

Instructions



DCS1000 Data Collection System

070-9595-01



This document supports firmware version 1.00 and above.

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to the Safety Summary prior to performing service.



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declare under sole responsibility that the

DCS1000

meets the intent of Directive 89/336/EEC for Electromagnetic Compatibility.
Compliance was demonstrated to the following specifications as listed in the Official
Journal of the European Communities:

EMC Directive 89/336/EEC:

EN 55011 Class A Radiated and Conducted Emissions

EN 50081-1 Emissions:

EN 60555-2 AC Power Line Harmonic Emissions

EN 50082-1 Immunity:

IEC 801-2 Electrostatic Discharge Immunity

IEC 801-3 RF Electromagnetic Field Immunity

IEC 801-4 Electrical Fast Transient/Burst Immunity

To ensure compliance with EMC requirements, backplane shields which comply with Rule B.7.45 of the VXibus Specification must be installed in the mainframe on any slots occupied by a VX4570, VX4244, or a VX4780. Additionally, only high quality shielded cables having a reliable, continuous outer shield (braid & foil) which has low impedance connections to shielded connector housings should be connected to modules in this system.

EC Declaration of Conformity

We

Tektronix Holland N.V.
Marktweg 73A
8444 AB Heerenveen
The Netherlands

declare under sole responsibility that the

VX4GBD

meets the intent of Directive 89/336/EEC for Electromagnetic Compatibility, and Low Voltage Directive 73/23/EEC for Product Safety. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities:

EMC Directive 89/336/EEC:

EN 55011 Class A Radiated and Conducted Emissions

EN 50081-1 Emissions:

EN 60555-2 AC Power Line Harmonic Emissions

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IEC 801-3 RF Electromagnetic Field Immunity

IEC 801-4 Electrical Fast Transient/Burst Immunity

IEC 801-5 Power Line Surge Immunity

Low Voltage Directive 73/23/EEC:

EN 61010-1 Safety requirements for electrical equipment for
measurement, control, and laboratory use

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General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

To avoid potential hazards, use this product only as specified.

Only qualified personnel should perform service procedures.

While using this product, you may need to access other parts of the system. Read the *General Safety Summary* in other system manuals for warnings and cautions related to operating the system.

Injury Precautions

Use Proper Power Cord. To avoid fire hazard, use only the power cords specified for this product.

Avoid Electric Overload. To avoid electric shock or fire hazard, do not apply a voltage to a terminal that is outside the range specified for that terminal.

Avoid Overvoltage. To avoid electric shock or fire hazard, do not apply potential to any terminal, including the common terminal, that varies from ground by more than the maximum rating for that terminal.

Avoid Electric Shock. To avoid injury or loss of life, do not connect or disconnect probes or test leads while they are connected to a voltage source.

Ground the Product. This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Do Not Operate Without Covers. To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.

Use Proper Fuse. To avoid fire hazard, use only the fuse type and rating specified for this product.

Do Not Operate in Wet/Damp Conditions. To avoid electric shock, do not operate this product in wet or damp conditions.

Do Not Operate in an Explosive Atmosphere. To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Product Damage Precautions

Use Proper Power Source. Do not operate this product from a power source that applies more than the voltage specified.

Provide Proper Ventilation. To prevent product overheating, provide proper ventilation.

Do Not Operate With Suspected Failures. If you suspect there is damage to this product, have it inspected by qualified service personnel.

Symbols and Terms

Terms in this Manual. These terms may appear in this manual:



WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.



CAUTION. Caution statements identify conditions or practices that could result in damage to this product or other property.

Terms on the Product. These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

Symbols on the Product. The following symbols may appear on the product:



DANGER
High Voltage



Protective Ground
(Earth) Terminal



ATTENTION
Refer to Manual



Double
Insulated

Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

Do Not Service Alone. Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power. To avoid electric shock, disconnect the main power by means of the power cord or, if provided, the power switch.

Use Care When Servicing With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

System Components

The Tektronix DCS1000 Data Collection System is a family of instruments and software designed to work together.

Component Descriptions

Components of the DCS1000 are described below.

- The VX4244 Digitizer Module provides 16 channels of 16-bit differential input, analog-to-digital conversion data, and sampling up to 800 kHz. If the VX4780 is not part of the configuration, the VX4244 uses the VX1746 (input) and the optional VX1658P (I/O) cables.
- The VX4780 Signal Conditioner is a 16-channel signal conditioning module that accepts the signals of sixteen transducers, amplifies and filters the signals. It then outputs the results to the VX4244 Digitizer Module. It uses the VX1744, VX1745 and the optional VX1658P (I/O) cables.
- The VX4570 Mass Storage Controller Module provides an interface between the VXIbus and the mass storage device (SCSI hard drive). The VX4570 will be a VXI Commander; it moves data from its data collector Servants (one or two VX4244 Modules) to shared memory in the VX4570 and then on to the mass storage device. The VX4570 is also the commander of the VX4780 modules associated with the VX4244s under its control.
- The System Management Control Software (SMCS), which runs in a Windows environment, resides on the host controller of the system. *VXIplug&play* drivers are included in the SMCS. The *plug&play* drivers are optimized for operation as part of an overall system, and differ from the individual module drivers. With the SMCS, the user controls the VX4570 as a tool for test scenarios, causing it to program its servants, start an acquisition process, and record data from its servants to disk media.
- The DCS1000 uses a 4 Gbyte (VX4GBD) hard drive with a SCSI-2 cable.
- The mainframe for the DCS1000 can be either the VX1406 6-slot or any VXI mainframe with adequate power and cooling capacity (such as the Tektronix VX1410 or VX1411).
- The MXI2PCI (PCIbus) Slot 0 module uses one slot in the card cage. It allows you to daisy chain multiple card cages.

Refer to the individual component user manuals for more information on individual DCS1000 components.

System Configuration

Component selection and configuration of the DCS1000 depends on your application. There are a number of ways to correctly set up the system. Refer to the following information for set up instructions.

