

## ML5 Asset Tracker

# Instructions for Installing the Telematics Module

For use with a ML5 controller only

### **Tools Required:**

- 1) Phillips/Flat screwdriver
- 2) Wire tie cutter
- 3) Silicone Caulk
- 4) Surface Cleaner (Isopropyl Alcohol)

**This instruction should be read through completely before proceeding.**

### **WARNING**

**Power the unit on and update the ML5 controller software to the currently released ML5 software (6320+) for the PrimeLINE models. Set the controller date and time in GMT. You may refer to the operations and service manual for detailed explanation.**

**Before proceeding with installation, set ON/OFF switch and circuit breaker to OFF position. Disconnect power plug from the unit.**

**Follow local lockout tagout procedures for working on the equipment.**

### **Parts required per assembly:**

| ITEM | PART NUMBER   | PART NAME                     | QTY |
|------|---------------|-------------------------------|-----|
| 1    | 12-00930-00   | TELEMATICS MODULE AND HARNESS | 1   |
| 2    | 58-01441-01   | STA-STRAP                     | 1   |
| 3    | 02-00311-02   | LUBRICANT                     | 1   |
| 4    | 66-U---1—3882 | WIRE TIE                      | 12  |
| 5    | 62-12305-00   | LABEL                         | 1   |
| 6    | 62-11270-32   | LABEL,WARNING                 | 1   |
| 7    | 62-11114-00   | TAG                           | 1   |
| 8    | 98-02739-00   | INSTALL INSTRUCTIONS          | 1   |

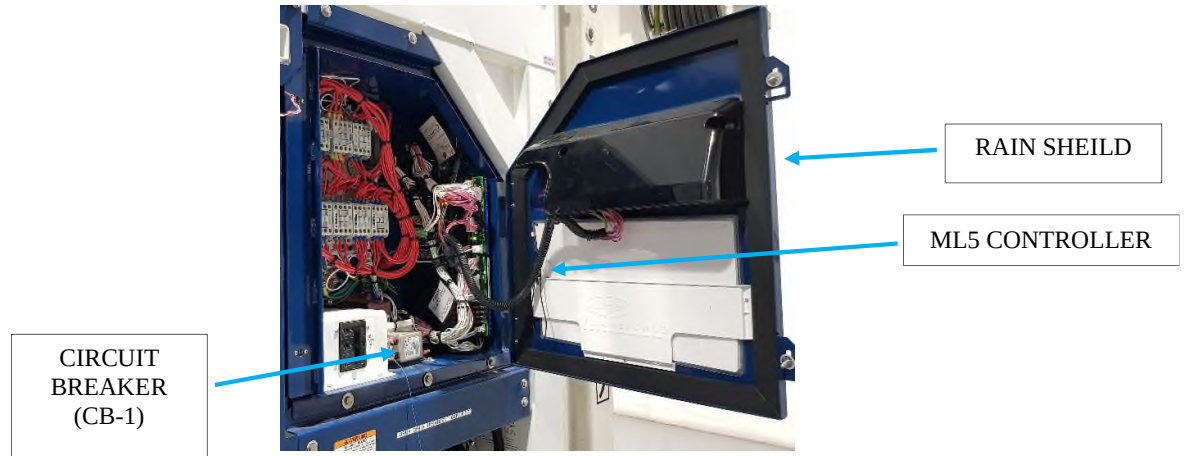
### **Installation Procedure:**

1. Ensure The ML5's software is updated to 6320+ prior to install.
2. Record the information shown in Table 1. If installed in the field, please report the following data to [container.lynxfleet support@carrier.com](mailto:container.lynxfleet support@carrier.com).

| Lynxfleet<br>Device<br>Serial<br>Number | Unit<br>S/N<br>Prefix | Unit<br>S/N | Container<br>Prefix | Container<br>No. | Comm. Date<br>(mm/dd/yyyy) | Controller<br>S/N | Software<br>Version | Install<br>Location | Customer |
|-----------------------------------------|-----------------------|-------------|---------------------|------------------|----------------------------|-------------------|---------------------|---------------------|----------|
|-----------------------------------------|-----------------------|-------------|---------------------|------------------|----------------------------|-------------------|---------------------|---------------------|----------|

**Table 1: LynxFleet Device Warranty Information**

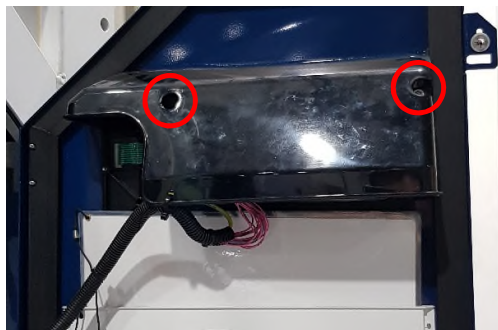
3. Open the control box door. See Figure 1.



