# Application Note AN-xxxx Setup of an Ad-Hoc network using UAY-MMC85M wireless cards (A How to Guide)

# Documentation No. \_\_\_\_ Marvell Semiconductor Inc.

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# **Revision History**

Date	Author	Revision	Description
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#### **Overview**

This document describes the procedure of setting up an ad-hoc network using Marvell UAY-MMC85M PCI Express WLAN client mini cards. Marvell configuration utility is used to configure and setup the Ad-Hoc network for testing purposes.

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### Ad-Hoc test Setup

The Ad-Hoc test setup consists of two laptops Master and Slave.





MC85 extender assembly

Each laptop uses a MC85 extender assembly. The MC85 extender assembly consists of:

- 1. MC85 PCIe card
- 2. PCIe extender adapter





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MC85 extender assembly



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MC85 card



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PCIe extender adapter The PCIe extender adapter is plugged in both the laptops to create an Ad-Hoc network.



### 1] Marvell Configuration Utility

### 1.1] Overview

The Marvell Client Card Configuration utility is a Windows based application that allows configuration and management of the Marvell high throughput client cards. The configuration utility sets up profiles, and performs other wireless network management tasks. The Marvell Client card configuration utility comes in an executable file. Running the executable file opens up the setup window. Following the instructions on screen will install the configuration utility. For details on installing the Marvell Client card configuration utility, please refer page 41.

#### Note:

For windows XP and Windows Server 2003, it is preferable to use the Marvell configuration utility when using Marvell client cards. Windows Zero Config and Marvell Configuration Utility cannot be used at the same time. In such a case, it is preferable to disable or manually stop the services running Windows Zero Config utility. Please refer page 54, on how to manually stop the Windows Zero Config service.





### **1.2] Settings on the Marvell Client Configuration Utility**

### 1.2.1] About tab details

The **About** tab in the Configuration utility should display the same settings on both the **Master** and **Slave** laptops, as seen in the snap shot below, except for the MAC address.

Marvell(R) Wireless Client Card Co	nfiguration Uti	lity		×
Network Status Profile Manager Admin Debug Tes	Site Survey st Page 2	Statistics About	Advanced AutoLink 802.11n/QoS	
MAC Address: Region Code: Firmware Version: NDIS Driver Version: Configuration Utility Version: DLL Version Config Utility:	00 50 43 20 5C USA (FCC) 4.1.3.9 2.1.4.0 (9-20-20 5.0.1.4 (3-16-20 5.0.1.4 (3-16-20	E7 06) 07) 07)		
Radio off (Alt+F2)		ОК	Cancel	



### **1.2.2] Creating the Profile**

This section provides the requisite settings to bring up the Ad-Hoc setup using UAY-MMC85M cards. The profile is created with the proper settings for the Ad-Hoc setup. This is done using the **Profile Manager** tab in the Marvell GUI. Following steps provide the details on creating a new profile.

# Please note that the profile <u>dfs120</u> and <u>dfs60</u> have already been created. Please refer pages 10 - 13 and 20 on how to select the pre-configured profile.

Note: The steps below help you to create a new profile only if needed.



1. Double click on the Marvell GUI icon (encircled) on the desktop.



2. The Network Status tab shows status as *Card unplugged*.

Marvell(R) Wirele	ss Client Card (	Configuration Uti	lity		X
Admin Deb	ug Test	Test Page 2	Abou	ut 8	302.11n/QoS
Network Status	Profile Manager	Site Survey	Statistics	Advanced	d AutoLink
Select Profile		Signal S	trength		
		·			
Link Information		Internet	Protocol (TCP/	(IP)	
Status:	Card unplugged	DHC	Option:		
Network SSID:		IP Ad	dress:		
Network Type:		Subn	et Mask:		
Network BSSID:		Defa	ult Gateway:		
Security:					
Tx/Rx Rates:					
		- Channel Performar	nce		
Current	Tx Rate:		Current Rx	(Rate:	
1 Kbps		1	Kbps		
500 bps		50	O bps		
0 bps			O bps		
Radio off (Alt+F	2)		0	ĸ	Cancel



3. Plug in the extender adapter card. The **Network Status** tab now shows *No connection*.

Marvell(R) Wireles	ss Client Ca	ard Config	uration Uti	ility			$\mathbf{X}$
Admin Deb	ug T	est	Test Page 2	2 Abou	ut 8	02.11n/QoS	
Network Status	Profile Mana	ger Site	e Survey	Statistics	Advanced	AutoLink	
Select Profile	Select Profile						
- Link Information-			Internet	Protocol (TCP/	'IP)		
Status:	No connecti	on	DHC	P Option:			
Network SSID:			IP Ad	Idress:			
Network Type:			Subn	et Mask:			
Network BSSID:			Defa	ult Gateway:			
Security:				Ľ			
Tx/Rx Rates:							
		Char	nnel Performa	nce			
Current	Tx Rate:			Current Rx	Rate:		
4.9 Kbps			4.4	Кыра			
2.5 Kbps			2.2	Kbps 🗾 🗌			
0 bps				0 bps			
Radio off (Alt+F	2)			0	ĸ	Cancel	



4. Click on the **Profile Manager** tab.

Marvell(R) Wireless Client Card Configuration Utility						
Admin Debug Test	Test Page 2		About	802.	11n/QoS	
Network Status Profile Manager	Site Survey	Statistic	s	Advanced	AutoLink	
✓ <default></default>	Profile Setting	Casuitu	Deale			
		secunty	FIOLO	COL		
	Profile Nar	ne:	<defa< th=""><th>ult&gt;</th><th></th></defa<>	ult>		
	Network S	SID:	KANY	SSID>		
	Network T	уре:	Infrast	ructure	~	
	Wireless M	lode:	Auto		~	
	Preferred (	Channel:	Auto-9	Select	×	
	Region Co	ide:	Defau	lt	~	
	┌ 🗹 802.11	n Networ	k —			
	Channel W	/idth:	Auto		<b>~</b>	
	Guard Inte	rval:	Auto		~	
	Extension	Channel:	Auto		~	
	Antenna S	election:	Auto		~	
Apply Profile						
Move Up Move Down	Delete		Create.		Save	
Radio off (Alt+F2)			OK		Cancel	



5. Click *Create* button.

Marvell	Network Info			×
Admin Networ	Enter the network info	ormation:	- Alexandre	ink
	Basic Settings         Profile Name:         Network SSID:         Network Type:         Wireless Mode:         Preferred Channel:         Region Code:         V         802.11n Network         Channel Width:         Guard Interval:         Extension Channel:         Antenna Selection:	Infrastructure Auto Auto-Select USA (FCC) Auto Auto Auto Auto		
Rac		< Back Next >	Cancel	el

6. Enter the following information in Basic Settings

#### a. Profile Name: dfs120

The profile name should be changed to dfs60, when testing is carried out on channel 60

#### b. Network SSID: dfs120

The network SSID should be set to dfs60, when testing is carried out on channel 60.

c. Network Type: Ad-Hoc



- d. Wireless Mode: 802.11a
- e. Preferred Channel: 120

The preferred channel should be set to channel 60 when testing is carried out on channel 60.

