Zed-FULL Mercedes-Benz Key Programming
User Manual

ZFH-MB
For reading key data from car ignition

EA KEY (BZR115Z) 433MHZ
For: All FBS3 vehicles

EA KEY (BZR116Z) 315MHZ
For: All FBS3 vehicles
Index

Mercedes-Benz Kit Content......................................................................................................1
Required additional adapters for Mercedes BGA/FBS3 key programming.................................3
General details for Mercedes-Benz key programing..................................................................4
Mercedes-Benz BGA/FBS3 system “Add Key” application........................................................ 6
Mercedes-Benz BGA/FBS3 system “Lost Key” application........................................................... 9

ZFH-C09 UNIVERSAL CABLE APPLICATIONS
   Mercedes-Benz “W164” (Old) EZS / EIS ..................................................................................12
   Mercedes-Benz “W164” (New) EZS / EIS ................................................................................ 13
   Mercedes-Benz “W169, W209, W211” EZS /EIS ....................................................................14
   Mercedes-Benz “W202, W208, W210” EZS /EIS ................................................................. 15
   Mercedes-Benz “W204, W207, W212” (Old) EZS /EIS ...........................................................16
   Mercedes-Benz “W212” (New) EZS /EIS ................................................................................17
   Mercedes-Benz “W215, W220, W230” EZS /EIS ................................................................. 18
   Mercedes-Benz “W216, W221” EZS /EIS ................................................................................19
   Mercedes-Benz “W246, W166” EZS /EIS ............................................................................. 20
   Mercedes-Benz “W639 (CAN)” EZS /EIS ............................................................................... 21
   Mercedes-Benz “W639 (K-Line), W203” EZS /EIS .................................................................22
   Mercedes-Benz “W906” EZS /EIS ...........................................................................................23

“ZFH-MBCA” adapter and cables
   ZFH-MBC1 (“W204, W207, W212” (Old) EZS / EIS)............................................................ 24
   ZFH-MBC3 (“W216, W221” EZS / EIS).................................................................................. 26
   ZFH-MBC4 (“W212” (New) EZS / EIS)................................................................................... 27
   ZFH-MBC5 (“W246, W166” EZS / EIS).................................................................................. 28

Key programming applications
   Mercedes-Benz W203-W209-W211-W220 EZS/EIS Boxes
   (Types do not need remove EZS/EIS from the car)....................................................................... 29
   Key programming steps for lost key situation............................................................................. 31
   Key programming steps for adding a new key............................................................................. 34
   OEM Mercedes-Benz Keys Types.............................................................................................. 37
   Mercedes-Benz C Class “W203” EZS / EIS (1J35D, 2J74Y, 4J74Y) MCU Reading Tips ..............38

ZFH-C08 / ZFH-C08-2 20 PIN CABLE APPLICATIONS
   Mercedes-Benz C Class “W203” EZS / EIS (1J35D, 2J74Y, 4J74Y) .................................................. 40
   Mercedes-Benz E Class “W215, W220” EZS / EIS (1J35D) .......................................................... 41
   Mercedes-Benz Vaneo, Viano, Vito “W639” (QFP64) EZS / EIS ................................................. 42
ZFH-EA7 - SECURITY MCU ADAPTER (912/9S12/9S12X) APPLICATIONS
Mercedes-Benz A/B Class "W169" EZS / EIS - TYPE 1................................................................. 44
Mercedes-Benz A/B Class "W169" EZS / EIS - TYPE 2.................................................................. 45
Mercedes-Benz CLK Class "W209" EZS / EIS........................................................................... 46
Mercedes-Benz E Class "W211 HC12-07-S" EZS / EIS................................................................. 47
Mercedes-Benz E Class "W211 HC12-12-S" EZS / EIS................................................................. 48
Mercedes-Benz E Class "W211 ST12-13-S" EZS / EIS................................................................. 49
Mercedes-Benz E Class "W211 ST12-15-S" EZS / EIS................................................................. 50
Mercedes-Benz Vaneo, Viano, Vito Models "W639" (QFP112) EZS / EIS.................................... 51
Mercedes-Benz Sprinter Model "W906" EZS / EIS.................................................................. 52

