



MICROCHIP

CY920 Getting Started Guide

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, dsPIC, FlashFlex, flexPWR, JukeBlox, KEELOQ, KEELOQ logo, Kleer, LANCheck, MediaLB, MOST, MOST logo, MPLAB, OptoLyzer, PIC, PICSTART, PIC³² logo, RightTouch, SpyNIC, SST, SST Logo, SuperFlash and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

The Embedded Control Solutions Company and mTouch are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, BodyCom, chipKIT, chipKIT logo, CodeGuard, dsPICDEM, dsPICDEM.net, ECAN, In-Circuit Serial Programming, ICSP, Inter-Chip Connectivity, KleerNet, KleerNet logo, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, RightTouch logo, REAL ICE, SQI, Serial Quad I/O, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

Silicon Storage Technology is a registered trademark of Microchip Technology Inc. in other countries.

GestIC is a registered trademarks of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2014, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

ISBN:

**QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
= ISO/TS 16949 =**

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC[®] MCUs and dsPIC[®] DSCs, KEELOQ[®] code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.



Table of Contents

Preface 5

Chapter 1. Introduction

 1.1 CY920 Module Block Diagram 12

 1.2 CY920 Module Top and Bottom View 13

 1.3 Evaluation Board Functionality and Features 15

Chapter 2. Evaluating CY920 Board

 2.1 Connecting CY920 Module, CE2 Board, and Interconnect Card 17

Chapter 3. Network Configuration

 3.1 Configuring CY920 in Ethernet Mode 21

 3.2 Configuring CY920 in Wi-Fi® Mode 23

Chapter 4. Audio Streaming

 4.1 AirPlay Streaming 27

 4.2 DLNA Streaming 28

Worldwide Sales and Service 30

CY920 Getting Started Guide

NOTES:

Preface

NOTICE TO CUSTOMERS

All documentation becomes dated, and this manual is no exception. Microchip tools and documentation are constantly evolving to meet customer needs, so some actual dialogs and/or tool descriptions may differ from those in this document. Please refer to our web site (www.microchip.com) to obtain the latest documentation available.

Documents are identified with a “DS” number. This number is located on the bottom of each page, in front of the page number. The numbering convention for the DS number is “DSXXXXXXXXA”, where “XXXXXXXX” is the document number and “A” is the revision level of the document.

INTRODUCTION

This chapter contains general information that will be useful to know before using the CY920 Network Media module. Items discussed in this chapter include:

- [Document Layout](#)
- [Conventions Used in this Guide](#)
- [Recommended Reading](#)
- [The Microchip Web Site](#)
- [Development Systems Customer Change Notification Service](#)
- [Customer Support](#)
- [Document Revision History](#)

DOCUMENT LAYOUT

This guide describes information on evaluating the CY920 Network Media module using the Evaluation board (CE2).

The document is organized as follows:

- **Chapter 1. “Introduction”** provides a brief description of the CY920 module features. It also covers functionality and features of the CE2 board.
- **Chapter 2. “Evaluating CY920 Board”** describes information on how to evaluate the CY920 module using the CE2 Board.
- **Chapter 3. “Network Configuration”** describes configuring the CY920 module using Ethernet or Wi-Fi mode.
- **Chapter 4. “Audio Streaming”** describes the CY920 module supported various sources of audio streaming informations.

CY920 Getting Started Guide

CONVENTIONS USED IN THIS GUIDE

This manual uses the following documentation conventions:

DOCUMENTATION CONVENTIONS

Description	Represents	Examples
Italic characters	Referenced books	<i>MPLAB IDE User's Guide</i>
	Emphasized text	...is the <i>only</i> compiler...
Initial caps	A window	the Output window
	A dialog	the Settings dialog
	A menu selection	select Enable Programmer
Quotes	A field name in a window or dialog	"Save project before build"
Underlined, italic text with right angle bracket	A menu path	<u><i>File > Save</i></u>
Bold characters	A dialog button	Click OK
	A tab	Click the Power tab
Text in angle brackets < >	A key on the keyboard	Press <Enter>, <F1>
Plain Courier New	Sample source code	<code>#define START</code>
	Filenames	<code>autoexec.bat</code>
	File paths	<code>c:\mcc18\h</code>
	Keywords	<code>_asm, _endasm, static</code>
	Command-line options	<code>-Opa+, -Opa-</code>
	Bit values	<code>0, 1</code>
	Constants	<code>0xFF, 'A'</code>
<i>Italic Courier New</i>	A variable argument	<code>file.o</code> , where <i>file</i> can be any valid filename
Square brackets []	Optional arguments	<code>mcc18 [options] file [options]</code>
Curly brackets and pipe character: { }	Choice of mutually exclusive arguments; an OR selection	<code>errorlevel {0 1}</code>
Ellipses...	Replaces repeated text	<code>var_name [, var_name...]</code>
	Represents code supplied by user	<code>void main (void) { ... }</code>
Notes	A Note presents information that we want to re-emphasize, either to help you avoid a common pitfall or to make you aware of operating differences between some device family members. A Note can be in a box, or when used in a table or figure, it is located at the bottom of the table or figure.	Note: This is a standard note box.
		CAUTION This is a caution note. Note 1: This is a note used in a table.

RECOMMENDED READING

The following Microchip documents are available and recommended as supplemental reference resources.

JukeBlox® Technology 4.X SDK User's Guide (DS70005181)

DM920 Multi-Core Network Media Processor System-on-Chip (SoC) with Integrated Wi-Fi® Data Sheet (DS60001278)

CY920 Network Media Module Data Sheet (DS60001270)

THE MICROCHIP WEB SITE

Microchip provides online support via our web site at: <http://www.microchip.com>. This web site makes files and information easily available to customers. Accessible by most Internet browsers, the web site contains the following information:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip consultant program member listings
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listings of seminars and events; and listings of Microchip sales offices, distributors and factory representatives

CY920 Getting Started Guide

DEVELOPMENT SYSTEMS CUSTOMER CHANGE NOTIFICATION SERVICE

Microchip's customer notification service helps keep customers current on Microchip products. Subscribers will receive e-mail notification whenever there are changes, updates, revisions or errata related to a specified product family or development tool of interest.

To register, access the Microchip web site at www.microchip.com, click on Customer Change Notification and follow the registration instructions.

Advanced RISC Machine (ARM®) Development Studio 5 (DS-5™) is used to develop software on JukeBlox 4.X. ARM Development Studio 5 (DS-5) can be downloaded from ARM web site.

Latest version of the product DS-5 V5.13 (Windows) is available; link to download DS-5 is as follows:

<http://www.arm.com/products/tools/software-tools/ds-5/ds-5-downloads.php>

License required for compiling CY920 SDK code is DS-5 Pro. When purchasing the license, it is suggested that customers should check if the license supports DS - 5 as well.

CUSTOMER SUPPORT

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Field Application Engineer (FAE)
- Technical Support

Customers should contact their distributor, representative or field application engineer (FAE) for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in the back of this document.

Technical support is available through the web site at: <http://support.microchip.com>.

DOCUMENT REVISION HISTORY

Revision A (April 2014)

This is the initial release of the document.

