

# SURFBEAM<sup>®</sup>

## LOW COST SUBSCRIBER TERMINAL

The SurfBeam<sup>®</sup> subscriber terminal for wireless broadband services is a compact, easy-to-install terminal that delivers fast two-way data by satellite. The terminal will seamlessly integrate into a home-based network with its built-in Ethernet interface (10/100 Mbps).

The complete terminal includes the indoor unit and a small, non-obtrusive outdoor antenna. The 2-watt or 4-watt power amplifier (SSPA) and Low Noise Block (LNB) transmits data at rates above 1 Mbps and receives at rates up to 72 Mbps. ViaSat's SurfBeam subscriber terminal provides fast, reliable, high-quality bandwidth-on-demand for a variety of digital communication services.



### Features

- Low cost broadband satellite modem
- Always on high-speed connections
- No PC software required
- Built-in security against theft-of-service and theft-of-subscriber
- Built-in TCP and Web acceleration functions
- Sophisticated QoS
- 10/100 Mbps Ethernet interface
- Remote management and control
- Dynamic multi-rate forward link provides high availability without throughput loss
- Rate adaptable MF-TDMA return link for increased dynamic range to counter fade conditions
- Standard Ku- and Ka-band ODU's available

### DOCSIS<sup>™</sup> 1.1 Standard Based

- Subscriber terminals based on high volume cable modem chipset standard
- Mature infrastructure products available
- Low-cost scalable hub equipment
- Off-the-shelf BSS and OSS equipment

### Applications

- Internet access
- Voice-over-IP
- MPEG video over IP
- High bandwidth FTP
- IP Multicast



## SPECIFICATIONS

### IDU

#### Forward Channel Modulation Coding:

Rate 2/3, 3/4, 5/6, 8/9 Turbo (8PSK)

Rate 1/2, 2/3, 3/4, 5/6 Turbo (QPSK)

Reed-Solomon outer code

**Modulation Types:** 8PSK and QPSK

**Downlink Symbol Rate:** 5 to 30 Msps

**Nominal Data Rates:** 5 to 72 Mbps

#### Return Channel Modulation Coding:

Rate 1/2 Turbo

Reed-Solomon outer code (Optional)

**Modulation Types:** QPSK

**Uplink Symbol Rate:** 160, 320, 640, 1280 or 2560\* kbps

**Nominal Data Rates:** 150 – 2400\* kbps

### IDU AND IFL INTERFACE

#### Transmit IF:

1800 – 2300 MHz (Ka-band ODU)

950 – 1450 MHz (Ku-band ODU)

#### Receive IF:

950 – 1700 MHz

**I/O Impedance:** 75 Ohms, nominal

**Tx Output Level:** 0 to -30 dBm

**Rx Input Level:** -30 to -60 dBm

**SSPA Power:** Supplied by IDU

### ODU AND ANTENNA INTERFACE

#### Typical EIRP:

48.3 to 58.5 dBW (Ka); 42 to 46.1 dBW (Ku)

**Typical G/T:** 15.4 dBi/ °K

**Noise Temperature:** 70°K, typical

#### Uplink Frequency Range:

(13.75\*) 14.0 – 14.5 GHz (Ku); 29.5 – 30.0 GHz (Ka)

#### Downlink Frequency Range:

10.7 to 12.75 GHz (Ku); 19.7 – 20.2 GHz (Ka)

### NETWORKING

#### IP Inter-networking:

Transparent TCP and HTTP acceleration

#### Quality-of-Service:

Layer 2–4 packet classification and filtering

Per-flow queuing and policing

### ENVIRONMENTAL

#### Indoor Unit

**Temperature:** 0° C to +40° C

**Humidity:** 10% to 95% (non-condensing)

**Altitude:** 10,000 feet

#### Outdoor Unit

**Temperature:** -40° C to +55° C

**Humidity:** 0 to 100% (condensing)

#### Dust, Sand and Fungus:

Withstand and operate without degradation in the presence of dust, sand, and fungus growth

### PHYSICAL

#### CPE Interface:

Ethernet: IEEE 802.3, 10/100 BaseT (single RJ-45 connector)

**IDU / ODU Interface:** RG-6 ( $\leq 30$ m) cable, F-type connector

**Status Indicators:** Power, Satellite Acquisition, Activity and Fault

**Power Supply:** 85 to 264 VAC; 47 to 63 Hz

#### Size:

Indoor unit: 23 x 23 x 3.8 cm (9 x 9 x 1.5 inches)

Outdoor unit: Transceiver: 11 x 15 x 5 cm

Outdoor unit: Antenna: 62 to 120 cm

#### Weight:

Indoor unit: 0.6 kg

Outdoor unit: Transceiver – 1.5 kg

Outdoor unit: Antenna – varies

\* Italics indicate planned capability  
Specifications subject to change without notice



**Atlanta** 4356 Communications Drive, Norcross, GA 30093, USA, Tel: +1.678.924.2400, Fax: +1.678.924.2480  
**Beijing** Lucky Tower, Block B, Suite 1110-1112, No. 3 Dong San Huan Bei Lu, Beijing 100027, China, Tel: +86.10.6461.5761, Fax: +86.10.6461.5754  
**New Delhi** 601, Paharpur Business Centre, Nehru Place Greens, New Delhi 110 019, India, Tel: +91.11.620.7618 or 620.7624, Fax: +91.11.647.4718 or 647.4725  
**Rome** Piazza del Popolo 18, 00187 Rome, Italy, Tel: +39.0636712432, Fax: +39.0636712400  
**San Diego** 6155 El Camino Real, Carlsbad, CA 92009, USA, Tel: +1.760.476.2200, Fax: +1.760.929.3941  
**Sydney** Unit 4/22 Narabang Way, BELROSE, NSW 2086, Australia, Tel: +61.2.9986.3888, Fax: +61.2.9986.3899  
**Washington** 22300 Comsat Drive, Clarksburg, MD 20871, USA, Tel: +1.301.428.4500, Fax: +1.301.428.4700