SAMTEC

Product Catalog

The Environment is our best friend

V-SAT Applications
Wireless Cellular Sites
Fiber Optic Solutions
Test & Measurement
Microwave Radio

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✓ About SAMtec Co. Ltd.

SAMtec is a leading company focused on promoting Telecommunication and IT products, systems and services to the local operators and other major customers in Yemen. The company undertakes turnkey projects involving design, supply, installation and commissioning of Telecommunication projects and services with cooperation of leading international suppliers.

✓ Area of focus:

- Blanning and Optimizition soultion for GSM,CDMA,Microwave and Wimax networks
- Microwave Radio
- Satellite Communication V-sat
- Test and Monitoring System for PDH/SDH/DWDM, Fiber optics, Access networks, IP networks, Digital video, wireless GSM/CDMA/GPRS/UMTS /3G/ LTE / WiMAX
- Synchronization systems
- Fiber monitoring system / CDMA & GSM QoS System
- Antennas / Diplexers / Feeders / Connectors
- Fiber Modems / E1 Modems / Conveters
- MPLS Routers / DSLAM
- Wireless ADSL Modems /WiMAX Routers /FWP CDMA Fixed Wireless Phone
- VOIP modems/Routers
- UPS power supply
- Telecom Turnkey Solutions

✓ Major Agencies & Brand Names

- JDSU USA – test equipment and DWDM system
- SIAE MICROELETTRONICA – Microwave Radio System
- RFS Radio Frquency System – Antennas ,Feeder,Connector ,Accessories
- iDirect –Satellite Hub station
- Symetricom USA – Synchronization equipment
- CTC Union - Fiber and Access Products
- Patton – USA – Access products SHDSL, VOIP
- DowsLake –STM1,STM4,DWDM,Fiber Solution
- Asiatelco FWP CDMA Fixed Wireless Phone
- Billion Taiwan – ADSL modems
- ZyXEL - WiMAX Routers
- Eastpower – UPS and batteries

✓ Projects done.

We are proud that we have executed the following projects.

- Fiber monitoring system: we have executed it for all Yemen fiber networks, this project done for Yemen Telecom PTC, it has been done with cooperation of JDSU Company USA
- Synchronization network: we have executed this project for all Yemen Telecom networks
  The system synchroniz all PTC telecom sites in Yemen with accurate Cesium o,clock it synchroniz switching, SDH, Data, mpls and wimax networks with coorporation of symetricom USA

- V-SAT network we have executed it for Yemen Telecom covers 7 sites and main hub station in Sana'a, this project connect the remote exchanges sites with the main exchange in Sana'a and connect Yemen mobile sites through V-SAT, the supplier of this project is NDSATcom Germany

- Teleyemen Hub Station: we have exuected this project as turnkey bases with the coopration with iDirect USA, the Hup Station capcity upto 500,000 remote site, the first stage for this project are 200 remote sites.

V-SAT Applications

You Can Connect to Your Office Or Branches Via Satellites Network

Series 15100 Universal Satellite Hub

The Series 15100 Universal Satellite Hub is ideal for service providers operating multiple high performance IP broadband networks. More powerful and future-ready, it incorporates the latest advances in performance, enabling network operators and military service providers to deliver the highest quality connectivity regardless of bandwidth requirement.

Features

- Compact, 11U, 19" rack mountable chassis with 20 line card slots enabling multiple in- and outbound networks
- 5 IF interfaces supporting multiple bands and transponders on up to five satellites
- Supports DVB-S2/ACM and iNFINITI on the outbound, D-TDMA on the inbound
- 40 Gigabit Ethernet LAN interfaces supporting high carrier symbol rates
- High level of redundancy (hub daisy chaining and geographic redundancy)
- Enables Virtual Network Operator management reducing capital investments and increasing ROI

Hub Chassis Specifications

IF Module	5 IF
Line Cards Slots	20
SatCom Range	Works with any iNFINITI or Evolution line card. Please refer to line card specification sheets for satcom ranges
Remote Requirements	Works with any iNFINITI or Evolution remote

Power Specifications

Input Voltage Range	200–240 VAC Single Phase; 10 Amps max.
Frequency	47–63 Hz
Main Power Module	1500 Watt, 1+1 redundancy, hot-swappable
Heat Dissipation	5118 BTU/hr.

