

EFI TECHNOLOGY

PGU09 / PGT10 / PGV01 (EURO 4)

For ASW-NEXT

Short User Manual



October 2023

Important notes:

If engine starts but its speed is limited to 2000 rpm - possibly ECU is VIRGIN

When ECU is in **VIRGIN** state, engine starts with any transponder of correct type but engine speed is limited to 2000 rpm. Engine does not start without transponder or with transponder of incorrect type.

Please check the number of stored keys by pressing button [Read Identification](#). ECU is **VIRGIN** if KEYS PROGR.: [NO KEYS PROGRAMMED]

Learn keys using [key programming procedure for VIRGIN ECU](#) or write at least 2 keys [manually](#).

Now software of ASW-NEXT supports:

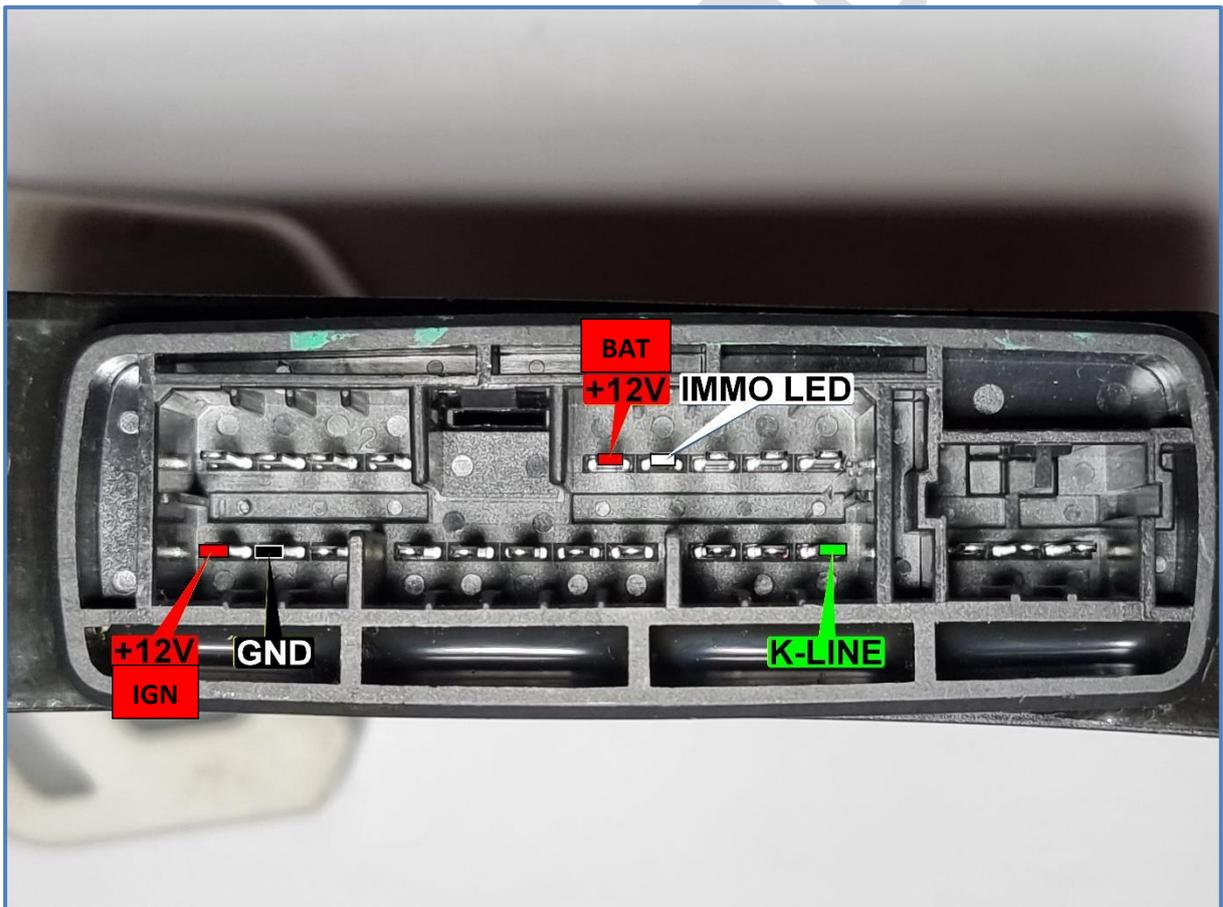
- *Key data extraction from ECU without erasing existing key values*
- *Read / Write ignition advance and fuel tables for chip tuning*
- *IMMO-OFF / IMMO-ON*

