

Agilent 8753 to ENA Code Conversion Assistant

Operation Manual

First Edition



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1 Overview

This chapter gives an overview of the Agilent 8753 to ENA Code Conversion Assistant.

Overview

The Agilent 8753ES to ENA Code Conversion Assistant is a software tool to help you convert the control programs of the 8753ES into programs that can control the ENA Series RF Network Analyzers.

The Conversion Assistant highlights 8753ES GPIB commands in the program source file according to difficulty and displays useful information for converting the source code. You can convert the GPIB command if there is a corresponding conversion command on the ENA.

Conversion Assistant consists of the following files.

File Name	Description
eme327e.exe	EmEditor Install Shield
AgtCCA.msi	Conversion Assistant Plug-in Install Shield
8753_E507x_r100.zip	Archive of conversion data file and highlight data file
sample8753.txt	Sample Program: This is used for the conversion example used in this manual
sample8753_done.txt	Sample Program: The result of converting sample8753.txt
conv_assist.pdf	Conversion Assistant Operation Manual (PDF formatted file)

Contents of 8753_E507x_r100.zip

8753_E507x_r100.tbl ^{*1}	Conversion data file
8753_E507x_r100.esy ^{*1}	Basic Highlight data file: This file is under the 8753_E507x folder
8753_E507x_r100_c++.esy ^{*1}	Highlight data file for C++: This file is under the 8753_E507x folder
8753_E507x_r100_rmb.esy ^{*1}	Highlight data file for HP BASIC and HT BASIC: This file is under the 8753_E507x folder
8753_E507x_r100_vb.esy ^{*1}	Highlight data file for Visual Basic: This file is under the 8753_E507x folder
readme.txt	Document for archive

*1. "r100" means the revision is 1.00. The revision numbers of the conversion data file and the highlight data file must be the same.

NOTE

8753ES to ENA Code Conversion Assistant may convert incorrectly for the other 8753 series network analyzers.

2 Installation

This chapter explains how to install the Agilent 8753ES-to-ENA Code Conversion Assistant.

Installation

Minimum System Requirements

PC	AT-Compatible
OS	Windows 98SE, Windows NT, Windows 2000 or Windows XP

Installation

You need to install the following programs to run the Agilent Code Conversion Assistant.

- EmEditor (eme327e.exe)
- Conversion Assistant Plug-in Install Shield (AgtCCA.msi)
- Conversion Data file (Extension.tbl)
- Highlight Data File (Extension.esy)

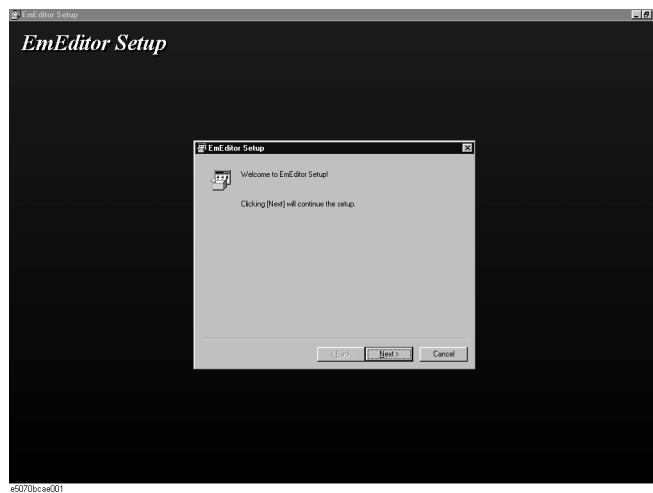
NOTE

The EmEditor is shareware. To continue using EmEditor v3 more than 30 days, you must register your copy.

Step 1. Execute eme327e.exe to run the EmEditor Install Shield (Figure 2-1).

Figure 2-1

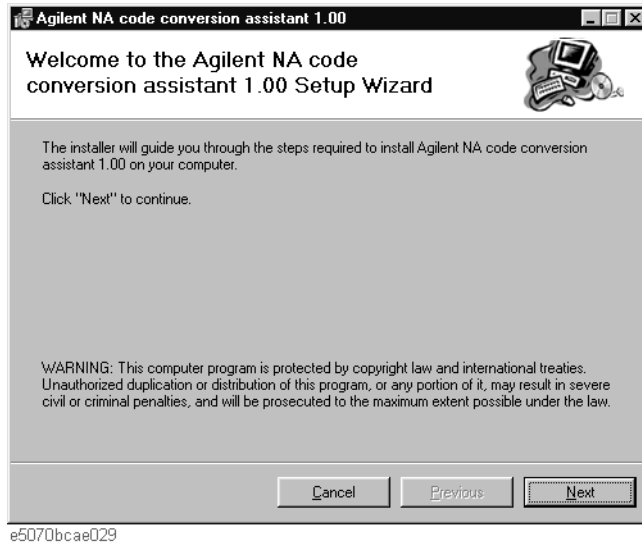
EmEditor Install Shield



Step 2. Install the EmEditor according to the installer's instructions.

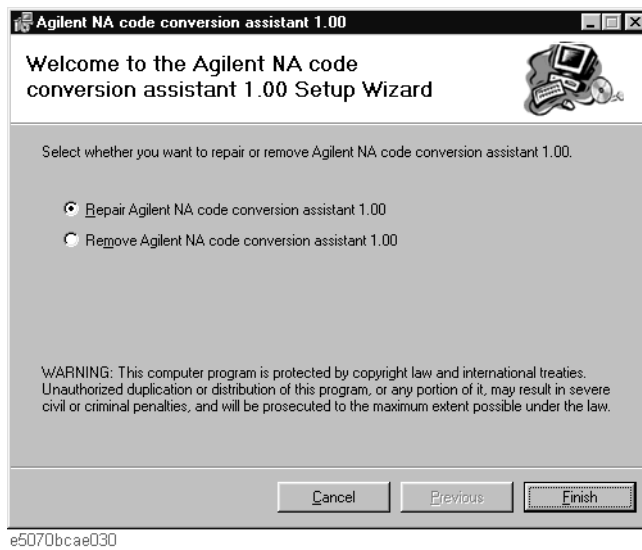
Step 3. Execute AgtCCA.msi to run the Code Conversion Assistant Install Shield (Figure 2-2).

Figure 2-2 Install Shield Window



NOTE Select Remove and proceed with the operation when the window in Figure 2-3 appears. Then execute AgtCCA.msi again.

Figure 2-3 Install Shield Window for Replacement



Step 4. Install the Plug-in according to the installer’s instructions.

Step 5. Extract the data archive file (8753_E507x_r100.zip) into the plug-in folder.

The default setting is C:\Program Files\EmEditor3\PlugIns\Agilent.

NOTE The above procedure creates a folder named 8753_E507x. The highlight data files are stored in this folder, but these files can be moved.

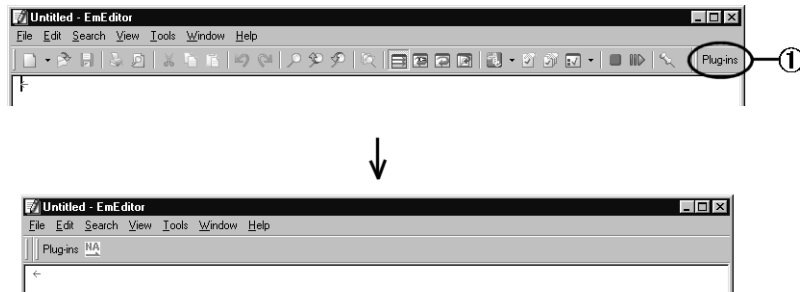
Installation Installation

Step 6. Click the Start button, then click on EmEditor v3 to run the EmEditor.

Step 7. Click Plug-ins on the EmEditor toolbar (1 in Figure 2-4).

NOTE If Plug-ins is not displayed, click the right button on the toolbar and select Plug-ins Bar.

Figure 2-4 EmEditor Toolbar

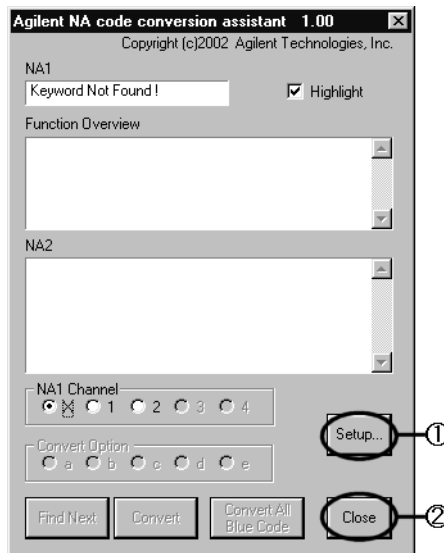


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Step 8. Click **NA** or **NA** to run the Code Conversion Assistant.

Step 9. Click the Setup button (1 in Figure 2-5) in the main window.

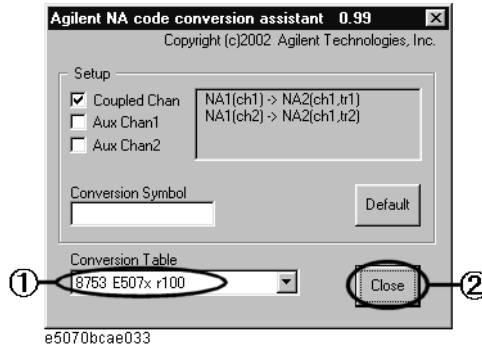
Figure 2-5 Setup Button in Main Window



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Step 10. Select the conversion data table in the Conversion Table pull-down menu (1 in Figure 2-6), then the message box appears. Click OK to close the message box.

Figure 2-6 Conversion Table Pull-down Menu

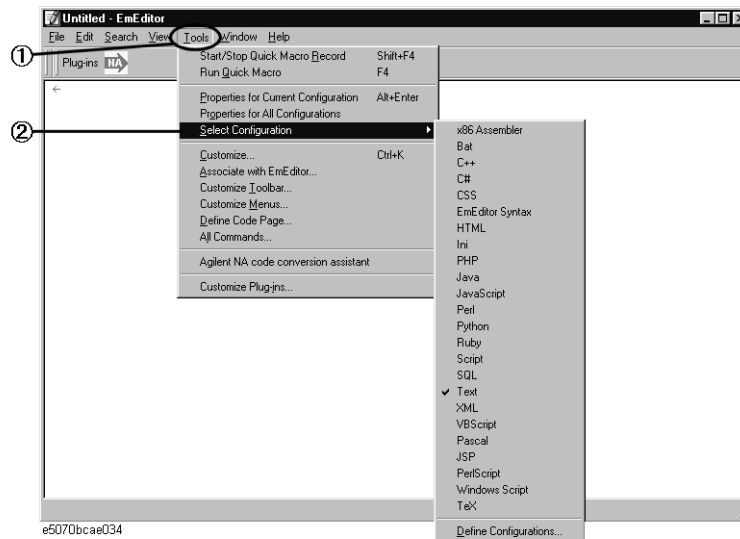


- Step 11.** Click the Close button (2 in Figure 2-6). In Figure 2-6, “8753_E507x_r100” is selected. The last 4 characters indicate the revision. In this case, the revision is 1.00.
- Step 12.** Click the Close button in the main window (2 in Figure 2-5).
- Step 13.** Use the Tools menu (1 in Figure 2-7) and then the Select Configuration sub-menu (2 in Figure 2-7) to select the programming language for configuration.

NOTE

Click Define Configuration to create a new programming language configuration and then import the highlight data file. This procedure is described in “Defining Programming Language Configuration” on page 30.

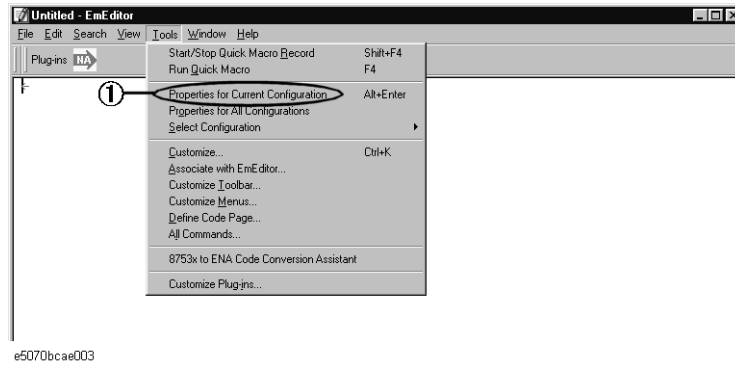
Figure 2-7 Programming Language Selection



- Step 14.** Click on Tools on the EmEditor toolbar.
- Step 15.** Select Properties for Current Configuration under the Tools menu (1 in Figure 2-8).

Figure 2-8

Tools Menu



Step 16. Click the Highlight (1) tab.

Step 17. Click Import (1 in Figure 2-9) and navigate to the highlight data file (Table 2-1). The file name is displayed at the top of the Highlight Words frame. Then Click OK (2 in Figure 2-9) to close the window.

The default setting is C:\Program Files\EmEditor3\PlugIns\Agilent\8753_E507x.

NOTE

The revision numbers of the conversion data file and the highlight data file must be same. If they are not the same, the highlight and the conversion are not synchronized.

Figure 2-9

Property Window

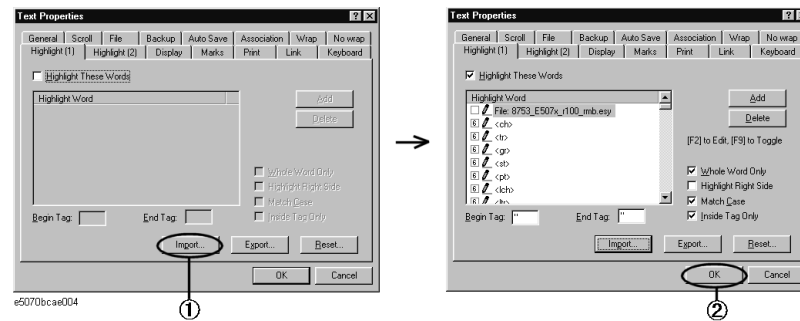


Table 2-1

Highlight Data Files

File Name	Description
8753_E507x_r100.esy ^{*1}	Basic highlight data files for highlighting 8753ES GPIB Commands
8753_E507x_r100_c++.esy ^{*1}	Highlight data files for C++; words in the following comment strings are not highlighted: <ul style="list-style-type: none"> Between “/*” and “*/” After “//” in a line.

Table 2-1

Highlight Data Files

File Name	Description
8753_E507x_r100_rmb.esy ^{*1}	Highlight data files for HP BASIC and HT BASIC; words after exclamation points (!) in the line are not highlighted
8753_E507x_r100_vb.esy ^{*1}	Highlight data files for Microsoft Visual Basic. The words after single quotation (‘) in the line are not highlighted.

*1. “r100” indicates the revision. The revision is 1.00 in this case.

