

MIAC

Arduino-Compatible Getting Started Guide



MI5466 MIAC ATmega

MI9335 MIAC ATmega with Wi-Fi

MI3449 MIAC ATmega with Bluetooth

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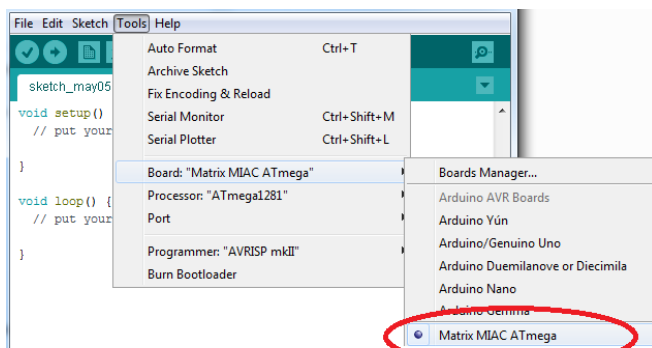
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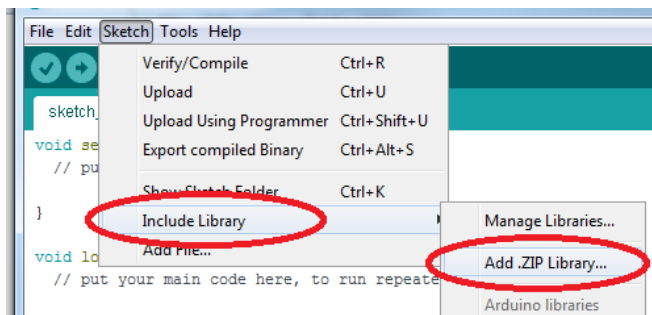
Arduino IDE setup

The AVR Arduino-Compatible version of MIAC can be programmed from the Matrix TSL flowchart based IDE and simulation application **Flowcode V7** or from the **Arduino IDE** for C++ development.

To prepare the Arduino IDE for use with MIAC, first download the MIAC board definition files “Arduino IDE MIAC Hardware File” and code library “MIAC Arduino IDE MIAC Library and Examples” from the MIAC resources section of the matrixTSL.com website.

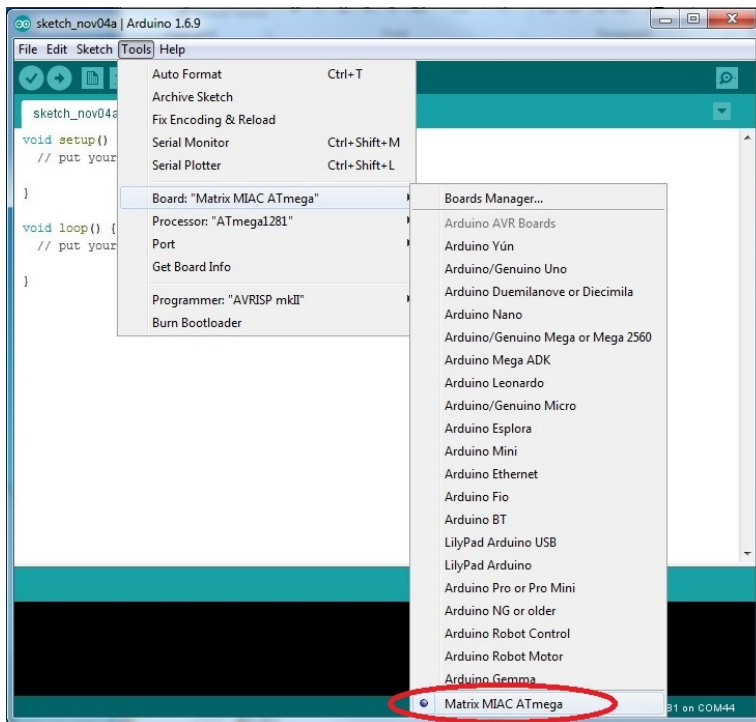


The MIAC board definition needs to be installed by unzipping the contents of the “Arduino IDE MIAC Hardware File” resource download into the “hardware” directory of the Arduino IDE installation. For example:
“C:\Program Files (x86)\Arduino\hardware\matrix”
The MIAC will now be listed in the “Tools->Board” menu.

