Fiber Optics and Security

In the digital age, secure transportation of data is as critical as fast and reliable transmission.

Fiber optic cables used in today's internet infrastructure stand out not only with their high speeds and long-distance capacity, but also with the security advantages they provide.

So, do you know why fiber optic cables are so important in terms of data security? Here is what you need to know about fiber optics and security.

Security Advantages of Fiber Optic Technology

1. Resistance to Eavesdropping
Traditional copper cables can be easily eavesdropped or interfered with by emitting electromagnetic signals. However, fiber optic cables do not emit electromagnetic signals because they transmit data with light pulses. This feature largely eliminates threats such as unauthorized access or data theft from outside. It is almost impossible to interfere with data transmission other than physically cutting or breaking fiber optic cables.

2. Complete Protection Against Interference
Fiber optic cables are completely immune to environmental interference and electromagnetic fields. This makes data transmission more reliable and minimizes the risk of the network being affected by external factors. Electromagnetic interference can create serious security gaps, especially in networks with sensitive data. Fiber optics provide excellent protection against such threats.

3. Like a Firewall: Physical Security of the Cable
Fiber optic cables cause signal distortions that can be noticed immediately when physically interfered with. This makes it difficult for cyber attackers to eavesdrop on data transmission without damaging the cable. Any interference with the fiber optic cable can be noticed immediately by system operators and the necessary precautions can be taken.

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