
	Crabtree Test panel LAB06 ADM & CAL	CRAB200-1
	Revision No:	01-2
	Effective Date:	31/01/2015
	Approved by:	F. Emslie


BAT ELECTRONICS

CRABTREE ENDURANCE TEST LAB PANEL LAB06 ADM & CAL page

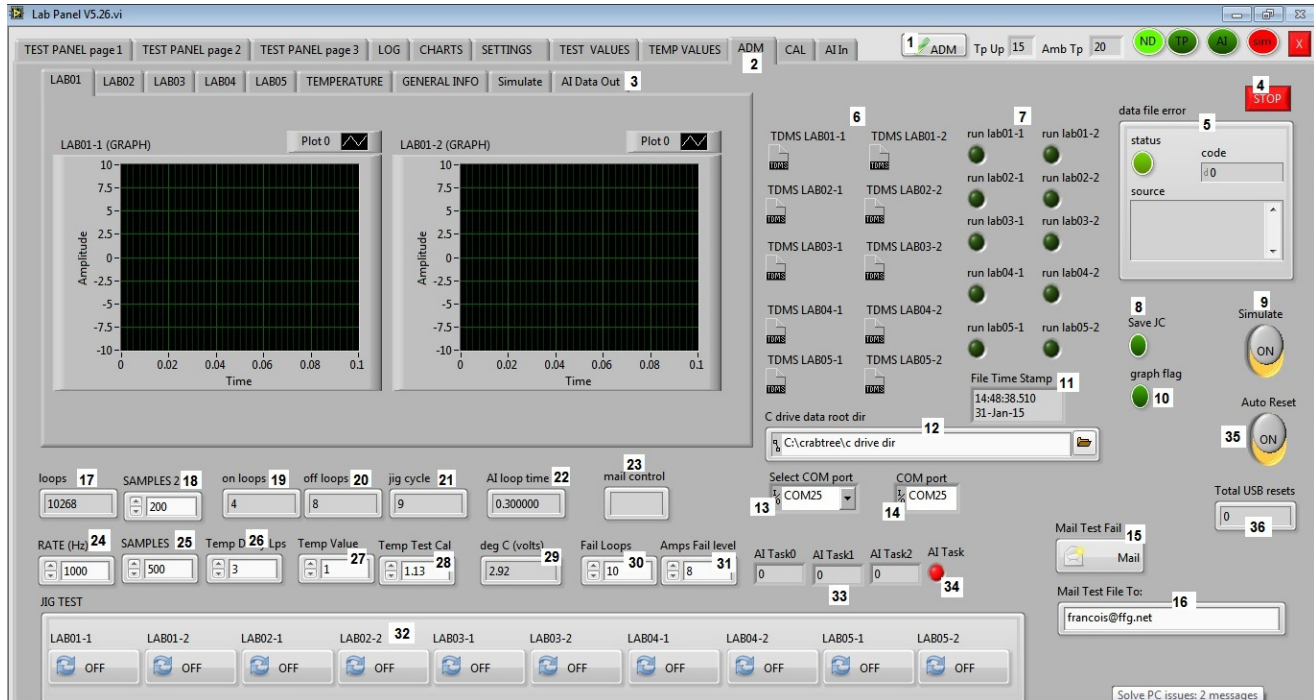
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2. LAB06 ADM page



1. Press to select ADM page. Enter password "9949".
2. ADM tab, select ADM page.
3. Raw data display, error message and Simulate TAB select.
 - a. LAB01-LAB05: Amps & Volts raw data from USB4704.
 - b. TEMPERATURE: Raw data from temperature board.
 - i. Tx: Actual temp value from board.
 - ii. ID: Board number; 1-5.
 - iii. Any Test Running; used to control task reading, if all controls are off stop Ai task from running. Start AI task if any control is on.
 - iv. Read Time; All temperature circuits 1-5 are read in one cycle, this displays the read time to get all 5 circuits data.
 - c. GENERAL INFO:
 - i. Display if any Analog error detected.
 - ii. At the start of the program, the temperature circuits are read to determine which circuits are connected, the circuits detected are displayed.
 - iii. The USB digital outputs are displayed.
 - d. Simulate: Control values when in simulate mode.
 - i. If no USB4704 units detected, program enters simulate mode.
 - ii. Change values as required for testing.
 - e. AI Data Out:
 - i. The AI task is running every 250mS, loop time, this page displays the raw data from each USB-4704 module task.


