AONT-1531

GPON SBU/SFU/HGU ONT (4GE+2POTS)

Feature Summary

- ITU-T G.984 and G.988 compliant, BBF.247 ready
- BBF TR.156 N:1 (E-Tree), 1:1 (E-Line) plus E-LAN
- Indoor wall or table mount
- Four 10/100/1000Base-T Ethernet RJ-45 ports
- Two FXS POTS ATA RJ-11 ports
- VoIP features: SIP, multiple voice codecs, T.30 and T.38 Fax and various CLASS services
- Supports feature rich VoIP application profiles for Caller ID, Call progress, Call Waiting, Call Direct, & Call presentation
- Integrated router with features such as IPv4, IPv6, IPoE, PPPoE, NAT, DHCP, DNS, IP Filtering, IP forwarding, Static IP routing, IP QoS and Firewall
- Flexible bridged or routed mode options on each Ethernet ports.
- Supports dual software image. Holds a working image & alternative image for image rollback
- Built-in L2 wire-speed switch with dynamic bridging, 1024 MAC addresses, 4k VLANs (802.1q tagged, untagged, port based, priority tagged, 802.1ad double tagged)
- ToS/DSCP to 802.1p (Tag Control Information bits) mapping
- Flexible traffic mapping, policing and shaping
- IGMPv2/v3 and MLDv2 (IPv6) snooping, proxy and filtering, 256 multicast groups
- Web based GUI for local provisioning and software upgrade
- Dual managed by ITU-T G.988 OMCI and/or remote management functions as TR-069 and Telnet for provisioning, diagnostics, monitoring, and software upgrade
- Battery Backup ready with an 8-pin (4x2) 'UPS' connector on rear
- ON/OFF & factory default RESET pushbuttons

Applications

The AONT-1531 has been optimized for small business or residential homes to provide triple play service to provide triple play services.

Advanced High Bandwidth GPON technology

The AONT-1531 is fully FSAN (ITU-T G.984) compliant 2.488 Gbps downstream and 1.244 Gbps upstream with a Class B+/C+ GPON systems.

Quality of Service

The AONT-1531 supports extensive QoS features, including 802.3x - flow control, DSCP to 802.1p mapping, upstream congestion control, and downstream traffic scheduling for premium or time sensitive content. Intelligent and robust buffer and queue management for Ethernet traffic, with eight individual prioritizable queues, ensures that tiered service offerings based on different bit-rates and QoS can be readily supported.

Gateway

The AONT-1531 contains both wire-speed L2 switch and L3 routing gateway with port forwarding, NAT and NAPT address translation, built-in PPPoE support for HSI, and an integrated stateful packet inspection firewall with a configurable access control list (ACL) and application-level gateway (ALG). Support for VPN (L2TP, PPTP and IPSec) pass through is also provided. Included as part of the gateway function are DHCP client, DHCP server and DNS server for IPv4 and IPv6.

Security

The AONT-1531 comes with the latest security features, including MAC address spoofing protection, MAC/IP address port binding, per-port access control list (ACL) based on port, MAC address and Ether-type, DoS prevention.

Flexible Management

The AONT-1531 is managed from the AOLT-4000 and AOLT-4200 OLT via OMCI. The AOLT in turn is managed with either Alphion Element Management System (AEMS) that provides configuration, profile based provisioning, event and fault management and performance monitoring for the AONT, or with a 3rd party NMS via northbound interface.

SPECIFICATIONS

GPON Uplink interface

Standard	Fully ITU-T G.984 and G.988 compliant
Line rate	Downstream: 2.488 Gbps; Upstream: 1.244 Gbps
Connector	SC/APC, single-mode-fiber; Labeled 'PON'
Link Budget	28 dB (Class B+) ITU G.984.2 Amd1
Wavelength	Transmit: 1310+/-20nm; Receive: 1490+/-10nm
WBF	Built-in, compliant to G.984.5
Tx Output power	+0.5 to +5.0 dBm mean launch power
Rx Sensitivity	-27dBm (at 10 dB extinction ratio w/FEC off)
Rx Overload	-8 dBm
Distance	up to 60 km (depending on split ratio & fiber loss)
OLS/OTM	ITU-T G.984.2Amd2 including RX & TX power and dying gasp
TC layer	AES (128-bit key), US and DS FEC RS(255,239)
DBA	DBRu mode 0 and mode 1SR
GEM port-IDs	up to 256, Flexible mapping between T-cont & GEM port, Multicast GEM
T-CONT	Type 1-5, up to 64, 8 queues per T-cont

Ethernet interface

Type	Four GE
Connector	RJ-45 connectors CAT5E, 100m (328ft); labeled 'GE1', 'GE2', 'GE3' and 'GE4'
Standard	IEEE 802.3, 802.3u, 801.3ab, IEEE 802.3az
Link	10/100/1000Base-T with rate and full/half-duplex auto-negotiation and MDI/MDIX auto-sensing
MTU max. size	2,000 Byte per IEEE802.3as
Flow control	per 802.3x

Voice/Fax interface

Type	Two POTS FXS
Connector	RJ-11 connectors; Labeled 'POTS1' and 'POTS2'
FXS	5 REN per line, loop start, balanced and unbalanced ringing, configurable tones, country specific impedance, DTMF dialing, CLIP, Hook flash detection, etc.

