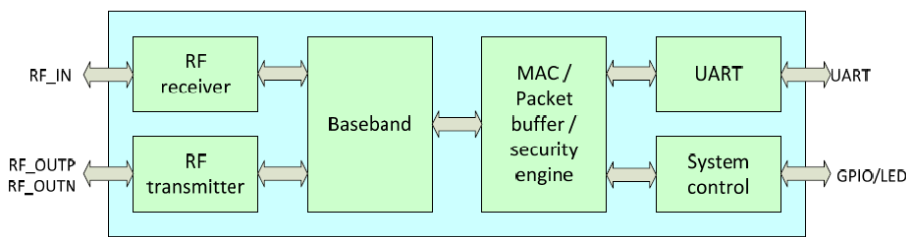


Overview:

HLK-M30 is a new low-cost embedded UART-WIFI module (serial port -Wireless) developed by Shenzhen HaiLingKe Electronic co., Ltd.

This product is an embedded module based on the universal serial interface network standard, built-in TCP / IP protocol stack, enabling the user serial port, wireless network (wifi) interface between the onversions. Through the HLK-M30 module, the traditional serial devices do not need to change any configuration, user data can be transmitted through the Internet network. Provide a quick solution for the user's serial devices to transfer data via WIFI

Module Block Diagram



Benefits

- Low Power consumption
- Ready to use in products
- Minimizes product development
- No RF test required for systems
- Serial to Wifi; Smart; Small;
- Support Smart Connection
- Transparent Transmission
- Serial to Wifi; Smart; Small;
- Compliant with CE and FCC

Applications

- WiFi Led Control
- WiFi Power Switch
- Smart Home; Smart Buliding
- OBDII WiFi Diagnose
- RFID Data Transfer
- Toys and Gaming Peripherals
- Industrial Systems
- Telemetry
- Remote Control

Features:

- 2.4GHz 802.11b/g/n, compatible
- WiFi Sta/Soft AP Mode
- Support Smart Connection
- The range of baudrate: 1200~115200bps
- Support transparent transmission mode
- Support multiple security authentication mechanisms:

WEP64/WEP128/ TKIP/ AES

WEP/WPA-PSK/WPA2-PSK

- Support wireless roam
- Support multiple network protocols:
 - TCP/UDP/ /DHCP/DNS
- Support AT instruction Set
- Device Dimensions 16.3mm*14mm* 2.24mm

Lead-free and RoHS compliant

1. Introduction

The HLK-M30 module provides designers with a ready made component that provides a fully integrated solution for applications, using the IEEE802.11 standard in the 2.4-2.5GHz ISM frequency band, including 802.11b/g/n, can be quickly and easily included in product designs. The modules integrate all of the RF components required, removing the need to perform expensive RF design and test. Products can be designed by simply connecting sensors and switches to the module IO pins or uart interface. The modules use MTK's chip Wireless Microcontroller, allowing designers to make use of the serial interface to connect with their device. Hence, this module allows designers to bring wireless applications to market in the minimum time with significantly reduced development effort and cost.

The HLK-M30 is an embedded module based on the universal serial interface network standard, built-in TCP / IP protocol stack, enabling the user serial port, wireless network (wifi) interface between the conversions. Through the HLK-M30 module, the traditional serial devices do not need to change any configuration; data can be transmitted through the Internet network. Provide a quick solution for the user's serial devices to transfer data via Ethernet. Also the HLK-M30 module have FCC modular approvals and is compliant with EU regulations.

2. Specifications

The parameters are defined here.

