ZYXEL
COMMUNICATIONS





IES5206/IES5212/IES6217 Series

Temperature-Hardened Chassis MSAN

The Zyxel IES5206/IES5212/IES6217 Series of 5U 6-slot Temperature-Hardened Chassis MSAN is a medium-size access platform providing multi-service, flexible application and smooth migration to the Vectoring VDSL2, GPON, 10G PON, and GbE network.

Benefits

Unified platform for various scenarios

The Zyxel IES5206, IES5212, and IES6217 Series of Temperature-Hardened Chassis MSAN support access to VDSL2, PON and active fiber based GbE/10GbE services with all service slots work with any service line cards. With a full set of line cards, the IES5206/IES5212 Series supports up to 8K/20K FTTH subscribers, and the IES5206/IES5212/IES6217 Series supports up to 192/384/576 FTTB/VDSL subscribers and 160/400/600 active Ethernet fiber links. In various application scenarios, the Series saves CAPEX significantly for operators. Since the IES5206, IES5212, and IES6217 Series use the same software and service line cards, the learning curve and spare part inventory can be significantly lowered for the operator.

- Multi-service interfaces including VDSL2, PON and active fiber based GbE/10GbE
- Board-Level Vectoring (BLV) and System-Level Vectoring (SLV)
- Full redundancy of Management card and power
- Comprehensive QoS enhanced Triple-Play experience
- Field-proven IGMP snooping and proxy for IPTV deployments

G.993.5 vectoring to cancel far-end crosstalk for higher bandwidth

The Zyxel IES5206, IES5212, and IES6217 Series are vectoring xDSL network devices featuring up to 192/384 ports for service providers, enterprises and large building complexes. The IES5206, IES5212, and IES6217 Series conform to G.993.2, G994.1 G.997.1, G.998.4 G.inp, and G.993.5 vectoring to ensure interoperability with standard-compliant VDSL CPEs. The IES5206, IES5212, and IES6217 Series support VDSL2 Vectoring (G.993.5) technology to mitigate performance degradation by cancelling the incurred crosstalk within multiple DSL lines.

Future-proof architecture

The Zyxel IES5206, IES5212, and IES6217 Series are equipped with failover-enabled Management Switch Cards (MSC), dual-input power modules and various high port densities, multi-purpose line cards. With comprehensive IP-centric firmware features, the IES5206, IES5212, and IES6217 Series facilitate telcos/ISPs to deliver high-quality services for residential or business users at a competitive CAPEX/ OPEX as well as to satisfy their need for reliability, flexibility and scalability necessary to the current and future infrastructures.

