

AIRMATE - DYNON

Interworking Pilot Manual



(C) MYRIEL AVIATION S.A. (www.airmate.aero)
 iOS v 3.3
 May 2022
 contact: airmate@airmate.aero

CONTENTS

AIRMATE - DYNON	1
Interworking Pilot Manual	1
Prerequisites	2
Planning a flight and sending it to the SkyView	3
Plan a flight	3
Includes IFR approaches, SID and STAR in your flight	4
Route expansion along Airways	5
Check the route	5
Send the flight plan to the Dynon SkyView	6
Using SkyView as data source	8
Introduction.....	8
Selecting SkyView as GPS source.....	8
AHRS Data and Synthetic Vision.....	9
Traffic display	9
FIS-B Data	9
Using Airmate navigation database, displaying charts and plates on your SkyView	10
Airmate Aviation Database for SkyView	10
How to load aviation data and obstacle data.....	11
How to load raster charts	11
How to load and view airport diagrams and approach plates	12
Debugging	13
Introduction.....	13
Checking Network Parameters	13
ADS-B Receiver	13
GPS Source	13

AIRMATE - DYNON

Interworking Pilot Manual

Airmate provides a complete integration with Dynon SkyView, provided a Wi-Fi interface is connected to the Dynon unit.

Using Airmate, you fully take advantage of all interworking capabilities of SkyView with Airmate Electronic Flight Bag:

- Airmate can use the SkyView as **high precision GPS source, AHRS data source and ADS-B/FIS-B source**.
- From Airmate, you could **send your planned flight to the Dynon SkyView**, the route will be automatically imported and will become the current active route. In this way, you don't need to create again your flight route in the SkyView, saving time and avoiding data entry errors.
- Even more, for training purposes, you can send to the SkyView **routes including approaches, SIDs and STARs**. All approaches waypoints will be loaded to the SkyView. You could also **include airway identifiers in your route**, Airmate will automatically expand the route and send to the SkyView the complete list of airway waypoints along your route. Please note those advanced features require the use of the Airmate Navigation Database loaded in your Dynon unit, to make sure Airmate and SkyView databases are fully aligned.
- By **subscribing to Airmate Navigation Database for SkyView in your region**, your Dynon unit will take advantage of the most comprehensive aeronautical database available, including for example all small, ultralight and bush airfields and Visual Reporting Points. You could also display **any aeronautical raster map** of the wide Airmate catalog (most of them free) and **view all VFR and IFR approach plates** in more than 200 countries.

Airmate AIRAC data are mainly sourced from official aeronautical authorities (in Europe, the USA, and other countries). They may be completed by open source and unofficial data.

Even if the greatest care is applied to aeronautical data check, the aeronautical data supplied free of charge may contain errors and missing information. Therefore, Airmate should never be used as main source of information for flight planning or navigation, and Airmate publishers decline all liability in case of incorrect or invalid data.

Prerequisites

You need to own an iPhone or iPad and Airmate version 3.3 or above. Dynon interworking will be added later to the Android version of Airmate.

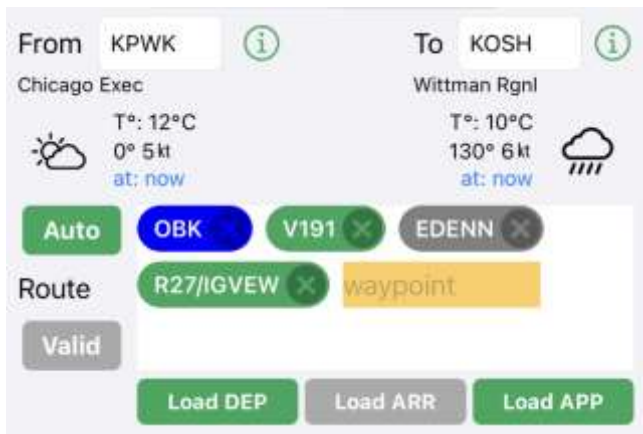
Dynon unit should have a firmware version 16.2 or later. To view current firmware: Press and hold buttons 7 & 8. Then, navigate to SETUP MENU > LOCAL DISPLAY SETUP, and then scroll down to DISPLAY HARDWARE INFORMATION).

