

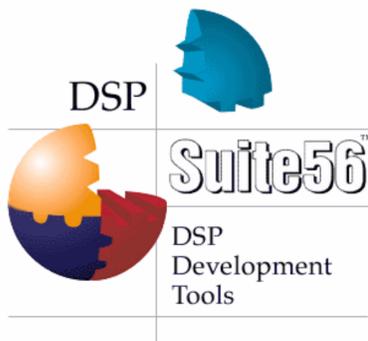


Freescale Semiconductor, Inc.

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Suite56™ Command Converter Server User's Guide

S56CCSERVER/D
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About This Book

This User Guide describes the features of the Suite56™ Command Converter Server software and gives step by step instructions on how to use it.

Audience

This manual is intended for software developers, application developers, or hardware developers who are evaluating Motorola DSP products.

Organization

This manual is organized into the following chapters:

- Section 1.0, “Introduction,” describes the features of the Suite56 Command Converter Server software.
- Section 2.0, “Getting Started,” explains how to start and configure the Suite56 Command Converter Server software.
- Section 3.0, “Remote Use,” explains how to connect remotely and debug DSP applications using the Suite56 Command Converter Server software.
- Section 4.0, “Troubleshooting,” describes what to do if issues should arise.

Suggested Reading

Refer to the following documentation for further information:

Suite56™ Application Development System (ADS) Debugger User Manual, (DSPADSUM/D)

Definitions, Acronyms, and Abbreviations

The following list defines the acronyms and abbreviations used in this document:

Ethernet	Local area networks using the IEEE Ethernet specification.
EVM	Acronym for Evaluation Module. A target device used in the development of software.
ADM	Acronym for Application Development Module. A target device used in the development of software.
JTAG	Acronym for Joint Test Action Group. IEEE specification for a serial interface used for debugging integrated circuits.
TCP/IP	Communication protocol, typically found on Ethernet networks.
CCS	Acronym for Command Converter Server. Software necessary for a server when used with remote debugging of target systems.

References

The following sources were referenced to produce this book:

- [1] Suite56™ Ethernet Command Converter User's Manual, 6/1999
- [2] Suite56™ Parallel Port Command Converter User's Manual, 6/1999
- [3] Suite56™ PCI Command Converter User's Manual, 6/1999
- [4] Suite56™ Application Development System (ADS) Debugger User Manual, 7/1999
- [5] TCL/Tk 8.2 Manual Pages, found on the World Wide Web at <http://www.scrip-tics.com>

1.0 Introduction

The Suite56™ Command Converter Server is supplementary software for the DSP Development Tools Suite, used to help facilitate the designing of real-time signal processing systems. It allows multiple users to develop software from any location via a network connection to a server that is connected to a target system, an Application Development Module (ADM), or an Evaluation Module (EVM) via a Suite56 Command Converter. By providing a more flexible working environment, the Command Converter Server gives application developers greater freedom and versatility with their software development process.

Figure 1 shows examples of remote connections between a debug host and a target system using various Suite56 Command Converters.

