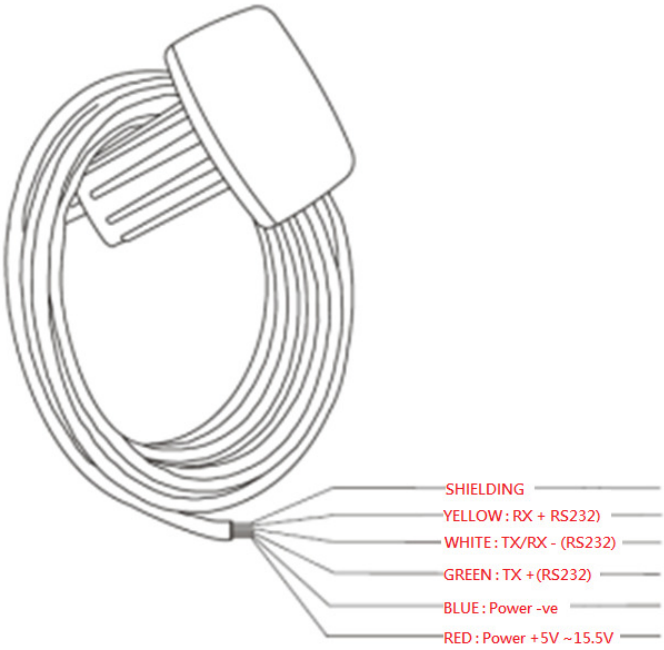
9 AXIS E-COMPASS MANAGER PC SOFTWARE FOR ONWA GPS ELECTRONICS COMPASS KA-GC9A

KA-GC9A is used to replace our previous product KA-GCxx. The advantages of KA-GC9A are:

1) Quicker response rate (real-time)
2) User programmable
3) More stable heading output
4) Provide online upgrade
5) Wider supply voltage

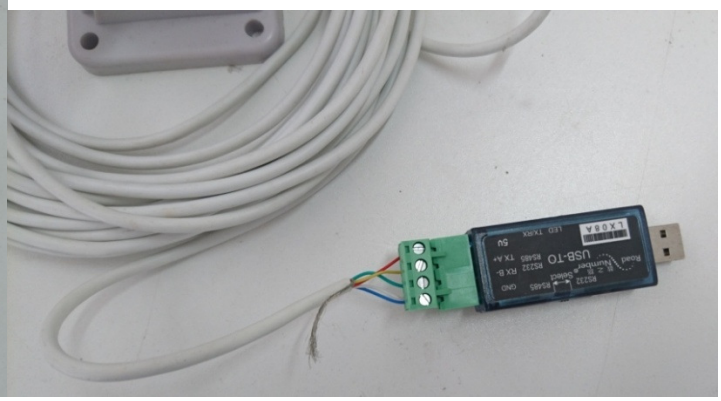


1) PREPARATION

- You need to prepare a RS232 -> USB converter (suggested to use LX08A)

- Connect KA-GC9A to LX08A as shown below

KA-GC9A



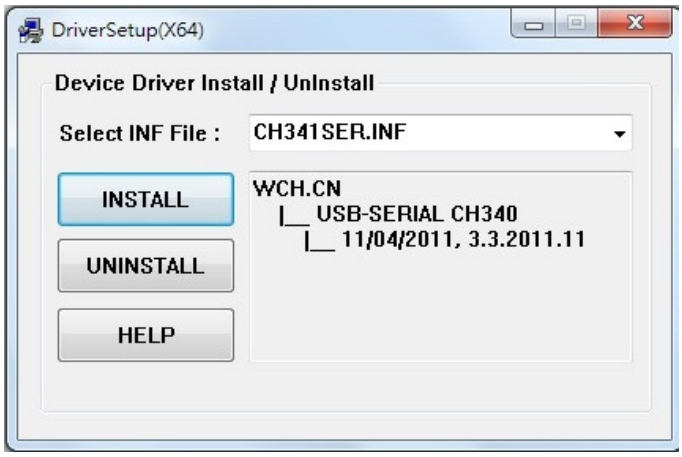
Connect KA-GC9A to LX08A

- Insert LX08A to any USB port of your PC

INSTALL THE LX08A DRIVER

- Download the LX08A driver from the link below:
  https://www.dropbox.com/s/kjbnn0gtiydiyeq/CH341SER.EXE?dl=0

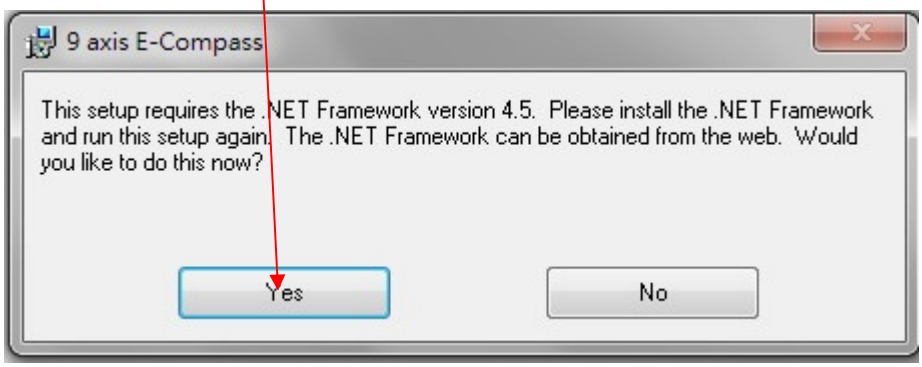
- Install the LX08A driver CH341SER.EXE in your PC



2) DOWNLOAD AND INSTALL "9 AXIS E-COMPASS MANAGER"

- Download the "9 axis E-Compass Manager" PC software 9 axis E-Compass installer.msi from the link below
  https://www.dropbox.com/sh/cg16vk40xdvicra/AABGsiQPFBgy4i_-B8J7q66ca?dl=0

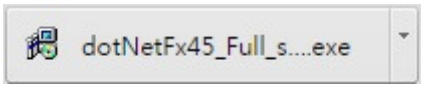
- Follow the instructions below on how to install 9 axis E-Compass installer.msi
- During Installation, you will see a prompt as shown below, and you will need to connect your PC to the internet and click [Yes] to start download and install ".NET Framework 4.5"



