

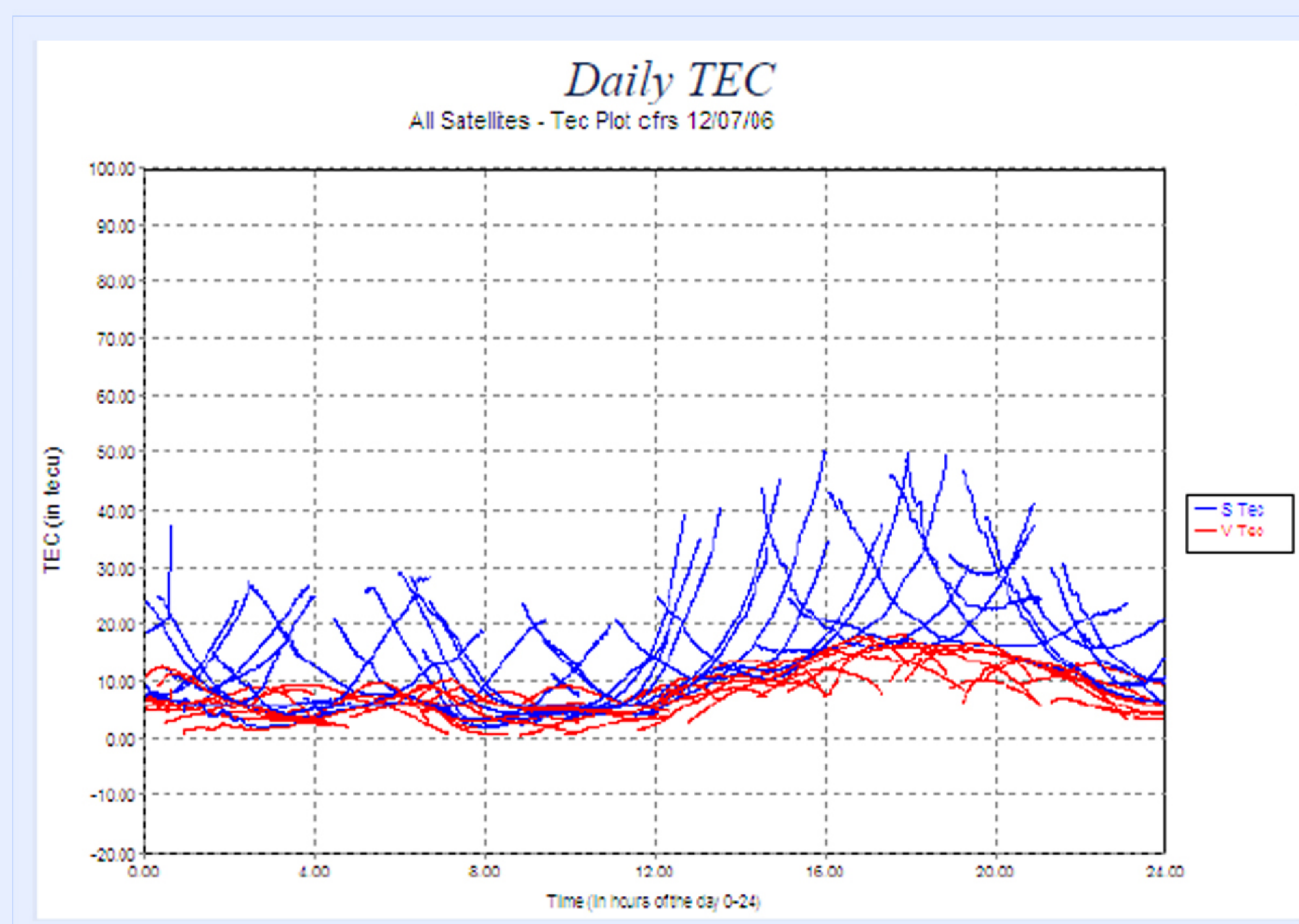
IONMGPS offers all GPS data (L_1 and L_2 pseudorange, phase, and amplitude output at 0-50 Hz)

IONMGPS is a digital software receiver providing total flexibility and upgradeability



SPECIALIZED SCIENTIFIC RECEIVER

Precise atmospheric and ionospheric monitoring requires a special receiver architecture and features not available in conventional GPS navigation receivers. These include precise monitoring of differential phase between L_1 and L_2 , unbiased measurement of pseudorange, as well as robust and unbiased tracking of phase under scintillating and variable ionospheric or propagation conditions. The CRS GPS receiver has been designed from the ground up to be the most advanced, accurate, and easy to use scientific GPS monitoring receiver available.



