

PDL (V1.1) Manual
Model: PDL-K03 Portable data Logger (PDL)

Application:

Portable data Logger is useful product for monitoring/Logging temperature and humidity data. Live data can be analyze and monitor continuously. This device can last for 1 year with CR2450 type battery. This device can be reuse after replacing battery once its battery drains. This device can be use in following applications.

1. Pharma labs to monitor Temperature and humidity.
2. Transit to monitor temperature and humidity.
3. Can be use in residential and in commercial area to map or monitor temperature and humidly.
4. Data servers were temperature and humidity parameter are monitored.

Feature and Specifications:

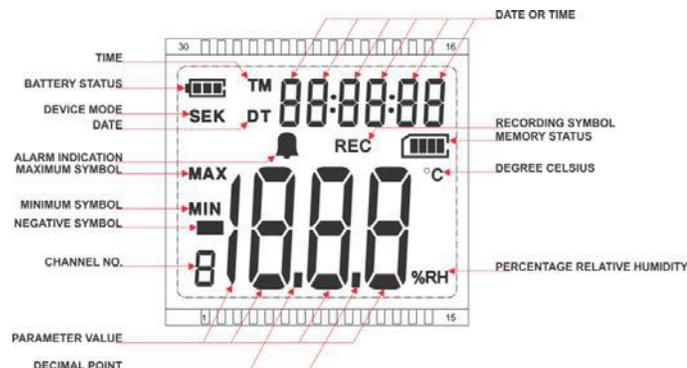
1. Battery operated LCD display with temperature and humidity monitoring and logging.
2. Device uses standard genuine Coin Cell battery (Type CR2450) which is commonly found in local electronic market with the battery life of minimum 1 Year. Display indicates battery life.
3. Sleek design with descent color combination.
4. Device last store data can be downloaded even if you remove and replace battery.
5. After replacing battery user should reconfigure the device to use.
6. Alarm can be indicated with 'BEL' symbol on it and 'AL' red led blinks on alarm excursion condition.
7. Large display to view Temperature and humidity data and can be viewed from longer distance.
8. Device toggle Temperature and Humidity data after 10 seconds, also toggles Date and Time after 10 second on top side.
9. Device can be place on desktop with vertically standing position or can be hanging on wall with given provision on top of the device enclosure.

Specifications:

| Sr.No. | Description | PORTABLE DATA INDICATOR |
|-------------------------------|-----------------------------|--|
| HARDWARE SPECIFICATION | | |
| 1 | No. of Channel | Two |
| 2 | Channel Type | Temperature Humidity |
| 3 | Input Range Specification | Temperature : -30°C ... 70°C (-22 °F ... 140 °F) Humidity : 0 % RH ... 100 % RH |
| 4 | Accuracy | Temp:- +/-0.3°C (for the range of 0°C to 40°C) for rest of the range +/-0.7 Maximum Humidity:- +/-3%RH (for the range of 20 to 80 %RH) for rest of the range +/-6%RH Maximum |
| 5 | Channel Resolution | Temp:- 0.1°C Humidity:- 0.1%RH |
| 6 | Sensor Location | Inbuilt Digital sensor Band Gap temperature/capacitive humidity sensor |
| 7 | Keypad | Two Key 1:- START key or function key 2:- MIN/ MAX key |
| 8 | RTC | 1:- Date and Time in 24 hours format only |
| 9 | Power Supply Source | CR2450 3.0V Battery (610mAh) |
| FIRMWARE FEATURE | | |
| 1 | RTC | Yes, Real time Clock |
| 2 | Transaction | 30,000 Transactions |
| 2 | Alarm setting for parameter | Temperature and Humidity Minimum and Maximum alarm setting through software. Temperature :- (-30°C to 70°C) Humidity :- (0%RH to 100%RH) Note:- Alarm setting can be set with 1°C resolution and RH with 1%RH resolution. |
| 3 | Minimum and Maximum value | You can view minimum and maximum reading with Min/Max key and also on software. |
| 4 | Alarm Indication | Yes (alarm indication on display with bell symbol, and red led blinks for alarm indication). |
| 5 | Battery Life | 1 year with 10 minute logging interval. |
| 6 | Logging interval | 1 minute to 255 minute |
| 7 | Device Start Delay | 0 minute to 65535 minute |
| 8 | Device Logging Mode | There are 4 Device logging mode 1. Measure upon Start Time 2. Start immediately until end of memory 3. Start / Stop measurement with time 4. Start upon key press (K) |
| 9 | LED Indication | Device LED indication can be disable to save battery life through software only. |
| 10 | Programming mode indication | Logging mode indication 1. (S) :-Measure upon Start Time 2. (E) :-Start immediately until end of memory 3. (S K) :-Start / Stop measurement with time 4. (K) :-Start upon key press |
| 11 | Memory Status | Device shows memory status. 1. Device shows memory level. After 4 stick device will stop. 2. Device Memory Edge will blink once memory gets full. Even after test gets complete. |
| 12 | Recording Status | 1. Device 'REC' symbols indicate device in recording mode, 2. 'REC' symbol will blink to indicate device is started to logging data but it is in delay mode. |
| 13 | Display On Time | Device Display will turn off to conserve battery if user does not want to monitor device continuously. But user can press any key (Start or Min/Max) to wake up the device. Device will turn on its display for mentioned period of time and will sleep again. |
| MECHANICAL / ENCLOSURE | | |
| 1 | Enclosure / Mounting | Customize Enclosure (66mm x 55mm x 20mm) |