ZFH-EA9 / ZFH-EA10 - 64 PIN MCU ADAPTER (QFP64) APPLICATIONS
Mercedes-Benz C Class "W203" EZS / EIS (1J35D)................................................................. 53
Mercedes-Benz C Class "W203" EZS / EIS (2J74Y, 4J74Y)......................................................... 54

ZFH-EA9 / ZFH-EA10 - 64 PIN MCU ADAPTER (QFP64) APPLICATIONS
Mercedes-Benz E Class "W215, W220" EZS / EIS (1J35D)........................................................ 55
Mercedes-Benz Vaneo, Viano, Vito "W639" (QFP64) EZS / EIS................................................. 56

ZFH-EA11 / ZFH-EA12 - 64 PIN MCU ADAPTER (QFP64) APPLICATIONS
Mercedes-Benz E Class "W215, W220" EZS / EIS (1D69J)........................................................ 57
Mercedes-Benz E Class "W202, W208-W210" EZS / EIS (0D69J, 0G47V, 1D69J, 1H52A)............ 58

Mercedes-Benz TEST KIT
Mercedes-Benz Test Kit Contents...................................................................................... 59
Mercedes-Benz "W164, W221" EZS / EIS Test Kit................................................................. 60
Mercedes-Benz "W169, W209, W211" EZS / EIS Test Kit...................................................... 61
Mercedes-Benz "W202, W208, W210" EZS / EIS Test Kit....................................................... 62
Mercedes-Benz "W203, W639" EZS / EIS Test Kit................................................................. 63
Mercedes-Benz "W215, W220" EZS / EIS Test Kit................................................................. 64
Mercedes-Benz "W906 Sprinter" EZS / EIS Test Kit................................................................. 65

PC SOFTWARE APPLICATIONS FOR Mercedes-Benz
Mercedes-Benz key programming application on PC Software............................................. 66
Saving Mercedes-Benz EZS / EIS files to PC....................................................................... 67
IR-PROG Module, ZFH-MB Key update.............................................................................. 68
ZFH-UTE update................................................................................................................. 69
Zed-FULL Mercedes-Benz Kit Content

“IR-PROG” MODULE
✓ “ZFH-MB” KEY

“ZFH-MBNEC” PROGRAMMER ADAPTER WITH SOCKET

✓ “ZFH-MCA” MULTI CONNECTION ADAPTER

“ZFH-C16” ZFH-MCA CABLE

✓ “ZFH-C17” GATEWAY CONNECTION 2 PINS CABLE (PINK + YELLOW)

“Zed-NET” Wi-Fi MODULE

✓ “ZFH-EA6” 28 PINS MCU PROGRAMMER PCB ADAPTER SOIC28 (05E6/05P3)

“ZFH-EA7” SECURITY MCU PROGRAMMER ADAPTER (912/9S12/9S12X)

✓ “ZFH-EA10” 64 PINS MCU PROGRAMMER PCB ADAPTER (08AZ/AB-908AS/AZ)

“ZFH-EA11” 64 PINS MCU PROGRAMMER PCB ADAPTER (QFP64 - 05B/X)

✓ “ZFH-C08” MCU PROGRAMMER 20 PINS CABLE (QFP64 08AZ/AB, 908AS/AZ)
“ZFH-C09” UNIVERSAL CABLE

“ZFH-C10” IR-PROG CONNECTION CABLE

“ZFH-C11” IR-PROG PC CONNECTION CABLE

“ZFH-C15” ZFH-UTE CONNECTION CABLE

“ZFH-UTE” (UNIVERSAL TRANSPONDER EMULATOR)

“TOOL101” TWEEZER

“ZFH-MB TEST KIT”
Required additional adapters for Mercedes BGA/FBS3 key programming

- “ZFH-MCA” ADAPTER
- “ZFH-C16” ZFH-MCA CABLE
- “Zed-NET” Wi-Fi MODULE
- “ZFH-UTE” (UNIVERSAL TRANSPONDER EMULATOR)
- “ZFH-C15” ZFH-UTE CONNECTION CABLE
- “ZFH-C09” UNIVERSAL CABLE
- “ZFH-C17” GATEWAY CONNECTION 2 PINS CABLE (PINK + YELLOW)

SAMPLE CONNECTION FOR “BGA-FBS3” SYSTEM ACCESSORIES
General details for Mercedes-Benz key programming

1- Many Types of W203, W209, W211, W215, W220 EZS/EIS Boxes
The version of working key is not important, even there is no working key, a new key can be programmed using ZFH-MB key easily with this feature.