- f. Region Code: USA (FCC)
- g. Channel Width: 20 MHz

Channel width should be set to 40 MHz, when testing the 40MHz test cases.

- h. Guard Interval: Standard
- i. Extension Channel: Lower

The extension channel should set to upper, when channel 60 is being used.

j. Antenna Selection: 2 by 2





Marvell	Network Info			×
Admin Networl	Enter the network inf	ormation:		ink
	Basic Settings Profile Name: Network SSID: Network Type: Wireless Mode: Preferred Channel: Region Code: 802.11n Network Channel Width: Guard Interval: Extension Channel: Antenna Selection:	dfs120         dfs120         AdHoc         802.11a         120 (5.600 GHz)         USA (FCC)         20 MHz         Standard         Lower         2 by 2		
Rad		< Back Next >	Cancel	el

7. Click Next.



- 8. On the **Security** window, leave the settings to default.
  - a. Authentication Mode: Open System
  - b. Encryption Method: Security Off

Marvell	Security		×
Admin Networl	Enter the security settings:		.ink
• 🔍			
	Authentication Mode:     Open System       Encryption Method:     Security off		
	WEP Key Setting		
	C Key 1 is not set		
	C Key 4 is not set		
	Configure WEP Keys		
Rac	< Back Next > Ca	ancel	el

9. Click Next.



#### 10. On the **Protocol** window

- a. Uncheck the Do not change settings (keep original settings) box.
- b. Leave rest of the settings as default.

Marvell	Protocol	x X
Admin Networl	Enter the wireless settings:	Link
	□ Do not change settings (keep original settings)         Use below settings         Power Save Mode:         Preamble (802.11b):         Auto         Transmit Rate:         Auto         Fragment Threshold:         2346         RTS/CTS Threshold:         2347         Reset	

11. Click Next.



### 12. Click Finish.

Marvell		
maiven	Complete.	
Admin		
Networl		Link
	D. C. Nove 46 120	
	Profile Name = dfs120 Network SSID = dfs120	
	Network Type = Ad-Hoc	
	Channel = 120 (5.600 GHz)	
	Authentication = Open System	
	Power Mode = Continuous Access	
	Hadio Preamble = Auto Transmit Data Bate = Auto	
	Fragmentation Threshold = 2346	
	RTS Threshold = 2347	
	Region Lode = USA (FLL)	
📃 Rac	Karaka Kar Karaka Karaka Kar Karaka Karaka Kar Karaka Karaka Karaka Karaka Karaka Kar	el



- 13. The new profile dfs120 is seen in the left hand column.
- 14. Select the profile dfs120 by clicking on it.

Marvell(R) Wireless Client Card Cor	nfiguration Uti	lity		X
Admin Debug Test	Test Page 2		About	802.11n/QoS
Network Status Profile Manager	Site Survey Statistic:		s Advanc	ed AutoLink
✓ <default></default>	Profile Setting	Securitu	Protocol	
	Profile Nan	ne:	dfs120	
	Network S	SID:	dfs120	
	Network T	уре:	Ad-Hoc	~
	Wireless M	Wireless Mode:		~
	Preferred Channel:		120 (5.600 GH	lz) 💌
	Region Co	de:	USA (FCC)	~
	802.11	n Networ	k	
	Channel W	idth:	20 MHz	✓
	Guard Inter	val:	Standard	✓
	Extension (	Channel:	Lower	~
	Antenna Se	election:	2 by 2	▼
Move Up Move Down	Delete		Create	Save
Radio off (Alt+F2)			OK	Cancel

- 15. Click on **Apply Profile** button to apply the dfs120 profile.
- 16. Click on the Network Status tab, to see the selected profile.



#### 17. The Status field in the Link Information section shows "Waiting for Peer."

Marvell(R) Wirele	ss Client	Card Co	nfigur	ation Uti	lity					×		
Admin Deb	ug	Test		Fest Page 2		Abou	t	802.1	1n/QoS			
Network Status	Network Status Profile Manager				Site Survey Statistics Advanced							
Select Profile		Signal SI	trength-									
dfs120			*									
Link Information				Internet	Protocol	(TCP/I	P)			-		
Status:	Waiting f	or peer		DHCF	<sup>o</sup> Option:							
Network SSID:	dfs120			IP Ad	dress:							
Network Type:	Ad-Hoc			Subn	et Mask:							
Network BSSID:	AA 1F 67	'DD 47 69		Defau	ult Gatew	vay:						
Security:	Security	off										
Tx/Rx Rates:												
			Chann	el Performar	nce					5		
Current	Tx Rate:				Curr	ent Rx	Rate:					
2.5 Kbps				2.5	Kbps 📕							
1.2 Kbps				1.2	КЬрз							
0 bps/					) ps							
Radio off (Alt+F	2)					Ok	<		Cancel			

- 18. Unplug the card from the laptop.
- 19. Follow the steps 1 18 to create the profile on Slave laptop.



### 2] Bringing up the Setup

#### This section provides the details on

- 1. Drivers for UAY-MMC85M cards
- 2. Steps to use the **Dbgview.exe utility** to see radar detection and other logs.
- 3. Steps to bring up the Ad-Hoc setup

### 2.1] Driver for UAY-MMC85M cards

The UAY-MMC85M has two versions of the same driver. These drivers are used for the following purpose:

1. To detect the radar in test mode

This driver version is used to detect the radar pulses, but not switch channels. This mode is known as test mode and used to count the number of radar pulses detected.

2. To detect the radar and switch channel

This driver version is used to detect the radar pulses and switch to a new channel. In this case the UAY-MMC85M switches channels anytime it detects radar. This is used to determine the moving and closing time of the channel switching.

