

1. General Description

AB-8188-8ML product Accord with FCC CE and is 150 wireless USB adapter which has lower power consumption, high linearity output power, accords with IEEE802.11B/G/N, and supports IEEE802.11i safety protocol, along with IEEE 802.11e standard service quality. It connects with other wireless device which accorded with these standards together, supports the new data encryption on 64/128 bit WEP and safety mechanism on WPA-PSK/WPA2-PSK, WPA/WPA2. Its wireless transmitting rate rises 150M, equivalent to 10 times of common 11b product. It's easy and convenient to link to wireless network for the users using desktop, laptop and other device that needs connect to wireless network.

2. The range of applying

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

3. Features

Feature	Implementation	
Power supply	VCC_3.3V +-0.2V	
Clock source	40MHz	
Temperature range	Work temperature: -20°C70°C	
	Storage temperature $-55^{\circ}C \sim +125^{\circ}C$	
Package	SMT 4 pins	
WLAN features		
General features	■CMOS MAC, Baseband PHY, and RF in a	
	single chip for IEEE 802.11b/g/n compatible	
	WLAN	
	■Complete 802.11n solution for 2.4GHz band	
	■ /2.2Mbps receive PHY rate and /2.2Mbps	
	■ 150Mbpg receive DUV rate and 150Mbpg	
	transmit PHV rate using 40MHz bandwidth	
	$\blacksquare Compatible with 802 11n specification$	
	■ Backward compatible with 802.11b/g devices	
	while operating in 802 11n mode	
Host Interface	Complies with USB Specification Revision	
	2.0	
Standards Supported	■ IEEE 802.11b/g/n compatible WLAN	
11	■ IEEE 802.11e QoS Enhancement (WMM)	
	■ IEEE 802.11h TPC, Spectrum Measurement	
	■802.11i (WPA, WPA2). Open, shared key, and	
	pair-wise key authentication services	
WLAN MAC Features	■ Frame aggregation for increased MAC	
	efficiency (A-MSDU, A-MPDU)	
	■ Low latency immediate High-Throughput	
	Block Acknowledgement (HT-BA)	
	■Long NAV for media reservation with CF-End	
	for NAV release	
	■PHY-level spoofing to enhance legacy	
	compatibility	
	Power saving mechanism	
	Channel management and co-existence	
	■ Multiple BSSID feature allows the DTL \$188CTV to assume multiple MAC	
	identities when used as a wireless bridge	
	Transmit Opportunity (TYOP) Short Inter Frame	
	Inter-Frame Space (SIFS) bursting for higher	
	multimedia bandwidth	
WLAN PHV Features	■IEEE 802.11n OFDM	
	■One Transmit and one Receive path (1T1R)	
	■20MHz and 40MHz bandwidth transmission ■Short Guard Interval (400ns)	
	■DSSS with DBPSK and DQPSK, CCK modulation	
	with long and short preamble	
	■OFDM with BPSK, QPSK, 16QAM, and 64QAM modulation. Convolutional Coding Rate: 1/2 2/3	
	3/4, and 5/6	
	■Maximum data rate 54Mbps in 802.11g and	
	■Switch diversity for DSSS/CCK	
	■Hardware antenna diversity	
	Selectable receiver FIR filters	
	Programmable scaling in transmitter and receiver to trade quantization noise against increased	
	probability of clipping Fast	
	■receiver Automatic Gain Control (AGC)	
	■On-chip ADC and DAC	

4. DC Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Units
VD33A,	3.3V I/O	3.135	3.3	3.465	v
VD33D	Supply Voltage				
VD12A,	1.2V Core	1.10	1.2	1.32	v
VD12D	Supply Voltage				
VD15A,	1.5V Supply	1.425	1.5	1.575	v
VD15D	Voltage				
IDD33	3.3V Rating	-	-	600	mA
	Current				

5. The main performance of product

Item	Description	
The supported protocol and standard	IEEE 802.11n, IEEE 802.11g,EE 802.11b	
Interface type	USB2.0	
The range of frequency	2.4-2.484GHZ	
The amount of working	1-11(America, Canada);1-13(China, Europe);1-14	
Channel	(Japan)	
Data Modulation	OFDM/DBPSK/DQPSK/CCK	
Working Mode	Infrastructure, Ad-Hoc	
The transmitting rate	135/54/48/36/24/18/12/9/6/1M (self-adapting)	
Spread spectrum	DSSS	
Sensitivity @PER	54/135M:-74dBm@10%PER,	
	11M:-85dBm@8%PER	
	6M: -88dBm@10%PER,	
	1M: -90dBm@8%PER	
RF Power	135M:15dBM,	
	54M:15dBM,	
	11M:19dBM	
Throughput	90Mbps(external 2dbi antenna ,damping 40dbm in	
	Shielding box)	
The connect type of	Connect to the ANT pin of Module	
Antenna		
LED indicator	status indicator	
The transmit distance	Indoor 100M, Outdoor 300M, according the local	
	environment	
Working Power consumption	480MW	
	12MM*27MM*0.8MM	
i në enipset model	RTL8188CUS	

6. DC/RF characteristics

Terms		Contents		
Specification : IEEE	802.11b	·		
Mode		DSSS / CCK		
Frequency		2412 - 2484MHz		
Data rate		1, 2, 5.5, 11Mbps		
DC Characteristics	min	Тур.	max.	unit
TX mode	240	245	250	mA
Rx mode	120	125	131	mA
standby mode	140	145	146	uA
Specification : IEEE	802.11g	·	·	
Mode		OFDM		
Frequency		2412 - 2484MHz		
Data rate		6, 9, 12, 18, 24, 36, 48, 54Mbps		Mbps
DC Characteristics	min	Тур.	max.	unit
TX mode	150	200	230	mA
Rx mode	120	125	130	mA
standby mode	143	145	146	uA
Specification : IEEE	Specification : IEEE802.11n			
Mode	e OFDM			
Frequency		2412 - 2484MHz		
Data rate		6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps		8.5, 65Mbps
DC Characteristics	min	Тур.	max.	unit
TX mode	230	240	245	mA
Rx mode	120	125	131	mA
standby mode	144	145	146	uA

7. The block diagram of product principle



8. The 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

9. The definition of product Pin



ТҮРЕ	Description
TX(RF ON/OFF)	TX(RF ON/OFF)
DC:3.3V	DC:3.3V
UDM-	UDM-
UDP+	UDP+
GND	GND
LED(Wireless TX Status)	LED(Wireless TX Status)
	TYPE TX(RF ON/OFF) DC:3.3V UDM- UDP+ GND LED(Wireless TX Status)

10: The ANT Pin connect to antenna, please refer to design demand



a) The current of 3.3V power supply must be >300mA, its ripple wave must be <30mV. The GND pins of module and external antenna need to be an incorporated part. The ground plane should be larger, module and antenna should keep far away from interference source.

b) The sixth pin is 2.4G high frequency output, coplanar impedance of layout line between this pin to antenna interface should be 50Ω , we suggest use arc line or straight line, and beside the line there will be ground plane that its length as shout as possible, the longest length is no more than 50mm. c) L1, C1, C2 constitute a π -type network that we preset, please make it close to antenna interface, this π -type network is used to match the antenna parameters and control the radiation. It should be adjusted according to the real condition when being used. Normally you can only mount L1 that its parameters are: 10pF, NP0 material. No need C1 and C2

11.Tpical Solder Reflow Profile

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