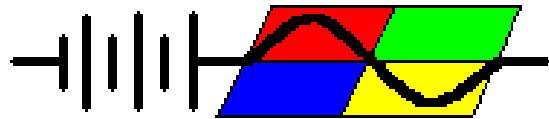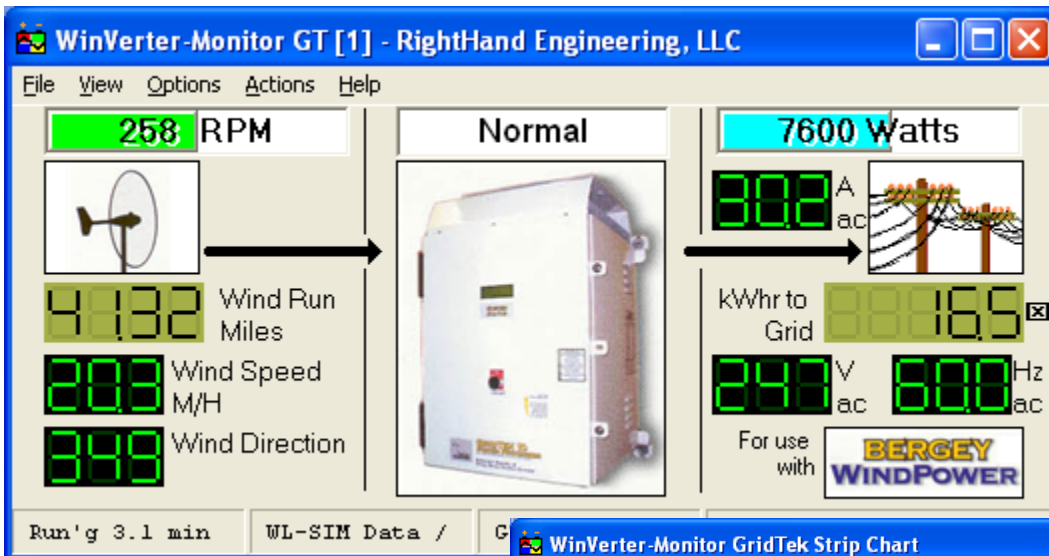# RightHand

Engineering, LLC

WinVerter-Monitor GT

WinVerter™-Monitor GT is Windows®-based PC software that works with the Bergey *GridTek-10* inverter (used with the Excel-S 10KW wind turbine) and the APRS World *Wind Data Logger*. It continually monitors and displays the device status while providing the user with data logging.
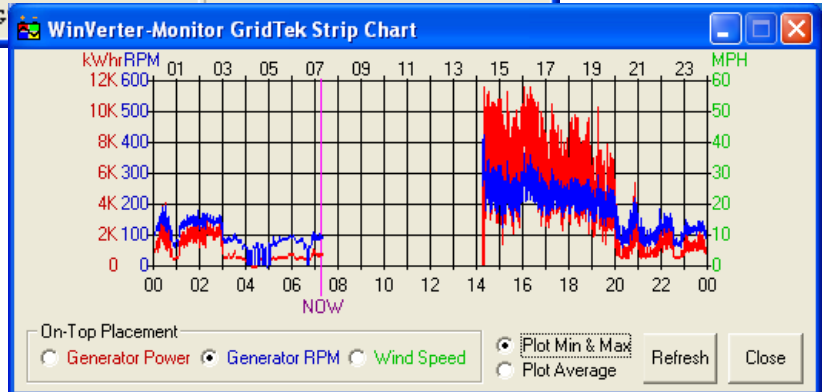
For use with products from these companies:

Complete Monitoring Soution

WinVerter-Monitor GT is a single software program capable of running on even low performance PCs. It contains two separate interface modules, one for the Bergey *GridTek-10* inverter, and the other for the APRS World *Wind Data Logger*. When combined, the software provides a complete information center for your entire wind power generation system. Each module can be purchased separately, when you need it, allowing you to pay only for what you need.

Try It Before You Buy It

You may download a free evaluation version (coming soon) from our web site, try it out, and if you like it, purchase on-line. We then email you the unlock codes for each module purchased which turns the evaluation software into fully functional software. Evaluation mode allows rudimentary monitoring features as well as full featured simulation.

Standard Vs. Professional Features

WinVerter-Monitor GT is available in both a Standard and Professional version.

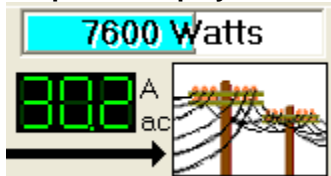| Feature	Std	Pro
Graphical Displays	Yes	Yes
Password Protection	Yes	Yes
Inverter Details	Yes	Yes
Wind Data Logger Details	Yes	Yes
Monitor 1 or 2 Systems	Yes	Yes
Simulation/Demo Mode	Yes	Yes
Time-based Accumulators	Yes	Yes
Event History	Yes	Yes
Data Logging Resolution	Course	Fine
Event Emails	No	Yes

Simulation Mode

The program allows you to simulate operation just as if it were connected to actual hardware. You are able to simulate mode and meter reading changes by clicking on particular screen elements. This allows for even more detailed evaluation and greatly assists in demonstrations.

