

# FiberSurf™

## XON500.SVC

### IP Managed Switch, Voice over IP, CATV



BKtel's *FiberSurf* XON500.SVC optical network unit delivers high-speed internet and full-spectrum CATV in FTTH (Fiber-to-the-Home) access networks. It combines a 100Base-FX to 10/100Base-TX 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 | ❖ | 100 Mbps layer 2 switching, VLAN capability, Voice over IP telephony, 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 <i>FiberSurf</i> XON10 Fiber Protection Unit easy interchangeable with other units of the <i>FiberSurf</i> product family                            |

#### Key Features

##### Layer 2 Ethernet Switch

- ▶ 100Base-BX WAN interface
- ▶ Four full duplex Ethernet ports
- ▶ 10/100Base-TX support (LAN)
- ▶ Integrated 10/100Mbps Ethernet switch
- ▶ Auto-negotiation ability to select half/full-duplex 10Base-T/100Base-TX 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 simultaneous voice over IP (VoIP) calls
- ▶ SIP 2.0 VoIP protocol

##### Optical CATV Receiver

- ▶ Optical home receiver for multichannel television and radio signals like AM-VSB, FM and QAM providing a bandwidth of 1 GHz
- ▶ 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 Auto-Provisioning System: auto-provisioning of all switch- and SIP-parameter
- ▶ Customer selectable device startup configuration
- ▶ Secure firmware update (dual image)
- ▶ Remote Diagnostics

## Specifications

### CATV + SAT-IF Receiver Module

Fiber type	Single mode 9/125 $\mu$ m
Optical connector	SC/APC
Optical input wavelength	1280 ... 1610 nm
Optical input power	Min. -10 dBm, max. -3 dBm
RF connector	F female
RF impedance	75 $\Omega$
RF bandwidth	47 ... 1000 MHz
Receiver noise current	Typ. 4.5 pA/ $\sqrt$ Hz
RF output level	$\geq$ 88 dB $\mu$ V @ -5dBm optical input power
Management and Diagnostics	Remote ON/FF switching, optical input level monitoring

### Ethernet Transceiver Module:

Fiber type	Single mode 9/125 $\mu$ m
Optical WAN connector	SC/PC
Ethernet wavelength	TX: 1260..1360nm, typical 1310nm RX: 1480..1600nm, typical 1550nm
Standard compliance	IEEE802.3u 100BASE-BX10

### LAN Twisted Pair Interface

Standard compliance	Fully compliant with IEEE802.3 10Base-T, IEEE802.3u 100Base-TX standards and IEEE802.3x
Mode	integrated four-port switch auto-cross-over, half/full-duplex, 10/100Mbps
Connector	4 x 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
-------------------	--

### 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, 4 queues of priority, Port based priority, VLAN based priority
Security	Broadcast Storm Protection
Rate Limiting	Ingress- / Egress-Rate limiting (granularity 200kbps)
MAC-address table size	2k

### Voice Features

SIP Support	SIP 2.0 - RFC 3261- Session Initiation Protocol Version 2.0
Voice Codecs	G.711 – a-Law / $\mu$ -Law (64kbps) G.726 – 16, 24, 32 and 40 kbps G.723.1 – 5.3 / 6.3kbps optional G.729a – 8 kbps optional
Features	Two separated SIP-accounts, Caller-ID (CLIP) via FSK and DTMF, Echo cancellation, DTMF-Support (via Inband, RFC2833 or SIP-Message), adjustable volumes of microphone and speaker, adjustable phone-line-impedance, Call-Waiting, Call-Transfer, 3-way calling and STUN-Support T.38 fax-support

### Management

Protocols	BKtel Auto-Provisioning System ARP, IP, ICMP, UDP, TCP, DHCP, DNS, SYSLOG, TFTP, NTP, SNMP, Telnet
DHCP	DHCP Option 66 - TFTP-Server DHCP Option 67- Auto-Provisioning File
SNMP	SNMP v1, v2c supported MIBs: RFC1213, 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 x 242 mm
Weight	1.4 kg
Power Supply Voltage	12V DC
Power Consumption	< 7W