Feature:

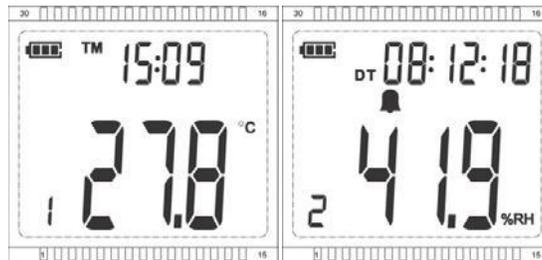
1. Display information.



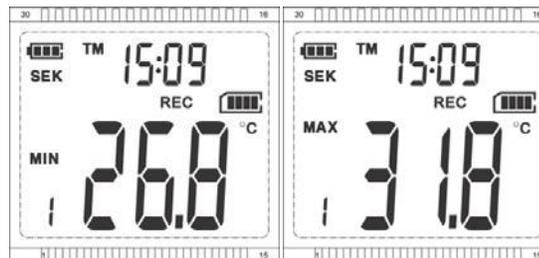
2. After inserting battery device will show information on display as below image.



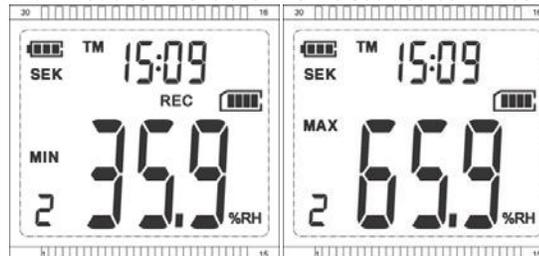
3. Power on device will start to show temperature and humidity reading. User can set date and time after replacing battery. Normally device shows data on display with temperature and humidity alternatively with 20 sec toggling time.



4. User can set Date Time and other parameter through software.
 5. After setting all data device will show RTC with temperature and humidity reading when we remove device from PBS (Portable Base Station).
 6. Device will show live Temperature Minimum and Maximum value by pressing 'MIN/MAX' key when display showing temperature reading. MIN MAX value can be identified with MIN and MAX symbol with °C symbol. (Note this is not alarm limit value)
- Note :-** If we keep device in Min Max mode for more then 15-20 sec device will come out off the Min Max mode.



7. Device will show live Humidity Minimum and Maximum value by pressing 'MIN/MAX' key when display showing Humidity reading. MIN MAX value can be identified with MIN and MAX symbol with %RH symbol. (Note this is not alarm limit value)
- Note :-** If we keep device in Min Max mode for more then 15-20 sec device will come out off the Min Max mode.



8. Min Max value will be reset on start of logging, and will update Min and Max reading till device in logging condition. It will not store Min and Max if device is in Start Delay mode and in Ideal case.
9. Device will show logging mode indication on its left side for following mode.
 1. (S) :-Measure upon Start Time
 2. (E) :-Start immediately until end of memory
 3. (S K) :-Start / Stop measurement with time
 4. (K) :-Start upon key press



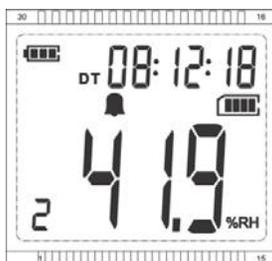
10. Device Shows REC symbol when it start logging data, While it is in delay mode REC symbol will blink.



