

TITLE: Temperature Monitoring – ESCORT iMiniPlus PDF

PRINCIPLE: ESCORT iMiniPlus PDF is a data logging solution to continuously monitor temperature in various settings. It measures and records temperature from -40°C to $+70^{\circ}\text{C}$ with sampling frequency between 5 seconds to 18 hours up to 8048 readings.

PERSONNEL: All blood bank staff must be familiar with this procedure.

SPECIMEN:

N/A

MATERIALS:***iMiniPlus PDF Logger******Mini B to A USB cable***

+

***PC with PDF Reader software installed******Console Pro Software installed*****STEPWISE PROCEDURE:****1) Logger profile:**

The iMiniPlus PDF Logger is available in two models. Both have the same temperature range of sensor; D-range (-40°C to $+70^{\circ}\text{C}$).

One model has the thermistor sensor mounted inside the logger (Internal sensor, MU-IN-D-16L)

The other model comes with the same sensor as above but encapsulated inside a stainless-steel tip on a one (1) meter PVC cable. This sensor assembly is permanently connected to the body of the iMiniPlus (External sensor, MU-OE-D-16L)

The iMiniPlus has a fully functional LCD display and push buttons. A summary of these features and functions is described in figures below.

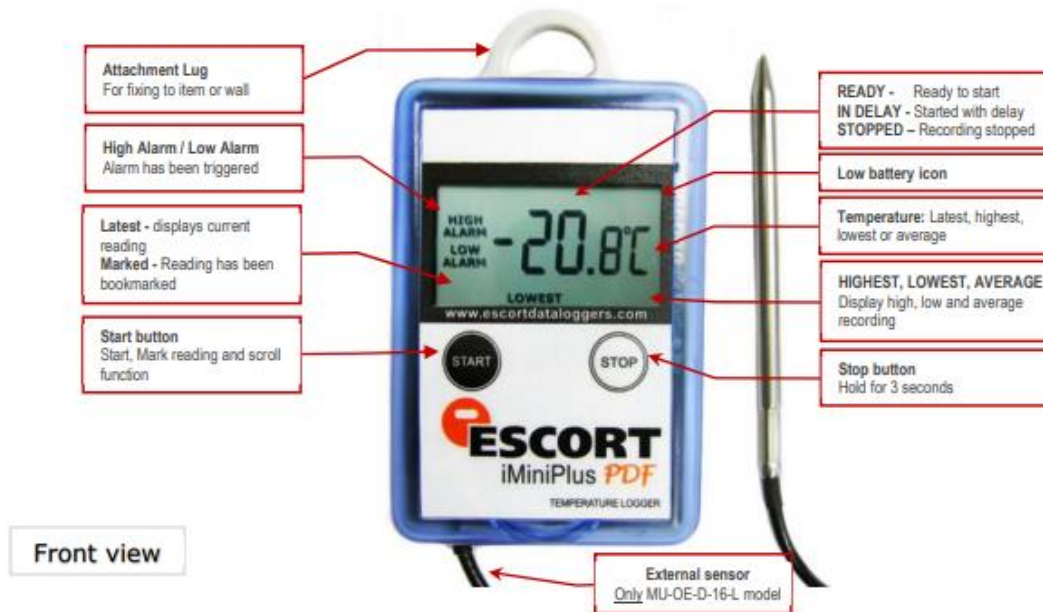


Figure 1

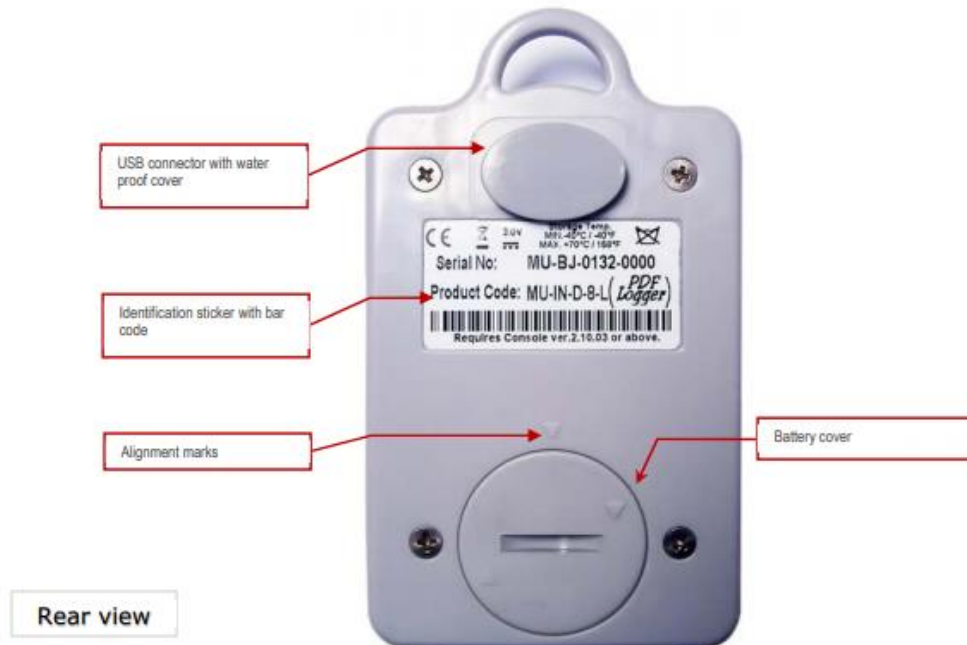


Figure 2.

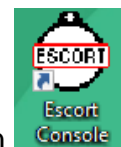
2) Start new log trip:

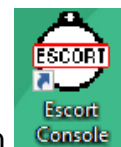
1. Press **START** button, you may only start a new log trip when the LCD display “READY”.

3) Stop log trip:

1. The **STOP** button is disabled. The log trip will automatically stop once the recorded data is download.

4) Downloading data:



1. Locate and double clicks **ESCORT CONSOLE** icon  on computer terminal
2. Connect USB cable to PC and to the iMiniPlus PDF Logger
3. Check the box for **ESCORT MPP (D:)** on the left panel under **Ports and Products**
 - a. If ESCORT MPP (D:\) is not available under Ports and Products, unplug and re-plug the USB cable to the iMiniPlus PDF Logger.



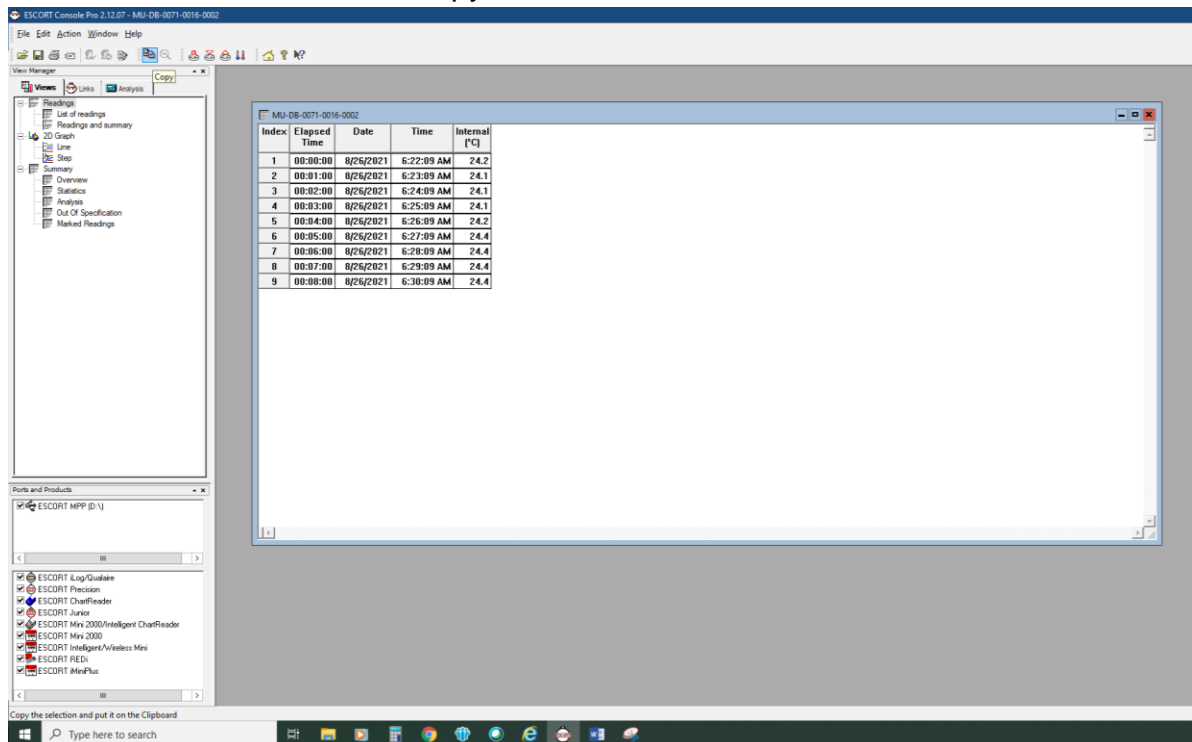
4. Click the **Download Information** button
 - a. Alternatively, the Download Information button can be selected under Action on the top menu bar.
5. A Download Readings box will appear on the screen, click ***** NEXT, Download, NEXT and Finish** to retrieve data.

