LOKI PLUGIN Key Fob Pairing for Tesla Model X Feature User Guide

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PLUGIN LOKI
KEY FOB PAIRING
FOR TESLA MODEL X FEATURE
USER GUIDE

Plugin Key Fob Pairing for Model X Feature

Contents

INTRODUCTION

To key for pairing for Model X , the LOKI module, the LC003-CX cable, the clean key (or several) and BLE dongle with the activated plugin are used.
Before turning on the module, you must connect BLE dongle to any port of the USB module.
The module itself is connected by LC003-CX cable to the diagnostic CAN port of the vehicle under the monitor.
To work plugin you need to connect to the Internet.

⚠️ **WARNING!** The plugin cannot untie an existing key or pairing the being in the use key.
The theoretical number of keys that can be pairing to a car is 20.

In general, the pairing process is as follows:

1. Connecting the module to the vehicle, reading the existing list of keys;
2. Connect the module to the clean key;
3. Provision procedure for entering data into the key;
4. Pairing procedure for directly pairing the key to the vehicle.

CONNECTION TO THE VEHICLE

The vehicle must be switched on, ignition is not necessary.
After connecting the module with the LC003-CX cable, you must go to the key pairing window.
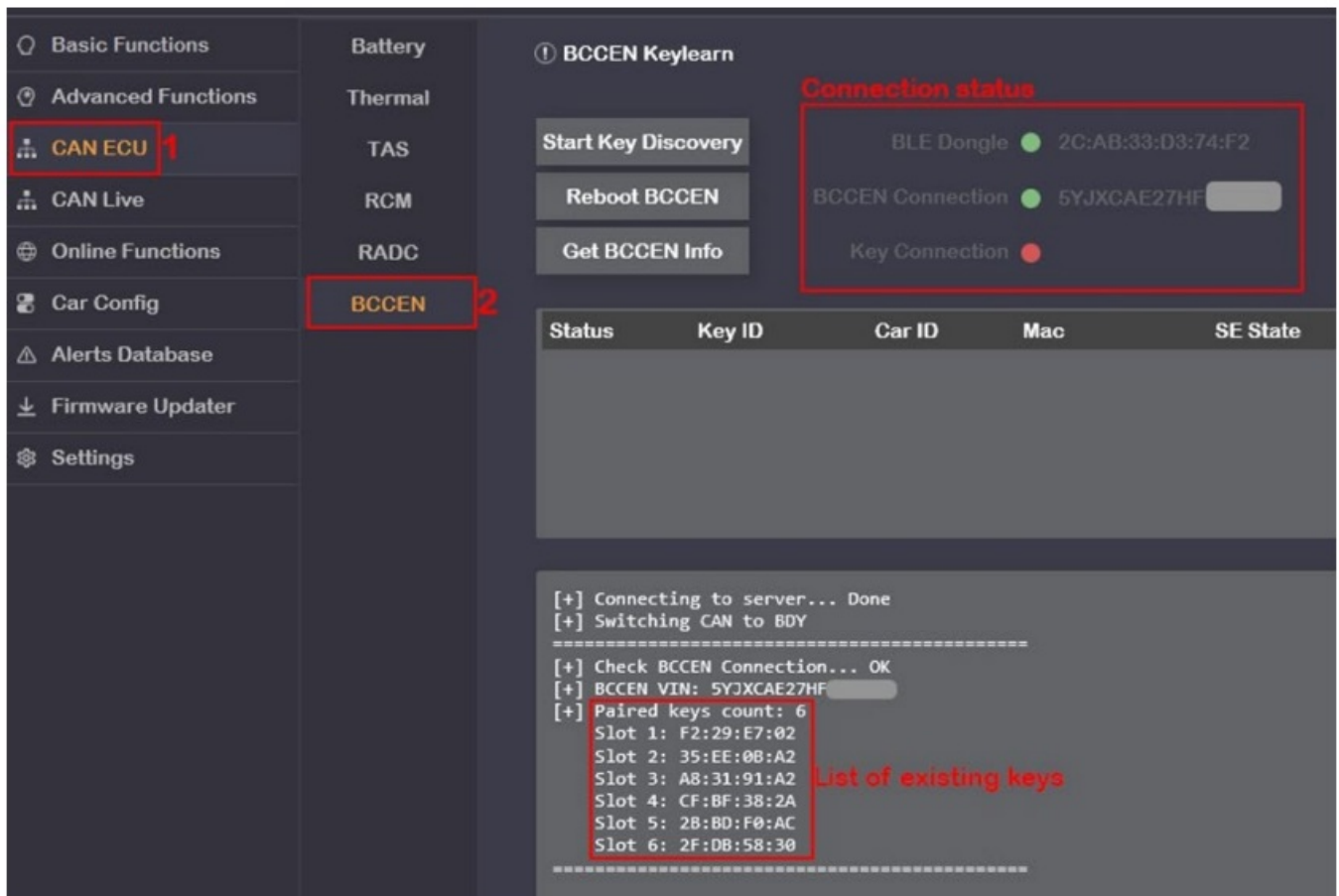
If the connection is successful, a list of keys in the BCCEN module and data about the vehicle and dongle will be displayed.

