# SPECTRUM PROCESSING MODULE (SPM)

*Spectrum Processor Module (SPM) is designed for receiving the analog IF signals of analog at its input, digitizes the input and then performs the Fourier Transform analysis on the incoming signal. The FFT values extracted from the input IF signal are transferred to the host PC using PCI interface or USB interface for display or storage purpose.*

*SPM is capable of meeting the following functional requirements:*

- Able to receive the IF signal 10MHz ± 5MHz frequency from –97dBm to –27dBm power level
- Plotting the spectrum of the incoming signal
- Providing the information to the host PC through PCI or USB

## *System Architecture*

The application software running on the PC gives a command to the Receiver to scan a band of frequencies. The receiver is set to the initial frequency value and after about 3 milliseconds of settling time, the IF output is given to the SPM module. The SPM module takes the input signal, digitizes it and calculates the spectral values for the specified number of frames (each frame can be of 1024 samples). Again, the receiver switch to the next frequency and the above process is repeated. The total time required for complete scanning of the frequency band is dependent on the settling time for each frequency and also the time to capture the data for each frequency spot.

## *System Specifications*

**Input**

| | |
|---|---|
| • Input signal | : 10.7 MHz/21.4 MHz IF signal with ± 5MHz bandwidth |
| • Bandwidth | : ± 20 MHz |
| • Input signal to Noise Ratio | : 15 dB (Typical) |
| • Input Impedance | : 50 Ohms |
| • Input Connector | : SMA Jack |
| • Input Signal Level | : -97 dBm to –27 dBm |
| • Dynamic Range | : 70dB |

**Output**

| | |
|---|---|
| • Display | : Display of Spectrum |
| • Output References | : 1. PCI interface to communicate with host PC<br>2. USB interface to Communicate with host PC |
| **Host Interface** | : PCI and USB |
| **Operating Temperature** | : 0 to $50^0$C. |
| **Card dimensions** | : 9cm X 11.5cm |

NOTE : The specifications can be changed without notice due to technological advances.


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