

MS33 sensor Introduction

1. Introduction

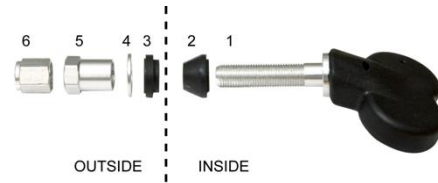
This MS33 BLE sensor is a type of sensor that combined TPMS and App installed in smart phone called Nissan ETCM. MS33 TPMS internal sensor adapts BLE low energy transmission, let driver understand tire situation through Nissan ETCM. When the system detects tire pressure or temperature abnormal situation, it (APP) will directly alarm the driver. Besides, transmission between sensor and smart phone has been fully protected by a well-design encryption/ decryption design. It could provide the condition of sensor let people who with bad intention know. Further more, there is an auto-learning function in Nissan ETCM. All the thing need to do is to place the smart phone in front of the driver at the left hand side, then drive for a while. There are more explanation about how to comply the whole process of auto-learning position function.

About This Manual :

- ◆ The information in this manual is subject to change without notice.
- ◆ This manual has been created with extra care. In case that you have any comments or questions regarding this manual, please contact your local dealer or our Customer Service Center.
- ◆ Before operating this set, please fully understand the prerequisite such as specifications or constraints of the hardware and software. We are not responsible and have no liability for any loss, damage or injury as a result of misuse.

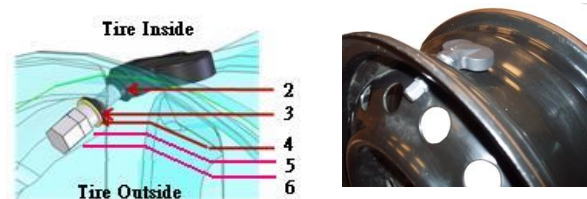
2. Internal Sensor

- 2.1 Remove the tires from the vehicle
- 2.2 Deflate the tires and detach the rims from the tires.
- 2.3 Install the sensor on the rim with appropriate position.(Please use 1.5~3. N-m to screw the sensor)



2.4 Balance the wheels.

2.5 Install the wheel to appropriate position of the vehicle.



Note :

- (1) Beware of the conductivity between the sensor and valve stem.
- (2) Sensors are supposed to be well locked valve stem to avoid from leaking.
- (3) Please replace original manufacturer's sensor battery in case voltage is below 2.7v.
- (4) Sensor will transmit data every 28~32 seconds when the vehicle is running, and when the vehicle stops, the sensor will transmit data every 148~152 seconds.

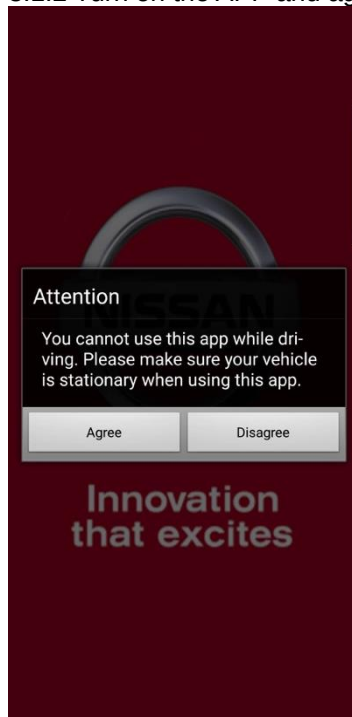
3. Nissan ETCM APP Installation:

Nissan ETCM App is designed for Nissan Vehicle. Through the Nissan ETCM you can know tire temperature and pressure, sensor battery voltage, and each sensor's ID. At the meanwhile, it provide the auto-learning position function for the driver to save time to set Sensor ID. Besides, the connection between MS33 BLE sensors has been encrypted, it could increase the safety and the stabilization of data transmission.

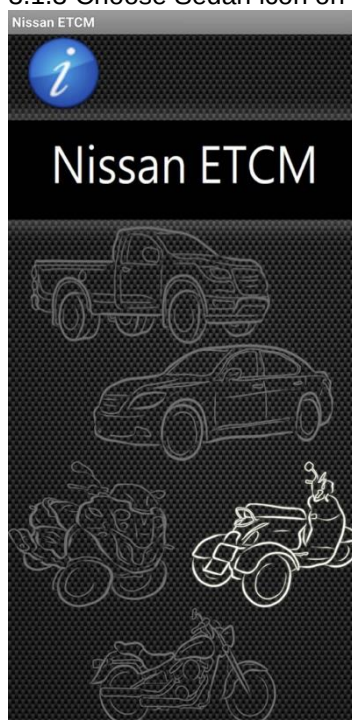
3.1 Install APP (Take Android as example)

3.1.1 Download the APP: Nissan ETCM from Apple Store or Google Play.

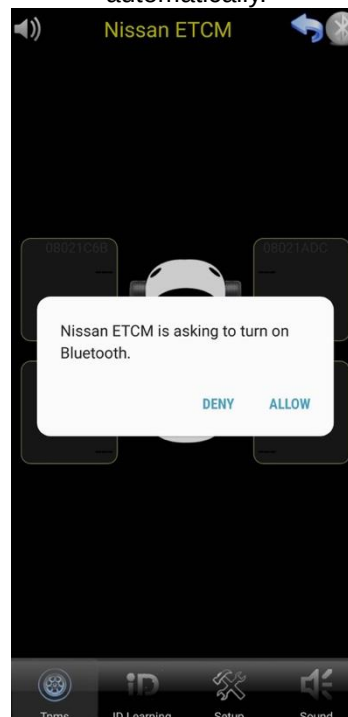
3.1.2 Turn on the APP and agree the statement.