Mechanical and Environmental

Size	W 17.5"x D 24"x H 19" (11U) (W 44.45 cm x D 60.96 cm x H 48.3 cm)
Weight	Empty 110.4 lbs (50.1 kg), Loaded - Varies
Operating Temperature and Humidity	0º to 45º C (+32º to +113º F), 0–95% non condensing
Fans	Three fans, 2+1 redundant, hot-swappable
LEDs	Line card status, power status, fan status
Reference Clock Module	10 MHz, 1+1 redundant, with auto fail-over, hot-swappable, external GPS Ref. capable
Radio Standards	Complies with EN 301-428 v1.3.1 - Ku-Band System Level Specifications. Complies with EN 301-443 v1.3.1 - C-Band System Level Specifications
Safety Standards	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
Emission Standard	Complies with EN 61000-3-2, EN 61000-3-3, EN 55022 Class A, FCC Part 15 Class A, CISPR 22 Class A
Immunity Standard	Complies with EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, EN 301-489-1, EN 301-489-12
Certification	FCC, CE, and RoHS Compliant

Additional Hub Components

Protocol Processor	Minimum of 2 servers, 1+1 redundant
NMS servers	Minimum of 2 servers, 1+1 redundant
LAN Switch	2 switches, 48 port Gigabit Ethernet LAN switch
KVM Switch	8-Port
Networking Software	iDX 2.0 and above with iVantage NMS

Line Card Specifications (optional)

Max. IP Data Rates Per Line Card	Downstream: up to 20 Mbps (iNFINITI) or up to 138 Mbps (Evolution). Upstream: up to 10 Mbps (QPSK, .793 FEC, unlimited NMS under optimal conditions)
Network Access Scheme	iNFINITI TDM or DVB-S2/ACM (on the downstream) and deterministic MF-TDMA (on the upstream)

For more details, please consult the line card specification sheets

iDIRECT

Evolution X3 Satellite Router

High-speed, High-efficiency IP Broadband Connectivity for Enterprise Networks

Evolution X3 features a highly efficient implementation of the DVB-S2 standard. With Adaptive Coding and Modulation (ACM) on the outbound carrier and iDirect's patented, deterministic TDMA or SCPC Return channel, Evolution X3 maximizes efficiency of satellite capacity to enable new opportunities for star topology networking. Evolution X3 is ideally suited for broadband requirements such as Internet and VPN access to enterprise networks, as well as real-time VoIP and videoconferencing.

Features

- Star topology
- DVB-S2/ACM outbound for greater efficiency and enhanced network availability
- Deterministic MF-TDMA or SCPC Return channel
- Efficient 2D 16-State inbound coding
- Automatic end-to-end Uplink Power Control
- Built-in TCP acceleration
- Advanced QoS and traffic prioritization
- Optional AES 256-bit encryption

NETWORK CONFIGURATION

Network Topology	Star (DVB-S2/ACM Outbound + Multi Frequency D-TDMA or SCPC Return*)		
	Downstream DVB-S2	*Upstream* TDMA	*Upstream* SCPC Return
Modulation	QPSK, 8PSK, 16APSK	BPSK, QPSK, 8PSK	BPSK, QPSK, 8PSK
FEC	LDPC, 1/4 - 8/9	TPC, 0.431 - 0.793**; 2D 16-State, 1/2 - 6/7	2D 16-State, 1/3 - 6/7
Max. Symbol Rate	45 Msps	7.5 Msps	15 Msps
Max. Info Rate	150 Mbps[1]	12.8 Mbps	24 Mbps
Max. Line Card IP Data Rate	149 Mbps[1]	11.1 Mbps[2]	20 Mbps[3]
Max. Remote IP Data Rate	29 Mbps[1]	7.8 Mbps[2]	11.8 Mbps[3]
	[1]16APSK 8/9 FEC	*[2]QPSK 6/7 FEC*	*[3]QPSK 4/5 FEC*

