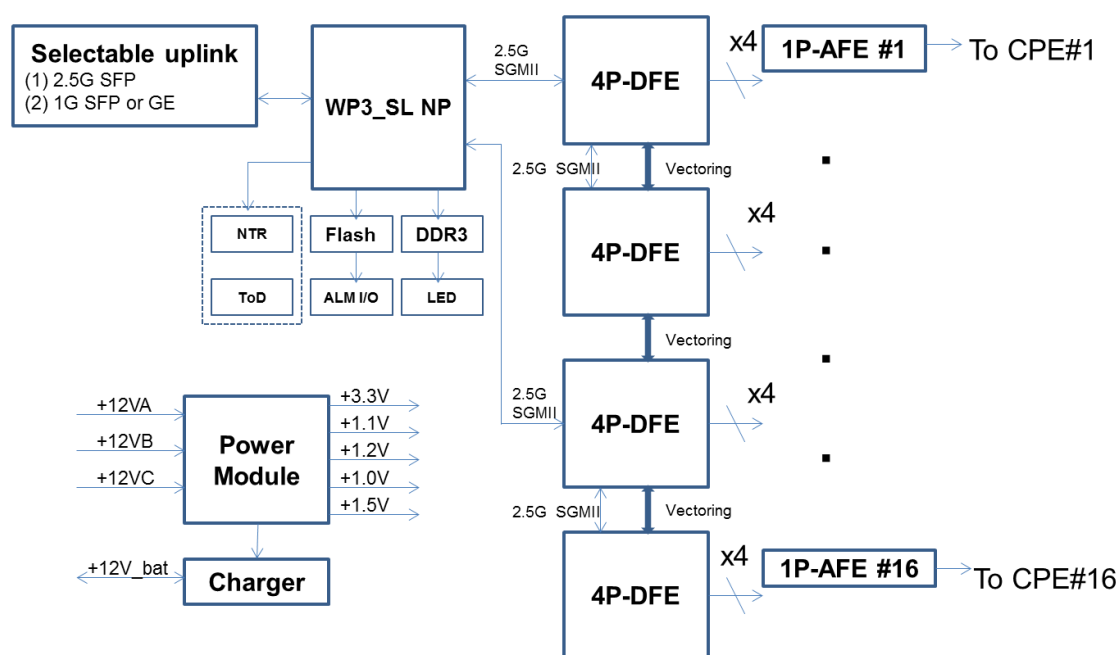# ZISA   DPU3016

16 Ports G.fast DPU

Overview

The emergence of OTT videos and 4K TV is accelerating ultra-broadband network deployments. Fiber to the home (FTTH) is a good solution to offer ultra-broadband service, but is costly and difficult to deploy services due to complicated construction works. G.fast, which reuses existing copper resources to reach speeds comparable to FTTH (1,000 Mbit/s), is well-suited to brownfield areas. Featuring faster access, faster deployment, and faster return on investment, G.fast is attracting increasing industry attention.

ZISA DPU 3016 rackmount, is 16-port G.fast DPU which accepts AC90~264V local power.

The service sets for DPU 3016 are IPTV, HSIA, and cVoIP. Together with advanced Ethernet OAM, it also targets for business services for copper wired Multi-tenant Units.

As following block diagram, DPU 301650 supports switch selectable (1) 2.5G SFP interface and (2) 1G SFP or GE interface as its uplink interface.

Features

 Profile 106a, spectrum up to 106 MHz bandwidth at 4dBm transmit power

16-port vectoring (crosstalk cancellation) with linear precoding now, and will support nonlinear precoding in the future when standards are clearly defined

Programmable Time-Division Duplexing, to accommodate different asymmetry ratios of downstream/upstream (Downstream MDS 15~29).

Full start up sequence takes less than 20sec, and the fast retrain time, including 16-port vectoring, is under 2sec.

