

Satellite Communication Applications Guide

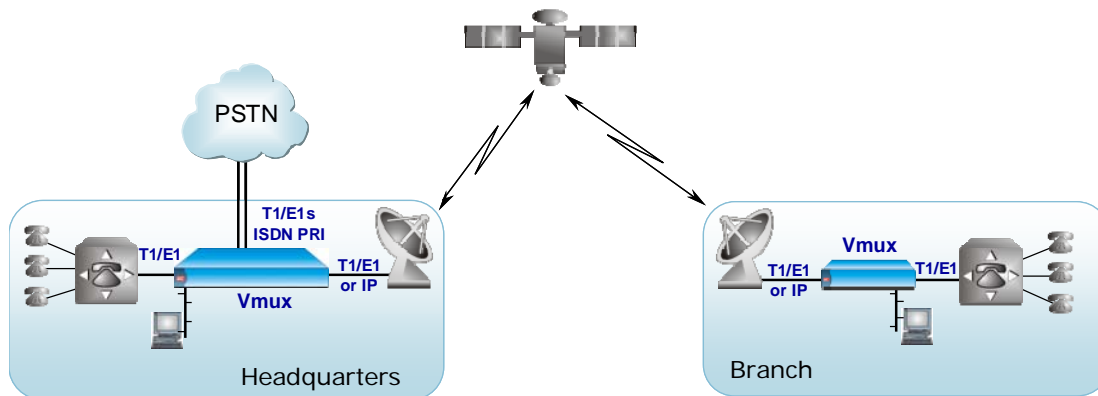


data communications

The need to maintain reliable communications with distant locations is critical in today's environment. Satellite services play a vital role for connectivity to remote locations as well as for emergency or temporary links. Given the nature of satellite service, bandwidth can be expensive. Organizations seeking to minimize costs turn to RAD Data Communications to aggregate, compress and optimize voice and data streams over these connections. The following application diagrams illustrate typical solutions.

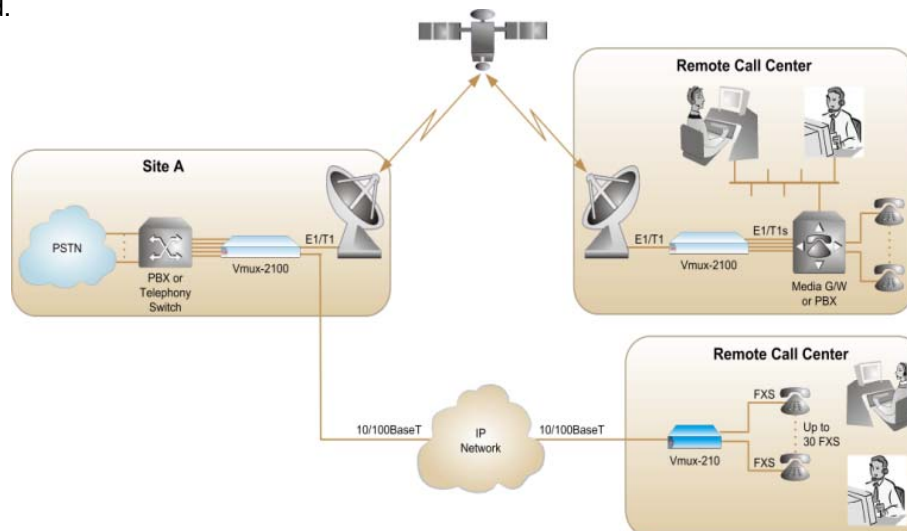
Application #1: PBX Voice Trunking over Satellite

Solution: RAD's Vmux family is ideal for providing voice and data connectivity to remote locations because it uses 20:1 voice compression to greatly reduce the number of T1/E1 timeslots or IP bandwidth required to carry a given traffic load. A single T1/E1 timeslot can carry 20 voice circuits or 20 E1/T1 links can be carried over a single E1/T1 connection. Alternatively, a full T1 of 24 voice channels can be transmitted over less than 100Kbps of IP bandwidth.



