

KR55 KEYMAKER



REMOTE/PCF

PCF7935

1. Select car type FBS2/FBSX (ONE BUTTON REMOTE) ▾
2. Load EEprom from original remote or scan PCF7935

Load HC05

Load 93

Scan Remote

Identify type

☒ FBS X C

☐ FBS2/2A

Key number #

3. Select transponder

1 2 3
☐ ☐ ☐

4. Program transponder and Remote

MB Remote Keymaker

FBS2/FBSX (ONE BUTTON REMOTE)

(Payable option)

In the early 1990s, Mercedes-Benz introduced the FBS2 and FBSX systems (Fahrberechtigungssystem, or "Drive Authorization System") as part of their transition toward more advanced electronic anti-theft technologies.

FBS2: there is only one IR receiver located ONLY in the rearview mirror (green and red LEDs are visible only on the mirror).

FBSX was an enhanced version of FBS2, featuring between two and four infrared receivers, which could be located in the driver's door handle, trunk lock, or interior mirror — though, unlike FBS2, the receiver in the mirror is not always present. This multi-receiver setup provided improved signal reliability and enhanced overall remote control performance.

MBE Engineering is the first company on the market to offer a dedicated device and brand-new remotes specifically designed for programming with these systems. The entire process is simple, fast, and hassle-free — making it easy to restore full key and remote functionality to older Mercedes-Benz vehicles.

VEHICLES EQUIPPED WITH FBS2 AND FBSX SYSTEMS:

W202	W210	W140	W129
W124	W463 (from 04.1995 to 08.1996)	W170 (1996)	

THESE VEHICLES MAY USE TWO TYPES OF REMOTES:

with transponder **without transponder**

How to determine which system the vehicle uses and whether the remote contains a transponder If NO working original remote is available:

To identify the system in the vehicle, check the number of infrared receivers:

- **FBS2:** there is only one IR receiver located in the rearview mirror (green and red LEDs are visible only on the mirror).
- **FBSX:** IR receivers are present in the rearview mirror, driver's door handle, and trunk lock (green and red LEDs are visible in all three locations).

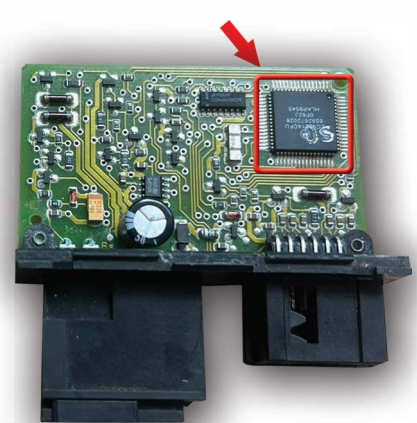
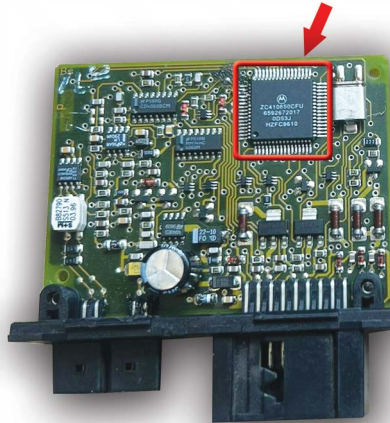


Here are examples of module types used in FBS2 / FBSX systems.

93c46



Motorola HC05



Receiver (only in FBSX)

Immo (FBS2 / FBSX)

Immo (only FBS2)

To check whether the remote contains a transponder, use a CoilDetector:
Place the detector coil near the ignition switch. If you have the cut blade key, insert it into the ignition and turn the switch. If the indicator light on the CoilDetector turns on, the vehicle requires a remote with a transponder. If you do not have the blade key, you will need to remove the ignition switch and check if there is a circular antenna coil mounted on it. If the antenna is present, this indicates that the vehicle requires a transponder-equipped remote.

