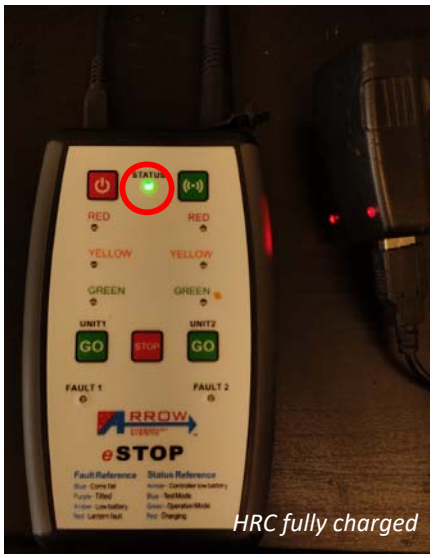
Troubleshooting

HRC (Handheld Remote Controller)

1. **Correct Charging** – when the HRC is charging the status indicator should be red (charging light will only indicate when the HRC is in off mode). Once it's fully charged, the status indicator will be green. If the status indicator does not appear, simply press any button to wake up the status.

HRC charging

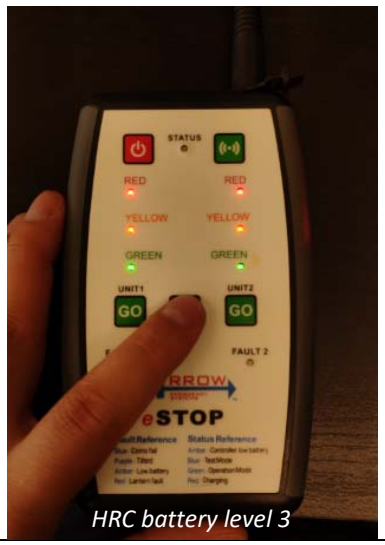


HRC fully charged

External 5V USB charger will also charge the HRC.

Charging cable can be stayed connected once its fully charger. If the HRC will be in storage for more than a week, do not leave the charging cable connected.

The battery level can be checked by pressing the STOP button while the HRC is in off mode. The green, yellow and red LED will light on representing a battery bar of 4 levels.



HRC battery level 3

Level 0 : No LED on, the battery is below 0-30%, it shoud be charged.

Level 1: Only Green LED on, the battery is between 30%-60%.

Level 2: Green and Yellow LED on, the battery is between 60%~90%.

Level 3: Green, Yellow and Red LED on, the battery is between 90%~100%.

2. **Charging Errors/Faults** – below are the steps to check for.

   - If the charger is faulty, check if the power light on the charger is red.

   - Test the charger with another known working device (work HRC/phone) to see if the charger works.
   - The cable could be faulty if the charger works, use a known working cable.
   - The connector on the HRC could be faulty.

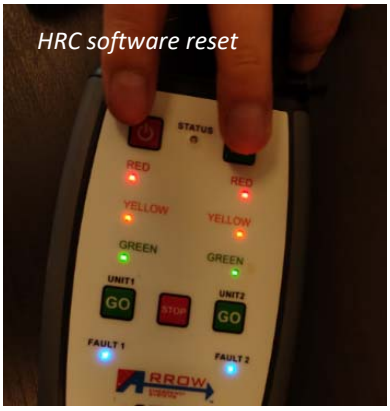
   - If the HRC is being in storage for more than 4 weeks and the HRC is completely dead where no response from any button press, it may be required to charge the HRC for at least 12 hours.
   - Charging maybe working, but the keypad membrane is faulty there the status is unknown-the keypad indicator can be checked using a software reset, step 4 will demonstrate this.

3. **Faulty Buttons/Keypad** – pressing a button on the keypad will sound a beep, if a button does not beep it may be faulty.

   If none of the buttons beeps, there may be a battery/charging issue, not a keypad issue.

   If a LED on the keypad is partially on, the Keypad is faulty, contact the supplier to have this replaced.

4. **Software reset and initialization** – Assuming the battery is not complete low, software reset can be performed by press down both of the top buttons (Power and Activation buttons) at the same time. The HRC will reboot and starts the hardware initialising then powers off.



   During hardware initialisation, a sequence of flashing all the LEDs on the keypad will take place, the Status and Fault indicators are tri-colours, and they should flash red, green and blue. After flashing all the LEDs, the status light will flash blue for 5 seconds then sound a beep and powers off.

A software reset will not un-pair a paired Lantern unit.

