Radicom Research, Inc.

Preliminary Designers Guide for the

WiFiHU-NE and WiFiHU





USB WiFi Modules



RoHS Compliant

February 17, 2011

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Thanks for purchasing Radicom Research's USB WiFi Module. Radicom is committed to providing quality service and technical support in order to expedite the product development process. The WiFiHU Module requires only a USB (Universal Serial Bus) interface to add state of the art data WiFi wireless operation to any system. It is designed to fully support **IEEE802.11nTM** Draft 2.0, **IEEE802.11eTM** and **IEEE802.11iTM** standards. If further information is required, please contact us and we will provide any additional help needed.

Features

- Compatible with both USB 1.1 and USB 2.0 host controllers
- USB 2.0 Compatible Hot Swappable Interface
- IEEE 802.11b/g/n compatible WLAN
- 1x2 MIMO technology for extended reception robustness and exceptional throughput
- 150Mbps receive PHY rate and 75Mbps transmit PHY rate using 20MHz bandwidth
- 300Mbps receive PHY rate and 150Mbps transmit PHY rate using 40MHz bandwidth
- 20MHz and 40MHz bandwidth transmission
- Operates in 2.4GHz Frequency Range
- Compatible with 802.11n draft 2.0 specification
- Backward compatible with 802.11b/g devices while operating at 802.11n data rates
- Frame aggregation for increased MAC efficiency (A-MSDU, A-MPDU)
- Low latency immediate High-Throughput Block Acknowledgement (HT-BA)
- Long NAV for media reservation with CF-End for NAV release
- PHY-level spoofing to enhance legacy compatibility
- MIMO power saving mechanism
- Channel management and co-existence
- Multiple BSSID feature allows the RTL8191SU-GR to assume multiple MAC identities when used as a wireless bridge
- Supports Wake-On-WLAN via Magic Packet and Wake-up frame
- Transmit Opportunity (TXOP) Short Inter-Frame Spaces (SIFS) bursting for higher multimedia bandwidth
- One Transmit and Two Receive paths (1T2R)
- Short Guard Interval (400ns)
- DSSS with DBPSK and DQPSK, CCK modulation with long and short preamble
- OFDM with BPSK, QPSK, 16QAM, and 64QAM modulation Convolutional Coding Rate: 1/2, 2/3, 3/4, and 5/6
- OFDM receive diversity with MRC using up to 2 receive paths. Switch diversity used for DSSS/CCK
- Hardware antenna diversity
- Selectable digital transmit and receive FIR filters
- Programmable scaling in transmitter and receiver to trade quantization noise against increased probability of clipping
- Fast receiver Automatic Gain Control (AGC)
- RoHS Compliant and CE Marked

Support

- IEEE 802.11b/g/n compatible WLAN
- IEEE 802.11e QoS Enhancement (WMM)
- IEEE 802.11h TPC, Spectrum Measurement
- IEEE 802.11i (WPA, WPA2). Open, shared key, and pair-wise key authentication services
- Cisco Compatible Extensions (CCX4)

Ratings

Parameter	Min	Typical	Max	Units
Maximum Data Rate			300M	bps
Operating Temperature HU	0°		70°	°C
Storage Temperature	0°		125°	°C
Relative Humidity (non-condensing)	5 %		95	%
Current Consumption	152	155	162	mA
Transmit & Receive Level	-84(Rx)		+17 (Tx)	dBm



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Model and Ordering Information

This versatile WiFiHU USB family of products offers various configuration options to meet the specific system requirements a designer may need to add state of the art WiFi USB operation. The WiFiHU is available as a module, a module with USB Jack and antennae interface, or as a complete external device in an enclosure. The WiFiHU also has three different antennae options.

