

INTRODUCTION

This document describes how to use the 1-Wire[®] Public-Domain (PD) Kit. It explains how to combine the files in the kit to form an application. It also shows how to build custom applications for a different OS platform even if one is not already supported. The 1-Wire PD Kit was built for any developer trying to create an application using Dallas Semiconductor's 1-Wire devices. It was designed as a learning tool to understand how to communicate to the 1-Wire network.

The source code in the 1-Wire PD Kit was written in 'C'. This language was selected because it is one of the most common programming languages and is highly portable to different operating systems. [Application Note 155](#) describes the 1-Wire PD Kit along with other software development kits that are available.

The files in the 1-Wire PD Kit can be broken down into groups. The first group is the *Session* group. The *Session* group acquires and releases exclusive use of the 1-Wire so that no other application can interfere with communication. The *Link* group is a set of primitive 1-Wire communication functions, which include reset, reading/writing bits, EPROM programming pulse, and power delivery. These *Link* functions are platform-dependent. The *Network* function group does device discovery and selection. Each 1-Wire device has a 1-Wire network address for individual selection. The *Transport* group does block communication and primitive read/write memory functions, which include packet read/write functions to 1-Wire devices. The *File* group contains memory level functions using the 1-Wire File Structure (see [Application Note 114](#)), which can be used on 1-Wire devices with more than one page of memory. The *Device* group uses the above groups of functions to perform specific operations on 1-Wire devices such as SHA operations, temperature readings, voltage readings, and setting switch states.

CONTENTS

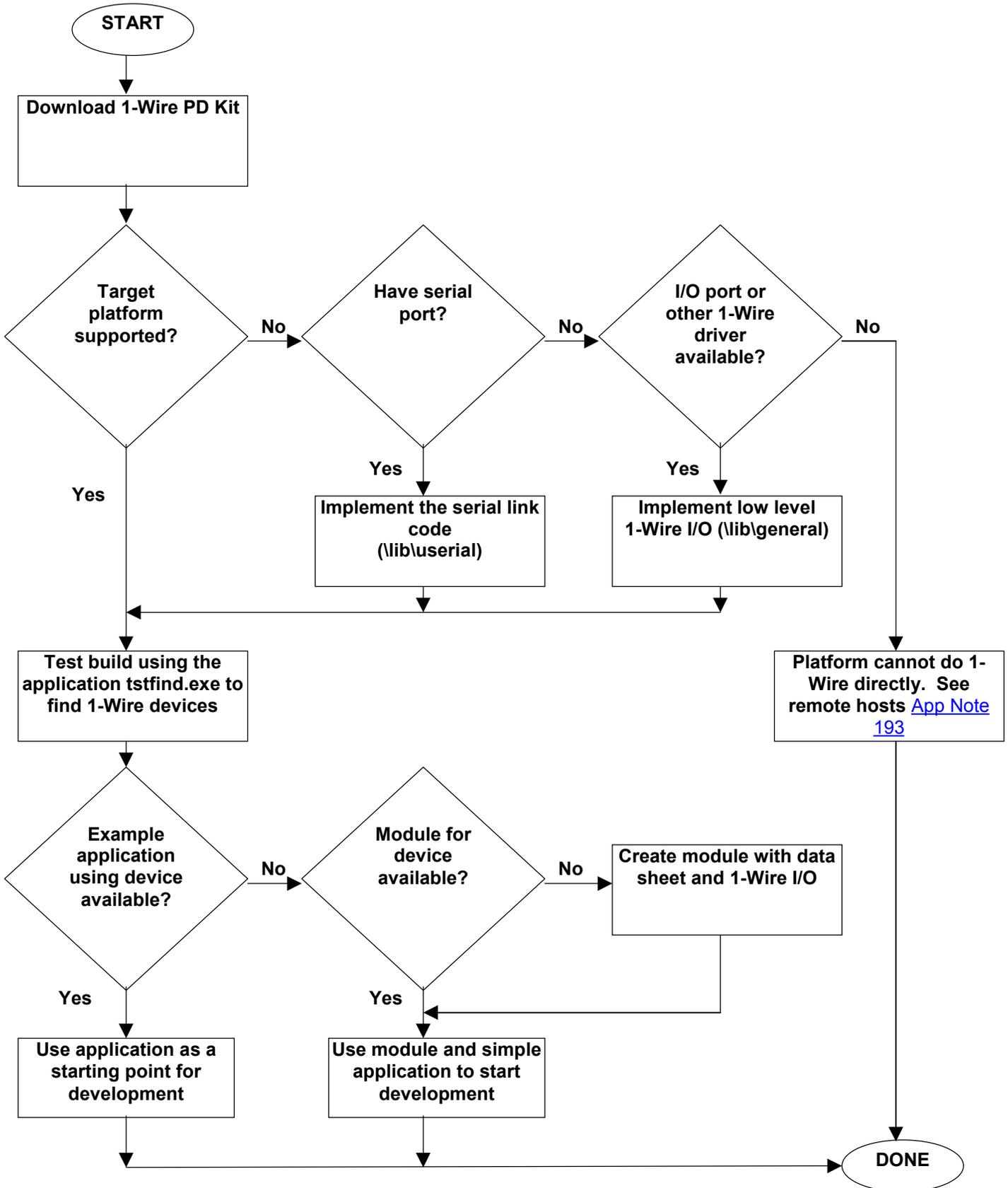
There are two sets of portable source files. The first set is general-purpose and is intended for platforms that already have the primitive *Link* 1-Wire communication functions. This is the lowest level that is hardware dependent and is called *general*. See [Application Note 126](#) for creating the 1-Wire *Link* functions in software.

