



MICROCHIP

**Wi-Fi Comm Demo Board
User's 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in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates.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, KEELOQ, KEELOQ logo, MPLAB, PIC, PICmicro, PICSTART, PIC³² logo, rPIC and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.


FilterLab, Hampshire, HI-TECH C, Linear Active Thermistor, MXDEV, MXLAB, SEEVAL and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, Application Maestro, chipKIT, chipKIT logo, CodeGuard, dsPICDEM, dsPICDEM.net, dsPICworks, dsSPEAK, ECAN, ECONOMONITOR, FanSense, HI-TIDE, In-Circuit Serial Programming, ICSP, Mindi, MiWi, MPASM, MPLAB Certified logo, MPLIB, MPLINK, mTouch, Omniscent Code Generation, PICC, PICC-18, PICDEM, PICDEM.net, PCKit, PICtail, REAL ICE, rfLAB, Select Mode, Total Endurance, TSHARC, UniWinDriver, WiperLock 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.

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

© 2012, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

 Printed on recycled paper.

ISBN: 978-1-62076-128-1

**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.



Wi-Fi COMM DEMO BOARD USER'S GUIDE

Table of Contents

Preface	5
Chapter 1. Overview	
1.1 Kit Contents	9
1.2 Functionality and Features	9
Chapter 2. Hardware	
2.1 Hardware Features	11
Chapter 3. Getting Started	
3.1 Overview	13
3.2 Running the Wi-Fi Comm Demo Application	13
3.3 Ad hoc Networks	16
3.4 Zero Configuration/Bonjour	16
3.5 Configured vs. Unconfigured State	17
Appendix A. Wi-Fi Comm Demo Board Schematic	
A.1 Introduction	19
Worldwide Sales and Service	22

Wi-Fi Comm Demo Board User's 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 “DSXXXXA”, where “XXXX” is the document number and “A” is the revision level of the document.

For the most up-to-date information on development tools, see the MPLAB® IDE on-line help. Select the Help menu, and then Topics to open a list of available on-line help files.

INTRODUCTION

This chapter contains general information that will be useful to know before using the Wi-Fi Comm Demo Board. Items discussed in this chapter include:

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

DOCUMENT LAYOUT

This document describes how to use the Wi-Fi Comm Demo Board to create a Wi-Fi network and control the demo board functions from the client device web browser. The manual layout is as follows:

- **Chapter 1. “Overview”** – This chapter provides a brief overview of the demo board, highlighting its features and uses.
- **Chapter 2. “Hardware”** – This chapter provides the hardware description of the Wi-Fi Comm Demo Board.
- **Chapter 3. “Getting Started”** – This chapter describes what you need to know to start using the Wi-Fi Comm Demo Board.
- **Appendix A. “Wi-Fi Comm Demo Board Schematic”** – This appendix includes Wi-Fi Comm Demo Board schematic.

Wi-Fi Comm Demo Board User's Guide

CONVENTIONS USED IN THIS GUIDE

This manual uses the following documentation conventions:

DOCUMENTATION CONVENTIONS

Description	Represents	Examples
Arial font:		
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
N'Rnnnn	A number in verilog format, where N is the total number of digits, R is the radix and n is a digit.	4'b0010, 2'hF1
Text in angle brackets < >	A key on the keyboard	Press <Enter>, <F1>
Courier New font:		
Plain Courier New	Sample source code	#define START
	Filenames	autoexec.bat
	File paths	c:\mcc18\h
	Keywords	_asm, _endasm, static
	Command-line options	-Opa+, -Opa-
	Bit values	0, 1
	Constants	0xFF, 'A'
Italic Courier New	A variable argument	<i>file.o</i> , where <i>file</i> can be any valid filename
Square brackets []	Optional arguments	mcc18 [options] <i>file</i> [options]
Curly brackets and pipe character: { }	Choice of mutually exclusive arguments; an OR selection	errorlevel {0 1}
Ellipses...	Replaces repeated text	var_name [, var_name...]
	Represents code supplied by user	void main (void) { ... }

WARRANTY REGISTRATION

Please complete the enclosed Warranty Registration Card and mail it promptly. Sending in the Warranty Registration Card entitles users to receive new product updates. Interim software releases are available at the Microchip web site.