11. Device shows memory status on its right side, Memory edge blinking indicate device has stopped or its memory full condition (depends on the mode selected).



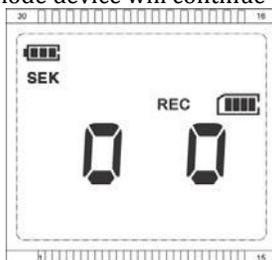
12. Device shows 'BELL' symbol to indicate that the showing parameter is in alarm condition, same will indicated with Alarm LED (AL:- red led).



13. Device Show 'PC' on display when it is connected to PBS (Portable base station) to configure or download data.



14. Device will go in sleep mode if device is set to display off mode after enable display off time. (This feature is to conserve battery power). It will show on display as follow. In sleep mode device will show Battery symbol, Logging Mode, Memory Status. User can press any key to wake up the device. After wake up device will sleep again after mentioned period of time. In this mode device will continue to store its data if it is in test condition.



Procedure:-

1. Insert battery in device; also check battery status while setting for test.



2. Now use 2 rupees coin to lock the battery cover, check OPEN mark on battery cover. while inserting it should be 45 degree, After rotating battery cover with the help of coin to clockwise, it will lock the battery cover. After lock OPEN symbol will be parallel to the device surface. To open battery cover rotate battery cover anti-clockwise with the help of coin.



3. To configure device insert PDL in PBS (Portable Base Station), device will display "PC" on its display after connecting to Base Station. (NOTE:- Before inserting kindly connect PBS to PC, PBS should be powered on before connecting PDL or inserting PDL into PBS for configuration or downloading.)



- Open enviLOG software to configure/download device data. Software will automatically detect our device and its configuration.
If device does not detect then click on “Search Logger”. It will connect the device.

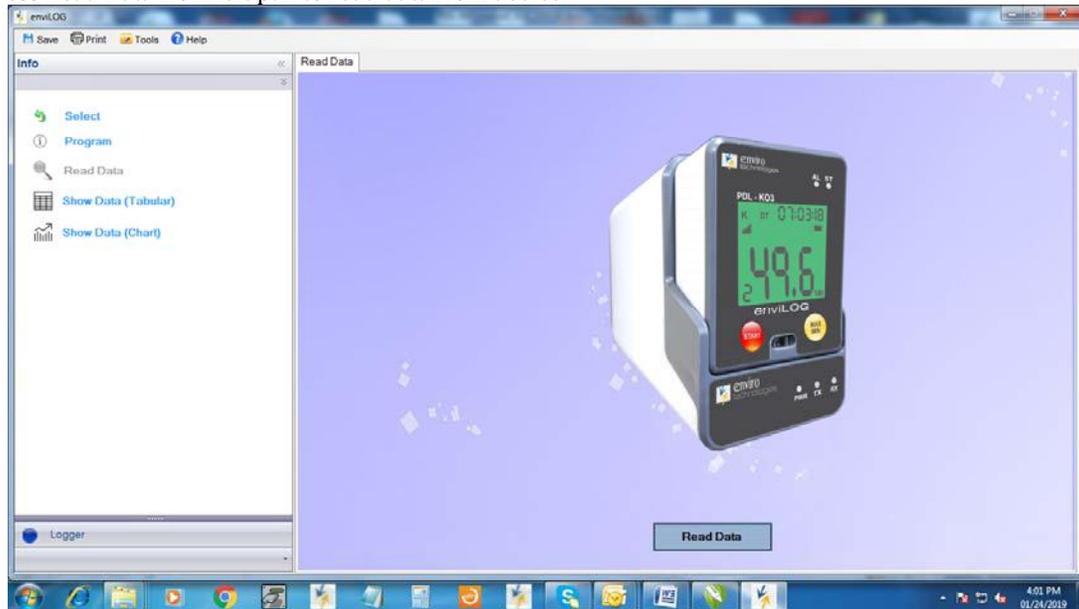


- On left pan click on program to configure device, user can edit Device Name as per its suitability, Select Type or mode of logger from drop down box, set interval in minute, set start time or stop time as per selected mode, Set start delay.
Set Temperature and humidity Lower Alarm and Upper Alarm, User can reduce battery consumption by disabling LED indication off if not required and device can be kept in sleep mode while in logging mode.
At bottom side user can view device information, serial No., Device RTC time.
Pressing Program logger button, configuring device will delete all older data and old configuration. After programming user has to remove device from PBS until “PC” symbol get remove from screen to set its configuration else it will not set the new parameter setting.

