A Low-Cost Spectrum Analyzer for SETI Amateurs

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ABSTRACT

A low cost spectrum analyzer, for amateur Seti observations, is here presented. The present Personal Computers allow the design and construction of efficient, low cost and high resolution spectrum analyzer for Seti activities that can be connected to small array of antennas. A 12 bit 20 MHz A/D converter is inserted in a PCI slot to directly introduce the digitized base band into the PC. An ad hoc software has been written to perform, in the fastest way, the FFT, the power computation and a Serendip IV like data processing and storing.

The system has been tested with an input bandwidth of 1 MHz. In this configuration it supplyied 0.5 million channels every 1.5 sec. (note that we used in these tests an old 300 MHz Pentium II PC)! Many different configurations in terms of input bandwidth and number of channels (max. input BW=20 MHz, max number of channels 1 million) can be set. It represents a very good starting point for further developments and upgrade by the exploitation of the velocity of the last generation Personal Computer.