

**Aprilia**

**RSV4 / Dorsoduro / Tuono / Shiver  
RS660**

**COBO LCD TFT instrument cluster**

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**RSV4 1100 E5 / Tuono V4 1100 E5**

**COBO LCD TFT 5" instrument cluster**

**For ASW-NEXT**

Short User Manual



**September 2024**

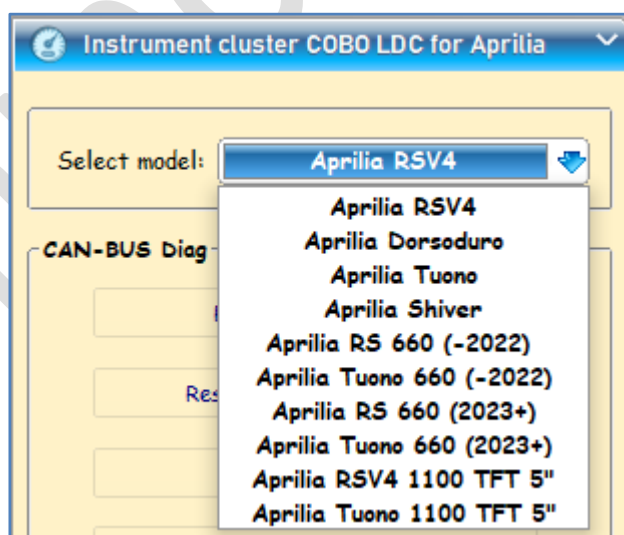
## Important notes:

This option applies only to the instrument clusters with a large color LCD made by **COBO**

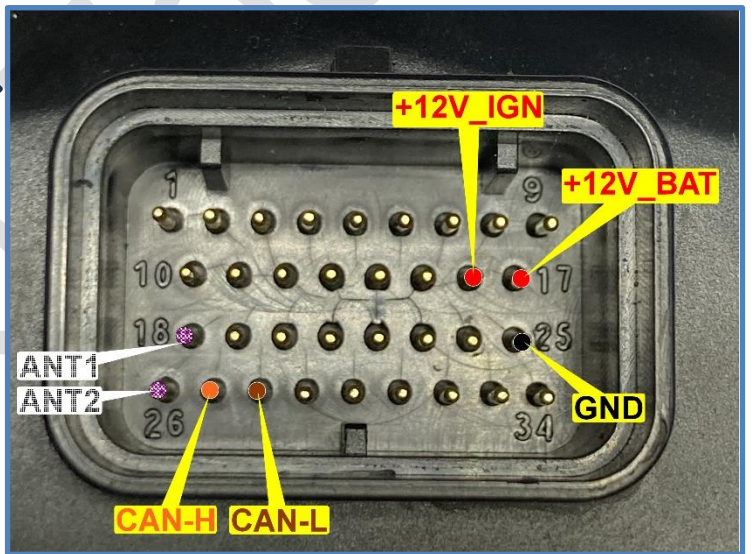
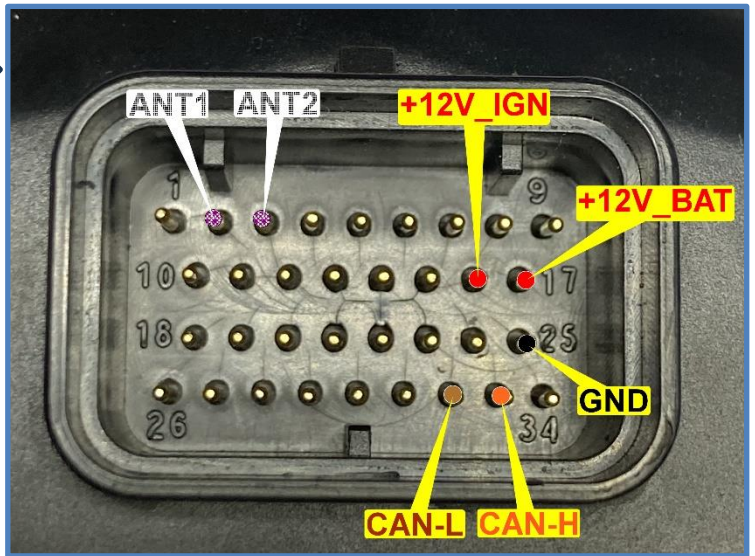
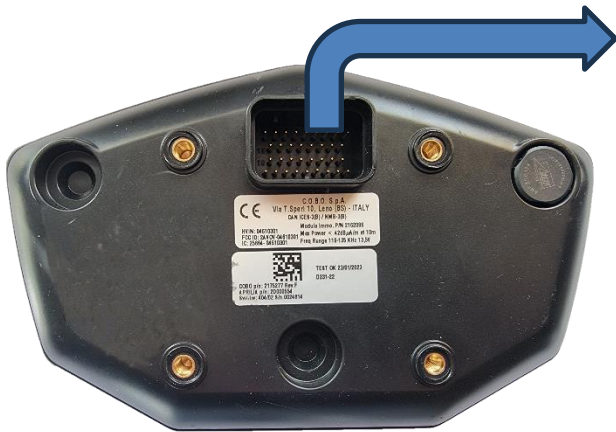
Depending on motorcycle model, some versions of COBO LCD instrument cluster are programmed to accept transponder key of type TEMIC-12 with header 'F0 00', some are designed to accept only transponder PCF7936 with header 'BA C1'.

