DAS-Scan Quick Start

The DAS-Scan system is a data acquisition system that allows you to measure voltage and/or thermocouple input on up to 4,096 analog input channels. You can use your DAS-Scan data acquisition system with the following software:

- **ASO-SCAN software** (Advanced Software Option) - Install this software if you want to create data acquisition application programs at the driver level using Microsoft Visual C++™, Borland C/C++ (for Windows), or Microsoft Visual Basic for Windows.

- **VTX**™ (Visual Test Extensions™) - Install this software if you want to create data acquisition application programs using an integrated set of custom controls within the Microsoft® Visual Basic® for Windows™ programming environment.

- **TestPoint**™ - Install this software if you want to create data acquisition applications under Windows using a set of professional software tools instead of programming.

To begin, use the DAS-Scan system setup checklist to set up your DAS-Scan system. Then, follow the quick start instructions for the software package you want to use.

DAS-Scan System Setup Checklist

Use the following DAS-Scan system setup checklist to set up your DAS-Scan system. Refer to the *DAS-Scan User's Guide* for detailed instructions.

❏ 1. Unpack and inspect the components of your DAS-Scan system.

❏ 2. Create a channel map indicating the input signals you want to attach to each of the channels in your DAS-Scan system.

❏ 3. Configure the hardware components, as follows:

– On the SCAN-AD-HR board, set the base I/O address switch (S1) to indicate the appropriate base I/O address, and, if appropriate, set the J6 jumper to indicate an external pacer clock or an external digital trigger/hardware gate.

– On each SCAN-BRD assembly, set the address thumbwheels to indicate the appropriate assembly address. (For the purposes of this quick start, make sure that you set the address of the first assembly to 00h.)

– If you are using SCAN-STP-TC screw terminal panels, set the J2 jumpers on each panel to indicate whether you are using cold junction compensation (CJC).

❏ 4. Mount the SCAN-STP screw terminal panels on DIN rails.

❏ 5. Attach the input signals to the appropriate SCAN-STP screw terminal panels.

❏ 6. Mount the SCAN-CH chassis in a 19-inch rack.

❏ 7. Attach one end of each SCAN-CAB-64 cable to the appropriate position in the SCAN-CH chassis. (Do not attach the other end of the SCAN-CAB-64 cables at this point.)

❏ 8. Attach a power cord to the power-supply panel of each SCAN-CH chassis.

❏ 9. Check the operation of the power supply in each SCAN-CH chassis.

❏ 10. Install the SCAN-BRD assemblies in the appropriate SCAN-CH chassis.

❏ 11. Make sure that power to the computer is turned OFF.

❏ 12. Install the SCAN-AD-HR board in your computer.

❏ 13. Attach the SCAN-AD-HR board to the first SCAN-CH chassis using the S-1802/M cable.

❏ 14. Daisy-chain multiple SCAN-CH chassis, if required, using S-1802/MM cables.

❏ 15. Attach the other end of each SCAN-CAB-64 cable to the appropriate SCAN-STP screw terminal panel.

❏ 16. Connect an external pacer clock, external digital trigger, or hardware gate, if required, to the J5 connector on the SCAN-AD-HR board using a CAB-SMA-BNC cable.

❏ 17. Plug the power cords into the wall, and then power up your computer, the SCAN-CH chassis, and any equipment attached to the SCAN-STP screw terminal panels.

When you finish setting up your DAS-Scan system, install your software package using the quick start instructions in this document. *Refer to the next section for ASO-SCAN software quick start instructions; refer to page 7 for VTX quick start instructions; refer to page 11 for TestPoint quick start instructions*.

ASO-SCAN Software Quick Start

Once you've set up your DAS-Scan system, do the following:

➡ **Install the software.**
If you need help during this procedure, refer to Chapter 2 of your *DAS-Scan User's Guide*.

1. Insert disk #1 of the ASO-SCAN software package in the appropriate disk drive.

2. Start Windows, if necessary.

3. *If you are using Windows 3.1*:

   – On the **File** menu of the Program Manager, click **Run**.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start** and then **Run**.