RECOMMENDED READING

This user's guide describes how to use the Wi-Fi Comm Demo Board. The following Microchip documents are available from the Microchip web site (www.microchip.com), and are recommended as supplemental reference resources.

MRF24WB0MA/MRF24WB0MB Data Sheet (DS70632)

PIC32MX5XX/6XX/7XX Family Data Sheet (DS61156)

THE MICROCHIP WEB SITE

Microchip provides online support via our web site at www.microchip.com. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, 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 listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

Wi-Fi Comm Demo Board User's 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.

The Development Systems product group categories are:

- **Compilers** – The latest information on Microchip C compilers and other language tools. These include the MPLAB[®] C18 and MPLAB C30 C compilers; MPASM[™] and MPLAB ASM30 assemblers; MPLINK[™] and MPLAB LINK30 object linkers; and MPLIB[™] and MPLAB LIB30 object librarians.
- **Emulators** – The latest information on Microchip in-circuit emulators. This includes the MPLAB ICE 2000 and MPLAB ICE 4000.
- **In-Circuit Debuggers** – The latest information on the Microchip in-circuit debugger, MPLAB ICD 2.
- **MPLAB[®] IDE** – The latest information on Microchip MPLAB IDE, the Windows[®] Integrated Development Environment for development systems tools. This list is focused on the MPLAB IDE, MPLAB SIM simulator, MPLAB IDE Project Manager and general editing and debugging features.
- **Programmers** – The latest information on Microchip programmers. These include the MPLAB PM3 and PRO MATE[®] II device programmers and the PICSTART[®] Plus and PICKit[™] 1 development programmers.

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 (March 2012)

This is the initial release of the document.

Chapter 1. Overview

1.1 INTRODUCTION

Thank you for purchasing the Microchip Technology's Wi-Fi Comm Demonstration kit. The Wi-Fi Comm Demo Board provides a low-cost and portable development system for Microchip's MRF24WB0MA 802.11b RF Transceiver module.

The Wi-Fi Comm Demo Board is preloaded with the demo software for the user to explore the features of the MRF24WB0MA Wi-Fi module. It is also expandable through an expansion interface, which allows the user to extend its functionality by adding various sensor expansion boards.

The topics discussed in this chapter include:

- [Wi-Fi Comm Demonstration kit Contents](#)
- [Functionality and Features](#)

1.2 Wi-Fi COMM DEMONSTRATION KIT CONTENTS

The Wi-Fi Comm Demonstration Kit contains these items:

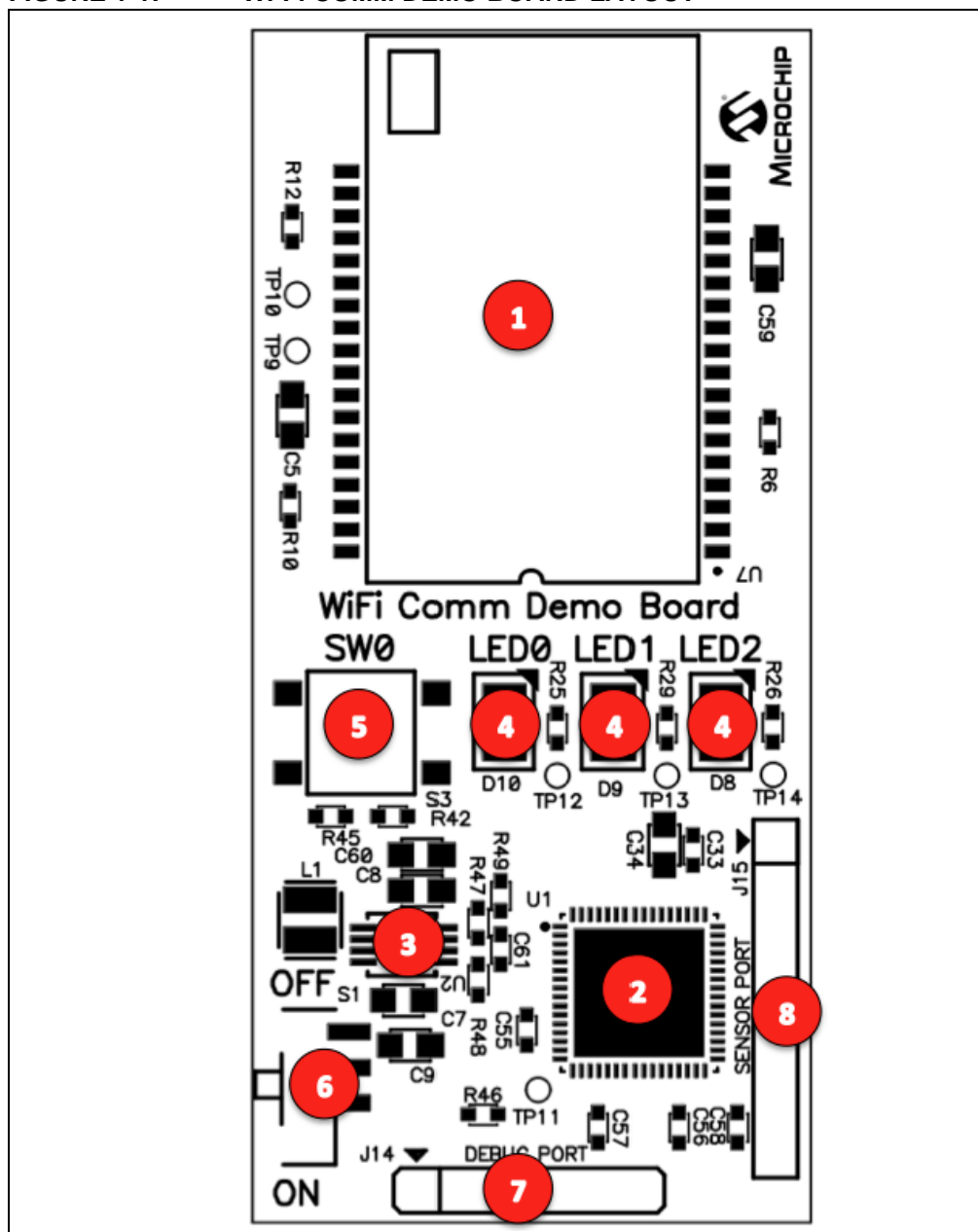
- Wi-Fi Comm Demo Board
- 2 AAA Lithium Batteries
- Wi-Fi Comm Demo Board Information Sheet

1.3 FUNCTIONALITY AND FEATURES

A representation of the layout for the Wi-Fi Comm Demo Board is as shown in [Figure 1-1](#).

Wi-Fi Comm Demo Board User's Guide

FIGURE 1-1: Wi-Fi COMM DEMO BOARD LAYOUT



The Wi-Fi Comm Demo Board includes the following key features:

1. MRF24WMB0MA RF Transceiver module
2. PIC32MX695F512H 32-bit microcontroller
3. MCP1642 +3.3V Boost regulator
4. Three status indicator LEDs
5. One push-button switch for user input
6. Power ON/OFF slider switch
7. 6-pin debug port
8. 8-pin sensor port

Chapter 2. Hardware

This chapter describes the hardware features of the Wi-Fi Comm Demo Board.

2.1 HARDWARE FEATURES

The key features of the Wi-Fi Comm Demo Board are listed below and they are introduced in the [Section 1.3 “Functionality and Features”](#), see [Figure 1-1](#) for their locations on the board.

2.1.1 Wi-Fi Transceiver

The MRF24WMB0MA RF Transceiver module provides wireless connectivity to the demo board. Host communication is through SPI2 of the PIC processor on the board.

2.1.2 Processor Support

The Wi-Fi Comm Demo Board is designed with a permanently mounted (soldered) PIC32MX695F512H processor.

2.1.3 Power Supply

The board is powered through 2 AAA Lithium batteries. If required, the battery voltage is monitored and boosted by the MCP1642 Synchronous Boost Regulator.

