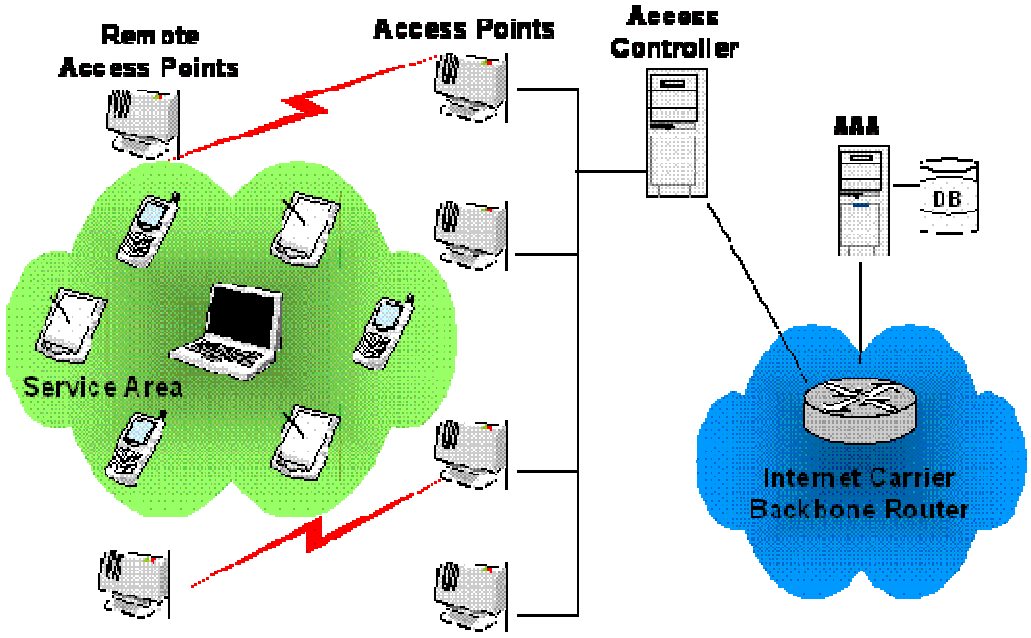
go NETWORKS **R&D Group**	**WLF (MBW-510)** **Theory of Operation**	Document ID: Revision: 1.0 Last Update: 06/02/08 Editor: Ronen Akerman

WLF (MBW-510) Theory of Operation

1. General description

The WLF is designed to be an outdoor Wireless LAN Access Point (AP) to be installed in public wireless LAN hot spots / hot zones. A user in the vicinity of the AP, that has a laptop / PDA or cell phone with a wireless LAN NIC (Network Interface Card) can associate with the AP and be connected to the Internet.



In a public WLAN (wireless LAN) installation, the WLF s will be installed by large service providers or cellular operators in areas where there will be a demand for this service, such as train stations, airports, convention centers and business areas. Another option is that the WLF will be installed in a campus (such as a university or hospital) by the "owner" of the campus.

1.1 Typical Installations

The WLF will typically be installed outdoors to provide outdoor coverage of Campuses or city neighborhoods. In these installations the WLF will typically be mounted on a light pole or communication tower.

The 5GHz interface (or interfaces) allows some of the WLF's to be installed without cable connection to the Internet. The units that are installed in vicinity form link between each other and can transfer data to the nearest Internet connection.

2. WLF Architecture

The WLF contains the following electrical modules:

2.1 Main board

The WLF's main board contains the processor which runs the WLF's SW. it also contains 2 miniPCI extension slots and an Ethernet interface. The CPU performs layer 2 switching of packets between its 3 ports (Ethernet + 2 miniPCI network interface cards).

2.2 2.4GHz interface

The 5GHz interface is constructed using an "off the shelf" module, installed into the unit's miniPCI connector.

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2.4 Power supply

The power supply is constructed using an "off the shelf" power supply module.

2.5 Filter card

When 2 wireless interfaces work simultaneously in close range, there is a problem of mutual interference. When one interface transmits, it can block out the other interface's reception and cause packet loss.

In order to avoid this, the WLF includes a filter card which dramatically improves the isolation between the 2 interfaces and enables them to operate simultaneously without interference.