Super Simple Installation

Because *WinVerter-Monitor GT* uses the meters built into the *GridTek-10* inverter, it does not require external metering devices or an electrician's license to install. The PC's serial data cable plugs into the DSP board inside the inverter. *WinVerter* continually reads the mode, voltage and amperage meters of inverter.

If you wish to also monitor wind speed and direction, *WinVerter* can also be connected to the APRS World, *Wind Data Logger*'s serial port.

Graphical Display

WinVerter-Monitor GT displays a graphic image of each power port. Thus at a glance you can see the mode and power output of the system. With the addition of the optional Wind Data module, you can also view the wind speed, wind direction, and wind run.

Calculated Values

The program also interprets other useful information from the meter readings. From volt and amp readings it calculates watts. From elapsed time it calculates kilowatt-hours. This information can be

used to validate the data from your utility production meter.

Equipment Details

The inverter and wind logger both provide much more information than a typical user needs or wants to see. But by enabling the view of details, installers and tech-savvy users are able to see all of the information available.
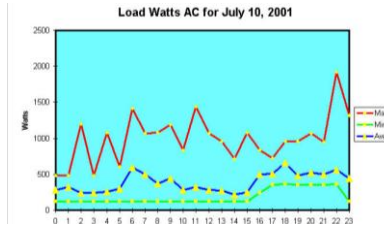
Strip Chart

WinVerter also includes a Strip Chart window that shows the wind speed (if equipped with the Wind Data module), turbine RPMs and inverter power output for the past 24 hours. You may choose to view the minimum/maximum or average values encountered.

Error Causes

The program provides an easy way to view inverter faults at a glance. When an inverter fault occurs it can produce an audible and visual alarm and gets logged along with time and date.

Data Logging

As long as *WinVerter-Monitor GT* is running it is able to accumulate and record readings from the system. The program writes a log file every day at

midnight. This contains the minimum, maximum and average data of every hour for every value displayed by the program. The Professional version of the software provides user adjustable log periods as frequent as once every 10 seconds.

Instructions included in the program's help text (on-line user's manual) give you detailed step-by-step instructions on how to import these data files into Microsoft's Excel spread sheet program.

INTERNET FEATURES

If the host PC has internet connectivity, the following features are particularly useful for monitoring the power at seasonal homes or telecom sites.

> **NOTE:**
> Configuring internet access requires
> IP networking and advanced PC skills.

Remote Internet Monitoring

Both the standard and professional versions of *WinVerter* can be provisioned to periodically post a copy of the display windows to the internet for viewing on the world wide web. To see a sample of this live monitoring, visit http://www.righthandeng.com/live.htm.

Email Notifications (Professional version only)

The Professional version of *WinVerter* can send emails upon user selectable events, which include equipment faults, program startup and shutdown, password tampering, communications errors, and equipment mode changes. Plus *WinVerter* can be configured to provide a once-per-day status email allowing you to confirm that all is well with the equipment.

This feature requires a POP3 email account

System Requirements

Inverter Requirements:
- Xantrex *GridTek-10* supplied by Bergey Wind Power for use with the 10KW Excel-S model wind turbine. Xantrex model number BWT-10240. Software revision 03.02.05.01 or later.

Wind Meter Requirements:
- APRS World *Wind Data Logger*, hardware revision 2G or later, firmware revision build July 2008 or later.

PC Requirements:
- Intel Pentium (or equivalent) or better processor
- Processor Speed:
  166 MHz or better for inverter only,
  233 MHz or better for inverter & wind logger,
  633 MHz or better for Professional version.
- Microsoft Windows® 98 SE or later operating system
- 128 MB RAM or as required by the operating system, whichever is higher
- 10 MB of free hard disk space plus 1 MB per month for standard daily logs, or 10 MB per month for professional data logs.
- Multi-read CDROM drive recommended

- Video Display (to view all info simultaneously):
  640 x 480 without details or strip chart,
  1024 x 768 with details or strip chart.
  Color recommended.
- Pointing device, such as mouse or track-ball
- One 9 or 25 pin RS-232 serial port for the inverter. One additional for the WindLogger. (double if running 2 instances)
- Monitoring PC must be within 100 feet wire distance of the equipment unless special extending devices are used.
- For remote connections a data path capable of sustaining 19.2K baud or higher
- For continuous, unattended operation the following is recommended:
  o No additional software should be installed other than Internet Explorer, Microsoft Office products, and the latest version of pcAnywhere or VNC.
  o Meet the minimum requirement for the other software installed on the PC.
  o Latest drivers compatible with the OS for the installed hardware.
  o The particular model of PC should be listed on the Microsoft Hardware Compatibility List (HCL) for the installed OS.

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