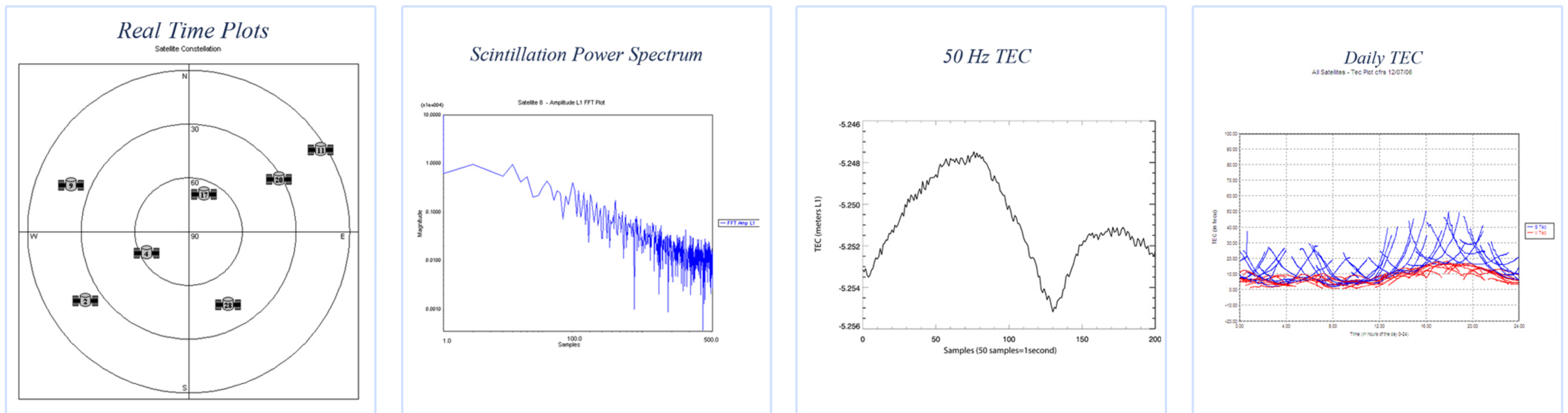
Applications

- Ionospheric Monitoring
- Atmospheric Monitoring
- GPS algorithm and signal research