How to determine which system the vehicle uses and whether the remote contains a transponder

If at least one working remote is available:

The identification process is much simpler:

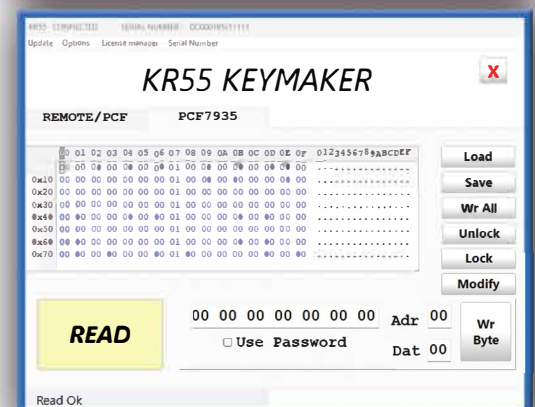
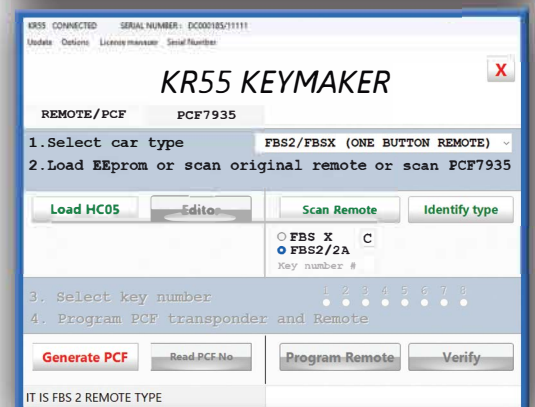
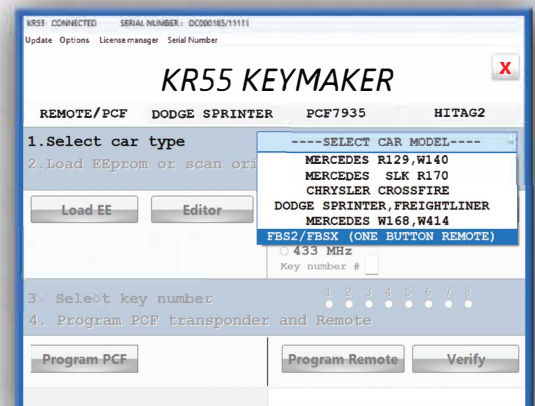
1. Insert the original remote into the MB Remote Keymaker.
2. In the KR55 Keymaker software, select: **FBS2/FBSX (ONE BUTTON REMOTE)**.

3. Click the **Identify type** button, then press a button on the remote.

The software will automatically detect and display the correct system type (FBS2 or FBSX).

4. Now click **PCF7935** tab.

In the PCF7935 tab, click the **READ** button. If the remote contains a transponder, its ID will be displayed along with the message "Read OK". If the remote does not contain a transponder, the message "Error" will appear.



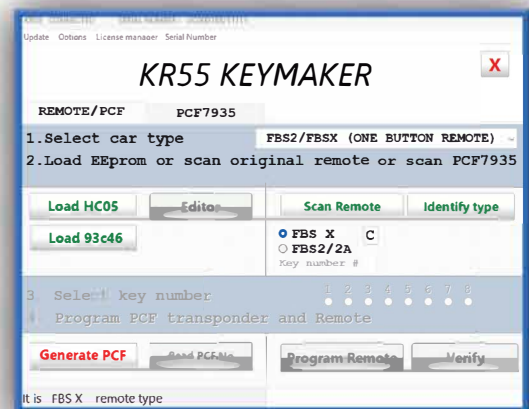
Programming the FBS X remote control (we have at least one working key).

1. Launch the Software

- Open the MB Remote Keymaker software.
- From the list, select: **FBS2/FBSX (ONE BUTTON REMOTE)**.