Planning a flight and sending it to the SkyView

Plan a flight

Plan your flight as usual using Airmate EFB (refer to Airmate Pilot Manual for more information). You need to indicate at least origin and destination airfield, and then add the waypoints of your route, either graphically from the map or using the Route Editor.

Once your flight is defined, you could easily upload it to your Dynon SkyView from Airmate EFB, avoiding the hassle to enter again all waypoints in your route and the risk of data entry errors.



In addition, Airmate also offers you two exclusive advanced features:

- **Use airway identifiers:** Instead of listing all waypoints along an airway you will follow, you can indicate only the first (entry) and last (exit) airway waypoint bracketing the airway identifier, as in the example displayed (OBK V191 EDENN). Airmate will automatically expand the airway to add all waypoints along the airway between the entry and exit waypoints.
- **Load IFR approaches, SIDs and STARS:** Airmate integrates an approach database providing approach details for IFR approaches, SIDs and STARS in many countries. When you load an approach, SID or STAR, all waypoints of the selected approaches will be added to your flight plan and sent to the Dynon unit.

Those advanced features are described below.

Includes IFR approaches, SID and STAR in your flight

Neither Dynon SkyView nor Airmate database are certified for flying instrument approaches. However, **for training purposes only** you could easily load approaches in your SkyView from the free iOS Airmate app.

This training feature is taking advantage of latest Airmate database that includes in the US and other countries many SIDs, STARs and approach procedures. **You will need to have subscribed to Airmate navigation database for your Dynon SkyView and have latest database loaded in your SkyView**, so Airmate app and your SkyView will share the same data. To subscribe, go to [Airmate Shop](#) and select your region.

First, create your flight in iOS Airmate app by selecting departure and destination airfields. If departure procedures (SID Standard Instrument Departure) are available in Airmate database for the departure airfield, a **Load DEP** button below the route editor will allow you to select and load the desired departure procedure in your route. In the same way, **Load ARR** and **Load APP** buttons may be active (green) to select and load the desired arrival procedure (STAR Standard Arrival Procedure) and instrument approach.

When you push one of those buttons, the list of the available procedures will be displayed. Once selected, you may also be proposed appropriate transitions (for example the departure runway for a SID) and/or the airway transition for a SID or a STAR).

The procedure is then loaded and will appear in the route using the procedure identifier used for flight plan filing (for example LANKO9K).

You could double click on any procedure in the route to view all points of the procedures, including identifier, track and distance to next point and mandatory altitudes.



You could at any time change a procedure by using the **Load ...** button to select another procedure and transition, it will replace the previous one.

Approach coverage depends on the country: in the USA, all departure, arrival and approach procedures are available. In most other countries, the coverage focuses on RNAV/RNP approaches and all approaches may not be available. We are working to enhance the

procedure coverage database, adding numerous new approaches every month, according customer requirements (if some RNP/RNAV approaches you would like to use are not listed, contact us at airmate@airmate.aero to have them added).

Route expansion along Airways

When you enter an airway designator between two route waypoints, and the bracketing waypoints are part of this airway, Airmate iOS will automatically insert in your flight route all intermediate waypoints along the airway between the waypoints. They will be shown graphically on the map and in the flight log. The airway designator will be displayed in green in the route editor.

Those intermediate waypoints automatically inserted are displayed on the map with a light blue dot.

You could double click on any airway in the route editor to view all waypoints along the route between the waypoints before and after the route designator. All those waypoints will be transmitted to the Dynon SkyView.

If you delete or reshuffle waypoints so the route designator is no longer bracketed by two waypoints belonging to this airway, the route designator will be displayed in red in the route editor and no waypoint expansion will occur.



V191		
From EDENN to OBK		
90.1NM FL98		
WIPED	0°	31.9NM
BONOT	348°	8.6NM
BAE	348°	15.3NM
CORIR	351°	21.6NM
EDENN	350°	12.9NM

Route editor interface showing buttons: Auto (green), OBK (blue), V191 (green), EDENN (grey), R27/IG (green).

Check the route

After having defined your route and selected appropriate departure, arrival and instrument approaches, check your route and flight log to ensure the routing matches your expectations. You could double click on the procedure name in Airmate Route Editor to expand it and review all points of the procedure along with their track, distance and altitudes.