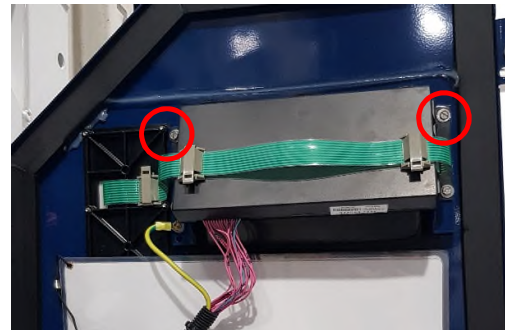
**Figure 1: Control Box with Door Open**

4. Remove the rain shield by removing the screws using a flat head screwdriver. Temporarily reinstall the two screws to hold display in place for the next step. See Figure 2a and 2b.

5. Clean area of any residue caulk on either the rain shield or the control box door.

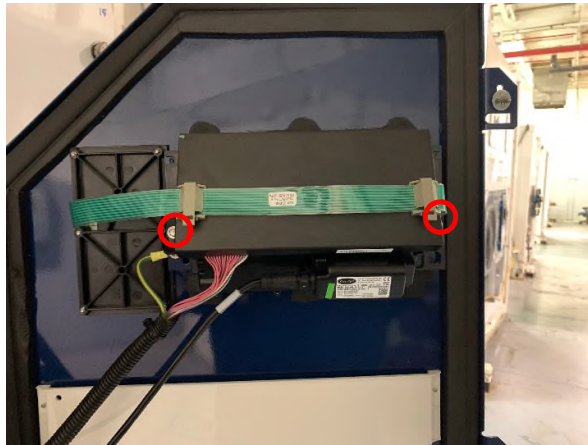


**Figure 2a: Removal of Rain Shield**



**Figure 2b: Screws reinstalled**

6. Remove the two lower screws on the display.
7. Position the Telematics module with the flat side of the module facing towards the door and reinstall the two screws on the display to secure / mount the module in place. See Figure 3.



**Figure 3: Module Installation**

8. Note the ground screw location and wire orientation. See Figure 4a. The module may need to be pushed up when tightening it down to clear the ground screw.