Revision B (October 2014)

This revision includes the following updates:

- Figures: [Figure 1-4](#), [Figure 2-2](#), [Figure 3-1](#) and [Figure 3-2](#)
- Examples: [Example 4-1](#), [Example 3-2](#)
- Tables: [Table 3-1](#)
- [Section 1.3 “Evaluation Board Functionality and Features”](#)
- [Section 3.2.2 “Secured Wi-Fi® Mode Setup”](#)

CY920 Getting Started Guide

NOTES:

Chapter 1. Introduction

Thank you for purchasing the CY920 Network Media module. The CY920 module is built on a single DM920 System-on-Chip (SoC). The feature-rich CY920 module comes along with connectivity features, such as USB 2.0, Wi-Fi® 802.11a/b/g/n, Bluetooth® v2.1 + EDR and 10/100 T Mbps Ethernet.

This document is intended to help users to evaluate the CY920 Network Media module using the Evaluation board (CE2). It also provides procedure to perform AirPlay® and DLNA™ streaming. It is assumed that the user of this document has prior knowledge of Airplay and DLNA.

This chapter covers the following topics:

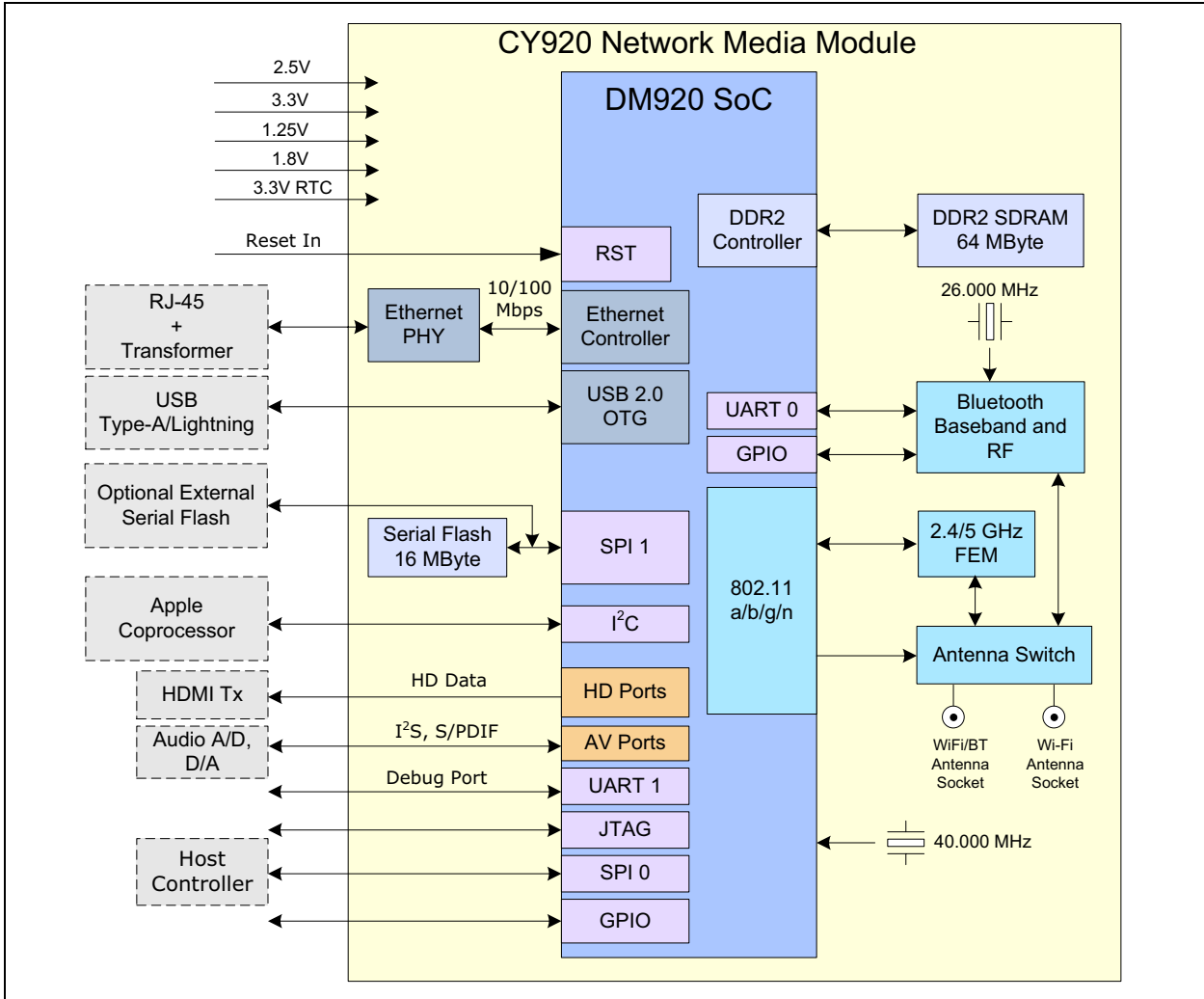
- [CY920 Module Block Diagram](#)
- [CY920 Module Top and Bottom View](#)
- [Evaluation Board Functionality and Features](#)

CY920 Getting Started Guide

1.1 CY920 MODULE BLOCK DIAGRAM

Figure 1-1 illustrates the features of the CY920 module. The CY920 module has various hardware configurations, known as Stock Keeping Units (SKUs). The hardware features of the CY920 module can vary depending on the SKUs used. For more information on SKUs used in the CY920 module, refer to the Ordering Guide section in the “CY920 Network Media Module Data Sheet” (DS60001270).

FIGURE 1-1: CY920 NETWORK MEDIA MODULE BLOCK DIAGRAM



1.2 CY920 MODULE TOP AND BOTTOM VIEW

This section provides the top and bottom view of the CY920 module with RF shield. [Figure 1-2](#) shows the top view of the CY920 module with RF shield.

FIGURE 1-2: CY920 MODULE (TOP VIEW)