## 2.2] Dbgview Utility

The current logs of the setup are displayed in the Dbgview utility window. It displays when the channel availability check has started on a particular channel and whether it has detected the radar or not. It also displays the channel switching process on the master and the new channel, the master has switched to. The Dbgview icon is encircled below.



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👯 D	ebu	gView	on \\	LENO	WO-2396BF64 (local)	×
File	Edit	Captu	re Oj	otions	Computer Help	
🚔		<b>*</b>	٩	-		
#		Time	э		Debug Print	
0 1 2		12:0 12:0 12:0	0:18 0:18 0:18	PM PM PM	======StaScanMachine: ScanMachineState_Start ====	
3 4 5 6		12:0 12:0 12:0 12:0	0:18 0:18 0:18 0:26	PM PM PM	=======StaScanMachine: ScanMachineState_Finish	
7 8 9		12:0 12:0 12:0	0:26 0:26 0:26	PM PM PM	=======StaScanMachine: ScanMachineState_Finish=== Ix_M80211h_StartQuietRadarDetection: ch=120	
11		12:0	0:26 0:26	PM PM	Radar Mode: Channel Availability Start	



When the radar is detected the Dbgview window shows the **Radar detected** message on the master.

🎘 D	ebug	View on VLENO	VO-2396BF64 (local)
File	Edit	Capture Options	Computer Help
6		2   4   8	
#		Time	Debug Print
10		2:49:35 PM	
11		2:49:35 PM	======StaScanMachine: ScanMachineState_Finish=======
13		2:49:35 PM	======StaScanMachine: ScanMachineState Start ====
14		2:49:43 PM	
15		2:49:43 PM	======StaScanMachine: ScanMachineState_Finish=======
16		2:49:43 PM	
19		2:49:43 PM	IX_M80ZIIN_StartQuietRadarbetection: Ch=IZO
19		2:49:43 PM	Radar Mode: Channel Availability Start
20		2:50:43 PM	
21		2:50:43 PM	Radar Mode: Channel Availability Stop
22		2:50:43 PM	
23		2:50:43 PM	Radar Mode: In service start
24		2:30:43 PM	StaScanMachine. ScanMachineState Start
26		2:50:48 PM	Stastanmachine. Stanmachinestate_Start
27		2:50:48 PM	======StaScanMachine: ScanMachineState_Finish=======
28		2:50:48 PM	
29		2:50:48 PM	Starting adhoc network on Channel 120
30		2:50:48 PM	
51 22		2:50:48 PM	set Beacon.
32		2:50:48 PM	RetStartCB.
34		2:55:19 PM	
35		2:55:19 PM	Radar detected
36		2:55:19 PM	
37		2:55:19 PM	=== !!!Radar signal detected, block current channel <120>!!!
20		2:00:19 PM	Set CH block count for channel <1205
40		2:55:19 PM	Set Ch block could for chamer (120)
41		2:55:19 PM	Sending HostCmd_CMD_UPDATE_IBSS_DF5_IE with 23 channels.
42		2:55:19 PM	
43		2:55:19 PM	Issuing CHANNEL_SWITCH, CH = 120, SW CH= 104, SW Cnt = 20
44		2:55:19 PM	conding wastend CMD SET SWITCH CHANNEL Next channel 104 often 10 intervals
45		2:00:19 PM	Sending Hostenid_CMD_SET_SWITCH_CHANNEL Next channel 104 after 20 intervals
47		2:55:21 PM	IX M80211h StartouietRadarDetection: ch=104
48		2:55:21 PM	
49		2:55:21 PM	Radar Mode: Channel Availability Start
50		2:56:21 PM	Dealer Meder Channel Michilder Chan
52		2:30:21 PM	Radar Mode: Channel Availability Stop
53		2:56:21 PM	Radar Mode: In service start



After the radar detection, the master switches to a new channel and starts the Ad-Hoc network on the new channel. The message **Starting adhoc network on channel** will be seen in the Dbgview window.





### 2.3] Ad-Hoc Setup bring up

### 2.3.1] Using UAY-MMC85M switch mode driver

The following section provides steps to bring up the setup to test the master for radar detection purposes. Please remember to use the test mode driver for these detections. In case of finding the channel move time, the closing time, it is advised to use the channel switch mode driver. The procedure below describes the steps to change the drivers.

- 1. On the Master laptop, double click on the Dbgview.exe icon to open it.
- 2. Double click on the Marvell GUI icon to open the GUI window.
- 3. Plug in the UAY-MMC85M master PCIe extender assembly in the laptop. The laptop screen should look like below.



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👯 Debu	gView on \\LEN(	DVO-2396BF64 (local)			ess Clien	t Card Co	onfigurat	tion Uti	lity			
File Edit	Capture Option:	; Computer Help ;	₩ ¥		 bug Profile N	Test	Tes Site Surv	st Page 2 veu	Statistic:	About s	80: Advanced	2.11n/QoS AutoLini
# 0 1 2 3 4 5 6 6 7 7 8 9 9 10 11	Time 12:00:18 PM 12:00:18 PM 12:00:18 PM 12:00:18 PM 12:00:18 PM 12:00:26 PM 12:00:26 PM 12:00:26 PM 12:00:26 PM 12:00:26 PM	Debug Print StaScanMachine: StaScanMachine: StaScanMachine: Ix_M80211h_StartQuietRad Radar Mode: Channel Avai	: ScanMachine : ScanMachine : ScanMachine : ScanMachine darDetection: :lability Sta	2State_Start = 2State_Finish= 2State_Start = 2State_Finish= ch=120 2rt	  No con	nection		Signal St Internet f DHCF IP Add Subne Defau	Protocol ( Poption: dress: et Mask: ult Gatewa	TCP/IP	) 	
					nt Tx Rate:		- Channel F	Performar 1 I 500	Curre Curre Kbps D bps	nt Rx F	late:	
Places		101	7	_	F2)					0K (		Cancel

4. The UAY-MMC85M driver starts the CAC and after a period of at least 60 seconds, brings up the UAY-MMC85M card, if no radar activity is seen in the channel 120. The **Waiting for peer** status is seen in the Marvell GUI.



