AW-HM662

802.11ah Module EVK

User Guide

Rev. 0.1

(For Standard)

Revision History

Document NO:

Version	Revision Date	Description	Initials	Approved
0.1	2024/9/6	● Initial Version	Daniel Lee	NC Chen

Table of Contents

1 Overview

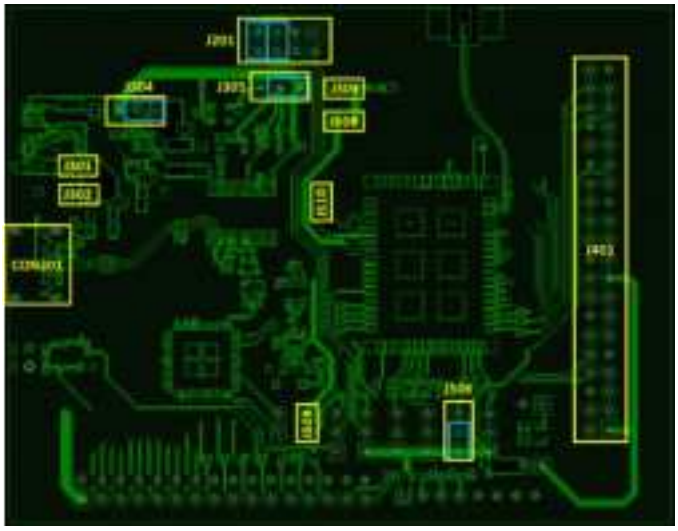
1.1 Device supported

This document supports the AW-HM662 (18 x 24 mm LGA Module). The AW-HM662 test board can be operated in Host Mode or Standalone Mode. You can use Newracom Modem Test Tool for RF performance testing.

2. Basic Setup and Requirements for Host Mode RF Verification

This section provides the detailed information about the setting for AW-HM662 demo board. The picture below shows 錯誤! 找不到參照來源。 the overview of the AW-HM662 demo board physical photo and PCB placement (TOP). The description of jumpers' functions and settings on demo board is as follows:

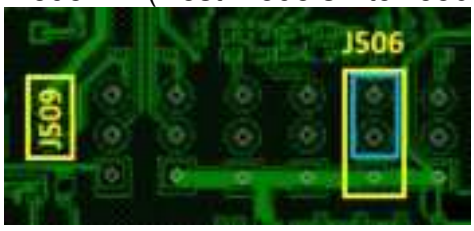
Azurewave AW-HM662 test board physical photo and PCB placement



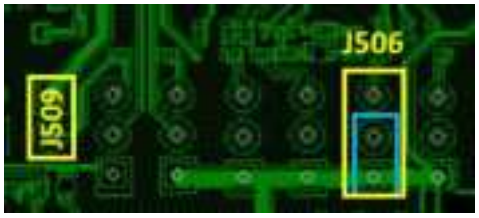
2.1 Operation Mode Configurations

AW-HM662 can be operated in Host Mode or Standalone Mode through the setting of jumper J506.

Mode = L (Host Mode switch J506 to 2-3)



Mode = H (Standalone Mode switch J506 to 1-2)