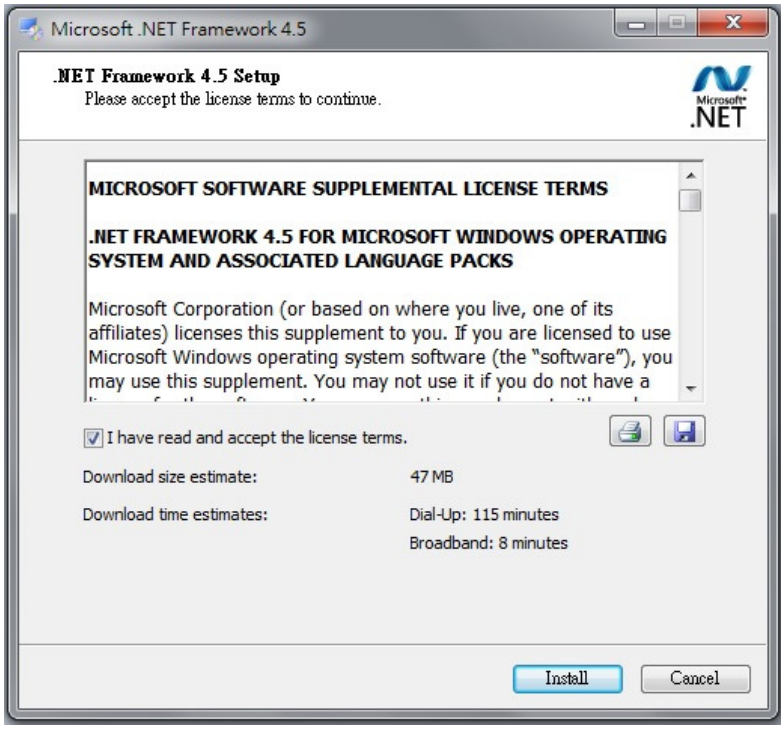
- The website below will automatically pop-up. Please click [Download] to obtain

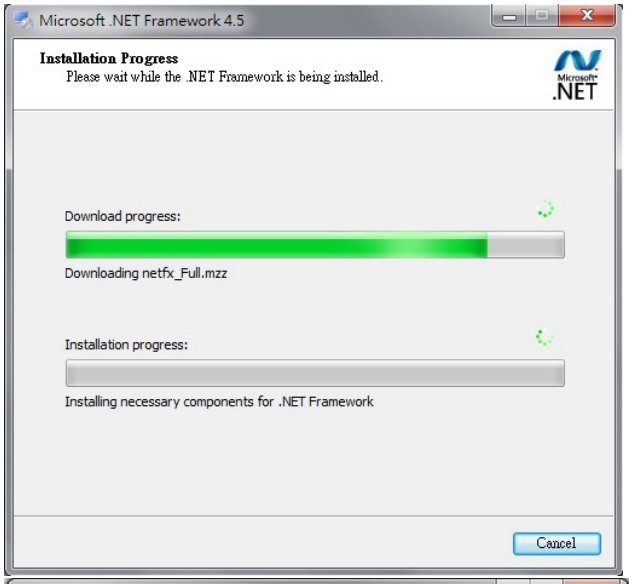
- After downloading, you will obtain 

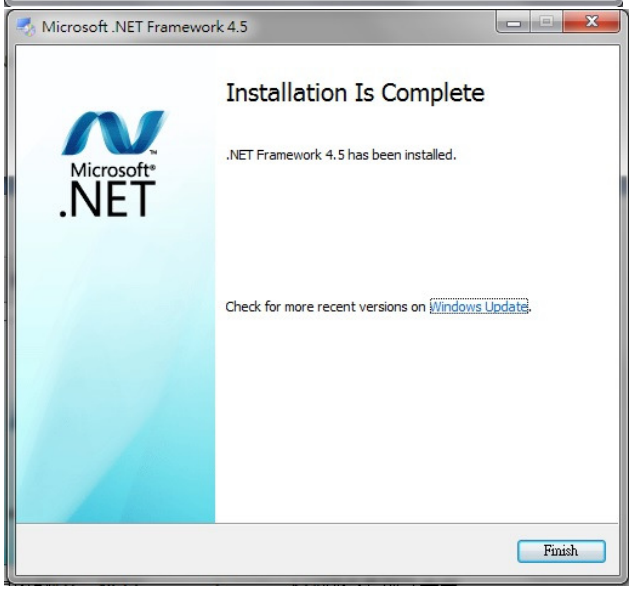
.

- Run 

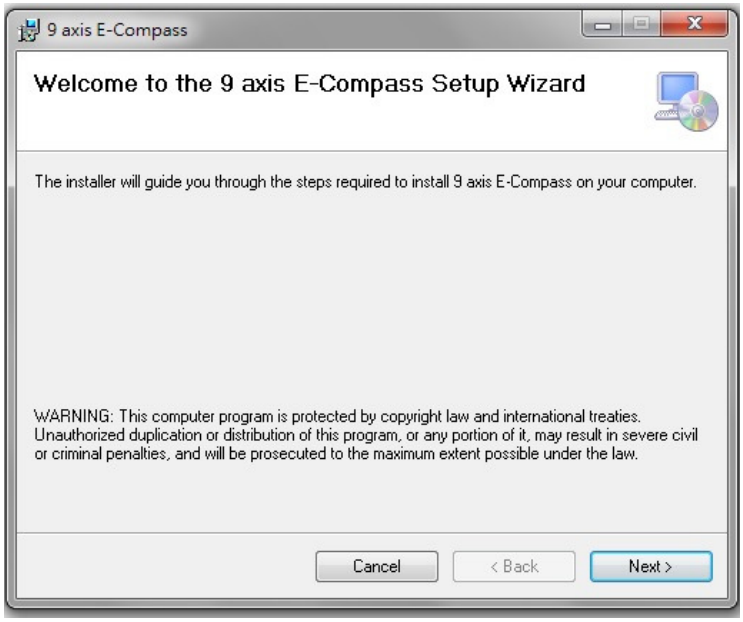
- Follow the instructions below to finish the installation of ”The .NET Framework version 4.5”