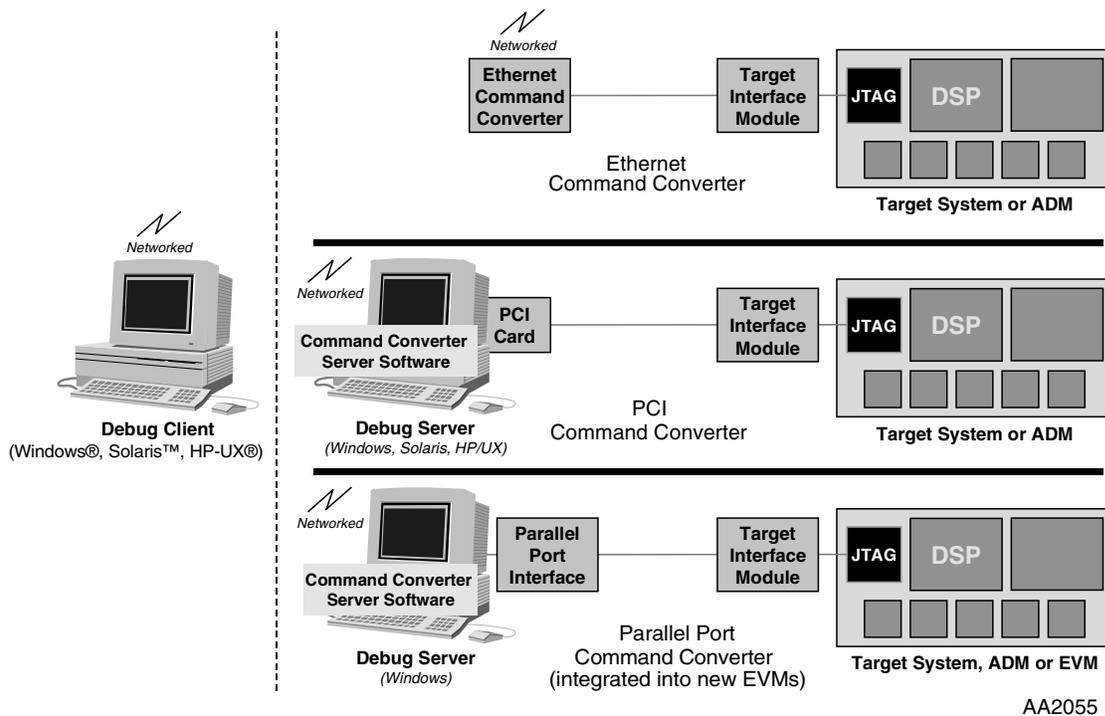


Figure 1. Remote Host Target Connection

NOTE:

For more information on target systems, refer to the *Suite56 Application Development System (ADS) Debugger User Manual* from the Motorola Suite56 Software Development Tools CD or the DSP Tools web site on the World Wide Web at the following web address:

<http://www.motorola.com/SPS/DSP/tools/documentation>

1.1 Features

The Suite56 Command Converter Server includes the following features:

- Supports up to 5 users connected at one time
- Supports Tcl version 8.2 software
- Supports server-to-server connections
- Supports one command converter at a time
- Supports the most current version of Suite56 DSP Software Development Tools

1.2 Configuring the Operating Environment

The Suite56 Command Converter Server is supported on the following platforms:

- Windows® PC
- Hewlett Packard Workstations
- Sun™ SPARCstation™ system
- Sun Ultra Workstations

1.3 Hardware Requirements

The minimum hardware requirements for using the Suite56 DSP Software Development Tools include the following:

- 32 Mbytes of RAM
- Hard drive with 50 Mbytes of free space
- Mouse and keyboard

1.3.1 Server Operating Environment

The minimum hardware requirements for the server, if you are planning to debug remotely, include all the requirements necessary for the command converter currently attached to the target device and the following items:

- 32 Mbytes of RAM
- Hard drive with 5 Mbytes of free space
- Keyboard
- TCP/IP connection

For the requirements of the command converter, please refer to the applicable command converter user's manual for specific information.

1.4 Software Requirements

The minimum software requirements for using the Suite56 Command Converter Server are included in the following sections.

1.4.1 Windows® PC Requirements

The specific requirements for using the Suite56 Command Converter Server with the Motorola DSP Suite56 Software Development Tools Debugger on a Windows PC include the following:

- Windows PC (Pentium® class processor, or higher)
- Windows® 95, Windows® 98, or Windows NT® 4.0 operating system with Service Pack 3 or higher

1.4.2 Hewlett Packard Workstation Requirements

The specific requirements for using the Suite56 Command Converter Server with the Motorola DSP Suite56 Software Development Tools Debugger on a Hewlett Packard Workstation include the following:

- HP® Workstation running HP-UX® version 9.xx or 10.20 (or higher)

1.4.3 Sun SPARCstation Requirements

The specific requirements for using the Suite56 Command Converter Server with the Motorola DSP Suite56 Software Development Tools Debugger on a Sun SPARCstation include the following:

- Solaris Operating Environment™ software release 2.5.1 (or higher), or SunOS 4.1.3 (or higher)

1.4.4 Sun Ultra™ Workstation Requirements

The specific requirements for using the Motorola DSP Suite56 Software Development Tools Debugger on a Sun Ultra™ workstation include the following:

- Solaris Operating Environment software release 2.5.1 (or higher),

2.0 Getting Started

Before you begin, you will need to have the following prerequisites:

- Remote host computer system that meets client requirements
- A computer that meets the Suite56 Command Converter Server requirements
- The most current version of the Suite56 Application Development System (ADS) Debugger software installed on either the remote host or the server
- Suite56 Command Converter connected to the server and to a target device (See Figure 1.)

