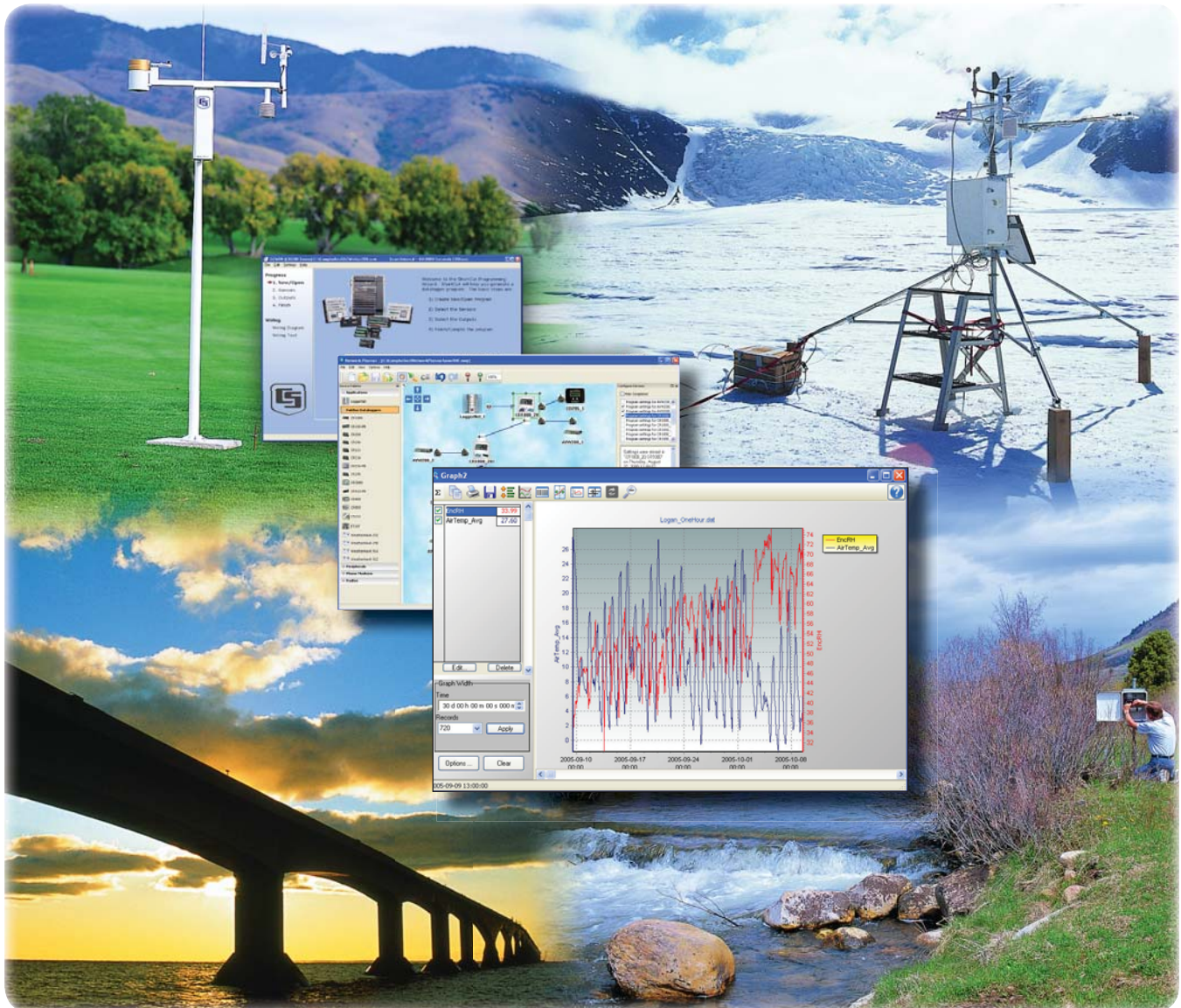# Software Overview

Campbell Scientific Software

Whether you're a new user with one datalogger or a long-time user with networks of dataloggers, Campbell Scientific provides a software solution for your application. Our software packages range from introductory packages for simple applications to full-featured packages for sophisticated measurement and control capabilities and PC-to-PC data distribution. We also have software packages that allow our dataloggers to communicate with a PDA, as well as software packages that provide comprehensive, easy-to-use software support for specific applications.

