

# VISION 1000 SPECIFICATIONS

## VISION 1000 CAPTURES:

- WAAS GPS data (latitude, longitude, speeds, altitude, etc.)
- Attitude data (pitch, roll, yaw, etc.)
- Crew and ATC communications
- Cockpit imaging
- Ambient audio

## TECHNICAL SPECIFICATIONS

AUDIOVISUAL SPECIFICATIONS	
Image Frame Rate	4 Hz
Audio Frequency Range	50 Hz - 15 kHz
Vision 1000 General Specifications	
Input Supply Voltage	12.0 - 32.0 VDC
Input Supply Current	100 mA
Weight	8.8 oz
Dimensions	4.02" x 2.08" x 2.48"
Roll and Pitch Accuracy	< 1.5° RMS
Yaw Accuracy	< 2.0° RMS
GPS Accuracy	2.5 m CEP, 5.0 m SEP
Operating Temperature	-40°C to + 70°C
GPS SPECIFICATIONS	
GPS Receiver Type	L1 Frequency, C/A Code, 16 Channels
GPS Update Rate	4 Hz
GPS TTFF*	2 min
Signal Reacquisition	< 1 s
GPS Dynamics	≤ 4 g
Antenna Frequency	1575.42MHz ± 2MHz
Polarization	RHCP
Antenna Dimensions	1.9" X 2.3" X 0.6"
MEMS RATE GYROSCOPES	
Sense Axis	X, Y, Z
Dynamic Range	300°/s
Sample Rate	64 Hz
MEMS ACCELEROMETERS	
Sense Axis	X, Y, Z Quad Redundant
Range	±10 g and ±1.7 g
Resolution	5 mg
Sample Rate	64 Hz

REMOVABLE FLASH MEMORY				
Card Type	SD HC			
Storage Capacity	16 GB 4 hours image/audio, 200+ hours inertial			
	32 GB 8 hours image/audio, 200+ hours inertial			
ON BOARD FLASH MEMORY				
Storage Capacity	8 GB 2 hours image/audio, 200+ hours inertial			
VISION 1000 RECORDED PARAMETERS				
Parameter	Unit	Rate	Resolution	Accuracy
Latitude	degrees	4 Hz	1x10 <sup>-7</sup> deg	2.5 m CEP 2σ
Longitude	degrees	4 Hz	1x10 <sup>-7</sup> deg	2.5 m CEP 2σ
Altitude (GPS)	meters	4 Hz	1 mm	5m SEP 2σ
Ground Speed*	knots	4 Hz	*	< 5 knots**
Vertical Speed*	feet/minute	4 Hz	*	< 50 ft/min**
Heading*	degrees	4 Hz	*	< 2 deg 1σ
Pitch Altitude*	degrees	4 Hz	*	< 1.5 deg 1σ
Roll Attitude*	degrees	4 Hz	*	< 1.5 deg 1σ
Pitch Rate	deg/second	4 Hz	0.01 deg/sec	.1 deg/sec/sqrt(Hz)
Roll Rate	deg/second	4 Hz	0.01 deg/sec	.1 deg/sec/sqrt(Hz)
Yaw Rate	deg/second	4 Hz	0.01 deg/sec	.1 deg/sec/sqrt(Hz)
Normal Acc.	g forces	4 Hz	0.9 ug	10 mg 2σ
Longitudinal Acc.	g forces	4 Hz	0.9 ug	10 mg 2σ
Lateral Acc. (slip)	g forces	4 Hz	0.9 ug	10 mg 2σ

\* These parameters are derived as part of a post processing algorithm — resolution is limited by the double precision floating point calculation

\*\*Approximate engineering estimates

APPAREO  
AVIATION

VISION  
1000

FLIGHT DATA MONITORING

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IT'S SMALL

BUT WHAT YOU  
GET IS A

BIG DEAL



# THIS IS VISION 1000

The easiest and most affordable  
**Flight Data Monitoring.**



(Actual size)  
4" x 2.5" x 2"



With this unassuming device, you can quickly and easily record flight data and simultaneously implement a comprehensive Flight Data Monitoring (FDM) program.