4. In the Run dialog box, enter the appropriate drive letter and the setup command. For example, if the disk is in drive A, enter

   ```
   a:\setup
   ```

   and then click **OK**.

5. Respond to the prompts.

   The installation program automatically creates a directory on the drive you specified and then copies all files, expanding any compressed files, to the new directory.

6. When the installation is complete, review the FILES.TXT and README.TXT files for important information.

7. *If you are using Windows 95 to write 32-bit programs*, install the ASO-Win95/32-Bit software, as follows:

   – Insert the ASO-Win95/32-Bit disk into the appropriate disk drive.

   – Click **Start** and then **Run**.

   – In the Run dialog box, enter the appropriate drive letter and the setup command. For example, if the disk is in drive A, enter

   ```
   a:\setup
   ```

   and then click **OK**.

   – Respond to the prompts, as appropriate. To avoid overwriting files with the same name, install the ASO-Win95/32-Bit software in a different directory from the one in which you installed the ASO-SCAN software package.

   – Refer to the README.TXT file in the installation directory for more information about the ASO-Win95/32-Bit software.

➥ **Create a configuration file.**
If you need help during this procedure, refer to Chapter 2 of your *DAS-Scan User's Guide*.

1. *If you are using Windows 3.1*:

   – From the Keithley DAS-Scan program group in the Program Manager, double-click the DAS-Scan Configuration icon.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley DAS-Scan**, and then click **DAS-Scan Configuration**.

   The DAS-Scan Configuration panel appears.

2. Under DAS-Scan General Info, set **Base Address** to match the setting of the base I/O address switch (S1) on the SCAN-AD-HR board.

   For this quick start session, the remaining default values are assumed. If your configuration differs from the default settings, refer to Chapter 2 of your *DAS-Scan User's Guide* for help on configuring the DAS-Scan system.

3. To save the configuration in the default configuration file (DASSCAN.CFG), click **Save** on the File menu.

4. To exit the DAS-Scan Configuration panel, click **Exit** on the File Menu or click **Exit** on the panel.

➡ **Install the Keithley Memory Manager.**
If you need help during this procedure, refer to Appendix B of your *DAS-Scan User's Guide*.

1. *If you are using Windows 3.1*:

   – From the Keithley DAS-Scan program group in the Program Manager, double-click the Memory Manager Setup icon.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley DAS-Scan**, and then click **Memory Manager Setup**.

   The Keithley Memory Manager - Setup panel appears.

2. In the Desired Setting field, enter the amount of memory that your VTX applications will require (the default is 128 KB).

3. Click **Update**.

4. If you changed the default value, click **Restart Windows** to ensure that the changes take effect immediately.

➡ **Verify that the DAS-Scan system and software are working properly.**
If you need help during this procedure, refer to Chapter 4 of your *DAS-Scan User's Guide* and to the online help provided for the DAS-Scan Control Panel.

1. *If you are using Windows 3.1*:

   – From the Keithley DAS-Scan program group in the Program Manager, double-click the DAS-Scan Control Panel icon.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley DAS-Scan**, and then click **DAS-Scan Control Panel**.

   The Open Configuration File panel appears.

2. Click **OK** to use the default configuration file (DASSCAN.CFG).

    The DAS-Scan Control Panel appears. This panel allows you to acquire, display, and transfer analog input data and to set up and display the analog input parameters.

3. Read the data from channel 0 by clicking **Start**.

    If your DAS-Scan system and the software are working properly, the program displays the data from channel 0. If data is not displayed or if an error occurs, refer to Chapter 5 of your *DAS-Scan User's Guide*. If you cannot resolve the problem, call (508) 880-3000 for technical support.

