

VISO SYSTEMS LabTemp

User Manual

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Congratulations on purchasing your new Viso Systems product. Before using this product, please read our Safety Information.

This manual contains all the feature operating information and troubleshooting necessary to install and operate your new Viso Systems product. Please review this manual thoroughly to ensure proper installation and operation.

For news, Q&A and support at Viso Systems, visit our website at www.visosystems.com

Other manuals in this series can be downloaded from www.visosystem.com

Contents

Introduction	4
LabTemp Installation Procedure	5
Hardware setup	5
Software Setup and Measurements	8
Mainboard Modifications	12
LabSpion Modifications.....	12
BaseSpion Modifications.....	16
Technical Specifications	21

Introduction

The special Viso accessory “LabTemp” is a hub with one internal and 3 external standard temperature probes. The LabTemp makes it possible to conform with ambient temperature control requirement of CIE standard S 025/E:2015.

The hub is attached to the goniometer with strong permanent magnets.

LabTemp captures temperature data on any Viso BaseSpion and LabSpion while measuring light. It saves temperature results with the light measurement file.

No extra software and no extra power supply is needed.

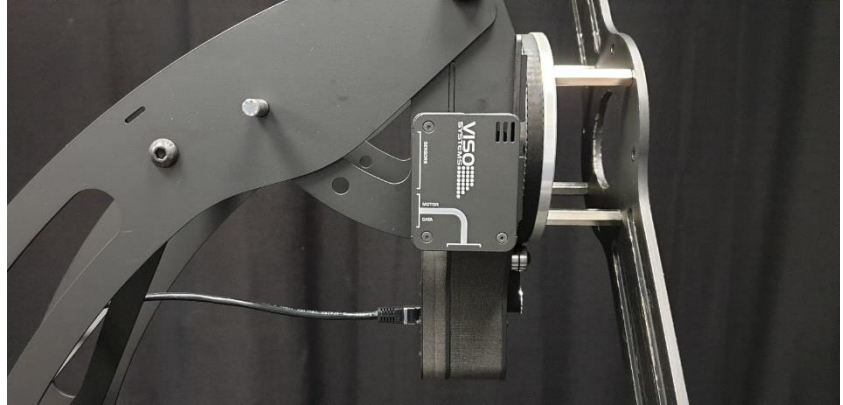
Easily connect the LabTemp by daisy chaining the LabTemp and the c-plane motor - power and data by Ethernet cable. If you have more than one LabTemp, just daisy chain together (cable in sequence).

Live temperature measurement results are displayed in the software and can be exported in various formats.

LabTemp Installation Procedure¹

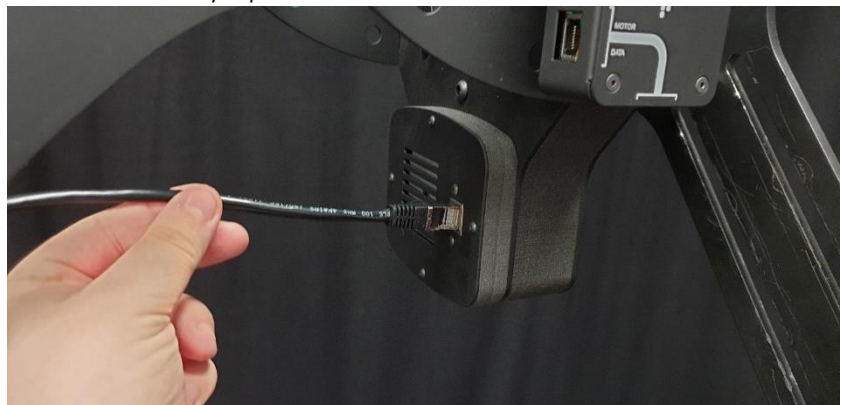
Hardware setup

Step 1: Place the LabTemp unit on the desired measurement equipment using the magnets on the back.



Note: If the internal high precision sensor is to be used to test compliance with the S 025 standard the vents in the corner of the LabTemp unit should be placed at the same height as light measurements are being performed.

Step 2: Disconnect the C-Plane motor Ethernet cable from the C-Plane motor. The other end should stay in place in the mainboard.

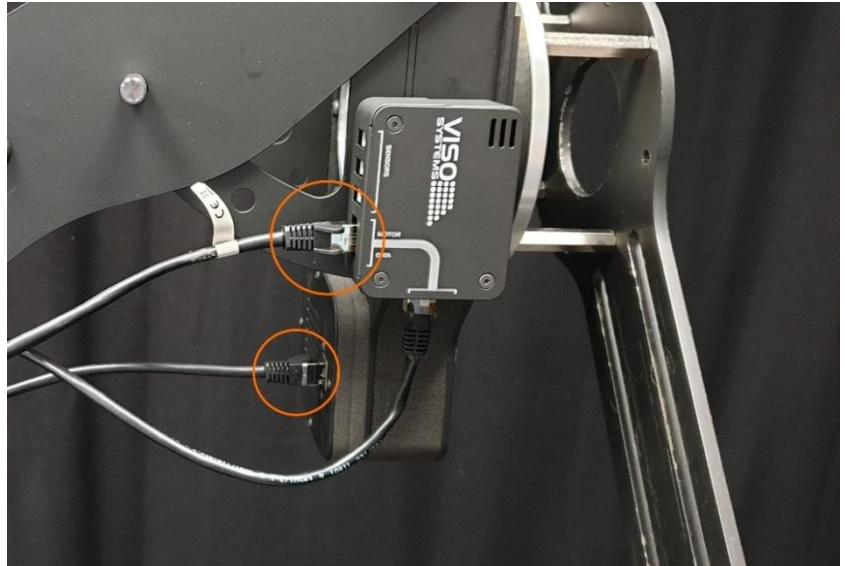


¹ Note: Owners of LabSpion and BaseSpion built before March 2021 need to make some mainboard modifications that are described step by step later in this manual.