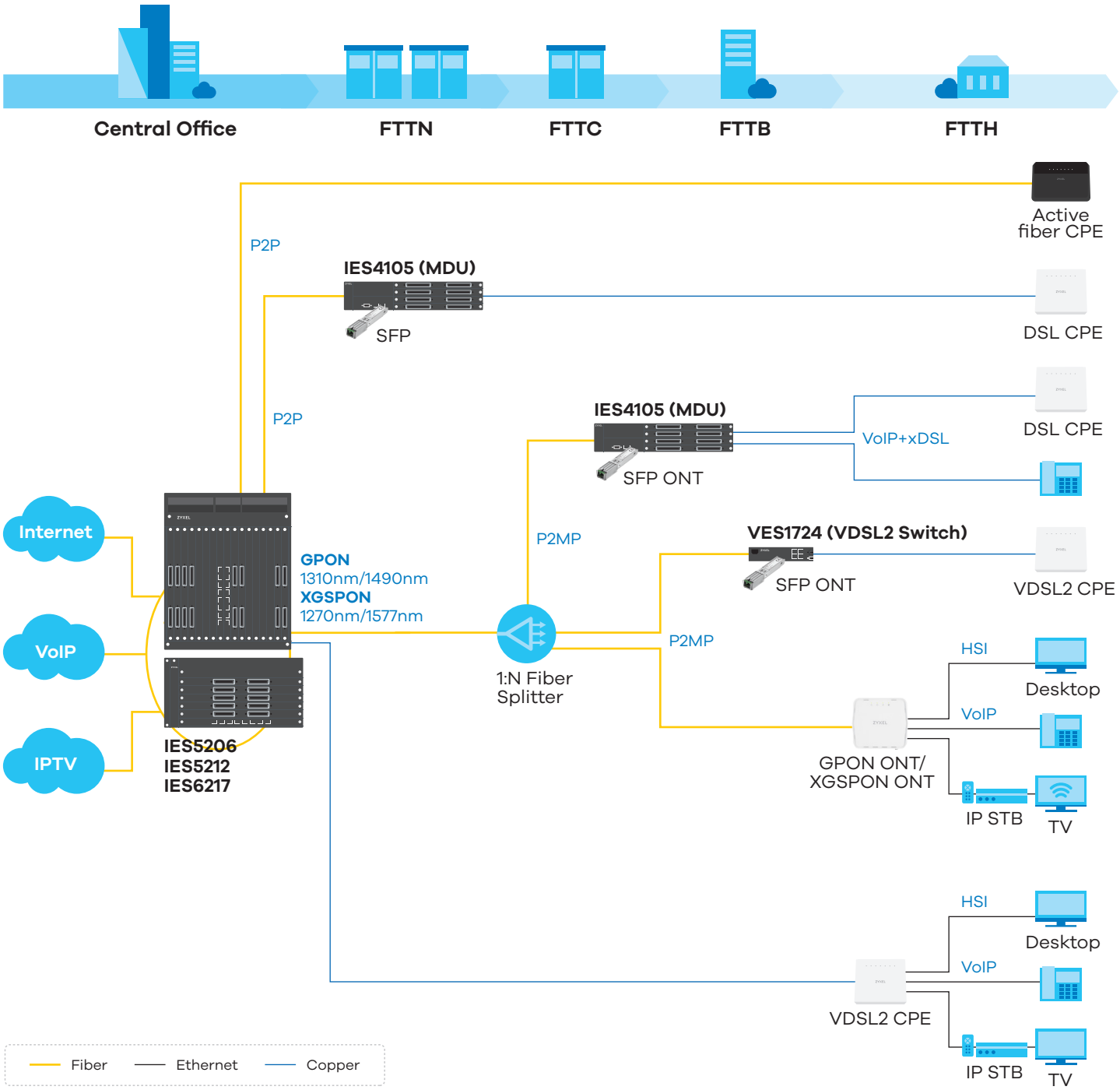
Advanced triple-play and mass-deployment functionalities

The Zyxel IES5206, IES5212, and IES6217 Series inherit all the Layer-2 Quality of Service (QoS), security and multicast functionalities; it also supports IGMP snooping to prevent unnecessary forwarding of multicast traffics to all subscribers and thus to optimize bandwidth utilization for multicast applications such as broadcast video. The IES5206, IES5212, and IES6217 Series also support the multicast VLAN feature that distributes the source to all the VLANs requesting video streams.

Sophisticated OAM&P features

The Zyxel IES5206, IES5212, and IES6217 Series provide various management methods: local console port, Telnet, local hosted Web GUI and SNMP-based EMS (NetAtlas EMS). The management functions include Alarm and Status Surveillance, Configuration Management, Performance Management and Fault Management. Both Series allow multiple administrative accounts with 3-level access privileges. IES5206, IES5212, and IES6217 Series support user-friendly web GUI that allows operators to manage through any browser on PCs, laptops or smart phones.

Application diagram



System architecture

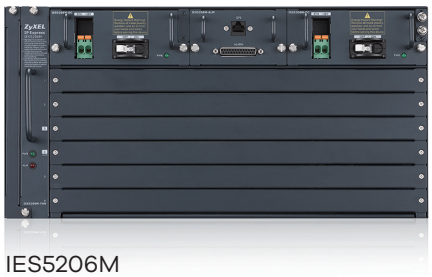
Chassis



IES6217M



IES5212M



IES5206M

Management switch cards



MSC1280XB



MSC1280XA



MSC1240XA

VDSL line cards



VLC1448X-51S



VLC1448X-51

Vectoring engine card



VEC1001X

Active fiber line cards



GLC1440X-55A



GLC1540X-55A

GPON line cards*



OLC3416-42A



OLC3416B-IA

AIO PON line card**



OLC3816-IA

Specifications

System specifications

DSL compliant
- Comply G.993.2, G.993.5 (Vectoring), G.998.2 (PTM bonding), & G.998.4 (G.INP) Profile 8a, 8b, 8c, 8d, 12a, 12b, 17a
- UPBO/DPBO
- Seamless rate adaptation
- Single End Loop Test (SELT)/ Dual End Loop Test (DELT)
- On-line reconfiguration
- Impulse Noise Monitoring (INM)
- Virtual noise
- ADSL2+ fallback
- ADSL G.992.1 (G.DMT)
- ADSL2 G.992.3 Annex M
- ADSL2+ G.992.5 Annex M