Faults can be determined during a software reset:

- If a LED did not flash at all, the Keypad is faulty, contact the supplier to have this replaced. Repeat the software reset process to confirm.
- If the status light continues to flash blue for more than 10 seconds, the HRC has failed hardware initialisation, contact the supplier to have this repaired.

Software reset may be required:

- If HRC is frozen or does not respond.
- To force the HRC to power off.
- To test the keypad LEDs or hardware initialisation.

Contact your supplier if the issue with the HRC is unknown after troubleshooting the above steps.

5. **Pairing Error** – If a HRC failed to pair to a lantern, the status light will flash red at the end of the paring sequence, and the Fault indicators on the HRC will be blank.

   Pairing may fail:
   - If the lantern unit is faulty – Follow Lantern troubleshoot section to check for any issues.
   - If the USB cable is faulty (make sure the cable is connect nicely in the sockets)
   - If the HRC fails to pair to a known working lantern and working USB cable, then the HRC has a faulty connector socket, contact the supplier to have this repaired.

6. **Fault Indicators** – During operation the below faults maybe appear on the HRC Fault1/Fault2 indicators located on the bottom of the keypad.

   Blue (Coms fail) – check that the distance of the Lantern unit from HRC does not exceed the maximum operating distance. Check that the correct unit is being paired or pair the units again. If the HRC is working with a different lantern, follow the Lantern troubleshoot section for communication fails on the lantern.

   Allow up to 1 minute for the HRC to connect to the lantern (fault light to go green).

   Purple (Tilted) – check the Lantern unit is not on tilt over 20 degrees from vertical. Place Lantern unit in its operating vertical position then perform a soft reset to recalibrate its orientation.

   Amber (Low Battery) – use the battery check procedures to check the battery status. Charge the batteries if they are low.

   Red (Lantern fault) – Follow Lantern Troubleshoot section to check for lantern fault, if a lantern is faulty, contact manufacturer for replacements. An individual LED aspect can be removed by releasing the latches located on the top left or right corner, then disconnect the connector attached to the aspect cable.

Lantern

1. **No Power/Power LED not lighting up** – the below components can be check to troubleshoot this issue. A competent person (such as an Auto Electricians or Electrical Technicians) is required for the below steps.

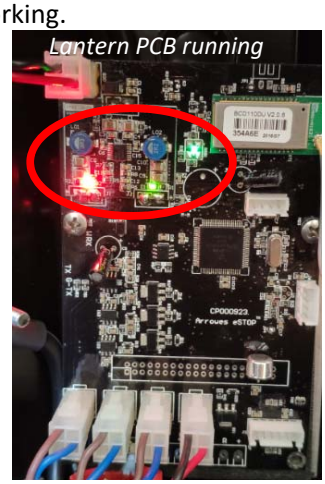
   Fuse – this is located behind the yellow lantern aspect, each aspect door can be released by press down a latch on the top right/left corner. Once the door is open, along the harness there should be a black fuse holder, check if the fuse is blown. A 5amp standard blade should be used if replacement is required.

Lantern aspect door opened

Lantern fuse holder

Battery – If the Fuse is not blown, try another known working battery. If the power LED is on after changing the battery then the initial battery is faulty. Contact the supplier for repairs or replacement.

Check controller PCB - check the controller PCB for running status LEDs, the PCB is located behind the red lantern aspect. If the running status LEDs are on, then the controller is working.



Lantern PCB running

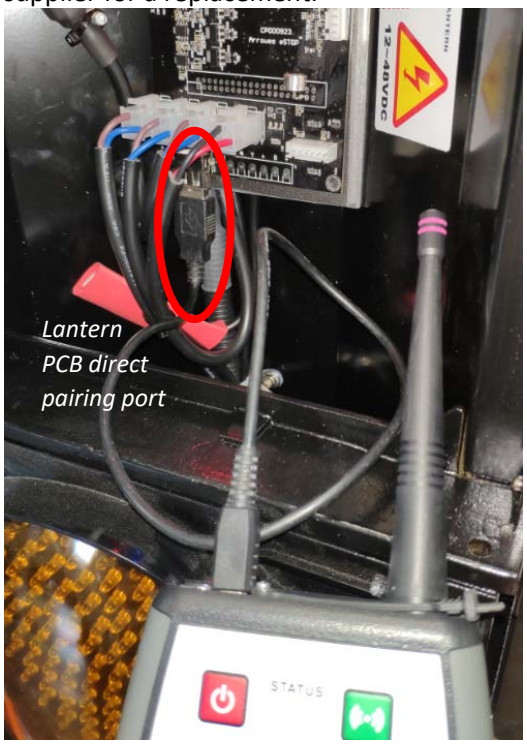
Switch - If the fuse is okay, the controller PCB LEDs are running and a known working battery is used but the switch LED is not on, then the switch is faulty.

