

Replace Key Batteries and Update Key Firmware

Classification	Campaign Bulletin	Section/Group	17 - Electrical	Country/Region	United States
Year	2016	Model	Model X	Version	All

Bulletin Classification: This campaign bulletin addresses a known non-safety-related condition and provides recommended technical diagnosis and repair procedures. Apply this procedure to all vehicles in the affected VIN range listed. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.

This Service Bulletin supersedes SB-16-17-008, dated 3-Jun-16. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Condition

An early version of key firmware might have caused the key battery to drain more quickly than normal.

Correction

Replace the key batteries and update the firmware on the keys.

Correction Description		Correction	Time
Replace 1 Key Battery And Update Key Firmware	:	S011617008	0.2
Replace 2 Key Batteries And Update Key Firmware	:	S021617008	0.3

Required Part(s):	Part Number	Description	Quantity
	1061712-00-A	MODEL X KEY FOB BATTERY CR2354	2

These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual.

Special Tool(s):	1082355-00-A	MX BLE DONGLE
	1086799-00-A	KEY FOB TOOL

Procedure

- 1. Replace both key batteries.
- 2. Install the Bluetooth low energy (BLE) drivers onto a laptop. Refer to Toolbox article 26985.

NOTE: If the following panels or options are unavailable, use Toolbox version Service Beta.

3. Connect the laptop to the vehicle.

4. Insert the BLE dongle into the laptop's USB port (Figure 1).





NOTE: The keys interact with Toolbox via Bluetooth. Ensure that both keys are within a few feet of the BLE dongle.

5. In Toolbox, navigate to the Model X Keys Diagnostics panel.

6. In the "BCCEN Info" field, click the **Refresh** icon (Figure 2).

Driver Assist Adv	Anced UDS Tesla Keys Safety Air Suspension Diagnos	tic Steering Tire	Fa and Suspension	Icon Door Sensors		
8 Model X Keys Dia	agnostics					
Refresh cu boundard ckC Security I/B: Learned VIN: Paired Key Fo	unty Update Initialize :: N/A App CRC: N/A :: N/A Security State: N/A N/A Full Security ID: N/A N/A Number of Keys Paired: N/A bb Security IDs No Paired SEIDs. Refresh to read from vehicle.	Sta	uş	No Stat	uses	
						•
Key Fob Info						
Enable Key Fo	ob Discovery	le: iei ii	le a v ·	le nu i		
Cario	Jecony Jo	No Key Fobs Fo	and	Secondy Version	Secondy state	Dattery voltage
Color Legend						
	Connected Pending Connection		Key fob matches ve	ehicle ID	Virgin ke	ey fob
				_		



7. Press the brake pedal to turn the vehicle on.

NOTE: The vehicle must be on for the remainder of this procedure.

8. Click the Enable Key Fob Discovery checkbox (Figure 3).

NOTE: It might take up to 30 seconds for Toolbox to recognize the keys.

Virver Assist Advanced UDS Tesla Keys Safety	Options Help	Facon Door Sensor	S
Model X Keys Diagnostics BCCEN Info Refresh Security Update Initialize Bootloader CRC: 7408C378 Security Dis Learned VIN: Number of Paired Key Fob Security IDs No Paired SEIDs.	DE318AB4 ate: Active y ID: 00:00:30:31:30:33:0 Keys Paired: 0 Refresh to read from vehicle.	Reading BCCEN bootloader CRC Reading BCCEN application CRC Acquiring smartcard lock Lock acquired: True Reading BCCEN SEB Reading BCCEN SEB Reading Lock SEB Reading parted SEDS Reading parted SEDS Reading parted SEDS Releasing smartcard lock Lock released: True Walking up key fobs with cartD 643 Searching for discoverable key fobs	
I	()	Status Restarting Scan	0
Enable Key Fob Discovery CariD Security ID	Signal	Strength Key App Version Security Version	on Security State Battery Voltage

