

SPECIFICATIONS

产品规格书

型号: TL809MDA1-X

规格: 芯片 XR809

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1. Introduction

TL809MDA1-X product is designed base on XR809 chipset .It is a fully integrated 2.4G WLAN module to support 802.11 b/g/n. It is optimized for mobile applications such as PDAs and portable media players. The low power consumption and intelligent host off loading of beacon as well as the packet processing ensure better battery life. High sensitivity and transmitting power ensure long distance and robust connection. Highest level of integration allows very compact and cost effective reference designs delivering fast time-to-market for new WLAN enabled products.

2. Features

Package

- 6 x 6mm 52-pin QFN package
Power Management and Clock Source
- Integrate high efficiency power management unit with single 2.7-5.5V power supply input.
- Integrated DC-DC and LDOs for internal power supply
- Separate power switches for CPU, RAM and peripherals
- 24MHz source crystal clock support
- 32KHz RC clock support

Application Microcontroller Subsystem

- ARM Cortex-M4F, up to 160MHz
- Embedded 384KB SRAM and 2MB Flash ROM
- Supports Secure Boot
- Hardware Crypto Engine for Advanced Security, Including AES, DES/3DES, SHA2/MD5, CRC
- 4-channels General Direct Memory Access(DMA) channels
- 2 Universal Asynchronous Receivers and Transmitters (UART)
- 2 Serial Peripheral Interfaces
- 2 General Timers, 2 alarm Timers, 1 RTC and 1 watch dog
- 4 PWM and Event Capture Controllers
- 3 channels 12-bit accuracy ADC
- 1 Two Wire Interface Controllers for sensors control
- 1 IR receiver and 1 IR transmitter

WLAN Subsystem

- 802.11b/g/n Radio, Baseband, Medium Access Control(MAC)
- Embedded TCP/IP Stack
- Station, AP Modes

- SmartConfig Technology for Autonomous and Fast WIFI Connections
- Security support for WEP, WPA/WPA2 personal, WPS2.0
- Industry-Standard BSD Socket Application Programming Interfaces (APIs)
- Miscellaneous
- Integrates 2Kbit eFuse to store device specific information and RF calibration data

3. Application

Home Automation
 Home Appliances
 Access Control
 Smart Energy
 Cloud Connectivity
 Industrial Control
 Wearable Equipment
 IP Network Sensor Nodes