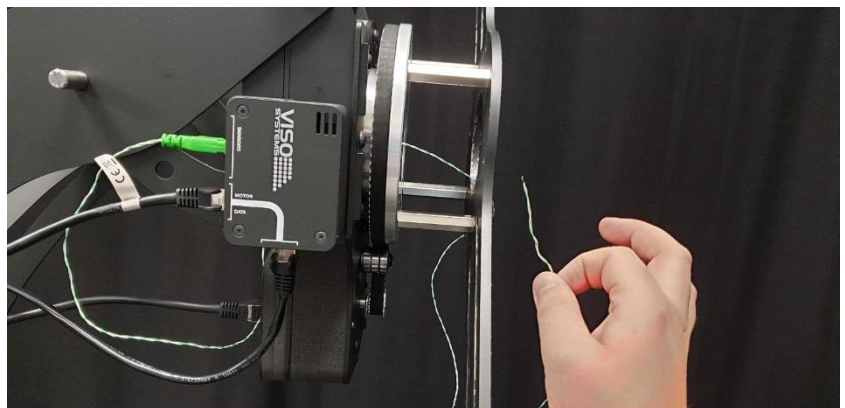
Step 3: Connect the C-Plane motor cable into one of the LabTemp data connectors.



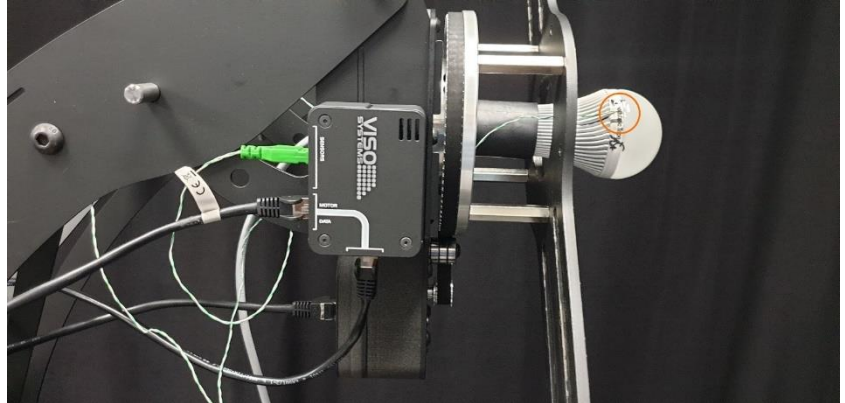
Step 4: Connect the short cable included with the LabTemp into remaining LabTemp data connector and the C-Plane motor of the measurement equipment.



Step 5: If needed connect any of the external temperature probes to the LabTemp and feed the probe wires through the cable hole on the measurement equipment used.



Step 6: Affix the external temperature probes to the DUT using tape.

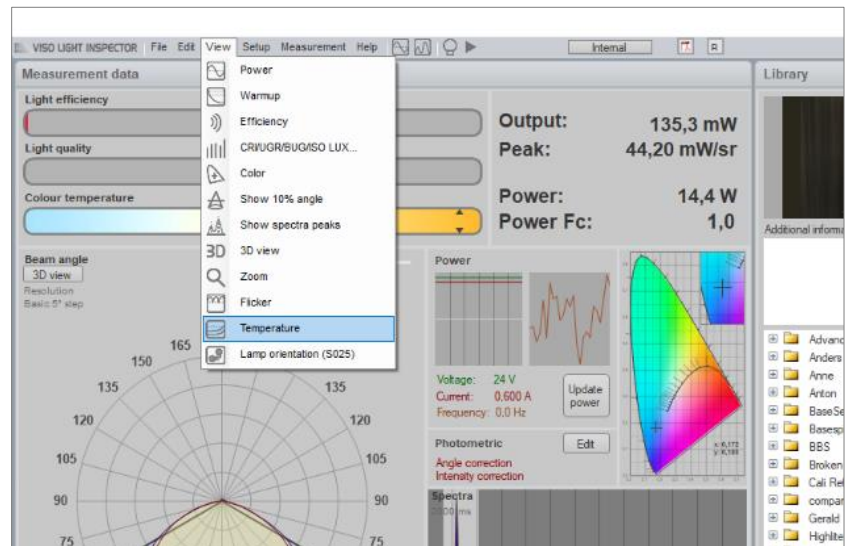


OBS: For higher temperatures Kapton tape can be used if other tape types tend to peel off or the adhesive tends to break down.

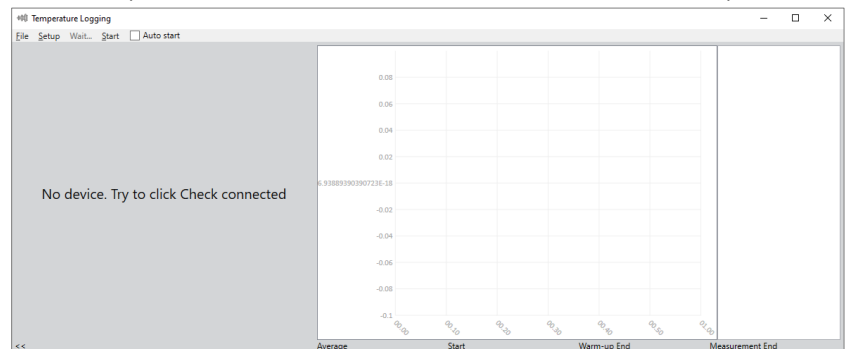
Step 7: LabTemp Hardware setup is complete.

