

Typical Applications of Fiber Optic Systems

Communications / Data Storage

Since fiber optics are resistant to electronic noise, fiber optics has made significant advances in the field of communications. The use of light as its source of data transmission has improved the sound quality in voice communications. It is also being used for transmitting and receiving purposes.

Military

Optical systems offer more security than traditional metal-based systems. The magnetic interference allows the leak of information in the coaxial cables. Fiber optics is not sensitive to electrical interference; therefore fiber optics is suitable for military applications and communications, where signal quality and security of data transmission are important.

The increased interest of the military in this technology caused the development of stronger fibers, specially designed cables and high quality components. It was also applied in more varied areas such as hydrophones for seismic and sonar, aircrafts, submarines and other underwater applications.

Networking

Fiber optics is used to connect servers and users in a variety of network settings. It increases the speed, quality and accuracy of data transmission. Computer and Internet technology has improved due to the enhanced transmission of digital signals through optical fibers.

Industrial/Commercial

Fiber optics is used for imaging in areas which are difficult to reach. It is also used in wiring where electromagnetic interference (EMI) is a problem. It gets used often as sensory devices to make temperature, pressure and other measurements as well as in the wiring of motorcars and in industrial settings.

Broadcast/CATV /Cable Television

Broadcast or cable companies use fiber optic cables for wiring CATV, HDTV, internet, video and other applications.

Usage of fiber optic cables in the cable-television industry began in 1976 and quickly spread because of the superiority of fiber optic cable over traditional coaxial cable. Fiber optic systems became less expensive and capable of transmitting clearer signals further away from the source signal. It also reduced signal losses and decreased the number of amplifiers required for each customer. Fiber optic cable allows cable providers to offer better service, because only one optical line is needed for every \pm 500 households.