

~ How to Use HyperTerminal ~

By yobuddy

(Edited from TronicGr's v1.0 User Guide)

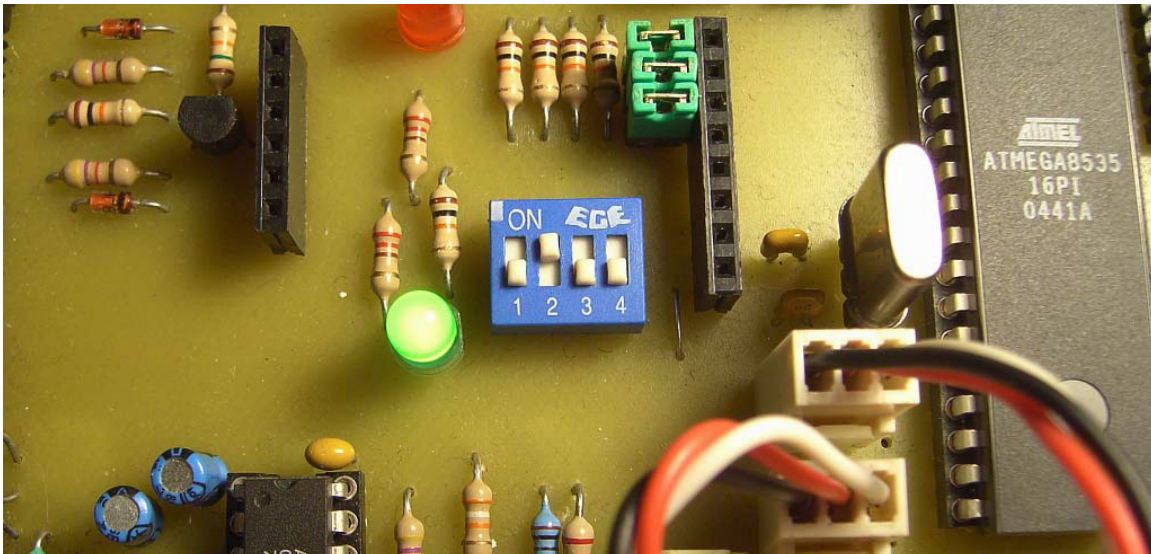
Motion Control parameters:

The motion control scheme of the motors consists of Proportional servo code that controls the acceleration and the positioning of the motor. In many cases the default setting of 3 times the proportionality constant (K_p) might not be enough to give fast motion, or even reaching the destination position. For this reason you must increase the K_p until you find the motion of the motor fast and precise in positioning.

Just be careful increase one at a time the K_p values as they are multiplied by the error factor and might end up with too little servo stabilization area and end up having your motor overshooting the destination position and bouncing forward and backward in a try to position itself.

This unbalance can be disastrous if you let it run this way for a while, since each overshooting can be bigger from the previous and it can produce mechanical problems. Depending on the type of simulator your building, you may need to assign different K_p parameters for each motor.

