SenseTronics®

LOG MASTER

Data Logger User Manual

LOG MASTER DATA LOGGER

Power Logger:

Temperature Logger:

LOG MASTER DATA LOGGER USER INSTRUCTIONS

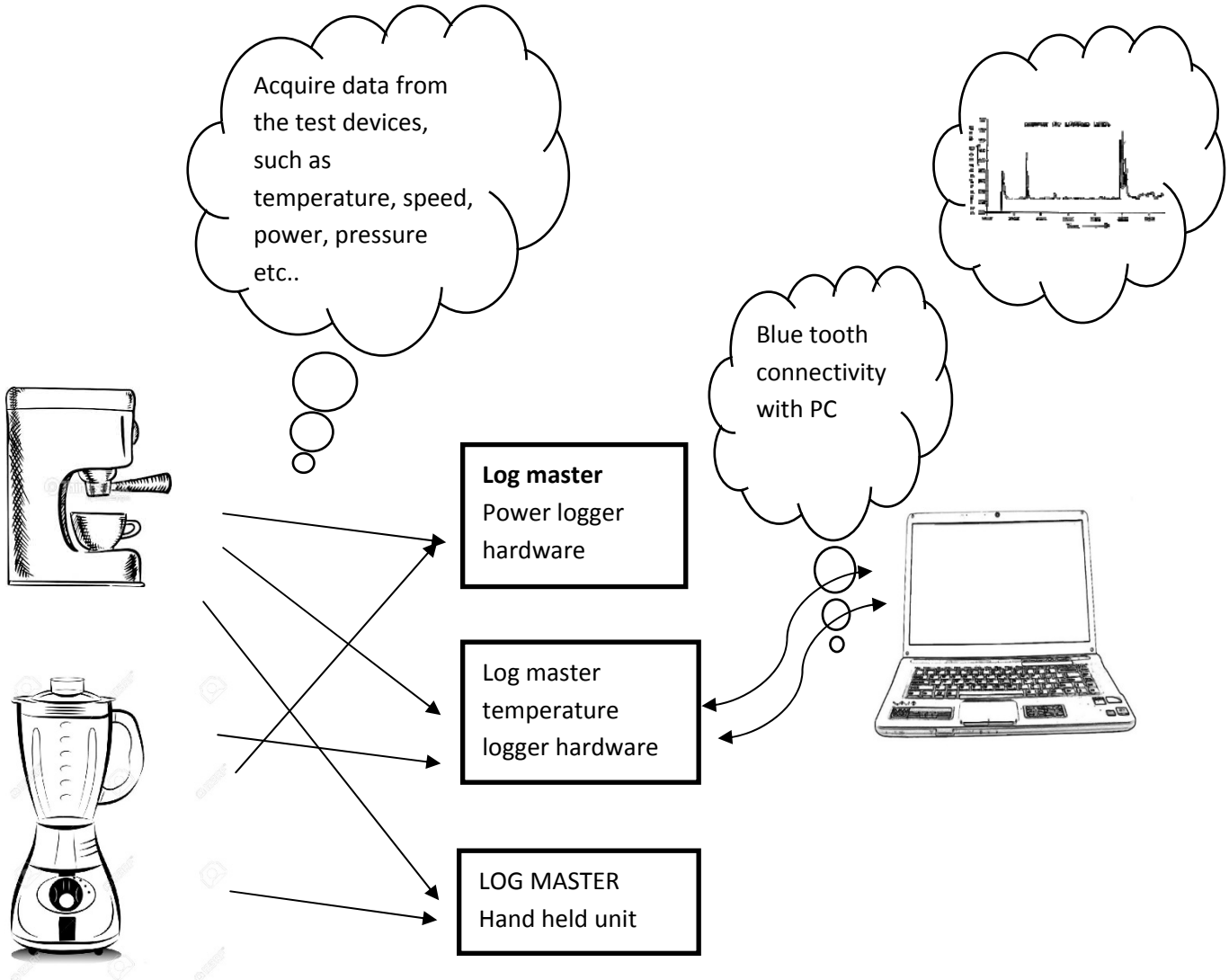
LOG MASTER is a low cost fully featured customized data logging solution for industrial products and appliance development industry.