2.1.4 LEDs

The LED's: LED0, LED1 and LED2 are connected to PORTE and PORTF of the PIC32MX695F512H processor. To ON the LED's, the port pins are set high.

2.1.5 Switches

The Wi-Fi Comm Demo Board contains the following switches:

- S1 – Controls the main power to the board. To turn on the board, move S1 slider to the ON position.
- SW0 – Push-button switch, it is an active low switch connected to RD9 of the processor. When Idle, switch is pulled high (+3.3V) and when pressed, it is grounded.

2.1.6 Debug Port

Connector J14 provides easy access to the PIC32MX695F512H processors debug pins.

2.1.7 Sensor Expansion Port

Connector J15 provides access to some of the processors spare I/O pins. These pins can function as an SPI, UART, or I2C port to an attached sensor board or as general purpose I/O.

Wi-Fi Comm Demo Board User's Guide

NOTES:

Chapter 3. Getting Started

3.1 OVERVIEW

Wireless Local Area Networks (WLAN) provide a unique challenge for configuring embedded wireless products without a natural user interface. Unlike wired networks, wireless networks require unique items such as the Service Set Identifier (SSID), network type and security keys, and these items must be sent to the device in some form or another.

Generally, the user would enter this information using a keyboard and display. The Wi-Fi Comm demo application uses a mechanism called EasyConfig to allow for configuration of an embedded device on a wireless network. It utilizes the web server of the TCP/IP stack and a wireless ad hoc (independent basic service set) network to allow the user to input the desired network information from a client browser, and then reset the device to connect to the desired network.

3.2 RUNNING THE WI-FI COMM DEMO APPLICATION

This section describes how to connect to the Wi-Fi Comm Demo Board to control the on board LED's and view the status of the SW0 switch from a web browser. It also describes how to connect the Wi-Fi Comm Demo board to an existing network.

1. After powering, the Wi-Fi Comm Demo Board broadcasts an ad hoc network with an SSID, MCHP_XXXX. Where, XXXX is the last four digits of the MRF24WMB0MA RF Transceiver module's MAC address (See [Example 3-1](#)).

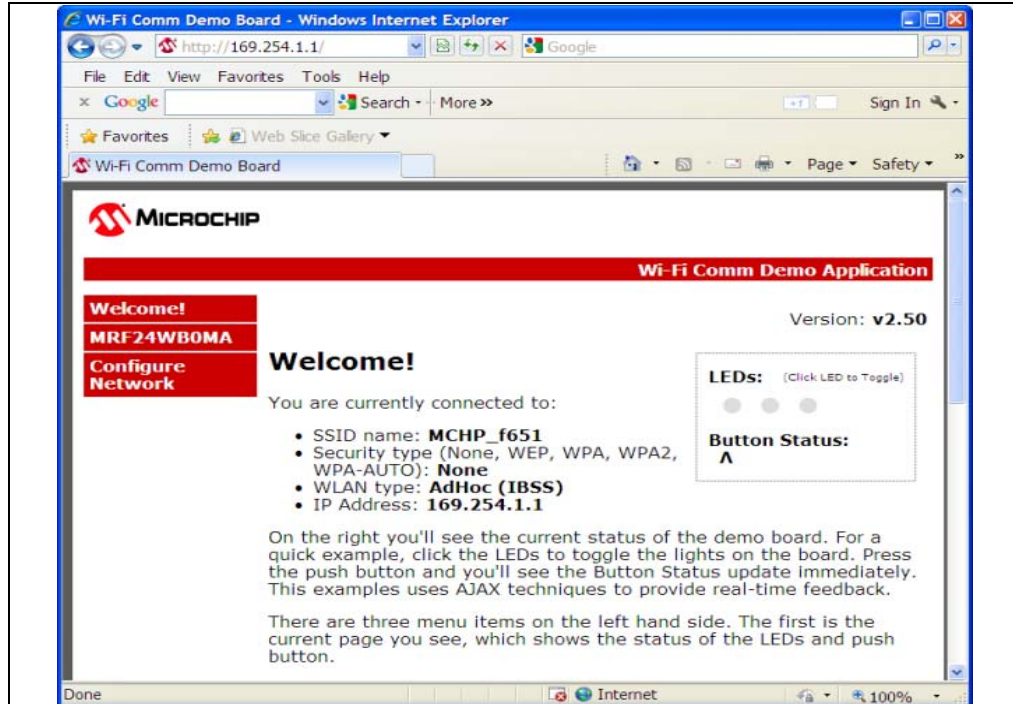
EXAMPLE 3-1:

```
MRF24WMB0MA MAC (SN): 001EC001E627  
AD HOC SSID: MCHP_E627
```

