# TWL-M01

Overview

TWL-M01 is a mini-PCI type III A high-power card, which is based on Atheros AR5414 802.11a WLAN solution. The operating radio frequencies is 4.9~5.9GHz supports 12 non-overlapping channels.

TWL-M01 average transmit power level is up to 23dBm (200mW) to improve Wi-Fi coverage distance. For the high-speed wireless connection, it also supports up to 108Mbps turbo mode data rate to fulfill your desire. The compact, lightweight, and low power consumption design allow you to integrate TWL-M01 easily into any embedded system or 802.11a based wireless networking device with the mini-PCI slot.

TWL-M01 supports a variety of security feature, such as Wi-Fi Protect Access (WPA) according to IEEE802.11i security standard – the hardware based Advanced Encryption Standard (AES). It also supports IEEE802.11e standard – Wireless Multi-Media (WMM) Enhancements Quality of Service (QoS). Those advanced features will secure the wireless network performance while meet your needs at the same time.
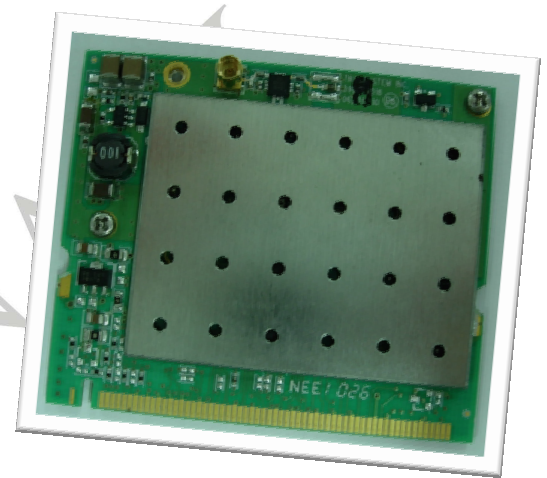
Key Features

- IEEE 802.11a
- High Power Design – Average Power up to 23 dBm and Peak Power up to 28 dBm
- Industry Grade Environment Operation Range
- 64/128/152-bit WEP/WPA/WPA-PSK Security
- Heat Sink Design
- Provide the Reliable High Radio Power
- Support auto fallback data rate
- Turbo Mode

- Hardware Radio On/Off Function
- 802.11e Compatible Bursting
- FCC Part 15 EMC Certification
- Wi-Fi Compliant
- RoHS Compliant

TranSystem. Inc.
Tel: + 886-3-578-0393   Fax: + 886-3-578-4111
Inquiries: sales@transystem.com.tw
Address: No. 1-2, Li-Hsin Rd I, Science-Based Industrial Park,
Hsinchu, Taiwan, R.O.C.
Web site: http://www.transystem.com.tw

Professional, Service, Quality   Rev: 0.4

Hardware Specification	
Chipset	● **Atheros AR5414A-B2B**
Supporting Standard	● **IEEE 802.11a**
Host Interface	● **Mini-PCI 32-bit Type IIIA** ● **124-pin Golden Finger**
RF Interface	● **1MMCX Connector**
Security	● **Hardware-Based AES Privacy**
Operating Environment	● **Operating Temperature: -40 ~ +75°C** ● **Operating Humidity: 20 ~ 90% (Non-Condensing)**
Storage Environment	● **Storage Temperature: -40 ~ +85˚C** ● **Storage Humidity: 10 ~ 95% (Non-Condensing)**
Weight & Size	● **Weight: 18g ± 2 g** ● **Size: 59.6 x 50.8 x 7.3 mm**
Operation Voltage	● **Voltage: 3.3VDC +/- 10 %**

Power Consumption	● **IEEE 802.11a**
	  Cont. Tx: 1000mA (typical) ~ 1200mA (Max)
	  Cont. Rx: 250mA (typical) ~ 270mA (Max)
	  Stand by: 280mA (typical) ~ 290mA (Max)

Radio Frequency Specification	

Date Rate & Modulation	● **IEEE 802.11a**
	  - (Normal Mode) OFDM: 54, 48, 36, 24, 18, 12, 9, 6Mbps (Auto-Fallback)
	  - (Turbo Mode) OFDM: 108, 96, 72, 48, 36, 24, 18, 12Mbps (Auto-Fallback)

Networking	● **Infrastructure Mode: Station-To-LAN Architecture** ● **Ad-Hoc Mode: Station-To-Station Architecture**

Frequency, Bandwidth and Channels	● **IEEE 802.11a**
	  - 4.9 ~ 5.9GHz Frequency Band
	  - US/Canada: 5.15 ~ 5.35GHz, 5.725 ~ 5.825GHz
	  - Europe: 5.15 ~ 5.35GHz, 5.47 ~ 5.725GHz
	  - China : 5.725 ~ 5.85GHz
	  - Japan : 4.9 ~ 5.35GHz
	  - 40/20/10 MHz Bandwidth Per Channel
	  - Frequency Tolerance: +/- 20 ppm

Maximum Transmit Output Power (+1/-1.5 dB)	● **Complies with FCC Part 15, Class B**
	● **IEEE 802.11a**
	  **23dBm @ 6~24Mbps (normal mode)
		23dBm @ 12~48Mbps (turbo mode)**
		  **21dBm @ 36Mbps (normal mode)
			21dBm @ 72Mbps (turbo mode)**
			  **19dBm @ 48Mbps (normal mode)
				19dBm @ 96Mbps (turbo mode)**
				  **18dBm @ 54Mbps (normal mode)
					18dBm @ 108Mbps (turbo mode)**

Receiver Sensitivity	- 6Mbps 9Mbps 12Mbps 18Mbps 24Mbps 36Mbps 48Mbps 54Mbps (Normal mode) - -91dBm -90dBm -89dBm -88dBm -85dBm -82dBm -76dBm -72dBm - 12Mbps 18Mbps 24Mbps 36Mbps 48Mbps 72Mbps 96Mbps 108Mbps (Turbo mode) - -88dBm -87dBm -86dBm -85dBm -82dBm -79dBm -73dBm -69dBm

Typical value @ 25°C, unless otherwise specified

Specifications are subject to change without prior notice

©2010 TRANSYSTEM INC. all rights reserved

TranSystem. Inc.
Tel: + 886-3-578-0393   Fax: + 886-3-578-4111
Inquiries: sales@transystem.com.tw

Address: No. 1-2, Li-Hsin Rd I, Science-Based Industrial Park,
Hsinchu, Taiwan, R.O.C.
Web site: http://www.transystem.com.tw

RoHS · NSF

Professional, Service, Quality