Theory of Operation
5020-ER

The 5020 Series HotPort Edge Mesh Node with redundancy comprised of four printed circuit assemblies; a Mother Board, Heater Board, and two Radio Cards.

It is powered by via an AC/DC desktop PoE adapter (56V out, 0.55A rating) or AC-DC adaptor with output of 15VDC/0.9A which is internally converted to 48V for powering the Mother board. The Mother Board accepts the 48-56 VDC input through its RJ45 connector. The Mother Board converts the 48 VDC into four other supply voltages used by the rest of the system; 1.8, 2.5, 3.3, and 5.0 VDC.

The main processing unit of the 5020 M (Mesh) is the Atheros 7161. Memory configuration is 32 Mbytes of FLASH and 128 Mbytes SDRAM. The 5020 supports a single wired 10/100/1000 Base-TX LAN network interface using the IC+ IP1001 PHY. The interface to the wired LAN network is through a RJ45 ports on the rear. The radio cards plug into the Mother Board. Communication between the Mother Board and the radio cards are made via a PCI interface

The Radio Card runs from 3.3 and 5.0 volts, which is provided by the Motherboard. The output TX stage of the radio is powered from +5.0 VDC and has a supply current of 350mA. The 5020 ER series uses a DNMA-H5 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.

Only proprietary software written and distributed by Firetide Inc. can be installed on the Mesh Node. "Source code" is controlled solely by Firetide Inc. and is not distributed to end users.

The HotPort Node is housed in a weatherized, cast aluminium enclosure. External antennas connect to the type N connectors on each side of the enclosure.

5020 LNK uses 19 dBi Panel antennas