Application #2: Compressed Voice Connectivity for Off-Shore Call Centers

Solution: RAD's Vmux-2100 is a scalable, compact, 1U high product that is ideal for remote call centers because it is optimized for quality voice trunking with 20:1 compression. The Vmux deploys TDMoIP (CV) technology that is more bandwidth efficient than VoIP - and its transparency to signaling protocols ensures simple deployment, faster call setup times, lower latency and higher availability. Transparency also means that all ACD/PBX features are supported to ensure that call center functionality is not compromised.



Satellite Communication Applications Guide

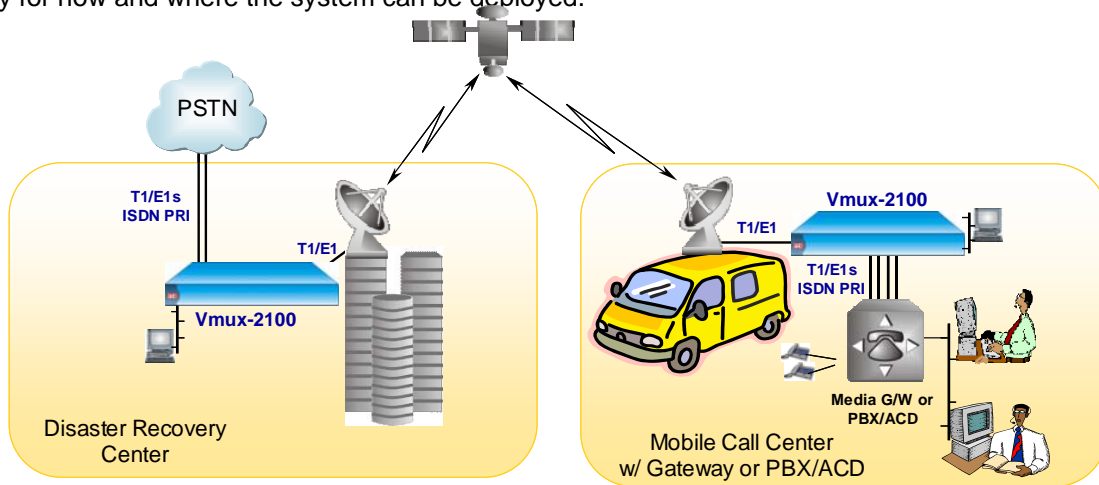


data communications

Application #3: Disaster Recovery via Mobile Contact Center

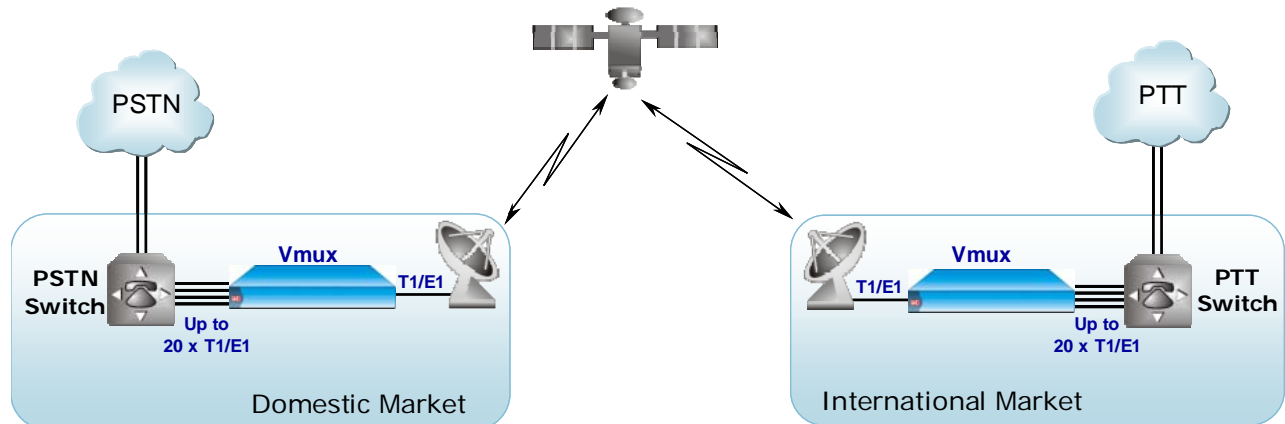
Solution: RAD's Vmux-2100 is ideal for mobile contact centers because it is a scalable, compact, 1U high product that can carry up to 20 T1/E1 voice circuits and Ethernet traffic over a single T1/E1 link. The Vmux deploys TDMoIP (CV) technology that is ideal for voice trunking because it's more bandwidth efficient than VoIP - and its transparency to signaling protocols ensures simple deployment, faster call setup times, lower latency and higher availability.