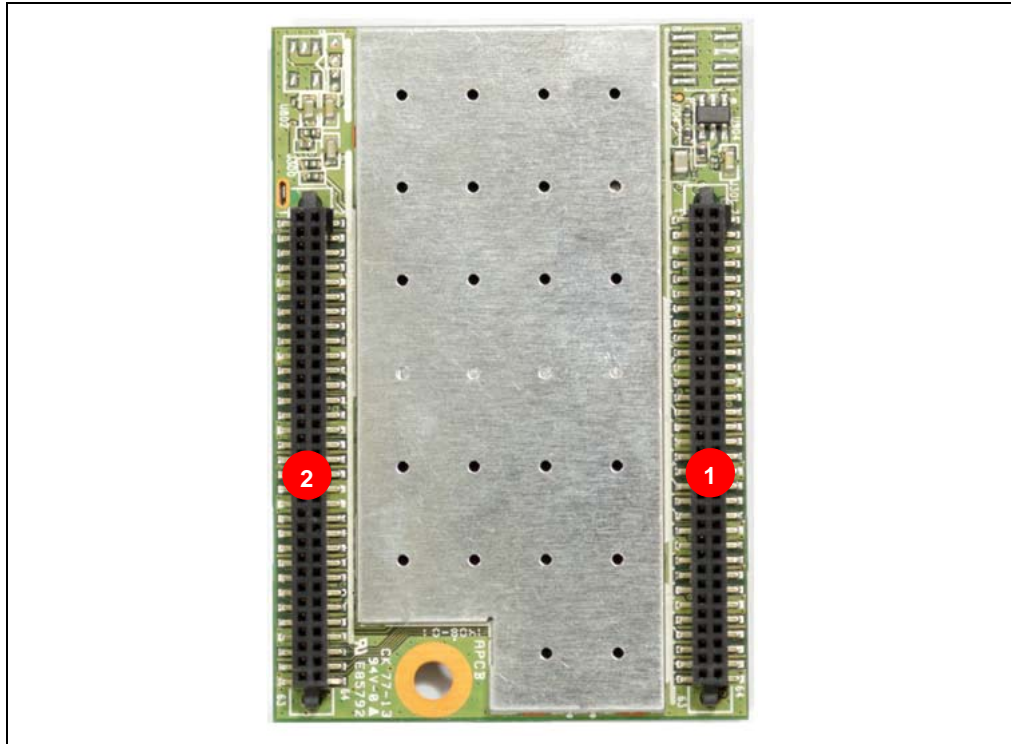
CY920 Getting Started Guide

Figure 1-3 shows the bottom view of the CY920 module with RF shield. It also features the following key components:

1. Basic Connector
2. Extended Connector (optional)

The extended connector is not available for certain SKUs of the CY920 module.

FIGURE 1-3: CY920 MODULE (BOTTOM VIEW)

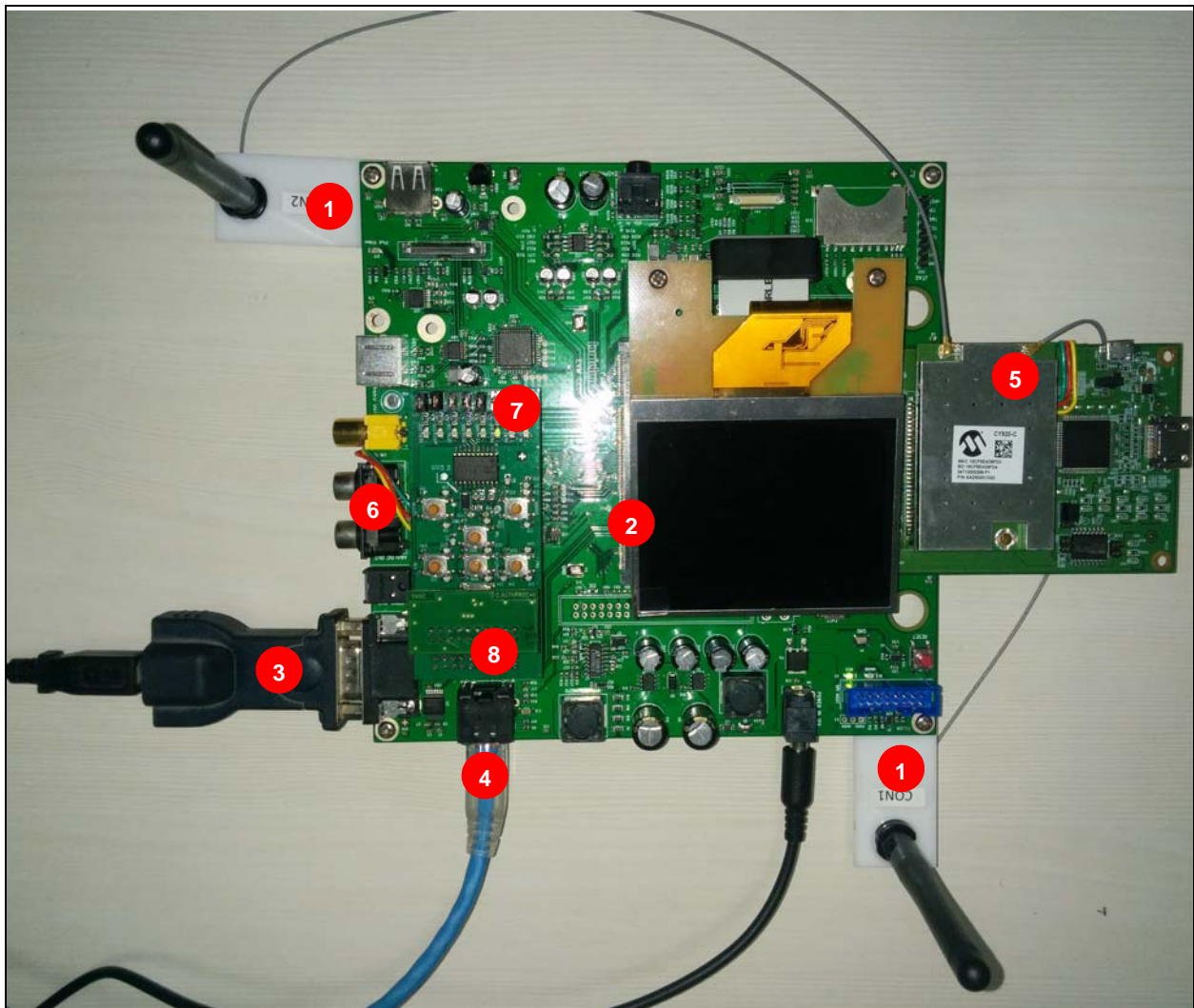


1.3 EVALUATION BOARD FUNCTIONALITY AND FEATURES

The Evaluation board (CE2) is a development base board with all the input and output interfaces to the CY920 module. The CE2 board has the following key features, as indicated by the corresponding numbers in [Figure 1-4](#).

1. Antenna Upgrade Kit for connecting the external RF antennas to the CE2 board. The Antenna Upgrade Kit includes two antennas and extended connecting cables to the module.
2. X2 connector, mounted on the CE2 board for inserting the CY920 interconnect card.
3. USB to serial adapter or RS232 cable connection to the CE2 board
4. Ethernet cable connection to the CE2 board
5. Ultra Small Surface Mount Coaxial (U.FL) connectors, used for connecting the external RF antennas
6. Speaker or headphone connection to the CE2 board
7. I/O Expander card connection at the X13 location (tuner module connector) on the CE2 board.
8. ACP 2.0C connection to the CE2 board

FIGURE 1-4: EVALUATION BOARD WITH VARIOUS CONNECTIONS



CY920 Getting Started Guide

NOTES:

Chapter 2. Evaluating CY920 Board

This chapter describes evaluating the CY920 module using the CE2 board. The CY920 module is not a stand-alone module and it must be hosted on an interconnect card before connecting it to the CE2 board. The following sections provide prerequisites for connecting the CE2 board and various inputs and outputs interfaces:

- EVM CE2 board with two antennas
- Interconnect card
- Authentication co-processor ACP 2.0C (compatible with the CE2 board)
- Power adapter (supplied along with the CE2 board (9V/2.0A))
- USB to serial converter for UART connection between computer and CE2 board
- Speaker or headphone
- Wi-Fi Access Point (AP)

2.1 CONNECTING CY920 MODULE, CE2 BOARD, AND INTERCONNECT CARD

To connect the CY920 module, CE2 board and interconnect card, follow these steps:

1. Connect the CY920 module to the interconnect card as shown in [Figure 2-1](#).

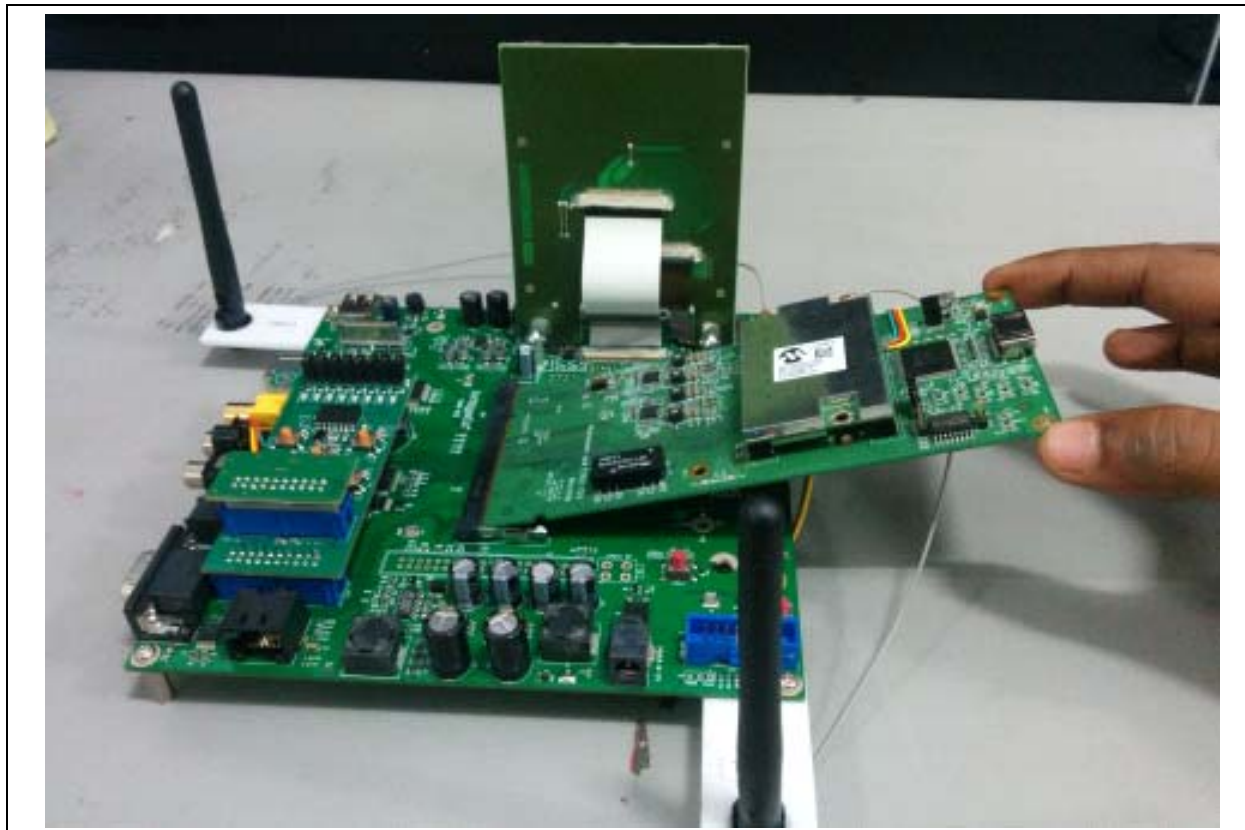
FIGURE 2-1: CY920 MODULE AND INTERCONNECT CARD ASSEMBLY



CY920 Getting Started Guide

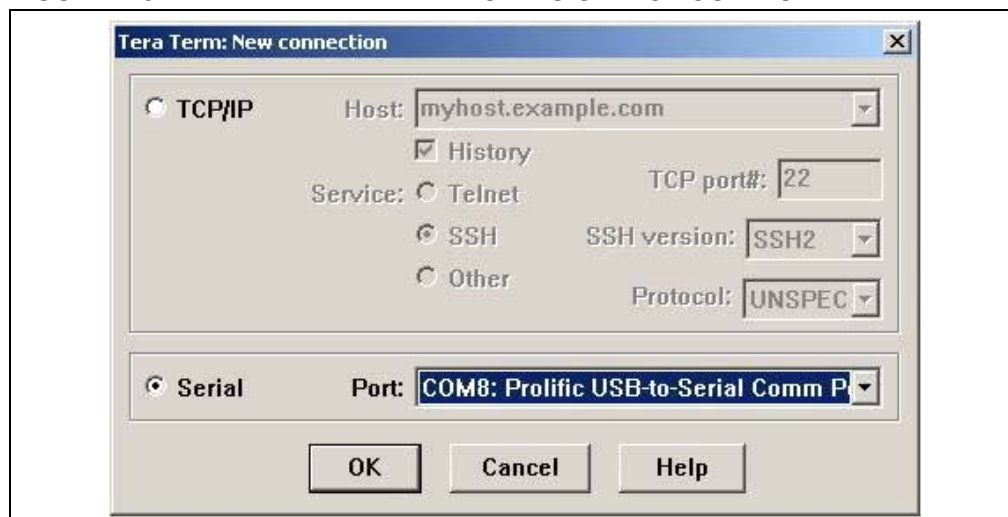
2. Connect the CY920 module and the interconnect card assembly to the connector X2 (200 pin SODIMM connector) on the CE2 board, see [Figure 1-4](#). Ensure that the edge of the interconnect card must be aligned to the X2 connector and it is inserted at an angle shown in [Figure 2-2](#). Push the interconnect card down to lock it on both the sides of the X2 connector.

FIGURE 2-2: INTERCONNECT CARD CONNECTED TO CE2 BOARD



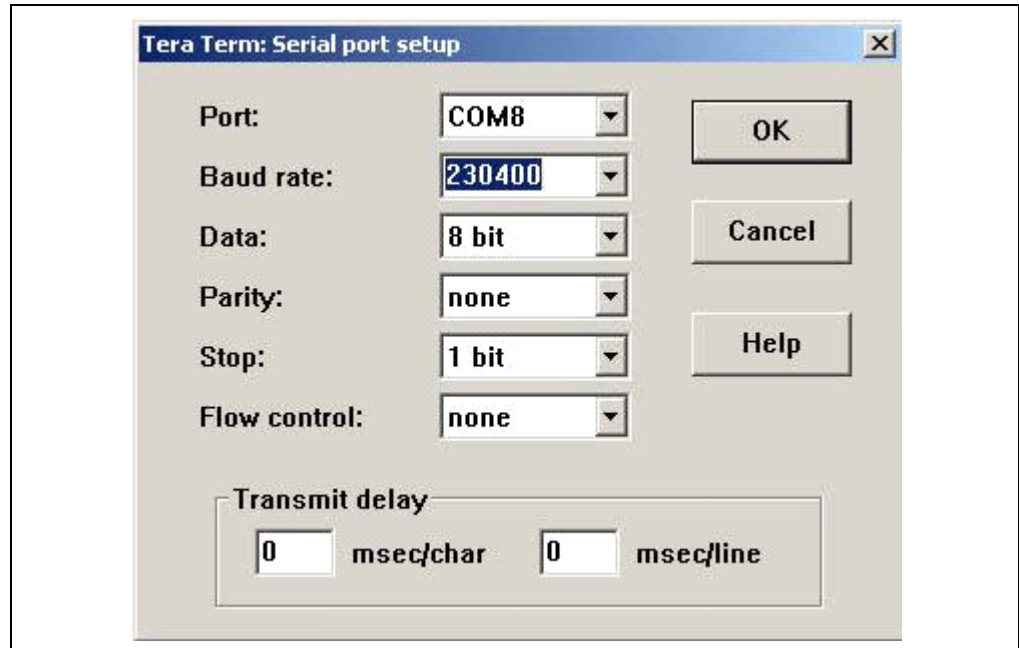
3. To view shell logs, connect the USB to the serial adapter or connect the RS232 cable to the CE2 board, see [Figure 1-4](#).
4. Use a serial terminal tool, Tera Term, for monitoring the RS232 serial data, see [Figure 2-3](#).