*****NOTE: DO NOT CHANGE ANY SETTINGS. *****

6. Once download is completed, a box containing data will appear.

5) Storing downloaded data:

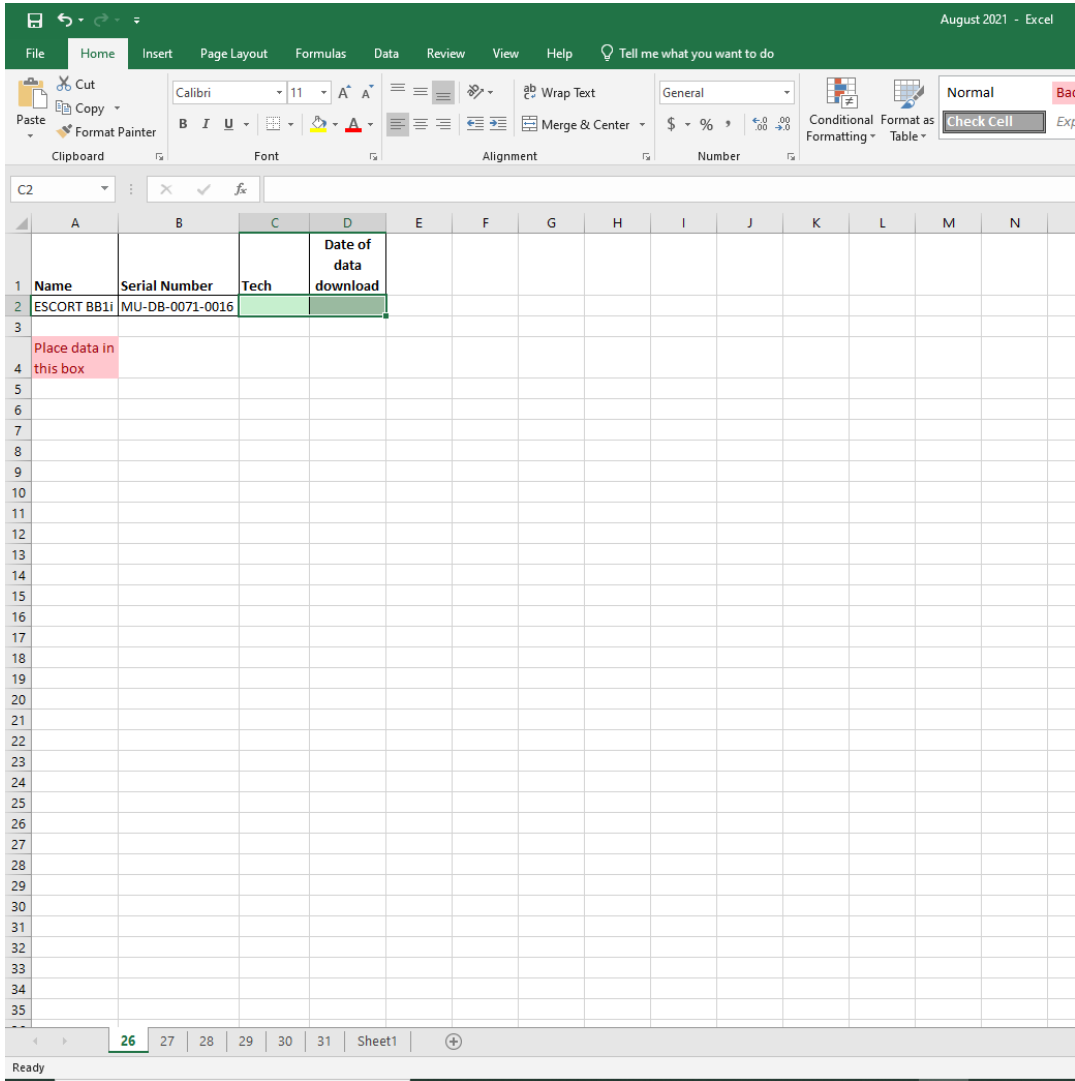
1. Click on the **COPY** button to copy the data.