- If your system includes a VX4570 System Controller, it must be installed to the left of any other DCS1000 modules with the exception of the Slot 0 controller.
- The physical location of the VX4570 should be to the left of all servant modules. The logical address of the VX4570 should numerically precede the servants logical addresses. Also, all of the servants must have logical addresses that are incrementally sequential to the VX4570. The logical addresses should increment starting with the module directly to the right of the VX4570 and continue to the right for each servant in the system. For example, if the VX4570 has logical address 02, then the next DCS1000 module must be in the adjacent slot to its right, and must have a logical address of 03, and so on.
- If you have installed a VX4780 Signal Conditioner, the system will pair it with the VX4244 Digitizer with the lowest logical address. Be sure the cabling is correct for this pairing. For example, if your card cage has two VX4244s in slots 2 and 3 with logical addresses 02 and 03, and a VX4780 in slot 4 with logical address 04, the system will assume that the VX4244 in slot 2 is cabled together with the VX4780.
- VX4244 Modules without corresponding VX4780 Modules require the VX1746 (input) cable. The VX1658P (I/O) cable is optional and can be ordered separately. The VX1746 cable is required if two VX4244s and one VX4780 is installed.
- The environmental requirements for the disk drive are lower than what is specified for all other components of the DCS1000. This means that a DCS1000 that includes a drive assembly should be restricted to the drive environmental specifications, shown in the *Specification* section of this manual.

Module Switch Settings

Following the procedures below, configure the DCS1000 modules and install them in the mainframe. The location of the switches are shown in the diagrams associated with each module.

A detailed description of these switches is given in each module user manual.

For All Modules. Set the Logical Address switches for each module. Each function module in a VXibus System must be assigned a unique logical address, from 1 to 255 decimal. The base VMEbus address of the modules are set to

values between 1 and FFh (255d) by two hexadecimal rotary switches. Align the desired switch position with the arrow on the module shield.

To avoid confusion, it is recommended that the slot number and the logical address be the same. The Logical Address of the VX4570 System Controller should numerically precede the DCS1000 servant modules logical addresses. The servant modules must have logical addresses that are incrementally sequential to the VX4570. The logical addresses should increment starting with the module directly to the right of the VX4570 and continue to the right for each servant module.

In order to use and program the DCS1000 modules in an IEEE-488 environment you must know the IEEE-488 address of the module. Different manufacturers of IEEE-488 interface devices might have different algorithms for equating a logical address with an IEEE-488 address. Consult the operating manual of the IEEE-488 Interface module being used.

VX4244 Switches. The VX4244 has Logical Address switches.

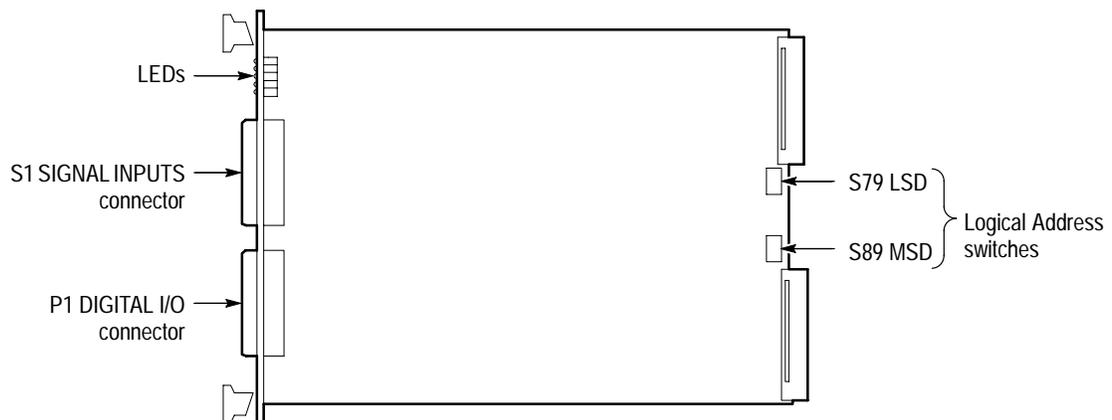


Figure 1: VX4244 Connector, Indicator, and Switch Locations

VX4780 Switches. In addition to the Logical Address switches, the VX4780 also has a Halt switch and an Interrupt Level switch that must be correctly set.

- Halt Switch.

Switch S1481 contains four rockers. Rocker number 1 serves as a Halt Switch. The setting of this switch selects the response of the VX4780 Module when the Reset bit in the module VXibus Control register is set. If the Halt switch is in the closed position, the VX4780 is reset to its power-on state and all programmed module parameters are set to their default values. If the Halt switch is set to the open position, the module will ignore the Reset bit and no action will take place.

Note that the module is not in strict compliance with the VXIbus Specification when the Halt switch is in the open position.

Rockers 2 through 4 on switch S1481 are not used and should be placed in the closed position.

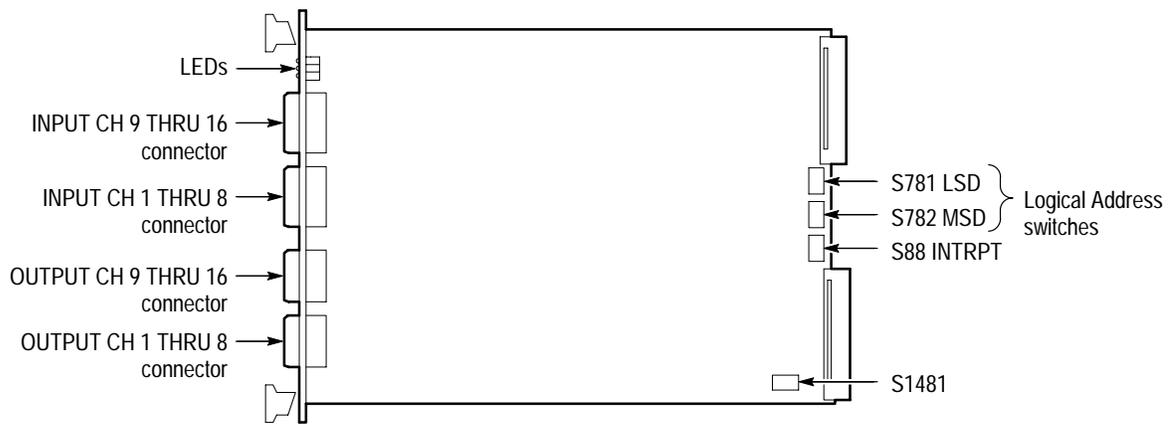


Figure 2: VX4780 Controls and Indicators

- VME Interrupt Level Select Switch.