Software Setup and Measurements

Step 1: Open the Viso LightInspector software and go the temperature measurement section under View → Temperature.



Step 2: If no LabTemp units are connected you will be prompted to connect them and have to press “Check connected” for the software to find the LabTemp units.

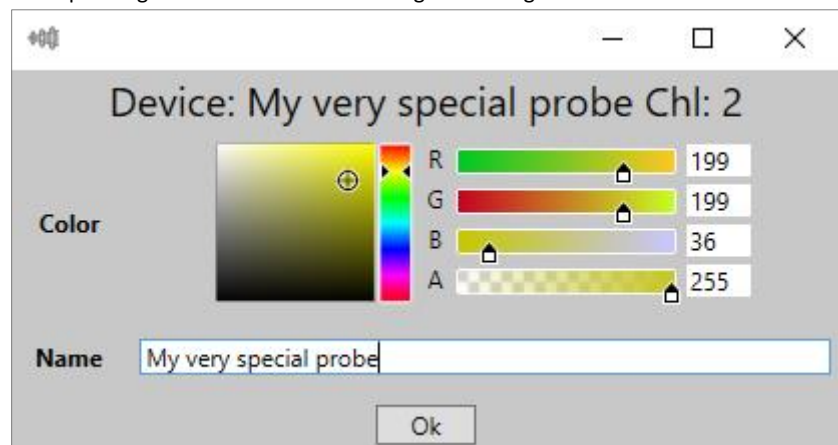


Step 3: Once the LabTemp Units have been detected they will show up in the panel on the left of the temperature measurement window.

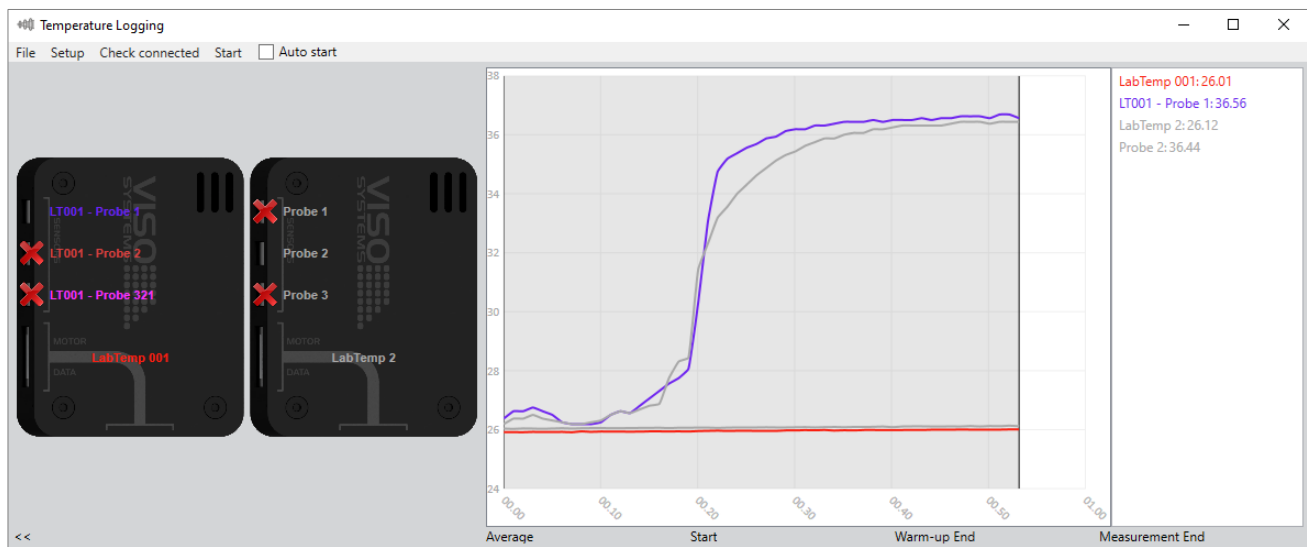


OBS: If external sensors are needed, they will need to be connected to the unit before pressing the “Check connected” button. Otherwise, another press of the “Check connected” button is required for them to be detected.

Step 4: If needed the internal and external sensors can be named and given a color in order to increase readability of the graphs. This can be done by clicking the corresponding text on a sensor and editing the settings.



Step 5: Once all sensors have been connected, configured and detected, a measurement can be started either manually (Start) or automatically alongside with normal light measurements (Auto start). Data will be shown on the graph in the middle of the temperature window and a legend will be shown on the right side of the window. Start, Stop and End of warm up period will automatically be displayed on the graph during measurement.



Step 6: Your setup is now complete.

At Viso Systems, we design, develop and manufacture OEM- and customer-specific goniophotometer solutions. Our mission is to support customers with powerful, yet easy-to-use control and measurement solutions. Products are developed and manufactured in Copenhagen, Denmark.

Mainboard Modifications

LabSpion Modifications

Note: Disregard this chapter if you own a LabSpion built after March 2021.

Step 1: Unplug the LabSpion and disconnect it from all other equipment.

