### **Evaluates: DS2484**

### **General Description**

The DS2484 evaluation system (EV system) consists of a DS2484 evaluation kit (EV kit) and a DS9400 USB-to-I<sup>2</sup>C adapter. The DS2484 is an I<sup>2</sup>C-to-1-Wire<sup>®</sup> bridge device that performs protocol conversion from an I<sup>2</sup>C master to any attached 1-Wire slave devices. Relative to any attached 1-Wire slave device, the DS2484 is a 1-Wire master. The evaluation software runs under a Windows<sup>®</sup> 7, Windows 8, or Windows XP<sup>®</sup> operating system (OS), providing a handy user interface to exercise the features of the DS2484.

Order the DS2484EVKIT# for the complete EV system to evaluate the DS2484 using a PC. Evaluation software for the EV system is also available on our website at: www.maximintegrated.com/evkit.

### **EV System Contents**

QTY	DESCRIPTION
1	DS2484 Evaluation Board
1	DS9400 USB-to-I <sup>2</sup> C Adapter Maxim DS9400#

### Features

- I<sup>2</sup>C Host Interface Supports 100kHz and 400kHz
- I<sup>2</sup>C Communication Speeds
- I<sup>2</sup>C Operating Voltages: 1.8V ±5% and 3.3V ±5%
- 1-Wire Operating Voltage: 1.8V ±5% and 3.3V ±5%
- EV Kit Contains a Mounted 6-Pin SOT23 DS2484R+T IC
- Convenient On-Board Test Points and TO-92 Socket
- Standard RJ11 Connector Interfaces to DS9120 Socket Boards
- Downloadable Evaluation Software

#### Ordering Information appears at end of data sheet.

QTY	DESCRIPTION
1	USB Type A to USB-Mini Type B Cable Qualtek 3021003-03
1	1024-Bit 1-Wire EEPROM (3 TO-92) Maxim DS2431+



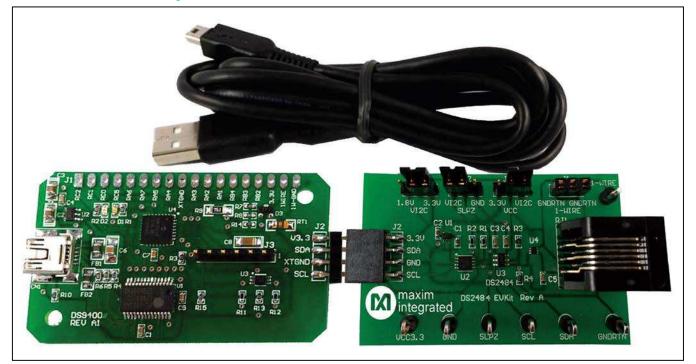
# Windows and Windows XP are registered trademarks and registered service marks of Microsoft Corporation.

1-Wire is a registered trademark of Maxim Integrated Products, Inc.



19-6892; Rev 0; 1/14

### **DS2484 Evaluation System**



### **Quick Start**

### **Recommended Equipment**

- Maxim DS9400 EV kit (included)
- DS2484 EV kit (included)
- USB type A to USB-Mini type B cable (included)
- DS2431+ (included)
- PC with a Windows 7, Windows, 8, Windows Vista<sup>®</sup>, or Windows XP OS and a spare USB port

**Note:** In the following sections, software-related items are identified by bolding. Text in **bold** refers to items directly from the EV kit software. Text in **bold and underlined** refers to items from the Windows OS.

### Procedure

1) a) Do the following to install PL-2303 Prolific Driver:

Download the driver file called **PL2303\_Prolific\_ DriverInstaller\_1\_9\_0.ZIP** or newer from http:// prolificusa.com/pl-2303hx-drivers.

Open and Run the file with the name or newer version PL2303\_Prolific\_DriverInstaller\_v1417.EXE.

Windows Vista is a registered trademark and registered service markof Microsoft Corp.

- b) Follow the directions of the <u>Install Wizard</u> until <u>Finish</u> is reached of the PL-2303 USB-to-serial driver install. Close by clicking the <u>Finish</u> button.
- 2) The DS9400 USB-to-I<sup>2</sup>C adapter uses both the Prolific PL-2303HXD and a microcontroller to provide an I<sup>2</sup>C port on any computer. Verify correct installation of the virtual COM port by inserting the DS9400 into a spare USB port on the computer. Check the COM port by looking in Control Panel|System|Device Manager and expand Ports (COM & LPT). If the driver installed correctly, the driver should display as in the example shown in Figure 1. Note that your COM port number may be different.

You have now completed the installation of the DS9400 adapter.

- Proceed now by setting up the DS2484 EV kit hardware by doing the following:
  - a) Set the jumpers per Figure 16 for 3.3V operation for both the I<sup>2</sup>C I/F and 1-Wire.
  - b) Insert the DS2431 device into J1 of the DS2484 EV kit.

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- c) Plug the J2 of the DS9400 adapter into J2 of the DS2484 EV kit.
- 4) Now download the DS2484 EVKit Software from www.maximintegrated.com/evkit.
- 5) Unzip the DS2484 EVKIT.ZIP in a known location.
- Open the DS2484 EVKIT folder and double-click the Setup.EXE. If you encounter the dialog box shown in

Figure 2, click the **<u>Cancel</u>** button. When prompted by the window as shown in <u>Figure 3</u>, click <u>**Install**</u>.

7) The DS2484 EV kit software detects if the PC has the required .NET Framework 2.0 files. If the files do not exist, the program prompts to download them from the web. Otherwise, the program will install and display the DS2484 EVKIT main page (Figure 4).

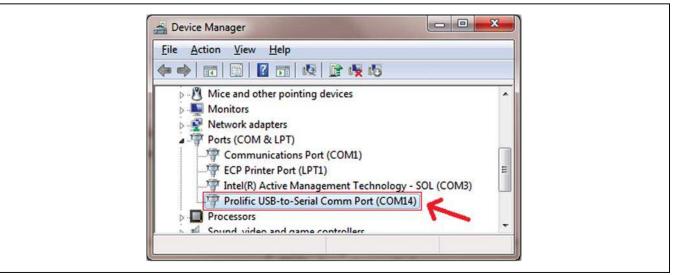


Figure 1. DS9400 COM Port

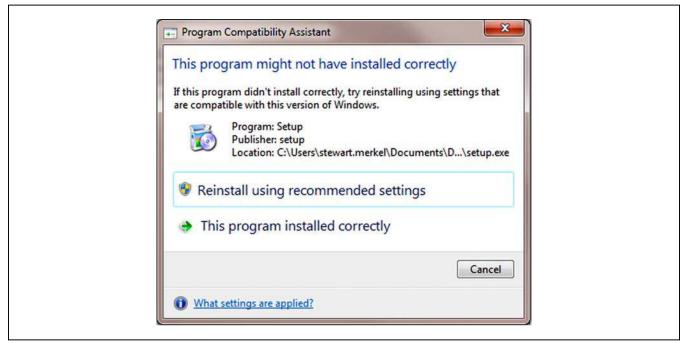


Figure 2. Program Compatibility Assistant

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Publisher cannot be verified. Are you sure you want to install this application?	
Name: DS2484 EVKIT	
From (Hover over the string below to see th C:\Users\Documents\Design\DS2484EVKITSW	
Publisher: Unknown Publisher	
	Install Don't Install
While applications can be useful, they can source, do not install this software. More In	potentially harm your computer. If you do not trust the

Figure 3. Application Install – Security Warning

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### **Detailed Description of Software**

Figure 4 shows the evaluation software's main window. This window consists of three main tabs: **DS2484**, **1-Wire Sequences**, and **Error Log**. The **I2C Data Log** and the **1-Wire Data Log** group boxes are shown regardless of which tab is selected and display communication activity.

