

Realtek/Intel UWB Dongle Demo Board User's Guide

Revision A





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1 Introduction

This document describes the operations, interfaces, and software installation of the Realtek/Intel UWB USB Dongle Demo Board.

2 System Description

Figure 1 shows the system block diagram of the Realtek/Intel UWB USB Dongle Demo Board.





The demo system mainly consists of two main chips – (i) UWB PHY, (ii) Intel MAC. A serial EEPROM is required to store proper data/commands for the PHY chip and MAC chip. To make the system work properly, the EEPROM should be loaded with proper content by using proper EEPROM writing equipment through I2C interface. Two basic clock frequencies are used in the system – 24MHz for MAC and 66MHz for PHY. Some more details of the components are shown in the following sections.

2.1 UWB PHY

This chip integrates the RF and baseband functions of a UWB PHY defined by the standard. This version of PHY chip is packaged in 48-pin QFN form factor. The analog/RF section requires 1.65V and 3.3V to operate. The digital core operates with 1.4V and the I/O voltage can support a range of 1.8V~3.3V.

2.2 Intel MAC

This MAC chip(Rhondda-M, 144-pin BGA) is from Intel which has a standard MPI interface to communicate with a standard UWB PHY, as well as a standard USB 2.0 interface to connect directly to a PC. This chip requires voltages of 1.5V and 3.3V.

2.3 EEPROM

This chip is a serial EEPROM from Atmel with a capacity of 512Kb. It is used by the MAC to store the initialization data and command sequence required by the MAC and PHY on start up. This chip requires 2.7V~5V. On the application circuit, it's powered by 3.3V.

3 Software

3.1 Driver/Application Installation

3.1.1 Setup

- Microsoft .NET Frame 2.0 should be installed before installing the software. Please download it from Microsoft web site.
- Make sure the HWA USB dongle is not connected to the PC/Laptop. Execute FCC_setup.exe





• Accept license agreement

.		
WB - InstallShield Wizard		
License Agreement Please read the following license agreement	carefully.	124
INTEL SOFTWARE LICENSE AGREEMEN	IT ("Agreement")	~
Intel Code ("Software")		
IMPORTANT - READ BEFORE COPYING, Do not use or load this Software, Develope User Documentation and any associated m ("You") have carefully read the following ter Software, You agree to the terms of this Agr install or use the Software.	INSTALLING OR USING. r tools, Sample source, Licen aterials (collectively, the "Sof rms and conditions. By loadin reement. If You do not wish to	sed Binaries, End- tware'') until You g or using the o so agree, do not
PRE-RELEASE: The Software is pre-release which Intel may substantially modify in produ	se code, which may not be fu ucing any final version. Intel (lly functional and can provide no
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skalomeu	< <u>B</u> ack <u>N</u> ext	> Cancel
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IWB - InstallShield Wizard		
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• Install the program

UWB - InstallShield Wizard	×
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation the wizard.	nn settings, click Back. Click Cancel to exit
InstallShield	Back Install Cancel

- The programs and drivers are install in the directory C:\Program Files\Intel\UWB
- Installed directory 😂 UWB <u>File E</u>dit View Favorites Tools Help 🄇 Back 🝷 🌔 E Search Polders • Address 🛅 C:\Program Files\Intel\UWB 👻 🔁 Go Folders × Name 🔺 Туре Date Modified App File Folder 2/8/2007 11:44 AM 🖃 🧰 UWB 🚞 bin File Folder 2/8/2007 11:44 AM 🚞 App Drivers File Folder 2/8/2007 11:47 AM 🚞 bin 🚞 eeprom File Folder 2/8/2007 11:44 AM Drivers 🚞 FW 🛛 File Folder 2/8/2007 11:44 AM 🗄 🚞 eeprom 🚞 Middleware File Folder 2/8/2007 11:44 AM 🚞 FW 표 🚞 Middleware > < 0 bytes 🛃 My Computer 6 objects (Disk free space: 9.32 GB)
 - <u>Copy all files in the Drivers directory of the software package into the installed directory and overwrite every files, i.e., C:\Program Files\Intel\UWB\Drivers.</u>
 - <u>Copy all files in the App directory of the software package into the installed</u> <u>directory and overwrite all files, i.e., C:\Program Files\Intel\UWB\App.</u>