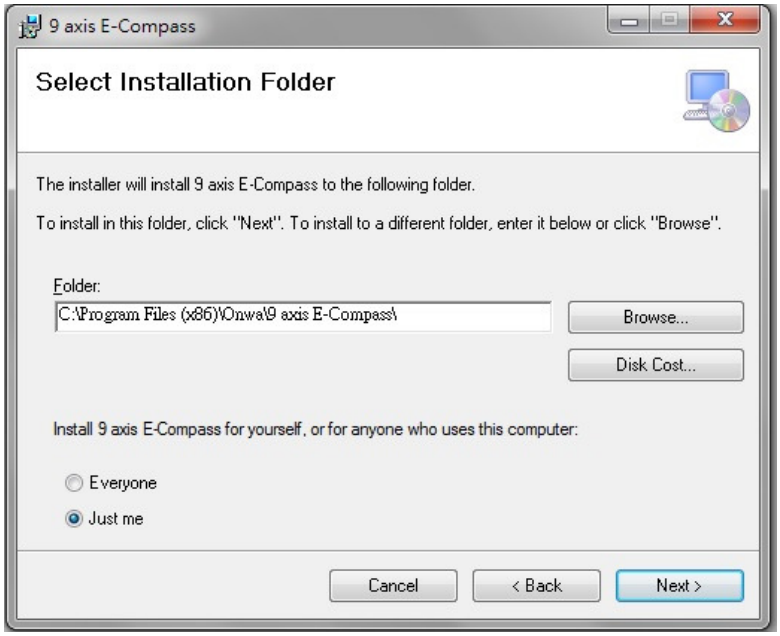


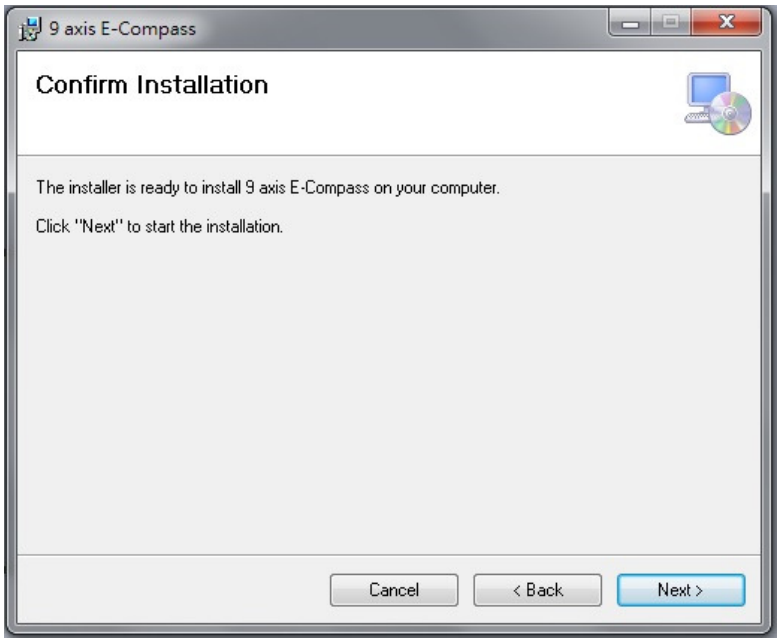


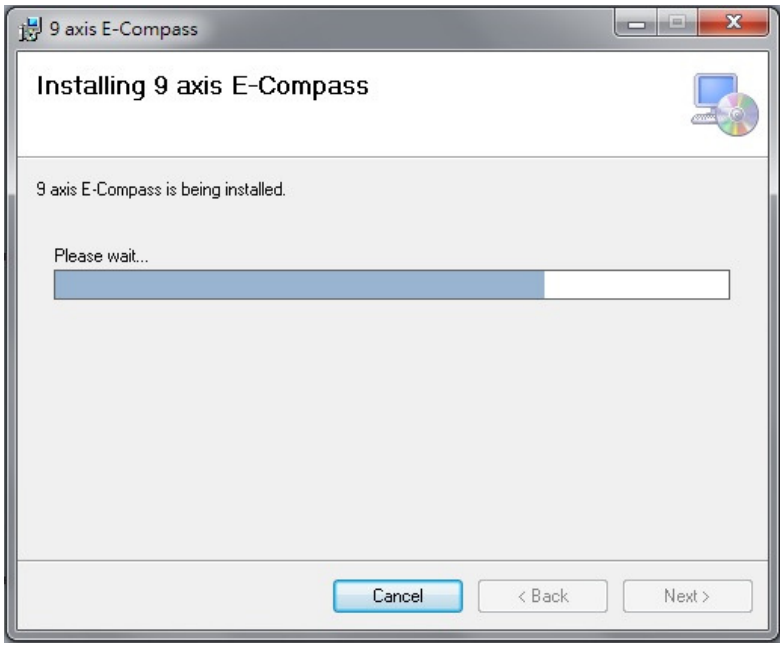


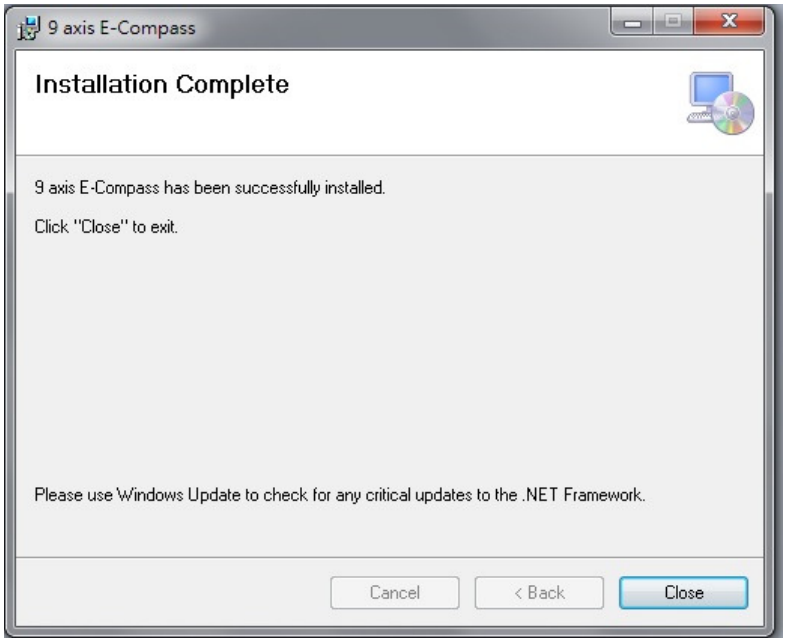
- Re-run 9 axis E-Compass installer.msi again to finish the installation of “9 axis E-Compass Manager”.




9 axis E-Compass
Select Installation Folder
The installer will install 9 axis E-Compass to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files (x86)\Onwa\9 axis E-Compass\
Browse...
Disk Cost...
Install 9 axis E-Compass for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

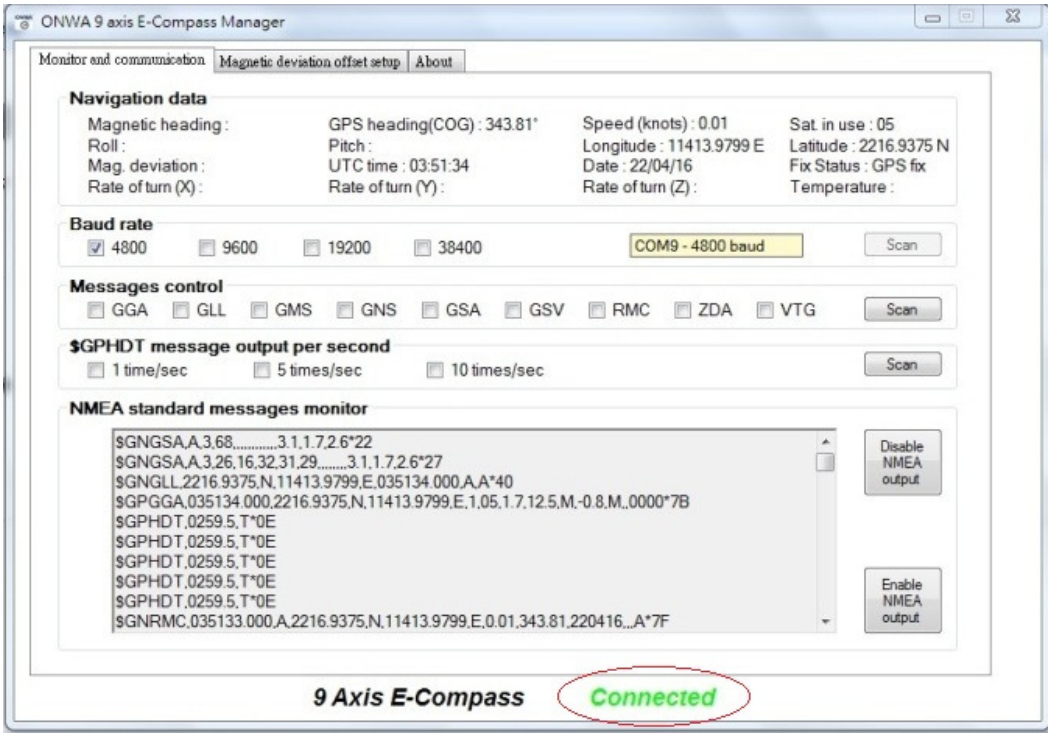

9 axis E-Compass
Confirm Installation
The installer is ready to install 9 axis E-Compass on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >


