EnGenius | DATASHEET

3G Mobile Wireless-N Router ***ESR6650***

2.4GHz **2.5G / 3G / 3.5G** **150Mbps** **AP/Router**

PRODUCT DESCRIPTION

ESR6650 is a 3G-enabled Wireless-N Router that delivers up to 3X faster speed (150Mbps). It supports 3G data cards from HuaWei, OPTION, Sierra and BandLuxe with standards covering WCDMA (HSDPA), CDMA2000 & TD-SCDMA. It is built-in with USB for easy and flexible plug-and-play interface for 3G cards.

ESR6650 supports home network with superior throughput and performance and unparalleled wireless range. With easy to use on the WPS function, it helps users to connect to wireless device with just one push button.

There's also a built-in 2-port full-duplex 10/100 Fast Switch to connect your wired-Ethernet devices together. The Router function ties it all together and lets your whole network shares a high-speed cable or DSL Internet connection.

PACKAGE CONTENT

- 1* 3G Mobile Wireless-N Router (ESR6650)
- 1*12V/1.25A Power Adapter
- 1*QIG
- 1*CD (User's Manual)
- 1*SMA Antenna

Technical Specifications

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

HARDWARE SPECIFICATIONS

MCU	RT3050, 320MHz embedded RF/MAC/BBP
Memory	**32MB** SDRAM
Flash	**4MB**
PCB dimension	100mm * 90mm
Physical Interface	WAN: 1 * 10/100 Fast Ethernet RJ-45
	LAN: 2 * 10/100 Fast Ethernet RJ-45
	Rest button
	Power Jack
	WPS (WiFi Protected Setup)
	USB (for 3G data card)
LEDs Status	Power Status
	WAN (Internet connection)
	10/100Mbps LAN1 & LAN2
	WLAN(Wireless connection)
	3G networks
Power Requirements	Power Supply: 200 to 240 VDC ± 10% (ETSI) 100 to 120 VDC ± 10% (FCC)
	Device: 12V/1.25A

Note:

1. **WAN can either be USB port or WAN port. USB is the default WAN.**
2. **RAM and Flash design should be flexible to cover SOHO and ISP purpose.**

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

Currently Supported 3G Data Cards

Vendor Name	Model Name	Supported
Huawei	E169G	O
	E170	O
	E172	O
	E176	O
	E220	O
	E272	O
	Vodafone K3565	O
	E1750	O
BandRich (BandLuxe)	C100S	O
	C120	O
	C270	O
Sierra	Aircard 888U (Aircard 888)	O
Option	ICON 225 (GIO 225)	O
Novatel	Ovation MC950D	O
NU	MU-Q101	O
Sony Ericsson	MD300	O
ZTE	MF626	O
	Vodafone K3565-Z	O
	Vodafone K3520-Z	O
ASUS	T500	O
EMOBILE	D02HW	O
	D12HW	O
	D21HW	O
	D22HW	O
	D23HW	O
	D11LC	O
	D12LC	O
	D21LC	O
docomo	L-02A	O
	A2502	O
	L-05A	O

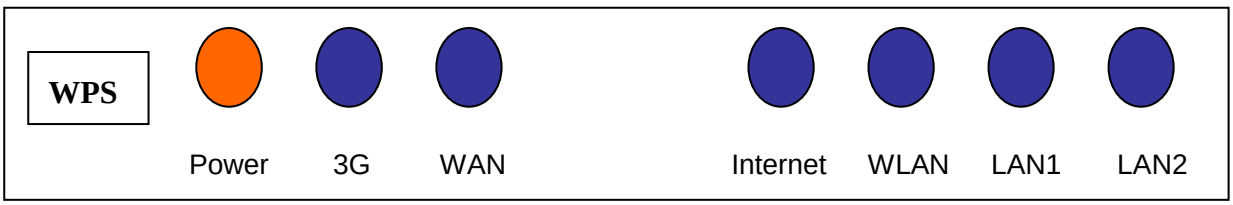
* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