Each function module in a VXIbus system can generate an interrupt at a specified level on the VMEbus to request service from the interrupt handler located on its commander. Set the interrupt level to the same level as the interrupt handler on that commander. The VMEbus interrupt level on which the VX4780 Signal Conditioner generates interrupts is set by a rotary switch, S88 INTRPT. Align the desired switch position with the arrow on the module shield.

Valid VMEbus Interrupt Level Select switch settings are 1 through 7, with setting one equivalent to level one, and so on. The level chosen should be the same as the level set on the VX4780 interrupt handler, typically the module commander. Setting the switch to 0 or 8 will disable the module interrupts. Do not use switch settings 9 through F.

Interrupts are used by the module to return VXIbus Protocol Events to the module commander. Refer to the *Operating Basics* section of the VX4780 User manual for more information on interrupts. The VXIbus Protocol Events supported by the module are listed in *Appendix A: Specifications* of the user manual.

VX4570 Switches. In addition to the Logical Address switches, the VX4570 also has Configuration switches which must be set. There are two 8-position rocker

switches labeled S1061 and S1071 in the lower rear portion of the board. Refer to Figure 3 for switch locations. The settings for the switches are as listed.

- S1061 rockers 1 and 2 – VMEbus Arbitration Level

These two rockers determine which bus Request level will be used by the VX4570 when it requires use of the VMEbus. The setting, of rockers 1 and 2 for the required Bus Request levels, is shown in Table 1.

Table 1: S1061 Settings

Rocker 1	Rocker 2	Level
Closed (down)	Closed (down)	0
Open (up)	Closed (down)	1
Closed (down)	Open (up)	2
Open (up)	Open (up)	3

- S1061 rocker 3 – Boundary Scan mode

In the closed (down) position the VX4570 is in Boundary Scan mode and will not operate as a VXI instrument. This switch must be in the open (up) position for normal operation of the VX4570

- S1061 rockers 4 through 8 – Unused

- S1071 rockers 1 through 4 – Servant Area Size

These 4 switches select how many data collector servants will be granted to the VX4570 when the VXI Resource Manager configures the system hierarchy. These four switches use binary values. Rocker 1 is the LS bit and rocker 4 is the MS bit. For a servant area size of 2, the switches would be set as shown in Table 2.

Table 2: S1071 Settings

Rocker	Position
1	closed (down)
2	open (up)
3	closed (down)
4	closed (down)

For this switch, up = 1 and down = 0.

- S1071 rockers 5 through 8 – Unused

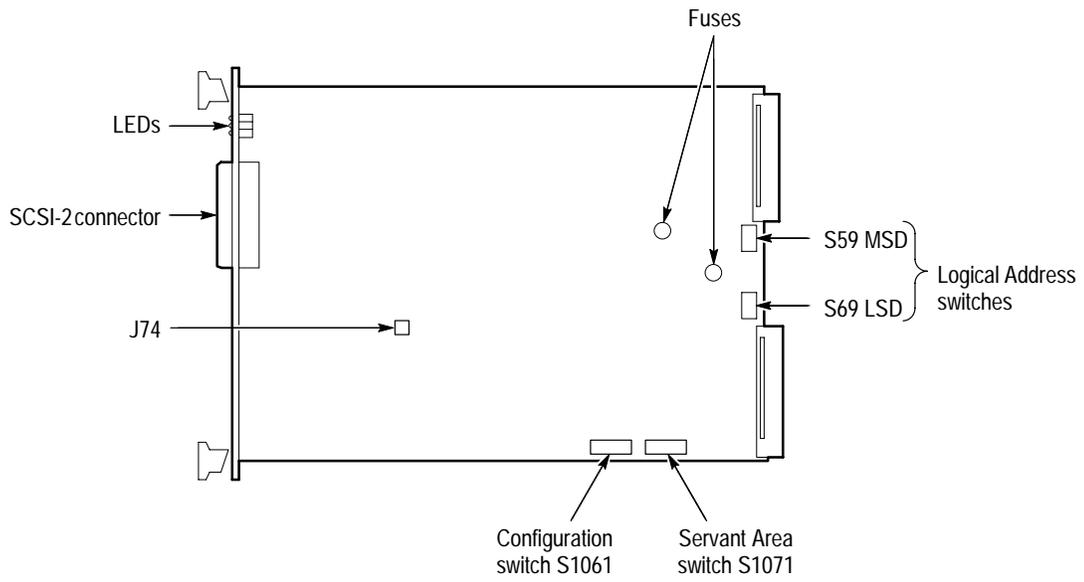


Figure 3: VX4570 Controls and Indicators

System Configuration Examples

A basic DCS1000 might consist of the following, as shown in the Figure 4. (Note that the slot numbers do not actually appear on the card cage. They are shown here for illustrative purposes.)