2- If the working key has
* If the key can be read with IR-PROG (BGA/FBS3 kit will be used)
* NEC MCU with 51, 57 versions
* Motoroka MCU
* NEC MCU with EA or BE versions
  in this case no need to remove EZS / EIS from the car.

3- You will be better instructed if you read all of the working keys at the beginning of the procedure.

4- If the working key has EA or BE versions, this is the easiest case to program a new key.
Because in this case we do not need to remove neither EZS/EIS from car nor the NEC MCU located on working key. We can get all required data from car ignition using ZFH-MB and from working key by reading it with IR-PROG module.

5- You can read EZS/EIS modules with Zed-FULL programmer adapters easily.

6- PC SW is required just to send the EZS / EIS data which is read with another programmer

7- No need computer or internet connections to sniff data from car or to calculate key datas.

8- For Mercedes-Benz Key programming only IEA made “EA” version keys or “OEM (second hand)” keys can be used. These OEM keys must be erased with Zed-FULL adapters before use.

9- For each application only 1 new key can be programmed.

10- During key programming procedure if the working key is Motorola type, you may still use NEC based key (OEM or EA version) as a new key.

10- Even the car EZS/EIS boxes cover or PCB seems same as with pictures on Zed-FULL. Still there might be some small differences so please before starting the procedure check the box carefully.

11- As long as the working key can be read with IR-PROG, Zed-FULL can program a new key for all Mercedes-Benz vehicles between 1998-2015 using Mercedes-Benz BGA/FBS3 kit.
WORKING KEY?

Yes (If it can be read with IR-PROG)

- Use BGA/FBS3 Kit
  - Read working key with IR-PROG
  - If the can be read with IR-PROG, select "SERVER" option to program a new key.

- EA or BE Key
  - (No need to remove EZS/EIS from car)

1- First using ZFH-MB Key, sniff data from ignition.
2- Using IR-PROG module, read sniffed data from ZFH-MB and send it to Zed-FULL.
3- No need to remove anything from working key. Read working key with IR-PROG module.
4- After getting sniffed info and working key info, new key data will be calculated to be written onto a new key.

51, 57 version Key or Motorola Key
  - (No need to remove EZS/EIS from car)

1- First using ZFH-MB Key, sniff data from ignition.
2- Using IR-PROG module, read sniffed data from ZFH-MB and send it to Zed-FULL.
3- Remove the NEC or Motorola MCU from working key and read the info from that MCU using Zed-FULL reader adapters.
4- After getting sniffed info and working key info, new key data will be calculated to be written onto a new key.

No (Lost key situation)

- All other version Keys
  - (Need to remove EZS/EIS from car)

1- First get data from ignition using ZFH-MB Key.
2- Use IR-Prog module to get data from ZFH-MB key.
3- Now we are ready to program a new key.

Many Types of W203-W209-W211-W220 EZS/EIS Boxes
  - (No need to remove EZS/EIS from the car)

1- Check the class of the car from VIN number. (W220, W215 etc...)
   (Sample: WXX220xxxxxxxxx - W220)
2- If the class is supported with Zed-FULL remove EZS/EIS from the car and open the box to read MCU located on EZS/EIS board.
3- Read the MCU located on the EZS/EIS board with Zed-FULL reader adapters to get required data. If the MCU can not be read with one of Zed-FULL adapters, use another MCU programmer to read the required data, save it to computer and using Zed-FULL PC SW send it to Zed-FULL to continue further steps from Zed-FULL.
4- Received data either directly from Zed-FULL reader adapters or from PC SW, will be used to calculate the key data, and calculated data will be written on a new key to complete the procedure.

Systems other than W203-W209-W211-W220

1- First get data from ignition using ZFH-MB Key.
2- Use IR-Prog module to get data from ZFH-MB key.
3- All steps are same as lost key situation.

