

1. What does VSAT stand for?

VSAT stands for Very Small Aperture Terminal

2. What is a VSAT?

A VSAT is a small-sized telecommunications earth station that transmits and receives via satellite. The terminal size is 0.75 to 3.8 meters in diameter.

3. For what are VSATs used?

VSAT systems generally connect a large number of geographically dispersed sites to a central location. VSAT networks may transmit voice, data, fax, or video conferencing.

4. What are the components in a VSAT site?

A typical VSAT site consists of a parabolic-shaped antenna mounted on the roof of a building, connected by a cable to a chassis inside the building. Operators install these antennas at customer sites and buy transmission capacity on satellites.

5. What does the VSAT unit contain?

A typical VSAT unit contains a modem for translating satellite transmissions back into data (and vice versa) and terrestrial interfaces for connecting customer equipment.

6. What is a satellite transponder?

A satellite transponder is a combination receiver, frequency converter, and transmitter package. It is physically part of a communications satellite. Communications satellites typically have 12 to 24 onboard transponders.

7. What are the typical VSAT network configurations?

VSAT networks can be arranged in point to point, star, mesh, star/mesh, and broadcast configurations. The preferred arrangement depends on the kind of information flow the network will service.

8. What is a point to point VSAT network?

A point to point network allows two-way communications between two VSAT sites.

9. What is a star VSAT network?

A star network allows any number of VSAT sites to have two-way communication with a central hub.

10. What is a mesh VSAT network?

A mesh network allows two-way communications between any VSAT sites in a network. A central hub is not necessary. Each site communicates to another site with a single satellite hop.

11. What are the different VSAT transmission methods?

There are three basic VSAT transmission types: TDMA, time-division multiple access; DAMA, demand-assigned multiple access; and SPCP/MCPC, single/multiple channels per carrier.

12. What are the characteristics of a TDMA transmissions type?

TDMA is a form of multiple access in which a single carrier is shared by many users. When signals from earth stations reach the satellite, they are processed in time segments without overlapping. TDMA is typically used in a packet switched environment when small or moderate amounts of data are to be transferred.

13. What are the characteristics of a DAMA transmission type?

The DAMA protocol is used to share bandwidth in a time division mode. Typically DAMA transmission is used in a packet-switched environment when large amounts of data are to be transferred. Is a highly efficient means of instantaneously assigning telephony channels in a transponder according to immediate traffic demands. DAMA is also applicable in a circuit-switched environment and is usually characterized by allowing each user a variable slot of time on a demand (or request) basis.

14. What are the characteristics of a SCPC/MCPC transmission type?

SCPC/MCPC systems use a dedicated satellite link between a few distinct locations. These links can support either a single telephone line or several telephone or data lines. Such links generally are permanently assigned with no carrier switching or rerouting over the satellite.

15. What is SCPC-DAMA transmission?

SCPC/DAMA systems provide a control network on top of an SCPC network. When a particular station wishes to make a telephone call, the control network is used to forward that request to a central processor that sets up a dedicated SCPC link between the two sites. When the call is finished, the link is taken down and the satellite resources can be used for a different call.

16. What is TDM-TDMA transmission?

TDM-TDMA networks are designed for interactive data applications. TDM-TDMA systems feature a large expensive hub that provides basic data communications to very inexpensive remote sites. The architecture supports many remote stations using a small amount of satellite bandwidth. Data rates supported at the remote sites are typically between 1.2 kbps and 9.6 kbps; however, this type of traffic has a very low average data rate. Each station may transmit bursts of 9.6 kbps data, but they generally average less than 100 kbps. Typical applications are transactional in nature. Examples include credit card verifications, point of sale systems, SCADA systems, and inventory control.

17. What is TDMA-DAMA transmission?

TDMA-DAMA networks have the same demand assignment capability as SCPC-DAMA networks, but also have division multiplexing to reduce the need for multiple modems at each site. TDMA-DAMA networks allow many telephone calls to be placed simultaneously to different destinations through a single station.

18. What is FDMA transmission?

FDMA (Frequency Division Multiple Access) uses a single modem for all communication from a site and transmits for very short interval and at higher rates. FDMA uses multiple carriers within the same transponder within which each uplink has been assigned frequency slot and bandwidth. It is usually used in conjunction with frequency modulation.

19. What is the advantage of a TDMA-DAMA system?

TDMA-DAMA systems support many telephone lines with very little incremental cost. E1 or T1 interfaces can be provided for direct digital connections to PBXs or telephony switches. TDMA-DAMA systems are also flexible in supporting applications such as data, video conferencing, broadcast, and the like. In addition, TDMA networks are hubless, which eliminates the high cost of a hub and a single point of failure within the network.

20. What applications do TDMA-DAMA networks best support?

TDMA-DAMA networks support applications with mesh connectivity and applications that require multiple services that are integrated into a single network such as telephony, low to high-speed data imaging, fax, and interactive video conferencing.