Model	Description	Comments
WiFiHU-a	WiFi USB Module with dual on	Uses onboard chip antennae. Not
	board chip antennae	for use with External Antenna.
		Allows designer to determine
		USB Jack placement.
WiFiHU-a-1-NE	WiFiHU-a installed in a	Complete WiFi Module with
	WiFiHU-CB1 Carrier Board	dual chip antennae with USB
	with on board USB Jack.	Jack interface.
WiFiHU-a-1-UE	WiFiHU-a and WiFiHU-CB1	Complete WiFi Standalone
	installed in enclosure	model with on board dual chip
		antenna and USB Jack mounted
		in enclosure.
WiFiHU-c	WiFi USB Module with two	Allows designer to determine
	SMD Connectors for attaching	USB Jack and antenna
	antenna cable and 2.4GHz 2 dBi	placement.
	Omni-directional antenna	
WiFiHU-c-1-NE	WiFiHU-c installed in WiFiHU-	Complete WiFi Module with
	CB1 Carrier Board with on	cable and antenna with USB
	board USB Jack.	Jack interface.
WiFiHU-c-1-UE	WiFiHU-c and WiFiHU-CB1	Complete WiFi Standalone
	installed in enclosure	model with cable, antenna and
		USB Jack mounted in enclosure
WiFiHU-c-2-NE	WiFiHU-c installed in WiFiHU-	Complete WiFi Module with
	CB2 Carrier Board with on	Fixed location antenna and USB
	board RPSMA antenna Jack	Jack.
	and USB Jack	
WiFiHU-c-2-UE	Complete WiFi module with	Complete WiFi USB Model with
	antenna installed in a case.	antenna and USB Jack mounted
		in enclosure.

Connecting the WiFiHU or WiFiHU-NE to Your System

The WiFiHU Modules are designed for easy connection to any standard USB Port and wireless network. Connect one end of the USB cable into the USB connector on the WiFiHU-NE and the other into any available USB receptacle on your computer. The WiFiHU-NE's "Hot Swap-able" interface allows you to plug or unplug the module even when the computer is on. If using Windows, load the provided drivers. The WiFiHU-NE is now ready for use.

If you plan to embed the WiFiHU into your system, the initial evaluation consists of the WiFiHU USB Module mounted onto a USB hub PCB (WiFiHU-NE). To remove the WiFiHU carefully remove it from the two 8 pin headers on the WiFiHU-NE USB interface board. Save this interface board. The WiFiHU can always be reinstalled into the WiFiHU-NE USB interface board and connected to any standard USB port to verify or test the module functions. If you use external antenna, connect one end of Radicom approved antenna to the on board socket.

Mechanical Specification and Pin Orientation for the WiFiHU

The WiFiHU USB Half Inch Modules are designed for easy connection to any standard USB interface and wireless network. The connection is made through two 8-pin headers, which may be attached to your device via a socket or by individually hardwiring each pin.



Notes:

- 1. Pin Spacing is 0.100 inch from center to center
- 2. Dimension of the WiFiHU module 1.10 x 1.00 x 0.25 inch
- 3. Suggested mating female connector:
 - Samtec P/N. #SSW-110-21-G-S (RoHS Thru-Hole) Samtec P/N. #SSW-110-22-G-S-VS (RoHS SMT)
- 4. Square pins 0.025 x 0.025 inch

Mechanical Specification for the WiFiHU USB HUB



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WiFiHU USB Interface Pins

The following shows the I/O Pins required for adding the WiFiHU USB Module to your embedded system.

PIN Number	Name	Туре
1	Not Used	
2	Not Used	
3	GND	Ground
4	VBUS	USB Power
5	DATA-	Input / Output
6	DATA+	Input / Output
7	Not Used	
8	Not Used	
9	Not Used	
10	Not Used	
11	LED (O)	Output
12	Reserved	
13	Not Used	
14	Not Used	
15	Not Used	
16	Key	No Pin

Additional Information on the USB Interface Signals

PIN	Name Definition
1,2	Not used – No Connection can be used for mounting purposes
3	GND – Ground – Connect this pin to the ground of the USB bus
4	VBUS – This is the USB Power Connection. Connect this pin to VBUS
5	*DATA (-) - Connect this pin to Data –
6	*DATA (+) - Connect this pin to the Data +
7,8,9,1	0 Not used – No Connection can be used for mounting purposes
11	LED - Link Process
12	Reserved
13,14,1	5 Not used – No Connection can be used for mounting purposes
16	No Pin – This Pin has been removed. Add a key to the mating connector to prevent the module from being plugged in backwards.

*Note: D+ (Pin 15) and D- (Pin 16) are the differential data plus and minus signals of the USB port. The two traces should be in parallel and equal in length.

