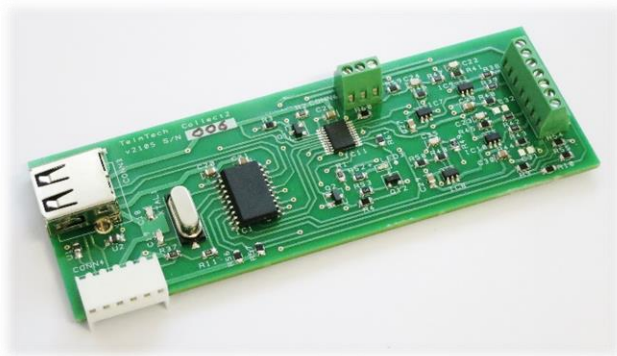


Collect2

Description

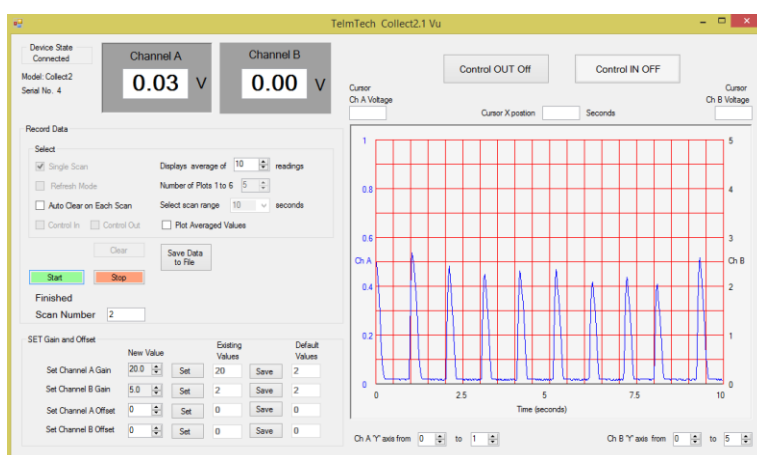
The Collect2 is an entry level data acquisition and display PCB with variable gain amplifiers and two channel data collection capability. It is intended for lab-based measurement and display of signals. A micro controller provides analogue to digital conversion (ADC) and a USB compatible communication port. Data is displayed in the Graphical User Interface (GUI) and can be saved to the host computer. The board also has logic level input and output that allows synchronisation of data collection either by triggering the measuring equipment or being triggered by the measuring equipment. The Collect2 works with positive input signal levels from 0 to 2.5V. The gain can be adjusted and saved for each channel from the 'Collect2 Vu interface'. The amplified analogue signal for each channel is also available to the user and the board is typically powered from the USB compatible port.



Features

- Two channels with input voltages in the range 0 to +2.5V
- Variable gain amplifiers, adjustable in the range 2 to 20.
- 10bit ADC resolution of the amplified signal (equivalent to 4.9mV)
- I/O for control of data collection or remote equipment
- Eight record and plot time intervals from 10s to 2400s

Collect2 Vu Graphical User Interface



The Collect2 is intended to be used with the TelmTech 'Collect2 Vu' user interface which runs on Windows computer systems and is required to set and save each channel's amplifier gain. The 'Collect2 Vu' records slowly varying signals with a minimum sample interval of 20ms. However, after the Collect2 has been set up it can be used as a stand-alone variable gain amplifier for signals up to the 20kHz region. There is no need of digital multi-meters or other

electronic equipment to set up the Collect2. All functions and voltages are displayed in the 'Collect2 Vu' which has two digital voltmeters, a graph plot area and also provides several operating modes for the control of data collection and the display and saving of data. The recorded plot range is selectable between 10s and 2400s with up to 5 scans being displayed and saved.

