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DT-Open Layers
FOR MICROSOFT® WINDOWS™

DT2801 Series Device Driver

FOR MICROSOFT® WINDOWS™

SP0927

For use with:

DataAcq SDK, VB-EZ, and DT VPI

UM-12511-E

DATA TRANSLATION®

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Introduction

The DT2801 Series device driver is a Windows 3.1 and Windows 95 installable device. The driver is a DT-Open Layers device that can be used with DataAcq SDK, version V2.20 or later. It can also be used with any library or application that adheres to the DT-Open Layers data acquisition API and SPI standards as defined in the *DataAcq SDK User Manual* (UM-11421).

The DT2801 Series installable driver supports the following models:

DT2801
DT2801-A
DT2801/5716A
DT2805
DT2805/5716A
DT2808
DT2809
DT2818
DT01-EZ
DT16-EZ

Windows 3.1 Installation

Before installing the software, do the following:

- Install Microsoft Windows 3.1 or later.
- Read the file README.TXT (if present on the distribution diskette) for any information not included in this document at release time.

Note: The device driver may be installed either before or after you install DataAcq SDK (or other DT-Open Layers compliant software).

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The installation program for the DT2801 Series driver is a Windows application. Perform the following steps to install the software:

1. Start Windows.
2. From the Main group, choose the Control Panel.
3. Choose the Drivers icon.
   The Drivers dialog box appears.
4. Click Add!
5. Select Unlisted or Updated Driver and then Click OK.
   A dialog box appears asking you to insert the driver diskette.
6. Insert your backup copy of the diskette into drive A, type a:\win31\ and Click OK. (If your diskette is not in drive A, type in the drive where your diskette is located.)
   The Add Unlisted or Updated Driver dialog box appears.
7. Select DT-Open Layers DT2801 and Click OK.
   The DT2801 Series Installation dialog box appears.
8. Select the board address from the list and type a board name.
   Make sure that the specified board address does not conflict with settings used by any other devices in your system.
9. Click Add!
   A dialog box confirms that the board was located.
10. Click Yes to add the board.
    The DT2801 Configuration dialog box appears.
11. Select DMA channels, A/D Channel Type, A/D Range, and DAC 0 and DAC 1 Range for the board.

Note: Refer to your *DT2801 Series User Manual* or *DataAcq-EZ Hardware User Manual* (for DT01-EZ Series boards) for information on the board configuration parameters.

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12. Click Update, then click Close.
    A dialog box appears stating that the driver has been added.

13. Choose Restart Now to restart Windows and enable the driver.

Installing Multiple Boards

To install additional boards after completing the initial driver installation, perform the following procedure.

1. From the Control Panel, choose the Drivers icon.
   The Drivers dialog box appears.

2. Select DT-Open Layers DT2801 Series and click OK.

3. Click Setup.
   The driver configuration dialog box appears.

4. Click New.
   The installation dialog box appears.

5. Select a board address and type a board name.
   Make sure that the specified board address does not conflict with settings used by any other devices in your system.

6. Click Add**...** .
   A dialog box confirms that the board was located.

7. Click Yes to add the board.
   The DT2801 Series Driver Configuration dialog box appears.

8. Recall the desired settings for your DT2801 Series board. Use the default settings or select the base clock frequency.

9. Click Update, and then click Close.

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Modifying Configuration of Existing Boards

To modify the configuration of boards already installed through driver installation, perform the following procedure.

1. From the Control Panel, choose the Drivers icon.
   The Drivers dialog box appears.
2. Select DT-Open Layers DT2801 Series.
3. Click Setup.
   The driver configuration dialog box appears.
4. Select the name of the board you want to modify
5. Recall the desired settings for your DT2801 Series board. Use the default settings or select the base clock frequency.
6. Click Update, and then click Close.

Removing Boards

To remove boards already installed through driver installation, perform the following procedure.

1. From the Control Panel, choose the Drivers icon.
   The Drivers dialog box appears.
2. Select DT-Open Layers DT2801 Series.
3. Click Setup.
   The driver configuration dialog box appears.
4. Select the name of the board you want to remove.
5. Click Delete.
   A dialog box confirms the board is to be removed.
6. Click Yes to remove the board.
   When the board has been removed, click Close.