2. Connect a client device, such as a laptop, iPod® Touch, iPhone®, iPad®, to the MCHP_XXXX ad hoc network.
3. After connecting the client device, use a standard web browser and enter the IP address of the Wi-Fi Comm Demo Board. The default IP address is http://169.254.1.1.
4. The following web pages from the web server that is running on the Wi-Fi Comm Demo Board will be displayed.
 - a) The `index.htm` web page displays the additional information about the Wi-Fi Comm Demo Board application. It also displays the continually updating status of the three LEDs (LED0, LED1 and LED2) and push-button on the Wi-Fi Comm Demo Board, see figure [Figure 3-1](#). To control the LED's, click on the LED icon on the Web page. To see the status of the push-button, press SW0 on the Wi-Fi Comm Demo Board.

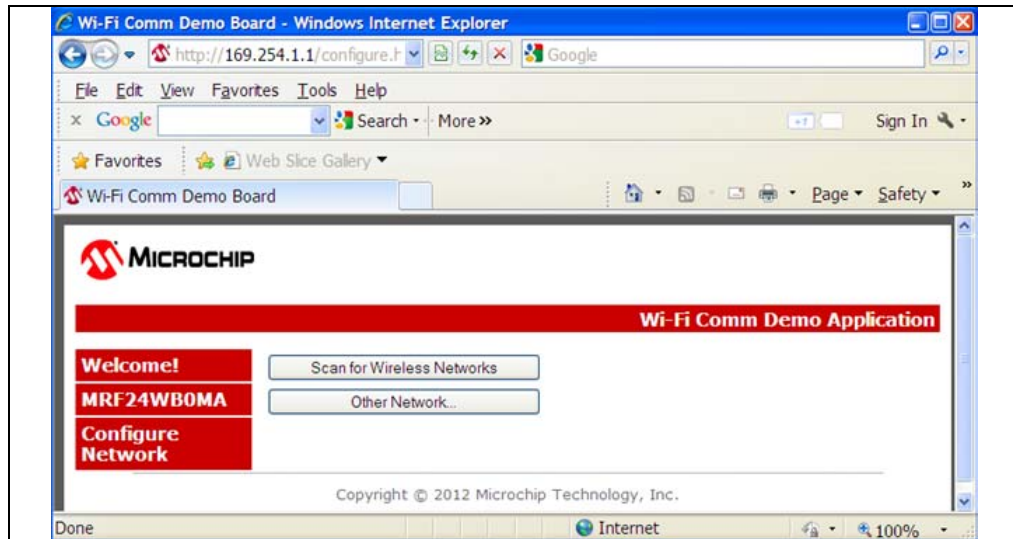
Wi-Fi Comm Demo Board User's Guide

FIGURE 3-1: SAMPLE INDEX.HTM WEB PAGE



- b) The `configure.htm` web page allows the user to scan for nearby networks and connect to the selected network, see Figure 3-2.

FIGURE 3-2: SAMPLE CONFIGURE.HTM WEB PAGE



5. To connect the Wi-Fi Comm Demo board to an existing network: Click **Scan for Wireless Networks** on the `configure.htm` web page.
6. When a new network is selected, the Wi-Fi Comm Demo Board will reset automatically using the parameters (SSID, security key) of the new network.
7. To continue using the demo, the client device must be reconnected to the same network where Wi-Fi Comm Demo Board is on.

Note: The demo board will always attempt to connect to the last known network. If the user wants to reset the demo to startup in ad hoc mode again, then simply slide the power switch S1 to the OFF position and then back to the ON position.

