



sModule Technology Co., Limited

sWiFi-R7601MU5

Product Specification

IEEE 802.11b/g/n (1T1R) WLAN USB Module

Version: 1.0

Please feel free to contact us in the following ways, we must reply you within 24 hours!

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Content

Content	1
0. Revision History	2
1. General Description.....	2
2. The range of applying	2
3. Product Specification.....	2
3.1 Function Block diagram	2
3.2 Electrical and Performance Specification.....	3
3.3 DC Characteristic	3
3.4 RF Characteristic.....	4
3.5 Product Photo.....	5
3.6 Mechanical Specification	6
3.7 Product Pin Definition	6
4. Supported platform.....	7
5. Peripheral Schematic Reference Design	7
5.1 WiFi RF Circuit reference pictures.....	7
6. Package Information	8
7. Typical Solder Reflow Profile	8

0. Revision History

Date	Document revision	Product revision	Change Description
2014/10/06	1.0	V1.0	Draft initial release

1. General Description

sWiFi-R7601MU5 product accord with FCC CE is a integrated Wi-Fi single chip which support 150 Mbps PHY rate. It fully complies with IEEE802.11n and IEEE802.11b/g standard, offering feature-rich wireless connectivity at high standard, and delivering reliable, cost-effective throughput from an extended distance. Optimized RF architecture and baseband algorithms provide superb performance and lower power consumption. Intelligent MAC design deploys a high efficient DMA engine and hardware data processing accelerators which offloads the host processor.

2. The range of applying

MID, networking camera, STB GPS, E-book, Hard disk player, Network Radios, PSP and other device which need be supported by wireless networking.

