SYSTEM DESCRIPTION P5010M-INT

The P5010M radio system is a point to point wireless link consisting of a Master unit (-MU) and
Remote unit (-RU) functioning as a wireless MAC layer ethernet access solution. Each unit
accepts full or half duplex Ethernet IEE 802.3 data packets from a 10/100BaseT port, breaks the
packets into smaller packets, and transmits them at 6 to 54 Mbit/sec rate using the ISL3692 zero –
IF modem. The modem formats the raw data into Orthogonal Frequency Division Multiplex
(OFDM) symbols and sends the symbols to the power amplifier through either a bandpasss filter
or a fixed attenuator, depending on the frequency selected. The radio operates in a Time Division
Duplexing (TDD) mode. The CPU and RF sections are clocked by the same 40 MHz oscillator.
The Ethernet port is clocked by a 25 MHz oscillator.   The DFS section is clocked by the same 40
MHz oscillator as the main section, except for the ADI microcontroller which uses a 32.768 Khz
clock crystal. The switching regulator oscillators are about 1MHz. The entire PCB is shielded by
a solid cast aluminum housing. The unit acts as a bridge and will transmit all packets it receives
on it's port. The unit utilizes a 9 degree azimuth integral patch antenna to achieve high gain and
immunity from surrounding transmitters coverage range. The RF power level is fixed inside the
unit but can be reduced by a remote web or telnet interface.

The MU is normally located at the Internet Service Provider's network center (usually mounted on a tower
or rooftop) and is connected to the wired Internet via Ethernet cable.

The RU is located on the Internet Service Provider AP tower (mounted outside) and is connected to access
points or other Ethernet device. .

Firmware running on the MU and RU manages the flow of information out to the Ethernet port. The
firmware is loaded into the FLASH memory on the unit and runs when the unit is powered on. The only
difference between the MU and RU is the firmware. The circuitry and antenna, enclosure is EXACTLY
the same, The functioning of the hardware is the same for both models, including RF channel changing, RF
power output, TX/RX switching, and anything that can affect emissions.

Functionally, the only difference between the units is that the MU is the Master and the RU is the slave.
The RU will only transmit when the MU authorizes it to. The MU also maintains the synchronization on
the link.

The entire system is grounded via the aluminum enclosure which is directly connected to Earth
ground using an 18 AWG wire. The patch antenna system is built in and requires no further
grounding.