The IIATE Techstarter board was developed as part of the Digital Literacy Schools Grant project conducted during 2017/2018.
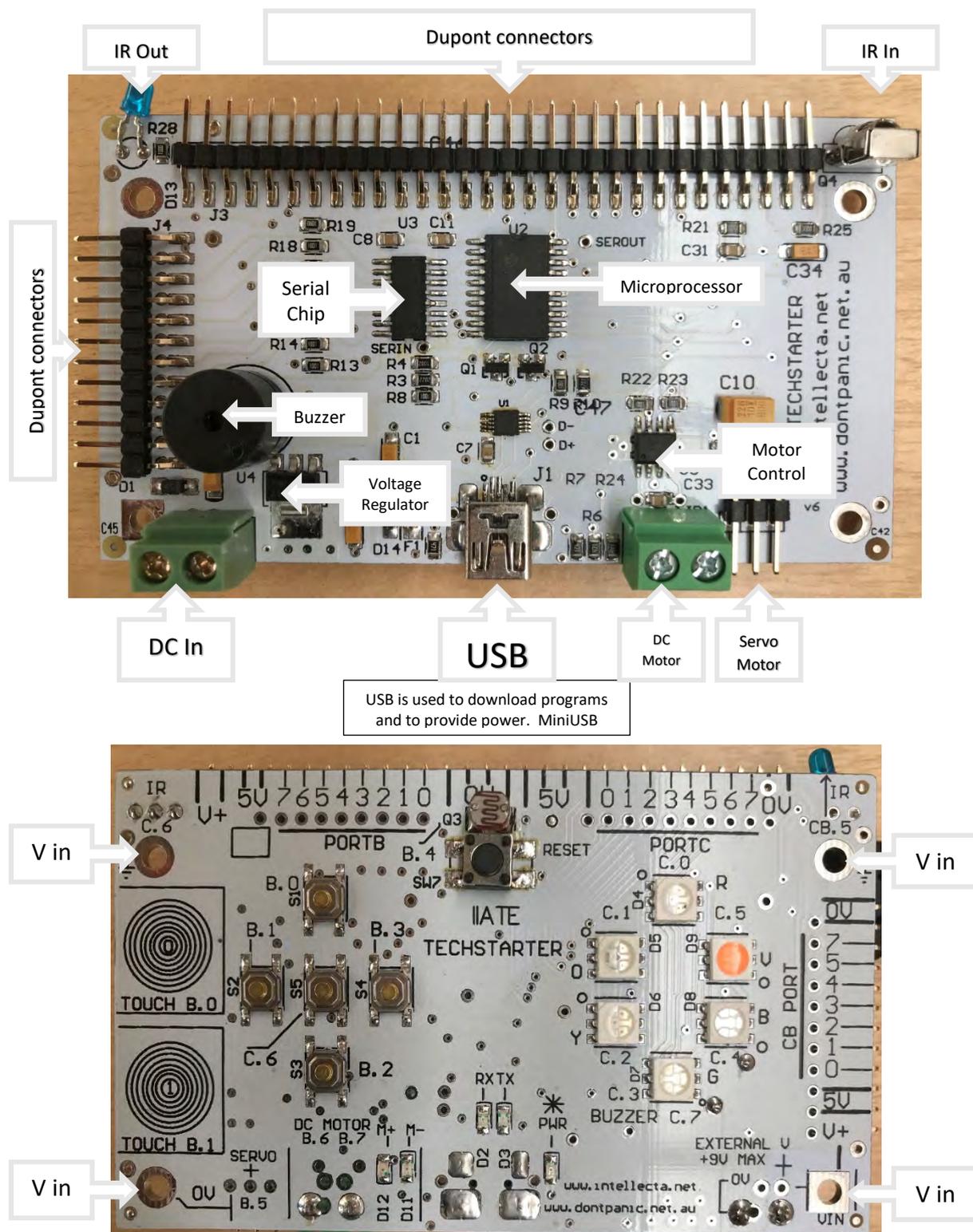
This board was developed by IIATE, Intellecta Technologies and DontPanic sTEm support as an easy entry level into physical computing.

The board is both a training board and a full control technology solution. It is based around the 20M2 PIC chip from Microchip corporation.

It can use PICAXE (from Revolution Technologies UK) programming interface which includes an easy Blockly introduction, then BASIC and JavaScript text based programming languages.