3. Product Specification

3.1 Function Block diagram

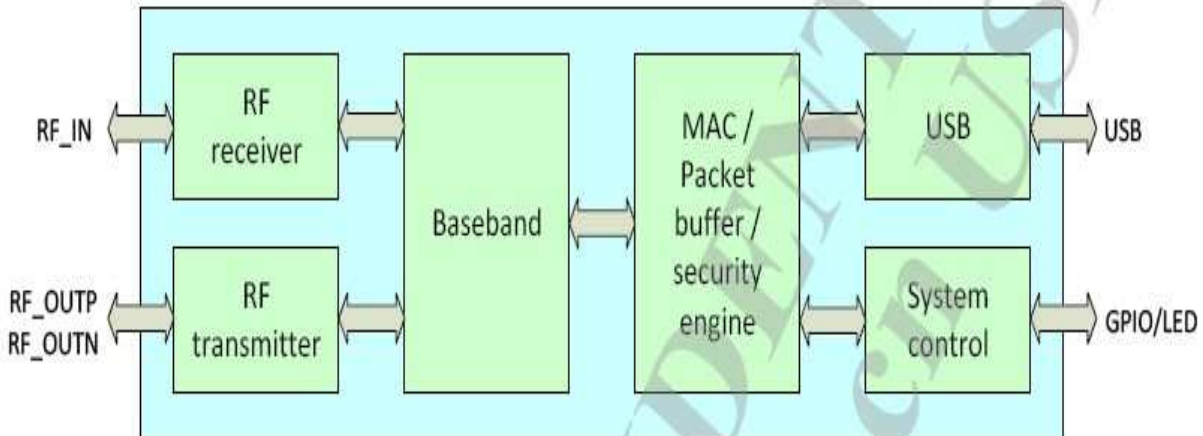


Figure 1 MT7601 block diagram

3.2 Electrical and Performance Specification

Item	Description
Product Name	sWiFi-R7601MU5
Major Chipset	MT7601UN
Host Interface	USB2.0
Standard	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
Frequency Range	2.4GHz~2.4835GHz
Modulation Type	802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM, 16-QAM, QPSK, BPSK 802.11n: 64-QAM, 16-QAM, QPSK, BPSK
Working Mode	Infrastructure, Ad-Hoc
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,135,90,120 Mbps(self-adapting)
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)
Sensitivity @PER	1M: <u>-95dBm@8%PER</u> 6M: <u>-90dBm@10%PER</u> 11M: <u>-86dBm@8%PER</u> 54M: <u>-74dBm@10%PER</u> 135M: <u>-70dBm@10%PER</u>
RF Power	< 18dBm@11b, < 16dBm@11g, < 15dBm@11n
Antenna type	Connect to the external antenna through the IPEX connector
The transmit distance	Indoor 100M, Outdoor 300M, according the local environment
Dimension(L*W*H)	20.3x 14x 8.5mm (LxWxH)
Power supply	3.3V +/-0.2V

Power Consumption	standby mode 228mA@3.3V , TX mode 246mA@3.3V
Clock source	40MHz
Working Temperature	-10°C to +70°C
Storage temperature	-55°C ~ +125°C

3.3 DC Characteristic

Terms	Contents			
Specification : IEEE802.11b				
Mode	DSSS / CCK			
Frequency	2412 – 2484MHz			
Data rate	1, 2, 5.5, 11Mbps			
DC Characteristics	min	Typ.	max.	unit
TX mode	239	245	249	mA
Rx mode	91	92	93	mA
Sleep mode	47	48	48	mA
Specification : IEEE802.11g				
Mode	OFDM			
Frequency	2412 - 2484MHz			
Data rate	6, 9, 12, 18, 24, 36, 48, 54Mbps			
DC Characteristics	min	Typ.	max.	unit
TX mode	149	150	153	mA
Rx mode	92	93	100	mA
Sleep mode	46	48	49	mA
Specification : IEEE802.11n				
Mode	OFDM			
Frequency	2412 - 2484MHz			
Data rate	6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps			
DC Characteristics	min	Typ.	max.	unit
TX mode	151	152	153	mA
Rx mode	91	92	93	mA
Sleep mode	47	48	49	mA

3.4 RF Characteristic

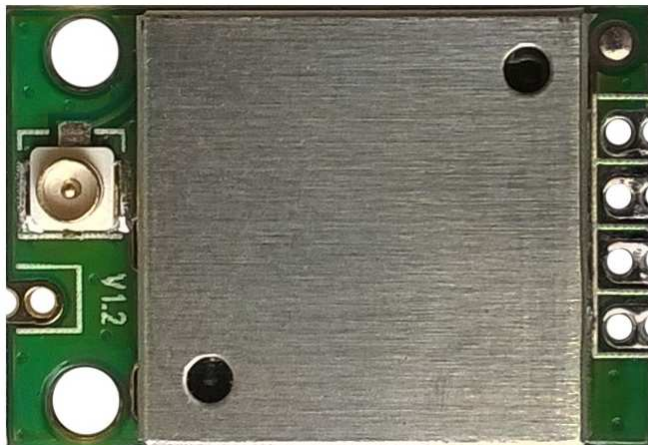
Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH1	CH7	CH13	CH1	CH7	CH13	CH1	CH7	CH13
11b	1	17.53	17.89	17.61	-31.20	-33.15	-31.53	-94	-94	-94

	11	17.22	17.49	17.79	-33.62	-33.13	-34.71	-89	-89	-89
11g	6	17.25	17.14	17.44	-34.00	-33.78	-33.57	-90	-90	-88
	54	16.80	16.28	16.35	-30.28	-31.10	-30.19	-74	-74	-74
11n	MCS0	17.38	17.29	17.41	-29.00	-29.09	-29.58	-87	-87	-87
HT20	MCS7	16.38	16.34	16.49	-30.35	-30.21	-31.54	-68	-68	-68

Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH3	CH7	CH11	CH3	CH7	CH11	CH3	CH7	CH11
11n	MCS0	17.45	17.81	17.47	-30.24	-30.92	-30.54	-87	-87	-87
HT40	MCS7	16.14	16.56	16.17	-30.75	-30.08	-31.20	-68	-68	-68