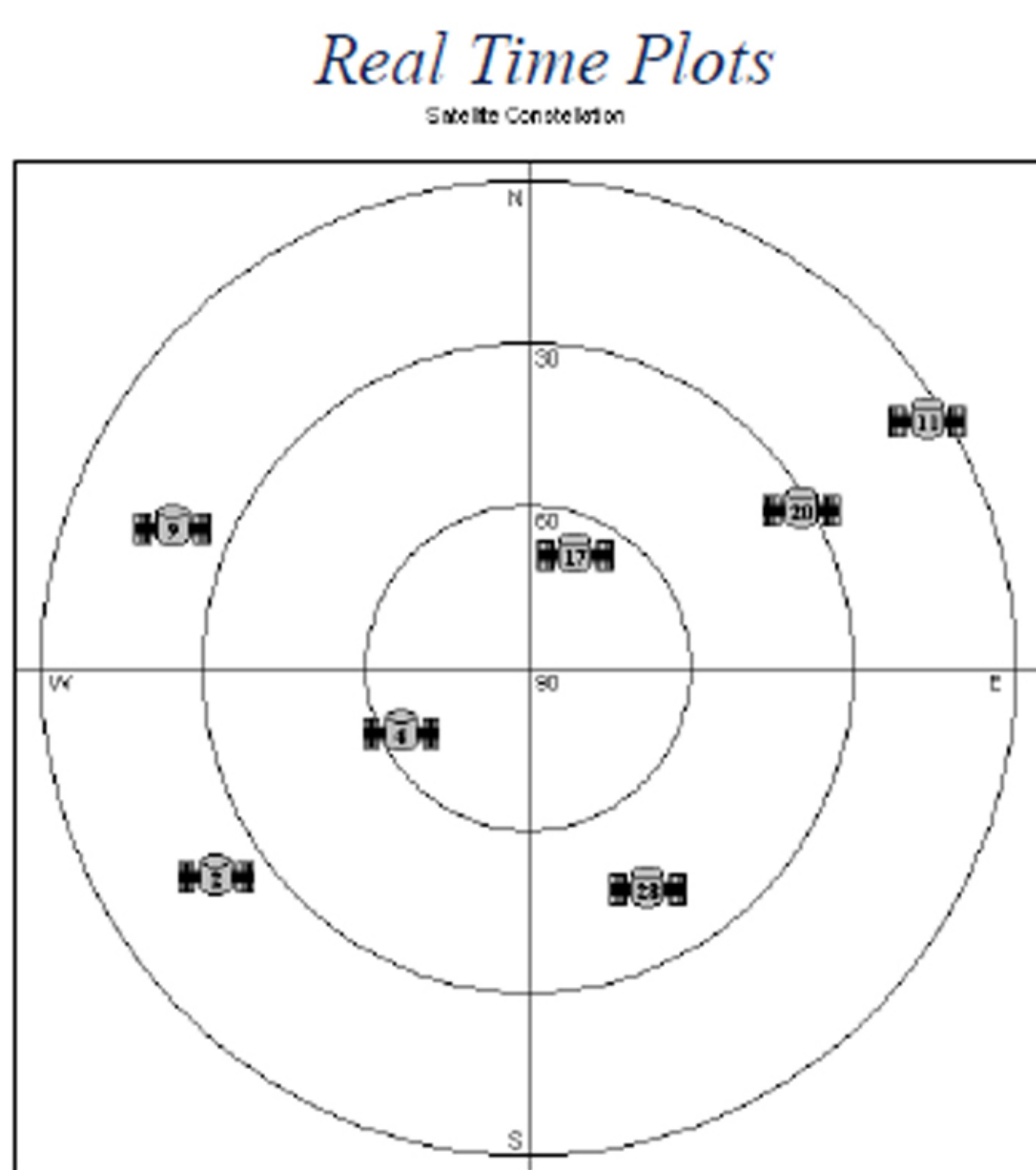
Technical Data

- Tracks L_1 and L_2 from all satellites in view
- USB 2.0 output and control.
- CRS GPS Data Analyzer software provides communication with a PC
- Data stored as binary and/ or ASCII (Rinex).
- Size: 13" x 13" x 5.25"
- Weight: 17 lbs.
- Signals tracked: L_1 C/A & P, L_2 P