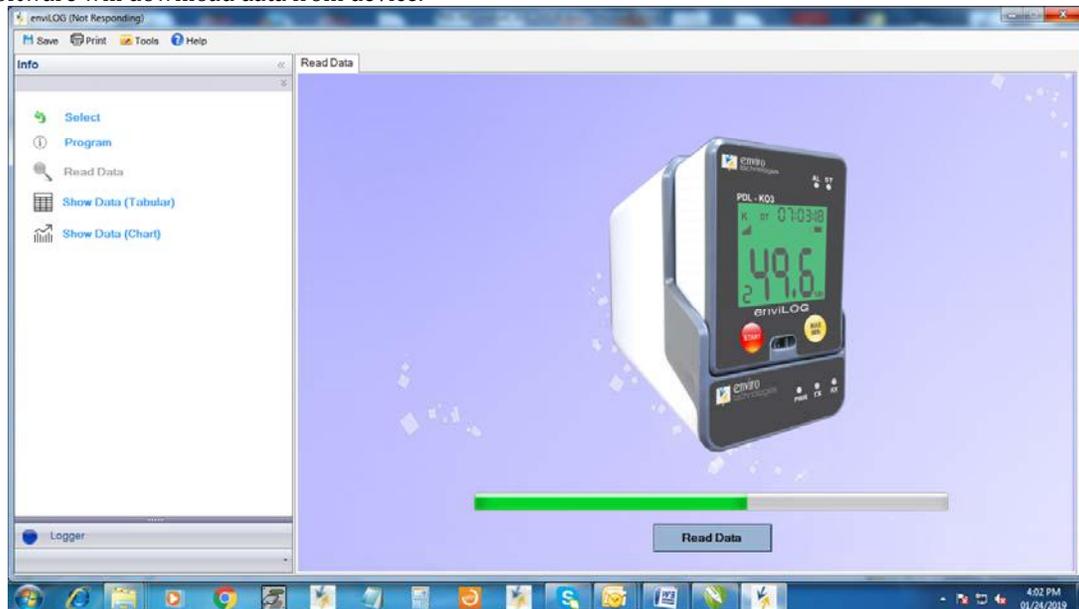


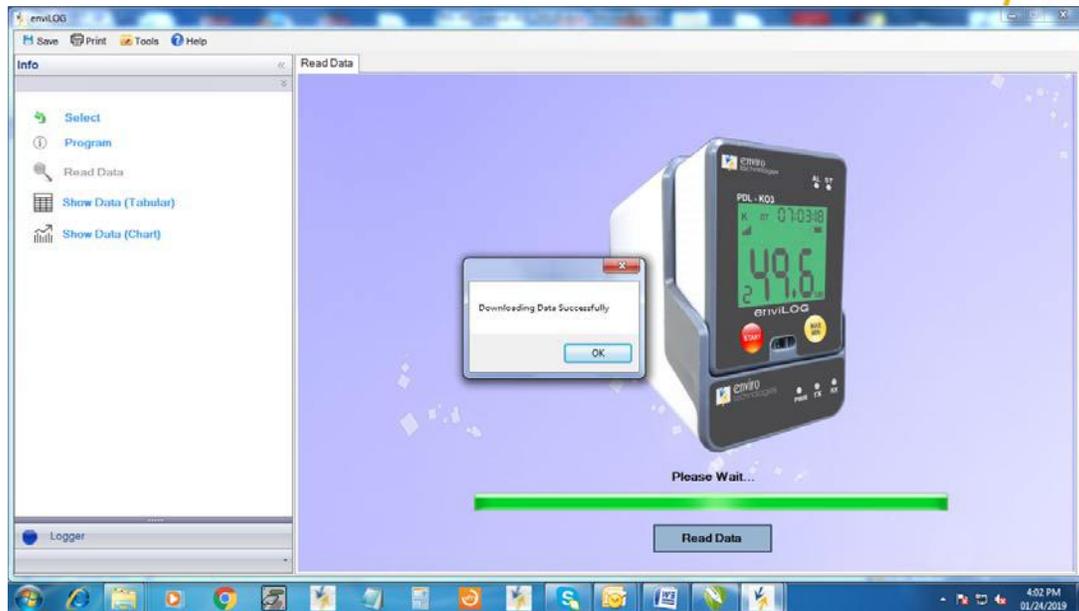
6. Start the logger for its test as per set configuration, after test complete connect device to Base Station for downloading data.