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7. The Systems Settings Change dialog box appears. Click Restart Now to restart Windows and disable the system settings for the removed board.

Uninstalling Drivers

To remove a driver from the system, perform the following procedure.

1. From the Control Panel, choose the Drivers icon.
   The Drivers dialog box appears.
2. Select DT-Open Layers DT2801 Series.
3. Click Remove.
   The Remove dialog box appears.
4. Click Yes.
5. The Systems Settings Change dialog box will appear. Click Restart Now to restart Windows and disable the system settings for the removed driver.

Resolving Driver Conflicts

Occasionally certain interrupt system conflicts, or conflicts with other user's Virtual Device Drivers (VXDs) will result in an error when trying to restart Windows. If you are unable to restart Windows after loading or updating a DT-Open Layers Installable Driver, it will be necessary to edit your Windows SYSTEM.INI file, located in your Windows root directory. Editing must be done from DOS before starting Windows.

1. Locate the topic [OpenLayers.Boards] in the SYSTEM.INI file.
2. Delete all board entries from this topic. Board entries follow the format:

   ```
   DT2801=DT2801.DRV 0x02F4 -1 3\0113
   ```

3. Locate the topic [VDTDAD] in the SYSTEM.INI file.

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4. If you have only one board installed, delete all configuration entries from this topic. Configuration entries include the following:

```
irqs=
buf128=
buf64=
```

Note: If you have more than one board installed, be very careful which configuration entries you delete.

5. Save and exit the edited SYSTEM.INI file and restart Windows. If Windows starts without error, proceed to Step 9. If Windows does not start, there could be a conflict between the DT-Open Layers VXD and another manufacturer's VXD. To resolve this, proceed to Step 6.

6. Locate the topic [386Enh] in the SYSTEM.INI file.

7. Delete the entry device=vdtdad.386 from the SYSTEM.INI file.

Windows should now restart without error. If Windows does not start, there is a possible conflict with some other manufacturer's VXD. Proceed to Step 8.

8. Edit the Windows SYSTEM.INI file, re-inserting the entry device=vdtdad.386 under the topic [386Enh]. If any other manufacturer's VXDs have been loaded, remove them following the manufacturer's instructions.

Windows should now restart without error.

9. Reinstall any DT-Open Layers device drivers removed in Step 4. Use a different base address or interrupt setting to avoid further system conflicts.

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Windows 95 Installation

The installation program for the DT2801 Series driver is a Windows application. Perform the following steps to install the software under Windows 95:

1. Start Windows.

2. Place the Driver diskette in Drive A.

3. Open the Control Panel
   Start -> Settings -> Control Panel

4. Double click on the Add New Hardware icon.
   The Add New Hardware Wizard dialog appears.

5. Click Next to begin installing your new hardware.
   The dialog asks if you want Windows to search for your new hardware.

6. Select No and click Next.
   A new dialog appears listing available hardware types. You are asked to select the type of hardware you want to install.

7. Scroll down the list and select Sound, Video, and Game Controllers as the desired hardware type, and click Next.
   A dialog asks you to click the manufacturer and model of your hardware.

8. Click Have Disk.....
   The Install From Disk dialog appears.

9. Click Browse...
   The Open file dialog appears.

10. Double-click on the Win95 directory on the floppy disk, select the dt2801~1.inf file, and press OK.
    A dialog appears asking you to insert the diskette. (You've already done so in Step 2.)

11. When you see Copy manufacturer's files from A:\WIN95, click OK.

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The Select Device dialog appears after the files are copied and you are asked to click the controller that matches your hardware. DT-Open Layers DT2801 Series is highlighted in the Select Device dialog list box.

12. Click OK.

    A dialog appears letting you know that Windows can continue installing your hardware.

13. Click Finish to allow Windows to continue installing the software needed by the hardware. Once the files are copied, you are back in Control Panel.

14. In the Control Panel, double-click on the Multimedia icon, select the Advanced dialog tab, and double-click on Media Control Devices.

15. Select DT Open Layers DT2801 Series Device Driver and click Properties.

    The DT-Open Layers DT2801 Series Device Driver Properties Dialog box appears.