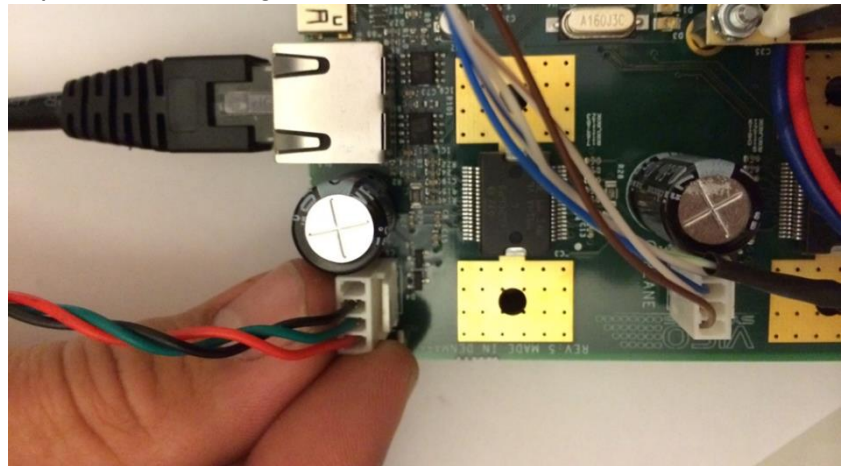
Step 2: Undo the 3 screws on the top of the Mainboard panel.



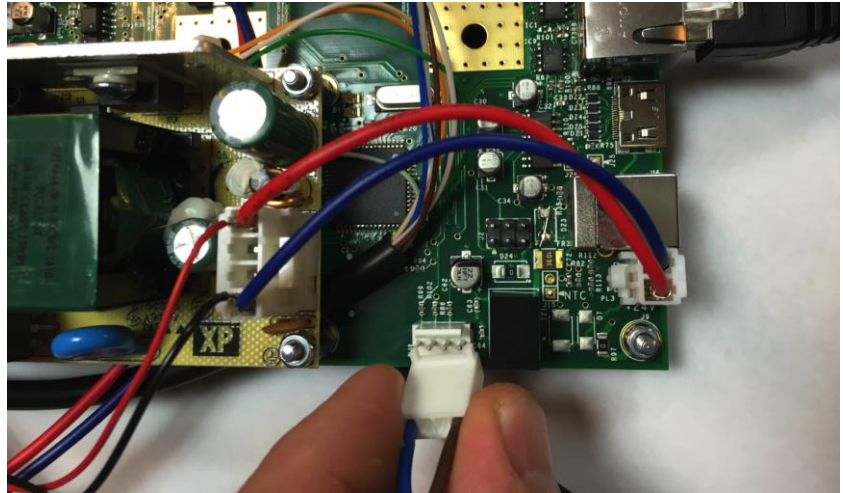
Step 3: Slide the Mainboard panel out making sure not to damage any internal cables.



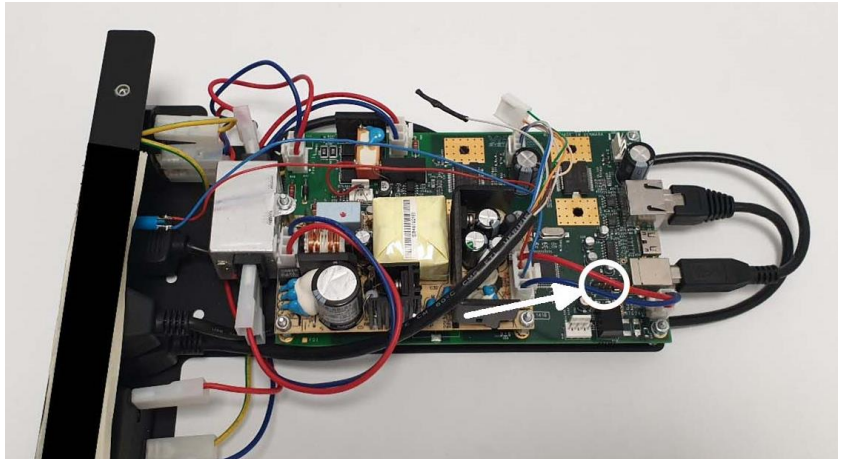
Step 4: Remove the main goniometer motor cable.



Step 5: Remove the rotation lock for the base.

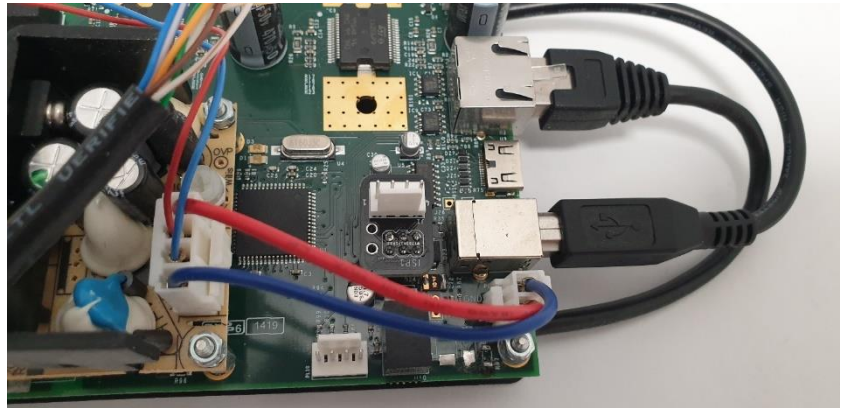


Step 6: Locate the 6 pin J2 header on the Mainboard.