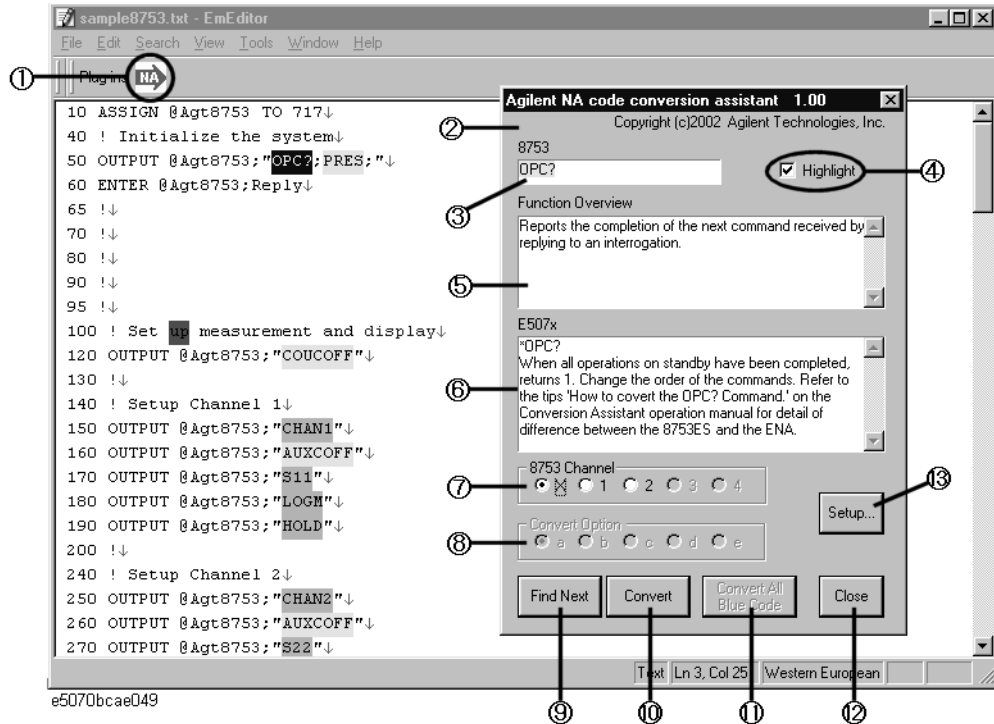
3 Basic Operation

This chapter explains the basic operation of the Agilent 8753 to ENA Code Conversion Assistant.

Components of the Conversion Assistant

This section gives the name and descriptions of the various components of the Code Conversion Assistant.

Figure 3-1 EmEditor and Code Conversion Assistant Window



1. Code Conversion Assistant Icon

The icon that is clicked to run the Code Conversion Assistant.

2. Code Conversion Assistant Main Window

The main window of the Code Conversion Assistant. All operations start from this window.

3. 8753 Command Area

Displays the selected 8753ES GPIB command. If the highlight check box is checked, the command is highlighted.

4. Highlight Check Box

Selects whether to highlight the command in the source file. If the box is checked, the 8753ES GPIB command in the source file is highlighted according to the difficulty of conversion.

5. Function Overview Area

Displays a description of the 8753ES GPIB command shown in the 8753 command area.

6. E507x Command Area

Displays information on the code conversion. If there is any replace command, the replacement command and the information on the conversion are displayed. If there is no replace command, the reason for it not appearing is displayed.

7. Channel Selection Area

For selecting the active channel on the 8753ES. The active channel and trace are automatically set up. If “X” is selected, the tag is inserted where the channel or trace is specified.

8. Convert Option

If there are two or more conversion commands, this area is activated. Select the designation of the conversion command.

9. Find Next Button

Skips conversion and jumps to the next 8753 GPIB command when clicked.

10. Convert Button

Converts the 8753 GPIB command and jumps to the next 8753 GPIB command when clicked.

11. Convert All Blue Code Button

Converts all of the blue highlighted 8753 GPIB commands in the selected area in the source code when clicked.

12. Close Button

Closes the Code Conversion Assistant Main Window when clicked.

13. Setup Button

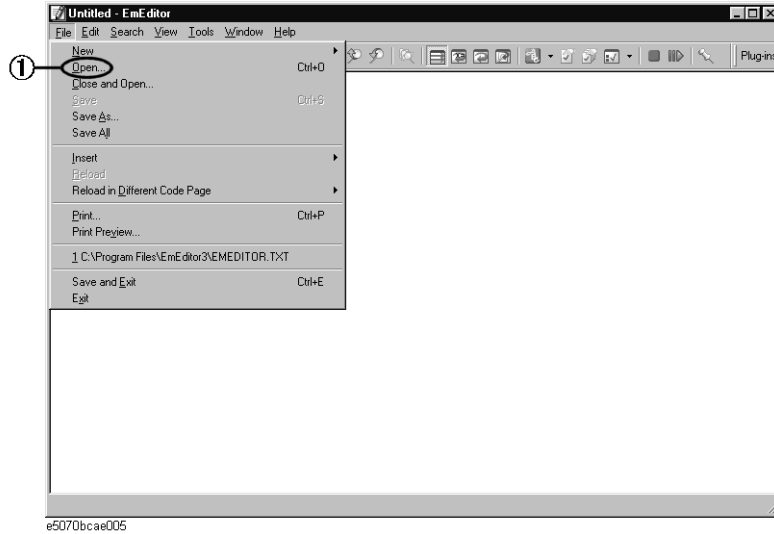
Displays the configuration window when clicked.

Loading the Source File

Step 1. Select Open under the File menu (1 in Figure 3-3).

Figure 3-2

EmEditor File Menu



Step 2. Navigate to the desired directory on your PC and select the source file.

Step 3. Click the Open button.

Step 4. The 8753ES GPIB commands are highlighted. Their color indicates the difficulty for conversion as described in Table 3-1. Figure 3-3 shows an example of a window when the source file is loaded.

NOTE

Words different from 8753ES commands may be highlighted when the same words as those used in 8753ES GPIB commands appear. These may be neglected

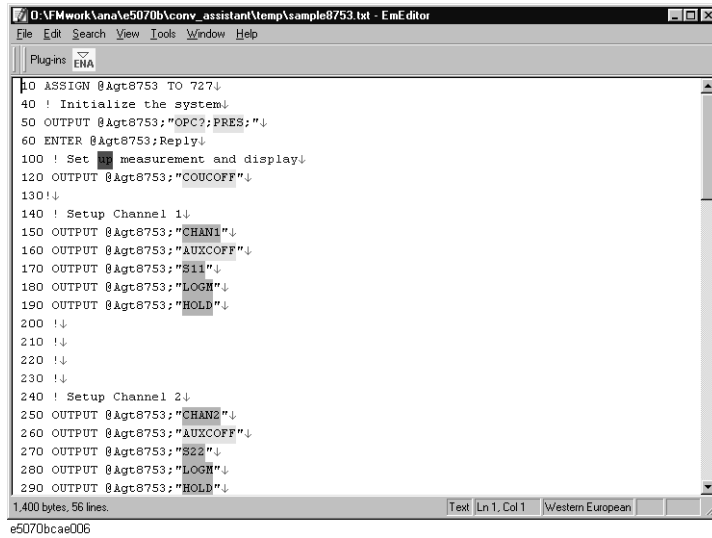
Table 3-1

Highlight Color

Color	Description
Blue	This command can be converted automatically because there is only one choice and no user input is required for conversion.
Yellow	There are two or more choices or special attention must be given to the conversion. Convert by referring to the information in the function overview and the E507x area in the main window. You may need to refer to the tips chapter in this manual or the programmer's guide.
Red	Difficult to convert. Consider whether the command can be deleted or whether there is any alternative.

Figure 3-3

Highlighted Source Code



```
O:\Mwork\anaVe5070b\conv_assistant\Temp\sample8753.txt - EmEditor
File Edit Search View Tools Window Help
Plugins ENA
40 ASSIGN @Agt8753 TO 727↓
40 ! Initialize the system↓
50 OUTPUT @Agt8753;"OPC?;PRES;"↓
60 ENTER @Agt8753;Reply↓
100 ! Set measurement and display↓
120 OUTPUT @Agt8753;"COUCOFF"↓
130!↓
140 ! Setup Channel 1↓
150 OUTPUT @Agt8753;"CHAN1"↓
160 OUTPUT @Agt8753;"AUXCOFF"↓
170 OUTPUT @Agt8753;"S11"↓
180 OUTPUT @Agt8753;"LOGH"↓
190 OUTPUT @Agt8753;"HOLD"↓
200 !↓
210 !↓
220 !↓
230 !↓
240 ! Setup Channel 2↓
250 OUTPUT @Agt8753;"CHAN2"↓
260 OUTPUT @Agt8753;"AUXCOFF"↓
270 OUTPUT @Agt8753;"S22"↓
280 OUTPUT @Agt8753;"LOGH"↓
290 OUTPUT @Agt8753;"HOLD"↓
1,400 bytes, 56 lines. Text Ln 1, Col 1 Western European
e5070bcae006
```

NOTE

If the 8753 GPIB commands are not highlighted, import the highlight data file by following the instructions for “Changing Highlight Data File” on page 33.

Configuring Conversion Settings

To complete the conversion smoothly, you need to configure the Code Conversion Assistant. The configuration is performed in the configuration window. This section describes the following configurations.

- “Opening Configuration Window”
- “Setting up Channel and Trace Conversion”
- “Adding Comment after Converted Line”

Opening Configuration Window



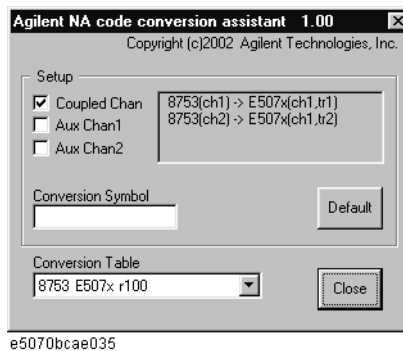
- Step 1.** Click  or  on the EmEditor toolbar, then the Code Conversion Assistant main window appears.
- Step 2.** Click on Setup button (13 in Figure 3-1) in the Code Conversion Assistant main window, then the configuration window appears (Figure 3-4).

Figure 3-4 Configuration Window



Setting up Channel and Trace Conversion

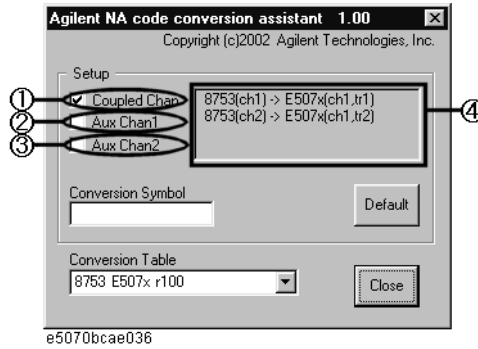
The Code Conversion Assistant has a function to convert the channel and trace settings. To perform these conversions correctly, input the channel setting on the 8753ES into the Code Conversion Assistant. Refer to “Differences in Channel and Trace Concepts between 8753ES and ENA” on page 45 for details of the channel and trace concepts.

- Step 1.** Check the following check boxes in the Setup frame according to the 8753ES setting, then the channel and trace correspondence between the 8753ES and the ENA is displayed to the right of the Channel Allocation frame. Skip this procedure if you translate the channel setting manually.
- Coupled Chan (1 in Figure 3-5)
Check this check box if the stimulus between channels 1 and 2 is coupled by the COUCON command on the 8753ES. The default setting is checked.
 - Aux Chan1 (2 in Figure 3-5)
Check this check box if channel 3 (the auxiliary channel of channel 1) is enabled by AUXCON and the active channel is 1 or 3. The default setting is not checked.
 - Aux Chan2 (3 in Figure 3-5)
Check this check box if channel 4 (the auxiliary channel of channel 1) is enabled by

AUXCON and the active channel is 1 or 3. The default setting is not checked.

The information on the channel and trace conversion is displayed to the right of the Setup frame (4 in Figure 3-5).

Figure 3-5 Setting Window



Adding Comment after Converted Line

The Code Conversion Assistant has a function to add comments at the end of the converted line to confirm which lines are converted.

- Step 1.** Enter the desired string in the Conversion Symbol text box in the configuration window. In the case of Figure 3-6, “! converted” is added after conversion as shown in Figure 3-7.

Figure 3-6 Setting Conversion Symbol

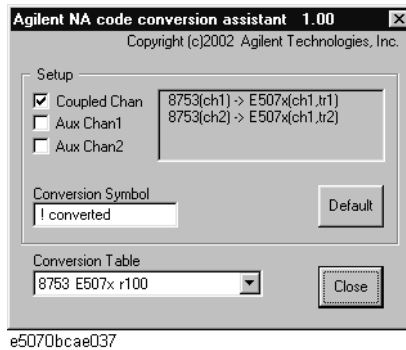


Figure 3-7 Added Comment

```

150 OUTPUT @Agt8753;"CHAN1"↓
150 OUTPUT @Agt8753;" :DISP:WIND<ch>:ACT;:CALC<ch>:PAR<tr>:SEL" ! converted↓

```

e5070bcae038

Set Configuration to Default

Click the Default button to set the configuration in the Setup frame to the default. The

Basic Operation
Configuring Conversion Settings

default settings are shown in Table 3-2.

Table 3-2 **Default Settings in Setup frame**

Name	Default Setting
Coupled Chan	Checked
Aux Chan1	Unchecked
Aux Chan2	Unchecked
Conversion Symbol	blank

Conversion

There are two conversion types. In this operation, the 8753ES commands highlighted by blue are converted to corresponding ENA commands by one of the following methods:

- Converting each command one-by-one
- Converting all of the commands highlighted in blue at once

Converting Each Command

Step 1. Specify the range where the conversion is to be performed.

NOTE

If a range is not specified, the range for conversion is automatically set to the area below the cursor.

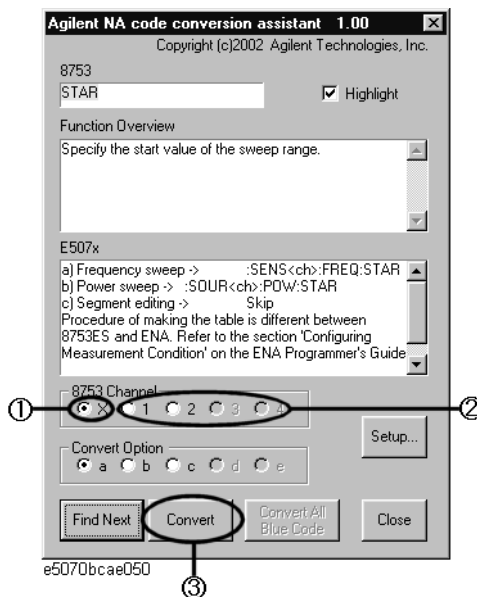
Step 2. Click on  or , then the Code Conversion Assistant main window appears.

Step 3. Enable any one of the following option buttons in the 8753 Channel frame for the channel and trace conversion.

- X (1 in Figure 3-8)
Select this option when you convert to the ENA channel and trace manually. The tags <tr> and <ch> input whether the trace number or the channel number is inserted. You need to replace the tags after the conversion.
- 1 to 4 (2 in Figure 3-8)
Select these options when you use the Code Conversion Assistant to set the channel and trace. The Code Conversion Assistant converts the 8753ES GPIB commands according the configuration setup in “Setting up Channel and Trace Conversion” on page 22.

3. Basic Operation

Figure 3-8 Main Window



Basic Operation

Conversion

Step 4. If there are two or more choices, the option buttons are activated in the Convert Option. Select the converted command from the E507x text box.

Step 5. Click the Convert button, then the 8753ES command is converted according to the option selected in Step 3 as shown in Figure 3-9 and the next 8753ES is highlighted.

NOTE

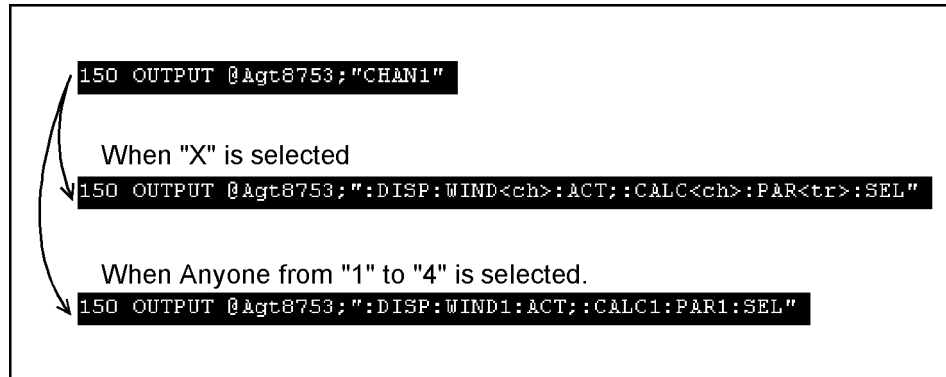
The next 8753ES command is highlighted without conversion when you click the Find Next button.