Here is what you get:

## **COMPREHENSIVE FLIGHT DATA RECORDING**

- Attitude data (pitch, roll, yaw, etc.)
- WAAS GPS data (lat, long, speeds, altitude, etc.)
- Cockpit imaging
- Crew and ATC communications
- Ambient audio
- Records to both internal crash-hardened memory and a removable SD card (8 hours imaging/audio, 200 hours flight data)

## **EASY INSTALLATION**

- Requires only 12-32 VDC (100 mA) and ground
- Small size (0.55 lbs, 4" x 2.5" x 2")
- Installs in any aircraft — one solution for the entire fleet

## **3D FLIGHT REPLAY SOFTWARE**

- Easily retrieve your flight data with a removable SD card
- Synchronized imaging, audio and 3D replay
- Review the entire flight overlaid on a topographical map and wrapped in satellite imagery

## **DEMONSTRABLE RETURN ON INVESTMENT**

- Attain concrete performance and safety measurement for flight ops
- Collect critical troubleshooting data for maintenance personnel
- Demonstrate your safety commitment to win more clients

## **COMPLIANCE WITH FAR 135.607 FOR HELICOPTER AIR AMBULANCE OPERATORS**

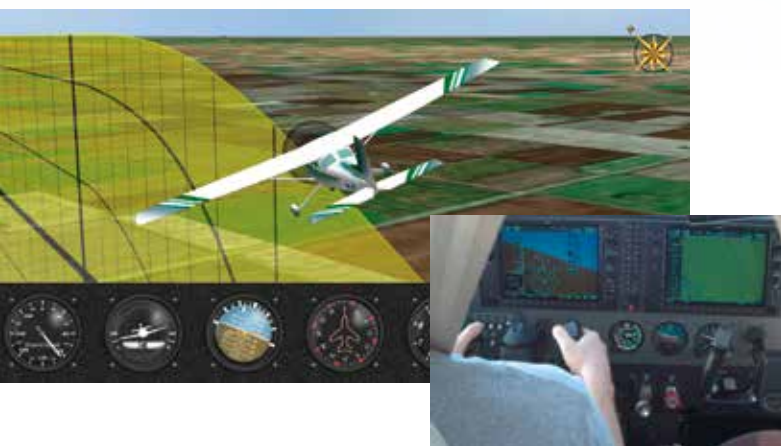
# TURN-KEY FLIGHT DATA MONITORING SUITE

Choose the solution that will best meet your needs today, with options to grow your FDM program in the future.



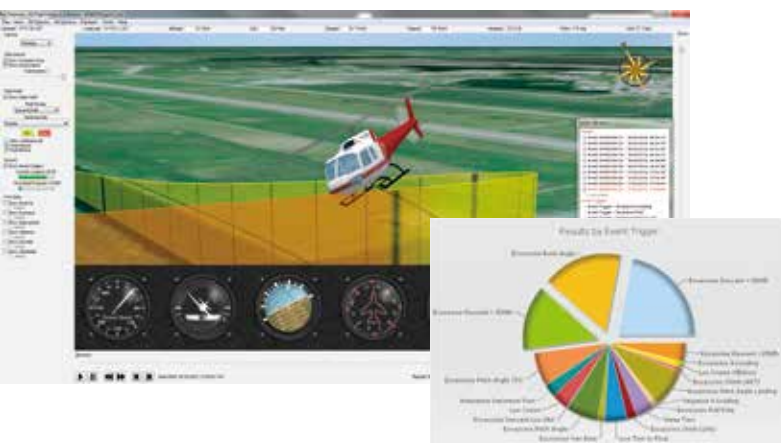
## Vision 1000

- Record flight data, audio, and cockpit imaging
- Small, light, and affordable
- Easy, one-day installation
- Playback utility included
- Meets FAA requirements for Helicopter Air Ambulance operators to be 135.607 compliant



## Visualization Software

- Synchronized imaging, audio, and 3D playback
- Flight training
- Incident investigation
- Maintenance troubleshooting



## FDM Software

- Automated event analysis
- Detailed reports
- Web-based accessibility
- Hosting to save and store flight data
- Easily manage your fleet from anywhere