From V1.21 ASW-NEXT software will output troubleshooting information in case of error message **Set REPROG...FAILED** during write key or program maps.

This error takes place when engine is running at the moment of attempt to set REPROG mode or when supply voltage is lower than 10V or higher than 14.4V

You can suspect internal hardware fault of EFI TECHNOLOGY control unit if ignition voltage displayed in troubleshooting information significantly differ from the real voltage of power supply. Minor difference (+/-0.6V) is allowed.

1. How to connect on-the-bench?



2. How to connect in the scooter?

- ✓ Connect **RED** and **BLACK** crocodile clips of ASW-NEXT interface to “+” and “-” of scooter battery
- ✓ Connect **GREEN** wire of ASW-NEXT interface (“K”) to **pin 3** in the diagnostic connector - this is a K-LINE.
Prepare yourself a piece of wire to make a bridge between green wire of ASW-NEXT and pin 3 of the diagnostic connector.



3. Software functions

- **Read Identification**

- **Read / Write keys**

To read existing and to store new desired values of transponders. Up to 4 keys can be programmed during this procedure.

- **Reset to VIRGIN**

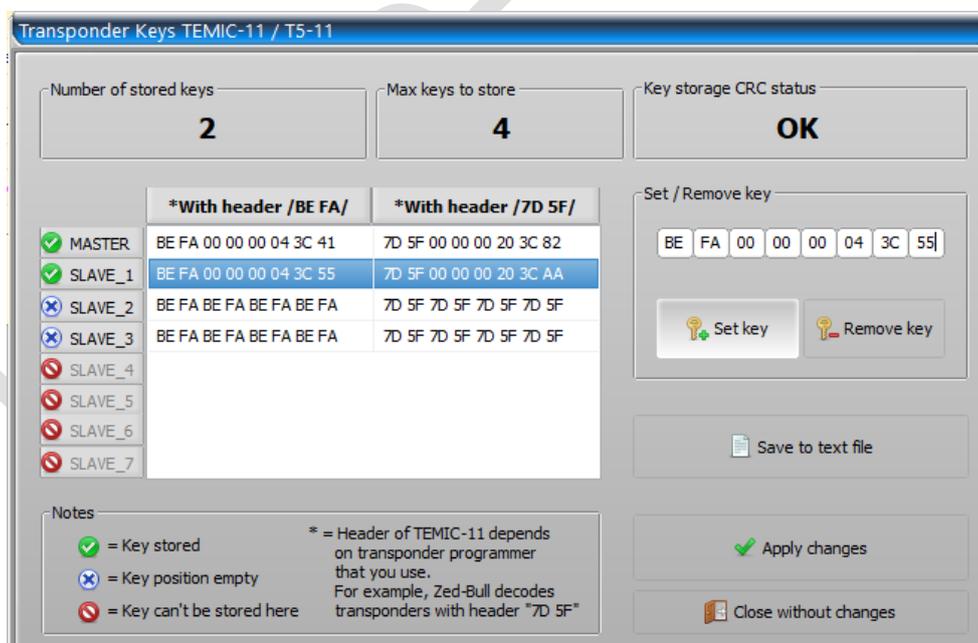
Erases all keys. Control unit is ready to self-learn new transponder values after Reset-to-VIRGIN.

