

ZYXEL

Your Networking Ally



Gigabit to the Home

PON/G.fast/Ethernet
Solution Brief

**We help you deploy
Gigabit broadband
networks with ease**



Why Gigabit to the Home?

The average number of Internet-connected devices per household is more than 5.7 today. People often simultaneously stream HD video from mobile devices to multiple TVs in the same household. Smart home services with sensors, gateways and machine-to-machine networks are also broadening the need of Internet connection. In Cloud services, the behavior between end-users and content providers are shifting while forecasts indicate that consumers will need

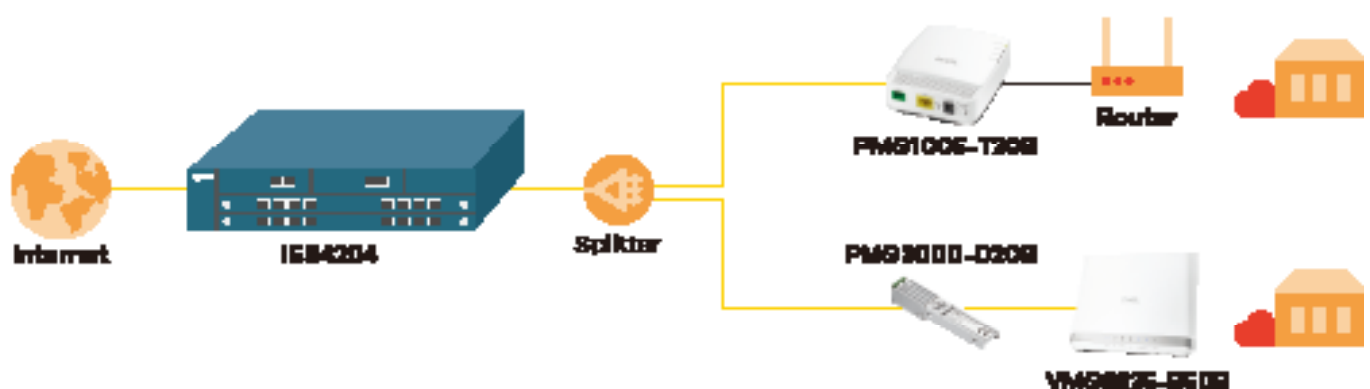
100 Mbps of bandwidth by 2020. This generates a tremendous demand on bandwidth access to the Internet.

As a leading networking solutions provider, Zyxel presents the PON E2E solution and G.fast solution to service providers for the increasing demand of bandwidth and various deployment requirements.

10G PON E2E Solution



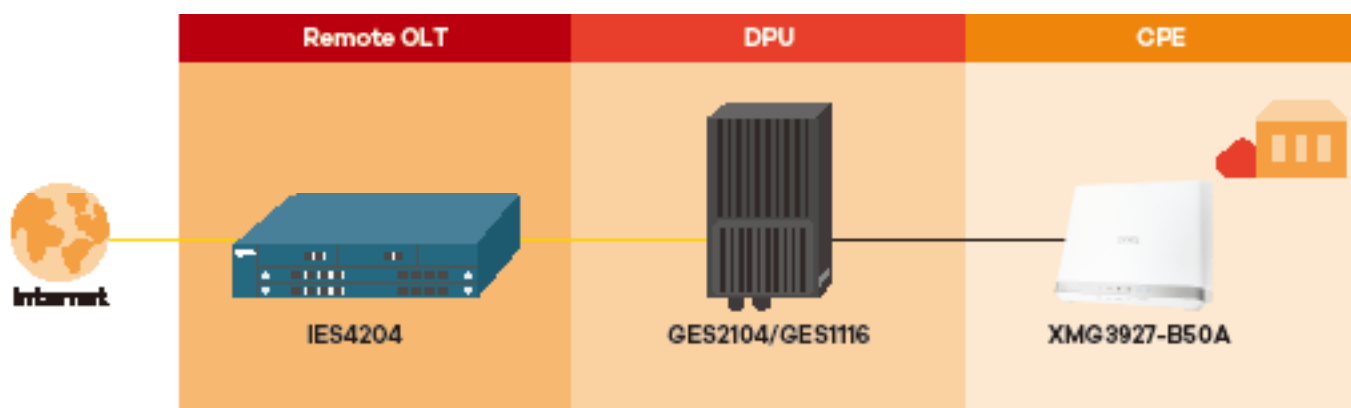
GPON E2E Solution



Benefits

- Lower CAPEX: No physical switches are necessary as less space and rooms are needed
- Lower OPEX: Consuming less electricity and space, no need to maintain active equipment
- Dynamic bandwidth allocation: Offering Giga-grade bandwidth efficiently
- Future-proof network infrastructure from technical and investment points of view

