



Instruction Manual Supplement for Secondary Dual A/D, G-Force, Thermocouple and Electric Expanders Document Version 1.1

Thank you for your purchase! This instruction manual supplement provides additional information on using the Secondary versions of our Dual A/D, G-Force, and Thermocouple Expanders. **Please read the entire manual and this supplement carefully before proceeding.** If, after you read the manuals, 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

Secondary Expanders are 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 your Secondary Expander, you need to download Windows Application Software version 4.44 or higher from the Support page of our website. To check your Application Software 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.

How the Secondary Expanders Work

Our Dual A/D, G-Force, and Thermocouple Expanders (both primary and secondary) each have a hardware codes associated with them, 1 through 4. Only one Expander with a particular code can be connected to the Recorder.

All of our recently shipped Secondary Expanders have a label attached, indicating their Code number. If you have a Secondary Expander without a Code label, see the “Setting up the Windows Application for the Secondary Expanders” section below to determine the code. NOTE: Our standard (Primary) G-Force, Thermocouple and Dual A/D Expanders do not have a code label, but their codes can be determined from the chart below.

NOTE: when using the Tertiary (third) Dual A/D expander, Altitude and Airspeed logging/display is disabled.

Below is a chart of the codes used by our Primary (Standard) and Secondary Expanders:

Expander	Code
Standard Dual-A/D Expander (Primary)	1
Standard G-Force Expander (Primary)	2
Standard Thermocouple Expander (Primary)	3
Secondary Thermocouple Expander	2
Secondary Dual A/D Expander	3
Secondary G-Force Expander	3
Secondary Electric Expander	1
Tertiary Electric Expander	2
Tertiary Dual A/D Expander	4

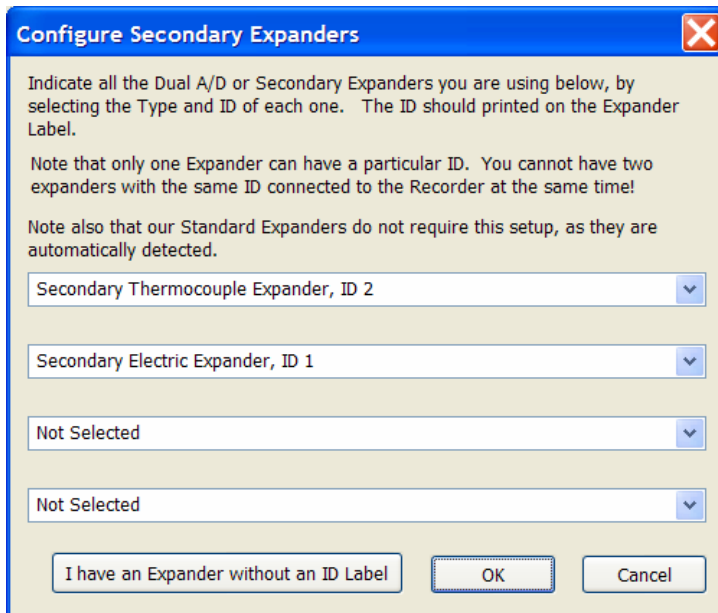
For example, from the chart above, we see that we cannot connect the Standard Dual-A/D Expander at the same time as the Secondary Electric Expander, because they use the same code. But, in most cases combinations of expanders can be found at different codes to measure just about anything. Email us at support@eagletreesystems.com if you need a combination that is not currently available, or if you have questions about codes.

Connecting the Secondary Expanders to the Recorder

Any of our Primary or Secondary Expanders can be connected to either the “G-Force” or “EGT” ports of your Recorder, with the red wire to the right. If you need to connect more than two Expanders at the same time, you will need one or two of our “Expander Y-Cable” connectors, part number CAB-EXP-Y, two of which will permit connecting of up to 4 Expanders (see chart above). To use the Expander Y-Cable, simply connect it (with the red wire to the right) to either the “G-Force” or “EGT” ports of your Recorder, and connect two Expanders to the other end of the Y-Cable, with the red wires of the expanders matched up with the red wire of the Y-Cable.

Setting up the Windows Application for the Secondary Expanders

To set up your Secondary Expander, first make sure you have Data Recorder Application version 4.44 or greater, as described above. Then, click “Tools, Configure Secondary Expanders” and choose the Secondary Expander(s) you are configuring in one or more of the 4 Expander Windows. Then, click OK. For example, if you have the Secondary Thermocouple Expander, the Secondary Electric Expander, the screen should be set up like this:



If you have a Secondary Expander (or Primary Expander) and you are not sure about its code, simply click on the “I have an Expander without an ID Label” and follow the instructions, to attain its ID.

Logging Data with the Secondary Expanders

After setting up the Secondary Expander(s) with the Windows Application as described above, the data may be logged in the Recorder by clicking “Tools, Choose Parameters to Log in the Recorder”, and selecting the appropriate channels of the Secondary Expanders you selected.

For Example, with the above Secondary Expanders selected, the following new options will appear:

- * Thermocouple Temperature C (Secondary Thermocouple Expander, ID 2)
- * Thermocouple Temperature D (Secondary Thermocouple Expander, ID 2)
- * Electric Motor Voltage B (Secondary Electric Expander, ID 1)
- * Electric Motor Voltage C (Secondary Electric Expander, ID 1)

Visualizing Data with the Secondary Expanders

After setting up the Secondary Expander(s) with the Windows Application as described above, the data may be displayed on the PC Screen by clicking “Tools, Choose Instruments to Display on PC Screen” and selecting the appropriate channels of the Secondary Expanders you selected.

To see a graph of the data, click on “Graph Data!” and the channels of the Secondary Expanders you selected 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 columns for the channels of the Secondary Expanders you selected.

If you have the Seagull Wireless option, the Secondary Expander channels can also be configured for the LCD Display. See the Seagull Users Manual for instructions on configuring parameters with the LCD Display.