GPON ONT
SNR-ONT-4G-2P-RF

Overview

To deliver triple-play services to the subscriber in Fiber-to-the-Home or Fiber-to-the-Premises application, the GPON ONT SNR-ONT-4G-2P-RF for SFU (Single Family Unit) incorporates interoperability, key customers' specific requirements and cost-efficiency.

Equipped with ITU-T G.984 compliant 2.5G Downstream and 1.25G Upstream GPON interface, the SNR-ONT-4G-2P-RF ONT supports the full Triple Play of services including voice, video, and high speed internet access.

Compliant with standard OMCI definition, ONT SNR-ONT-4G-2P-RF is manageable at remote side and supports the full range FCAPS functions including supervision, monitoring and maintenance.

Services

Data

The SNR-ONT-4G-2P-RF ONT is delivered with up to four 10/100/1000Base-T Ethernet data interfaces, supporting:

- Auto-negotiation and MDI/MDIX auto-sensing
- Data transferring at wire-speed for all packet size
- Built-in layer-2 switch
- Advanced data features such as VLAN tag manipulation, classification, and filtering

Voice

The SNR-ONT-4G-2P-RF ONT can optionally be delivered with up to two POTS interface ports for carrier-grade voice services, supporting:

- 5 REN per line, balanced Ring at 55V RMS, DTMF dialing
- Multiple voice codec
- Echo Cancelling, VAD, CNG
- Various CLASS services - Caller ID, Call Waiting, Call Forwarding, Call Transfer, etc.
- SIP (RFC3261)
- MEGACO v2 (H.248)
- Common architecture, drop-in replacement

To enable VoIP access, the SNR-ONT-4G-2P-RF ONT also supports interfacing external IAD box or Home Router with voice capability through the Ethernet Interface.

Video

The SNR-ONT-4G-2P-RF ONT supports two kinds of video services: one with Video Overlay and the other is delivered in form of data (by multicast or unicast).

In supporting of Video Overlay, where a dedicated wavelength is used for carry video broadcast signal to the subscriber, a Triplexer (the three wavelength GPON optical transceiver) will be equipped. The output level of the analog RF signal is at +18dBmV.

As default, the pass band of this analog video interface is 46 MHz to 870 MHz. But as required in some specific applications, the ONT can optionally provide an additional remote band control function to support for "Basic Services" and "Premium Service".

In case where multicast technology is used for delivering video contents through data channel, the ONT supports the dedicated multicast GEM port on the Downstream. So the video contents are received and processed by all the ONTs through the unified channel and this greatly improves the bandwidth efficiency.

In addition, the ONT supports IGMP snooping function to be applied for further optimization. When IGMP snooping is enabled, the ONT monitors the member joining and leaving activities at the Ethernet service port, and then selectively delivers the multicast streams.

Specification

Dimensions

35mm x 208mm x 150mm (H x W x D)

Power Supply

+12V 1.0A (feed via external AC/DC adapter)

2-PIN power adaptor input

Optional 8-PIN power input with UPS monitoring

Power Consumption: 10W

Dying Gasp support

Working Environment

Temperature: 0 ~ 40℃

Humidity: 10 ~ 90% relative humidity

Safety & EMI

ETSI, FCC certified

Environmental Directive

WEEE, RoHS6

Installation

Wall mounting & desktop mounting

Network Interface

Compliant to ITU-T G.984 GPON standards

SFF type laser, SC/APC connector

1.244G bps Burst Mode Upstream Transmitter

2.488 Gbps Downstream Receiver

Compliant with ITU-T G.984.2 Amd1, Class B+

APD receiver and DFB transmitter

0.5~+5dBm launch power, -27 dBm sensitivity, and -8dBm overload

Wavelengths:

US 1310nm, DS 1490nm

Analog RF video over dedicated 1550nm wavelength

Laser compliant to FCC 47 CFR Part 15,

Class B and FDA 21 CFR 1040.10 and 1040.11, Class I

GPON QoS

Fully ITU-T G.984 compliant framing

Multiple T-CONTs per device

Multiple GEM Ports per device

Support Single T-CONT mode and Multiple T-CONTs mode

Flexible mapping between GEM Ports and T-CONT

Priority queues and scheduling on Upstream

Activation with automatic discovered SN and password

AES-128 Decryption with key generation and switching

FEC (Forward Error Correction)

DBA reporting in status indications in the PLOu, and by piggyback reports in the DBRu (mode 0)

802.1p mapper service profile on U/S

Mapping of GEM Ports into a T-CONT with priority queues based scheduling

Support for Multicast GEM Port

Ethernet Interface

10/100/1000Base-T interface with RJ45 connectors

Ethernet port auto negotiation or manual configuration

MDI/MDIX automatically sense

Hardware priority queues on the downstream direction in support of CoS

802.1D bridging

Virtual switch based on 802.1q VLAN

Up to 256 MAC address and 16 VLAN group

VLAN tagging/detagging per Ethernet port

VLAN stacking (Q-in-Q) and VLAN Translation

IP ToS/DSCP to 802.1p mapping

Class of Service based on UNI, VLAN-ID, 802.1p bit, ToS/DSCP

Marking/remarking of 802.1p

IGMP v2/v3 snooping

Broadcast/Multicast rate limiting

MAC address limiting

POTS Interface

RJ-11 connector

5-REN

Balanced Ring, 55V RMS

DTMF Dialing

Multiple Codecs:

G.711 (μ-law and A-law)

G.729 (A and B)

G.723.1

Echo Cancellation

Voice Activity Detection and Comfortable Noise Insertion

SIP (RFC3261)

SDP (RFC2327)

RTP (RFC3550/3551)

DTMF encoding by RELAY or IN-BAND method

Support various CLASS services - Caller ID, Call Waiting, Call Forwarding, Call Transfer, Call Toggle, Three Way Calling, Distinctive Ringing, etc.

G.711 for FAX, modem connection and TTY devices

T.30 and T.38 FAX

Configurable dial plan

Country specific ring tone generation

DHCP Client or static IP configuration

Optionally Metallic Loop Testing

Analog Video Interface

Standard F-Type connector

Analog RF video over dedicated 1550nm wavelength

RF output level of +18 dBmV

RF Passband: 46 MHz~870 MHz

Optionally remote band control function:

Basic services: 50 - 435MHz

Premium services: 465 - 770MHz, pass or block, software provisionable

Switched on/off by remote control

LEDs

Power

Test

GPON

Video

LAN

POTS

OAM

Standard compliant OMCI (the embedded operations channel) interface as defined by ITU-T G.984.4 and G.983.2

MIB manipulation over OMCI by Create, Delete, Set, Get, Get next commands

Provisioning all kinds of services including Ethernet, VoIP and RF etc.

Alarming and AVC report, performance monitoring

Remotely software image download over OMCI, as well as activation and rebooting

Hold two software sets with software image integrity checking and automatic rollback