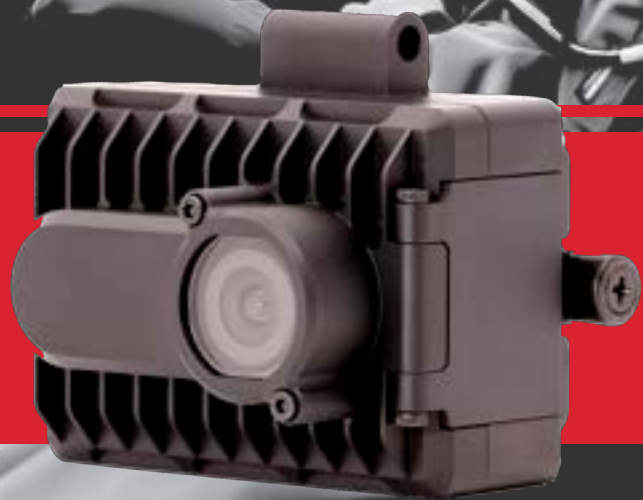




FLIGHT DATA MONITORING  
+  
FLIGHT OPERATIONS  
QUALITY ASSURANCE



APPAREO

INCREASE SAFETY | FLIGHT TRAINING | ASSET MANAGEMENT | INCIDENT INVESTIGATION | MAINTENANCE

# AIRS-400

AIRS-400 is a stand-alone flight data recording solution that captures accurate flight data, plus cockpit audio and 4k video. It's small, lightweight, and easy to install, making it ideal for any rotor or fixed-wing aircraft. Using its internal sensors, AIRS-400 records an entire cache of flight data to an internal crash-hardened memory as well as a removable SD card to help you better manage the safety and performance of your aircraft.

## INFORMATION CAPTURED:

- Attitude data (pitch, roll, yaw, etc.)
- WAAS GPS data (date/time, latitude, longitude, speeds, altitude, etc.)
- Cockpit video
- Crew and ATC communication
- Ambient audio

## TECHNICAL OVERVIEW:

- 4K images (8 MP)
- 30 images per second
- h.264 encoded images
- 90 degree Field-Of-View
- 128 GB to 2 TB SD cards
- 35 GB internal memory
- 100 Mbps Ethernet
- 25800 DMIPS processor

## OPTIONAL FEATURES:

- ARINC 429 input
- Cellular data offload
- ED-155 audio output
- RS-422 output

## CERTIFICATIONS

- FAA STC-AML Part 27
- Part 29, Part 23, Part 25 field approval or minor modification



Dimensions: 2.8" x 3.4" x 2.6"  
Weight: 11 ounces



Power  
ICS  
RS-422

Ethernet  
ARINC 429  
Audio Out

GPS

Cellular

## EASY INSTALLATION + RETROFITTABLE

Unlike other flight recording solutions, Appareo's AIRS-400 is the only device you'll need to install in your aircraft. With its own internal sensors, AIRS-400 only requires aircraft power and ground; and a small GPS antenna to be installed inside the aircraft. A standard intercom system connection is included to record crew and ATC communications in addition to the ambient audio already being recorded. There are no special tools required for the installation, and it only takes about one day to complete.

If you are upgrading from Appareo's Vision 1000, the AIRS-400 bracket mounting pattern, power connector, and GPS connector are compatible for an easy drop-in replacement.



Image Specifications	
Image Frame Rate	30 fps
Image Size	3840 x 2160
Compression Methodology	H.264
Horizontal Field of View	90°
Vertical Field of View	45°

Audio Record Specification	
ICS Input Range	up to 44.1 KHz
Audio Input per ED-112 Max Input Voltage	3.0 VRMS
Ambient Area Audio Recording (per DO-214)	up to 32 KHz

Audio Output Specification	
Nominal Output Level	1 Vrms (600 ohm load)
Max Output Level	2 Vrms (600 ohm load)
Output Impedance	< 600 ohms
Frequency Range	100 Hz - 10 KHz
Flat Frequency Response	< 3 dB

Inertial Measurement Unit (IMU) Specification	
IMU Record Rate	4 Hz
Rotational Rate Range	250 dps
Acceleration Range	+/- 4g
Sense Axis	triaxial
Heading Accuracy	2°
Roll and Pitch Accuracy	1.5°

