

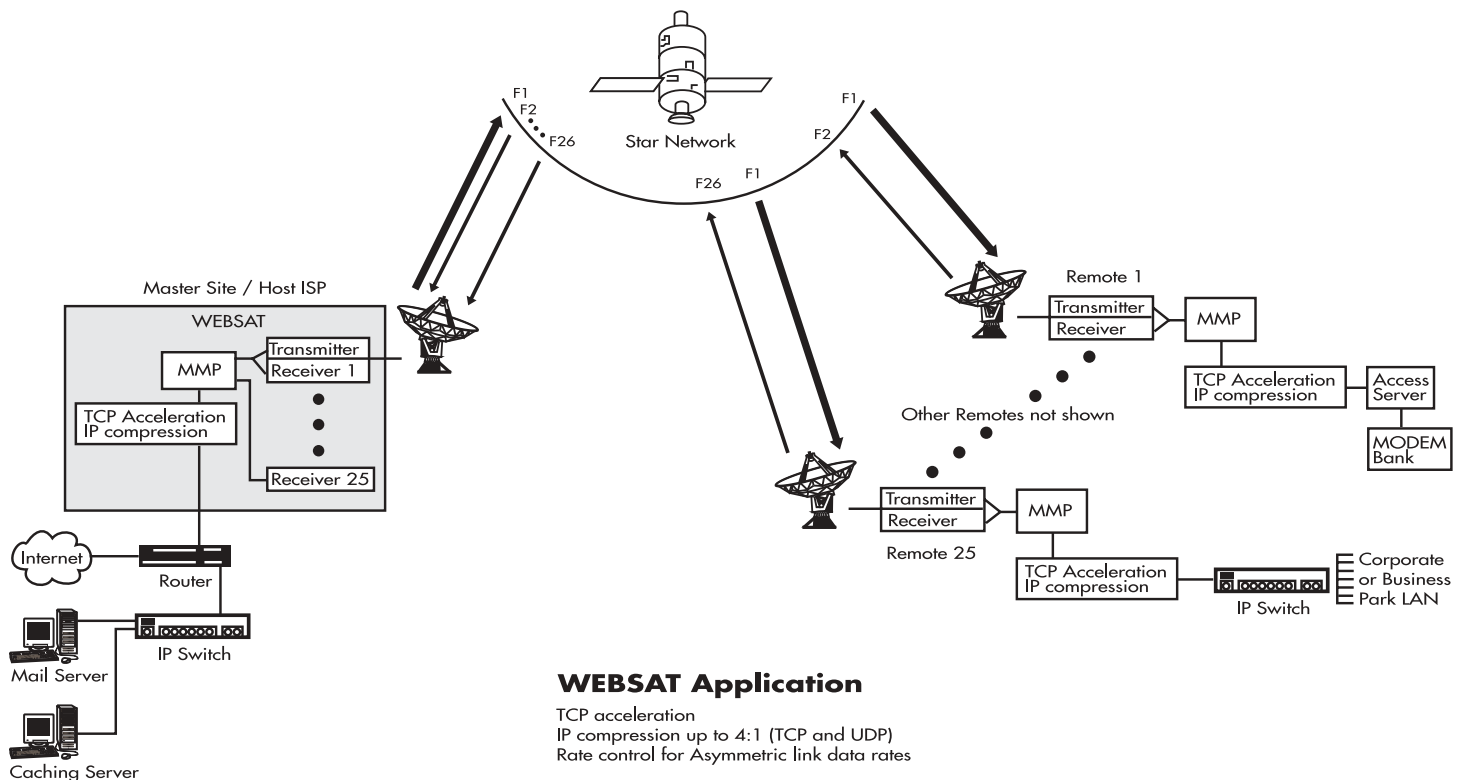
WebSAT™ - Satellite Solutions for Internet Access



WebSAT™ is an enhancement of the ISAT® product line designed specifically for Internet connections and service to locations where alternative connections are not easily available. Building on ISAT's bandwidth capabilities, WebSAT accommodates high outbound and low inbound rates, for efficient use of bandwidth. WebSAT integrates an IP accelerator that overcomes the typical satellite speed limitations for IF data and manages data flow from multiple connections, using Quality of Service (QOS) bandwidth controls. See diagram below.

WebSAT can provide services to remote POPs, to corporate users, or to shared users such as office parks.

- Point of Presence (POP) interconnect for underserved communities
- High speed connections to E1 and above
- High transfer rates shatter 400 Kbps per user session barrier
- ISP interconnect for backbone extensions



Note: Example of a hub and 25 remotes in a star configuration. The hub transmits on frequency F1 at up to 4.096 Mbps for the first carrier (multicarrier capable). The hub listens to frequencies F2 through F26 (remotes 1-25) which can be set for data rates of 9.6 Kbps to 4.096 Mbps. All remotes listen to hub carrier F1 or, if the hub has more than one carrier, the remotes would be grouped to listen to a specified carrier from the hub.



communications
Satellite Networks

A cost effective solution

Typical Internet traffic is extremely asymmetrical, with heavy traffic from the Internet to each user and light traffic inbound from the user. ISAT can easily match this traffic profile. Using a single large outbound link instead of many small outbound links, ISAT provides the advantages of statistical multiplexing and power-savings. Also, bandwidth is shared very efficiently between users. In larger networks, multiple hub outbound links may be provided to handle the traffic. Multiple links are also easy to implement using WebSat equipment.

Technical Specifications

Satellite Frequencies
Antenna

C- or Ku- and other commercial bands
1.2 meter and above, depending on satellite and earth station requirements

IP Accelerator

Satellite WAN spoofing application which provides a 12 to 18 fold increase in the efficiency of TCP/IP networks over satellites and provides up to 4:1 compression of TCP

ISAT®
RF Transceiver

Transmit power rating
Redundant configuration

C-band or Ku-band
2 to 200 W (Ku-band)
5 to 400 W (C-band)
Optional
Provides complete frequency conversions and amplification for uplink and downlink signals

Baseband Unit

PSK modulator/demodulator. Provides interface between modulated carriers and digital baseband

Aggregate Information
per Site

9.6 to 4096 Kbps

Modem Parameters

Modulation
Scrambling/Descrambling
BER (1/2 rate coding)

Convolutional FEC coding, $R=1/2$, $R=3/4$
Convolutional FEC coding, $R=7/8$ option available
Viterbi decoding, $K=7$, soft decision
BPSK, QPSK
V.35
 1×10^{-6} at $E_b/N_0=5.6$ dB (typ.)
 1×10^{-7} at $E_b/N_0=6.3$ dB (typ.)

Multimedia Processor

Incorporates Frame Relay Switch and optional voice codecs and protocol encapsulation
Expandable to virtually any required number of ports

LAN Interface

Protocols

Ethernet 10BaseT, 100BaseT, 10Base2, Token Ring Protocols
Full RFC 1490 support, IP and IPX with routing/filtering
No external bridge or router required

Telephony Interfaces
(Optional)

T1/E1 and ISDN Interfaces
2/4 wire E&M types I-V
FXS and FXO



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