# Working with the 3DM-GX3® -25 Update Mode

3DM-GX3® -25

Overview

MicroStrain's 3DM-GX3®-25 inertial sensor has been designed to allow the user to update its firmware. This is done by putting the sensor into 'update' mode, uploading the new firmware, and returning to idle mode. If the sensor is left in 'update' mode, is inadvertently programmed into 'update' mode, or is forced into 'update' mode by a very noisy serial line or crosstalk on the serial line, the device is unable to respond to normal communications. This will appear to the user as if the device has failed. This technical note seeks to help the user understand and troubleshoot the issue, and return the device to idle mode.
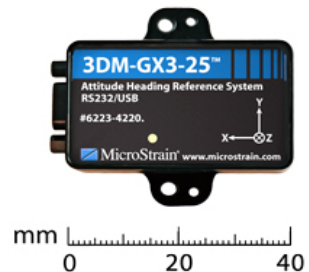
Typical firmware update

Our technical note entitled *Updating Firmware on a 3DM-GX3 using an RS-232 connection and HyperTerminal* describes a step-by-step method to put the sensor into update mode, upload the new firmware, and return to idle mode. In this method, communication is established between the host PC and the 3DM-GX3®-25 by opening a terminal connection, uploading a password file, commanding the device into update mode, uploading the firmware file via Ymodem protocol, and commanding the device back into idle mode. Please note the state of the yellow activity LED on the 3DM-GX3®-25. In idle mode, the LED pulsates on and off, on and off, indicating the device is idle and awaiting instructions. In update mode, the LED is off, indicating the device is awaiting an upload. This LED state is an indicator as to what state the 3DM-GX3®-25 is in.

Programming update mode

Developers may choose to build their own application to update the 3DM-GX3®-25 firmware. This can be particularly useful for those developers embedding the OEM version of 3DM-GX3®-25 into a larger system.

The commands for Go to Update mode and Leave Update mode are:

Command	Command Bytes (in hex)
Go to Update mode	0xFD 0x73 0x4A
Leave Update mode	0x32 (ASCII "2")

These commands can be simply demonstrated by issuing the commands in a terminal program and observing the LED as described above:

- Connect to the device at 115200 baud, 8 data bits, 1 stop bits, n(one) parity control, n(one) flow control.

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- Send the Go to Update mode command and the LED will stop pulsating.
- Send the Leave Update mode command and the LED will again pulsate.

NOTE: This method can also provide the user with a simple way to get a 3DM-GX3®-25 out of update mode if that is suspected.

Please contact MicroStrain support engineers for further details on programming updates. We can provide further information on mimicking HyperTerminal commands in embedded systems, etc.

Noise and crosstalk on a serial line
Noise or crosstalk on a serial line is <u>not</u> a normal condition. If noise is suspected, examine all cables, connectors, and potential sources of noise including motors, relays, etc.

Further Support
MicroStrain support engineers are always available to expand on this subject and support you in any way we can.

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