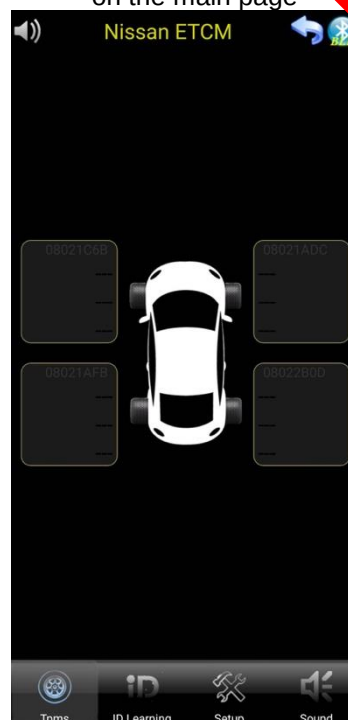
3.1.3 Choose Sedan icon on the screen.



3.1.4: Turn on the Bluetooth, and it will scan the devices automatically.



3.1.5 The BLE icon will light on after turning the Bluetooth on the main page



3.2 App Auto Operating

For the sensor side, there are 2 way to awake the transmission. First, using the function of auto-learning position to pair the sensor and APP by reliable algorithm. **Place reference procedure 3.2 series** Second, using trigger to awake MS33 properly, and then enter the sensor ID setting pages. After setting the ID properly, it will read the tire data immediately.

3.2.1 Click "Learning ID" button below

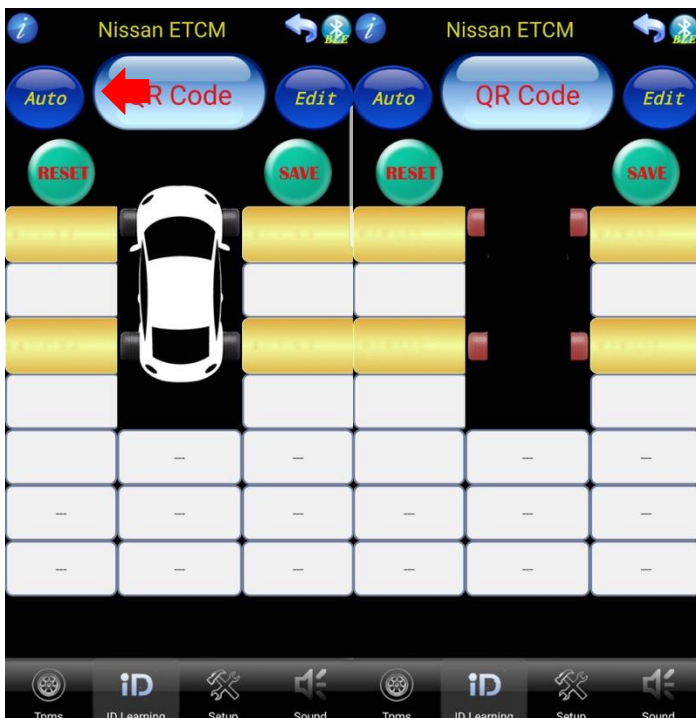


3.2.3 Please the smart phone in front of the driver at the front center side, then drive for about 20 to 30 minutes.



3.2.4 During the detection, the sensor ID will show on the learning page automatically, once it complete the detection, the learning page will show like the below picture. Then, please press "Save" button to turn the page to the main page

3.2.2 Press the "Auto" button, start to learn the sensor ID automatically, at the meanwhile, the vehicle will start to blink.



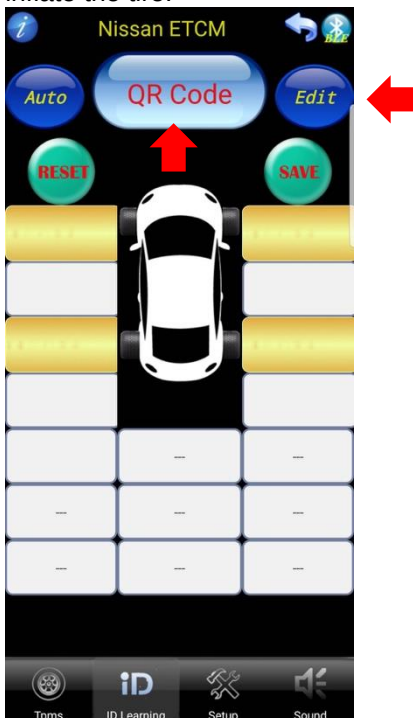
3.2.5 Press “Yes” button to confirm.



