

適用機種:WM288P

WLAN CARD WM288P Specifications

- 1. General specification
- 2. Standard test condition
- 3. Electrical specification
- 4. Frequency channel plan

核准:	審查:	製表:	修訂日期:			制定日期:
		莊繐瑄	年	月	日	2003年1月22日

		S	pecifica	tion		Tost Mathad/Condition
No.	Item	Condition	Min.	Тур.	Max.	Test Wethod/Condition
1.	General specification	l				
1-1.	Standard	IEEE 802.11	lb			
1-2.	Frequency Band(MHz)		2400		2483.5	
1-3.	No. of Selectable	11 Channels	(US, Car	ada)		
	Channels	13 Channels	(Europe)			
		14 Channels	(Japan)	1	1	
1-4.	Channel Spacing (MHz)			5		
1-5.	Modulation Technique	DSSS (CCK	, DQPSK	, DBPSI	K)	
1-6.	Spreading	11-chip Barl	ker Seque	nce		
1-7.	Media Access Protocol	CSMA/CA(collision A	Avoidan	ce) with	
		ACK				
1-8.	Interface	Mini PCI Ty	pe III A			
1-9.	Dimensions	60.0 mm x 4	5.0 mm x	3.5 mm	1	
1-10.	LED Indicators	non				
1-11.	Antenna Connector	Hirose U.FL	-R-SMT			
2.	Standard Test Condi	ition				
2-1.	Supply voltage(V)			3.3		
3.	Electrical Temperature Range : $0 \sim 55^{\circ}$ C					Temperature Range $: 0 \sim 55^{\circ}$ C
	Specification					Humidity: 95 % (Non-condensing)
3-1.	Power Consumption	@+3.3V			150	Receiver Mode
	(mA)				260	Transmit Mode
3-2	Receive Sensitivity		-82	-84		@ 11 Msps
	(dBm)[FER < 8%]		-87			@ 5.5 Msps
			-90			@ 2 Msps
			-92			@ 1 Msps
3-3.	Average Output Power		10	11		@29.5dB difference between the signal
	(dBm)					level at center frequency and higher
						first side lobe
3-4	Frequency Accuracy(ppm)		- 25		+ 25	

4. Freq	uency cha	nnel plan						
- I			Regulation Domains					
Channel_ID	Frequency	FCC	IC	ETSI	Spain	France	MKK	
	(Mhz)	(X '10')	(X '20')	(X '30')	(X '31')	(X '32')	(X '40')	
1	2412	Х	X	Х				
2	2417	Х	Х	X				
3	2422	Х	Х	X				
4	2427	Х	Х	X				
5	2432	Х	Х	X				
6	2437	X	X	X				
7	2442	Х	Х	Х				
8	2447	X	X	Х				
9	2452	Х	Х	Х				
10	2457	X	Х	Х	Х	Х		
11	2462	X	Х	Х	Х	Х		
12	2467			Х		Х		
13	2472			X		X		
14	2484						X	

Alchemy^{**}

Manufacturing Test Suite User's Manual

A Utility for Testing the

Am1772™ Mini PCI Reference Design Kit

Version 0.2

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4. Consult the dealer or an experienced radio technician for help.

FCC Caution

This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm spacing must be provided between computer mounted antenna and person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment.

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1 Overview

The AMD Manufacturing Test Suite (MTS) provides advanced functionalities, such as pure carrier wave generation, upper and lower side band data generation, RF carrier suppression, Tx Modulation Accuracy, BPSK, QPSK, Carrier 5.5, Carrier 11, Packet Error Rate (PER) Measurement, 25% Duty Cycle, Power Save/Awake, Tx/Rx Traffic generation in MAC mode and MAC Bypass Modes.

The following table shows the test suite's eight modes and their features.