Many Types of W203-W209-W211-W220 EZS/EIS Boxes
  - (No need to remove EZS/EIS from the car)

1- First get data from ignition using ZFH-MB Key.
2- Use IR-Prog module to get data from ZFH-MB key.
3- No need to remove anything from working key. Read working key with IR-PROG module.
4- After getting sniffed info and working key info, new key data will be calculated to be written onto a new key.

1- Connect ZFH-MCA, Zed-NET and IR-PROG to Zed-FULL.
2- Connect Zed-FULL to OBD2 port on vehicle.
3- Select "Add Key>SERVER" and select the option to continue.
   - Auto Detect(OBD) or Select System(ZFH-MB), (C09/ZFH-MBCA), (ZFH-UTE).
Mercedes-Benz BGA/FBS3 system “Add Key” application

Select “MB IR-PROG” section on device screen

Select “Program”

Car has one working key, we will add a key
Select “Add Key”

All working keys must be read on this step
Select “Read(IR-PROG)” section.
Insert all working keys to IR-PROG one by one and press “Read” button.
After reading all working keys, press “Continue” button.

Connect ZFH-MCA to Zed-FULL, Connect IR-PROG and Zed-NET to ZFH-MCA adapter sockets.
Select “SERVER” on screen and press “Continue” button.

Connect ZFH-MCA to Zed-FULL, Connect IR-PROG and Zed-NET to ZFH-MCA adapter sockets.
Select “SERVER” on screen and press “Continue” button.

* Auto Detect (OBD): ESZ/EIS data will be extracted from the car through OBD2 socket.
* Select System(09/ZFH-MBCA): Remove EZS/EIS box from the car and read data from EZS/EIS box using ZFH-C09 cable or ZFH-MBCA.
* Select System(ZFH-MB): EZS/EIS data will be extracted using ZFH-MB sniffer from ignition.
* Select System(ZFH-UTE): EZS/EIS data will be extracted using ZFH-UTE sniffer from ignition.
## Mercedes-Benz BGA/FBS3 system “Add Key” application

### Instructions:
1. **Insert working key to car ignition**
2. **Wait 5 seconds and remove the key**
3. **Insert working key to “IR-PROG” and press “Continue” button.**
   - *Zed-FULL* may ask you to repeat these steps a few times.

### Zed-FULL
- **Connecting to “iEA-Server” for key calculation:**
  - Processed Unit: iEA-SERVER
  - Calculating HASH. Please Wait...
  - This process may take up to 2 minutes.

### Key Options:
- **Your Key:** Existing working keys
- **Used:** Already key programmed slot. If all keys are lost, if you select any “Used” slot, this key number slot will be overwritten.
- **Not Used:** Empty slot in memory

### Network Connection:
- Zed-FULL must be connected to an internet network via Zed-NET. Press “ON” button to activate Zed-NET, after that press on “Wifi List” to select network to be connected, enter password and press on “Connect” button.
Mercedes-Benz BGA/FBS3 system “Add Key” application

EA version key will be programmed.
Insert EA key to IR-PROG
Select “Program EA Key (IR)” and press on “Program Key” button.

Key programming is completed.
You may check programmed key(s) info on Zed-FULL screen.
Press “Exit” to complete process.
Mercedes-Benz BGA/FBS3 system “Lost Key” application

Select “MB IR-PROG” section on device screen

Select “Program”

Working key does not exist.
Select “Lost Key”.

Connect ZFH-MCA to Zed-FULL. Connect IR-PROG and Zed-NET to ZFH-MCA adapter sockets.
Select “SERVER” on screen and press “Continue” button.

Select System(C09/ZFH-MBCA)
* ZFH-C09: Data will be read from EZS/EIS unit using ZFH-C09 cable. EZS unit must be removed from the car.
* ZFH-MBCA: Data will be read from EZS/EIS unit. Connect “ZFH-MBCA” adapter to “ZFH-MBC3” and Zed-FULL “OBD DONGLE” port. EZS unit must be removed from the car.

Reading data from EZS/EIS may take up to 1 minute.
Mercedes-Benz BGA/FBS3 system “Lost Key” application

Reading data from EZS/EIS completed. VIN number, EZS/EIS number and some other info is shown on Zed-FULL screen.

