

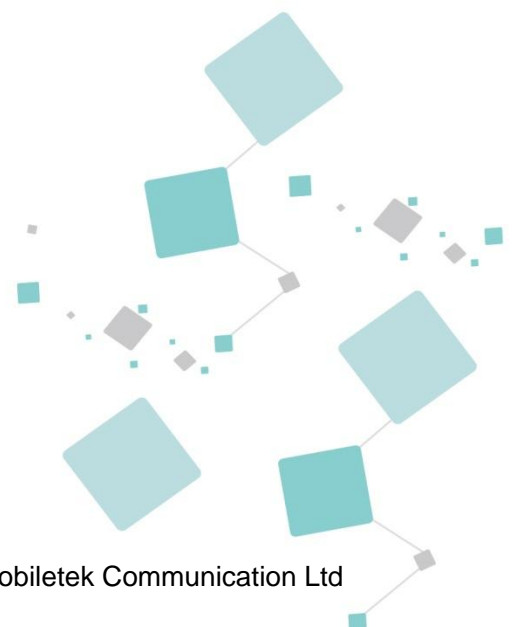
**LYNO**

# **L510-3 Series\_EVB User Manual**

**IoT Module Series**

**Version:** V1.2

**Date:** 2020-10-31



Shanghai Mobiletek Communication Ltd

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# Version History

Date	Version	Modify records	Author
2022-03-15	V1.0	Initial	hb.fang
2022-03-31	V1.1	GPIO for audio enable control is changed from GPIO25 to GPIO24	hb.fang
2022-10-31	V1.2	The document was retyped	rc.tian; rc.dong

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# 1. Introduction

The L510-3\_EVB is designed to help the developers to debug and test the L510-3 Series module. The following figure shows the label of the main functions of the L510-3\_EVB. This document will describe the various parts of its functions in later chapters.