Marvell(R) Wirele	s Client	Card Co	nfigu	ration Uti	lity					×
Admin Deb	, g	Test		Test Page 2		About	:	802.1	1n/QoS	
Network Status	Profile M	anager	Site	Survey	ed	AutoLink				
Select Profile			*	- Signal Si	trength-					
Link Information				Internet	Protocol	(TCP/II	P)			
Status:	Waiting f	or peer		DHCF	<sup>o</sup> Option:	: [				
Network SSID:	dfs120			IP Ad	dress:					
Network Type:	Ad-Hoc			Subn	et Mask:					
Network BSSID:	AA 1F 67	DD 47 69		Defau	ult Gatew	vay:				
Security:	Security of	off								
Tx/Rx Rates:										
			 Chanr	l Leformar	nce					
Current	Tx Rate:				Curr	ent Rx I	Rate:			
2.5 Kbps				2.5	Кыр 🔳					
1.2 Kbps				1.2	КЬрз					
0 bps					) bps					
Radio off (Alt+F	2)					OK			Cancel	

5. Now follow steps 1, 2 and 3 on **Slave** laptop to bring up the slave UAY-MMC85M.

6. The association between the master and slave takes place. The Network Status tab shows the *Status* as Connected.
The status on the Marvell GUI should be seen as below. Please refer the *page 37*, *section 3.1*, in chapter Debugging Ad-Hoc Setup if there are problems in association.



File Edit Capture Options Computer Help         Image: Computer Melp         Image: Computer	₩D	ebu	gView on	WLENC	)VO-2396	BF6	i4 (lo	cal)								ess Cli	ie nt	Card (	Config	gurat	ion Uti	lity		
Image: Statistic State       Image: Statistic State       Advance         Image: Statistic State       Image: Statistic State       Advance         Image: State       Image: State       Statistic State         Image: State       Image: State       Image: State         Image: State       Image: State       Image: State         Image: State       Image: State       Image: State       Image: State         Image: State	File	Edit	Capture	Options	Computer	rН	elp									- hurs	_	Test		Te	. D 0		6 h	00:
#       Time       Debug Print         0       12:00:18 PM         1       12:00:18 PM         1       12:00:18 PM         3       12:00:18 PM         4       12:00:18 PM         5       12:00:18 PM         5       12:00:18 PM         6       12:00:18 PM         7       12:00:26 PM         9       12:00:26 PM         9       12:00:26 PM         11       12:00:26 PM         12:00:26 PM       Radar Mode: Channel Availability Start         12:10:26 PM       Radar Mode: Channel Availability Start         12:10:26 PM       Radar Mode: In service start         16       12:01:26 PM         12:01:26 PM       Radar Mode: In service start         16       12:01:31 PM         17:Mbps       CurretRxRate 800         17:Mbps       17:Mbps         12:01:31 PM       Security off         12:01:31 PM       Set Beacon.         12:01:31 PM       Set Beacon.         12:01:31 PM       Set Beacon.	6	H	<b>2</b>	۹ 🏽			S I	🛛 🖉	$\triangleleft$	 +	酋	I				Profi	ile Ma	nager	Si	te Sur	x Fage 2 veu	Statistics	ADOU	Advanced
0       12:00:18 PH         1       12:00:18 PH         3       12:00:18 PH         3       12:00:18 PH         4       12:00:18 PH         5       12:00:18 PH         4       12:00:18 PH         7       12:00:18 PH         7       12:00:26 PH         7       12:00:26 PH         8       12:00:26 PH         9       12:00:26 PH         9       12:00:26 PH         12:00:26 PH       12:00:26 PH         12:00:26 PH       12:00:26 PH         12:00:26 PH       Radar Mode: Channel Availability Start         12:00:26 PH       Radar Mode: Channel Availability Start         12:01:26 PH       Radar Mode: In service start         14       12:01:26 PH         12:01:26 PH       ====================================	#		Time		Debug	Pr	int														Circal Ci	ropoth		
1       12:00:18 PM       PM       ====================================	0		12:00:	18 PM																	olyriai o	irengun		
12:00:10 PM       =======StaScanMachine: ScanMachineState_Finish===         4       12:00:18 PM       =======StaScanMachine: ScanMachineState_Start ====         6       12:00:26 PM       =======StaScanMachine: ScanMachineState_Finish===         8       12:00:26 PM       =======StaScanMachine: ScanMachineState_Finish===         9       12:00:26 PM       Ix_M80211h_StartQuietRadarDetection: ch=120         10       12:00:26 PM       Radar Mode: Channel Availability Start         12:00:26 PM       Radar Mode: Channel Availability Start         12:01:26 PM       Radar Mode: In service start         11       12:01:26 PM         12:01:26 PM       Radar Mode: In service start         16       12:01:26 PM         17       12:01:26 PM         18       12:01:26 PM         19       12:01:26 PM         19       12:01:26 PM         10       12:01:26 PM         11       12:01:21 PM         12:01:21 PM       ====================================	1		12:00: 12:00:	18 PM		===	StaS	ScanM	achine	e: Sca	anMac	chineS	State_	_Start					*			9	18 %	
