CT UNITE COMMUNICATION ECHNOLOGY LTD

# SPECIFICATIONS



**Version··V2.0**

**Date··2014.01.10**

**MODEL NAME:** ZK-7662

**PRODUCT NAME :2T2R867Mbps ’24G+5G+BT4.0 Wi-Fi Module**

DESIGN ：_____ CHECK ：_____ APPROVAL ：_____

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**企业远景 ：中国无线通信模块第一品牌 ！**

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **S P E C I F I C A T I O N**<br>MODEL NAME: **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE :2/11 |

# 1. Features

**ZK-7662** is the small size and low power module for IEEE 802.11ac/b/g/n wireless LAN. **ZK-7662** is based on MT7662U solution. IEEE802.11 ac/b/g/n Dual Band WLAN infrastructure Size : 26.9mm x 12.9mm x 2.4mm

2.4GHz&5GHZ internal PA

Two stream spatial multiplexing up to 867/300Mbps ANT (2T2R)

Use on-chip OTP (One-Time Programmable)

MT7662 USB 3.0/2.0

USB/WiFi 2.0

USB/Bluetooth V4.0 Low energy(LE)

Supports drivers for Windows Vista, 2000, XP, Linux

Security : WPA,WPA2,AES(TKIP) ,IEEE 802.1X

• Application: DTV, DVR, HD DVD Player, Blue-ray Disk Player, STB

# 2. Ordering Information

| **Model** | **Description** |
|---|---|
| **ZK-7662** | Wi-Fi Module, 2T2R |

# 3. Label markin


① Model No

② MAC Address BAR Code

③ MAC Address No.

④ Product Lot No. : 1110A0401

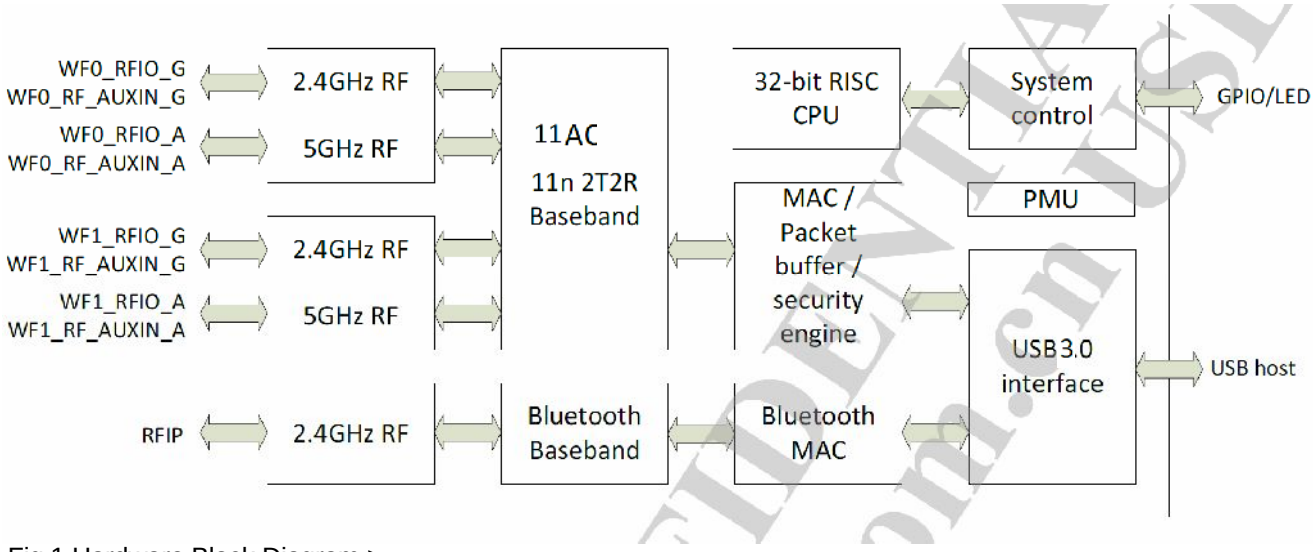
-11 : Year - 02 : Date

- 11: Month - 01 : Manufactured

- Revision No. : A Process

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **S P E C I F I C A T I O N**<br>MODEL NAME : **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE : 3/11 |