Figure 3

9. Right click the first key and select **Connect To Device** (Figure 4).

	True with Supervised
Model X Keys Diagnostics	ing Tires and Suspension
CCEN Info Refresh Security Update Initialize Bootloader CRC: 740BC878 App CRC: DE318A84 Security Version: 3 Security State: Active Security ID: Pril Security ID: 00:00:30:31:30:33:00 Learned VIN: Number of Keys Paired: 0 Paired Key Fob Security IDs	Reading BCCEN bootloader CRC Reading BCCEN application CRC Acquiring smartcard lock Lock acquired: True Reading SE application version Reading BCCEN SE State Reading BCCEN SEID Reading Lock SEID Reading number of keys paired Reading paired SEIDs Releasing smartcard lock Lock released: True Waking up key fobs with car ID 643
No Paired SEIDs. Refresh to read from vehicle.	Searching for discoverable key fobs
No Paired SEDs. Refresh to read from vehicle.	Status
No Paired SEDs. Refresh to read from vehicle.	Searching for discoverable key tobs
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No Paired SEDs. Refresh to read from vehicle.	Searching for discoverable key tobs Status • Restarting Scan • O 2 • Ingth Key App Version Security Version Security State Battery Voltage

Figure 4

10. Right click the key and select **Refresh Data** (Figure 5).

NOTE: Information about the keys is displayed under "Key Fob Info" once Toolbox has established a connection with the keys.

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Model X Keys Diagnostics	
Accel Info Centre Security Update Descrity Ursion: 3 Security UPdate Security Update Security Update Security Update Security Update Security Upi Control State: Active Full Security UD: Derred VIN: Number of Keys Paired: 0 Paired Key Fob Security IDs No Paired SEIDs. Refresh to read from vehicle. No Paired SEIDs. Refresh to read from vehicle.	Reading BCCEN bootloader CRC Reading BCCEN application CRC Acquiring smartcard lock Lock acquiring smartcard lock Lock acquiring true Reading Starplication version Reading BCCEN SE Date Reading and VII in BCCEN Reading number of keys paired Reading number of keys paired Stopping wake keyfobs with car ID 643 Connection established to Stopping wake keyfobs service
	Status
Key Fob Info	
Car ID Security ID Signal Str 00643 Refresh Data Disconnect Device	rength Key App Version Security Version Security State Battery Voltage
Color Legend Connected Pending Connection	Key fob matches vehicle ID Virgin key fob



11. Click outside of the "Key Fob Info" section to deselect the key.

- 12. Check the color displayed below "Key App Version":
 - If the color is green, skip to step 17.
 - If the color is red (Figure 6), continue to the next step.

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Model X Keys Diagnostics	
BCCEN Info Initialize Bootloader CRC: 74080378 App CRC: DE318A84 Security Urston: 3 Security State: Active Security D: Full Security ID: Learned VIN: Number of Keys Paired: 0 Paired Key Fob Security IDs No Paired SEIDs. Refresh to read from vehicle. Image: Image of the security IDs Image of the security IDs Image: Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Image of the security IDs Im	Reading Keydo SE State Reading Keydo SED Reading Keydo SED Reading Keydo SED Searching Keydo Sentor and Data Disconnecting Keydo Sentor D433 Connecting to discoverable key fobs Connecting to discoverable key fobs Connecting to discoverable key fobs Connecting to Connecting to Connecting to Connecting to Connecting to Connecting to Reading Keydo SE State Reading Keydo SE State
Key Fob Info	
Enable Key Fob Discovery	
Car ID Security ID Signa 00643 00643 00643 00643	Il Strength Key App Version Security Version Security State Battery Voltage
Color Legend	Key fob matches vehicle ID Virgin key fob

Figure 6

- 13. Right click the key and select Verify Provisioning.
- 14. Right click the key and select **Update Key App**.