3.3 AD HOC NETWORKS

On starting the demo, the product will either connect to another ad hoc network or will start its own if ad hoc network is not found. Ad hoc networks are peer-to-peer networks with no centralized coordinator for the network; all the devices share the responsibilities of keeping the network running. One downfall of ad hoc networks is that typically security is not employed on them.

The MRF24WB0M module can secure an ad hoc network with Wired Equivalent Privacy (WEP) (40-bit/104-bit) security, like most of the laptops and ad hoc devices. Very few devices in the market can secure an ad hoc network with Wi-Fi Protected Access (WPA) level security due to tremendous overhead.

The demo starts on an ad hoc network without security. This means that all the network information that is being configured on the device is going over-the-air in the open. For most applications, unless somebody is specifically attempting to listen in on this network, there should be minor impact on security. However, for applications that require baseline level of security, WEP can be employed on the network.

3.4 ZERO CONFIGURATION/BONJOUR

Zero Configuration (Zeroconf) provides a mechanism to simplify the device configuration on a network. The term Zeroconf is titled from the names Bonjour (Apple) and Avahi (Linux), and is an Internet Engineering Task Force (IETF) standard. Zeroconf provides simplified naming conventions, instead of relying on the IP addresses alone. The Zeroconf is built on the following three core technologies.

3.4.1 Link Local

The first component of Zeroconf is the ability to self-assign an IP address to each member of a network. Usually, a Dynamic Host Configuration Protocol (DHCP) server handles such situations. However, when no DHCP server exists, Zeroconf enabled devices negotiate the unique IP address amongst themselves.

3.4.2 Multicast DNS

The second component of Zeroconf is the ability to self-assign the host names. Multicast Domain Name System (DNS) provides the local network with the ability to have the features of a DNS server. User can use the host names to access the devices on the network. When devices select to use the same host name, as in the IP address resolution, each of the devices will self-assign the Auto-negotiate New Names, usually appending a number at the end of the name.

3.4.3 Service Discovery

The last component of Zeroconf is service discovery. All Zeroconf devices can broadcast what services they provide. For instance, a printer can broadcast about available printing services. A thermostat can broadcast that it has an HVAC control service. For a specific service, the user can see the list of devices that provide the service, and connect to it. This eliminates the need to know whether something exists on a network (and what its IP or host name is). The user can query the network to see if a certain service exists or not, and easily connect to it.

Wi-Fi Comm Demo Board User's Guide

3.5 CONFIGURED VS. UNCONFIGURED STATE

When the Wi-Fi Comm demo is in an unconfigured state (i.e, serving the default MCHP_xxxx SSID in ad hoc mode), the LED (LED0) will blink twice per second to indicate it is not configured. After the network is configured, the LED will blink once per second.

Note: When the Wi-Fi Comm Demo Board is moved to a different network, a new IP address will be assigned to it. As the Wi-Fi Comm Demo Board does not display the new IP address, the user must obtain the new IP address from the server that assigned it. Refer to your server's documentation for the necessary steps required to obtain the new IP address.