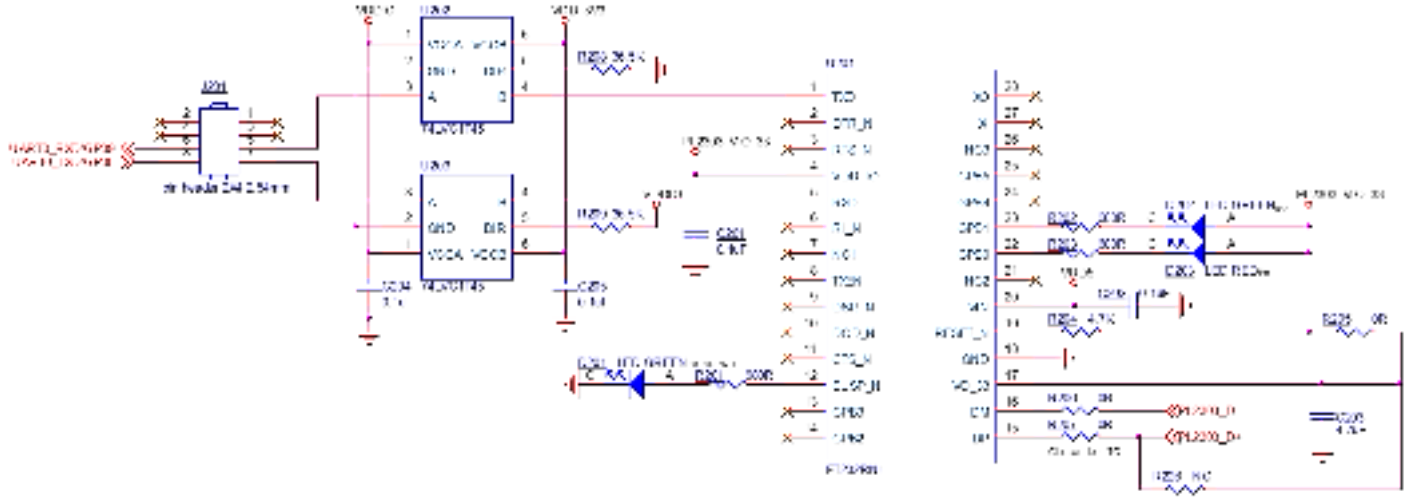
2.2 Power Supply

a. The 5.0V power supply can be provided by USB type C connector (CON301) and short J301.
b. The 4.0V power supply (short J304 pin.1 and pin.2) for AW-HM662 pin.5 VDD_FEM is converted from the 5.0V power supply through the LDO on the demo board. You can measure the current of VDD_FEM by connecting an ammeter in series with J510.
c. The 3.3V power supply (J508) for AW-HM662 pin.6 VBAT is converted from the 5V power supply through the LDO on the demo board. You can measure the current of VBAT by connecting an ammeter in series with J508.
d. The 3.3V power supply (short J305 pin.2 and pin.3) for VDDIO of AW-HM662 pin.51 is converted from the 5.0V power supply through the LDO on the demo. You can measure the current of VDDIO by connecting an ammeter in series with J509.

2.3 USB to UART (J201)

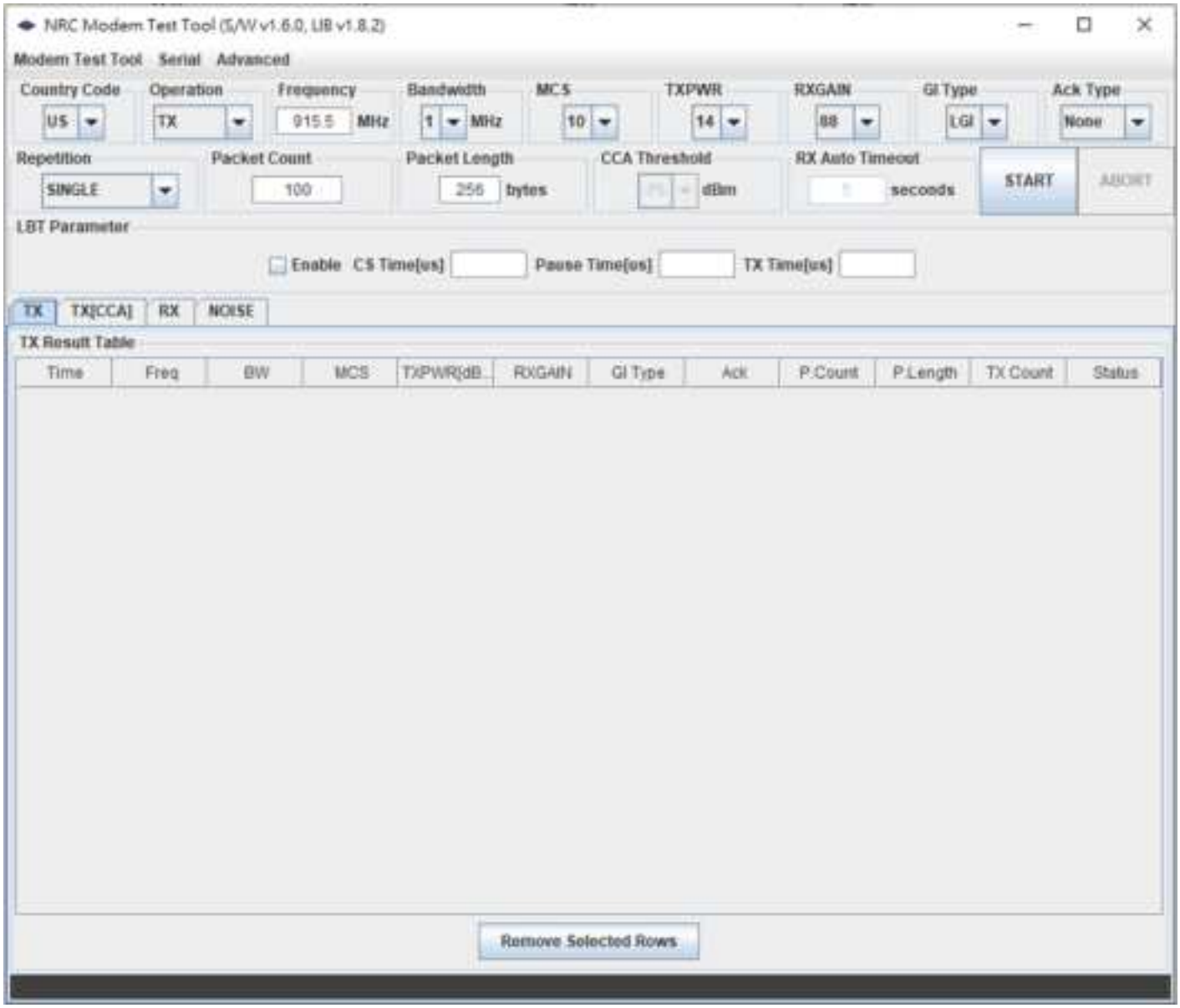
The USB to UART Bridge IC used in this demo board is FT232RNL. Please download and install the FT232RNL driver from the FTDI official website before use.