The Convert button is disabled if a command matching either of the following cases is displayed in the 8753 text box:

- The command is highlighted in red
- The command is highlighted in yellow and you need to refer to the manual for conversion

Figure 3-9

Conversion Example



NOTE

The Code Conversion Assistant skips highlighted words under the following conditions because the word is clearly not a GPIB command:

- The command has no parameter
- A character other than double quotation (") or semi-colon (;) is placed next to the word

Code Conversion Assistant skips S11 in Figure 3-10 because a colon (:) is next to S11.

Figure 3-10

Skipped Word

```
390 INPUT "ENTER START FREQUENCY (MHz) for S11:", F_start(1)↓
```

e5070bcae039

A tag may be inserted in some of the replaced commands. Table 3-3 shows the meaning of each of these tags.

Table 3-3

Tag Description

Tag	Description
<ch>	Channel

Table 3-3 Tag Description

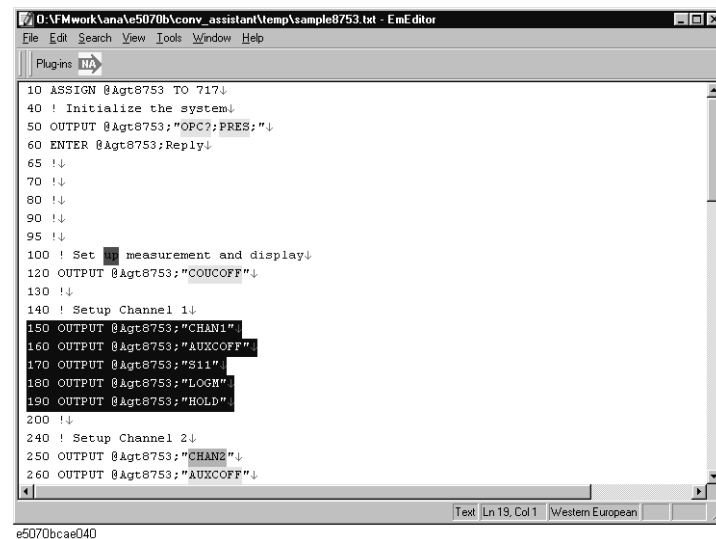
Tag	Description
<tr>	Trace
<mk>	Marker
<pt>	Port Number
<file>	File Name
<r>	Amount of Red
<g>	Amount of Green
	Amount of Blue

Converting All Commands Highlighted in Blue

Step 1. Specify the range where the conversion is performed as shown in Figure 3-11.

Figure 3-11

Specifying the conversion range



Step 2. Click on **HA** or **HA**, then the Code Conversion Assistant main window appears.

Step 3. Enable any one of the following option buttons in the 8753 Channel frame for the channel and trace conversion.

- X (1 in Figure 3-8)
Select this option when you convert to ENA channel and trace manually. The tags <tr> and <ch> input whether the trace number or the channel number is inserted. You need to replace the tags after the conversion.
- 1 to 4 (2 in Figure 3-8)
Select these options when you use the Code Conversion Assistant to set the channel and trace. The Code Conversion Assistant converts the 8753ES GPIB command according the configuration setup in "Setting up Channel and Trace Conversion" on

Basic Operation

Conversion

page 22.

Step 4. Click on the `Conversion All Blue` code button, then all of the commands highlighted as blue are converted according to Step 3.

A tag may be inserted in some of the replaced commands. Table 3-3 on page 26 shows the meaning of each of these tags.

Undoing Conversion

To undo conversion, you need to exit the Code Conversion Assistant main window. The procedure is described as follows.

- Step 1.** Click on the `Close` button to close the Code Conversion Assistant main window.
- Step 2.** Operate as anyone of the following list to undo conversion.
- Press the **Ctrl** and **Z** keys at the same time.
 - Click the `Edit - Undo` button.
 - click the right mouse button - `Undo`

NOTE

The undoing procedure used depends on the conversion type as follows.

- Undoing a conversion made command-by-command:

The EmEditor will undo the conversion for the command converted last. If you repeat this operation, EmEditor will undo conversions in reverse order of when they were made, i.e., from most recent to earlier.

- Undoing a conversion made for all commands highlighted in blue:

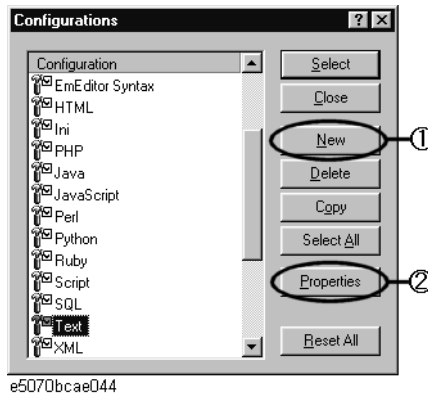
EmEditor will undo the conversion for all converted commands.

Defining Programming Language Configuration

It is necessary to define the programming language configuration if the proper language is not already registered in the EmEditor. This section describes how to define the programming language configuration.

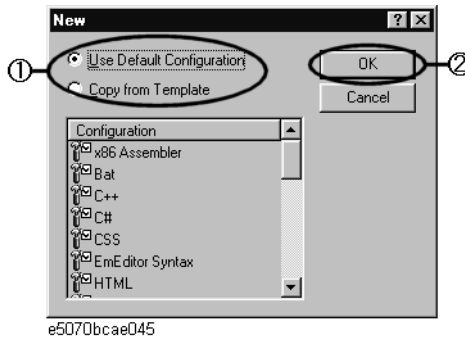
Step 1. Click **Tools - Select Configuration - Define Configuration** in the EmEditor. Then the Configuration window appears as shown in Figure 3-12.

Figure 3-12 Configuration Window



Step 2. Click the **New** button (1 in Figure 3-12). Then the **New** window appears as shown in Figure 3-13

Figure 3-13 New Window



Step 3. Select one of the following options and then click **OK** (2 in Figure 3-13).

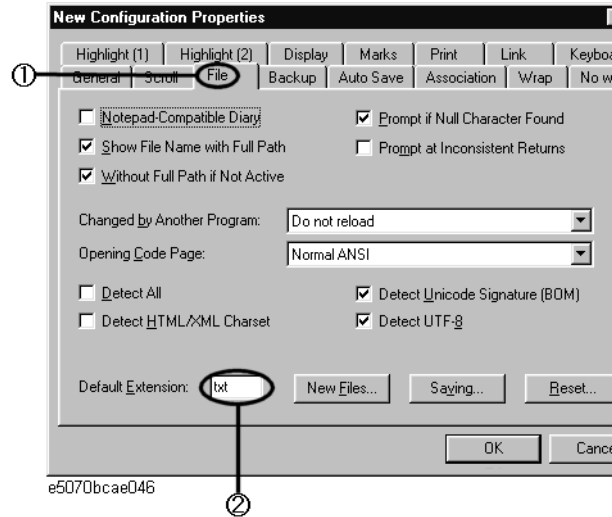
- **Use Default Configuration:**
Create the new configuration as the default setting.
- **Copy from Template:**
Copy a setting from a predefined configuration.

Step 4. Input the name of the new configuration and then click **Properties** (2 in Figure 3-12).

Step 5. Click the **File** tab (1 in Figure 3-14). Input the extension in the **default extension**

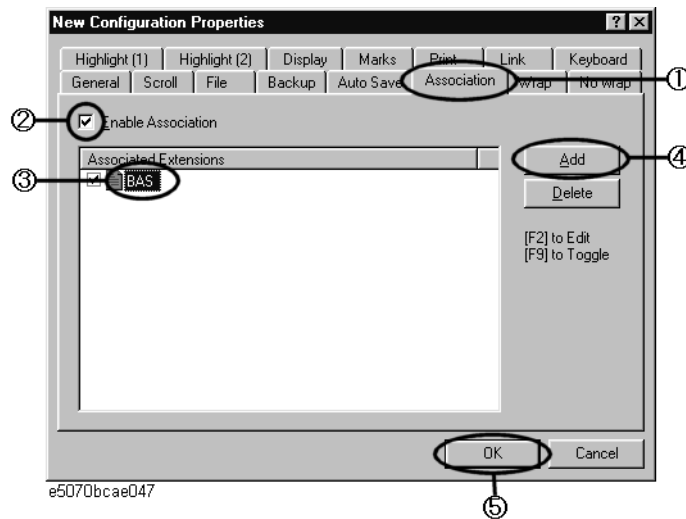
(2 in Figure 3-14) text box. The file is saved with this extension.

Figure 3-14 Setting Default Extension



Step 6. Click the Association tab (1 in Figure 3-15) when another extension is to be associated with this configuration.

Figure 3-15 Setting Association



Step 7. Check the Enable Association (2 in Figure 3-15) check box.

Step 8. Click the Add button (3 in Figure 3-15) and input the extension (4 in Figure 3-15).

Step 9. Click the OK button (5 in Figure 3-15).

Changing Data File

This section describe the procedure for changing the conversion data file and the highlight data file.

Changing Conversion Data File

You need to change the conversion data file when it is revised.

Procedure


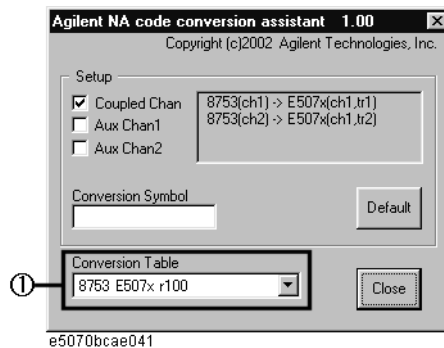
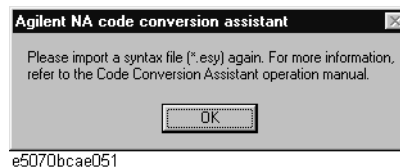
- Step 1.** Click  or **NA** on the EmEditor toolbar, then the Code Conversion Assistant main window appears.
- Step 2.** Click the **Setup** button in the Code Conversion Assistant main window, then the configuration window appears (Figure 3-16).

Figure 3-16 Configuration Window



- Step 3.** Select the conversion data file from the **Conversion Table** pull-down menu, then a message box (Figure 3-17) appears to show that the conversion data file (extension **esy**) must be changed.

Figure 3-17 Message Box



- Step 4.** Click the **OK** button in the message box and then click the **Close** button in the configuration window.
- Step 5.** Click the **Close** button in the main window and then change the highlight data file as described in “Changing Highlight Data File.”

NOTE If the highlight data file has been changed, check the **Highlight** check box in the Code Conversion Assistant main window.

Changing Highlight Data File

You need to change the highlight data file in the following cases:

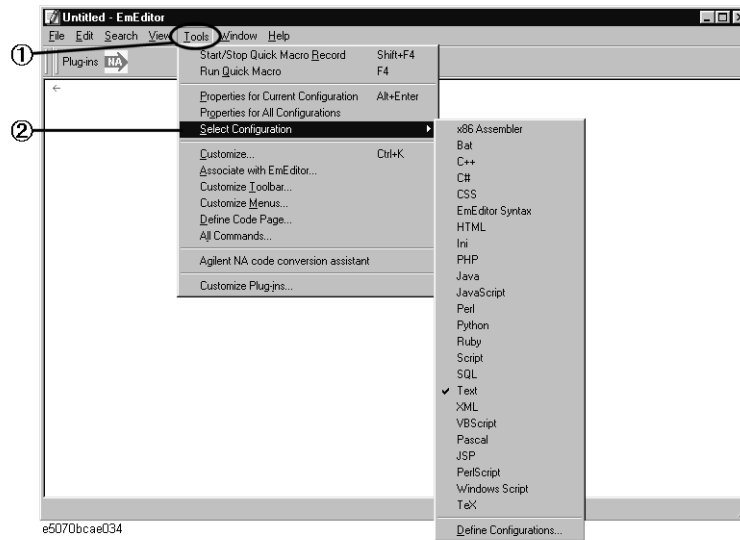
- The programming language is changed
- After the conversion data file is changed

Procedure

- Step 1.** Use the **Tools** menu (1 in Figure 3-18) and then the **Select Configuration** (2 in Figure 3-18) sub-menu to select the programming language for configuration.

NOTE Select **Text** if the desired programming language is not listed.

Figure 3-18 Programming Language Selection

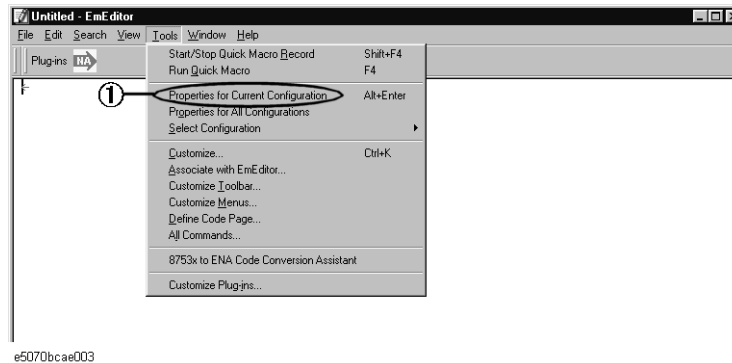


3. Basic Operation

- Step 2.** Click on **Tools** on the EmEditor toolbar.

- Step 3.** Select **Properties for Current Configuration** under the **Tools** menu (1 in Figure 3-19).

Figure 3-19 Tools Menu



Basic Operation
Changing Data File

Step 4. Click the Highlight (1) tab.

Step 5. Click Import (1 in Figure 3-20) and navigate to the highlight data file (Table 3-4). The following table shows the list of highlight data files. Then Click OK (2 in Figure 3-20) to close the window. The file name is displayed at the top of the Highlight Words frame.

NOTE

The revision numbers of the conversion data file and the highlight data file must be the same. If they are not the same, the highlight and the conversion are not synchronized.

Figure 3-20

Property Window

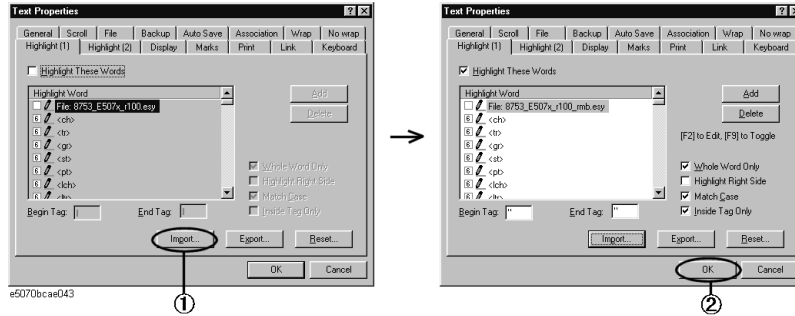


Table 3-4

Highlight Data Files

File Name	Description
8753_E507x_r100.esy* ¹	Basic highlight data files to highlight 8753ES GPIB Commands
8753_E507x_r100_c++.esy* ¹	Highlight data files for C++; words in the following comment strings are not highlighted: <ul style="list-style-type: none"> Between “/*” and “*/” After “//” in a line
8753_E507x_r100_rmb.esy* ¹	Highlight data files for HP BASIC and HT BASIC; words after exclamation points (!) in the line are not highlighted
8753_E507x_r100_vb.esy* ¹	Highlight data files for Microsoft Visual Basic; words after single quotation (‘) in the line are not highlighted

*1. “r100” indicates the revision number. The revision is 1.00 in this case.

Step 6. If the conversion data file is not yet changed, change it by referring to “Changing Highlight Data File” on page 33.

4**General Flow of Code Conversion**

This chapter shows the general flow of code conversion by using an example of an actual program conversion. You'll find it very helpful to go through this chapter as you convert a program for the first time.

General Flow of Code Conversion

This chapter illustrates the general flow of code conversion by reference to an example of an actual program conversion from `sample8753.txt` to `sample8753_done.txt` (Figure 4-2). In order to convert a program efficiently with the ENA Code Conversion Assistant, it is recommended that you follow the flow shown in Figure 4-1.

