

## (D)AARC5XX Release Package 2022 – Summary

<b>Host FW:</b>		DAARC500 11030-04-D	AARC510 11031-03-D	AARC52 11122-03-D	DAS52 11164-01-B
1	<p>Custom device support (DAARC500) –</p> <p>In addition to the standard general-purpose data acquisition functionality supported via analog, serial (RS232), and Ethernet (TCP/IP) interfaces, the new firmware provides enhanced support for a collection of commonly used ancillary devices: (a) decoded data from the device may be monitored in real-time in a dedicated window through the user interface; and (b) decoded data may be output to some external device (e.g., a navigation system). Data capture and output are via two pre-defined serial (RS232) ports. Radar and laser altimeters are typical examples of the devices supported with this enhanced functionality. Since the format of output packets varies widely amongst the various devices, ‘customized’ interpretations are required.</p> <p>[DAARC: Sec. 3.4.1, 3.4.7, 3.4.12, Appx. O]</p>	•			
2	<p>Custom device support (AARC510, AARC52, DAS52) –</p> <p>In addition to the standard general-purpose data acquisition functionality supported via analog and Ethernet (TCP/IP) interfaces, the new firmware provides enhanced support for a collection of commonly used ancillary devices: (a) decoded data from the device may be monitored in real-time in a dedicated window through the user interface; and (b) decoded data may be output to some external device (e.g., a navigation system). Data capture is via any one of the logical connections supported via Ethernet, and data output via the serial (RS232) Remote Control Port. Radar and laser altimeters are typical examples of the devices supported with this enhanced functionality. Since the format of output packets varies widely amongst the various devices, ‘customized’ interpretations are required.</p> <p>[510, 52: Sec. 3.4.1, 3.4.3, 3.4.7, Appx. L]</p>		•	•	•
3	<p>The warning/reminder to clean the fan filter after a certain number of operating hours can now be disabled.</p> <p>[Sec. 3.4.1]</p>	•	•	•	•
4	<p>The checking for potential processing power violations has been adjusted to reflect measures implemented in release RMS1877-05-B of the Front End firmware to reduce crosstalk amongst analog inputs.</p> <p>[Sec. 4.3]</p>	•	•	•	•

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5	The maximum <i>Host Sampling Rate</i> for the system has been increased from 80 to 160 Hz. This is the rate at which raw, processed (i.e., compensated) and ancillary data are recorded, output, and displayed. The <i>Front End (FE) Sampling Rate</i> , i.e., the rate at which magnetometer signals are acquired and processed, remains unchanged (with a maximum of 1280 Hz). [Sec. 4.3.1]			•	•
6	Adjustments to the boot file disable potentially problematic keyboard 'hot keys' in the windows manager.	•	•	•	•
7	Minor/cosmetic: real-time graphic display; FE configuration dialog; LP-filter dialog.	•	•	•	•
8	Minor/cosmetic: monitor analog inputs dialog; colour scheme for capacity indicators when using redundant recording; XY-plot shifting.	•			

## Front End FW:

### RMS1877-05-B

- a. Substantial reduction (> 4X) of worst-case cross-talk amongst analog inputs in the vector magnetometer interface. Re-qualification of critical timing to ensure compliance with processing power thresholds.
- b. Enhancements to allow more flexibility in the user-customization of front end transfer functions. This allows tailoring front end processing to specific installation requirements.

## (D)AARC5XX Support Software – Jan/2022, Oct/2022

### ExportDAARC

- v3.7** – *ExportEth* and *ExportSerial*: Support new protocols/interpretations customized for LR-D1 radar altimeter.
- v3.6** – *ExportSerial*: Support new protocols/interpretations customized for LTI 200-series laser altimeters, FreeFlight RA-4000/RA-4500 series radar altimeters, and Novatel INSPVA (INS position, velocity and attitude) packets.
  - *Export & Merge*: File checking ignores NAV file if Embedded-GPS option is enabled. For consistency with FW, auxiliary-file designations 't1' and 't2' changed to 't' and 'rsvd'.
  - *Merge*: Controls for selection of NAV file not shown if Embedded-GPS option is enabled. Auxiliary files now searched for at the same location as the 'root' (MAG) file. Character "\*" now recognized as token separator – a number of devices use it before a terminating checksum.
  - *ExportSerial* and *ExportEth*: Blocks without valid Fiducial and Events Tag ("\*" in flat-ASCII output) now generate Geosoft GBN channels with the Fiducial set to Geosoft's 'dummy' and the Event Tag set to 0's.
  - *ExportSerial* and *ExportAnalog*: The Time-Tag option, which has always been limited to 'msec-after-midnight', is now disabled.

- *ExportMag*: Saturate output for embedded sensors (barometric pressure & temperature) if out of range.

### SeeInDAARC

- v2.30** – Supports fan-filter warning parameter (DAARC500, AARC510, AARC51, AARC52).
- Supports custom device parameter (DAARC500, AARC510, AARC52).

### Console-Mode Programs

#### ExportMag

- v3.0** – Unchanged.

#### ExportAnalog

- v1.6** – Unchanged.

#### ExportSerial

- v2.9** – Unchanged.

#### ExportEth

- v1.0** – Unchanged.

#### MergeDAARC

- v2.0** – Unchanged.

#### ExportLog

- v1.3** – Unchanged.