If the approach plates have been georeferenced, you will be able to click on the airfield in the aeronautical map to display the georeferenced plate matching selected procedure on top of the map (this may be done automatically by Airmate when selecting an approach). You could then easily follow your approach path along the georeferenced chart. The missed approach will be displayed using a lighter magenta path, including its racetrack if applicable

For non-georeferenced approach plates, you could review them to check your routing is appropriate, either from Airmate app or from your Dynon SkyView if you have inserted an USB stick with the approach plates for your country or region.

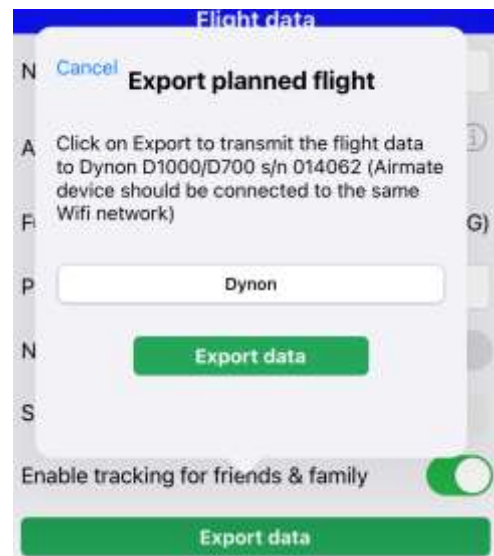


Send the flight plan to the Dynon SkyView

Once the route is complete, you could click on the **Share** button from iOS Airmate summary flight plan planning form or on the **Export flight plan** button from the detailed flight plan planning form to send instantly your planned route to your Dynon SkyView. You should be connected to the SkyView Wifi network and use the iOS version of Airmate (SkyView interworking will be added in the future to the Android version of Airmate).

There are two ways of sharing/exporting a flight:

- from the summary flight edition page displayed using the Edit tab, click on the Share button at top right.
- For the detailed flight edition page, you could also click on the **Export Data** button

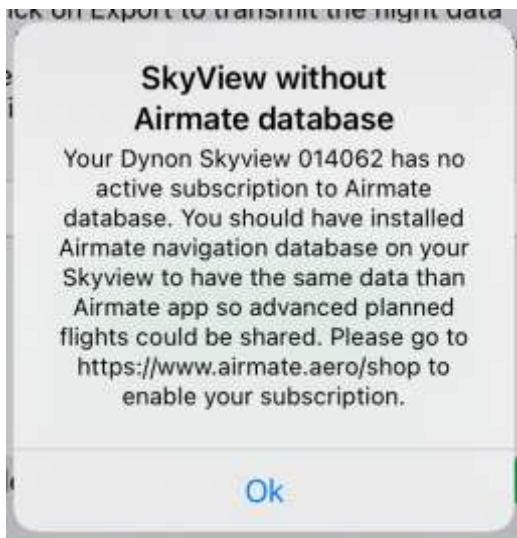


This will open the Export planned flight popup that will detect the Dynon unit and prompt you to launch the export. After confirmation, the currently selected planned flight will be sent to the Dynon SkyView, the SkyView will display a confirmation message “*Flight plan received from Airmate*” and will update the active flight plan.



All the points in your route and approach are now loaded in your SkyView and could be tracked, including the waypoints for your approach.

If your Airmate route includes either approaches or airways, your Dynon unit should have subscribed to Airmate Navigation Database, to ensure aviation databases are aligned at both sides. If the serial number of your Dynon unit has not subscribed to Airmate Navigation Database, you will get an error message.



If your route doesn't include approaches or airways, you could export it to the Dynon unit even when using a database supplied by another supplier. However, a discrepancy in both databases is always possible, so a careful check of all points in the route will be needed to make sure both databases are using the same waypoints.

Using SkyView as data source

Introduction

The SkyView is a powerful device able to transmit to Electronic Flight Bags its current position, flight parameters including attitude, and received ADS-B and FIS-B data, including detected traffic and flight information service data.