9 axis E-Compass
Installing 9 axis E-Compass
9 axis E-Compass is being installed.
Please wait...
Cancel
< Back
Next >



3) HOW TO USE “9 AXIS E-COMPASS MANAGER”

- Run “9 axis E-Compass Manager”, it will auto detect the COMPort and baud rate. You will see a Green Word **“**Connected” as shown below.



3.1) Output setting

You can set the following items:

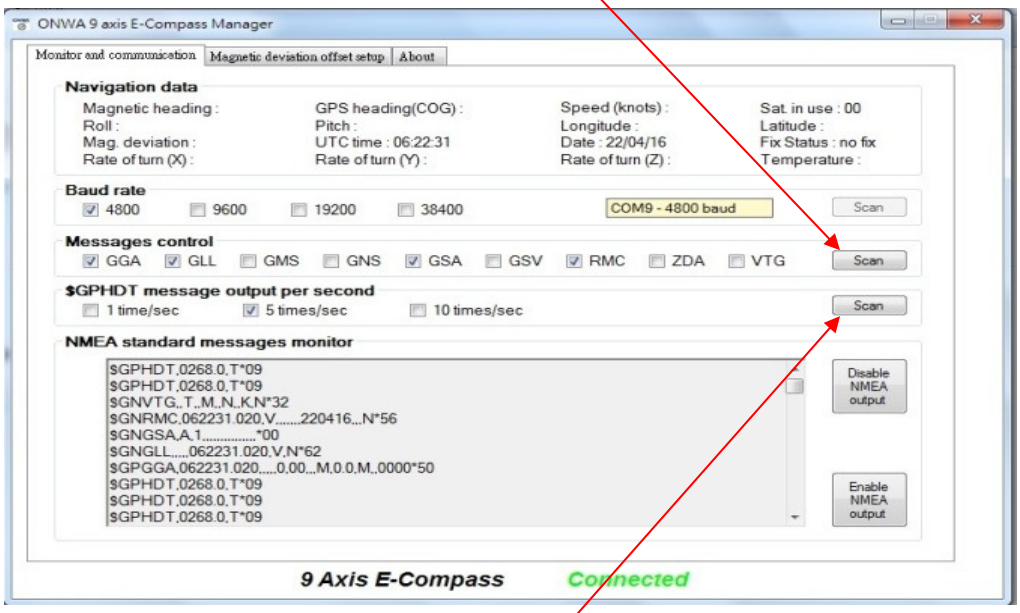
A) Output baud rate

B) Output NMEA sentences

C) Heading (HDT) output intervals

- Click [Scan] to check the original settings in your KA-GC9A.

Click [Scan] to check output NMEA sentences



Click [Scan] to check heading output intervals

- From the above figure you can see the original data of KA-GC9A after clicking [Scan] :

A) Output baud rate: 4800

B) Output NMEA sentences: GGA, GLL, GSA, RMC

C) Heading output intervals: 5Hz

- To change any of the above settings,

A) To change the Output Baud rate:

Ex: 38400

(*Check the box beside [38400]*)

B) To Add output NMEA sentences:

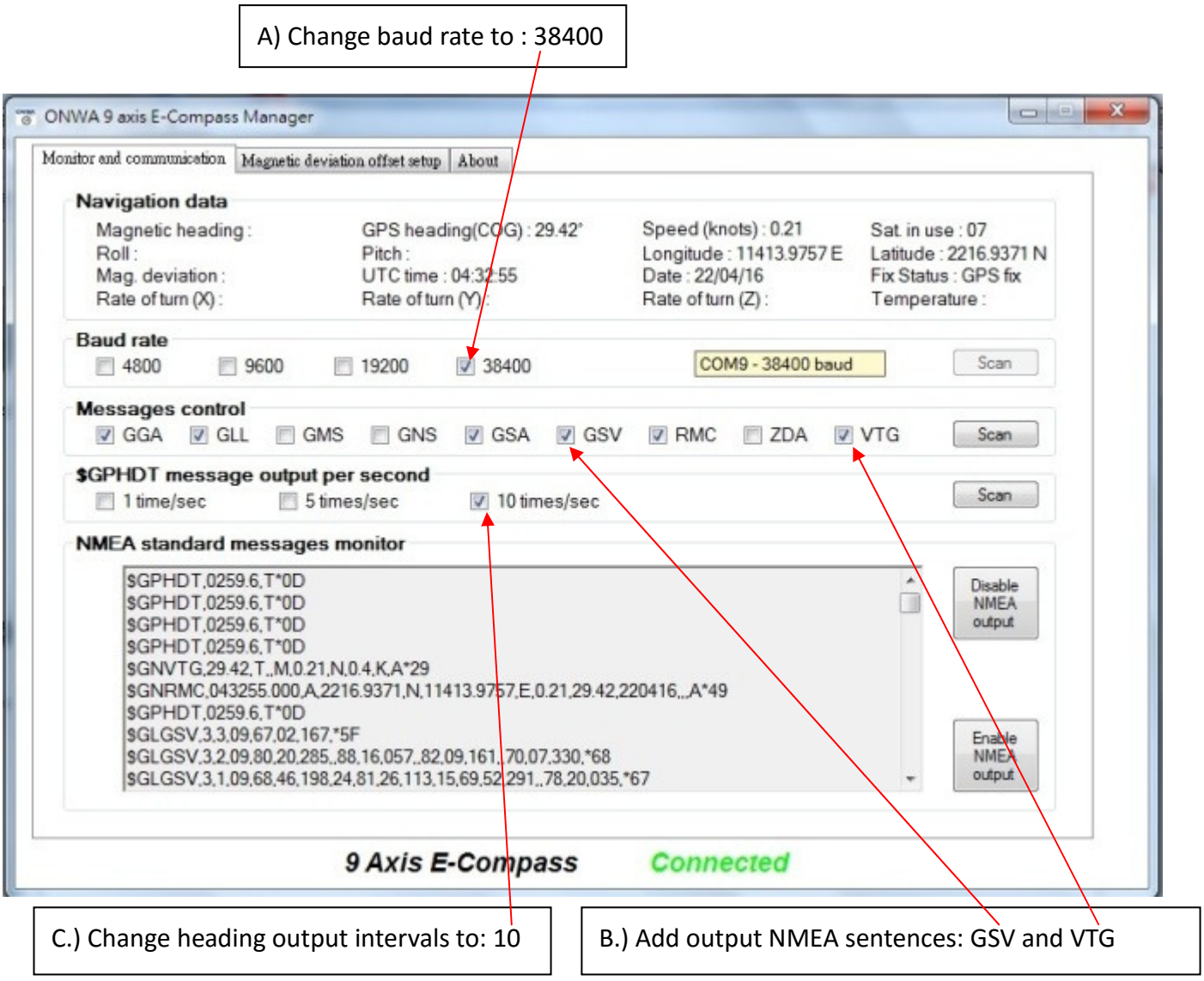
Ex: GSV & VTG

(Check the box beside [GSV] and [VTG], if you want to de-select just simply uncheck the related box.)

C) To Change the Heading output intervals:

Ex: 10Hz

(Check the box beside [10 times/sec])



Note : Changes will be completed when you check on the box or boxes.

SUGGESTED SETTING FOR DIFFERENT APPLICATIONS:

	Baud rate	Output NMEA sentences	Heading output intervals
KA-GC9A_05(for KEC30G)	4800	RMC, GSA, GGA, GMS, ZDA	5 times/sec
KA-GC9A_10(for KAP866)	4800		10 times/sec
For others applications (Radar, Plotters, etc.)	Will depend on the application	RMC, GSA, GGA, GLL, VTG	5 times/sec

Note: Heading (HDT) is a must sentence, you can only choose the output intervals

3.2) Magnetic deviation offset set-up

Aside from changing the output setting of KA-GC9A, the user can also set magnetic deviation and computation parameters.

Automatic computation: KA-GC9A has built-in GPS module, we can use COG data to correct heading error. The user can set the below computation parameters:

A) Minimum speed threshold (knots)

Automatic error computation will carry out in certain speed.

B) Time for offset validation (sec)

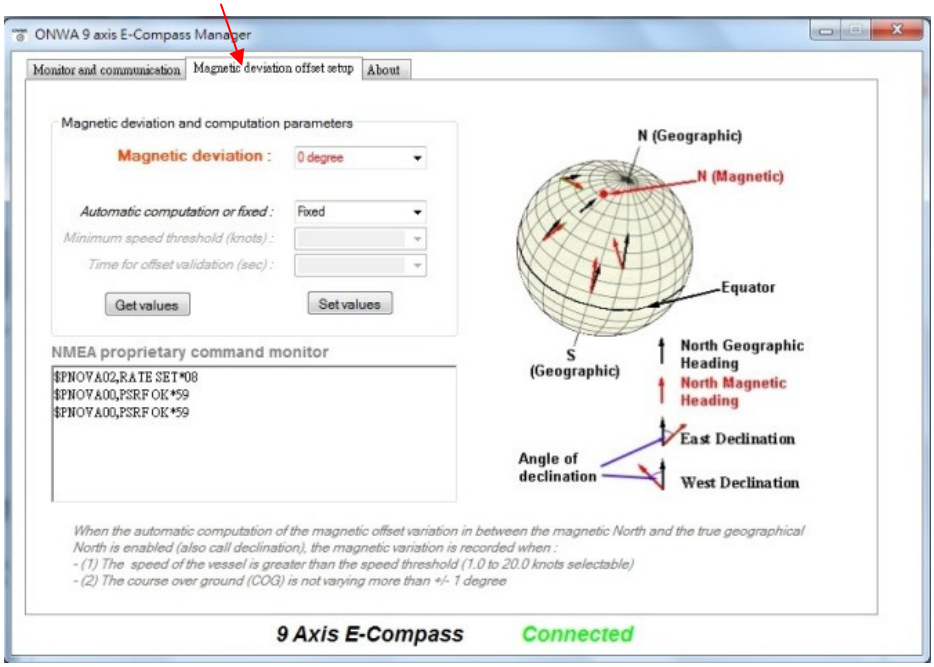
Automatic error computation will carry out when COG keep within +/-1 degree within certain set time in second.

Example : If [Minimum speed threshold] is set to 8 knots and [Time for offset validation] is set to ”5 sec” then the auto error computation will only carry out when the SOG reach 8 knots or above (the set [Minimum speed threshold]) and COG keeps the course within +/-1 degree for 5 seconds (the set [Time for offset validation]).

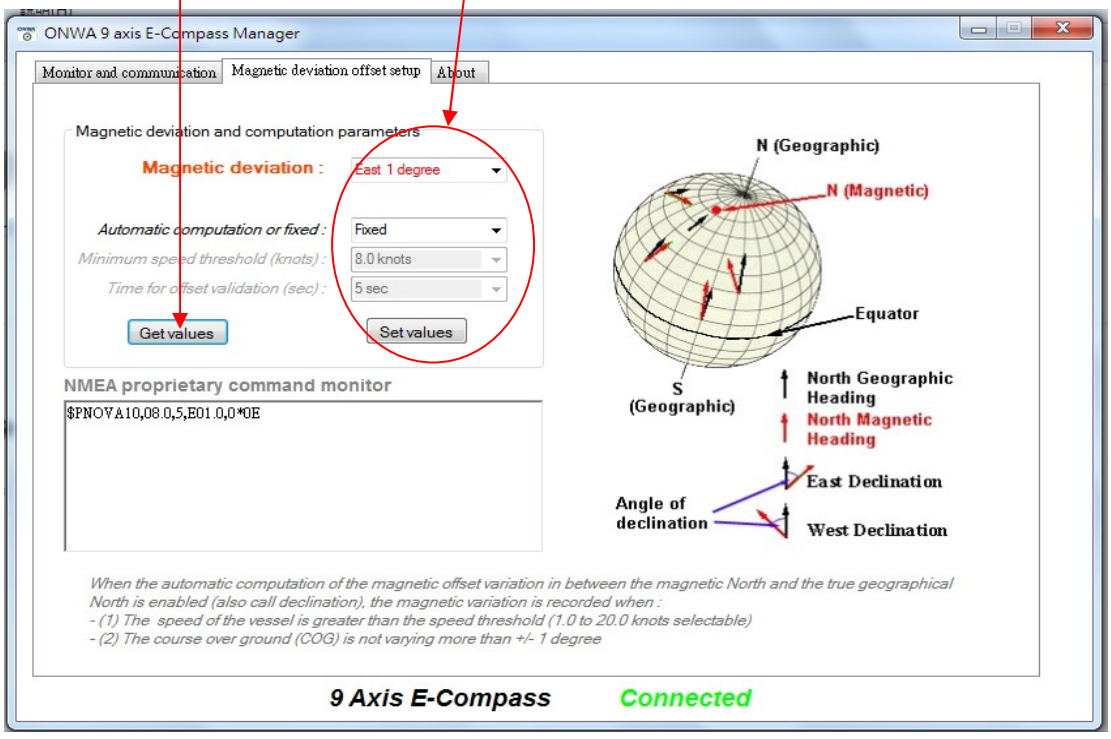
If the user sets [Automatic computation or fixed] to ”fixed” then the automatic computation function is turned off.

