

# **FCC ID: VN702030PM-RX**

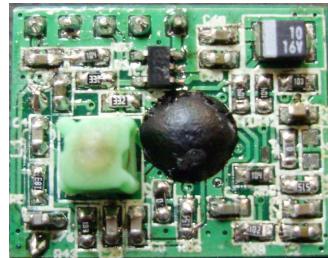
## **Technical Description :**

The brief circuit description is listed as follows :

- U1 (GPC11033A) and associated circuit act as Controller
- U2 (GPY0029B) and associated circuit act as Voltage Regulator
- Q1-Q4, Q7-Q12, Q15, Q16 and associated circuit act as Motor driver
- Q13, Q14 and associated circuit act as LED driver
- PR3 and associated circuit act as Reset button
- PB1, PB2, SW2-SW5 and associated circuit act as internal test key
- IC1 (LW103) and associated circuit act as super regenerative receiver module
- IC2 (ML62024D272MRG) and associated circuit act as Voltage regulator

## **Antenna Used :**

An internal antenna has been used.



## 1.0 Introduction

The LW103HM is a 850MHz to 930MHz receiver module employing super-regenerative amplitude-shift-keying (ASK) modulation (or On-Off keying, OOK). Customer can specify the receiving frequency and the factory will preset the receiving frequency accordingly. LW103HM is designed to operate for low power device (LPD) applications.

## 2.0 Features

- Frequency range from 850 MHz to 930 MHz
- High sensitivity
- Small size (24mm x 19mm)
- Low power consumption
- Operate from -20 °C to 70 °C
- Low cost
- Low RF emission

## 3.0 Applications

- Remote controllers
- Security systems such as car alarm
- Wireless door bells
- Garage openers
- Radio controlled toys
- Monitoring systems
- RFID

## 6.0 Functional Descriptions

LW103HM is a super-regenerative receiver module. It employs Lexiwave's receiver RFIC LW103H as the core component in the module. The heart of the chip is an oscillator operating in super-regenerative mode. The demodulated baseband signal is filtered by a low pass filter. The filtered signal is then amplified by an operational amplifier. The amplified signal is compared with reference voltage at a data comparator. The transmitted "0" and "1" will be exported at the DATA output.

A bandgap reference is implemented inside the chip for stable operation over temperature and supply voltages. In addition, our patent pending approach allows the module operates normally from 2.5V to 3.3V and remain stable at component variations. The chip is thus ideal for mass production applications of which no tight tolerance components are required.

LW103HM makes use of the internal Low Noise Amplifier (LNA) to achieve higher sensitivity and isolation to meet emission requirements. At the time when oscillation frequency of the super-regenerative oscillator is affected by a closing object, (hand effect), LNA will offer signal isolation and minimize receiver sensitivity degradation.