Click-A-Tune

User Manual

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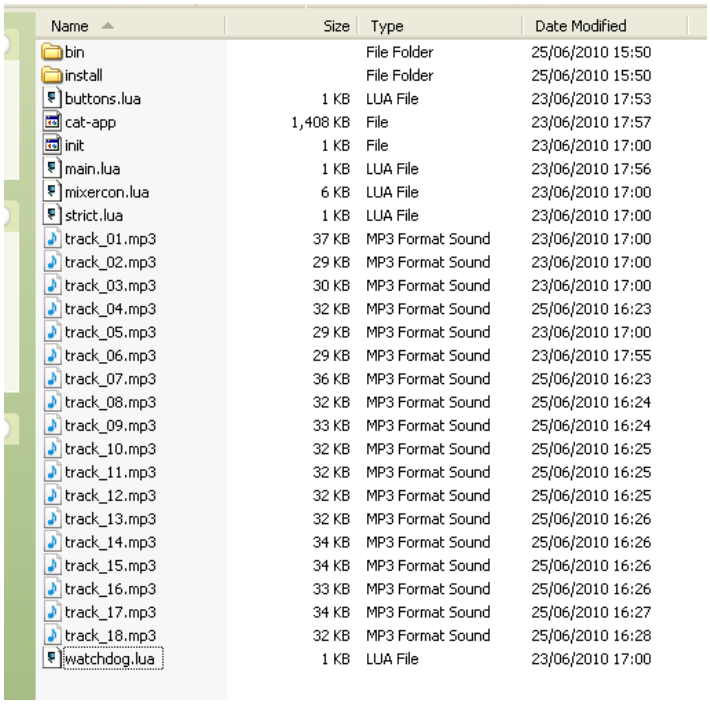
Configuring the Click-A-Tune

The Click-A-Tune has a very powerful 200MHz ARM processor running Linux. A scripting language, LUA, is used to provide the Click-A-Tune functionality.

In its standard form the Click-A-Tune uses a number of switches to trigger the playing of named mp3 files.

Data is transferred to the Click-A-Tune using a USB memory stick. The root directory of the memory key must contain all of the files as supplied on the Click-A-Tune CD.



Name	Size	Type	Date Modified
bin		File Folder	25/06/2010 15:50
install		File Folder	25/06/2010 15:50
buttons.lua	1 KB	LUA File	23/06/2010 17:53
cat-app	1,408 KB	File	23/06/2010 17:57
init	1 KB	File	23/06/2010 17:00
main.lua	1 KB	LUA File	23/06/2010 17:56
mixercon.lua	6 KB	LUA File	23/06/2010 17:00
strict.lua	1 KB	LUA File	23/06/2010 17:00
track_01.mp3	37 KB	MP3 Format Sound	23/06/2010 17:00
track_02.mp3	29 KB	MP3 Format Sound	23/06/2010 17:00
track_03.mp3	30 KB	MP3 Format Sound	23/06/2010 17:00
track_04.mp3	32 KB	MP3 Format Sound	25/06/2010 16:23
track_05.mp3	29 KB	MP3 Format Sound	23/06/2010 17:00
track_06.mp3	29 KB	MP3 Format Sound	23/06/2010 17:55
track_07.mp3	36 KB	MP3 Format Sound	25/06/2010 16:23
track_08.mp3	32 KB	MP3 Format Sound	25/06/2010 16:24
track_09.mp3	33 KB	MP3 Format Sound	25/06/2010 16:24
track_10.mp3	32 KB	MP3 Format Sound	25/06/2010 16:25
track_11.mp3	32 KB	MP3 Format Sound	25/06/2010 16:25
track_12.mp3	32 KB	MP3 Format Sound	25/06/2010 16:25
track_13.mp3	32 KB	MP3 Format Sound	25/06/2010 16:26
track_14.mp3	34 KB	MP3 Format Sound	25/06/2010 16:26
track_15.mp3	34 KB	MP3 Format Sound	25/06/2010 16:26
track_16.mp3	33 KB	MP3 Format Sound	25/06/2010 16:26
track_17.mp3	34 KB	MP3 Format Sound	25/06/2010 16:27
track_18.mp3	32 KB	MP3 Format Sound	25/06/2010 16:28
watchdog.lua	1 KB	LUA File	23/06/2010 17:00

Please note that the entire structure needs to be on the key – including the 'bin' and 'install' directories.