Starter Software

These are easy-to-use software products intended for first time users or applications that don't require sophisticated communications or datalogger program editing.

Short Cut Starter Programming

- Creates straightforward programs that measure sensors and control multiplexers and the AVW200-series Vibrating Wire Interfaces
- Allows user entered calculations
- Supports our dataloggers as well as our ET107, ET106, and MetData1 Weather Stations
- Includes a reference crop evapotranspiration calculation module and many other useful calculation modules (e.g., heat index or wind chill)
- Provides a head start on developing new programs by letting you import Short Cut programs into CRBasic or Edlog, our more sophisticated editors

PC200W Starter Communications

- Supports communications between a PC and a Campbell Scientific datalogger
- Communicates via a direct link
- Collects data with a push of a button (scheduled data collection not supported)
- Provides numeric display of measurements and final storage data
- Includes Short Cut Programming Software for datalogger program generation

Software on our Website or ResourceDVD

Our starter software, patches, and trial software is available, at no charge, from *www.campbellsci.com/downloads*. Patches provide updates within versions (e.g., 2.0 to 2.1). Trial software allows the user to "test drive" the software before purchasing the entire package. Campbell Scientific also offers a ResourceDVD that includes our starter software, along with PDF versions of our brochures and manuals.

Our device configuration (DevConfig) utility is bundled with PC400, LoggerNet, and RTDAQ and can be downloaded, at no charge, from our website. DevConfig is used to change device settings and update operating systems.

Datalogger Support Software

Our general purpose datalogger support software packages provide more capabilities than our Starter Software. Each of these software packages contains program editing, communications, and display tools that can support an entire datalogger network.

PC400

PC400, our mid-level datalogger support software, provides a simple user interface that:

- Supports all contemporary dataloggers and many retired dataloggers (e.g., CR510, CR23X, CR10X)
- Generates/edits datalogger programs used to measure sensors and control multiplexers, SDM devices, and relays
- Retrieves data via direct connect, phone modems, Ethernet, radios (UHF, VHF, spread spectrum), or multidrop modems (combinations of communication options not supported)
- Collects data with a push of a button (scheduled data collection not supported)
- Provides numeric display of real-time or historic data
- Creates simple line graphs from a data file

LoggerNet

LoggerNet is a full-featured software package based on a server application and several client applications. LoggerNet supports connection to a single datalogger and large datalogger networks.

LoggerNet supports:

- All contemporary dataloggers, as well as many retired dataloggers (e.g., 21X, CR23X, CR10X)
- Creation/editing of datalogger programs that measure sensors and control multiplexers, SDM devices, vibrating wire interfaces, and relays
- Data collection on demand or by schedule
- Data retrieval via any of our communications options and combinations of those options (e.g., phone-to-RF)
- Historical data displays in a variety of formats (Line Graph, X-Y Plot, Histogram, Rainflow Histogram, and 2-D and 3-D FFTs)
- Multi-tab data displays that include digital displays, set-points, alarms, sliders, charts, toggles, switches, and gauges (using RTMC)
- Network Planner that assists you in designing PakBus datalogger networks

LoggerNet Admin

LoggerNet Admin, a more advanced software package than the standard LoggerNet, has tools that are useful for those with large datalogger networks.

Besides providing all the capabilities of the standard LoggerNet software, LoggerNet Admin includes:

- Option to collect data quickly over UHF/VHF networks via Data Advise
- Remote client capabilities to administer the server via TCP/IP
- LoggerNet user security settings
- Additional network views and sorting options for monitoring large networks
- Utilities that facilitate data transfer from LoggerNet via TCP/IP
- Ability to run the LoggerNet server as a Windows service

LoggerNet Remote

LoggerNet Remote includes LoggerNet Admin clients to administer a running LoggerNet Admin server via TCP/IP from a remote PC. This software does not include the LoggerNet server.
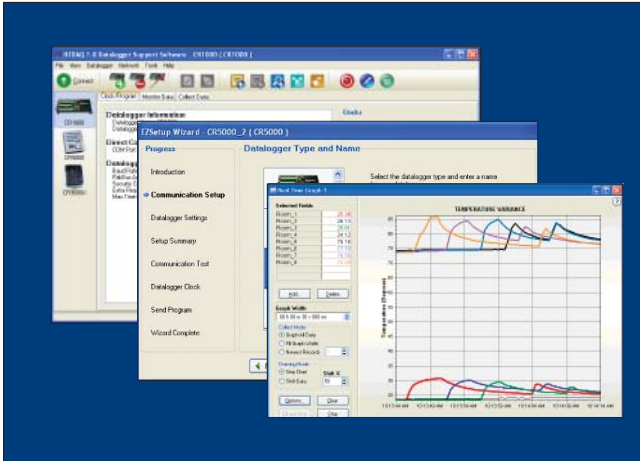
LoggerNet Linux