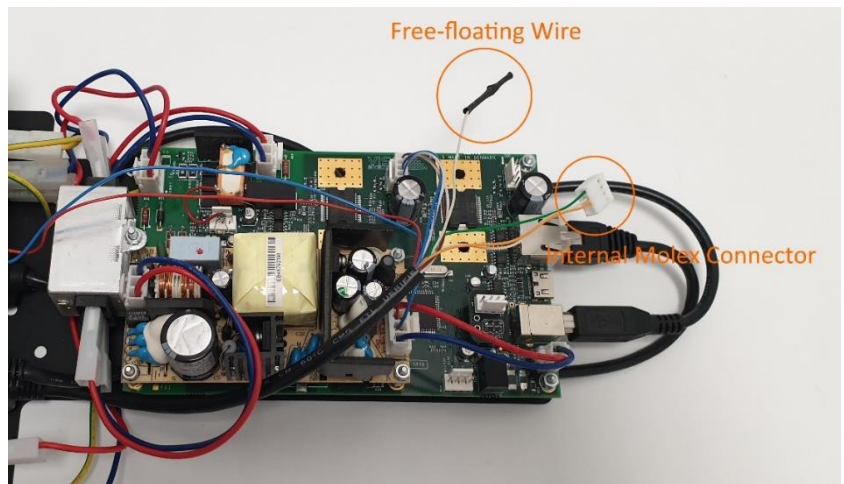


Step 7: Place the included Mainboard to Molex adapter with the Molex connector towards the center of the Mainboard.

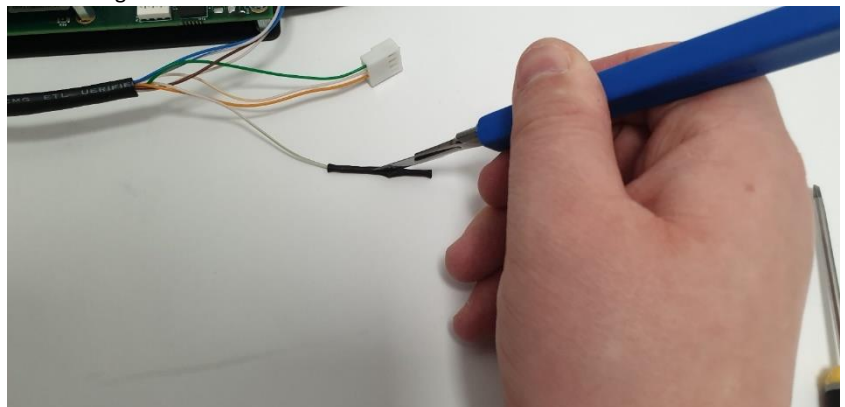




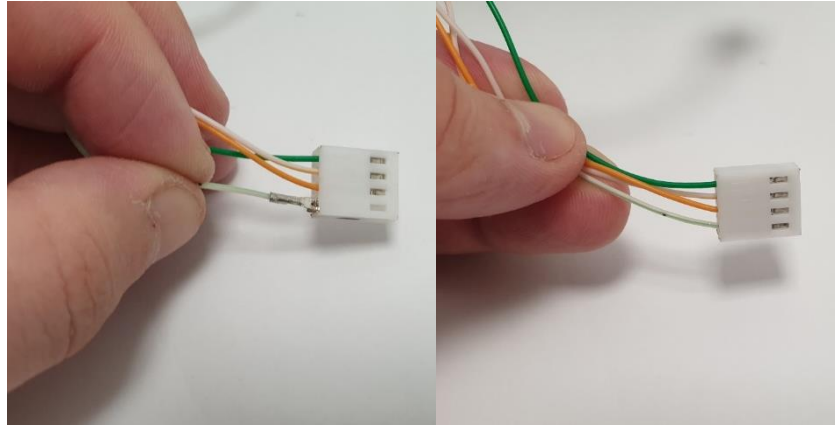
Step 8: Locate the free internal Molex connector connected to the C-Plane motor connector.



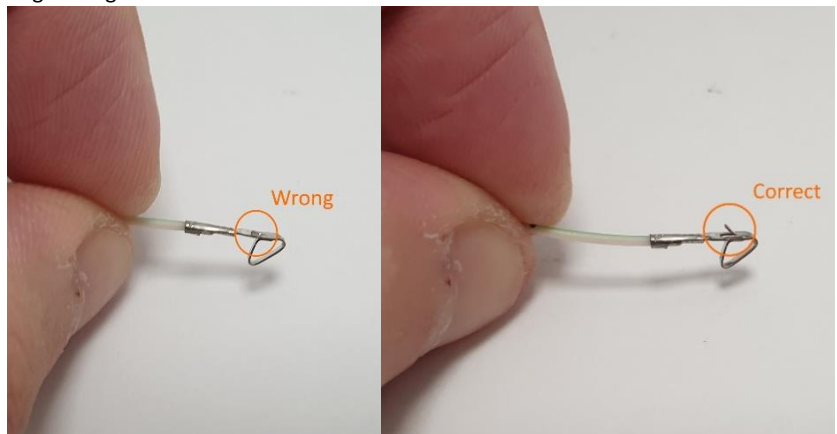
Step 9: Carefully use a knife to free the single free-floating terminal from the surrounding heat shrink.