# 4. Block Diagram




< Fig.1 Hardware Block Diagram >

# 5. Absolute Maximum Ratings

Caution : The specifications in Table 1 define levels at which permanent damage to the device can occur. Function operation is not guaranteed under these conditions. Operating at absolute maximum conditions for extend periods can adversely affect the long-term reliability of the device.

| Parameter | Min | Max | Unit |
|---|---|---|---|
| Storage Temperature | -10 | +80□ | □ |
| Storage Humidity (40□ ) | - | 90% | % |

< Table 1 Absolute Maximum Ratings > . Other conditions

1) Do not use or store modules in the corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are contained. Also, avoid exposure to moisture.

2) Store the modules where the temperature and relative humidity do not exceed 5 to 40□ and 20 to 60%.

3) Assemble the modules within 6 months.
Check the soldering ability in case of 6 months over.

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **S P E C I F I C A T I O N**<br>MODEL NAME : **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE : 4/11 |

# 5. Operating Conditions

| Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Temperature | | 0 | - | 100 | ℃ |
| Operating Humidity | | - | - | 130 | % |
| Supply Voltage1 | VDD_3.3V | 2.7 | 3.3 | 4.0 | Vdc |

# 6. Standard Test Conditions

The Test for electrical specification shall be performed under the following condition unless otherwise specified.

1). Ambient condition

Temperature :25℃ ±5℃

. Humidity:65% ± 5% R.H.

2). Power supply voltages

3.3V (±5%) input power at the Module

3). Current consumption over recommended range of supply voltage and operating

conditions is like below.

When it's tested, it must be supplied more than 2 times of maximal current.

# 7. Electrical Specifications

**1) DC Characteristics**

| **Current Consumption** | **Min.** | **Typ.** | **Max.** | **Unit** |
|---|---|---|---|---|
| TX Mode ( MCS7) | - | 250 | - | mA |
| Idle and Associated state | - | 160 | - | |
| Radio disabled state | - | 20 | - | |

**2) RF Characteristics for IEEE802.11b** ( 11Mbps mode unless otherwise specified)

| **Items** | **Contents** | | | |
|---|---|---|---|---|
| Specification | IEEE802.11b | | | |
| Mode | DSSS/CCK | | | |
| Channel frequency | 2400 ~ 2483 MHz | | | |
| Data rate | 1,2,5.5,11Mbps | | | |
| **TX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Power Level | 16 | 17 | 18 | dBm |
| Spectrum Mask | | | | |
| 1st side lobes ( to fc ±11MHz) | - | -43 | -30 | dBr |
| 2nd side lobes ( to fc ±22MHz) | - | -58 | -50 | dBr |
| Modulation Accuracy (EVM) | - | 30 | 30 | % |
| Power On/Off ramp | - | 0.5 | 2.0 | Usec |
| Freq. Tolerance | -15 | - | 15 | ppm |
| Chip Clock Freq. Tolerance | -15 | - | 15 | ppm |
| **RX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Minimum Input Level Sens (FER ≤ 8%) | - | -88 | -76 | dBm |
| Maximum Input Level (FER ≤ 8%) | -10 | - | - | dBm |

* Normal Condition : 25□ , VDD=3.3/5V.

