On-Board Unit (OBU)

Product Description

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1. Brief Introduction

Electronic toll collection system (ETC) is an automatic toll collection system for highways or bridges. Through the special short-range communication between the vehicle-mounted on-board unit installed on the vehicle windshield and the microwave antenna on the ETC lane of the toll station, the computer networking technology is used for backup settlement processing with the bank, so as to achieve the vehicle toll through the highway or bridge then pay the highway or bridge fee without stopping the station.

The ETC system performs wireless communication and information exchange between the vehicle-mounted device installed on the vehicle and the antenna installed on the lane of the toll station, and is mainly composed of the vehicle automatic identification system, the central management system and other auxiliary facilities.

Among them, the vehicle automatic identification system is composed of on-board unit (OBU), roadside unit (RSU), dedicated short-range communication technology (DSRC), etc. They are also the three major elements of ETC technology.

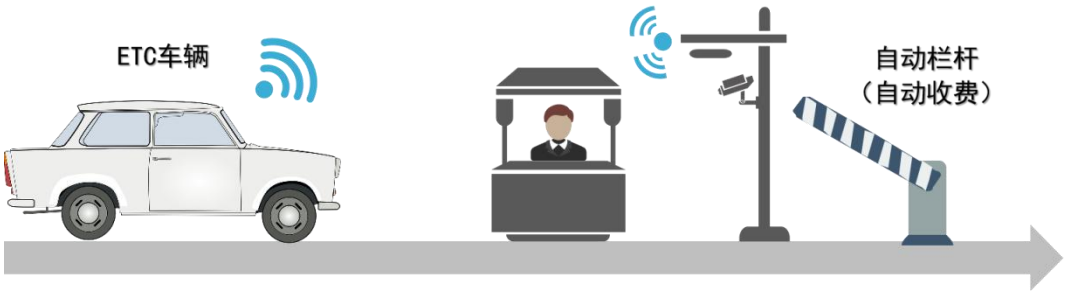

Figure 1.1 Simple diagram of ETC system

2. Product Introduction

W-115B+ is a dual-chip on-board unit product with blue-tooth access function independently developed by VanJee Technology through years of in-depth exploration of the actual needs of users.

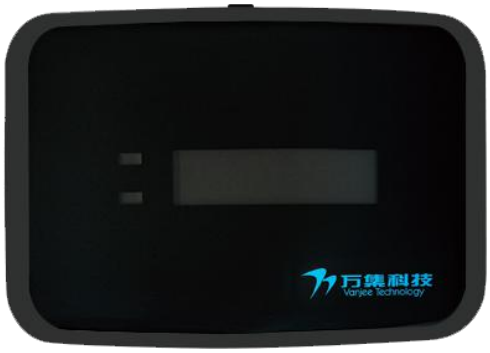

Figure 1.2 W-115B+ On-Board Unit

This on-board unit is at the leading level in the industry in terms of quality control, performance indicators, and service life. The supply area covers 29 provinces in China mainland, and the cumulative supply exceeds 30 million pieces. It has high Bluetooth adaptability and fast issuance speed and other features.

This on-board unit is fully compatible with nearly 630 mainstream brand mobile phones on the market, and can realize multiple service functions such as online recharge, online activation, and remote program update, which greatly improves operation efficiency and simplifies operation methods.

3. Product Features

Low power consumption, long life

- Intelligent power management, time-sharing dynamic power supply to each circuit module unit, to minimize the working current consumption of the system;
- The dual-circuit power supply mode of solar battery and high-performance lithium battery is adopted, with independent patented low-power circuit design to ensure the service life of the product;

High security

- Built-in ESAM security module to store access control keys, ETC application information and tag serial numbers, so that the tags have data security read and write functions, secure file key management, TDES encryption and decryption operations and other security mechanisms to ensure transaction security;
- Integrated anti-disassembly design, effectively preventing illegal disassembly and cheating;

4. Main Components

The main components of the dual-chip on-board unit are shown in Table 1.1.

Item	Chip Module	Model	Remark
1	Main chip (MCU)	BK5863N	Three-in-one SOC chip
2	Card reader chip	BK5863N	
3	RF chip	BK5863N	
4	Bluetooth chip	BK3435	
5	ESAM module	SSESAM08	
6	Battery module	ER14250E	
7	Capacitor module	SPC1520	
8	LCD module	fM1722870CT6-00-B	

Table 1.1 Main components of W-115B+ On-Board Unit