	MTS Test Mode	Features	Run Mode
1	Customized Transmit Modes	Carrier 1, Carrier 2, Upper Side Band, Lower Side Band, Randomized, Customized, RF Carrier Suppression, Tx Modulation Accuracy	Mac Bypass
2	Transmit Continuous With Modulation	BPSK, QPSK, CCK 5.5, CCK 11 with Scrambler On/Off, Data 101010, 111111, Random, Custom.	Mac Bypass
3	Transmit Packets With Modulation	Transmit Broadcast Frames	Mac Bypass
4	Receive and Display PER	Receive Frames and Display Packet Error Rate (PER)	Mac Bypass
5	Unicast and Multicast Frame Transmit	Start/Join an Adhoc BSS and do unicast or multicast (broadcast) frame transmit/receive.	Mac Mode
6	Unicast and Multicast Frame Receive	Join the Adhoc BSS started above in #5 and receive frames.	Mac Mode
7	Duty Cycle Measurement	25% Duty Cycle Measurement	Mac Bypass
8	Power Save and Awake	Place device in Sleep and then Awake it.	N/A

NOTE: mts.exe runs advanced baseband functionality that involves MAC tunneling. Please do NOT run Am1772 Terminal.exe or AtlasCfg.exe while mts.exe is running.

2 Installation

Step #1: Install the Am1772[™] Terminal application. See *Am1772[™] Terminal User's Manual*.

Step #2: The MTS application, MTS.EXE, should be within the above software pack. Save it to the local drive and create a shortcut to it on the desktop. Run MTS.EXE. The following Main Screen will be displayed:

Manufactures Test Suite 6.01	
W Test Suite About	
Test Modes	
select a test Customized Transmit Modes Transmit Continuous with Modulation Transmit Packets with Modulation Receive and Display PER Unicast or Multicast Frame Transmit Unicast or Multicast Frame Receive Duty Cycle Measurement Power Save and Awake	
Choose any one of the tests and click Execute Test.	
Execute Test	
Close	Cancel

Clicking on the *About* property page displays the following screen:

Driver Product Name	Am1772(tm) Wireless LAN Chipset
Driver Product Version	A0.8
Driver Version	B00001
Мас Туре	Am1771 (B0)
Mac Revision	20902197
Base Band Type	Am1771 (B0)
Base Band Revision	B.04
RFE Type	Am1770
MAC Address	00:00:41:4D:44:12
AMD 802.11 Win Advanced Micro Sunnyvale, CA, S Internal Release MTS Version 6.0	eless Manufactures Test Suite (MTS). Devices Inc. 14088. Edition. 1, November 2002.

3 MTS Tests

From the main test suite window, select a test to be performed. The following sections describe each test.

3.1 Customized Transmit Modes

Select the appropriate configuration and click **Start** to initiate the selected Tx Mode. To change the configuration, first click **Stop**, change the configuration, and then **Start** again. After the test click **Close**.

Execute Test		X
Customized Transmit M Configuration Power (mw) 1 10 10 10 10 10 10 10 10 10 10 10 10 1	Tx Modes Carrier 1 Carrier 2 LSB 5.5 MHz LSB 2.75 MHz LSB 1.375 MHz USB 5.5 MHz USB 2.75 MHz USB 1.375 MHz USB 1.375 MHz Random Custom RF Carrier Suppression Tx Modulation Accuracy	Base Band Registers 00 00 00 00 00 00 00 A4 A5 A6 A7 A8 A9 AA 00 00 00 00 00 00 00 AB AC AD AE AF B0 B1 00 00 05 B2 B3 A2 Antenna • A • B
Start	Idle State	Stop <u>C</u> lose

Customized Transmit Modes

3.2 Transmit Continuous with Modulation

Select the appropriate configuration and click **Start** to initiate the selected modulation. To change the configuration first click **Stop**, change the configuration, and then **Start** again. After the test, click **Close**.

Execute Test	
Transmit Continuous with Modulation	
Configuration Power (mw) 1 1 1 1 1 1 1 1 1 1 1 1 1	Base Band Registers 55 55 55 55 55 55 55 A4 A5 A6 A7 A8 A9 AA AB AC 55 55 55 55 55 55 55 25 AD AE AF B0 B1 B2 B3 A2 Data 010101 111111 Random Custom Scrambler ON OFF
Control Idle State	S <u>t</u> op <u>C</u> lose

Transmit Continuous with Modulation



3.3 Transmit Packets with Modulation

Select the appropriate configuration and click **Start** to initiate the selected Tx mode. To change the configuration first click **Stop**, change the configuration, and then **Start** again. After the test, click **Close**.