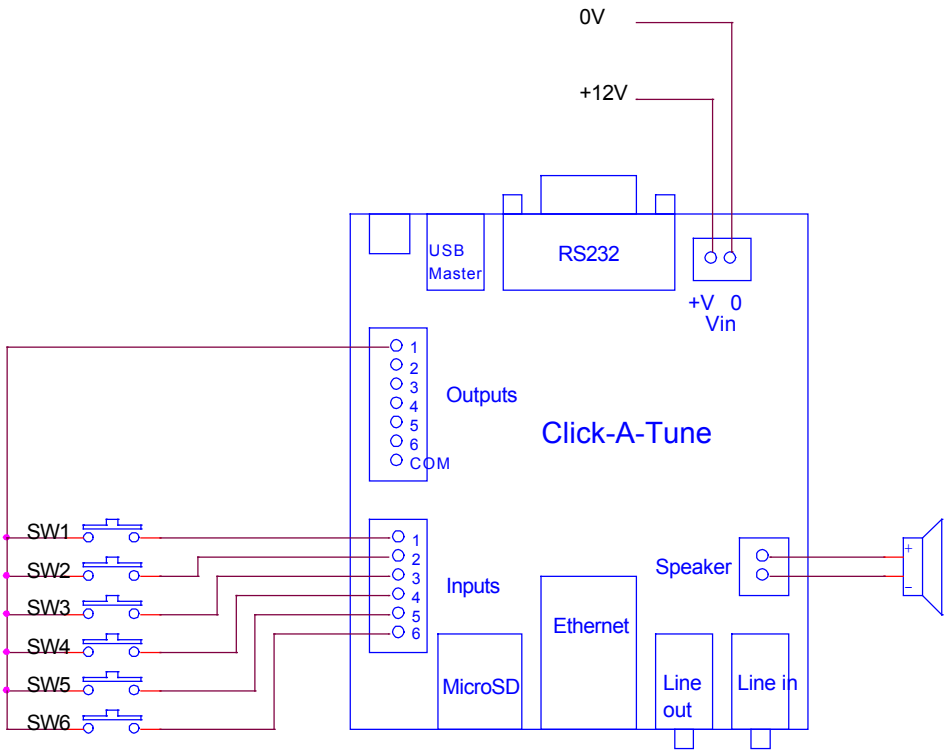
The number of tracks depends on the number of switches you intend to use. You may add them or remove them.

Transferring data to the Click-A-Tune

1. Copy data to the root directory of a USB memory stick.
2. Change the 'track_xx.mp3' files to be the sounds you wish to play.
3. Power the Click-A-Tune OFF.
4. Plug the memory key in to the USB master socket on the Click-A-Tune
5. Power the Click-A-Tune ON.
6. If the USB key has an activity LED it will flash while the Click-A-Tune copies data from it. This will normally take a few seconds.
7. Remove the memory key – the Click-A-Tune is ready to go!

Click-A-Tune with 6 switch configuration

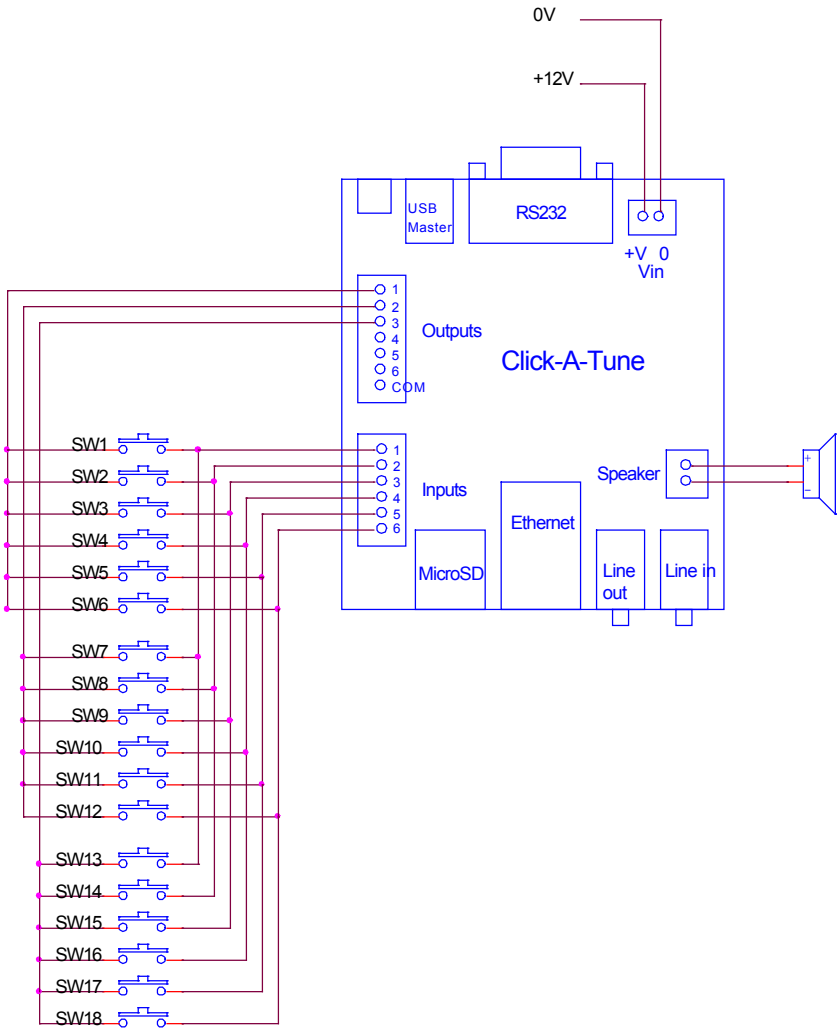
This diagram shows how to wire the Click-A-Tune in a configuration with up to 6 switches.