Maximum downstream and upstream data rates cannot be achieved simultaneously

Maximum rates are achieved with optimal configurations

INTERFACES

Satcom Interfaces	TxIF: Type-F, 950–1700MHz, +7dBm / -35dBm RxIF: Type-F, 950–2150MHz, -5dBm (max) composite/ -125+10*log(Fsym)dBm (min) single carrier Software controllable 10 MHz reference on TX Out and RX In ports
BUC IFL Interface	+24V, max. 70W, (120W PSU) (please refer to X3 Installation Manual for full list of supported BUCs)
LNB IFL Interface	+19V (Nominal), 500mA max DiSEqC (Voltage 14V/19V + 22KHz tone)
Data Interfaces	LAN: 10/100 Ethernet, 802.1q VLAN RS-232: RJ45 (Console connection)
Protocols Supported	TCP, UDP, ACL, ICMP, IGMP, RIP Ver2, Static Routes, NAT, DHCP, DHCP Helper, Local DNS Caching, cRTP and GRE
Traffic Engineering	Group QoS, QoS (Priority Queuing and CBWFQ), Strict Priority Queuing, Application Based QoS, Minimum CIR, CIR (Static and Dynamic), Rate Limiting
Other Features	Built-in Automatic Uplink Power, Frequency and Timing Control, Authentication, AES-256 encryption***, Antenna Control Interface (OpenAMIP)

MECHANICAL/ENVIRONMENTAL

Size	W 11.5 in (29.2 cm) x D 9.9 in (D25.1 cm) x H 2 in (5.1cm)
Weight	4.3 lbs (1.95 Kg)
Operating Temperature	0˚ to +50˚C (32˚ to +122˚F) at Sea Level with temperature gradient of 0.5˚C per 1 min 0˚ to +45˚C (32˚ to +113˚F) at 10,000 Feet with temperature gradient of 0.5˚C per 1 min For ODU power consumption <70W (please refer to X3 Installation Manual for details)
Humidity Max	90% non-condensing humidity
Input Voltage	100–240 VAC Single Phase, 50–60 Hz, 2A max at 90 VAC, 1A max at 240 VAC
Radio Standards	EN 301-428 v1.3.1 — Ku-Band System Level Specification EN 301-443 v1.3.1 — C-Band System Level Specification
Safety Standards	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
Emission Standard	Complies with EN 55022 Class B, FCC Part 15 Class B, CISPR 22 Class B, EN 61000-3-2, EN 61000-3-3
EMC/Immunity Standard	Complies with EN 55024, EN 301-489-1, EN 301-489-12, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Certification	FCC, CE, and RoHS Compliant

*Available with iDX 3.0 or above   **Not supported for use with DVB-S2 outbound in iDX 3.0 or above   ***Optional*

Some examples of V-SAT applications that going to be done to all customers:

1- Oil and Gas Applications

Oil and Gas companies are some of the major users of communications services based on satellite. With employees now wanting access to state-of-the-art communications on oil rigs andremote locations, as well as companies want to improve the efficiency of their operations, this has become akey issue.

The connectivity requirements at oil and gas sites are also changing. In addition to basic voice and data communications access, oil and gas companies demand more bandwidth to support real-time applications that improve productivity, security and crew welfare.

Many oil and gas companies are turning to satellite communications for a highly effective solution to keep remote sites connected and advance core operations. Recent improvements in IP-based broadband satellite communications allow these companies to extend the reach of corporate networks seamlessly to any location and support two-way communications.

