



Public Domain 1-Wire Net Functions

Version 2.00
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The 1-Wire Net functions provided are written in 'C' and are intended to be used on platforms not supported by the iButton-TMEX 1-Wire Net drivers. The '1-Wire Net' is a one wire and ground network with one master and one or more slave devices.

This source code creates a 1-Wire Net master that can be used to identify and communicate with slave devices. It provides all of the 1-Wire Net, and some of the transport and file level services to communicate with all of Dallas Semiconductor's 1-Wire devices including iButtons.

This source code is designed to be portable. There are provided 'TODO' templates to be completed for a specific platform. Several platform example implementations have been provided. There are also several example applications that use these platform implementations.

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-level 1-Wire Net communication functions. This is the lowest level that is hardware dependent.

The other set of portable source files assumes that the user has a serial port (RS232) and wishes to utilize our 'Universal Serial 1-Wire Line Driver Master chip' called the DS2480. This chip receives commands over the serial port, performs 1-Wire Net operations and then sends the results back to the serial port. The source code converts the intended 1-Wire operations into serial communications packets to the DS2480. The only thing that needs to be provided for a platform are the serial port read/write primitives.

These two sets of portable source code files implement the same 1-Wire Net functions and are interchangeable.

The files in the sub-directory '\source\MICRO\' are written for example programs using assembly language.

It is best to use the files from one or the other, either general or userial, rather than a combination of the two groups of files for faster processing.

CONTENTS:

source

lib (1-Wire Net library code sets)

userial - Code set based on Universal Serial chip (DS2480)

general - Code set based on 1-Wire link-level functions

micro - Formerly in the TMEX kit, written for example programs using assembly language

apps (application examples)

atodtst - *finds and display the value for channels*

A,B,C,D on the DS2450 Quad A/D Converter

counter - *reads the DS2423 counter value of the*

associated memory page

coupler - *tests the DS2409 commands and searches for the DS2409*

and the devices on the branch of the DS2409

ibsha - *DS1963S SHA iButton monetary demo. Initializes both*

the dedicated co-processor DS1963S and the user iButton.

Performs fully authenticated secure money debits.

mweather - *1-Wire Weather Station example, supports both*

versions of the Weather Station

swtlpop - *performs various operations on the DS2406*

Dual Addressable Switch

swtsngl - *turns the DS2405 switch on & off and reads*

the on/off status

tagging - *utilities to create and read 1-Wire TAGs*

1-Wire sensor application(s) that utilize the 1-Wire TAG

temp - *finds and displays the temperature*

measurement for the DS1920/DS1820

thermo - *DS1921 ThermoChron download and mission*

example application

tstfind - *loop to find all 1-Wire devices on Net*

tstow - *test to exercise all non-EPROM API*

tstowe - *test to exercise EPROM programming*

examples (example implementations on platforms)

- linux - *Linux implementation using 'userial' code set*
- win32 - *Windows 32-Bit implementation using 'userial' code set*
- tmex32 - *Windows 32-bit implementation using 'general' code set and iButton-TMEX 32-bit as the 1-Wire link-level functions.*
- macOS - *MacOS implemenation using 'userial' code set (needs work)*
- beos - *BeOS implementation using 'userial' code set*

doc (documentation)

- ReadMe.pdf - *this file (Version 2.00, application descriptions, platforms used, information, kit history)*
- license.txt - *'public domain' source code license (based on X Consortium's/MIT license)*
<http://www.opensource.org/mit-license.html>
- \doc\OWPD200.pdf - *Notes to the user, device listing, application interface code*
- \source\apps\ReadMe.txt - *documentation throughout the One Wire Public Domain kit with code explanation and location of other files that may be required for usage*

supplementary documentation for Tagging Program

- \doc\OBM.pdf - *Network bridge operating system*
- \doc\1-WireTag.pdf - *Tagging guidelines for 1-Wire sensors and instruments*
- \doc\TAGreadme.txt - *documentation on 1-Wire TAG and the Object Based Messaging (OBM) format*

INFORMATION:

The best source of information about 1-Wire devices including iButtons is Dallas Semiconductor's iButton web site at:
<http://www.ibutton.com/>

This file has the latest download listings:

ftp://ftp.dalsemi.com/pub/auto_id/softdev/softdev.html

Dallas Semiconductor's main web site:

<http://www.dalsemi.com/>

Data sheets:

<http://www.dalsemi.com/DocControl/PDFs/pdfindex.html>

KIT HISTORY:

1.01  1.02 Support multiple DS1820 temperature devices in MWeather

example.

Change MLANU(serial) section to implement opening and closing of communication port with generic functions.

Fix incorrect declarations of global variables in MLANU(serial).

Fix reading incorrect counter page in MWeather example.

Extended DSO of MLANU(serial) adapter.

- 1.02  1.03 Reorganization of files/directories
 - Make applications not library dependent (serial/general)
 - Add Linux support

- 1.03  2.00 Reorganization of files/directories
 - Addition of the Common directory
 - Additional support added to the Lib file for multiple ports
 - New applications and examples
 - New Weather Station example to support both versions of the Weather Station
 - Change from MicroLAN (MLAN) to 1-Wire Net (OW)