Collect2 Specification

Power Supply

USB Voltage	5V
USB Current	0.1A
External Supply voltage	5V
External Supply current	≤ 40mA

Analogue inputs

Number of Channels	2
Input voltage range ChA & ChB	0 - 2.5V ¹
Maximum common mode DC voltage	+4.4V ²
Minimum common mode DC voltage	-0.4V ²
Input frequency range (square wave)	0 - 20kHz
Input impedance	>1MΩ

Analogue outputs

Output voltage range	0 - 5V
Maximum output current	15mA
Analogue output signal rise time to 95% (square wave input)	≤ 12us ³ (depends on gain)
Analogue output signal fall time to 5% (square wave input)	≤ 15us ³

Control In

Maximum voltage	5V
Logic high level	> 2.5V
Logic low level	< 2V
Current	~5uA
Trigger pulse duration	typ. 25ms

Control Out

Maximum voltage	5.2V
Logic high level	≥4.9V
Logic Low level	≤0.1V
Current	≤ 1mA

Digital Conversion

ADC resolution	10bit
----------------	-------

Environment

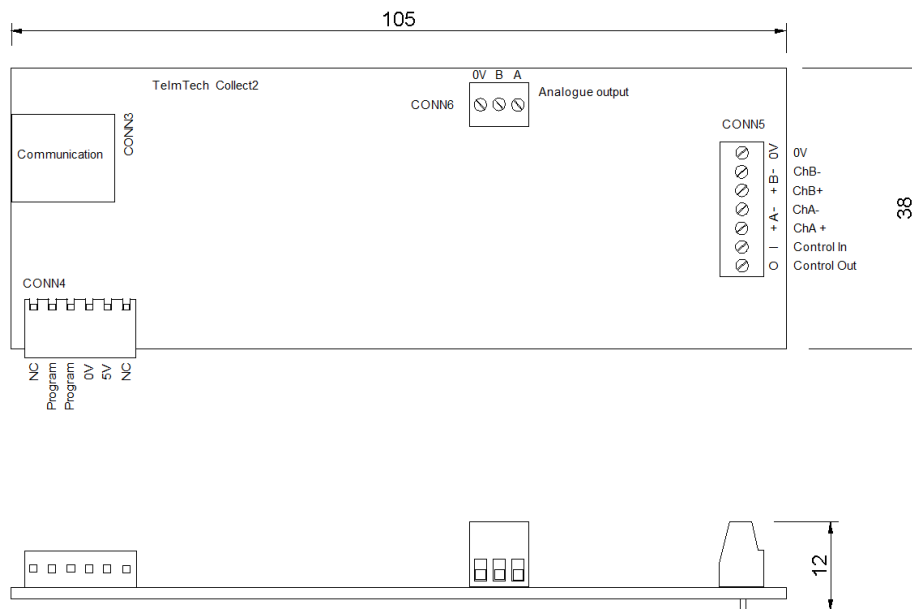
Operating temperature range	10 – 40 Celsius
-----------------------------	-----------------

Connectors

CONN3	Style A USB, female ⁴
CONN4	6-way female Molex KK254
0V	0V
5V	5V Output or Input ⁵
Program	DO NOT connect ⁵

CONN5	Inputs & I/O, 7-way screw terminal
0V	0V
A+	ChA non-inverting input
A-	ChA inverting input
B+	ChB non-inverting input
B-	ChB inverting input
I	Control In
O	Control Out
CONN6	Analogue outputs, 3-way screw terminal
0V	0V
A	ChA amplifier Output
B	ChB amplifier Output
Physical size W x L x H	38 x 105 x 12mm

Collect2 Mechanical Information



1. The voltage between the non-inverting and inverting inputs.
2. This is the common mode voltage at the inverting input terminal with respect to 0V. Test Condition: Gain = 20, Input square wave amplitude 220mV, rise time ~1us.
3. Test Condition: Gain = 20, Input square wave amplitude 220mV, rise time ~1us. Note, when the gain is reduced the rise or fall times become shorter.
4. Requires Style A male on the connecting lead.
5. Do not connect an external power source when the compatible USB is plugged in. Do not connect to any other pins on connector CONN3 except pins 0V & 5V. Pins labelled 'Program' are used for programming the on-board micro controller and incorrect signals or voltages may cause incorrect operation or result in device failure. The external voltage should only be connected after the Collect2 has been set up using the Collect2 Vu interface and the serial connection removed.

Important Notice: The Collect2 is NOT to be used in high reliability and risk applications, such as medical, aerospace & transport, where failure might present a risk to life or serious injuring. In addition, the information presented in this data sheet is provided in good faith and is considered to be accurate at the time but may be subject to change without notice.