Tolerant of inside wire impairments and changing noise conditions

Fast On-Line Reconfiguration (SRA, FRA, and bit-swapping) to cope with Channel/DPU 3016 series management structure
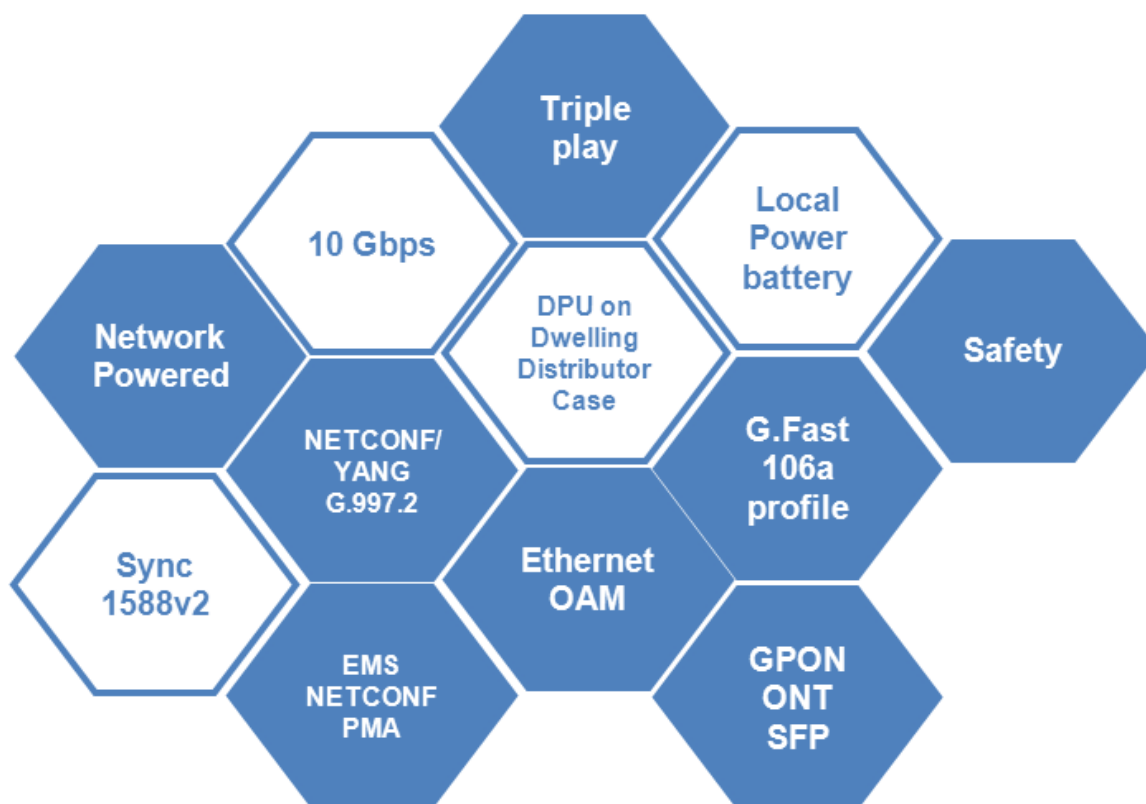
Follows BBF G.fast recommendations and TR-167, the DPU and G.fast SFP modem are treated as a GPON fed remote DSLAM

