



## IES5206/IES5212 Series

5U 6-slot/8.3U 12-slot Temperature-Hardened Chassis MSAN

### Benefits

#### Unified platform for various scenarios

The ZyXel IES5206 and IES5212 Series of Temperature-Hardened Chassis MSAN support access to VDSL2, GPON and fiber-based GbE services with all service slots work with any service line cards. With a full set of line cards, the IES5206 and IES5212 Series support up to 8K/20K FTTH subscribers, 192/384 FTTB/VDSL subscribers and 160/400 active non-blocking Gigabit Ethernet fiber links. In various application scenarios, the IES5206 and IES5212 Series save CAPEX significantly for operators. Since the IES5206 and IES5212 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, GPON and fiber-based GbE



Board-Level Vectoring (BLV) and System-Level Vectoring (SLV)



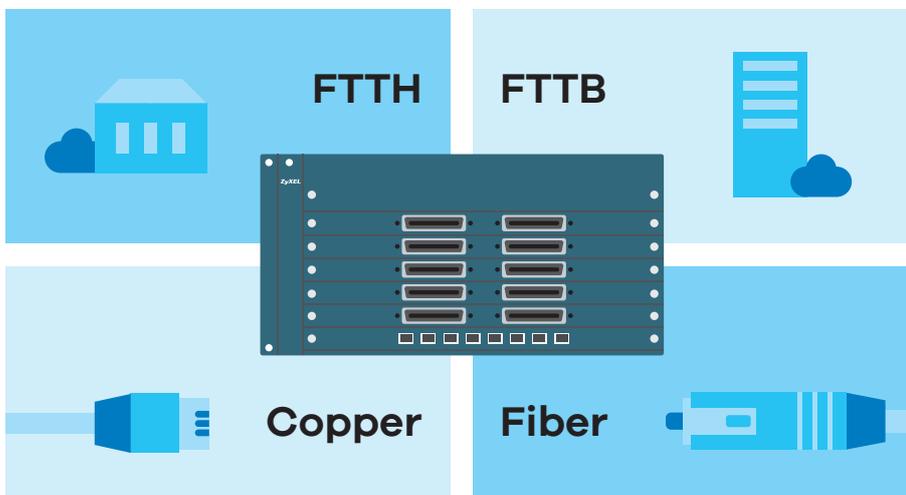
Full redundancy of Management card and power



Comprehensive QoS enhanced Triple-Play experience

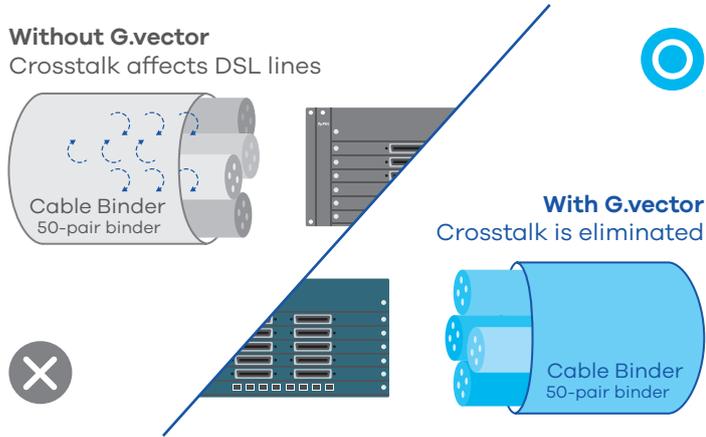


Field-proven IGMP snooping and proxy for IPTV deployments



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

The Zyxel IES5206 and IES5212 Series are vectoring xDSL network devices featuring up to 192/384 ports for service providers, enterprises and large building complexes. The IES5206 and IES5212 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 and IES5212 Series support VDSL2 Vectoring (G.993.5) technology to mitigate performance degradation by cancelling the incurred crosstalk within multiple DSL lines.



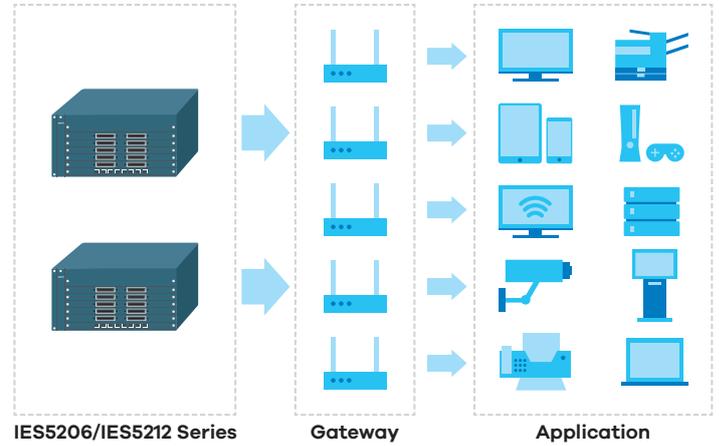
## Future-proof architecture

The Zyxel IES5206 and IES5212 Series are equipped with non-blocking backplane, 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 and IES5212 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.