KEY PAIRING

To connect to the key it is necessary to bring it to the module at a distance of up to 70cm (closer – better), and start a key search by the button "Start Key Discovery", after the dongle initialization, you need to double-click the front trunk button to wake the key.
After discovery, the key will appear in the list.

① BCCEN Keylearn

Button		Indicator	
Start Key Discovery	1	BLE Dongle ●	2C:AB:33:D3:74:F2
Reboot BCCEN		BCCEN Connection ●	5YJXCAE27HF
Get BCCEN Info		Key Connection ●	

Status	Key ID	Car ID	Mac	SE State	SE Version	Rssi	Battery
Disconneted	00:00:00:00	00000	6C:79:B8:35:E4:F3	--	--	-50	--

3

```
[+] Connecting to server... Done
[+] Switching CAN to BDY
============================================
[+] Check BCCEN Connection... OK
[+] BCCEN VIN: 5YJXCAE27HF
[+] Paired keys count: 6
    Slot 1: F2:29:E7:02
    Slot 2: 35:EE:0B:A2
    Slot 3: A8:31:91:A2
    Slot 4: CF:BF:38:2A
    Slot 5: 2B:BD:F0:AC
    Slot 6: 2F:DB:58:30
============================================
[+] BLE dongle initialization... Done
[+] Press frunk 2 times to wake up the key.   2
[+] Found key: 6C:79:B8:35:E4:F3
```

Press 2 times to Discovery
Press 3 times for Connect

After the key is discovered, you need to connect to it, just click on the "Connect" of the desired key in the table. As soon as the corresponding inscription appears in the log – press three times on the front trunk button to confirm the connection.

After reading the data from the key, it is considered connected.

The status of the key can be seen in the SE State field where:

– Personalization – Clean Key, ready for Provision procedure;

– Active – A key that has passed the Provision procedure, is waiting to execute the Pairing procedure;

– Paired – Paired key after Pairing procedure.

⚠️ **WARNING!** The key transition from the Personalization state to all subsequent states is irreversible.

PREPARING THE PAIRING KEY (PROVISION)

⚠️**WARNING!** Once this procedure is started, the key cannot be used to paired to another car.

To perform the Provision procedure, just click on the corresponding menu item, the program will automatically configure the key for the connected vehicle and prepare it for pairing.

Information about the end of the procedure will appear in the log.

```
[+] Connecting to server... Done
[+] Switching CAN to BDY
================================================
[+] Check BCCEN Connection... OK
[+] BCCEN VIN: 5YJXCAE27HF
[+] Paired keys count: 6
    Slot 1: F2:29:E7:02
    Slot 2: 35:EE:0B:A2
    Slot 3: A8:31:91:A2
    Slot 4: CF:BF:38:2A
    Slot 5: 2B:BD:F0:AC
    Slot 6: 2F:DB:58:30
================================================
[+] BLE dongle initialization...  Done
[+] Press frunk 2 times to wake up the key.
[+] Found key: 6C:79:B8:35:E4:F3
[+] Connecting to key: 6C:79:B8:35:E4:F3
[+] Press frunk 3 times.........................
[+] Read data from key... Done
================================================
Check BCCEN Connection... √ VIN: 5YJXCAE27HFXXXXXX
Read SEID form key... √ SEID: 0000XXXXXXXXXXXXXXXXXXXX
Getting certificates from the server... √ Done
Read SE version from key... √ SE v4
Read SE state... √ SE State: PERSONALIZATION
Read ID... √
Load data part 1...  √
Generate Certs... √
Load Cert 1 (may take 1-2 minutes)... √
Load Cert 2 (may take 1-2 minutes)... √
Load Cert 3 (may take 1-2 minutes)... √
Write SEID... √
Write CarID... √
Read car IDs... √ Current CarID: XXXXX, SEID: XXXXXXXX
Provision procedure completed successfully √
================================================
```

If the key was not clean, the log will look like this.

```
[+] Connecting to server... Done
[+] Switching CAN to BDY
=============================================
[+] Check BCCEN Connection... OK
[+] BCCEN VIN: 5YJXCAE27HF
[+] Paired keys count: 6
    Slot 1: F2:29:E7:02
    Slot 2: 35:EE:0B:A2
    Slot 3: A8:31:91:A2
    Slot 4: CF:BF:38:2A
    Slot 5: 2B:BD:F0:AC
    Slot 6: 2F:DB:58:30
=============================================
[+] BLE dongle initialization...  Done
[+] Press frunk 2 times to wake up the key.
[+] Found key: 6C:79:B8:35:E4:F3
[+] Connecting to key: 6C:79:B8:35:E4:F3
[+] Press frunk 3 times.......................
[+] Read data from key... Done
=============================================
[+] Check BCCEN Connection... ✓ VIN: 5YJXCAE27HF
[+] Read SEID form key...  ✓ SEID: 000030
[+] Getting certificates from the server... ✓ Done
Read SE version from key... ✓ SE v4
Read SE state... ✗ Current SE state 'PAIRED' incorrect, should be PERSONALIZATION.
Provision procedure completed with an error. Try again ✗
=============================================
```

After successfully completing the Provision procedure, you can proceed with the Pairing procedure.