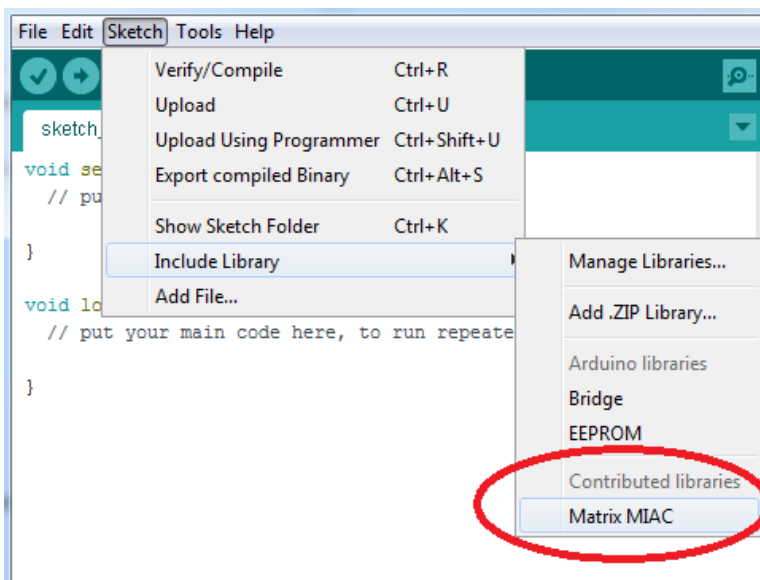


The MIAC code library “MIAC Arduino IDE MIAC Library and Examples” resource download is installed by using the “Add ZIP Library” feature of the IDE.

Creating your project



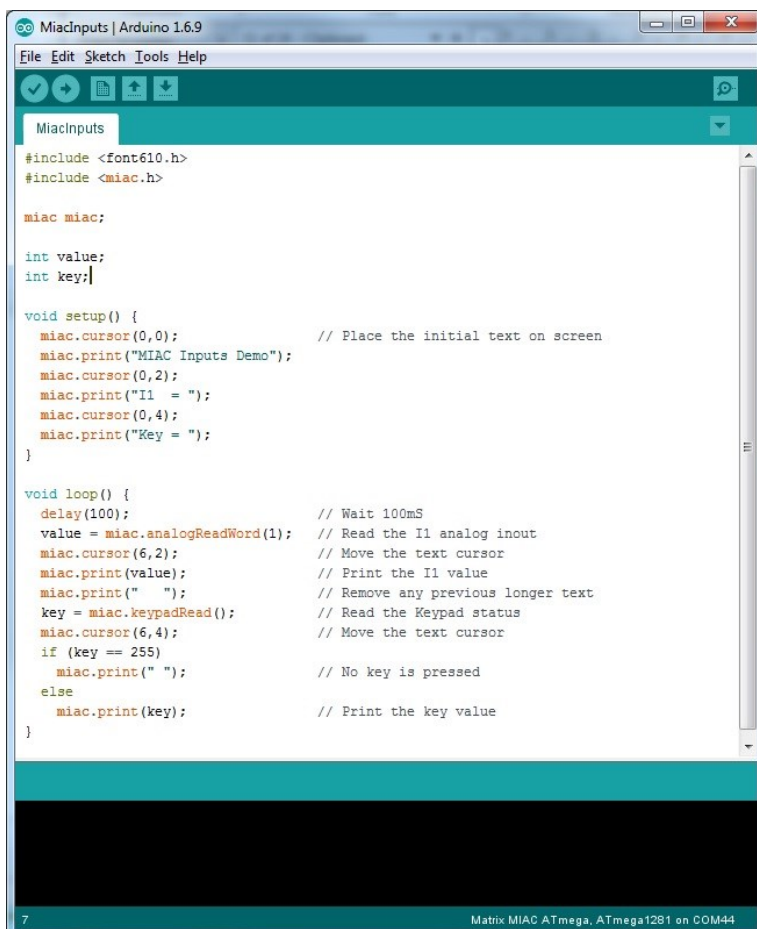
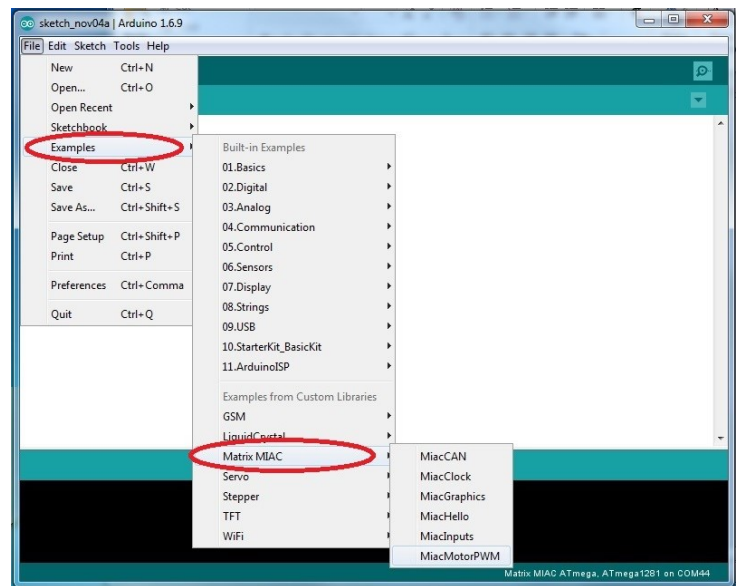
First load the MIAC board definition by selecting “Matrix MIAC Atmega” from the Tools Board menu.