4       12:00:18 PM         5       12:00:18 PM         5       12:00:26 PM         7       12:00:26 PM         8       12:00:26 PM         9       12:00:26 PM         9       12:00:26 PM         9       12:00:26 PM         10       12:00:26 PM         11       12:00:26 PM         12:00:26 PM       Radar Mode: Channel Availability Start         12:01:26 PM       Radar Mode: Channel Availability Stop         14       12:01:26 PM         12:01:26 PM       Radar Mode: In service start         15       12:01:26 PM         12:01:26 PM       Fadar Mode: In service start         15       12:01:31 PM         12:01:31 PM       ====================================	3		12:00: 12:00:	18 PM			StaS	ScanM	achine	: Sca	anMac	chine5	State_	_Finis	h===						Internet	Protocol (T	CP/IF	η
6       12:00:26 PM       13:00:26 PM       12:00:26 PM       12:00:26 PM       12:00:26 PM       12:00:26 PM       12:00:26 PM       13:00:26 PM       Radar Mode: Channel Availability Start       12:00:26 PM       13:00:26 PM       13:00:26 PM       Radar Mode: Channel Availability Start       14:00:26 PM	4		12:00: 12:00:	18 PM			Sta	ScanM	achine	· 50	anMac	-hine9	State	Start		Conr	nerte	ď			рнся	Option:	<b>D</b> :	
7       12:00:26 PM       ========StaScanMachine: ScanMachineState_Finish===       IP Addres:       192:16811         8       12:00:26 PM       Ix_M80211h_StartQuietRadarDetection: ch=120       AdHoc       Subnet Mask:       255:255:25         10       12:00:26 PM       Radar Mode: Channel Availability Start       54:69:D0:80:2268       Default Gateway:	6		12:00:	26 PM			Juan	Jeann	achine	, 000	annac	JILIIGA	Juane_	_otar t		JK.11	necie				Unior	· o puon.	Di	sable
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10       12:00:26 PM       PM       The formation of the formation	8		12:00:	26 PM	Tx M80:	211	h St	artO	uietRa	udarDe	etect	tion	ch=10	20		Ad-H	100				Subn	et Mask:	25	5.255.255.0
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12:01:26 PM       Radar Mode: Channel Availability Stop         14       12:01:26 PM       Radar Mode: In service start         16       12:01:26 PM       Radar Mode: In service start         16       12:01:26 PM       ======StaScanMachine: ScanMachineState_Start ====         18       12:01:31 PM         19       12:01:31 PM         11       12:01:31 PM         12:01:31 PM       ======StaScanMachine: ScanMachineState_Finish===         11       12:01:31 PM         12:01:31 PM       Starting adhoc network on Channel 120         12:01:31 PM       Set Beacon.         12:01:31 PM      GetMcast: 6501a8c0 81ef62f0	11		12:00:	26 PM	Radar I	Noc	le: C	Chann	el Àva	ilab:	ility	7 Star	rt			Secu	urity o	off						
14       12:01:26 PM       Radar Mode: In service start         15       12:01:26 PM       Radar Mode: In service start         16       12:01:26 PM       ====================================	13		12:01:	26 FM	Radar 1	Mod	le: C	Chann	el Ava	ilab:	ilitv	7 Stop	D			26 M	1bps -	/ 26 Mbp	ps					
15       12:01:26 PM Radar Mode: In service start         16       12:01:26 PM         17       12:01:26 PM         18       12:01:31 PM         19       12:01:31 PM         19       12:01:31 PM         21       12:01:31 PM         21       12:01:31 PM         21       12:01:31 PM         22       12:01:31 PM         23       12:01:31 PM         24       12:01:31 PM         25       12:01:31 PM         26       12:02:18 PM         26       12:02:18 PM         26       12:02:18 PM         26       12:02:18 PM	14		12:01:	26 PM							,		-						Chan	 nd 12	0.05.600	GH-1		
12:01:26 PM      GetMcast: 6501a8c0 81ef62f0         11:12:01:26 PM      GetMcast: 6501a8c0 81ef62f0	15		12:01: 12:01:	26 PM	Radar l	Mod	le: I	In se	rvice	star	t							o. 1.4	Criani	nei 12	0 (0.000	un2)		• • • • • • • •
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19       12:01:31 PM       PM       =========================       8238Kbps	18		12:01:	31 PM						_							n I		<u>а</u> Ла		1.71	Mops	-	
1       12:01:31 PM Starting adhoc network on Channel 120         22       12:01:31 PM Set Beacon.         23       12:01:31 PM Set Beacon.         24       12:01:31 PM RetStartCB.         25       12:02:18 PMGetMcast: 6501a8c0 81ef62f0	20		12:01:	31 PM		===	Stab	canM	achine	e: Sca	anMac	chinet	state_	_Finis	h===		Ш		WW					
22       12:01:31 PM         23       12:01:31 PM         24       12:01:31 PM         25       12:01:31 PM         26       12:02:18 PM         26       12:02:18 PM	21		12:01:	31 PM	Starti	ng	adhc	oc ne	twork	on Ch	hanne	∍l 120	0				₩₩		₽		829.8	Kbps	-#++	<u> +</u> /₩
23       12:01:31 PM       Set Beacon.       0 bps	22		12:01:	31 PM	C-+ D												11	t į						111
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	26		<b>1</b> 2:02:	18 PM	GetMo	cas	st: E	501a	8c0 81	.ef621	£O													
-F2) ΟΚ																-F2)							OK	
																1		1			_		(	
	 Di-		***												- 71									
												-						5						