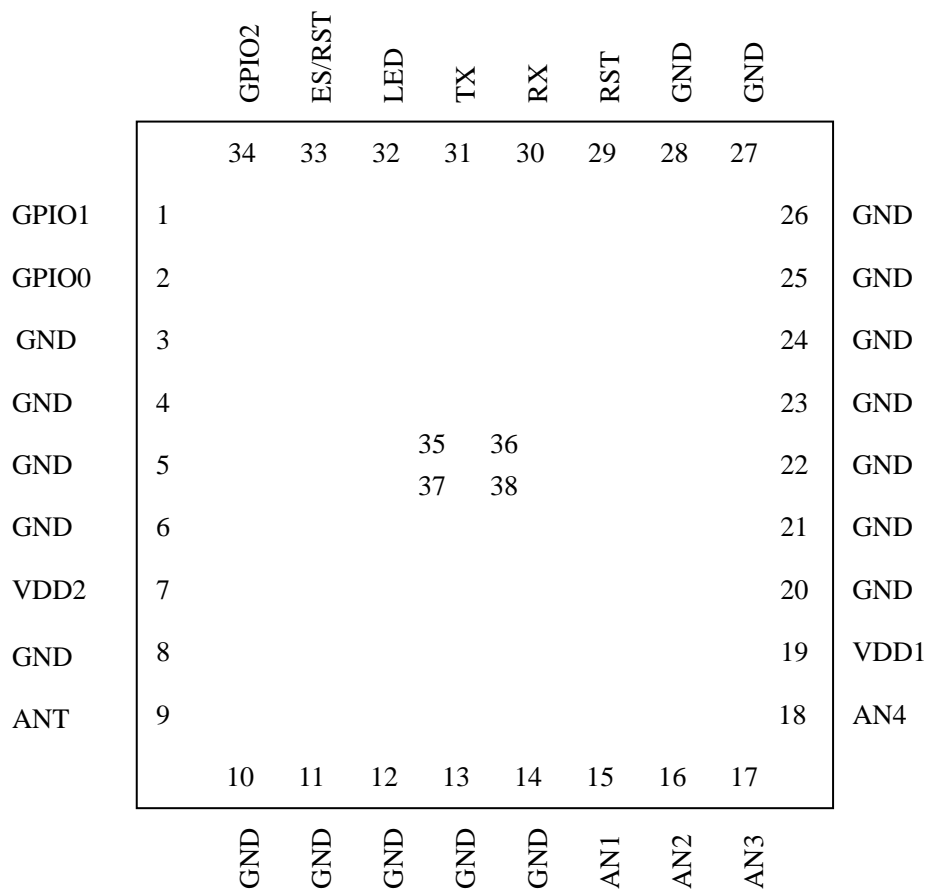
VDD=3.3V @ +25°C

Typical DC Characteristics		Notes
RX Active, HT40, MCS7	150mA	802.11.n
TX HT40, MCS7 @ 15dBm	210mA	802.11.n
Typical RF Characteristics		Notes
Receive sensitivity	-70dBm(802.11n)	Use IQview to adjust
Maximum Transmit power	18dBm/15dBm/13.5dBm	802.11b/g/n
RF Port impedance – Ipex onnector	50 ohm	2.4 - 2.5GHz
VSWR (max)	2:1	2.4 - 2.5GHz
Centre frequency accuracy	+/-25ppm	Additional +/-15ppm allowance
Peripherals		Notes
UART	2pins	1200-115200kbps
GPIO	5pins	GPIO
VCC	2pins	3.3V+/-10% Two VCC should all connect to power
AN	4pins	Analog
GND	23pins	GND

3. Product Development

HaiLingKe supplies all the development tools needed to enable end-product development to occur quickly and efficiently. These are all available from www.hlktech.com. A evaluation kits is also available, allowing products to be quickly bread boarded. Efficient development of software applications is enabled by the provision of a complete, unlimited, software developer kit. This package provides everything required to develop application code and to trial it with hardware representative of the final module.

4. Pin Layout



Note: VDD1 and VDD2 should all connect to 3.3V. Pin 35/36/37/38 is GND.

4.1. Pin Description

Pin No	Signal Type	Description
1	GPIO1	General GPIO
2	GPIO0	General GPIO

HLK-M30 Data Sheet

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3	GND	Analogue Ground
4	GND	Analogue Ground
5	GND	Analogue Ground
6	GND	Analogue Ground
7	VDD2	Supply Voltage, 3.3V+/-10%
8	GND	Analogue Ground
9	ANT	Antenna Pin
10	GND	Analogue Ground
11	GND	Analogue Ground
12	GND	Analogue Ground
13	GND	Analogue Ground
14	GND	Analogue Ground
15	AN1	Analogue Pin(Reserved)
16	AN2	Analogue Pin(Reserved)
17	AN3	Analogue Pin(Reserved)
18	AN4	Analogue Pin(Reserved)
19	VDD1	Supply Voltage, 3.3V+/-10%
20	GND	Analogue Ground
21	GND	Analogue Ground
22	GND	Analogue Ground
23	GND	Analogue Ground
24	GND	Analogue Ground
25	GND	Analogue Ground
26	GND	Analogue Ground
27	GND	Analogue Ground
28	GND	Analogue Ground
29	RST_N	Reset Module
30	RX	UART RX
31	TX	UART TX
32	LED	Staus LED
33	ES/RST	Exit/Default/Update
34	GPIO2	General GPIO
35	GND	Analogue Ground
36	GND	Analogue Ground
37	GND	Analogue Ground
38	GND	Analogue Ground

FCC Warning

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.

NOTE: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

Note 1: This module certified that complies with RF exposure requirement under portable or mobile or fixed condition, this module is to be installed only in portable or mobile or fixed applications.

A portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

A fixed device is defined as a device is physically secured at one location and is not able to be easily moved to another location.

Note 2: Any modifications made to the module will void the Grant of Certification, this module is limited to OEM installation only and must not be sold to end-users, end-user has no manual instructions to remove or install the device, only software or operating procedure shall be placed in the end-user operating manual of final products.

