

# FIBERLINK 4111

## GPON ONU



### DESCRIPTION

Fiberlink 4111 is a third generation GPON ONU designed by Parks. Flexibility is one of its main features, since the device operates both on GPON networks and on Metro Ethernet networks.

The auto-detection mechanism of fiber optic technology enables the ONU's automatic adaptation to the network to which it is connected, without requiring intervention by the user or the service provider.

Fiberlink 4111 has an integrated analog telephone adapter (ATA) with two independent voice ports. The VoIP solution included in this product is fully compliant with SIP and RTP protocols. The model has also an integrated Access Point Wi-Fi 802.11n with advanced Wi-Fi features such as virtual Wi-Fi communities, wireless operation in both Bridge and Router modes, automatic channel selection, up to 4 SSIDs with provisioning via OMCI, among other features.

Support for IPv6 addressing, Wirespeed performance (1Gbit / s @ 64B) and the Green Ethernet technology are some examples that make Fiberlink 4111 the ultimate solution for your network, not just for today but for the future as well.

Specially designed for the FTTH and Metro Ethernet services market, Fiberlink 4111 is the best solution for both residential and business deployment.

### HIGHLIGHTS

- ✓ ITU G.984 GPON ONU
- ✓ IPv6 and IPv4
- ✓ Advanced QoS, ensuring triple-play services quality
- ✓ Operates in GPON and Active Ethernet modes with autodetection
- ✓ Allows Point to Multipoint (GPON) and Point to Point (Active Ethernet) services provision
- ✓ Maximum routing performance: up to 1Gbit/s with 64 Bytes packets
- ✓ Green Ethernet - Energy-Efficient Ethernet
- ✓ IPTV Multicast, unicast, and Video on Demand
- ✓ Easy installation and provision
- ✓ Operates simultaneously in router and bridge modes
- ✓ Low latency and ultra-broadband: ideal solution for interactive and multiplayer games
- ✓ Corporate and residential Wi-Fi services
- ✓ Integrated VoIP analog telephone adapter (ATA), with 2 or 4 FXS ports

## TECHNICAL SPECIFICATIONS

### INTERFACES

#### *OPTICAL INTERFACE*

GPON mode in compliance with ITU-T G.984

Operates in GPON and Active Ethernet modes, with automatic mode of operation detection

1490nm (Downstream) and 1310nm (Upstream) wavelengths

TX Power: 0.5 to +5 dBm

RX sensibility: -8 dBm to -28dBm ( $\pm 3$ dBm)

Maximum reach of 20 km

#### *ETHERNET INTERFACE*

4x 10/100/1000 T Base (RJ45) ports

IEEE 802.3/802.3u/802.3ab compliant interfaces

Supports IEEE 802.3az (Energy-Efficient Ethernet)

Auto negotiation and auto MDI/MDI-X

Half-duplex (back pressure) and full-duplex in compliance with 802.3x (PAUSE frames)

#### *WIRELESS INTERNET (Wi-Fi)*

Standard: IEEE 802.11 b/g/n\*

Standard: IEEE 802.11 ac\*

Frequency: 5.8GHz\*

Frequency: 2.4 & 5.8GHz\*

MiMo 2x2 (2T2R)\*

MiMo 3x3 (3T3R)\*

External omnidirectional antennas (+7dBi gain each)\*

Internal omnidirectional antennas (+3dBi gain each)\*

TX Power: 17dBm +/- 1,5dB (excluding antenna gain)

Data rate: up to 866 Mbit/s\*

Data rate: up to 1.3 Gbit/s\*

\*check available versions

#### *FXS INTERFACES (TELEPHONE)*

2 voice ports with RJ11 connectors

In compliance with ANATEL regulation #512

Caller ID support

## CONFIGURATION, PROVISION, AND MONITORING

GPON provision via OMCI

Configuration via Parks NMS, CLI, and WEB (local)

Remote monitoring via SNMPv2 and SNMPv3

Remote (OMCI and FTP) or local (FTP) firmware update

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Syslog (RFC3164) for event registration, error messages and notification

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Status and activity LED indicators

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Host IP, maintenance IP, and Loopback

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Reset button for factory settings recovery

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## FUNCIONALITIES

### *GPON*

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2.488 Gbit/s Downlink/1.244 Gbit/s Uplink data rate

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Forward Error Correction (FEC) in upstream (US) and downstream (DS)

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Supports static and dynamic bandwidth allocation (SBA/DBA)

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128 bits AES cryptography in downstream

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Up to 256 GEM (GPON Encapsulation Method) ports per ONU

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ONU activation via Serial Number (SN) or password

