Firetide 6200 Series
Theory of Operation

The 6200 Series Hotport Mesh Node is comprised of five printed circuit assemblies; a Mother Board, Daughter Card, Panel Board, and two Radio Cards.

The HotPort Mesh Node is powered via 120VAC/60 Hz wall power. The AC input powers an internal AC/DC switching power supply, which has an output of 15 VDC. 15 VDC is the power input to the Daughtercard. The Daughtercard converts the the 15 VDC into four other supply voltages used by the rest of the system; 1.3, 1.8, 3.3, and 5.0 VDC.

The Motherboard uses the Intel IXP425 as the central processing unit. Memory configuration is 32M bytes of FLASH and 128M bytes SDRAM. The Ethernet PHY circuitry is also located on the Motherboard. The Hotport Node supports up to 3 10/100 Base-TX LAN network interfaces using the Micrel KS8995MA Ethernet switch. The interface to the wired LAN network is through three weatherized 10 pin connectors on the rear of the HotPort. The radio cards plug into the Motherboard. Communication to/from the Motherboard is made via a MMI interface.

The Radio Card runs from 3.3 and 5.0 volts, which is provided by the Motherboard. The TX output stage of the Radio Card is powered from +5.0 VDC and draws approximately 350 mA. The 6200 series uses a Firetide proprietary radio card. Each Radio is a full featured 802.11a/b/g client card. The Radio operates from 2412 MHz to 2462 MHz according to the IEEE 802.11b/g specification and from 4.94 – 4.99 and 5.15 – 5.825 GHz according to the IEEE 802.11a specification. The data rates supported are 1 Mbit (DBPSK), 2 Mbit (DQPSK), 5.5 Mbit (CCK), and 11 Mbit (CCK) for .11b and 6, 9, 12, 18, 24, 36, and 54 MBit OFDM for .11a/g. The Hotport Node is housed in a weatherized, cast aluminum enclosure.