16. Click Settings.

    The Data Translation DT2801 Series Driver Configuration dialog box appears.

17. Click New.

    The DT2801 Series Installation dialog box appears.

18. Verify the base address, then click Add!

    A dialog box appears confirming the board was found at the address you selected and asks to add it.

19. Click Yes.

    The dialog box now shows IRQ and DMA settings.

20. Verify the IRQ and DMA settings, then press the Update button.

21. Click Close.

    This change will not take effect until you restart Windows. Click OK to continue.

22. Click OK to close the Device Driver properties dialog.

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23. Click OK to close the Multimedia Properties dialog.

24. Press Start -> Shut Down -> Restart Computer to restart Windows and enable the new driver.

Installing More Than One Type of Board

To install other types of boards after completing the initial driver installation, repeat the Windows 95 installation process beginning on page 7.

Adding a Board or Modifying Configuration of Existing Boards

To add a second board of the same type or to modify the device driver configuration, perform the following steps:

1. Open the Control Panel.

2. Double click on Multimedia.
   The Multimedia Properties dialog appears.

3. Select the Advanced tab and double click on Media Control Devices.

4. Double click on DT-Open Layers DT2801 Series Device Driver.
   The DT-Open Layers DT2801 Series Device Driver Properties dialog box appears.

5. Select Use this Media Control device and click Settings.
   The DT2801 Series Device Driver Configuration dialog box appears.

6. Click on New to add a DT2801 Series board or skip to step 10.
   The DT2801 Series Installation dialog box appears.

7. Select the board number (1), desired type, and enter a board name. (This can be any name that is not already used by another DT-Open Layers board.)

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8. Click Add!
   A dialog box confirms that the board was located.

9. Click Yes to add the board.

10. Click Update, then on Close.

11. Click OK in the Changes Saved dialog.

12. Click OK to close the DT2801 Series properties dialog box and click on OK to close the Multimedia Properties box.

13. Close the Control Panel.

14. Restart Windows 95 in order for your changes to take effect.

Removing Boards and Drivers From Your System

To remove your board and its driver from your system, you need to perform the following steps in the order shown:

- First, remove the board(s) from the driver
- Second, remove the driver(s) from the system
- Last, remove the board(s) from the system

Removing a Board From the Driver

Repeat the following steps for each board you are removing from the driver.

1. Open the Control Panel.

2. Double click on Multimedia.
   The Multimedia Properties dialog appears.

3. Select the Advanced tab and double click on Media Control Devices.

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4. Double click on DT-Open Layers DT2801 Series Device Driver.
   The DT-Open Layers DT2801 Series Device Driver Properties dialog box appears.

5. Select Use this Media Control device and click Settings.
   The DT2801 Series Device Driver Configuration dialog box appears.

6. Select the board that you want to remove.

7. Click Delete.
   A dialog box confirms that the board was located.

8. Click Yes to remove the board.

9. Click Update, then on Close.

10. Click OK in the Changes Saved dialog.

11. Click OK to close the DT2801 Series properties dialog box and click on OK to close the Multimedia Properties box.

12. Close the Control Panel.

13. Restart Windows 95 in order for your changes to take effect.

Removing the Driver From the System

To remove the driver from your system, perform the following steps.

1. Open the Control Panel and double click on Multimedia.
   The Multimedia Properties dialog appears.

2. Select the Advanced tab and double click on Media Control Devices**.**

3. Double click on DT-Open Layers DT2801 Series Device Driver.

4. Click Remove.
   The Remove dialog box appears.

5. Click Yes.
   The Device Removed dialog box appears.

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6. Click OK.
   Another Device Removed dialog box appears telling you that you must restart Windows for the change to take effect.

7. Click OK.

8. Click OK to close the Multimedia Properties dialog box.
   This returns you to the Control Panel.

Removing Boards From the System

1. Open the Control Panel and double click on System and select the Device Manager tab.

2. Double click on Sound, video and game controllers and then click on DT-Open Layers DT2801 Series.

3. Click Remove.
   The Confirm Device Removal dialog appears.

4. Click OK to confirm removal.

5. Click Close in the System Properties dialog box.

6. Close the Control Panel.

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Resolving Driver Conflicts Under Windows 95

Occasionally certain interrupt system conflicts, or conflicts with other user's Virtual Device Drivers (VXDs) results in an error when trying to restart Windows 95. If you are unable to restart Windows 95 after loading or updating a DT-Open Layers Installable Driver, it is necessary to edit your Windows SYSTEM.INI file, located in your Windows 95 root directory.

