

# FiberSurf™

## XON600.SVC

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



BKtel's *FiberSurf* XON600.SVC optical network unit delivers high-speed internet and full-spectrum CATV in FTTH (Fiber-to-the-Home) access networks. It combines a 100Base-BX 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 module with two separate analog phone ports, broadband CATV reception with high output level (capable to supply multiple TV sets) in one unit
- Modern Exterior**
✦
 Attractive design in high-quality, durable housing, ideal for office and apartment installation
- Easy Handling and Management**
✦
 Combined with the *FiberSurf* XON20 Fiber Protection Unit easy wall mount installation, optional table-top usage, BKtel provisioning, remote management and remote diagnostics

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

## Specifications

### CATV Receiver Module

|                            |   |
|----------------------------|---|
| Fiber type                 | Single-mode 9/125 $\mu$ m                               |
| Optical connector          | SC/APC <sup>1</sup>                                     |
| 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/OFF switching, optical input level monitoring |

### Ethernet Transceiver Module

|                       |  |
|-----------------------|--|
| Fiber type            | Single-mode 9/125 $\mu$ m  |
| Optical WAN connector | SC/PC <sup>1</sup>   |
| Ethernet wavelength   | TX: 1260..1360nm, typical 1310nm<br>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<br>Auto-cross-over, half/full-duplex, 10/100Mbps            |
| Connector           | 4x RJ-45  |

### Layer 2 Software Features

|                   |  |
|-------------------|--|
| Layer 2 Protocols | RFC 2236 - IGMP Snooping v1, v2<br>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<br>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 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<br>G.726 - 16, 24, 32 and 40 kbps<br>Optional G.729a - 8 kbps and G.723.1 - 5.3 and 6.3kbps   |
| Features     | Two separated SIP-Accounts, Caller-ID (CLIP) via FSK and DTMF, Echo cancellation (ITU G.168), 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, STUN-Support and T.38 Fax-Support |
| Connector    | 2x RJ-11  |

### Management

|                          |  |
|--------------------------|--|
| Protocols                | BKtel Provisioning System<br>ARP, IP, ICMP, UDP, TCP, DHCP, DNS, SYSLOG, TFTP, NTP, SNMP, HTTP, Telnet |
| DHCP Options (Selection) | DHCP Option 66 - TFTP-Server<br>DHCP Option 67- Boot File Name (remote-configuration-file)             |
| SNMP                     | SNMP v1, v2c<br>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) | 176mm x 44mm x 288mm   |
| Weight                     | 710g   |
| Power Supply Voltage       | 12V DC   |
| Power Consumption          | < 7W   |
| Climatic specification     |  |
| Operation                  | ETS 300 019, class 3.1 Temperature: 0°C - 40°C (exceptional: 45°C) |
| Storage                    | ETS 300 019, class 1.2   |

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