



Quick Start Download Instructions for DART

General guidance: When a softkey is pressed and a new menu is displayed, pressing ESC will always show the previous page. If there is room to display the HOME button, it will always appear on F1.

1. Power DART by pressing the button in the upper left corner. You will see the screen's backlight illuminate for a few seconds and then go dark. Within 10 seconds the screen will show the splash page. DART will take 45 seconds to fully boot.



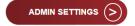
- 2. Once fully booted the home page will be displayed.
- 3. In the upper left corner, you will see the UTC date and time. Keep in mind your local offset and verify that the date and time are correct. If the date or time are not correct, DART needs to connect to the internet to check in.













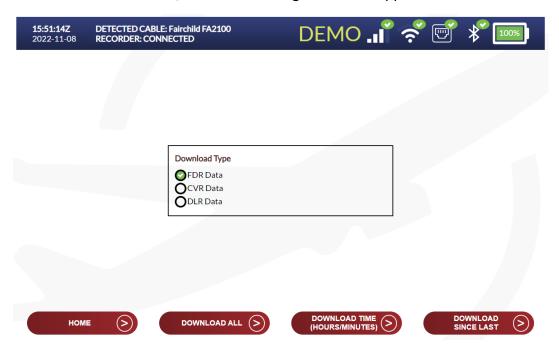
- 4. Connect DART to Wi-Fi.
 - a. On the home page, press F4 (Admin Settings).
 - b. Press F1 (Networks)
 - c. Press F1 (Wi-Fi)
 - d. Press F4 (Networks)
 - e. Select your local network and enter the password.
 - i. There is a "Show" button on the bottom right to verify entry.
 - f. If the password is correct, you will see the Wi-Fi icon illuminate and a green check mark, following this the IP address will be displayed.
 - g. If the Wi-Fi icon disappears or the IP address does not appear, the password was not accepted. Remove the network from the saved list by following 4.a 4.c and then selecting saved networks. Select your network and remove it by pressing enter or the remove button.
- 5. Once connected to Wi-Fi, DART will update its date and time, if necessary.
- 6. Select the cable that connects to the recorder and plug it into either J1 or J2 as indicated by the color code.
 - a. There is an arrow on the connector that should face the front of DART.
 - b. Align this arrow and hold the top of the connector (near the cable) with your left hand. You will feel the connector slide into place.

- c. Use your right hand to twist the locking mechanism, you will feel the detent as it locks in place.
- d. The newer connectors may need pressure from the left hand to push down while the locking mechanism is twisted.

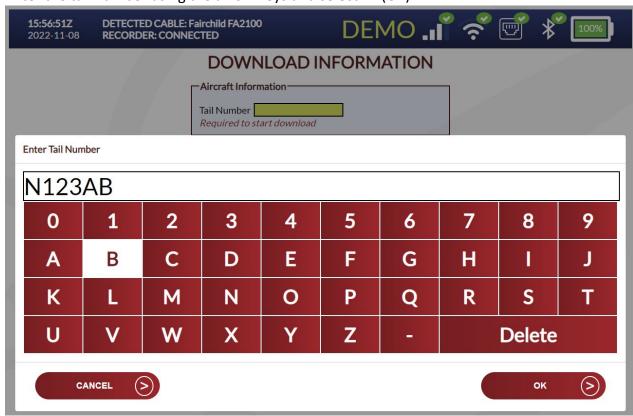


- 7. Once the connector is securely in place you will see the cable detected in the banner. The cable information should match the recorder type.
- 8. WARNING: ALL RECORDERS SHOULD BE OFF BEFORE CONNECTING OR DISCONNECTING ANY CABLES TO THEM.
- 9. Connect the other end of the cable to the recorder and power the recorder by following the maintenance procedure. Once the recorder is powered, the "Recorder: Disconnected" will be replaced with "Recorder: *type* Connected" and the function buttons F1 F3 will change from gray to red.

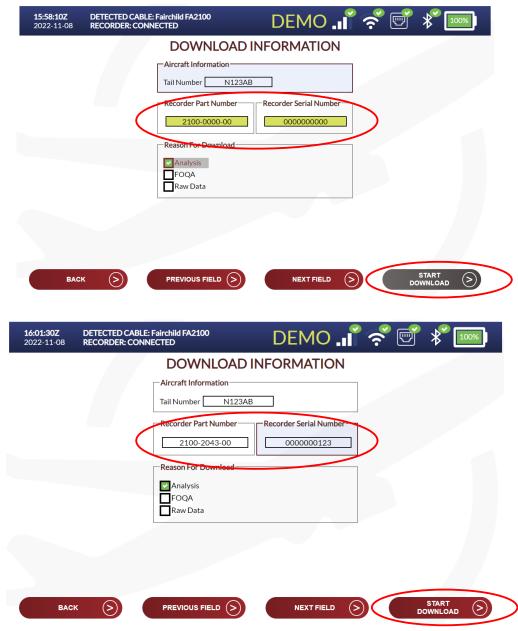
10. Press **F2 Download Recorder**, and the following screen will appear:



- 11. Select F2, F3 or F4 to determine the Download type.
- 12. Enter the tail number using the arrow keys and select F4 (OK).