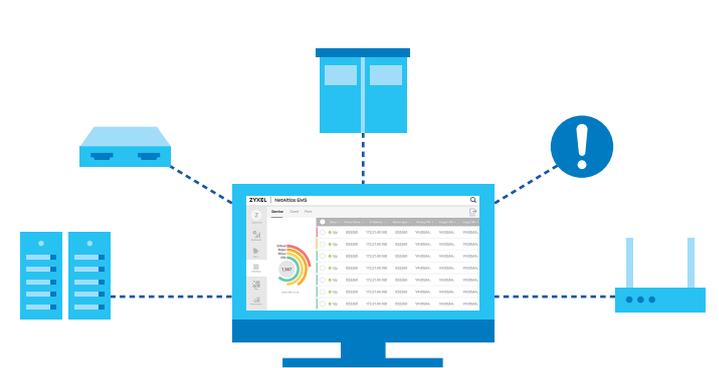
## Advanced Triple-play and mass-deployment functionalities

The Zyxel IES5206 and IES5212 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 and IES5212 Series also support the multicast VLAN feature that distributes the source to all the VLANs requesting video streams.

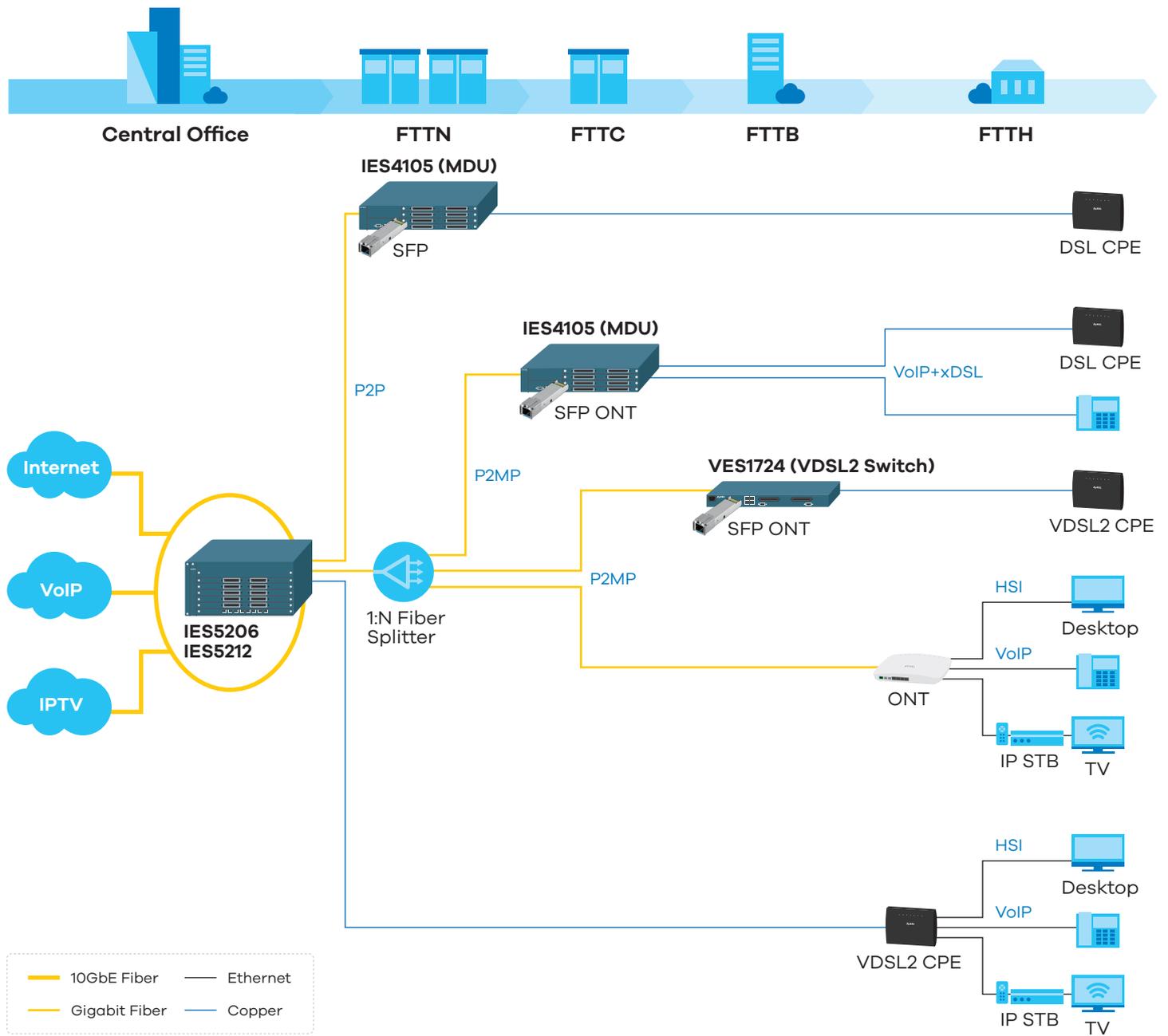


## Sophisticated OAM&P features

The Zyxel IES5206 and IES5212 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. The IES5206 and IES5212 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



IES5212M



IES5206M

## Management Switch Cards



MSC1240XA



MSC1280XA

## VDSL Line Cards



VLC1448X-51S



VLC1448X-51

## Vectoring Engine Card



VEC1001X

## Gigabit Ethernet Line Card



GLC1440X-55A

## GPON Line Card



OLC3416-42A

# 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
- G.INP

### GPON Compliant

- ITU-T 984.1
- ITU-T 984.2
- ITU-T 984.3
- ITU-T 984.4
- ITU-T 984.7
- 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

### 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

- IGMPv1, v2, v3 snooping
- Fast leave
- Multicast VLAN

### 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
- DDoS

### 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/Telnet/SSH
- Web GUI
- NetAtlas EMS

## Hardware Specifications

### Chassis—IES5212M

- 12-slot rack mountable enclosure, 19" chassis
- 8 slots for DSL line cards
- 10 Slots for GPON line card and GE line card
- 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 DSL or GPON line card
- 2 slots for management and switch card
- 1 slot for Vectoring card
- 2 DC power input module 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—

#### MSC1240XA

- Four 10G (SFP+) or four 1G uplink/subtending interfaces
- One mini-RJ11 console port
- One 10M/100M/1G out-of-band Mgmt 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

### Gigabit Ethernet Line Card—

#### GLC1440X-55A

- Hot swappable 40-port active Gigabit Ethernet line card
- 20 open slots for Gigabit or Fast Ethernet SFP (1000/100BASE-FX/BX/LX/EX)