4. Block Diagram

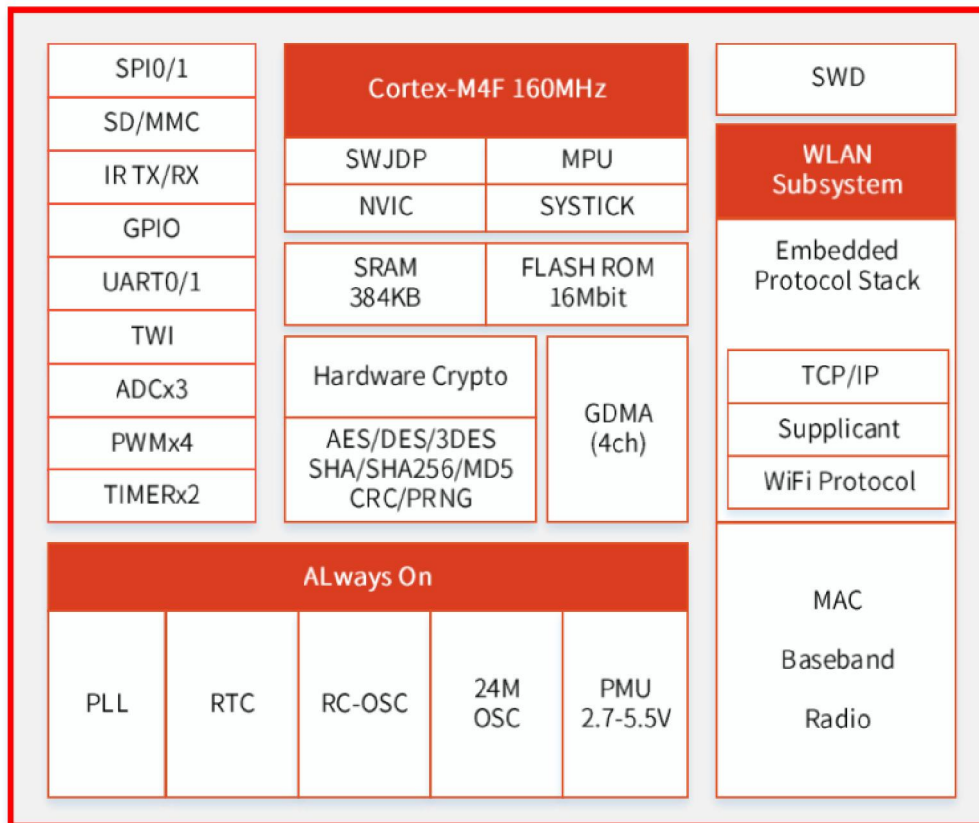
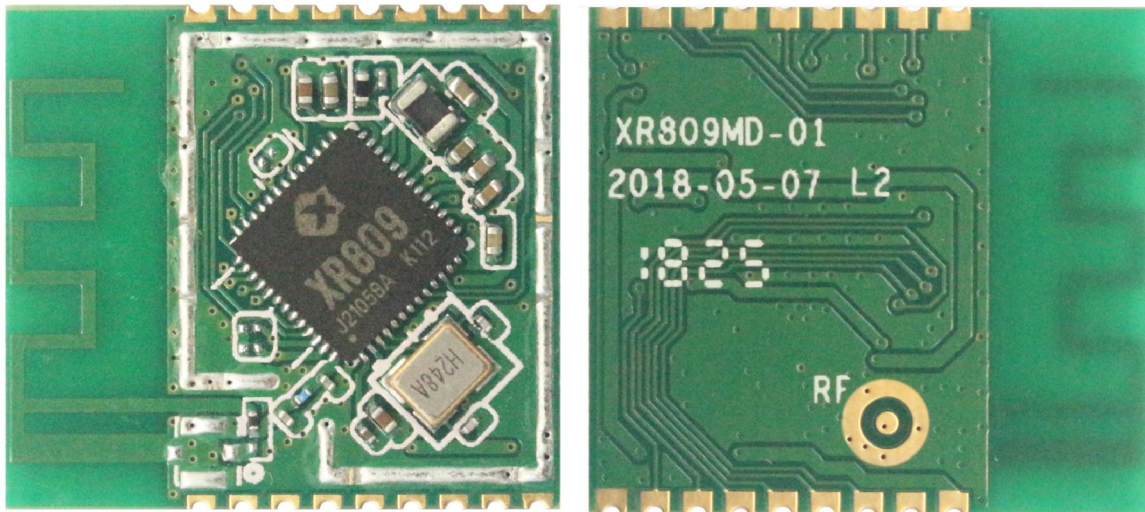


Figure 1-1 XR809 Functional Block Diagram

5. General Specification

Item	Description
Product Name	TL809MDA1-X
Major Chipset	XR809
Host Interface	UART
Standard	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
Frequency Range	2.4GHz — 2.484GHz
Modulation Type	802.11b: CCK, DQPSK, DBPSK; 802.11g: 64-QAM, 16-QAM, QPSK, BPSK; 802.11n: 64-QAM, 16-QAM, QPSK, BPSK;
Data Transfer Rate	1, 2, 5.5, 6, 6.5, 9, 11, 12, 13, 18, 19.5, 24, 26, 36, 39, 48, 52, 54, 58.5 and maximum of 65Mbps
Sensitivity @PER	11M: -86dBm@8%) ; 54M: -72dBm@10%) ; MCS7 HT20: -70dBm@10%) ;
RF Power	15±2dBm@11b, 14±2dBm@11g, 13±2dBm@11n
Dimension(L*W*H)	20.0 x 18.0 x 0.8mm (LxWxH) ; Tolerance: ±0.1mm
Clock source	24MHz
Working Temperature	-20°C ~ +85°C
Storage temperature	-40°C ~ +85°C