13. The **DOWNLOAD INFORMATION** screen will then appear. Use the F2 (Previous Field) and F3 (Next Field) to move to each section. If there are yellow highlighted sections, they will need to be updated prior to starting the download. F4 (Start Download) will be grayed out until the missing information is added.



14. Once the recorder part number and serial number are entered, select **F3** to advance to the **Reason For Download** options:

Analysis Following the Download, KGB Aviation Solutions will contact the operator,

and offer data analysis options.

FOQA Following the download, KGB Aviation Solutions will not contact the

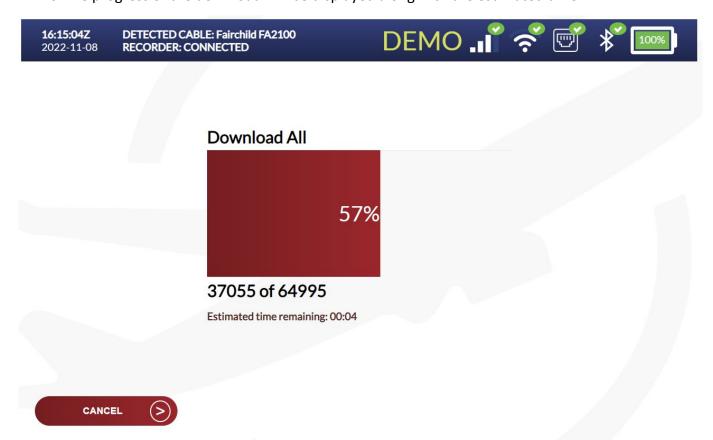
operator. It will be assumed that the operator will be preforming the data

analysis.

Raw Data The operator may desire Engineering Unit data conversion service, available

through KGB Aviation Solutions.

- 15. The download will be possible by pressing F4.
- 16. The progress of the download will be displayed along with the estimated time:



Once the download is complete, the files will be compressed and automatically uploaded to the AWS portal.

- a. The upload page will be displayed and depending on the speed of the Wi-Fi, the upload progress will be shown.
- b. Once the data is uploaded to AWS, the file name will appear in the UPLOADED FILES group:

16:17:53Z 2022-11-08 **DETECTED CABLE: Fairchild FA2100** RECORDER: CONNECTED











UPLOADED DATA

Last downloaded filename was N123AB_221108_81457_fdr_OK.zip

Uploaded Files

File Name N123AB_221108_81457_fdr_OK.zip 100BL_221028_191437_FDR_all_OK.zip 745GC_221026_125489_FDR_all_OK.zip

Date Uploaded

2022-11-08T16:15:14.699Z 2022-11-08T15:32:41.628Z 2022-11-06T21:27:41.628Z

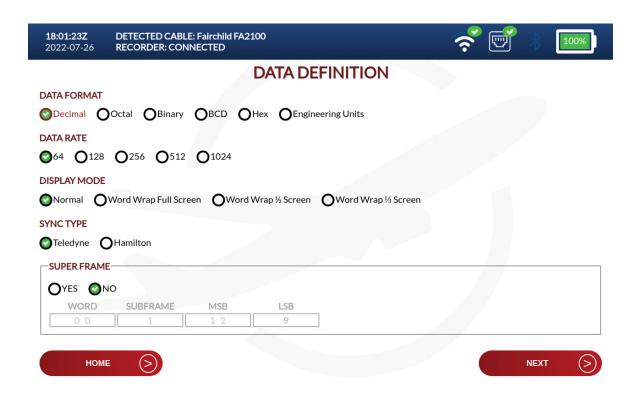


- 17. DART does not need to be connected to the recorder for the data to be uploaded to AWS. As long as the data download was completed (message will be displayed confirming that), DART can be removed from the recorder (Recorder must be powered down before removing cables from the recorder or the DART).
- 18. Power down the recorder.
- 19. The banner on DART will show that the recorder is disconnected, and this will indicate that the power has been removed from the recorder and it is safe to disconnect the cable from the recorder.
- 20. Disconnect the cable from DART.
- 21. Hold the top of the connector with your left hand and use your right hand to twist counterclockwise to unlock the mechanism.
- 22. Once you feel the connector's lock disengage pull the connector off with your left hand. Your right hand can assist by continuing to twist and lift but the main force should be from your left hand after the lock is disengaged.

