TZXDuino – Updating/switching firmware

The latest version of this manual can be found at https://myretrostore.co.uk/service-manuals/

TZXDuino supports both the Maxduino or TZXDuino firmware.

To update or switch firmware you will need to download the Arduino IDE software (open source) and also download the firmware as a sketch (.ino) file, which is then compiled and uploaded using the IDE

First step is to download Arduino IDE from https://www.arduino.cc/en/software
Download the latest Arduino IDE (Windows or Linux is supported)

Unzip and install Arduino IDE.

If you use Windows you will need to also install the USB drivers for the CH340G serial chip on the PCB:
https://learn.sparkfun.com/tutorials/how-to-install-ch340-drivers/all

Once installed then download Maxduino or TZXDuino code:

TZXDuino 1.17 can be downloaded from

http://arduitape.blogspot.com/2020/09/tzxduino-firmware-116-117-and-updated.html

Extract to a folder called TZXDuino_V1.17

Run Arduino IDE / File / Open – browse to TZXDuino_V1.17.ino

On the userconfig.h tab make sure you have the following settings (I'm not sure if these are default)

#define LCDSCREEN16x2 1
#define LCD_I2C_ADDR 0x27

Proceed as below to compile and upload to the PCB.

Maxduino can be download from
https://github.com/rcmolina/MaxDuino_v1.74

(This is regularly updated so check back often for updates. Latest at time of writing is 1.74)

Click on "Code" and **Download ZIP**.

Save and extract contents and rename folder to MaxDuino_v1.74 (The folder must be the same name as the .ino file otherwise Arduino complains)

Run Arduino IDE / File / Open – browse to MaxDuino_v1.74.ino

On the userconfig.h tab make sure you have the following settings (I'm not sure if these are default)

#define LCDSCREEN16x2
#define LCD_I2C_ADDR 0x27

Installing Arduino Libraries

The latest version of Maxduino requires SoftI2CMaster library to be installed. This can be done by going to Sketch / Include Library / Manage Libraries
Search for ***softi2cmaster*** and install.
You might also need to install ***sdfat*** library to compile tzxduino or maxduino.

Compiling and uploading

To see the progress while the upload is taking place you will need to enable debug logging (Optional)

Click on File / Preferences
Tick “Show verbose output” on “upload”

Plug in the PCB to the serial port using a USB cable.
Under Linux the device should report under /dev/ttyUSB0

Under Windows it will be one of the COM ports. (Have a look under device manager. Make sure the CH340 device drivers are installed)

In Arduino IDE click on Tools / Board / Arduino AVR Boards and select “Arduino Pro or Pro Mini”

Under Tools / Port – select the serial port (/dev/ttyUSB0)
Click on Sketch / Verify-Compile. You should see something similar to:

Sketch uses 29640 bytes (96%) of program storage space. Maximum is 30720 bytes.
Global variables use 1688 bytes (82%) of dynamic memory, leaving 360 bytes for local variables. Maximum is 2048 bytes.
Low memory available, stability problems may occur.

Then click on Sketch / Upload.

Once successful you will see:

avrdude: 29640 bytes of flash written
avrdude: verifying flash memory against /tmp/arduino_build_630358/MaxDuino_v1.71.ino.hex:
avrdude: load data flash data from input file /tmp/arduino_build_630358/MaxDuino_v1.71.ino.hex:
avrdude: input file /tmp/arduino_build_630358/MaxDuino_v1.71.ino.hex contains 29640 bytes
avrdude: reading on-chip flash data:

Reading | ## | 100% 6.53s

avrdude: verifying ...
avrdude: 29640 bytes of flash verified

avrdude done. Thank you.

As new versions of Maxduino / TZXDuino come out you can use the method above to reflash and upgrade.