The *serial* set of portable source files assumes that the user has a serial port and wishes to utilize DS2480B 1-Wire Line Driver. This chip receives commands over the serial port, performs 1-Wire operations, and then sends the results back to the serial port. More on the DS2480B can be found in [Application Note 192](#) along with the data sheet. The DS2480B is used in the following Dallas Semiconductor PC adapters:

[DS9097U-009](#)
[DS9097U-S09](#)
[DS9097U-E25](#)
[DS1411-009](#)
[DS1411-S09](#)

See Figure 1 for a flow-chart diagram stepping through the decisions to best utilize the kit.

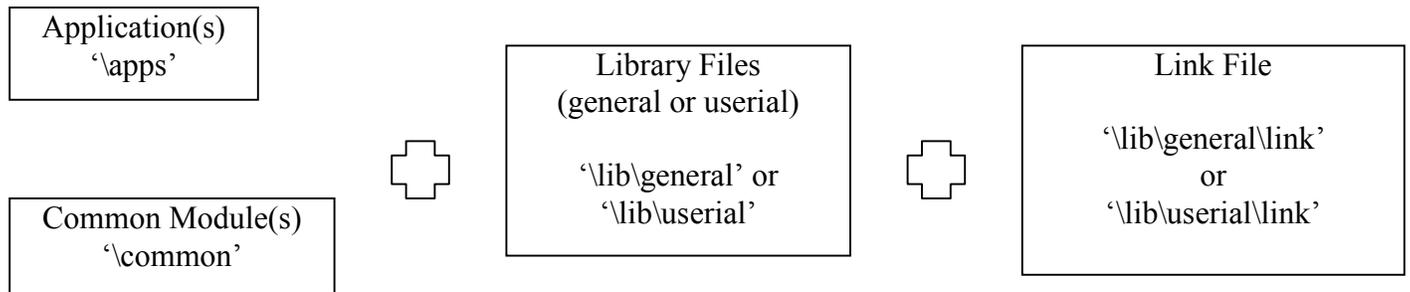
1-Wire PD Kit How-To Flow Chart Figure 1