Zyxel G.fast Solution

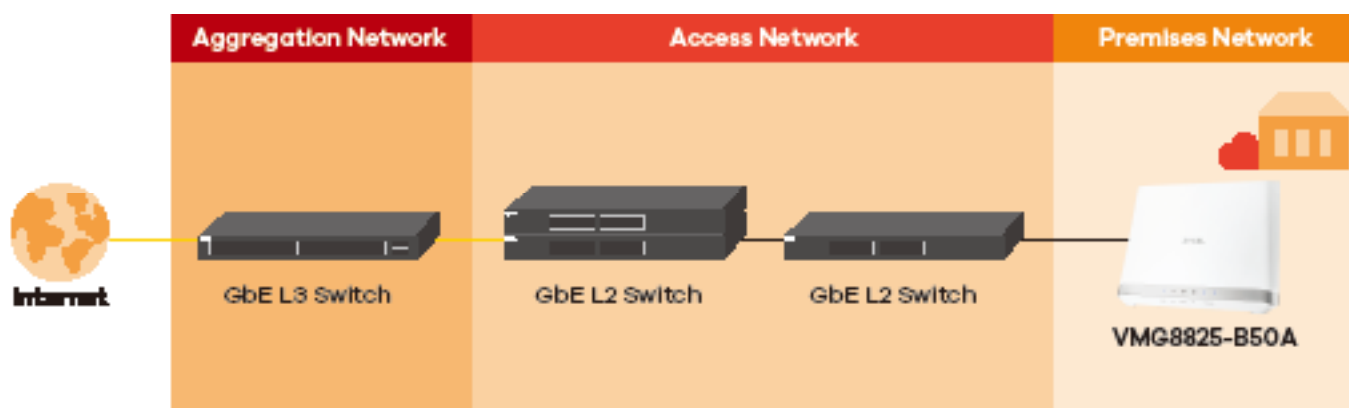


Benefits

- Provide time-to-market deployments base on the existing copper infrastructure
- Favorable solution for service providers who are looking for fiber-like service based on the existing copper infrastructure
- High Flexibility to deploy broadband services



Zyxel Ethernet Solution



Benefits

- Flexible deployments based on the existing Ethernet cable infrastructure.
- Lower CAPEX compared with other networking technologies as Ethernet is ubiquitous and relatively inexpensive



IES4204

2U 4-slot Temperature-Hardened Chassis MSAN



- Multi-service interfaces including VDSL2, GPON, 10G PON and fiber-based GbE
- 2 management card and switching cards for redundancy
- Temperature hardened design for remote deployment
- Comprehensive QoS to enhance users' Triple-Play experience
- Field-proven IGMP snooping and proxy for IPTV deployments

Specifications

Extension slots	2 x line cards, 2 x management cards	Security	Rule-based ACL filtering, Anti-ARP-spoofing, Anti-ARP-flooding, IP Source Guard, Port Isolation, RADIUS and TACACS+, DHCP Option 82, Port Binding
Performance	8 queues with packet priority scheduling (SPQ/WRR), supports up to 1K IGMP multicast groups, DSCP to 802.1p priority mapping	VLAN	4096 IEEE 802.1Q compatible VLAN tagging, VLAN stacking (Q-in-Q), VLAN bridge function, VLAN trunking
Management	SNMP v1/v2/v3, EMS (NetAtlas EMS), CLI, Web GUI		

PX730V

Dual-Band Wireless AX XGSPON HGU with 10G LAN support



- SFP+ Cage flexible design for 10G Active Fiber and XGSPON Support
- 10 Gigabit Ethernet LAN high performance support
- AX6000, dual-band WiFi with 2.4G 802.11ax 4x4+5G 802.11ax 4x4 technology delivering high WiFi performance for video streaming and IPTV
- Superior coverage with unique concurrent dual-band wireless circuit design