FIGURE 2-3: TERA TERM WINDOW TO SELECT COM PORT



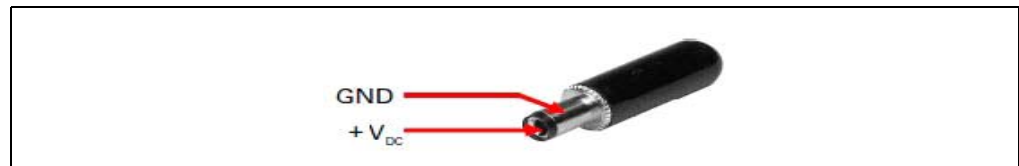
5. Configure the user console on a computer using the Serial port setup, see [Figure 2-4](#).

FIGURE 2-4: SERIAL PORT SETUP



6. Power on the CE2 board using the power adapter, see [Figure 2-5](#).

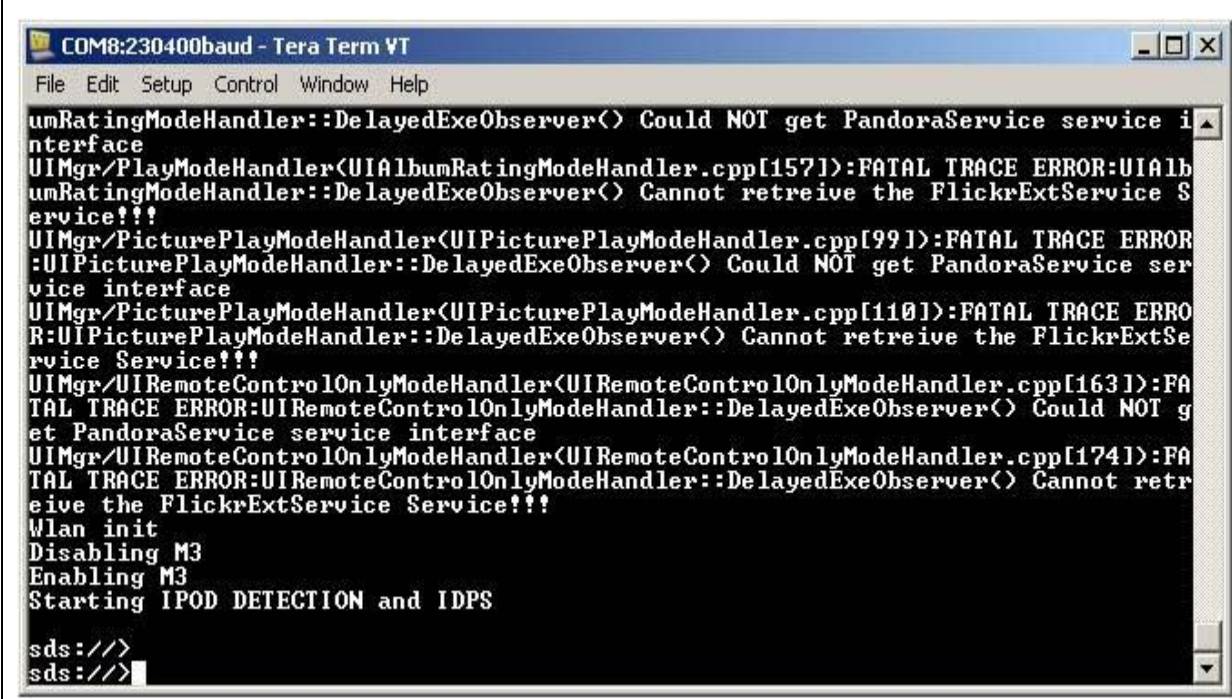
FIGURE 2-5: POWER JACK CONNECTOR



7. On powering, the Bootloader software is executed. If a valid application is found, the booting sequence will be completed and the device starts in normal mode.
8. When the application is running, continue to press <Enter> until the "sds : /" shell command is displayed on the window, see [Figure 2-6](#).

CY920 Getting Started Guide

FIGURE 2-6: WINDOW DISPLAYING SHELL PROMPT



```
COM8:230400baud - Tera Term VT
File Edit Setup Control Window Help
umRatingModeHandler::DelayedExeObserver() Could NOT get PandoraService service interface
UIMgr/PlayModeHandler(UIAlbumRatingModeHandler.cpp[157]):FATAL TRACE ERROR:UIAlbumRatingModeHandler::DelayedExeObserver() Cannot retrieve the FlickrExtService Service!!!
UIMgr/PicturePlayModeHandler(UIPicturePlayModeHandler.cpp[99]):FATAL TRACE ERROR:UIPicturePlayModeHandler::DelayedExeObserver() Could NOT get PandoraService service interface
UIMgr/PicturePlayModeHandler(UIPicturePlayModeHandler.cpp[110]):FATAL TRACE ERROR:UIPicturePlayModeHandler::DelayedExeObserver() Cannot retrieve the FlickrExtService Service!!!
UIMgr/UIRemoteControlOnlyModeHandler(UIRemoteControlOnlyModeHandler.cpp[163]):FATAL TRACE ERROR:UIRemoteControlOnlyModeHandler::DelayedExeObserver() Could NOT get PandoraService service interface
UIMgr/UIRemoteControlOnlyModeHandler(UIRemoteControlOnlyModeHandler.cpp[174]):FATAL TRACE ERROR:UIRemoteControlOnlyModeHandler::DelayedExeObserver() Cannot retrieve the FlickrExtService Service!!!
Wlan init
Disabling M3
Enabling M3
Starting IPOD DETECTION and IDPS

sds://>
sds://>
```

Chapter 3. Network Configuration

The CY920 module can be configured using Ethernet or Wi-Fi mode. To check whether a particular SKU can support Ethernet or Wi-Fi mode, refer to the Ordering Guide section in the “**CY920 Network Media Module Data Sheet**” (DS60001270).

3.1 CONFIGURING CY920 IN ETHERNET MODE

Some of the CY920 module SKUs have provision for Ethernet mode. To connect the CY920 module to Ethernet mode, the set up needs an AP with Dynamic Host Control Protocol (DHCP) support. You must connect the CE2 board to the AP using an Ethernet cable. [Figure 1-4](#) shows the Ethernet cable is connected to the CE2 board.

