

Item 5: Theory of Operation/ Technical Description

The hField Technologies Wi-Fire adapter is an 802.11 b/g WiFi (2.4 Ghz) USB network adapter coupled with a 10 dBi Yagi antenna comprised of one driver element, one reflector element, and two director elements. The Yagi antenna is connected to the USB circuit via a U.FL coaxial cable and U.FL coaxial port located on the USB circuit. An USB retractable extension cable connects the USB circuit to a personal computer running a Windows XP operating system. When the USB cable is plugged into a personal computer, the computer communicates with the USB circuit, which encodes/decodes the signal into 802.11b/g wireless signals which is then transmitted/received via the Yagi antenna through the U.FL coaxial cable.

The Yagi antenna and the USB circuit are held in a plastic enclosure made of ABS material. The retractable USB cable connects to the USB circuit through an open port in this enclosure. This enclosure is then placed in a mount, also made of ABS material, which permits the user to fix the Wi-Fire to a laptop monitor or flatscreen monitor. The pivoting action of this mount also allows for placement on any flat surface.