In this case the Click-A-Tune will play 'track_01.mp3' when SW1 is pressed, 'track_02.mp3' when SW2 is pressed etc.

NOTE: You do not need to connect all of the switches – only those you need to operate.

Click-A-Tune with switch matrix – up to 36 switches



This example shows 18 switches being used. In this case the Click-A-Tune will play 'track_01.mp3' when SW1 is pressed, 'track_18.mp3' when SW18 is pressed etc.

Changing the Click-A-Tune playback volume

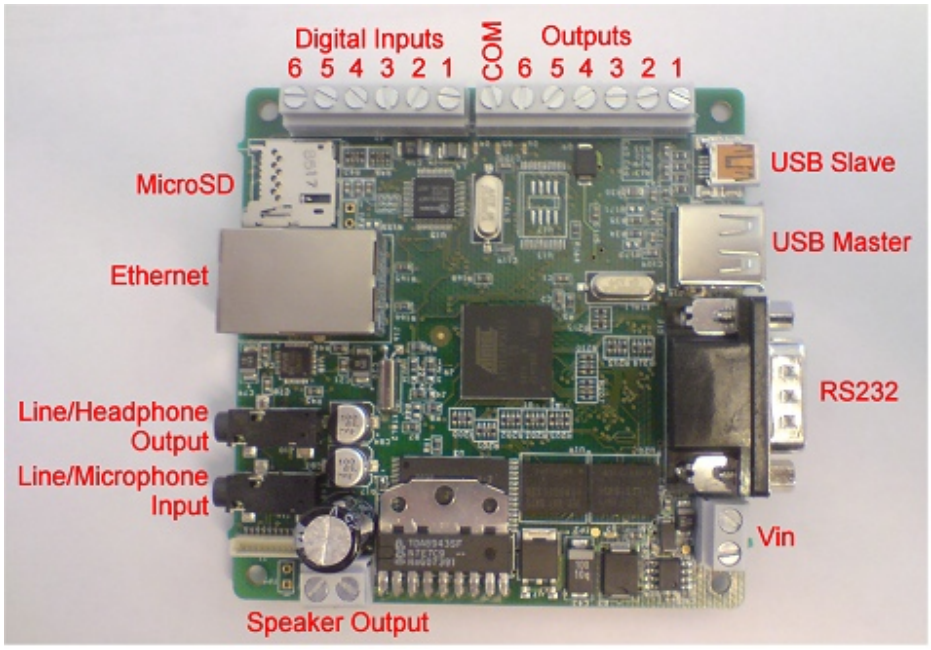
The volume of the Click-A-Tune output is fixed by the script. If you wish to change the volume of the output the script needs to be changed.