Set the UART port (UART0) of AW-HM661 by short-circuiting J201 pin.5 to pin.6 and pin.7 to pin.8.



2.3 Modem Test Tool Usage

Modem Test Tool is a GUI tool for performing RF/PHY-level TRX tests on NRC7394 modules with a logging functionality. You can measure the RF performance of the frequency, bandwidth MCS, etc. you want to measure through the setting of configurable parameters.

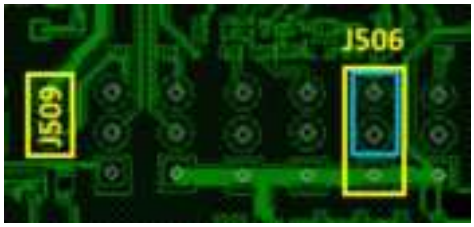


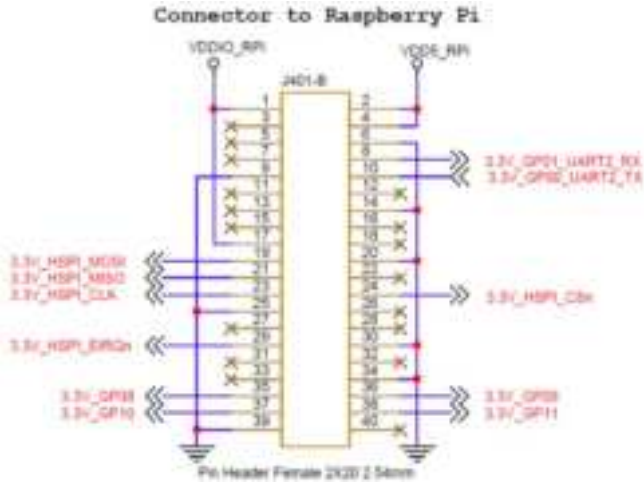
3. AW-HM662 Demo Board Offers Communication Interface to An External Host.

The 5.0V power supply can be provided by Raspberry Pi4 through connector J401 and short J301 and J302.

AW-HM662 can be connected to the Host side via SPI interface. The picture below is a photo of AW-HM662 demo board connected to Raspberry Pi4 via J401. Please note that the mode of J506, must be set correctly when operating in Host Mode.

Mode = L (Host Mode switch J506 to 2-3)





4. Standalone Mode Operation

This section provides detailed information on how to use AT commands to transmit and receive packets.

4.1 Download Standalone AT-CMD Firmware

Set the AW-HM662 demo board to download mode (switch J506 to 2-3). Connect the demo board to the PC using a USB cable, and then execute the Newracom Firmware Flash Tool.

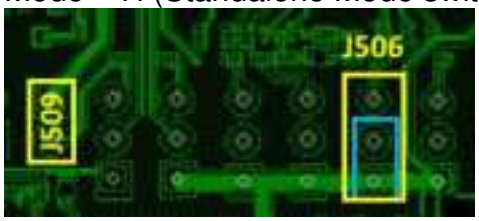
Mode = L (Download Mode switch J506 to 2-3)

XIP BOOTLOADER PATH:
Select nrc7394_standalone_xip_ATCMD_UART.bin and then press START to download the firmware.

