

Feature

- Standard: 802.11a/b/g/n
- Interface: Mini PCI Express
- Chipset: Qualcomm Atheros AR9592-AR1B
- Industrial-Grade Temperature:
 -40 ~ 85°C
- Antenna: 2 x U.FL connectors
- Data rate up to 300Mbps
- Enhanced wireless security: 64/128-bits WEP, WPA, WPA2, 802.1x
- Support Linux, Android by request

WPEA-252NI

Dual-Band 802.11n 2T2R Industrial-Grade Mini PCIe Module

802.11n Dual-Band Solution

SparkLAN WPEA-252NI is an Industrial-Grade 802.11a/b/g/n 2.4GHz + 5GHz Mini Card based on Qualcomm Atheros AR9592-AR1B chipset. It supports 2T2R (2x2) MIMO spatial multiplexing technology, which runs up to 300Mbps and delivers superior WiFi output power up to 19dBm.

Industrial-Grade Temperature Range

WPEA-252NI is able to function under severe weather condition (-40 \sim 85°C), which is ideal for manufacturers to integrate with their devices that are designed for wide-temperature range.

Secure Wireless Connection

Incorporated with advanced security encryption, such as 64/128-bits WEP, WPA, and WPA2, it helps prevent users' devices from malicious attacks.



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WPEA-252NI

Specification

Siandard	
Chipset	
Mac/BB/RF	Qualcomm Atheros AR9592-AR1B
Host Interface	
PCI express	
Form Factor	
Mini PCIe (Mini Card)	
Data Rates	
802.11a: 6~54Mbps / 802	2.11b: 1~11Mbps / 802.11g: 6~54Mbps
802.11n (HT20): MCS0 ~ M	CS15 / 802.11n (HT40): MCS0 ~ MCS15
Radio	
Antenna	2 x U.FL connectors, 2T2R
	a/n ISM Band: 5.150GHz ~ 5.825GHz
Operating Frequency	b/g/n ISM Band: 2.400GHz ~ 2.4835GHz
	*subject to local regulations
	802.11a: OFDM (BPSK, QPSK,16-QAM, 64-QAM) 802.11b: DSSS (DRPSK, DOPSK, CCK)
Modulation	802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
	802.11n: OFDM (BPSK, QPSK,16-QAM, 64-QAM)
	802.11a: 14dBm ± 2dBm@54Mbps
Output Power	802.11g: 16dBm ± 2dBm@54Mbps
(1T)	802.11gn HT20: 15dBm ± 2dBm@MCS7 / 802.11gn HT40: 14dBm ± 2dBm@MCS7
	802.11an HT20: 12dBm ± 2dBm@MCS7 / 802.11an HT40: 11dBm ± 2dBm@MCS7
	802.11a: < -77aBm@54Mpps 802.11b: < -85dBm@11Mpps
Receive Sensitivity	802.11g: ≤ -77dBm@54Mbps
(1R)	802.11gn HT20: ≤ -74dBm@MCS7 / 802.11gn HT40: ≤ -71dBm@MCS7
Power consumption	802.11811H120: ≤ -730BHI@MC377 802.11811H140: ≤ -700BHI@MC37
	700~ 4
	500ITIA
Operating Voltage	
PCIe slot: DC 3.3V ± 10%	
Environmental	
Temperature Range	-40 ~ 85°C (Operating) / -50 ~ 90°C (Storing)
Humidity	10% ~ 85% (Operating) / 5% ~ 90% (Storing)
(Non-Condensing)	
Dimensions	29.85mm X 50.80mm X 2.86mm (± 0.5mm)
Software	
Driver	Linux Android by request
Security	
	07/120-Dits WELL, WI A, WI A2, 002.1A
I VILL "	
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Mechanical Dimension (mm)



Block Diagram



WPEA-252NI

Pin Assignment

F	Pin#	Pin Name	Description	Pin#	Pin Name	Description
1		WAKE_L(NA)	Output and open Drain active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event.	2	+3.3V	+3.3V
3	3	GPIO12(OPT)	This pin is reserved for definition with future revisions of this specification.	4	GND	GND
5	5	No Connection	-	6	No Connection	-
7	1	CLKREQ_L	Output for reference clock request signal	8	No Connection	-
ç)	GND	GND	10	No Connection	-
1	1	REFCLK-	Input signal for PCI Express differential reference clock (100 MHz)	12	No Connection	-
1	3	REFCLK+	Input signal for PCI Express differential reference clock (100 MHz)	14	No Connection	-
1	5	GND	GND	16	No Connection	-
1	7	No Connection	-	18	GND	GND
1	9	No Connection	-	20	W_DISABLE_L(OPT)	Input and active low signal. This signal is used by the system to disable radio operation on add-in cards that implement radio frequency applications. When implemented, this signal requires a pull-up resistor on the card
2	21	GND	GND	22	PERST_L	Input signal for functional reset to the card
	23	PERn0	Signal for PCI Express x1 data interface: one differential receive pair	24	No Connection	-
	25	PERPO	Signal for PCI Express x1 data interface: one differential receive pair	26	GND	GND



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27	GND	GND	28	No Connection	-
29	GND	GND	30	No Connection	-
31	PETn0	Signal for PCI Express x1 data interface: one differential transmit pair	32	No Connection	-
33	РЕТрО	Signal for PCI Express x1 data interface: one differential transmit pair	34	GND	GND
35	GND	GND	36	No Connection	-
37	No Connection	-	38	No Connection	-
39	3.3V	+3.3V	40	No Connection	-
41	3.3V	+3.3V	42	No Connection	-
43	GND	GND	44	LED_WLAN_L (OPT)	Output and open drain active low signal. This signal is used to allow the PCI Express Mini Card add-in card to provide status indicators via LED devices that will be provided by the system
45	No Connection	-	46	No Connection	-
47	GPIO13(OPT)	These pins are reserved for definition with future revisions of this specification.	48	No Connection	-
49	GPIO14(OPT)	These pins are reserved for definition with future revisions of this specification.	50	GND	GND
51	GPIO15(OPT)	These pins are reserved for definition with future revisions of this specification.	52	+3.3V	+3.3V

*NA→No active, OPT→Optional

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*Specifications are subject to change without notice