15. Right click the key and select **Refresh Data** (Figure 7).

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Model X Keys Diagnostics	
BCCEN Info Refresh Security Update Initialize Bootboader CRC: 7408C878 App CRC: DE318AB4 Security Version: 3 Security State: Active Security UP: Full Security D: Number of Keys Paired: 0 Paired Key Fob Security IDs No Paired SEIDs. Refresh to read from vehicle. It IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Reading Keyfob SE State Reading Keyfob SED Reading Keyfob battery voltage Waking up keyfobs with car ID 643 Searching for discoverable key fobs Disconnecting keyfob Stopping wake keyfobs service Waking up keyfobs Connection to terminated, reason: HOST_REQUESTED_TERM Stopping wake keyfobs service Reading security version from Reading keyfob SE State Reading keyfob battery voltage Error while reading battery voltage: Characteristic not available
Kev Fob Info	
Enable Key Fob Discovery	
CarID Security ID Signal Str. 00643 81.0% 80.0%	angth Key App Version Security Version Security State Battery Voltage
Color Legend	Pair Keyfob to BCCEN Verify Provisioning Virgin key fob

Figure 7

16. Click outside of the "Key Fob Info" section to deselect the key.

NOTE: Ensure that the color displayed under "Key App Version" is green. If the color is still red, perform steps 13-16 again. Escalate a Toolbox session, as appropriate, if the color is still red after a second attempt.

- 17. Ensure that the key displays "Paired" in the "Security State" field (Figure 8).
- **NOTE:** If the key does not display "Paired", right click and select **Pair Keyfob to BCCEN** (Figure 9).

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Model X Keys Diagnostics				
CCEN Info Refresh Security Update Initialize Bootbader CRC: 7408C876 Security Version: 3 Security ID: Learned VIN: Paired Key Fob Security IDs	App CRC: DE318AB4 Security State: Active Ful Security DI: 00:00:30:3 Number of Keys Pared: 1	Canceling connectio Canceling connectio Waking up key fobs Connecting to Connecting to Connecting to Stopping wake keyfor Refreshing data from Reading Security vers Reading Keyfob SED Reading keyfob SED	In request to In request to with car ID 643 and to bbs service asion from tate Version from tate asion from tate Version ery voltage	
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		81.0% 1.3	3 Paired	2V

Figure 8

00643 9F:E8:E0:48 00:00 70.0% 1.4 3 Active 2.771/ N/A F9:C6:0A:D9 00:0 81.0% 1.4 3 Personalizatii Refresh Data Remove Pairing Disconnect Devi	Car ID	Security ID /	Signal Strength	Key App Version	Security Version	Security State	Battery Voltage
	00643 N/A	9F:E8:E0:48 00:00 F9:C6:0A:D9 00:0	70.0% 81.0%	1.4 1.4	3	Active Personalizatio	Refresh Data Remove Pairing Disconnect Device
							Verify Provisioning

Figure 9

18. Perform steps 9-17 on the 2nd key, if available.

19. In the "BCCEN Info" field, click the **Refresh** icon (Figure 10).

NOTE: Ensure that the "BCCEN Info" section displays information for both keys. If the keys are not recognized, escalate a Toolbox session, as appropriate.

	🗄 Model X Keys Diagnostics 🔛	
	BCCEN Info Control Control Co	
	Bootloader CRC: 740BC878 App CRC: DE318AB4	
	Security Version: 3 Security State: Active	
	Security ID: Full Security ID: 00:00:30:31:30:33:00	
	Learned VIN: Number of Keys Paired: 2	
	Paired Key Fob Security IDs	
	Figure 10	
20. Verify proper operation	ration of both keys.	
21. Disconnect the BL	E dongle from the laptop.	
22. Disconnect the lap	ptop from the vehicle.	

Affected VIN(s) Affected keys that were delivered with Model X vehicles built before approximately May 20, 2016.

NOTE: This is a simplified summary of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.

For feedback on the accuracy of this document, email <u>ServiceBulletinFeedback@tesla.com</u>.