4. When you are finished using the control panel, click **Exit** on the File menu.

Now that you've verified that the DAS-Scan system and software are working properly, you can configure the DAS-Scan system and software according to your needs and build your application using the DAS-Scan Function Call Driver. Refer to the source code examples and the EXAMPLES.TXT file in the installation directory for programming tips. Refer to your *DAS-Scan Function Call Driver User's Guide* and to the DAS-Scan Function Call Driver online help file (SCANFCD.HLP) for detailed information.

VTX Quick Start

Once you've set up your DAS-Scan system, do the following:

➡ **Install the software.**
If you need help during this procedure, refer to Chapter 1 of your *VTX User's Guide* or to your Visual Basic documentation.

1. Install Version 3.0 or 4.0 (16-bit version only) of Visual Basic for Windows.

2. Insert disk #1 of the VTX DAS base module in the appropriate disk drive.

3. *If you are using Windows 3.1*:

    –   On the **File** menu of the Program Manager, click **Run**.

    If you are using Windows 95:

    –   On the Windows 95 task bar, click **Start** and then **Run**.

4. In the Run dialog box, enter the appropriate drive letter and the setup command. For example, if the VTX DAS disk is in drive A, enter

    ```
    a:\setup
    ```

    and then click **OK**.

5. Respond to the prompts, making sure that you include the DAS-Scan software and that you choose to automatically add the VTX controls to your Visual Basic Toolbox.

6. When the installation is complete, review the README file for important information.

➡ **Register and configure your DAS-Scan system, and install the Keithley Memory Manager.**

If you need help during this procedure, refer to Chapter 1 of your *VTX User's Guide*.

1. *If you are using Windows 3.1*:

    – From the Keithley VTX program group in the Program Manager, double-click the VTX Configuration icon.

    If you are using Windows 95:

    – On the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley VTX**, and then click **VTX Configuration**.

2. From the DAS Hardware configuration window (displayed on top), click **Add New** to register your DAS-Scan system for use with the VTX software.

    The Add New Board dialog box appears, with a list of the hardware families whose VTX-compatible software is currently installed.

3. From the Add New Board dialog box, select **DAS-Scan** and click **OK**.

    The DAS-Scan Configuration panel appears.

4. In the **Name** list, click **DAS-Scan**.

    For this quick start session, the remaining default values are assumed. If your configuration differs from the default settings, refer to Chapter 2 of your *DAS-Scan User's Guide* for help on configuring the DAS-Scan system.

5. To save the configuration, click **Save** on the File menu.

6. To exit the DAS-Scan Configuration panel, click **Exit** on the File Menu or click **Exit** on the panel.

7. Click the Keithley Memory Manager tab.

8. Under **Desired Setting**, enter the amount of memory that your VTX applications will require (the default is 128 KB).

9. *If you are using Windows 3.1 and 128 KB is sufficient*:

   –   Exit the VTX configuration utility by clicking **Close** and proceed to the next section.

If you are using Windows 3.1 and changed the amount of memory required:

   –   Click **Update** and then click **Restart Windows** to ensure that the changes take effect immediately.

If you are using Windows 95:

   –   Click **Update**. (You must click **Update** whether or not you changed the default value.)

   –   If you changed the default value, click **Restart Windows** to ensure that the changes take effect immediately.

➡ **Verify that the DAS-Scan system and software are working properly.**
If you need help, refer to your *VTX User's Guide* or to the online help.

1. Start Windows and then start Visual Basic. A new form appears.

2. Double-click the VTX DAS control icon in the Visual Basic Toolbox to place the control in the middle of the Visual Basic form.

3. Make sure that the DAS control is selected by clicking it once with the mouse. While pressing and holding down the left mouse button, use the mouse to drag the DAS control to the left side of the form.

4. Double-click the VTX Text control icon to place the control on the form.

5. Click the DAS control once to select it, press **F4** to display the Properties window, and double-click the ProcessSrc property in the Properties window until **DASScan Board 1** appears.

6. Click the Text control once to select it, press **F4** to display the Properties window, and double-click the Process property in the Properties window until the Grid process appears.

7. Click the Text control again to select it, and use the mouse to drag one of the corner sizing handles until the Text control is large enough to hold several samples.

