

Optical Wireless Router

Optical Broadband Ethernet Wireless Router with VoIP support

FR201



■ Product Description

The FR201 is a highly integrated optical Ethernet wireless IAD, which is designed for point-to-point FTTH application. It interoperates with major vendors' Ethernet layer 2 switches to meet the worldwide residential market requirements. The integrated Fast Ethernet switch features automatic speed sensing, Crossover Detection & Auto-correction for easily connecting to user's PCs or LAN environment. Alternatively the built-in 802.11b/g WLAN brings relief to those troublesome wirings. Two lines of telephony service are provided using VoIP technology with SIP or MGCP signaling protocol. By offering the flexibility to service provider, the FR201 delivers the convenience of one model that fits different kind of Internet applications.

■ Features

- ▶ Optical Ethernet interface supports up to 100 Mbps symmetric rates
- ▶ Integrated four-port Ethernet switch with automatic speed-sensing and crossover correction
- ▶ 802.11b/g WLAN supports up to 54 Mbps transmission rate
- ▶ Secure transmitting encryption by either 802.1x; WEP; WEP2; WPA; WPA2; TKIP; AES; 802.11i
- ▶ Two FXS ports for VoIP using POTS phone set
- ▶ Supports various voice CODECs and advanced voice features to ensure best voice quality
- ▶ Supports SIP signaling protocol services like call forwarding, call waiting, call transfer, call busy, call return, enquiry service, CLIP/CLIR and three way conference
- ▶ Supports networking protocols such as IP Routing, PPP, NAT, firewall, DHCP server / relay / client
- ▶ Configuration and management by Web/HTTP, SNMP or TR-069/TR-104
- ▶ Firmware upgradeable through HTTP or TFTP

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■ Product Specifications

Hardware

▶ WAN Interface

- Single-mode, bi-directional single fiber
- Compliant with IEEE802.3ah 100Base-BX10
- Nominal wavelength: TX= 1310nm / RX= 1550nm

▶ Local Interface

- Four 10/100 Base-T Ethernet ports in RJ-45 connector, comply with IEEE 802.3u and support automatic MDI/MDIX and speed sensing
- Integrated 802.11g WLAN Access Point with external antenna, backward compatible with 802.11b

▶ Analog Voice Interface

- Two FXS ports with RJ-11 connectors for connecting to traditional analog phone set

▶ WLAN ON/OFF Control

- One button located at front-top to turn on or off the WLAN AP functionality

▶ LED Indicators

Front panel (all LEDs in green color)

- Power – ON when the power supply is properly connected.
- WAN – ON when Ethernet WAN is active, and blinking while WAN is transmitting data.
- Internet – ON when Ethernet WAN is active, and blinking while WLAN is transmitting data.
- TEL1 – Green when VoIP call is working; yellow when PSTN call is working.
- TEL2 – Green when VoIP call is working; yellow when PSTN call is working.
- Ethernet – ON when any LAN port is active, and blinking while LAN is transmitting data.
- WLAN – ON when WLAN is active, and blinking while WLAN is transmitting data.

▶ Rear panel

- Each Ethernet port has its speed (10/100 Mbps) and activity indicators.

▶ Environment

- Operation Temperature: 0°C ~ +45°C
- Operation Humidity: 5% ~ 95% (non-condensing)
- Storage Temperature: -20 ~ +85°C
- Storage Humidity: 5% ~ 95% (non-condensing)

▶ Power

- AC to DC adapter: input 100~240 VAC 50/60 Hz; output 12 VDC 1.5 Amp
- Power consumption: Less than 15 watts

▶ Physical Dimensions

- (W x D x H) 220 mm x 149 mm x 56 mm (main body only)

▶ Certificates

- CE - EN55022, EN55024, EN300328 & EN301489; FCC Part 15b & 15c
- LVD - IEC60950-1 (ed.1), UL-60950

Software

▶ Networking Protocols

- Support Point-to-Point Protocol with user authentication via PAP, CHAP or MS-CHAP
- PPP pass-through and filtering
- Transparent bridging
- IP Multicast IGMP v1/v2/v3, proxy and snooping
- 16 VLAN either port-based or per 802.1q
- Support insert / remove tag and VLAN priority remarking

* Specifications are subject to change without notice
* Ver 1.0

▶ Routing

- Routing Information Protocol (RIP) v1 and v2, policy routing and static route
- DHCP client, server and relay agent
- NAT / PAT – RFC1631 with support for extensive ALGs
- DNS relay and proxy server
- Dynamic DNS

▶ Firewall and Security

- Full cone NAT with DMZ host and ALG supports
- Port forwarding and triggering
- Stateful Packet Inspection (SPI) with DOS attack protection - Ping of Death, SYN flooding, IP smurfing, teardrop, land and etc.
- Packet filtering on L3, L2 or physical interface
- UPnP NAT traversal and VPN / IPsec pass-through
- Parental control and URI/URL filtering
- Three level login and Service access control

▶ Packet Level QoS

- IP / Bridge / 802.1p QoS
- Support 4-level priority queues per port with WRR/WFQ/SP scheduling
- Token bucket rate control per I/O port, traffic policy or WFQ

▶ Wireless Features

- Supports 802.1x; WEP; WEP2; WPA; WPA2; TKIP; AES; 802.11i
- Hidden SSID; multiple SSID
- WMM for advanced Quality of Service
- 125 High Speed Mode: Standards-plus performance enhancement delivers best real-world performance as the client card uses the same technology

▶ Voice Features

- Supports voice CODECs like G.711, G.726, G.729AB, BV16, ILBC, T.38 etc
- G.168 line echo cancellation with programmable tail
- Adaptive jitter buffer, packet loss concealment (PLC), voice activity detection (VAD), comfort noise generation (CNG) and Caller ID
- DTMF tone detection and generation; Fax / Modem detection and pass-through

▶ VoIP and Telephony Bonus Services

- Supports SIP (RFC3261), SDP (RFC2327, RFC3264) as well as both TCP and UDP transport
- Supports User Agent Client (UAC) - User Agent Server (UAS) call, or proxy call routing
- Supports SIP and telephone URL addressing
- Supports in-band DTMF tone sending / receiving and out-band DTMF signaling with RTP, as per RFC2833
- Bonus services include:
 - Call Forwarding: Unconditional, No Response, On Busy
 - Call Waiting: Force Busy, Pickup and Release Old, Pickup and Put Old on Hold, Switch between two calls
 - Call Transfer, Call Back busy subscriber, Call Back last number called (call return)
 - Enquiry service
 - Three way conference
- Provisioning through TFTP client with configuration profile

▶ Configuration and Network Management

- SNMP v1/v2c agent and MIB-II
- SNTP with DHCP options
- UPnP Internet Gateway Device (IGDv1.0) compliance
- Management and configuration via CLI / (console or Telnet) and Web / HTTP, with configuration file upload and download
- Firmware upgrade using HTTP or TFTP
- Support TR-064, TR-069 and TR-104