3.5 Product Photo

TOP

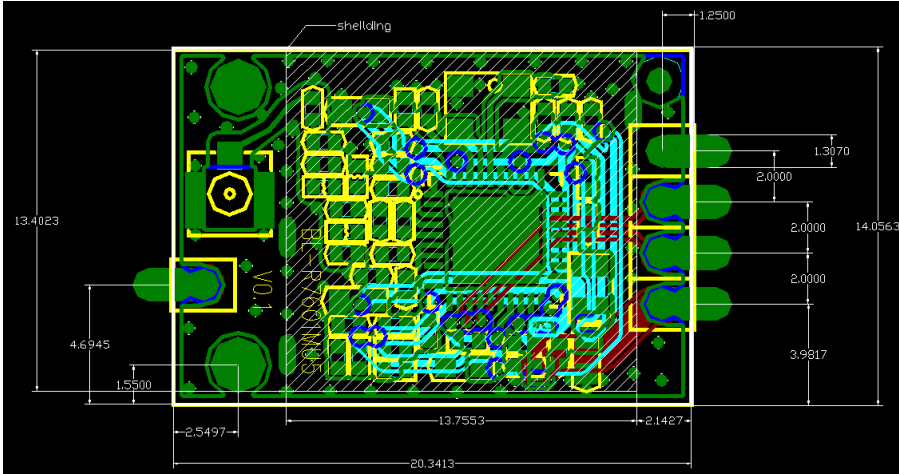


Bottom

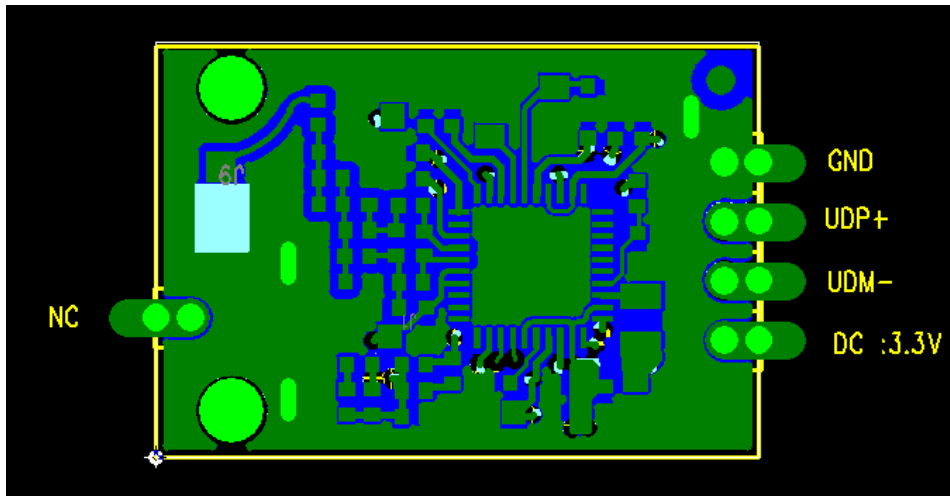


3.6 Mechanical Specification

Module dimension: Typical (W x L x H): 20.3mmx14mm x3.0mm Tolerance : +/-0.2mm



3.7 Product Pin Definition

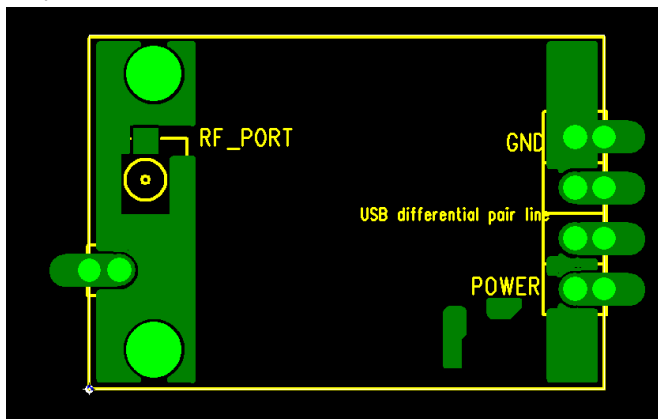


4. Supported platform

Operating System	CPU Framework	Driver
WIN2000/XP/VISTA/WIN7	X86 Platform	Enable
LINUX2.4/2.6	ARM, MIPSII	Enable