- VX1406 6-slot card cage
- MXI2PCI Slot 0 module
- VX4570 Mass Storage Controller
- one VX4244 Digitizer
- VX4780 Signal Conditioner
- VX1744 and VX1745 cables
- VX4GBD hard drive

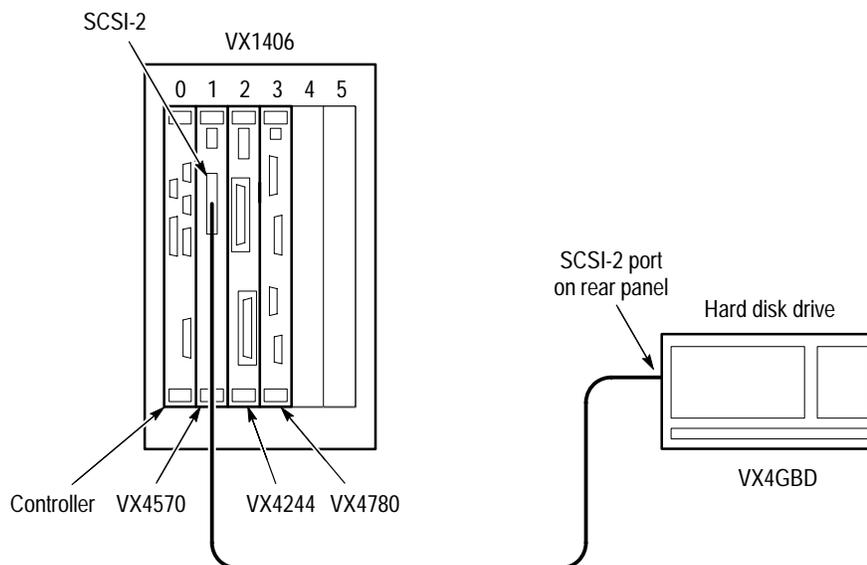


Figure 4: Basic DCS1000

To increase the capability of the system, you can add any or all of the following:

- an additional VX4244 Digitizer and a VX4780 Signal Conditioner
- VX1744 and VX1745 cables
- a larger card cage such as 13-slot Tektronix VX1410 or VX1411

A more complex system, like the example shown in Figure 5, might consist of the following:

- VX1410 13-slot Card Cage
- MXI2PCI Slot 0 module
- VX4570 Mass Storage Controller with SMCS software and SCSI drive
- 4 Gbyte drive
- two VX4244 Digitizers
- two VX4780 Signal Conditioners
- Interconnect cables: VX1745 and VX1744.

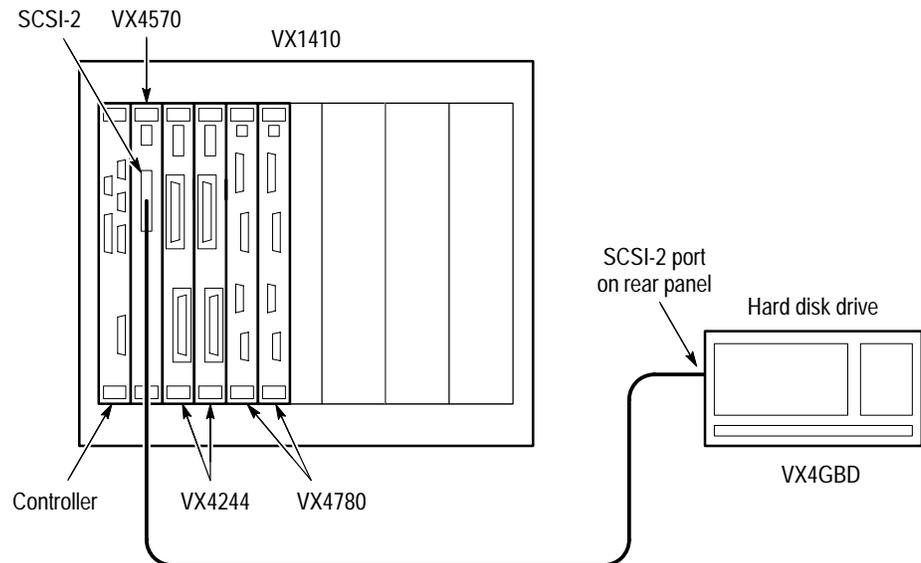


Figure 5: Complex DCS1000

Note that with this configuration, the VX4244 Digitizer in slot 2 with logical address 02 is paired by the SMCS software with the VX4780 Signal Conditioner in slot 4 with logical address 04. The VX4244 Digitizer in slot 3 with logical address 03 is paired with the VX4780 Signal Conditioner in slot 5 with logical address 05. The cabling must reflect this pairing.

Installation

This section describes how to install the VXIbus modules, explains cable requirements, and provides installation checklists to record necessary information.

Tools Required

A slotted screwdriver set is required for proper installation.

Requirements and Cautions

The DCS1000 modules are C-size VXIbus instrument modules and therefore may be installed in any C- or D-size VXIbus mainframe slot other than Slot 0. To install the module in a D-size mainframe, consult the Operating manual for the mainframe. Refer to *Configuration* for information on selecting and setting the Logical Address switch of the module. This switch defines the programming address of your module. To avoid confusion, it is recommended that the slot number and the logical address be the same.

NOTE. *There are two printed ejector handles on each card. To avoid installing a card incorrectly, make sure the ejector marked with the model number is at the top.*



CAUTION. *Overheating can damage electronic components. Verify that the mainframe is able to provide adequate cooling and power with all the modules installed. Refer to the mainframe Operating manual for instructions.*

If the DCS1000 is used in a Tektronix mainframe, all DCS1000 cooling requirements are met.

NOTE. *If any of the modules are inserted in a slot with any empty slots to the left of the module, the VME daisy chain jumpers must be installed on the backplane in order for the VXI Module to operate properly. Check the manual of the mainframe being used for jumpering instructions. Jumpers are not necessary for autoconfiguring backplane designs.*

EMI Configurations

To ensure compliance with EMC requirements, backplane shields which comply with Rule B.7.45 of the VXibus Specification must be installed in the mainframe on any slots occupied by a VX4570, VX4244, or a VX4780. To order EMI shields, refer to the *Replaceable Parts List* in this manual.

Perform the following steps to install the EMI shields.

1. Determine the slot connectors where you want to install the shields.
2. Install the shields over each backplane connector as shown in Figure 6.
3. Mount each shield in place using the two 4-20 thread forming screws that are provided.
4. Install the DCS1000 Modules. Refer to *Module Installation* in this section.