Data reading through “ZFH-UTE” has been completed. Zed-FULL will automatically proceed to next step.

Zed-FULL is going to connect to “iEA-Server” for key calculation. This process may take up to 2 minutes.

ZFH-MBCA connections has already been done. Now connect “ZFH-UTE” to EZS/EIS unit and press “Continue” button.

ZFH-MBCA connections has already been done. Zed-FULL must be connected to internet network via Zed-NET. Press “ON” button to activate Zed-NET, after that press on “Wifi List” to select network to be connected, enter password and press on “Connect” button.
Mercedes-Benz BGA/FBS3 system “Lost Key” application

Zed-FULL will pass on to key programming step after “PASSWORD calculated” warning shown on screen.

* Your Key: Existing working keys
* Used: Already key programmed slot. If all keys are lost, if you select any “Used” slot, this key number slot will be overwritten.
* Not Used: Empty slot in memory

EA version key will be programmed.
Insert EA key to IR-PROG
Select “Program EA Key (IR)” and press on “Program Key” button.

Key programming is completed.
You may check programmed key(s) info on Zed-FULL screen.
Press “Exit” to complete process.
For this application, beside "ZFH-C09" cable, "ZFH-C17" and a "Gateway Module" are also required. Connect indicated "ZFH-C09" cable wires to the pins shown on "Gateway Module" and "EZS/EIS" box properly. If you do not have a "Gateway Module", to purchase please contact with your distributor for "MB-GWM" product.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC2" adapters.
For this application, beside "ZFH-C09" cable, "ZFH-C17" and a "Gateway Module" are also required. Connect indicated "ZFH-C09" cable wires to the pins shown on "Gateway Module" and "EZS/EIS" box properly. If you do not have a "Gateway Module", to purchase please contact with your distributor for "MB-GWM" product.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC2" adapters.
For this application, beside "ZFH-C09" cable, "ZFH-C17" and a "Gateway Module" are also required. Connect indicated "ZFH-C09" cable wires to the pins shown on "Gateway Module" and "EZS/EIS" box properly. If you do not have a "Gateway Module", to purchase please contact with your distributor for "MB-GWM" product.
For this application, beside "ZFH-C09" cable, "ZFH-C17" and a "Gateway Module" are also required. Connect indicated "ZFH-C09" cable wires to the pins shown on "Gateway Module" and "EZS/EIS" box properly. If you do not have a "Gateway Module", to purchase please contact with your distributor for "MB-GWM" product.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC1" adapters.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC4" adapters.
Mercedes-Benz “W215, W220, W230” EZS / EIS
ZFH-C09 UNIVERSAL CABLE

Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC3" adapters.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.

Optional: This application can also be done with "ZFH-MBCA"+"ZFH-MBC5" adapters.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.
Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.
Mercedes-Benz “W906” EZS / EIS
ZFH-C09 UNIVERSAL CABLE

Connect indicated ZFH-C09 cable wires to the pins shown on EZS/EIS box properly.
ZFH-MBC1
For “W204, W207, W212(Old)” EZS/EIS

“W204, W207” EZS/EIS Connections

“W212(Old)” EZS/EIS Connections
ZFH-MBC2
For “W164, W251” EZS/EIS

“W164” EZS/EIS Connections
ZFH-MBC3
For “W216, W221” EZS/EIS

“W216” EZS/EIS Connections
ZFH-MBC4
For “W212(New)” EZS/EIS

“W212(New)” EZS/EIS Connections
ZFH-MBC5
For “W246, W166” EZS/EIS

“W246” EZS/EIS Connections
There are 2 different options under “Program” icon. For this document we will program a new key for “Lost Key” situation.

Select “Lost Key / ZFH-MB” then press Continue.

Insert “ZF-MB” to ignition. Once all data is received from ignition, green led will flash.

Reading data from EZS/EIS may take up to 1 minute.
After key programming all new key data will be shown on Zed-FULL screen.

Key No: 00 is programmed and version of the new key is EA.

For this document we calculate Key No: 00 and we program it on EA version key. So we can program EA key using IR-PROG module.

Key programming procedure is Successful.