1. Shut off your computer.
   After a minute, turn it back on.

2. The following screen appears:

```
Microsoft Windows 95 Startup Menu
    1. Normal
    2. Logged (\BootLog.txt)
    3. Safe mode
    4. Safe mode with network support
    5. Step-by-step confirmation
    6. Command prompt only
    7. Safe mode command prompt only
Enter a choice: _____
Warning: Windows did not finish loading on the
previous attempt. Choose Safe mode to start with a
minimal set of drivers.
```

3. Choose #6 - Command prompt only.
   You are now in DOS.

4. Go to your Windows 95 directory.
   C:\cd win95 (or wherever it resides).

5. Follow steps 6 to 15 edit your SYSTEM.INI file.

6. Locate the topic [OpenLayers.Boards] in the SYSTEM.INI file.

7. Delete all board entries from this topic. Board entries follow the format:

   ```
   DT2801=DT2801.DRV
   ```


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8. Locate the topic [Drivers] in the SYSTEM.INI file and delete all board entries from this topic.

9. Locate the topic [mci] in the SYSTEM.INI file and delete all board entries from this topic.

10. Locate the topic [VDTDAD] in the SYSTEM.INI file.

11. If you have only one board installed, delete all configuration entries from this topic. Configuration entries include the following:

```
irqs=
buf128=
buf64=
```

Note: If you have more than one board installed, be very careful which configuration entries you delete.

---

12. Save and exit the edited SYSTEM.INI file and restart Windows. If Windows starts without error, proceed to Step 15. If Windows does not start, there could be a conflict between the DT-Open Layers VXD and another manufacturer's VXD. To resolve this conflict, proceed to Step 13.

13. Locate the topic [386Enh] in the SYSTEM.INI file.

14. Delete the entry `device=vdtdad.386` from the SYSTEM.INI file. Windows should now restart without error. If Windows does not start, there is a possible conflict with some other manufacturer's VXD. Proceed to the next step.

15. Edit the Windows SYSTEM.INI file, re-inserting the entry `device=vdtdad.386` under the topic [386Enh]. If any other manufacturer's VXDs have been loaded, remove them following the manufacturer's instructions.

16. Save the file and reboot your computer. Windows 95 should now restart without error.

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17. Reinstall any DT-Open Layers device drivers removed in Step 7. Use a different base address or interrupt setting to avoid further system conflicts.

Supported Options

The DT2801 Series driver provides support for A/D, D/A, digital input (DIN), digital output (DOUT), and counter/timer subsystems. Tables 1 through 7 on the following pages provide an overview of board features available for use with DataAcq SDK. Because the library is hardware-independent, all board models are treated in the same manner. DataAcq SDK provides calls which return support information for specified subsystem capabilities at run-time.

The first row in the table lists the subsystem types. The first column lists all possible subsystem capabilities. A brief description of each capability is followed by the parameter used to describe the capability in DataAcq SDK.

Note: Blank fields represent non-supported options.

If a subsystem capability lists an asterisk (*) followed by a number, refer to the corresponding note after the Table for more information about the capability.

The following tables list the subsystem options for the supported boards:

Table 1: DT2801 16
Table 2: DT2801-A and DT01-EZ 23
Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ 30
Table 4: DT2805 37
Table 5: DT2808 44
Table 6: DT2809 50
Table 7: DT2818 57

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DataAcq SDK uses the function calls **olDaGetSSCaps** and **olDaGetSSCapsEx** to return the supported subsystem capabilities for a device. For more information, refer to the description of these functions in the *DataAcq SDK User Manual*.

The following notes apply to DT2801 Series subsystem operation:

- The A/D subsystem may not be started while the D/A subsystem is running (and vice versa).
- Resetting the A/D (D/A) subsystem while D/A (A/D) is running is not allowed. Resetting in these instances will return the error OLBOARDRUNNING.