**Figure 4a: Module Installation**



**Figure 4b: Module Installed under rain shield**

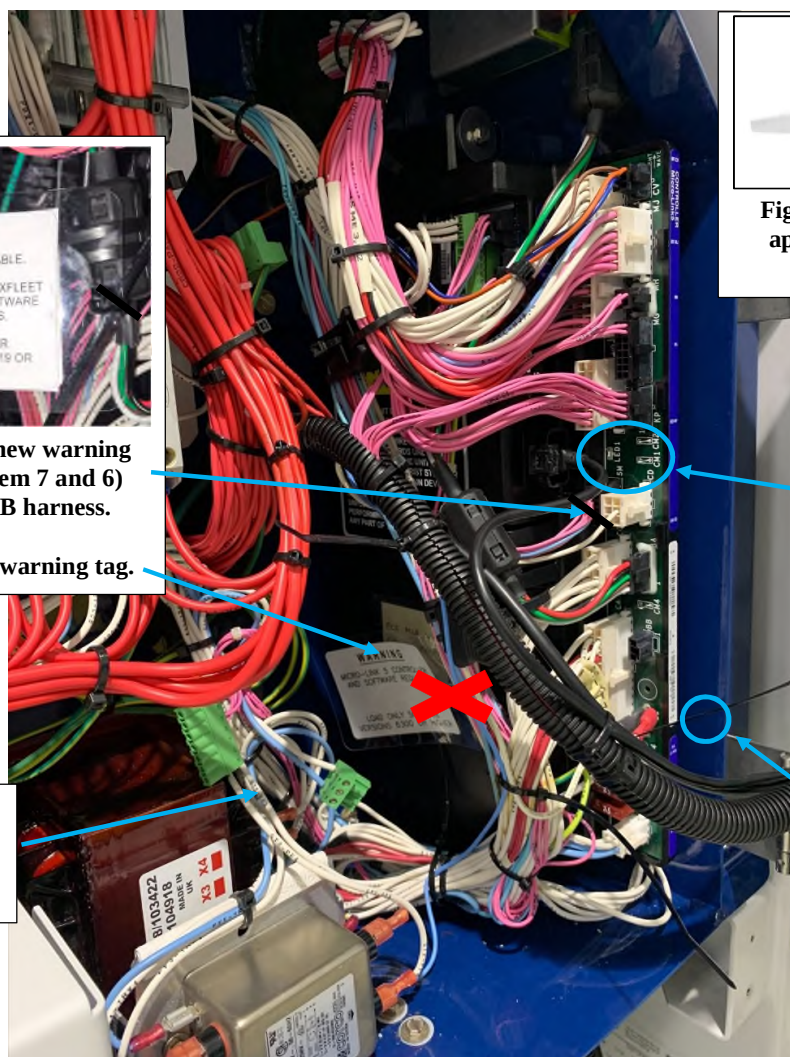
9. Apply electrical contact dielectric grease to the micro-USB connector on the ML5 and the micro-USB plug. See figure 5b.
10. Plug the micro-USB (item 1) to the ML5 controller connector and secure with the STA-Strap (item 3) to the USB guard and pull tie wrap to secure USB cable. See Figure 5c and 5d.
11. Locate the existing software tag and remove it from the unit. See figure 5d.
12. Take the clear plastic tag (item 7) and apply new label (item 6). See figure 5d.
13. Secure tag to the USB cable near the controller using wire tie. See figure 5d.
14. The power cable splits into QC and TRX2. Connect the wire marked QC to the QC connector on ML5 controller. See Figure 5e.



**Figure 5d: Add new warning tag and label (item 7 and 6) here on the USB harness.**

**Remove existing warning tag.**

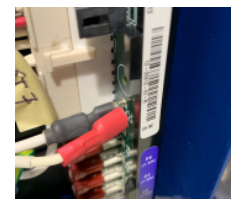
Transformer  
See Figure 6c for  
installation of  
TRX2 wire



**Figure 5b: Lubricant (item 3) to be applied to Micro-USB connection**



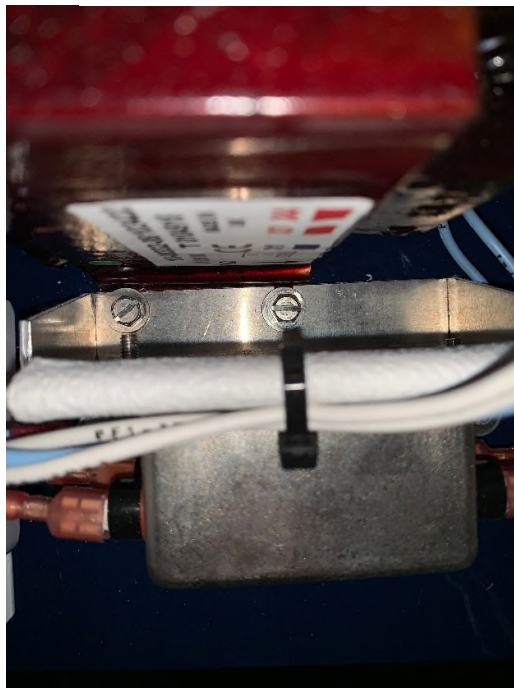
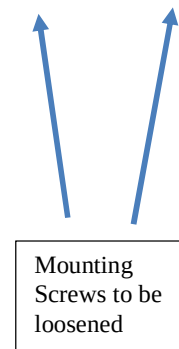
**Figure 5c: STA-STRAP (item 4) Secure to USB guard**