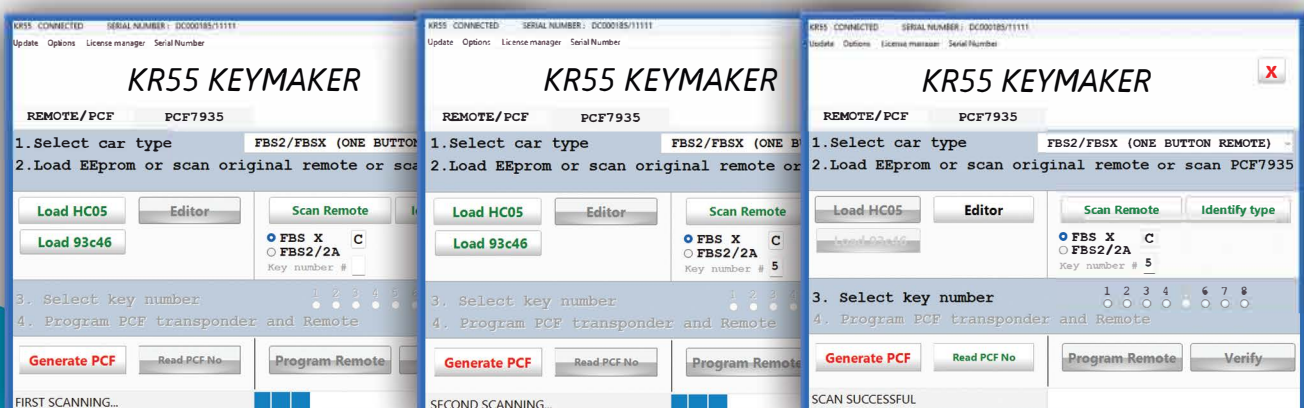
2. Identifying the Remote Type

- Insert the original remote into the MB Remote Keymaker device.
- To identify the remote type, click the **Identify type** button, then press a button on the remote.
- The device will read the signal, recognize the remote type, and automatically select FBS2/2A or FBS X.



3. Scanning the Original Remote

- Click the **Scan Remote** button.
- When the message **First Scanning** appears, press a button on the remote.
- When **Second Scanning** appears, press the button again.
- If the process is successful, you will see the message **Scan successful**.



Programming the FBS X remote control (we have at least one working key).

4. Programming the New Remote

- Insert the new remote into the device.
- Select the key number you want to program.
- Click **Program Remote**, then press and hold a button on the remote until you hear a confirmation beep and see the message:

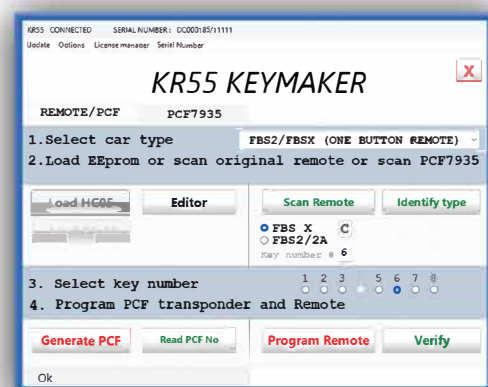
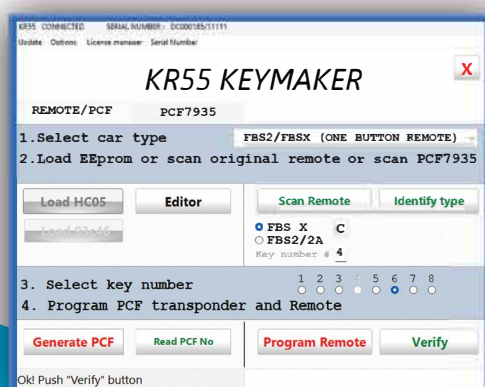
Ok! Push "Verify" button.