Table 1: DT2801 Supported Options

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	13.794kHz (*1)	131.579kHz *(*1, *5)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	1 Hz	1 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	50kHz	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	1 Hz	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	0	0		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	5MHz	5MHz	0	0		
SE Channels OLSSC_MAXSECHANS	16	0	0	0		
DI Channels OLSSC_MAXDICHANS	8	2	0	0		
CGL Depth OLSSC_CGLDEPTH	512	2	0	0		

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Table 1: DT2801 Supported Options (Continued)

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Filters OLSSC_NUMFILTERS	1	1	0	0		
Number of Gains OLSSC_NUMGAINS	4	1	0	0		
Number of Voltage Ranges OLSSC_NUMRANGES	2	2	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	2	2	0	0		
Number of Channels OLSSC_NUMCHANNELS	16	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT	Yes	Yes				
SE Support OLSSC_SUP_SINGLEENDED	Yes					
DI Support OLSSC_SUP_DIFFERENTIAL	Yes	Yes				
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP	Yes	Yes				
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				

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Table 1: DT2801 Supported Options (Continued)

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN	Yes					
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL	Yes	Yes				
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO	Yes					
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN	Yes					

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Table 1: DT2801 Supported Options (Continued)

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Data Processing Capability OLSSC_SUP_PROCESSOR						
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE	Yes	Yes				
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						

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Table 1: DT2801 Supported Options (Continued)

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START	Yes	Yes				
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL						
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH						
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL	Yes					
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA		Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA	Yes	Yes				
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						

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Table 1: DT2801 Supported Options (Continued)

DT2801	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. This is a jumper-configurable setting and is determined during driver installation/configuration.

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*3. There are two voltage ranges for the A/D subsystem. These ranges are jumper-configurable and driver settings must be set at installation time.

*4. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

*5. The maximum throughput per channel with DMA is

Single Channel: 14.815 kHz

Two Channels: 16 kHz

Note: Refer to the *DT2801 Series User Manual* for information on jumper settings.

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Table 2: DT2801-A and DT01-EZ Supported Options

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	27.587kHz *(*1)*	*(*1, *5)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	1 2Hz	12 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	0	0		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	800 kHz	800 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	16 *(*2)*	0	0	0		
DI Channels OLSSC_MAXDICHANS	8 *(*2)*	2	1	1		
CGL Depth OLSSC_CGLDEPTH	16SE *(*2)* 8DI	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	4	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1 *(*3)*	1 *(*4)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 2: DT2801-A and DT01-EZ Supported Options (Continued)

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	16SE *(*2)* *8DI*	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED						
DI Support OLSSC_SUP_DIFFERENTIAL	Yes	Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP						
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						

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Table 2: DT2801-A and DT01-EZ Supported Options (Continued)

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN	Yes					
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						

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Table 2: DT2801-A and DT01-EZ Supported Options (Continued)

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START						

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Table 2: DT2801-A and DT01-EZ Supported Options (Continued)

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH						
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						

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Table 2: DT2801-A and DT01-EZ Supported Options (Continued)

DT2801-A DT01-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. This is a jumper-configurable setting and is determined during driver installation/configuration.

*3. There are two voltage ranges for the A/D subsystem. These ranges are jumper-configurable and driver settings must be set at installation time.

*4. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

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*5. The maximum throughput per channel with DMA is

Single Channel: 29.630 kHz
Two Channels: 33.334 kHz

Note: Refer to your *DT2801 Series User Manual* or *DataAcq-EZ Hardware User Manual* (DT01-EZ Series boards) for information on jumper settings.

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	7.548 kHz *(*1,*3)*	*(*1,*4)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	6 Hz	6 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	1	1		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	400 kHz	400 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	0	0	0	0		
DI Channels OLSSC_MAXDICHANS	8	2	1	1		
CGL Depth OLSSC_CGLDEPTH	8	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	1	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1	1 *(*2)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options (Continued)

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	8	2	0	0		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED						
DI Support OLSSC_SUP_DIFFERENTIAL	Yes	Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY						
Two's Complement Support OLSSC_SUP_2SCOMP	Yes	Yes				
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options (Continued)

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN	Yes					
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options (Continued)

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options (Continued)

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START						
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH						
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						

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Table 3: DT2801/5716A, DT2805/5716A, and DT16-EZ Options (Continued)

DT2801/5716A DT2805/5716A DT16-EZ	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

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*2. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

*3. At gains of 100 or 500, the maximum recommended throughput to maintain maximum ENOB is 2.5 kHz.