These two group boxes assist the engineer in becoming familiar with what command sequences the DS2484 device needs in order to function. A mini tool bar provides additional functionality for both the software and the DS2484 device.

184 1-Wire Sequences Error Log	Status F	Register							
Reset	DIR	TSB	SBR	RST	LL	SD	PPD	1WB	
Vrite Byte(s)									
(comma delimited or spaces between bytes)	Rea	ad							
ead Byte(s) Bytes to Read (decimal)	-	Configura							
Write Bit       Logic 1       Logic 0	!1WS	ISPU	IPDN	IAPU	1WS	SPU	PDN	APU	
Triplets	Rea		01	nibble alı		1.01.)			

Figure 4. DS2484 EVKIT Main Window

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### **Viewer Window Areas**

#### DS2484 Tab

The **1-Wire Commands** group box (Figure 5) allows the user to send **1-Wire commands** to any 1-Wire slave device. The following features are supported in the **1-Wire Commands** group box:

- **Reset:** This sends a 1-Wire Reset command on the 1-Wire bus.
- Write Byte(s): Writes any number of 1-Wire bytes on the 1-Wire bus up to 16,382 bytes (no spaces or commas).

- Read Byte(s): Reads any number of 1-Wire time-slot bytes on the 1-Wire bus up to 32,768 bytes.
- Write Bit: Writes a 1-Wire single bit with a value of 0 or 1 dependent on if Logic 1 or Logic 0 is selected to the 1-Wire bus.
- Triplets: Writes a single triplet with a branch direction of 0 or 1 dependent on if Direction 1 or Direction 0 is selected to the 1-Wire bus. This function assists in performing a Search ROM function on a 1-Wire bus.

1-Wire Commands	Status F	Register							
Reset	DIR	TSB	SBR	RST	LL	SD	PPD	1WB	
Write Byte(s) 33	0	0	0	1	1	0	1	0	
(comma delimited or spaces between bytes)	Rea	ad				-			
Read Byte(s) 8 Bytes to Read (decimal)	Device	Configura	tion (Cliv	ck head	er to togo	le bit)			
Write Bit      O Logic 1      Logic 0	I1WS	ISPU	IPDN	IAPU	1WS	SPU	PDN	APU	
I2C Data Log S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex P - Stop [HH"] - Read from device with NACK (hex		ad	RF	Wire Dat P/RN - F H - Write	a Log leset + P to devic	resence e (hex)	1b/	0b - Write	e to device (binary) ead from device (binary)
S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex	0	ad	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	
S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex P - Stop [HH"] - Read from device with NACK (hex I-Wire Reset S 30 B4 Sr 31 [1A] [1A+] P I-Wire Write Byte(s) S 30 A5 33 Sr 31 [1A] [1A+] P	0	ad	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)
S-Start HH - Write to device (hex) Sr-Repeated Start [HH]-Read from device with ACK (her P-Stop [HH]-Read from device with NACK (her I-Wire Reset S 30 B4 Sr 31 [1A] [1A+] P I-Wire Write Byte(s) S 30 A5 33 Sr 31 [1A] [1A+] P I-Wire Read Byte(s) S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31	() () (2D*)	P	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)
S-Start HH - Write to device (hex) Sr-Repeated Start [HH] - Read from device with ACK (hex) P-Stop [HH] - Read from device with NACK (hex) -Wire Reset S 30 B4 Sr 31 [1A] [1A+] P -Wire Write Byte(s) S 30 A5 33 Sr 31 [1A] [1A+] P -Wire Read Byte(s)	() hex) [2D*] [64*]	P	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)
S-Stat         HH - Write to device (hex)           Gr-Repeated Stat         [HH]-Read from device with ACK (hex)           - Stop         [HH]-Read from device with NACK (hex)           -Wire Reset         30 B4 Sr 31 [1A] [1A+] P           -Wire Write Byte(s)         30 A5 33 Sr 31 [1A] [1A+] P           -Wire Read Byte(s)         30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31           30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31         30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31           30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31         30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31	() (2D*) (64*) (44*) (49*)	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)
S-Start HH - Write to device (hex) r-Repeated Start [HH] - Read from device with ACK (hev - Stop [HH"] - Read from device with NACK (hev -Wire Reset 30 B4 Sr 31 [1A] [1A*] P -Wire Write Byte(s) 30 A5 33 Sr 31 [1A] [1A*] P -Wire Read Byte(s) 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31	() (2D*) (64*) (44*) (44*) (02*)	8 9 9 9	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)
S-Start HH - Write to device (hex) r-Repeated Start [HH] - Read from device with ACK (hex - Stop [HH] - Read from device with NACK (hex -Wire Reset 30 B4 Sr 31 [1A] [1A+] P -Wire Write Byte(s) 30 A5 33 Sr 31 [1A] [1A+] P -Wire Read Byte(s) 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31	() (2D*) (64*) (44*) (49*)	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1-) RF HI- [H	Wire Dat P/RN - F H - Write H] - Rea	a Log leset + P to devic d from de	resence e (hex) evice (he	1b/ (1b)	0b - Write /[0b] - R	ead from device (binary)

Figure 5. 1-Wire Commands Group Box

The **Status Register** group box (Figure 6) provides access to the DS2484's Status register bits. A **Read** performs a read of the Status register bits by the  $I^2C$  interface. This is a read-only register. The software

application automatically updates the contents when a command alters any of the bits in the **Status Register** group box.

Image: Sequences     Error Log       1-Wire Commands	Status F								
Reset	DIR	TSB	SBR	RST	LL	SD	PPD	1WB	
Write Byte(s)	0	0	0	1	1	0	0	0	
(comma delimited or spaces between bytes)	Rea								
Read Byte(s) Bytes to Read (decimal)	-	Configura		0.000					
Write Bit	!1WS	ISPU	IPDN	IAPU	1WS	SPU	PDN	APU	
2C Data Log S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex P - Stop [HH*] - Read from device with NACK (hex Read Status Register 30 El FO Sr 31 [18*] P	) ex)		RF	I - Write	eset + P to devic		1b/	Ob - Write	e to device (binary) ead from device (binary)

Figure 6. Status Register Group Box

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The **Device Configuration** group box (Figure 7) provides access to the DS2484's Configuration register bits. A Read performs a **read** of the Device Configuration register bits. The upper nibble always reads 0h. Click on the header bit label to toggle the particular bit. When writing to the Device Configuration register, the new data is accepted

only if the upper nibble (bits 7:4) is the one's complement of the lower nibble (bits 3:0). Therefore, when a bit on the lower nibble is selected, the upper nibble bit with the same label and invert symbol (!) automatically shows as the one's complement. However, when reading the register, the upper nibble reads 0h.

