TS7C00A/TS7B20A

UHF Fiber Optic Repeater

400-470 MHz UHF Fiber Optic Repeater

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On Order

[?????????]

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UHF Fiber Optic Repeater is an active distributed antenna system designed to extend wireless communication coverage. It is primarily used to resolve **UHF (Ultra High Frequency, typically between 380-512 MHz) signal blind spots or weak reception issues** in large buildings, underground tunnels, mining areas, or regions far from the Base Transceiver Station (BTS). By utilizing fiber optic cables for long-distance, low-loss signal transmission, it is particularly suitable for public safety systems (such as TETRA, P25), enterprise private networks (DMR/PMR), and two-way radio signal extensions.

System Components & Working Principle

A UHF fiber optic repeater system typically adopts a two-layer architecture, consisting of the following two core units:

Master Unit / Donor Unit (MU):

l Installed near the Base Transceiver Station (BTS) or at a location capable of receiving a strong wireless signal.

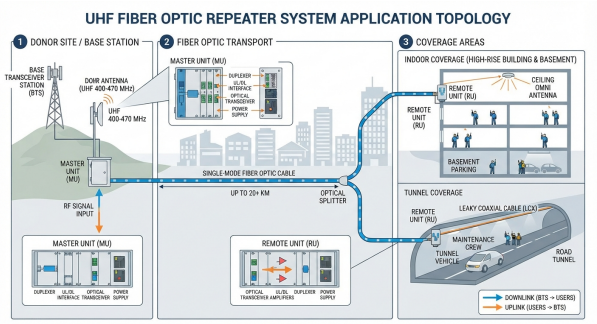
l Captures the RF (Radio Frequency) signal from the base station via a direct coupler or a donor antenna.

l Converts the internal RF signal into an **optical signal** and transmits it over long distances through a single-mode fiber optic network.

Remote Unit / Coverage Unit (RU):

l Deployed in the target blind zones requiring signal coverage (e.g., inside tunnels, basements).

l Receives the optical signal from the fiber optic cable and **converts it back into an RF signal**.

l Amplifies the signal using an internal power amplifier and broadcasts it through indoor/outdoor coverage antennas to terminal devices (such as walkie-talkies or radios).

l Conversely, the uplink signal from terminal devices travels back along the reverse path to the base station.