Specifications

WAN connection	1 ITU-T G.9807.1 10-Gigabit-capable symmetric passive optical network (XGSPON)	VoIP	SIP v2 (RFC 3261), 2 VoIP POTS phone ports, codecs: G.711, G.729a/b (optional), G.722, T.38 fax relay, supplementary services (Call transfer, call waiting, 3-way calling, etc.)
Wireless	IEEE 802.11a/n/a/ac/ax, (4x4) data rate: up to 4800 Mbps, frequency: 5 GHz IEEE 802.11b/g/n/ax, (4x4) data rate: up to 1150 Mbps, frequency: 2.4 GHz	Security & Firewall	SPI, content filtering
LAN	1 10/100/1000/10000 BASE-T port 4 10/100/1000BASE-T ports	Management	OMCI, TR-069, TR-181

VMG8825-B50B

Dual-Band Wireless AC/N VDSL2 Combo WAN Gigabit IAD



- Supports SFP for fiber applications
- ComboWAN-in-a-box for optimized CAPEX of FTTH/VDSL2 deployments
- AC2400, dual-band WiFi with 1.7 Gbps 802.11ac 4x4 Wave 2 technology delivering performance boosts for video streaming and IPTV
- Supports VoIP SIP protocol with 3-way conference calls
- Remote management through TR-181 issue-2

Specifications

WAN connection	VDSL2 (up to 35b profile)/ADSL2+ Dual Mode, GbE	VoIP	SIP v2 (RFC 3261), 2 VoIP POTS phone ports, codecs: G.711, G.729a/b (optional), G.722, T.38 fax relay, supplementary services (Call transfer, call waiting, 3-way calling, etc.)
Wireless	IEEE 802.11ac, (4x4) data rate: up to 1.7 Gbps, frequency: 5 GHz IEEE 802.11n, (3x3) data rate: up to 600 Mbps, frequency: 2.4 GHz	Security & Firewall	SPI, content filtering
QoS	Triple-play QoS (802.1p/802.1q/ToS/DiffServ)	USB	File sharing, 3G/4G back up with USB dongle
		Management	TR-069, TR-098, TR-181 and TR-104

PMG1005-T20B

GPON SFU with 1-port GbE LAN



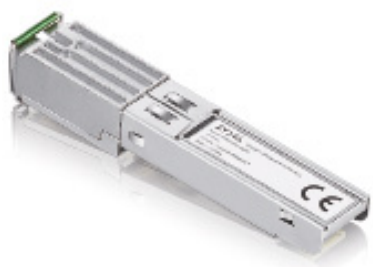
- Gigabit data access via fiber
- Simple bridge design for flexible deployments
- Field-proven interoperability with ZyXel OLT

Specifications

PON interfaces	1 ITU-T G.984-compliant GPON port, GPON Class B+ type PMD specification (ITU-T G.984.1, G.984.2, G.984.3, G.984.4)	LAN	10/100/1000 Mbps Giga Ethernet port
Functionality	Bridge	Management	OMCI
		Power supply	100 to 220 V, 12 V DC/0.5 A

PMG3000-D20B

Gigabit GPON SFP-TYPE SFU



- One GPON WAN port with SC/APC connector
- Class B+ optics
- Complies with ITU-T G.984.1, G.984.2, G.984.3, G.984.4 and G.984.5 standards
- One SFP Electrical Footprint with MSA compliance
- Single fiber BiDi SC/APC receptacle

Specifications

PON interfaces	1 ITU-T G.984-compliant GPON port, GPON Class B+ type PMD specification (ITU-T G.984.1, G.984.2, G.984.3, G.984.4)
LAN	MSA SFP interface

Functionality	Bridge only
Management	OMCI

PMG5622GA/PMG5617GA

Dual-Band Wireless AC/N GPON HGU with 4-port GbE LAN



- Unlimited possibility with GPON fiber
- Lower OPEX with Zyxel OMCI & APS
- Superior coverage with unique concurrent dual-band wireless circuit design
- Zyxel OPAL firmware realizes the flexibility and faster time to market
- RF overlay enables traditional CATV video services through the GPON network (PMG5622GA)

Specifications

WAN connection	1 ITU-T G.984-compliant GPON port, GPON Class B+ type PMD specification (ITU-T G.984.1, G.984.2, G.984.3, G.984.4)
Wireless	IEEE 802.11ac/a/n, (2x2) data rate: up to 866 Mbps, frequency: 5 GHz IEEE 802.11b/g/n, (2x2) data rate: up to 300 Mbps, frequency: 2.4 GHz
VoIP	SIP (RFC3261)

Security & Firewall	SPI firewall, MAC/IP/URL addresses filtering
Networking	802.1p (at least 8 priority queues), 802.3x flow control, IGMP v1/v2/v3, IGMP snooping, fast leave, NAT/ NAPT, DHCP Client/Server/Relay, RIP I/II, ALG (SIP, RTSP), UPnP, DDNS/DNS server/DNS client
Management	Standard OMCI (G.984.4), PLOAM, TR-069, Zyxel Auto-Provisioning

