



 **ALERTS**

Vision 1000

APPAREO
SYSTEMS

ALERTS Vision 1000

Image, audio and inertial data

The Vision 1000 is a cockpit imaging and flight data monitoring (FDM) device wrapped into one. The system captures critical inertial and positioning data (i.e location, attitude, etc.) as well as cockpit imagery (instrument panel, flight controls, partial exterior view) and audio.

The flight data and imagery are stored on a crash-hardened memory module as well as a removable SD HC card for use in FDM/FOQA programs. The Vision 1000 offers a low-cost, lightweight solution for collecting and analyzing flight data.

Because of its small size and ease of mounting, the Vision 1000 is the perfect FDM/FOQA solution for any type of aircraft or operator.



Actual Size

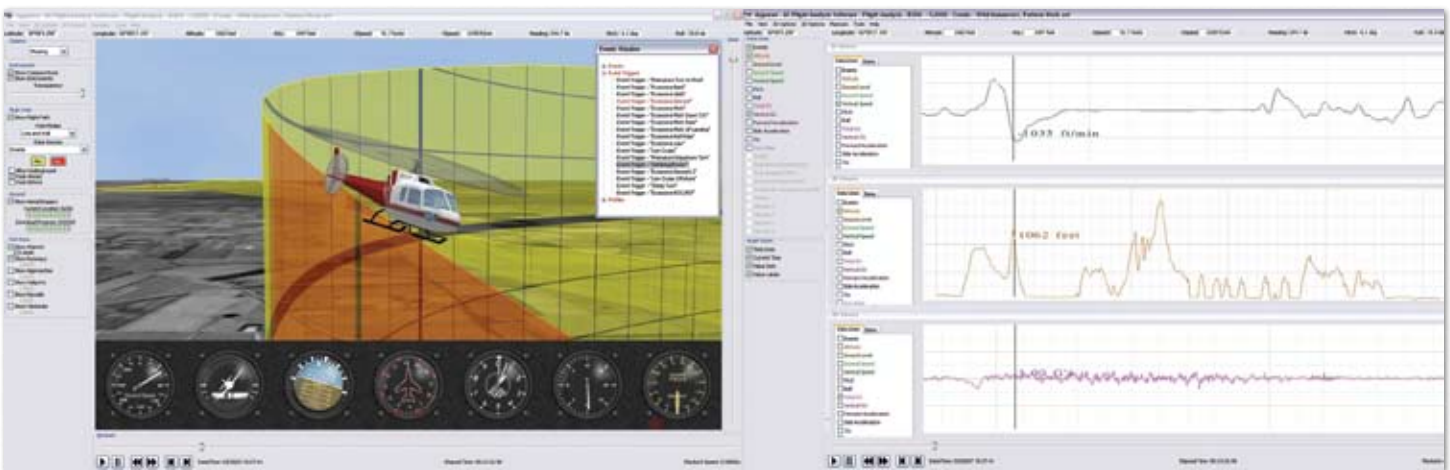
Ideal tool for collecting flight data on light and legacy aircraft.

Low Cost - The Vision 1000 is a fraction of the cost of traditional flight data collection systems.

Lightweight - The system weighs only 8.8 oz.

Minimally Intrusive - Requiring only 28 VDC and ground to install, the system does not require extensive integration like other flight data management systems.

Actionable Information - Provides only the information you need to make important decisions. There's no need to sort through excess data to find what matters.



Integration with ALERTS

The Vision 1000 integrates fully with Appareo's award-winning ALERTS flight data management system. Flight data can be easily transferred from the SD card to Appareo's servers for analysis with Appareo's cutting-edge management and visualization software packages.

A joint development between:



Vision 1000 mounted in a Eurocopter AS350



AS350 cockpit image as captured by the ALERTS Vision 1000.

ALERTS: Award-winning FDM system

- American Helicopter Society's Harry T. Jensen Award
- SAFE Foundation's M.P. Koch Award
- Aviation Week & Space Technology Product Breakthrough of the Year.



Contact Appareo Today

For more information on the ALERTS Vision 1000, or to find out how Appareo's leading engineering team can design a solution for your specific needs, call or visit:

www.appareo.com
 sales@appareo.com
 (701) 356-2200

Vision 1000 Recorded Parameters				
Parameter	Unit	Rate	Resolution	Accuracy
Latitude	deg	4 Hz	1x10 ⁻⁷ deg	2.5 m CEP 2 σ
Longitude	deg	4 Hz	1x10 ⁻⁷ deg	2.5 m CEP 2 σ
Altitude (GPS)	meters	4 Hz	1 mm	5.0 m SEP 2 σ
Ground Speed*	knots	4 Hz	*	< 5 knots **
Vertical Speed*	ft/min	4 Hz	*	< 50 ft/min **
Heading*	deg	4 Hz	*	< 2.0 deg 1 σ
Pitch Attitude*	deg	4 Hz	*	< 1.5 deg 1 σ
Roll Attitude*	deg	4 Hz	*	< 1.5 deg 1 σ
Pitch Rate	deg/sec	4 Hz	0.01 deg/sec	0.1 deg/sec/sqrt(Hz)
Roll Rate	deg/sec	4 Hz	0.01 deg/sec	0.1 deg/sec/sqrt(Hz)
Yaw Rate	deg/sec	4 Hz	0.01 deg/sec	0.1 deg/sec/sqrt(Hz)
Normal Acc.	g forces	4 Hz	0.9 ug	10 mg 2 σ
Longitudinal Acc.	g forces	4 Hz	0.9 ug	10 mg 2 σ
Lateral Acc. (slip)	g forces	4 Hz	0.9 ug	10 mg 2 σ

Audio/Visual Specifications	
Image Resolution	2 MP @ 4 Hz; 1 MP @ 8 Hz
Image Frame Rate	4 Hz - 8 Hz
Audio Frequency Range	50 Hz - 15 kHz

Vision 1000 General Specifications	
Input Supply Voltage	14.0 - 32.0 VDC
Input Supply Current	100 mA
Weight	8.8 oz
Dimensions	4.0" x 2.1" x 2.5"
Roll and Pitch Accuracy	< 1.5 deg RMS
Yaw Accuracy	< 2.0 deg 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 sec
GPS Dynamics	≤ 4 g
Antenna Frequency	1575.42 MHz ± 2 MHz
Polarization	RHCP
Antenna Dimensions	1.9" X 2.3" X 0.6"

MEMS Rate Gyroscopes	
Sense Axis	X, Y, Z
Dynamic Range	300 deg/sec
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	
Storage Capacity	8 GB
Storage Time	2 hours image/audio, 16 hours inertial
Card Type	SD HC

On Board Flash Memory	
Storage Capacity	8 GB
Storage Time	2 hours image/audio, 16 hours inertial

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

**Engineering estimates

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