1. **Key features**
   - Up to 32 expandable thermocouple channels with 0.25C temperature resolution
   - -20C ~ 750C wide temperature measurement range
   - Appliance Voltage, Current and power data acquisition up to 260V/15A.
   - 4 Pressure Sensor logging channels (Output type: 4mA~20mA) with user define pressure range
   - Hand held contactless IR temperature measurements and contactless laser tachometer with TFT display
   - 5rpm ~ 30000rpm wide range speed measurements
   - Programmable high speed data capturing and plotting intervals (programmable intervals from 50ms ~ 1minute range)
   - Export data logging chart to excel, jpg. Ability to save data files in ".tdms" format
   - Replay, pause and fast forward captured data to review and simulate the actual process
   - Graph colors, channel names, recording parameters etc can be customized for easy identification or readability and ability to save and recall user's own setting for future use
   - Select or filter individual charts for clear and better visibility
   - USB powered, portable and light weight (with optional rechargeable battery pack)
   - Flexible and user friendly Wireless Bluetooth connectivity between PC and the logger hardware
   - Future expandable data logging modules such as:
   - vibration sensors with FFT analysis
   - Sound level meter with FFT analysis
   - Humidity sensors
   - Frequency monitors
   - Load cells
   - Any User define sensor communicate through serial port
   - Any user define Sensor which has capability with 0-5V signal out put
   - WIFI web server to remotely access data over the internet, APPs for data monitoring with mobile devices etc

2. System inclusive

- **LOG MASTER** temperature logger hardware:
  Up to 32 channel expandable temperature logger with k-type thermocouple sockets
- **LOG MASTER** power logger hardware:
  High speed data logging hardware to capture AC mains voltage, AC current up to 15A, wattage up to 3300w and Power Factor and the AC frequency
  Data capture and plot interval is programmable from 50ms to 1minute range
- 4mA – 20mA four pressure sensor channels
- Hand held wireless contactless IR temperature meter and laser tachometer with TFT display
- PC windows based comprehensive data logging hardware

