

Technical

Upgrade

Information

## i2 and x2 False Battery Red Light

### Affected Units

All Gen2 units, including i2, X2, and X2 Golf are affected.

### Description of Issue

When charging, the charge indicator lights on the Segway® Personal Transporter (PT) are green and behave as expected. Upon reaching a full charge, one or both of the charge indicator lights turn red. However, upon the PT powering on, the battery gauge notes a full battery and the PT behaves normally.

The condition may be intermittent and may not present itself with every charge cycle. Exposure to a high humidity environment appears to contribute to the likelihood that customers will see this condition. Customers may report a link between the condition appearing and the weather in which they are operating.

Batteries manufactured from July 2007 and after are known to have the potential to exhibit this condition. It is not known when the issue first started and it is possible batteries that are older than July 2007 could be subject to this condition. The first 6 numeric positions of the battery serial number denote the date of manufacturer. For example: C081507 would indicate the battery was manufactured on August 15<sup>th</sup> of 2007.

It is important to note that not all charger red lights are linked to this condition. There are other battery and charging faults indicated by red lights during / after charge. These other faults will typically result in a no-start condition, or an inability for a battery to reach full charge.

To positively identify a PT that is experiencing this condition, the following criteria must be met:

One or both of the charge lights turn red at the end of the charge cycle. However, upon consulting the InfoKey, the user can see that the batteries are fully charged. Further, the PT will power on and function normally.

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**CUSTOMER INFORMATION:** The information in this bulletin is intended for use only by skilled technicians, who have the proper tools, equipment and training to correctly and safely service a Segway PT. These procedures should not be attempted by "do-it-yourselfers," and a Segway PT Customer should not assume this bulletin applies to his/her Segway PT, or that his/her Segway PT has the condition described. To determine whether this information applies, a Segway PT customer should contact an authorized Segway dealer.

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### Cause of the Issue

Each battery pack has the ability to monitor key attributes relative to the cells such as voltage, capacity, and state of charge. Each pack has a voltage measuring circuit that sets a “flag” (red light) if the battery voltage rises above a pre-set limit during charging. A failure in this circuit is setting this flag prematurely with the battery below the desired limit, but still at full charge level.

### Issue Resolution

Segway Inc. is working closely with the battery manufacturer to have the issue corrected. The manufacturer is aware of the issue and is designing a resolution. New batteries will be manufactured with the solution in place soon.

**IMPORTANT** - Batteries with this condition should **NOT** be replaced in an attempt to correct the issue. This is because new batteries with revisions to correct this issue are not yet available. As such, replacing a battery with this condition will not ensure that the issue is solved.

### Communication to Customers

This section provides you with a common source of information and messaging to convey to your customers who contact you with questions about this condition.

- Use the information in this memo to compare with the customer’s account of what they are experiencing and determine if their PT is indeed experiencing this condition.
- Some PTs may never experience this condition.
- The condition can be accurately described as the battery’s internal circuitry being too cautious in its monitoring of the charging cycle and thus displaying the red charge indicator light at the end of the charge cycle once the battery reaches full charge.

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- The condition is related to exposure to high levels of humidity and thus storing the PT, when not in use, in a generally low humidity environment may help.
- Riders who observe this condition can accurately determine if their batteries did indeed receive a full charge by consulting their InfoKey.
- Final corrective actions are not defined at this time.

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