Specification sheet:

**Event (Serial) Logger:**

This is a simple Event (serial) Logger that has 4 channels and a timer recording the time once the program is set to run. The 4 channels correspond to 4 buttons on the circuit, and upon the press of the button it records the time the button was pressed. All this information is displayed on the Tera Term software and saved on the user’s desktop/ laptop. This model utilizes the timers, UART, and interrupts.

To operate the device:

To operate the device, the user needs to need to power it up with a power supply, set to 5 volts and 0.1 Amps to the red and black jumper labelled 1 and 2 in figure 1 respectively.

A picture containing text

Description automatically generated

1

2

Figure : Set up for the circuit

Ensure the tera term software is set up correctly with these settings on your laptop/desktop where the snap is connected to.

1. Serial Port (Snap is detected)
2. Setup -> Serial Port -> set the Speed to 38400-> New setting

Once the serial port is set up. Run the code on MPLABx and the timer will begin, and from there, the user can press either of the button and the time will be displayed in the format: DDD HH:MM:SS:T Channel (number) on the tera term.

**Testing:** To test the device, two methods were used to ensure the device is fully functional. First test was to ensure all 4 channels were recorded on the Tera Term software upon the button being pressed. This was done in ascending and descending order. All the buttons displayed the information accurately. The second test was to ensure the timer was running in line with the time on my stopwatch with an error of 1/10th of a second. I used the stopwatch app on my phone to measure the time when I started the program till, I pressed a button. Both the times matched which therefore concludes that both the tests were successfully passed.

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| Temperature Range | -25°C to +70°C |
| Voltage rating | 1.8 – 5.5 (volts) |
| Ready time | Approximately 20 seconds |
| Nominal weight | 120 grams |
| Power consumption | Active Mode - 190 to 1.8V and 1MHz  Idle Mode - 24 at 1.8V and 1MHz  Power down Mode – 0.1*A* at 1.8V and 25°C |
| Speed Grades | 0-4 MHz @ 1.8 to 5.5V  0-4 MHz @ 2.7 to 5.5V  0-4 MHz @ 4.5 to 5.5V |
| Memory Capacity | 12KB |

**Warning: To avoid damage to the unit keep these points in mind**

1. Do not use this unit in the environment of rain
2. Do not leave unit near high temperatures
3. Do hold the unit from the loops of the jumper cables

**System requirements:**

* MPLAB x software installed – Support for the following OS: Windows 7, Mac OS X 10,11 or higher, Windows 10, Linux 18.04 or higher
* USB 2.0/ USB3.0 for connection to the device
* Power supply/ Analogue discovery, supplying power at 5 volts and 0.1A
* Intel core i5, 10GB hard disk space and 4GB ram