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3.1.2 Driver Installation

3.1.2.1 USB Dongle

3.1.2.1.1 DFU Driver

• Plug in the dongle, wait for the following dialog

ound New Hardware Wi	zard
	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). Read our privacy policy
	Can Windows connect to Windows Update to search for software? <u>Yes</u> , this time only <u>Yes</u> , now and givery time I connect a device No, not this time
	< Back Next > Cancel

• Install the drivers from the specified location(C:\Program Files\Intel\UWB\Drivers) manually

Found New Hardware Wizard	
This wizard helps you install software for: Rhondda-M 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.	
< <u>B</u> ack <u>N</u> ext > Cancel	

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• Don't search...

Found New Hardware Wizard	
Please choose your search and installation options.	2
Search for the best driver in these locations. Use the check boxes below to limit or expand the default search, which includes local	
paths and removable media. The best driver found will be installed. Search removable media (floppy, CD-ROM) Jinclude this lgcation in the search:	
C:\Documents and Settings\lab\Desktop\cardbus_d v Browse	
Choose this option to select the device driver from a list. Windows does not guarantee to the driver you choose will be the best match for your hardware.	hat
< <u>B</u> ack <u>N</u> ext > Cancel	
Click "Next>"	
und New Hardware Wizard	
Hardware Type.	Þ
Select a hardware type, and then click Next.	
Show All Devices Show All Devices Show All Devices All Show All Device All Show All Device Show All Show Show Show Show Show Show Show Show	
< <u>B</u> ack <u>N</u> ext > Cancel	
Choose "Have Disk"	
und New Hardware Wizard	
Select the device driver you want to install for this hardware.	>
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
Manufacturer Model (Standard CD-ROM drives) CD-ROM Drive (force CDDA accurate) (Standard keyboards) CO-ROM Drive (force CDDA inaccurate) (Standard keyboards) CD-ROM Drive (force IMAPI disable) (Standard keyboards) CD-ROM Drive (force IMAPI disable) CD-ROM Drive (IMAPI settings 0,1) Have Disk	
Tell me why driver signing is important	
< <u>B</u> ack <u>N</u> ext > Cancel	



• Install the drivers from C:\Program Files\Intel\UWB\Drivers



• Click "Continue Anyway"

Hardwa	Hardware Installation		
1	The software you are installing for this hardware: Intel(R) Wireless UWB Link 1480M Device Firmware Utility 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		



• Click "Finish"

Completing the Found New Hardware Wizard The wizard has finished installing the software for: Intel(R) Wireless UWB Link 1480M Device Firmware Utility
Click Finish to close the wizard.

3.1.2.1.2 Control Driver

Found New Hardware Wizard	
	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). Read our privacy policy
	Can Windows connect to Windows Update to search for software?
	Click Next to continue.

• Install the drivers from the specified location(C:\Program Files\Intel\UWB\Drivers) manually



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• Don't Search...

Found New Hardware Wizard
Please choose your search and installation options.
 Search for the best driver in these locations. Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed. Search removable media (floppy, CD-ROM) Include this location in the search: C:\Program Files\Intel\UWB\Drivers Browse 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.
< <u>B</u> ack <u>N</u> ext > Cancel
Click "Next>"
Found New Hardware Wizard
Hardware Type.
Common hardware types: Show All Devices 1394 Debugger Device All Class AVC Device Class Batteries Buteries Bluetooth Radios Computer Disk drivee
< <u>Back</u> <u>N</u> ext > Cancel
Choose "Have Disk"
Found New Hardware Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Manufacturer Model (Standard CD-ROM drives) CD-ROM Drive (force CDDA accurate) (Standard keyboards) CD-ROM Drive (force CDDA inaccurate) (Standard system devices) CD-ROM Drive (force IMAPI disable) CD-ROM Drive (force IMAPI disable) CD-ROM Drive (IMAPI settings 0,1) This driver is digitally signed. Have Disk Tell me why driver signing is important Have Disk