**Use transponder key of correct type for every particular motorcycle model.**

**Make sure to select a correct motorcycle model for every software function to operate properly**



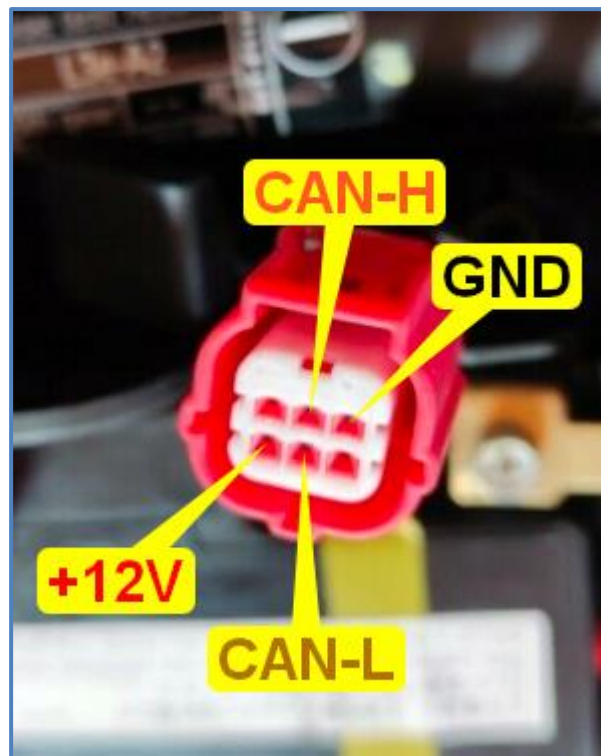
# 1. How to connect on-the-bench?



**NOTE:** *ANT1 / ANT2* – terminals to connect transponder antenna.

Antenna is optional, use it in case when you need to test transponder acceptance on-the-bench.

## 2. How to connect by EURO-5 diagnostic connector?



### 3. Software functions

- **Reset Service Remainder**
- **Reset User CODE to value ,00000‘ when original code is unknown**
- **Reset Keys**

Erases all keys and stores value of the key that is in the ignition lock. Up to 4 keys can be programmed during this procedure. Does not require **USER CODE**. Follow messages on the LCD screen of instrument cluster.
- **Set Odometer**

Set new odometer value. Mileage increase, decrease or set zero is available.

EEPROM dump functions:

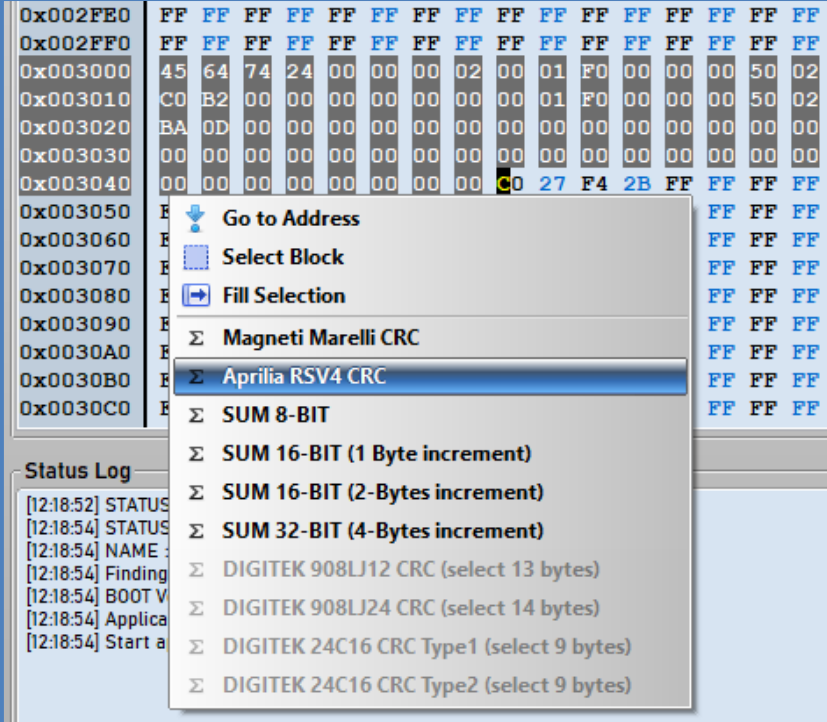
- **Read / Set odometer in the EEPROM dump**
- **Read USER CODE from the EEPROM dump**
- **Read / Set Keys in the EEPROM dump**

Group of dump functions do require **24C512** content to be previously read from instrument cluster using suitable **EEPROM programmer**.

