# DC-4E/GEDC-6E/AHRS-8 – Technical Bulletin - 001

Update of the World Magnetic Model (WMM) to the latest Coefficients.

# Introduction

This technical bulletin describes how to update the World Magnetic Model used to compute True North heading and enhanced 2D calibration.

# Background

The DC-4E/GEDC-6E/AHRS-8 devices have a default World Magnetic Model when shipped from the factory. Every 5 years (2005, 2010, 2015, …) these coefficients are updated to provide a more recent and accurate model of the magnetic pole locations and the magnetic variation spanning the globe. This magnetic model is easily updated with a new and more current model in one of two ways: updating to the latest firmware or simply updating the WMM coefficients. The World Magnetic Model provides declination angles to provide accurate True North heading as well as enhancing the 2D calibration when latitude, longitude, altitude and date is available.

# Required Documents

AN-1006E Firmware Upgrades with Flash Magic

AN-1004E Recommended Circuit for Firmware Upgrades

**Updating the Model**

Updating the firmware

*DC-4E/GEDC-6E/AHRS-8 users:*

If you are able to physically update the firmware either by using the NDS-1 Development board or using your own hardware and Application Note AN-1004E, you will need to follow the instructions in Application Note 1006E for updating the firmware.

The correct version of firmware to update to the coefficients is V4.3.2 for all series AHRS-8/GEDC-6E/DC-4E.

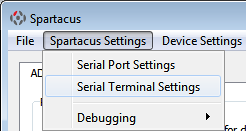
Without an update to the firmware

*DC-4E/GEDC-6E/AHRS-8 users:*

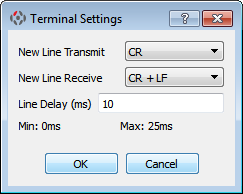
If you are unable to use the NDS-1 Development Board to update your firmware and you do not have the ability to FLASH firmware in your hardware circuitry following Application Note 1004E, you can update the WMM by sending the WMM\_2015\_pre\_4\_3\_2\_firmware.4th file located on the website over the serial port.

The Spartacus Software (formerly NDS-2) contains the ability to send a NorthTek script (text file) to the system. Please follow the following directions to update the WMM to the new 2015 coefficients.

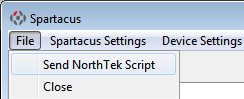
1. Go to Spartacus Software ->Serial Terminal Settings and click on that selection



1. Verify the following settings:



1. Go to File->Send NorthTek Script and click on that selection.



1. Go to the WMM\_2105.4th file location and select that file. You will see the coefficients streaming to the sensor. Once the data stream is finished, check the Basic Terminal Window to see if any “Huh?”s appear in the dialog. This would indicate that there was an error in the data transfer.
2. Once the transfer is complete with no errors, the new coefficients are ready to use!!!

You can also perform the same action with a simple terminal emulator and send the file as text or even use your own system to send the ASCII data.

**Want to know more?**

* Check it out here: [www.spartonnavex.com](http://www.spartonnavex.com)

Or email us at: [productsupport@sparton.com](mailto:productsupport@sparton.com)