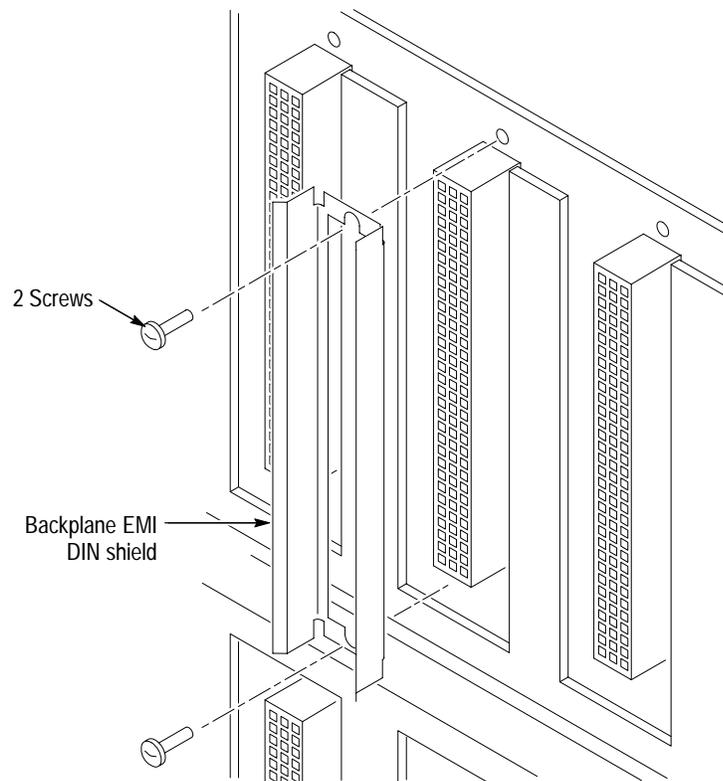


Figure 6: Installing the backplane EMI DIN Shields

5. Install a blank EMI front panel for each empty slot making sure that the EMI shielding is in contact with the adjacent front panel.

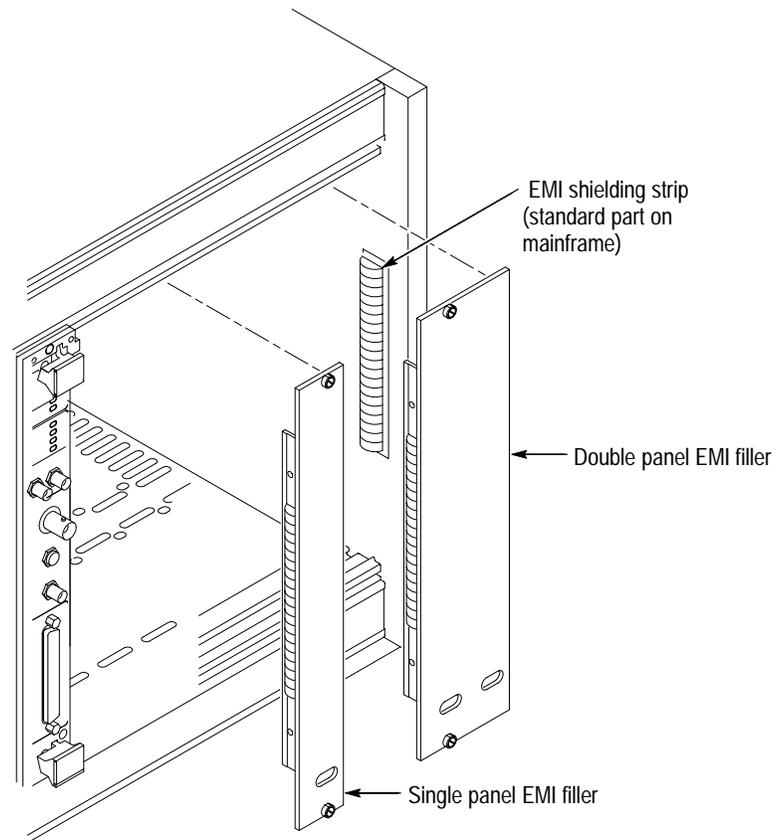


Figure 7: Installing the EMI front panel EMI fillers

Module Installation

Refer to the following steps for module installation:

1. For each module, record the revision level, serial number (located on the label on the shield of the module), and switch settings on the appropriate *Installation Checklists*. (The *Installation Checklists*, for the VX4780, VX4244 and VX4750, are included in the *System Components* section of this manual.)
2. Verify that the switches are set to the correct values. Refer to *System Configuration* for more information on setting switches.
3. Make sure that the mainframe power is off.
4. Insert each module into one of the instrument slots of the mainframe with the VX4570 located to the left of any DCS1000 modules (VX4244 or VX4780).

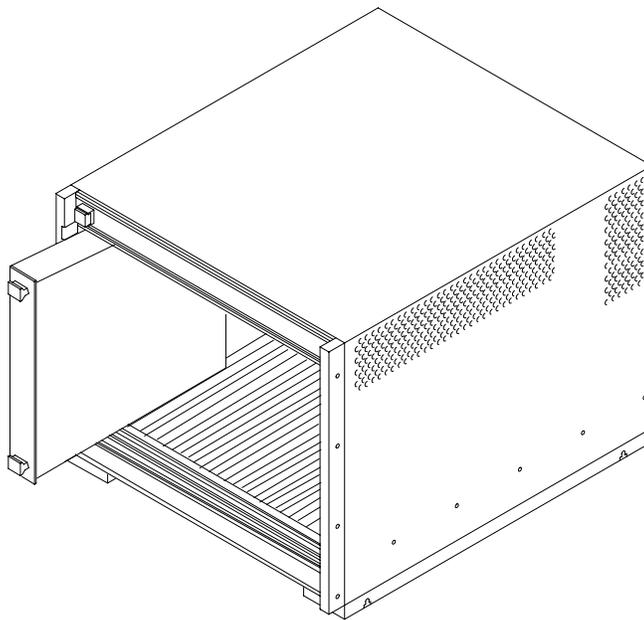


Figure 8: Module Installation

Cable Installation

Cable requirements for the DCS1000 system are determined by the system configuration. Figure 9 shows the DCS1000 modules with interconnecting cables. The possible required cables associated with the DCS1000 system are listed in Table 3.