8. Connect the data output connection point of the DAS control to the data input connection point of the Text control, as follows:

– Position the cursor over the small, dark rectangle on the right side of the DAS control. This rectangle is called the *data output connection point* of the DAS control.
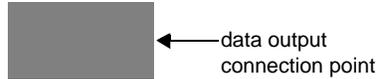
– When the cursor changes to an arrow with a wiring icon, press and hold down the left mouse button.

– When the arrow disappears, drag the wiring icon to the small, dark rectangle on the left side of the Text control. This rectangle is called the *data input connection point*.
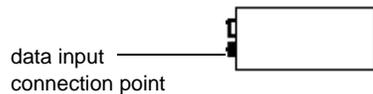
– When the arrow with the wiring icon reappears, release the left mouse button.

You should see a solid line that connects the two controls together.

9. Click **Start** on the Visual Basic Run menu to run the program.

If your DAS-Scan system and the software are working properly, the program displays the data from channel 0 in a grid. If data is not displayed or if an error message appears, refer to Chapter 5 of your *DAS-Scan User's Guide*. If you cannot resolve the problem, call (508) 880-3000 for technical support.

Now that you've verified that your DAS-Scan system and software are working properly, you can configure the DAS-Scan system and software according to your needs and build a more sophisticated application using VTX. For a VTX tutorial, refer to Chapter 2 of your *VTX User's Guide*. Refer to the VTX online help for detailed information.

TestPoint Quick Start

Once you've set up your DAS-Scan system, do the following:

➡ **Install the ASO-SCAN software.**
If you need help during this procedure, refer to Chapter 2 of your
DAS-Scan User's Guide.

1. Insert disk #1 of the ASO-SCAN software package in the appropriate
   disk drive.

2. Start Windows, if necessary.

3. *If you are using Windows 3.1*:

   – On the **File** menu of the Program Manager, click **Run**.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start** and then **Run**.

4. In the Run dialog box, enter the appropriate drive letter and the setup
   command. For example, if the disk is in drive A, enter

   ```
   a:\setup
   ```

   and then click **OK**.

5. Respond to the prompts.

Note: TestPoint requires only the DAS-Scan Configuration Utility
(CFGSCAN.EXE) and the Keithley Memory Manager
(KMMSETUP.EXE) from the ASO-SCAN software package. If you
do not intend to use the ASO-SCAN software for programming, do
not select any of the check boxes presented.

The installation program automatically creates a directory on the
drive you specified and then copies the files, expanding any
compressed files, to the new directory.

➡ **Install the TestPoint software and execution control key.**
If you need help during this procedure, refer to *TestPoint QuickStart*, which was shipped with your TestPoint software.

1. Insert TestPoint disk #1 in the appropriate disk drive.

2. Start Windows, if necessary.

3. *If you are using Windows 3.1*:

    –   On the **File** menu of the Program Manager, click **Run**.

    If you are using Windows 95:

    –   From the Windows 95 task bar, click **Start** and then **Run**.

4. In the Run dialog box, enter the appropriate drive letter and the setup command. For example, if the disk is in drive A, enter

    ```
    a:\setup
    ```

    and then click **OK**.

5. Respond to the prompts.

    The installation program copies the TestPoint files to the directory you specified or to the default directory C:\TESTPT and adds new icons to the Windows Program Manager.

6. If you want to install any of the optional libraries, insert the first library disk in the appropriate disk drive and repeat steps 3 through 5.

7. Install the execution control key in the first parallel port on the back of your computer.

➡ **Create a configuration file.**
If you need help during this procedure, refer to Chapter 2 of your *DAS-Scan User's Guide*.

1. *If you are using Windows 3.1*:

    –   From the Keithley DAS-Scan program group in the Program Manager, double-click the DAS-Scan Configuration icon.

    If you are using Windows 95:

    –   From the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley DAS-Scan**, and then click **DAS-Scan Configuration**.

    The DAS-Scan Configuration panel appears.