Currently supports CLI/WEB/SNMP management, and will add the Netconf protocol and Yang data modeling for G.997.2.
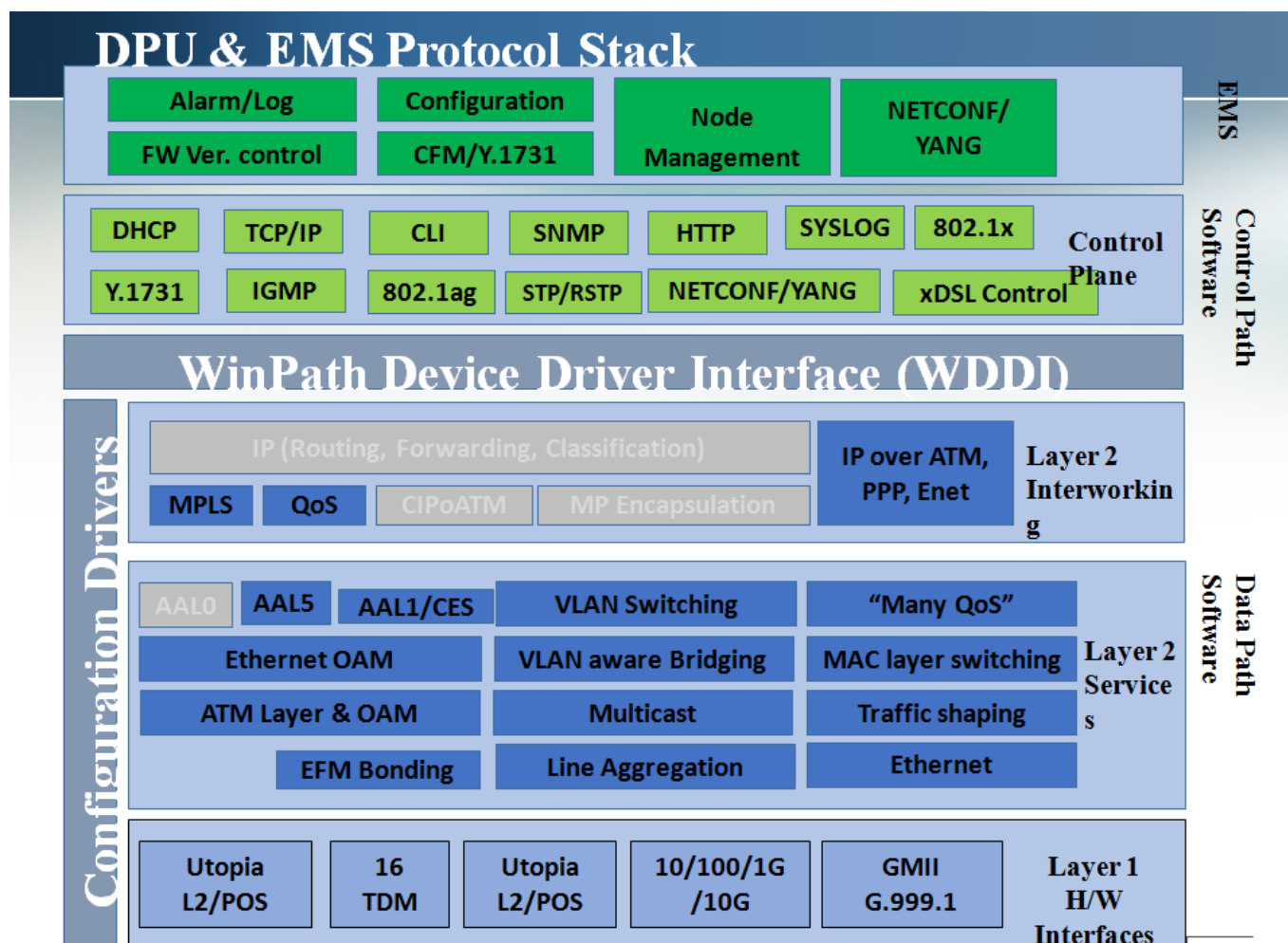
The GPON feed/GPON SFP ONT are managed by OMCI messages from the OLT.

DPU 3016 supports Ethernet OAM to provide SLAs for business users. Ethernet Service Assurance features, based on MEF, IETF, ITU, and IEEE standards enable service providers to offer businesses an assured MEF service with tools to ensure conformance to a service level agreement (SLA).

Finally, ZISA EMS can acts as NETCONF PMA to remotely manage and monitor the DPU 3016. It can help the ISP to offer the best quality service to their customers.

As following figure, please see the protocol stack supported by the EMS & DPU

DPU & EMS Protocol Stack

EMS
Alarm/Log · Configuration · Node Management · NETCONF/YANG
FW Ver. control · CFM/Y.1731

Control Plane / Control Path Software

DHCP · TCP/IP · CLI · SNMP · HTTP · SYSLOG · 802.1x
Y.1731 · IGMP · 802.1ag · STP/RSTP · NETCONF/YANG · xDSL Control

WinPath Device Driver Interface (WDDI)

Configuration Drivers

Layer 2 Interworking:
IP (Routing, Forwarding, Classification)
MPLS · QoS · CIPoATM · MP Encapsulation · IP over ATM, PPP, Enet

Layer 2 Services / Data Path Software:
AAL0 · AAL5 · AAL1/CES · VLAN Switching · "Many QoS"
Ethernet OAM · VLAN aware Bridging · MAC layer switching
ATM Layer & OAM · Multicast · Traffic shaping
EFM Bonding · Line Aggregation · Ethernet

