

# A2RT



**Everything you need for a remote gauging site in an easy-to-configure package**



## Overview

**The A2RT is a complete ALERT2 sensor management and data logging platform from Blue Water Design built for continuous, unattended operation in remote environments.**

The A2RT provides all the logic needed to run an ALERT2 remote gauging site in a single, easy-to-configure package. Powered with a solar panel and battery, the A2RT delivers reliable, low-power operation across a broad temperature range of -40 - +80°C.

The A2RT supports up to four analog and sixteen SDI12 sensors for data collection. Measurements are stored locally and transmitted efficiently and in real-time using the ALERT2 protocol. The on-board MPPT solar charge regulator ensures efficient charging via a solar panel, while the switched digital output supports local control applications.

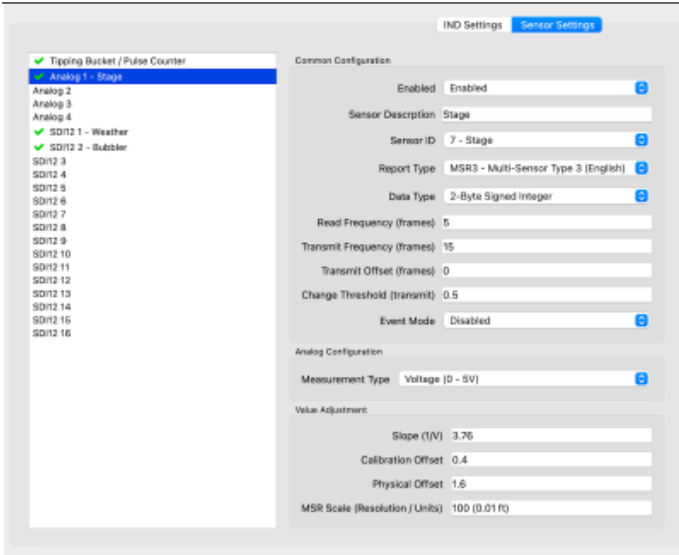
## Highlights

- **Easy to deploy** - Compact all-in-one design simplifies site infrastructure. Integrated solar charger. Easy to use wire connectors.
- **Easy to configure** - Intuitive GUI application for device and site configuration. Templating tool makes provisioning new sites a breeze.
- **Easy to maintain** - Send comprehensive status reports at regular intervals. Perform test readings using the integrated transmit button or the GUI interface. See GPS signal quality in real time. Measurement and diagnostics are logged to integrated storage.
- **Flexible** - One pulse counter, four analog inputs (0-5 V or 4-20 ma), and two SDI12 buses. Individual control of sensor measurement frequency and reporting criteria.

# Configuration and Control

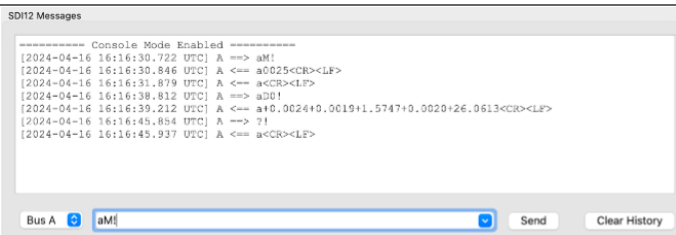
Maintenance and troubleshooting efforts should be focused on the equipment in the field, not fighting awkward software. With the A2RT's intuitive configuration and control application, you'll be able to update configurations and identify problems at a glance.

## Intuitive Configuration GUI



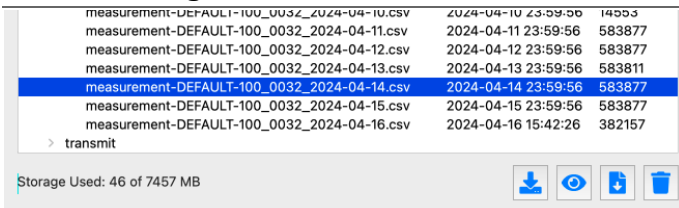
Device and Sensor Configuration is performed using an simple and intuitive GUI.

## SDI12 Console



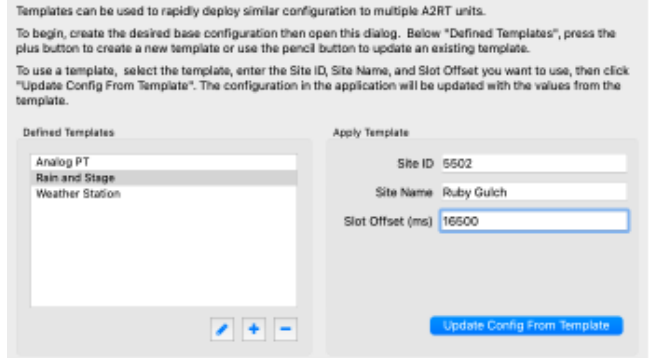
Easily interact with SDI12 sensors using the built-in console. The A2RT's support for two independent SDI12 buses makes configuration and wiring easy.