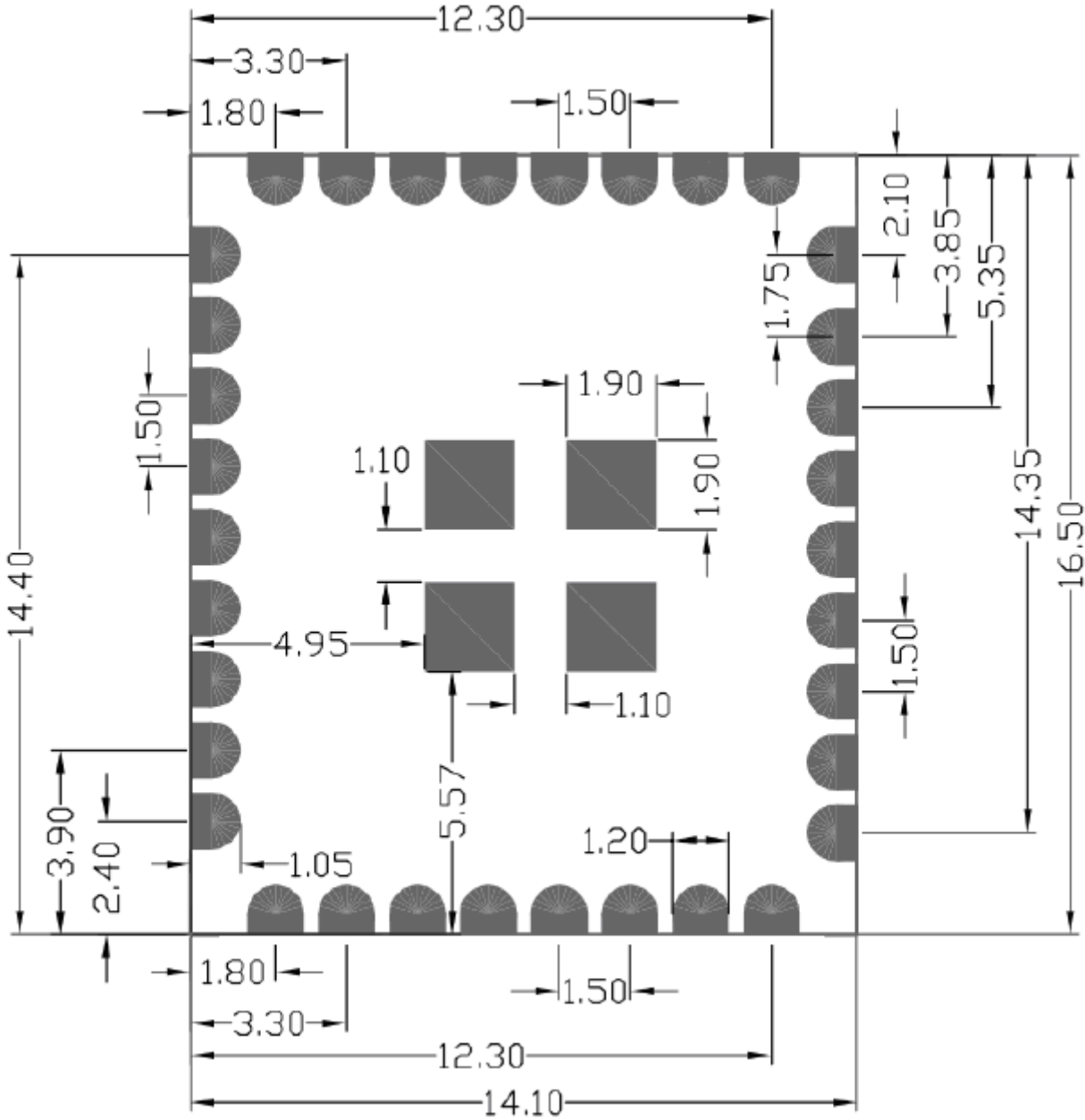
Note 3: The device must not transmit simultaneously with any other antenna or transmitter.

Note 4: To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. For example, if a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that the after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, Shenzhen HaiLingKe Electronic co., Ltd shall provide guidance to the host manufacturer for compliance with the Part 15B requirements.

Note 5: FCC ID label on the final system must be labeled with “Contains FCC ID: 2AD56HLK-M30” or “Contains transmitter module FCC ID: 2AD56HLK-M30”.

The transmitter module must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the host product. Shenzhen HaiLingKe Electronic co., Ltd is responsible for the compliance of the module in all final hosts.

5.Package Information(QFN Packaging)



Unit:mm

5.1.Ordering Information

Part number	Package	Operate Temp
HLK-M30	14.1*16.5mm QFN38	-20~70°C