Figure 4-1

Code Conversion Flow

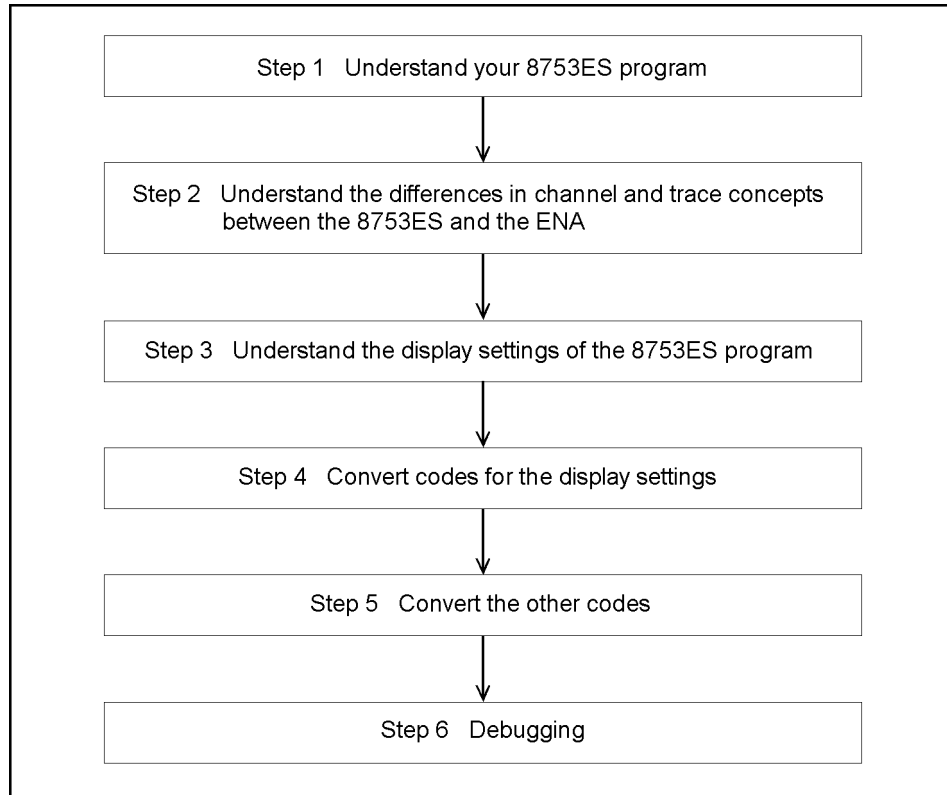


Figure 4-2 Program Conversion Example

8753ES sample program(sample 8753.txt)

```

10 ASSIGN @Agt8753 TO 717↓
40 ! Initialize the system↓
50 OUTPUT @Agt8753;"OPC?;PRES;"↓
60 ENTER @Agt8753;Reply↓
65 !↓
70 !↓
80 !↓
90 !↓
95 !↓
100 ! Set up measurement and display↓
120 OUTPUT @Agt8753;"COUCOFF"↓
130 !↓
140 ! Setup Channel 1↓
150 OUTPUT @Agt8753;"CHAN1"↓
160 OUTPUT @Agt8753;"AUXCOFF"↓
170 OUTPUT @Agt8753;"S11"↓
180 OUTPUT @Agt8753;"LOGM"↓
190 OUTPUT @Agt8753;"HOLD"↓
200 !↓
240 ! Setup Channel 2↓
250 OUTPUT @Agt8753;"CHAN2"↓
260 OUTPUT @Agt8753;"AUXCOFF"↓
270 OUTPUT @Agt8753;"S22"↓
280 OUTPUT @Agt8753;"LOGM"↓
290 OUTPUT @Agt8753;"HOLD"↓
300 !↓
340 ! Dual channel display↓
350 OUTPUT @Agt8753;"DUACON"↓
360 !↓
370 ! Request start and stop frequency↓
380 DIM F_start(1:2),F_stop(1:2)↓
390 INPUT "ENTER START FREQUENCY (MHz) for S11:";F_start(1)↓
400 INPUT "ENTER STOP FREQUENCY (MHz) for S11:";F_stop(1)↓
410 INPUT "ENTER START FREQUENCY (MHz) for S22:";F_start(2)↓
420 INPUT "ENTER STOP FREQUENCY (MHz) for S22:";F_stop(2)↓
430 !↓
440 ! Program the analyzer settings↓
450 FOR I=1 TO 2↓
460 OUTPUT @Agt8753;"CHAN"&VAL$(I)↓
470 OUTPUT @Agt8753;"STAR";F_start(I);"MHZ"↓
480 OUTPUT @Agt8753;"STOP";F_stop(I);"MHZ"↓
490 NEXT I↓
500 !↓
510 ! Single sweep measurement↓
520 OUTPUT @Agt8753;"OPC?;SING"↓
530 ENTER @Agt8753;Reply↓
540 !↓
550 !↓
560 ! Autoscale the displays↓
570 OUTPUT @Agt8753;"CHAN1;AUTO"↓
580 OUTPUT @Agt8753;"CHAN2;AUTO"↓
590 !↓
600 LOCAL @Agt8753↓
610 END↓
↓

```

Converted program for ENA(sample 8753_done.txt)

```

10 ASSIGN @Agt8753 TO 717↓
40 ! Initialize the system↓
50 OUTPUT @Agt8753;"SYST:PRES;*OPC?"↓
60 ENTER @Agt8753;Reply↓
65 !↓
70 OUTPUT @Agt8753;"DISP:SPL D1_2"↓
80 OUTPUT @Agt8753;"CALC1:PAR:COUN 1;;CALC2:PAR:COUN 1"↓
90 OUTPUT @Agt8753;"DISP:WIND1:SPL D1;;DISP:WIND2:SPL D1"↓
95 !↓
100 ! Set up measurement and display↓
120 !OUTPUT @Agt8753;"COUCOFF"↓
130 !↓
140 ! Setup Channel 1↓
150 OUTPUT @Agt8753;"DISP:WIND1:ACT;;CALC1:PAR1:SEL"↓
160 !OUTPUT @Agt8753;"AUXCOFF"↓
170 OUTPUT @Agt8753;"CALC1:PAR1:DEF S11"↓
180 OUTPUT @Agt8753;"CALC1:FORM MLOG"↓
190 OUTPUT @Agt8753;"INIT1:CONT OFF"↓
200 !↓
240 ! Setup Channel 2↓
250 OUTPUT @Agt8753;"DISP:WIND2:ACT;;CALC2:PAR1:SEL"↓
260 !OUTPUT @Agt8753;"AUXCOFF"↓
270 OUTPUT @Agt8753;"CALC2:PAR1:DEF S22"↓
280 OUTPUT @Agt8753;"CALC2:FORM MLOG"↓
290 OUTPUT @Agt8753;"INIT2:CONT OFF"↓
300 !↓
340 ! Dual channel display↓
350 !OUTPUT @Agt8753;"DUACON"↓
360 !↓
370 ! Request start and stop frequency↓
380 DIM F_start(1:2),F_stop(1:2)↓
390 INPUT "ENTER START FREQUENCY (Hz) for S11:";F_start(1)↓
400 INPUT "ENTER STOP FREQUENCY (Hz) for S11:";F_stop(1)↓
410 INPUT "ENTER START FREQUENCY (Hz) for S22:";F_start(2)↓
420 INPUT "ENTER STOP FREQUENCY (Hz) for S22:";F_stop(2)↓
430 !↓
440 ! Program the analyzer settings↓
450 FOR I=1 TO 2↓
460 OUTPUT @Agt8753;"DISP:WIND"&VAL$(I)&"ACT;;CALC"&VAL$(I)&"PAR1:SEL"↓
470 OUTPUT @Agt8753;"SENS"&VAL$(I)&"FREQ:STAR ";F_start(I)↓
480 OUTPUT @Agt8753;"SENS"&VAL$(I)&"FREQ:STOP";F_stop(I)↓
490 NEXT I↓
500 !↓
510 ! Single sweep measurement↓
520 OUTPUT @Agt8753;"INIT1;;INIT2;*OPC?"↓
530 ENTER @Agt8753;Reply↓
540 !↓
550 !↓
560 ! Autoscale the displays↓
570 OUTPUT @Agt8753;"DISP:WIND1:ACT;;CALC1:PAR1:SEL;;DISP:WIND1:TRAC1:Y:AUTO"↓
580 OUTPUT @Agt8753;"DISP:WIND2:ACT;;CALC2:PAR1:SEL;;DISP:WIND2:TRAC1:Y:AUTO"↓
590 !↓
600 LOCAL @Agt8753↓
610 END↓
↓

```

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Step 1: Understand your 8753ES program

Load the 8753ES program into the EmEditor. Check whether the 8753ES program contains a “Red” command. It is difficult to convert a “Red” command because the ENA doesn't have the same function represented by the command. Consider whether these commands can be deleted or alternative functions can be used on the ENA.

For example, there is no alternative for the mixer measurement function because of the hardware function. On the other hand, the printer setup is performed by a front panel operation on the ENA.

NOTE

For more information on the definitions of the commands highlighted in blue, yellow or red, refer to the section "How to convert the commands highlighted as blue/yellow/red" on page 49.

NOTE

For ease of code conversion, refer to the section “Making It Easier to Find 8753ES Commands” on page 48.

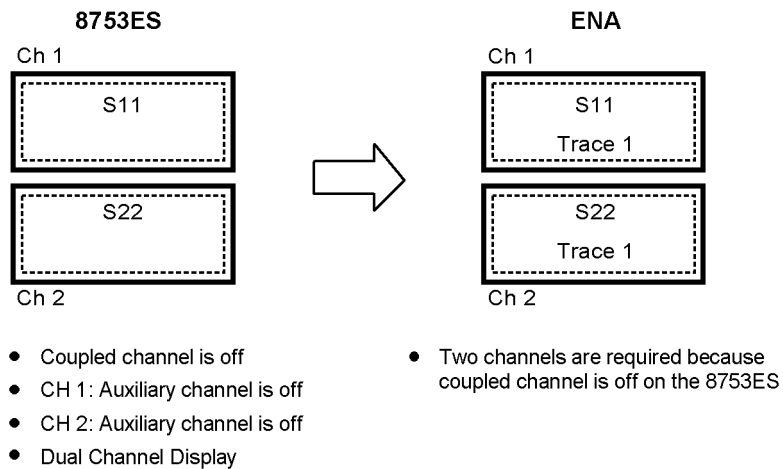
Step 2: Understand the differences in channel and trace concepts between the 8753ES and the ENA

Refer to the section “Differences in Channel and Trace Concepts between 8753ES and ENA” on page 45.

Step 3: Understand the display settings of the 8753ES program

1. The program code from line 40 to 350 sets up the display conditions (Figure 4-2 8753ES sample program). Confirm the status of the coupled channel and auxiliary channels (Figure 4-3 shows an example). After that, determine the display setting of the ENA based on the display conditions of the 8753ES.

Figure 4-3 8753ES and ENA display settings



NOTE

Typical conversion examples are shown in the section “How to Convert Commands for

Display Settings” on page 47.

2. Change the Setup in the configuration window by referring to the section “Configuring Conversion Settings” on page 22.

Step 4: Convert codes for the display settings

In the ENA programming, the display settings affect program commands because most of the commands require the channel/trace numbers as parameters. For ease of code conversion, it is recommended that you convert the display setting commands first.

In Figure 4-4, the program codes from line 40 to 350 determine measurement and display settings. Take the following steps to convert them.

1. Convert the preset command
2. Set the layout of measurement channels (:DISP:SPL command)
3. Set the number of traces (:CALC<ch>:PAR:COUN command)
4. Set the layout of traces (:DISP:WIND<ch>:SPL command)
5. Convert the other commands with the Code Conversion Assistant

NOTE

For more information on the definitions of the commands highlighted in blue, yellow or red, refer to the section "How to convert the commands highlighted in blue/yellow/red" on page 49.

8753ES Sample Program:

Line 50	Convert the OPC? and PRES command. Refer to the section "How to convert the *OPC? or PRES command" on page 50.
Lines 70 to 90	Insert the commands for display setting (Steps 3-2 to 3-4).
Line 120	Delete or comment out the COUCOFF command. We have already finished channel and trace setting (Lines 70 to 90).
Line 150	Convert the CHAN1 command. This command is highlighted in blue. The Conversion Assistant shows a single choice.
Line 160	Delete or comment out the AUXCOFF command. We have already finished channel setting (Lines 70 to 90).
Lines 170 to 190	Convert all commands. These commands are highlighted in blue. The Conversion Assistant shows a single choice.
Line 350	Delete or comment out the DUACON command. We have already finished channel setting (Lines 70 to 90).

Figure 4-4 Display setting part of Figure 4-2

8753ES sample program(sample 8753.txt)	Converted program for ENA(sample 8753_done.txt)
10 ASSIGN @Agt8753 TO 717↓	1 ! Converted Program for ENA↓
40 ! Initialize the system↓	10 ASSIGN @Agt8753 TO 717↓
50 OUTPUT @Agt8753;"OPC?;PRES;"↓	40 ! Initialize the system↓
60 ENTER @Agt8753;Reply↓	50 OUTPUT @Agt8753;"::SYST:PRES;*OPC?"↓
65 !↓	60 ENTER @Agt8753;Reply↓
70 !↓	65 !↓
80 !↓	70 OUTPUT @Agt8753;"::DISP:SPL D1_2"↓
90 !↓	80 OUTPUT @Agt8753;"::CALC1:PAR:COUN 1;;CALC2:PAR:COUN 1"↓
95 !↓	90 OUTPUT @Agt8753;"::DISP:WIND1:SPL D1;;DISP:WIND2:SPL D1"↓
100 ! Set up measurement and display↓	95 !↓
120 OUTPUT @Agt8753;"COUCOFF"↓	100 ! Set up measurement and display↓
130 !↓	120 !OUTPUT @Agt8753;"COUCOFF"↓
140 ! Setup Channel 1↓	130 !↓
150 OUTPUT @Agt8753;"CHAN1"↓	140 ! Setup Channel 1↓
160 OUTPUT @Agt8753;"AUXCOFF"↓	150 OUTPUT @Agt8753;"::DISP:WIND1:ACT::CALC1:PAR1:SEL"↓
170 OUTPUT @Agt8753;"S11"↓	160 !OUTPUT @Agt8753;"AUXCOFF"↓
180 OUTPUT @Agt8753;"LOGM"↓	170 OUTPUT @Agt8753;"::CALC1:PAR1:DEF S11"↓
190 OUTPUT @Agt8753;"HOLD"↓	180 OUTPUT @Agt8753;"::CALC1:FORM MLOG"↓
200 !↓	190 OUTPUT @Agt8753;"::INIT1:CONT OFF"↓
240 ! Setup Channel 2↓	200 !↓
250 OUTPUT @Agt8753;"CHAN2"↓	240 ! Setup Channel 2↓
260 OUTPUT @Agt8753;"AUXCOFF"↓	250 OUTPUT @Agt8753;"::DISP:WIND2:ACT::CALC2:PAR1:SEL"↓
270 OUTPUT @Agt8753;"S22"↓	260 !OUTPUT @Agt8753;"AUXCOFF"↓
280 OUTPUT @Agt8753;"LOGM"↓	270 OUTPUT @Agt8753;"::CALC2:PAR1:DEF S22"↓
290 OUTPUT @Agt8753;"HOLD"↓	280 OUTPUT @Agt8753;"::CALC2:FORM MLOG"↓
300 !↓	290 OUTPUT @Agt8753;"::INIT2:CONT OFF"↓
340 ! Dual channel display↓	300 !↓
350 OUTPUT @Agt8753;"DUACON"↓	340 ! Dual channel display↓
360 !↓	350 !OUTPUT @Agt8753;"DUACON"↓
370 ! Request start and stop frequency↓	360 !↓
380 DIM F_start(1:2),F_stop(1:2)↓	370 ! Request start and stop frequency↓
390 INPUT "ENTER START FREQUENCY (MHz) for S11:";F_start(1)↓	380 DIM F_start(1:2),F_stop(1:2)↓
400 INPUT "ENTER STOP FREQUENCY (MHz) for S11:";F_stop(1)↓	390 INPUT "ENTER START FREQUENCY (Hz) for S11:";F_start(1)↓
410 INPUT "ENTER START FREQUENCY (MHz) for S22:";F_start(2)↓	400 INPUT "ENTER STOP FREQUENCY (Hz) for S11:";F_stop(1)↓
420 INPUT "ENTER STOP FREQUENCY (MHz) for S22:";F_stop(2)↓	410 INPUT "ENTER START FREQUENCY (Hz) for S22:";F_start(2)↓
430 !↓	420 INPUT "ENTER STOP FREQUENCY (Hz) for S22:";F_stop(2)↓
440 ! Program the analyzer settings↓	430 !↓
450 FOR I=1 TO 2↓	440 ! Program the analyzer settings↓
460 OUTPUT @Agt8753;"CHAN"&VAL\$(I)↓	450 FOR I=1 TO 2↓
470 OUTPUT @Agt8753;"STAR";F_start(I);"MHZ"↓	460 OUTPUT @Agt8753;"::DISP:WIND"&VAL\$(I)&"::ACT::CALC"&VAL\$(I)&"::PAR1:SEL"↓
480 OUTPUT @Agt8753;"STOP";F_stop(I);"MHZ"↓	470 OUTPUT @Agt8753;"::SENS"&VAL\$(I)&"::FREQ:STAR ";F_start(I)↓
490 NEXT I↓	480 OUTPUT @Agt8753;"::SENS"&VAL\$(I)&"::FREQ:STOP";F_stop(I)↓
500 !↓	490 NEXT I↓
510 ! Single sweep measurement↓	500 !↓
520 OUTPUT @Agt8753;"OPC?;SING"↓	510 ! Single sweep measurement↓
530 ENTER @Agt8753;Reply↓	520 OUTPUT @Agt8753;"::INIT1::INIT2;*OPC?"↓
540 !↓	530 ENTER @Agt8753;Reply↓
550 !↓	540 !↓
560 ! Autoscale the displays↓	550 !↓
570 OUTPUT @Agt8753;"CHAN1;AUTO"↓	560 ! Autoscale the displays↓
580 OUTPUT @Agt8753;"CHAN2;AUTO"↓	570 OUTPUT @Agt8753;"::DISP:WIND1:ACT::CALC1:PAR1:SEL;;DISP:WIND1:TRAC1:Y:AUTO"↓
590 !↓	580 OUTPUT @Agt8753;"::DISP:WIND2:ACT::CALC2:PAR1:SEL;;DISP:WIND2:TRAC1:Y:AUTO"↓
600 LOCAL @Agt8753↓	590 !↓
610 END↓	600 LOCAL @Agt8753↓
←	610 END↓