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Supports up to 7 simultaneous T-CONTs (Transmission Containers)

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Flexible mapping between GEM Ports and T-CONT

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Separate GEM Port for multicast

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Traffic Management (priority Queue and Traffic Shaping)

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### *ACTIVE ETHERNET*

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1000BASE-BX10 compliant Active Ethernet

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Data rate: 1Gbit/s full duplex

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Supports Transparent Lan Services (TLS)

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### *OPERATION MODES*

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Router

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Bridge

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Hybrid mode (Router and bridge simultaneously)

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### *ROUTER (IPV6 E IPV4)*

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IPv6 and IPv4 static routing

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RIPv1 (RFC1058), RIPv2 (RFC2453), RIPv3 (RFC2080)

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OSPF (RFC2328) and OSPFv3 (RFC5340)

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Dynamic routes authentication using MD5 (RFC1321)

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Fluctuating route based on priority or object track

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Internet connection: DHCP client, static IP, or PPPoE

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NAT/NAPT

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DHCP Server (RFC2131, RFC2132), Relay (RFC1542), and Client (IPv4 and IPv6)

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Stateful Firewall

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DNS Relay and Proxy

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NTP (RFC1305) with pair authentication

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PPPoE client (RFC2516)

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*BRIDGE (SWITCHING)*


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Integrated Ethernet Switch with GbE ports

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MAC table with up to 1024 entries

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LAN ports isolation based on VLANs

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*VLAN*


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Supports IEEE 802.1d and 802.1q

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VLAN ID 802.1q processing via port (Port-based VLAN)

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VLAN tagging/untagging

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VLAN Stacking (QinQ)

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QoS and Traffic Shaping bases on VLAN

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SSID mapping (Wi-Fi) for VLAN

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*IPTV*


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Supports up to 128 simultaneous multicast channels and interactive TV services (VoD)

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Allows IPTV traffic prioritizing (QoS) based on IEEE 802.1p

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Supports Multicasting IGMP v2/v3 protocols

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IGMP Proxy & Snooping

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IGMP processing per VLAN ID of channels

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*VoIP*


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SIPv1 (RFC2543) and SIPv2 (RFC3261) control protocols

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Supports G.711 (u-law and A-law), G.729A/B/AB and G.726 CODECs

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Adaptive 300ms jitter buffer

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FAX transmission via G.711 (fallback) or T.30/T.38

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V.21/V.25 fax/modem tone detection

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Echo cancelation in compliance with ITU-T G.165 and G.168

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In-band, out-of-band (RFC 2833), and SIP Info/Notify dialing

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Voice Activity Detection (VAD)

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Comfort Noise Generation (CNG)

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Multiple dial plans configuration

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Configurable Flash key

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High priority queue (low latency) for voice services

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*Wi-Fi*


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Cryptography: WEP, WPA-PSK (TKIP), WPA2-PSK (AES)

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Supports up to 4 SSIDs, provided locally or via OMCI

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Each virtual community (SSID) can be mapped in a different VLAN

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Authentication can be done locally or through a Radius server (IEEE 802.1X authentication)

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QoS through WMM (Wi-Fi MultiMedia) mechanism

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Manual or automatic channel selection

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Automatic or forced Data Rate

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Cryptography: WEP, WPA-PSK (TKIP), WPA2-PSK (AES)

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## SECURITY

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SPI (Stateful Packet Inspection) type firewall

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128 bits AES cryptography for GPON traffic (downstream)

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Login with several permission levels

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AAA authentication: TACACS (RFC1492), TACACS+, RADIUS (RFC2138, RFC2139)

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## QoS

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Traffic prioritization by port, VLAN, VLAN + CoS (802.1p), or CoS only;

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Up to 7 different services provided per ONU

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Each provided service may be divided into up to 8 fluxes

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Prioritization between fluxes may be based on WRR (Weighted Round Robin) or Rate Control

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Downstream (Rate Limit) and upstream (Traffic Shaping) bandwidth limitation

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## MECHANICAL, ELECTRICAL AND ENVIRONMENTAL FEATURES

### *POWER SUPPLY*

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External power source

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Input: 93 to 253VAC (Full Range)

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Output: 12V

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Consumption: 8W (maximum)

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### *ENVIRONMENT*

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Operating temperature: 0 °C a 50 °C

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Relative humidity: 0 to 95% (non-condensing)

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### *WEIGHT AND DIMENSIONS*

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W x H x D (mm): 181 x 34 x 128

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Weight: 0,288Kg

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For more information, visit [www.parks.com.br](http://www.parks.com.br).

*The information presented in this document is subject to change without previous notice.*