To set up the CY920 module in Ethernet mode, perform the following steps:

1. Set up the CE2 board, see [2.1 “Connecting CY920 Module, CE2 Board, and Interconnect Card”](#).
2. Power on the CY920 module and wait till the “`sds://`” shell command to display, or press <Enter> until the shell command prompt appears.
3. Configure the CnE value “`CurrentMode`” to “`wired`”, which is available on the following path “`cne/Application/NetIF`”, see [Example 3-1](#).

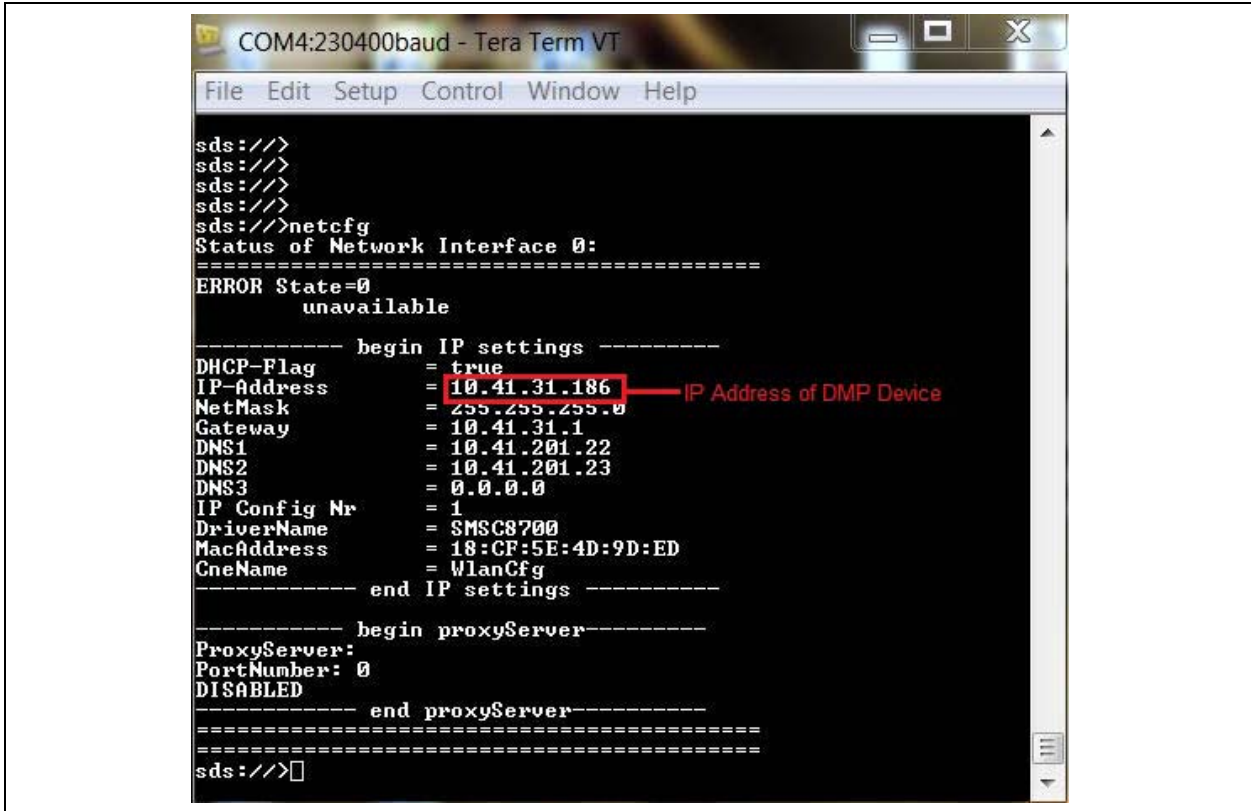
EXAMPLE 3-1: SHELL COMMAND

```
cd cne/Application/NetIF
ls -v
set CurrentMode wired
ls -v
```

4. Reboot the CY920 module and wait for the “`sds://`” shell command to display on the window.
5. Run the “`netcfg`” command to confirm whether the CY920 module is connected to the network or not.
6. The acquired IP address of the Digital Media Player (DMP) device will be displayed on the window, see [Figure 3-1](#).

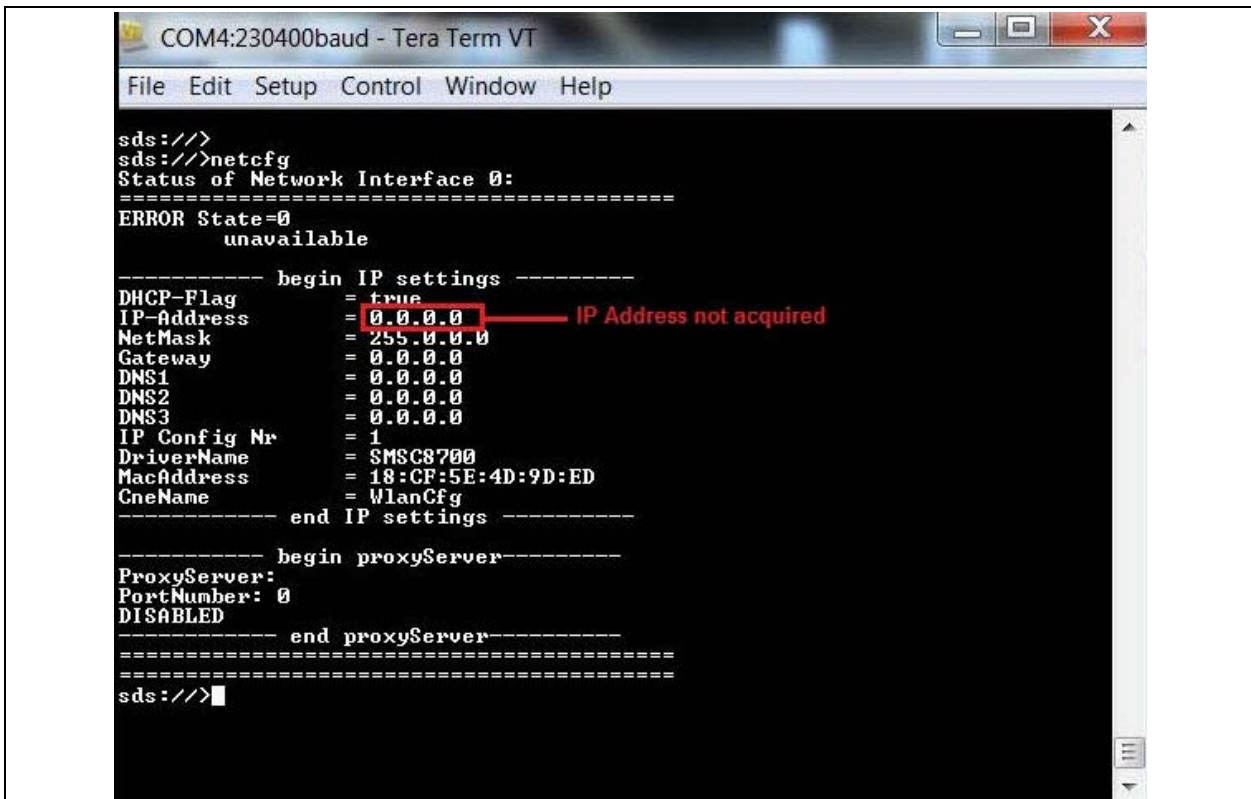
CY920 Getting Started Guide

FIGURE 3-1: DISPLAYING ACQUIRED IP ADDRESS



7. If IP address of the DMP device is not acquired, IP address will not be displayed on the window, see [Figure 3-2](#).

FIGURE 3-2: DISPLAY WHEN IP ADDRESS NOT ACQUIRED



3.2 CONFIGURING CY920 IN Wi-Fi® MODE

The CY920 module can be configured in two Wi-Fi modes: an unsecured (open) mode or a secured mode. The CY920 module has two U.FL connectors for connecting the external RF antennas mounted on the CE2 board. [Figure 1-4](#) shows the U.FL connectors used for connecting the antennas.

