

AD9371/AD9375 Software Release Notes

Date: June 9, 2017

The links and release notes for the updated AD9371 Transceiver Evaluation Software version 2.0.67 and associated API and ARM code are below. **This code update applies to Rev1.0 and Rev 1.1 silicon only and is not backwards compatible with older versions.** It may be necessary to copy and paste the links into Internet Explorer for proper operation (links are only valid for Internet Explorer).

V2.0.67 GUI – notes reflect changes since version 2.0.62

1. Support added for new AD9375 part number
2. Corrected an issue in the GUI generated 'C' script where a duplicate entry was created in obsRxAgcConfig
3. Added support for new AD9528 custom settings generated from the filter wizard.

V3565.0 API

1. Corrected an issue with the AUX ADC configuration when using div 2 mode for calibration.
2. Corrected a bug in setupJesd204bDeframer where relink on SYSREF option was overwritten if set.
3. Updated CLKPLL settings to enable more robust operation over temperature.
4. Added a new function to support loading multiple ARM firmware blocks in parallel.
5. API function getArmVersion now returns an extra parameter to indicate whether the ARM version is a debug build, test build, or release build.
6. Corrected an issue where the incorrect ADC profile was loaded into the sniffer channel.
7. Added "common.c" example file in the release package.
8. Corrected an issue with the JESD de-framer FIFO depth reported in Link.Mykonos.getDeframerFifoDepth
9. Performed changes to correct static analysis tool errors in the API
10. Updates to AD9528 API to allow configurability for different VCXOs and allowing configurable outputs
11. Updated function MYKONOS_CheckArmState to provide better capability
12. Command, resetExtTxLolChannel, can now be called in radioOn() or radioOff().
13. Corrected an API Issue where conflicting types were used for MYKONOS_setGPIODrv.
14. Added new members for DPD maximum sample levels and iteration count in the DPD status structure. Added DPD error counter structure and read command that allows read back of the accumulated total DPD errors of each type since last power up (for AD9375 only).
15. New configuration structure and set and get commands have been added to enable DPD bypass actuator feature when power below threshold (for AD9375 only).
16. New configuration structure and set and get commands have been added to enable DPD actuator gain check feature (for AD9375 only).
17. New configuration structure and set and get commands have been added to enable CLGC TX attenuation range limit feature (for AD9375 only).
18. New commands added to support setting and getting the path delay values for DPD, CLGC, and VSWR (for AD9375 only).
19. DPD Feature robustModeling can no longer be enabled through the API call to configure DPD (for AD9375 only).

Release v5.1.1 ARM

ARM binary is provided separately from the API.

ARM Release Notes:

1. Resolved a timing issue between ARM tasks which could lead to a Health Monitor time out.
2. Corrected an ARM issue (race condition) that could occur when switching between OBS_INTERNALCALC mode and OBS modes very quickly that could lead to an ARM error.
3. Corrected an issue where TX LO leakage correction values after TX LO Leakage Init were not correct when TX attenuation stepsize set to 0.10dB or 0.20dB
4. Added a delay in PLL power up to resolve an issue with cold temperature PLL start up.
5. Corrected an issue where transitioning to RadioOff reconfigured GPIO3p3_1 if VSWR was not used.
6. Added logging of DPD maximum sample level and iteration count in the DPD status structure. Added DPD error counters that accumulate total DPD errors of each type since last power up (for AD9375 only).
7. Added ability to check gain through the DPD actuator and optionally force a DPD reset to clear incorrect DPD Actuator Values. If the gain through the DPD path exceeds the programmed value below the part will report error 14 in the DPD status (for AD9375 only).
8. DPD processing task was modified to prevent blocking of lower priority interrupts (for AD9375 only).
9. CLGC attenuation tuning range limit added (for AD9375 only).
10. Added ability to program and read back path delay for DPD/CLGC/VSWR (for AD9375 only).
11. Corrected an issue where CLGC reported attenuation levels beyond maximum range – CLGC now reports accurate attenuation level during error condition (for AD9375 only).
12. Added a mode to bypass the DPD actuator when TX power is below a set threshold (for AD9375 only).
13. Normalized the tracking precision in TX QEC based on the ORX I/Q rate
14. DPD Performance Improvements when operating with dynamic signals (for AD9375 only):
 - a. Improved robustness of DPD numerical computations
 - b. Improved modeling of DPD prior - decoupled prior gain/phase from current adaptation's gain/phase to better allow tracking of low-power signals (eg. E-TM2 like signals)
 - c. Robust modeling feature has been removed from DPD
 - d. Corrected a bug in TxRMS level (min_avg_signal) calculation that triggers ERR_7.
 - e. Reset DPD added modes: "clear_prior" and "clear_correlator".

ARM Firmware Verification Notes:

1. RX QEC can degrade if large CW signal is placed directly on DC.
2. RX QEC performance can degrade if channel remains in a continuous overload condition.
3. The sniffer channel QEC operation is not supported above 5 GHz for this release.
4. The CLGC relative threshold feature can intermittently fail to report an issue if the change is only slightly above the threshold – this is due to transition occurring within data capture window (in AD9375 only).
5. When DPD is enabled in TDD mode in certain uplink/downlink configurations TX QEC tracking and VSWR are not updating (AD9373 Only). Consult ADI applications team for workaround options (in AD9375 only).
6. External LO leakage init can have reduced performance when run after running LO leakage tracking.
7. VSWR can have reduced accuracy at low signal input power levels (in AD9375 only).