For more information on target systems, command converters, or the ADS Debugger, refer to the *Suite56 Application Development System (ADS) Debugger User's Manual*, the applicable command converter user's manual, or the applicable EVM or ADM User's Manual from the Motorola Suite56 Software Development Tools CD or the DSP Tools web site on the World Wide Web at the following web address:

<http://www.motorola.com/SPS/DSP/tools/documentation>

Once you have obtained the Suite56 Command Converter Server and the ADS Debugging software, the first time you use them we recommend you perform the following tasks in this order:

1. From the CCS command line on the server, configure your settings and save them.
2. Verify settings by quitting the command line, restarting, and then checking them.

2.1 Starting the Server

To start the Suite56 Command Converter Server, perform the following steps:

For all users:

- In the command window type **ccs** and press **ENTER**.
You can now configure your settings.

2.2 Configuring the Settings

After you download the Suite56 Command Converter Server, you must configure your settings before you can run any debug software.

2.2.1 Specifying a Command Converter

To specify a command converter for Windows:

- The Suite56 Command Converter Server defaults to work with a parallel port command converter connected on LPT1. To change command converter, type the following at the prompt:

```
config cc [cc]
```

where [cc] can be parallel:<LPT#>, ethernet:<IP or hostname>, server:<IP or hostname>, or pci. For an example, see Figure 2.

```

C:\TEMP\ccs\ccs.exe
Motorola Suite56 Command Converter Server 8-20-99 ver. 1.0
Copyright 1999

Loading Default Configuration...

Suite56 CCS> config cc pci
PCI Plug and Play Command Converter

Suite56 CCS>

```

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Figure 2. Specifying a Command Converter

To specify a command converter for Unix:

- The Suite56 Command Converter Server has no defaults in Unix so you will have to configure it to either the Suite56 PCI or Suite56 Ethernet Command Converter. To set the command converter, type the following at the prompt:

```
config cc [cc]
```

where [cc] can be pci, ethernet:<IP or hostname>, or server:<IP or hostname>

2.2.2 Specifying a Port

For all operating systems, the Suite56 Command Converter Server port defaults to 41475. The user must specify a port if they wish to run more than one server on the same machine. There can be only one server per port, so if a user wishes to run more than one server, then they will have to specify a different port from the currently running server(s). For example, a user wishes to use a PCI command converter and a parallel port command converter on the same machine. The user can start the server configured for the PCI command converter and listen on port 22222, while another server could be configured for the parallel port command converter and listen on port 11111. In order for the Suite56 Debuggers to connect, the user must specify the port when the debugger is started. For example, if one was to connect the PCI command converter in the previous example, they would execute the debugger this way.

```
ads56xxx -d server:machine.with.pci:22222
```

To change the port number, type the following at the prompt:

```
ccs -c [new port number]
```

where [new port number] can be any five numbers less than or equal to 65535. For Unix only, the port number must be above 1500. To verify your current port number, refer to Section 2.2.4, “Verifying Settings.”

2.2.3 Saving Your Settings

For all operating systems, once you have configured your settings, you can save them in a file so they will automatically default on start up. To do this, type the following at the prompt:

```
config save
```

The current settings are then saved into a file called ccs.cfg.

2.2.4 Verifying Settings

To make sure the Suite56 Command Converter Server is configured correctly, check the command converter setting and the port setting by performing the steps listed below.

The process of verifying settings is the same on all operating systems.

1. Start the Suite56 Command Converter Server (refer to Section 2.1, “Starting the Server,”) and type the following at the command line:

show cc

The Suite56 Command Converter Server will list the current active command converter. To change this setting, refer to Section 2.2.1, “Specifying a Command Converter.”

2. To verify the port setting, type the following at the command line:

show port

The Suite56 Command Converter Server will show the active port. To change this setting, refer to Section 2.2.2, “Specifying a Port.”

3.0 Remote Use

Now that the Suite56 Command Converter Server is configured on the server, you can access the target device remotely and start debugging.

3.1 Debugging

To begin debugging for all operating systems:

1. From a command line, go to the directory where the Suite56 Command Converter Server is installed and type the following:

```
ccs
```

The `ccs` command starts the Suite56 Command Converter Server and loads the saved configurations. You are now ready to run the Debugger. The Suite56 Command Converter Server works with the most current release of Suite56 DSP Software Development Tools.

2. To start the text debugger, type the following at the command line:

```
ads56[xxx] -d server:<IP or hostname>
```

To start the graphic debugger, type the following at the command line:

```
gds56[xxx] -d server:<IP or hostname>
```

where [xxx] is the DSP family you are working with and [IP or host name] is the IP address or host name of the server. For example, if you were working with the DSP56300 family, you would type the following to start debugging with the text debugger:

```
ads56300 -d server:localhost
```

NOTE:

If the Debugger software and the Suite56 Command Converter Server software are running on the same machine, you may use **localhost** for <hostname>.