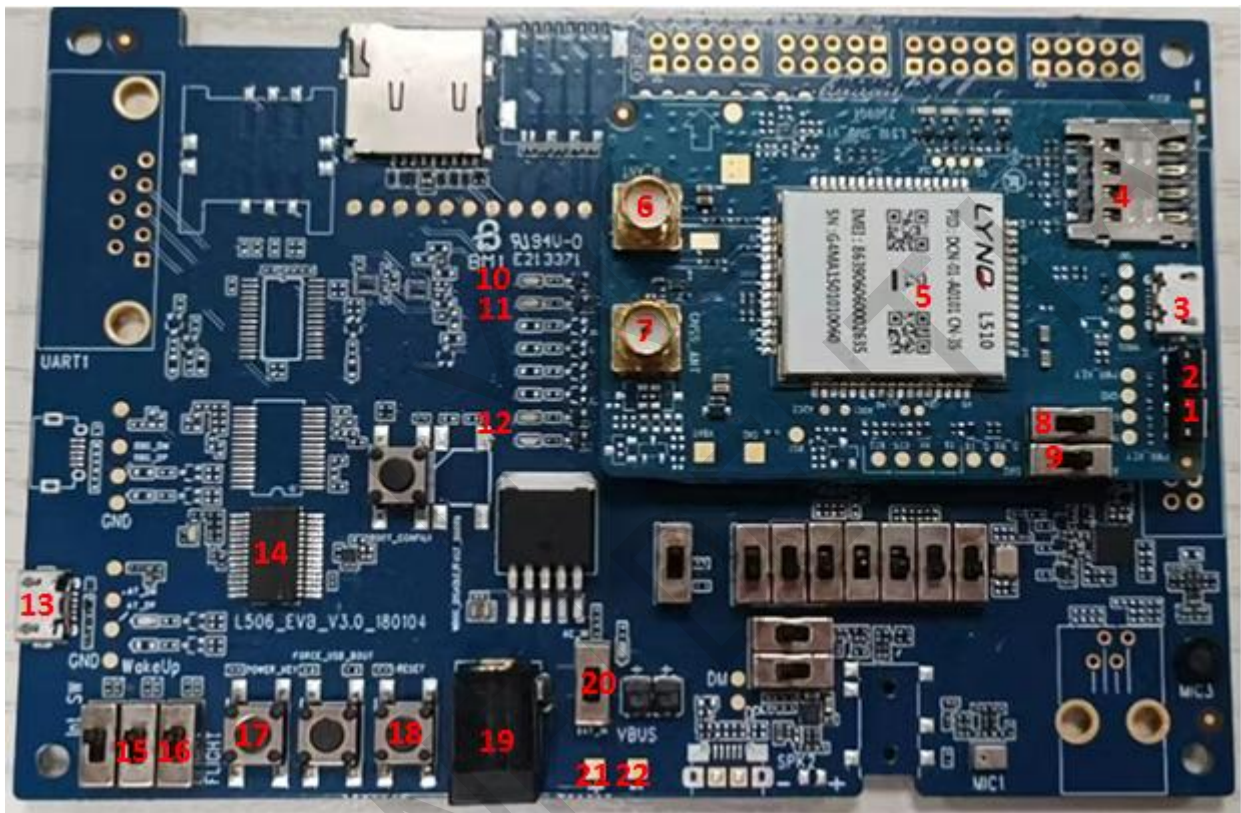


Figure 1-1 L510-3\_EVB TOP View

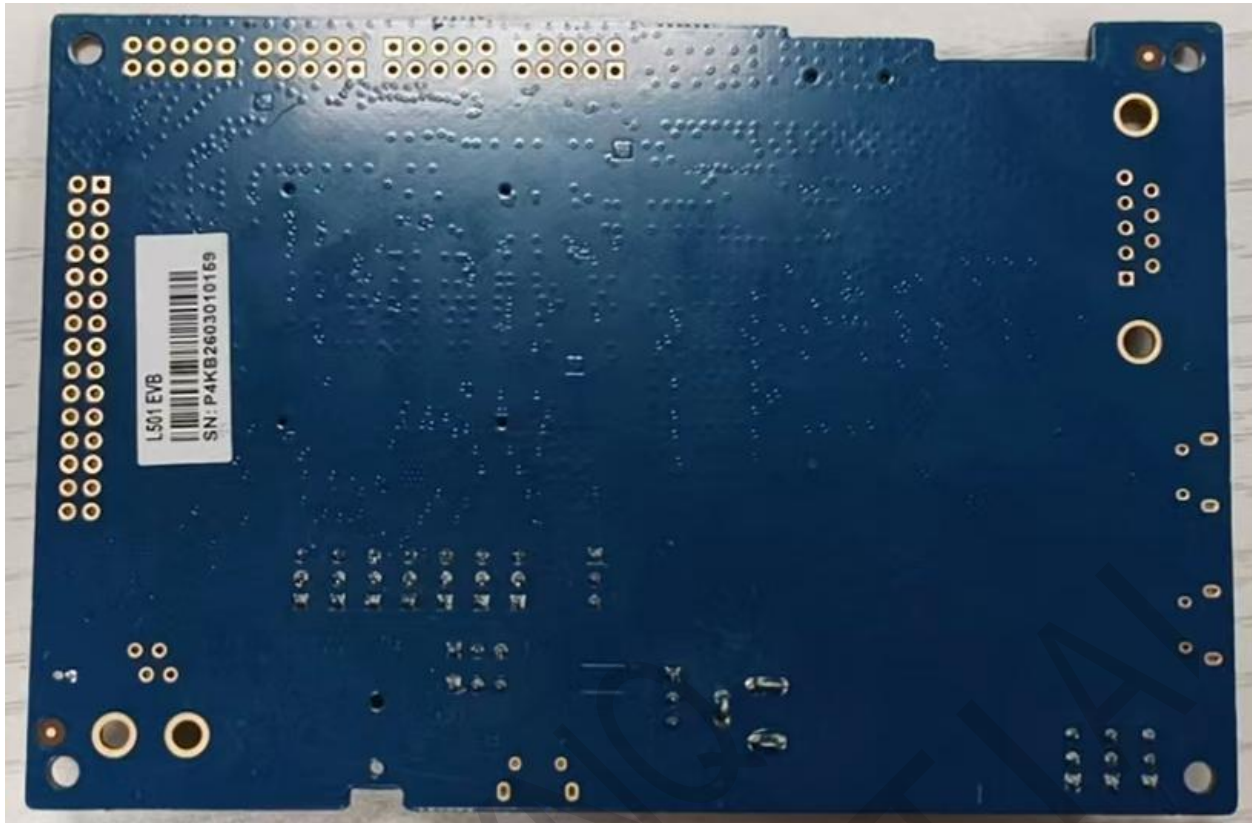


Figure 1-2 L510-3\_EVB BOT View

Table 1-1 Label Description

1. Power Key	2. FORCE_DOWNLOAD Key	3. 5pin Micro USB
4. (U)SIM Card	5. L510-3 Module	6. MAIN Antenna
7. GNSS Antenna	8. AT/ Debug Switch	9. AT/ Debug Switch
10. WAKEUP OUT LED	11. STATUS LED	12. NETLIGHT LED
13. 5pin Micro USB (AT Command/Debug)	14. USB to UART IC	15. WAKEUP Switch
16. FLIGHTMODE Switch	17. Power Key	18. RESET Key
19. DC5V	20. Power Switch	21. DC3.8V
22. GND		

# 2. Function Introduction

## 2.1 Power Supply

The L510-3\_EVB provides two kinds of power supply: DC5V adapter power supply and DC3.8V power supply. Customers can switch by controlling Power Switch. When the switch sets to the DC5V, it is powered by the DC5V adapter. When the switch sets to the DC3.8V, it is powered by the DC3.8V. As shown in the figure below.