Teleport

Hub System
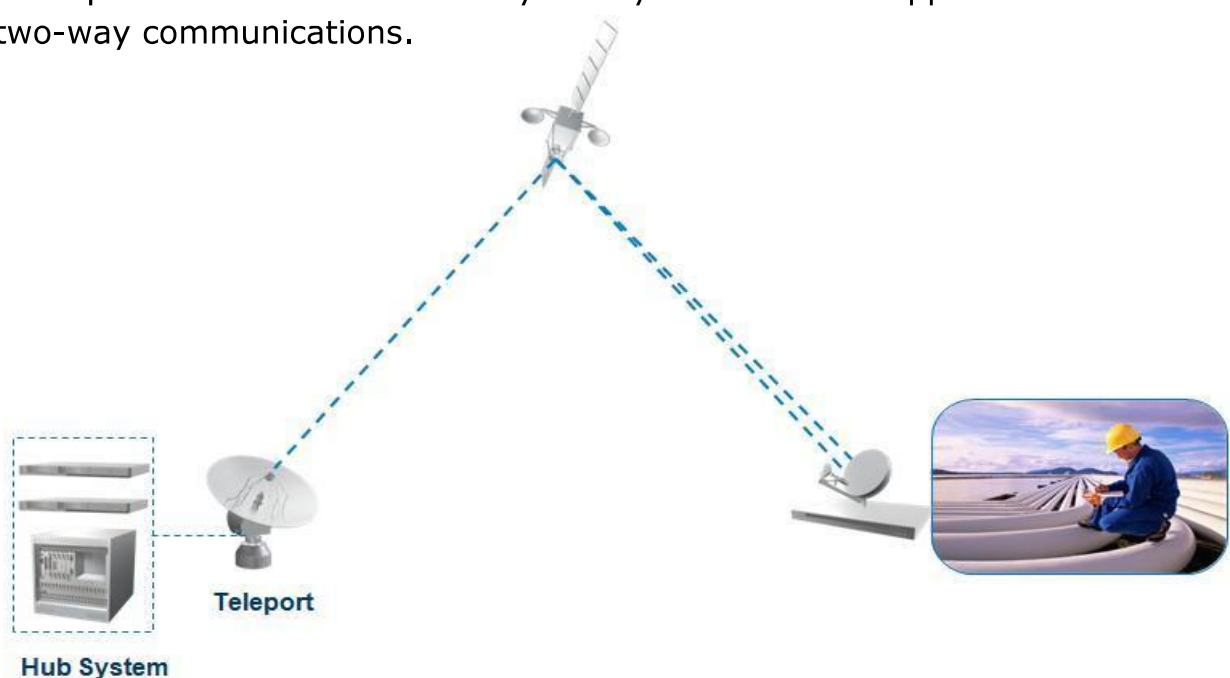
2- Internet Services

Internet access provided through satellites is a Modern
technology that is typically provided to users world-wide and
can offer high data speedsas opposed to cables and telephone lines.