Table 3: Cable requirements

Configuration	Connection	Cable
VX4244 with a VX4780	DUT to VX4780 input	VX1745
	VX4780 to VX4244	VX1744
	VX4570 to SCSI hard drive assembly	SCSI-2
	VX4244 IO (optional external ARM, TRIG, and CLK)	VX1658P
VX4244 without a VX4780	DUT to VX4244 inputs	VX1746
	VX4570 to SCSI hard drive assembly	SCSI-2
	VX4244 I/O (optional external ARM, TRIG, and CLK)	VX1658P

The VX4780 and VX4244 with the lowest logical addresses are paired by the SMCS software. The cabling must also reflect this pairing.

Refer to the cable documentation for pinouts of the individual cables.

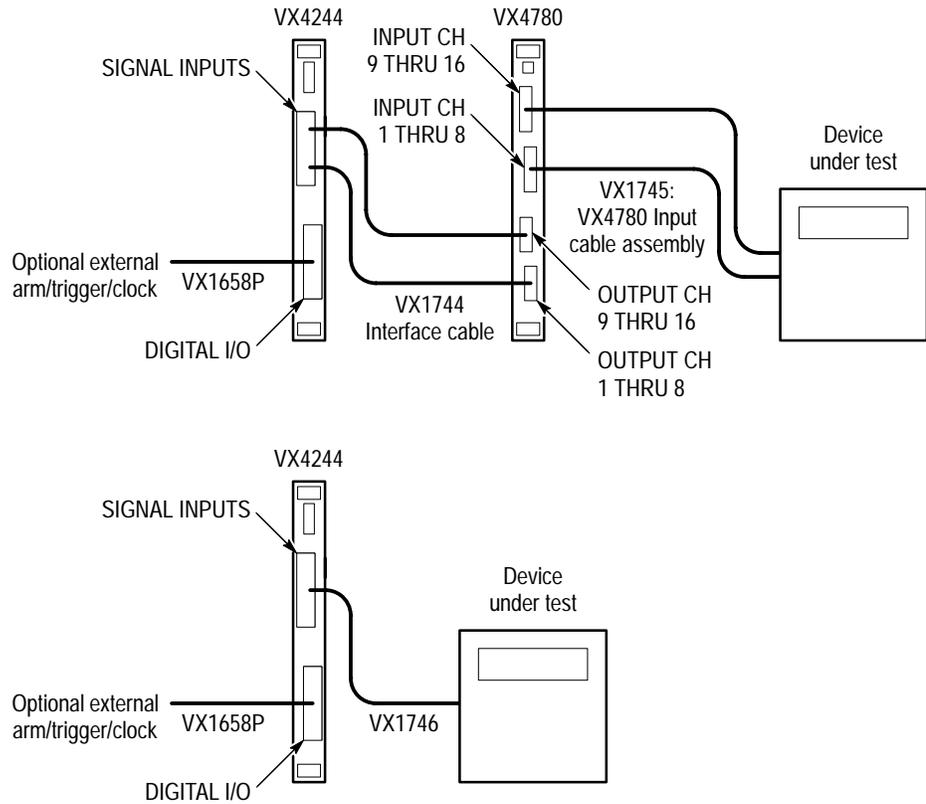


Figure 9: Examples of DCS1000 Cabling

Installation Checklists

Record the revision level, serial number (located on the label on the top shield of the DCS1000 Modules), and switch settings on the Installation Checklists located at the end of this section.

Functional Check

When all the modules have been configured and installed, turn on the card cage power and verify that all the modules pass their built-in self test. On each module, the green POWER LED is on and all others are off when the self test is successfully completed.

If there are any problems, make sure the module switches are correctly set, the cables are correctly installed, and the modules are in the correct order in the card cage.

If problems still persist, contact your Tektronix field office or representative for service assistance. For technical assistance with application questions, please contact the Measurement Business Division Customer Support Center at 800-835-9433 (800 TEK-WIDE), extension 2400.

Refer to the individual User Manual for each instrument for details on their commands and operation.

Hard Drive Installation

Follow these step to install the hard drive:

1. Power off the DCS1000 system and all peripherals before working on the SCSI-bus devices.
2. Set the SCSI ID switch, which is located under the drive enclosure.

Determine the SCSI ID you want to use for the SCSI hard drive used in the DCS1000 system. Valid choices are 0 through 6. When the hard drive is first initialized, the address must be set to 6. The DCS1000 hard drives(4 Gbyte) has a switch, located on the underside of the drive enclosure, to set the SCSI ID. The switch includes a display for the current SCSI ID. Power must be off when changing the SCSI ID. If more than one SCSI drive is used, notice that no two devices can use the same SCSI ID on the same SCSI-bus.

For information on installing more than one SCSI device refer to the Installation manual included with the DCS1000 SCSI hard drive.

3. Connect the SCSI-bus cable to the VX4570 and the hard drive. Install the terminator.

On the VX4570 single ended SCSI-bus, you must have a terminator placed at each physical end of the bus. The external terminator should be attached into the remaining plug, after the SCSI-2 cable is connected, on the back of the SCSI hard drive cabinet. The SCSI-2 cable provided with the DCS1000 hard drive is 1 meter in length. The total length of the SCSI-bus should never exceed 6 meters.

NOTE. Enclosure fan clearance for the VX4GBD requires 2 inches minimum space on all sides.

4. Apply power to the hard drive. Wait at least 20 seconds for the hard drive to begin operation.
5. Apply power to the DCS1000 system and any peripherals. Pay attention to the power on process to see that there are no errors.

Initializing Initialization of the new SCSI hard drive in the DCS1000 system can be accomplished by either running the SMCS software or executing SCPI commands specific to the VX4570. The new SCSI hard drive address must be set to 6 in order to be initialized.

SMCS Method. Perform the following steps to initialize using the SMCS software.

