

Firetide 5900 Mesh Node

Theory of Operation

A Firetide Mesh Network, which is composed of two or more Mesh Nodes, gives you the convenience of a wired-Ethernet switch combined with the deployment flexibility of wireless technology. Each Mesh Node in the network can accept a wired Ethernet connection. That connection's Ethernet data is sent wirelessly to another Mesh Node. If the receiving Mesh Node is connected to the wired destination for the data packet, the Node routes that packet to its Ethernet connection. If it is not the final destination, the packet is forwarded wirelessly to the next Mesh Node and ultimately to its final destination. Depending on the network topology, a Mesh Node can be set up to operate as a point to point device or as a point to multipoint device.

The 5900 Mesh Node is powered by via an AC/DC desktop adapter (12V out, 2A rating). The Board accepts the 12 VDC input through a dc connector. The Mother Board converts the 12 VDC into four other supply voltages used by the rest of the system; 1.2, 2.5, 3.3, and 5.0 VDC.

The Mother Board uses the Atheros AR7161 as the central processing unit. Memory configuration is 32 Mbytes of FLASH and 128 Mbytes DDR SDRAM. The node has one RJ45 Ethernet interface as a communication interface. The interface to the wired LAN network is through RJ45 port on node. This Ethernet interface uses the external Gigabit Transceiver which is capable of running at 10/100/1000Mbps. The radio cards plug into the Mother Board. Communication between the Mother Board and the radio cards are made via a PCI interface.

The 5900 uses two different mini PCI form factor radio modules. One radio module is DNMA-H5 from Wistron NeWeb, an industrial-grade, high-power 802.11n a/b/g/n WIFI 3x3 mini-PCI module designed specifically to enable highest performance and reliability. This radio module is capable of operating in 2.4 & 5GHz applications. The Radio operates in the 2.4 GHz band according to the IEEE 802.11b/g specification and 5 GHz band according to the IEEE 802.11a/n specification.

The other radio module is MaxR-900 from Arada Systems, 500 mW High Power 900MHz Wireless Mini PCI Card is built with proprietary power MMICs and industrial-grade components.

Only proprietary software written and distributed by Firetide Inc. can be installed on the 5900 Mesh Node. "Source code" is controlled solely by Firetide Inc. and is not distributed to end users.