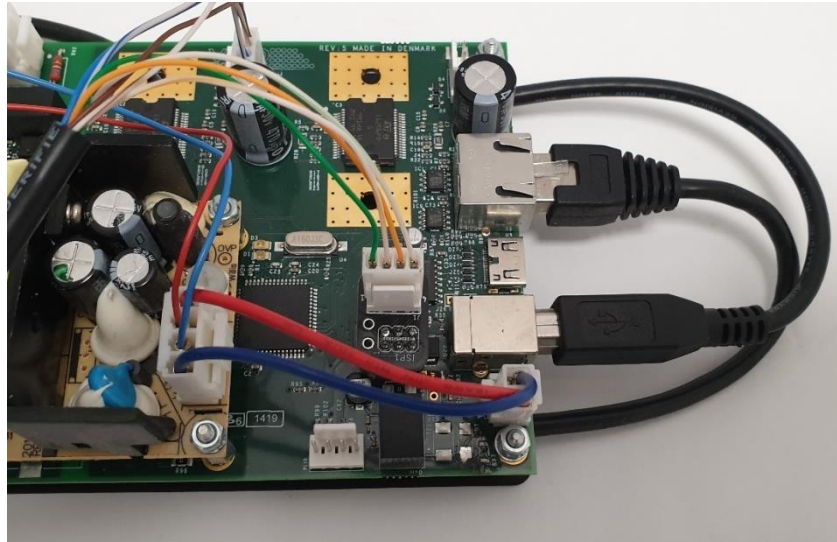
Step 10: Insert the free-floating terminal into the free opening on the Molex connector with the small tab facing the small cutout on the connector. The terminal should lock into the connector with a small tactile click.



OSB: If the free-floating terminal does not lock into the Molex connector, make sure the small tab of the terminal is protruding from the rest of the terminal at a 30–45-degree angle.



Step 11: Connect the internal Molex connector to the Mainboard to Molex adapter.



Step 12: Plug in the main goniometer motor wire and the rotation lock wire that was removed in step 4 and 5.

Step 13: Put the LabSpion Mainboard panel back into the LabSpion again making sure not to damage any of the internal cables.

Step 14: Screw in the screws on the top of the Mainboard panel.

Step 15: LabSpion modification is complete.

BaseSpion Modifications

Note: Disregard this chapter if you own a BaseSpion built after March 2021.

Step 1: Unplug the BaseSpion and disconnect it from all other equipment.

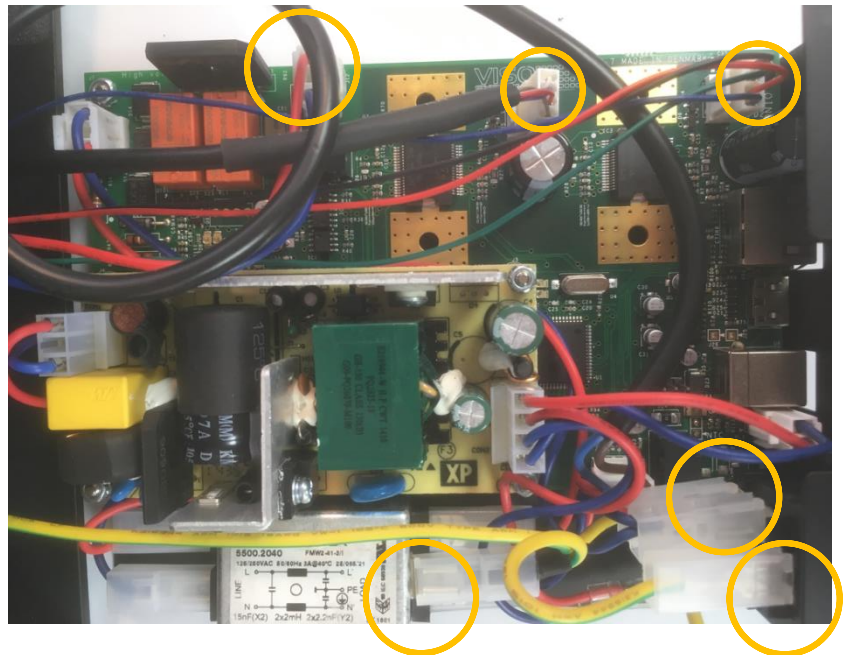
Step 2: Undo the 2 screws on the top of the Mainboard panel.



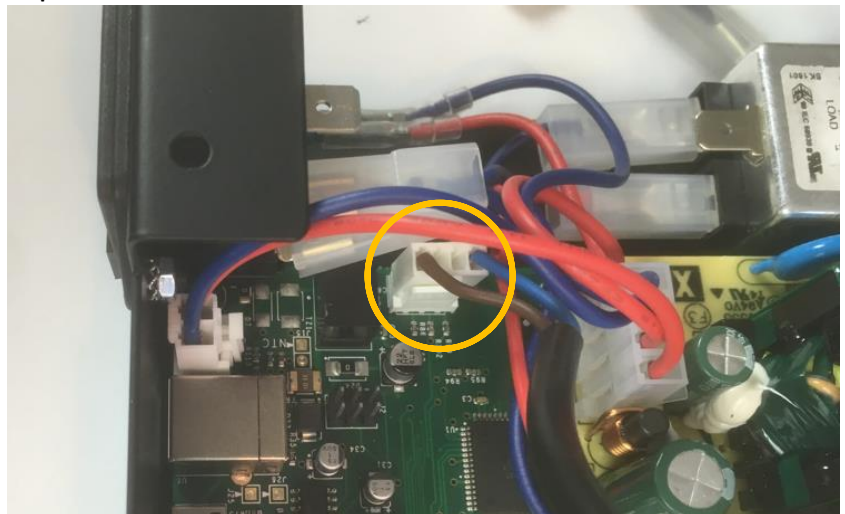
Step 3: Slide the Mainboard panel out making sure not to damage any internal cables.