<u>Magnetic deviation offset setup</u>

A) Select ”Magnetic deviation offset setup”

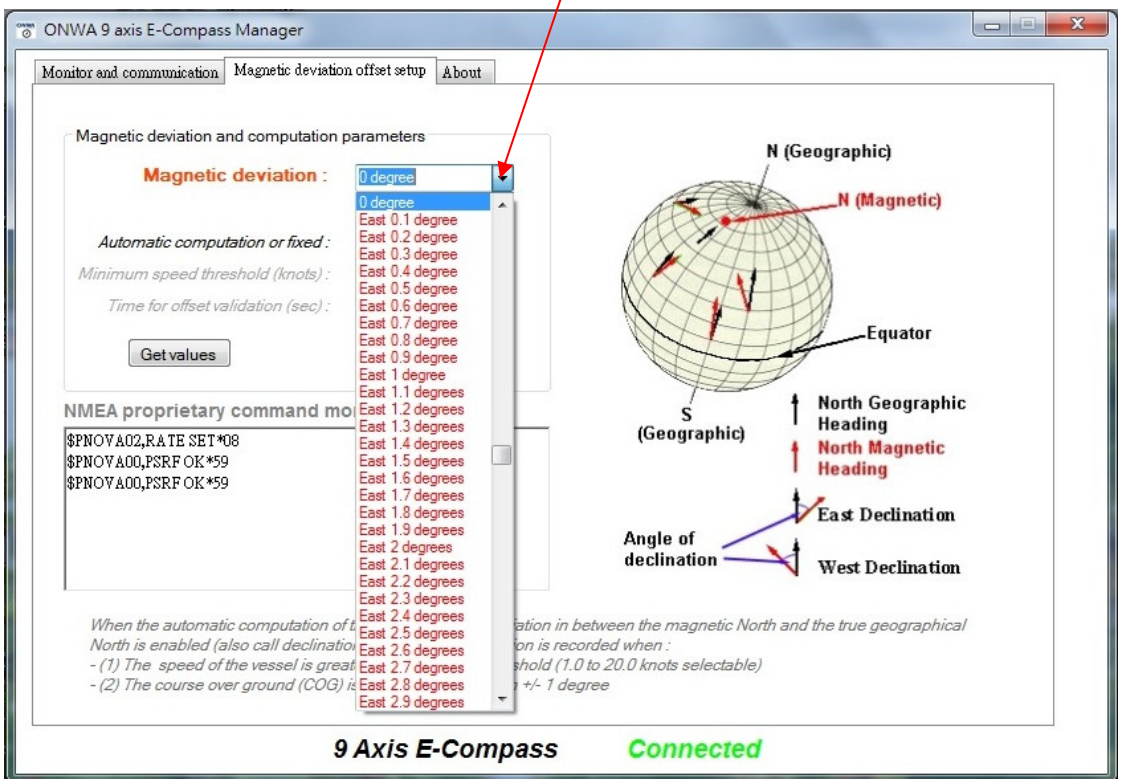


B) Click [Get values] to read the <u>preset value</u> in KA-GC9A(default is 0 degree)

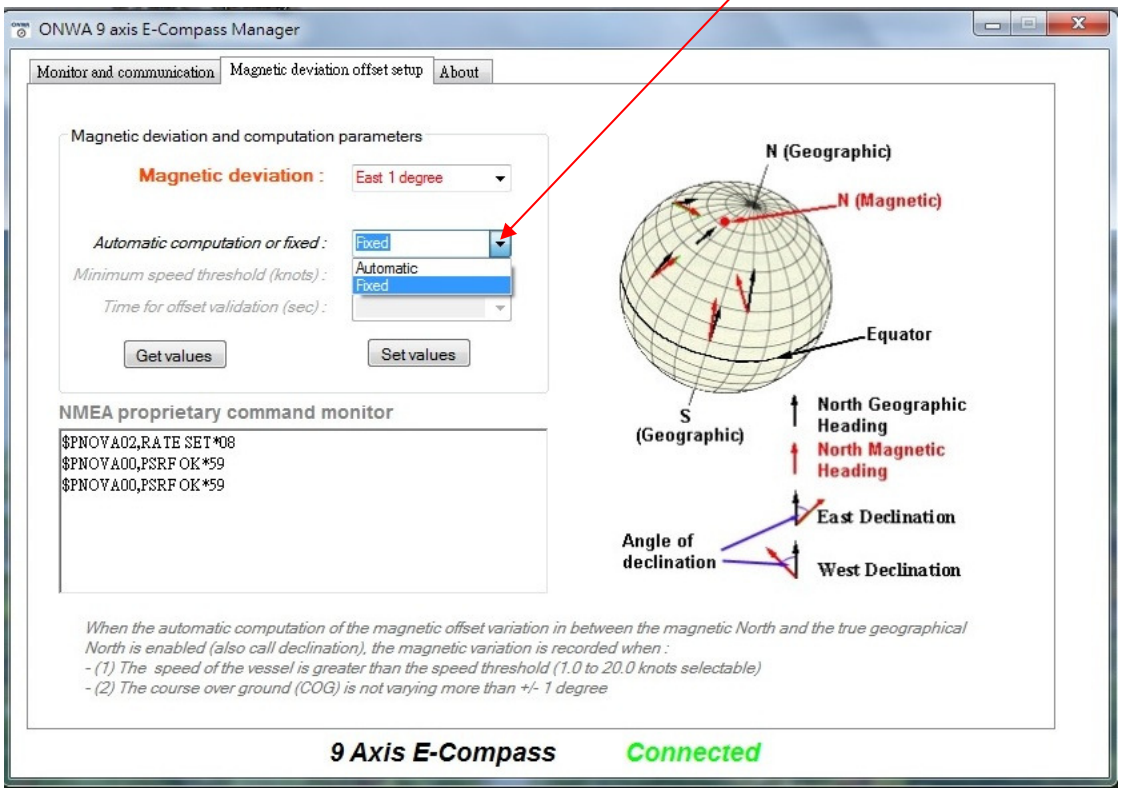


C) Click [Magnetic deviation] to change magnetic deviation degree and direction

*(It is suggested **NOT** to change the magnetic deviation unless there are installation errors or you are sure about the magnetic deviation)*