Important Compliance and User Information



Federal Communication Commission (FCC) 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 the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. 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 of the following measures:

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

Regulation Information:

The WiFiHU USB Client Adapter must be installed and used in strict accordance with the manufacturer's instructions. This device complies with the following radio frequency and safety standards.

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.
- (2) This device must accept any interference received,

including interference that may cause undesired operation.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF Exposure compliance.

To comply with the FCC requirements, this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Your device contains a low power transmitter. When this device is operational, use only with supplied, or recommended antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

You are cautioned that changes or modifications not expressly approved by the manufacturer or the party responsible for compliance could void the user's authority to operate the equipment.

Europe – R&TTE Compliance Statement:

Hereby, Radicom Research Inc, declares that this equipment complies with the essential requirements and other relevant provisions of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE).

CE Declaration of Conformity

For the following equipment:

Radicom Research Inc. WiFi USB Modem Module Model(s): WiFiHU, WiFiHU-NE

is herewith confirmed to comply with the requirements set out in the Council (European parliament) Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility of Radio and Telecom device (1999/5/CE). For the evaluation regarding this Directive, the following standards were applied:

EN 300 328 V1.7.1

EN 301 489-1 V1.6.1 ; EN 301 489-17 V1.2.1

EN 60950-1:2001

This equipment is marked with the CC_{0984} symbol and can be used throughout the European community. Marking by the symbol ① indicates that usage restrictions apply.

France – 2.4GHz for Metropolitan France:

In all Metropolitan departments, wireless LAN frequencies can be used under the following conditions, either for public or private use:

- Indoor use: maximum power (EIRP*) of 100 mW for the entire 2400-2483.5 MHz frequency band
- Outdoor use: maximum power (EIRP*) of 100 mW for the 2400-2454 MHz band and with maximum power (EIRP*) of 10 mW for the 2454-2483 MHz band

Caution: Exposure to Radio Frequency Radiation.

To comply with RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

This device is intended for use as check in the following European Community countries:

🗆 Austria	🗖 Belgium	Czech Republic	🗆 Austria
Denmark	🗆 Estonia	□ France	Finland
□ Germany	Greece	□ Hungary	□ Ireland
□ Italy	□ Iceland	□ Luxemburg	🗆 Latvia
🗆 Lithuania	Malta	□ Norway	□ Netherlands
Portugal	□ Poland	🗆 Spain	□ Sweden
🗆 Slovakia	□ Slovenia	United Kingdom	

The channel identifiers, channel center frequencies, and regulatory domains of each 22-MHz-wide channel are shown in following table.

Channel Frequency				Regulatory	y Domains		
Identifier (MHZ)	Japan	ETSI	North America	Israel	France Outdoor	Mexico	
1	2412	v	v	v		v	
2	2417	v	~	~		~	
3	2422	v	~	~	v	~	
4	2427	v	~	~	v	~	
5	2432	v	v	~	v	~	
6	2437	v	~	~	v	~	
7	2442	v	~	~	v	~	
8	2447	v	v	~	v	~	
9	2452	v	~	~	v	~	
10	2457	v	~	~			v
11	2462	v	v	~			v
12	2467	v	~				
13	2472	v	~				
14	2484	v					

Driver Installation Guide For Windows XP/2K

- 1.0 Insert the installation disc into CD-ROM.
- 1.1 Select your language from the Choose Setup Language drop-down list.
- 1.2 Click **NEXT**.

REALTEK 11n USB Wireless LAN Software - InstallShield Wizard	
Choose Setup Language Select the language for the installation from the choices below.	
Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch English Finnish French (Canadian) French (Standard) German Greek	
InstallShield < Back Next > Cance	3



2. Click **NEXT** to continue.

3. Click **Install** to begin the installation.

REALTEK 11n USB Wireless LAN Driver and Utility	×
REALTEK 11n USB Wireless LAN Driver and Utility	
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	

Installing...

REALTEK 11n USB Wireless LAN Driver and Utility	×
Setup Status	K
The InstallShield Wizard is installing REALTEK 11n USB Wireless LAN Driver and Ut	ility
InstallShield	Cancel

4. Click **Finish** to complete the installation.

REALTEK 11n USB Wireless	: LAN Driver and Utility
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed REALTEK 11n USB Wireless LAN Driver and Utility. Before you can use the program, you must restart your computer. (Install Program, you must restart my computer now. (Install Program, and the start my computer later. Program and the formula formula to restart the start of the start
	complete setup.
	< Back Finish Cancel

- 5.0 Plug the device into the USB port.
- 5.1 Windows will automatically begin the installation for the device.
- 5.2 Click **NEXT**.

