Atheros   2T2R PCIe Module   *EMP7618*
2.4 / 5 GHz   802.11a/b/g/n   300Mbps

EMP7618 is a 2.4 / 5Ghz Dual Band 2T2R PCIe Half-Card Module based on the Atheros AR9382 solution which features improved transmission power and sensitivity by Senao Networks.

Using the AR9382 internal FEM, it is the ideal cost effective solution for platform integration.

With enhanced technologies such as advanced power management and receiver boost, it makes the EMP7618 the ideal 2.4 or 5Ghz 2T2R module.

Features	Benefits
Advanced Power Management	Unscheduled Automatic Power Save Delivery (UAPSD), it allows the RF module to spend more time in "sleep" state. Dynamic MIMO Power Save allows radios to downshift to less intensive Tx configurations when traffic is light.
Receiver Boost	Utilizing Maximum Likelihood Demodulation (MLD) and Maximal Ratio Combining (MRC) to optimize signal receiving.

V1.0 (2011-07-14)

General information	
Chipset	Atheros AR9382
PA	Internal Front End Module
Interface	PCIe
Operating voltage	PCIe Slot : DC 3.3 V ± 5% with Advanced DC Power management support
Antenna connectors	2x I-PEX connectors
PCB Dimensions	30 x 27mm (W x L) – Half Card
Temperature range	0°C to + 55 °C (Operating temperature)
	-45°C to + 85°C (Storage temperature)
Security	WPA, WPA2, 64/128 bit WEP, TKIP, and AES. hardware-based IEEE 802.11i encryption engine
Data rates	**802.11a:** 6, 9, 12, 18, 24, 36, 48, 54Mbps **802.11b:**1, 2, 5.5, 11Mbps **802.11g:** 6, 9, 12, 18, 24, 36, 48, 54Mbps **802.11n:** 20MHz channel: ● 1Nss: 65Mbps @ 800ns GI; 72.2Mbps @ 400ns GI (Max); ● 2Nss: 130Mbps @ 800ns GI; 144.44Mbps @ 400ns GI (Max); **802.11n:** 40MHz channel: ● 1Nss: 135Mbps @ 800ns GI; 157.5Mbps @ 400ns GI (Max.); ● 2Nss: 270Mbps @ 800ns GI; 300Mbps @ 400ns GI (Max.);
Tx channel width support	20MHz / 40MHz
Standard/Compliance	WECA (Wi-Fi & Wi-Fi5 compliance), IEEE802.11,b/g/n, RoHS and WEEE
Regulation Certifications	FCC Part 15

V1.0 (2011-07-14)

Radio Frequency Band					
Channel	Data rate	Tx AVG. Power (2TX) (dBm)	Tolerance	Sensitivity (2RX) (dBm)	
Frequency Band: 2.412 ~ 2.482GHz					
802.11b (2.412~2.482GHz)	1 Mbps	12	+2/-2 dB	≦-96	
	2 Mbps	12	+2/-2 dB	≦-94	
	5.5 Mbps	12	+2/-2 dB	≦-94	
	11 Mbps	12	+2/-2 dB	≦-91	
802.11g (2.412~2.482GHz)	6 Mbps	12	+2/-2 dB	≦-93	
	54 Mbps	12	+2/-2 dB	≦-77	
802.11n_HT20 (2.412~2.472GHz)	MCS 0/MCS 8	12	+2/-2 dB	≦-92	
	MCS 1/MCS 9	12	+2/-2 dB	≦-91	
	MCS 2/MCS 10	12	+2/-2 dB	≦-89	
	MCS 3/MCS 11	12	+2/-2 dB	≦-84	
	MCS 4/MCS 12	12	+2/-2 dB	≦-81	
	MCS 5/MCS 13	12	+2/-2 dB	≦-77	
	MCS 6/MCS 14	11	+2/-2 dB	≦-75	
	MCS 7/MCS 15	11	+2/-2 dB	≦-73	
Operating Frequency: 2.422~2.462GHz					
802.11n_HT40	MCS 0/MCS 8	12	+2/-2 dB	≦-89	
	MCS 1/MCS 9	12	+2/-2 dB	≦-88	
	MCS 2/MCS 10	12	+2/-2 dB	≦-86	
	MCS 3/MCS 11	12	+2/-2 dB	≦-82	
	MCS 4/MCS 12	12	+2/-2 dB	≦-79	
	MCS 5/MCS 13	12	+2/-2 dB	≦-75	
	MCS 6/MCS 14	11	+2/-2 dB	≦-73	
	MCS 7/MCS 15	11	+2/-2 dB	≦-70	

V1.0 (2011-07-14)

Frequency Band **5.18~5.825GHz**					
802.11a (5.18~5.825GHz)	6 Mbps	11	+2/-2 dB	≦-91	
	54 Mbps	11	+2/-2 dB	≦-74	
802.11n_HT20	MCS 0/MCS 8	11	+2/-2 dB	≦-91	
	MCS 1/MCS 9	11	+2/-2 dB	≦-89	
	MCS 2/MCS 10	11	+2/-2 dB	≦-87	
	MCS 3/MCS 11	11	+2/-2 dB	≦-84	
	MCS 4/MCS 12	11	+2/-2 dB	≦-81	
	MCS 5/MCS 13	11	+2/-2 dB	≦-77	
	MCS 6/MCS 14	10	+2/-2 dB	≦-75	
	MCS 7/MCS 15	10	+2/-2 dB	≦-71	
Operating Frequency: 5.190~5.795GHz					
802.11n_HT40	MCS 0/MCS 8	11	+2/-2 dB	≦-88	
	MCS 1/MCS 9	11	+2/-2 dB	≦-86	
	MCS 2/MCS 10	11	+2/-2 dB	≦-83	
	MCS 3/MCS 11	11	+2/-2 dB	≦-79	
	MCS 4/MCS 12	11	+2/-2 dB	≦-76	
	MCS 5/MCS 13	11	+2/-2 dB	≦-71	
	MCS 6/MCS 14	10	+2/-2 dB	≦-70	
	MCS 7/MCS 15	10	+2/-2 dB	≦-68	
Current Consumption Information					
Tx current consumption (without Jump wire)	Continuous TX (99% duty)	≦ 3.0 W			
Sleep Current	Sleep mode	≦ 100 mA			
OS support	Windows 2000/XP/Vista, Linux				

V1.0 (2011-07-14)