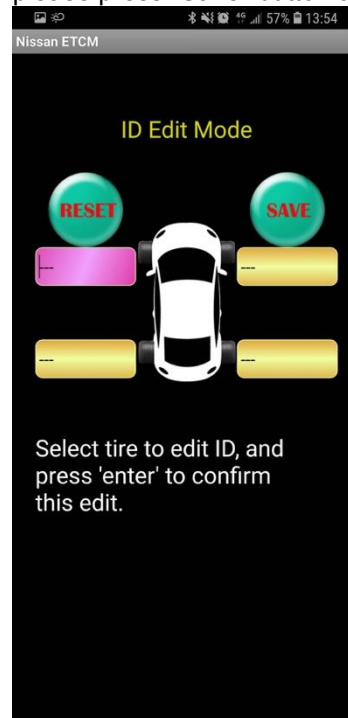
Note: When the Auto Sensor ID Learning is abnormal, please stay in the same learning page and redo 3.2 procedure again.

3.3 App Manual Operating

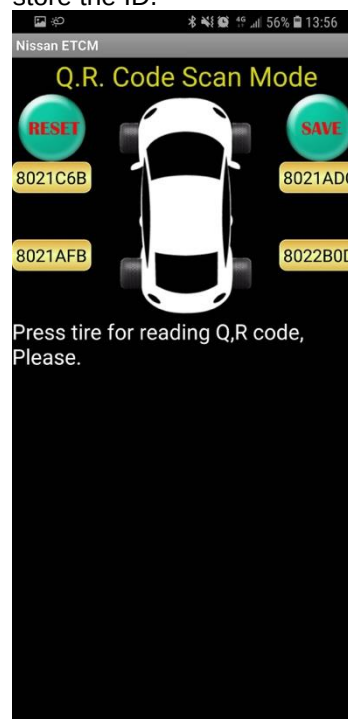
3.3.1 Enter learning ID page, users can use “edit” or “QR code” button to set up the ID manually before install inflate the tire.



3.3.2 ID Edit Mode page: User could key in the sensor ID one by one directly. Once four sensors are already, please press “Save” button to store the ID.



QR Code Mode page: User could scan the QR Code on the MS33 to get the sensor ID one by one directly. . Once four sensors are already, please press “Save” button to store the ID.



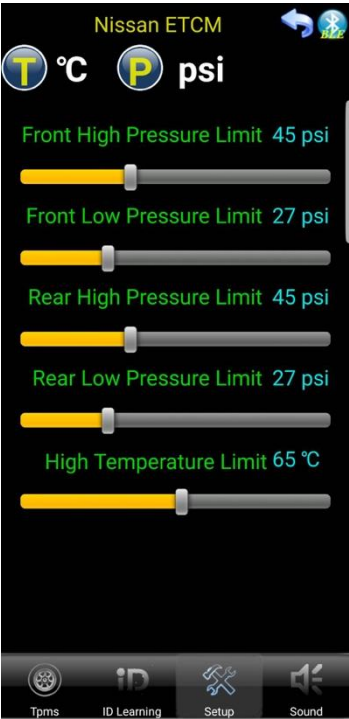


3.3.3 Press “Yes” button to confirm.

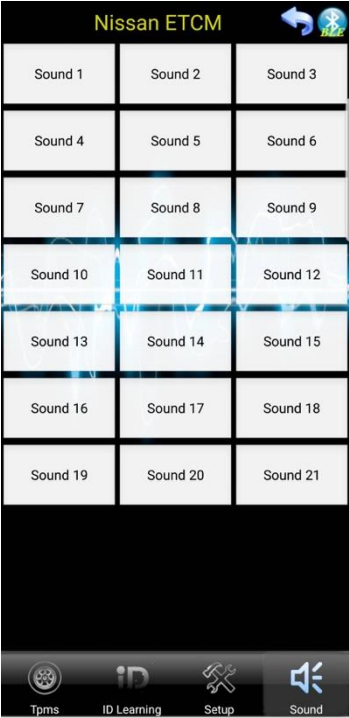


3.4 App Other setting

3.4.1 Enter Setup page, users can set up the unit and limit of tire pressure and temperature.



3.4.2 Enter Sound page, users can choose the audio alarm for the abnormal tire condition.



5. Specification

5.1 MS33 Sensor

Model	MS33
Operation Temperature	-40°C ~ 125°C
Operation Humidity	0 ~ 100%
Total Length	72±0.2mm
Total Height	12.4±0.2mm
Weight	27g (±0.5g)
Battery lifespan	Around 36 months
Battery size	CR2050W for TPMS spec
Monitoring pressure	0 ~ 900kpa ±7Kpa (0-130psi ±1Psi)
Monitoring temperature	-20°C~85°C ±1°C
Frequency	2.4GHz
Others	Continuously transmits 10 records when tire pressure change rapidly; When a tire stops, it transmits every 148-152 seconds. If not, it transmits every 28-32 seconds.

Federal Communication Commission

Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices). 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.

Radiation Exposure Statement:

The device has been evaluated to meet general RF exposure requirement, The device can be used in portable exposure condition without restriction.