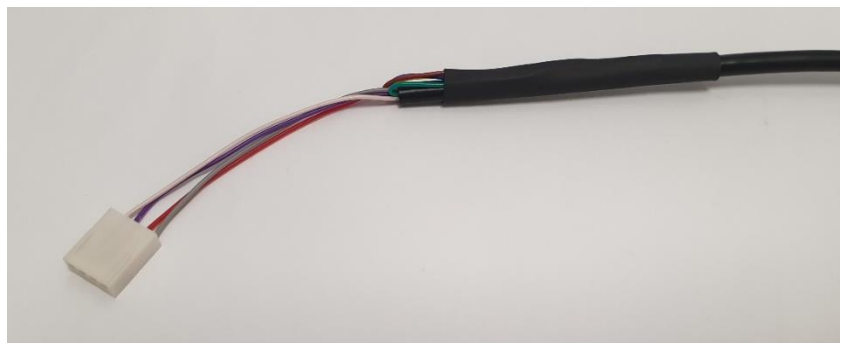
Step 4: Remove the 3 Molex connectors and the yellow grounding cable with 3 connectors.



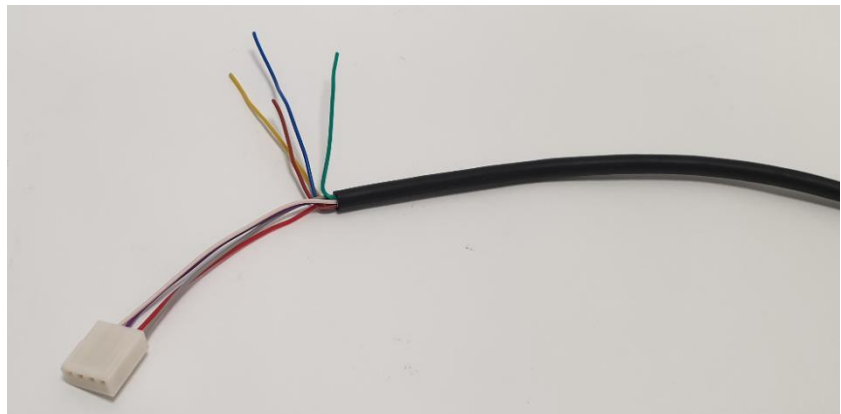
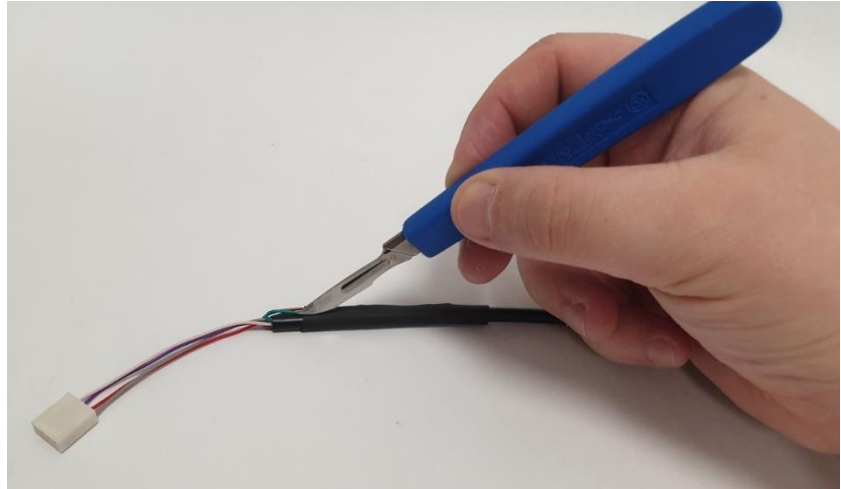
Step 5: Remove the rotation lock for the base.



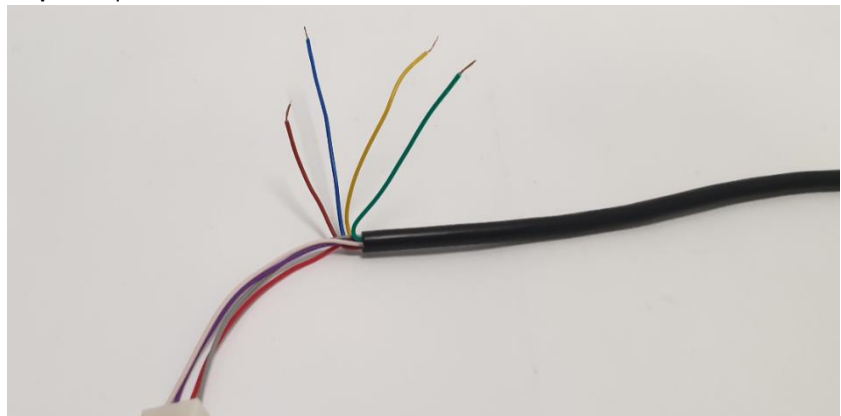
Step 6: Locate the heat shrink covered internal Wires on the internal C-Plane motor cable.



Step 7: Carefully use a knife to free the wires from the surrounding heat shrink.



Step 8: Strip the wires clean from insulation. About 5mm of clear wire is needed.



OBS: For stripping the wires either the 24 AWG setting on a wire stripper can be used or a wire snipper with some patience and a steady hand.