Welcome to the Found New
Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). <u>Read our privacy policy</u>
Can Windows connect to Windows Update to search for software?
Set Yes, this time only
Yes, now and every time I connect a device
○ No, not this time
Click Next to continue.

6. Click **NEXT** to begin the installation.

Found New Hardware Wiz	ard
	This wizard helps you install software for: 802.11n WLAN Adapter If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do? Install the software automatically (Recommended) Install from a list or specific location (Advanced) Click Next to continue.
	< Back Next > Cancel

7. Windows will search for the software for the device.



8. Click Continue Anyway.

Har dwar	e Installation
<u>.</u>	The software you are installing for this hardware: Realtek RTL8192SU Wireless LAN 802.11n USB 2.0 Network Adapter has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair 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

Installing...

Found New Hardware Wizard			
Please wai	t while the wizard installs	the software	
E	Realtek RTL8192SU Wireless	s LAN 802.11n USB 2.0 Network Adapter	
	RTL8192su.sys To C:\WINDOWS\syster	n32\DRIVERS	
		< Back Next >	Cancel

9. Driver installation is completed. Click **Finish** to close the wizard.

Found New Hardware Wizard			
	Completing the Found New Hardware Wizard		
	The wizard has finished installing the software for:		
	Realtek RTL8192SU Wireless LAN 802.11n USB 2.0 Network Adapter		
	Click Finish to close the wizard.		

10.0 Right click the **Network Connection** icon on the right side of System Tray.



10.1 Select View Available Wireless Networks.



11. Choose a wireless network from the list and double click to connect.



- 12.0 The network will require a password.
- 12.1 Enter the password then click **Connect**.

Wireless Network Con	inection	×
The network 'Business' req network key helps prevent Type the key, and then cli	juires a network key (also called a WEP key or WPA key). A t unknown intruders from connecting to this network. ck Connect.	
Network key:	•••••	
Confirm network key:		
	Connect Cancel	

Connecting	
	Wireless Network Connection
	•
	Please wait while Windows connects to the 'Business' network.
	Waiting for the network
	Cancel

- 13.0 Network will appear as "Automatic" if the password entered is incorrect.
- 13.1 Network will appear as "Limited or no connectivity" if the password is correct but the IP address is incorrect.

⁽⁽)) Wireless Network Connecti	ion 3		
Network Tasks	Choose	e a wireless network	
🚭 Refresh network list	Click an iten information	n in the list below to connect to a wireless network in	range or to get more
Set up a wireless network	((ဓူ))	Network A	Limited or no 🔶
	U	😚 Security-enabled wireless network (WPA)	
Related Tasks	((ဓူ))	Network B	Automatic 👷
 Learn about wireless 	U	😚 Security-enabled wireless network (WPA)	
networking	((@))	Network C	Automatic 👷
Change the order of preferred networks		😚 Security-enabled wireless network (WPA2)	
🍄 Change advanced	((Q))	Network D	
settings	U	😚 Security-enabled wireless network (WPA)	0008#
	((ດູ))	Network E	
	U	👫 Security-enabled wireless network (WPA2)	
	((ດູ))	Network F	
	U	😚 Security-enabled wireless network (WPA)	0000
			Disconnect

14. Go to Start Menu and select Control Panel.

Recycle Bri	a la ca		A seal	1 2	Martin and
					The Annual
Microsoft Outlink					
Wireless Network Co			X		Sec. 3
REALTI USB W Network Tasks	Choose a wirele	ess network			
🔓 🥵 Refresh network list	Click an item in the list belo	ow to connect to a wireless network in i	ange or to get more		A A A A A A A A A A A A A A A A A A A
user9	- CONDUCT	led wireless network (WPA)	Limited or no connectivity attil		
Internet Internet Explorer	My Documents	led wireless network (WPA)	Automatic 🛠	seed and a	and the second
Cutlook Express	My Recent Documents	ed wireless network (WPA2)	Automatic 🔶	Call Barney	- Collins and a state
Microsoft Word	My Music				2
Command Prompt	My Computer	led wireless network (WPA)			
REALTEK 11n USB Wireless	Control Panel		- Internet		
W Paint	Connect To	ations for you to customize the appeara add or remove programs, and set up n	ince and functionality of your atwork connections and user		
Hyper Terminal	Printers and Faxes	led wireless network (WPA)			
MSN	Help and Support		Disconnect		Contraction of the second
All Programs	P Search				
2	2 Log Off 🚺 Turn Off Compute	er			
🐴 start 🔰 😂 🚳 🥱	(9) Wireless Network Co				🔍 🌇 10:51 AM