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Step 5: Convert the other codes

8753ES Sample Program:

- Lines 370 to 420 Although several words are highlighted, ignore them because they are not program commands.
- Lines 450 to 480 Variables are used to specify the command parameters. We need some tips to convert this type of program code. For more details, refer to the section "How to Convert When Variables Specify Command Parameters" on page 51.
- Line 520 Convert the OPC? and SING command. Refer to the section "How to convert the SING command".
- Lines 570 to 580

Figure 4-5 Continuation of Figure 4-4

8753ES sample program	Converted program for ENA
<pre> 370 ! Request start and stop frequency↵ 380 DIM F_start(1:2);F_stop(1:2)↵ 390 INPUT "ENTER START FREQUENCY (MHz) for S11:";F_start(1)↵ 400 INPUT "ENTER STOP FREQUENCY (MHz) for S11:";F_stop(1)↵ 410 INPUT "ENTER START FREQUENCY (MHz) for S22:";F_start(2)↵ 420 INPUT "ENTER STOP FREQUENCY (MHz) for S22:";F_stop(2)↵ 430 !↵ 440 ! Program the analyzer settings↵ 450 FOR I=1 TO 2↵ 480 OUTPUT @Agt8753;"CHAN";SVAL\$(I)↵ 470 OUTPUT @Agt8753;"STAR";F_start(I);"MHZ"↵ 480 OUTPUT @Agt8753;"STOP";F_stop(I);"MHZ"↵ 490 NEXT I↵ 500 !↵ 510 ! Single sweep measurement↵ 520 OUTPUT @Agt8753;"OPC?;SING"↵ 530 ENTER @Agt8753;Reply↵ 540 !↵ 550 !↵ 560 ! Autoscale the displays↵ 570 OUTPUT @Agt8753;"CHAN1;AUTO"↵ 580 OUTPUT @Agt8753;"CHAN2;AUTO"↵ 590 !↵ 600 LOCAL @Agt8753↵ 610 END↵ </pre>	<pre> 370 ! Request start and stop frequency↵ 380 DIM F_start(1:2);F_stop(1:2)↵ 390 INPUT "ENTER START FREQUENCY (Hz) for S11:";F_start(1)↵ 400 INPUT "ENTER STOP FREQUENCY (Hz) for S11:";F_stop(1)↵ 410 INPUT "ENTER START FREQUENCY (Hz) for S22:";F_start(2)↵ 420 INPUT "ENTER STOP FREQUENCY (Hz) for S22:";F_stop(2)↵ 430 !↵ 440 ! Program the analyzer settings↵ 450 FOR I=1 TO 2↵ 460 OUTPUT @Agt8753;"DISP:WIND";SVAL\$(I)&"":ACT:"CALC";SVAL\$(I)&"":PAR1:SEL↵ 470 OUTPUT @Agt8753;"SENS";SVAL\$(I)&"":FREQ:STAR ";F_start(I)↵ 480 OUTPUT @Agt8753;"SENS";SVAL\$(I)&"":FREQ:STOP";F_stop(I)↵ 490 NEXT I↵ 500 !↵ 510 ! Single sweep measurement↵ 520 OUTPUT @Agt8753;"::INIT1::INIT2;*OPC?"↵ 530 ENTER @Agt8753;Reply↵ 540 !↵ 550 !↵ 560 ! Autoscale the displays↵ 570 OUTPUT @Agt8753;"::DISP:WIND1:ACT::CALC1:PAR1:SEL::DISP:WIND1:TRAC1:Y:AUTO"↵ 580 OUTPUT @Agt8753;"::DISP:WIND2:ACT::CALC2:PAR1:SEL::DISP:WIND2:TRAC1:Y:AUTO"↵ 590 !↵ 600 LOCAL @Agt8753↵ 610 END↵ </pre>

Step 6: Debugging

Run the converted program. If an execution error occurs, analyze the error for possible causes. The following resources are very useful in the debugging process:

- Chapter 5, “Tips for the 8753ES Code Conversion,” on page 43
- Chapter 6, “Comparing functions of the 8753ES and the E5070B/E5071B,” on page 67
- Chapter 7, “Comparing Commands of the 8753ES and E5070B/E5071B,” on page 85
- ENA Programmer's Guide

General Flow of Code Conversion
General Flow of Code Conversion

5 **Tips for the 8753ES Code Conversion**

This chapter provides a wide range of conversion tips that you may find useful when converting programs.

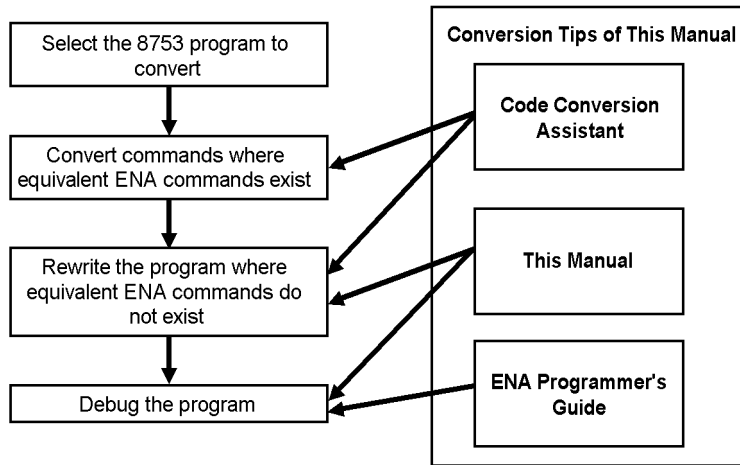
Taking Advantage of Migration Guide and ENA Programmer's Guide

The following resources are very useful in the conversion process (Figure 5-1).

- Code Conversion Assistant Operation Manual:
Refer to Chapter 6 and Chapter 7 "Function and Command Comparisons between the 8753ES and the ENA".
- ENA Programmer's Guide:
This manual is shipped with the ENA and can also be downloaded at <http://www.agilent.com/find/ena>

Figure 5-1

Conversion flow and useful tools

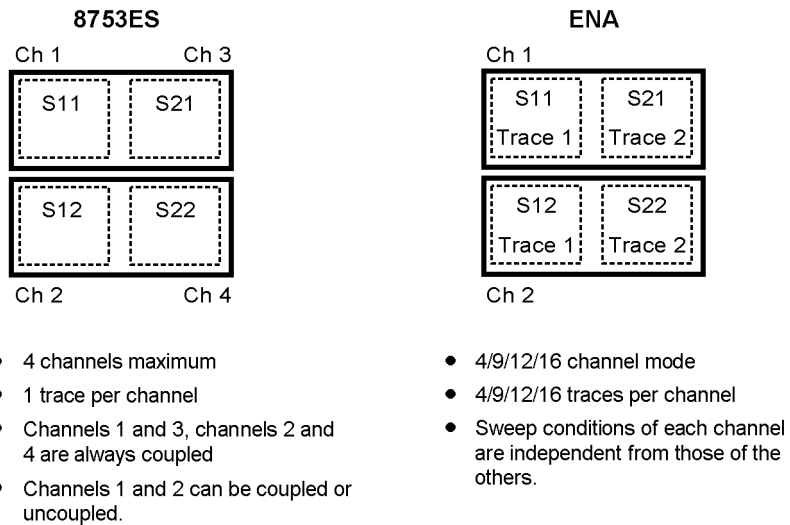


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Differences in Channel and Trace Concepts between 8753ES and ENA

Most of the ENA program commands require the channel number and the trace number, unlike the 8753ES. By understanding the differences in channel and trace concepts, you can convert the 8753ES GPIB commands more efficiently. Figure 5-2 highlights the key conceptual differences.

Figure 5-2 Key conceptual differences



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Table 5-1 shows the sweep conditions of the 8753ES and the ENA. The ENA does not have the channel coupling function, but there are multiple traces in a channel. The sweep conditions of the traces are the same on the ENA if they are in the same channel. Accordingly, this feature works in a similar way to the channel coupling function.

Table 5-1 Sweep conditions of each channel.

Coupled CH	Sweep Conditions	
	8753ES	ENA
OFF	CH1=CH3 and CH2=CH4 and CH≠CH2	CH1≠CH2
ON	CH1=CH2=CH3=CH4	Not available

NOTE

By using the two channels on the ENA, every measurement setting of the 8753ES can be converted.

Tips for the 8753ES Code Conversion
Differences in Channel and Trace Concepts between 8753ES and ENA

Table 5-2 shows a comparison of the channel settings between the 8753ES and the ENA. Use this table as described in the following procedure.

- Step 1.** Understand which state is the current setting on the 8753ES by finding the COUC and AUXC commands in the source code.
- Step 2.** Set up the conversion setting as described in “Configuring Conversion Settings” on page 22.
- Step 3.** Comment out or delete COUC and AUXC, then insert the ENA GPIB command.
- Step 4.** Convert the other commands. If the active channel is specified, the Code Conversion Assistant converts the channel number and the trace number as shown in Table 5-2.

Table 5-2 Channel and Trace Comparison

Desig.	8753ES Channel Setting			ENA Active Channel and Trace corresponded to 8753ES Active Channel (ENA Channel - ENA Trace)				ENA GPIB Command to set the number of traces in the channel
	COUC	AUXC		Chan 1	Chan 2	Chan 3	Chan 4	
		Chan 1	Chan 2					
a ^{*1}	ON	OFF	OFF	1 - 1	1 - 2	————	————	:CALC1:PAR:COUN 2
b	ON	ON	OFF	1 - 1	1 - 2	1 - 3	————	:CALC1:PAR:COUN 3
c	ON	OFF	ON	1 - 1	1 - 2	————	1 - 3	:CALC1:PAR:COUN 3
d	ON	ON	ON	1 - 1	1 - 2	1 - 3	1 - 4	:CALC1:PAR:COUN 4
e	OFF	OFF	OFF	1 - 1	2 - 1	————	————	:CALC1:PAR:COUN 1; :CALC2:PAR COUN 1
f	OFF	ON	OFF	1 - 1	2 - 1	1 - 2	————	:CALC1:PAR:COUN 2; :CALC2:PAR COUN 1
g	OFF	OFF	ON	1 - 1	2 - 1	————	2 - 2	:CALC1:PAR:COUN 1; :CALC2:PAR COUN 2
h	OFF	ON	ON	1 - 1	2 - 1	1 - 2	2 - 2	:CALC1:PAR:COUN 2; :CALC2:PAR COUN 2

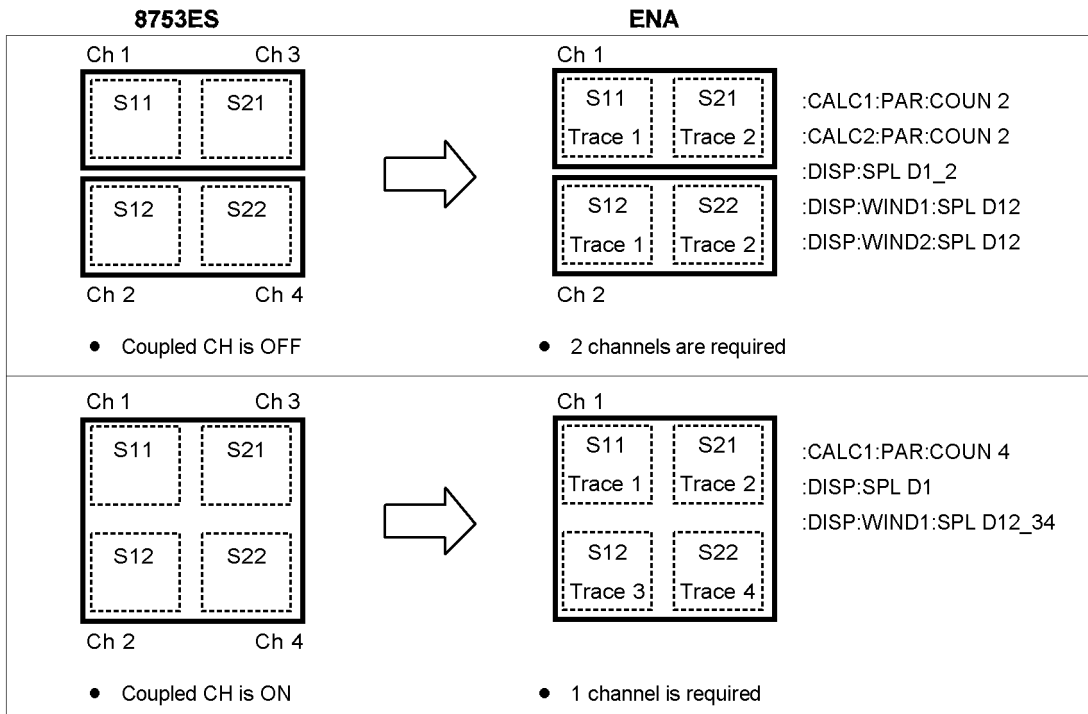
*1.Preset State

How to Convert Commands for Display Settings

This section shows typical conversion examples for display settings. Channels 1 and 2 of the 8753ES are either coupled or uncoupled, which is a key point in converting the commands for display settings (Figure 5-3). Use the following commands to set the display layout.