3- Data service

Satellites provide universal coverage overcoming the limitations facing
traditional telecommunications networks. It provide high speed data
communications in high growth markets with high reliability and high security.
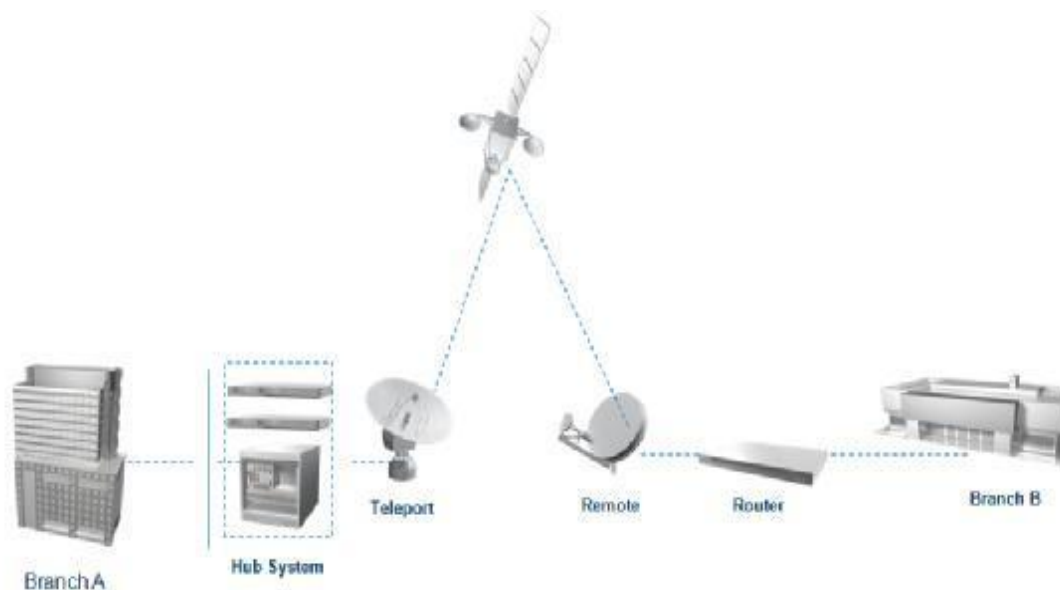
4- Backhauling

Bringing communications to remote areas of the world is a huge opportunity for cellular operators to profitably expand their networks and gain millions of new customers.

Optical fiber and leased lines are hard to deploy, with long installation timelines.Microwave links are costly to deploy and maintain and have limited reach capabilities.

Vsat can provide a very high speed and reliable connectivity for Mobile backhauling.It enables carriers to share network capacity across multiple locations,allocating bandwidth on demand to maximize efficiency while reducing costs.
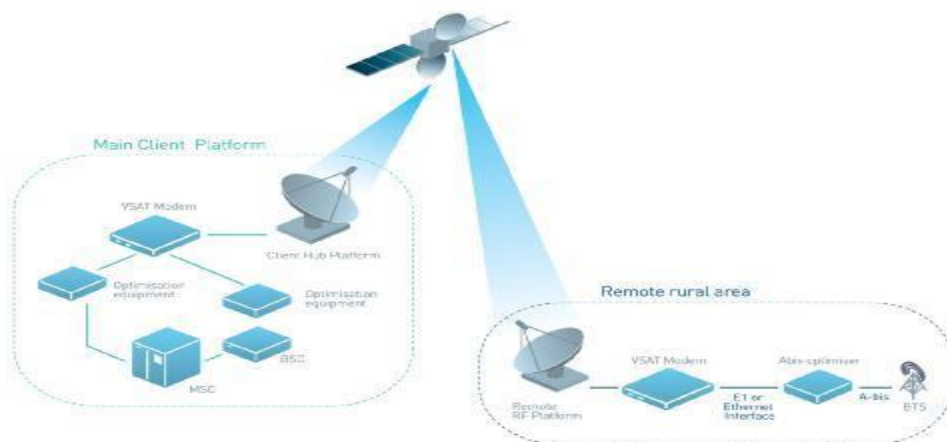

5- Rural Telephony and connectivity

Residents and businesses in rural areas commonly have no access to communication.Due to remote location, difficult terrain, hostile environment or widely dispersed customers, laying copper or fiber may not be a cost effective solution to deliver connectivity.

Satellites can provide coverage overcoming the limitations facing traditional telecommunications networks and allow connectivity to even the most remote and hard-to-reach regions. So V-sat is a very appropriate solution for rural connectivityas it has the flexibility to cost-effectivelymeet any customer requirements.