## Local Storage



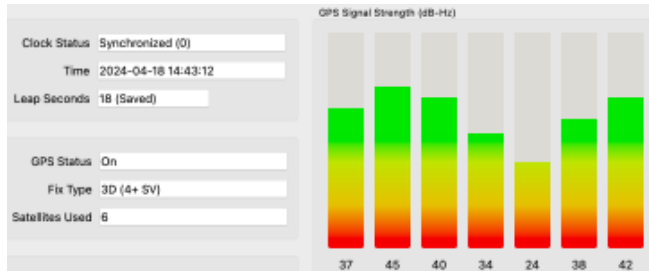
With 8GB of local storage, the A2RT has enough storage for over a decade of operation.

## Define New Sites Easily Using Templates



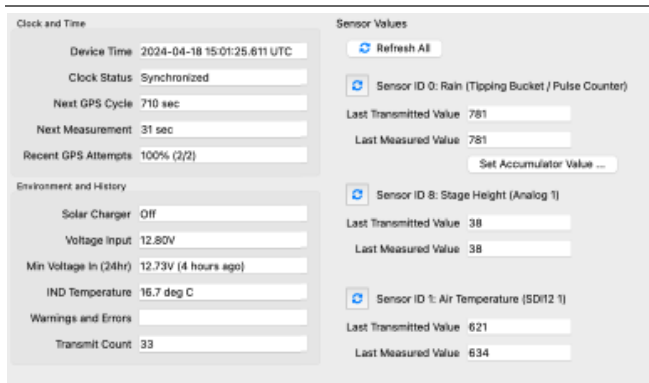
New sites can be provisioned easily and with increased consistency using the built-in templating feature.

## Live GPS Status



See GPS performance in real time. Be confident your antennas are working optimally before you leave the site.

## Sensor Value View



View the latest readings or acquire a new measurement with a click of the "Refresh" button.

## A2RT Specifications

### Physical

Dimensions	7.5 " x 4" x 1.25"
Weight	1.3lbs (600g)
Temperature Range	-40 - +80 °C

### Power

Power Supply (Battery)	9 - 17 V, reverse polarity protected
Current Draw	450 µA (quiescent) 25 mA (GPS on)
Solar Charge Regulator	16.5 - 24 V input MPTT regulator
TX Radio - Audio Out Level	100 mV - 1 V peak-to-peak

### Clock

Supported Interface	GPS Disciplined Clock
Clock Drift	+/- 2ppm

### Interfaces

Solar Charger (SOLAR)	Polarity protected solar charger input, 16.5-24V
Battery (BAT)	Polarity protected battery input, 12-17V
Switched V+ (SW V+)	Switched power terminal (battery voltage) for use with analog measurements. 1 A max output
Switched 5V (SW 5)	Switched power terminal (regulated 5v output) for use with analog measurements. 100 mA max output
Power Output (V+)	Always-on battery voltage output 500 mA max output
Digital Output (DO)	Switched power terminal (battery voltage). Switched based on measured values or extended warm up time for a specific sensor. 500mA max output
SDI12 (SDI12)	Two SDI12 Buses, A and B terminals are separate interfaces
Tipping Bucket (PULSE)	Pulse counter. Provides 3.3 V on + pin, detects switch closures to ground
Multi-Function Analog In (AIN1, AIN2)	0-5 V or 4-20mA input, 14 bit ADC

### ALERT2

Compatible with NHWC ALERT2 AirLink v1.1, MANT v1.1, Application Layer v1.3

Supports TDMA, Configurable FEC, and Encryption protocols

### SDI-12

2 Independent SDI-12 Bus Inputs

Supports up to 16 SDI-12 measurements, using M, C, and R commands on multiple addresses.

SDI-12 Listen mode allows use of measurements from an SDI-12 bus controlled by a separate data recorder (SDI-12 snoop)

### Additional Features

Reports device status via ALERT2 Network (battery voltage, temperature, error flags, GPS clock status, and message statistics).

Transmit button can initiate a measurement and transmit cycle or send a test tone.

Encourages best practices for sending ALERT2 messages.

Analog In (AIN3, AIN4)	0-5 V input, 14 bit ADC
USB-C Console	USB-C Full Speed (12 Mbit) Port for configuration and data transfer
Active GPS Antenna	SMA, Female interface for powered GPS antenna
Status LED	Tri-color status LED provides health and activity information
Transmit Button	Easily initiate transmission of most recent measurements
RS-232	Custom serial interface, 2400-115200 baud
Radio Interface	Custom 5-pin cable available for Maxon and Ritron radio models.
Storage	8 GB eMMC on-board storage