Mercedes-Benz W203-W209-W211-W220 EZS/EIS Boxes
(Types do not need remove EZS/EIS from the car)
There are 2 different options under “Program” icon. For this document we will program a new key for “Lost Key” situation.

1- To read, identify or erase OEM keys.
2- To program a new key.
3- Version details.
4- Additional features for MB applications.
5- Key Test

Zed-FULL main screen.

*If there is no working key available use this option.
Press ‘Continue’ button to continue.

There are 2 different options under “Program” icon. For this document we will program a new key for “Lost Key” situation.

In “Lost key” situation EZS/EIS must be removed from the car.

*EZS/EIS unit is removed and dump is read with reader adapter. Key data is generated from the dump.
Press ‘Continue’ button to continue.

Select module type from the list. This module type is also written in VIN number and on the EZS / EIS module.

For this document we use W639 (QFP112) type, for this module the only way to read MCU is using ZFH-EA7 adapter.
Key programming steps for lost key situation

Follow the steps.

Type is also written on the module.

PCB picture of the module can be viewed using green arrows on Zed-FULL screen, PCB board divided into 2 parts to view more details.

Part 1

Part 2

Connect IR-Prog to Zed-FULL external port then press ’Continue’ to generate key data.

Select the key slot that you want to program a key into, then press ‘Continue button. This may take 1 minute.

* * * * * * * This key number can not be programmed. Please select another key number.
* Used: Already used key locations.
* Not Used: Never used before. Either “Used” or “Not Used” key locations may be selected. Only 1 new key can be programmed at each calculation.
If we want to program on OEM key which is not erased before, we must remove the NEC processor from OEM key, insert it into ZFH-MBNEC adapter, erase and program it respectively.

For this document, we calculated Key No: 03 and program it on EA version key. So we can program EA key using IR-PROG module.

At the end of programming procedure, Key No “03” is programmed and the version of the key is EA.

IR-PROG can also be used to program already erased OEM keys.

If we want to program on OEM key which is not erased before, we must remove the NEC processor from OEM key, insert it into ZFH-MBNEC adapter, erase and program it respectively.

At the bottom of the list, without leaving the procedure you may read keys or erase OEM keys, if needed.

At the end of programming procedure, Key No “03” is programmed and the version of the key is EA.

At the bottom of the list you may also see the IR-PROG or adapter connection details if needed.
Key programming steps for **add key** situation

**Zed-FULL main screen.**

Select “MB IR-PROG” icon to start Mercedes-Benz application

**There are 2 different options under “Program” icon. For this document we will program a new key for “Add Key” situation.**

**First working key is read by IR-PROG, this working key number is “03” and version is “57”**
Key programming steps for **add key** situation

In “Add Key” situation if the working key is not Motorola key or the key version is not 51, 57, EA or BE in this case EZS/EIS must be removed from the car and procedure should be followed as “Lost Key” situation.

We will read the password from working key and for this document working key version is “57”. So, remove NEC processor from “57” version working key and insert it into ZFH-MB NEC adapter and connect it to Zed-FULL. If working key is Motorola MCU, use ZFH-EA8 adapter.

In “Add Key” situation if at least one of the working key is Motorola type or version is 51, 57, EA or BE, “ZFH-MB” option will be automatically shown on the list and we will continue our steps on this option.

Zed-FULL screen shows all details for each step.

First working key is read by IR-PROG, this working key number is “03” and version is “57”
Key programming steps for **add key** situation

1. **Put erased original key to the IR-PROG as seen below then press 'Program'**.
   - **Key No**: 01
   - **SSID**: 20 EE OE C6
   - **Life**: 196607

**IR-PROG** can also be used to program already erased OEM keys.

2. **After key programming all new key data will be shown on Zed-FULL screen.**
   - **Key No**: 01 is programmed and version of the new key is EA.

3. **If we want to program an OEM key which has not been erased before, we must remove the NEC processor from OEM key, insert it into ZFH-MBNEC adapter, erase and program it respectively.**

4. **IR-PROG** can also be used to program already erased OEM keys.

**Key programming steps for add key situation**

- **Connect IR-PROG to the Zed-FULL external port.**
  - *Put the key to the IR-PROG as seen below then press 'Read'***At the end of the list on the right you may see the connection schemes.