• Install the drivers from C:\Program Files\Intel\UWB\Drivers



• Click "Continue Anyway"

Hardware Installation	
<u>.</u>	The software you are installing for this hardware: Intel(R) Wireless UWB Link 1480M Control Driver 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



• Click "Finish"	"
Found New Hardware Wiz	ard
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Intel(R) Wireless UWB Link 1480M Control Driver
	Click Finish to close the wizard.
	< Back Finish Cancel

3.1.2.1.3 HWA(Host Wire Adapter) Driver

Found New Hardware Wizard	
	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). Read our privacy policy
	Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and givery time I connect a device No, not this time
	Click Next to continue.
< Back Next > Cancel	

• Install the drivers from the specified location(C:\Program Files\Intel\UWB\Drivers) manually

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ardware Type.		<u>XX</u>
Select a hardware type, and then c	slick Next.	
Common bordwore tunes:		
Show All Devices		~
1394 Debugger Device		
G1883 Device Class		
AVC Deuties Class		
AVC Device Class		
Batteries		
Batteries		
Batteries Biometric Bluetooth Radios		
Batteries Bometric Biometric Bluetooth Radios		

• Click "Have Disk..."

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Found New Hardware Wizard	
Select the device driver you want to install for this hardware.	
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
Manufacturer 🔥 Model	
(Generic USB Audio) (Generic USB Hub) (Standard CD-ROM drives)	
This driver is digitally signed. <u>Have Disk</u>	
< <u>B</u> ack <u>N</u> ext > Cancel	
• Install the drivers from C:\Program Files\Intel\U	WB\Drivers
Install From Disk	
Insert the manufacturer's installation disk, and then OK Cancel	
Copy manufacturer's files from: C:\Program Files\Intel\UWB\Drivers	
• Click "Next>"	
Found New Hardware Wizard	
Select the device driver you want to install for this hardware.	
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
Show compatible hardware	
Model	
Intel(R) Wireless UWB Link 1480M Host Wire Adapter	



Click "Continue Anyway"



	Hardwa	re Installation
The software you are installing for this hardware: Intel(R) Wireless UWB Link 1480M Host Wire 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.	<u>.</u>	The software you are installing for this hardware: Intel(R) Wireless UWB Link 1480M Host Wire 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

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• Click "Finish	??
Found New Hardware Wiz	zard
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Intel(R) Wireless UWB Link 1480M Host Wire Adapter
	Click Finish to close the wizard.
	< Back Finish Cancel

• Host Wire Adapter is installed

🚇 Device Manager	
Eile Action View Help	
 Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D4 Intel(R) 82801G (ICH7 Family) SMBus Controller - 27D4 Intel(R) 82801G (ICH7 Family) SMBus Controller - 27DA Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB Intel(R) Wireless UWB Link 1480M Control Driver Intel(R) 82801GM (ICH7-M) LPC Interface Controller - 27B9 Intel(R) 82801GM (ICH7-M) LPC Interface Controller - 27C4 Microsoft UAA Bus Driver for High Definition Audio Mobile Intel(R) 945GM Express Chipset Family Mobile Intel(R) 945GM Express Chipset Family Mobile Intel(R) 955XM/945GM/PM/GMS/940GML Express Processor to DRAM Controller - 27A0 	
Ogeneration (Construction)	~

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3.1.2.1.4 WiNet Driver

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). Read our privacy policy	
Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and every time I connect a device No, not this time	
< Back Next > Cancel	

• Install the drivers from the specified location(C:\Program Files\Intel\UWB\Drivers) manually

Found New Hardware Wiz	ard
	This wizard helps you install software for: Intel_Uwb_NETWORK_ 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.
	< <u>B</u> ack <u>N</u> ext > Cancel