**3) RF Characteristics for IEEE802.11g** ( 54Mbps mode unless otherwise specified)

| **Items** | **Contents** | | | |
|---|---|---|---|---|
| Specification | IEEE802.11g | | | |
| Mode | OFDM | | | |
| Channel frequency | 2400 ~ 2483 MHz | | | |
| Data rate | 6,9,12,18,24,36,48,54Mbps | | | |
| **TX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Power Level | 14 | 15 | 16 | dBm |
| Spectrum Mask | | | | |
| at fc ±11MHz | - | -32 | -20 | dBr |
| at fc ±20MHz | - | -43 | -28 | dBr |
| at fc ≥ ± 30MHz | - | -48 | -40 | dBr |
| Constellation Error (EVM) | - | -34 | -25 | dB |
| Freq. Tolerance | -15 | - | 15 | ppm |
| Chip Clock Freq. Tolerance | -15 | - | 15 | ppm |
| **RX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Minimum Input Level Sens. (PER ≤ 10%) | - | -75 | | ppm |
| Maximum Input Level (PER ≤ 10%) | -20 | - | | ppm |

*Normal Condition : 25℃, VDD=3.3/5V

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **S P E C I F I C A T I O N**<br>MODEL NAME : **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE : 7/11 |

**5) RF Characteristics for IEEE802.11an** ( MCS7 mode unless otherwise specified)

| **Items** | **Contents** | | | |
|---|---|---|---|---|
| Specification | IEEE802.11n - 5GHz | | | |
| Mode | OFDM | | | |
| Channel frequency | 5150~5650MHz, 5725 ~ 5850 MHz | | | |
| Data rate | 6513195263952585,65Mbps.,,.,,,,. | | | |
| **TX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Power Level | 11 | 12 | 13 | dBm |
| Spectrum Mask | | | | |
| at fc ±11MHz | - | -32 | -20 | dBr |
| at fc ±20MHz | - | -35 | -28 | dBr |
| at fc ≥ ± 30MHz | - | -45 | -40 | dBr |
| Constellation Error (EVM) | - | -32 | -28 | dB |
| Freq. Tolerance | -15 | - | 15 | ppm |
| Chip Clock Freq. Tolerance | -15 | - | 15 | ppm |
| **RX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Minimum Input Level Sens.(HT20,PER ≤ 10%) | - | -71 | -64 | ppm |
| Minimum Input Level Sens.(HT40,PER ≤ 10%) | -30 | -68 | -61 | ppm |
| Maximum Input Level (PER ≤ 10%) | -30 | | | ppm |

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **S P E C I F I C A T I O N**<br>MODEL NAME : **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE : 8/11 |

**5) RF Characteristics for IEEE802.11ac**

| **Items** | **Contents** | | | |
|---|---|---|---|---|
| Specification | IEEE802.11n - 5GHz | | | |
| Mode | OFDM | | | |
| Channel frequency | 5150~5650MHz, 5725 ~ 5850 MHz | | | |
| Data rate | 6513195263952585,65Mbps.,,.,,,,. | | | |
| **TX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Power Level | 11 | 12 | 13 | dBm |
| Spectrum Mask | | | | |
| at fc ±11MHz | - | -32 | -20 | dBr |
| at fc ±20MHz | - | -35 | -28 | dBr |
| at fc ≥ ± 30MHz | - | -45 | -40 | dBr |
| Constellation Error (EVM) | - | -32 | -28 | dB |
| Freq. Tolerance | -15 | - | 15 | ppm |
| Chip Clock Freq. Tolerance | -15 | - | 15 | ppm |
| **RX Characteristics** | **Min.** | **Typ.** | **Max.** | **Unit** |
| Minimum Input Level Sens.(HT20,PER ≤ 10%) | - | -71 | -64 | ppm |
| Minimum Input Level Sens.(HT40,PER ≤ 10%) | -30 | -68 | -61 | ppm |
| Maximum Input Level (PER ≤ 10%) | -30 | | | ppm |

