Keyfob User Manual

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

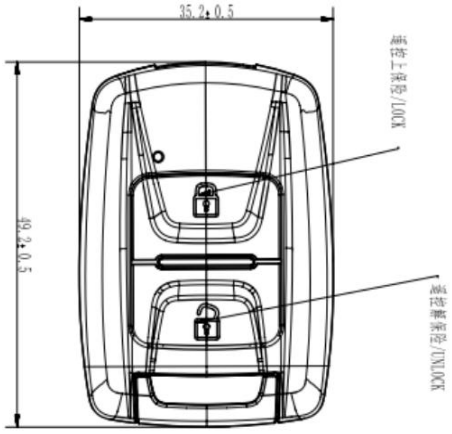
—— Consult the dealer or an experienced radio/TV technician for help.

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.

Product Introduction:

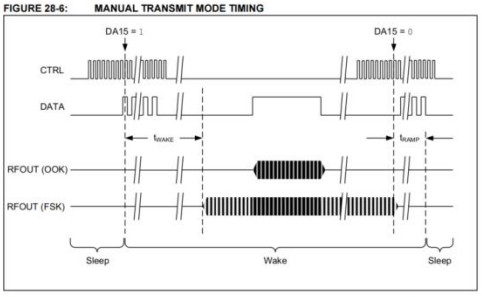


PIC12LF1840T39A

28.2.5 MANUAL TRANSMIT MODE

The RF transmitter can continuously transmit by setting the Mode bit (DA15) to a logic '1' in the Applications register (see Table 28-3). It will continuously transmit RF data presented on the DATA pin without automatically entering Sleep mode. To cease transmission the Mode bit is must be cleared (DA15 = '0'). Figure 28-6 shows the Manual Transmit mode timing.

FIGURE 28-6: MANUAL TRANSMIT MODE TIMING



28.3 Modulation Selection

28.3.1 ON-OFF KEYING (OOK)

OOK modulation can be configured by setting the modulation DA14 bit in the Application register (Table 28-3). Data is transmitted as stated in **Section 28.2.3 "Data Transmission"**.

28.3.2 FREQUENCY SHIFT KEYING (FSK)

FSK modulation can be configured by clearing the modulation DA14 bit in the Application register. Frequency Deviation (f_{DEV}) is configured by setting the DA<12:5> bits in the Application register. Data is transmitted as stated in **Section 28.2.3 "Data Transmission"**.

28.3.3 DIGITAL TRANSMISSION SYSTEM (DTS)

In the United States and Canada, digital modulation techniques are permitted (FCC Part 15.247 and RSS-210, respectively). The RF transmitter can be configured for DTS mode by selecting FSK and f_{DEV} = 200 kHz. Data encoding techniques, such as data whitening, may be needed to ensure that the minimum 6 dB bandwidth is at least 500 kHz.

Keyfob has two buttons, one to unlock and one to lock, The microprocessor(PIC12LF1840 of Microchip) and RF transmitting circuit are integrated inside, When the button is pressed Keyfob sends a wireless remote signal to control the vehicle door lock unlock or lock.

The radio frequency modulation mode is ASK(OOK), Data rate is 2Kbps

The Keyfob operating voltage range is 2.3V to 3.3V, When the battery voltage is lower than 2.3V, replace the battery.

Function Description:

- Remote Lock

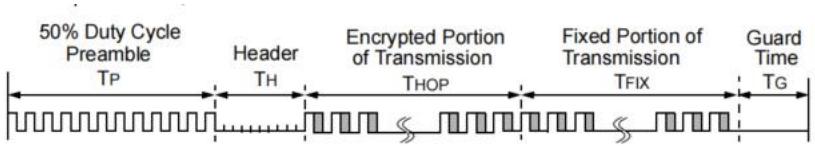
When the microcontroller(inside Keyfob) detects that the lock button is pressed, the data containing the lock command is packaged and the wireless signal is sent to the receiver through the RF transmitting circuit, and the receiver ECU verifies that the data is legitimate and drives the lock motor to perform the lock action.

- Remote Unlock

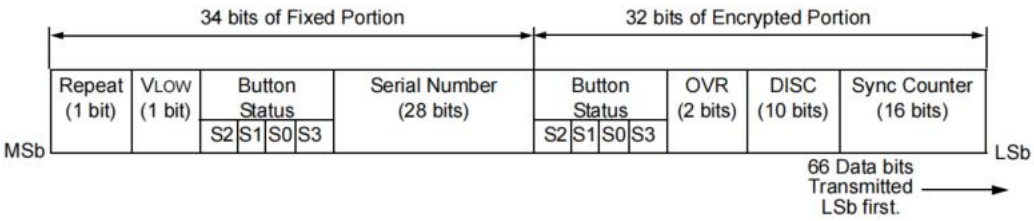
When the microcontroller(inside Keyfob) detects that the unlock button is pressed, the data containing the unlock command is packaged and the wireless signal is sent to the receiver through the RF transmitting circuit, and the receiver ECU verifies that the data is legitimate and drives the unlock motor to perform the lock action.

RF Data :

- CODE WORD FORMAT



- CODE ORGANIZATION



The button Status containing button pressed information. The receiver ECU analyze instructions after receiving radio frequency data.

●aphorism

The device has been evaluated to meet general RF exposure requirement.