The Vmux product family provides economic voice and data facilities over satellite - providing maximum flexibility for how and where the system can be deployed.



Application #4: International Toll Bypass with 20:1 Voice Compression

Solution: RAD's Vmux-2100 is a compact, 1U high DCME (Digital Circuit Multiplication Equipment) solution that is ideal for international and domestic toll-bypass. It can be configured to compress 20 T1 or E1 voice circuits into a single T1/E1 or IP link. The Vmux-2100 utilizes TDMoIP (CV) technology to deliver high quality voice with 20:1 voice compression, rate configurable fax relay, modem relay and transparent support for common signaling protocols such as SS7, ISDN PRI and R2/MFC. Voice trunking features such as Q.50 and COT are also supported. TDMoIP (CV) uniquely aggregates and multiplexes multiple voice channels into a single IP bundle to ensure minimum overhead, bandwidth and latency.



Satellite Communication Applications Guide

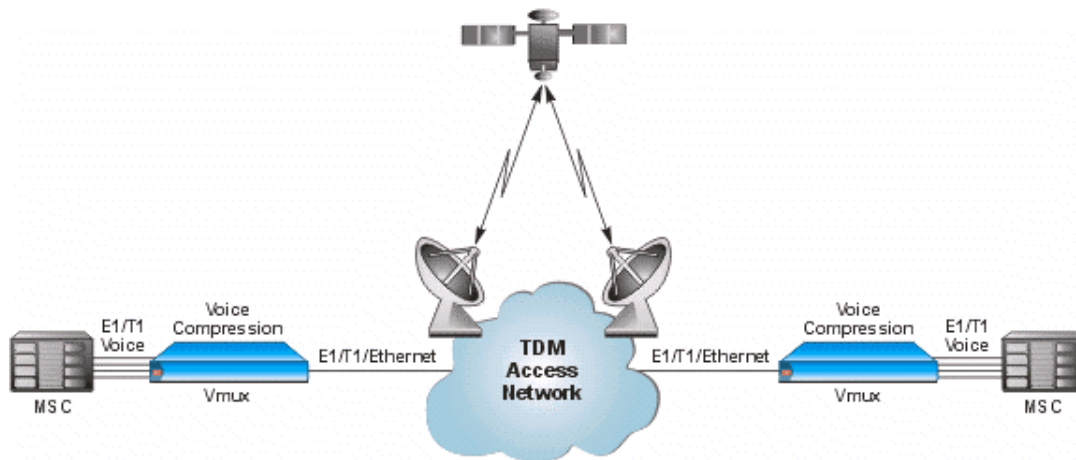


data communications

Application #5: Inter-MSC Cellular Connectivity

Solution: Inter-MSC (E channel) trunking is one of the main contributors to the cost of running a cellular operation. Typically, hundreds of long haul links are used to transport traffic between voice switches, in meshed, star or mixed network topologies. Reducing the number of links translates into immediate cost savings, adding directly to the mobile operator's bottom line. Because the payload of inter-MSC transmission is voice traffic, the simplest and easiest way to realize this reduction is by compressing the amount of voice traversing the network using standard voice compression algorithms.

RAD's Vmux Compressed Voice System uses powerful standardized voice processing technology to compress a full E1/T1 circuit down to 128 kbps, or 20 full E1/T1 lines and associated signaling down to a single E1/T1 circuit over TDM or IP/Ethernet links.



Application #6: GSM Backhaul Optimization from Remote Cell Site Connectivity

Solution: RAD's VMUX-400 family of voice optimization gateways provide up to a 3:1 efficiency improvement for the backhaul of a.bis GSM traffic.