Step 9: Insert the wires into the screw terminal and use a screwdriver to lock the wires in place. The wires should be placed in the terminal in the order specified in

Table 1 according to the colors of the internal wires.

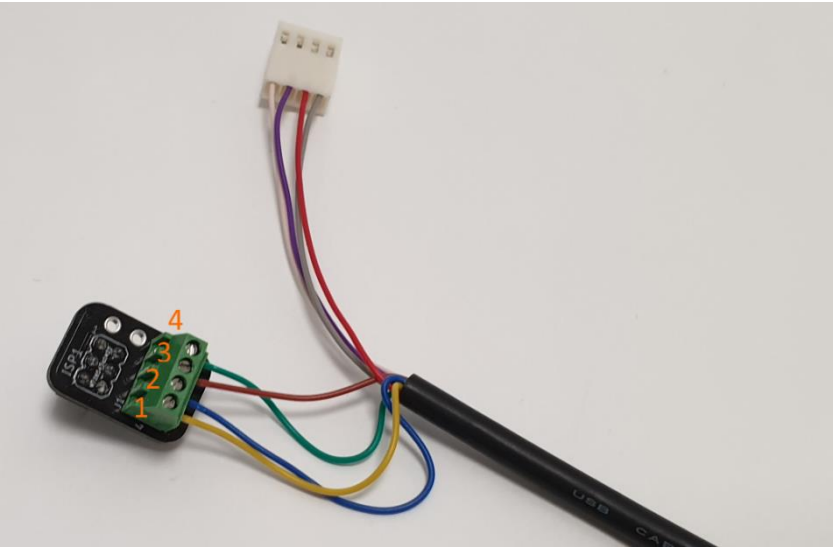
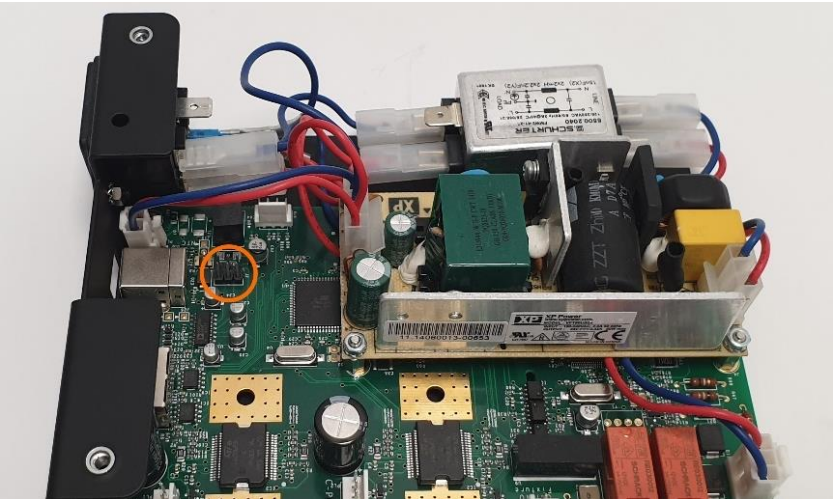
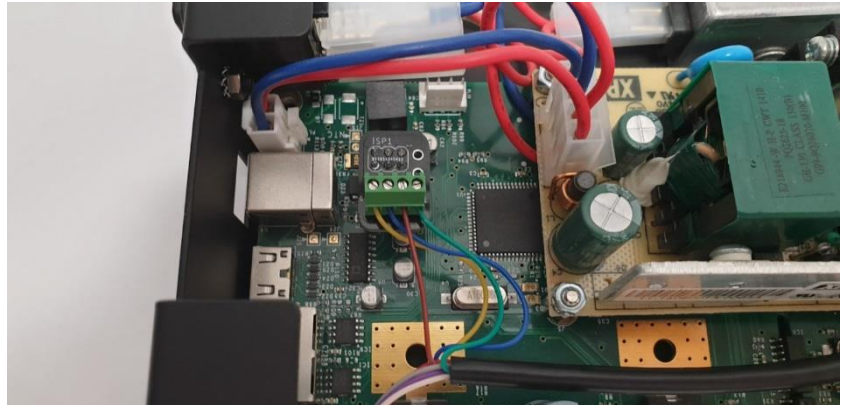


Table 1				
Terminal slot number	1	2	3	4
Cable Type 1	Yellow	Blue	Brown	Green
Cable Type 2	White & Green	Orange	White & Orange	Green

Step 10: Locate the 6 pin J2 header on the Mainboard.



Step 11: Place the included Mainboard to screw terminal adapter with the screw terminal facing the center of the Mainboard.



Step 12: Plug in the main goniometer motor wire and the rotation lock wire that was removed in step 4 and 5.

Step 13: Put the BaseSpion Mainboard panel back into the LabSpion again making sure not to damage any of the internal cables.

Step 14: Screw in the 2 screws on the top of the Mainboard panel.

Step 15: BaseSpion modification is complete.

Technical Specifications

Power and data	Via Ethernet RJ45
Dimensions, L*W*H	76.3mm * 58mm * 32mm
Materials	Powder coated steel housing
Weight	Device 200 g + sensors and 0.5 m Ethernet cable
Number of sensors Internal	1 pcs, external 3 pcs
Temperature range of sensors	Internal -40 to 128 °C, external -210 to 1800 °C
Accuracy of sensors	Internal ± 0.25 °C, external $\pm 0.15\%$
Precision of sensors	0.01 °C
Update Frequency	5Sa/s