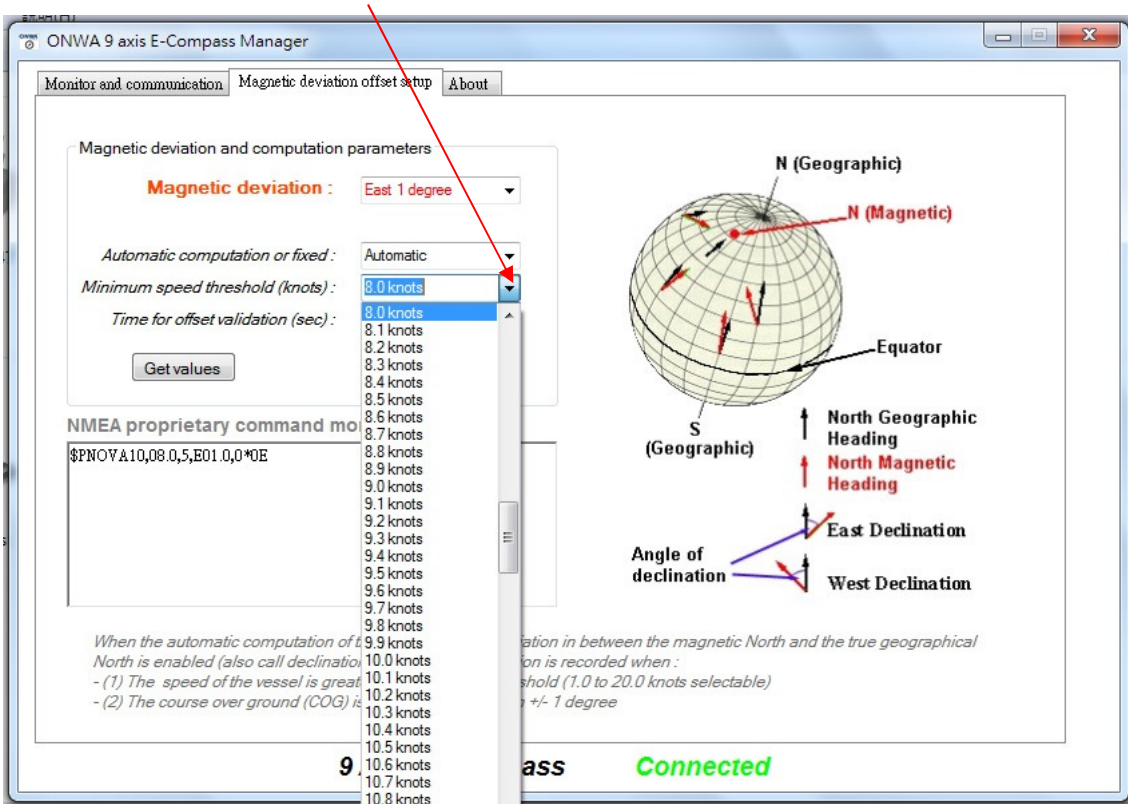


D) If you want automatic computation you can change [Automatic computation or fixed] from ”Fixed” to “Automatic”



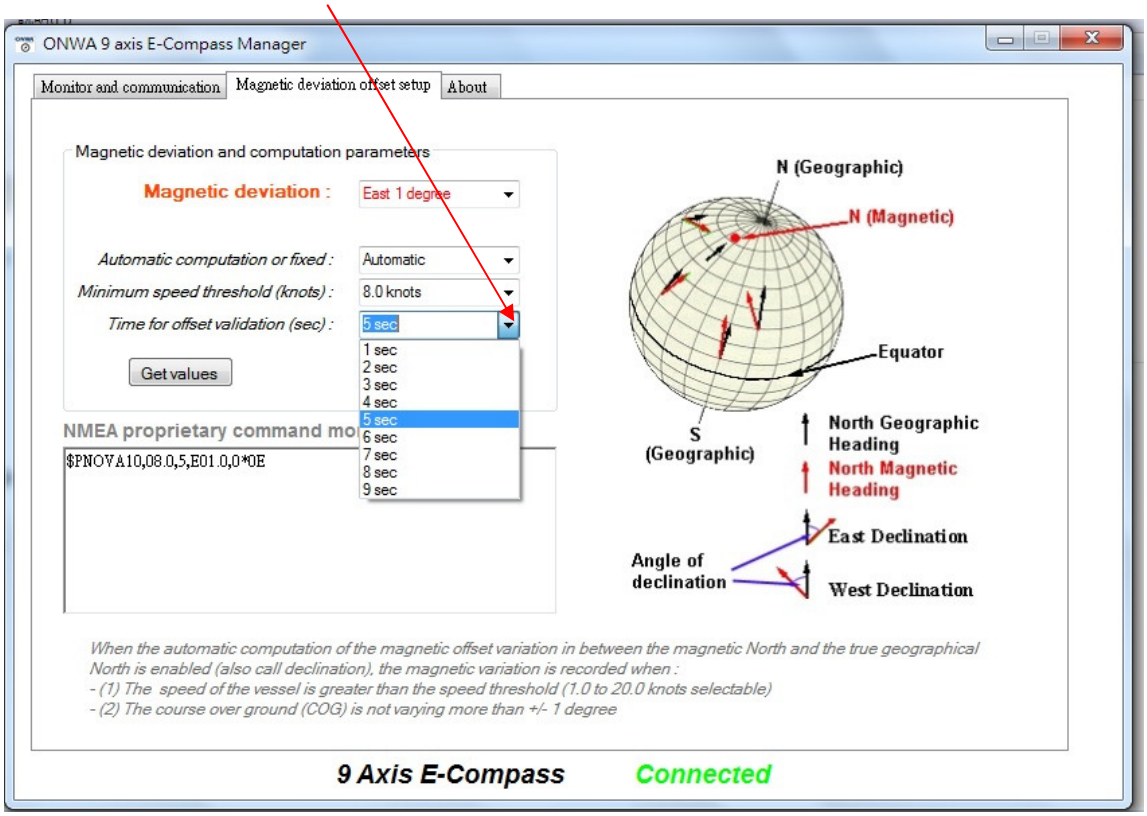
After you change error computation from “Fixed” to “Auto” then you need to set [Minimum speed threshold] and [Time for offset validation] as well

E) Change [Minimum speed threshold]