Layer 1 H/W Interfaces:
Utopia L2/POS · 16 TDM · Utopia L2/POS · 10/100/1G /10G · GMII G.999.1

Specifications

System Features	Protocols Support
● G.fast Ports	● IGMPv1, v2, v3 snooping and proxy
✓ 16-port G.FAST subscriber interface Comply with ITU-T G.9700/9701,106a Profiles	● DHCP L2 Relay – TR101 Appendix B
	● IEEE 802.1x
✓ Total rate up to 800 Mbps, aggregate the downstream and upstream rate	● STP(802.1D) / RSTP (802.1W)
	● SNTP Client
✓ Support resynchronization	● SysLog Client
✓ Support RFI configuration	**Uplink ports**
✓ Support G.FAST profile setup	Switch selectable
✓ 16-port vectoring(crosstalk cancellation) with linear precoding	● 2.5G SFP interface
	● 1G SFP interface
	Management

- ✓ Programmable Time-Division Duplexing, to accommodate different asymmetry ratios of downstream/upstream (Downstream MDS 15~29)
- ✓ Full start up sequence takes less than 20sec, and the fast retrain time, including 16 ports vectoring, is under 2sec.
- ✓ Tolerant of inside wire impairments and changing noise conditions
- ✓ Support Fast On-Line Reconfiguration (FRA) to cope with Channel
- Bridging Port
  - ✓ Tagged/Untagged/TLS port
  - ✓ VLAN Ingress Filter check
  - ✓ Port-based VLAN
  - ✓ Protocol-based VLAN
  - ✓ Priority VLAN
  - ✓ S-tag/C-tag Priority Mapping
  - ✓ VLAN Translation
- VLAN
  - ✓ Single or Double tag support
  - ✓ N:1 /1:1 VLAN

- Local RS-232 CLI and Ethernet Web/SNMP/TELNET management
- Remote in-band Web/SNMP/TELNET management
- NETCONF/YANG G.997.2 Data Model *
- Firmware upgradeable
- Support SNMP v1, v2.
- Alarm Relay for 4 input

Operating Requirements

- Operating Temperature: 0° to 65 °C
- Storage Temperature: -40c° to 80 °C
- Operating Humidity: 5% to 95% RH non-condensing

Dimension and Weight

- Dimension: 66mmx440mmx230mm
- Weight: 4.0 kg

Selective Power Source

- From DSL loop 36V~57V, (Reverse power)*
- AC power mode: 90VAC ~ 264 VAC, 50-60 Hz, 12V output, 6A (local power)
- Power Consumption: all 16-ports up needs 75 Watts(25℃)
- Power saving mode*

Certifications

- Forwarding Data Base
  - ✓ 4K entries of MAC address
  - ✓ Dynamic/Static FDB
  - ✓ MAC learning limitation per port
- Multicast
  - ✓ IGMP v1, v2, V3
  - ✓ IGMP proxy
  - ✓ Multicast VLAN mapping
    - ◆ Independent VLAN multicast (IVM).
- QoS:
  - ✓ Policer:
    - Broadcast and Unknown
      unicast flooding rate limit
    - VLAN+802.1p Priority rate limit
  - ✓ Scheduler:
    - SP -Strict priority
    - WFQ –Weighted Fair Queue
    - WRR –Weighted Round Robin.
    - Shaping: CIR, CIR/EIR
- Access Control List
  According to packet field
  *Source or destination MAC
  addresses
  *Source or destination IP addresses
  *VLAN ID
  *Ethernet type
  *Protocol number
  *TCP/UDP port
  To do: Deny, Allow, VLAN Priority,
  DSCP to 802.1p mapping, Policer to
  do rate limitation

- EMC
  FCC Part 15 Class A
  CE-EMC Class A
- Safety
  EN60950-1
  ITU-T K.21 Surge and Lightning protection

* Future

ZISA Corporation Limited

Tel: +86-10-52885062 Fax:+86-10-82156720

Mail to : sales@zisacom.com.cn

URL: http://www.zisacom.com

Specifications are subject to change without notice.

Copyright © ZISA Corp. All rights reserved.