The board has built in inputs and outputs, including PWM and InfraRed. An LDR is onboard to simulate analogue input prior to using external sensors.

A motor controller, A servo controller, 6 LEDS and 5 switches are on the board so sophisticated code can be demonstrated and modified.

IR Out

Dupont connectors

IR In

Dupont connectors

Serial Chip

Microprocessor

Buzzer

Voltage Regulator

Motor Control

DC In

USB

DC Motor

Servo Motor

USB is used to download programs and to provide power. MiniUSB

V in

V in

V in

V in

There is a single environment for coding, simulating and testing then downloading the code to the micro. No swapping from an IDE to simulate then to re test. This can be done in one environment, including a Cloud based Browser based version that means no installation issues to simulate code.

The board can be programmed with MANY languages starting with a "Blockly" interface;
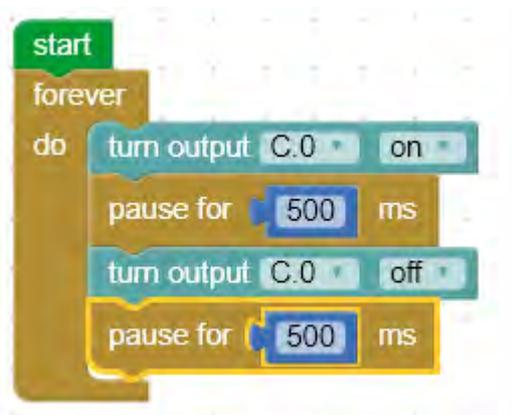

We have produced it for a price that will make it affordable to schools AND that the skills learnt are transferable.
For example, once I program the TechStarter as a development, prototyping platform, I can then use the same environment to program a chip costing less than $2 to do the same job.
Imagine adding LEDS, Coding, sensors and the micro to a project for less than $6!
(this scenario uses an 8M chip or 14M2 chip)

Very sophisticated programs can be written and AS IT IS, TechStarter is able to do Pulse Width Modulation, control a DC motor AND a stepper motor. It can receive analogue and digital input and has ONBOARD switches and an LDR (light dependant resistor) to simulate Analogue input. These inputs can drive the onboard LEDs to show output.

A few courses have already been run with TechStarter and the response is excellent.

Teachers can see very quickly that students will catch on to Digital Technology easily and that the 'embedding' of digital technology in a project is a snack. No surprise when you consider the main designer has DECADES of experience with control technology, embedded systems and education, both secondary and tertiary.
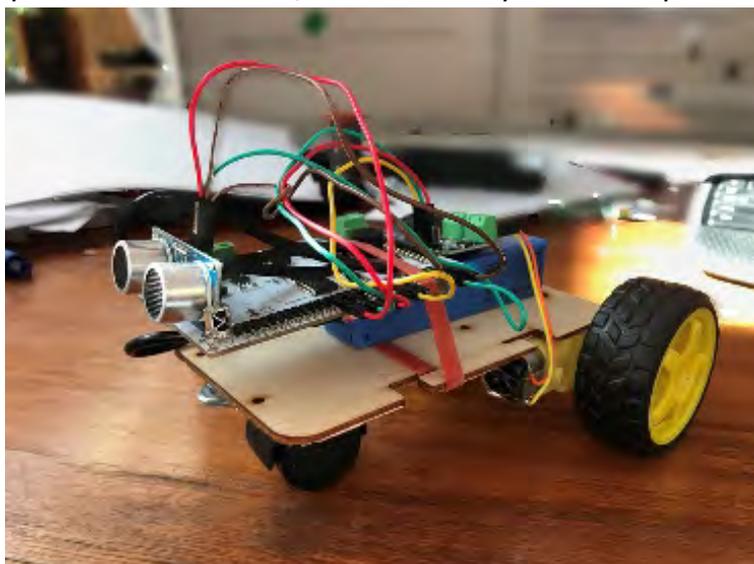
This is a collision avoidance vehicle using a distance sensor, a motor controller board and is powered by a rechargeable power bank like those for a phone or tablet.

The code has the vehicle going forward, then when it detects an object, it reverses and heads off in a different direction at 45 degrees to the previous path.

The 'chassis' is laser cut ply, wheels come with the motors and the front wheel is a small castor.

All files available