We recommend always selecting key positions starting from the end — from 8 down to 5. This helps prevent programming a new remote or transponder to a position that is already in use. If you accidentally select an occupied position, the original remote or transponder assigned to that position will stop working.



5. Verifying the New Remote

- Click the **Verify** button, then press a button on the new remote.
- After a moment, you will hear a beep confirming successful signal verification.



Programming the FBS X remote control (based on eeprom from Motorola HC05 memory from Immo module).

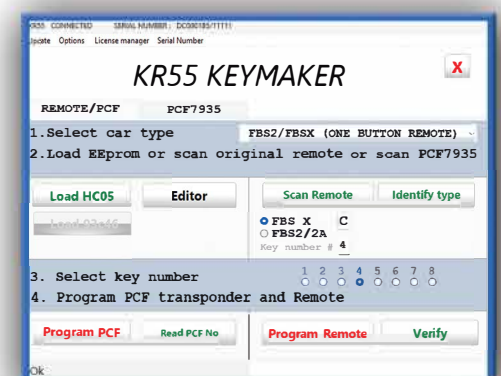
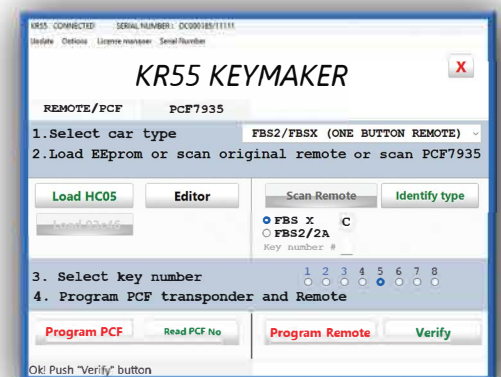
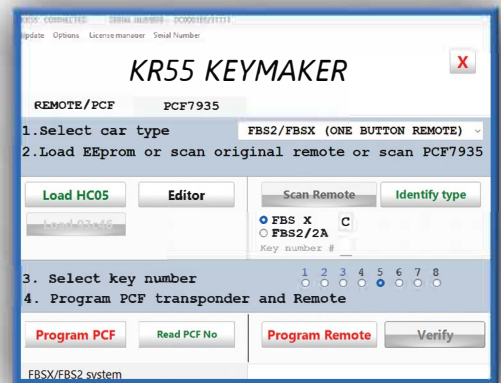
In this case, it is necessary to read the HC05 memory from the immo module.

1. Loading the HC05 File

- Once you have successfully read the HC05 data, launch the MB Remote Keymaker software.
- From the list, select:
FBS2/FBSX (ONE BUTTON REMOTE).
- Click the **Load HC05** button and select the previously saved HC05 file.

2. Programming the New Remote

- Insert the new remote into the MB Remote Keymaker device.
- Choose a key number you wish to program.
- Click **Program Remote**, then press and hold a button on the new remote.
- Release the button after you hear a confirmation beep.
- Click **Verify**, then press a button on the remote again. A beep will confirm the remote has been successfully programmed.



Programming the FBS X remote control (based on eeprom from 93c46 memory from receiver module).

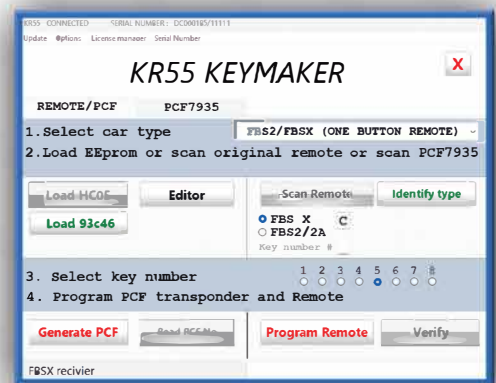
In this case, it is necessary to read the 93c46 memory from the receiver module.

