

BCM Manual

With the rapid development of electronic information technology, the electronic information technology, data communications technology, sensor technology, control technology, computer technology and vehicle network technology and others are used in modern automobile anti-theft technology, promoting it highly intelligent, diversified function. Electronic security controller is the most widely used automobile anti-theft devices. QJ BCM is the most effective controller among this kind of product; it is locking the engine ECU to achieve security purposes.

System components

QJ BCM is mainly made up by PKE, IMMO and LF antenna, controllers, tester and status indicators, among which the controller is the core of the anti-theft and Body control system.

System's working principle

Sleep Mode

The BCM enters sleep mode when (KL.15 and KL.R are switched OFF and there is no network activity), provided the permanent battery feed is connected and all busses are in a quiescent state. The BCM remains in readiness for CAN & LIN bus signals, i.e. it's possible that in some case BCM can wake up other ECUs via hardwired wake-up or CAN.

Various inputs shall be monitored, which when activated shall wake up the BCM from sleep mode.

In sleep mode the quiescent current through the BCM shall not exceed 1.5mA.

In sleep mode (battery connected) the following systems shall be enabled:

Exterior Lighting System (certain lamps only)

Interior Lighting System

Security System

Locking System

PEPS System

The BCM remains in readiness for CAN/LIN messages and monitors the wake-up lines and KL15 input.

ACC

With KL.R active the following systems shall be enabled:

Diagnostics.

Interior Lighting System.

Exterior Lighting System (certain lamps only)

Security System (with invalid Key only).

Window-Lift System.

Wash / Wipe System.

Immobiliser System.

Locking System

PEPS System

Power management System

RUN

With KL.15 active the following systems shall be enabled:

- Diagnostics.
- Interior Lighting System.
- Exterior Lighting System (all lamps)
- Security (with invalid Key only)
- Window-Lift System.
- Wash / Wipe System.
- Immobiliser System.
- Locking System
- PEPS System
- Power management

Crank

With KL.50 active no EEPROM data shall be written and the following systems shall be disabled:

- Dipped & Main-Beam Headlamps
- Window-Lift System.
- Wash / Wipe System.

While KL.50 is active, no analogue signals except for its power supply provided by the regulator are evaluated and no EEPROM data is written.

Battery Management

It shall be possible to configure the BCM to operate in the following operating modes:

Manufacturing Mode: This is the default mode and is used during the vehicle manufacturing process at the assembly plant.

Transit Mode: This is sometimes referred to as Logistics Mode, and is used post vehicle build, for vehicle transportation between the manufacturing plant and the dealer.

Normal Mode: This is the normal customer mode and is configured after vehicle PDI prior to the vehicle being accepted by the customer.

Show Room Mode

Storage Mode

This shall enable the BCM to inhibit / modify certain functionality when in manufacturing and transit modes in order to reduce battery loads prior to delivery of the vehicle to the customer thereby preserving the condition of the vehicle battery.

At the same time, BCM shall enable or disable some related function according to the loadshed status.

Index of technique

1. Rated voltage: DC13V;
2. Voltage range of work: DC9V~DC16V;
3. Working temperature: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$;
4. Storage temperature: $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$;
5. Maximum current: 14.0A (MAX);
6. Standby current: $\leq 1.5\text{mA}$ (Test voltage 13.5V);
7. Working current: 9A (Nominal);
8. Waterproof and dustproof type: IP5K0;

Attentions of installation and use

The device is generally installed under the center IP. IMMO is installed under the cup holder or in other appointed position. Transmitter is integrated in the smart key. First using tester to matching the key through diagnosis interface, then the key is certified.

When using this system, make sure all parts installed strongly, connecting between pins and the controller reliable. During the process of key matching and EMS, make sure to follow the matching process strictly.

FCC compliance statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.