15. Double click Network Connections icon in Control Panel.



- 16.0 In Network Connections you will find Wireless Network Connection with "Limited or no connectivity" status.
- 16.1 Right click and select Properties.

Recycle Bin	a ciù		4	the second
				The Martine
Marseit outook	Network Connections File Edit View Favorites Too Back • (2) - (2)	ols Advanced Help Search 🎼 Folders		
UES Virké	Addess • Network Losk • Create a new connection • Conn	LAN or High-Speed Internet	Weeks Network Correction 3 Laded or no correctively, Fr., Netwick, RTR1922U Weeks E Bridge Correctors Greate Shortu: Center Rename Properties	as Internaria
	My Network Places My Documents My Computer Details	V		
🛃 start 🛛 🖉 🧐 🦷	🕫 Wireless Network Co 🤇 🧏 Netwo	ork Connections		10:57 AM

17. Double click **Internet Protocol (TCP/IP)** from the drop down list.

🕹 Wireless Network Connection 3 Properties 👘 🕐 🔀
General Wireless Networks Advanced
Connect using:
🕮 Realtek RTL8192SU Wireless LAN 8 Configure
This connection uses the following items:
🗹 📇 QoS Packet Scheduler
Install Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication
across diverse interconnected networks.
Show icon in notification area when connected
Votiry me when this connection has limited or no connectivity
OK Cancel

18. Type the IP address then click **OK**.

Internet Protocol (TCP/IP) Prop	erties 🛛 🛛 🛛 🔀
General Alternate Configuration	
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	omatically if your network supports ask your network administrator for
💿 Obtain an IP address automatica	lly
OUse the following IP address: —	
IP address:	
Subnet mask:	
Default gateway:	
Obtain DNS server address auto	matically
OUse the following DNS server ac	Idresses:
Preferred DNS server:	· · · · · · · ·
Alternate DNS server:	
	Advanced
	OK Cancel

19. You are now connected to the wireless network.

^{((†))} Wireless Network Connect	on 3	
Network Tasks	Choose a wireless network	
🚭 Refresh network list	Click an item in the list below to connect to a wireless network in ra information.	ange or to get more
Set up a wireless network for a home or small office	((p)) Network A	Connected 👷
	🕴 😚 Security-enabled wireless network (WPA)	0000
Related Tasks	((Q)) Network B	Automatic 👷
 Learn about wireless 	🖁 Security-enabled wireless network (WPA)	000
networking	((Q)) Network C	Automatic 👷
Change the order of preferred networks	🖁 😚 Security-enabled wireless network (WPA2)	
Section 2010 Change advanced	((Q)) Network D	
settings	🖁 Security-enabled wireless network (WPA2)	
	((Q)) Network E	
	🖁 😚 Security-enabled wireless network (WPA)	000**
	((Q)) Network F	
	🖡 🦸 🖁 Security-enabled wireless network (WPA)	0008#
		Connect

Driver Installation Guide For Windows 7

- 1.0 Insert the installation disc into CD-ROM.
- 1.1 Select your language from the Choose Setup Language drop-down list.
- 1.2 Click **NEXT**.

REALTEK 11n USB Wireless LAN Software - InstallShield Wizard	x
Choose Setup Language Select the language for the installation from the choices below.	
Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch English Finnish French (Canadian) French (Standard) German Greek	
InstallShield < Back Next > Cancel	



2. Click **NEXT** to continue.

Installing...



3. Click **Finish** to complete the installation.



- 4.0 Plug the device into the USB port.
- 4.1 Windows will automatically begin the installation for the device.