LoggerNet Linux includes a Linux version of the LoggerNet server and a copy of LoggerNet Remote. The Microsoft® Windows-based clients in LoggerNet Remote run on a separate computer, and are used to manage the LoggerNet Linux server. The LoggerNet Linux disk contains two RPM distributions—Redhat and SUSE.

Client/Server network architecture allows LoggerNet to accommodate communication between one computer and the datalogger network, many computers and the datalogger network, or many remote computers and the datalogger network.

Datalogger Support Software (Cont.)

RTDAQ

RTDAQ is versatile software that supports a variety of telecommunication options, manual data collection, and extensive data display.

RTDAQ is an ideal solution for industrial and real-time users desiring to use reliable data collection software over a single telecommunications medium, and who do not rely on scheduled data collection. RTDAQ's strength lies in its ability to handle the display of high speed data. RTDAQ is compatible with CRBasic dataloggers (except CR200(X)-series and CR9000).

Features/Benefits:

- Provides noninvasive field calibration of sensors—incorporating the appropriate multipliers and offsets into the datalogger program
- Monitors real-time data using the Graph, Fast Graph (similar to PC9000's virtual oscilloscope), Histogram Viewer, Fast Fourier Transform (FFT) Viewer, Rainflow Viewer, Table Monitor (similar to the PC9000 Field Monitor), and XY Plot Viewer
- Displays historical data files including specialized engineering data such as FFTs and histograms

Clients

Clients add functionality to LoggerNet or LoggerNet Admin. RTMC-based clients can also add functionality to RTDAQ.

Baler

Baler stores LoggerNet data into new files so that the data can be imported to a database or third-party analysis program.

LoggerNetData

LoggerNetData generates displays of real-time or historical data, post-processes data files, and generates reports. It includes Split, RTMC, View Pro, and Data Filer.

CSI OPC Server

The CSI OPC Server feeds datalogger data into third-party OPC-compatible graphic packages. A trial version of CSI OPC Server is offered.

LNDB

LNDB moves data from one LoggerNet server into a single database. The two main components of LNDB are LNDB Manager and LNDB Engine. LNDB Manager is used to set up a database and select the datalogger data tables that will be stored in the database. It also provides tools to monitor the LNDB Engine and to review the database data. LNDB Engine runs as a service and sends the selected data from the LoggerNet data cache to the database. Additionally, LNDB includes utilities for importing and exporting data, and generating simple reports from your database data.

RTMC Pro

RTMC Pro is an enhanced version of the RTMC client. RTMC Pro provides additional capabilities and more flexibility, including multi-state alarms, email on alarm conditions, hyperlinks, and FTP file transfer.

RTMCRT

RTMCRT allows you to view and print multi-tab displays of real-time data. The displays are created in RTMC or RTMC Pro.

CSI Web Server

The CSI Web Server allows RTMC projects to be published to either a PC website or to an HTTP-enabled datalogger. With this software, users can configure the web server, check the status of the web server, and easily browse to sites running on the web server. The CSI Web Server is included with RTMC Pro. It can be purchased separately for use with the standard RTMC Development application that is bundled with LoggerNet, LoggerNet Admin, LoggerNetData, and RTDAQ.

CSI Web Server was used to simultaneously display data from multiple dataloggers on one web page.

Software Development Kits (SDKs)

Campbell Scientific software development kits (SDKs) permit software developers to create custom applications that communicate with our dataloggers.