1. Execute VXIinit and Resman.
2. Execute the SMCS *plug&play* front panel.
3. On the first screen, choose Utilities, then choose Talk/Listen.
4. On the Talk/Listen screen, type MMEM:INIT in the Command to Send field. (This command is described in Table 4.)
5. Choose Send.
6. Type MMEM:MSIS in the Command to Send field. (This command is described in Table 4.)
7. Choose Send.
8. Choose OK to return to the first SMCS screen.

VX4570 Method. Execute the two VX4570 commands shown in Table 4 to recognize and initialize the SCSI hard drive. The INITialize command must be executed first.

Table 4: Initialization commands

Commands	Description
MMEMory:INITialize	The "INITialize" command initializes (formats) the specified mass storage media. If the <msus> parameter is not specified, the default is used. The default is the <msus> selected at *RST, not the currently selected <msus>. Any previous data on the media is destroyed when the media is initialized.
MMEMory:MSIS[<msus>]	The "Mass Storage IS" command selects a default mass storage device which is used by all MMEMory commands except INITialize. If the parameter is omitted, the device dependent setting for default mass storage device is selected.

Troubleshooting

If the DCS1000 system is unable to recognize the SCSI hard drive or you have errors reading from or writing to it, you may have a SCSI-bus problem.

SCSI bus errors. The following are common SCSI bus errors:

- The hard drive was not initialized prior to start-up. Set the SCSI hard drive to an address of 6. Refer to *Initializing* on page 16 of this manual for more information.
- Total physical length of the bus cable exceeds 6 meters. Use a shorter connecting cable.
- Conflicting SCSI ID on two devices. Choose a SCSI hard drive ID numbered 0 through 6. The VX4570 uses an address of number 7.
- Power on was initiated incorrectly. Apply power again using the correct sequence described on page 15 of this manual.



CAUTION. To avoid damage to the SCSI devices and the DCS1000 system, do not make SCSI bus connections when system components are powered on.

- Cable connection is incorrect or cable needs to be replaced. Replace cables or remove some devices from the SCSI bus before initializing.

VX4570 hard drive installation errors. The following are common hard drive errors:

- The hard drive was not installed correctly. Refer to *Hard Drive Installation* on page 15 of this manual for more information.
- Refer to the *Command* section of the VX4570 User manual for possible command errors.

SMCS Installation

The DCS1000 system can be configured and controlled using the System Management Control Software (SMCS). The SMCS software is included with the VX4570 Mass Storage Controller module. The SMCS VXI*plug&play* drivers require the VISA Transition Library (VISA.dll) to be resident in the \WINDOWS\SYSTEM directory on the system controller.

Listed below are steps to install the SMCS VXI*plug&play* support:

1. Start Microsoft Windows.
2. Insert the disk in drive A:.

3. From Program Manager select File Menu and choose Run.
4. Type A:\SETUP and press ENTER.

The DCS1000 instruments are required in order to fully operate the soft front panel.

SMCS Initialization

Use the following procedure to initialize the SMCS:

1. Power on the hard drive. Wait 15 seconds, then power on the DCS1000 system.
2. Execute VXIinit and Resman. Start the SMCS program. The SMCS screen will be displayed. The system Configuration field lists all of the currently loaded DCS1000 modules (VX4570, VX4244, and VX4780). The SCSI hard drive will not appear here. If you have not initialized the hard drive, do so now. (See *Hard Drive Installation*.)

3. Choose Begin.

The Configure Digitizer screen will appear. Configuration screens for Signal Conditioning and Triggering are accessible from buttons at the bottom of the Digitizer screen.

NOTE. *If there are two digitizers in the system there will be two consecutive digitizer screens. The first digitizer screen will include input channels 1–16. The second digitizer screen will include input channels 17–32.*

4. Choose Next (bottom right side of screen).

The Configure Mass Storage Controller screen will appear. The SMCS finds the initialized Mass Storage Hard drive with the largest address. The SCSI hard drive address will be displayed in the Storage Device field. This screen also provides a field to input the file name where data will be stored, and the ability to clear any previously stored data.

5. Choose OK.

The Arm screen will appear. The Arm can be triggered immediately or from an external signal input. When the Arm is triggered the SMCS screen will appear and the data acquisition will begin.

VX4244 Installation Checklist

Installation parameters will vary depending on the mainframe being used. Be sure to consult the mainframe Instruction manual before installing and operating the module.

Revision Level: _____

Serial No.: _____

Mainframe Slot Number: _____

Switch Settings:

VXIbus Logical Address Switch: _____
(FFh enables dynamic configuration.)

Interrupt Level Select: Dynamically programmed by the Resource Manager.

Cables Installed: (if any)

Performed by: _____ Date: _____

VX4780 Installation Checklist

Installation parameters will vary depending on the mainframe being used. Be sure to consult the mainframe Instruction manual before installing and operating the module.

Revision Level: _____

Serial No.: _____

Mainframe Slot Number: _____

Switch Settings: _____

VXibus Logical Address Switch: _____

Interrupt Level Select Switch: _____

Halt Switch: _____

Cables Installed (if any):

Performed by: _____ Date: _____

VX4570 Installation Checklist

Installation parameters will vary depending on the mainframe being used. Be sure to consult the mainframe Instruction manual before installing and operating the module.

Revision Level: _____

Serial No.: _____

Mainframe Slot Number: _____

Switch Settings:

VXibus Logical Address Switch: _____

Configuration Switches: _____

S1061 VMEbus Arbitration Level:

Rocker 1: _____

Rocker 2: _____

Rocker 3: _____

(Rockers 4-8 unused)

S1071 Servant Area Size:

Rocker 1: _____

Rocker 2: _____

Rocker 3: _____

Rocker 4: _____

(Rockers 5-8 unused)

Cables Installed (if any):

Performed by: _____ Date: _____

VX4GBD Specifications

This section contains specifications that apply to the VX4GBD only.