**EEPROM R/W by diagnostic is not implemented.**

## 4. CRC for EEPROM 24C512 dump

You are free to edit EEPROM content manually but CRC for modified data block must be updated with correct value. Occupied EEPROM area is divided into information blocks where every block starts with ,**Edt\$**' and ends with 32-bit CRC. Select block in the HexEditor window and right-click with mouse on the selected block. Choose ,**Aprilia RSV4 CRC**'. Update 4 bytes of calculated CRC if necessary.

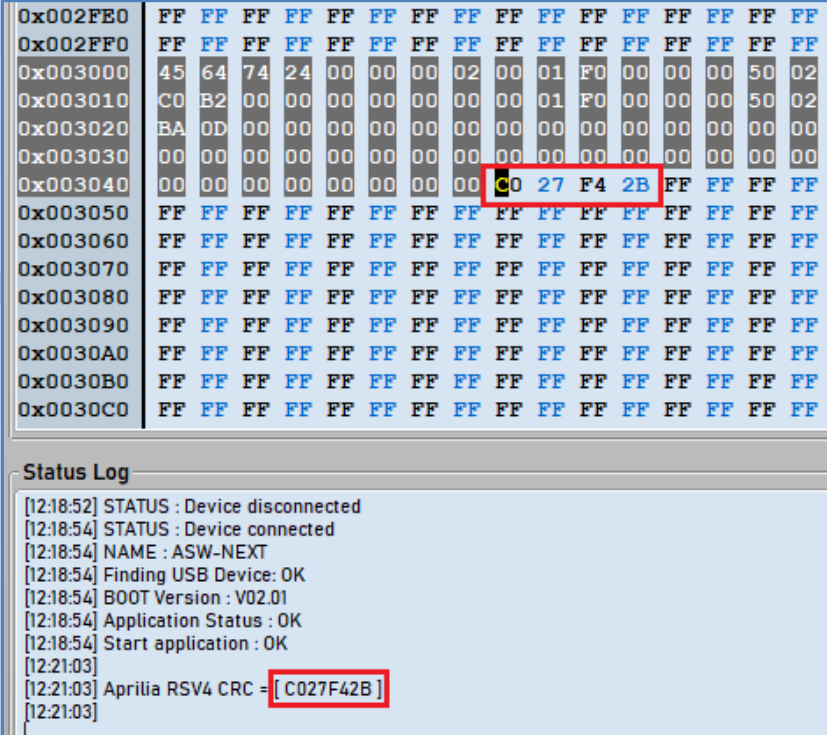


The screenshot shows a hex editor window with a context menu open over a selected block of data. The menu options are:

- Go to Address
- Select Block
- Fill Selection
- Σ Magneti Marelli CRC
- Σ **Aprilia RSV4 CRC** (highlighted)
- Σ SUM 8-BIT
- Σ SUM 16-BIT (1 Byte increment)
- Σ SUM 16-BIT (2-Bytes increment)
- Σ SUM 32-BIT (4-Bytes increment)
- Σ DIGITEK 908LJ12 CRC (select 13 bytes)
- Σ DIGITEK 908LJ24 CRC (select 14 bytes)
- Σ DIGITEK 24C16 CRC Type1 (select 9 bytes)
- Σ DIGITEK 24C16 CRC Type2 (select 9 bytes)

The hex data shown is:

```
0x002FE0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x002FF0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003000 45 64 74 24 00 00 00 02 00 01 F0 00 00 50 02
0x003010 C0 B2 00 00 00 00 00 00 00 01 F0 00 00 50 02
0x003020 BA 0D 00 00 00 00 00 00 00 00 00 00 00 00
0x003030 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x003040 00 00 00 00 00 00 00 00 C0 27 F4 2B FF FF FF FF
0x003050 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003060 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003070 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003080 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003090 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030A0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030B0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030C0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```



The screenshot shows the same hex editor window after the CRC has been updated. The hex data is now:

```
0x002FE0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x002FF0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003000 45 64 74 24 00 00 00 02 00 01 F0 00 00 50 02
0x003010 C0 B2 00 00 00 00 00 00 00 01 F0 00 00 50 02
0x003020 BA 0D 00 00 00 00 00 00 00 00 00 00 00 00
0x003030 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x003040 00 00 00 00 00 00 00 00 C0 27 F4 2B FF FF FF FF
0x003050 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003060 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003070 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003080 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x003090 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030A0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030B0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x0030C0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

The Status Log shows the following entries:

```
[12:18:52] STATUS : Device disconnected
[12:18:54] STATUS : Device connected
[12:18:54] NAME : ASW-NEXT
[12:18:54] Finding USB Device: OK
[12:18:54] BOOT Version : V02.01
[12:18:54] Application Status : OK
[12:18:54] Start application : OK
[12:21:03]
[12:21:03] Aprilia RSV4 CRC = [ C027F42B ]
[12:21:03]
```