



Blue Water Design A2X Specifications

Overview

The A2X from Blue Water Design is a two-way capable ALERT2 intelligent network device (IND). Rated for operation across the industrial temperature range (-40 - +80 °C) and built to work in high radio frequency interference (RFI) environments, the A2X is designed to provide reliable unattended performance in remote installations, unconditioned radio rooms, and datacenters alike.

The A2X is compatible with the ALERT2 standards produced by the National Hydrologic Warning Council, implementing IND, decoder, demodulator, encoder, and modulator functionality in a single device. ALERT2 provides a means to reliably deliver short messages over a shared channel, using TDMA and error detection and correction algorithms to ensure that sites do not interfere with one another and that data integrity is maintained through the network.

Physical

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

Electrical

Power Supply	9 - 17 vDC, reverse polarity protected
Current Drain	96mA (@12V DC), normal operation, no external connections Each serial port: ~1mA Ethernet port: ~25mA GPS on: ~20mA 144mA (@12V DC), all serial ports, USB console, and Ethernet connected, GPS on
RX Radio - Data Out Level	300 - 1200mV peak-to-peak
TX Radio - Data In Level	100-1200mV peak-to-peak, configurable in 0.5 dB steps

Clock

Supported Interfaces	GPS Clock, NTP
GPS Clock Sync Interval	Configurable 5-60 minutes, or continuously on
Clock Drift	2ppm (0 - 40 °C); 3.5ppm (-40- +80 °C)

Interfaces

Power	2 pin, screw terminal, polarity protected
RS-232	3 ports, line-level, custom 3-pin cable, 1200 - 115200 bps
Ethernet	10/100Mb, supports fixed or dynamic (DHCP) addresses
Storage	microSD expandable storage, records all ALERT2 traffic in ASCII format (N, P, S, C messages), ships with at least 8GB uSD card
LEDs	10 Status LEDs: Power, Bit Sync, Frame Sync, GPS On, Clock Sync, TX Radio Power, Transmit, Serial 1, Serial 2, Serial 3
Configuration	microUSB console and configuration port
USB	Software upgrade and data export, via thumb drive
Active GPS Antenna	SMA, female
RX Radio	4 pin, spring clip: power, gnd, data, channel select
TX Radio	5 pin, spring clip: power, gnd, ptt, data, channel select



ALERT2

Compatible with NHWC ALERT2 AirLink v1.1, MANT v1.1, API v1.0
 Supports ALERT2 API input, and ALERT2 API and ASCII output
 Implements proposed protocol extension for Configurable Forward Error Correction
 Implements proposed protocol extension for Encryption and Authorization
 Implements proposed protocol extension for End-to-End Reliable Datagram Service
 Complete address list support: maintain pass or reject lists, based on source or destination address

Additional Features

TCP/IP Streaming of received ALERT2 messages and error messages in binary or ASCII format
 MicroSD card stores received ALERT2 Messages and error messages
 Download logs and data in a secure manner via SFTP over a TCP/IP network
 Reports device status on via ALERT2 Network (battery voltage, temperature, error flags, GPS clock status, and message statistics).
 Remotely reconfigure device via secure TCP/IP connection

Backplane Configurations

The A2X is available in a standalone, cased configuration or mounted on a pre-drilled, flexible 10.88" x 12.75" backplane complete with a radio, data logger, and sensor wiring solution.