No.99 PARK AVE. III, Science-based Industrial Park,
Hsin-Chu 308, Taiwan, R.O.C.
Phone (886) 3-577-7777 Fax (886) 3-577-7788

WG414-L7-CL

Wireless-b/g Broadband Router
PRELIMINARY HARDWARE PRODUCT SPECIFICATION

Revision 1.0.0

Initialized Document Date: April 30, 2007
Revision Document Date: April 30, 2007

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1 DOCUMENT REVISION HISTORY

Revision	Date	Author	Remark
1.0.0	April 30, 2007	Bryan Chou	Initialize.

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2 PRODUCT DESCRIPTION

- WG414 is a Wireless-b/g Router that is targeting Home or SOHO market.
- High-speed performance.
- Internet interface, comes with one 10/100 Mbps Auto-Negotiation port. It provides auto MDI/MDI-X feature so that there has no more cabling trouble happen. Thus, the service burden can be eliminated
- Local Interface, comes with one 10/100Mbps Auto-Negotiation port. Auto-MDI/MDIX function is supported as well. Users do not have to learn what straight or crossed cable is; just plug can go.
- Wireless connectivity, an on-board wireless module, that is compliant to IEEE 802.11b/g standard, is provided to work as a wireless Access Point. And for security reason, the 802.1x module is designed as standard feature.

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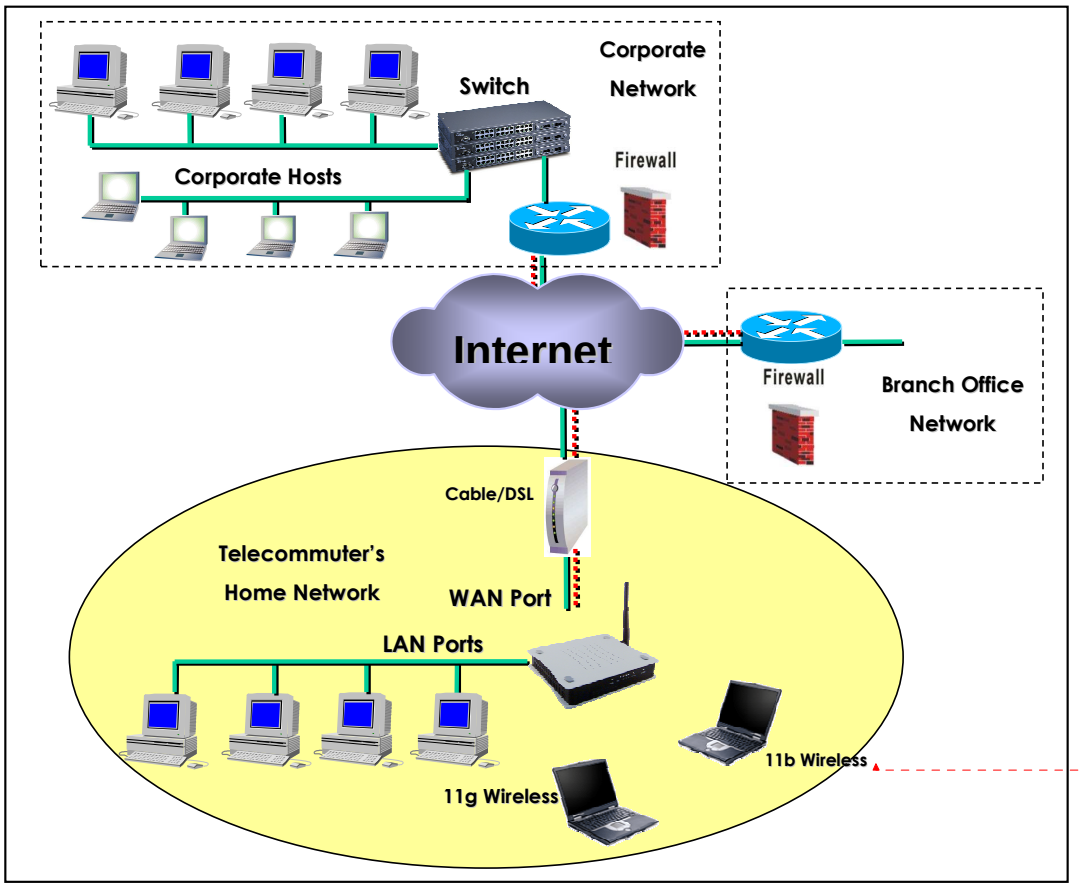
3 Application Diagram



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4 HOUSING

4.1 3D VIEW

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5 PRODUCT FEATURES

5.1 PHYSICAL SPECIFICATIONS

Ethernet Interface	LAN Ports	Four 10/100M 802.3/u (RJ-45) interfaces with auto-MDIX sensing		
	WAN Port	One 10/100M 802.3/u (RJ-45) interface with auto-MDIX sensing		
LEDs Indicating	Power	Green	Off	Power Off
			On	Power On/Device Ready
			Blinking	Booting/System Self-Test/Firmware upgrade
	WAN	Green	Off	No connection on WAN port
			On	WAN link is up
			Blinking	Data is transmission through WAN interface
	Wireless	Green/ 11b/g	Off	Wireless option is disable
			On	Wireless option is enable
			Blinking	Data is transmission through wireless
	LAN (4-port)	Green	Off	No connection on LAN port
			On	LAN link is up
			Blinking	Data is transmission through LAN interface
	DMZ	Green	Off	DMZ Host option is disable
			On	DMZ Host option is enable
Power Supply	North American	External Linear Power Adapter. Input: 100VAC/50~60Hz, output: 12VDC/1A		
PCB Dimension (W * D * H)		160 * 138 mm		
Weight		TBD		