Table 5: VX4GBD Specifications

Characteristic	Description								
Power Requirements:									
Voltage	96 – 250 VAC, CAT II								
Frequency	50 – 60 Hz								
Maximum Power	60 W (40 W, typical)								
Temperature Range:									
Operating	5° C to 55° C								
Nonoperating	-40° C to 70° C								
Maximum Shock:									
Operating (read/write)	10 g								
Nonoperating	60 g								
Maximum Altitude	2000 m (6500 ft)								
Required Clearance for Cooling	2 inch (50.8 mm) minimum								
Pollution Degree	Degree 2								
Dimensions, Shipping	12 in × 9 in × 5.5 in								
Equipment Supplied	SCSI-2 cable Tektronix part number 012-1465-00								
Certifications	UL, CUL								
Overvoltage Category Description	<table> <tr> <td>Category:</td> <td>Examples of Products in this Category:</td> </tr> <tr> <td>CAT III</td> <td>Distributed-level mains, fixed installation</td> </tr> <tr> <td>CAT II</td> <td>Local-level mains, appliances, portable equipment</td> </tr> <tr> <td>CAT I</td> <td>Signal levels in special equipment or parts of equipment, telecommunications, electronics</td> </tr> </table>	Category:	Examples of Products in this Category:	CAT III	Distributed-level mains, fixed installation	CAT II	Local-level mains, appliances, portable equipment	CAT I	Signal levels in special equipment or parts of equipment, telecommunications, electronics
Category:	Examples of Products in this Category:								
CAT III	Distributed-level mains, fixed installation								
CAT II	Local-level mains, appliances, portable equipment								
CAT I	Signal levels in special equipment or parts of equipment, telecommunications, electronics								

VX4GBD General Care and Cleaning

General Care

Protect the VX4GBD from adverse weather conditions. The hard drive is not waterproof.



CAUTION. To avoid damage to the hard drive, do not expose it to sprays, liquids, or solvents.

Cleaning

Inspect the hard drive as often as operating conditions require. To clean the hard drive exterior, perform the following steps:

1. Remove loose dust on the outside of the hard drive with a lint-free cloth.
2. Use a soft cloth or paper towel dampened with water to clean the hard drive. You can use a 75% isopropyl alcohol solution for more efficient cleaning.



CAUTION. To avoid damage to the surface of the hard drive, do not use any abrasive or chemical cleaning agents.

Replaceable Parts

This section contains a list of the replaceable modules for the DCS1000 Data Collection System. Use this list to identify and order replacement parts.

Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order.

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

Module Servicing

Modules can be serviced by selecting one of the following three options. Contact your local Tektronix service center or representative for repair assistance.

Module Exchange. In some cases you may exchange your module for a remanufactured module (product dependent). These modules cost significantly less than new modules and meet the same factory specifications. For more information about the module exchange program, call 1-800-TEK-WIDE, extension 6630.

Module Repair and Return. You may ship your module to us for repair, after which we will return it to you.

New Modules. You may purchase replacement modules in the same way as other replacement parts.

Using the Replaceable Parts List

This section contains a list of the mechanical and/or electrical components that are replaceable for the DCS1000 Data Collection System. Use this list to identify and order replacement parts. The following table describes each column in the parts list.

Parts List Column Descriptions

Column	Column Name	Description
1	Figure & Index Number	Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.
2	Tektronix Part Number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial Number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entries indicates the part is good for all serial numbers.
5	Qty	This indicates the quantity of parts used.
6	Name & Description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
7	Mfr. Code	This indicates the code of the actual manufacturer of the part.
8	Mfr. Part Number	This indicates the actual manufacturer's or vendor's part number.

Abbreviations Abbreviations conform to American National Standard ANSI Y1.1-1972.

Mfr. Code to Manufacturer Cross Index The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

Manufacturers Cross Index

Mfr. Code	Manufacturer	Address	City, State, Zip Code
00779	AMP INC.	CUSTOMER SERVICE DEPT PO BOX 3608	HARRISBURG, PA 17105-3608
61857	SAN-O INDUSTRIAL CORP	91-3 COLIN DRIVE	HOLBROOK, NY 11741
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON, OR 97077-0001
TK1547	MOORE ELECTRONICS INC	19500 SW 90TH CT PO BOX 1030	TUALATIN, OR 97062
OJ9P4	DELTA ENGINEERING & MFG. CO.	19500 SW TETON	TUALATIN, OR 97062
OKB01	STAUFFER SUPPLY CO	810 SE SHERMAN	PORTLAND, OR 97214-4657
TK1943	NEILSEN MANUFACTURING INC	3501 PORTLAND RD NE	SALEM, OR 97303

Replaceable Parts

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description	Mfr. Code	Mfr. Part Number
	012-1465-00			1	CABLE,INTCON:SHLD CMPST,SCSI I TO SCSI IIB,25,28 AWG,TW PR,2.0 METER	00779	750342-5
	061-4090-00			1	DATA SHEET:READ ME FIRST PAGE	80009	061-4090-00
	070-9595-00			1	MANUAL TECH:INSTRUCTIONS,DCS1000 DATA COLLECTION SYSTEM COMPONENTS	80009	070-9595-00
	159-0191-00			1	FUSE,CARTRIDGE:250V (FOR HARD DISK ENCLOSURE)	61857	22 02 000
	337-4057-00				SHIELD,EMI:DIN (ORDER 2 PER EACH MODULE)	OJ9P4	337-4057-00
	211-0909-00				SCREW,TAPPING:4-20 X 0.250 LONG (ORDER 4 PER EACH MODULE)	OKB01	211-0909-00
	333-4092-00				FRONT,PANEL:EMI SINGLE-WIDE FILLER	TK1943	333-4092-00
	333-4092-01				PANEL,FRONT:EMI DOUBLE-WIDE FILLER	TK1943	333-4092-01
	VX1746			1	CABLE:SHLD CMPST,VX4244,CRC,16 TWPR,5 METER		
	VX1658P			1	CABLE ASSY: SP ELEC SHLD TWPR VX4244 DIGITAL/I/O 22AWG 3FT 50 POS DSUB MALE		