GES2104-R55/A55

4-port Environmental-Hardened G.fast DPU



- G.fast with G.vectoring and VDSL2 fallback
- Environmental harden for flexible installation
- Reverse Power Feeding (RPF) or AC power
- Persistent Management Agent (PMA) for off-line management

Specifications

Network interfaces	4 x quick connector for G.fast ports, 1 x SFP slot	Management	Web GUI, Telnet, FTP, CLI, SNMP, SSH, EMS support
G.fast data throughput	Up to 1 Gbps for upstream and downstream aggregate	System functions	Band plan support, DHCP server/relay, VLAN, VLAN stacking, MVR, port mirroring, static route, IGMP, 802.1x RADIUS
G.fast function	G.INP support, US/DS ratio configurable, on-line reconfiguration, UPBO, VDSL fallback	Quality of Service	802.1p (8 priority queues per port), traffic shaping, rule-based bandwidth management, storm control, ACL, DSCP to 802.1p mapping, 802.3x flow control

GES1116-FSA

16-port Temperature-Hardened G.fast DPU with Built-in Splitter



- G.fast with G.vectoring and VDSL2 fallback
- Temperature harden for flexible installation
- Flexible uplink interface
- Complete QoS for service differentiation

Specifications

Network interfaces	2 x Telco-50 for up to 16 G.fast ports 2 x 1/2.5/10 Gbps SFP uplink open slots	System functions	Band plan support, DHCP server/relay, VLAN, VLAN stacking, MVR, port mirroring, static route, IGMP, 802.1x RADIUS
VDSL data throughput	Up to 1 Gbps for upstream and downstream aggregate	Quality of Service	802.1p (8 priority queues per port), traffic shaping, rule-based bandwidth management, storm control, ACL, DSCP to 802.1p mapping, 802.3x flow control
G.fast function	G.INP support, US/DS ratio configurable, on-line reconfiguration, UPBO, VDSL fallback	Management	Web GUI, Telnet, FTP, CLI, SNMP, SSH, EMS support
Redundancy	802.3ad link aggregation, 802.1W RSTP, 802.1D STP		

XMG3927-B50A

Dual-Band Wireless AC/N G.fast Gateway



- G.fast supports up to bandwidth 106 MHz
- VDSL2 supports super vectoring up to profile 35b
- AC2400, dual-band WiFi with 1.7 Gbps 802.11ac 4x4 Wave 2 technology delivering performance boosts for video streaming and IPTV
- Remote management through TR-069/TR-181 issue-2

Specifications

WAN connection	VDSL2 (up to 35b profile)/ADSL2+ Dual Mode, GbE	VoIP	SIP v2 (RFC 3261), 2 VoIP POTS phone ports, codecs: G.711, G.729a/b (optional), G.722, T.38 fax relay, supplementary services (Call transfer, call waiting, 3-way calling, etc.)
Wireless	IEEE 802.11ac, (4x4) data rate: up to 1.7 Gbps, frequency: 5 GHz IEEE 802.11n, (3x3) data rate: up to 600 Mbps, frequency: 2.4 GHz	Security & Firewall	SPI, content filtering
QoS	Triple-play QoS (802.1p/802.1q/ToS/DiffServ)	Management	TR-069, TR-098, TR-181 i2 and TR-111

VMG8825-B50A/B60A

Dual-Band Wireless AC/N VDSL2 IAD with USB



- VDSL2 supports super vectoring up to profile 35b
- AC2400, dual-band WiFi with 1.7 Gbps 802.11ac 4x4 Wave 2 technology delivering performance boosts for video streaming and IPTV
- Supports VoIP SIP protocol with 3-way conference calls
- Remote management through TR-069/TR-181 issue-2

Specifications

WAN connection	VDSL2 (up to 35b profile)/ADSL2+ Dual Mode, GbE	VoIP	SIP v2 (RFC 3261), 2 VoIP POTS phone ports, codecs: G.711, G.729a/b (optional), G.722, T.38 fax relay, supplementary services (Call transfer, call waiting, 3-way calling, etc.)
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QoS	Triple-play QoS (802.1p/802.1q/ToS/DiffServ)	Management	TR-069, TR-098, TR-181TR-069, TR-098, TR-181 i2 and TR-111



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