



RELEASE NOTES

WaveSculptor Motor Controllers

TRI74.049 ver 5
31 August 2015

1 CURRENT RELEASE - 31ST AUGUST 2015

Released:

- WS22 and WS200 firmware images v1.12
- wsConfig 1.14
- triFwLoader 1.06
- User's Manual WS22.v4 and WS200.v5
- Config software users manual v4
- WS200 Datasheet v4

Fixes:

- Firmware: fixed (resolver / encoder) motor position processing and switching the rotation direction defined as "forwards"
- Firmware: added Tritium version reporting system
- Firmware: added support for new Tritium CAN Bootloader
- wsConfig: updated to detect new device IDs and GUI cosmetic improvements
- triFwLoader: updated to support new Tritium CAN Bootloader for more reliable firmware updates

Notes:

- The latest wsConfig *must* be used with the latest DSP firmware, the WaveSculptors device IDs have been updated and older software will not detect the devices
- Devices shipped after July 2014 have a new bootloader installed. Older devices must use the firmware file designated by "_oldBL" in the filename

2 RELEASE - 24TH SEPTEMBER 2013

Released:

- WS22 and WS200 firmware images v1.11
- wsConfig 1.13

Fixes:

- Firmware: fixed fault with "ACTMOT" CAN command causing configuration corruption when used
- Firmware: improved motor position sensing at very low speeds
- Firmware: fixed overly aggressive minimum bus voltage control loop
- Firmware: updated stream bulk data transfer protocol
- wsConfig: updated stream bulk data transfer protocol

Notes:

- The latest wsConfig *must* be used with the latest DSP firmware, or a stream protocol error will be reported when uploading or downloading configurations



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3 **RELEASE - 26TH JULY 2013**

Released:

- WS22 and WS200 firmware images v1.10
- wsConfig 1.12
- triFwLoader 1.05
- WS22 user's manual v3

Fixes:

- Firmware: improved motor temperature reporting reliability
- Firmware: removed field weakening (overspeed) operation for BLDC type (permanent magnet) motors. This eliminates reported issues with high-speed velocity control and motor efficiency in solarcars.
- wsConfig: remembers window screen positions correctly
- WS22 user's manual: updated M6 bolt torque to match datasheet value

Notes:

- There is also updated CanBridgeConfig and CanLogger programs associated with the CAN-Ethernet bridge, improving operation on some network types

4 **RELEASE - 18TH APRIL 2012**

Released:

- WS22 and WS200 firmware images v1.08
- wsConfig 1.11
- triFwLoader 1.04
- User's Manual v4
- Config software users manual v3

Additions:

- WS configuration transfers now utilise an end-to-end stream protocol in order to increase transfer reliability over Ethernet and CAN
- Improved induction motor control, particularly in the overspeed region
- Further cleaned up User Interface for Firmware Loader utility
- Clarified motor setup procedures and error descriptions in software user's manual
- Improved noise immunity and response rate when using a resolver for motor position feedback

Fixes:

- Improved motor interface serial communications reliability in WS

Notes:

- The new 1.08 WS firmware requires the updated Windows software 1.11 which in turn requires CAN-Ethernet bridge firmware v1.04 or later



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- A full update of all Windows programs and device firmware is highly recommended

5 RELEASE - 8TH OCTOBER 2011

Released:

- WS22 and WS200 firmware images v1.07
- wsConfig 1.10
- triFwLoader 1.03

Additions:

- All Windows executables are digitally signed
- Improved handling of noisy/glitchy hall signal inputs, which may previously have triggered HALL or SWOC errors
- Improved handling of noisy Sin/Cos resolver position data
- Improved calibration accuracy on later production controllers (S/N 6900+)
- User Interface change regarding config upload/download
- Improved reliability of config upload/download
- Config no longer downloads at wsConfig startup, only when required
- Added ability to load Factory Default files without having to read existing config, which may be corrupted
- Cleaned up User Interface for Firmware Loader utility

Fixes:

- Set active motor CAN packet ("ACTMOT") no longer corrupts config

Notes:

- Windows software requires CanBridgeConfig v1.06 or later
- Also suggest upgrading to CAN-Ethernet bridge firmware v1.03 or later