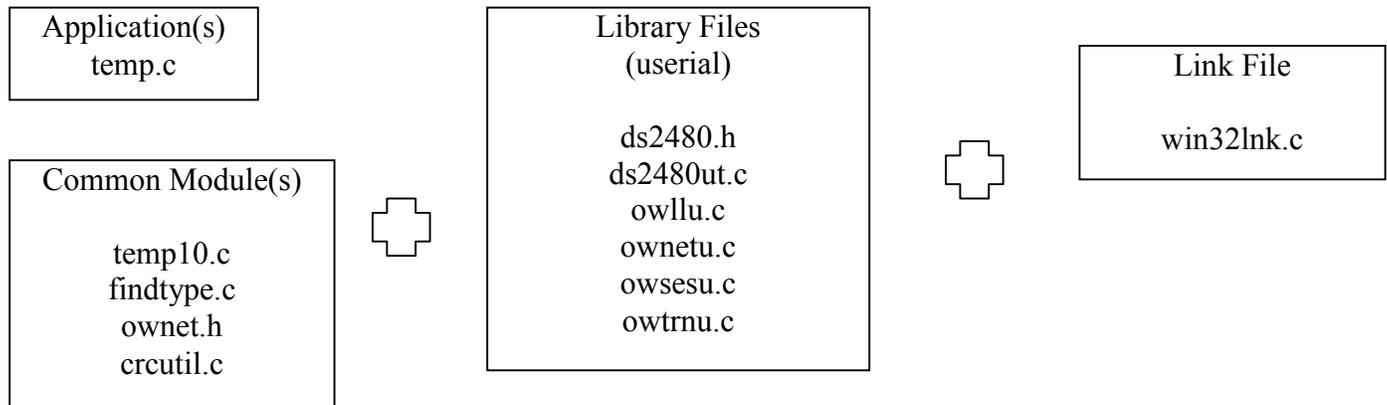
HOW TO CREATE AN APPLICATION

The kit files are organized into several subdirectories. The files in the ‘\apps’ directory can be used along with the files in the ‘\common’ directory to form an application basis for any port or platform. The files that are in the ‘lib\general’ and the ‘lib\userial’ are the two sets of portable source files discussed earlier. The last part of putting the application together is the *Link* file, which can be found in either ‘lib\userial\link’ or ‘lib\general\link’. If the link file does not exist for the target platform, then provided source code template files (todo) must be completed. These link files have functions that need to be filled in correctly for your port and platform to get the 1-Wire PD Kit working. Figure 2 is an example of putting all the files together with an existing *Link* file.

APPLICATION CONSTRUCTION Figure 2



Example: ‘\apps\temp’



Below is Table 1 of Platforms that are currently supported and can be downloaded from the [1-Wire PD Kit](#)'s main page.

PLATFORMS Table 1

Platform	Compiler	Library	Interface	Name
Visor	CW 7.0	general	Visor adapter	gvisorcw
Palm	CW 7.0	userial	DS2480B	upalmcw
WinCE/ PocketPC	MS Visual C	userial	DS2480B	uwincevc
Win32	MS Visual C	general	DS1410E	gpw32vc
Linux	GNU	userial	DS2480B	ulinuxgnu
Win32	MS Visual C	userial	DS2480B	uwin32vc
Win32	GNU	userial	DS2480B	uwin32gnu
Win32	MS Visual C	wrapper	all	tmexwrappervc
DOS	MS Visual C	userial	DS2480B	udosvc
Win16	MS Visual C	userial	DS2480B	uwin16vc
DS550	Keil	general	Active Pull-up pin	gds550keil
DS550	Keil	userial	DS2480B	uds550keil

LINKS

1-Wire Public-Domain Kit: <http://www.ibutton.com/software/1wire/wirekit.html>

Application Note 155 1-Wire Software Resource Guide:

<http://pdfserv.maxim-ic.com/arpdf/AppNotes/app155.pdf>

Application Note 114 1-Wire File Structure: <http://pdfserv.maxim-ic.com/arpdf/AppNotes/app114.pdf>

Application Note 192 Using the DS2480B Serial 1-Wire Line Driver:

<http://pdfserv.maxim-ic.com/arpdf/AppNotes/app192.pdf>

Application Note 193 Extending 1-Wire Range with Network Proxies:

<http://pdfserv.maxim-ic.com/arpdf/AppNotes/app193.pdf>

Application Note 126 1-Wire Communication Through Software:

http://dbserv.maxim-ic.com/appnotes.cfm?appnote_number=522

DS2480B data sheet: http://dbserv.maxim-ic.com/quick_view2.cfm?qv_pk=2923

DS9097U data sheet: http://dbserv.maxim-ic.com/quick_view2.cfm?qv_pk=2983

DS1411 data sheet: <http://pdfserv.maxim-ic.com/arpdf/DS1411.pdf>