Product Specification

Revision	V1.0		
Date	2019-07-16		
Model Name	BL-WA1200		
Product Name	IEEE 802.11b/g/n/ac(2T2R) USB WLAN		
Bilian Approve Field			
Engineer	**QC**	**Sales**	
Customer Approve Field			
Engineer	**QC**	**Manufactory**	**Purchasing**

联系电话：0755-83684788　13798358430　　联络人：夏先生
传真:0755-28029002　　邮箱：Xia@b-link.net.cn
网址:www.b-link.net.cn
公司地址：深圳市光明新区观光路华强创意园1A栋11楼

Shenzhen Bilian Electronic Co.，Ltd
Address: 10 - 11 / F , Block A1 , Huqiang Creative Industrial Park , Sightseeing Road ,Guangming District, Shenzhen, 518107,PRC
Homepage: www.b-link.net.cn

Table of Contents

Revision History

Date	Document Revision	Product Revision	Description
	0.1	V0.1	Preliminary release
	1.0	V1.0	Batch production

1. Introduction

1.1 General Description

BL-WA1200 product is a highly integrated module that support 2-stream 802.11ac solutions with Multi-user MIMO (Multiple In, Multiple Out) with wlan USB2.0 network interface controller.It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in a single chip. The product provides a complete solution for a high-performance integrated wireless device.

Figure 1 Top View

Figure 2 Bottom View

Note: The above pictures are for reference only

1.2 Features

- Operating Frequencies : 2.4~2.4835GHz and 5.15~5.85GHz
- Host Interface is USB2.0
- IEEE Standards : IEEE 802.11a/b/g/n/ac
- Wireless data rate can reach up to 867Mbps
- Power Supply:5V±0.2V

1.3 Applications

- MID
- IP Camera
- compute
- Smart TV
- E-book
- Other devices which need to be supported by wireless network

