

RELEASE NOTES

DAARC500 (Gen-2)

DAS & Adaptive Aeromagnetic Real-Time Compensator

Host Firmware Release RMS11030-03-F

These release notes contain important information about the new firmware and how it will affect the performance of instruments in which it is installed. The notes outline functional enhancements, adaptive changes and, if applicable, problem corrections.

Please read this documentation carefully. References to pertinent sections in the product's user's guide are shown in square brackets.

Compatibility:

(D)AARC500 Front End – Requires firmware RMS1877-04-E or later

DAARC500 Support Software – Requires v. Jul/2019 or later

1. For increased reliability the system now supports concurrent, real-time (redundant) data recording on two different media. When redundant recording is enabled, ALL relevant data files (magnetics/GPS, analog, serial, and TCP/IP) are recorded simultaneously on the two devices.

The DAARC500's real-time operating system (RTOS) maintains the file systems on both recording devices with the highest level of robustness and reliability.

Separate bargraphs, permanently visible in the user interface's main dialog, monitor in real-time storage capacity in each device. Numerical values (% used) are also shown within the indicators.

[User's Guide: Section 3.4.2]

2. The firmware now supports user-defined gradient geometries in systems with more than 4 magnetometer inputs.

In preceding firmware releases the geometry of the three gradients supported has been fixed: $G1 = A - B$ (lateral), $G2 = (A+B)/2 - C$ (longitudinal), and $G3 = C - D$ (vertical).

The mechanism implemented in the new firmware allows easy (user-defined) configuration of a variety of useful gradient geometries, which may be tailored to the specific requirements of a project (e.g., alternate forms of tri-axial configurations, multiple vertical gradients, etc.).

[User's Guide: Section 3.4.1.3]

3. Support of optional output of FOM estimates.

When this option is enabled a rough estimate of the FOM measure, intended only as a general reference, is displayed together with the core (standard-deviation-based) calibration statistics the system has always provided.

[User's Guide: Section 3.4.1]

4. New facilities for analysis of calibration flights' solutions, providing insight into changes undergone by the magnetic signature of an installation.

Measures calculated for the various 'classes' of solution terms (e.g., permanent, induced, etc.) assess the change in relevance for each class between any pair of calibration solutions.

(This replaces the *display terms* function of previous firmware releases.)

[User's Guide: Section 3.5.1.3]

5. Enhancements to the Remote Control Port interface: (a) new command to clear RLSQ initial conditions; (b) support of an 'extended' status packet (in addition to the 'legacy' packet of previous firmware revisions), which encodes also the recording status of the system.

[User's Guide: Section 3.4.1]

6. Minor/cosmetic: Formatting enhancements to the system log file ('monasc.txt').