7. Once the Ad-Hoc network is created, ping the Master laptop from the Slave laptop. The ping should succeed.
M A R V E L L<sup>20</sup>

8. On the **Slave** laptop's desktop, double click on the **Shortcut to mplayerc** to run it.



9. On the slave laptop, go to **Start -> Run** and type the *Ip address of the master*. This will enable the slave's access to the hard drive of the master.

		3			
My Network Mrv8000x_5 PRINTKEY					
Run 🤶 🔀	$\vee$				
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.					
Open: (\\192.168.1.101)					
OK Cancel Browse	03h	04h	05h	06h	6
🛃 start 🛛 🧭 🥝 🤔 🤌 M 🗖 🔤 C	髓 6	. 🗅	1	¥ s	

10. Select the C-Cert folder and double click on it to open it.



😨 W192.168.1.101	
File Edit View Favorites Tools Help	
🔇 Back 🔹 🌍 - 🏂 🔎 Search 🌮 Folders 🔯 🍞 🗙 🍄 🎹 -	
Address 🖁 \\192.168.1.101	💌 🄁 Go
Name A Comments	
C_Cert2 CHDvideo video fro	
1 objects selected	

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11. Select **video\_fcc** folder and double click on it to open it.



😨 \\192.168.1.101\C_Cert2			
File Edit View Favorites To	ools Help		and a state of the
🕒 Back 🔹 🕥 🖓 🎾	🔾 Search 😥 Folders 🔯 🏂	Х №	
Address 😌 \\192.168.1.101\C_Ce	rt2		💙 🄁 Go
Name 🔺	Size Type	Date Modified	<u>^</u>
🛅 972a6881f2937af449692a9fe	File Folder	12/7/2006 11:40 PM	
Customer	File Folder	9/28/2006 2:12 PM	
🛅 Documents and Settings	File Folder	5/24/2006 2:01 AM	
C DRIVERS	File Folder	3/15/2006 5:43 PM	
🛅 Gary	File Folder	3/15/2007 5:28 PM	
🛅 HDvideo	File Folder	9/21/2006 8:53 AM	
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	File Folder	5/24/2006 2:01 AM	
🛅 IBMSHARE	File Folder	5/3/2007 11:26 PM	
🛅 IBMTOOLS	File Folder	5/24/2006 2:01 AM	
ibmwork	File Folder	5/24/2006 2:03 AM	=
🛅 Icons	File Folder	3/15/2006 5:06 PM	
🛅 Marvell	File Folder	1/25/2007 7:33 PM	
🛅 MSOCache	File Folder	5/24/2006 2:08 AM	
DADS Projects	File Folder	9/19/2006 2:49 PM	
🛅 PhiMacLe	File Folder	12/7/2006 12:58 PM	
🛅 Program Files	File Folder	3/20/2007 10:43 AM	
C SUPPORT	File Folder	8/9/2004 9:42 AM	
🛅 SWTOOLS	File Folder	12/13/2006 5:27 PM	
C VALUEADD	File Folder	8/9/2004 9:42 AM	
ideo_fcc	File Folder	9/20/2006 7:30 PM	
C WINDOWS	File Folder	5/3/2007 11:16 PM	
AUTOEXEC Size: 344 MR	POS Batch File	5/24/2006 2:01 AM	
BOOTLOG Files: 612Magic1958	.mpeg, klcodec261f.exe Document	3/15/2006 5:21 PM	
BOOTLOG.PRV	UKB PRV File	3/15/2006 5:14 PM	
🔤 CONFIG	0 KB System file	5/24/2006 2:01 AM	
	OVD THE DESIGN	ONEROOK E-OD DM	<u> </u>
1 objects selected			🔮 Internet



12. Select the file **612Magic1958**.

😂 \\192.168.1.101\C_Cert2	2\video_fcc		
File Edit View Favorites T	Fools Help		
🌀 Back 🝷 🕥 🚽 🏂 🍃	🔎 Search 🎼 Folders 🕼	ا ۲ 🗙 🕉	
Address 🛅 \\192.168.1.101\C_Ce	ert2\video_fcc		💌 🄁 Go
Name 🔻	Size Type	Date Modified	
tiv klcodec261f iiii 612Magic1958	14,370 KB Application 338,487 KB MPEG File	11/10/2005 2:05 PM 4/19/2005 10:29 AM	
Type: MPEG File Size: 330 MB Date M	lodified: 4/19/2005 10:29 AM		330 MB 🔮 Internet 🛒



13. Drag and drop the file on the opened media player window.





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14. The video clip should start playing.



15. Now all the requisite tests in which the master has to switch channel can be performed.



### 2.3.2] Changing UAY-MMC85M driver

In the previous section, the UAY-MMC85M would switch channel whenever radar was detected in the operating channel. The following section provides steps to change the driver so that the master/slave would just detect the radar. This means that UAY-MMC85M will not switch the channel and give a count of the number of radar detections. The procedure below describes the steps to change the drivers.

1. Open the folder C:\Documents and Settings\admin\Desktop\DFS\dfsbuilds\fcc2006.

😂 C:\Documents and Setting	gs\admin\Desktop\DFS\dfsbuilds\dfsbuilds\fcc2006	
File Edit View Favorites <sup>-</sup>	Tools Help	A 1
🚱 Back 🔹 🕥 🕘 🏂	🔎 Search 🎼 Folders 🔯 🏂 🗙 🍫 🛄 -	
Address 🛅 C:\Documents and Se	ttings\admin\Desktop\DFS\dfsbuilds\dfsbuilds\fcc2006	💌 🄁 Go
Name 🔺	Size Type Date Modified	
Control of the second s	File Folder 3/19/2007 3:32 PM File Folder 3/19/2007 3:32 PM	
1 objects selected	S My Compu	ter 🔡



2. Open the folder dbg-radar-detect.



- 3. Select the file **netmw145.sys** and press **Ctrl C** to coy the file.
- 4. Go to C:\Windows\system32\drivers and paste the copied file.
- 5. Unplug and plug the UAY-MMC85M master assembly. The UAY-MMC85M master / slave now has the test mode driver.
- 6. All the tests to count the number of radar detects can be carried out. The radar detection count and logs will be seen on the **Dbgview.exe** window.



### 3] Debugging Ad-Hoc Setup

#### 3.1] Slave does not associate with the Master

Sometimes the Slave would not join the Ad-Hoc network and would start the radar mode channel availability process. This can be seen when a message shown below is seen in the Dbgview window.

👯 D	ebu	gView o	n Wi	.ENO	VO-2396BF64 (local)
File	Edit	Capture	e Op	otions	Computer Help
🚔		<b>¥</b>	Q	-	→ 😹   🖾 🖳 🎯   苓 🖫   🛤
#		Time			Debug Print
0 1 2		12:00 12:00	:18 :18 :19	PM PM PM	======StaScanMachine: ScanMachineState_Start ====
3 4		12:00 12:00	:18 :18	PM PM	=======StaScanMachine: ScanMachineState_Finish===
5		12:00	:18	РM РM	======StaScanMachine: ScanMachineState_Start ====
0 7 8		12:00	:26	PM PM	=======StaScanMachine: ScanMachineState_Finish===
9		12:00	:26	PM	<pre>Ix_M80211h_StartQuietRadarDetection: ch=120</pre>
11		12:00	:26	PM PM	Radar Mode: Channel Availability Start

When such messages are seen in the Dbgview window on the slave, do the following:

- 1. Unplug the Master and the Slave UAY-MMC85M assemblies.
- 2. Plug in the Master assembly first.
- 3. Wait for the CAC time period, until the Dbgview window in Master shows the message **Starting adhoc network on channel**.
- 4. Plug back the Slave assembly and wait for association to take place.



5. Please follow the steps 1-4 a couple of times, in case association does not take place.

### 3.2] Link Instability

Sometimes the link between the Master and Slave can be quite unstable. In such a case, please look for any loose connections in the setup. Please confirm that all the pads have correct attenuation.

### 3.3] Video cannot be played

This can happen due to improper channel loading. In such cases, look at the **Tx/Rx Rates** as seen in the **Network Status** tab below. If the rates stabilize around 6Mbps, the video file cannot be played, even though the ping between the master and slave is successful. It is preferred to unplug both the UAY-MMC85M extender assemblies and plug them back starting with the Master assembly.