For more information, please refer to the *Suite56 Application Development System (ADS) Debugger User's Manual*.

3.2 Using Tcl Scripts

One of the most useful features of the Suite56 Command Converter Server is remote support of Tcl scripts. Basically, the Suite56 Command Converter Server is capable of doing anything Tcl can do, giving it incredible diversity. Run a Tcl script by performing the following steps:

1. Save the Tcl script in the same directory where the `ccs.exe` file is located
2. Type the following at the prompt:

```
ccs [file name]
```

where [file name] is the name of the Tcl script.

For more information on Tcl, please refer to the Scriptics web site on the World Wide Web at <http://www.scriptics.com>.

4.0 Troubleshooting

Before contacting Technical Support, verify the following:

- Check all cable connections and verify they are secure.
- Verify you are using the correct IP address.
- Verify your network is running by pinging a known IP address on your command line. Type **ping**, and the IP address at the command line. If there is no response, there is a problem with your network. Contact a system administrator for assistance.
- If you get the error message “unable to connect” when attempting to run the debugger while the Suite56 Command Converter Server is running, verify hostname, IP address, or the network.
- If you get an error screen when attempting to run the debugger while the Suite56 Command Converter Server is running, verify your hardware connections to the command converter or the target device are correct and secure.
- If you are using a parallel port command converter, verify you are configuring to the correct parallel port from your machine by performing the following steps:

For Windows NT:

- a) Click on the **Start** button, select **Programs**, select **Administrative Tools**, and select **Windows NT Diagnostics**.
- b) In the **Resources** tab, click on the **I/O Port** button at the bottom of the dialog box.
- c) In the ports listing, check the numbers to the left of the parport. Compare them against LPT numbers listed in Table 1 to verify your current LPT port.

For Windows 95/98:

- a) Click on the **Start** button, select **Control Panel**, double click on the **Systems** icon.
- b) Select the **Device Manager** tab and click on the **ports** icon to view all ports on your computer.
- c) Select the printer port icon and click on the **Properties** button.
- d) Select the **Resources** tab. In the **Settings** box, check the numbers against those in Table 1 to verify your current LPT number.

Table 1. Parallel Port Configuration

LPT Number	Parallel Port
LPT1	0x378
LPT2	0x278
LPT3	0x3BC

NOTE:

If any of the hardware or software connections are not correct, the Command Converter Server will not prompt you with error messages. You will need to have the Debugger software running to receive error messages.

If this does not resolve your issue, continue to Section 4.2, “Technical Support.”

4.1 The Help Command

The Suite56 Command Converter Server has a Help command feature that displays command syntax information and command descriptions. When you type **help** at the command prompt, a list of commands and their descriptions appear. See Figure 3.

```

MS-DOS C:\TEMP\ccs\ccs.exe
Loading Default Configuration...
Suite56 CCS> help

Syntax:
help [show/config/cmdl/quit]
-----

help show      # Display help info for show
help config    # Display help info for config
help cmdl      # Display command line help info.
help quit      # Display quit help info.

Suite56 CCS>
    
```

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Figure 3. General Help Screen

For example, when you type **help show**, a list of **show** commands and their description appears.

```

MS-DOS C:\TEMP\ccs\ccs.exe

Suite56 CCS> help show

Syntax:
show [cc/user/version/port]
-----

show cc        # Show Current Command Converter Configuration
show user      # Show Users Connected to Server
show version   # Show Version Info.
show port      # Show Current Port the Server Is Listening On

Suite56 CCS> show cc
Parallel Port Command Converter <LPT:2>

Suite56 CCS> show user
User does not exist.

Suite56 CCS> show version
Motorola Suite56 Command Converter Server 8-20-99 ver. 1.0
Copyright 1999

Suite56 CCS> show port
Server Listening on Port: 41475

Suite56 CCS>
    
```

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Figure 4. Help Show Screen

Use the help command when you need command definitions and syntax. You can also use the help command when running the Debugger software, please refer to the *Suite56™ Application Development System (ADS) Debugger User Manual*, for more information.

4.2 Technical Support

The DSP Technical Support Center is found on the World Wide Web at:

<http://www.motorola.com/SPS/DSP/support>

There you can access a Quick Solutions Database, DSP Helpline, a list of Frequently Asked Questions, or run a Case Outline Package Search.

You can also e-mail the DSP Helpline directly at:

dsphelp@dsp.sps.mot.com

To speak with a Technical Support representative, call the Technical Resource Center at:

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