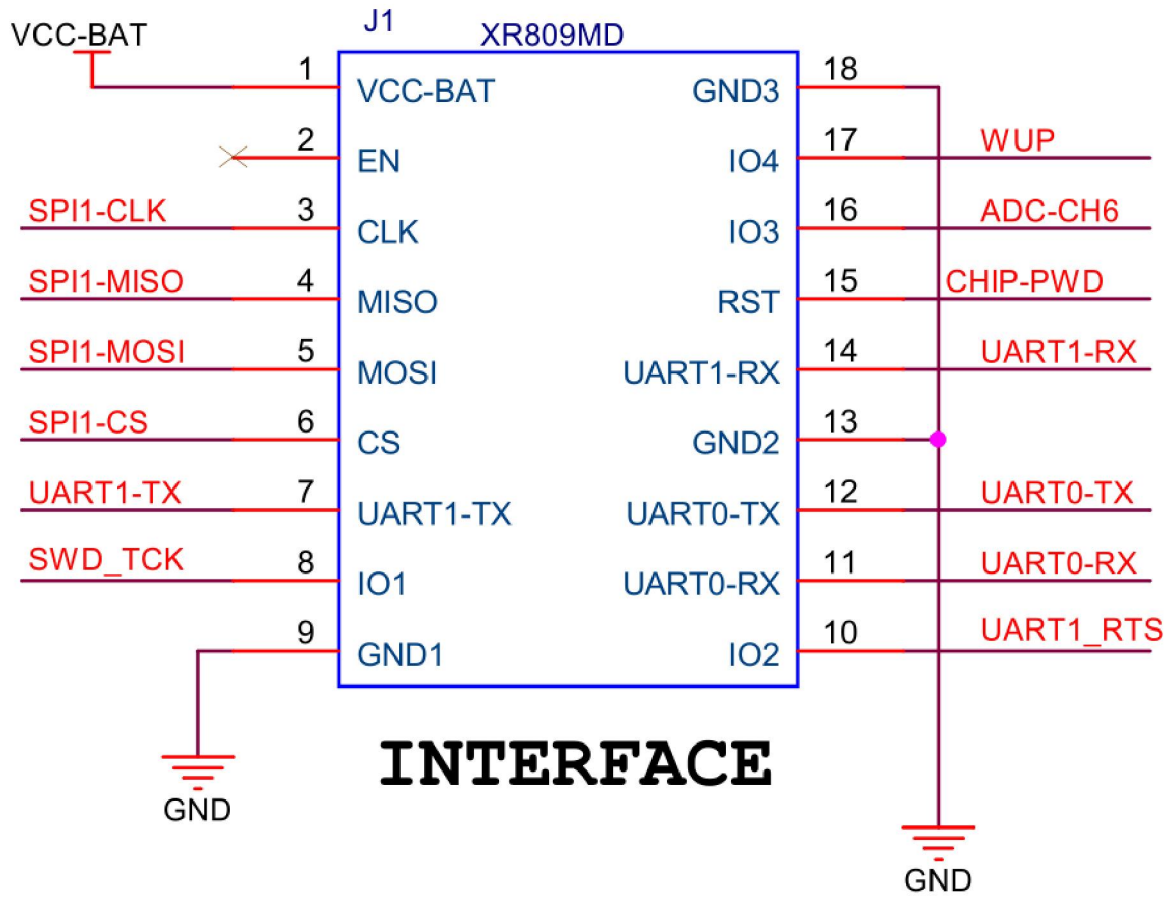
6. Product appearance



7.Pin List

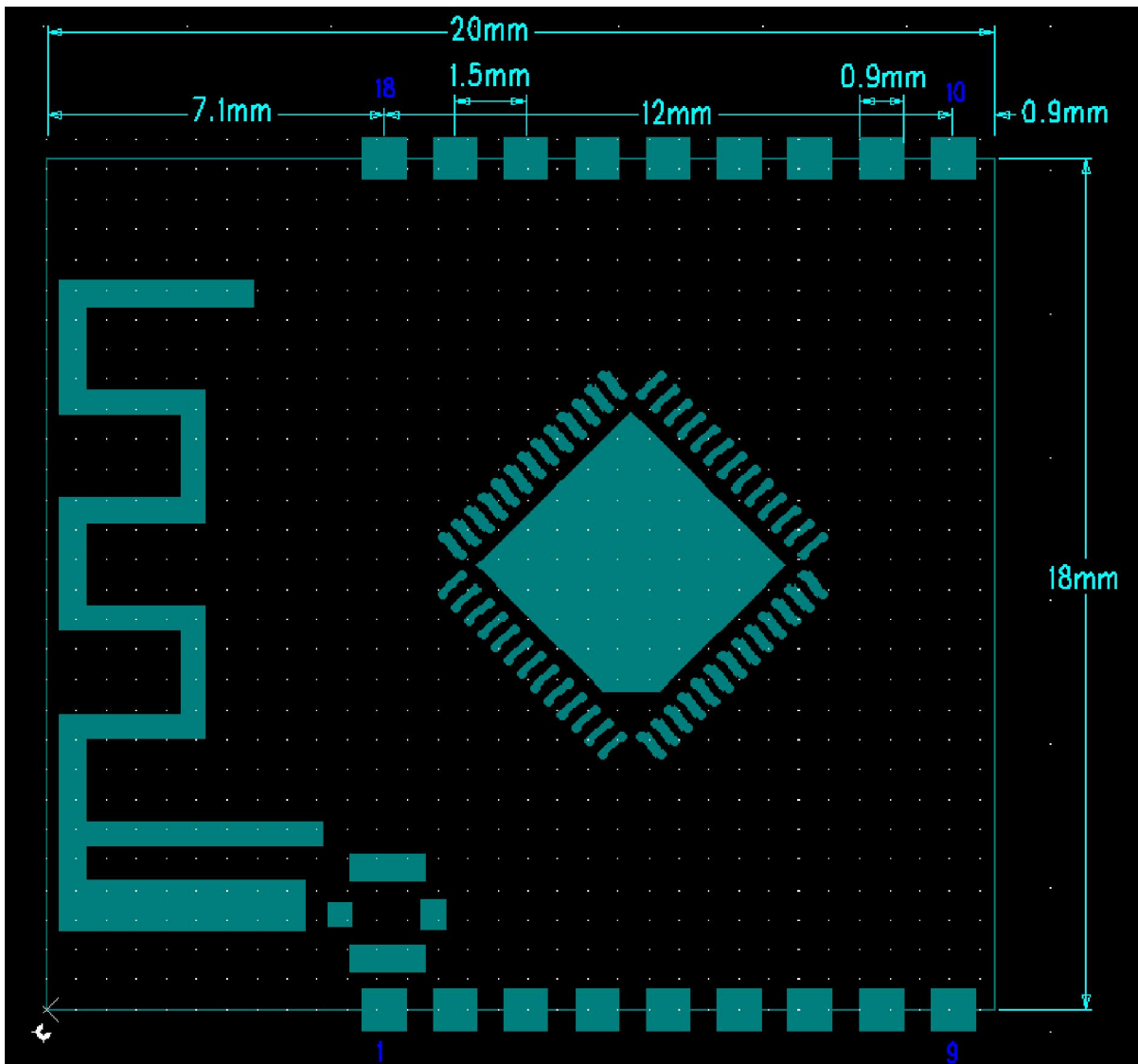
Pin	Name	Description
1	VCC	2.7-5.5V power supply
2	EN	NC
3	SPI1-CLK	Programmable input/output
4	SPI1-MISO	Programmable input/output
5	SPI1-MOSI	Programmable input/output
6	SPI1-CS	Programmable input/output
7	UART1-TX	Programmable input/output
8	GPIO 1	Programmable input/output
9	GND	GND
10	GPIO 2	Programmable input/output
11	UART0-RX	Programmable input/output
12	UART0-TX	Programmable input/output
13	GND	GND
14	UART1-RX	3.3V Supply for module
15	CHIP_PWD/RESET	Chip Power Down/System Reset
16	GPIO 3	Programmable input/output
17	GPIO 4	Programmable input/output
18	GND	GND

8. Reference design circuit



9. Mechanical Specification

	Feature	Detailed Description
9.1	Length	20mm
9.2	Width	18mm
9.3	Height	0.8mm (PCB)



10. Other matters of attention

Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : $<250^{\circ}\text{C}$

Number of Times : ≤ 2 times