Wire Commands       Status Register         Reset       DIR       TSB       SBR       RST       LL       SD       PPD       1WB         Write Byte(s)       (comma delimited or spaces between bytes)       Read       Device Configuration (Click header to toggle bit)       IIIWS       IIIWS       ISPU       PDN       APU         Write Bit       © Logic 1       Logic 0       Device Configuration (Click header to toggle bit)       IIWS       IWSPU       IPDN       APU       0       <	2483 1-Wire Sequences Error Log									
Write Byte(s)       (comma delimited or spaces between bytes)         Read Byte(s)       Bytes to Read (decimal)         Write Bit       Logic 1         Logic 1       Logic 0         Triplets       Direction 1         Direction 1       Direction 0         Read       (Upper nibble always reads 0h)         C Data Log	-Wire Commands	Status F	Register							
(comma delimited or spaces between bytes)       Read         Read Byte(s)       Bytes to Read (decimal)         Write Bit       Logic 1         O Logic 1       Logic 0         Triplets       Direction 1         Direction 1       Direction 0         Read       (Upper nibble always reads 0h)         C Data Log       - Start         - Stap       [HH] - Read from device (hex)         - Repeated Start       [HH] - Read from device with NACK (hex)         - Stop       [HH] - Read from device with NACK (hex)         ead Device Configuration Register       [HH] - Read from device (binary)	Reset	DIR	TSB	SBR	RST	LL	SD	PPD	1WB	]
Read Byte(s)       Bytes to Read (decimal)         Write Bit       Logic 1         Logic 1       Logic 0         Triplets       Direction 1         Direction 1       Direction 0         Read       (Upper nibble always reads 0h)         P: Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with NACK (hex)         P: Stop       [HH] - Read from device with NACK (hex)         ead Device Configuration Register       Ib/(b) - Write to device (binary)	Write Byte(s)									
Write Bit <ul> <li>Logic 1</li> <li>Logic 0</li> <li>I1WS ISPU IPDN IAPU 1WS SPU PDN APU</li> <li>0</li> <li>0</li></ul>	(comma delimited or spaces between bytes)	Rea	ad							
Write bit       I Logic I       Logic I         Triplets       Direction 1       Direction 0         Read       (Upper nibble always reads 0h)         Image: Section 1       Direction 0         Image: Section 1	Read Byte(s) Bytes to Read (decimal)	Device	Configura	ation (Clic	ck heade	er to togg	gle bit)			
Triplets       Image: Direction 1       Direction 0         Read       (Upper nibble always reads 0h)         2C Data Log       1-Wire Data Log         S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)	Write Bit			AND PARA	0.0.000	- deleter	and the second second	1.700	and the second second	
Read       (Upper nibble always reads 0h)         2C Data Log	Triplete	0	0	0	0	0	0	0	0	]
	S - Start HH - Write to device (hex)			1.1. ST. 1.	P/RN - R	eset + P	resence	No Pres		

Figure 7. Device Configuration Group Box

#### 1-Wire Sequences Tab

The **Single Slave** group box (Figure 8) allows the user to send 1-Wire command sequences to any 1-Wire slave device. Using these commands with multiple slaves on the line may cause data corruption (logical ANDing of bits). The following features are supported in the **Single Slave** group box:

• **Read ROM:** Sends a 1-Wire Reset command, Read ROM (33h) command followed by reading 8 bytes on

the 1-Wire bus. The ROM ID is then displayed and the CRC is verified.

- **Skip ROM:** Sends a 1-Wire Reset command followed by a Skip ROM (CCh) command on the 1-Wire bus. This is used to select a single 1-Wire slave device.
- **OD Skip ROM:** Sends a 1-Wire Reset command followed by an OD Skip ROM (3Ch) command on the Wire bus. This is used to place a single or all the 1-Wire slave devices on the 1-Wire bus into overdrive mode.

S2484     1-Wire Sequences     Error Log       ingle Slave     Read ROM     Multiple slaves will generate invalid CRC.       Skip ROM     OD Skip ROM	Multiple Slaves Search ROM (First) Device List (0) Search ROM (Next) Match ROM
2C Data Log S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex)	OD Match ROM Resume ROM Find All Devices Clear Device List 1-Wire Data Log RP/RN - Reset + Presence/No Presence HH - Write to device (binary)
P-Stop [HH"]-Read from device with NACK (hex) 1-Wire Reset S 30 B4 Sr 31 [1A] [1A+] P Read ROM S 30 A5 33 Sr 31 [1A] [1A+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [2D+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [44+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [44+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [49+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [02+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [00+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [00+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [00+] P S 30 96 Sr 31 [1A] [1A+] Sr 30 E1 E1 Sr 31 [02+] P ROM ID = 020000024944642D (CRC OK)	[HH] - Read from device (hex) [1b]/[0b] - Read from device (binary)

Figure 8. Single Slave Group Box

The **Multiple Slaves** group box (<u>Figure 9</u>) allows the user to send 1-Wire command sequences to any 1-Wire slave device. The following features are supported in the **Multiple Slaves** group box:

- Search ROM (First): Uses the Search ROM command (F0h) to perform the first sequence of the 1-Wire Search ROM algorithm to discover the "first" 1-Wire slave device on the 1-Wire bus. The "first" ROM ID is displayed in the **Device List**. Refer to Application Note 187: 1-Wire Search Algorithm for more details.
- Search ROM (Next): Also uses the Search ROM command (F0h) in a sequence as to continue the 1-Wire Search ROM algorithm where the last binary search left off to discover the "next" 1-Wire slave device ROM ID.
- Match ROM: Sends the 1-Wire Reset command, followed by the Match ROM command (55h), followed by the ROM ID selected from the **Device List**. If no 1-Wire slave device is selected in the **Device List** or none is available to select, an "!" is displayed, indicating a warning that no device has been selected.
- OD Match ROM: Sends the 1-Wire Reset command, followed by the Match ROM command (69h), followed by the ROM ID selected from the Device List. If no 1-Wire slave device is selected in the Device List or

none is available to select, an "!" is displayed indicating a warning that no device has been selected. This places the selected 1-Wire slave device into overdrive mode.

- **Resume ROM:** Sends a 1-Wire Reset command followed by the Resume command (A5h).
- Find All Devices: Performs the entire Search ROM Algorithm sequence, and all the 1-Wire slave ROM IDs discovered are displayed in the Device List.
- Clear Device List: Removes all 1-Wire slave devices listed in the Device List.

#### Log Group Boxes

The log group boxes provide all the outputs of the I<sup>2</sup>C bus and the 1-Wire bus. These logs can each be highlighted and copied to the clipboard for pasting into any windows program.

The **I2C Data Log** (Figure 10) allows the user to view all the I<sup>2</sup>C traffic transmitted and received from the I<sup>2</sup>C bus. This can assist the designer determining what I<sup>2</sup>C command sequences are needed to exercise the DS2484 device. The **I2C Data Log** displays the characters shown in Table 1.

