

XON1500.SVC

IP Managed Switch,
Voice over IP,
CATV



BKtel's *FiberSurf* XON1500.SVC optical network unit delivers high-speed internet and full-spectrum CATV in FTTH (Fiber-to-the-Home) access networks. It combines a 1000Base-BX10 to 10/100/1000Base-T managed switch, Voice over IP (VoIP) based telephony and a broadband optical television (CATV) receiver, allowing up to 15 km single-mode fiber connectivity.

Leading Edge Technology

- ◆ 1000 Mbps layer 2 switching, VLAN capability, Voice over IP module with two separate analog phone ports, broadband CATV reception with high output level (capable to supply multiple TV sets) in one unit

Compact

- ◆ small size and wall mountable; ideal for office, apartment or basement installation

Solid

- ◆ strong durable metal case securely protects sensitive fiber optics and electronics

Modular

- ◆ combined with the *FiberSurf* XON10 Fiber Protection Unit easy interchangeable with other units of the *FiberSurf* product family

Key Features

Layer 2 Ethernet Switch

- ▶ Multi-rate WAN interface, 1000Base-BX10 optional 100Base-BX10
- ▶ Four full-duplex Ethernet LAN ports
- ▶ 10/100/1000Base-T support (LAN)
- ▶ Integrated 10/100/1000Mbps Ethernet switch
- ▶ Auto-negotiation ability to select half/full-duplex 10Base-T/100Base-TX/1000Base-T mode
- ▶ Virtual LAN-Support Port-based and 802.1q
- ▶ Quality of Service / Class of Service
- ▶ IGMP snooping v1/v2
- ▶ Rate Limiting Capability

Telephony with VoIP

- ▶ Two FXS ports to connect two analog phones
- ▶ Each port has its own SIP-Account for VoIP telephony

Optical CATV Receiver

- ▶ Optical home receiver for multichannel television and radio signals like AM-VSB, FM and QAM providing a bandwidth of 1GHz
- ▶ Ultra low noise push-pull technology
- ▶ Very low distortion
- ▶ Wide range of optical input power
- ▶ Single-mode fiber, high return loss optical interface

Management

- ▶ BKtel Provisioning System: Remote configuration of all relevant switch- and phone-parameters
- ▶ Customer selectable device startup configuration
- ▶ Secure Firmware Update (dual image)
- ▶ Remote Diagnostics

Specifications

CATV Receiver Module

Fiber type	Single-mode 9/125 μm
Optical connector	SC/APC ¹
Optical input wavelength	1280 ... 1610 nm
Optical input power	Min. - 10 dBm, max. -3 dBm
RF connector	F female
RF impedance	75 Ω
RF bandwidth	47 ... 1000 MHz
Receiver noise current	Typ. 4.5 pA/√Hz
RF output level	≥ 88 dBμV @ -5 dBm optical input power
Management and Diagnostics	Remote ON/OFF switching, optical input level monitoring

WAN Interface

Fiber type	Single-mode 9/125 μm
Optical WAN connector	SC/PC ¹ connector
Ethernet wavelength	Tx: 1260..1360 nm, typical 1310 nm Rx: 1480..1600 nm, typical 1550 nm
Standard compliance	IEEE 802.3u 1000Base-BX10, optional 100Base-BX10
Mode	100/1000 Mbps

LAN Interface

Standard compliance	Fully compliant with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T standards and IEEE 802.3x
Mode	Integrated four-port switch Auto-cross-over, half/full-duplex, 10/100/1000Mbps
Connector	4x RJ-45

Layer 2 Software Features

Layer 2 Protocols	RFC 2236 - IGMP Snooping v1, v2 802.3x Flow-Control, Pause-Frame and Backpressure, Auto-negotiation
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Switch Device Features

Device Mode	Store and Forward
VLAN	IEEE 802.1Q - VLAN: Up to 16 groups Port-based VLAN (Port-Grouping)
Quality of Service / Class of Service	IEEE 802.1p - Class of Service Layer 2, RFC 2474 / 2475 – Diffserv, four queues of priority, port-based priority, VLAN-based priority
Security	Broadcast Storm Protection
Rate Limiting	Ingress- / Egress-Rate limiting (granularity 64kbps)
MAC-Address Table size	4k

Voice Features

SIP Support	SIP 2.0 - RFC 3261 - Session Initiation Protocol Version 2.0
Voice Codecs	G.711 - a-Law / μ-Law (64kbps), G.726 - 16, 24, 32 and 40 kbps Optional G.729a - 8 kbps and G.723.1 - 5.3 / 6.3kbps
Features	Two separated SIP-Accounts, Caller-ID (CLIP) via FSK and DTMF, Echo cancellation (ITU G.168), DTMF-Support (via Inband, RFC 2833 or SIP-Message), adjustable volumes of microphone and speaker, adjustable phone-line-impedance, Call-Waiting, Call-Transfer, 3-Way Calling, STUN-Support and T.38 Fax-Support
Connector	2x RJ-11

Management

Protocols	BKtel Provisioning System ARP, IP, ICMP, UDP, TCP, DHCP, DNS, SYSLOG, TFTP, NTP, SNMP, HTTP, Telnet
DHCP Options (Selection)	DHCP Option 66 - TFTP-Server DHCP Option 67 - Boot File Name (remote-configuration-file)
SNMP	SNMP v1, v2c Supported MIBs: RFC 1213, DOCSIS Cable Device MIB, BKtel Enterprise MIB

Status LEDs

Power, Device status, Phone, WAN and LAN link/activity, CATV status

General Technical Data

Size (height, depth, width)	150 mm x 33 mm x242 mm
Weight	1.4 kg
Power Supply Voltage	12V DC
Power Consumption	< 7W

Climatic specification

Operation	ETS 300 019, class 3.1 Temperatur: 0°C - 40°C (exceptional: 45°C)
Storage	ETS 300 019, class 1.2

¹ One-fiber version available with integrated WDM filter (1310nm/1490nm Optical Ethernet & 1550 nm CATV video overlay): SC/APC connector