4. Key programming procedures

Let's overview several possible situations:

➤ **All keys were lost**

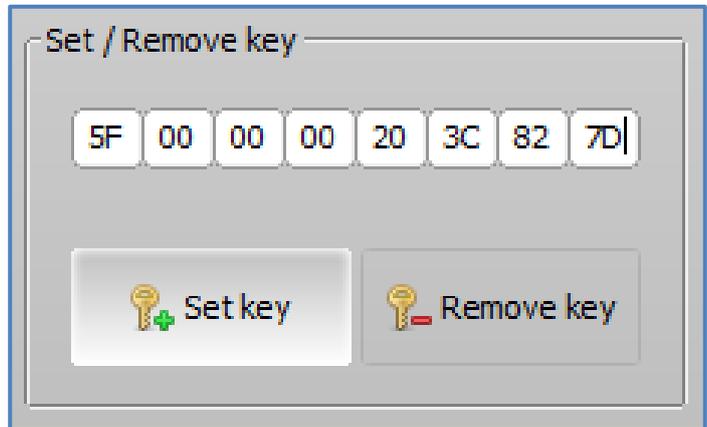
Connect wires from interface of ASW-NEXT to CDI unit, apply +12V power to connection and press „**Read /Set Keys**“ button. Diagnostic connection to CDI unit will be established and transponder values will be read:



Write value of any active (marked with green) key to transponder **T5** as **TEMIC-11** using any suitable transponder programmer. Choose data with header „**BE FA**“ or „**7D 5F**“ depending on type of your transponder programmer.

➤ You want to set / delete key(s) manually in CDI unit

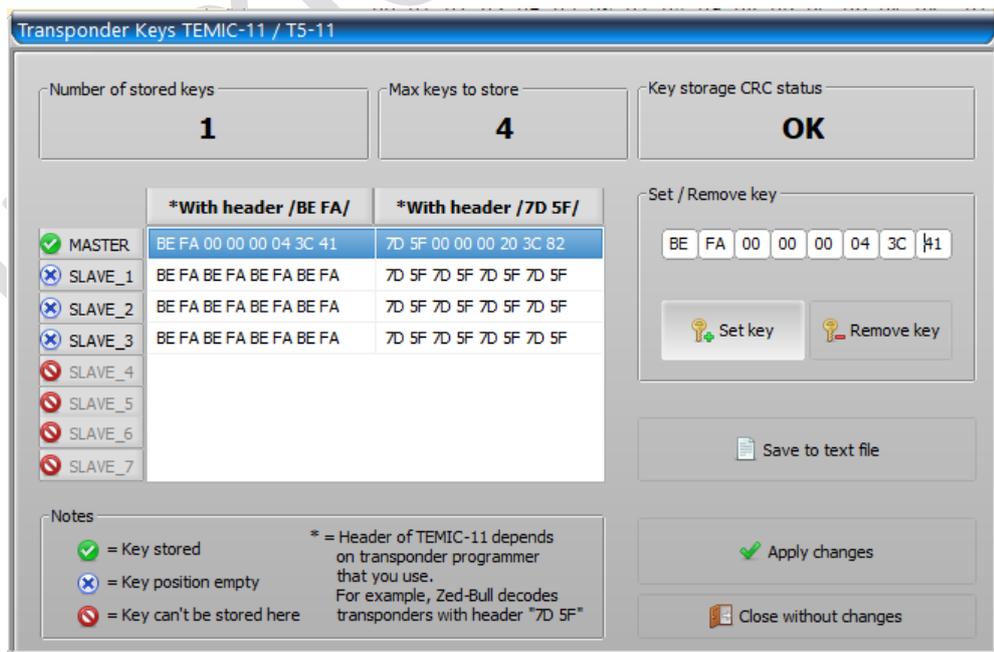
Press „**Read /Set Keys**“ button. Diagnostic connection to CDI unit will be established and transponder values will be read. Select position to set key to. Read key you want to store to CDI unit with any transponder programmer.



