



8100 Series

Motorola Femtocell Ethernet Gateway

The Motorola 8100 Series delivers a dedicated coverage solution for indoor/residential situations, providing operators with a complete solution—a family of small, low-cost, low-power, easy-to-install 3G Femtocell Ethernet gateways. Ethernet gateways that can be quickly integrated and provisioned into existing macro networks to support existing 3G handsets and devices. The 8100 Series also eliminates the cost and clutter of stand-alone routers, hubs, and wireless access points—it includes an advanced router and firewall with 802.11b/g wireless access point.

HIGHLIGHTS

- Easy to use and simple to set-up with numerous built-in security features.
- Plug-and-play — plugs into any broadband connection (Cable or DSL).
- Built-in advanced router and firewall with 802.11b/g wireless access point — eliminates the cost and clutter of stand-alone routers, hubs, and access points.
- Quality-of-Service (QoS) for voice over data prioritization, enabling one to talk on the phone while using the Internet, without a noticeable reduction in voice quality.

3G in-building coverage

The majority of cellular calls occur indoors; however indoor 3G coverage is generally poor. The Motorola 8100 Series extends 3G coverage indoors, while offloading the macro network.

Remote management

Configured to enable automated service provisioning, embedded software updates, and service activation without subscriber intervention or unnecessary truck-rolls for plug-and-play deployment and operations.

Voice over data prioritization

Subscribers can talk on the phone while using the Internet—without a noticeable reduction in voice quality. Voice calls are prioritized over data traffic to enable seamless mobility of telephony services.

Leveraging Deep Expertise in Home Networking

Motorola's KeepMeConnected™ Femtocell solutions leverage Motorola's deep expertise in home networking to enable the future of the digital home. Motorola is a global leader in delivering high-volume consumer premises equipment (CPE) and in deploying mobile and fixed networks across all technologies that are supported by world-class experience in Operations, Administration, Management, and Provisioning (OAM&P). The Motorola 8100 Series Femtocell Ethernet Gateways enhance end-user experiences, thereby limiting churn and increasing Average Revenue Per User (ARPU) through better

home coverage and new multimedia applications. Motorola's KeepMeConnected end-to-end Femtocell solutions include RAN gateway/concentrator, CPE management systems, and services.

High-End, Integrated Gateways for Residential Customers

The Motorola 8100 Series gateways are the ideal choice for cost-effectively connecting residential subscribers to any broadband networks for high-speed Internet access. They allow subscribers to connect their 3G mobile phones to their home network at High-Speed Downlink Packet Access (HSDPA) speeds.

Extending 3G Coverage

The 8100 Series extends 3G coverage indoors via the home broadband connection, while allowing service providers to reduce operational costs by offloading the macro network. Consumers benefit from excellent indoor coverage, high data rates, and the convenience of using their existing 3G handsets inside the home.

IPTV-Capable

The 8100 Series is built to handle demanding services such as IPTV, VoIP, standard TV, and high-definition TV (HDTV) via its support for IGMP and the addition of an IPTV set-top. They are packed with differentiated features that ensure responsive, broadcast-quality IPTV service.

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Wired and Wireless Home Connectivity

By allowing subscribers to connect an 8100 Series gateway to a broadband router or modem, service providers can add 3G to home service packages to increase revenue. The 8100 Series combines a Femtocell gateway, a voice-over-IP (VoIP) port, as well as an 802.11b/g Wi-Fi® access point and a four-port Ethernet router into one compact unit, eliminating the cost and clutter of multiple units. The perfect networking solution for the home, home office, or small business, the 8100 Series allows subscribers to share a broadband connection, files, and networked printers and peripherals—with or without wires.

Robust Security

The robust security features include a built-in stateful firewall to protect single-user households from hackers and Denial of Service (DoS) attacks. Intelligent software features and diagnostics reduce the cost of ongoing customer support while increasing customer satisfaction.

Wi-Fi Protected Setup™

The 8100 Series gateways are equipped with Wi-Fi Protected Setup pairing technology. Wi-Fi Protected Setup is a certification program from the Wi-Fi Alliance that is designed to ease the task of setting up and configuring security on wireless local area networks. Introduced by the Wi-Fi Alliance in early 2007, the program provides an industry-wide set of network setup solutions for homes and small office (SOHO) environments. Wi-Fi Protected Setup enables typical users who possess little understanding of traditional Wi-Fi configuration and security settings to automatically configure new wireless networks, add new devices, and enable security.