PAIRING THE KEY (PAIRING)

To perform the Pairing procedure, just click on the corresponding menu item, the program will automatically attach the key to the connected vehicle.
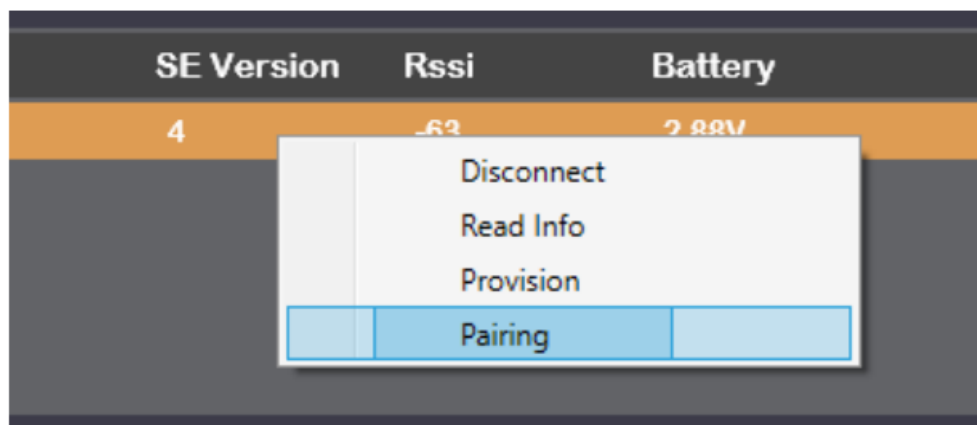
```
[+] Connecting to server... Done
[+] Switching CAN to BDY
==========================================
[+] Check BCCEN Connection... OK
[+] BCCEN VIN: 5YJXCAE27HF
[+] Paired keys count: 6
    Slot 1: F2:29:E7:02
    Slot 2: 35:EE:0B:A2
    Slot 3: A8:31:91:A2
    Slot 4: CF:BF:38:2A
    Slot 5: 2B:BD:F0:AC
    Slot 6: 2F:DB:58:30
==========================================
[+] BLE dongle initialization...  Done
[+] Press frunk 2 times to wake up the key.
[+] Found key: B4:52:A9:0E:DD:BE
[+] Connecting to key: B4:52:A9:0E:DD:BE
[+] Press frunk 3 times..................
[+] Read data from key... Done
==========================================
Check BCCEN Connection... ✓ VIN: 5YJXCAE27HFXXXXXX
Read SE version from key... ✓ SE v4
Read SE state... ✓ SE State: ACTIVE
Get challenge from BCCEN... ✓
Get pairing token... ✓
Get pubkey... ✓
Get blob... ✓
Store blob... ✓
Save key... ✓
Pairing procedure completed successfully. ✓ Please reboot BCCEN.
==========================================
```

After you complete the pairing procedure, you need to restart the BCCEN block and read the key list to ensure that the pairing succeeds.
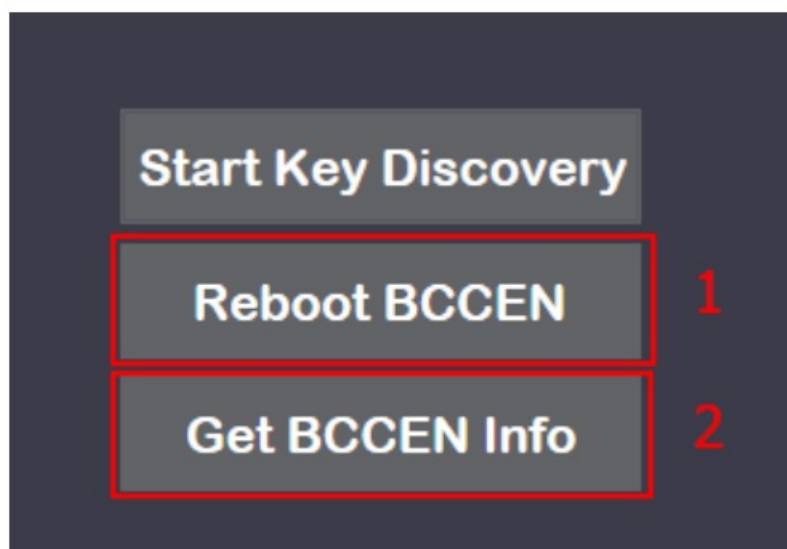
The pairing procedure of the first and all subsequent keys is not different, so if necessary, pairing several keys procedure should be repeated for each of them, the old keys will not be disconnected and will continue to work.

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NOTES

Documents / Resources

	LOKI PLUGIN Key Fob Pairing for Tesla Model X Feature [pdf] User Guide PLUGIN, Key Fob Pairing for Tesla Model X Feature, PLUGIN Key Fob Pairing for Tesla Model X Feature

References

- **MSG Equipment - wyposażenie warsztatów TM MSG equipment. - msgequipment.pl**