To monitor live data with DART, follow steps 1 through 9 above to connect to the recorder and prepare DART to begin monitoring live data.

1. At the DART Home screen, select F3 for **MONITOR DATA**. Note that whenever live data is being monitored, the powered recorder is overwriting the oldest data in memory.

At the DATA DEFINITION screen, the operator will then choose the desired DATA FORMAT of raw values (decimal, octal, binary, bcd, hex), or data converted into Engineering Unit values.

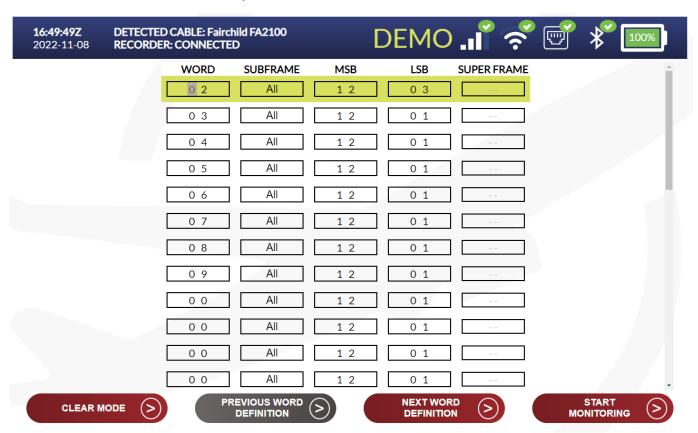


If Engineering Unit values are chosen under DATA FORMAT, skip ahead to **MONITOR DATA in Engineering Units**

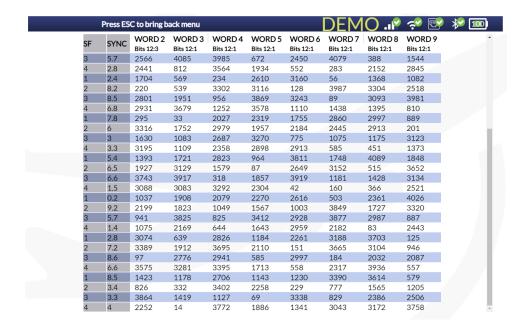
MONITOR DATA in Raw values (Decimal, Octal, Binary, BCD, and Hex).

- 1. The operator will then select the applicable DATA RATE in Words per Second.
- 2. Under DISPLAY MODE, the operator may choose from the following:

Normal. This mode enables the operator to isolate the display to specific Word, Subframe, Bit, and Superframe locations in the data stream, as shown below:

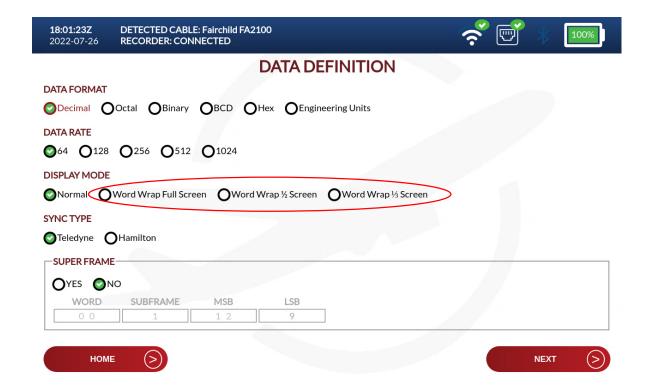


The example below illustrates a selection of data word numbers 1 - 9, displayed in Decimal Format:



Word Wrap. The Word Wrap Display Mode options provides the operator with all of the words in the data frame.

NOTE: Word Wrap is offered for displaying Raw values only, and is not available when displaying Engineering Unit values.



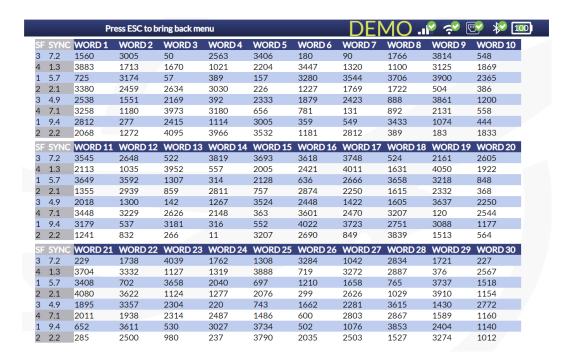
Word Wrap Full Screen. This Display Mode presents the operator with a display of raw values for all words in the data stream, in 10-word location increments.



Word Wrap 1/2 Screen. This Display Mode presents the operator with two screen sections of raw values for all words in the data stream, in 20-word location increments.