WINCE5.0/6.0	ARM ,MIPSII	Enable

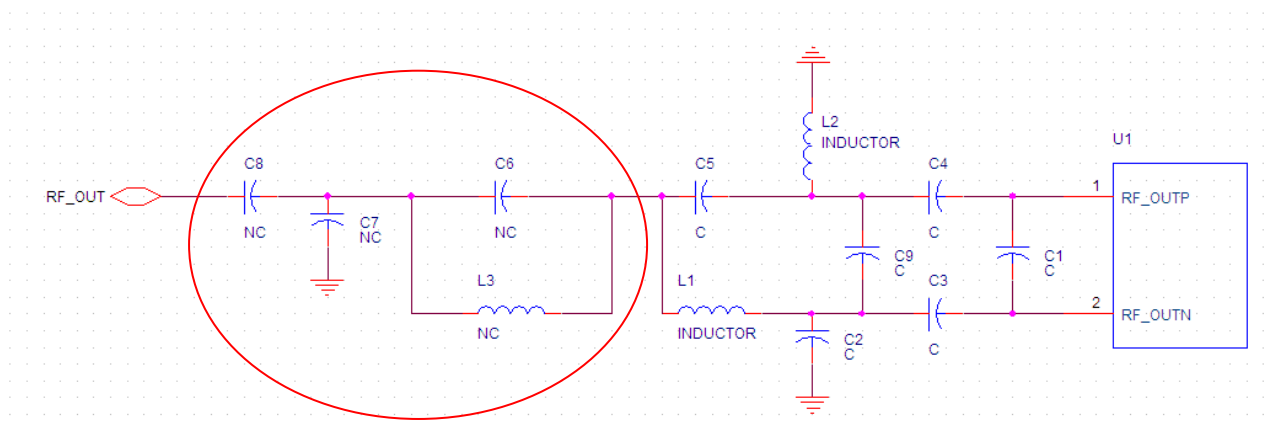
5. Peripheral Schematic Reference Design

Recommended Layout Pattern



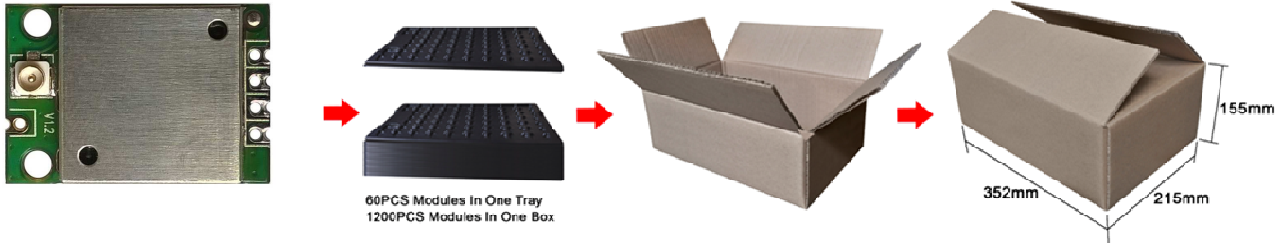
RF trace need to keep 50 ohm impedance.
 USB differential pair need to keep 90ohm impedance.

5.1 WiFi RF Circuit reference pictures



Pls reserve the highlight circuit for antenna matching.

6. Package Information



7. Typical Solder Reflow Profile