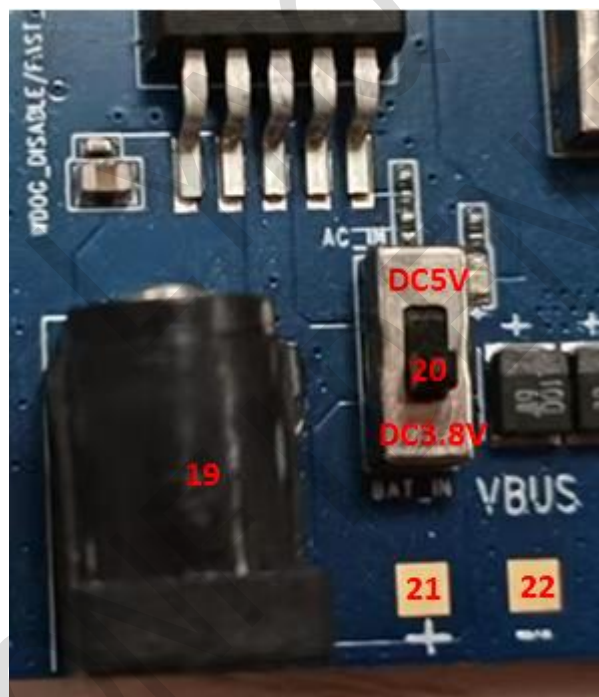


Figure 2.1-1 L510-3\_EVB DC Power Interface and Power Switch



## 2.2 Power Key

The module can be turn on by pressing the power key for 1s.



Figure 2.2-1 Power Key

## 2.3 Force download key

There is no force download button on the backplane. Pressing the force download button on the SUB board to make the module enter the forced download mode. Before the system is powered on, pressing the force download button and the power on button at the same time to enable the L510-3 Series module to enter the force download mode.



Figure 2.3-1 Force download key



## 2.4 RESET Key

Pressing the RESET Key can restart the module.



Figure 2.4-1 RESET Key

## 2.5 FLIGHTMODE Switch

The FLIGHTMODE switch can make the module enter the flight mode or exit the flight mode. The FLIGHTMODE switch is shown in Figure 2.5-1.

