RDA 9.0.0 RELEASE NOTES (DECEMBER 2017)

These notes cover changes made to RDA since version 8.13.7 of June 2017. If you are upgrading from an earlier release, please read those notes as well.

This is a new major release, since support for RVP8 systems in code base has been removed completely. In addition support for 32 bit systems has been dropped.

This document uses the term “RVP” to refer to features in RVP900.

Important Upgrade Notes

1. This release is built for the 64-bit CentOS7 operating systems. Support for the 32-bit CentOS6 operating system has been dropped.

2. Support for RVP8 systems in code base has been removed completely. If you are using RVP8 system, the last RDA version that has RVP8 functionality is 8.13.7. RVP8 hardware component sales has ended many years ago and the official end of support was already in the end of 2015. Now the SW support for RVP8 is dropped as well.

New Features

1. Increased the maximum number of range bins to 8168. The maximum number of bins and data moments in this version is thus 16 (2 bytes) data moments x 8168 bins. IRIS-1163

2. Added support for dual burst pulse sampling. IFDR has a mode that allows the burst pulse to be received on the same channel as the Rx input. In this mode and in single channel mode it will Receive data and burst pulse on ADC-A / CH1. In dual pole mode it will receive data and burst pulse on ADC-A & B / CH1 & 2. The code that manages the I and Q processing in RDA handles dual burst samples so that it is processing each channel separately using the results in bin 0 for that channel.

   To configure the new mode a question was added in the Mb menu "Burst Pulse and AFC". The new question is "Use the same channel for Rx and Burst Pulse Sampling". It defaults to NO which uses the TXB (ADC-E) for the burst pulse. If set to Yes will enable the new mode. There is a new parameter in rvp9.conf called lBurstSelectRx to store this configuration setting.
   There are several functions including AFC/MFC, Burst Pulse tracking and hunting that are still limited to using a single TX channel even when two bursts are present. They will either sample the TXB (ADC-E) when lBurstSelectRx =0 or they will sample CH1 (ADC-A = horizontal) when lBurstSelectRx=1. Therefore these functions will still operate but will not track and monitor both burst inputs they will base their assessment on only a single burst input. IRIS-1315

3. Added support for long NLFM 100us compressed pulse. IRIS-1230

Bug Repairs

1. Changed the default value in rvpts.conf for rvptsConfig.nIQDVecs = 25600000 to support using increased number of range bins. IRIS-1566

2. Number of output bins was limited in certain situations. There was a loop counter in the ingest process that had only 16-bits. When the payload of a ray has more than 2^16 bytes of data this causes the counter to overflow and hang the process or cause a segmentation fault. Payload size = some bytes of header + Number of Bins * Number of Moments * Number of bytes / moment. So if you are running 8.13.7 or earlier then you will want to limit your number of bins and number of moments to keep the payload under 2^16. Bug fix in 9.0.0: Increased the loop counter to be 32-bits. IRIS-1518

3. Naming of two new data moments that are available since 8.13.7 was changed to avoid confusion. CSP was changed to CSR and CCOR to XCOR. IRIS-1530

4. If in previous releases a hybrid pulse was configured in such a way that the number of bins in the long pulse + the number of bins in the short pulse was greater than the maximum number of bins, the data structures would be overflowed causing loss or corruption of data in the moment calculations. IRIS-1466

5. Burst Power Based Correction of Z0 was fixed and made functional. IRIS-1473

6. BITEX fails to open if the antlib.log is zipped. Fixed by adding "nocompress" option to the /etc/logrotate.d/sigmet-antlib. IRIS-1470