Mode
Auto reboot time(Days)	<input type="text" value="disable"/>			

Router Password

Changes the administrator password for accessing the device

Password	<input type="text"/>
Confirmation	<input type="text"/>

Admin Config (Cont)

Router Password

To change the modem password, enter a new password and re-enter to confirm. It is strongly recommended that the default password be changed to protect your router.

If the password has been lost or forgotten, the modem must be reset. See “Resetting the Modem” on page 27.



Admin | **Config** | Upgrade

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

General Settings	Log Settings	Schedule Reboot	Manual APN	Router Mode
Hostname	DWM-311			
Local Time	Tue Oct 7 00:59:27 2003		<input type="checkbox"/> Sync with browser	
Timezone	UTC			
Use LTE Network Time	<input type="checkbox"/>			
Enable NTP client	<input checked="" type="checkbox"/>			
NTP server 1	0.openwrt.pool.ntp.org			
NTP server 2	1.openwrt.pool.ntp.org			
Date And Time	Year	Month	Date	Set Time
	2003	10	7	<input type="checkbox"/>
	Hour	Minute	Second	
	0	32	43	<input type="checkbox"/>

Router Password

Changes the administrator password for accessing the device

Password	<input type="password"/>
Confirmation	<input type="password"/>

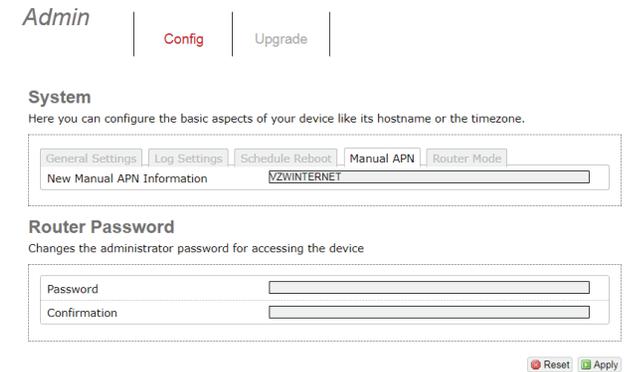
Admin Config (Cont)

Manual APN

Your DWM-311 comes pre-programmed with your ISP's default APN (Access Point Name). However, some features or alternative carriers may require manual configuration of this setting. This information should be provided by your ISP.

New Manual APN Information: If your ISP or data plan requires a custom APN setting, enter the APN here.

Click **Apply** to save changes or **Reset** to revert changes.



Admin Config (Cont)

Router Mode

By default, the DWM-311 operates in bridge mode. Any attached devices are assigned an IP address directly by the ISP. However, for compatibility purposes, some devices may require an IP address assigned from a local DHCP server. Enabling router mode ensures that all IPs on the subnet will be assigned by the DWM-311's internal DHCP server, and all traffic relayed to the ISP via NAT (Network Address Translation).

Note: NAT is considered a type of firewall, and may interfere with incoming direct connections over the Internet.*

Turn on router mode Check this box to enable the DWM-311's internal DHCP server and NAT. This setting is disabled by default. Enable this setting only if your clients do not support bridge mode.

Click **Apply** to save changes or **Reset** to revert changes.



Admin | **Config** | Upgrade

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

General Settings | Log Settings | Schedule Reboot | Manual APN | Router Mode

Turn on router mode

Router Password

Changes the administrator password for accessing the device

Password

Confirmation

*This device is not designed to replace a conventional router, and is not intended for use as a network security device. Filtering and advanced firewall features are not supported.

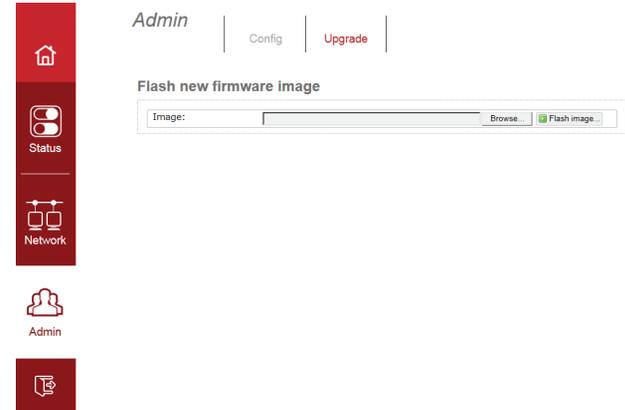
Admin Upgrade

Flash new firmware image

This menu allows the manual installation of new firmware. This device should automatically receive Firmware Over-The-Air (FOTA) upgrades from your LTE operator, and this feature is provided only for diagnostics and advanced users.

Browse: Click to select a firmware file on the local client.

Flash Image: Once a firmware file has been selected, click **Flash image** to begin the process. Ensure that you have a stable power source and wait until the firmware update is complete.



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWM-311. Read the following descriptions if you are having problems.

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link modem (**192.168.17.1** for Ethernet, **192.168.15.1** for USB), you are not connecting to a website, nor do you have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
 - Microsoft Internet Explorer® 11 or higher
 - Mozilla Firefox 52 or higher
 - Google™ Chrome 8 or higher
- If connecting over Ethernet, verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable, or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any Internet security software running on the computer. Software firewalls such as ZoneAlarm, BlackICE, Sygate, Norton Personal Firewall, and Windows® firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:
 - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.
 - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
 - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
 - Close your web browser (if open) and re-open it.
- Open your web browser and enter the IP address of your D-Link modem in the address bar. This should open the login page for your web interface.
- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug it back in. Wait about 30 seconds and try accessing the utility. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your modem. This process will revert all your settings back to the factory defaults.