<u>F</u> ile				
📰   💭 •   🚳   🏧 •   🏟				
0S2484 1-Wire Sequences Error Log				-
Single Slave	Mu	Itiple Slaves	A 8 252	-
Read ROM Multiple slaves will generate invalid (	CBC S	earch ROM (First)	Device List (2)	
			AB00000054AC1A10	and the second sec
Skip ROM	S	earch ROM (Next)	020000024944642D	
OD Skip ROM		Match ROM		
		OD Match ROM		1 N N
		Resume ROM		0 July 1997 1998
		TROBUILD THOM	Find All Devices	
				1
			Clear Device List	1 A A A A A A A A A A A A A A A A A A A
I2C Data Log S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex) P - Stoo [HH1] - Read from device with NACK (hex)	x)	HH - Write to der	+ Presence/No Presence vice (hex) 1b/0b - Write to der	
S - Start HH - Write to device (hex)	x)	RP/RN - Reset - HH - Write to der [HH] - Read from	+ Presence/No Presence	
S - Start     HH - Write to device (hex)       Sr - Repeated Start     [HH] - Read from device with ACK (hex)       P - Stop     [HH] - Read from device with NACK (hex)	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b	+ Presence/No Presence vice (hex) 1b/0b - Write to der	m device (binary)
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 (5A) (5A+) P         S 30 78 00 Sr 31 (5A) (5A+) P           S 30 78 00 Sr 31 (5A) (5A+) P	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b]	+ Presence/No Presence vice (hex) 1b/0b - Write to dev i device (hex) [1b]/[0b] - Read from	m device (binary)
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b]	Presence/No Presence vice (hex) 1b/0b - Write to den device (hex) [1b]/[0b] - Read from (0b) 1b [0b] [1b] 0b [1b]	m device (binary) 0] [0b] 1b [1b] 0b] [1b] 0b [0b]
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P           S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b	+ Presence/No Presence vice (hex) 1b/0b - Write to device (hex) [1b]/(0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b) [0b] 1b [1b] 1 (1b) 0b (1b) [0b] 1b [1b] 0b (1b] 1 (1b] 0b (1b] (0b] 1b [1b] 0b [1b] (0b] 1b [1b] 0b (1b) [1b] 0b [1b] 0b (1b) 0b [1b]	m device (binary) 0] [0b] 1b [1b] 0b] [1b] 0b [0b] 1b] [0b] 1b [0b] 1b] [0b] 1b [0b]
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 (5A) (5A*) P         [S 30 78 00 Sr 31 (5A) (5A*) P           S 30 78 00 Sr 31 (5A) (5A*) P         [S 30 78 00 Sr 31 (5A) (5A*) P           S 30 78 00 Sr 31 (5A) (5A*) P         [S 30 78 00 Sr 31 (5A) (5A*) P           S 30 78 00 Sr 31 (5A) (5A*) P         [S 30 78 00 Sr 31 (5A) (5A*) P           S 30 78 00 Sr 31 (5A) (5A*) P         [S 30 78 00 Sr 31 (5A) (5A*) P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b	+ Presence/No Presence vice (hex) 1b/0b - Write to devi- device (hex) [1b]/[0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b) (0b) 1b [ 1 (1b) 0b (1b) (0b) 1b [ 1 (1b) 0b (1b) (0b) 1b [ 1 (1b) 0b (0b) (1b) 0b [ 1 (1b) 0b [ 1 (1b) 0b (1b) 0b	m device (binary) ] [0b] 1b [1b] 0b] (1b] 0b [0b] 1b] (0b] 1b [0b] 1b] (0b] 1b [0b] 1b] (0b] 1b [0b]
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b	Presence/No Presence           vice (hex)         1b/0b - Write to detect (hex)           1device (hex)         [1b]/[0b] - Read from           (0b)         1b         (0b)           1b)         0b         (1b)           1b)         0b         (0b)	m device (binary) b] (0b] 1b (1b] 0b] (1b] 0b (0b] 1b] (0b] 1b (0b] 1b] (0b] 1b (0b] 1b] (0b] 1b (0b] 1b] (0b] 1b (0b]
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b (0b [1b] 0b (0b [1b] 0b (0b [1b] 0b (1b]	+ Presence/No Presence vice (hex) 1b/(0b) - Write to den device (hex) [1b/(0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b) (0b) 1b (1b) 1 (1b) 0b (0b) (1b) 0b (1b) 0	m device (binary)
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P           S 30 78 00 Sr 31 (5A) (5A+1) P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [1b] [0b] 1b [0b]	+ Presence/No Presence vice (hex)  b/(b- Write to device (hex)  b/(b] - Read from [1b/(b]  b  0b  1b] 0b [1b] [1b] 0b [1b] 0b [1b] 0b [1b] [1b] 0b [0b] 1b] 0b [1b] 0b	m device (binary)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P         S 30 78 00 Sr 31 [SA] [SA*] P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b] [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b] [1b] 0b [1b] [0b] 1b [0b] [1b] 0b [0b]	+ Presence/No Presence vice (hex) 1b/0b - Write to device (hex) [1b]/[0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b] (0b) 1b [ 1 (1b) 0b (0b) (1b) 0b [ 1 (1b) 0b (0b) (1b) 0b [ 1 (1b) 0b (0b) [1b] 0b [ 1 (1b) 0b (0b) [1b] 0b [ 1 (1b] 0b (1b] (1b] 1b [ 1 (1b] 0b (1b) [1b] 0b [ 1 (1b] 0b (1b) [1b] 0b [ 1 (1b] 0b [1b]	m device (binary)
S - Start         HH - Write to device (hex)           Sr - Repeated Start         [HH] - Read from device with ACK (hex)           P - Stop         [HH] - Read from device with ACK (hex)           S 30 78 00 Sr 31 [SA] [SA*] P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [1b [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b	+ Presence/No Presence vice (hex) 1b/Ob - Write to device (hex) [1b]/[0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b] (0b) 1b [ 1 (1b] 0b (1b] (0b) 1b [ 1 (1b] 0b (1b] (0b) 1b [ 1 (1b] 0b (0b) [1b] 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b] (1b] 0b [ 1 (1b] 0b (1b] (1b] 0b [ 1 (1b] 0b (1b] (0b] 1b [ 1 (1b] 0b (0b] (1b] 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b) (1b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b (0b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) 0b (0b) 0b (0b) 0b [ 1 (1b] 0b (0b)	m device (binary)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 (5A) (5A+1) P <td>x)</td> <td>RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [1b] [0b] 1b [0b [1b] 0b [1b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b</td> <td>+ Presence/No Presence vice (hex) 1b/(0b) - Write to den device (hex) [1b/(0b] - Read from (0b) 1b (0b) [1b] 0b [1b] 1 (1b) 0b (1b] (0b) 1b [ 1 (1b] 0b (0b] (1b] 0b [1b] 1 (1b] 0b (0b] (1b] 0b [1b] 0b [1b] 0b [1b] 0b [0b] [1b] 0b [1b] 0b</td> <td>m device (binary) b] (0b) 1b (1b] 0b] (1b) 0b (0b) 1b] (0b] 1b (0b) 1b] (0b) 1b (0b) 1b] (0b) 1b (0b) 1b] (0b] 1b (0b) 0b] (1b] 0b (1b) 1b] (0b] 1b (0b) 0b] (1b] 0b (0b) 0b] (1b] 0b (0b) 0b] (1b] 0b (0b)</td>	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [1b] [0b] 1b [0b [1b] 0b [1b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b	+ Presence/No Presence vice (hex) 1b/(0b) - Write to den device (hex) [1b/(0b] - Read from (0b) 1b (0b) [1b] 0b [1b] 1 (1b) 0b (1b] (0b) 1b [ 1 (1b] 0b (0b] (1b] 0b [1b] 1 (1b] 0b (0b] (1b] 0b [1b] 0b [1b] 0b [1b] 0b [0b] [1b] 0b	m device (binary) b] (0b) 1b (1b] 0b] (1b) 0b (0b) 1b] (0b] 1b (0b) 1b] (0b) 1b (0b) 1b] (0b) 1b (0b) 1b] (0b] 1b (0b) 0b] (1b] 0b (1b) 1b] (0b] 1b (0b) 0b] (1b] 0b (0b) 0b] (1b] 0b (0b) 0b] (1b] 0b (0b)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [5A+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P         S 30 78 00 Sr 31 (5A) [SA+] P	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b	+ Presence/No Presence vice (hex) 1b/Ob - Write to device (hex) [1b]/[0b] - Read from (0b) 1b (0b) [1b] 0b (1b) 1 (1b) 0b (1b] (0b) 1b [ 1 (1b] 0b (1b] (0b) 1b [ 1 (1b] 0b (1b] (0b) 1b [ 1 (1b] 0b (0b) [1b] 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b] (1b] 0b [ 1 (1b] 0b (1b] (1b] 0b [ 1 (1b] 0b (1b] (0b] 1b [ 1 (1b] 0b (0b] (1b] 0b [ 1 (1b] 0b (0b] (1b) 0b [ 1 (1b] 0b (0b) (1b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b (0b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b [ 1 (1b] 0b (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) (1b) 0b (0b) 0b [ 1 (1b] 0b (0b) (0b) 0b (0b) 0b (0b) 0b [ 1 (1b] 0b (0b)	m device (binary)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 (5A) (5A+1 P	x)	RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b	Presence/No Presence           vice (hex)         1b/0b - Write to det (1b/(0b) - Read from           (0b)         1b (0b)         1b)           1 (1b)         0b (1b)         0b (1b)           1 (1b)         0b (1b)         1b)           1 (1b)         0b (0b)         11b)         0b (1b)           1 (1b)         0b (0b)         11b)         0b (1b)           1 (1b)         0b (0b)         11b)         0b (1b)           1 (1b)         0b (1b)         11b)         0b (1b)           1 (1b)         0b (1b)         11b)         0b (1b)           1 (1b)         0b (1b)         11b)         0b (1b)           1 (1b)         0b (0b)         11b)         0b (1b)	m device (binary)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 (5A) (5A*) P		RP/RN - Reset HH - Write to det [HH] - Read from [0b] 1b RP F0 (0b] (0b) 1b (0b (1b) 0b (0b (1b) 0b (0b (1b) 0b (0b (1b) 0b (1b) (0b) 1 b (0b (1b) 0b (0b	Presence/No Presence           vice (hex)         1b/0b - Write to det (1b)/(0b] - Read from           (0b) 1b (0b) [1b] 0b (1b)         (1b) 0b (1b)           (1b) 0b (1b) (0b) 1b (1b)         (1b) 0b (1b)           (1b) 0b (1b) (0b) (1b) 0b (1b)         (1b) 0b (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b) 0b (1b)         (1b) 0b (0b) (1b) 0b (1b)	m device (binary)
S - Start       HH - Write to device (hex)         Sr - Repeated Start       [HH] - Read from device with ACK (hex)         P - Stop       [HH] - Read from device with ACK (hex)         S 30 78 00 Sr 31 (5A) (5A+1 P	x)	RP/RN - Reset HH - Write to der [HH] - Read from [0b] 1b RP F0 [0b] [0b] 1b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [0b [1b] 0b [1b] [1b] 0b [1b] [1b] 0b [0b [1b] 0b [0b	Presence/No Presence           vice (hex)         1b/0b - Write to det (1b)/(0b] - Read from           (0b) 1b (0b) (1b) (0b] 1b (1b)         (1b) 0b (1b)           (1b) 0b (1b) (0b) 1b (1b)         (1b) 0b (1b)           (1b) 0b (1b) (0b) 1b (1b)         (1b) 0b (1b)           (1b) 0b (1b) (0b) 1b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (0b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)           (1b) 0b (0b) (1b) 0b (1b)         (1b) 0b (1b)	m device (binary)

