Meet the A2X

Two-Way Capable ALERT2 Encoder and Decoder

The A2X from Blue Water Design is a two-way capable ALERT2 intelligent network device (IND). Different firmware configurations allow the A2X to perform several roles that have traditionally been handled by separate devices: base station receiver or transceiver, repeater, or 2-way remote sensing and control site.

Rugged, Reliable and Compact

The A2X continues Blue Water Design's tradition of delivering reliable products, intended for unattended use in remote locations. Engineered to work across a wide temperature range (-40 - 80 °C) and for efficient power usage, the A2X is ready for use in the field and in the data center.

The A2X has been designed from the ground up to be a compact, fully-featured 2-way capable ALERT2 IND. Measuring just 7.5" x 4", the A2X is much smaller than our previous generation of products. The A2X offers 3 standard serial ports, in addition to a microUSB console port, allowing concurrent input from and output to several different devices. Also new is a full-size USB port, for updating firmware or for copying logs to a thumbdrive.

Increased Data Throughput

The A2X offers a new feature called **Configurable Forward Error Correction**, which allows sites to transmit roughly twice as much data in the same amount of time, given a clear radio path. Three FEC settings are available: the original ALERT2 settings, and two new modes designed for

sites that have good or great radio paths. The A2X is capable of both transmitting and receiving in any of the new FEC modes.

The A2X can be configured to use **250ms TDMA slots** with the new Configurable Forward Error Correction. Cutting the minimum TDMA slot length in half and increasing the data throughput allows systems to almost double their capacity or halve their TDMA cycle time and reporting latency.

Status and Error Reporting

Knowing how your devices are performing and addressing issues early is a critical piece of running a reliable system. The A2X will send status reports at a configurable interval that include: battery voltage, device operating temperature, GPS status, subsystem errors or warnings, and message statistics.

Additional Features

- Stainless steel, powder coated **case**. Mount flat or on edge.
- **Backplane** options available, 10.88"x12.75"
- FCC Part 15 Class A Certified
- **ALERT2 2-way**. The proposed protocol extension for the End-to-End Reliable Datagram Service (EERDS) is supported on the A2X. For robust 2-way communication, either the message is delivered successfully, or, after several attempts have failed, an error is generated.
- **Encryption**. The A2X implements the proposed protocol extension for Encryption and Authorization. This feature is especially important for 2-way control sites, ensuring malicious activity at control sites can be prevented.
- **Simple updates**. Simply load an update file onto a thumbdrive and insert it into the A2X's USB host port to update the device. Remote updates are supported via the SFTP protocol over TCP/IP.
- **New GUI**. Blue Water Design has developed a GUI for configuration and control of the A2X. The GUI may be used via the microUSB port, or via a TCP/IP network connection.

About ALERT2

ALERT2 is a low-bandwidth, high-reliability data protocol intended for transmission over VHF/UHF radios. It is an open standard published by the National Hydrologic Warning Council (NWHC), and uses a TDMA, a time-slot scheme, to ensure device transmissions do not occur simultaneously. ALERT2 is often used for the collection of hydrological data, but is flexible enough that it may be used for many applications. If you have remote sites that need reliable communications, ALERT2 may be a good solution for you. Contact Blue Water Design for further information.