1. Loading the 93c46 File

- Once you have successfully read the 93c46 data, launch the MB Remote Keymaker software.
- From the list, select:
FBS2/FBSX (ONE BUTTON REMOTE).
- Click the **Load 93c46** button and select the previously saved 93c46 file.

2. Programming the New Remote

- Insert the new remote into the MB Remote Keymaker device.
- Choose a key number you wish to program.
- Click **Program Remote**, then press and hold a button on the new remote.
- Release the button after you hear a confirmation beep.
- Click **Verify**, then press a button on the remote again. A beep will confirm the remote has been successfully programmed.



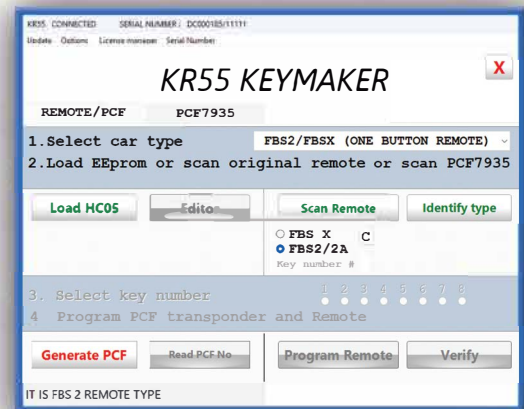
Programming the FBS 2 remote control (we have at least one working key).

1. Launch the Software

- Open the MB Remote Keymaker software.
- From the list, select: **FBS2/FBSX (ONE BUTTON REMOTE)**.

2. Identifying the Remote Type

- Insert the original remote into the MB Remote Keymaker device.
- To identify the remote type, click the **Identify type** button, then press a button on the remote.
- The device will read the signal, recognize the remote type, and automatically select FBS2/2A or FBS X.



3. Scanning the Original Remote

- Click the **Scan Remote** button.
- When the message **First Scanning** appears, press a button on the remote.
- When **Second Scanning** appears, press the button again.
- If the process is successful, you will see the message **Scan successful**.



Programming the FBS 2 remote control (we have at least one working key).

4. Programming the New Remote

- Insert the new remote into the device.
- Select the key number you want to program.
- Click **Program Remote**, then press and hold a button on the remote until you hear a confirmation beep and see the message:

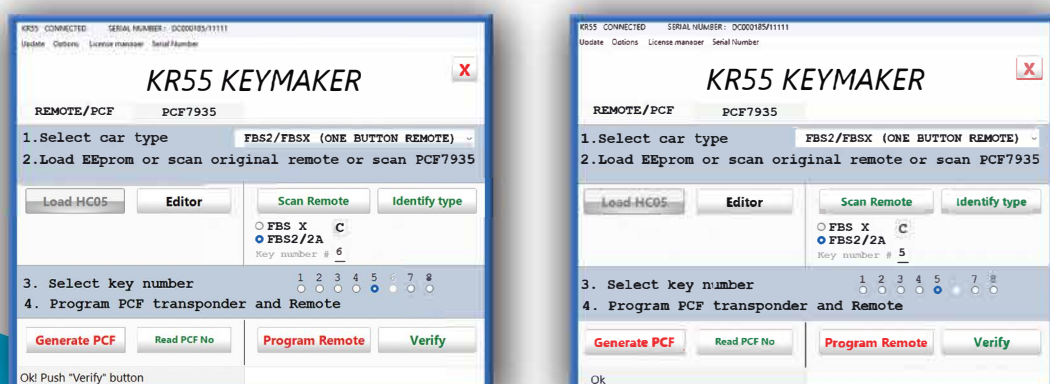
Ok! Push "Verify" button.

We recommend always selecting key positions starting from the end — from 8 down to 5. This helps prevent programming a new remote or transponder to a position that is already in use. If you accidentally select an occupied position, the original remote or transponder assigned to that position will stop working.



5. Verifying the New Remote

- Click the **Verify** button, then press a button on the new remote.
- After a moment, you will hear a beep confirming successful signal verification.