*4. The maximum throughput per channel with DMA is

Single Channel: 14.815 kHz
Two Channels: 16 kHz

Note: Refer to your *DT2801 Series User Manual* or *DataAcq-EZ Hardware User Manual* (DT01-EZ Series boards) for information on jumper settings.

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Table 4: DT2805 Supported Options

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	13.794 kHz *(*1,*4)*	*(*1, *5)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	6 Hz	6 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	1	1		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	400 kHz	400 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	0	0	0	0		
DI Channels OLSSC_MAXDICHANS	8	2	1	1		
CGL Depth OLSSC_CGLDEPTH	8	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	4	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1 *(*2)*	1 *(*3)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 4: DT2805 Supported Options (Continued)

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	8	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED						
DI Support OLSSC_SUP_DIFFERENTIAL	Yes	Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP						
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						

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Table 4: DT2805 Supported Options (Continued)

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN	Yes					
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						

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Table 4: DT2805 Supported Options (Continued)

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START						

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Table 4: DT2805 Supported Options (Continued)

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH						
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						

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Table 4: DT2805 Supported Options (Continued)

DT2805	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. There are two voltage ranges for the A/D subsystem. These ranges are jumper-configurable and driver settings must be set at installation time.

*3. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

*4. At gains of 100 or 500, the recommended maximum throughput to maintain maximum ENOB is 2.5 kHz.

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*5. The maximum throughput per channel with DMA is
Single Channel: 14.815 kHz
Two Channels: 16 kHz

Note: Refer to the *DT2801 Series User Manual* for information on jumper settings.

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Table 5: DT2808 Supported Options

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	3.306 kHz *(*1)*	10 kHz *(*1,*3)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	6 Hz	6 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	1	1		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	400 kHz	400 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	16	0	0	0		
DI Channels OLSSC_MAXDICHANS	0	2	1	1		
CGL Depth OLSSC_CGLDEPTH	16	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	4	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1	1 *(*2)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 5: DT2808 Supported Options (Continued)

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	16	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED	Yes					
DI Support OLSSC_SUP_DIFFERENTIAL		Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP						
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						

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Table 5: DT2808 Supported Options (Continued)

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN						
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						

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Table 5: DT2808 Supported Options (Continued)

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START						

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Table 5: DT2808 Supported Options (Continued)

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH						
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						

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Table 5: DT2808 Supported Options (Continued)

DT2808	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. There are two voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

*3. Maximum throughput per channel.

Note: Refer to the *DT2801 Series User Manual* for information on jumper settings.

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Table 6: DT2809 Supported Options

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	16 kHz *(*1)*	*(*1, *3)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	12 Hz	12 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	0	0		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	800 kHz	800 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	16	0	0	0		
DI Channels OLSSC_MAXDICHANS	8	0	0	0		
CGL Depth OLSSC_CGLDEPTH	8	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	1	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1	1 *(*2)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 6: DT2809 Supported Options (Continued)

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	8	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED	Yes					
DI Support OLSSC_SUP_DIFFERENTIAL		Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP						
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						

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Table 6: DT2809 Supported Options (Continued)

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN						
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						

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Table 6: DT2809 Supported Options (Continued)

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START						

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Table 6: DT2809 Supported Options (Continued)

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH	Yes					
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	Yes	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						

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Table 6: DT2809 Supported Options (Continued)

DT2809	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

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*3. The maximum throughput per channel with DMA is
Single Channel: 29.630 kHz
Two Channels: 33.334 kHz

Note: Refer to the *DT2801 Series User Manual* for information on jumper settings.