# 11.Bluetooth Specification

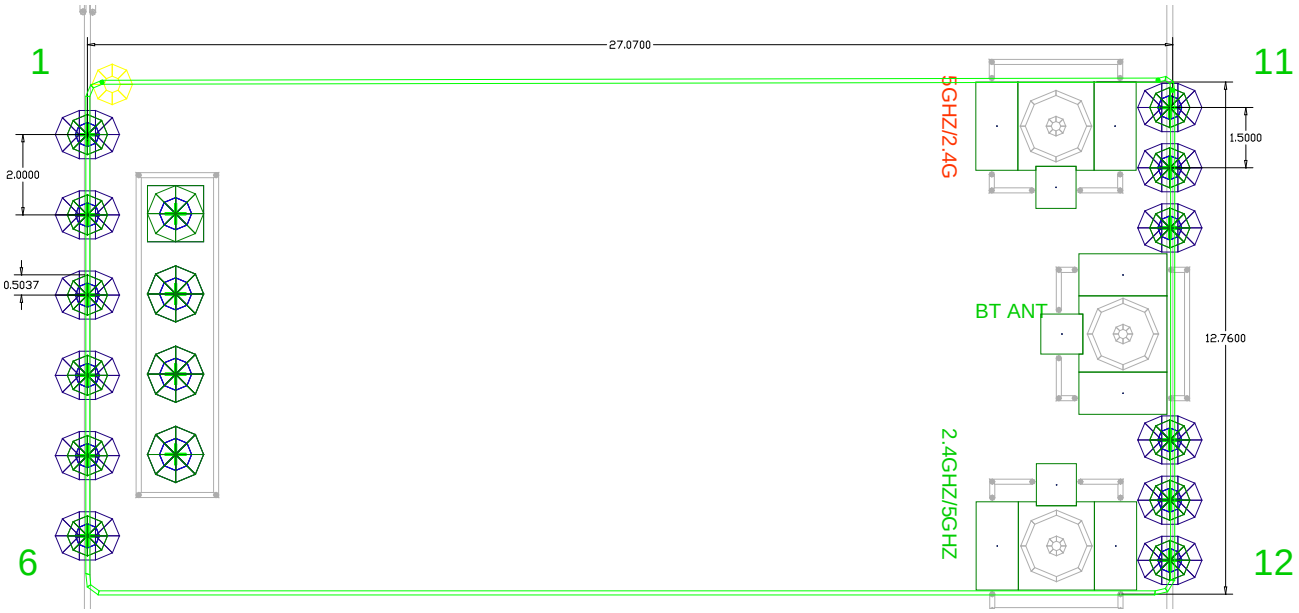
Bluetooth Specification Conditions : VBAT=3.3V ; Temp:25°C

| **Feature** | **Description** | | |
|---|---|---|---|
| ***General Specification*** | | | |
| Bluetooth Standard | Bluetooth V3.3 of 1, 2 and 3 Mbps. | | |
| Host Interface | USB | | |
| Antenna Reference | Small antennas with 0~2 dBi peak gain | | |
| Frequency Band | 2.400 GHz ~ 2483.5 GHz | | |
| Number of Channels | 79 channels | | |
| Modulation | FHSS, GFSK, DPSK, DQPSK | | |
| ***RF Specification*** | | | |
| | **Min.** | **Typical.** | **Max.** |
| Output Power (Class 1.5) | | 10 | |
| Output Power (Class 2) | | 2 | |
| Sensitivity @ BER=0.1%<br>for GFSK (1Mbps) | | -86 | |
| Sensitivity @ BER=0.01%<br>for π/4-DQPSK (2Mbps) | | -86 | |
| Sensitivity @ BER=0.01%<br>for 8DPSK (3Mbps) | | -80 | |
| Maximum Input Level | GFSK (1Mbps):-20dBm | | |
| | π/4-DQPSK (2Mbps) :-20dBm | | |
| | 8DPSK (3Mbps) :-20dBm | | |

| CT-UNITE | | DOCUMENT No : |
|---|---|---|
| REG.DATE :2014.01.10 | **SPECIFICATION**<br>MODEL NAME : **ZK-7662** | REV.NO : 1.5 |
| REV.DATE :2014.01.10 | | PAGE : 10/11 |