**Figure 5e: QC connection**

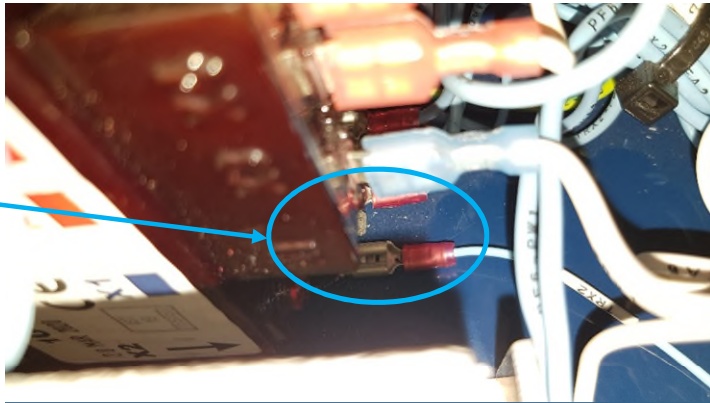
**Figure 5a: Harness Connections**

15. Loosen the mounting screws of the filter in front of the transformer using a flathead screwdriver so it can be rotated out of the way. See fig. 6a and 6b.



16. Connect the wire marked TRX2 to the low voltage side of transformer at an open X2 connector. See Figure 6c.

Step 12



**Figure 6c: TRX2 connection to Transformer**

17. Move the filter back to its original place and secure it with the mounting screw.
18. With the door fully open, neatly secure the wire harness using the wire ties and securing to existing display cable conduit. See Figure 7a.



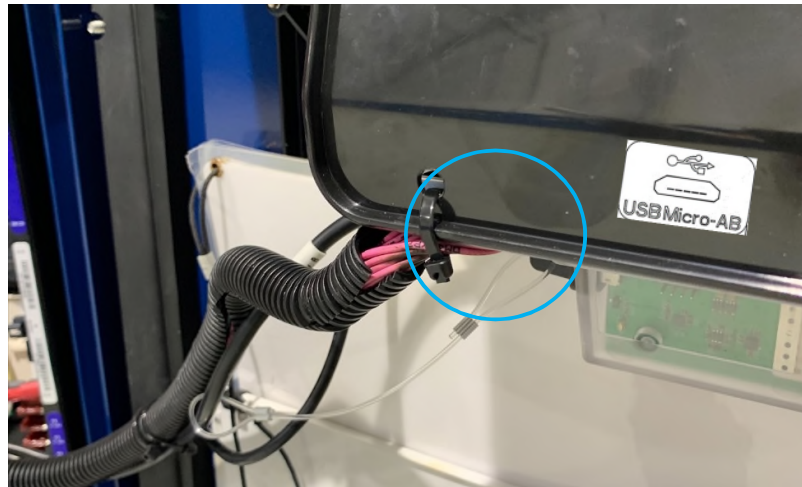
**Figure 7a: Securing wire harness**

19. Remove the top screws on the display. Reinstall rain shield using these screws.
20. Caulk along the top of the rain shield to prevent water ingress. See figure 7b.



**Figure 7b: Caulking of Rain Shield**

21. Secure the wire harnesses to the rain shield via the hole as shown below in figure 7c. If there is no hole, drill a hole with a ¼” or 6mm drill bit.
22. Clean the rain shield with an appropriate cleaner and add the USB label (item 5) to the rain shield to the right of the harness mounting hole. Location shown in figure 7c.



**Figure 7c: Routing wire harness and label location**

23. Power on the reefer unit.
24. Check the operation of the Telematics Module using the LED display. The LED on the module will display accordingly.

NOTE: Ensure there is good cellular coverage for a successful telematics device connection.

## Standard Startup

### KEY

A= Amber G= Green R= Red  
A/G/R -> LED ON ~250MS  
- -> LED OFF ~250MS  
... -> Pattern repeats

|                             |      | Startup      | Gateway Connection Check | Telemetry Ready/Sending |
|-----------------------------|------|--------------|--------------------------|-------------------------|
| On power<br>Battery<br>Time | LED  | no LED       | GAGG - - - - ...         | G - G - G - - - - - ... |
|                             | LED  | no LED       | AGAA - - - - ...         | A - A - A - - - - - ... |
|                             | Time | < 30 seconds | < 30 seconds             | With Good Cell signal   |