3.2.1 Unsecured Wi-Fi® Mode Setup

To configure the CY920 module in an unsecured Wi-Fi mode, follow these steps:

1. Set up the CE2 board, see [2.1 “Connecting CY920 Module, CE2 Board, and Interconnect Card”](#).
2. Power on the CY920 module and wait for the “sds://” shell command to appear on the window, or press <Enter> until the shell command prompt appears.
3. Run the following command in the shell prompt: “cd cne/Networking/DrvCfg/WlanCfg/Profile1”.
4. Set the user SSID as “set ssid <APSSID>”. Where, “APSSID” is the SSID of the AP.
5. Set the security to none “set security NONE”.
6. Reboot the CY920 module and run the “netcfg” command to verify whether the CY920 module is acquired an IP address or not.

3.2.2 Secured Wi-Fi® Mode Setup

The CY920 module can be configured on the different, secured Wi-Fi security modes, refer to Chapter 3. Wireless Network Configuration in “[JukeBlox® Technology 4.X SDK User’s Guide](#)” (DS70005181). This section only describes the WPA2PSK Wi-Fi security setup method.

To configure the CY920 module in the WPA2PSK Wi-Fi security mode, follow these steps:

1. Set up the CE2 board, see [2.1 “Connecting CY920 Module, CE2 Board, and Interconnect Card”](#).
2. Power on the CY920 module and wait for the “sds://” shell command to appear on the window, or press <Enter> until the “sds://” shell command is displayed.
3. Configure the CnE value “currentMode” to “wireless” or “autosense”, which is available on the following path “cne/Application/NetIF”, see [Example 3-3](#).
4. Run the following command in the shell prompt: “cd cne/Networking/DrvCfg/WlanCfg/Profile1”. Where, “Profile1” is the active profile.
5. Set security and cipher, according to the Home AP, using the security configuration map provided in [Table 3-1](#).

TABLE 3-1: SECURITY CONFIGURATION MAP

Security setting at AP	DMP			
	Security	Cipher	WEP Key	Key index
Disabled	None	—	—	—
WEP	WEP	—	WEP Key	Key index number
WPA2PSK and AES	WPA2PSK or WPAWPA2PSK	CCMP or AES	—	—
Any other settings	WPAWPA2PSK	TKIPCCMP	—	—

CY920 Getting Started Guide

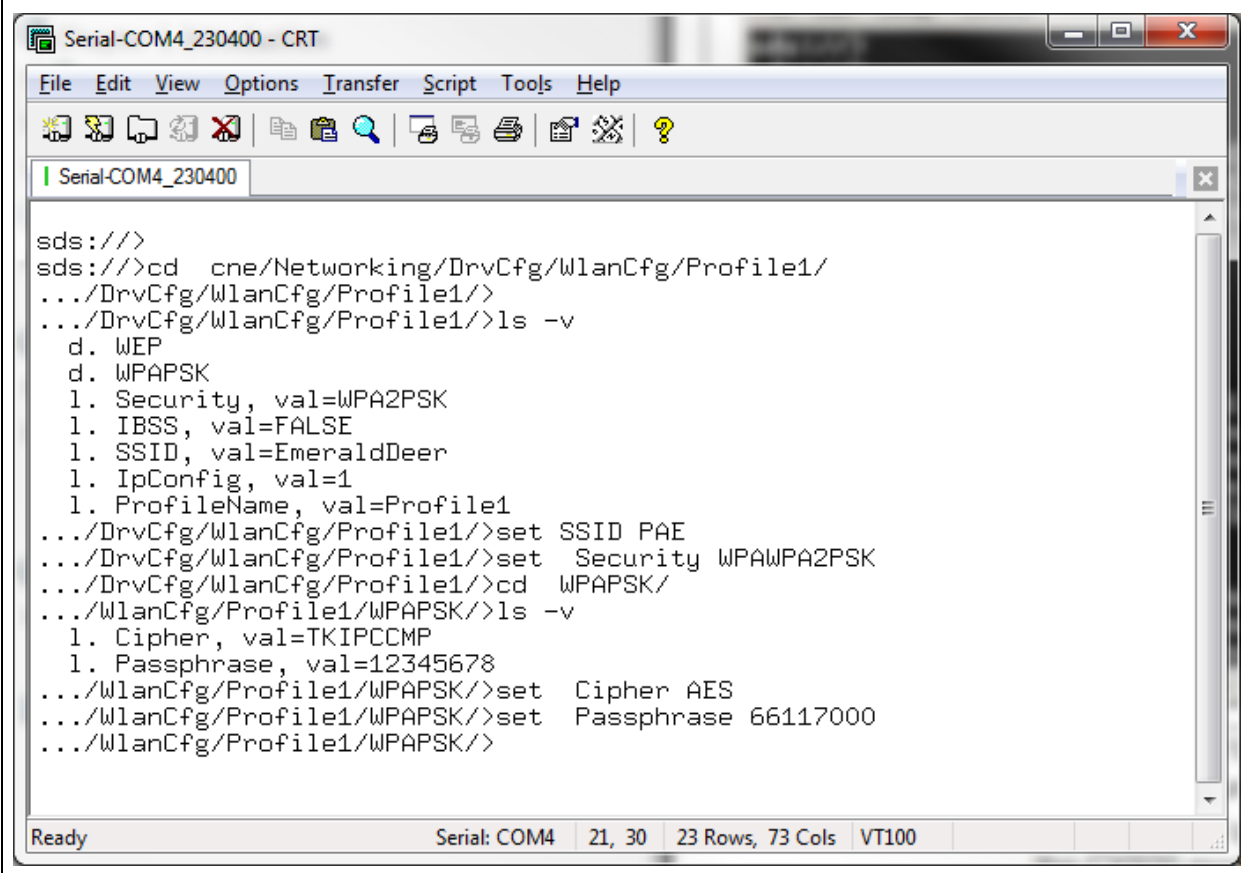
- The security CnE parameter is located at the following location: “cne/Networking/DrvCfg/WlanCfg/Profile1”. The CnE parameter for cipher and passphrase are located at “cne/Networking/DrvCfg/WlanCfg/Profile1/WPAPSK”.
- [Example 3-2](#) provides examples to set the credentials for a AP configured with WPA2PSK and AES.

