

Key Features and Benefits

- Available Search & Rescue software
- NVG (optional)
- EGPWS/TAWS interface
- Primary means oceanic/remote operations
- Ultra high contrast display for maximum sunlight readability
- Simplified course reversal procedures
- Suitable for European B-RNAV applications
- Flash memory card for software upgrading

FreeFlightSM
SYSTEMSM



FreeFlight 2101 I/O Approach Plus

Airborne IFR GPS Navigation System

Provides IFR enroute, terminal and nonprecision approach capabilities for corporate, helicopter and regional commuter aviation.

The FreeFlight 2101 I/O Approach Plus is the full input/output version of our highly successful GPS Dzus rail mounted navigator series. Certified to TSO C-129 (A1), it may be used for supplemental enroute, terminal and approach IFR operations as well as European B-RNAV applications.

The FreeFlight 2101 I/O Approach Plus has been designed to minimize pilot workload during execution of approach procedures. Flying an approach is as simple as identifying the airport, selecting the approach and flying direct to each sequenced waypoint. The pilot is automatically prompted to enable the approach at 30 nm from the destination airport, an action that takes a single press of the Enter Key. All system functions required during the approach are automatically selected; all messages are automatically presented and removed.

This improved GPS receiver extends the automatic sequencing features of the FreeFlight 2101 I/O to provide more intuitive course guidance throughout the entire approach to landing. No pilot actions are required to interrupt and reactivate waypoint sequencing when navigating through procedure turns or holding patterns. If a missed approach is required, the pilot selects the Direct Key when located anywhere from inside the Final Approach Fix (FAF) to beyond the Missed Approach Point (MAP).

At the heart of the FreeFlight 2101 I/O Approach Plus is a 12-channel GPS receiver that greatly



enhances the rejection of jamming and interference from comm radios. The FreeFlight 2101 I/O Approach Plus continuously checks accuracy using Receiver Autonomous Integrity Monitoring (RAIM) and predicts RAIM conditions for the approach arrival time.

With less than 5% surface light reflection, information is readable in the most sunlit conditions.

Installation of the FreeFlight 2101 I/O Approach Plus is simplified. Only four external annunciators are required: Message (MSG), Waypoint (WPT), Approach (APR), and Hold (HLD). Connection to an external CDI/HSI for navigation and autopilot interface is available. Expensive resolver interfacing is not required, resulting in substantially reduced installation cost.

When integrated with an optional air data computer, the FreeFlight 2101 I/O Approach

Plus will display true air speed, density altitude, and pressure altitude. It also calculates and displays winds aloft and applies current wind to ETE and ETA calculations. The 2101 I/O Approach Plus is also recognized as having the easiest to use emergency search function.

Swapping of international and North America data base cards or data card updates can be handled while in flight. The same card slot can be used for flash memory updating of future software enhancements, thereby minimizing the cost and complexity of new features.

A notable feature of the FreeFlight 2101 I/O Approach Plus is the protection provided to the configuration settings from inadvertent operator use.

The FreeFlight 2101 I/O Approach Plus can be ordered with a comprehensive computer based training program that familiarizes the pilot with the receiver's functionality.

FreeFlight 2101 I/O Approach Plus

Airborne IFR GPS Navigation System

Features

Twelve-channel receiver with low susceptibility to comm radio jamming and interference; in-flight data card swapping, configuration data protection from inadvertent operator use; calculates and displays position, bearing, distance, ground speed, ground track, and the estimated time enroute on a high-contrast LED display, worldwide accuracy to 15 meters*; bright green, 2-line x 20-character LED display; GPS position/velocity update 5 times per second; full three-dimensional positioning; Jeppesen worldwide NavData data base; waypoint library holds up to 250 user-created waypoints; store up to 40 flight plans of up to 40 waypoints each (max. of 400 WPT); has a 20 nearest-airport search function; instantaneous bearing and range to and from any waypoint; Airwatch™ restricted airspace warning system; interfaces to air data computer, altitude aiding devices, autopilots, CDIs, external annunciators, and RS-422 serial output; two year warranty.

GPS Specifications

Type:	Twelve-channel receiver, L1 frequency, C/A code, continuous all-in-view tracking
Acquisition time:	1.5 to 3.5 minutes
Position update rate:	Five times per second
Dynamics:	800 knots, (4g tracking)
Accuracy:	Position: 15 meters RMS* Velocity: 0.1 knots steady-state* Altitude: 35 meters RMS (msl)* Time: UTC to nearest microsecond
Computation range:	Great circle: 0 to 999 nm
Distance resolution:	0 to 9.99 nm: in 0.01 nm increments 10 to 99.9 nm: in 0.1 nm increments 100 nm+: in 1.0 nm increments
Interfaces:	EAI Standards, RS-422 CDI, flags and external annunciators
GPS antenna:	Omnidirectional flat microstrip with integral preamp. TNC connector
Display:	LED: 2 lines of 20 characters each High-intensity, green alphanumeric

Interface (Input/Output Summary)

Inputs

ARINC 407 synchros:	Heading, Altitude, and TAS
ARINC 545/565:	TAS (AC and DC formats)
ARINC 419/429:	Air Data, Heading, Fuel
Serial: RS-232/422:	Air Data
Discrete inputs:	Altitude Valid, Synchro Valid, TAS Valid, Oleo

Outputs

ARINC 407 Synchros:	Three Synchros, Independently programmable
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ARINC 419/429:	EFIS (Flight Plan Overlay), FMS (GPS Position), both ARINC & GAMA labels (2w and 6w) EGPWS/TAWS software (optional)
Serial: RS-232/422:	Differential Data Logging
Discrete outputs:	Steering Valid, Synchro Valid
Composite roll steering:	393 mV/degree output
Analog deviation:	Crosstrack, Glideslope

Physical Characteristics

Size:	Receiver: 5.75"W x 7.68"D x 3.0"H (146.05mm x 196.85mm x 76.2mm) Antenna: 3.75"W x 4.0"D x 0.75"H (95.25mm x 101.6mm x 19.05mm)
Weight:	Receiver: 3.25 lbs. (1.48 kg) Antenna: 0.4 lbs. (200g)
Power:	10-32 VDC, negative ground 3.0 amps @ 14 VDC 1.5 amps @ 28 VDC 42 watts
Operating temp:	Receiver: -55° to +70°C Antenna: -55° to +70°C
Storage temp:	Receiver: -55° to +85°C Data Card: -20° to +60° C
Operating humidity:	95% @ to 50°C
Operating altitude:	Receiver: Up to 50,000 ft. Antenna: Up to 50,000 ft

Regulatory Compliance

System:	FAA TSO C-129 (A1) FAA AC 20-138 JAA B-RNAV **FAA 8110.60
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*Note: When Selective Availability (S/A) not implemented. All GPS receivers subject to position and velocity degradations when Department of Defense S/A is imposed. GPS unit complies with U.S. Department of Commerce/U.S. GPS Industry Council export control provisions.

**Dual systems required

NavData Card is a trademark of Jeppesen, Inc.

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Specifications subject to change without notice.



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