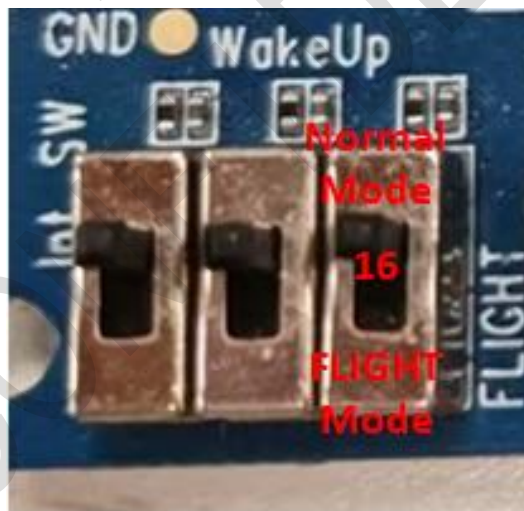


Figure 2.5-1 FLIGHTMODE Switch

## 2.6 WAKEUP Switch

The WAKEUP switch can enable the module to enter sleep mode or Wake Up mode. The WAKEUP switch is shown in Figure 2.6-1.



Figure 2.6-1 WAKEUP Switch

## 2.7 Application Interface

### 2.7.1 USB to UART Interface

The L510-3\_EVB provides two serial ports through serial USB to UART IC which converts the COMS 1.8V level of the L510-3 to a standard USB2.0 signal. Users can connect PC or other terminal equipment through USB cable for UART communication and the default baud rate for the first boot is 115200bps. UART\_Debug can be connected to the PC through the standard USB cable to debug and the baud rate is 115200bps.



Figure 2.7.1-1 USB to UART Interface

Main UART and UART\_Debug share a set of USB to serial port interfaces, which can be toggled through the switch selection function, AT Command or Debug, and the AT Command/Debug transfer switch is shown in Figure 2.7.1-2. Both switches should be flipped to the same end at the same time.



Figure 2.7.1-2 AT/Debug transfer switch

## 2.7.2 USB Interface

The L510-3\_EVB provides a standard Micro USB interface. The USB is mainly used for data transmission, firmware update, module program testing and send AT command.



Figure 2.7.2-1 USB Interface

## 2.7.3 (U)SIM Card

The L510-3\_EVB provides one (U)SIM interface which can automatically identify 1.8V and 3V (U)SIM card.



Figure 2.7.3-1 (U)SIM Card



## 2.7.4 NETLIGHT

Table 2.7.4-1 NETLIGHT Status

LED Status	Module Status
OFF	Power off or PSM Mode
64ms ON/800ms OFF	Shut down network
64ms ON/3000ms OFF	Registered network

## 2.8 Antenna Interface

The L510-3\_EVB provides two antenna interfaces. One is the main antenna and the other is the GNSS antenna.



Figure 2.8-1 Antenna interface

# 3. EVB and Accessories

The EVB and its accessories are showed as follow figure which tell user how to connect them.



Figure 3-1 EVB and Accessories

## 4. USB to UART Driver

You need to install the driver of Micro-USB, when use Micro-USB for data communication. Please get the driver from our FAE of Mobiletek Company or download them from internet.

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# 5. Safety Information

For the reasonable usage of the module, please comply with all these safety notices of this page. The product manufacturers should send followed safety information to user, operator or product's spec.



The devices using the module may disturb some electronic equipment. Put the module away from the phone, TV, radio and automation equipment to avoid the module and the equipment to interfere with each other.



Shut down the mobile device or change to flying mode before boarding. The Using of wireless appliances in an aircraft is forbidden to avoid the interference, or else cause to unsafe flying, even violate the law.



In hospital or health care center, switch off the mobile devices. RF interference may damage the medical devices, like hearing-aid, cochlear implant and heart pacemaker etc.



Mobile devices can't guarantee to connect in all conditions, like no fee or with an invalid SIM card. When you need emergent help, please remember using emergency calls and make sure your device power on in an area with well signal.



Put the module away from inflammable gases. Switch off the mobile device when close to gas station, oil depot, chemical plant etc.



The module is not water proof. Please don't use the module in the area with high humidity like bathroom, which will decelerate the physical performance, insulation resistance and mechanical strength.



Non-professionals can't teardown the module which will damage it. Refer to the specification or communicate the related staffs to repair and maintain it.



Please switch on the module before cleaning. The staffs should be equipped with anti-ESD clothing and gloves.

The users and product manufacturers should abide by the national law of wireless modules and devices. If not, Mobiletek will not respond the related damages.