Figure 9. Multiple Slaves Group Box

## Table 1. I<sup>2</sup>C Communication Key

KEY	FUNCTION
S - Start	I <sup>2</sup> C START command represented by a single "S" in a line.
Sr - Repeated Start	I <sup>2</sup> C repeated START command represented by "Sr" in a line.
P - Stop	I <sup>2</sup> C STOP command represented by a single "P" in a line.
HH - Write to device (hex)	I <sup>2</sup> C write from master to device represented by a pair of hex digits showing the byte that was transmitted.
[HH] - Read from device with ACK (hex)	I <sup>2</sup> C read from device represented by a pair of hex digits bounded by brackets "[]" showing that the byte that was received. This byte was ACKed by the master.
[HH*] - Read from device with NACK (hex)	I <sup>2</sup> C read from device represented by a pair of hex digits and an asterisk "*" bounded by brackets "[]" showing the byte that was received. This byte was NACKed by the master indicated that the master is done reading.

ngle Slave N	fultiple Slaves
Read ROM Multiple slaves will generate invalid CRC.	Search ROM (First) Device List (0) Search ROM (Next) Match ROM
	OD Match ROM Resume ROM Find All Devices Clear Device List
2C Data Log         5 - Start       HH - Write to device (hex)         5r - Repeated Start       [HH] - Read from device with ACK (hex)         2 - Stop       [HH"] - Read from device with NACK (hex)         -Wire Reset       30 B4 Sr 31 [1A] [1A*] P	1-Wire Data Log         RP/RN - Reset + Presence/No Presence         HH - Write to device (hex)       1b/0b - Write to device (binary)         [HH] - Read from device (hex)       [1b]/[0b] - Read from device (binary)         RP 33 [2D] [64] [44] [49] [02] [00] [00] [02]
ad ROM 30 A5 33 Sr 31 [1A] [1A*] P 30 96 Sr 31 [1A] [1A*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [2D*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [64*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [44*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [49*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [00*] P 30 96 Sr 31 [1A] [1A*] Sr 30 E1 E1 Sr 31 [00*] P	

Figure 10. I2C Data Log Group Box

The **1-Wire Data Log** group box (Figure 11) allows the user to view all the 1-Wire traffic transmitted and received from the 1-Wire bus. This can assist the designer in determining what 1-Wire command sequences are

needed to exercise the DS2484 device and 1-Wire slave devices. The **1-Wire Data Log** displays the characters shown in <u>Table 2</u>.

## Table 2. 1-Wire Communication Key

KEY	FUNCTION
RP - Reset + Presence	1-Wire reset and presence pulse response.
RN - Reset + No Presence	1-Wire reset and no presence pulse response.
HH - Write to device (hex)	1-Wire write from master to device represented by a pair of hex digits showing the byte that was transmitted.
[HH] - Read from device (hex)	1-Wire read from device represented by a pair of hex digits bounded by brackets "[]" showing the byte that was received.
1b/0b - Write to device (binary)	1-Wire write bit from master to device represented by a single binary digit (1/0).
[1b]/[0b] - Read from device (binary)	1-Wire read bit from master to device represented by a single binary digit (1/0) bounded by brackets "[]" showing the bit that was received.

