Portable Network Kits (PNK)

A Portable Network Kit (PNK) is a local Wi-Fi network anyone can access using a Wi-Fi enabled smartphone, tablet, or computer. Once you log-on to the Wi-Fi network you can access the local server to use its apps and services such as sending and receiving messages and files (but not cloud-based apps such as Facebook, Whatsapp or Gmail) or, if you have a working internet connection connected to the PNK, you can share that connection with multiple people.

The PNK is designed to use off-the-shelf Wi-Fi equipment, to make it easier to use and lower cost. This allows a community to build their own communications infrastructure that they can control and govern. Even if access to the internet is not available, the PNK allows for local wireless communication via chat-rooms and shared document editing apps running on the PNK’s server.

The PNK is also an excellent teaching tool to distribute transferable skills, the understanding of how wireless networking happens and how the internet works. (Sample lesson plans available on request)

Currently, we have a set of configurations for a few routers and Ubiquiti’s UniFi Mesh system. The mesh access points (APs) both provide a Wi-Fi connection and act as a relay. The range from AP to AP will vary depending on the buildings and trees in the area, but you can go about 100 to 150 meters between units, and potentially further if the conditions are right. If an Internet connection is available, it can be relayed to other sites within range. The bandwidth on the network is limited to the Internet connection you provide, but access to the local services on the Raspberry Pi Server should always be available.

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