HES-3106-PLUS Managed CPE Switch

5 x 10/100/1000Base-T RJ-45 + 1 x 100/1000Base-X Fiber Managed Ethernet CPE Switch

Features

- **IPv4/IPv6 Dual Stack**
  Support IPv6 management, packet forwarding and MLD v1/v2 snooping

- **SFF-8472 Diagnostic Monitor Interface**
  Allow administrator to view SFP information and status including speed, distance, vendor ID, vender S/N, temperature, voltage, TX bias, etc.

- **Rich in Functions to Facilitate Multimedia Streaming**
  Support IGMP snooping, IGMP fast leave, IGMP filtering to intelligently transmit multicast traffic and deliver IPTV service.

- **iProbe Monitoring Tool**
  IPTV monitoring, end user device emulation and cable test that makes troubleshooting easy through Web GUI, CLI SNMP and schedule.

- **Q-in-Q VLAN Tagging**
  Allow service providers to implement Metro Ethernet service while maintaining the layer-2 separating of different customers.

- **Unique Power Down Trap Technology**
  Built-in CTS unique SNMP power down trap function and detect network fault caused by power outage rapidly.

- **Optional Cable Tray**
  This is a flexible option for FTTH installation. Users can keep excessive fiber inside the cable tray to have extra protection for the sensitive fiber.

- **DHCP Auto-Provision with Text Based Config File**
  Fulfill the deployment requirement and reduce the OPEX of device maintenance for service providers or operators.

Connection Technology System (CTS) HES-3106-PLUS series is a CPE switch with 5-Port 10/100/1000Base-T RJ-45 with 1-Port 100/1000Base-X fiber, and is housed with an eye-catching pearl-white case. It supports conversion between 10/100/1000Base-T and 100/1000Base-X network. Also, it is fully compliant with IEEE 802.3, 802.3u, 802.3ab, and 802.3z standards. The operation status can be monitored through the comprehensive LED display.

HES-3106-PLUS series provides user-friendly but advanced IPv4/IPv6 management interface and abundant L2 switching functions. It is the best investment for businesses and SOHOs expanding or upgrading their network infrastructure with cost-effective and high-speed for FTTX solution.

RF model supports CATV RF receiver interface that provides the option of provisioning analog video service to create new subscriber base and revenue for service provides.

Target Applications
- SOHO & Residential CPE switch application which requires network management for FTTX service deployment.

Specification

■ Interface
-TP Port:
  5 x 10/100/1000Base-T RJ-45
-F/O Port:
  1 x 100/1000Base-X F/O
-CATV RF Receiver Port*:
  1 x CATV fiber optic input
  1 x NTSC/PAL CATV coaxial output

■ CATV RF Receiver
-Input Optic Wavelength: 1260~1610nm
-Input Fiber Optic Power: -6~0dBm
  AGC controlled receiver with -6~0dBm
  dynamic range
-Fiber Optic Connector: SC/APC
-Forward Path Frequency Range: 45~1000MHz
-Output Power Level: 88dBuV
-CNR: Min 46dB@-6dBm; OMI=3.5%
-CSO: Min 55dB@0dBm; OMI=3.5%
-CTB: Min 55dB@0dBm; OMI=3.5%
-Output Return Loss: 16dB
-Flatness: +/-1dB

■ Standards
IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX/FX
IEEE 802.3ab 1000Base-T
IEEE 802.3z 1000Base-X
IEEE 802.1p Priority
IEEE 802.1q Tag VLAN
IEEE 802.3x Flow Control
IEEE 802.1ab LLDP

■ H/W Specification
MAC Address table: 2K
Non-blocking Switching Fabric: 12Gbps
Throughput @ 64Bytes: 8.9Mpps
Memory Buffer: 1Mbit
Jumbo Frame: 9K Bytes
Store and Forward Switching Mechanism
Auto-cross Over for MDI/MDIX in TP Ports
Auto-negotiation in TP Ports
Full/Half Duplex Mode Operation

