AEROcontrol
Precise Positioning & Attitude Determination

Image showing the Inertial Measurement Unit (IMU) and the *AEROcontrol* computer

System Specifications:

PERFORMANCE	*AEROcontrol IId*	Performance Test*
Position (m)	0.1	0.08
Velocity (m/s)	0.005	0.005
Roll / Pitch (deg)	0.004	0.003
True heading (deg)	0.01	0.007

*Results achieved during the “Vaihingen / Enz test 2000” with AEROcontrol IId

PHYSICAL	*AEROcontrol* Computer	IMU
Dimensions:		
Length	262 mm	185 mm
Width	208 mm	138 mm
Height	132 mm	133 mm
Weight	4.0 kg	3.2 kg
Power consumption	40 W @ 20 - 32 VDC	20 W @ 20 - 32 VDC
Operating temperature	-20°C to +40°C	-25°C to +60°C
Storage temperature	-20°C to +70°C	-25°C to +80°C

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GENERAL	
IMU	high performance fibre-optic gyros (FOG) durable robust design for high-vibration environments adapter plate for IMU mounting to sensors
	transmission rate 64 Hz 128 Hz 256 Hz
	FOG-Bias: 0.1 deg / h FOG-RW: 0.02 deg / sqrt(h) resolution: 0.0038 mrad (@ 128 Hz) resolution: 0.0019 mrad (@ 256 Hz)
	accelerometer bias: 0.5 mg resolution: 0.122 *10 -³ m / s (@ 128 Hz) resolution: 0.061 *10 -³ m / s (@ 256 Hz)
Computer	internal 72-channel L1 / L2 / L-band triple frequency GPS+GLONASS receiver low noise, raw GPS data (2 Hz), DGPS ready includes shock-absorbing tray for mounting
Data storage	PC card, 512 MB

INTERFACES	
I/O	DGPS input (RS232), PPS output (TTL), event input (TTL), time tag (RS232), binary real-time output (RS232), camera mount PAV30 / GSM3000 (RS232)
Protocol	AUX GPS Input (RTK, OmniSTAR-HP), RTCM104 DGPS corrections input **NMEA Standard ASCII messages:** $GPGGA, $GPVTG **Binary Protocol:** time, position, attitude, speed, track, velocity **ASCII Protocol:** PAV30 Gimbal encoder input, *LiteMapper*, time tag, GSM3000 Gimbal encoder + leveling
Options	- combination with the flight management system *CCNS4* or as a stand-alone system - external GPS receiver options: - OmniSTAR - OmniSTAR-HP - NavCom StarFire

SOFTWARE	
Processing software	*AEROoffice* for IMU post-processing, incl. GrafNav of NovAtel / Waypoint for GPS post-processing and Bingo30 of GIP for aerial triangulation (AT)

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