- 20 open slots C-SFP for 40 port Gigabit Ethernet
- 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 frequency allocation band plan 998 and 997
- 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 B+ and class C+ SFP
- One mini-RJ11 console port
- Upstream signaling speed: 1.244 Gbps
- Downstream signaling speed: 2.488 Gbps
- 1:1 redundancy with another OLC3416-42A

## Physical Specifications

### Chassis—IES5212M

- Item dimensions (WxDxH):  
440 x 272 x 370 mm
- Item weight: 15.5 kg

### Chassis—IES5206M

- Item dimensions (WxDxH):  
442 x 272 x 222 mm
- Item weight: 13 kg

### Management Switch Card— MSC1240XA

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.2 kg

### Management Switch Card— MSC1280XA

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.2 kg

### VDSL Line Card—VLC1448X-51S

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.6 kg

### VDSL Line Card—VLC1448X-51

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.2 kg

### Gigabit Ethernet Line Card— GLC1440X-55A

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.1 kg

### GPON Line Card—OLC3416-42A

- Item dimensions (WxDxH):  
391 x 258 x 25 mm
- Item weight: 1.1 kg

## Power Consumption

- MSC1240XA: 87W
- MSC1280XA: 93W
- VLC1448X-51: 73W
- VLC1448X-51S: 73W
- VEC1001X: 51W
- GLC1440X-55A: 83W
- OLC3416-42A: 69W

## 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:
  - EN60950-1
  - CSA60950-1
  - UL60950-1
  - IEC60950-1
- EMC:
  - EN55022 class A
  - EN55024 class A
  - ETSI 300 386 V1.6.1
  - FCC part 15 class A
- ITU-T K.20

For more product information, visit us on the web at [www.zyxel.com](http://www.zyxel.com)

Copyright © 2018 Zyxel Communications Corp. All rights reserved. Zyxel, Zyxel logo are registered trademarks of Zyxel Communications Corp. All other brands, product names, or trademarks mentioned are the property of their respective owners. All specifications are subject to change without notice.

Datasheet [IES5206/IES5212 Series](#)



5-100-01618004 03/18