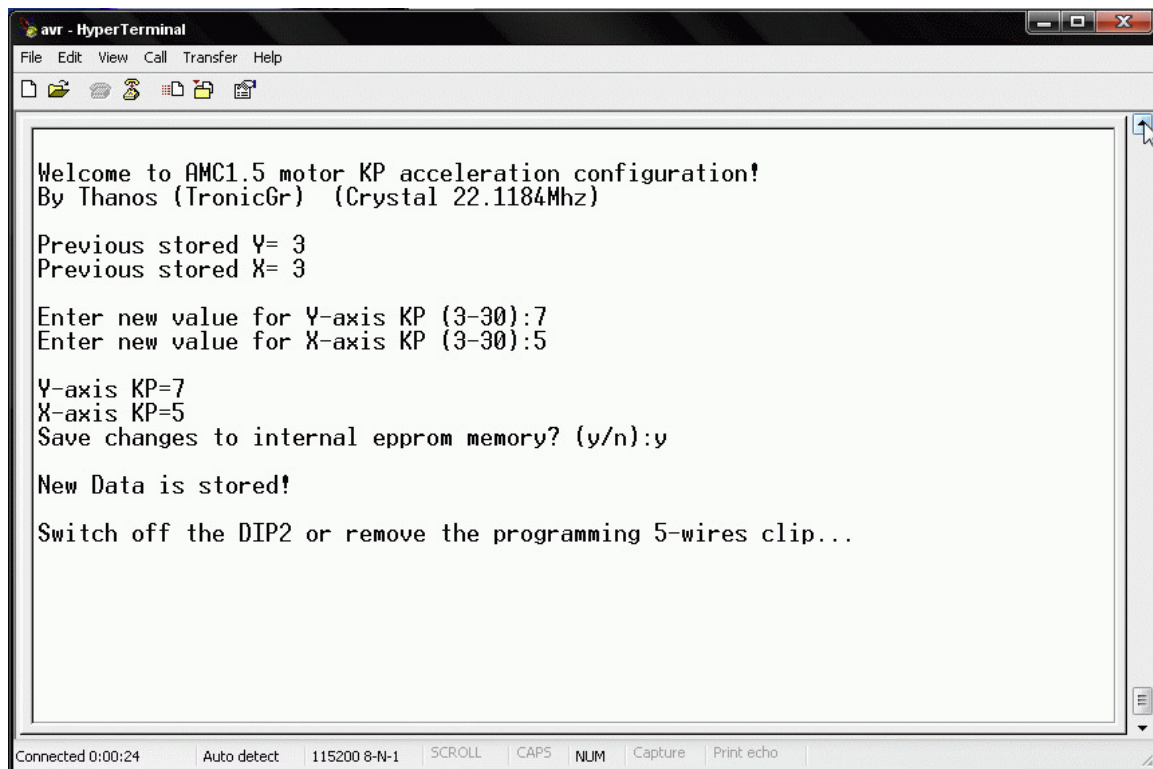
To manually set the K_p setting for each motor you have to set the 2nd DIP switch to ON position and then power-on or reset the AMC board.



HyperTerminal Use:

For entering the K_p parameters of the motors you have to use the windows HyperTerminal to have access in the simple user interface of AMC.

Here is an example screen shot:



```
avr - HyperTerminal
File Edit View Call Transfer Help

Welcome to AMC1.5 motor KP acceleration configuration!
By Thanos (TronicGr) (Crystal 22.1184Mhz)

Previous stored Y= 3
Previous stored X= 3

Enter new value for Y-axis KP (3-30):7
Enter new value for X-axis KP (3-30):5

Y-axis KP=7
X-axis KP=5
Save changes to internal eeprom memory? (y/n):y

New Data is stored!

Switch off the DIP2 or remove the programming 5-wires clip...

Connected 0:00:24  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

The steps to start and use the Windows HyperTerminal are:

1. Open HyperTerminal.
2. Enter a name for the terminal window (I called it “AVR”).
3. Select the COM port you are using.
4. Set the bits per second as 115200 and Flow Control to “None”.
5. From Menu, select View, Font, and increase the system font to size 12.
6. Now set the DIP2 switch to ON position and power-on the AMC1.5 board.

The following will appear on the terminal:

```
Welcome to AMC1.5 motor KP acceleration configuration!
By Thanos (TronicGr) (Crystal 22.1184Mhz)

Previous stored Y= 3
Previous stored X= 3

Enter new value for Y-axis KP (3-30):
```

Enter the Kp parameters you need for each axis motor by typing the number and then pressing enter. It will accept values from 3 to 30.

TIP: For SimForceGT motion, it’s recommended to use the same Kp parameter values for both motors, or else the motion might not be synchronized! You can “repair” a slow motor in a SimForceGT motion simulator by increasing it’s KP a little until it matches the faster motor!

Enter new value for Y-axis KP (3-30):7
Enter new value for X-axis KP (3-30):5

Y-axis KP=7

X-axis KP=5

Save changes to internal eeprom memory? (y/n):

It will then ask if you want to save the changes you have made, so the settings can be used each time you power the AMC automatically...

You should press “y” or “n” here and then press Enter.

If you press “y” this will show on the terminal:

New Data is stored!

In this case the parameters are written in the memory.

If you press “n” this will show on the terminal:

Procedure is aborted!

In this case nothing will be written in memory.

Another message will also show, telling you to switch off the DIP2, in order to continue with normal operation of your AMC.

Switch off the DIP2...

Note: The first time that you run this firmware you will see that the Kp values for both Y,X axis are 255 (FF). This is normal. If you cycle the power or reset the AMC board, an internal safety check TronicGr installed will save automatically the default values of Kp=3 for both Y,X axis. This is the same internal safety check that prevents you from entering values smaller than 3 and bigger than 30. A KP setting between 3 and 30 are the absolute limits that the software can operate in.