Marvell(R) Wireles	s Client	Card Co	nfigu	uration Uti	lity					×
Admin Debu	, g	Test		Test Page 2		Abo	out	802.1	11n/QoS	
Network Status	Profile M	anager	Site	Survey	Statistic	cs	Advan	ced	AutoLink	
C Select Profile				Signal S	trength-					
dfs120			*							
Link Information					Protocol	(TCP	VIP)			í I
Status:	Connecte	ed 🛛		DHC	<sup>o</sup> Option:		Disable			
Network SSID:	dfs120			IP Ad	dress:	(in the	192.168.1	.101		
Network Type:	Ad-Hoc			Subn	et Mask:		255.255.2	255.0		
Network BSSID:	AA 1F 67	DD 47 69		Defa	ult Gatew	iay:				
Security:	Security (	off								
Tx/Rx Rates:	6 Mbps /	6 Mbps								
		C	hanne	el 120 (5.600	GHz)					í
Current	Tx Rate: 1	.8 Mbps			Curr	ent R	x Rate: 2.	5 КЪр	8	
2.5 Kbps				80.0	Кыры					
1.2 Kbps				12	Khos					
1.2 (0)				12						
0 bps					D bps	+				
					•					
Radio off (Alt+F	2)					(	ЭК		Cancel	

In case unplugging and plugging the assemblies does not increase the **Tx/Rx Rates**, do the following:

- 1. Go to the Profile manager tab on the Master.
- 2. Select the **Default** profile and click **Apply**.
- 3. Select the **dfs120** profile.



Marvell(R) Wireless Client Card Configuration Utility				
Admin Debug Test	Test Page 2	About 802.11n/QoS		
Network Status Profile Manager	Site Survey Statistic	s Advanced AutoLink		
	Profile Setting			
✓ ◆ <default> ✓ DFS120</default>	Network Info Security	Protocol		
	Profile Name:	DFS120		
	Network SSID:	DFS120		
	Network Type:	Ad-Hoc 💌		
	Wireless Mode:	802.11a 💌		
	Preferred Channel:	120 (5.600 GHz)		
	Region Code:	USA (FCC) 🔽		
	802.11n Network	k		
	Channel Width:	20 MHz 🗸		
	Guard Interval:	Standard 💌		
	Extension Channel:	Lower 🗸		
Apply Profile	Antenna Selection:	2 by 2		
Move Up Move Down	Delete	Create Save		
🔲 Radio off (Alt+F2)		OK Cancel		

- 4. Click on the **Protocol** tab.
- 5. From the drop down menu of **Transmit Rate**, select **MCS12**.



Marvell(R) Wireless Client Card Cor	figuration Utility		
Admin Debug Test	t Page 2 About	802.11n/Qo	S
Network Status Profile Manager	Site Survey Statistics	Advanced	AutoLink
<ul> <li><default></default></li> <li>dfs120</li> <li>dfs60</li> </ul>	Profile Setting Network Info Security F Do not change setting Use bo Power Save Mode: Preamble (802.11b):	Protocol ings elow settings Continuous Access Auto	
	Transmit Rate: Fragment Threshold: RTS/CTS Threshold:	Auto Auto 6 Mbps 9 Mbps 12 Mbps 18 Mbps 24 Mbps 36 Mbps 48 Mbps 54 Mbps 54 Mbps	<u> </u>
Apply Profile Move Up Move Down		MCS 0 MCS 1 MCS 2 MCS 3 MCS 4 MCS 5	
Radio off (Alt+F2)		MCS 6 MCS 7 MCS 8 MCS 9 MCS 10	ncel
		MCS 11 MCS 12 MCS 13 MCS 14 MCS 15	

- 6. Click on Save.
- 7. Click on Apply Profile.
- 8. Follow steps 1 7 on the Slave.



### APPENDIX A

### Federal Communications Commission (FCC) Compliance

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the 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 these instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in any 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 correct the interference by one of more of the following measures:

- 1) Reorient the antenna.
- 2) Increase the separation between the affected equipment and the unit.
- 3) Connect the affected equipment to a power outlet on a different circuit from that which the receiver is connected to.
- 4) Consult the dealer and/or experienced radio/TV technician for help.

#### FCC ID: UAY-MMC85M MODEL: MC-85

#### **IMPORTANT NOTE:**

Intentional or unintentional changes or modifications must not be made unless under the express consent of the party responsible for compliance. Any such modifications could void the user's authority to operate the equipment and will void the manufacturer's warranty. To comply with FCC RF exposure requirements, the following antenna installation and device operating configurations must be satisfied. The antenna for this unit must have a separation distance of at least 20 cm from all persons. Furthermore, it must not be co-located or operating in conjunction with any other antenna or transmitter.



### APPENDIX B

### Setting up UAY-MMC85M

This section provides step by step procedure on how to install the UAY-MMC85M driver, the Marvell Client Configuration Utility (Marvell GUI) and the settings required on the Marvell GUI in order to set up the UAY-MMC85M to operate in Ad-Hoc mode.

The UAY-MMC85M apparatus consists of a PCIe card (UAY-MMC85M) and a PCIe extender adapter board. The UAY-MMC85M is a PCIe card. This card is plugged into the PCMCIA slot with PCIe interface of the laptop using a PCIe-to-PCIe adapter extender card. The figure below shows the assembly.

### 1] UAY-MMC85M Driver Installation

This section explains how to install both the UAY-MMC85M client card and the driver for Marvell high throughput client cards in a client card slot of a Windows XP based PC computer. The client card driver must be installed before installing the Marvell Configuration Utility.

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### 1.1 Installing the Client Card

To install the client card:

- 1. Turn the computer off.
- 2. Insert the extender adapter (connector end toward the computer) into an available client card slot
- 3. Turn the computer on.

### 1.2 Installing the Windows XP driver

When the computer detects the client card extender, the Found Hew Hardware Wizard dialog box is displayed.



Found New Hardware Wizard					
	Welcome to the Found New Hardware Wizard				
	This wizard helps you install software for:				
	Ethernet Controller				
	If your hardware came with an installation CD or floppy disk, insert it now.				
	What do you want the wizard to do?				
	<ul> <li>Install the software automatically (Recommended)</li> <li>Install from a list or specific location (Advanced)</li> </ul>				
	Click Next to continue.				
	< Back Next > Cancel				

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- 1. Select Install from a list or specific location (Advanced).
- 2. Click Next to continue. The Please choose your search and installation options dialog box is displayed.



Found New Hardware Wizard
Please choose your search and installation options.
<ul> <li>Search for the best driver in these locations.</li> <li>Use the check boxes below to limit or expand the default search, which includes local</li> </ul>
paths and removable media. The best driver found will be installed. Search removable media (floppy, CD-ROM)
Include this location in the search: D:\CB85\Inf\WinXP Browse Browse
O Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back Next > Cancel

- 3. Enter the path of the directory that contains the driver.
- 4. Click **Next** to continue
- 5. If the **Hardware Installation** dialog box displays a warning that the software has not passed Windows Logo Testing, click **Continue Anyway**.



