

SPECIFICATIONS

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Version ·· V1.0

Date ·· 2013.11.02

MODEL NAME: ZK-7601

PRODUCT NAME :1T1R150Mbps WiFi Module

CT UNITE COMMUNICATION TECHNOLOGY LTD

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企业远景 :中国无线通信模块第一品牌 !

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		DOCUMENT No :
REG.DATE :2011.12.2	SPECIFICATION MODEL NAME: ZK-7601	REV.NO : 1.5
REV.DATE :2011.12.2		PAGE :2/9

1. Features

ZK-7601 is the small size and low power module for IEEE 802.11b/g/n wireless LAN. ZK-7601 is based on Ralink MT7601/MT5370 solution.

IEEE 802.11 b/g/n Dual Band WLAN infrastructure

Size : 26.9mm x 12.9mm x 2.4mm

2.4GHz internal PA

Two stream spatial multiplexing up to 150Mbps

ANT (1T1R)

Use on-chip OTP (One-Time Programmable)

USB 2.0

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-7601	Wi-Fi Module, 1T1R

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

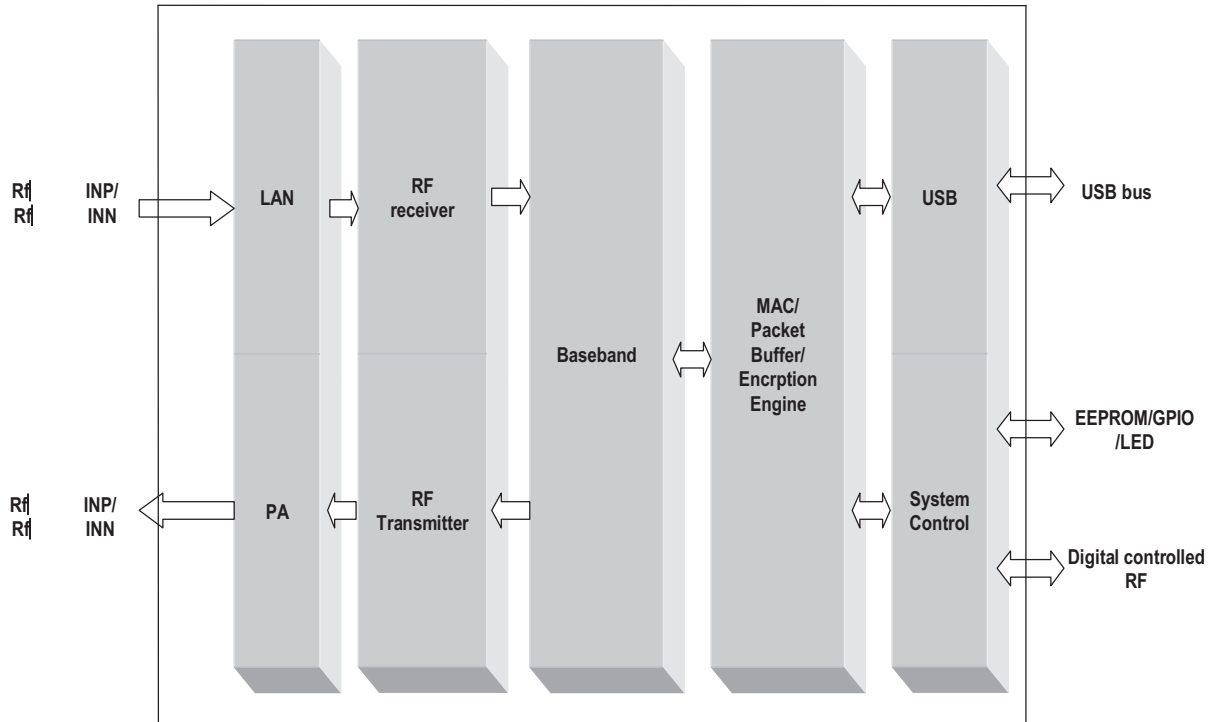
- 01 : Manufactured

- Revision No. : A

Process

		DOCUMENT No :
REG.DATE :2011.12.2	SPECIFICATION MODEL NAME : ZK-7601	REV.NO : 1.5
REV.DATE :2011.12.2		PAGE : 3/9

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.