# 8. Pin Description

| Terminal No | ﹀公板﹀Terminal name | 乐视专用 | Terminal Voltage |
|---|---|---|---|
| 1 | GND | GND | |
| 2 | GND | UDP | |
| 3 | UDP | UDM | |
| 4 | UDM | WiFi RST | |
| 5 | VDD3.3V | VDD3.3V | 3.3V |
| 6 | Wakeup | Wakeup | |
| 7 | GND | | |
| 8 | WIFI ANT1 | | |
| 9 | GND | | |
| 10 | GND | | |
| 11 | WIFI ANT2 | | |
| 12 | GND | | |



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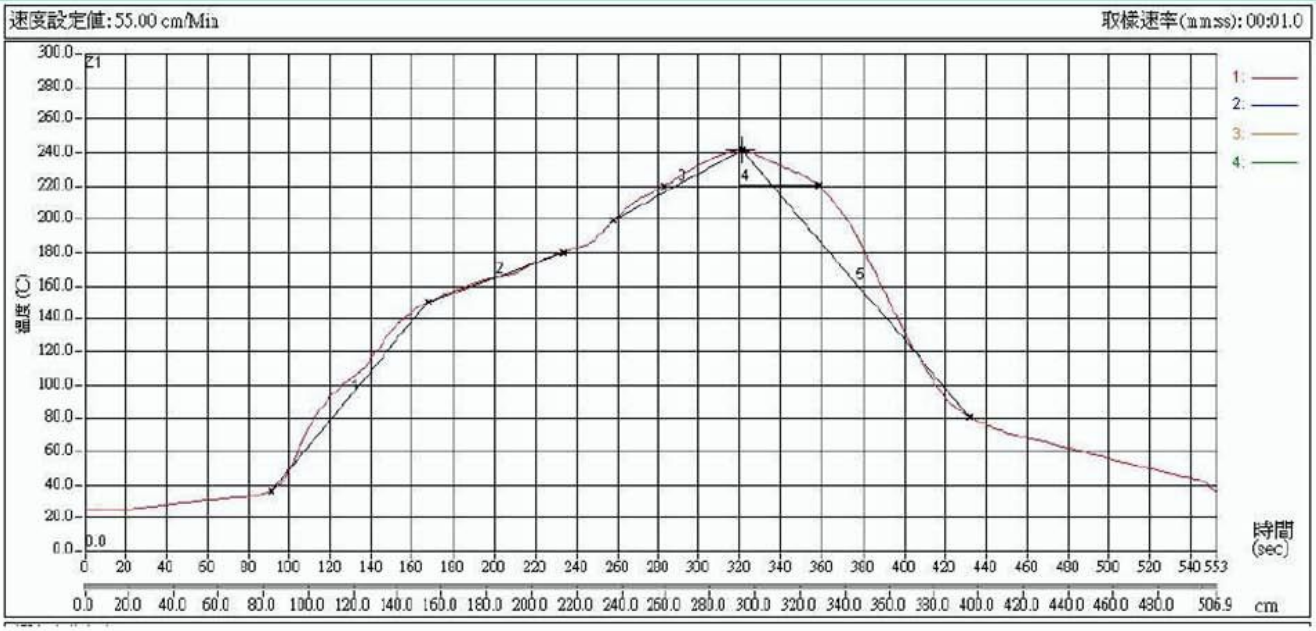
| REG.DATE : 2013.3.31 | **S P E C I F I C A T I O N**<br>MODEL NAME : **ZK-T210** | REV.NO : 1.5 |
| REV.DATE : 2013.3.31 | | PAGE :11/11 |

## **9.** Recommended Reflow Profile




| ~ 150 ℃<br>< 2 ℃/s | 150 ~ 180 ℃<br>55 ~ 65 sec | 200℃ ~ peak<br>< 1 ℃/s | above 220℃<br>65 ~ 75 sec | Peak Temp.<br>235~245 ℃ |
|---|---|---|---|---|
| 1.47 | 65 | 0.66 | 75 | 241.5 |

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