Rural VoIP Telephony Solution
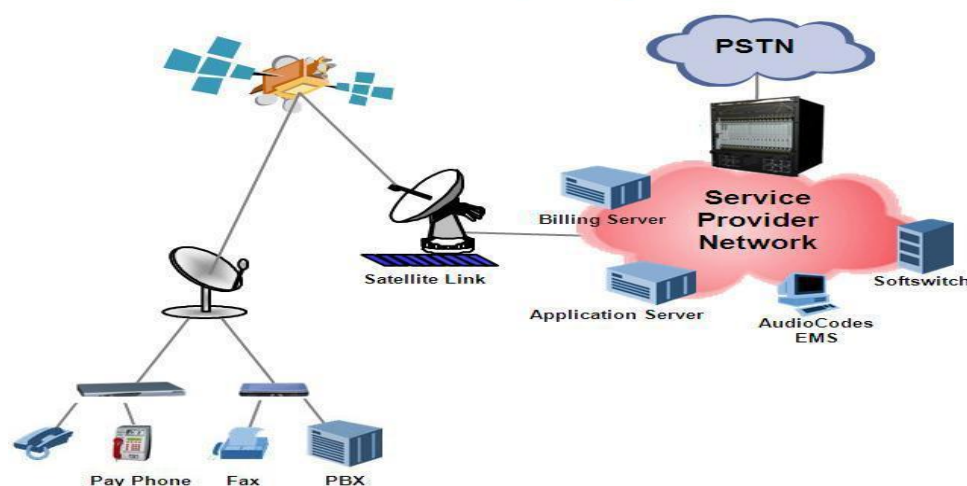
6- E1 connectivity

As well as Mobile connectivity V-sat is anincredible choice for E1 connectivity.Companies can connect their branches with E1 to connect their PABX with unified telecom system.
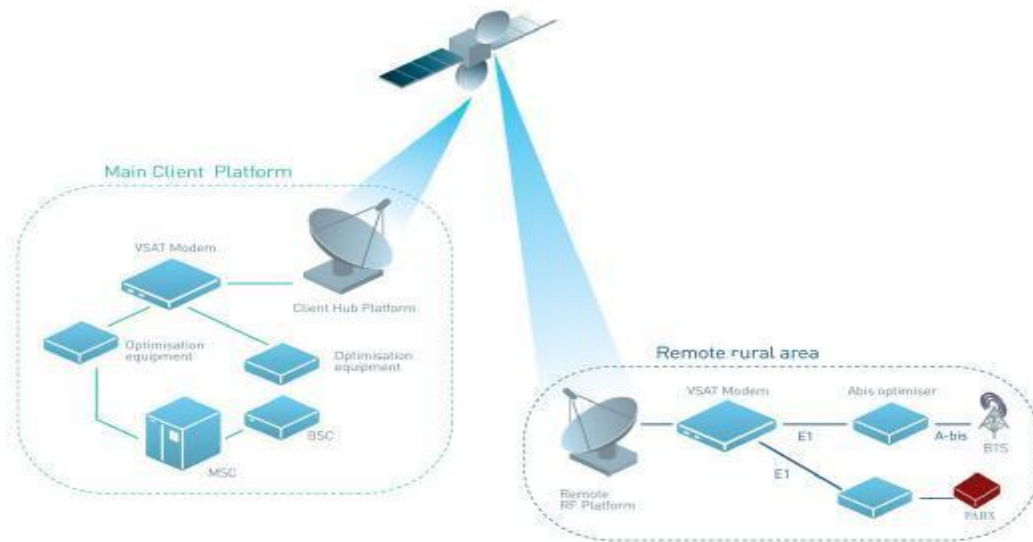

7- Video monitoring

The V-sat solution provides end-to-end IP access to support applications such as full video monitoring and surveillance capabilities anywhere inYemen, including the most remote locations and harshest environments.