- **At the bottom of the list without leaving the procedure you may read keys or erase OEM keys if needed.**
OEM Mercedes-Benz Key Types

- Motorola MCU
- Motorola MCU
- NEC MCU
- NEC MCU
- NEC MCU
- NEC MCU
- NEC MCU
- BGA MCU
- BGA MCU
Mercedes-Benz C Class "W203" EZS / EIS
MCU MASK NUMBER : 1J35D, 2J74Y, 4J74Y
MCU READING TIPS

If you are facing any problem during “W203” EZS/EIS MCU reading with ZFH-C08 or ZFH-C08-2 cable, please touch the tweezer to green pin soldered point as shown on picture and try to read again.

If you are using “ZFH-EA9” please make the tweezer touch to marked pin as shown on the left picture and try to read again.

ZFH-C08
ZFH-C08-2
ZFH-EA9
If you are using “ZFH-EA10” please make the tweezer touch to marked pin as shown on the left picture and try to read again.

ZFH-EA10
Mercedes-Benz C Series "W203" EZS / EIS
MCU MASK NUMBER : 1J35D, 2J74Y, 4J74Y
ZFH-C08 CABLE (20 Pin) / ZFH-C08-2 CABLE (20 Pin)

If you are facing any problem reading this MCU please also check page 38, 39

Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Example Description : [16 / G2]Yeşil (Green) means; If you use “ZFH-C08” Cable, “16th wire which is green” or if you use “ZFH-C08-2” Cable “Green cable on G2 marked group”.

[10 / G1]Kahverengi (Brown)

[7 / G1]Sarı (Yellow)

[12 / G2]Siyah (Black)

[18 / G2]Turuncu (Orange)

Kısa devre (Kristal) Short circuit (Crystal)

ÜST (TOP)

ALT (BOTTOM)

[16 / G2]Yeşil (Green)
Mercedes-Benz E Class "W215-W220" EZS / EIS
MCU MASK NUMBER : 1J35D
ZFH-C08 CABLE (20 Pins) / ZFH-C08-2 CABLE (20 Pin)

Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.

Example Description: [16 / G2] Yeşil (Green) means; If you use “ZFH-C08” Cable, “16th wire which is green” or if you use “ZFH-C08-2” Cable “Green cable on G2 marked group”.
Mercedes-Benz Vaneo, Viano, Vito Models "W639" (QFP64) EZS / EIS
MASK NUMBER : 4J74Y, 2J74Y, 3K85K, 0L02M, 1L02M, 2M73Y
ZFH-C08 CABLE (20 Pins) / ZFH-C08-2 CABLE (20 Pin)

See the next page for bottom side

[Sarı (Yellow)] [12 / G2] Beyaz (White)
[10 / G1] Kahverengi (Brown)
Mercedes-Benz Vaneo, Viano, Vito Models "W639" (QFP64) EZS / EIS

MASK NUMBER : 4J74Y, 2J74Y, 3K85K, 0L02M, 1L02M, 2M73Y

ZFH-C08 CABLE (20 Pins) / ZFH-C08-2 CABLE (20 Pin)

If you are getting read error with ZFH-C08 or ZFH-C08-2 while reading in circuit, remove and read the processor with adapter as shown in page 56.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Mercedes-Benz CLK Class "W209" EZS / EIS
ZFH-EA7 - Security MCU Adapter

Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Solder the wires to the certain points as given on each picture to read MCU with Zed-FULL.
Mercedes-Benz C Class "W203" ELS / EIS
MCU MASK NUMBER : 1J35D
ZFH-EA9 / ZFH-EA10 - 64 Pins MCU Adapter (QFP64)
If you are facing any problem reading this MCU please also check page 38, 39

Remove MCU from board and read it with Zed-FULL using ZFH-EA9 or ZFH-EA10 adapters.
Remove MCU from board and read it with Zed-FULL using ZFH-EA9 or ZFH-EA10 adapters.
Remove MCU from board and read it with Zed-FULL using ZFH-EA9 or ZFH-EA10 adapters.
Remove MCU from board and read it with Zed-FULL using ZFH-EA9 or ZFH-EA10 adapters.
Mercedes-Benz E Class "W215-W220" EZS / EIS
MCU MASK NUMBER : 1D69J
ZFH-EA11 / ZFH-EA12 - 64 Pins MCU Adapter (QFP64)