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Table 7: DT2818 Supported Options

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Maximum Throughput OLSSCE_MAX_THROUGHPUT	27.587 kHz *(*1)*	*(*1, *4)*	0	0		
Minimum Throughput OLSSCE_MIN_THROUGHPUT	12 Hz	12 Hz	0	0		
Maximum Retrigger Frequency OLSSCE_MAXRETRIGGER	0	0	0	0		
Minimum Retrigger Frequency OLSSCE_MINRETRIGGER	0	0	0	0		
Maximum External Clock Divider OLSSCE_MAXCLOCKDIVIDER	1	1	1	1		
Minimum External Clock Divider OLSSCE_MINCLOCKDIVIDER	**1**	**1**	**1**	**1**		
Base Clock Frequency OLSSCE_BASECLOCK	800 kHz	800 kHz	0	0		
SE Channels OLSSC_MAXSECHANS	4	0	0	0		
DI Channels OLSSC_MAXDICHANS	0	2	1	1		
CGL Depth OLSSC_CGLDEPTH	4	2	1	1		
Number of Filters OLSSC_NUMFILTERS	1	1	1	1		
Number of Gains OLSSC_NUMGAINS	1	1	1	1		
Number of Voltage Ranges OLSSC_NUMRANGES	1 *(*2)*	1 *(*3)*	0	0		
Number of DMA Channels OLSSC_NUMDMACHANS	1	1	0	0		

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Table 7: DT2818 Supported Options (Continued)

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Number of Channels OLSSC_NUMCHANNELS	4	2	1	1		
Number of Extra Clocks OLSSC_NUMEXTRACLOCKS	0	0	0	0		
Number of Extra Triggers OLSSC_NUMEXTRATRIGGERS	0	0	0	0		
Number of Resolutions OLSSC_NUMRESOLUTIONS	1	1	1	1		
Interrupt Support OLSSC_SUP_INTERRUPT						
SE Support OLSSC_SUP_SINGLEENDED	Yes					
DI Support OLSSC_SUP_DIFFERENTIAL		Yes	Yes	Yes		
Binary Coding Support OLSSC_SUP_BINARY	Yes	Yes				
Two's Complement Support OLSSC_SUP_2SCOMP						
Software Trigger Support OLSSC_SUP_SOFTTRIG	Yes	Yes				
External Trigger Support OLSSC_SUP_EXTERNTRIG	Yes	Yes				
Threshold Trigger Support OLSSC_SUP_THRESHTRIGPOS						
Threshold Trigger Support OLSSC_SUP_THRESHTRIGNEG						
Analog Event Trigger Support OLSSC_SUP_ANALOGEVENTTRIG						
Digital Event Trigger Support OLSSC_SUP_DIGITALEVENTTRIG						

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Table 7: DT2818 Supported Options (Continued)

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Timer Event Trigger Support OLSSC_SUP_TIMEREVENTTRIG						
Triggered Scan Support OLSSC_SUP_TRIGSCAN						
Internal Clock Support OLSSC_SUP_INTCLOCK	Yes	Yes				
External Clock Support OLSSC_SUP_EXTCLOCK	Yes	Yes				
Software Calibration Support OLSSC_SUP_SWCAL						
DT2896 Channel Expansion Support OLSSC_SUP_EXP2896						
DT727 Channel Expansion OLSSC_SUP_EXP727	Yes					
Filter/Channel Support OLSSC_SUP_FILTERPERCHAN						
DT-Connect Support OLSSC_SUP_DTCONNECT						
FIFO in Data Path Support OLSSC_SUP_FIFO						
Programmable Gain Support OLSSC_SUP_PROGRAMGAIN						
Data Processing Capability OLSSC_SUP_PROCESSOR	Yes	Yes	Yes	Yes		
Software Programmable Resolution OLSSC_SUP_SWRESOLUTION						
Continuous Operation Support OLSSC_SUP_CONTINUOUS	Yes	Yes				
Pause Operation Support OLSSC_SUP_PAUSE						

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Table 7: DT2818 Supported Options (Continued)