EXAMPLE 3-2: CREDENTIALS FOR AP CONFIGURATION WITH WPA2PSK AND AES

```
set cne/Networking/DrvCfg/WlanCfg/Profile1/Security WPAWPA2PSK
set cne/Networking/DrvCfg/WlanCfg/Profile1/WPAPSK/Cipher AES
```

- Set the passphrase: “set Passphrase <APPassphrase>”. Where, APAssphrase is the Passphrase used by the AP. The WPAPSK Wi-Fi configuration details will be displayed on the window, see [Figure 3-3](#).

FIGURE 3-3: WPAPSK METHOD



```
Serial-COM4_230400 - CRT
File Edit View Options Transfer Script Tools Help
Serial-COM4_230400
sds://>
sds://>cd cne/Networking/DrvCfg/WlanCfg/Profile1/
.../DrvCfg/WlanCfg/Profile1/>
.../DrvCfg/WlanCfg/Profile1/>ls -v
d. WEP
d. WPAPSK
1. Security, val=WPA2PSK
1. IBSS, val=FALSE
1. SSID, val=EmeraldDeer
1. IpConfig, val=1
1. ProfileName, val=Profile1
.../DrvCfg/WlanCfg/Profile1/>set SSID PAE
.../DrvCfg/WlanCfg/Profile1/>set Security WPAWPA2PSK
.../DrvCfg/WlanCfg/Profile1/>cd WPAPSK/
.../WlanCfg/Profile1/WPAPSK/>ls -v
1. Cipher, val=TKIPCCMP
1. Passphrase, val=12345678
.../WlanCfg/Profile1/WPAPSK/>set Cipher AES
.../WlanCfg/Profile1/WPAPSK/>set Passphrase 66117000
.../WlanCfg/Profile1/WPAPSK/>
Ready Serial: COM4 21, 30 23 Rows, 73 Cols VT100
```

- Reboot the CY920 module and wait for the “sds://” shell command to display. Ensure that the Ethernet cable is not connected.
- Once the shell prompt is displayed, run the “netcfg” command to verify whether the CY920 module is acquired an IP address or not.

Note: The system might require several seconds to acquire an IP address, and it depends on the characteristics of the network.

Optional: Users can list all the preceding commands in the `wireless_Setting.txt` file and copy all the commands to a serial terminal tool, Tera Term, to configure the CY920 module in the WPAPSK Wi-Fi security mode, see [Example 3-3](#),

EXAMPLE 3-3: Wireless_Setting.txt FILE

```
cd cne
cd Application/NetIF
set mode wireless
cd /cne/Networking/DrvCfg/WlanCfg/Profile1
set SSID BCO-T1
set Security WPAWPA2PSK
cd WPAPSK
set Cipher AES
set Passphrase WelCome!23
sys reboot
```

CY920 Getting Started Guide

NOTES:

Chapter 4. Audio Streaming

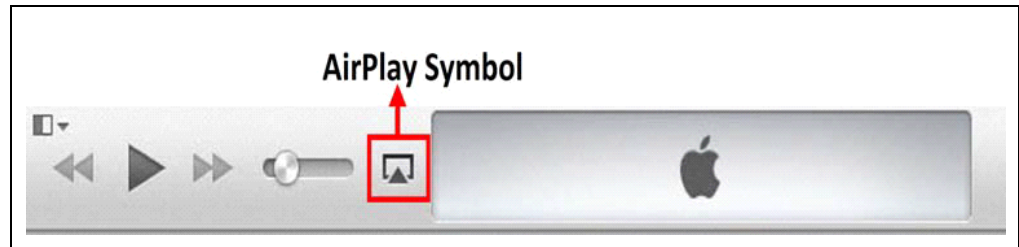
The CY920 module supports various sources of audio streaming; however, this chapter only covers AirPlay and DLNA streaming details.

4.1 AIRPLAY STREAMING

Perform the following steps for the Airplay streaming:

1. Set up the CE2 board, see [2.1 “Connecting CY920 Module, CE2 Board, and Interconnect Card”](#).
2. Configure the CY920 module network using Ethernet or Wi-Fi mode, see [Chapter 3. “Network Configuration”](#).
3. Use an iOS device or a computer that has the latest iTunes® installed. Configure the iOS device or computer to the same network as that of the CY920 module.
4. Connect the speaker to audio out pin of the CE2 board as shown in [Figure 1-4](#). Ensure that the ACP 2.0C is connected to the CE2 board.
5. Open the iTunes from the iOS device or computer. If the CY920 module and the iOS device or computer is on the same network, the Airplay symbol will be lit up as shown in [Figure 4-1](#).

FIGURE 4-1: DMP AND iTUNES® IN THE SAME NETWORK



6. Select the CY920 module by pressing the Airplay symbol, see [Figure 4-2](#).

FIGURE 4-2: SELECTING THE AIRPLAY® ENABLED DMP



7. After the CY920 module is selected, authentication with iTunes and the device happens automatically.
8. On successful authentication, press “Play” button on iTunes for audio streaming.

CY920 Getting Started Guide

4.2 DLNA STREAMING

Perform the following steps for the DLNA streaming:

1. Set up the CE2 board, see [2.1 “Connecting CY920 Module, CE2 Board, and Interconnect Card”](#).
2. Configure the CY920 module network using Ethernet or Wi-Fi mode, see [Chapter 3. “Network Configuration”](#).
3. Connect the computer and the CY920 module to the same network.
4. Connect the speaker to an audio out pin of the CE2 board, see [Figure 1-4](#).
5. To enable the audio decoders, configure the CnE values “cne\cneGroup” to “1” as shown in [Example 4-1](#).

EXAMPLE 4-1: ENABLING AUDIO DECODER VALUES

```
cd cne\cneGroup
set IsflacEnabled 1
set IsaacEnabled 1
set IsoggEnabled 1
set Ismp3Enabled 1
set IsaiffEnabled 1
set IswmaEnabled 1
set IsUPnPEnabled 1
set IsalacEnabled 1
set Ismp4Enabled 1
set IsDSDEnabled 1
```

6. Reboot the CY920 module.
7. Run Microsoft® Windows Media Player 12 (WMP 12) on the computer and perform the WMP 12 “Play To” setup procedure provided in the Microsoft web site: <http://windows.microsoft.com/en-IN/windows7/using-the-play-to-feature-to-stream-media>.

NOTES:



MICROCHIP

Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://www.microchip.com/support>
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Austin, TX
Tel: 512-257-3370

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Cleveland
Independence, OH
Tel: 216-447-0464
Fax: 216-447-0643

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110

Canada - Toronto
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2943-5100
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China - Hangzhou
Tel: 86-571-8792-8115
Fax: 86-571-8792-8116

China - Hong Kong SAR
Tel: 852-2943-5100
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8864-2200
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-3019-1500

Japan - Osaka
Tel: 81-6-6152-7160
Fax: 81-6-6152-9310

Japan - Tokyo
Tel: 81-3-6880-3770
Fax: 81-3-6880-3771

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Dusseldorf
Tel: 49-2129-3766400

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany - Pforzheim
Tel: 49-7231-424750

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy - Venice
Tel: 39-049-7625286

Netherlands - Druenen
Tel: 31-416-690399
Fax: 31-416-690340

Poland - Warsaw
Tel: 48-22-3325737

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

03/25/14