

802.11g Wireless DSL/Cable Gateway Router

F5D7230-4

FCC WARNING**FCC Certification**

The United States Federal Communication Commission (FCC) and the Canadian Department of Communications have established certain rules governing the use of electronic equipment.

(15.21)

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

15.19 (a)(3)

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.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**CAUTION:**

1. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
2. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

If you have any trouble with use this equipment, please contact customer care service:

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Table of Contents

1. Introduction.....	3
2. Product Overview.....	3
2.1 Features.....	3
2.2 System Requirements.....	3
3. Product Hardware.....	4
3.1 Physical Specifications.....	4
3.2 Chipset Platform.....	4
3.3 Ports.....	4
3.4 Antenna.....	4
3.5 LED Indicators.....	4
3.6 Supported Clients.....	4
3.7 Operating Range.....	5
3.8 Power Consumption.....	5
3.9 Environment Conditions.....	5
4. Product Software.....	5
4.1 Wireless Specifications.....	5
4.1.1 Modulation.....	5
4.1.2 Data Rates.....	5
4.1.3 Wireless Channels.....	6
4.1.4 Wireless Security.....	6
4.2 Client Utility.....	6
4.2.1 Features.....	6
4.3 WAN connections.....	6
4.4 Firewall.....	7
4.5 Configuration.....	7
4.6 Compatibility.....	7
4.7 Firmware.....	7
4.8 Port Forwarding.....	8
5. Bill of Materials.....	8
6. Regulatory Certifications.....	8
7. Intended Markets.....	8

1. Introduction

This document covers the functional description, specification and deliverables of this project.

2. Product Overview

The Belkin **F5D7230-4 Wireless 11G Router** is a WLAN Router with 4 LAN ports. The Router conforms to the IEEE 802.11b/g wireless standards. The router operates on 2.4GHz frequencies and can access 802.11b and 802.11g WLAN networks. The Router is to be used with either a Broadband ADSL or Cable Modem via the WAN port to share broadband connections with up to 4 computers via the LAN ports and 32 computers via the WLAN. Each LAN port supports 10/100 Base-T Networks with auto sensing and switching compatibilities. The Router's EZ install software operates on Microsoft's Windows 98SE, Me, 2000 and XP. The Router can be configured through a web-browser interface. The product is designed for the home and small office and will be available through major retailers and online retailers.

2.1 Features

- Enables sharing of broadband Internet connection
- Connects four computers through the LAN ports
- Connects 32 computers wirelessly
- Operates on 2.4 frequency band
- Conforms to IEEE 802.11b and 802.11g standards
- Security supports WPA and WEP Encryption
- Windows OS supports Windows 98SE, ME, 2000 and XP
- WAN supports include:
 - Dynamic
 - Static
 - PPPoE
 - PPTP
- LED indicators include:
 - Power,
 - WAN,
 - 4x LAN,
 - WLAN
 - Internet connections.

2.2 System Requirements

- Broadband Internet connection with RJ45
- At least one computer with an installed network interface card
- TCP/IP networking protocol installed on each computer

- EZ Install software (not required to use Router):

- Windows 98SE, ME, 2000 or XP
- Router configuration through Web-Browser:
 - Internet browser
 - TCP/IP networking protocol

3. Product Hardware

3.1 Physical Specifications

Dimensions: TBC

Weight: TBD

3.2 Chipset Platform

Atheros 2315

3.3 Ports

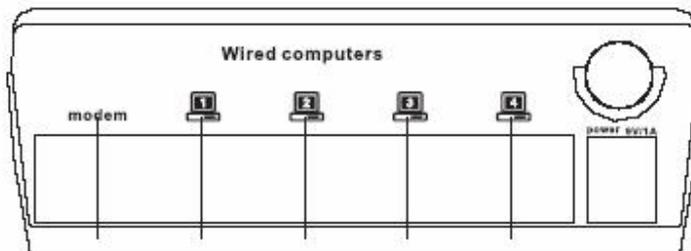
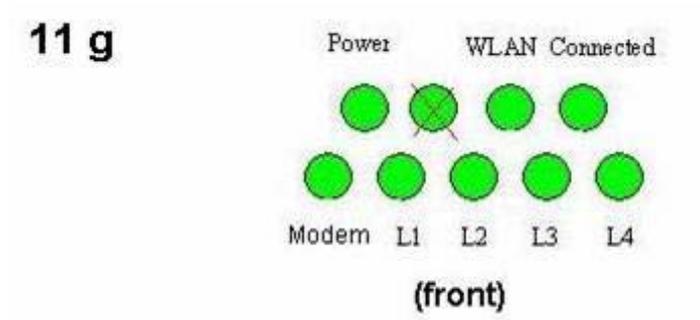
- 1x RJ45 WAN port
- 4x RJ45 LAN port