Press Read Data from left pan to read data from device.

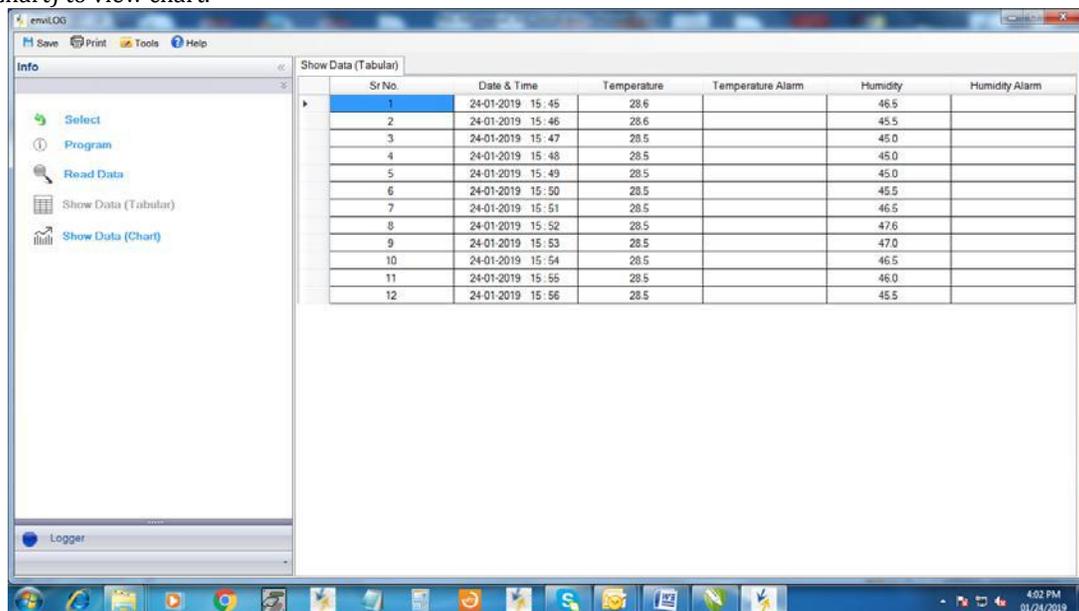


7. Software will download data from device.

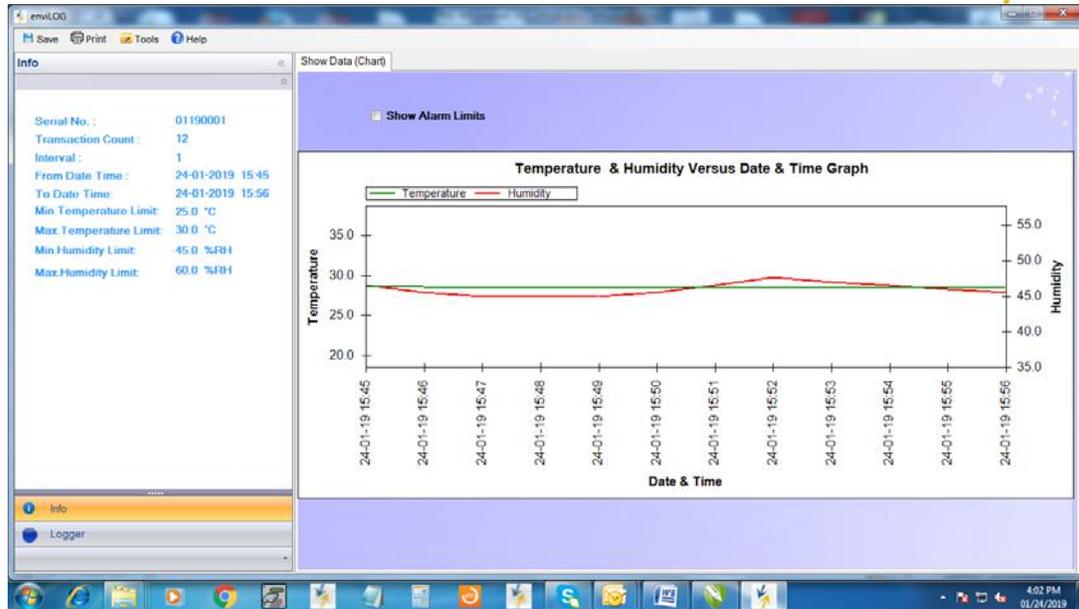




8. After downloading data press Show Data (Tabular) button from left pan to view tabular report or press Show data (Chart) to view chart.