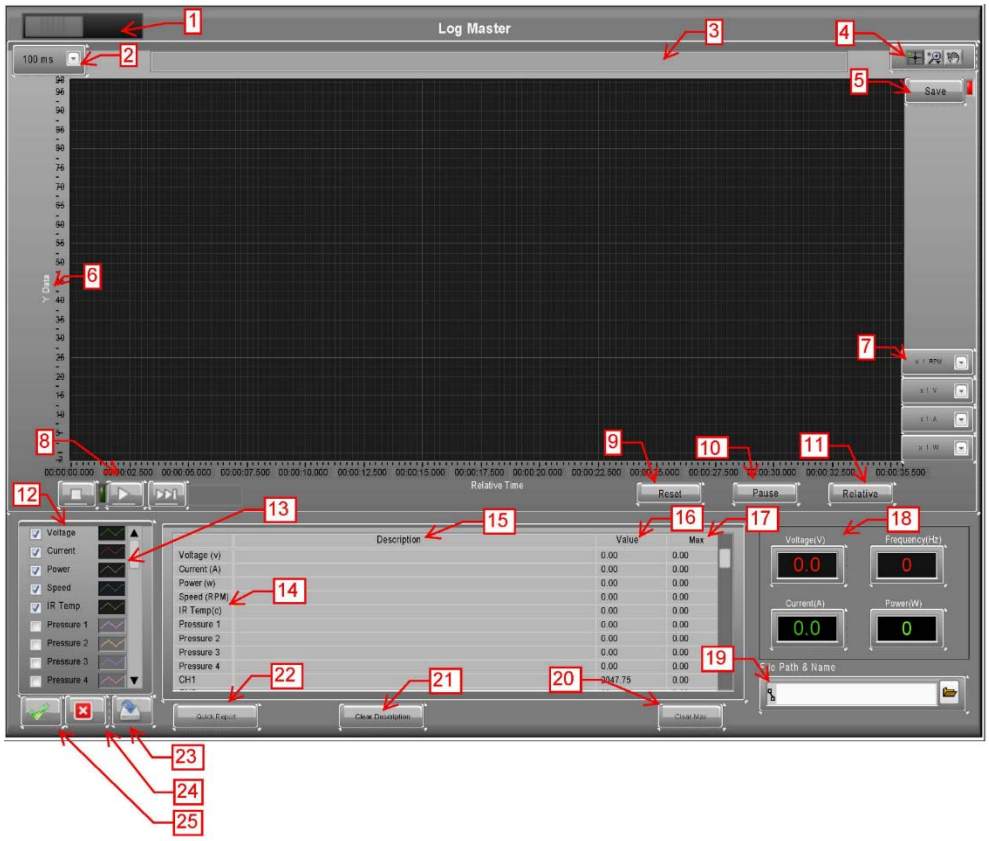
3. System connection diagram



4. LOG MASTER windows based software

LOG MASTER is windows based comprehensive data logging software, compatible with Windows7 – 32bit or 64bit and later versions.

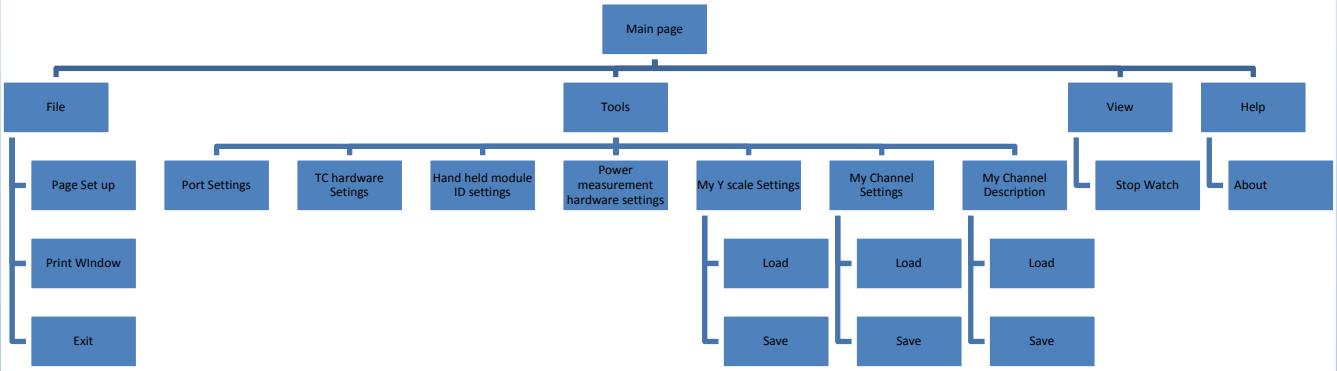
4.1 Main window



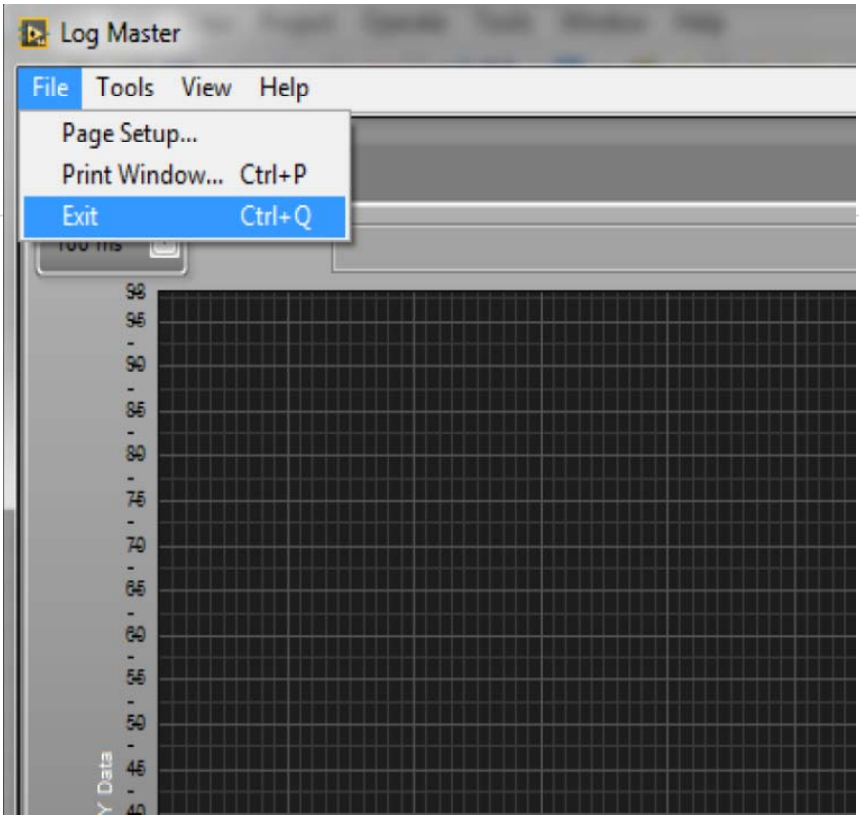
1- Main switch to run the data logger
2- Graph refresh time interval selector (50ms to 1min selectable range)
3- Designated area to make user notes regards to the test window
4- Graph palette: Functions with Zoom, Pan, move graph etc
5- Data save activation button
6- Y axis data
7- Scalar for RPM, Voltage, current and power graphs
8- Play, fast forward and stop buttons for replaying recorded data
9- Time scale reset button
10- Graph pause button
11- Time scale convert button between relative and absolute time
12- Y-scale plots selection window
13- Y-scale plot color selector
14- Y-axis data definitions
15- Y-axis plots user define description for each plot
16- Y-axis plots real time value
17- Y-axis plots max values