Index	Elapsed Time	Date	Time	Internal [°C]
1	00:00:00	8/26/2021	6:22:09 AM	24.2
2	00:01:00	8/26/2021	6:23:09 AM	24.1
3	00:02:00	8/26/2021	6:24:09 AM	24.1
4	00:03:00	8/26/2021	6:25:09 AM	24.1
5	00:04:00	8/26/2021	6:26:09 AM	24.2
6	00:05:00	8/26/2021	6:27:09 AM	24.4
7	00:06:00	8/26/2021	6:28:09 AM	24.4
8	00:07:00	8/26/2021	6:29:09 AM	24.4
9	00:08:00	8/26/2021	6:30:09 AM	24.4

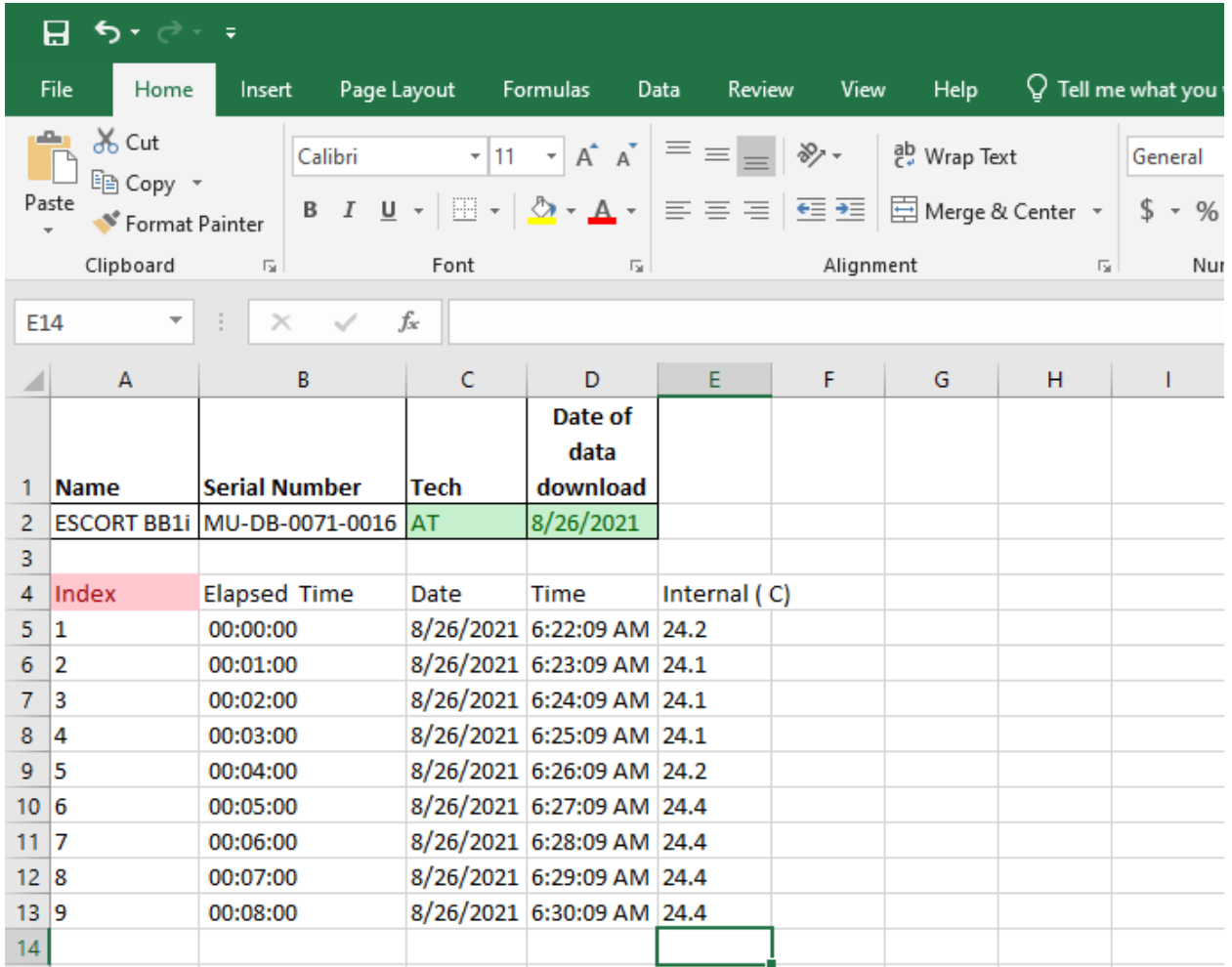
2. Open EXCEL file named – ESCORT iMiniPlus PDF in S:\
 - a. (S:\BLOOD.BANK_Serology\ESCORT iMiniPlus PDF\)