- :DISP:SPL (set the channel layout)
- :DISP:WIND<ch>:SPL (set the graph layout in the specified channel)

Figure 5-3 Typical conversion examples



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NOTE Some layouts on the 8753ES cannot be converted to the ENA. For such a layout, set a layout similar to that on the 8753ES.

Making It Easier to Find 8753ES Commands

It is recommended that you use the search function of the EmEditor to highlight the GPIB address. The GPIB commands that you have to convert are written with the OUTPUT and GPIB address in HP BASIC. By highlighting the 8753ES GPIB address commands, you can easily find the 8753ES GPIB commands from among the large number of program codes.

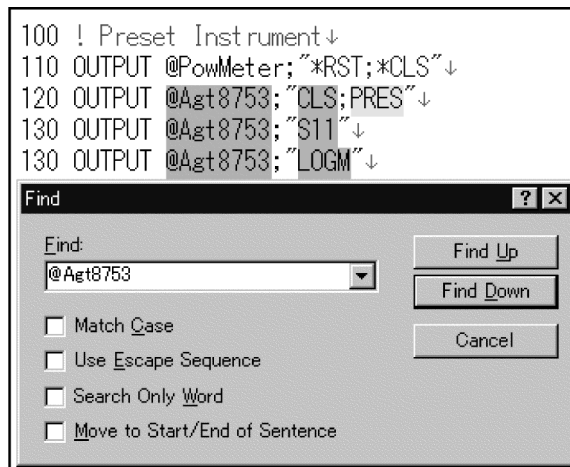
In Figure 5-4, The I/O path @Agt8753 indicating the GPIB address is highlighted.

To highlight the @Agt8753 commands in green, follow this procedure:

{Search} → {Find} → Find "@Agt8753"

Figure 5-4

Highlight the OUTPUT commands



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How to Convert Commands Highlighted in Blue

The commands highlighted in blue can be easily converted into the appropriate ENA commands because there is only one choice. For more details on conversion procedures, refer to the section “Conversion” on page 25.

How to Convert Commands Highlighted in Yellow

The commands highlighted in yellow cannot be converted as easily as those in blue because there are multiple choices for conversion or the source code needs to be modified.

In this case, refer to the information in the Code Conversion Assistant window. You may need to refer to the tips in this section or in the ENA programmer's guide, depending on the complexity of the conversion.

How to Convert Commands Highlighted in Red

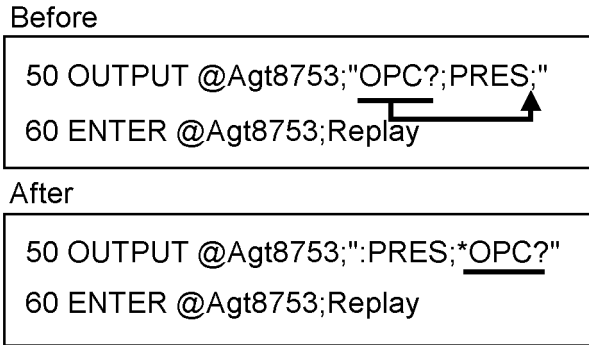
It is difficult to convert a command highlighted in red because the ENA doesn't have the same function. Consider whether these commands can be deleted or alternative functions can be used on the ENA.

For more details on the functional differences between the 8753ES and the ENA, refer to the section “Important Functional Differences” on page 68.

How to Convert the OPC? Command

The OPC? command of the 8753ES waits for the completion of the next command. The *OPC? command of the ENA waits for the completion of all pending operations. To convert the OPC? command, move it to the end of the command line and convert OPC? to *OPC?.

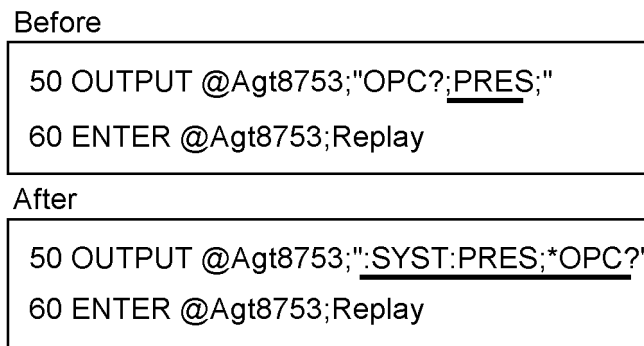
Figure 5-5 OPC? command conversion



How to Convert the PRES Command

The PRES command of the 8753ES can be replaced with the :SYST: PRES command.

Figure 5-6 PRES command Conversion



NOTE

After performing preset on the ENA, it is recommended that you first set the display conditions. The display settings affect program commands because most of the ENA commands require the channel/trace numbers as parameters. For more information, refer to Chapter 4, "General Flow of Code Conversion," on page 35.

How to Convert When Variables Specify Command Parameters

When variables are used to specify command parameters, there are several choices for how to convert the command even if it is highlighted in blue. The following example shows how to convert the CHAN command. You have to change the CHAN command according to the channel and trace setting on the ENA.


Figure 5-7 Code conversion when variables are used

Before

```
450 FOR I =1 TO 2
460 OUTPUT @Agt8753;"CHAN"&VAL$(I )
490 NEXT I
```

When conversion assistant is used

```
450 FOR I =1 TO 2
460 OUTPUT @Agt8753;":DISP:WIND<ch>:ACT;:CALC<ch>:PAR<tr>:SEL"&VAL$( I )
490 NEXT I
```



After conversion

```
450 FOR I =1 TO 2
460 OUTPUT @Agt8753;":DISP:WIND"&VAL$(I )&":ACT;:CALC"&VAL$(I ):PAR1:SEL"
490 NEXT I
```

How to Convert the SING Command

This program generates a trigger to channel 1 and waits for the end of measurement by using *OPC?.

```
10 OUTPUT @ENA; ":INIT1:CONT OFF"  
20 OUTPUT @ENA; ":TRIG:SOUR BUS"  
30 OUTPUT @ENA; ":TRIG:SING"  
40 OUTPUT @ENA; "*OPC?"  
50 ENTER @ENA;Reply
```

For more details, refer to the section "Using the :TRIG:SING command" in Chapter 5 of the "ENA programmer's guide".

NOTE

An ENA trigger event is common to all channels, while the 8753ES can trigger channels separately. (Couple/Uncouple is not available in ENA.)

How to Convert a Frequency Sweep List Table

It is recommended that you develop the frequency sweep list table from scratch with reference to the section "Configuring Measurement Conditions" in Chapter 3 of the ENA Programmer's Guide. It is likely to take more time to convert the frequency sweep list table because the concepts between the 8753ES and ENA are different. The ENA sets up an entire table at the same time, while the 8753ES sets up a table line-by-line.

Conversion Example for a Frequency Sweep List Table

The following list frequency table is created. The conversion example of programs for executing a list frequency sweep is shown in Table 5-3.

Start	Stop	Number of Points	Power Level	IF Bandwidth
850 MHz	870 MHz	5	0 dBm	10 Hz
870 MHz	880 MHz	11	0 dBm	100 Hz
880 MHz	940 MHz	15	-10 dBm	3 kHz
940 MHz	955 MHz	100	-10 dBm	3 kHz
955 MHz	1040 MHz	10	-10 dBm	1 kHz

The flow of this program is as follows:

1. Enter the contents of the list frequency table into array variables (Lines 90 to 210)
2. Define the I/O path of the analyzer. (Line 230)
3. Preset the analyzer and then stop the sweep operation. (Lines 250 to 300)

NOTE On the Code Conversion Assistant, the bus trigger is selected as the trigger source. On the 8753ES, which has no bus trigger, the setting remains at the internal trigger.

4. Set the analyzer in swept mode. (Line 350)

NOTE The Code Conversion Assistant allows itself to be set in swept mode even when the sweep type is separate from the list frequency sweep.

5. Make arrangements for the IF bandwidth and power level to be specified segment by segment. (Lines 370 to 470)

NOTE On the 8753ES, a command is sent to establish the above setup. On the Code Conversion Assistant, however, the parameters for the list table creation command are used to perform the setup.

6. Create the list frequency table. (Lines 510 to 590)

7. Perform one sweep operation. (Lines 630 to 680)

8. Execute autoscale. (Line 690)

Table 5-3 Comparison Between Two Programs for Executing a List Frequency Sweep

8753ES	Code Conversion Assistant
<pre> 10 ! 20 ! The list below has the following entries: 30 ! Start: Start frequency (MHz) 40 ! Stop: Segment stop (MHz) 50 ! Pts: Segment number of points 60 ! Pow: Power at port 1 (dBm) 70 ! IFBW: Segment IFBW (Hz) 80 !----- 90 DIM Listtable(1:5,1:5) 100 Freqlist: ! 110! List: Start (MHz) Stop (MHz) Pts Pow IFBW 120! ----- 130! ----- 140 DATA 850.0, 870.0, 5, 0, 10 150 DATA 870.0, 880.0, 11, 0, 100 160 DATA 880.0, 940.0, 15, -10, 3000 170 DATA 940.0, 955.0, 100, -10, 3000 180 DATA 955.0, 1040.0, 10, -10, 1000 190! ----- 200 READ Listtable(*) 210 Numb=SIZE(Listtable,1) 220! 230 ASSIGN @Agt8753 TO 716 240! 250! Initialize the system 260 OUTPUT @Agt8753;"OPC?;PRES" 270 ENTER @Agt8753;Done 280 OUTPUT @Agt8753;"HOLD" 290! 300!</pre>	<pre> 10 ! 20 ! The list below has the following entries: 30 ! Start: Start frequency (Hz) 40 ! Stop: Segment stop (Hz) 50 ! Pts: Segment number of points 60 ! Pow: Power at port 1 (dBm) 70 ! IFBW: Segment IFBW (Hz) 80 !----- 90 DIM Listtable(1:5,1:5) 100 Freqlist: ! 110! List: Start (Hz) Stop (Hz) Pts IFBW Pow 120! ----- 130! ----- 140 DATA 850.0E+6, 870.0E+6, 5, 10, 0 150 DATA 870.0E+6, 880.0E+6, 11, 100, 0 160 DATA 880.0E+6, 940.0E+6, 15, 3000, -10 170 DATA 940.0E+6, 955.0E+6, 100, 3000, -10 180 DATA 955.0E+6, 1040.0E+6, 10, 1000, -10 190! ----- 200 READ Listtable(*) 210 Numb=SIZE(Listtable,1) 220! 230 ASSIGN @Agte507x TO 717 240! 250! Initialize the system 260 OUTPUT @Agte507x;" :SYST:PRES;" 270 OUTPUT @Agte507x;"*OPC?" 280 ENTER @Agte507x;Done 290 OUTPUT @Agte507x;" :TRIG:SOUR BUS" 300 OUTPUT @Agte507x;" :INIT:CONT OFF"</pre>

Table 5-3 Comparison Between Two Programs for Executing a List Frequency Sweep

8753ES	Code Conversion Assistant
310!	310!
320! Set list frequency mode	320! Set sweep mode
330! (swept list mode)	330! (swept mode)
340!	340!
350 OUTPUT @Agt8753;"EDITLIST;LISTTYPELSWP"	350 OUTPUT @Agte507x;":SENS1:SWE:GEN ANAL"
360!	360!
370!	370 INTEGER Freq_mode,List_ifbw,List_power,List_delay,List_time
380!	380!
390!	390! Set the frequency segment mode to Start/Stop
400!	400! Freq_mode 0: Start/Stop 1:Center/Span
410! Turn on list power mode	410!
420! Turn on list ifbw mode	420 Freq_mode=0
430!	430!
440 OUTPUT @Agt8753;"LISIFBWMON"	440 List_ifbw=1 ! Turn on list ifbw mode
450 OUTPUT @Agt8753;"LISPWRMON"	450 List_power=1 ! Turn on list power mode
460!	460 List_delay=0 ! Turn off list delay mode
470!	470 List_time=0 ! Turn off list time mode
480!	480!
490! Create segment table	490! Create segment table
500!	500!
510 FOR I=1 TO Numb	510 DIM Para\$(300)
520 OUTPUT @Agt8753;"SADD;STAR";Listtable(I,1);	520 Para\$="5,"&VAL\$(Freq_mode)&","&VAL\$(List_ifbw
"MHZ")&","&VAL\$(List_power)&","&VAL\$(List_delay)&","&VAL
530 OUTPUT @Agt8753;"STOP";Listtable(I,2);"MHZ"	\$ (List_time)&","&VAL\$(Numb)
540 OUTPUT @Agt8753;"POIN";Listtable(I,3)	530 FOR I=1 TO Numb
550 OUTPUT @Agt8753;"SEGPOWER";Listtable(I,4)	540 FOR J=1 TO 5
560 OUTPUT @Agt8753;"SEGIFBW";Listtable(I,5)	550 Para\$=Para\$&","&VAL\$(Listtable(I,J))
570 OUTPUT @Agt8753;"SDON"	560 NEXT J
580 NEXT I	570 NEXT I
590 OUTPUT @Agt8753;"EDITDONE"	580 OUTPUT @Agte507x;":SENS1:SEGM:DATA ";Para\$
600!	590!
610! Make a single sweep	600!
620!	610! Make a single sweep
630 OUTPUT @Agt8753;"LISFREQ;S21;OPC?;SING"	620!
640 ENTER @Agt8753;Done	630 OUTPUT @Agte507x;":SENS1:SWE:TYPE SEGM;"
650!	640 OUTPUT @Agte507x;":CALC1:PAR1:DEF S21;"
660!	650 OUTPUT @Agte507x;":INIT"
670!	660 OUTPUT @Agte507x;":TRIG:SING"
680!	670 OUTPUT @Agte507x;"*OPC?"
690 OUTPUT @Agt8753;"AUTOSCAL;WAIT"	680 ENTER @Agte507x;Done
700 !	690 OUTPUT @Agte507x;":DISP:WIND1:TRAC1:Y:AUTO"
710 LOCAL @Agt8753	700 !
720 END	710 !
	720 END

How to Export a Frequency Sweep List Table

Use the :MMEM:STOR:SEGM command. You can save the frequency sweep list table of the active channel into a CSV format file. Please note that the table's format is different between the 8753ES and the ENA. For more details, refer to the section "Configuring Measurement Conditions" in Chapter 3 of the ENA Programmer's Guide.

How to Convert a Limit Table

It is recommended that you develop the limit table from scratch with reference to Chapter 8 "Limit Test" in the ENA Programmer's Guide. It is likely to take more time to convert a limit table because the concepts between the 8753ES and ENA are different. The ENA sets up an entire table at the same time, while the 8753ES sets up a table line-by-line.

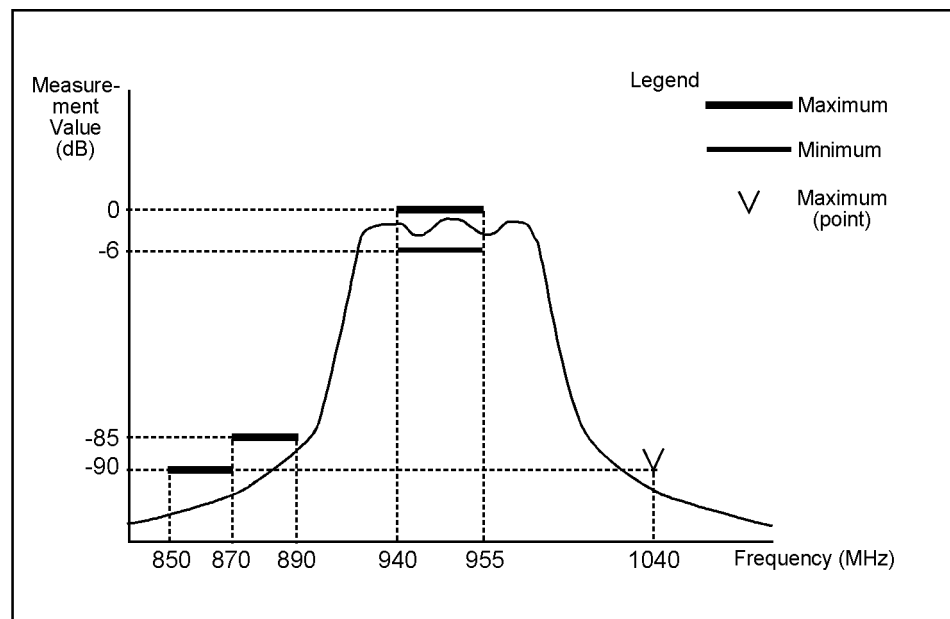
Limit Test

The limit table for displaying the limit lines in Table 5-8 is created. A comparison between two programs for displaying the limit lines and executing the limit test is shown in Table 5-4.