18- Power meter panel, includes voltage, current, power and frequency
19- Data save or data load (to replay) path and file name
20- Reset max values of plots
21- Clear user defined description for each channel
22- Export the data table to excel file
23- Save plot settings
24- Unselect all the plots
25- Select all the plots

4.2 Data logger menus



4.2.1 File



4.2.1.1 Page set up

Set up print page parameters

4.2.1.2 Print Window

Print the data logger main page

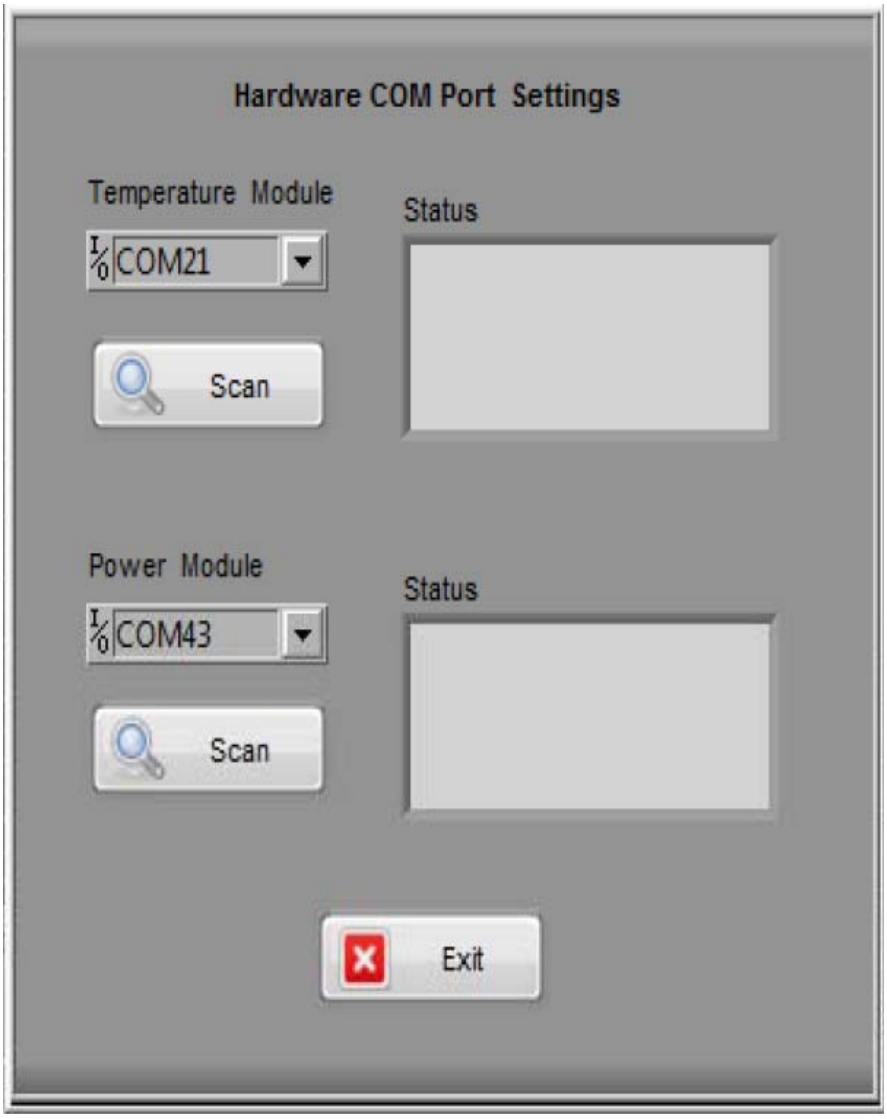
4.2.1.3 Exit

Exit the software

4.2.2 Tools

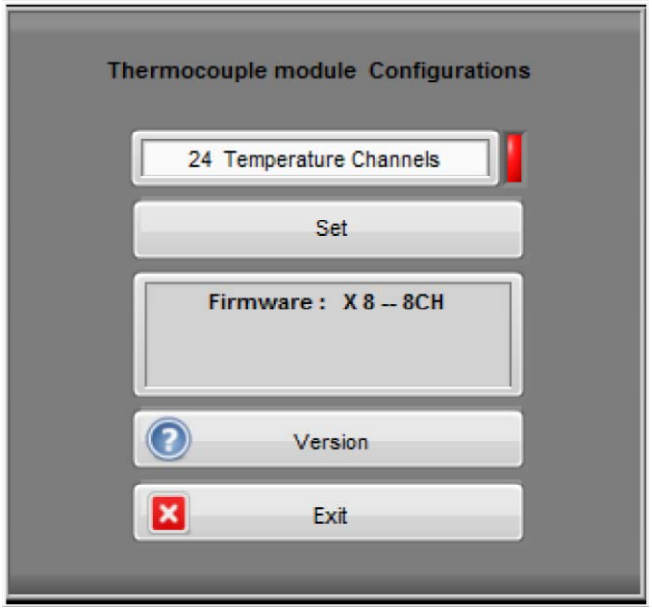
4.2.2.1 Port settings

Set up communication ports of the hardware. Please enable Blue tooth function and set up BT hardware in you r PC prior to configure the com ports. Once established the communication ports please select from the menu and scan to make the link between hardware and the PC. Once the hardware linked, in the status window show up the hardware details, or otherwise error message will be displayed.



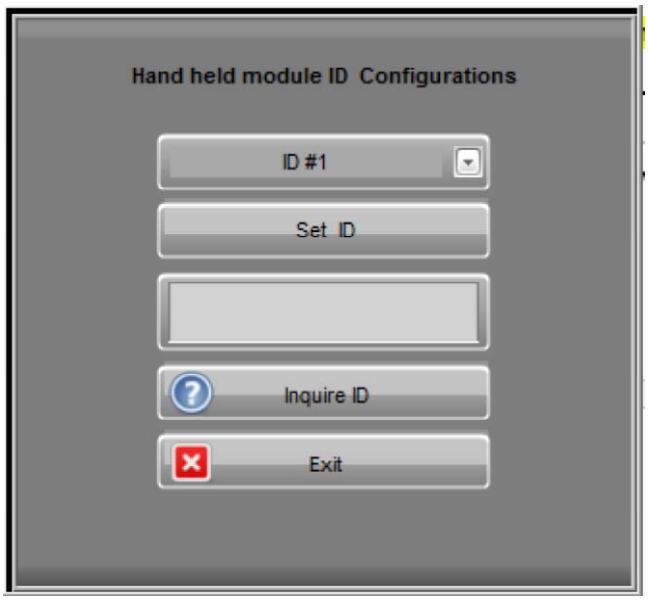
4.2.2.2 TC hardware settings

After established the link between the TC hardware and the PC user will be able to set the TC channel qty base on the hardware and inquire the firmware versions.