VoIP Telephony

Each 8100 Series platform includes an RJ-11 port and supports cellular network-terminated VoIP telephony; using the device's integrated SIM card; This VoIP port enables the delivery of primary line, full-featured telephone service over the broadband connection to the home.

Plug and Play Installation with "Phone Home" Provisioning

Featuring Motorola's legendary ease of use, reliability, and security, the 8100 Series includes automated provisioning capabilities. Upon first connection to the network, an 8100 gateway is configured to automatically "phone home" to the service provider, enabling automated service provisioning, embedded software updates and service activation—all without subscriber intervention*. The 8100 Series is supported by the Motorola NBBS device management platform, a world-class leading CPE service management platform that has been developed to the DSL Forum TR-069 specification. It allows service providers to

expand broadband service revenues, while reducing operational and support costs through automated service provisioning and comprehensive device management.

Comprehensive Remote Manageability

The 8100 Series is designed for Service Assurance — Quality of Service at the edge of the network. Compatible with Motorola's NBBS device management platform, the 8100 Series can be centrally managed by Motorola's NBBS platform, which provides centralized service and device management and integrates seamlessly with existing operational support and customer relationship management systems.

The 8100 Series unlocks the potential of offering a dedicated coverage solution for indoor/residential situations, as well as high-quality voices services, and a whole home networking solution.

Benefits

Operators: Motorola's 8100 Series enable operators to provide higher-quality and higher-performance wireless voice and real-time data services to their residential and small home office customers. In addition, they enable a lower cost of delivery of wireless traffic in comparison to the macro cell network. The 8100 Series may be used as part of integrated 'triple' or 'quad play services', which meet the consumers' communication needs, increasing competitiveness and customer retention for the operator.

The 8100 Series:

- Reduces operational expenses by off-loading of cellular macro network, when calls are made via the 8000 Series Femtocell Ethernet Gateway.
- Increases customer satisfaction from improved in-home coverage and reliability, a key user network quality metric.
- Improves customer retention through unique value added services.
- Enables the operator with the ability to offer QoS for voice over data prioritization.

Consumers: For Consumers, the benefits of Motorola's 8100 Series include; a seamless communication experience as they roam from inside to outside their homes, reduced in-home call charges, excellent indoor coverage and consolidated billing all from their existing handsets. Consumers benefit from the convenience of using their mobile handset with its personal phonebook and other cool handset features, without the concerns of poor call quality or additional cost.

* WEP for Wi-Fi requires customer interaction via a GUI.

Specifications

INTERFACES

WAN Interface	Ethernet (RJ-45)
LAN Interface	4-port 10/100 BASE-T Ethernet (RJ-45) with Auto-MDIX crossover; Built-in 802.11g (54 Mbps) Wireless; backward compatible with 802.11b

NETWORK PROTOCOL SUPPORT

DSL Forum TR-101 support	
IEEE 802.1Q VLAN support, IPOE Support	
DHCP client, server, and relay	DHCP option support and filter rules
DNS name server support	Dynamic DNS

BRIDGING/ROUTING FUNCTION

Network Address Translation (NAT), IP Maps, and Pinholes	
Static routes	
IP multicast outbound support through NAT	
DHCP client, server, and relay	
DNS Proxy	
RIP1 & RIP2 on LAN/WAN	

SECURITY

Network Address Port Translation (NAPT)	
Stateful firewall	
Configurable firewall function	
Virtual DMZ/IP pass-through	
Denial of service protection	
Software and games control	
VPN pass-through for L2TP and IPSec	
IPSec VPN gateway (upgrade)	
DES, 3DES, and IKE	
Hash Algorithm Support: MD5 and SHA1	
Security Monitoring and Logging (upgrade)	

3-D REACH® WI-FI

Wireless Features	Integrated omni-directional antennas with diversity support; 400mW transmit power
	Channel set: North America, 1–11; Europe, 1–13
Wireless Security	WEP 64-, 128-, 256-bit Encryption; 802.1x; WPA-PSK; block wireless bridging; MAC Address filtering