Ionospheric/Atmospheric Monitoring Receiver

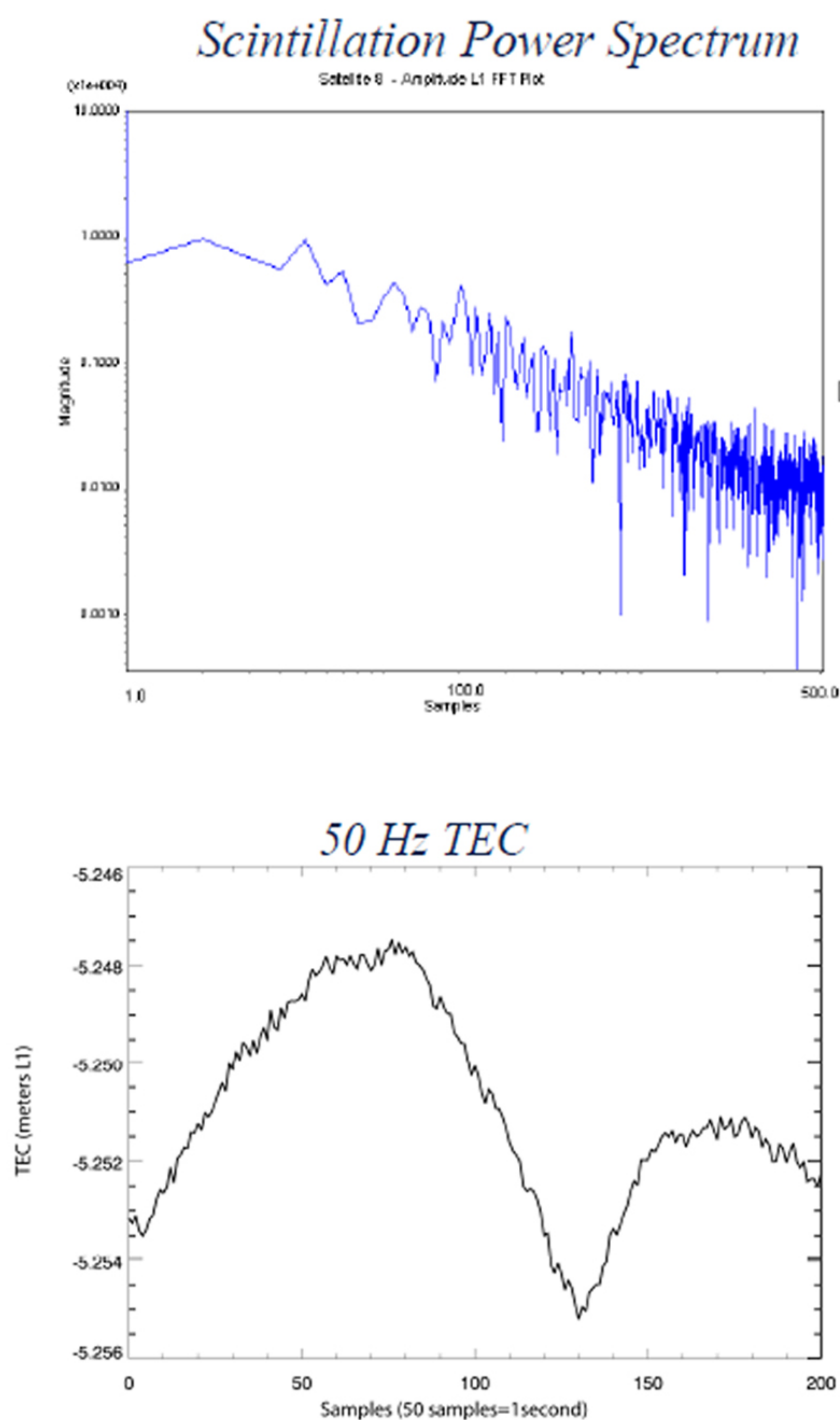


IONMGPS DOES MORE, SO YOU CAN DO MORE



- **Real-time visualization** tools with CRS GPS Data Analyzer software for plotting all GPS parameters, including phase, amplitude, pseudorange, TEC, and their spectra (See adjacent examples).
- **The only GPS receiver to output all receiver data at user selectable 0-50 Hz** including L_1 and L_2 Amplitude, phase and pseudorange, allowing for scintillation and TEC calculations at 50 Hz.
- Ionospheric science derivables are plotted in real-time and output **directly**. **TEC, scintillations S_4 and S_5** .
- The software-based digital receiver utilizes the most modern electronics and processing capabilities. It provides a flexible, userdefinable system.
- **Interested in ionospheric scintillation data at 50 Hz, but don't want to sort through Gbytes of data?** IONMGPS has a S4 triggered burst mode for 50 Hz data recording during periods above user specified settings.

TECHNICAL FEATURES



- Prevents obsolescence against future upgrades: in hardware; in satellite codes (M-code, L_2C); systems (Galileo); different architecture,etc.
- The CRS GPS Data Analyzer allows scheduling, controlling, data analysis via plotting, and logging.
- Uses architecture where L_1 and L_2 are treated independently. Users can optimize the performance for their needs.
- Provides scheduling, real-time monitoring, and a user-friendly GPS Data Analyzer software for operation, control, and data analysis.
- User configurable receiver parameters. The bandwidths of the tracking loops (filters) can be set by the users in order to get the best performance for every situation. The tracking loop bandwidths can be varied from a fraction a Hz to 100 Hz. Typically, the noise power bandwidth lies between 25 Hz to a hundred Hz and the phase noise bandwidth is approximately 15 Hz. Users can vary these bandwidths to optimize for S/N conditions, loop stability, and scintillation monitoring.
- Typical user specified parameters include: start time, stop time, file name, data, time (UTC), lat, long, PDOP, sat PRN, PR, EL, AZ, TEC, CNO, and carrier phase.
- Fully upgradable, multiple architecture support.