4.2.2.3 Hand held module ID settings

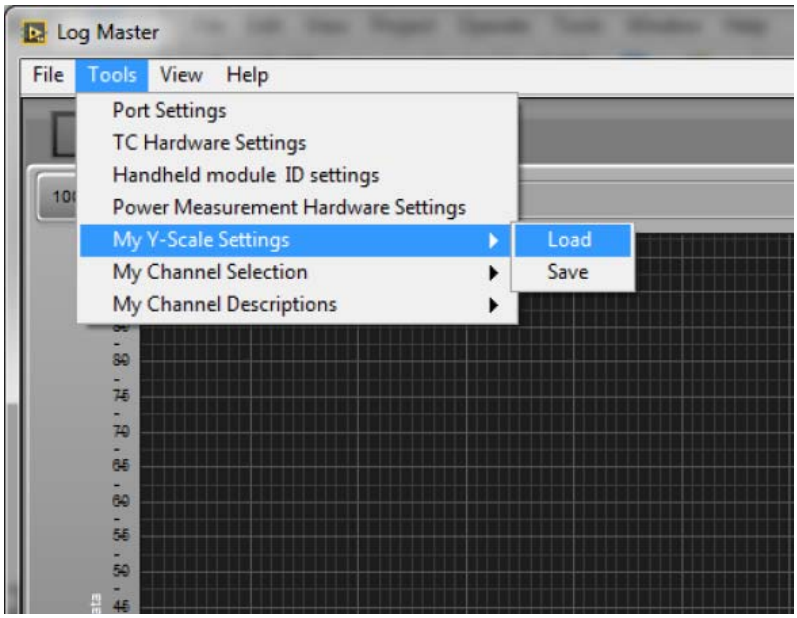
Data from the hand held unit is transferred to TC module and then transfer to the PC through Bluetooth. Therefore in order to communicate with the handheld module, user has to establish the TC hardware link first . To assure correct wireless link between hand held unit and the TC module, it is necessary to setup identification code. This window is mainly to set up and inquire the ID set up in the TC module. In later paragraph, will describe how to set the hand held module address to match with the TC module



4.2.2.4 Power measurement hardware settings

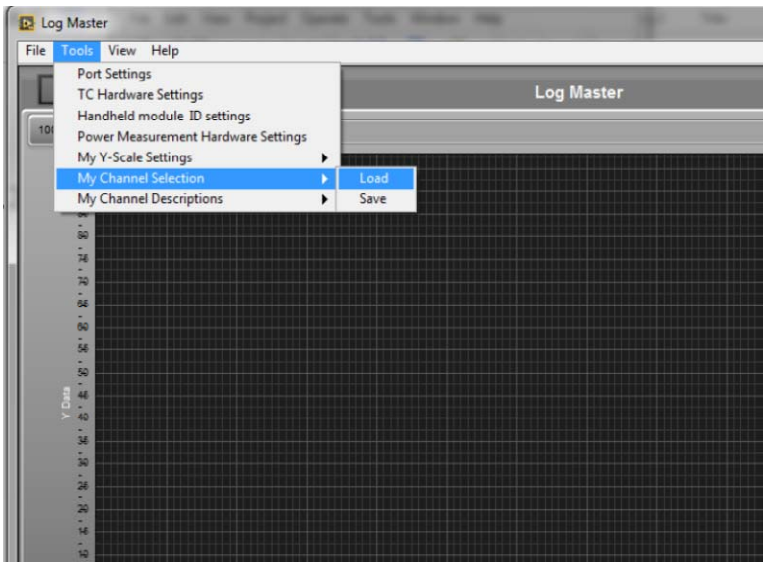
After establish the link between PC and the power measurement hardware, user will be able to set the power measurement hardware parameters. This includes Speed range selections, Power averaging window selections. Also user will be able to select factory calibrations of the hardware or upload a new calibration file.