Execute Test	
Transmit Packets with Modulation	
Configuration T x Antenna A B T x MSDU (bytes) 1000 Frame Delay (ms) 10	Tx Rate (preamble) 1 2 (short) 2 (long) 5.5 (short) 5.5 (long) 11 (short)
Statistics Tx Average 0	Tx Packets 0
Control Idle State	Stop <u>C</u> lose

Transmit Packets with Modulation

3.4 Receive and Display PER

Select the appropriate configuration and click **Start** to initiate the selected mode. After selection press the **Start** button to see traffic with another InfraAP or Adhoc IBSS station that is required for this test mode. Alternatively, use another notebook that is in unicast transmit mode.

To change the configuration first click **Stop**, change the configuration, and then **Start** again. After the test, click **Close**.

eceive and Display PER	
Configuration	
Rx Antenna Rx Channel	7
CA 1.	
Св 2	
Diversity	
Rx Statistics	
Rx Packets 0	CRC16 0
Rx Avg 0.00 Kbps	CRC32 0
Signal Quality 0	Packet Error Rate 0 /sec

Receive and Display PER

3.5 Unicast or Multicast Frame Transmit

Set up the required configuration first. Press the "Smart Connect" button. After activation the left button switches from "NO NETWORK" to "STARTED" mode. This means an Adhoc BSS has been started with SSID "AMD 802.11 MTS Network". Now setup the required PAYLOAD in bytes. Next, press "START" for start test mode, whereby after starting, the "IDLE" button switches to "RUNNING". Now validation over statistics is possible.

Execute Test	
Unicast or Multicast Frame Transmit Network Configuration Power (mw) 1 10 11 11 11 11 11 11 11 11 11 11 11 11	Transmit Destination FF:FF:FF:FF:FF A0:00:A2:A3:A4:A5 C0:00:A2:A3:A4:A5 E0:00:A2:A3:A4:A5 E0:00:A2:A3:A4:A5 E0:00:A2:A3:A4:A5 Refresh Payload (bytes) 2304 Start
BSSID : 1E:A0:C7:7B:4F:44	Stopped
Statistics Tx Avg 0.00 Kbps Tx Max 0 Rx Max 0	Tx Packets 0 Rx Packets 66 Close

Unicast or Multicast Frame Transmit.

Note that this is a two-machine test. Start this mode on one machine and on another machine run the MTS test "Unicast or Multicast Frame Transmit" and see it "Joining" the network started by this test, that is, the "AMD 802.11 MTS Network".

3.6 Unicast or Multicast Frame Receive

This is part of a two-machine test. Use the MTS mode "Unicast or Multicast Transmit" on another machine to start an Adhoc BSS. (See previous section.) Now, set up the required configuration first (make sure the Rx Channel is the same as that on the second machine on which a BSS Start was done using Unicast or Multicast Transmit mode). Now push the "JOIN" button, whereby after activation, the "No Network" button switches to "Joined...". Now validation over statistics is possible.

Lonfiguratio	on — P	v Channel —	18		
C A	nna 🔤 🖬	x channel			
CR	2				
© Div	versitu 3				
Rx Statistic	s				
Rx Avg	0.00 Kbps	_ Mgmt	0	CRC32	0
Rx Max	0	– Multicast	0	 Duplicates	0
	-				1
Data	U	CRUID	U	Signal Quality	0

Unicast or Multicast Frame Receive.

Note, if "Started !" is displayed instead of "Joined...", it means either the Rx channel was not selected properly or the Adhoc BSS "AMD 802.11 MTS Network" was not started or is out-of-range on the second machine. Please click the Join button again to disconnect, verify setup and Join again.

3.7 Duty Cycle Measurement

Set up the required configuration first. Press the "START" button next for the test, whereby the "IDLE" button switches to "RUNNING". Now validation over statistics is possible.

Execute Test	- 🗆 🗵
Duty Cycle Measurement	
Configuration	
Tx Channel Tx Power (mw) Image: Comparison of the compariso	
Statistics Tx Average 5.47 Mbps Tx MPDUs	
Control Start Running Stop	

Duty cycle measurement

3.8 Power Save and Awake

This mode configures the power save mode for various system-level measurements.

Set Power Save Mode	×
Place device in Power Save Mode ?	
<u>Y</u> es <u>N</u> o	
After finalization of the test series proceing	the "OK" button welfor the system
Arter manzation of the test series, pressing	the OK button wakes the system.
Power Save Mode	×
Device is now in Power Save Mode. Continue to Awake Mode.	
ОК	