Vsat remote broad band network solution provides high bandwidth, reliability and security.
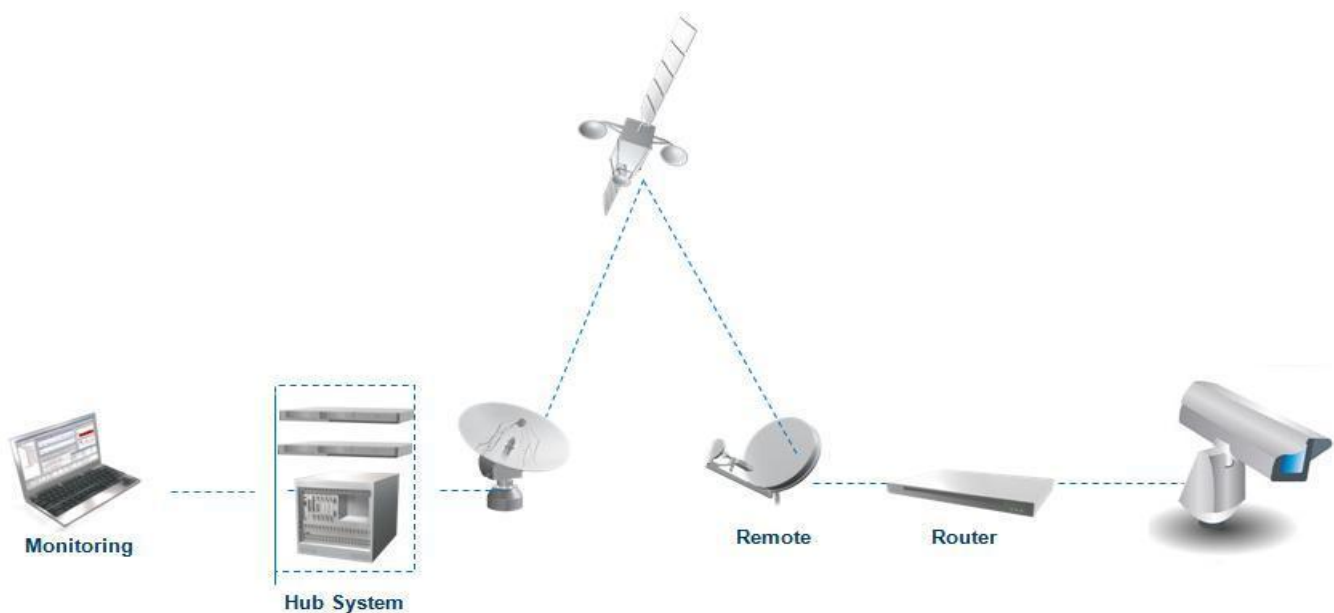
8- Branching

Vsat can provide a very high speed and reliable connectivity between branches distributed over a large area inside or outside Yemen.
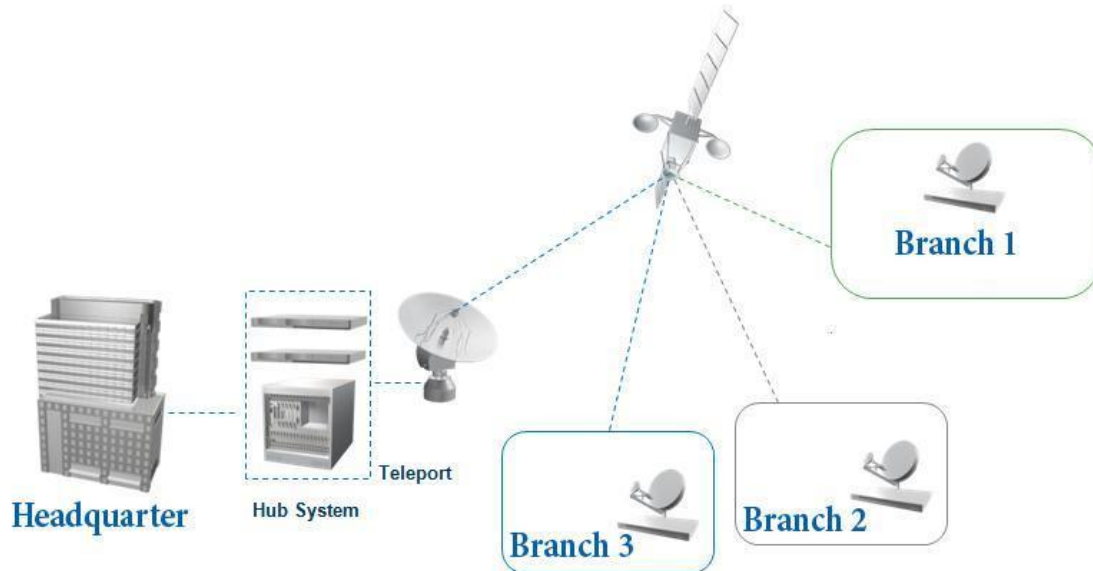
9- Tele-Medicine

