




Conventional Fixed-Wing & Helicopter Platforms
UAV Platforms

| | DAARC500 | DAS500 | AARC500 | AARC510 | AARC52 | DAS52 | AARC51 |
|---|--|------------|-----------------|---|---------------|---|---------------|
| |  | | |  | |  | |
| Stage in life-cycle [a] | Active | Mature | Mature | Active | Active | | Mature |
| Max. number of magnetometer inputs (type) [b] | 8 (Cs, K, He) | | 8 (Cs, K, He) | 4 (Cs, K, He) | 2 (Cs) | | 1 (Cs) |
| Front-End (FE) maximum sampling rate | 1280 Hz | | 1280 Hz | 1280 Hz | 1280 Hz | | 1280 Hz |
| Real-time compensation, total-fields & gradients | Yes | No | Yes | Yes | Yes | No | Yes |
| Data output/recording rate | 80 Hz | 160 Hz | 80 Hz | 80 Hz | 160 Hz | | 80 Hz |
| Adaptive compensation | Yes | No | Yes | Yes | Yes | No | Yes |
| Fluxgate (vector) magnetometer included | Yes | Optional | Yes | Yes | Yes | No | Yes |
| General-purpose data acquisition (DAQ) | | | | | | | |
| Analog input module [c] | 16 DIFF / 32 SE | | N/A | N/A | N/A | | N/A |
| FE analog inputs [c] | 4 DIFF | N/A | 4 DIFF | 4 DIFF | 2 DIFF | | 2 DIFF |
| Serial I/O (RS232) | 8 ports | | N/A | 1 port [d] | 1 port [d] | | N/A |
| Ethernet DAQ port (# logical connections) | 1-Gbps (2) | 1-Gbps (1) | N/A | 1-Gbps (3) | 1-Gbps (3) | | 1-Gbps (2) |
| Ethernet server port [e] | Yes | | Shared | Shared | Shared | | Shared |
| Embedded Flash solid-state drive (SSD) | ≥ 32 GB | | ≥ 32 GB | ≥ 32 GB | ≥ 32 GB | | ≥ 32 GB |
| Embedded mass storage (HDD or SSD) | SATA, ≥ 1 TB | | No | No | No | | No |
| Redundant real-time recording in two media | Yes | No | No | No | No | | No |
| User-customizable FE processing | ✓\$ Advanced | | ✓\$ Advanced | ✓\$ Advanced | ✓ Advanced | | ✓ Advanced |
| On-board electronics (OBE) compensation | ✓\$ (4) | X | ✓\$ (4) | ✓\$ (4) | ✓ (2) | X | ✓ (2) |
| Gating of mag readings for concurrent use with EM | ✓\$ | | ✓\$ | ✓\$ | ✓ | | X |
| Post-flight compensation & analysis functions | ✓\$ | X | ✓\$ | ✓\$ | ✓ | X | ✓ |
| GPS – Interface for external receiver | ✓ | ✓\$ | ✓\$ | ✓ | ✓ | | ✓ |
| Embedded receiver | ✓\$ | ✓\$ | ✓\$ | ✓\$ | ✓\$ | | X |

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| Embedded barometric-pressure & temp. sensors [f] | ✓\$ | X | X | ✓\$ | ✓ | ✓ | ✓ |
| Real-time streaming data output – Serial (RS232) | Yes | Yes | Yes | Yes | Yes | Yes | No |
| Ethernet | Yes | No | Yes | Yes | Yes | Yes | Yes |
| Real-time chart recorder output – GR33A | Yes, serial | | Yes, serial | No | No | No | No |
| GP300 | Yes, serial | | Yes, serial | No | No | No | No |
| Remote control from serial (RS232) port | Yes | | Yes | Yes | Yes | Yes | No |
| Remote control from Windows (via Ethernet) | Yes | | Yes | Yes | Yes | Yes | Yes |
| FTP server (via Ethernet) | Yes | | Yes | Yes | Yes | Yes | Yes |
| Host processor module | Core 2 Duo technology | | Core 2 Duo technology | Intel Atom | Intel Atom | Intel Atom | Intel Atom |
| Serial I/O module | 2 nd -gen. HW | | N/A | N/A | N/A | N/A | N/A |
| Other general-purpose I/O | 5X USB 2.0 | | 5X USB 2.0 | 4X USB 2.0 | 3X USB 2.0 | 3X USB 2.0 | 3X USB 2.0 |
| Embedded display/mouse | Yes | | Yes | No | No | No | No |
| External display via standard VGA port | Yes | | Yes | Yes | Yes | Yes | Yes |
| Scan/Error LED indicators | Front & rear panels | | Front & rear panels | Rear panel only | Rear panel only | Rear panel only | Rear panel only |
| Real-time operating system (RTOS) | QNX 6.5 | | QNX 6.5 | QNX 6.5 | QNX 6.5 | QNX 6.5 | QNX 6.5 |
| Features tailored to UAV applications | No | | No | Some | Advanced | Advanced | Advanced |
| Embedded power/decoupler for mag sensors | ✓\$ | | ✓\$ | ✓\$ | ✓ | ✓ | ✓ |
| Mounting | 19"-rack | | 19"-rack | Strap-down | Strap-down | Strap-down | Strap-down |
| Dimensions | 19 x 5¼ x 15" | | 19 x 5¼ x 15" | 8 x 5¼ x 12" | 5¼ x 5¼ x 8½" | 5¼ x 5¼ x 8½" | 5¼ x 5¼ x 8½" |
| Weight | 19 lb (8.6 Kg) | | 18 lb (8.2 Kg) | 10 lb (4.5 Kg) | < 4.4 lb (2.0 Kg) | < 4.4 lb (2.0 Kg) | < 4 lb (1.8 Kg) |
| Operating temperature | 0 to +50°C | | 0 to +50°C | 0 to +50°C | -10 to +50°C | -10 to +50°C | -10 to +50°C |
| Cost | | | | | | | |
| Data sheet | DAARC500 Data Sheet | DAS500 Data Sheet | AARC500 Data Sheet | AARC510 Data Sheet | AARC52 Data Sheet | DAS52 Data Sheet | AARC51 Data Sheet |

- ✓\$ Available as an option
- ✓ Included
- X Not available

- a. 'Active' products recommended for new designs – undergo continuing enhancements and updates. 'Mature' products are static.
- b. Cs: Cesium-vapour, optically-pumped magnetometers with Larmor output modulated onto power (e.g., CS-3, CS-L, CS-VL, G-822A, G-823A); K: Potassium-vapour magnetometers with Larmor output option on dedicated connection (e.g., GSMP-35A); He: Helium-vapour magnetometers with Larmor output on dedicated connection.
- c. All analog inputs: 16-bit res. DIFF: differential; SE: single-ended. Analog input module: ±10V or ±5V. FE analog inputs: ±5V (standard in AARC51/52 and DAS52, optional in others).
- d. Dedicated to capture & recording of 'Line Number' from AgNav Navigation System.
- e. DAARC500 & DAS500: dedicated port; others: shared with Ethernet DAQ port. Server functions (FTP server, remote control, streaming data output) itemized separately.
- f. Through FE analog inputs. AARC51/52, DAS52: 2 dedicated inputs in addition to 2 general-purpose inputs; DAARC500, AARC510: use 2 of the 4 FE analog inputs.