GSM

3GPP Release 5 2005-06	UMTS WCDMA FDD; Cell Radius 200m (15m – 25m in a typical in-building deployment scenario); UE Speed <3.5 miles/hour
Signaling	3.4 Kbps and 13.6 Kbps signaling SRBs; 12.2 Kbps AMR voice, bi-directional (four users); 64 Kbps circuit-switched multimedia, bi-directional (four users); 64 Kbps packet-switched data, bi-directional (four users); 128 Kbps downlink packet-switched data, 64 Kbps uplink (four users); 384 Kbps downlink packet-switched data, 128 Kbps uplink (two users); maximum of 20 users in idle mode
HSPDA Support	Maximum number of codes: 10; maximum number of HS-SCCH: 2; QPSK and 16QAM HS-PDSCH modulation; supported UE categories: 1-8, 11,12; 3.6 Mbps (upgradeable to 7.2 Mbps); peak data rate (uplink 128 Kbps and 384 Kbps PS)
HSUPA future support (by software upgrade)	
Networking Layer	IPSec ESP, IKEv2 (with NAT traversal), EAP-AKA/SIM security; SIP, SDP, RTP, RTCP voice gateway support; SIP/SDP Pre-IMS and 3GPP Rel 6 IMS compliant; 3G UMA (variant), lub over IP (optional) Radio Network Interface; SIM card support
Radio Access Layer	Non Access Stratum (NAS) SS, SMS, CC, SM, MM, GMM; Access Stratum (AS) PDCP, RRC, RLC, MAC; transport channels BCH, PCH, RACH, FACH, DCH, HS-DSCH
Physical Channels	SCH, CPICH, P-CCPCH, S-CCPCH, PICH, AICH, DPCH, PRACH, DPDCH, DPCCCH, HS-DPCCH, HS-PDSCH, HS-SCCH
Physical Layer	Band 1, Receive 1920 MHz – 1980 MHz, Transmit 2110 MHz – 2170 MHz; 10dBm maximum transmit power; TS25.141 Compliant for Local Area; Node B (except max. TX power); Dynamic Power Control (DPC) Modes 0 and 1

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VoIP FXS PORT

SIP version 2 (RFC 3261)	
Voice codecs	G.711 μ -law and A-law; G.729A; G.723.1; G.726
Voice processing features	
ITU-T G.168 Echo Cancellation	configurable tail-end delay up to 128 ms
Voice activity detection	Silence suppression; comfort noise generation
DTMF detection and generation	DTMF Relay per RFC 2833
Caller ID Generation	
Dynamic Jitter Buffer Support	
Packet loss recovery and concealment support	
Fax/modem support	ITU-T.T.38 FAX relay; ITU-T.T.30 Fax pass-through

MANAGEMENT AND QoS

Remote management	TR-069; TR-104; Web UI (HTTP) and CLI (Telnet)
Local management	TR-064; UPnP; Web UI (HTTP) and CLI (Telnet)
Two-level password protected access	
Statistic and log reporting, remote Syslog support	
Seven-layer diagnostics	
Utilities	Ping, Traceroute, Reverse DNS
Closed System Mode	
Software Upgradeable	
LEDs	Power, Link, Status, and Activity Indicators

REGULATORY

United States	Safety (UL 60950), EMC (FCC Part 15 Class B); CEC-compliant power supply
Canada	Safety (C-UL, CAN/CSA-22.2 No.60950-00); EMC (Industry Canada ICES-003)
Europe	Safety (EN 60950), EMC (R&TTE, EN 300 328, EN 301 489); RoHS Compliant

ENVIRONMENTAL

Operating Temperature	0° C to 40° C (32° F to 104° F)
Storage Temperature	0° C to 70° C (32° F to 158° F)
Relative Humidity	20 – 80% Non-Condensing
External Power	12 VDC, 1500mA
Acoustic noise	<25 dB

WEIGHT AND DIMENSIONS

Weight	0.9 lb (408g)
Dimensions	11.8 in L x 8.2 in W x 1.4 in H (301 mm x 208 mm x 36.7mm)
Horizontal desktop placement or vertical standing	

All features, functionality, and product specifications are subject to change without notice or obligation.



MOTOROLA

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