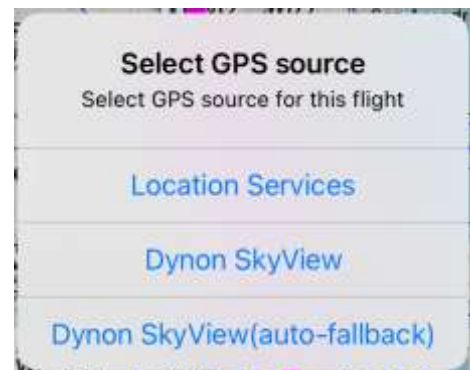
When connected to the SkyView Wi-Fi network and switched to Flight Mode, Airmate will take advantage of all those data transmitted by the SkyView, including:

- **GPS Position:** using the SkyView GPS position will be more accurate than the embedded iPhone or iPad GPS. Furthermore, this will greatly lower the battery drain and heating of your iPhone/iPad.
- **AHRS data**, that could be used to drive Airmate EFIS and Synthetic Vision.
- **ADS-B traffic data**, so Airmate will display traffic on its aeronautical map.
- **And FIS-B data**, including weather and NOTAM updates during flight.

Selecting SkyView as GPS source

When an iOS device is connected to the SkyView Wi-Fi network, Airmate will automatically detect the SkyView network when switched to Flight mode and will propose you to use the SkyView as GPS source. Click on **Dynon SkyView** to select the SkyView as GPS source, you could also select the auto-fallback choice to revert automatically to iOS own GPS (Location Services) in case of lost network connectivity with the SkyView.

You could also use Airmate Advanced Settings to set the SkyView as a data source.



AHRS Data and Synthetic Vision

Clicking on Airmate attitude indicator will open the EFIS display showing an attitude indicator and flight parameters. If the terrain data has been loaded for the overflowed region, Synthetic Vision showing the ups and downs of rolling terrain ahead will be available.

The attitude displayed with use AHRS data received from the SkyView (pitch, bank and other parameters).



Traffic display

Airmate will display traffic received from ADS-B by the SkyView on its aviation map. An icon will show aircraft location and heading, its identification, and the altitude difference relative to own aircraft.



FIS-B Data

When FIS-B data is received from the SkyView, Airmate will process it and perform appropriate actions:

- Received TAF and METAR will be stored in embedded weather database to update it. If the TAF or METAR pertains to the destination airfield or an alternate airfield, it will be displayed in an information box.
- Behavior is the same for NOTAM.
- Other received messages may be viewed by clicking on the Tower antenna displayed in the EFIS display or flight parameters.

Using Airmate navigation database, displaying charts and plates on your SkyView

Airmate Aviation Database for SkyView

Airmate, provides a yearly subscription to its proven Aviation Database for your **Dynon SkyView**.



Tailored for VFR pilots, Airmate Navigation database will offer you more features than any other database:

- airports include not only large ICAO airports, but also **small, ultralight and private airfields**, as well as bush fields.
- waypoints include in addition to standard **IFR** waypoints, **Visual Reporting Points**.

- **obstacles** are provided when published by the authorities, when possible they are complemented by obstacles announced by NOTAM valid for the database cycle.
- in addition, Airmate provides you **free access to airport diagrams and VFR / IFR approach plates** in more than 200 countries.
- in the same way, **free VFR and IFR raster charts** are also provided in numerous countries.

AIRMATE Aviation Database is updated every 28 days at each AIRAC cycle.

To subscribe, go to [Airmate Shop](#)

How to load aviation data and obstacle data

As a database subscriber you will receive at every AIRAC cycle (every 28 days) download links for Airmate data. To load aviation and obstacle data in your SkyView:

- store the NavData aviation file (**airmate_av_data...dup**) and obstacle file (**airmate_obstacle_data...dup**) on the root directory of an USB stick (FAT-32 formatted).
- connect the USB stick to your Dynon unit. The database has been generated for your Dynon unit according to its serial number, if you have a dual unit installation it could be installed on both units.
- after Dynon unit launch, perform a long press on the two rightmost buttons to enter Setup mode.
- Select "System software" and then "Load file" and load the aviation database file.
- Then load the obstacle data file.
- After successful load, you could remove the USB stick. Don't remove the USB stick during load operations.

How to load raster charts

We provide our navigation database subscribers a free access to a wide range of VFR and IFR raster aeronautical charts worldwide, including Sectionals, WAC, other VFR charts, IFR Enroute charts and so on... In addition to this wide catalog of free charts, you could also if you wish purchase on our Airmate Web Shop commercial charts from all major publishers (Air Million, Avioportolano, Cartabossy, DFS, IGN, NATS, Rogers Data...).