BMP5-SDK
- Allows users to create custom software clients that support communications with one PakBus® datalogger using an RS-232 or IP Port connection.
- Provides a simple call-level API (SimplePB.DLL) that acts as a wrapper for the included PakBus communications engine (PakBusDLL.DLL)
- Available at no charge from our website

LoggerNet-SDK
- Allows software developers to create custom applications that communicate through a LoggerNet server with any datalogger supported by LoggerNet
- Includes a limited LoggerNet Server communications DLL that only allows communication with a single datalogger via an RS-232 or IP Port connection
- Provides five ActiveX® controls that encapsulate the fundamental tasks users want our dataloggers to perform
- Targeted at developers who want to create a custom client application for an existing LoggerNet server

LoggerNet Server-SDK
- Allows software developers to create custom applications that communicate through a LoggerNet server with any datalogger supported by LoggerNet
- Includes the complete LoggerNet Server DLL
- Provides five ActiveX® controls that encapsulate the fundamental tasks users want our dataloggers to perform
- Targeted at developers who want to create a custom datalogger support package for our dataloggers

JAVA-SDK
- Allows software developers to write Java applications or applets that use the PakBus protocol to communicate directly with dataloggers in a PakBus network
- Supports the creation of applets that enable users to access data and control the network via a web browser
- Provides an option for developers who do not want to use Microsoft Windows products

TDR-SDK
- Allows software developers to customize and simplify the user-interface for the TDR100
- Consists of a DLL (dynamically linked library) file that gives developers access to the entire TDR100 command set
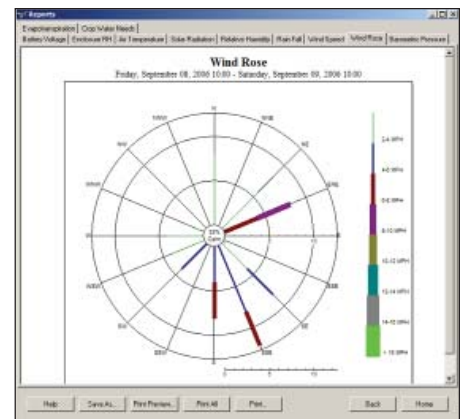
Application Specific Software

Application specific software supports use of Campbell Scientific dataloggers in common but specialized applications where customized software is of substantial benefit.

VisualWeather Weather Station
- Supports the ET107, Toro T.107, ET106, MetData1, and custom weather stations
- For pre-configured weather stations, automatically generates program as sensors and communication path are selected
- Includes Short Cut for programming custom Campbell Scientific weather stations
- Supports direct, short haul, phone, phone-to-RF, RF, and TCP/IP communications
- Collects data on demand or by schedule
- Provides a large variety of reports
- Calculates ETo, Growing Degree Days, crop watering needs, wind chill, dew point, and chill hours

You can use VisualWeather software to create a wind rose report that displays the distribution of wind directions at various wind speeds.

PDA Software

PDA software allows communications between our dataloggers and a personal digital assistant (PDA). The software supports simple on-site functions such as collecting data, monitoring real-time data, controlling datalogger ports and flags, graphing historical data, and transferring datalogger programs. Compatible dataloggers include our CR200-series, CR500, CR510, CR10(X), CR800, CR850, CR1000, CR3000, 21X, CR7, and CR23X. The two software packages differ in the PDA operating systems they support.

PConnect
PConnect is for Palm OS-based devices.

PConnectCE
PConnectCE is for Windows Pocket PC/Windows Mobile OS-based devices.

Starter and Datalogger Support Software

Select the software that best suits your needs ...	Short Cut (see note 1)	PC200W (see note 1)	PC400 (see note 1)	LoggerNet (see note 1)	RTDAQ (see note 1)
CONTEMPORARY DATALOGGERS SUPPORTED	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR800, CR850, CR1000, CR3000, CR5000, CR9000X
RETIRED DATALOGGERS SUPPORTED	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000	none
DATA STORAGE METHOD SUPPORTED	mixed-array, table	mixed-array, table	mixed-array, table	mixed-array, table	table
SOFTWARE LEVEL	entry	entry	entry to intermediate	intermediate to advanced	intermediate to advanced
SENSORS SUPPORTED	over 100 sensors (including generic measurements)	includes Short Cut for programming	most commercially available sensors	most commercially available sensors	most commercially available sensors
COMMUNICATION DEVICES SUPPORTED	N/A (program generator only)	direct connect	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF transceivers (UHF, VHF, and spread spectrum), multidrop modems	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF transceivers (UHF, VHF, and spread spectrum), multidrop modems	direct connect, Ethernet, short-haul, phone modems (land-line, cellular, voice synthesized), RF transceivers (UHF, VHF, and spread spectrum), multidrop modems
COMBINATIONS OF COMMUNICATION DEVICES SUPPORTED	N/A (program generator only)	no	no	yes	no
MEASUREMENT AND CONTROL PERIPHERALS SUPPORTED	multiplexers, AVW200-series Vibrating Wire Interfaces	see Short Cut	SDM devices, multiplexers, relays, vibrating wire interfaces	SDM devices, multiplexers, relays, vibrating wire interfaces	SDM devices, multiplexers, relays, vibrating wire interfaces
OTHER PRODUCTS SUPPORTED (see note 2)	ET107, ET106, MetData1	PC cards, CompactFlash cards	ET107, ET106, MetData1, PC cards, CompactFlash cards	ET107, ET106, MetData1, PC cards, CompactFlash cards	ET107, PC cards, CompactFlash cards
SCHEDULED DATA COLLECTION SUPPORTED	N/A (program generator only)	no	no	yes	no
DATA DISPLAY SUPPORTED	N/A (program generator only)	numeric, simple, line graph (see note 3)	numeric, simple, line graph (see note 3)	numeric, graphical, Boolean data objects (see note 4)	numeric, graphical, Boolean data objects (see note 4)