2. Functional Block Diagram

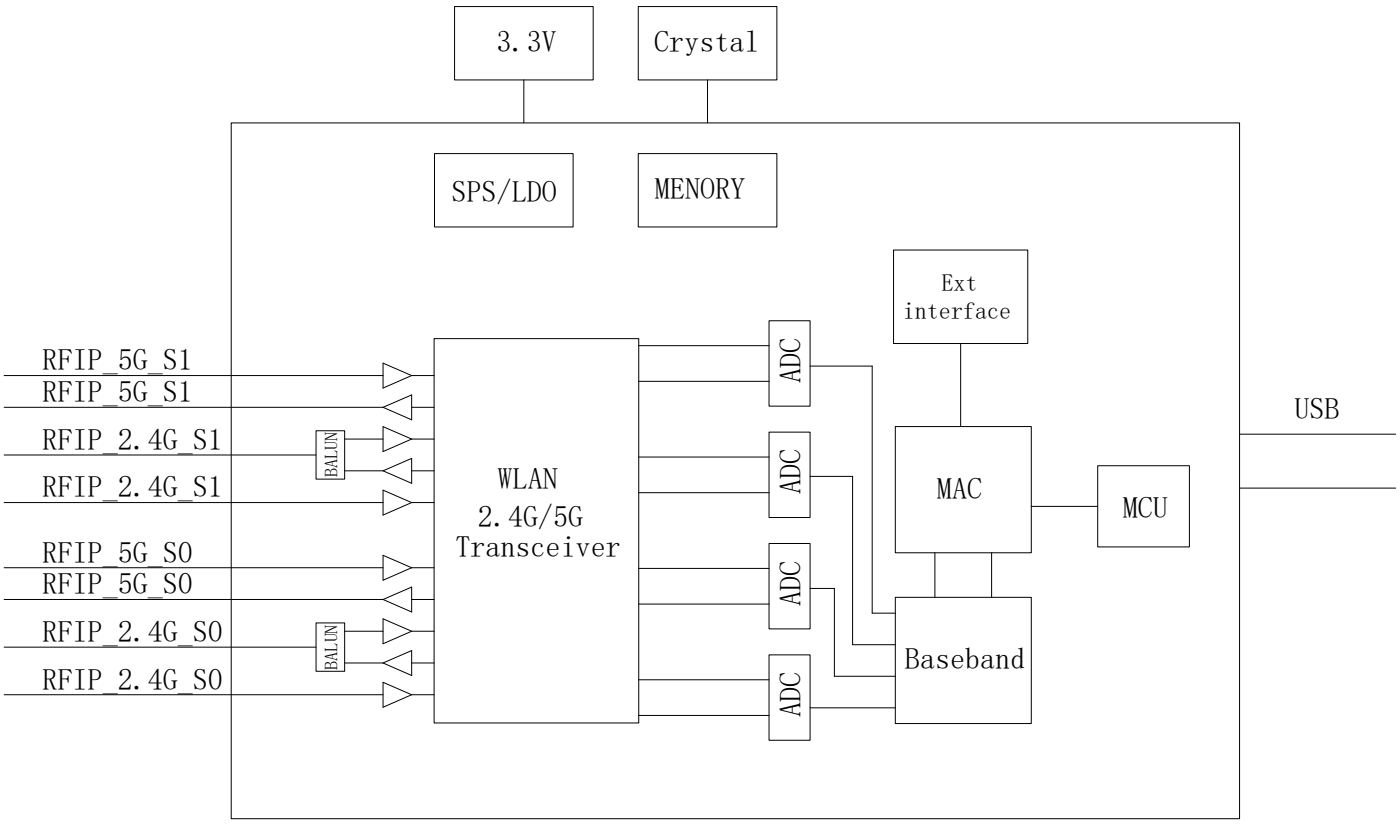

Figure 3 RTL8812BU block diagram

3. Product Technical Specifications

3.1 General Specifications

Item	Description
Product Name	BL-WA1200
Main Chip	RTL8812BU
Host Interface	USB2.0
IEEE Standards	IEEE 802.11a/b/g/n/ac
Operating Frequencies	2.4GHz~2.4835GHz /5.15~5.85Hz
Modulation	WIFI: 802.11b: CCK, DQPSK, DBPSK 802.11a/g: 64-QAM,16-QAM, QPSK, BPSK 802.11n: 64-QAM,16-QAM, QPSK, BPSK 802.11ac: 256-QAM,64-QAM,16-QAM, QPSK, BPSK
Working Mode	Infrastructure, Ad-Hoc

Wireless Data Rate	WIFI: 802.11b: 1, 2 ,5.5,11Mbps 802.11a/g: 6,9,12,18,24,36,48,54Mbps 802.11n: HT20 reach up to144.4Mbps, HT40 reach up to300Mbps 802.11ac: VHT20 reach up to173.3Mbps, VHT40 reach up to400Mbps, VHT80 reach up to866.7Mbps
Rx Sensitivity	-95dBm (Min)
TX Power	18.5dBm (Max)
Antenna Type	Connect to external antenna through the half hole connector
Power Supply	5V±0.2V
Clock Source	40MHz
Working Temperature	-10° C to +50° C
Storage Temperature	-40° C to +70° C

3.2 RF Specifications

TX Power	2.4G: 802.11b:17±1.5dBm 802.11g/11n-HT20:14±1.5dBm 802.11n -HT40:13±1.5dBm 5G: 802.11a/11n-HT20:12±1.5dBm 802.11n-HT40:11±1.5dBm 802.11ac:10±1.5dBm
TX Constellation Error(EVM)	2.4G: 802.11b: <-20dB@11Mbps 802.11g: <-28dB@54Mbps 802.11n-HT20: <-28dB@72.2Mbps 802.11n-HT40:< -28dB@150Mbps 5G: 802.11a: <-28dB@54Mbps 802.11n-HT20: <-28dB@72.2Mbps 802.11n-HT40: <-28dB@150Mbps 802.11ac:< -32dB@433Mbps
Receiver Minimum Input Sensitivity@PER	1Mbps: -95dBm@PER<8%; 11Mbps:-85dBm@PER<8%; 54Mbps:-72dBm@PER<10%; 150Mbps:-68dBm@PER<10%; 300Mbps:-67dBm@PER<10%;

	433Mbps:-58dBm@PER<10%; 867Mbps:-56dBm@PER<10%;