2. Under DAS-Scan General Info, set **Base Address** to match the setting of the base I/O address switch (S1) on the SCAN-AD-HR board.

    For this quick start session, the remaining default values are assumed. If your configuration differs from the default settings, refer to Chapter 2 of your *DAS-Scan User's Guide* for help on configuring the DAS-Scan system.

3. Click **Save as** on the File menu. The software prompts you for the name and location of the configuration file.

4. Enter the file name KEITHLEY.CFG and specify the complete path to the TestPoint installation directory.

    Notes: You must name the configuration file KEITHLEY.CFG.

    You must save the configuration file KEITHLEY.CFG in the TestPoint installation directory.

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5. To exit the DAS-Scan Configuration panel, click **Exit** on the File Menu or click **Exit** on the panel.

➡ **Install the Keithley Memory Manager.**
If you need help during this procedure, refer to Appendix B of your *DAS-Scan User's Guide*.

1. *If you are using Windows 3.1*:

    –   From the Keithley DAS-Scan program group in the Program Manager, double-click the Memory Manager Setup icon.

    If you are using Windows 95:

    –   From the Windows 95 task bar, click **Start**, point to **Programs** and **Keithley DAS-Scan**, and then click **Memory Manager Setup**.

    The Keithley Memory Manager - Setup panel appears.

2. In the Desired Setting field, enter the amount of memory that your VTX applications will require (the default is 128 KB).

3. Click **Update**.

4. If you changed the default value, click **Restart Windows** to ensure that the changes take effect immediately.

➥ **Verify that the DAS-Scan system and software are working properly.**

If you need help during this procedure, refer to *TestPoint QuickStart*.

1. Make sure that the execution control key is installed in the first parallel port on the back of your computer.

2. *If you are using Windows 3.1*:

   – From the TestPoint window in the program Manager, double-click the TestPoint icon.

   If you are using Windows 95:

   – From the Windows 95 task bar, click **Start**, point to **Programs**, and then click **TestPoint**.

   The TestPoint editor appears, containing the Stock window (in the upper left of the screen), the Objects window (in the lower left of the screen), and the Panel1 window (in the upper right of the screen).

3. Drag a pushbutton object from the Stock window to the Panel1 window.

4. In the Settings tab of the Object "Pushbutton1" window that appears on the lower right of the screen, enter **Acquire** as the name for the pushbutton object. The remaining default values are assumed.

5. Drag an A/D object from the Stock window to the Panel1 window.

6. In Settings tab of the Object "A/D1" window that appears on the lower right of the screen, enter **DAS-Scan Board #0** as the name for the first 256 channels of your DAS-Scan system. The remaining default values are assumed.

7. Drag a graph object from the Stock window to the panel. The default values are assumed.

8. Drag the A/D object **DAS-Scan Board #0** from the Objects window to the Actions tab of the Object "Acquire" window.

9. From the list of actions, click **Acquire A/D**.

10. In the text line, click on the appropriate blank and enter **100** for the number of samples, **10,000** for the rate in hertz, and **0** for the channel.

11. Drag the graph object **Graph1** from the Objects window to the Actions tab of the Object "Acquire" window.

12. From the list of actions, click **Draw graph**.

13. Drag the name of the A/D object **DAS-Scan Board #0** from the first text line to the blank in the second text line.

14. Click **Mode=Edit** on the menu bar to change the menu name to **Mode=Run**.

15. Click **Acquire** in the panel.

    If your DAS-Scan system and the software are working properly, the program displays the data from channel 0 in the graph. If data is not displayed or if an error occurs, refer to Chapter 5 of your *DAS-Scan User's Guide* or to the TestPoint online help. If you cannot resolve the problem, call (508) 880-3000 for technical support.

16. When you are finished, click **Exit** on the File menu.

Now that you've verified that the DAS-Scan system and software are working properly, you can configure the DAS-Scan system and software according to your needs and build your application using TestPoint. Refer to *TestPoint Techniques and Reference* and to the TestPoint online help for detailed information.