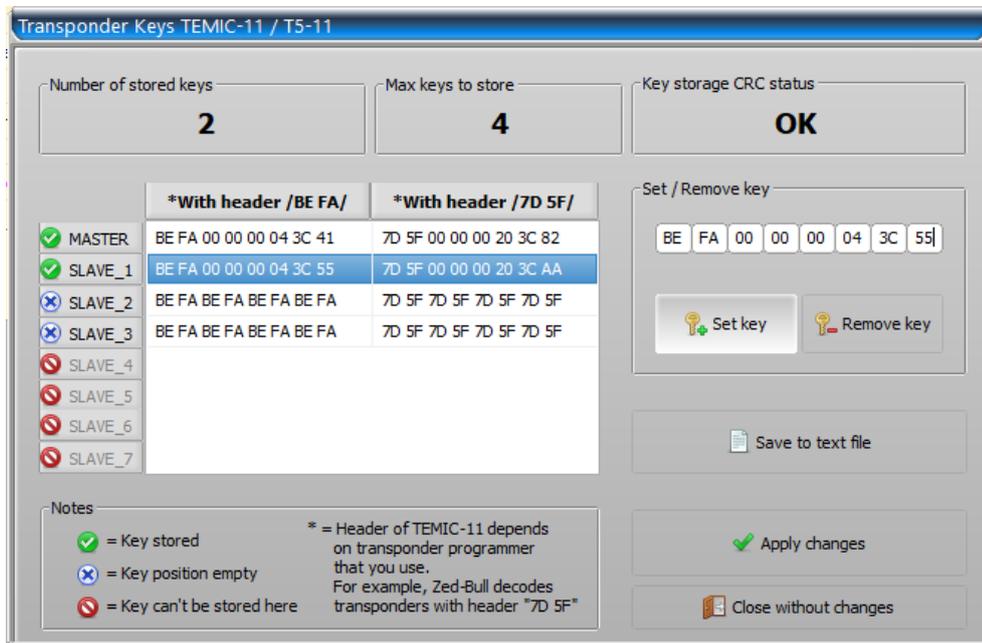
Let's say you've got **TYPE-11** or **T5-11** transponder and your transponder reader displayed value as in the picture above.

Enter this value to the „**Set / Remove key**“ field and press „**Set key**“ button. **Software will accept valid transponder value from a key programmer of every type – no data conversion of any kind is required.**

Software will automatically re-align bits and now it looks like this:



Important! CDI unit will treat itself as not completely programmed with only one key stored. To avoid this you must store one more key, even if single key is needed. Just enter any valid value for a second key position, different from value of **MASTER** key.



- Use „**Save to text file**“ to access transponder data later if no physical transponder is prepared yet. **Keep in mind that you can't read key values later from control unit**
- Press „**Apply changes**“ button to write key programming values to control unit

➤ **You want to reset PGU09 / PGT10 / PGV01 to VIRGIN state**

- Fill in all key positions with **BE FA BE FA BE FA BE FA**
- Press „**Apply changes**“ to program blank key values to memory

or

- Press button „**Reset to VIRGIN**“

➤ **You want to learn keys to the VIRGIN PGU09 / PGT10 / PGV01**

- Make yourself two valid **T5-11** transponders or take two ready suitable keys of **TEMIC-11 / TYPE-11**.

To make **T5-11** transponders please program to one of them, for example:

BE FA 00 00 00 11 22 33 (7D 5F 00 00 00 88 44 CC)* and

BE FA 00 00 00 11 22 34 (7D 5F 00 00 00 88 44 2C)* to another.

Both transponders must be programmed with different values.

- Turn ignition with first key for 1.5 sec. Key will be stored as a **MASTER**
- Turn ignition with second key for 1.5 sec. Key will be stored as a **SERVICE**
- Turn ignition with first key again for 1.5 sec. to close programming procedure.

IMPORTANT NOTE: Do not exceed time of 1.5 seconds when changing key in ignition lock between every step. Turn ignition off while LED is still on!

