



## RELEASE NOTES

### WaveSculptor Motor Controllers

TRI74.049 ver 4  
24 September 2013

#### **1 CURRENT RELEASE – 24<sup>TH</sup> 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

#### **2 RELEASE – 26<sup>TH</sup> 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

#### **3 RELEASE – 18<sup>TH</sup> APRIL 2012**

##### **Released:**

- WS22 and WS200 firmware images v1.08
- wsConfig 1.11
- triFwLoader 1.04



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

## **4 RELEASE – 8<sup>TH</sup> 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:**



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- 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