CAUTION

When points are not included in the range defined by the limit lines, the 8753ES carries out the limit test using the interpolated values. On the Code Conversion Assistant, however, the test is passed when points are not included. Sweep conditions should be defined so that points are included within the range defined by the limit lines.

Figure 5-8 Limit Lines Drawn Using Program in Table 5-3



The flow of this program is as shown below:

1. Pass the contents of the limit table to array variables. (Lines 210 to 340)
2. Define the I/O path of the analyzer. (Line 360)
3. Preset the analyzer and then stop the sweep operation. (Lines 390 to 420)
4. Create the limit table. (Lines 460 to 550)

NOTE

The items in the limit table for the 8753ES differ from those for the Code Conversion

Tips for the 8753ES Code Conversion
How to Convert a Limit Table

Assistant.

5. Display the limit lines and turn on the limit test. (Lines 570 to 580)

Table 5-4 Comparison Between Two Programs for Executing a Limit Test

8753ES	Code Conversion Assistant
10 !-----	10 !-----
20 ! The following constants are used to represent	20 ! The following constants are used to represent
30 ! limit line "type" in the table below.	30 ! limit line "type" in the table below.
40 !	40 !
50 ! 1 = flat line	50 ! Limit line type
60 ! 2 = sloping line	60 ! 0 = off
70 ! 3 = single point (also used to terminate a line segment)	70 ! 1 = upper limit line
80 !-----	80 ! 2 = lower limit line
90 !	90 !
100 DIM Limtype\$(1:3) [2]	100!-----
110 DATA FL, SL, SP	110!
120 READ Limtype\$ (*)	120!
130!	130!
140! The list below has the following entries:	140! The list below has the following entries:
150! Stim: Stimulus Value (Hz)	150! Start: Start frequency (Hz)
160! upper: Upper Limit	160! Stop: Stop frequency (Hz)
170! lower: Lower Limit	170! strt resp: Limit value at start frequency (dB)
180! lim type: Limit Line type	180! stop resp: Limit value at stop frequency (dB)
190!-----	190! lim type: Limit line type
200!	200!-----
210 DIM Listtable(1:6,1:4)	210 DIM Listtable(1:5,1:5)
220 Freqlist: ! lim	220 Freqlist: ! lim strt stop
230! List: Stim uppr lower type	230! List: type Start Stop resp resp
240!-----	240!-----
250!	250!
260 DATA 850.0, -90, -200, 1	260 DATA 1, 850.0E+6, 870.0E+6, -90, -90
270 DATA 870.0, -85, -200, 1	270 DATA 1, 870.0E+6, 880.0E+6, -85, -85
280 DATA 880.0, -85, -200, 3	280 DATA 1, 940.0E+6, 955.0E+6, 0, 0
290 DATA 940.0, 0, -6, 1	290 DATA 1, 1040.0E+6, 1040.0E+6, -90, -90
300 DATA 955.0, 0, -6, 3	300 DATA 2, 940.0E+6, 955.0E+6, -6, -6
310 DATA 1040.0, -90, -200, 3	310!-----
320!-----	320!
330 READ Listtable(*)	330 READ Listtable(*)
340 Numb=SIZE(Listtable,1)	340 Numb=SIZE(Listtable,1)
350!	350!
360 ASSIGN @Agt8753 TO 727	360 ASSIGN @Agte507x TO 717
370!	370!
380! Initialize the system	380! Initialize the system
390 OUTPUT @Agt8753;"OPC?;PRES"	390 OUTPUT @Agte507x;" :SYST:PRES"
400 ENTER @Agt8753;Done	400 OUTPUT @Agte507x;"*OPC?"
410 OUTPUT @Agt8753;"HOLD"	410 ENTER @Agte507x;Done
420!	420 OUTPUT @Agte507x;" :INIT1:CONT OFF"
430!	430!
440! Create the corresponding limit table	440! Create the corresponding limit table
450!	450!
460 OUTPUT @Agt8753;"EDITLIML;CLEAL"	460 DIM Para\$[200]
470 FOR I=1 TO Numb	470 Para\$=VAL\$(Numb)
480 OUTPUT @Agt8753;"SADD"	480 FOR I=1 TO Numb
490 OUTPUT @Agt8753;" ;LIMS";Listtable(I,1) ;"MHZ"	490 FOR J=1 TO 5
500 OUTPUT @Agt8753;" ;LIMU";Listtable(I,2)	500 Para\$=Para\$&" , "&VAL\$(Listtable(I,J))
510 OUTPUT @Agt8753;" ;LIML";Listtable(I,3)	510 NEXT J
520 OUTPUT @Agt8753;" ;LIMT";Limtype\$(Listtable(I,4))	520 NEXT I
530 OUTPUT @Agt8753;" ;SDON"	530 OUTPUT @Agte507x;" :CALC1:LIM:DATA " ;Para\$
540 NEXT I	540 !
550 OUTPUT @Agt8753;"EDITDONE"	550 !
560 !	560 !
570 OUTPUT @Agt8753;"LIMILINEON;LIMITESTON"	570 OUTPUT @Agte507x;" :CALC1:LIM:DISP ON"
580 !	580 OUTPUT @Agte507x;" :CALC1:LIM ON"
590 LOCAL @Agt8753	590 !
600 END	600 END

How to Export a Limit Table

Use the `:MMEM:STOR:LIM` command. You can save the limit list table of the active channel into a CSV format file. Please note that the table's format is different between the 8753ES and the ENA. For more detail, refer to Chapter 8 "Limit Test" in the ENA Programmer's Guide.

How to Convert a Power Sensor Calibration Factor Table

It is recommended that you to develop the limit table from scratch with reference to Chapter 4 "Performing Calibration" in the ENA Programmer's Guide. It is likely to take more time to convert a power sensor calibration factor table because the procedure is much different between the 8753ES and ENA. The ENA sets up an entire table at the same time, while the 8753ES sets up a table line-by-line.

How to Convert a Power Loss Table

It is recommended that you to develop the limit table from scratch with reference to Chapter 4 "Performing Calibration" in the ENA Programmer's Guide. It is likely to take more time to convert a power loss table because the procedure is much different between the 8753ES and ENA. The ENA sets up an entire table at the same time, while the 8753ES sets up a table line-by-line.

How to Convert Program Code for Calibration

It is recommended that you develop a limit table from scratch with reference to Chapter 4 "Performing a Calibration" in the ENA Programmer's Guide. It is likely to take more time to convert the GPIB commands for calibration because ENA calibration is simpler than that of the 8753ES.

Conversion Example for Full 2-Port Calibration

The conversion example of programs for executing full 2-port calibration on channel 1 is shown in Table 5-5.

The program flow is shown below. The line numbers are common for both the Code Conversion Assistant and 8753ES examples.

1. Define the I/O path of the analyzer. (Line 40)

Tips for the 8753ES Code Conversion

How to Convert Program Code for Calibration

2. Select calibration kits. (Lines 80 to 280)

NOTE

For the 8753ES, the choice is made between two types: 85031B (7 mm) and 875032B/E (N type, 50 Ω). For the Code Conversion Assistant, in contrast, the labels of the registered calibration kits are read to make the selection.

3. Start full 2-port calibration. (Line 320)

NOTE

The Code Conversion Assistant requires one or more ports to be designated. In this example, ports 1 and 2 are used.

4. Measure the reflection. (Lines 370 to 1070)

NOTE

When two or more standards are registered in a calibration class on the 8753ES, you must send two commands, one for selecting a standard and the other for ending the calibration class measurement. On the Code Conversion Assistant, which allows only one standard to be registered in each calibration class, there is no command for selecting a standard.

5. Measure the transmission. (Lines 1120 to 1370)

NOTE

Specifying the input port and output port enables the Code Conversion Assistant to measure matching and transmission simultaneously.

6. Determine whether or not to measure isolation. Execute once the measurement selection is made. (Lines 1420 to 1750)

NOTE

To end calibration without performing isolation, the 8753ES requires a command for ending calibration without performing isolation (Line 1470). The Code Conversion Assistant, however, allows the calibration to be ended without sending any command.

7. Calculate the error correction factors based on the data acquired, and then end the calibration. (Lines 1810 to 1840)

Table 5-5 Comparison Between Two Programs for Executing Full 2-Port Calibration

8753ES	Code Conversion Assistant
10 INTEGER Cal_kit	10 INTEGER I, Cal_kit
20 !	20 DIM Cal_kit_lbl\$(1:10) [20], Inp_char\$(9)
30 !	30 !
40 ASSIGN @Agt8753 TO 716	40 ASSIGN @Agte507x TO 717
50 !	50 !
60 ! Select Calibration Kit	60 ! Select Calibration Kit
70 !	70 !
80 !	80 FOR I=1 TO 10
90 !	90 OUTPUT @Agte507x;":SENS1:CORR:COLL:CKIT ";I
100 !	100 OUTPUT @Agte507x;":SENS1:CORR:COLL:CKIT:LA B?"
110 !	110 ENTER @Agte507x;Cal_kit_lbl\$(I)
120 !	120 NEXT I
130 !	130 !
140 Kit_select: !	140 Kit_select: !
150 CLEAR SCREEN	150 CLEAR SCREEN
160 PRINT "## Calibration Kit Selection ##"	160 PRINT "## Calibration Kit Selection ##"
170 PRINT "Enter one of the following numbers:"	170 PRINT "Enter one of the following numbers"
180 PRINT "1 to use the 85031B kit, "	180 FOR I=1 TO 10
190 PRINT "2 to use the 85032B/E kit, "	190 PRINT VAL\$(I)&":&Cal_kit_lbl\$(I)
200 INPUT Cal_kit	200 NEXT I
210 SELECT Cal_kit	210 PRINT "Input 1 to 10"
220 CASE 1	220 INPUT "Input number? (1 to 10)", Inp_char\$
230 OUTPUT @Agt8753;"CALK7MM"	230 Cal_kit=IVAL(Inp_char\$,10)
240 CASE 2	240 IF Cal_kit<1 OR Cal_kit>10 THEN Kit_select
250 OUTPUT @Agt8753;"CALKN50"	250 !
260 CASE ELSE	260 OUTPUT @Agte507x;":SENS1:CORR:COLL:CKIT ";Ca l_kit
270 GOTO Kit_select	270 !
280 END SELECT	280 !
290 !	290 !
300 ! Start Full 2-Port Calibration	300 ! Start Full 2-Port Calibration
310 !	310 !
320 OUTPUT @Agt8753;"CALIFUL2"	320 OUTPUT @Agte507x;":SENS1:CORR:COLL:METH:SOLT 2 1,2"
330 !	330 !
340 ! Reflection Measurement	340 ! Reflection Measurement
350 !	350 !
360 CLEAR SCREEN	360 CLEAR SCREEN
370 PRINT "## REFLECTION MEASUREMENT ##"	370 PRINT "## REFLECTION MEASUREMENT ##"
380 OUTPUT @Agt8753;"REFL"	380 !
390 !	390 FOR I=1 TO 2
400 !	400 !
410 ! S11 Open Measurement	410 ! Open Measurement
420 !	420 !
430 CALL Waitforkey("CONNECT OPEN AT PORT 1")	430 PRINT "CONNECT OPEN AT PORT "&VAL\$(I)&". P ress [Enter] when ready."
440 IF Cal_kit=2 THEN	440 INPUT "",Buff\$
450 OUTPUT @Agt8753;"CLASS11A"	450 OUTPUT @Agte507x;":SENS1:CORR:COLL:OPEN ";I
460 OUTPUT @Agt8753;"OPC?;STANB"	460 OUTPUT @Agte507x;"*OPC?"
470 ELSE	470 ENTER @Agte507x;Buff\$
480 OUTPUT @Agt8753;"OPC?;CLASS11A"	480 !
490 END IF	490 !
500 ENTER @Agt8753;Reply	500 !
510 OUTPUT @Agt8753;"DONE"	510 !
520 !	520 !
530 ! S11 Short Measurement	530 ! Short Measurement
540 !	540 !

Tips for the 8753ES Code Conversion
How to Convert Program Code for Calibration

Table 5-5 Comparison Between Two Programs for Executing Full 2-Port Calibration

8753ES	Code Conversion Assistant
550 CALL Waitforkey("CONNECT SHORT AT PORT 1")	550 PRINT "CONNECT SHORT AT PORT "&VAL\$(I)&". Press [Enter] when ready."
560 IF Cal_kit=2 THEN	560 INPUT "",Buff\$
570 OUTPUT @Agt8753;"CLASS11B"	570 OUTPUT @Agte507x;":SENS1:CORR:COLL:SHOR ";I
580 OUTPUT @Agt8753;"OPC?;STANB"	580 OUTPUT @Agte507x;"*OPC?"
590 ELSE	590 ENTER @Agte507x;Buff\$
600 OUTPUT @Agt8753;"OPC?;CLASS11B"	600 !
610 END IF	610 !
620 ENTER @Agt8753;Reply	620 !
630 OUTPUT @Agt8753;"DONE"	630 !
640 !	640 !
650 ! S11 Load Measurement	650 ! Load Measurement
660 !	660 !
670 CALL Waitforkey("CONNECT LOAD AT PORT 1")	670 PRINT "CONNECT LOAD AT PORT "&VAL\$(I)&". P ress [Enter] when ready."
680 OUTPUT @Agt8753;"OPC?;CLASS11C"	680 INPUT "",Buff\$
690 ENTER @Agt8753;Reply	690 OUTPUT @Agte507x;":SENS1:CORR:COLL:LOAD ";I
700 OUTPUT @Agt8753;"DONE"	700 OUTPUT @Agte507x;"*OPC?"
710 !	710 ENTER @Agte507x;Buff\$
720 ! S22 Open Measurement	720 !
730 !	730 !
740 CALL Waitforkey("CONNECT OPEN AT PORT 2")	740 !
750 IF Cal_kit=2 THEN	750 !
760 OUTPUT @Agt8753;"CLASS22A"	760 !
770 OUTPUT @Agt8753;"OPC?;STANA"	770 !
780 ELSE	780 !
790 OUTPUT @Agt8753;"OPC?;CLASS22A"	790 !
800 END IF	800 !
810 ENTER @Agt8753;Reply	810 !
820 OUTPUT @Agt8753;"DONE"	820 !
830 !	830 !
840 ! S22 Short Measurement	840 !
850 !	850 !
860 CALL Waitforkey("CONNECT SHORT AT PORT 2")	860 !
870 IF Cal_kit=2 THEN	870 !
880 OUTPUT @Agt8753;"CLASS22B"	880 !
890 OUTPUT @Agt8753;"OPC?;STANA"	890 !
900 ELSE	900 !
910 OUTPUT @Agt8753;"OPC?;CLASS22B"	910 !
920 END IF	920 !
930 ENTER @Agt8753;Reply	930 !
940 OUTPUT @Agt8753;"DONE"	940 !
950 !	950 !
960 ! S22 Load Measurement	960 !
970 !	970 !
980 CALL Waitforkey("CONNECT LOAD AT PORT 2")	980 !
990 OUTPUT @Agt8753;"OPC?;CLASS22C"	990 !
1000 ENTER @Agt8753;Reply	1000 !
1010 OUTPUT @Agt8753;"DONE"	1010 !
1020 !	1020 !
1030 ! Reflection Measurement Done	1030 !
1040 !	1040 !
1050 PRINT "COMPUTING REFLECTION CALIBRATION COEFF ICIENTS"	1050 !
1060 !	1060 !
1070 OUTPUT @Agt8753;"REFD"	1070 NEXT I
1080 !	1080 !
1090 ! Transmission Measurement	1090 ! Transmission Measurement
1100 !	1100 !