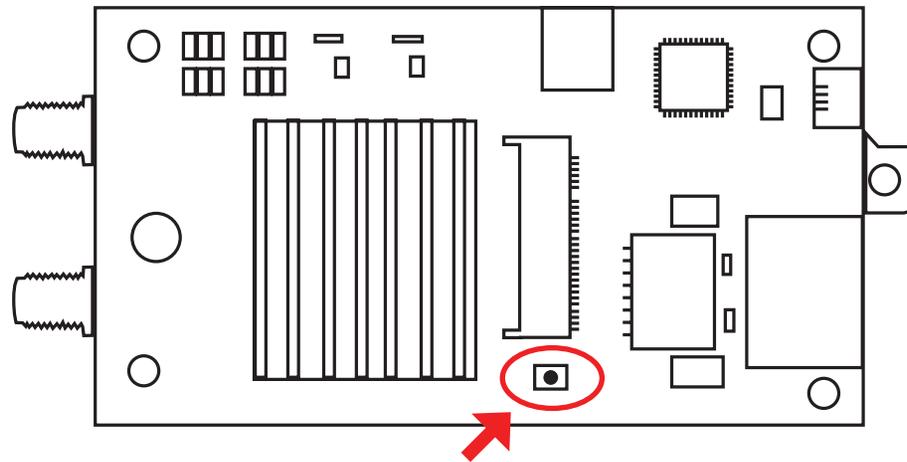
To reset the modem, follow the instructions on the next page.

Resetting the Modem

To protect devices that may be placed in public places, the reset button is not accessible from outside of the case.

1. To access the reset button, use a standard #0 phillips head screw driver (2.0 mm) to remove the four screws, one at each at each corner of the case. Remove the cover.
2. With the USB power connected, press and hold the reset button, labelled SW100, and hold for five seconds. The location of the button is indicated in the diagram.
3. Once the reset procedure is complete, replace the case and screws securely.

Note: Be careful not to touch exposed circuitry, as it may damage the modem.



Location of Reset Button

Networking Basics

Check your IP address

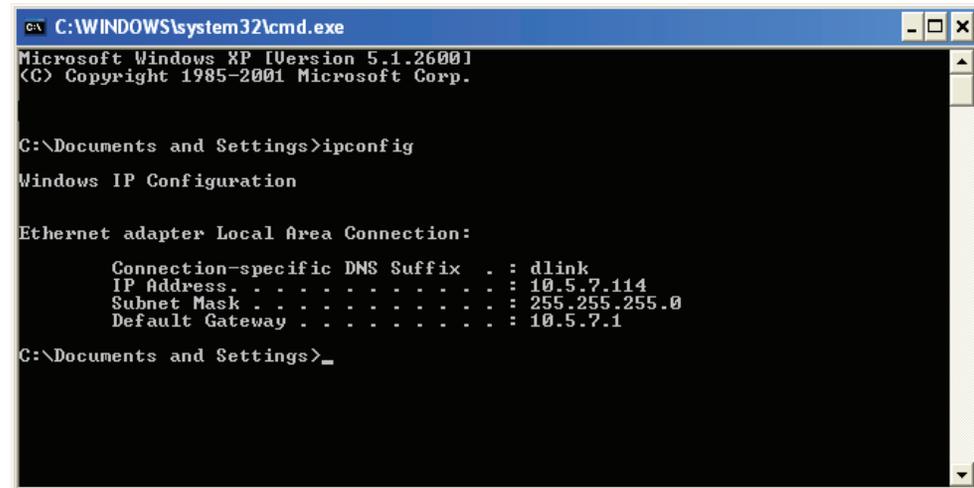
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows® 10/8/7/Vista® users type *cmd* in the **Start Search** box.)

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and Settings>_
```

Technical Specifications

LTE Band Support¹

- Release 9, Category 4: Bands 2/4/13

Data Rates²

- LTE Uplink: Up to 50 Mbps
- LTE Downlink: Up to 150 Mbps

Standards

- IEEE 802.3i
- IEEE 802.3u

Antenna

- Two detachable 4G LTE antennas

Ports

- 1 x 10/100 Fast Ethernet WAN port
- 1 x Micro-USB 2.0 port
- 1 x Mini-USB port (power)
- 2 x SMA (antenna connectors)

LED Status Indicators

- Status
- Power
- Ethernet connection
- Ethernet activity

Power

- Input: DC 5 V / 1 A via Mini-USB port

Dimensions

- 4.22 x 1.89 x 0.77 in (107 x 48 x 19 mm)

Weight

- 5.12 oz (145 g)

Temperature

- Operating: -4 to 140 °F (-20 to 60 °C)
- Storage : -40 to 185 °F (-40 to 85 °C)

Humidity

- Operating: 5% to 85% non-condensing
- Storage: 0% to 95% non-condensing

Certifications

- FCC
- Verizon Wireless Private Network
- Verizon Wireless Open development

¹ This model for use with Verizon Wireless in the US only.

² Data rates are theoretical. Data transfer rate depends on network capacity and signal strength.

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Please direct all inquiries to:
Email: GPLCODE@DLink.com
Snail Mail:
Attn: GPLSOURCE REQUEST
D-Link Systems, Inc.
17595 Mt. Herrmann Street
Fountain Valley, CA 92708

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1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work’s System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
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6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

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- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6 b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

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Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Non-modification Statement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contacting Technical Support

U.S. customers can contact D-Link technical support through our website or by phone. Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DWM-311)
- Hardware Revision (located on the label on the device (e.g. rev A1))
- Serial Number (s/n number located on the label on the device).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within the United States:

Phone Support:

(877) 354-6555

Monday-Friday 7am-4pm (Pacific)

Internet Support:

<http://support.dlink.com>