Notes:
1. Short Cut is bundled with PC200W, PC400, LoggerNet, and RTDAQ. It is also available from our website and Resource CD.
2. Customers can use Flash storage modules with PC200W, PC400, or LoggerNet by downloading SMS Storage Module Support Software, at no charge, from our website.
3. For more descriptive information about the data display capabilities of PC200W or PC400, see "View" on the Data Graphics and Analysis Software chart.
4. For more descriptive information about the data display capabilities of LoggerNet or RTDAQ, see "View Pro" and "RTMC" on the Data Graphics and Analysis Software chart.
5. Computer requirements and more detailed information are provided in our product brochure for the specific software package.

Data Graphics and Analysis Software

Select the software that best suits your needs ...	**VIEW**	**View Pro**	**QuickReports**	**RTMC**	**RTMC Pro**
PURCHASED SEPARATELY	no (included in PC200W and PC400)	no (included in LoggerNet and RTDAQ)	no (included in LNDB)	no (included in RTDAQ, LoggerNet, LoggerNet Admin, and LoggerNetData)	yes (as an enhancement to RTMC)
CONTEMPORARY DATALOGGERS SUPPORTED	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X	CR200X-series, CR800, CR850, CR1000, CR3000, CR5000, CR7, CR9000X
RETIRED DATALOGGERS SUPPORTED	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000	CR200-series, CR500, CR510, CR10, CR10X, 21X, CR23X, CR9000
DATA STORAGE METHOD SUPPORTED	mixed-array, table	mixed-array, table	mixed-array, table	mixed-array, table	mixed-array, table
DESIGN GOAL	quick and simple viewer for data files	graphically appealing, flexible, powerful	simple report generator using an LNDB database	starter software, simple, yet graphically appealing	graphically appealing, flexible, powerful
REAL-TIME UPDATES	no (historic only)	no (historic only)	no (historic only)	yes	yes
ALARMS	none	none	none	real-time, visual, audible	real-time, visual, audible, multi-level alarms possible, alarm log, launch programs, email notifications
DESIGNER TOOL KIT	one table and graph	tables, graphs with multiple traces, FFTs, histograms	tables, graphs with multiple traces	alarms, COM check, gauges, charts, images, labels, digital displays, set points, sliders, status bars, table displays, time displays, switches	all the tools included in RTMC, as well as additional alarm types, switches, layout components, hot spots launch commands, FTP file transfer, run cora commands, xy chart, oscilloscopes
CREATE FILES FOR EXPORT TO WEBSITE	no	yes (see note 1)	no	(see note 2)	yes
TRIAL VERSION AVAILABLE	no	yes (see note 3)	yes (see note 4)	yes (see note 3)	yes
RUN-TIME VERSION AVAILABLE	no	no	no	yes	yes

Notes:
1. Graphic files created in View Pro can be exported to a website on demand.
2. Projects created in RTMC or RTMC Pro can be displayed on a website using CSI Web Server. For the standard RTMC Development application, CSI Web Server needs to be purchased separately. CSI Web Server is included with RTMC Pro.
3. A trial version of View Pro and RTMC is included in the trial version of both LoggerNet and RTDAQ.
4. A trial version of QuickReports is included in the trial version of LNDB.
5. Computer requirements and more detailed information are provided in our product brochure for the specific software package.