The “Matrix MIAC” library needs to be included in your sketch via the Sketch Include Library menu .

Example MIAC projects

Example MIAC sketches can be found in the File Examples menu under “Matrix MIAC”.



For example, the MIAC sketch “MiacInputs” demonstrates basic cursor positioning, text output to gLCD screen together with examples of how to read the keypad and the analogue inputs of the MIAC.

Serial ports

The MIAC uses two UART peripherals to access and control the RS232 and RS485 interfaces.

In addition, the optional wireless modules can be accessed via the UART channels. Note that the wireless modules are factory set at 57600 baud and connected to UART 1. Please see the MIAC Datasheet for details for changing the serial interface configurations.

The Bluetooth module can be used as a communication link by simply connecting using the PIN code 1234.

The UART peripheral connection information is detailed in the table below.

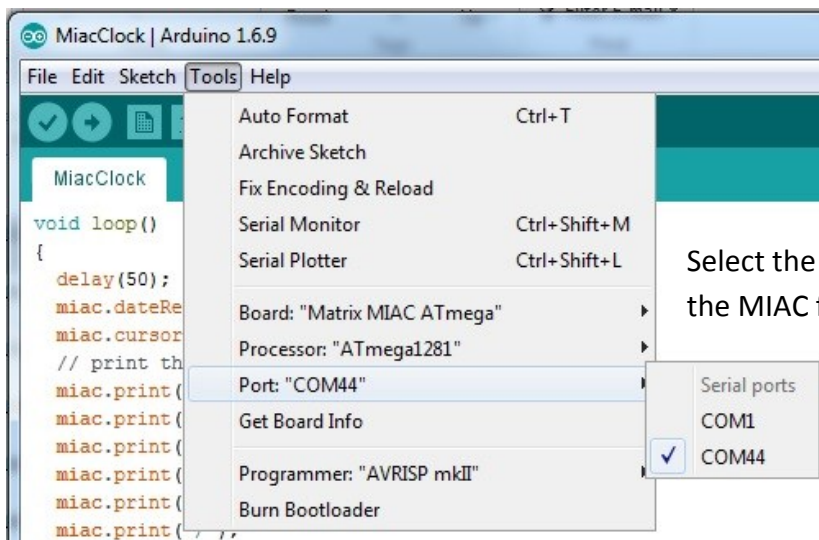
		ATmega Port Pin
UART 0 (RS232)	TX	E1
	RX	E0
	CTS	F0
	RTS	F1
UART 1 (RS485)	TX	D3
	RX	D2
	OE	G4

Programming the MIAC

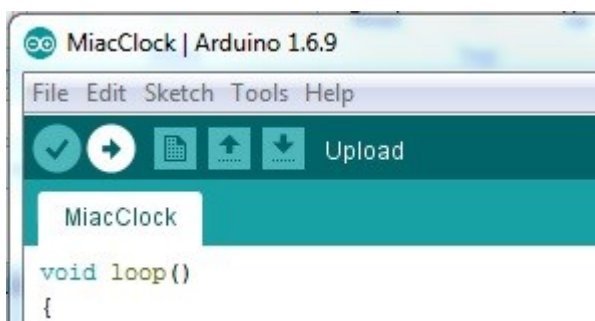


To deploy your project to the AVR (Arduino-Compatible) versions of MIAC, connect via a USB cable and apply power the MIAC.

The USB communication port will be detected and, if it is the first time connected, Windows will install the required FT230X drivers and serial port. If it does not, please download and install the FT230X VCP drivers from www.ftdichip.com



Select the COM port allocated by Windows for the MIAC from the Tools Port menu.



Click the Upload icon to compile and send the sketch to the USB connected MIAC.

Disconnect the USB cable, this is particularly important if the serial UART 0 is used in the sketch. This is because UART 0 is disconnected from the MIAC serial interface circuits when the USB cable is connected.



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