Word Wrap 1/3 Screen. This Display Mode presents the operator with two screen sections of raw values for all words in the data stream, in 30-word location increments

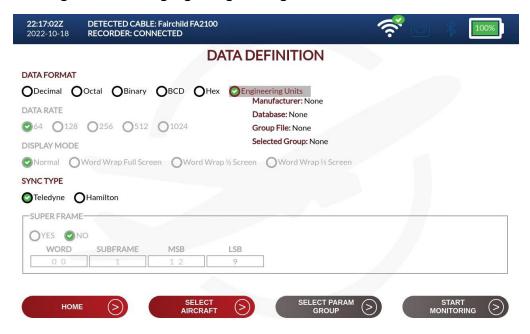


A useful one-button feature within **Word Wrap** enables the operator with fast access movement throughout the data frame display. Pressing **F2 Previous Page** or **F3 Next Page** will jump to the next group of raw data words for display. For example – If monitoring raw data in **Word Wrap 1/3 Screen** words 1 through 30 will be displayed, simply pressing **F3 Next Page** will immediately present the operator with words 31-60. Pressing F3 again will present words 61-90, and so on.



MONITOR DATA in Engineering Units

When the DATA DEFINITION screen appears, the DATA FORMAT field will be active. Use the Right Arrow to highlight Engineering Units.



By pressing F2, SELECT AIRCRAFT, a new screen will appear which displays the multiple aircraft manufacturers. The operator uses the Left, Right, Up and Down arrows to highlight the desired manufacturer. In this example, a Bombardier aircraft has been selected. Press F4 for NEXT.



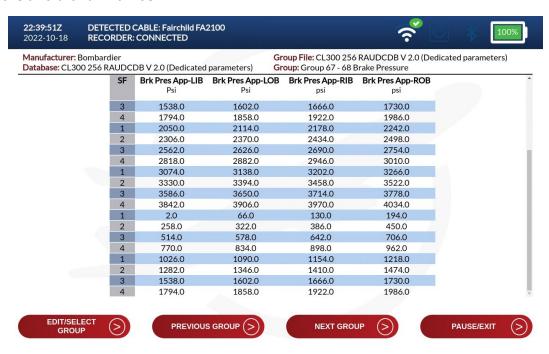
6. In this example, the Bombardier CL300 aircraft database has been chosen. Press F4, NEXT, to choose from the multiple groups of data parameters.



7. Use the arrow buttons at the SELECT PARAMETER GROUP screen:



8. In this example, the Brake Pressure group of parameters has been selected for displaying. Press F4 to START MONITORING the data. DART will display a Warning that by Monitoring live data, old data will begin to be overwritten. Also, DART will request the operator to enter the aircraft Tail Number.



9. The DART provides the operator with additional features which can be quickly activated while live data is scrolling:
PREVIOUS GROUP will change the display to present the previous Group of parameters held in the SELECT PARAMETER GROUP screen.
NEXT GROUP will change the display to present the next Group of parameters held in the SELECT PARAMTER GROUP screen.
PAUSE/EXIT will freeze the scrolling of parameters. The operator may then press RESUME SCROLL to continue.
10. EDIT/SELECT GROUP will launch a screen of new features.
BACK returns the operator to the previous screen
ADD PARAMETERS enables the operator to include another parameter to the present Group of being displayed. Using the arrow buttons, a parameter may be chosen from the screen, and then added to the display by pressing ENTER. The scrolling of parameters will then resume.
DELETE PARAMETERS enables the operator to remove any parameter from the present Group being displayed. Using the arrow buttons, a parameter may be chosen from the screen, and then deleted from the display by pressing ENTER. The scrolling of parameters will then resume.

SELECT GROUP enables the operator to change the display to a different Group of parameters. Using the arrow buttons, a parameter Group may be chosen from the screen, and then the scrolling of data will resume after pressing F4, **START MONITORING**.

Section 4. Power down the recorder and disconnect

Power down the recorder.

The banner on DART will show that the recorder is disconnected, and this will indicate that the power has been removed from the recorder and it is now safe to disconnect the cable from the recorder.

Disconnect the cable from DART.

To power off DART, press the power button in the top left corner of the display panel. After pressing the power button, DART will display a prompt to confirm user-directed power-off. To continue powering down, press F4 for "CONFIRM". To cancel powering down, press F1 for "CANCEL".

Please note there are some scenarios where DART will not allow/display the power down prompt, even if the power button is pressed. These scenarios include --

- A download is in progress
- A live data monitoring operation is in progress
- A DART update is being installed

In the unlikely event that DART becomes unresponsive or does not power down as expected, the power button can be held down for 10 seconds to force the unit to power off.