The use of telecommunication and information technologies in order tohelp eliminate distance barriers and can improve access to medical services that would often not be consistently available in distant. Vsat features make it a very appropriate choice on that major.
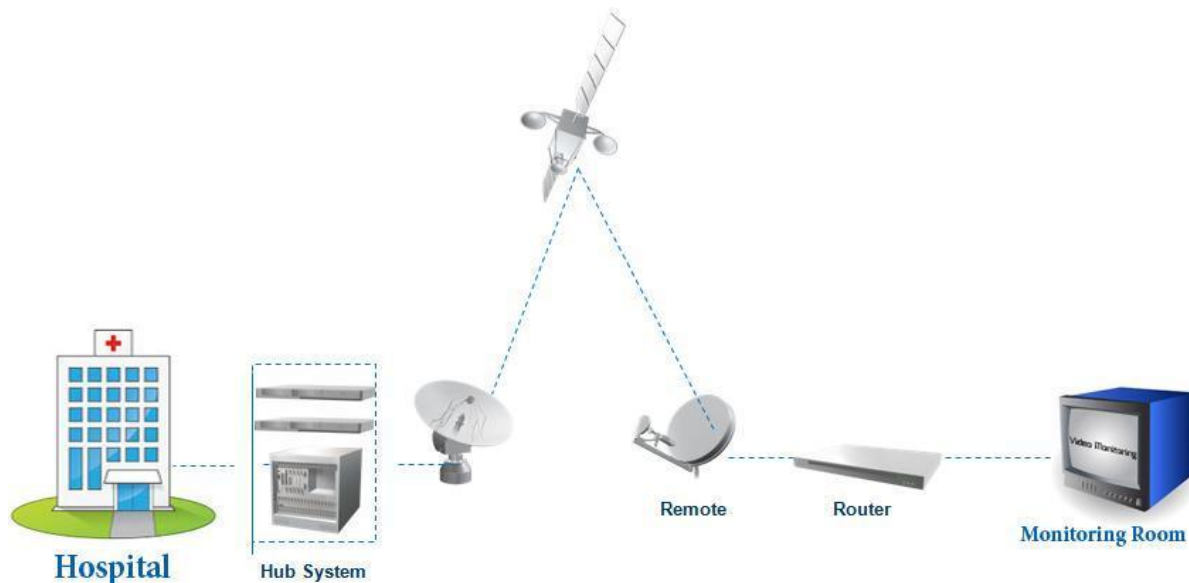
10-SCADA

Supporting large scale distributed measurement and control systems such as Supervisory Control and Data Acquisition (SCADA) implementations requires reliable and rugged networksthat can connect thousands of remote sites and operatein inhospitable regions where no traditional infrastructure exists.

Additionally, above and beyond supporting traditional SCADAimplementations, companies are increasingly requiring theirinfrastructure to handle more network services and deliverthe full spectrum of broadband applications to hundreds andeven thousands of points along their business operations.

V-sat delivers hig -speed two-way broadband connectivityover the air and can be deployed quickly to any geographicregion, under any conditions.