■ LED
-Power, LAN, WAN, Status

■ Forward / Filter Rate
10M: 14,880/14,880pps
100M: 148,800/148,800pps
1000M: 1,488,000/1,488,000pps

■ Layer 2 Switch Features
VLAN
-IEEE 802.1q VLAN
  VLAN ID: 4094 IDs
  VLAN Concurrent Groups: 128 VLAN Groups
-Port Based VLAN
-Q-in-Q Double tag with Configurable Ether Type

QoS
-QoS 802.1p CoS / DSCP
-Scheduling Algorithm
  Weighted Round Robin (WRR)
  Strict Priority Queuing (SPQ)
-QoS Priority Queues: 4 Queues
-802.1p P-bit & DSCP Remarking
-Port based rate limit (ingress/egress)

Multicast
-IGMP Snooping v1/v2
-IGMP Snooping Group: 64 Groups

IPv6 Feature
-IPv6 over Ethernet (RFC 2464)
-IPv6 Addressing Architecture (RFC 4291)
-IPv6 Dual Stack (RFC4213)
-ICMPv6 (RFC4884)
-Path MTU Discovery for IPv6 (RFC 1981)
-Neighbor Discovery (RFC4861)
-DHCPv6 Client

■ Management
-SNMP v1 & v2c/Web/Telnet/SSHv2/CLI
-SNMP Trap
  Cold Start, Warm Start, Authentication Failure,
  Port Link Up/Down, Power Down
-Text Base CLI Configure file
-Port Configuration
  Speed/duplex/flow control/Description
-NTP with Daylight Saving Time
-LLDP

■ Security
-DHCP Snooping and DHCP server trust port
-Port Isolation
-Broadcast Storm Control
-Loop Detection

■ Maintenance
Diagnostic
-Port Mirror
-ICMP Ping
-Event log
-Syslog
-SFP SFF-8472 DDMI monitor
-Cable Diagnosis
-Network Diagnosis
  DHCP client, DNS server,
  IPTV service, IGMP control packet
  Ping, throughput

Upgrade/Restore
-Firmware Upgrade/Downgrade
  FTP/TFTP
  DHCP Auto-provision
-Configuration Upload/Backup
  FTP/TFTP
  DHCP Auto-provision

■ Power Requirement
External Power adaptor
Input AC: 100V~240V 50/60Hz
Output DC Rating: 12V/1.5A
Power Consumption
  AC Side: 5.3W (MAX.)
  DC Side: 4.2W (MAX.)

■ Environmental Condition
Operation: 0℃ ~ 50℃
Storage Temperature: -20℃ ~ 60℃
Humidity: 5% ~ 90%, non-condensing