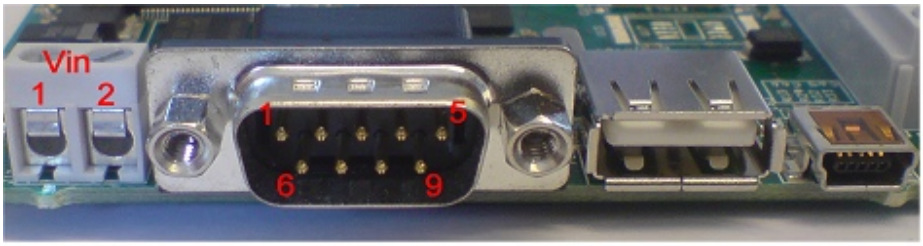
1. Using a text editor (example 'Notepad') edit the file 'main.lua' on your USB memory key
2. Search for the lines

```
-- initialise mixer
mixercon.init()
mixercon.setvol( 'Mono', 100 )
```

3. Change the number in the line with '.setvol' to the desired level. The maximum is 127 and the minimum is 0.
4. Save the file to the memory key
5. Transfer the data to the Click-A-Tune as described in section 'Transferring data to the Click-A-Tune' on page 2.

Connections





Power and Serial connections

Power requirements (Vin)

Pin	Function	Type
1	GND	Power (Reverse Polarity Protected)
2	+12V	7 to 13 volts – nominal 12 volts

Power supply current draw at 12 volts

- 130mA in idle state
- 500mA with audio playback in to 8 ohms

RS232 (DTE)

This is a standard RS232 DTE (Data Terminal Equipment) using a 9 pin D-sub connector. Pin 4 (DTE) is connected to +5V through a 100R resistor. This pin may be used to power remote devices.
The serial port may be used to control the Click-A-Tune

Pin	Function	Type
1	Not connected	
2	RS232	RX (Receive data - input to Click-A-Tune)
3	RS232	TX (Transmit data - output from Click-A-Tune)
4	Pull-up to +5V via 100R resistor	Power for remote hardware
5	GND	GND
6	Not connected	
7	RS232	RTS (Request To Send – output from Click-A-Tune)
8	RS232	CTS (Clear To Send – input to Click-A-Tune)
9	Not connected	

USB Master

USB connector intended for connection of USB memory sticks to upload content or mass storage of audio files.

USB slave

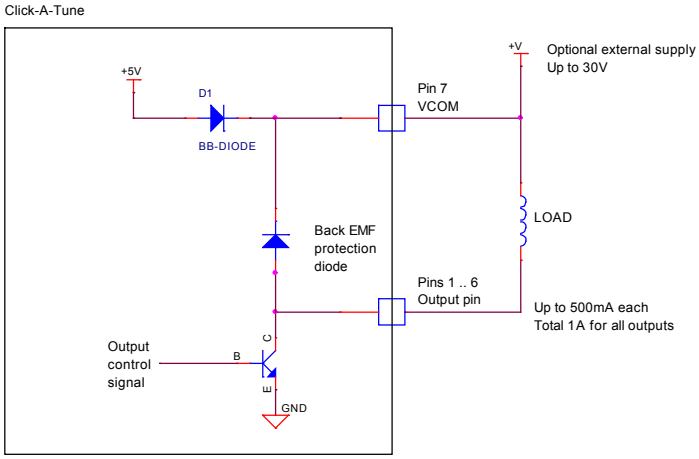
Not currently used.

Outputs

The outputs may be general purpose outputs under control of the Click-A-Tune software. Currently the outputs are configured to drive a switch matrix.

Pin	Type	Function
1	Open Collector with diode to Pin 7 (30VDC 50mA Max)	Output / Switch matrix drive
2		Output / Switch matrix drive
3		Output / Switch matrix drive
4		Output / Switch matrix drive
5		Output / Switch matrix drive
6		Output / Switch matrix drive
7	Internal connection via diode to +5V connect to COM voltage if required (30VDC Max)	Common Voltage

The outputs are open collector transistors as shown below



Digital Inputs

NOTE: To operate a digital input, connect the input to 0V (ground) of the power supply.

Pin	Type	Function
1	Internal Pullup to +3v3	Control / Switch Matrix Input
2	Internal Pullup to +3v3	Control / Switch Matrix Input
3	Internal Pullup to +3v3	Control / Switch Matrix Input
4	Internal Pullup to +3v3	Control / Switch Matrix Input
5	Internal Pullup to +3v3	Control / Switch Matrix Input
6	Internal Pullup to +3v3	Control / Switch Matrix Input

Micro SD

Micro SD socket for Micro SD or Transflash memory cards. This card can be used for music storage

Ethernet

The Ethernet port can be used to control the Click-A-Tune. No scripts have been created to use this link yet

Line / Headphone output

Audio at line levels from the Click-A-Tune. This output will drive a standard pair of headphones

Line input

Audio input which is mixed with the audio output from the Click-A-Tune.

Speaker output

Speaker output, capable of driving 8 or 4 ohm speakers. The power output depends on the supply voltage for the Click-A-Tune.