4.2.2.5 My Y- Scale settings



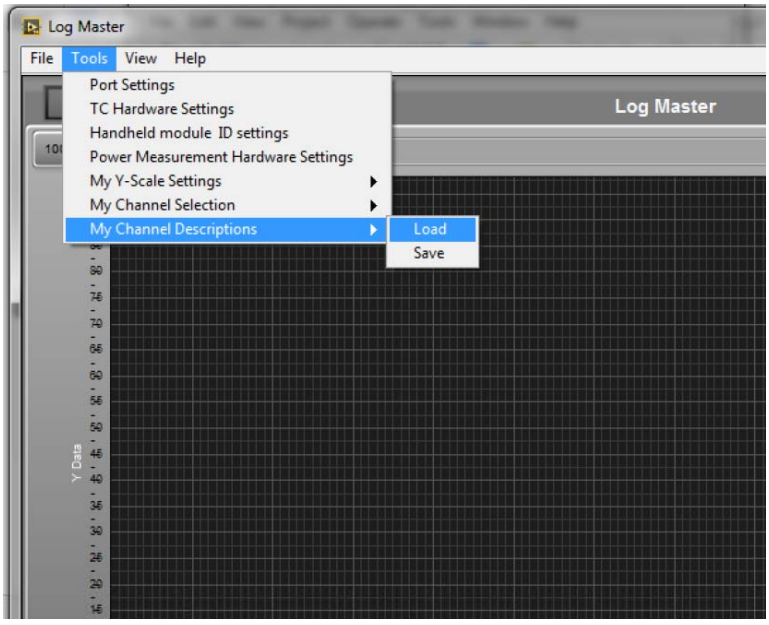
From this menu user will be able to save the Y scale settings of RPM, Voltage, current and power settings and also user will be able to upload previous settings from a saved file.

4.2.2.6 My Channel selection



From this menu user will be able to save the selections of the graphs and also user will be able to upload previous settings from a saved file

4.2.2.7 My Channel Descriptions



From this menu user will be able to save own descriptions marked for each channel of the graph and also user will be able to upload previous descriptions from a saved file.

General Characteristics of LOG MASTER

Power logger	
Display	3.2 inch TFT true color
Operating Voltage	100-265V, 50/60Hz
Power measurement range	0.5w ~ 3300w
Current measurement range	0.1A ~ 15A AC
Data sampling rates	40ms, 100ms, 200ms , 500ms
Power measurement accuracy at 500ms sampling rate	Range: 0.5 W ~ <100 W +/-0.5w >100W 1% of reading
Current measurement Accuracy at 500ms sampling range	Range: 0.1 A ~ 1 A +/- 0.1 A 1 A~ 3 A +/- 0. 3A 3A~15A +/- 0.5 A
Voltage accuracy at 500 ms sampling rate	1% of the reading
Pressure Sensors	Four M12 Male Sockets for user programmable pressure range for 4mA ~ 20mA Pressure Sensors
Connectivity	Blue tooth
Operating temperature	10C ~ 40C
Data logging	Windows based Data logger software

Temperature logger	
Thermocouple	k-Type
Temperature range	-20C ~ +750C
Accuracy	Range: -20C ~ -5C +/- 1.5C -5C ~50C +/- 0.5C 50C ~ 200C +/- 1.5C >200C +/- 2C (with Class 1 K-Type Thermocouples)
Resolution	0.25C
Data sampling rate	250ms
Connectivity	Blue tooth connectivity to PC and 2.4 G wireless communication with temperature /speed hand held unit /
Power supply	5V/350mA USB B socket
operating temperature	10C ~ 40C
Data logging	Windows based Data logger software

Hand Held Tacho Meter and IR Temperature Meter	
Display	1.8 inch full color
Operating voltage	9V battery or external 9V power supply
Laser Tacho range	Range Lo: 3rpm ~ 2000rpm Range Hi : 2000rpm ~30000rpm
Laser Tacho Accuracy	Range Lo: +/- (0.5% +1rpm) Range Hi : +/- 20rpm
Laser Tacho resolution	1rpm
Laser Tacho detectable distance	up to 20cm (depend on reflective sticker size)
External speed sensor socket	5V TTL waveforms with up to 32 programmable pulses /revolution
Temperature range	-40C ~ 250C
Temperature accuracy	Range: -20C ~0C +/- 1C 0C ~ 50C +/- 0.5C >50C +/- 1.5C
Temperature resolution	0.1C
Detectable temperature range	20cm (base on 10cm x 10cm Surface)
Sampling rate	300ms
Operating temperature	10C ~ 40C
Communication	2.4G wireless communication with temperature logger module
Data logging	Windows based Data logger software