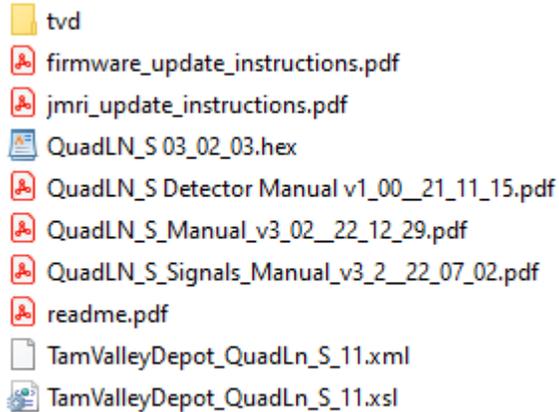


QuadLN_S version **3.2.3** release
Dec 31 2022

This update is only for the QuadLN_S decoder, it will not work with the old QuadLN decoder.

Zip File Contents. This zip file contains the QuadLN_S firmware version 3.2.3 hex update file, several JMRI decoder template files and folders, and manuals.



Updating the Firmware

The included **firmware_update_instructions** file walks through the steps needed to install a firmware update in your QuadLN_S decoder.

Updating JMRI to support version 3.2.3 firmware

The included **jmri_update_instructions** file has information about decoder file updates and how to perform an update when needed.

WHAT'S NEW in the QuadLN_S firmware

Version 3.2

- Aspect outputs can now be assigned to Turnouts as well as Signal Board LEDs.
- Aspects can now be accessed when the EXP Port is not connected to a Signal Board.
- Servo Refresh Option
- Servo Repower Upon Command Option

Version 3.1

- Drives all Servos simultaneously, even in 12 or 16 Servo mode (in version 3.0.x there was a limit of 8 servos moving at one time)
- Stall Motor support. Each Turnout output (previously called "Servo output") can be individually set for Servo (pulse) drive or Steady (stall motor, relay) drive. This feature supports the new (5 volt output) Driver board for stall motors and low current relays.
- Added LocoNet Lock configuration option. When set the Lock impacts both Local and LocoNet control of the Turnout, so that throttle and touchscreen control of a turnout can now also be locked out.

- Remote Align updated so user can move through Closed and Thrown positions for Steady drive outputs but cannot adjust setpoint values.
- Servo Off When Stopped is now selected on a per-servo basis instead of globally
- New servo “Jump” option for animations. This replaces the RapidStart option which has been removed.
- Midpoint/Oscillate mode for continuous movement. Useful for wig-wags, oil wells and other animation effects.
- New “CV7 Interrogate” option that allows one specific board to be interrogated at a time. Useful for large layouts where there is a great deal of LocoNet traffic during JMRI startup.
- Improved IO input sampling timing to minimize the “read glitch”.
- Minor bug fixes and code improvements

Version 3.0

- Supports up to 16 servos per board. There are now separate functionality choices for each IO Port. Here are the combinations of features that are possible:

Port Settings		Turnouts				IO			New in Ver 3.0
Expansion	Main and Aux IO	Total	Main	Aux	Exp	Total	Detector Board	Signal Board	
Relays	Both IO	4				8			
Signaling	Both IO	4				8		X	
Turnout	Both IO	8			5-8	8			
Relays	Both IO	4				4	X		
Signaling	Both IO	4				4	X	X	
Turnout	Both IO	8			5-8	4	X		
Relays	Main IO, Aux Turnout	8		5-8		4			X
Signaling	Main IO, Aux Turnout	8		5-8		4			X
Turnout	Main IO, Aux Turnout	12		5-8	9-12	4			X
Relays	Main IO, Aux Turnout	8		5-8		0	X		X
Signaling	Main IO, Aux Turnout	8		5-8		0	X	X	X
Turnout	Main IO, Aux Turnout	12		5-8	9-12	0	X		X
Relays	Both Turnout	12	5-8	9-12		0			X
Signaling	Both Turnout	12	5-8	9-12		0		X	X
Turnout	Both Turnout	16	5-8	9-12	13-16	0			X

- Quickly center a servo using the Remote Align Board. Enter Align mode on the desired servo in the usual way. Once the servo is in Align mode, you can press SEL-UP at any point to Center the servo. LED 7 (RV) will flash while the servo is centered. To resume normal Align modes just press SEL. As before, to exit Align mode long press SEL.

- Servos are re-powered (if Off) when any Servo CV is changed. This ensures that the new position CV setting takes effect immediately.
- Signal Align mode now turns on the LED output being adjusted. The LED is restored to its prior state after exiting Align mode. Previously the LED had to be on prior to entering Align mode.

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