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Others	Reset Button	To warm start system or reset all device settings to factory default values.
	PCB	4-layers
	CPU	BCM5352E/MIPS@200MHz
	Switch Controller	Build-in 5-port switch
	Antenna	2 * detachable Antenna
	Flash Memory	8MB
	Main Memory	32MB DDR SRAM

5.2 RADIO SPECIFICATIONS

Solution Vendor	BCM 2050 (802.11b/g)	
WLAN Standard	IEEE 802.11/11b Industry standards	
	IEEE 802.11g standard	
Media Access Protocol	IEEE 802.11	
Operating Frequency	11b Mode	(2412GHz~2472GHz)
	11g Mode	(2412GHz~2472GHz)
Operating Channels	11b Mode	14 for Japan; USA Ch1-11
	11g Mode	13 for JTAC, Japan; USA Ch1-11
Data Rate Shifting	11b Mode	11, 9, 6, 5.5, 2, 1 Mbps
	11g Mode	54, 48, 36, 24, 12, 11, 9, 6, 5.5, 2, 1 Mbps
Modulation Technique	11b Mode	CCK (5.5, 11Mbps), Barker Modulation (1, 2Mbps)
	11g Mode	OFDM (54, 48, 36, 24, 12, 9, 6Mbps)

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Wireless Distribution System	AP mode	
802.11e	WMM support	
Security	WEP	Support 64-bit & 128-bit Encryption, Passphrase, Manual key for Hex.
	TKIP	Required for Wi-Fi WPA stage 1 certificate
	AES	Required for Wi-Fi WPA stage 2 certificate
	WPA	Support both home mode and enterprise mode
	802.1x	EAP-TTL, EAP-TTLS, PEAP
	Support Wireless MAC address filtering	
	SSID broadcast enable/disable supported	
Transmitted Power	11b	802.11g: Typical, 14+/-1.5dBm @ Normal Temp Range
	11g	802.11b: Typical, 16+/-1.5dBm @ Normal Temp Range
Receive Sensitivity	802.11g: Preliminary Performance – Minimum Sensitivity:	Data Rate (Mbps) Sensitivity (dBm) 54 -74.4 11 -87.2

5.3 CERTIFICATION/APPROVAL/WARRANTY

EMI	North America	FCC Part 15 Class B
		FCC Part 15 Class C

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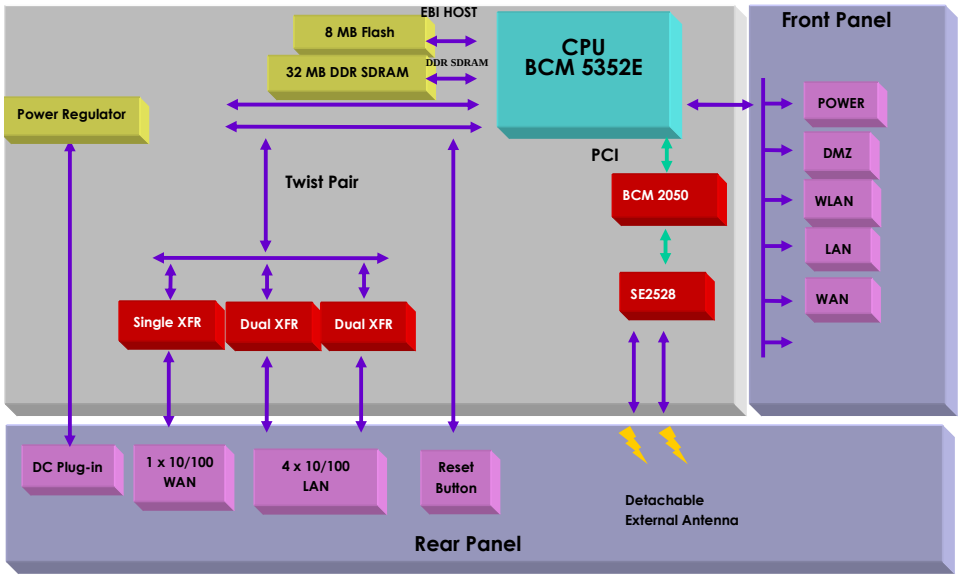
6 HARDWARE SPECIFICATIONS

6.1 SYSTEM BLOCK DIAGRAM



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6.2 KEY COMPONENTS

No	Item	Description
1	CPU	BCM 5352E/200MHz
2	Switch	Build-in
3	Flash	8MB
4	DDR SRAM	32MB
5	802.11 b/g, RF	BCM 2050

6.3 PRODUCT CERTIFICATION REQUIREMENTS

6.3.1 IEEE COMPLIANCE REQUIREMENTS

Standard	Description
IEEE 802.3	10Mbps Ethernet Specification.
IEEE 802.3u	100Mbps Fast Ethernet Specification.
IEEE 802.3x	Full-duplex operation/Flow Control Ethernet.
IEEE 802.1D	Transparent Bridge
IEEE 802.11g	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b	11, 5.5, 2 and 1Mbps
IEEE 802.11	2 and 1 Mbps

6.4 TECHNICAL SPECIFICATIONS

- Physical Interface
  - LAN: 4 * RJ-45 Connector.
  - Wireless: 1 * 802.11 b/g AP
  - WAN: 1 * RJ-45 Connector..
- Power Supply
  - Build-in Universal AC/DC Power Module
    - Input

      110 VAC (US)

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- Output

  12VDC/1A.

- Physical Dimensions
  - Dimension (W X D x H): 160 * 138 mm
- Environmental Specifications (Tolerance 10%)
  - Operating Temperature: 0 to 40°C.
  - Storage Temperature: -20 to 70°C.
  - Operating Humidity 10 to 90% RH..
- Thermal Test.

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.