5.0 Right click the Network Connection icon on the right side of System Tray.



5.1 Select Open Network and Sharing Center.



6. Click Connect to a network.



7. Choose a wireless network from the list and double click to connect.

Not connected	÷7
Connections are available	
Wireless Network Connection 3	^
Network A	all
Network B	.ull
Network C	all
Network D	all
Network E	all
Network F	all
Open Network and Sharing Center	

8. Enter password then click OK. You are now connected to the wireless network.

💇 Connect to a Netw	ork	— X
Type the networ	k security key	
Security key:	1	
	Hide characters	
		OK Cancel

Driver Installation Guide For Windows Vista

- 1.0 Insert the installation disc into CD-ROM.
- 1.1 Select **Open folder to view files**



2. Double click to open Windows folder.



- 3.0 Double click **Setup** (Setup.exe) icon to run the setup application.
- 3.1 Windows will ask your permission to start the program. Click Continue.



- 4.0 Select your language from the Choose Setup Language drop-down list.
- 4.1 Click NEXT.

REALTEK 11n USB Wireless LAN Software - InstallShield Wizard	×
Choose Setup Language Select the language for the installation from the choices below.	Z
Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch English	
French (Canadian) French (Standard) German Greek	-
InstallShield Car	ncel

5. Click **NEXT** to continue.



Installing...

REALTEK 11n USB Wireless LAN Software	x
Setup Status	
REALTEK 11n USB Wireless LAN Software is configuring your new software installation.	
InstallShield — Cancel	

6. If the Windows Security message appears, select **Install this driver software anyway** to continue.

😵 Wir	dows	Security
8	Win	dows can't verify the publisher of this driver software
	+	Don't install this driver software You should check your manufacturer's website for updated driver software for your device.
	+	Install this driver software anyway Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
	See de	tails

7. Click **Finish** to complete the installation.

REALTEK 11n USB Wireless LAN	I Software
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed REALTEK 11n USB Wireless LAN Software. Before you can use the program, you must restart your computer. Program, you must restart my computer now. No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
	< Back Finish Cancel

- 8.0 Plug the device into the USB port.
- 8.1 Windows will automatically begin the installation for the device.

Installing device driver software * × Click here for status.	ACCESSION OF	1999 B			12622622
· ·	٦	12	(ه)	3:40 PM 8/9/2010	ſ
		No.			3256
Realtek RTL8192SU Wireless LAN 802.11n USB 2.0 Network Adapte Device driver software installed successfully.	er 🌯	×			
	•	1	ê 🤞	(·) 3:41 PM 8/9/2010	

9.0 Right click the Network Connection icon on the right side of System Tray.



9.1 Select Connect to a network.



10. Choose a wireless network from the list, then click **Connect**.

Show All	•	
Network A	Security-enabled network	llee.
Network B	Security-enabled network	lltee
Network C	Security-enabled network	liter
		-1

11. Enter password and click **Connect**. You are now connected to the wireless network.

Type the n	etwork security key or pa	assphrase for Netv	vork A
The person w	io setup the network can give y	ou th <mark>e key or passphrase</mark>	e)
Security key o	passphrase:		
🔲 Display ch	racters		
If you	have a <u>USB flash drive</u> with net	work settings for RRIENG	GR, insert it now.

WiFiHU USB Linux Driver Quick Installation Guide

Software Package & Platform requirements:

- The software package contains one WiFiHU Linux driver (source code) that supports Linux kernel version 2.6, and WiFiHU documents.
- Platform requirements: PC-based Linux platform (i386) and WiFiHU Linux driver which supports Linux kernel version 2.6.18 through 2.6.35

The following commands have been verified in Ubuntu 9.04 (Kernel version 2.6.28), Ubuntu 9.10 (Kernel version 2.6.31), Ubuntu 10.04 (Kernel version 2.6.32) and Ubuntu 10.10 (Kernel version 2.6.35).

1. Uncompress driver >tar zxvf WiFiHU_linux_driver_021611.tar.gz

2. Change to driver directory >cd rtl8712_8188_8191_8192SU_usb_linux_v2.6.6.0.20101111

3. Make WiFiHU USB driver module >make

4. Clean the operation environment >sudo ./clean

5. Insert WiFiHU module >sudo rmmod 8712u.ko >sudo insmod 8712u.ko

6. Use if config to set up wireless LAN operation

Limited Warranty

Warranty Coverage and Duration

Radicom Research, Inc. ("RRI") warrants to the original purchaser its RRI-manufactured products ("Product") against defects in material and workmanship under normal use and service for a period of one year from the date of delivery.

