Operational description.

Product overview

This product is a Ethernet to RF transceiver.

The product consists of a custom IBM compatible single board computer with a network interface controller card(NIC) and a radio transceiver installed in a PCMIA port card.

The RF card:

This device is Direct Sequence Spread Spectrum, the data is mixed by pseudorandom code which is an orthogonal code. The mixed data is digital modulated by BPSK and QPSK technique depends on the data rates.

The CCK coding is applied fro increasing the data rate, and also the processing gain will be increased. The bit rates are 1,2,5.5, 11Mbps, the symbol rates are 1,1,1.375,1.375Mbps, the chip rates are always 11Mbps.

So, the Chip/symbol is 11,11,8 and 8 respectively. Although is higher bit rate, the processing gain is lower than 10, but the CCK coding used in higher bit rate will provide 2.2dB coding gain.

The oscillators employed are a VCO from 2030 to 2090MHz controlled by software, 704 MHz, and which when divided by 2 gives the 352 MHz an IF local oscillator.

The computer:

The CPU uses 25 and 32MHz crystal oscillators.