

Reliability of ReFLEX

Since the advent of the first pager and mobile phone, wireless technology has been relied upon for business and general use. Furthermore, mobile technology should be dependable, not just in business districts but in areas where subscribers live and travel. Whether a mobile phone, pager or wireless email device – it is important that the technology behind it is proven.

Time and again, USA Mobility's narrowband wireless data network has passed the test. Reliability of USA Mobility's network is attributed to its operation and design, which is based on the Motorola developed ReFLEX 25[™] protocol. USA Mobility operates the largest ReFLEX network, covering more the 90 percent of the United States population. This kind of coverage allows customers to travel throughout the country and be assured their device works.

While there are many design issues that go into building and operating a reliable wireless data network, they can be condensed into four major points.

- **USA Mobility's network uses a satellite based VSAT network**

Our VSAT network enables the transmitter/receiver locations to remain on the air when most wire-line communications facilities are lost. In the instance of a site failure, the point to multi-point architecture of a VSAT network limits the effect of the failure to one location while other sites take over the responsibility of the damaged transmitter/receiver. This stability is primarily due to the extremely high reliability of satellite communications, which have been refined over many years of use.

- **Network developed as a Simulcast system to transmit messages**

Simulcasting covers a given area with RF (radio frequency) that is transmitted from multiple locations. This redundancy enables communication even during times when a specific transmitter location is off the air and increases the overall power of the RF signal. This provides for greater in-building penetration allowing for better coverage and for messages to be sent or received from inside office buildings or in parking garages. USA Mobility's simulcast system delivers unprecedented always-connected service and coverage reliability for mobile devices compared to the single base station/single link system of other packet data networks such as broadband PCS and Mobitex networks. See figure 1.

- **Wireless data devices interact extremely well with the Internet**

This compatibility allows USA Mobility subscribers to communicate with other wireless data devices as well as general email users when many of the wire-line communications are down. Being able to send and receive messages through computer-based Internet as well as via our wireless network adds a level of access that voice communications do not have available to them. Furthermore, wireless data devices also have the advantage of receiving a voice mail or numeric message initiated by phone. Being able to connect with ReFLEX wireless devices via voice and Internet facilities provides a degree of redundancy that most communications systems don't have. See figure 2.

- **Network specifically designed to transport data**

Wireless data networks are designed to support short bursts of data and provide a high level of service during peak network traffic hours. Due to the short message length of wireless data traffic, the network is capable of processing a very high number of messages at any given time. This enables the network to handle a very large amount of traffic as is demanded during a crisis.

Due to these network design aspects, the vulnerability of USA Mobility's network is reduced compared to cellular or wire-line communications systems. Not only is reliability built into the design, but ReFLEX wireless data networks demonstrate compelling advantages in geographic coverage, in-building penetration and in the ability to support reliable delivery in difficult environments.

Figure 1

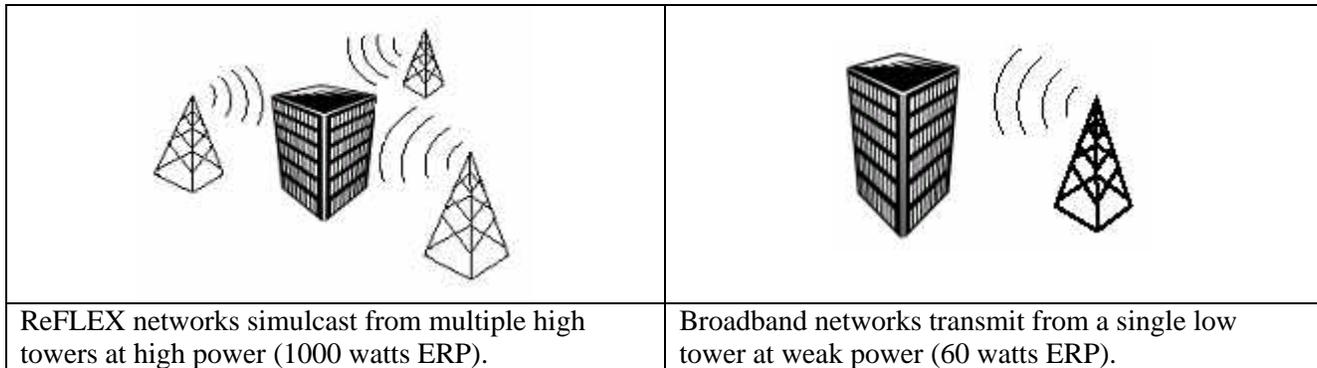


Figure 2

Two-way Network