Remove the MCU from board and read it with Zed-FULL using ZFH-EA11 or ZFH-EA12 adapter.
Remove the MCU from board and read it with Zed-FULL using ZFH-EA11 or ZFH-EA12 adapter.
Mercedes-Benz Test Kit
Contents

Power Cable

W164, W221 EZS/EIS Test Kit

W169, W209, W211 EZS/EIS Test Kit

W202, W208, W210 EZS/EIS Test Kit

W203, W639 EZS/EIS Test Kit

W215, W220 EZS/EIS Test Kit

W906 EZS/EIS (Sprinter) Test Kit

iEA
Insert the test kit adapter to EZS/EIS unit as shown on Picture. White color marked side on adapter must be on top side. Give 12 Volt DC to power cable- Zed-FULL power adapter can be used. After all required connections you can test the keys which you have programmed with Zed-FULL.
Insert the test kit adapter to EZS/EIS unit as shown on Picture. White color marked side on adapter must be on top side. Give 12 Volt DC to power cable- Zed-FULL power adapter can be used. After all required connections you can test the keys which you have programmed with Zed-FULL.
Insert the test kit adapter to EZS/EIS unit as shown on Picture. White color marked side on adapter must be on top side. Give 12 Volt DC to power cable- Zed-FULL power adapter can be used. After all required connections you can test the keys which you have programmed with Zed-FULL.
Insert the test kit adapter to EZS/EIS unit as shown on Picture. White color marked side on adapter must be on top side.

Give 12 Volt DC to power cable- Zed-FULL power adapter can be used.

After all required connections you can test the keys which you have programmed with Zed-FULL.
Insert the test kit adapter to EZS/EIS unit as shown on Picture.
White color marked side on adapter must be on top side.
Give 12 Volt DC to power cable- Zed-FULL power adapter can be used.
After all required connections you can test the keys which you have programmed with Zed-FULL.
Insert the test kit adapter to EZS/EIS unit as shown on Picture.
White color marked side on adapter must be on top side.
Give 12 Volt DC to power cable- Zed-FULL power adapter can be used.
After all required connections you can test the keys which you have programmed with Zed-FULL.
Mercedes-Benz key programming application on PC Software

1- Key programming button.
2- Save Mercedes File button to save EZS / EIS files to your PC.
3- To update IR-PROG module.
4- To update ZFH-MB key.
5- To update ZFH-UTE.

If the password can not be calculated from dump file, PC SW will ask you to enter 16 digits password. Enter it or if you do not have the password, please send EZS/EIS dump file to your distributor or IEA support to get password.

When a different programmer is used to read EZS/EIS MCU, this file must be sent to Zed-FULL using PC SW. For this click on “Key Programming” and on new window open the EZS/EIS dump file and press “OK”.

To get data from PC SW, Zed-FULL must be on this screen. As soon as we press on “Continue” button, Zed-FULL will pull the file from PC SW. The rest of procedure will be done on Zed-FULL screen.
Saving Mercedes-Benz EZS / EIS files to PC

To save Mercedes files, select type of the EZS / EIS from the list.

Once you click on “List Mercedes Files” button, all read files will be listed.

Select the file which you want to save to your PC and click on “Save” button.

Once we click on “Save” button, a new folder will be created on your PC desktop and selected file will be saved in this folder.
IR-PROG Module, ZFH-MB Key update

To update IR-PROG module connect it to PC and click on “IR-PROG Update” button.

To update ZFH-MB, connect "IR-PROG" to PC, insert ZFH-MB into IR-PROG and click on to “ZFHM-B Update” button.

Click on “Update Control” to make automatic update from internet.
To update ZFH-UTE, please follow these steps;
1- Connect ZFH-UTE to PC with ZFH-C11 cable.
2- Go to "ZFH-UTE" section on PC SW.
3- Select (ZFH-UTE Update) from PC SW.
4- Click on "Ok" button on PC SW.
5- Click on "Update Control" button to start automatic update from internet.