

## ► Wind Remote Data Logger

The Remote Monitor and Controller (RMC) provides an integrated solution for monitoring and controlling any electrical or electronic device by means of remote communications using SMS and GPRS.

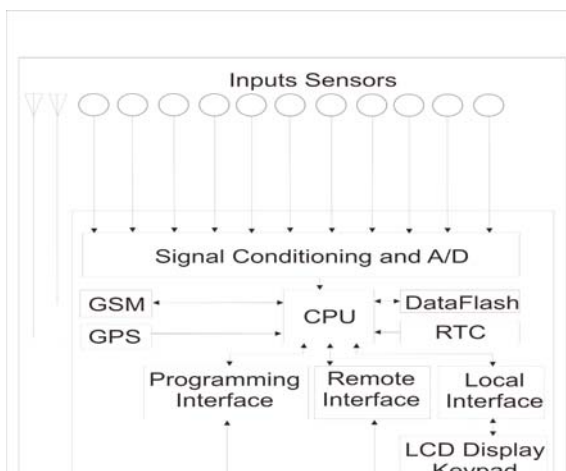
The Wind Remote Data Logger (WRDL) is an RMC configured with sensors for wind speed, wind direction, air temperature, barometric pressure sensor, relative humidity, voltage and current specifically for monitoring and controlling renewable energy systems such as wind measurement masts, wind turbine generators and photovoltaic generation systems.

In addition to measuring and recording the relevant parameters in non-volatile memory, the WRDL determines in real-time the instantaneous and aggregate wind power per unit area from the measured wind speed, air temperature and air pressure and records the results in non-volatile memory.

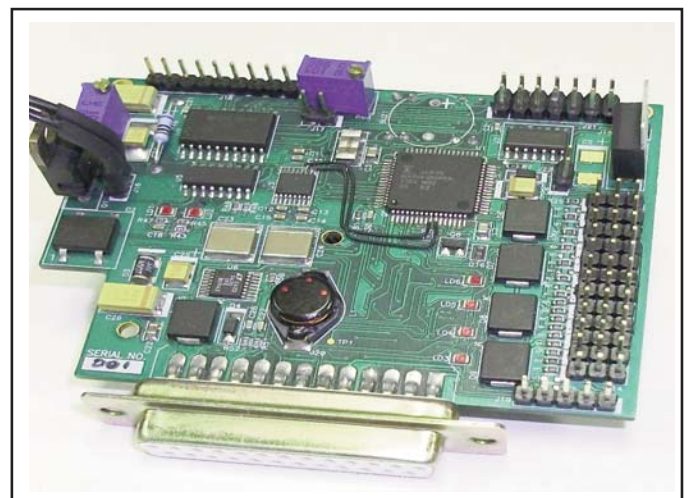
A Global Positioning System (GPS) module, various meteorological sensors and various communication technologies are optional.

### Architecture

The WRDL incorporates a Global System for Mobile Communication (GSM) module, autonomous data logging to onboard non-volatile memory, digital/analogue input and digital output, real-time clock and watchdog protection. All WRDL functions can be accessed using an Application Program Interface (API).



**WRDL Architecture**



**WRDL PCB**

### Features

- GSM V2.5 (GPRS with built-in TCP/IP stack, SMS and CSD communication options)
- up to 12 Mbit of Data Flash for logging measured and derived data with timestamp
- hardware measurement of instantaneous meteorological parameters
- software determination of instantaneous and aggregated wind power
- a powerful API providing flexible access to all onboard monitoring and control functions
- stand-alone data logging and control
- sophisticated reporting functions
- easy to use GSM (GPRS/SMS/CSD) communications

### Applications

- wind mast measurement and data logging
- wind turbine generator monitoring and control
- photovoltaic monitoring and control
- remote data logging using GPRS/SMS/CSD
- remote control using GPRS/SMS/CSD

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### Specifications

|                                    |   |
|------------------------------------|---|
| <b>Serial Interface</b>            | RS232-compatible asynchronous transfer with modem control signals |
| <b>GSM Module</b>                  | GPRS, SMS and CSD   |
| <b>GSM Data Format</b>             | Serial API  |
| <b>Data Flash</b>                  | up to 12 Mbit   |
| <b>Wind Speed Anemometer</b>       | 1 (up to 5 optional)  |
| <b>Wind Direction Vane</b>         | 1   |
| <b>Air Temperature Sensor</b>      | 1   |
| <b>Barometric Pressure Sensor</b>  | 1   |
| <b>Relative Humidity Sensor</b>    | 1   |
| <b>Solar Irradiation Sensor</b>    | 1 (optional)  |
| <b>DC Voltage Sensor</b>           | 1   |
| <b>DC Current Sensor</b>           | 1 (optional) (@ up to 1 000 A)                                    |
| <b>Other Digital Inputs</b>        | 8   |
| <b>Local Alarm Output (Buzzer)</b> | 1   |
| <b>Dimensions</b>                  | 100 mm x 80 mm x 30 mm  |
| <b>Power Requirements</b>          | 6,6 V to 24 V; 24 W   |
| <b>MTBF</b>                        | > 90 000 hours (MIL-HDBK-217F, Ground Benign)                     |
| <b>MTTR</b>                        | < 30 minutes  |
| <b>Supporting Software</b>         | Sample serial API user application software (C/C++ source code)   |

### Options

|                              |  |
|------------------------------|--|
| <b>WeatherSensors</b>        | Wind Speed, Wind Direction, Barometric Pressure, Ambient Temperature, Relative Humidity, Rainfall, Solar Irradiation, Ultra-Violet Radiation, Soil Wetness, Leaf Wetness, Water Salinity |
| <b>Positioning, Tracking</b> | GPS, DGPS  |
| <b>Communications</b>        | Wireless (802.15.4), Ethernet (10, 100, 1000)  |

### Environmental Specifications

|  |  |
|--|--|
| <b>Temperature</b><br>- Operating<br>- Storage | -20 C to +70 C<br>-40 C to +85 C                           |
| <b>Humidity</b>                                | 0% - 90%   |
| <b>Vibration</b><br>- Sine<br>- Random         | 2 g (peak) 10 Hz to 100 Hz<br>0,04 g²/Hz at 15 Hz to 2 kHz |