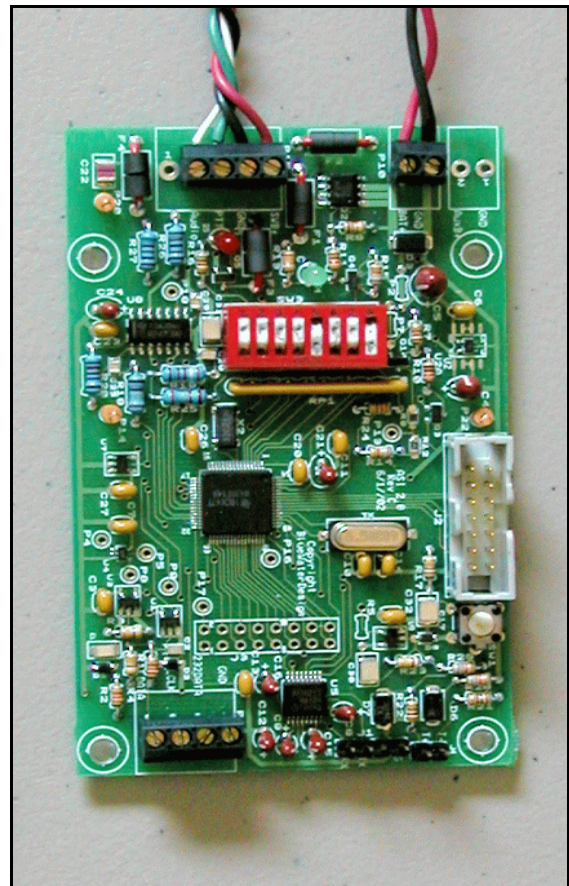




The **WATERLOG[®]** H-264 ALERT Serial Interface (ASI) is a multi-purpose device that accepts ALERT ID and data reports in variety of serial data formats. It buffers, parses, and converts them to 300 baud FSK audio signals in binary ALERT format. The device controls power, audio and PTT lines of an attached transmitter to send a standard ALERT binary format transmission.

KEY FEATURES

- User selectable, flexible serial input:
 - Asynchronous or Synchronous,
 - True RS-232 level input & output or Logic Levels, and
 - ASCII or Binary ALERT format.
- Automatic conversion from ASCII ALERT format input to binary ALERT transmission.
- Double buffered serial interface: receive serial data concurrently with ALERT transmissions.
- Each buffer accepts up to 10 serial input ALERT messages for conversion and transmission in a single ALERT transmission.
- High accuracy battery voltage monitor maximizes transmissions available from a battery.
- User selectable ALERT transmission preamble length (from 101 to 665 milliseconds) allows system design for maximum channel capacity with and without a repeater.
- Robust ESD and over-voltage protection on serial and battery supply inputs enhances reliability.
- Hardware watchdog timer guards against excessive transmitter on.
- 12-second duty cycle timer protects transmitter and ensure no single unit saturates a channel.



SPECIFICATIONS

Data Inputs

ALERT Asynchronous Serial Input

- RS-232 level (negative logic), 2 wire input (Data & Gnd), or
- Logic Level (positive logic, 0 – 2.8V min to 16V max), 2 wire input (Data & Gnd).
- Baud Rate DIP switch selectable: 300, 1200 or 4800, with
- Asynchronous Format: 8 data bits, no parity bit, 1 stop bit.
- Input Message format: ASCII ALERT format (8 bytes for each ID+Data message), or
- Binary ALERT Format (4 bytes for each ID+Data message).
- ESD protection: +/- 15kV - Human Body Model; +/- 8kV – IEC1000-4-2, Contact Discharge; +/- 15kV – IEC 1000-4-2, Air Gap Discharge.