• Don't Search



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Peace choose your search and installation options:	ound New Hardware Wizard		
Search for the best driver in these locations. Use the check boxes below to limit or expand the default search, which includes local paths and menovable media. The best driver found will be installed. Search removable gedia floppy, CO-ROM) Include the location in the search: 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. Click "Next>" common bardware type, and then click Next. Common bardware type, and then click Next. Common bardware type, and then click Next. Common bardware type. Select a hardware type, and then click Next. Common bardware type. Select a hardware type. Click "Have Disk" Select a hardware type. Click "Have Disk" Select herdware type. Click "Have Disk" Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the drive for want be driver you want to	Please choose your search and installation	on options.	
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<pre>Indude this location in the search: CProgram Files/Inde/UWB/Drives</pre>	Search removable media (floppy, C	D-ROM)	
C'Program Files/Hale/UWB/Drivers Rowse Image: Description of select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware. Click ''Next>'' Counce Click ''Next>'' Partware Type. Select a hardware type, and then click Next. Common bardware type, and then click Next. Common bardware type, and then click Next. Common bardware type. Select a hardware type. Select Basics Select Device Class Select Device Class Select Basics Select Marker Disk' Select Hardware Wizard Select Hardware Wizard Select the device driver you want to install for this hardware. Select the device driver you want to install, click Have Disk. Select the device driver and model of your hardware device and then click Next. From Select Marker Select the device driver and model of your hardware device and then click Next. From Select Marker Select the device driver and model of your hardware device and then click Have Disk. Select the device on the analysic the function of the shardware.<	Include this location in the search:		
♥ Onth 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. Click "Next>" Pund New Hardware Wizard Hardware Type. Select a hardware type, and then click Next. Common lgardware type: State of the bebugger Device I State of the bebugger Device I State of the bebugger Device I Buck of Device Class I Buck of Device Class I Buck of the bebugger Device I Buck of the bebugger Device I Buck of Device Class I Buck of the bebugger Device I Buck of the device Class I Buck of the device driver you want to install for this hardware. I Select the device driver you want to install for this hardware. I Select the device driver you want to install for this hardware. I Select the device driver you want to install for this hardware. I Select the device driver you want to install for the drive Disk. I Select the device of iver you want to install for the bardware. I Select the manufacturer and model of your hardware device and then click Next. F you have a disk that contains the driver you want to install, click Have Disk. I Marufacturer I Select th	C:\Program Files\Intel\UWB\Drive	rs Browse	
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. Click "Next>" Pund New Hardware Wizard Hardware Type. Select a hardware type, and then click Next. Common hardware type: Select a hardware type: Select hardware type: Computer Dud New Hardware Wizard Click "Have Disk" Pund New Hardware Wizard Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. Select the device driver you want to install for this hardware. The driver is dgtally signed. Select the driver is dgtally signed. Have Disk The driver is dgtally signed. Hardware wideware signed is important. Hardware for the driver signed is important.	Don't search. I will choose the driver to install		
< Back	Choose this option to select the device dri the driver you choose will be the best mate	iver from a list. Windows does not guarantee that ch for your hardware.	
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This driver is digitally signed. Tell me why driver signing is important.	(Generic USB Audio) (Generic USB Hub) (Standard CD-ROM drives) ✓	1 Gigabit Ethernet	
	This driver is digitally signed. Tell me why driver signing is important	Have Disk	

• Install the drivers from C:\Program Files\Intel\UWB\Drivers

http://www.realtek.com.tw



E	Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.	ОК
		Cancel
	Copy manufacturer's files from:	



• Click "Have Disk..."

Found New Hardware Wizard	
Select the device driver you want to inst	tall for this hardware.
Select the manufacturer and model of you have a disk that contains the driver you w	ur hardware device and then click Next. If you vant to install, click Have Disk.
Model	
Intel(R) Wireless UWB Link 1480M USB WiNe	et Adapter
This driver is not digitally signed! <u>Tell me why driver signing is important</u>	Have Disk
	< <u>Back</u> <u>N</u> ext > Cancel

• Click "Continue Anyway"

