

## Single Frequency GPS Hardware Front End



The Single Frequency GPS Front End consists of a single-frequency downconverter and an optional data acquisition system. The downconverter box downconverts  $L_1$  band signals to suitable IF frequencies, whose signals can then be digitized and stored in either a PC using the data acquisition card or the digital storage unit. The IF signal can also be used as a direct input to the real-time software correlators or other receivers.

These downconverters are developed using discrete components and provide excellent performance in terms of noise, gain, phase flatness, and overall reliability. Both AGC and fixed gain (digitally controlled) versions are available.

### SAMPLE APPLICATIONS

- CRS Real-Time Software Receiver Front End
- Snapshot Processing
- Receiver Development
- Signal Simulator Evaluation
- Multipath Monitoring

### DATA LOGGING

#### DL-1-002-01

Number of Bits	4 or 14
Sampling Rate	4, 5.33, 8, 16 MSPS
Interface	PCI Bus
Storage	1 GB in Hard Drive

### ALSO AVAILABLE:

- Hard Disk Recording System: *For data storage up to 1 to 3 hours*
- FPGA Accelerated Correlator: *For pre-processing and real-time operation*
- Modular Software GPS Receiver: *Interfaces directly with the Front End for an entirely software-based operation or through FPGA correlator for real-time operation*
- Multiple Antenna RF Front End: *For beamforming, multipath monitoring, and mitigations as well as other STAP processing*
- Satellite Beacon Receivers: *150 MHz/400 MHz RF Front Ends. Programmable Los allow easy adaptation to any frequency plan. Specialized adaptation with various Front End, A/D conversion, interface card, storage, and other relevant subassemblies.*

## Single Frequency Front End

### OPERATING SPECIFICATIONS

#### ONE CHANNEL DOWNCONVERTER (PRELIMINARY)

<b>Input Frequencies:</b>	1575.42 MHz
<b>Input/Output Impedance:</b>	50 Ohms, all ports except CLK OUT port
<b>I.F. Bandwidth (3 dB):</b>	2 MHz
<b>Gain:</b>	80 dB, typical
<b>Gain Flatness:</b>	$\pm 1$ dB
<b>Noise Figure:</b>	4.0 dB, typical
<b>Output 1 dB Compression:</b>	$\pm 10$ dBm, typical
<b>Final I.F. Output:</b>	$\pm 10$ dBm, typical
<b>Antenna Power:</b>	12 VDC @ 50 mA, maximum current
<b>Reference Frequency:</b>	16.384 MHz
<b>Reference Stability:</b>	$\pm 2$ ppm
<b>Power Requirements:</b>	+ 12 VDC +/-5%, 1 mA + 5 VDC +/-5%, 50 mA - 12 VDC +/-5%, 1 mA
<b>Operating Temperature:</b>	0° to 50° C
<b>Housing Dimensions:</b>	2.00" X 4.00" X 0.9"
<b>R.F. Connections:</b>	SMA
<b>Power Connections:</b>	Solder terminals