1     - •   🏐   🎆 •   🍪								
2484 1-Wire Sequences Error Log		- 280				_		_
ngle Slave	Multip	le Slaves	-					
Read ROM Multiple slaves will generate invalid CRC.	Sea	rch ROM (First)	Device List		_			
			0200000	4944642	D			
Skip ROM	Sea	rch ROM (Next)						
OD SHE BOM		Match ROM						
OD Skip ROM		notori mom						
	0	Match ROM						
	_							
	F	esume ROM	Find	All Devices				
			Clear	Device List				
	_0.0					2		
2C Data Log		1-Wire Data Log						
S - Start HH - Write to device (hex)		RP/RN - Reset +	Presence/No	Presence				
Sr - Repeated Start [HH] - Read from device with ACK (hex)		HH - Write to dev		16/06 - W				
P - Stop [HH*] - Read from device with NACK (hex)		HH - Write to dev [HH] - Read from						
P - Stop [HH*] - Read from device with NACK (hex) 30 78 00 Sr 31 (5A) [5A*] P	•	[HH] - Read from	device (hex)	[1b]/[0b] -	Read from	n device (t	oinary)	
P-Stop [HH*] - Read from device with NACK (hex) 30 78 00 Sr 31 (5A] (5A*] P 30 78 00 Sr 31 (5A] (5A*] P	*	[HH] - Read from RP F0 [1b]	device (hex)	[1b]/[0b]-	Read from	n device (t	binary) Lb (1b	2 V20V20V2
P-Stop [HH*]-Read from device with NACK (hex) 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P	*	[HH] - Read from RP F0 (1b) 1b (0b) (1b)	device (hex) [0b] 1b [0]   0b [1b]	[1b]/[0b] - b] [1b] [0b] 1b	Read from 0b [1b] [0b] [1	n device (t   [0b] :  b] 0b	) inary) Lb [1b (0b] [	16] 06
P-Stop [HH*]-Read from device with NACK (hex) 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P 30 78 00 Sr 31 [5A] [5A+] P	*	[HH] - Read from RP F0 [1b]	device (hex) (0b] 1b [0] 0b [1b] 5 [0b] [1b]	[1b]/[0b] - b] [1b] [0b] 1b ] 0b [1b	Read from 0b [1b] [0b] [1 ] [0b]	n device ( [0b] : [b] 0b 1b [0b]	binary) Lb [1b (0b] [ [ [1b]	1b] 0b 0b
P-Stop [HH*]-Read from device with NACK (hex) 30 78 00 Sr 31 [5A] [5A*] P 30 78 00 Sr 31 [5A] [5A*] P	*	[HH] - Read from RP F0 [1b] 1b [0b] [1b] [0b] [1b] 02	device (hex) (0b] 1b [01 0b [1b] 0 [0b] [1b 0 [1b] [0b	[1b]/[0b] - [0b] [1b] [0b] 1b [0b] [1b] [1b] [1b]	Read from 0b [1b] [0b] [1 ] [0b] ] [0b]	n device ( [0b] : [b] 0b 1b [0b] 1b [0b]	binary) Lb [1b [0b] [ [1b] [1b]	1b] 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         [SA]         [SA*]         P	*	[HH]- Read from RP F0 [1b] [ 1b [0b] [1b] 0t [0b] [1b] 0t [0b] [1b] 0t [0b] [1b] 0t	device (hex) (0b) 1b [0] 0b [1b] 0 [0b] 1b 0 [0b] [1b 0 [0b] [1b 0 [0b] [1b	[1b]/[0b] - [0b] [1b] [0b] 1b 0b [1b] 1 b [1b] 0b [1b] 0b [1b]	Read from 0b [1b] [0b] [1 ] [0b] ] [0b] ] [0b] ] [0b]	n device ( [0b] 0b 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b	binary) Lb [1b (0b] [ [ [1b] [ [1b] [ [1b] [ [1b]	1b] 0b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P	*	[HH]- Read from RP F0 [1b] 1 1b [0b] [1b] 0 [0b] [1b] 0 [0b] [1b] 0 [0b] [1b] 0 [1b] 0 [1b] 0 [1b] 0 [1b] 1 [1b] 1 [1b	device (hex) (0b] 1b [01 0 b [1b] 0 [1b] [1b] 0 [1b] [1b] 0 [0b] [1b] 0 [0b] [1b] 0 [0b] [1b] 0 [0b] [1b]	[1b]/[0b] - b] [1b] [0b] 1b [0b] 1b [0b] 1b [1b] 1b [1b] [0b] 1b [0b] 1b [0b	Read from 0b [1b] [0b] [1 ] [0b] ] [0b] ] [0b] ] [0b] ] [1b]	(0b) (0b) (0b) (0b) (0b) (0b) (0b) (0b)	binary) Lb [1b (0b] [ [1b] [1b] [1b] [1b] [1b] [0b]	1b] 0b 0b 0b 0b 0b 1b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P           30         78         00         Sr         31		[HH]-Read from RP F0 (1b)   1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) (0b) 11 (0b) (1b) 0b	device (hex) (0b] 1b [00] 0b [1b] 0 [0b] [1b] 0 [1b] [0b] 0 [0b] [1b] 0 [0b] [1b] 0 [0b] [1b] 0 [0b] [1b]	[1b]/[0b]- b] [1b] (0b] 1b 1 0b [1b 1 1b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [1b]	Read from (0b [1b] [0b] [1 ] [0b] ] [0b] ] [0b] ] [0b] ] [1b] ] [0b]	n device ( [0b] 0b 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b	binary) Lb [1b (0b] [ [1b] [1b] [1b] [1b] [1b] [0b] [1b]	1b] 0b 0b 0b 0b 0b 1b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P           30         78         00         Sr         31         (5A)         S         1           30         78         00         Sr         31         (5A)         S         1           30         78         00         Sr         31         (5A)         P         30         78         00         Sr         31         (5A)         P           30         78         00         Sr         31         (5A)         P         30         78	*	[HH]-Read from RP F0 [1b] 1 1b [0b] [1b] 0b [0b] [1b] 0b [0b] [1b] 0b [0b] [1b] 0b [1b] 0b] 1b [0b] 1b] 0b [0b] 1b] 0b [0b] 1b] 0b	device (hex) (0b) 1b (0) 0 b (1b) 0 (0b) (1b) 1 (1b) (0b) 1 (1b) (0b) 0 (0b) (1b) 0 (0b) (1b) (1b) 0 (0b) (1b) (1b) 0 (0b) (1b) (1b) (1b) 0 (0b) (1b) (1b) (1b) (1b) (1b) (1b) (1b) (1	[1b]/[0b]- b] [1b] (0b] 1b 0 0b [1b 1 0b [1b 1 0b [1b 0 0b [1b 0 0b [1b 0 0b [1b 0 0b [1b 0 0b [1b 0 0b [1b]	Read from (0b [1b] (0b] [1 ] (0b] ] (0b] ] (0b] ] (0b] ] (1b] ] (0b] ] (1b] ] (1b]	(0b) (0b) (0b) (0b) (1b) (0b) (1b) (0b) (1b) (0b) (1b) (0b) (0b) (0b) (0b)	hinary) Lb [1b (0b] [ [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b	1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         [5A]         [5A*]         P           30         78         00         Sr         31	*	[HH]-Read from RP F0 (1b) (1 1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) (0b) 1b) 0b (1b) (0b) 1b) 0b (0b) (1b) 0b (0b) (1b) 0b	device (hex) (0b] 1b [00] 0b [1b] 0 [0b] 1b 0 [0b] [1b] 0 [0b] [1b] [0b] 0 [0b] [1b] [0b] 0 [0b] [1b] [0b] [1b] 0 [0b] [1b] [0b] [1b] [0b] [1b] 0 [0b] [1b] [1b] [0b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1	[1b]/[0b] - [0b] 1b [0b] 1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [0b 1 0b [0b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [0b	Read from (0b [1b] (0b] [1 ] (0b] ] (0b] ] (0b] ] (0b] ] (1b] ] (1b] ] (1b]	<pre>(0b) (0b) (0b) (0b) (0b) (0b) (0b) (0b)</pre>	binary) Lb [1b (0b] [ [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b]	1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         [SA]         [SA*]         P           30         78         00         Sr         31	*	[HH]-Read from RP F0 (1b) (1b) (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) 0b (1b) 0b) 11 (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b	device (hex) (0b] 1b [00] 0 0b [1b] 0 (0b] 11b [00] 0 (1b] [1b] 0 (0b] [1b] 0 (0b] [1b] 0 (1b] [1b] [1b] 0 (1b] [1b] [1b] 0 (1b] [1b] [1b] 0 (1b] [1b] [1b] [1b] [1b] 0 (1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [	[1b]/[0b] - [0b] 1b [0b] 1b [0b] 1b [0b] 1b [1b] 1b [1b] 1b [1b] 1b [0b] 1b [0b] 1b [0b] 1b [1b] 0b [1b] 0	Read from (0b) [1b] (0b) [1 ) (0b] ) (0b) ] (0b) ] (1b) ] (1b) ] (1b) ] (1b) ] (1b)	n device ( [0b] 0b 1b [0b 1b [0b 1b [0b 1b [0b 0b [1b 0b [1b 0b [0b 0b [0b 0b [0b	binary) Lb [1b (0b] [ [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b] [ [1b]	1b] 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P           30         78         00         Sr         31	•	[HH]-Read from RP F0 (1b)   1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) (0b) 1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b	device (hex) (0b] 1b [0] 0b [1b] 0b [1b] (0b] 1b (0b] 1b (0b) 1b (0b	[1b]/[0b] - [0b] 1b [0b] 1b 1 0b [1b 1 1b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [1b 1 0b [0b 1 0b [0b 1 0b [0b 1 0b [0b	Read from (0b) (1b) (0b) (1 ) (0b) ) (0b) ) (0b) ) (0b) ) (1b) 1 (1b) 1 (1b) 1 (1b) 1 (1b)	n device ( (0b) 3 1b (0b) 3 1b (0b) 1b (0b) 1b (0b) 1b (0b) 1b (0b) 1b (0b) 0b (0b) 0b (0b) 0b (0b) 0b (0b)	hinary) Lb [1b (0b] [ [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b]	1b] 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         [SA]         [SA*]         P           30         78         00         Sr         31	·	[HH]-Read from RP F0 (1b) (1b) (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) 0b) 1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b	device (hex) (0b] 1b [0] 0b [1b] 0 [0b] 1b [0] 0 [0b] 1b 0 [0	[1b]/(0b] - b] [1b] [0b] 1b [0b] 0b [0b] 0b	Read from (0b) (1b) (0b) (1 ) (0b) ) (0b) ) (0b) ) (1b) 1 (1b) 1 (1b) 1 (1b) 1 (1b) 1 (1b) 1 (1b)	n device ( 1 [0b] 1 1b] 0b 1b [0b] 1b [0b] 1b [0b] 1b [0b] 0b [1b] 0b [0b] 0b [0b] 0b [0b] 0b [0b] 0b [0b] 0b [0b]	hinary) Lb [1b (0b] [ [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b]	1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P           30         78         00         Sr         31         (5A)         P           30         78         00         Sr         31         (5A)         P           30         78         00         Sr         31         (5A)         P <td>m,</td> <td>[HH]-Read from RP F0 (1b)   1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) (0b) 1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b</td> <td>device (hex) (0b] 1b [01 0b [1b] 0 [0b] 1b 0 [0b] 1</td> <td>[1b]/[0b] - [1b]/[0b] 1b [0b] 1b [0b] 1b [0b] 1b [1b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 0b [0b] 0b [0b</td> <td>Read from (0b [1b] (0b] [1 1 (0b] 1 (0b] 1 (0b] 1 (0b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b]</td> <td>n device ( 1 [0b] 3 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b 0b [1b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b</td> <td>hinary) Lb [1b] (0b] [ [1b]</td> <td>1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b 0b 0b 0b 0b</td>	m,	[HH]-Read from RP F0 (1b)   1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (1b) (0b) 1b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b (0b) (1b) 0b	device (hex) (0b] 1b [01 0b [1b] 0 [0b] 1b 0 [0b] 1	[1b]/[0b] - [1b]/[0b] 1b [0b] 1b [0b] 1b [0b] 1b [1b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 0b [0b] 0b [0b	Read from (0b [1b] (0b] [1 1 (0b] 1 (0b] 1 (0b] 1 (0b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b] 1 (1b]	n device ( 1 [0b] 3 1b [0b 1b [0b 1b [0b 1b [0b 1b [0b 0b [1b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b 0b [0b	hinary) Lb [1b] (0b] [ [1b]	1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b 0b 0b 0b 0b
P - Stop         [HH*] - Read from device with NACK (hex)           30         78         00         Sr         31         (5A)         (5A*)         P           30         78         00         Sr         31		[HH]-Read from RP F0 [1b] 1 1b [0b] [1b] 0b [0b] [1b] 0b	device (hex) (0b) 1b [00] 0b [1b] 0 (0b) [1b] 0 (0b]	[1b]/[0b] - b] [1b] (0b] 1b 0 0b [1b] 1 0b [1b] 1 0b [1b] 1 0b [1b] 0 0b [1b] 0 0b [1b] 0 0b [1b] 1 1b [1b] 0 0b [0b] 1 0b [0b] 0 0b [0b] 0 0b [0b] 0 0b [0b] 1	Read from (0b [1b] (0b] [1 ) (0b] ) (0b] ) (0b] ] (0b] ] (1b] ] (1b] ] (1b] ] (1b] ] (1b] ] (1b] ] (1b] ] (1b]	n device ( [0b] 3 1b] 0b 1b [0b] 1b [0b] 1b [0b] 1b [0b] 1b [0b] 0b [1b] 0b [0b] 0b	<pre>inary) inary) ib [1b] (0b] [ [1b] [1b] [1b] [1b] [1b] [1b] [1b] [1b</pre>	1b] 0b 0b 0b 0b 0b 1b 0b 0b 0b 0b 0b 0b 0b 0b