Hardware Installation				
The software you are installing for this hardware: Intel(R) Wireless UWB Link 1480M USB WiNet 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.				
<u>Continue Anyway</u> <u>STOP Installation</u> Click "Finish"				
Found New Hardware Wi	zard			
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Intel(R) Wireless UWB Link 1480M USB WiNet Adapter			
	Click Finish to close the wizard.			
	< Back Finish Cancel			

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• Both Host Wire Adapter and WiNet Adapter are installed

🚇 Device Manager	
<u>File Action View H</u> elp	
 Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D0 Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D2 Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D4 Intel(R) 82801G (ICH7 Family) PCI Express Root Port - 27D4 Intel(R) 82801G (ICH7 Family) SMBus Controller - 27DA Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C3 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C3 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C3 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C3 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8 Intel(R) Wireless UWB Link 1480M Control Driver Intel(R) Wireless UWB Link 1480M Host Wire Adapter Intel(R) Wireless UWB Link 1480M Host Wire Adapter Intel(R) 82801GBM (ICH7-M) LPC Interface Controller - 27B9 Intel(R) 82801GBM (ICH7-M) LPC Interface Controller - 27C4 Microsoft UAA Bus Driver for High Definition Audio Mobile Intel(R) 945GM Express Chipset Family Mobile Intel(R) 945GM Express Chipset Family 	
Wobile Intel(R) 955XM/945GM/PM/GMS/940GML Express Processor to DRAM Controller – 27A0 Wotherboard resources	~

3.1.3 Application Operation

• Execute the C:\Program Files\Intel\UWB\App\UWB Test Application.exe, and select either Station A, B, or C.



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• Press #RESET# button in the Commands block of the Common Controls tab

Intel(R) UWB Test Application		
Network Station A P C A	~~ UWB Test Application ~~	(intel)
Common Controls NDIS Controls R C C Common Controls PHY Channel no: 0 X 0E Set # RESET # Set MAC ADDR (if not in EEPROM) Set Dev Address Default Start SCAN C IP Only C WUSB Only C IP Only Start BEACONING	Commands Vendor Commands WireAdapter Commands Memory Dump NW Simulator PHY Control Download the PHY parameters File1 Events/Notifications Register / Un-Register to receive Notifications AS Probe IE Received Beacon Received Beacon Received Beacon Received Control Beacon Processoria Register > Control Beacon Processoria Register > Control Beacon Processoria Control Beac	Activity Log
	Close	

• Select File1 and press Load PHY Parameters in the PHY Control block to load the PHY parameter file, RTU7010-13RF1.TXT, from the C:\Program Files\Intel\UWB\App directory.

Intel(R) UWB Test Application		
Network Station A P C A	~~ UWB Test Application ~~	(intel)
Common Controls NDIS Controls R C C Common Controls Commands PHY Channel no: 0 X 0E Set # RESET # Set MAC ADDR (# not in EEPROM) Set Dev Address Default Start SCAN	Commands Vendor Commands WireAdapter Commands Memory Dump NW Simulator PHY Control Download the PHY parameters File1 File2 File2 File2 File2 File2 File3	Activity Log Wrote e2:33 ▲ TimeStamp:16 > 16:37:08 : Wrote e0:e3 ▲ TimeStamp:16 > 16:37:08 : Wrote e1:8f ■ TimeStamp:16 > 16:37:08 : Wrote e2:4a ■ TimeStamp:16 > 16:37:08 : Wrote e3:7i ■ TimeStamp:16 > 16:37:08 : Wrote e3:7i ■ TimeStamp:16 > 16:37:08 : Wrote b0:61 ■ TimeStamp:16 > 16:37:08 : Wrote b1:3 ■
C WUSB Only C IP and WUSB	Close	TimeStamp:16 > 16:37:08 ; Wrote f0:0 TimeStamp:16 > 16:37:08 ; Wrote 82:28 TimeStamp:16 > 16:37:08 ; Wrote 88:6 TimeStamp:16 > 16:37:08 ; >>Pty Param download complete<<

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• Change to Vendor Command tab, select Start FCC TX Test, configure transmit setting, then press Send Command to start transmitting