## Warning/Error patterns

| LED patern               | Error/Warning description | Recommended Action     |
|--------------------------|---------------------------|------------------------|
| R-R- R-R- R- - - - - ... | SIM Detection ERROR       | IoT device replacement |

|                            |                         |                                                                       |                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|-------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>R-R- R-R- ----...</b>   |                         | SIM CELL Network Reg ERROR                                            | IoT device replacement**                                                                                                                                                                                                                                                                                                                 |
| <b>R-R- R-R- ----...</b>   |                         | SIM DATA Network Reg ERROR                                            | IoT device replacement**                                                                                                                                                                                                                                                                                                                 |
| <b>R-R- R- - - ----...</b> |                         | SIM APN ERROR                                                         | IoT device replacement**                                                                                                                                                                                                                                                                                                                 |
| <b>R-R- ----...</b>        |                         | Controller serial number incorrect on ML5                             | ML5 replacement**                                                                                                                                                                                                                                                                                                                        |
| <b>AAAA ----</b><br>...    | <b>GGGG ----</b><br>... | Connection to internet but not to Lynx Fleet                          | Ok; no action required.                                                                                                                                                                                                                                                                                                                  |
| No LED for more 2 minutes  |                         | Communication between ML5 controller and Telematics device defective. | Step 1: Check Power Supply to ML5 and Telematics Device.<br>Step 2: Check ML5 Connection<br>Step 3: Check ML5 USB port with a flash drive (data download)<br>if flash drive is detected ML5 is probably fine<br>Return the IoT Gateway<br>If flash drive is not detected, ML5 USB port may have an issue. Try the device on another ML5. |

Other warning patterns:

|          |     | Cell signal Marginal                                                                                                | NO Cell Signal                                                                                               | Action                                                  |
|----------|-----|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| On power | LED | G-G- ----...                                                                                                        | G--- ----...                                                                                                 | Move reefer unit to area with better cellular coverage. |
|          | LED | A-A- ----...                                                                                                        | A--- ----...                                                                                                 |                                                         |
|          |     | Cell signal low or inconsistent:<br>Data will be stored on device and will be sent when cell coverage is recovered. | No cell signal detected -<br>Data will be stored on device and will be sent when cell coverage is recovered. |                                                         |

\*\* Contact your assigned Carrier Field Service Manager or Lynx Fleet Support prior to any replacement.

## **FCC/CE/ISED Compliance**

### ***FCC Warning***

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### **NOTE:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

|                                                                                   |                  |                                       |
|-----------------------------------------------------------------------------------|------------------|---------------------------------------|
|  | No.: 98-02739-00 | Rev: B<br>Authorization #: ECN1146067 |
| Title: Telematics Device Instructions.<br>Kits 76-00980-00                        | Supersedes:      | Page: 10 of 11                        |

## FCC / ISED RF exposure statement:

The equipment complies with FCC & ISED Radiation exposure limit set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

## ISED

This device complies with Part 15 of the FCC Rules and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS standard 247.

Operation is subject to the following two conditions:

this device may not cause harmful interference, and

this device must accept any interference received, including interference that may cause undesired operation.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

## CE Warning

This equipment should be installed and operated with minimum distance 20cm between the radiator and your body

This device in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. All essential radio test suites have been carried out.

|                                  |                          |                                 |                  |
|----------------------------------|--------------------------|---------------------------------|------------------|
| Used On:<br>ML5 Controller Units | Prepared By:<br>D. Eager | Approved By:<br>Hoover, Navarro | Date:<br>08/2022 |
|----------------------------------|--------------------------|---------------------------------|------------------|

|                                                                                   |                  |                                       |
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CAUTION : RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

1. Adapter shall be installed near the equipment and shall be easily accessible.
2. The plug considered as disconnect device of adapter.
3. The device complies with RF specifications when the device used at 20mm from your body.

| SYM | REVISION RECORD        | DATE        | BY | ENGR | ECN NO     |
|-----|------------------------|-------------|----|------|------------|
| A   | INITIAL RELEASE        | 23 MAY 2022 | DE |      | ECN1146067 |
| B   | Updated photos         | 27 MAY 2022 | DE |      |            |
| C   | Added FCC/CE Statement | 13 OCT 2022 | WD |      |            |

|                                         |                                 |                                        |                         |
|-----------------------------------------|---------------------------------|----------------------------------------|-------------------------|
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|-----------------------------------------|---------------------------------|----------------------------------------|-------------------------|

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