EAGLE TREE
SYSTEMS

Instruction Manual for the Data Recorder Dual Channel A/D Expander V2
Document Version 1.9

Model # AD-02

Thank you for your purchase!   This instruction manual will guide you through the installation and operation of your Dual A/D Expander V2.   ***Please read the entire manual carefully before proceeding***.   If, after you read the manual, you have further questions or problems, see the Support page on http://www.eagletreesystems.com for additional information, or email us at support@eagletreesystems.com.

Supported Products

The A/D Expander is compatible with Eagle Tree Systems Flight Data Recorder Pro and V2, Car Data Recorders and Boat Data **Recorders with FIRMWARE version 4.XX or higher**.   This can be checked by choosing "Tools, Firmware Control" in the application, with the Recorder connected to USB.   If you have firmware that is 3.XX or below, email support@eagletreesystems.com for hardware upgrade information.

To use the A/D Expander, you need to download Windows Application Software version 4.44 or higher from the Support page of our website. To check your app version, choose "Help, About."   After installing the correct version of the application, please update the Recorder firmware by connecting the Recorder to USB, and choosing "Tools, Firmware Control" in the application, and clicking the "Update Firmware" button.

If you have purchased a **Secondary or Tertiary Dual A/D Expander**, allowing up to 6 channels of A/D to be used simultaneously, please refer to the Secondary Expander instructions for additional information, after reading the instructions below.

Packing List

Your package should include the following: The Dual A/D Expander, and a printed version of this manual.   Please check the support page of our website for updates to this manual which may have been made after it was printed.

How the A/D Expander Works

The A/D Expander measures two channels of analog input, ranging from 0-4V.   The input can exceed 4V (up to 6V maximum), but values over 4V will read as maximum.   The maximum resolution is 15 bit.

Connecting the A/D Expander to the Recorder

The 4 wire connector attached to the A/D Expander plugs into either the G-Force or EGT ("Thermo") port of your Data Recorder as shown in Figure 1.   Make sure that you connect it in the correct location on the recorder, and with the correct polarity!   NOTE: If you are already using both EGT and G-Force expanders, email us at support@eagletreesystems.com for more info.

Calibrating the A/D Expander

We offer fee based customization to our Windows software for calibrating the data from the Expander, for your specific application.   Email support@eagletreesystems.com for details.

Pinouts of the A/D Expander

There are two 3 pin input leads (with Futaba style female connectors) attached to the expander. With each of these, the connections are as follows:

Red - 4V regulated output (maximum around 50 mA, overload protected)
Black – Ground
White – Analog In, 0-4V (don't exceed 6V)

Figure 1

Setting up the Windows Application for the A/D Expander

First, make sure you have Data Recorder Application version 4.44 or greater, as described above.

To set up the Dual A/D Expander, simply click "Tools, Configure Secondary Expanders" and click "Dual A/D Expander, ID 1 (or Dual A/D Expander with No ID)" in one of the 4 Expander Windows. Then, click OK.

If you have purchased a Secondary A/D Expander, see the additional instructions that should have been included with your Secondary Expander.

Logging Data with the A/D Expander
Copyright © 2003 Eagle Tree Systems, LLC
http://www.eagletreesystems.com
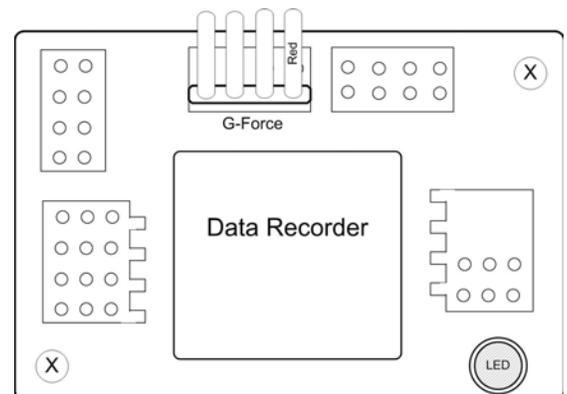
Data from both A/D channels can be logged by clicking "Tools, Choose What To Log", and selecting the "Dual A/D Expander Channel A" and/or "Dual A/D Expander Channel B."

If you have purchased a Secondary A/D Expander, see the additional instructions that should have been included with your Secondary Expander.

Visualizing Data with the A/D Expander

Choosing "Tools, Choose Instruments to Display on PC Screen" and checking one or more of the following lets you see recorded or live mode data in the app:
- Dual A/D Ch. A Gauge
- Dual A/D Ch. B Gauge
- Numeric Dual A/D Ch. A
- Numeric Dual A/D Ch. B

To see a graph of the data, click on "Graph Data!" and "A/D Channel A" and "A/D Channel B" graphs will appear in the graphing options for the Y axes.

To see the file with Excel or other viewer, save the file as usual, and the file header will have "A/D A" and "A/D B" columns.

If you have purchased a Secondary A/D Expander, see the additional instructions that should have been included with your Secondary Expander.

Troubleshooting

Below is a list of problems that may be encountered, and steps to remedy them. If your particular issue is not addressed by the below, see the Support page on http://eagletreesystems.com or email info@eagletreesystems.com. Include a full description of your problem, your machine configuration, brands/models of receivers, transmitters and servos, application and Recorder firmware version if possible (from Help->About in the app) and any other relevant details.

A/D Expander Specifications

Channels: Dual
Max Input: around 6V, but 4V is full scale
Weight: approximately 0.4 ounces
Resolution: 15 bits per channel max

Limited Warranty

Eagle Tree Systems, LLC, warrants the A/D Expander to be free from defects in materials and workmanship for a period of one (1) year from the date of original purchase. This warranty is nontransferable. If your unit requires warranty service during this period, we will replace or repair it at our option. Shipping cost to us is your responsibility.

To obtain warranty service, contact us by phone, fax or email to request an RMA number. No returns will be accepted without this number.

This limited warranty does not cover:

- The Software included with the Data Recorder. See the Software license agreement for more information on Software restrictions.
- Problems that result from:
    - External causes such as accident, abuse, misuse, or problems with electrical power
    - Servicing not authorized by us
    - Usage that is not in accordance with product instructions
    - Failure to follow the product instructions

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). OUR RESPONSIBILITY FOR MALFUNCITONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD AS DESCRIBED ABOVE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

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