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4. Select to STOP program during testing, note X on main menu bar end Labview session, only to be used when running in final application mode. Will STOP display program as well.
5. Error display from test data file open, write or close.
6. Test data file path indicators.
7. Actual Boolean value used for START & STOP control.
8. Used to control jig cycle counter save.
9. Indicator of SIMULATE mode. At the start of the program, it is possible to set the program in simulate mode, password 9949. During normal testing simulate mode can be run by setting the control.
10. Used to sync display of graph values with display remote display program.
11. Time stamp used for test data file (.tdms) save.
12. Directory path to be used for local "C" drive test data save.
13. Select RS232 to RS485 converter COM port used for temperature network measure.
14. Display of COM port saved to setup data file.
15. Control button to select sending of all fail test data files.
16. Mail address to send test fail data files to.
17. Test loops, continuous.
18. Set number of samples to read from AI task.
19. Calculated "ON" loops to suit selected JIG control time using loop delay time.
 - a. $\text{ON loops} = \text{JIG on time} / \text{loop time}$ (ex: $2 = 1 / 0.5$)
20. Calculated "OFF" loops to suit selected JIG control off time using loop delay time.
 - a. $\text{OFF loops} = \text{JIG off time} / \text{loop time}$ (ex: $4 = 2 / 0.5$)
21. Current JIG cycle busy, max = ON loops + OFF loops.
22. Time taken to read all channels from USB4704 (1-3).
23. Variable used for mail control sending.
24. Set measurement rate in Hz for USB4704 task.
25. Set number of samples to be used for USB4704 measurement task.
26. The number of consecutive changed readings required to change the temperature value.
27. The value required in deg C before a temp value change is recognized.
28. Multiplier value used to change temperature value once test is started. Offset cal value required to realize real value due to probe clip design.
29. Raw data voltage value from LM335 ambient temperature probe 10mV/ deg Kelvin.
30. Number of consecutive faulty readings required to fail a test, set default to 10.
31. Amps level used to measure fail condition. If amps less than this for ON cycle or amps higher than this for OFF cycle, then fail counter starts.
32. JIG TEST; This can be used to drive jig outputs if no test started.
33. From V26 the AI measurement is done using polymorphic task routine. The tasks are created at the start of the program using RATE (Hz) and SAMPLES value and set to measure "continuous". These display values display the task numbers created.
34. To indicate that the tasks have been created.
35. Auto Reset; default is ON. Used to control if USB reset to be done automatically or wait for user input.