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Multiple Buffer Wrap Mode Support OLSSC_SUP_WRPMULTIPLE	Yes	Yes				
Single Buffer Wrap Mode Support OLSSC_SUP_WRPSINGLE	Yes	Yes				
Single Value Operation Support OLSSC_SUP_SINGLEVALUE	Yes	Yes	Yes	Yes		
Asynchronous Operation Support OLSSC_SUP_POSTMESSAGE	Yes	Yes				
Cascading Support OLSSC_SUP_CASCADING						
Event Count Mode Support OLSC_SUP_CTMODE_COUNT						
Rate Generation Mode Support OLSSC_SUP_CTMODE_RATE						
One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT						
Repeatable One-Shot Mode Support OLSSC_SUP_CTMODE_ONESHOT_RPT						
Maximum Synchronous Digital I/O Value OLSSC_MAX_DIGITALIOLIST_VALUE						
Continuous DT-Connect Support OLSSC_SUP_DTCONNECT_CONTINUOUS						
Burst DT-Connect Support OLSSC_SUP_DTCONNECT_BURST						
Channel List Inhibit Support OLSSC_SUP_CHANNEL_LIST_INHIBIT						
Synchronous Digital I/O Support OLSSC_SUP_SYNCHRONOUS_DIGITALIO						
Simultaneous Start List Support OLSSC_SUP_SIMULTANEOUS_START	Yes	Yes				

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Table 7: DT2818 Supported Options (Continued)

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Inprocess Buffer Flush Support OLSSC_SUP_INPROCESSFLUSH	Yes					
Range per Channel Support OLSSC_SUP_RANGEPERCHANNEL		Yes				
Simultaneous Sample and Hold Support OLSSC_SUP_SIMULTANEOUS_SH	Yes					
Random Channel Gain List Support OLSSC_SUP_RANDOM_CGL						
Sequential Channel Gain List Support OLSSC_SUP_SEQUENTIAL_CGL	No	Yes				
Zero Start Sequential Channel Gain List Support OLSSC_SUP_ZEROSEQUENTIAL_CGL	Yes	Yes				
Supports Gap Free Data with No DMA OLSSC_SUP_GAPFREE_NODMA	Yes	Yes				
Supports Gap Free Data with Single DMA OLSSC_SUP_GAPFREE_SINGLEDMA	Yes	Yes				
Supports Gap Free Data with Dual DMA OLSSC_SUP_GAPFREE_DUALDMA						
High to Low Output Pulse Support OLSSC_SUP_PLS_HIGH2LOW						
Low to High Output Pulse Support OLSSC_SUP_PLS_LOW2HIGH						
None (internal) Gate Type Support OLSSC_SUP_GATE_NONE						
High Level Gate Type Support OLSSC_SUP_GATE_HIGH_LEVEL						
Low Level Gate Type Support OLSSC_SUP_GATE_LOW_LEVEL						
High Edge Gate Type Support OLSSC_SUP_GATE_HIGH_EDGE						

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Table 7: DT2818 Supported Options (Continued)

DT2818	A/D	D/A	DIN	DOUT	Serial I/O	Counter/ Timer
Total Subsystems on Board	**1**	**1**	**2**	**2**	**0**	**0**
Low Edge Gate Type Support OLSSC_SUP_GATE_LOW_EDGE						
Level Change Gate Type Support OLSSC_SUP_GATE_LEVEL						
High Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_LEVEL_DEBOUNCE						
Low Level Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_LEVEL_DEBOUNCE						
High Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_HIGH_EDGE_DEBOUNCE						
Low Edge Gate Type with Input Debounce Support OLSSC_SUP_GATE_LOW_EDGE_DEBOUNCE						
Level Change Gate Type with Input Debounce Support OLSSC_SUP_GATE_LEVEL_DEBOUNCE						
Supports Internal Retriggered Triggered Scan OLSSC_SUP_RETRIGGER_INTERNAL						
Supports Scan per Trigger Event Triggered Scan OLSSC_SUP_RETRIGGER_SCAN_PER_TRIGGER						

Related Notes

*1. When the board is run continuously without using DMA, the maximum reliable throughput is 10 to 12Hz.

*2. There are two voltage ranges for the A/D subsystem. These ranges are jumper-configurable and driver settings must be set at installation time.

*3. There are five voltage ranges for the D/A subsystem. These ranges are jumper-configurable and driver settings must be set at installation time. Each channel of the D/A subsystem has independent jumper-configurable voltage ranges. The DataAcq SDK function call **olDaGetRange** will only return the range of D/A channel 0.

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*4. The maximum throughput per channel with DMA is

Single Channel: 29.630 kHz

Two Channels: 33.334 kHz

Note: Refer to the *DT2801 Series User Manual* for information on jumper settings.

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