Programming the FBS 2 remote control (based on eeprom from Motorola HC05 memory from Immo module).

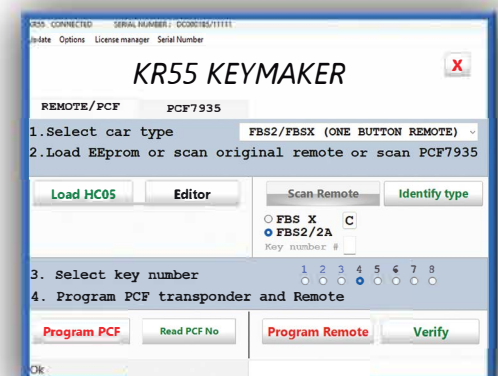
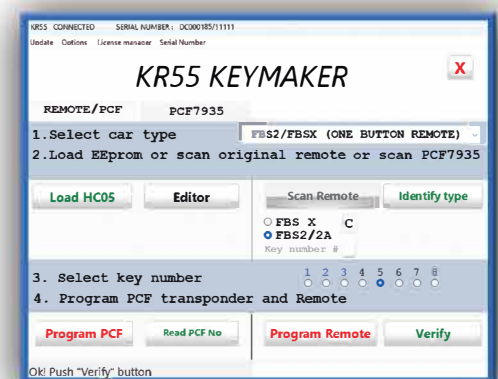
In this case, it is necessary to read the HC05 memory from the immo module.

1. Loading the HC05 File

- Once you have successfully read the HC05 data, launch the MB Remote Keymaker software.
- From the list, select:
FBS2/FBSX (ONE BUTTON REMOTE).
- Click the **Load HC05** button and select the previously saved HC05 file.

2. Programming the New Remote

- Insert the new remote into the MB Remote Keymaker device.
- Choose a key number you wish to program.
- Click **Program Remote**, then press and hold a button on the new remote.
- Release the button after you hear a confirmation beep.
- Click **Verify**, then press a button on the remote again. A beep will confirm the remote has been successfully programmed.



PCF Transponder Programming FBS2 / FBSX (when original remote data is available)

If you have data retrieved from the original remote, follow the steps:

1. Insert the new remote into the MB Remote Keymaker device and click the **Generate PCF** button.

In the newly opened window, select the key number you want to program (ideally the same one used for remote programming, though it's not required).

We recommend always selecting key positions starting from the end — from 8 down to 5. This helps prevent programming a new remote or transponder to a position that is already in use. If you accidentally select an occupied position, the original remote or transponder assigned to that position will stop working.

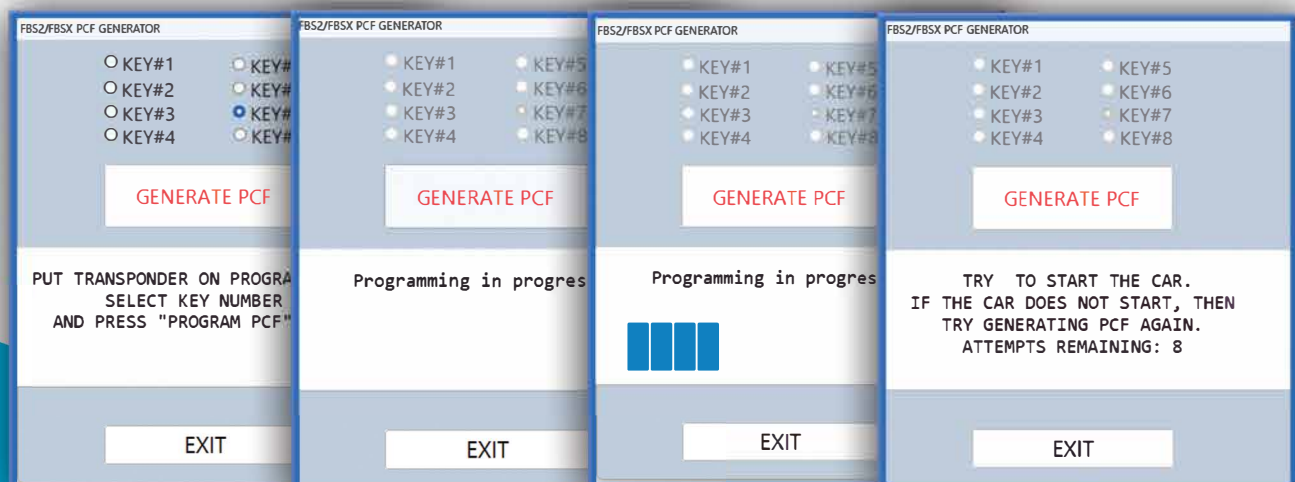
2. Click **Generate PCF** again to begin the transponder programming process.