Har dwa	re Installation	
1	The software you are installing for this hardware: Marvell Libertas 802.11n Wireless (CB85) has not passed Windows Logo testing to verify its compatibility with Windows XP. ( <u>Tell me why this testing is important.</u> ) <b>Continuing your installation of this software may impai</b> or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.	-
	Continue Anyway STOP Installation	

The Please wait while wizard installs the software dialog box is displayed.  $\bowtie$ 





6. Click **Next** to continue.

The Completing the Found New Hardware Wizard dialog box is displayed.



Found New Hardware Wiz	ar d				
	Completing the Found New Hardware Wizard				
	The wizard has finished installing the software for:				
	Marvell Libertas 802.11n Wireless (CB85)				
	Click Finish to close the wizard.				
	< Back Finish Cancel				
М	ARVELL®				

7. Click Finish to complete the installation.



### 2] Configuration Utility Installation

This section provides a step by step procedure to install the configuration utility.

- 1. Power on the computer
- 2. Navigate the drive where the Marvell Client Card Configuration Utility files are located.
- 3. Change to the directory \**Utils**.
- 4. Double-click Setup.exe. Windows starts the utility setup program.

🐻 Marvell(R) Wireless Client Card Configuration Utility - InstallShield Wi 🔀				
	Welcome to the InstallShield Wizard for Marvell(R) Wireless Client Card Configuration Utility			
	The InstallShield(R) Wizard will install Marvell(R) Wireless Client Card Configuration Utility on your computer. To continue, click Next.			
	WARNING: This program is protected by copyright law and international treaties.			
	< <u>B</u> ack <u>N</u> ext > Cancel			

5. Click **Next** to continue. The **License Agreement** dialog box is displayed.



Barvell(R) Wireless Client Card Configuration Utility - InstallShield Wi	. 🗙			
License Agreement Please read the following license agreement carefully.				
MARVELL LIMITED USE LICENSE AGREEMENT	^			
The use of the "Deliverables," as defined herein, is exclusively governed by the terms of this limited use license agreement (the "Agreement"), dated and effective as of the Effective Date set forth below, by and between MARVELL INTERNATIONAL LTD ("Marvell") and LICENSEE By downloading, installing or using the Deliverables, Licensee accepts the terms of this Agreement. If Licensee does not agree to all of the terms of this Agreement, then Licensee must not download, install or use the Deliverables. Licensee and Marvell are each a "party" and, collectively, are the "parties" to this Agreement.				
<ol> <li>Definitions.</li> <li>1 1 "Affiliate" many a payon or antity that dimetly, or indirectly through one</li> </ol>	~			
<ul> <li>I accept the terms in the license agreement</li> </ul>				
$\bigcirc$ I do not accept the terms in the license agreement				
InstallShield.				
< Back Next > Cancel				
< Back Next > Cancel				

- 6. Select I accept the terms in the license agreement.
- 7. Click **Next** to continue. The **Customer Information** dialog box is displayed.



🙀 Marvell Libertas Driver - InstallShield Wizard	
Customer Information Please enter your information.	
Liser Name	
Administrator	
Organization:	
, Install this application for:	
<ul> <li>Anyone who uses this computer (all users)</li> </ul>	
<ul> <li>Only for me (Administrator)</li> </ul>	
InstallShield < Back Ne	ext > Cancel

8. Enter User Name and Organization.

### 9. Click Next.

The **Destination Folder** dialog box is displayed.



🕼 Marvell	Libertas Driver - InstallShield Wizard	×
<b>Destinati</b> Click Nex	i <b>on Folder</b> xt to install to this folder, or click Change to install to a different folder.	
	Install Marvell(R) Wireless Client Card Configuration Utility to: C:\Program Files\Marvell\ Change	]
InstallShield -	< Back Next > Cancel	)

### **MARVELL**<sup>%</sup> **st** to install the Marvell Configuration Utility in the defau

 Click Next to install the Marvell Configuration Utility in the default folder or enter a different path before clicking Next. The Ready to Install the Program dialog box is displayed.



🙀 Marvell Libertas Driver - InstallShield Wizard	×
<b>Ready to Install the Program</b> The wizard is ready to begin installation.	
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
InstallShield < Back Install Cancel	

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11. Click **Install** to start the installation.

The **Installing Configuration Utility** dialog box is displayed.



😸 Marvell Libertas Driver - InstallShield Wizard				
Installing Marvell Libertas Driver The program features you selected are being installed.				
i de la companya de l	Please wait while the InstallShield Wizard installs Marvell Libertas Driver. This may take several minutes. Status:			
InstallShield —	< Back Next > Cancel			

### is in programs

Installation is in progress.

When the Setup Wizard finishes, the **Installation Complete** dialog box is displayed.





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12. Click **Finish** to complete the installation of the Marvell Configuration Utility. The installation program for the Marvell Odyssey Client launches automatically.



### APPENDIX C

### **Disabling Windows Zero Config**

For windows XP and Windows Server 2003, it is preferable to use the Marvell configuration utility when using Marvell client cards. Windows Zero Config and Marvell Configuration Utility cannot be used at the same time. In such a case, it is preferable to disable or manually stop the services running Windows Zero Config utility. The snapshots below show how to manually stop the Windows Zero Config service.

### 1] Disabling Windows Zero Configuration Utility

To disable the Windows Zero Configuration Utility (if not disabled previously):

- 1. From the Control Panel, click **Network Connections**.
- 2. Right-click the icon for the Marvell client card and select **Properties**.
- 3. Click the Wireless Networks tab.
- 4. Clear the **Use Windows to configure my wireless settings** check box to disable the Windows Zero Configuration Utility.

L Wireless Network Connection P	roperties	?×		
General Wireless Networks Advanced				
Use Windows to configure my wireless network settings				
Available networks:				
To connect to, disconnect from, or find out more information about wireless networks in range, click the button below				
	View Wireless Networks			
Preferred networks: Automatically connect to available below: Add Remove Learn about <u>setting up wireless network</u>	networks in the order listed Move up Move down Properties Advanced			
Learn about <u>setting up wireless net</u>	Mork Advanced			