PON compliant
- ITU-T G.984
- ITU-T G.988
- ITU-T G.9807 (XGSPON)
- Dynamic bandwidth allocation for upstream bandwidth dynamic adjustment
- Forward error correction
- GPON encapsulation method fragmentation
- GPON Type-B protection
- Rogue ONT detection
- 1:128 ONT support per PON port
- 1:256 ONT support per 10G PON port

Topology protocols
- ERPS
- Ring/Tree/Star topology
- STP/RSTP/MSTP
- Link aggregation

Switch function
- IEEE 802.1q VLAN
- IEEE 802.1ad VLAN stacking
- VLAN translation 1:1
- VLAN translation N:1
- Jumbo frame
- Mirroring by port
- Mirroring by VLAN
- Port isolation

Multicast
- Multicast VLAN registration
- IGMPv2 & v3, snooping & proxy
- IGMP filter profile setting
- IGMP fast leave
- MLDv1 & MLDv2 snooping and proxy

Security
- DHCP relay agent
- PPPoE IA
- Static MAC
- Drop packet by ACL
- MAC limit per port
- MAC filtering source/destination MAC
- Storming control
- Anti MAC spoofing
- Prevent ARP spoofing

QoS
- IEEE 802.1P
- Ingress port rate limit
- Egress port rate limit
- Scheduling algorithm SP, SP+WFQ, WFQ
- Limit packet rate by ACL

OAM&P
- SNMP
- In band management/out-of-band management
- CLI via console port/Telent/SSH
- Web GUI
- NetAtlas EMS

Hardware specifications

Chassis — IES6217M
- 17-slot rack mountable enclosure, 19" chassis
- 15 slots for VDSL and GE line cards
- 2 slots for management and switch cards
- 3 slots for Vectoring Engine cards
- 2 DC power input modules
- One fan and dust filter module
- One alarm module

Chassis — IES5212M
- 12-slot rack mountable enclosure, 19" chassis
- 10 slots for VDSL, GPON, and GE line cards
- 2 slots for management and switch cards
- 2 slots for Vectoring cards
- 2 DC power input modules
- One fan and dust filter module
- One alarm module

Chassis — IES5206M
- 6-slot rack mountable enclosure, 19" chassis
- 4 slots for VDSL, GPON, XGSPON and GE line cards
- 2 slots for management and switch cards
- 1 slot for Vectoring card
- 2 DC power input modules for redundancy or one AC and one DC power input module for redundancy
- One fan and dust filter module
- One alarm module

Management switch card — MSC1280XB
- Eight 10G (SFP+) or eight 1G uplink/ subtending interfaces
- One mini-RJ11 console port
- One 10M/100M/1G out-of-band Management interface
- Successor of the MSC1240XA and MSC1280XA

Management switch card — MSC1240XA
- Four 10G (SFP+) or four 1G uplink/ subtending interfaces
- One mini-RJ11 console port
- One 10M/100M/1G out-of-band management interface

Management switch card — MSC1280XA
- Eight 10G (SFP+) or eight 1G uplink/ subtending interfaces
- One mini-RJ11 console port
- One 10M/100M/1G out-of-band management interface

Active fiber line cards — GLC1440X-55A/GLC1540X-55A
- Hot swappable 40-port active Gigabit Ethernet line card (GLC1440X-55A)
- Hot swappable 40-port active 10G Ethernet line card (GLC1540X-55A)
- 20 open slots for 20 ports GbE/10GbE SFP/SFP+
- 20 open slots for 40 ports GbE/10GbE CSFP/CSFP+
- One mini-RJ11 console