ALERT Synchronous Serial Input

- 3 wire interface: Sync Data, Sync CLK and Gnd, with
- Logic level input (positive logic, 0 – 2.8V min to 16V max),
- Bits read at positive transitions of Sync CLK line.
- Minimum positive & negative CLK pulse width 1 millisecond each (500 Hz data rate, software limited; hardware deglitch filter time constant 200 microseconds).
- ESD protection exceeds JESD 22: 2000-V Human Body Model (A114-A); 200-V Machine Model (A115-A); 1000-V Charged Device Model (C101).

Test Switch Input (forces test transmission)

- Contact Closure; 2 wire input switch interface; transmission on contact “break”.
- Minimum open time 2 milliseconds; RC & Schmitt trigger debounced.
- Over-voltage protection: 100 ohm + 10V bidirectional 400 mW zener diode
- ESD protection exceeds JESD 22: 2000-V Human Body Model (A114-A); 200-V Machine Model (A115-A); 1000-V Charged Device Model (C101).

Output

ALERT Transmitter Interface

- 4 wire interface (Switched Battery Power, Gnd, Push To Talk, and Audio).
- Switched Battery Power:
 - Low dropout high side power switch: typically < 0.05 V drop (1 A), max TBD.
 - High current rating: min 2 A at 18 V continuous without additional heat sink.
 - High breakdown voltage rating: 30 V.
- PTT Output:
 - Open collector NPN output, no pull up; on (“current sink”) for “Push to Talk”.
 - 200 mA max current; V(CE) typically 0.3 V at 50 mA.
- Audio Tone Output:
 - AC coupled (non-polarized 1 uF capacitive coupling).
 - 200 mV RMS, +/- TBD%; (factory settable for 50 - 707 mV RMS).
 - FSK tones: Mark - 2140 Hz, Space - 1920 Hz, +/- 0.05%.
 - 3 pole low pass FSK filter: typical: 3rd harmonics attenuated 30 dB, min TBD
 - No spurious transitions at bit period transitions

- All Outputs RF attenuated for noise control (in line ferrite bead, nominal 100 ohms series resistance at 100 MHz – 500 MHz).
- Transmission Indicators:
 - Green LED on Switched Battery Power output.
 - Red LED on “Push to Talk” output.

Power Requirements

Input Voltage Range (ASI only):

Minimum: 4 V DC Maximum: 20 V DC

Supply Current (ASI only, with nominal 12 V DC input):

- Idle (waiting for serial input)
 - Typical: 9 uA Maximum: TBD
- Buffer Message Conversion
 - Typical: 320 uA Maximum: TBD
- High speed processing (ADC)
 - Typical: 2.8 mA Maximum: TBD
- ALERT transmission (with LEDs & audio filter on)
 - Typical: 10 mA Maximum: TBD

Mechanical

Size: 10.0 cm x 6.20 cm

Mounting Holes:

- 4, (0.381 cm diameter, designed for M3x0.5mm mounting screw clearance);
 - 2 located 0.40 cm from top edge and 0.40 cm from the right side,
 - 2 located 0.40 cm from bottom edge and 2.00 cm from the left side.

Connectors:

- Screw terminal connector rated 125 V DC, 6 A, wire size AWG 28-16, 3.5 mm spacing, and 5.5 mm wire strip length.
 - 2 pin battery input (left edge),
 - 4 pin transmitter I/O (left edge),
 - 4 pin serial input (right edge)
- 0.025” gold plate square post, 0.1” on centers; rated 500 V DC, 2.5 A
 - 2 pin test switch input header (right edge),
 - 4 pin AuxRS232 header (right edge)
- Reset Switch: Momentary, 6.5mm x 6.5 mm, tactile switch

Environmental

Operating & Storage Temperature: -40 degrees C to +85 degrees C
Relative Humidity: 10% - 95% non-condensing

Warranty

The **WATERLOG**® H-264 is warranted against defects in materials and workmanship for one year from date of shipment.

Note

Specifications subject to change without prior notice due to ongoing commitment to product testing and improvement. LR July 26, 2006.

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