GPS Specification	
GPS Constellations Supported	GPS, GLONASS
GPS Receiver Type	WAAS
GPS Update Rate	4 Hz
GPS TTFF	< 2 minutes

On Board Flash Memory	
Storage Capacity	35 GB
Storage Time	200 hours IMU, 100 hours of ARINC, 2 hours of image/audio

Removable Flash Memory (SD Card)	
Storage Capacity (based on 128 GB)*	200 hours of IMU, 100 hours of ARINC, 8 hours image/audio

\*Hours of image/audio data changes depending on card size. SD cards with up to 2 TB storage capacity may be supported.

ARINC 429 Support	
Baud Rates Supported	12.5 and 100 Kbps

Wired Communication Specification	
Ethernet per IEEE 802.3U (100BASE-TX)	at least 5 MB/s
RS-422 supporting ANSI / TIA / EIA-422-B Standards	230.4 kbps Bidirectional

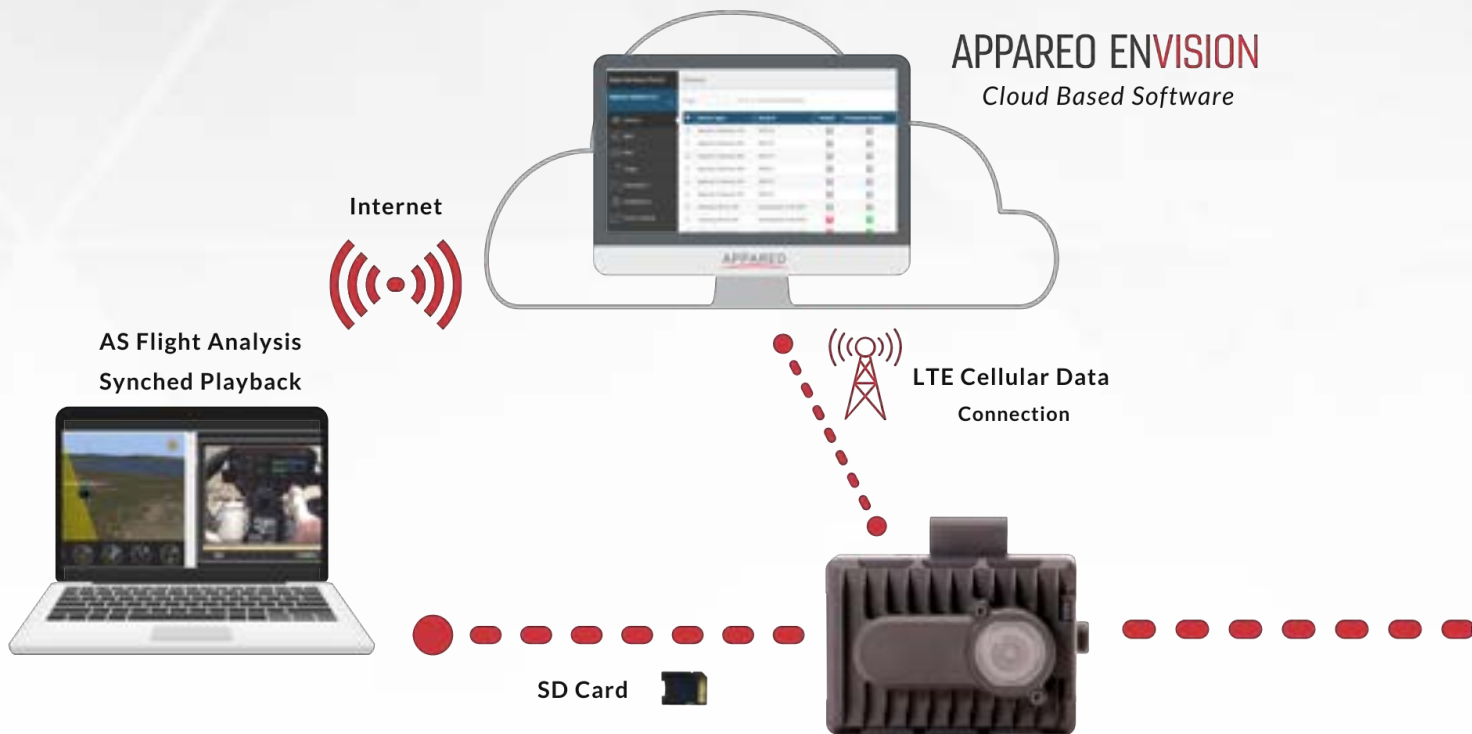
Cellular Communication Specification	
LTE M1	B1, B2, B3, B4, B5, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B66