*- Depends on type of transponder programmer (does it use *BE FA* or *7D 5F* header)

➤ **To check how many keys programmed to the PGU09 / PGT10 / PGV01**

- Press „**Read Identification**“ button to read HW / SW info along with number of keys programmed to the control unit

Read / Write MAPS

Software of ASW-NEXT is now able to read and reprogram ignition advance and fuel tables. You may find this useful to improve engine performance or to remove speed limiter.

NOTE: Software of ASW-NEXT by itself does not modify map files to remove any limitations. Please use appropriate software to edit map files, e. g. WinOLS.

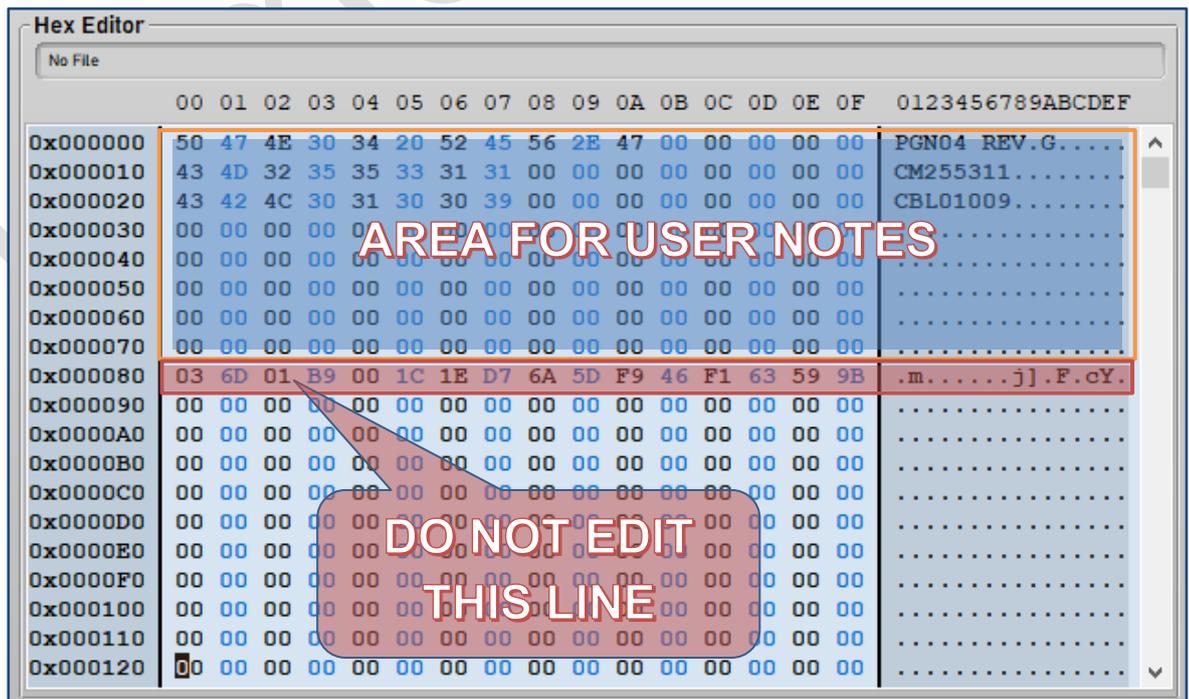
NOTE: Software of ASW-NEXT will recalculate CRCs in map file, modified by third-party software before to program it to engine control unit.

MAP file

MAP is saved to binary file. File size for PGU09 / PGT10 / PGV01 MAP file is 96kb. Ignition advance and fuel tables in binary MAP file are located at their physical addresses in the memory space of STM8.

Upper 8 lines (128 bytes) can be modified by the user without any limitations. This area is reserved to store various text notes about MAP file.

NOTE: Do not edit data at 0080-008F. MAP file will be treated as corrupted once data at line 0080 was modified.



- **IMMO-OFF / IMMO-ON**

This function configures immobilizer feature presence. Works by K-Line.