RF Test Report										
PathA										
2.4G										
Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH1	CH7	CH13	CH1	CH7	CH13	CH1	CH7	CH13
11b	1	16.94	16.89	17.14	-24.74	-24.62	-24.95	-95	-95	-95
	11	16.99	16.85	17.85	-23.21	-23.10	-23.22	-86	-85	-85
11g	6	16.21	16.44	16.26	-27.89	-27.13	-27.16	-91	-91	-91
	54	14.32	14.14	14.21	-32.02	-31.86	-31.20	-74	-73	-73
Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH3	CH7	CH11	CH3	CH7	CH11	CH3	CH7	CH11
11n HT40	MCS0	15.52	15.47	15.43	-28.28	-28.19	-28.41	-87	-87	-87
	MCS7	13.34	13.68	13.39	-34.07	-33.78	-33.82	-68	-68	-68
PathB										
Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH1	CH7	CH13	CH1	CH7	CH13	CH1	CH7	CH13
11b	1	17.03	16.55	16.84	-25.14	-25.07	-23.91	-95	-95	-95
	11	17.16	17.11	17.83	-25.02	-25.07	-23.13	-86	-86	-86
11g	6	16.41	16.28	16.20	-24.30	-24.45	-24.43	-91	-91	-91
	54	14.53	14.54	14.27	-30.53	-29.40	-29.29	-74	-74	-74
Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH3	CH7	CH11	CH3	CH7	CH11	CH3	CH7	CH11
11n HT40	MCS0	15.47	15.21	15.32	-28.07	-28.09	-27.49	-88	-88	-88
	MCS7	13.54	13.53	13.40	-32.69	-32.80	-32.21	-69	-69	-69

RF Test Report				
PathA				
5G				
Mod	Rate(	Power(dBm)	EVM(dB)	Sensitivity(dBm)

e	Mbps)	CH 36	CH 100	CH 140	CH 161	CH 36	CH100	CH140	CH161	CH 36	CH 100	CH 140	CH 161
11a	6	16.34	16.55	16.35	16.22	-22.13	-22.90	-26.63	-23.98	-91	-91	-91	-91
	54	12.27	12.10	12.07	12.32	-31.99	-31.73	-32.66	-30.13	-75	-75	-75	-75
Mode	Rate(Mbps)	Power(dBm)				EVM(dB)				Sensitivity(dBm)			
		CH 38	CH 102	CH 142	CH 159	CH 38	CH102	CH142	CH159	CH 38	CH 102	CH 142	CH 159
11n 40	MCS0	15.36	15.53	15.47	15.64	-28.53	-29.50	-28.80	-26.69	-88	-89	-89	-89
	MCS7	11.73	11.61	11.61	11.32	-32.25	-31.65	-31.33	-30.24	-70	-70	-70	-70
Mode	Rate(Mbps)	Power(dBm)				EVM(dB)				Sensitivity(dBm)			
		CH 42	CH 106	CH 138	CH 155	CH 42	CH106	CH138	CH155	CH 42	CH 106	CH 138	CH 155
11ac	MCS0	14.56	14.76	14.45	14.22	-30.03	-29.74	-29.70	-30.45	-85	-85	-85	-84
	MCS9	10.52	10.41	10.33	10.64	-33.86	-33.24	-34.71	-33.56	-61	-61	-61	-61
PathB													
5G													
Mode	Rate(Mbps)	Power(dBm)				EVM(dB)				Sensitivity(dBm)			
		CH 36	CH 100	CH 140	CH 161	CH 36	CH100	CH140	CH161	CH 36	CH 100	CH 140	CH 161
11a	6	15.54	15.27	15.45	15.65	-29.53	-30.68	-31.02	-30.09	-91	-91	-91	-91
	54	12.52	12.72	12.10	12.78	-31.10	-30.69	-30.30	-30.10	-75	-75	-75	-75
Mode	Rate(Mbps)	Power(dBm)				EVM(dB)				Sensitivity(dBm)			
		CH 38	CH 102	CH 142	CH 159	CH 38	CH102	CH142	CH159	CH 38	CH 102	CH 142	CH 159
11n 40	MCS0	15.54	15.27	15.45	15.65	-29.53	-30.68	-31.02	-30.09	-88	-88	-88	-88
	MCS7	11.52	11.72	11.41	11.63	-32.93	-31.73	-32.19	-33.19	-70	-70	-70	-70
Mode	Rate(Mbps)	Power(dBm)				EVM(dB)				Sensitivity(dBm)			
		CH 42	CH 106	CH 138	CH 155	CH 42	CH106	CH138	CH155	CH 42	CH 106	CH 138	CH 155
11ac	MCS0	14.74	14.71	14.35	14.41	-31.42	-30.56	-32.12	-31.43	-84	-84	-84	-84
	MCS9	10.63	10.52	10.71	10.69	-34.21	-33.65	-34.28	-33.81	-60	-59	-59	-59