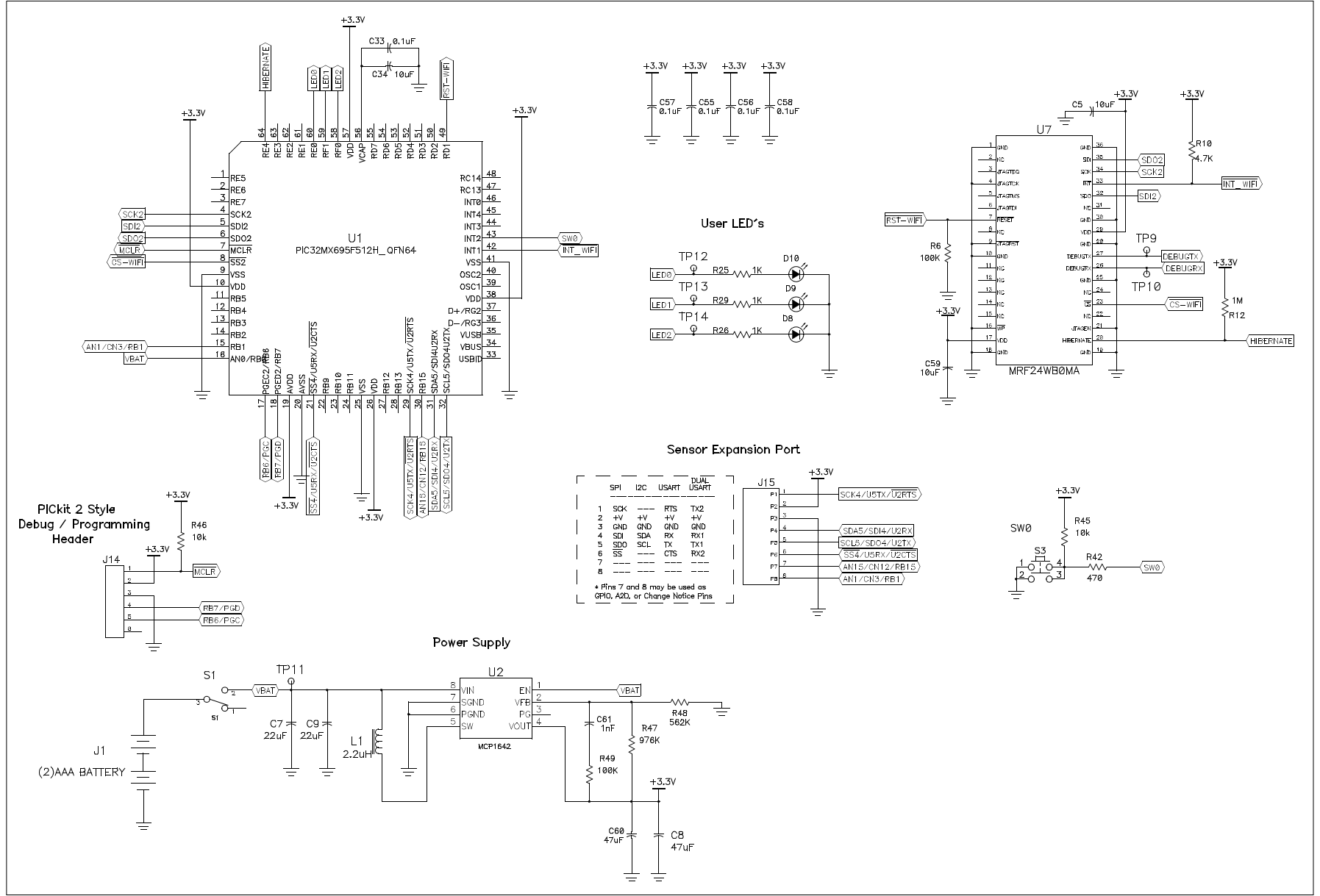
Wi-Fi COMM DEMO BOARD USER'S GUIDE

Appendix A. Wi-Fi Comm Demo Board Schematic

A.1 INTRODUCTION

This appendix provides the Wi-Fi Comm Demo Board schematic.

FIGURE A-1: Wi-Fi COMM DEMO BOARD SCHEMATIC



Wi-Fi Comm Demo Board Schematic

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](http://www.microchip.com/support)
Web Address:
www.microchip.com

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

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
Farmington Hills, MI
Tel: 248-538-2250
Fax: 248-538-2260

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

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

Santa Clara
Santa Clara, CA
Tel: 408-961-6444
Fax: 408-961-6445

Toronto
Mississauga, Ontario,
Canada
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: 852-2401-1200
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: 86-571-2819-3187
Fax: 86-571-2819-3189

China - Hong Kong SAR
Tel: 852-2401-1200
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: 86-755-8203-2660
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: 91-20-2566-1512
Fax: 91-20-2566-1513

Japan - Osaka
Tel: 81-66-152-7160
Fax: 81-66-152-9310

Japan - Yokohama
Tel: 81-45-471-6166
Fax: 81-45-471-6122

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: 886-7-536-4818
Fax: 886-7-330-9305

Taiwan - Taipei
Tel: 886-2-2500-6610
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 - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

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

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

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

UK - Wokingham
Tel: 44-118-921-5869
Fax: 44-118-921-5820

11/29/11



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.