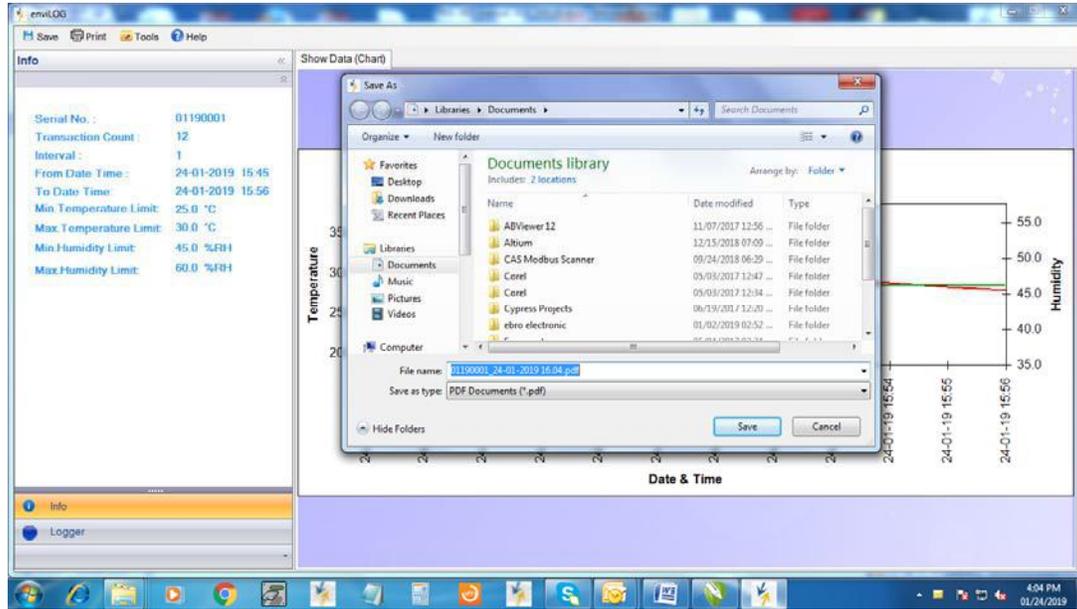
| Sr No. | Date & Time | Temperature | Temperature Alarm | Humidity | Humidity Alarm |
|--------|------------------|-------------|-------------------|----------|----------------|
| 1 | 24-01-2019 15:45 | 28.6 | | 46.5 | |
| 2 | 24-01-2019 15:46 | 28.6 | | 45.5 | |
| 3 | 24-01-2019 15:47 | 28.5 | | 45.0 | |
| 4 | 24-01-2019 15:48 | 28.5 | | 45.0 | |
| 5 | 24-01-2019 15:49 | 28.5 | | 45.0 | |
| 6 | 24-01-2019 15:50 | 28.5 | | 45.5 | |
| 7 | 24-01-2019 15:51 | 28.5 | | 46.5 | |
| 8 | 24-01-2019 15:52 | 28.5 | | 47.6 | |
| 9 | 24-01-2019 15:53 | 28.5 | | 47.0 | |
| 10 | 24-01-2019 15:54 | 28.5 | | 46.5 | |
| 11 | 24-01-2019 15:55 | 28.5 | | 46.0 | |
| 12 | 24-01-2019 15:56 | 28.5 | | 45.5 | |



9. In Info tab (located at bottom) you can view device short summery.



10. User can save data in PDF format to store data for reference; software will browse you to save data as per you mentioned location.



Precaution and troubleshooting:

1. Use genuine standard CR2450 Panasonic battery for better performance and battery life.
2. Do not connect PDL device in PBS (Portable Base Station) for longer time without use, it will reduce battery life.
3. Do not connect PDL device in PBS without USB power applied to PBS, it will reduce battery life.
4. Do not remove battery while in test it will lose logged data.
5. Do not drop device.
6. Verify the battery status before starting test.
7. Do not keep any material or liquid on device.
8. Dispose drain battery properly as per regional battery disposable guide line.
9. If you do not want to use the device then remove battery from its compartment.
10. If battery is drain then replace it or remove it from device, do not keep battery inside the device.
11. If device is not working then replace the battery or clean the battery contact.
12. Above shown screen shot of software is for reference only, contain of data may vary than the original data.