General Specifications	
Input Supply Voltage	10.25 - 32.2 VDC
Input Supply Current	2 Amps
Weight	310 grams
Dimensions	71.09 mm x 86.47 mm x 65.69 mm
Operating Temperature	-40° C to +55° C
Time to Record Power Application	<30 seconds

# CONNECTIVITY + COMPLIANCE

## FDM ECOSYSTEM

Appareo's industry-leading advanced hardware + software solutions for Flight Data Monitoring (FDM) are easy to use and implement for your Safety Management System (SMS). Pair Appareo's certified crash-hardened flight data recorder with the playback and analysis software, and your fleet will be equipped to fly safer. Get the benefits of an advanced FDM solution without the complexities.



## COMPLIANCE

AIRS-400 is 14 CFR 135.607 compliant.

ED-155 regulatory compliance is not required in most parts of the world. For full compliance, the camera needs to be paired with an external Recoverable Data Module (RDM). Most installations do not require an RDM because the AIRS-400 flight data recorder is capable of surviving accidents without a second module, and it acquires and records ADRS and AIRS data.

Existing Avionics



ARINC 429 input/output

RS-422



Crash- Hardened  
Recoverable Data Module (RDM)

# FDM SOFTWARE

## EASY TO USE AND IMPLEMENT

When it comes to flight safety, there's nothing more valuable than accurate statistics, actionable trending data, and true visual representations of every moment during a flight. Maximize the effectiveness of your flight data with a powerful software suite for visualization and analysis that's easy to use.

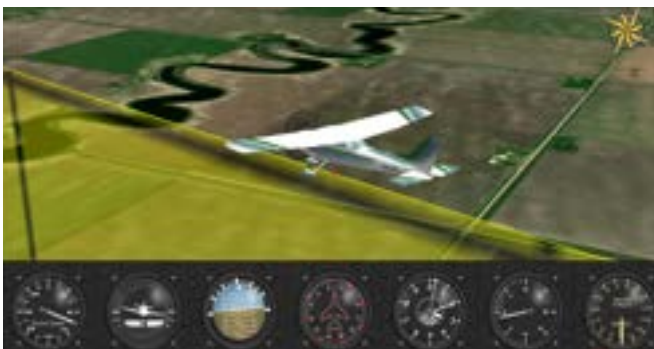
## PLAYBACK UTILITY

Included with AIRS-400, the Playback Utility replays imaging, audio, and flight data recorded on a removable SD card.



## AS FLIGHT ANALYSIS SOFTWARE

Replay the flight with our rich 3D visualization software that incorporates a topographical map overlaid with satellite imagery. Your flight path and accurate flight position show you exactly when, where, and how the aircraft was being operated. This software will also sync with the Playback Utility, so you get a full picture of all recorded information.



# APPAREO ENVISION

## YOUR VIRTUAL FLIGHT ANALYST

Appareo EnVision provides deep access to raw data while delivering it in a simple, clean, easy-to-use interface that can automatically filter flight data and identify flights for further review. EnVision is cloud-based, so you can easily manage your fleet anywhere you have the internet. Review past and current flight data, generate detailed reports, and trend the safety improvements in your flight operations.

## EVENT TRIGGERS + AUTOMATED ANALYSIS + REPORTING

Flight data is automatically analyzed against customized event triggers that are set for different aircraft or operations defined in your Safety Management System (SMS). Detailed reports are easy to generate so that you can understand the event duration and severity, and use that information to drive actionable improvements in your flight briefings. Unique to EnVision, event triggers can be based on above-ground altitude (AGL) without needing a radar altimeter.





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