3. Select and Open the proper year, data logger, month and date
 - a. See example below for 8/26/2021, MU-DB-0071-0016



4. Fill in **Tech ID** and **Date of data download**


5. Place data in the highlighted box



	A	B	C	D	E	F	G	H	I
				Date of data download					
1	Name	Serial Number	Tech						
2	ESCORT BB1i	MU-DB-0071-0016	AT	8/26/2021					
3									
4	Index	Elapsed Time	Date	Time	Internal (C)				
5	1	00:00:00	8/26/2021	6:22:09 AM	24.2				
6	2	00:01:00	8/26/2021	6:23:09 AM	24.1				
7	3	00:02:00	8/26/2021	6:24:09 AM	24.1				
8	4	00:03:00	8/26/2021	6:25:09 AM	24.1				
9	5	00:04:00	8/26/2021	6:26:09 AM	24.2				
10	6	00:05:00	8/26/2021	6:27:09 AM	24.4				
11	7	00:06:00	8/26/2021	6:28:09 AM	24.4				
12	8	00:07:00	8/26/2021	6:29:09 AM	24.4				
13	9	00:08:00	8/26/2021	6:30:09 AM	24.4				
14									


6. Save file by clicking the **SAVE** button
7. Exit EXCEL and re-enter the same file to ensure data was saved

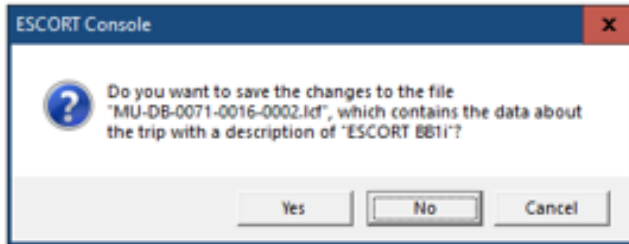
6) Rearm Data Logger:

1. Click the **Rearm** button 
 - a. Alternatively, the Rearm button can be selected under Action on the top menu bar.
2. A Rearm box will on the screen, click ***** NEXT, NEXT, Rearm and Finish** to rearm data logger.

*****NOTE: DO NOT CHANGE ANY SETTINGS. *****

7) Existing ESCORT CONSOLE:

1. Click the **Close** button 
2. The following box will appear



3. Click No

CALIBRATION:

Calibration of the ESCORT iMiniPlus PDF was done by the manufacturer. Re-calibration with an in-date NIST calibrated data logger is needed at least once a year or after major repair. See Proc.#4840-BB-1026 (Calibration of Temperature Monitoring – ESCORT iMiniPlus PDF) for detail.

QUALITY CONTROL:

The temperature of the ESCORT iMiniPlus PEF is done every four (4) months, quarterly.

REPORTING RESULTS:

The recorded data will be kept in the form of protected excel files.

CALCULATIONS:

N/A

REFERENCE RANGES:

-40°C to +70°C or -40°F to +158°F

RELATED DOCUMENTS:

1. Proc.#4840-BB-1026 (Calibration of Temperature Monitoring – ESCORT iMiniPlus PDF)

REFERENCES:

1. AABB, Standards for Blood Banks and Transfusion Services, *current edition*
2. iMiniPlus PDF User Guide