3.4 Antenna

**1 external dipole “90° angle ” antenna with 0 ~ 2 dBi antenna gain
(including cable loss)**

**1 dipole on-board antenna with 0 ~ 2 dBi antenna gain
(Dimension 4.8cm x 1.1cm)**

3.5 LED Indicators & Real Panel definition



- Power Solid Green – power on
Off – power off
- Wireless **Blinking** Green – wireless enabled
Off – wireless disabled
- Internet **Blinking** Green – connected to the Internet
Off – not connected to the Internet
- Modem **Blinking** Green – connected to the modem
Off – not connected to the modem
- 1-4 Solid Green – computer 1, 2, 3 or 4 linked to network
Off – computer 1, 2, 3 or 4 not connected to network
Blinking Green - data is transferring on computer 1, 2, 3 or 4

3.6 Supported Clients

The following clients must be tested and verified

- Windows 98/98SE/Me/NT SP 6.0 and higher/2000/XP
- Mac OS 7 to 10
- Linux
- Unix

The following clients are expected to be compatible

- Any TCP/IP enabled client

3.7 Operating Range

- Indoor: 200ft
- Outdoor: 1500ft

3.8 Power Consumption

Input: 120VAC, 60Hz, 9W

Output: 9VDC, 1A

3.9 Environment Conditions

Temperature Range: Operating - 0 ~ 40
Storing - 20 ~ 70

Humidity: Operating – 10 ~ 85% non-condensing
 Storing – 5 ~ 90% non-condensing

4. Product Software

4.1 Wireless Specifications

4.1.1 Modulation

802.11b: CCK (11 Mbps, 5.5 Mbps)
 DQPSK (2 Mbps)
 DBPSK (1 Mbps)

802.11g: OFDM

4.1.2 Data Rates

802.11b: 11, 5.5, 2, 1 Mbps
 < 1Mbps XR (Auto fallback for extended range)

802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
 Auto fallback for extended range

4.1.3 Wireless Channels

802.11b/g North America 1-11
 Europe 1-13
 Australia 1-11
 Most of Asia 1-13

4.1.4 Wireless Security

802.11b/g WPA – AES, TKIP
 WEP – 64-, 128-bit

4.2 Utility Specifications

4.2.1 Features

- HTML configurable from client browsers
- Login Screen
- DHCP Server
- DHCP disable
- Adjustable IP range
- Adjustable subnet mask
- Viewable DHCP Log
- Computer Name
- IP address
- MAC address
- Time set
 - Auto from SNTP server
 - Time viewable on page
- Supports WAN Administration (remote management)
- Easy Port Configuration for common applications (250+ settings) (11K)
 - Video Conferencing
 - Games
 - Netmeeting
 - Manually configurable
- UPnP Enabled/Disabled
- NAT (rfc1631)
- Network Address Port Translation (NAPT)

4.3 WAN Connections

- Static
- Dynamic
- DHCP Client
 - Host Name
 - PPPoE (selectable Idle Timeout and connect on demand)
- Mac address (including ability to clone a client)
- PPTP (selectable Idle Timeout and connect on demand)
- DNS Relay

4.4 Firewall

- All ports stealth
- Stateful Packet Inspection (SPI)
- ICSA certified
- Protection from the following types of attacks
 - Denial of Service (DoS)
 - IP Spoofing
 - Land Attack
 - Ping of Death
 - IP with zero length
 - Smurf Attack
 - TCP null scan
 - SYN flood
 - UDP flooding
 - Tear Drop Attack
 - ICMP defect
 - RIP defect
 - Fragment flooding
- Hacker logging (HTML viewable)

4.5 Configuration

- MAC address filtering
- HTTP administration
- HTTP 1.0 (rfc 1945)
- HTTP (rfc1866)
- Base64 algorithm

4.6 Compatibility

- UPnP (enable/disable)
- VPN pass-thru
 - IPSec
 - PPTP
 - L2TP
 - Checkpoint, Cisco, Nortel, FreeSwan

4.7 Firmware

- Upgradeable via file transfer
- Automatically notify user of new firmware availability
- Ability to back up and restore user settings

4.8 Port Forwarding

- Custom Ports

- DMZ (exposed host) (all ports open)
- 50 Max forwarding entries
- Public / Private port translation
- Forward Ranges
- Can forward UDP and TCP separately or Simultaneously

5. Bill of Materials

- Wireless G Router
- CD-ROM
- Ethernet Cable
- Quick Install Guide
- Power Adapter

6. Regulatory Certifications

US:	FCC Part 15B & C
Canada:	ICES-003 & RSS-210
Europe:	EN 301 489-1 & -17, EN 300 328 EN 61000-3-2, EN 61000-3-3, EN 60950-1: 2001
Australia:	C-Tick

7. Intended Markets

North America:	USA Canada Mexico
Europe:	United Kingdom France Spain Italy Germany Netherlands
Asia / Pacific:	Australia Singapore