VDSL line cards — VLC1448X-51/VLC1448X-51S
- Hot swappable 48-port vectored VDSL2 line card over POTS
- Support G.993.5, G.998.4, G.993.2, G.994.1, G.997.1
- Maximum transmission rate up to 100 Mbps/50 Mbps
- One mini-RJ11 console port
- Support VDSL2 profiles 8a, 8b, 8c, 8d, 12a, 12b and 17a
- Support U0 band, customer PSD, RFI notch, single latency in PTM mode and INP

- Support UPBO and DPBO, Reed Solomon and trellis coding
- Support ADSL fall back with ADSL/ADSL2/ADSL2+ CPE in Annex A, J, M, L modes

GPON line card — OLC3416-42A
- 16 GPON SFP open slots compatible with class C+ SFP
- One mini-RJ11 console port
- Upstream signaling speed: 1.244 Gbps
- Downstream signaling speed: 2.488 Gbps

GPON line card — OLC3416B-IA
- Hot swappable
- 16 GPON SFP open slots compatible with class C+ SFP
- One mini-RJ11 console port
- Upstream signaling speed: 1.244 Gbps
- Downstream signaling speed: 2.488 Gbps

All-in-one (AIO) PON line card — OLC3816-IA
- Hot swappable
- 16 GPON/XGS-PON/Combo PON SFP/SFP+ open slots
- One mini-RJ11 console port

Physical specifications

Chassis — IES6217M
- Item dimensions (WxDxH): 440 x 275 x 622 mm (17.32″ x 10.83″ x 24.49″)
- Item weight: 25.5 kg (56.22 lb.)

Chassis — IES5212M
- Item dimensions (WxDxH): 440 x 275 x 370 mm (17.32″ x 10.83″ x 14.57″)
- Item weight: 15.5 kg (34.17 lb.)

Chassis — IES5206M
- Item dimensions (WxDxH): 442 x 275 x 222 mm (17.40″ x 10.83″ x 8.74″)
- Item weight: 13 kg (28.67 lb.)

Management switch card — MSC1280XB/MSC1240XA/MSC1280XA
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.16″ x 0.98″)
- Item weight: 1.2 kg (2.65 lb.)

VDSL line card — VLC1448X-51S
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.16″ x 0.98″)
- Item weight: 1.6 kg (3.53 lb.)

VDSL line card — VLC1448X-51
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.16″ x 0.98″)
- Item weight: 1.2 kg (2.65 lb.)

Active fiber line card — GLC1440X-55A
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.15″ x 0.98″)
- Item weight: 1.1 kg (2.43 lb.)

Active fiber line card — GLC1540X-55A
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.15″ x 0.98″)
- Item weight: 1.34 kg (2.95 lb.)

GPON line card — OLC3416-42A
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.15″ x 0.98″)
- Item weight: 1.1 kg (2.43 lb.)

GPON line card — OLC3416B-IA
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.16″ x 0.98″)
- Item weight: 1.1 kg (2.42 lb.)

All-in-one (AIO) PON line card — OLC3816-IA
- Item dimensions (WxDxH): 391 x 258 x 25 mm (15.39″ x 10.15″ x 0.98″)
- Item weight: 1.50 kg (3.31 lb.)

Power consumption
- MSC1240XA: 87W
- MSC1280XA: 93W
- MSC1280XB: 93 W
- VLC1448X-51: 73 W
- VLC1448X-51S: 73 W
- VEC1001X: 51 W
- GLC1440X-55A: 83 W
- GLC1540X-55A: 103 W
- OLC3416-42A: 69 W
- OLC3416B-IA: 71 W
- OLC3816-IA: 162 W

Environmental specifications

Operating environment
- Temperature: -40°C to 65°C (-40°F to 149°F)***
- Humidity: 10% to 95% (Non-condensing)

Storage environment
- Temperature: -40°C to 70°C (-40°F to 158°F)
- Humidity: 10% to 95% (Non-condensing)

Certification
- Safety:
  - IEC 62368-1:2018
  - EN IEC 62368-1:2020+A11:2020
- EMC:
  - EN 55032 Class A
  - EN IEC 61000-3-2
  - EN 61000-3-3
  - EN 55035
  - EN 300 386
- ITU-T K.20

* OLC3416-42A and OLC3416B-IA can only support in IES5206 and IES5212
** OLC3816-IA can only support with IES5206 (DC)
*** OLC3816-IA supports -40°C to 60°C (-40°F to 140°F)

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