

## (D)AARC5XX Release Package 2025 – Summary

### Host FW:

		DAARC500 11030-04-H	AARC510 11031-03-H	AARC52 11122-03-H	DAS52 11164-01-F
1	Support for a new Front-End transfer function (MA825s). It complements a comprehensive collection of both pre-defined and customizable transfer functions, carefully designed for airborne geophysical applications. MA825s has a bandwidth directly proportional to the host sampling rate and excellent attenuation beyond the pass-band. This replaces a previously 'reserved' option. [Sec. 3.4.1]	•	•	•	•
2	The Event-3 tag in recorded and transmitted data packets may now, optionally, reflect host-subsystem-generated warnings (in addition to front-end-generated errors). When transmitted in real-time to a navigation system (Ag-Nav), this provides pilots/operators with a simple 'green-light/red-light' indication of system readiness. [Sec. 2.4.1.2, 3.4.1]	•	•	•	•
3	Two cells in the custom numerical display now allow real-time monitoring of any system variable, with user-defined alarm thresholds and trigger modes. Complements similar functionality in place for monitoring quality-control signals for total-field magnetometers as well as the fluxgate magnetometer. [Sec. 3.3.2]	•	•	•	•
4	The firmware now supports real-time calculation and display of the largest gradient measured along the calibration flight path by any one of the total-field magnetometer sensors in the system. This is a useful quality-control measure: excessive gradients during a calibration will inevitably lead to poor results. [Sec. 3.3.1]	•	•	•	
5	To this point, the <i>line number</i> included in data packets from a navigation system has been captured by the DAARC500 via any one of the 8 general-purpose serial I/O channels available, with the full packet in turn recorded in the corresponding 's-file'. New functionality optionally allows the additional extraction of the line number and its recording in the 'd-file', which in some cases is preferable for subsequent data exporting and merging. [Sec. 2.4.1.2, 3.4.1]	•			

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6	Support for a second capture mode of the <i>line number</i> transmitted by Ag-Nav navigation systems. Intended for setups in which the line number is not necessarily a multiple of ten. [Sec. 3.4.3]		•	•	•
7	Miscellaneous cosmetic/streamlining changes.	•	•	•	•

## Front End FW:

### RMS1877-05-D

- New transfer function with bandwidth directly proportional to the host sampling rate:  $BW = 0.131 F_{SH}$ . With  $F_{SH} = 10$  Hz it corresponds to 'Custom2' configured with factory-default parameters. Excellent antialiasing characteristics and attenuation beyond the pass-band, while still remaining well under 1-s length (825 ms worst case).
- Minor adjustments/improvements in access to embedded temperature and barometric pressure sensors.

## (D)AARC5XX Support Software – Apr/2025

### ExportDAARC

- v4.1** – Merge: Controls for selection of  $F_S$  and  $F_{SH}$  not shown if Embedded-GPS option is enabled.

### SeeInDAARC

- v2.60** – Adds event-3-tag warning mode, as well as trigger types and thresholds for cells C3 and C4 in custom numerical display (DAARC500, AARC510, AARC52).
  - Adds parameter to enable capture of line number via serial channel (DAARC500), and second capture mode via the remote control port (AARC510, AARC52).
  - Miscellaneous cosmetic/format changes.

### Console-Mode Programs

#### BatchMerge.bat

- v1.0** – Initial release. User-customizable batch script to automate the export and merge process for (D)AARC5XX data sets. Implicitly uses the set of console-mode programs.

#### MergeDAARCG

- v1.0** – Initial release. Functionally equivalent to Merge page in ExportDAARC v4.1, for systems with embedded GPS (i.e., GPS data included in d-files).

#### ExportMag

- v3.1** – Updated for functional equivalence to ExportMag page in ExportDAARC v4.1.

#### ExportAnalog

- v1.7** – Updated for functional equivalence to ExportAnalog page in ExportDAARC v4.1.

**ExportSerial**

**v3.0** – Updated for functional equivalence to ExportSerial page in ExportDAARC v4.1.

**ExportEth**

**v1.1** – Updated for functional equivalence to ExportEth page in ExportDAARC v4.1.

**MergeDAARC**

**v2.0** – Unchanged.

**ExportLog**

**v1.3** – Unchanged.