

26. Appendix F: User Data Logs

SkyView continuously stores four retrievable data logs that can be exported for user analysis. These data logs are stored on SkyView's internal flash memory and are exported to a USB flash drive.

The base file name is the same on all four logs. Each element is separated by a dash (-) character:

- DATE – Expressed as year (-) 2-digit month – (2-digit day). Example 2015-01-14
- TAILNUMBER – As entered into SETUP MENU > SYSTEM SETUP > AIRCRAFT INFORMATION > TAIL NUMBER
- SKYVIEWDISPLAYSERIALNUMBER – The serial number of the SkyView display the datalogs were recorded from. Expressed as SNxxxxx (4 digits for SV-D600/SV-D700/SV-D900/SV-D1000, 5 digits for SV-D1000T).
- SOFTWAREVERSION – The Software version on the SkyView display that the datalogs were recorded from, at the time of the datalog export.
- OPTIONAL33CHARACTERS – Optional 33 user-selectable characters that can be added to the datalogs filename, selectable at the time of the datalogs are exported.
- PART_XX – SkyView may save a datalog into multiple files, distinguished by sequential digits, such asPART_01,PART_02, etc.

User Data Log

Filename format:

DATE-TAILNUMBER-SKYVIEWDISPLAYSERIALNUMBER-SOFTWAREVERSION-
OPTIONAL33CHARACTERS-USER-LOG-DATA.csv

Example:

2014-08-07-N123X-SN1492-11.0-CROSS_COUNTRY_LEG1-USER_LOG_DATA.csv
(CROSS_COUNTRY_LEG1 is user-selectable text, up to 33 characters, at time of export.)

The User Data Log contains plain-text tabular data that records the entire state of your SkyView system at a recording rate of your choosing (see below). This includes over 100 items, and includes all ADAHRS (flight instrument) data, Engine parameters, GPS data, Autopilot status, SV-XPNDR-261/262 status, time, and more.

When exported, the data log is a standard CSV (comma separated value) file and can be viewed in spreadsheet programs such as Microsoft Excel once exported from the system. The top row of the CSV file is a header row which documents the format of the file. The headers for each configurable EMS input follow the following format: Name (Units) (where the "Name" field is as it is named in the SENSOR INPUT MAPPING setup menu). Each row beneath that header row contains an individual record – or instantaneous snapshot – of all of the recorded fields. Because different SkyView systems have different EMS pin mappings, the order and content of the columns can be dynamic from system to system.

The User Data Log records at the selected Record Rate (see below) any time the SkyView system is powered on.

A sample of what a few columns and rows of data would look like when viewed in a spreadsheet program is shown below. An actual user data log would have over 100 columns of data, and many thousands of rows:

System Time	Pitch (deg)	Roll (deg)	Magnetic Heading (deg)	Indicated Airspeed (knots)	Pressure Altitude (ft.)
1:50:38	0.2	-1.7	134.4	0	4364
1:50:38	0.2	-1.8	134.4	0	4364
1:50:38	0.2	-1.8	134.3	0	4364
1:50:38	0.2	-1.8	134.4	0	4364
1:50:39	0.2	-1.8	134.4	0	4364
1:50:39	0.2	-1.7	134.4	0	4364

Table 128 – User Data Log Excerpt Example

Recent Flight Data Log

Filename format:

2014-08-07-N123X-SKYVIEWDISPLAYSERIALNUMBER-SOFTWAREVERSION-
OPTIONAL33CHARACTERS-BLACK_BOX_LOG_DATA.csv

Example:

2014-08-07-N123X-SN1492-11.0-CROSS_COUNTRY_LEG1-BLACK_BOX_LOG_DATA.csv
(CROSS_COUNTRY_LEG1 is user-selectable text, up to 33 characters, at time of export.)

The Recent Flight Data Log records the most recent 15 minutes of flight at a data recording rate of 16 times per second, in the same manner as described above. Its recording rate cannot be changed.

The Recent Flight Data Log records data whenever SkyView believes that it is in flight, which it determines by observing IAS and/or GPS ground speed.