During the applicable warranty period, at no charge, RRI will, at its option, either repair, replace or refund the purchase price of this Product, provided it is returned in accordance with the terms of this warranty to RRI. Repair, at the option of RRI, may include the replacement of parts, boards or other components with functionally equivalent reconditioned or new parts, boards or other components. Replaced parts, boards or other components are warranted for the balance of the original applicable warranty period. All replaced items shall become the property of RRI.

RRI MAKES NO GUARANTEE OR WARRANTY THAT THE PRODUCT WILL PREVENT OCCURRENCES, OR THE CONSEQUENCES THEREOF, WHICH THE PRODUCT IS DESIGNED TO DETECT.

This expressed limited warranty is extended by RRI to the original end-user purchaser only, and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by RRI, and RRI assumes no obligation or liability for additions or modifications to this warranty. In no case does RRI warrant the installation, maintenance or service of the Product.

RRI is not responsible in any way for any ancillary equipment not furnished by RRI that is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because of wide variations in topographical and atmospheric conditions, which may require availability of repeater stations or of particular radio frequencies, RRI assumes no liability for range, coverage or suitability of the Product for any particular application. Buyer acknowledges that RRI does not know a particular purpose for which buyer wants the Product, and that buyer is not relying on RRI's skill and judgment to select or furnish suitable goods.

What this Warranty does NOT Cover:

- (a) Defects or damage resulting from use of the Product in other than its normal and customary manner.
- (b) Defects or damage from misuse, accident or neglect.
- (c) Defects of damage from improper testing, operation, maintenance, installation, alteration, modification or adjustment.

- (d) Disassembly or repair of the Product in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.
- (e) Any Product that has had its serial number or date code removed or made illegible.

How to Receive Warranty Service:

To obtain warranty service, contact RRI by phone (408) 383 9006 for RMA Department or email to <u>rma@radi.com</u> for an RMA (Return Merchandise Authorization) number. Deliver or send the Product, transportation and insurance prepaid to RRI, with the RMA number clearly marked on the outside of the package.

General Provision

This warranty sets forth the full extent of RRI's responsibilities regarding the Product. Repair, replacement or refund of the purchase price, at RRI's option, is the exclusive remedy.

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESSED WARRANTIES. ANY APPLICABLE IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. TO THE FULLEST EXTENT PERMITTED BY LAW, RRI DISCLAIMS ANY LIABILITY FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVING OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE OR FAILURE OF SUCH PRODUCT.

Contacting Radicom Research

If more information or technical support is needed, please contact us:



2148 Bering Drive

San Jose, CA. 95131

Telephone: (408) 383 9006

Fax: (408) 383 9007

or e-mail: <u>sales@radi.com</u>

http://www.radi.com/

For IC

3.2.1 Labelling Requirements for the Host device. The host device shall be properly labelled to identify the modules within the host device. The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows: Contains transmitter module IC: 2377A-WIFIHUA and 2377A-WIFIHUC2NE where 2377A-WIFIHUA and 2377A-WIFIHUC2NE are the module is certification number. The applicant for equipment certification of the module shall provide with each unit of the module either a label such as described above, or an explanation and instructions to the user as to the host device labelling requirements.

For FCC

This device is intended only for OEM integrators under the following conditions:

- The antenna must be installed such that 20 cm is maintained between the antenna and users. For laptop installations, the antenna must be installed to ensure that the proper spacing is maintained in the event the users places the device in their lap during use (i.e. positioning of antennas must be placed in the upper portion of the LCD panel only to ensure 20 cm will be maintained if the user places the device in their lap for use) and
- 2) The transmitter module may not be co-located with any other transmitter or antenna. As long as the 2 conditions above are met, further <u>transmitter</u> testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions <u>can not be met</u> (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID <u>can not</u> be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example access points, routers, wireless ASDL modems, certain laptop configurations, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: K7T-WIFIHU-A and K7T-WIFIHU-C-2-NE".

RF Exposure Manual Information That Must be Included

The users manual for end users must include the following information in a prominent location "IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

Additional Information That Must be Provided to OEM Integrators

The end user should NOT be provided any instructions on how to remove or install the device.