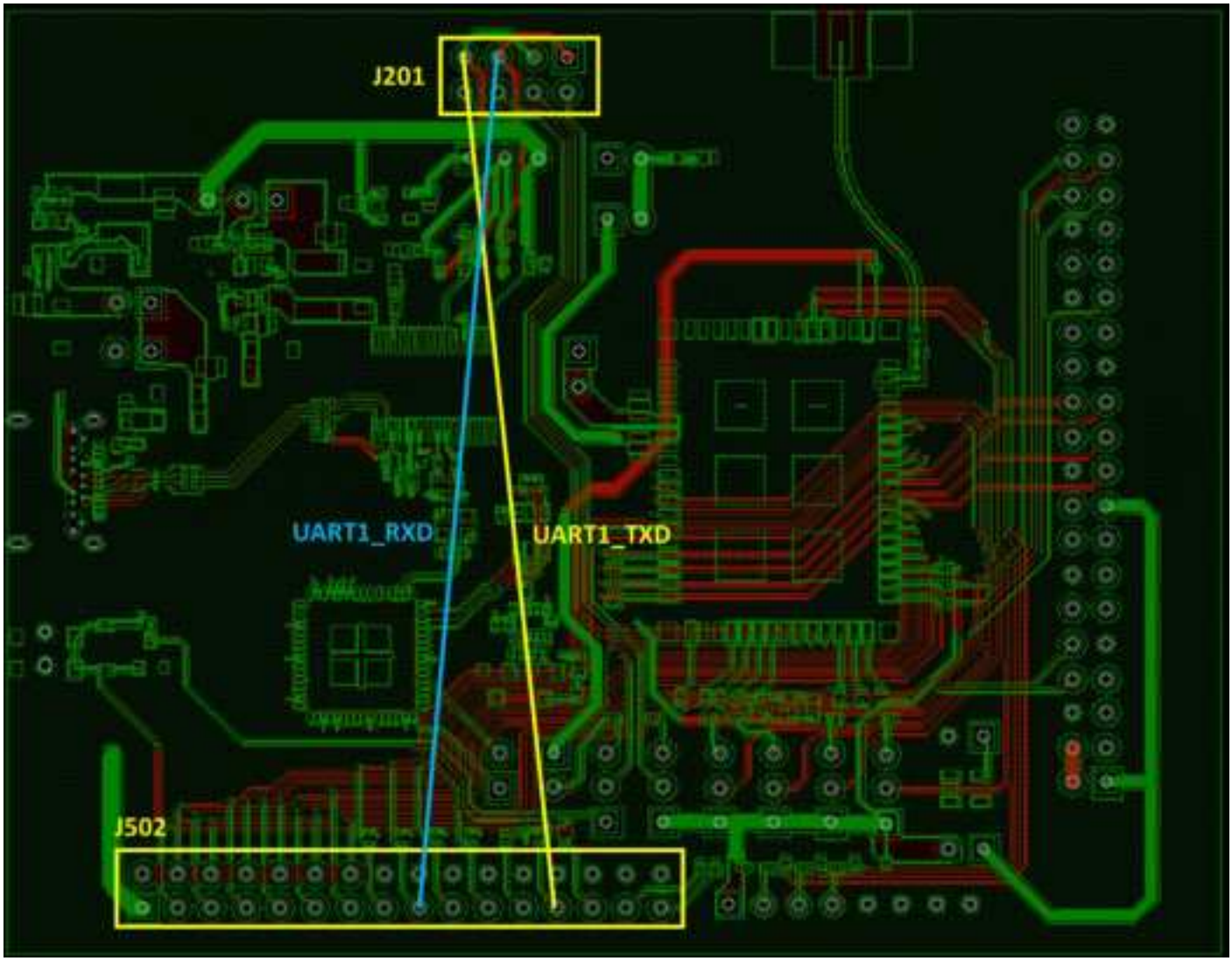
4.2 AT Command Application

Set the AW-HM662 demo board to standalone mode (switch J506 to 1-2), and use DuPont cable to connect J201 pin.5 to J502 pin.17, and connect J201 pin.7 to J502 pin.25. Then use a USB cable to connect the demo board to the PC, and the user can execute AT commands through UART1.

Mode = H (Standalone Mode switch J506 to 1-2)



Connect J201 pin.5 to J502 pin.17, and connect J201 pin.7 to J502 pin.25



Use Newracom AT-CMD Test Tool to execute AT command instructions