Alert Data Log

Filename format:

DATE-TAILNUMBER-SKYVIEWDISPLAYSERIALNUMBER-SOFTWAREVERSION-
OPTIONAL33CHARACTERS-ALERT_DATA.csv

Example:

2014-08-07-N123X-SN1492-11.0-CROSS_COUNTRY_LEG1-ALERT_DATA.csv
(CROSS_COUNTRY_LEG1 is user-selectable text, up to 33 characters, at time of export.)

The Alert Data Log contains plain-text tabular data. A new record is appended each time a SkyView alert of any kind is triggered, including audible alerts and system messages. The Alert Data Log is useful for diagnosing alerts that automatically clear on a brief condition, for

example, oil pressure going into the red zone for a few seconds, then back into green, and automatically clearing.

When exported, the data log is a standard CSV (comma separated value) file and can be viewed in spreadsheet programs such as Microsoft Excel once exported from the system. The top row of the CSV file is a header row which documents the format of the file. Each record consists of supporting data such as time, GPS data, type of alert, the type of alert action, and the description of the alert. The Alert Data Log is allocated 2 MB which may be sufficient to record more than 1500 hours of operation assuming as many as 10 alerts per hour. The Alert Data Log is not affected by the RECORD RATE setting below.

History Data Log

Filename format:

DATE-TAILNUMBER-SKYVIEWDISPLAYSERIALNUMBER-SOFTWAREVERSION-
OPTIONAL33CHARACTERS-HISTORY_LOG_DATA.csv

Example:

2014-08-07-N123X-SN1492-11.0-CROSS_COUNTRY_LEG1-HISTORY_LOG_DATA.csv
(CROSS_COUNTRY_LEG1 is user-selectable text, up to 33 characters, at time of export.)

The History Data Log is a cumulative history of files loaded onto the SkyView and other changes mostly used for troubleshooting when requested from Dynon Avionics Technical Support.

Data Logging Recording Options

Record Rate

You can choose the frequency of the data that is recorded from SkyView's various systems for your particular needs. SkyView can record data as frequently as 16 times per second or as infrequently as once every 10 seconds. Recording more frequently trades off the amount of time that the data log covers. At once every 10 seconds, SkyView's User Data Log can store up to about 150 hours of data. At 16 times per second, the log stores about 2 hours of data. When the data log fills up, the oldest data is automatically discarded to make room for new data.

Navigate to SETUP MENU > SYSTEM SETUP > DATA LOG SETUP > RECORD RATE to choose the frequency that data is recorded to the internal User Data Log.

Clearing Data Logs

Navigate to SETUP MENU > SYSTEM SETUP > DATA LOG SETUP > CLEAR ALL DATA to erase the User Data Log, Recent Flight Data Log, and Alert Data Log. Note that this does not clear History Data Log, as this is a log of all significant changes to the configuration of the SkyView system.

Exporting Data Logs



In a dual engine configuration (dual SV-EMS-22x with at least two SkyView displays), data logs for each engine are recorded / exported *only* on the display that is monitoring each engine. Example – in a system where the left display is

configured to monitor the left engine, the data log exported from the left display contains the data log for the left engine (only). It is recommended to use a separate USB flash drive per engine to prevent the possibility of overwriting data logs.

Connect a USB flash drive with at least 100 MB of available storage capacity to your SkyView display. Then, navigate to SETUP MENU > SYSTEM SOFTWARE > EXPORT USER DATA LOGS to export the three data logs to the USB flash drive.

If your SkyView system has not yet flown, or has not flown since the data logs were last cleared, there may not be a Recent Flight Data Log available.

The data logs that are exported are in CSV (comma separated values) format and can be opened by common spreadsheet programs such as Microsoft Excel.

Web-based Engine Analysis

Savvy Analysis – <http://www.savvyanalysis.com> is a free web-based tool that supports the upload an analysis of the engine information that is contained within SkyView's User Data Logs. Instructions for creating an account and uploading data logs are on the Savvy Analysis website.

Other than technical cooperation to ensure that SkyView datalogs can be correctly parsed as formats are periodically updated, Dynon Avionics has no relationship with Savvy Analysis.



Figure 230
Savvy Analysis Web Page