■ Dimension & Weight
HES-3106-PLUS
- Size: 180 x 130 x 30mm (W x D x H)
- Weight: 0.6kg
HES-3106-PLUS with Cable Tray**
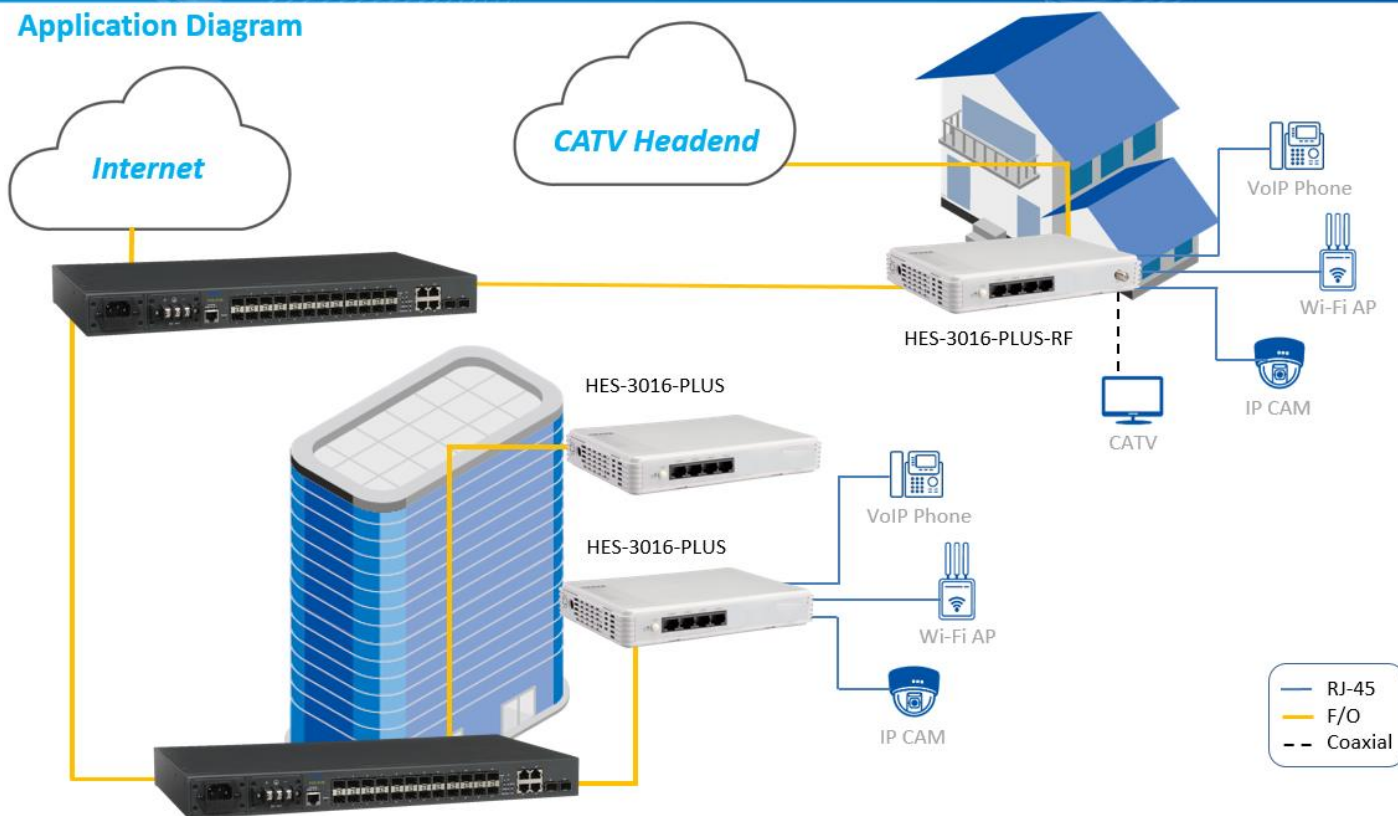- Size: 180 x 180 x 42mm (W x D x H)

■ EMC/Safety
FCC Class A, CE

*Only RF model supports CATV RF receiver port
**HES-FCT-S is Fiber Cable Tray Accessory for HES series

Application Diagram

Order Information

HES-3106-PLUS-DR

Model	Fiber Port					TP Port		Power Type
	Speed	Type	Connector	Distance	Port	Speed	Port	
HES-3106W2A(SM-10)-PLUS-DR	100/1000M	WDM	SC	10Km	1	10/100/1000M	5	External power adapter
HES-3106W2B(SM-10)-PLUS-DR	100/1000M	WDM	SC	10Km	1	10/100/1000M	5	External power adapter
HES-3106SFP-PLUS-DR	100/1000M	SFP	-	-	1	10/100/1000M	5	External power adapter

HES-3106-PLUS-DR-RF

Model	Fiber Port					TP Port		CATV RF		Power Type
	Speed	Type	Connector	Distance	Port	Speed	Port	Fiber	Coaxial	
HES-3106W2A(SM-10)-PLUS-DR-RF	100/1000M	WDM	SC	10Km	1	10/100/1000M	5	1	1	External power adapter
HES-3106W2B(SM-10)-PLUS-DR-RF	100/1000M	WDM	SC	10Km	1	10/100/1000M	5	1	1	External power adapter
HES-3106SFP-PLUS-DR-RF	100/1000M	SFP	-	-	1	10/100/1000M	5	1	1	External power adapter