- copy your provided chart key file **CHARTS...key** on the root directory of an USB stick.
- Select in the list the aeronautical raster charts you are interested in. Copy the .dcf files for those charts on a subdirectory named "Raster" on the same USB stick.
- connect this USB stick to your Dynon unit. It should be left connected during the whole flight.
- when flying, click on "Menu" button, then "Map Layers" and enable the needed layer (SECT, VFR WAC, ICAO, IFR, and so on...).

How to load and view airport diagrams and approach plates

In the same way, we offer our navigation database subscribers free access to airport charts and diagrams in more than 200 countries, so you could load them in your Dynon unit and display them from the SkyView airport detail page (using the "PLT" tab).

To install those plates:

- expand your country or continent ***-Plates...zip** file and copy the **ChartData** main directory to the root directory of an USB stick (FAT-32 formatted).
- connect this USB stick to your Dynon unit. It should be left connected during the whole flight.

When flying, click on any airport then on the "INFO" button to view airport information. The "PLT" tab will display the airport plate list, you could view any plate by clicking on its name.

You could use the same USB stick to store both airport plates (in ChartData directory) and aeronautical charts (in Raster directory).



Debugging

Introduction

Once your iPad/iPhone is connected to the Dynon SkyView network, SkyView will be automatically detected by Airmate, so no specific configuration is needed.

In case of issue, go to Airmate Settings/Advanced to check connectivity parameters as explained below.

Checking Network Parameters

ADS-B Receiver

Airmate may use the SkyView link to receive real-time traffic and AHRS data and should automatically detect the SkyView when the network name includes “SkyView”.

If you changed the network name, the SkyView may not be recognized: in this case you must switch on the device as ADS-B device providing AHRS inputs and indicate port 8384 for connectivity.

Please note that, since iOS 14, Apple blocks app connectivity to devices on the local network, until user approval. You will need to approve access to local network when requested.

GPS Source

This choice allows to switch between 3 different GPS sources:

ADS-B Receiver	
Wifi network	SkyView-DEMO
Is an ADSB-B device	<input checked="" type="checkbox"/>
ADS-B Device	SKYVIEW-DEMO
ADS-B device address	192.168.1.1
ADS-B device port	8384
ADS-B network SSID	
Device PIN code	-
Provides AHRS inputs	<input checked="" type="checkbox"/>
Display FLARM traffic	<input type="checkbox"/>

GPS Source	
Internal GPS (or external)	<input type="checkbox"/>
Simulator	No
SKYVIEW-DEMO	<input checked="" type="checkbox"/>

- **Internal GPS (or external)** is either the own iPhone/iPad internal GPS receiver or any Apple compatible MFI GPS receiver that is paired using Bluetooth with the iPhone/iPad. In both cases, Apple device will process location data and forward them to Airmate. This is the default choice.
- **Simulator:** location data are received from a simulator on the port number specified in Flight Simulation submenu and will replace the actual GPS location. The aircraft symbol on the map will be black instead of red. In this choice, you could indicate **No** (flight simulator inputs not used), **Once** (flight simulator inputs used for this session only) or **Always** (always use flight simulator inputs, don't forget to disable this option when you want to use GPS inputs during a real flight).
- **SkyView:** if the SkyView is detected, its name will be shown there, otherwise **No external GPS found** will be displayed. You could select the SkyView as GPS source for improved accuracy here. By default, using SkyView as GPS source will be proposed to you automatically when you will switch Airmate to Flight mode.

Contact Us

For any question, comment or issue, please contact:

airmate@airmate.aero

Online help and support forum is also available at www.airmate.aero

You could purchase on Airmate Shop Airmate Navigation Database subscription for your SkyView, as well plates and maps from commercial suppliers:

<https://www.airmate.aero/shop>

News are also posted on social networks:

- our web <https://www.airmate.aero>
- our Facebook page: <https://www.facebook.com/airmate.aero>
- Twitter https://www.twitter.com/airmate_aero
- Youtube: subscribe to our channel <https://www.youtube.com/channel/UCLr-J2NGIAGk-MqyJ4XZ1nA>

If you like Airmate, please spread the word! You can:

- rate Airmate on Apple Store or Google Play, the "Rate Airmate" choice in the Community menu will bring you to the rating page.
- like us on Facebook.
- send a message from the app to your friends to give them the pointer to download the app.
- subscribe to Airmate video tutorials on Youtube.
- Spread the world on Dynon forums.