DOCUMENT No :

REG.DATE :2011.12.2

SPECIFICATION
MODEL NAME : **ZK-7601**

REV.NO : 1.5

REV.DATE :2011.12.2

PAGE : 4/9

5. Operating Conditions

Parameter	Min	Typ	Max	Unit	
Operating Temperature	0	-	100	°C	
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°C ± 5°C

. 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.

CT UNITE COMMUNICATION TECHNOLOGY LTD



DOCUMENT No :

REG.DATE :2011.12.2

SPECIFICATION
MODEL NAME : **ZK-7601**

REV.NO : 1.5

REV.DATE :2011.12.2

PAGE : 5/9

7. Electrical Specifications

1) DC Characteristics

Current Consumption	Min.	Typ.	Max.	Unit
TX Mode (MCS7)	-	95	-	mA
Idle and Associated state	-	40	-	
Radio disabled state	-	20	-	

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

Items	Contents			
Specification	IEEE802.11b			
Mode	DSSS/CCK			
Spectrum Mask				
1 st side lobes (to fc ±11MHz)	-	-43	-30	dBr
2 nd 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°C , VDD=3.3/5V.

CT UNITE COMMUNICATION TECHNOLOGY LTD



DOCUMENT No :

REG.DATE :2011.12.2

SPECIFICATION
MODEL NAME : **ZK-7601**

REV.NO : 1.5

REV.DATE :2011.12.2

PAGE : 6/9

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

Items	Contents			
Specification	IEEE802.11g			
Mode	OFDM			
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°C, VDD=3.3/5V

CT UNITE COMMUNICATION TECHNOLOGY LTD



DOCUMENT No :

REG.DATE :2011.12.2

SPECIFICATION
MODEL NAME : **ZK-7601**

REV.NO : 1.5

REV.DATE :2011.12.2

PAGE : 7/9

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

Items	Contents			
Specification	IEEE802.11n			
Mode	OFDM			
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°C, VDD=3.3/5V

CT UNITE COMMUNICATION TECHNOLOGY LTD



DOCUMENT No :

REG.DATE :2011.12.2

SPECIFICATION
MODEL NAME : ZK-7601

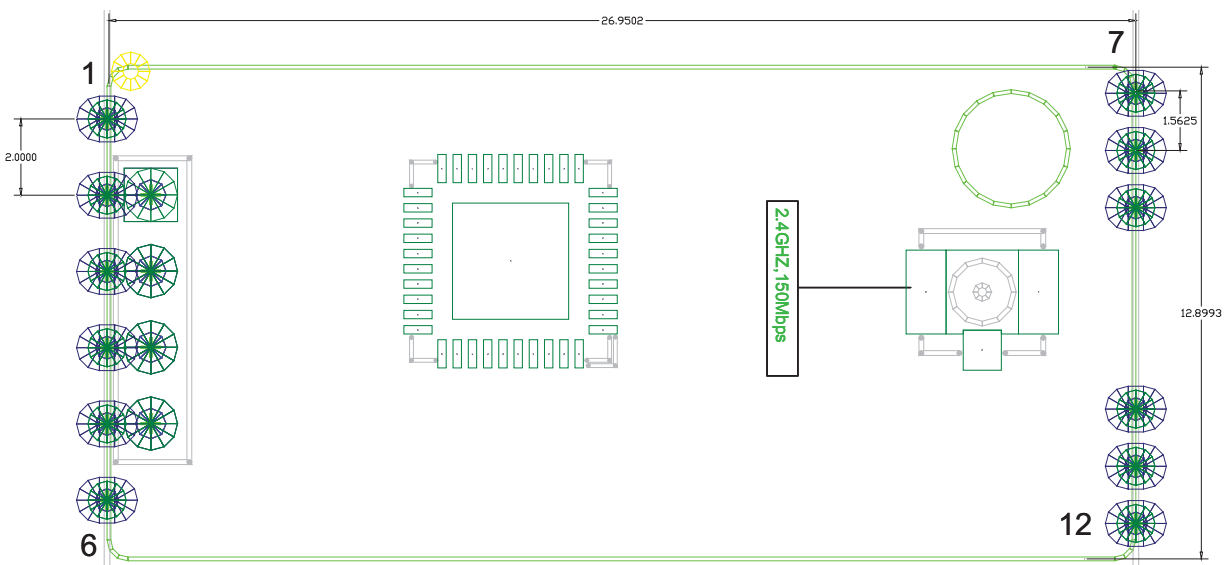
REV.NO : 1.5

REV.DATE :2011.12.2

PAGE : 8/9

8. Pin Description

Terminal No	Terminal name	Terminal Voltage
1	NC	
2	GND	
3	UDP	
4	UDM	
5	VDD3.3V	3.3V
6	NC	
7	RF GND	
8	NC	
9	RF GND	
10	RFGND	
11	ANT1	
12	RFGND	



