

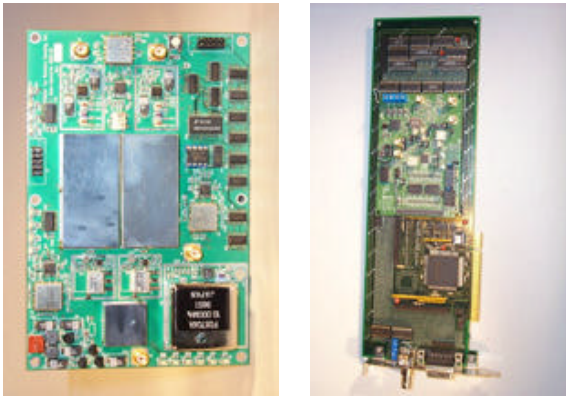
## Advanced GPS Developer

Center for Remote Sensing released its Software GPS Builder. The system is based on the CRS Impulse software running on Windows Platforms. The available Front End and software enable the user to build either an  $L_1$  or  $L_1/L_2$  (C/A and P) GPS receiver in their computer. The software is fully configurable via drag and drop components to construct a fully working GPS receiver in minutes. The receiver can be operated using real time input via the available  $L_1$  or  $L_1/L_2$  PCI card interface or via the available software simulator module.

This fully operator configurable system will allow the user to Configure systems in minutes, trouble shoot, introduce error sources, and test the system before building an expensive test platform. The software modules can be directly transported to various platforms (Pentium processors, DSP, FPGA etc), resulting directly into production. The system is also an invaluable teaching tool for all aspects of GPS receiver architecture. Additional modules such as GLONASS, WAAS and more will be available.

## GPS Front Ends

Center for Remote Sensing announces the release of various R.F. Front Ends for high performance GPS receiver development. Both single and dual frequency Front Ends and multiple antenna units for STAP processing are also available. R.F. Front Ends downconverts the GPS signals to I.F. and the digitizes the signal at user specified rates. The sampling rate can be selected to be between 5 and 60 MSPS. The dynamic range can be selected with up to 12 bits of A/D conversion. Digitized data are transferred either directly to the PC memory or can be stored in the hard disk. Data from the R.F. Front End are directly used by the Software GPS Receiver. The R.F. Front End, in conjunction with the software GPS receiver, constitute a fully working GPS Receiver. These Front Ends have excellent noise figure, gain, stability and other parameters and are specially developed for advanced applications. The items consist of: Single Frequency



GPS Front End (GPF-CA-001-01), Dual Frequency GPS Front End (GPF-DF-002-01), Multiple Antennas Front End (GPF-DF-002-01). Associated Products include: FPGA Correlators, Hard Disk Based Storage System for Storage of data up to 720GB (1 hr. of L<sub>1</sub> and L<sub>2</sub> data at 60 MSPS).

## **GPS Signal Simulator**

Center for Remote Sensing announces the release of the software based GPS signal simulator. This is among the suite of products developed by CRS for the development of advanced GPS system. It allows simulation of various signal conditions and test the software GPS receiver performance. The user can configure the GPS signal chain (this is not possible with hardwired simulators), allowing the user to introduce various specialized situations (high dynamics, directional jamming, different waveforms, degraded signal conditions, re-entry plasma effects, space based BPS signals in LEO, GEO orbits, cluster missions, networking, formation flying, ocean scattering, variety of multipath effects, GPS & INS integration etc.) The output of the simulator is a data file, which can be directly read by the software GPS receiver. The file is similar to, and replicates, the data file created using the R.F. Front End, where data at the I.F.'s are digitized and acquired.

Contains signal simulator components for both the  $L_1$  and  $L_2$  signals using C/A and P-Codes. Pseudo W-Codes (unclassified may also be generated. Other codes may be made available to valid users. Allowing simulation of up to 24 GPS satellites. Received GPS signal wave-front and multiple antennas in the receiver can be modeled. Separated modules for Interface and Jamming simulation are available. Simulators for M-Code, GLONASS, GALILEO, and L5, will become available in the future. Hardware add-ons for providing live R.F. signal at I.F. and at  $L_1$  and  $L_2$  frequencies will become available soon.