After a short moment, the message **TRY TO START THE CAR** will appear. Attempt to start the vehicle.

If it does not start — reinsert the remote into the device, click **Generate PCF** again, and retry starting the vehicle.

You can perform up to **8 attempts** using the same key number.

If the vehicle still does not start after 8 attempts, select a different key number and repeat the programming process.



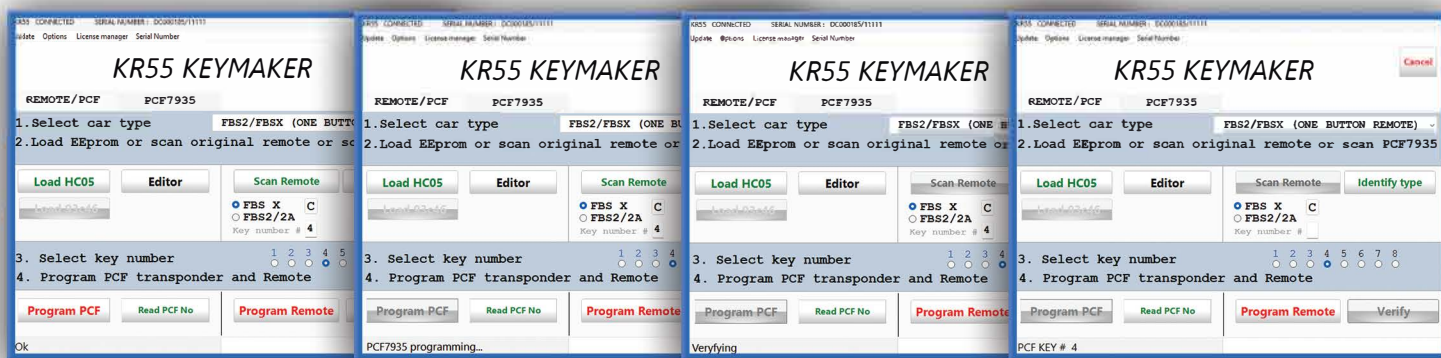
PCF Transponder Programming FBS2 / FBSX (when no original key is available and an HC05 memory file is used)

If you are using an EEPROM file from Motorola HC05 read from the vehicle, the transponder programming process is very straightforward:

Click the **Program PCF** button – this will start the automatic transponder programming. After a short moment, the process will complete.

Click **Read PCF No** to read the transponder ID – this confirms that programming was successful and the vehicle should start on the first attempt.

We recommend always selecting key positions starting from the end — from 8 down to 5. This helps prevent programming a new remote or transponder to a position that is already in use. If you accidentally select an occupied position, the original remote or transponder assigned to that position will stop working.



PCF Transponder Programming for FBSX (when no original key is available and a Receiver 93C46 file is used)

When using a file read from a 93C46 receiver, the transponder programming procedure is identical to the one used when working with an original key. Simply click the **Generate PCF** button and follow the steps described on page 11.