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DOCUMENT No :

REG.DATE : 2013.3.31

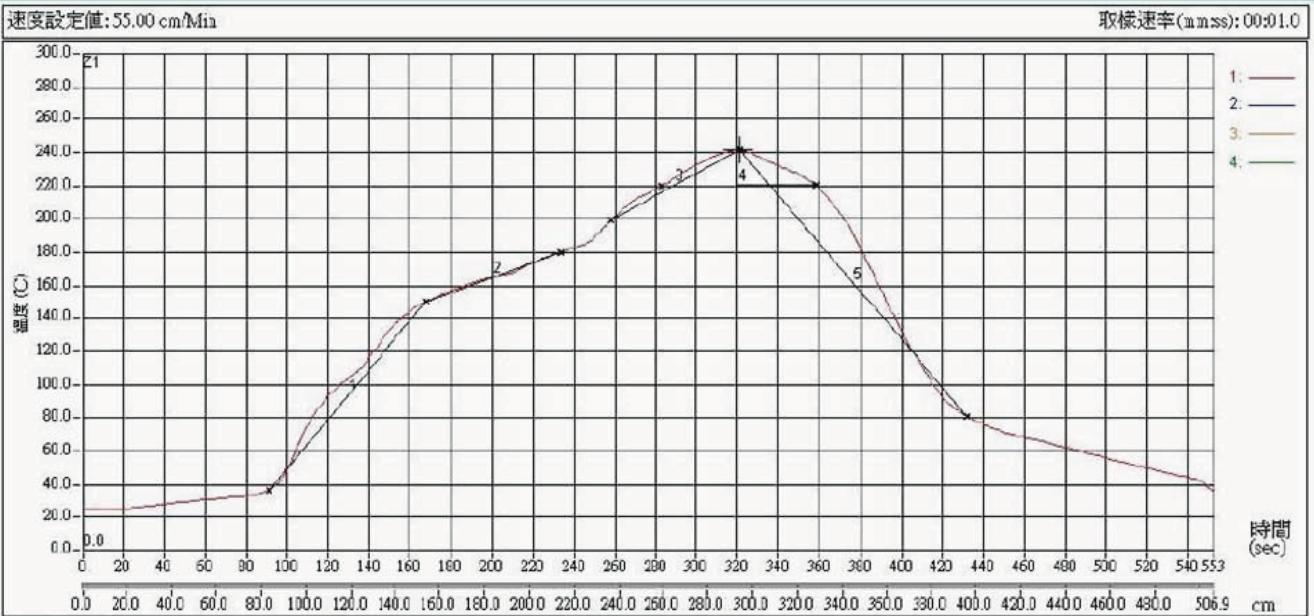
SPECIFICATION
MODEL NAME : ZK-7601

REV.NO : 1.5

REV.DATE : 2013.3.31

PAGE : 9/9

9. Recommended Reflow Profile



~ 150 °C < 2 °C/s	150 ~ 180 °C 55 ~ 65 sec	200°C ~ peak < 1 °C/s	above 220°C 65 ~ 75 sec	Peak Temp. 235~245 °C
1.47	65	0.66	75	241.5

*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.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

FCC Radiation Exposure Statement

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device, for example, USB dongle like transmitters is forbidden.

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: 2ACWK7601"

when the module is installed inside another device, the user manual of this device must contain below warning statements;

- 1. 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.
(2) This device must accept any interference received, including interference that may cause undesired operation.*
- 2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Antenna Manufacturer: Shenzhen Sunchip Technology Co, Ltd.
Antenna Model: CX-803
Antenna Gain: 0.5dBi
Only above antenna could be used with this modular.