Power

AC Adapter	Input: 100-240VAC, 50/60Hz
	Output: 12VDC, 1.5A
DC Connector	2-pin Barrel connector
Control	Power ON/OFF push button on rear
Power (Max)	~14 watts

Physical

Temperature	0 °C to 50 °C
Storage	-40 °C to 65 °C
Humidity (RH)	5% to 95% non-condensing
Weight	0.640kg
Mounting	Wall, table/desktop or under table/desk
LED Indicators	11 LEDs - PWR, BAT, ALARM, WAN, DATA, LINK4, LINK3, LINK1, VOICE2, VOICE1
Switches	ON/OFF Pushbutton on rear, Recessed 'RESET' push button on rear
Battery Backup	8-pin (4x2) 'UPS' connector UPS Connector w/On Battery, Battery Low ,Battery Fail and Battery Missing indication

Secure Management

Local	Web based GUI (HTTPS)
Remote	G.984.4/988 OMCI, G.984 PLOAM, Telnet, TR-069
Image Upgrade	Supports firmware upgrade via remote server
Image Restore	Holds a working image & alternative image
Authorization	Secure ONT registration - ONT serial number, PLOAM password

L2 features

Bridging	802.1d STP transparent bridging, 512 MAC table, MAC aging timer, UNI port MAC limit, MAC Filters
US Rate Limiting	Broadcast/multicast, unknown multicast and DLF
VLAN model	TR-156 1:1 & N:1, Transparent LAN Service (TLS);
VLAN	4,095 VLANs (2-4094), Untagged, Priority tagged, Port based, 802.1q Single tagged, 802.1ad (Q-in-Q) Double tagged, VLAN ID translation
VLANs per port	up to 32 configurable VLAN IDs per ONT/port
Multicast	IGMPv2/v3 & MLDv2 snooping, 256 multicast groups, 8 clients, 32 simultaneous flows/client
QoS (Classification)	US: 802.1p TCI, 802.1q CoS, per port IP ToS/DSCP to 802.1p mapping/re-marking; DS: per GEM port
Scheduling	SP, WRR, SP+WRR, 8 queues per T-cont
Congestion	PAUSE frame, support tail-drop, support rate-limiting per port
OAM	Stats, PMs, GEM &UNI port loopback, 802.1ag**

Gateway features for IPv4 and IPv6

WAN	PPPoE client, IPoE with DHCP client or static IP, NAT/NAPT, port forwarding, port triggering
LAN	DHCP server and relay agent, DHCP option 60, DNS relay
Routing	RIP v1/v2 and static IP routing

IPv6 support

Mode	Dual stack lite, 6rd

Firewall

Type	Stateful packet inspection (SPI) pass/block
Filtering	DoS attack prevention, IP source/destination, TCP/UDP port source/destination, MAC source
ALGs	FTP, SIP, H.323, RSTP
VPN	PPTP, L2TP, IPSec pass-through
Access control	DMZ, Parental Controls

VoIP

Protocols	SIP (RFC3261), SDP (RFC2327), RTP/RTCP (RFC3550/3605), RFC3611**, RFC2198**, DTMF & Tones (RFC283)
Supplementary Services	CLASS features- caller ID, call transfer, call forwarding, call hold, call park and pickup, call waiting, MWI, 3-way conference, etc.
Codec	ITU-T G.711 (μ & a-law), G.722, G.723.1, G.729a/b, echo cancellation, jitter buffer, voice activity detection (VAD), silence suppression, comfort noise generation (CNG), voice modem bypass
Fax	ITU-T T.30, T.38 FoIP, Fax Relay, Fax by-pass
IP address	DHCP client or static IP configuration
Interop (IOP)	Proven with major soft switch, gateways, IP-PBXs

Regulatory Compliance

Certification	CE (Conformité Européenne) Compliant
EMC/EMI	EN300 386
EMC Emissions	EN55022, CISPR-22 Class B
EMC Immunity	Radiated RF: EN/IEC61000-4-3(2002) level 2
	Conducted RF: EN/IEC61000-4-6(2001) level 2
Safety	EN/IEC60950-1/UL60950
Laser safety	IEC60825-1 Class 1 laser safety per G.664
Transient	EN/IEC61000-4-4(2001) level 2
Surge	EN/IEC61000-4-5(2001) 0.5 KV (line), 1.5 KV (earth)
ESD	EN/IEC61000-4-2(2001) contact level 2, air discharge level 3
Energy	Broadband Equipment Code of Conduct (2008)
Hazardous	RoHS6, WEEE

*** Contact Sales for feature availability*