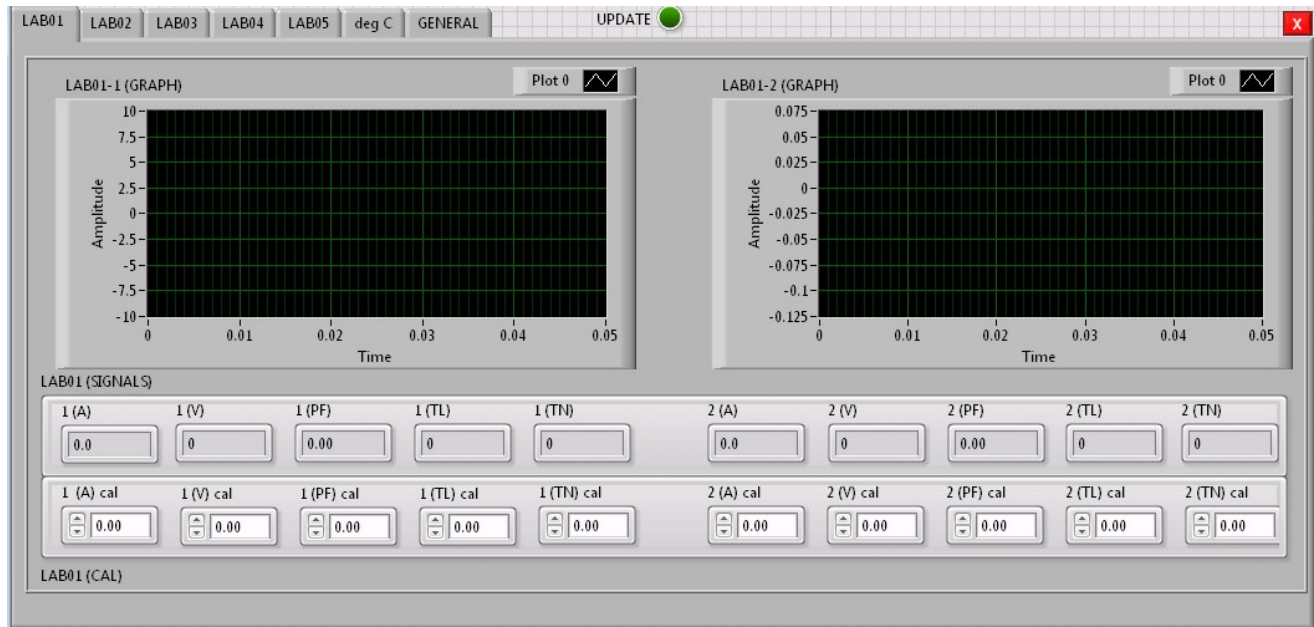
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3. MEASURING SYSTEM DESCRIPTION

- Analog measuring:
 - At the start of the program tasks are created in continuous measurement mode.
 - The tasks are set to measure data every 250mS, control loop.
 - The actual data is used at specific loop times to ensure correct AI data used.
 - If no test panel control is switched on, all tasks are stopped, 0 displayed for all values.
 - If any control, Panel on/off or test START is selected the tasks are created and AI data measured every 250mS.
 - When the program is stopped, the tasks are first stopped as well.
 - As a backup, all tasks are stopped before a new task is created.
 - AI tasks set up to convert at 5000Hz and convert 500 samples.
 - Program set to get 500 samples from task, 100mS data.
 - If 10 continuous AI task errors are detected the USB reset cycle is run.
 - Delay
 - Switch off panel power in controlled mode using 5s time delay for each.
 - Trigger USB reset timer, 5s delay.
 - Wait for USB2 to detect digital input.
 - Once input detected, turn all power back on as before reset started.
 - Reset all error displays.
 - Return to test at point of reset.
- Temperature measuring:
 - At the start of the program the temperature circuits connected will be checked, by reading all 5 circuits and checking for a valid response. The circuits detected will be stored and only these circuits will be read during a test cycle.
 - Temperature measurements are only taken every 20 test cycles.
 - Once cycle 20 is reached, the temperature circuits power (5V) will be switched off and then on (PIC Micro reset). Test cycles can “crash” pic device, therefore rest done with all jigs off, then measurement done.
 - All detected circuits will be measured, read time around 600ms.

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4. CALIBRATION (CAL) page



- Select CAL tab.
- All measurement value calibration constants displayed.
- To change calibration constants select “SET (cal)” button.
- Enter password “7777”.
- Select required USB4704 data and set constant using reference measurement.
- Notes on temperature calibration:
 - Use “deg C” tab to calibrate ambient reference probe.
 - The temp value read from thermocouple pcb will normally be higher than expected.
 - Use cal constant to reduce to reference value for ambient value.
 - IF clip connected to test lead and current applied, temperature will rise at a faster rate. The test panel value section 2 (28) is then used to set displayed value only if test started. This is to adjust temperature under test conditions as investigated on test bench when developing test probe clip design.
- GENERAL tab used to display system values, no calibration information.