Figure 11. 1-Wire Data Log Group Box

## Evaluates: DS2484

The **Error Log** tab (Figure 12) allows the user to view any unhandled software exceptions. This error would display when the user does something that is outside the bounds of normal operation for the software and the software has

no way to handle the specific event. The exception as shown in <u>Figure 12</u> was due to the user entering a value larger than what the Read Byte command could handle.

3   •   🕸   🇱 •   🍪   62484   1-Wire Sequences   Error Log	
essage:Value was either too large or too small for an Int16. ack Trace: at System.Int16.Parse(String s, NumberStyles style, NumberFor at System.Convert.ToInt16(String value) at DS2484_EVKIT.frmMain.cmd1WReadByte_Click(Object sender, EventAr	
2C Data Log S - Start HH - Write to device (hex) Sr - Repeated Start [HH] - Read from device with ACK (hex) P - Stop [HH*] - Read from device with NACK (hex)	1-Wire Data Log         RP/RN - Reset + Presence/No Presence         HH - Write to device (hex)       1b/0b - Write to device (binary)         [HH] - Read from device (hex)       [1b]/[0b] - Read from device (binary)
-Wire Read Byte(s)	

Figure 12. Error Log Tab

### Evaluates: DS2484

#### Mini Tool Bar

The mini tool bar icon short descriptions are provided in  $\underline{\text{Figure 13}}$ . The following is the long description of each icon:

- **Device Reset:** Causes the DS2484 to perform an internal reset cycle caused from executing the Device Reset command followed by a read of the Device Configuration register.
- Change I2C Speed: Allows the I<sup>2</sup>C bus to run at the selected frequency of 100kHz or 400kHz. The selection only affects the microcontroller. The DS2484 does not have to be configured for speed.
- Change 1-Wire Timing: Provides reading of the Port Configuration register and writing of the Adjust 1-Wire Port. The window is shown in <u>Figure 14</u>. Adjustment to any timing parameter shown is done by selecting the timing **Parameter** and **Speed**, adjusting the slider symbol, and clicking on the **Write** button. Verification of the write can be done by clicking on the **Read** button. Exit by clicking on the **Close** button.
- DS2484 EVKIT

   File

   Device Reset
   Change 12C Speed
   Change 1-Wire Timing
   Data Log Options
   Clear Data Logs

Figure 13. Mini Tool Bar

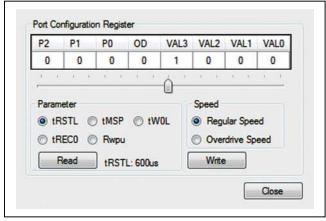


Figure 14. Port Configuration Register

- Data Log Options: Allows selecting to turn on/off the 1-Wire Data Log or I2C Data Log.
- Clear Data Logs: Clears all data log group boxes.

#### Viewer Menu

The viewer menu consists only of **File** with the only option in the drop-down menu to **Exit**. **Exit** closes the program. The program also ends by the keyboard keys (**Alt** + **f**) and then (**x**).

### Detailed Description of Connectors/ Jumpers

### **RJ11 Pinout**

The RJ11 pinout mounted on the EV kit PCB at RJ1 is shown in <u>Table 3</u> and <u>Figure 15</u>. RJ11 pin 1 can supply 3.3V or 1.8V and can be used for auxiliary board power. GND is ground of the 3.3V or 1.8V supply, depending on jumper settings. The signal 1-WIRE stands for the one-wire data bus. The ground return 1-WIRE is the signal GND\_RTN. Pins 5 and 6 marked as NC are not connected.

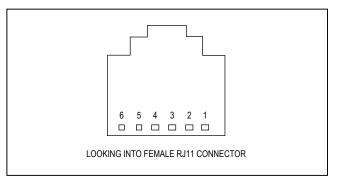


Figure 15. 1-Wire RJ11 Port

### Table 3. 1-Wire RJ11 Pinout

CONNECTOR PIN #	SIGNAL NAME
1	VCC
2	GND
3	1-WIRE
4	GND_RTN
5	NC
6	NC

#### J2 Pinout

The 4-position 100-mil-spaced I<sup>2</sup>C I/F connector is mounted at J2 of the EV kit PCB, as shown in <u>Table 4</u>. These signals are routed to U2 of the MAX3394E IC that is used as a dual-level translator to allow either 1.8V or 3.3V I<sup>2</sup>C signals to U3 of the DS2484 IC. J2 of the EV kit can be connected to J2 of the DS9400 for a complete EV system. The SDA\_PORT signal is the I<sup>2</sup>C serial-data input/output port and the SDC\_PORT is the I<sup>2</sup>C Serialclock input port.

### **Jumper Settings**

The EV kit has three jumpers that are needed to select power-supply inputs for the DS2484 IC. Figure 16 to Figure 19 show the most common power-supply input selections for the DS2484 device.

### Table 4. I<sup>2</sup>C I/F Pinout

CONNECTOR PIN #	SIGNAL NAME
1	VCC3.3
2	SDA_PORT
3	GND
4	SCL_PORT



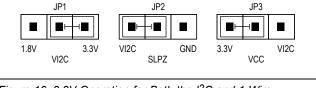


Figure 16. 3.3V Operation for Both the  $I^2C$  and 1-Wire Interfaces

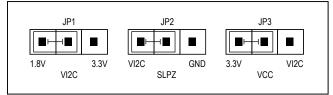


Figure 17. 1.8V I<sup>2</sup>C I/F and 3.3V 1-Wire

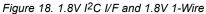




Figure 19. Powered Down (Sleep Mode)

## Evaluates: DS2484

## **Component List**

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	1μF ±10%, 10V ceramic capacitors (0603) TDK Corporation C1608X5R1A105K
C3–C5	3	0.1µF ±10%, 16V X7R ceramic capacitors (0603) KEMET C0603C104K4RACTU
J1	1	3-position connector socket strip LOPRO Samtec SSA-132-S-G
J2	1	4-pin 100-mil female connector Samtec SSQ-104-02-T-S-RA
JP1, JP2, JP3	3	0.100, 3-position vertical 0.318 breakaway headers Tyco Electronics 9-146276-0
R1, R2	2	3.3kΩ ±1% resistors (0603) Yageo RC0603FR-073K3L
R3, R4	2	5.11Ω ±1% resistors (0603) Panasonic ERJ-8GEYJ5R1V

DESIGNATION	QTY	DESCRIPTION
RJ1	1	Connector mod jack, 6-6 PCB 50AU Tyco Electronics 5555165-1
TP1–TP7	7	Test points Keystone Electronics 5011
U1	1	High PSRR, low-dropout, 150mA linear regulator (5 SC70) Maxim MAX8891EXK18+
U2	1	Dual-channel level translator (8 TDFN-EP*) Maxim MAX3394EETA+T
U3	1	I <sup>2</sup> C-to1-Wire master (6 SOT23) Maxim DS2484R+T
U4	1	2-/4-/6-/8-channel ±30kV ESD protectors (6/8/10 μDFN) Maxim MAX13202
_	3	LP with handle, 2-position shunt, 30AU TE Connectivity 881545-2
_	1	PCB: DS2484 EVKit Rev A

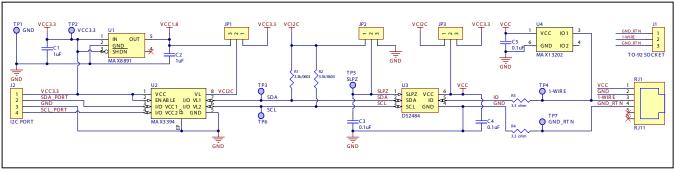


Figure 20. DS2484 EV Kit Schematic

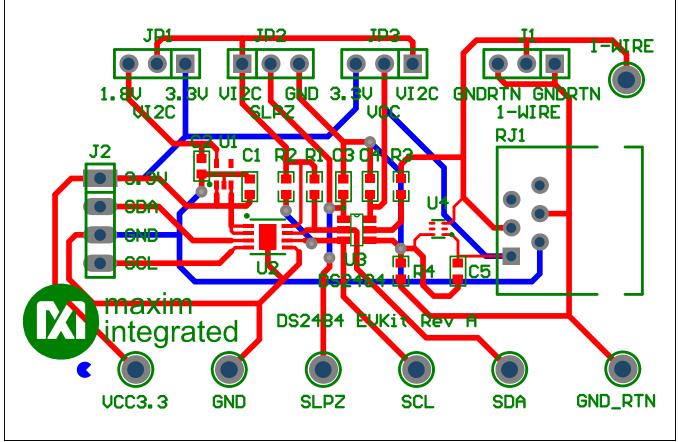


Figure 21. DS2484 EV Kit Composite Layout

## Evaluates: DS2484

## **Ordering Information**

PART	TYPE	
DS2484EVKIT#	EV System	

#Denotes RoHS compliant.

www.maximintegrated.com

## Evaluates: DS2484

### **Revision History**

REVISION	REVISION	DESCRIPTION	PAGES
NUMBER	DATE		CHANGED
0	1/14	Initial release	—

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