SoftBank	C01LC	O
SoftBank	C01SW	O
WILLCOM	AX530S	O
	WS002IN	O
	USB-WSIM	O
	NS001U	O
WILLCOM CORE 3G	HX001IN	O
	HX002IN	O
b-mobile3G	BM-DL3-150H	O
	BM-DC1-500M	O
IIJ mobile	110FU	O

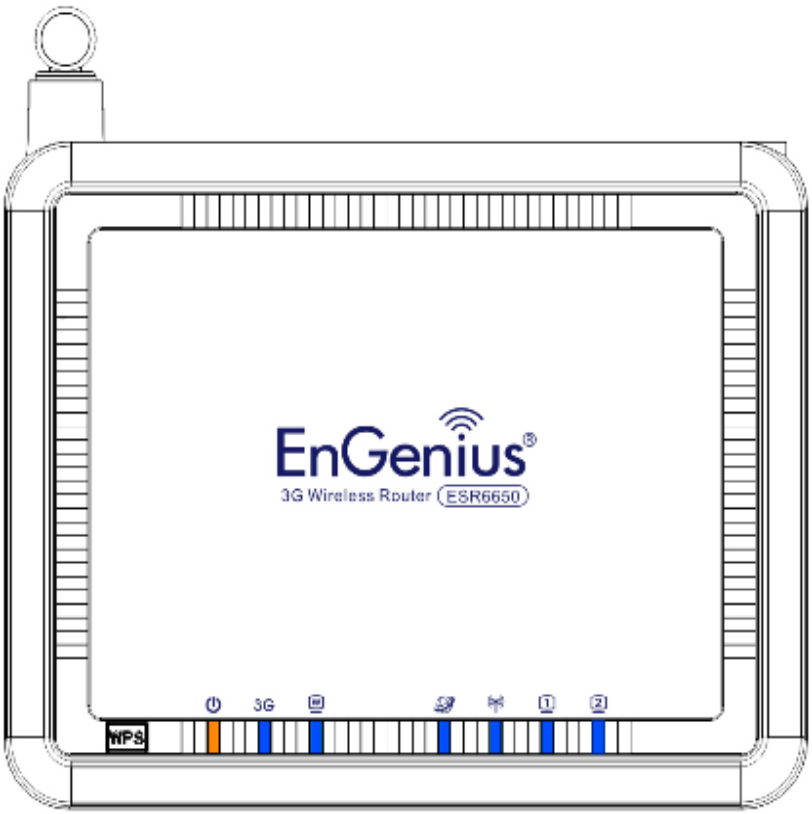
Top Panel (LED status)

Power	1 (On-> orange Test/reset default->blink)
3G	1 (Link-> blue on)
WAN	1 (Link-> blue on, traffic->blink)
Internet	1 (Link-> blue on)
WLAN	1 (Link-> blue on, traffic->blink)
LAN1	1 (Link-> blue on, traffic->blink)
LAN2	1 (Link-> blue on, traffic->blink)



* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

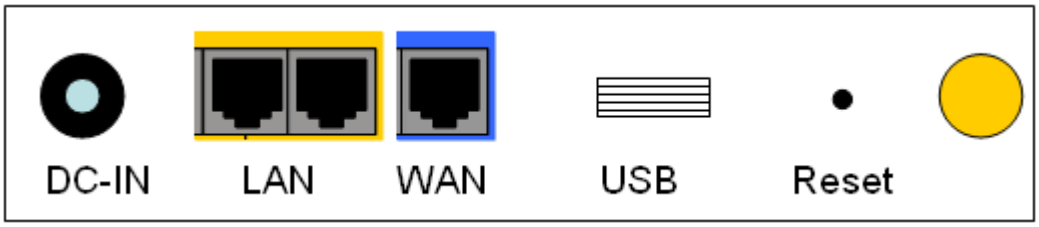
** All specifications are subject to change without notice. 12/1/2009



* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

Rear Panel (Interface)



Antenna: Detachable SMA

RF SPECIFICATION

Frequency Band	2.400～2.484 GHz
Modulation Technology	● OFDM: BPSK, QPSK, 16-QAM, 64-QAM ● DBPSK, DQPSK, CCK ● **3G / 3.5G:** WCDMA (HSDPA), CDMA2000 & TD-SCDMA
Operating Channels	11 for North America, 14 for Japan, 13 for Europe
Wireless Setting	● Wireless Mode – 11b/ 11g / 11n ● Channel Selection (Setting varies by Country) ● Channel Bandwidth (Auto, 20Mhz, 40Mhz) ● Transmission Rate -11g: Best. 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 in Mbps
Receive	● IEEE802.11n

MCS index	Guard Interval 800ns		Guard Interval 400ns	
	20MHz(Mbps)	40MHz(Mbps)	20MHz(Mbps)	40MHz(Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	157.5

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

Sensitivity (Typical)	MCS0@ -91dBm MCS7@ -74dBm ● IEEE802.11g 6Mbps@ -90dBm 54Mbps@ -70dBm ● IEEE802.11b 1Mbps@ -90dBm 11Mbps@ -87dBm
Available transmit power (Typical)	● IEEE802.11N MCS0~7@ 15dBm ● IEEE802.11g 6~54 Mbps@ 15dBm ● IEEE802.11b 1~11Mbps@ 16dBm
Antenna *1	Peak Gain = 2 dBi with SMA connector

SOFTWARE FEATURES

Router and Gateway

Topology	Infrastructure
Operation Mode	AP / Router / WDS
LAN	• DHCP Server • Static Routing Table
WAN	• PPTP • PPPoE • Static IP • DHCP Client • Clone MAC
Router	• NAT/ NAPT • Static Routing • Dynamic Route • Virtual server mapping • IP address mapping • Port Forwarding

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

	• Port Triggering • Special application • ALG(Application Layer Gateway) support (RTP/RTSP, AOL, FTP, ICMP, WMP/MMS, NetMeeting, SIP) • DNS Relay • DDNS • Time Zone(NTP client)
Firewall	• Blocking Ping • DoS(Blocking Ping, Port scan, Sync Flood) • MAC / IP Filtering • ICMP Blocking • SPI (Stateful Packet Inspection) • DMZ (Demilitarized Zone) Host • Policy Based Parental Controls ➢ Port Range / Service Filtering ➢ Internet Domain Restriction ➢ Dynamic URL Filtering (OEM subscription service)
VPN	VPN pass-through (PPTP, L2TP, IPSEC)
Wireless	• Power saving(Green technology) • Multiple SSID • 64/128 bit WEP Encryption • WPA Personal (WPA-PSK using TKIP or AES) • WPA Enterprise (WPA-EAP using TKIP) • 802.1x Authenticator • Hide SSID in beacons • Wi-Fi Protection Setup (WPS) • WDS • ACL control • Best channel selection • Speed/Bandwidth monitor
QoS	• WMM • Application base ➢ Priority Queue ➢ Bandwidth Allocation

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009

Management

Configuration	Web-based configuration (HTTP)
Firmware Upgrade	• Via webpage upgrade • Auto recovery once firmware upgrade fail
Administrator Setting	• Administrator password change
Reset Setting	• Reboot • Reset to Factory Default
System monitoring	• Speed and Bandwidth monitoring
Scheduling	• Enable Firewall • Enable power saving
Easy access	• User can type model name and access the main page.
Install wizard	• Guide user to set-up Router smoothly

ENVIRONMENT & PHYSICAL

Temperature Range	0 to 45° C - Operating, -10 to 70 ° C - Storage
Humidity (non-condensing)	15%～95% typical
Dimensions	125mm (L) x 98mm (W) x 25mm (H)

* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g, n chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice. 12/1/2009