EI(R) UWB Test Application						
Network Station A P C A		~~ UV	/B Test Application \sim	~	(intel)	
Common Controls NDIS Controls R C	Commands Vendor Con	nmands WireAda	pter Commands Men	nory Dump NW Simulator		
Vendor Commands					Activity Log	
	Command				-	
Select Vendor Command	0x0046				Wrote e2:33 TimeStamp:16 > 16:37:08 : Wrote e0:e3	<u>^</u>
Get MAC&PHY Info Set Radio Power State Set Security Mode					TimeStamp:16 > 16:37:08 : Wrote e1:6f	
Modify Local Key Store Modify Multicast Address Rece Set Device Fragment Size Set Device PHY Data Rate					TimeStamp:16 > 16:37:08 : Wrote e2:4a TimeStamp:16 > 16:37:08 :	
Get Current Beacon Info Set IP MAS Write MPI Serial Interface Read MPI Serial Interface	Channel	9	Antenna	1	Wrote f0:1 TimeStamp:16 > 16:37:08 : Wrote a9:7	
Radio Ready Hag Set Timestamp Flag Read Statistics	Count	0	Payload Size	1024	TimeStamp:16 > 16:37:08 : Wrote b0:61	
Set FCS Preset Read Rhondda Memory Enable Function Profiling	Frame spacing	P.	Statt Seq.	10	TimeStamp:16 > 16:37:08 : Wrote bf:3	
Send Test Packets Start FCC TX Test Stop FCC TX Test	Ack Policy	No Ack	-		TimeStamp:16 > 16:37:08 : Wrote f0:0	
Start FCC RX Test Stop FCC RX Test Get FCC Status		53.3 Mbps 53.3 Mbps	- Sen	d Command	TimeStamp:16 > 16:37:08 : Wrote 8d:28	
		106.7 Mbps 160 Mbps			TimeStamp:16 > 16:37:08 : Wrote 88:6	
		320 Mbps			TimeStamp:16 > 16:37:08 : >>Phy Param download complete <<	~
		480 Mbps			5	>

- Channel: 7 channels can be tested. TFC-1~7. The mapping is in the table 1 below.
- Antenna: 1. Do not change to other values. Only antenna 1 is used.
- Count: Transmit packet count. Set to 0 to transmit continuously.
- Payload Size: 0~4095.
- Frame spacing: 1~255. Set to 1 for the minimum Tx frame spacing.
- Start Seq.: Don't care.
- Ack Policy: No Ack.
- Transmit packets data rates: 8 different data rates to test. 53.3Mbps, 80Mbps, 106.7Mbps, 160Mbps, 200Mbps, 320Mbps, 400Mbps, and 480Mbps.

Table 1 Channel Table

TFC	Channel Value
1	9
2	10
3	11
4	12
5	13
6	14
7	15



- Select Stop FCC TX Test and press Send Command to stop transmitting.
- To continue Tx tests with different Tx setting, just change the setting and press Send Command without leaving the Start FCC TX Test.
- Whenever there's Tx or Rx activities, one of the lights (LED's) should be blinking. If the light is not blinking, press the Sand Command again. If the light is still not blinking or in any other abnormal situations that the USB dongle is not working correctly, close the application, unplug the dongle, and re-plug the dongle, execute the application and do the test again.
- To enable receive function, just select Start FCC RX test, configure related setting, and press Send Command to start receiving.
- Activity Log window also shows commands result of the dongle being tested.

4 Hardware Interfaces

4.1 USB Interface

Table 2 shows the pinout of the USB interface.

Table 2 USB Connector Pinout

Pin#	Pin Name	Description
1	VBUS	USB BUS Power = 5V
2	Data-(D-, DM on the schematic)	Differential Data Pin -
3	Data+(D+, DP on the schematic)	Differential Data Pin +
4	GND	USB BUS Ground

5 Instruction to The User

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 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:

- * 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 help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables

is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

This equipment may only be operated indoors. Operation outdoors is in violation of 47 USC Section 301 and could subject the operator to serious legal penalties.

Date	Revision	Description	Author
02/14/07	А	Initial Release	Ted Lin

6 Document History