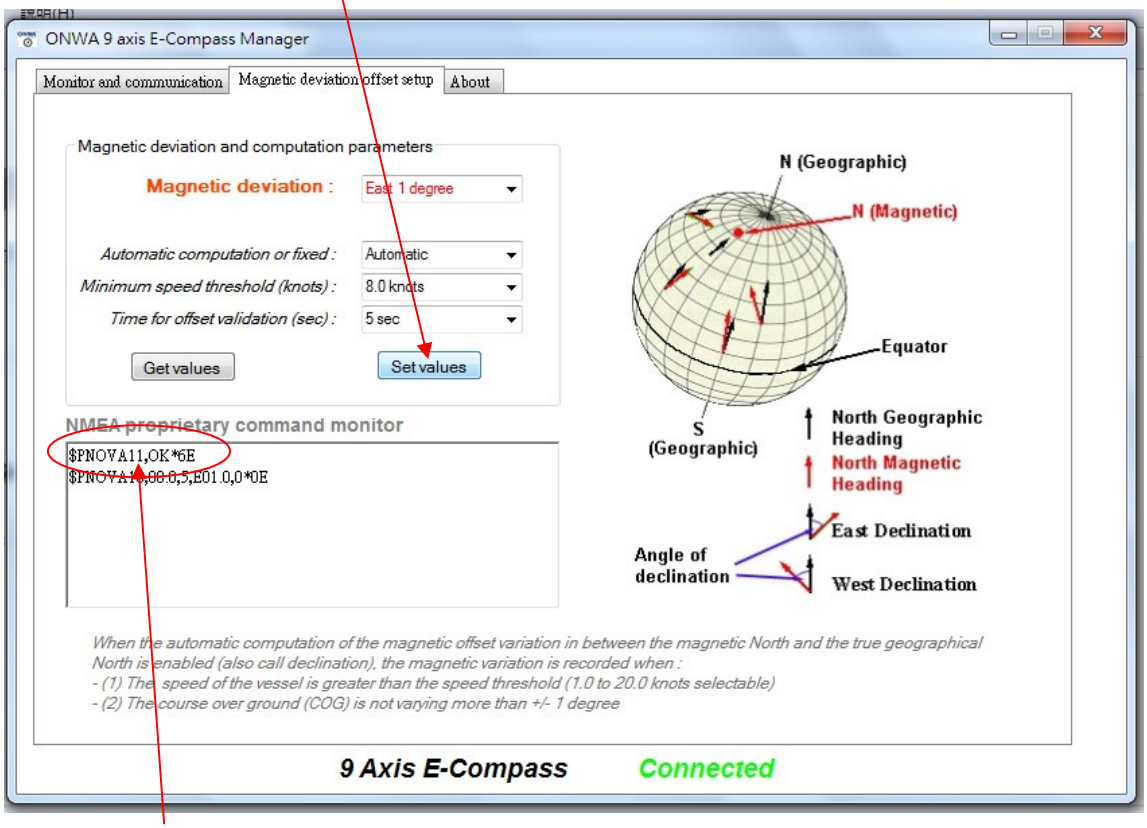
Changing the [Minimum speed threshold] to **8 knots** *or above is recommended unless the KA-GC9A is used as a slow boat.*

F) Change [Time for offset validation]



Changing the [Time for offset validation] to ***5 seconds*** *or above is recommended.*

G) Remember to click [Set values] to save the changes after settings.

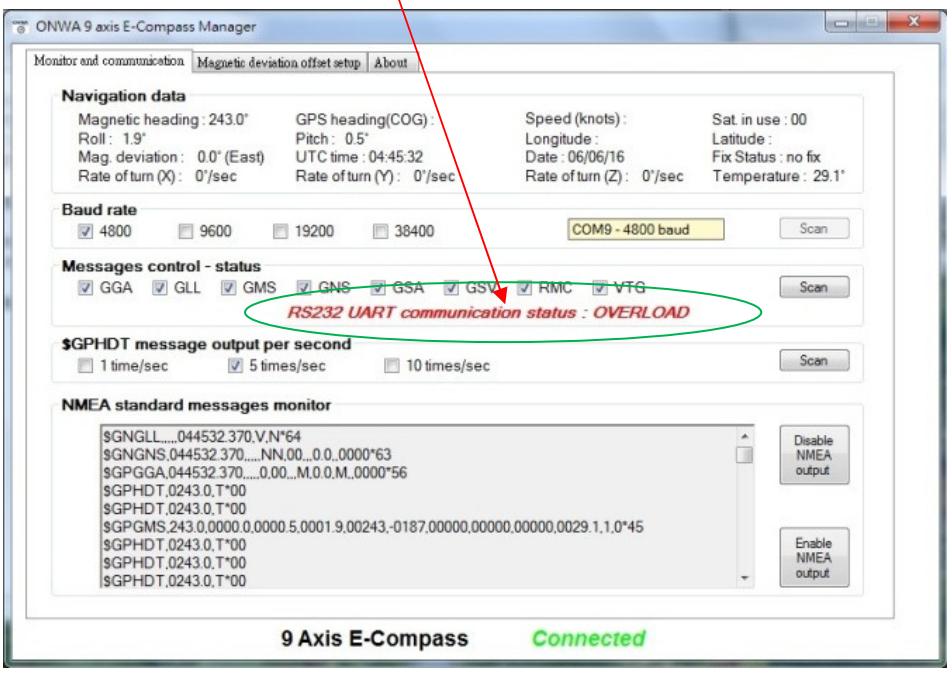


You can see this message appear on this window when you click [Set values] to confirm successful save of changes.

APPENDIX A

ONWA's new version 4.0.0 9-axis E-Compass Manager, a new function was added to detect whether the customer had chosen too many output sentences against lower baud rate :

Example : if a customer choose 4800 baud rate but at the same time he had chosen too many GPS NMEA output sentences and high heading output intervals as below, then a red text "RS232 UART communication status : OVERLOAD" will appear to warn the customer he had chosen too many GPS NMEA output sentences.

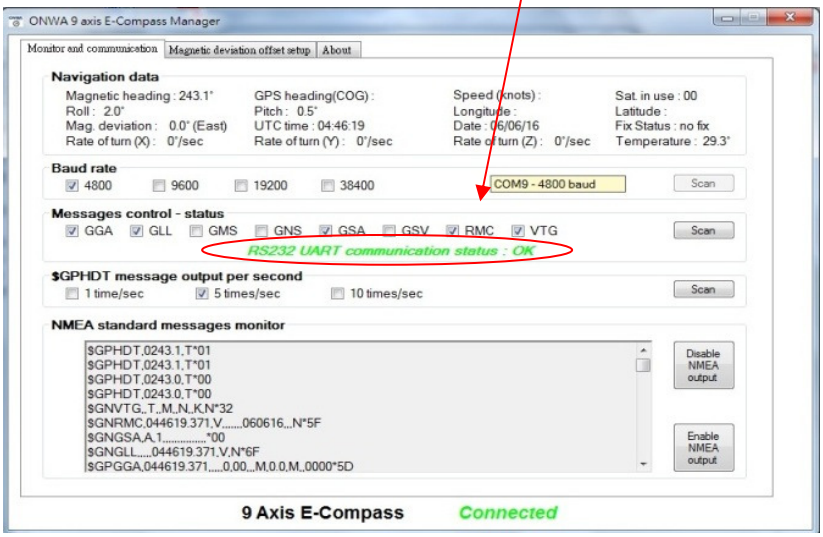


The user can fix this by:

A) de-select some GPS NMEA output sentences Or

B) choose lower heading output intervals

The user sees a green text that shows "RS232 UART communication status : OK" when all his settings are OK, as shown below :



APPENDIX B

ONWA's newest version 4.0.1 9-axis E-Compass Manager, A "Get version" function was added for the user to check the firmware version of his KA-GC9A module. This can be used when he reports a software bug of KA-GC9A.