2. **Fails pairing** to a known working HRC, if you're unsure about whether the HRC works, follow the HRC troubleshoot section to confirm this.

   Check if power is switched on – follow Lantern STEP 1 to troubleshoot power switch issue.

   Check controller PCB - check the controller PCB for running status LEDs, the PCB is located behind the red lantern aspect. If the fuse is not blown, battery is not faulty and the power switch LED is on. But the status LEDs on the PCB are not on, then the controller PCB is faulty. Contact your supplier for a replacement.

   Connect USB cable directly into PCB - if the status LEDs on the PCB are running, but pairing still fails, then connect the USB cable directly into the USB socket on the PCB. And try pairing again. If paring is successful then the USB extension cable connector is faulty, Contact your supplier for a replacement.



   If pairing still fails after troubleshooting the above steps, contact your supplier.

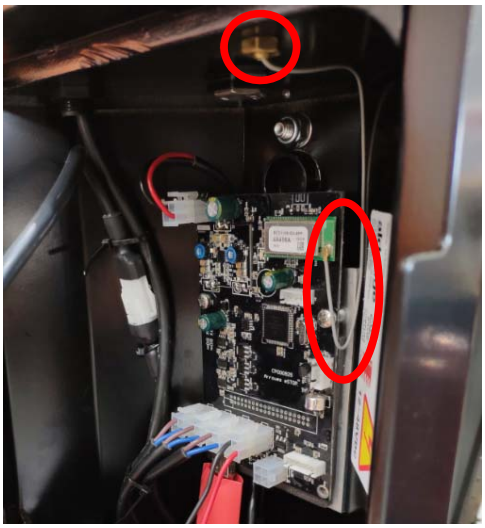
3. **Lantern not communication to the HRC** – when a lantern fails to establish a communication after a successful pair to HRC or loses communication during operation and fails to reconnect, then the below steps can be check to troubleshoot the lantern.

   Long distance – check if the distance between HRC and lantern is within the maximum operation range of 400m and in line of sight.

   Surrounding inference – check if there is high noise/power device around such as power transformers.

   Lantern is running – check if lantern is still running, follow Lantern STEP 1 to troubleshoot if lantern has power and is running.

Pairing – If lantern is running, use a known working HRC to pair the unit. If pairing is successful and the unit is not communicating, then the lantern controller PCB may be faulty. Contact your supplier for replacement.
Antenna – check if the antenna is connected to the PCB correctly.



4. **Lantern aspects not lighting up** could be cause by a faulty lantern aspect or a faulty lantern controller PCB. During operation a red fault light indicates a faulty lantern aspect.

   LED test – assuming the lantern is paired and communicating to a HRC, press the GO button of the paired unit on the HRC during test mode will run a LED test sequence, where each of the green, yellow and red lantern will flash for 0.1 seconds. This allows the lanterns to be tested.

   Faulty Lantern-If a lantern aspect does not light up during LED test, it is most likely the lantern is faulty, to verified this, disconnect the lantern connect it to another known working lantern unit and run LED test again, if the lantern aspect is still not lighting up then the lantern aspect is faulty. Contact your supplier for a replacement.

   Faulty Controller PCB - If the lantern aspect works on the second lantern unit but not on the first unit then the fault is on the lantern controller PCB. Contact your supplier for a replacement.

Lantern Battery

1. Charging –when the battery is charging, the status indicator on the charger is red, once full it will turn green. It should take up to 6hrs for a battery to be fully charged.

2. No power out –charge the battery with a working charger for at least 6 hours, test the battery on a known working lantern, if the lantern does not turn on then the battery is faulty. Contact your supplier for a replacement.
3. Not lasting more than 15hrs - charge the battery with a working charger for at least 6 hours, test the battery on a known working lantern and leave the lantern running on red, if the lantern unit powers of on its own before 15hrs then the battery is below rated capacity. Contact your supplier for a replacement.

Battery level check using a HRC – once a lantern is paired and communicating with the HRC, the lantern battery level can be check by pressing the STOP button during test mode. Once it is pressed the green, yellow and red LED will light up representing a battery bar of 4 levels.

Level 0 : No LED on, the battery is below 0-30%, it shoud be charged.

Level 1: Only Green LED on, the battery is between 30%-60%.

Level 2: Green and Yellow LED on, the battery is between 60%~90%.

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The lantern battery should be serviced every 800 cycle of use.