Table 5-5 Comparison Between Two Programs for Executing Full 2-Port Calibration

8753ES	Code Conversion Assistant
1110 CLEAR SCREEN	1110 CLEAR SCREEN
1120 PRINT "## TRANSMISSION MEASUREMENT ##"	1120 PRINT "## TRANSMISSION MEASUREMENT ##"
1130 OUTPUT @Agt8753;"TRAN"	1130 !
1140 !	1140 !
1150 CALL Waitforkey("CONNECT THRU [PORT 1 TO PORT 2]")	1150 PRINT "CONNECT THRU [PORT 1 TO PORT 2]. Press [Enter] when ready."
1160 !	1160 INPUT "",Buff\$
1170 !	1170 !
1180 ! Forward Transmission Measurement	1180 ! Forward Transmission Measurement
1190 !	1190 !
1200 PRINT "MEASURING FORWARD TRANSMISSION"	1200 PRINT "MEASURING FORWARD TRANSMISSION"
1210 OUTPUT @Agt8753;"OPC?;FWDI"	1210 OUTPUT @Agte507x;":SENS1:CORR:COLL:THRU 2,1"
1220 ENTER @Agt8753;Reply	1220 OUTPUT @Agte507x;"*OPC?"
1230 !	1230 ENTER @Agte507x;Buff\$
1240 OUTPUT @Agt8753;"OPC?;FWDM"	1240 !
1250 ENTER @Agt8753;Reply	1250 !
1260 !	1260 !
1270 ! Reverse Transmission Measurement	1270 ! Reverse Transmission Measurement
1280 !	1280 !
1290 PRINT "MEASURING REVERSE TRANSMISSION"	1290 PRINT "MEASURING REVERSE TRANSMISSION"
1300 OUTPUT @Agt8753;"OPC?;REVT"	1300 OUTPUT @Agte507x;":SENS1:CORR:COLL:THRU 1,2"
1310 ENTER @Agt8753;Reply	1310 OUTPUT @Agte507x;"*OPC?"
1320 !	1320 ENTER @Agte507x;Buff\$
1330 OUTPUT @Agt8753;"OPC?;REVM"	1330 !
1340 ENTER @Agt8753;Reply	1340 !
1350 !	1350 !
1360 ! Transmission Measurement Done	1360 !
1370 !	1370 !
1380 OUTPUT @Agt8753;"TRAD"	1380 !
1390 !	1390 !
1400 ! Isolation Measurement	1400 ! Isolation Measurement
1410 !	1410 !
1420 Start isolation: !	1420 Start_isolation: !
1430 CLEAR SCREEN	1430 CLEAR SCREEN
1440 PRINT "## ISOLATION MEASUREMENT ##"	1440 PRINT "## ISOLATION MEASUREMENT ##"
1450 INPUT "SKIP ISOLATION CAL? Y OR N.",An\$	1450 INPUT "SKIP ISOLATION CAL?",An\$
1460 IF An\$="Y" OR An\$="y" THEN	1460 IF An\$="Y" OR An\$="y" THEN Cal_done
1470 OUTPUT @Agt8753;"OMII"	1470 !
1480 GOTO Cal_done	1480 !
1490 END IF	1490 !
1500 IF An\$<>"N" AND An\$<>"n" THEN Start_isolation	1500 IF An\$="N" OR An\$="n" THEN
1510 !	1510 !
1520 CALL Waitforkey("ISOLATE TEST PORTS")	1520 PRINT "ISOLATE TEST PORTS 1 AND 2. Press [Enter] when ready."
1530 !	1530 INPUT "",Buff\$
1540 OUTPUT @Agt8753;"ISOL"	1540 !
1550 OUTPUT @Agt8753;"AVERFACT10"	1550 OUTPUT @Agte507x;":SENS1:AVER:COUN 10"
1560 OUTPUT @Agt8753;"AVEROON"	1560 OUTPUT @Agte507x;":SENS1:AVER ON"
1570 !	1570 !
1580 ! Forward Isolation Measurement	1580 ! Forward Isolation Measurement
1590 !	1590 !
1600 PRINT "MEASURING FORWARD ISOLATION"	1600 PRINT "MEASURING FORWARD ISOLATION"
1610 OUTPUT @Agt8753;"OPC?;FWDI"	1610 OUTPUT @Agte507x;":SENS1:CORR:COLL:ISOL 2,1"
1620 ENTER @Agt8753;Reply	1620 OUTPUT @Agte507x;"*OPC?"
1630 !	1630 ENTER @Agte507x;Buff\$
1640 !	1640 !
1650 ! Reverse Isolation Measurement	1650 ! Reverse Isolation Measurement
1660 !	1660 !
1670 PRINT "MEASURING REVERSE ISOLATION"	1670 PRINT "MEASURING REVERSE ISOLATION"

Table 5-5 Comparison Between Two Programs for Executing Full 2-Port Calibration

8753ES	Code Conversion Assistant
1680 OUTPUT @Agt8753;"OPC?;REVI"	1680 OUTPUT @Agte507x;":SENS1:CORR:COLL:ISOL 1,2"
1690 ENTER @Agt8753;Reply	1690 OUTPUT @Agte507x;"*OPC?"
1700 !	1700 ENTER @Agte507x;Buff\$
1710 !	1710 !
1720 OUTPUT @Agt8753;"ISOD;AVEROOF"	1720 OUTPUT @Agte507x;":SENS1:AVER OFF"
1730 !	1730 ELSE
1740 !	1740 GOTO Start_isolation
1750 !	1750 END IF
1760 !	1760 !
1770 ! Done with Full 2-Port Calibration	1770 ! Done with Full 2-Port Calibration
1780 !	1780 !
1790 Cal_done: !	1790 Cal_done: !
1800 CLEAR SCREEN	1800 CLEAR SCREEN
1810 PRINT "COMPUTING CALIBRATION COEFFICIENTS"	1810 PRINT "COMPUTING CALIBRATION COEFFICIENTS"
1820 OUTPUT @Agt8753;"OPC?;SAV2"	1820 OUTPUT @Agte507x;":SENS1:CORR:COLL:SAVE"
1830 ENTER @Agt8753;Reply	1830 OUTPUT @Agte507x;"*OPC?"
1840 !	1840 ENTER @Agte507x;Buff\$
1850 PRINT "DONE WITH FULL 2-PORT CAL."	1850 PRINT "DONE WITH FULL 2-PORT CALIBRATION"
1860 OUTPUT @Agt8753;"MENUON"	1860 !
1870 !	1870 END
1880 END	
1890 !	
1900 ! Subroutine	
1910 !	
1920 SUB Waitforkey(Lab\$)	
1930 PRINT Lab\$&" Press ENTER when ready"	
1940 INPUT A\$	
1950 SUBEND	

How to Convert Program Code for Save/Recall Functions

It is recommended that you develop a limit table from scratch with reference to Chapter 9 "Saving and Recalling (File Management)" in the ENA Programmer's Guide. It is likely to take more time to convert the GPIB commands for save/recall functions because the concepts between the 8753ES and ENA are different.

How to Read Instrument Model Number

Use the *IDN? command as in the following sample program:

```
10 OUTPUT @ENA;"*IDN?;"
20 ENTER @ENA;Reply$
30 Model$=Reply$[22;6]
```

How to Read Firmware Revision Number

Use the *IDN? command as in the following sample program:

```
10 OUTPUT @ENA;"*IDN?;"  
20 ENTER @ENA;Reply$  
30 Firmrev$=Reply$[40;6]
```

How to Read Serial Number

In order to read the serial number, the OUTPSEARN command is used with the 8753ES. With the ENA, use the *IDN? command as in the following sample program:

```
10 DIM A$[46]  
20 Output @ENA;"*IDN?"  
30 Enter @ENA;Reply$  
40 SerialNo$ = Reply$[29,38]  
50 Print SerialNo$
```

How to Convert a Command Containing a Unit

The 8753ES can interpret a unit in the command parameter, but the ENA cannot. Remove any unit before conversion.

You have to remove the unit for conversion from the GPIB command. You must convert with care when the unit is frequency. The frequency parameter unit is interpreted as Hz on the ENA. For example, you have to set the parameter to 3000000000 or 3E9 when you specify the frequency as 3 GHz.

How to Convert a Binary Data Transfer Program

It is recommended that you develop a limit table from scratch with reference to Chapter 7 "Reading/Writing Measurement Data" in the ENA Programmer's Guide. When converting the program, you must take into account the fact that the definitions of the header and footer are different between the 8753ES and the ENA.

How to Read the Active Channel and Trace

Reading the active channel on the 8753ES is equivalent to reading the active channel and trace. To read the active trace on the ENA, the channel must be specified in the

Tips for the 8753ES Code Conversion Difference in Marker Couple/Uncouple

command. Table 5-6 shows a conversion example.

Table 5-6 Converting the program to read the active channel.

8753ES	ENA
100 OUTPUT @Agt8753;"OUTPCHAN" 110 ENTER @Agt8753;Chan	100 OUTPUT @Agtena;" :SERV:CHAN:ACT?" 110 ENTER @Agtena;Chan 120 OUTPUT @Agtena;" :SERV:CHAN"&VAL\$(Chan) &" :TRAC:ACT?" 130 ENTER @Agtena;Trace

Difference in Marker Couple/Uncouple

In the 8753ES, the marker coupling function is in effect for all channels, even if the channel setting is uncoupled. On the other hand, on the ENA, marker coupling is in effect only among the traces in the same channel. Convert the following commands while giving special attention to this difference.

- MARKCOUP
- MARKUNCO

How to Convert a Query on 8753ES to Multiple Queries on ENA

Some individual 8753ES query commands are converted to multiple query commands. In this case, you need to modify the program to read the response as string. An example is shown in Table 5-7.

Table 5-7 Converting the program to read the active channel.

8753ES	ENA
100 OUTPUT @Agt8753;"LOWSTEP?" 110 ENTER @Agt8753;Tran	100 OUTPUT @Agtena;" :CALC1:TRAN:TIME?; :CALC1:TRAN:TIME:STIM?" 110 ENTER @Agtena;Tran\$

How to Convert Chop/Alternate Sweep Mode

The 8753ES has a function for switching the chop/alternate sweep mode. The chop/alternate mode is set by the following commands:

- CHOPAB
- ALTAB

On the other hand, on the ENA, the traces in on channel work as a chop sweep while the traces in the other channels work as the alternate sweep mode.

You need to set each trace into a separate channel on the ENA because the sweep operation in the alternate sweep mode is performed separately for each channel in the 8753ES. Thus, Table 5-2 on page 46 is not applicable to the alternate sweep mode. You need to set the channel and trace numbers manually when you convert a program where the alternate sweep mode is activated.

How to Convert Color Setting

It is recommended that you develop a color setting from scratch with reference to Chapter 3 "Setting Up the Analyzer" in the ENA Programmer's Guide. It is likely to take more time to convert a color setting because the procedure is much different between the 8753ES and ENA.

Tips for the 8753ES Code Conversion
How to Convert Color Setting

6 Comparing functions of the 8753ES and the E5070B/E5071B

This chapter describes the information necessary to replace Agilent 8753ES with the Agilent E5070B/E5071B.

Important Functional Differences

This section describes the key differences between the Agilent 8753ES and Agilent E5070B/E5071B.

Channel and Trace Concepts

In the 8753ES, channels 1 and 2 are independent from each other and have auxiliary channels, channels 3 and 4, respectively. Channels 3 and 4 can be displayed as additions to channels 1 and 2, respectively. This allows up to four channels to be displayed for up to four traces on the screen simultaneously. Channels 1 and 3 and channels 2 and 4 are always coupled, while channels 1 and 2 are independent from each other. This enables you to specify different sweep conditions on each of channels 1 and 2. The E5070B/E5071B has four/nine/twelve/sixteen independent channels, each of which allows sweep conditions to be defined different from those on other channels. On the screen you can open up to sixteen windows, each of which allows up to sixteen traces to be defined.

Measurement Parameters

In the 8753ES, S-parameters as well as measurement parameters such as A, B, R, A/R, B/R, and A/B are supported to enable you to measure values such as the absolute value of the power input to a port. The E5070B/E5071B, however, allows only S-parameters to be measured.

Test Port Output Ranges

The 8753ES comes standard with test sets for two ports, while the E5070B/E5071B comes optionally with test sets for two ports (Options 213 and 214), three ports (Options 313 and 314), and four ports (Options 413 and 414). Furthermore, the 8753ES comes optionally with a 75 Ω test set (Option 075), while the E5070B/E5071B does not.

For more about the measurement frequency ranges of the 8753ES and E5070B/E5071B, see Table 6-1.

Table 6-1

Measurement Frequency Ranges

Function	8753ES	E5070B/E5071B
Measurement frequency range	30 kHz to 3 GHz (std.)	300 kHz to 3 GHz (E5070B)
	30 kHz to 6 GHz (Option 006)	300 kHz to 8.5 GHz (E5071B)

For more about the output power levels and output power ranges of the 8753ES and E5070B/E5071B, see Table 6-2.

Table 6-2 Test Port Output Power Levels

Function	8753ES	E5070B/E5071B
Output power levels	-85 dBm to 10 dBm (std.) -85 dBm to 8 dBm (Options 014 and 075)	-15 dBm to 0 dBm (Options 213, 313, and 413) -50 dBm to 0 dBm (Options 214, 314, and 414)
Output power ranges	-15 dBm to 10 dBm (std.) or -15 dBm to 8 dBm (Options 014 and 075), -25 dBm to 0 dBm, -35 dBm to -10 dBm, -45 dBm to -20 dBm, -55 dBm to -30 dBm, -65 dBm to -40 dBm, -75 dBm to -50 dBm, -85 dBm to -60 dBm	-15 dBm to 0 dBm only (Options 213, 313, and 413) -15 dBm to 10 dBm, -20 dBm to 5 dBm, -25 dBm to 0 dBm, -30 dBm to -5 dBm, -35 dBm to -10 dBm, -40 dBm to -15 dBm, -45 dBm to -20 dBm, -50 dBm to -25 dBm (Options 214, 314, and 414)

Sweep Function

The list (segment) sweep function enables you to perform measurements corresponding to two or more sweep conditions in one sweep operation and is supported both on the 8753ES and E5070B/E5071B. While the 8753ES allows only up to 30 segments per table to be defined, the E5070B/E5071B allows up to 201 segments to be defined. Furthermore, while two or more commands are needed to create a table using GPIB (SCPI) commands on the 8753ES, only one command does the same function on the E5070B/E5071B.

The 8753ES supports an IF bandwidth up to 6 kHz, but the E5070B/E5071B supports an IF bandwidth up to 100 kHz, enabling faster sweep operations than with the 8753ES.

While the 8753ES supports automatically selecting the output power range, the E5070B/E5071B supports only manual selection.

On the 8753ES, which supports frequency offset sweeps, frequency conversion devices such as mixers can be measured. The E5070B/E5071B, however, does not support this function.

Calibration

The types of calibration kits supported by the 8753ES and E5070B/E5071B are shown in Table 6-3.

Table 6-3 Supported Calibration Kits

Type of calibration kit	8753ES	E5070B/E5071B
7 mm	85031B	N/A
3.5 mm	85033C/D/E	85033D/E, 85032D
N type	50 Ω : 85032B/E/F 75 Ω : 85036B/E	50 Ω : 85032B/F 75 Ω : 85036B/E
2.4 mm	85056/D	N/A
TRL 3.5 mm	85052C	N/A
Others	User-defined calibration kit	User-defined calibration kit

The 8753ES allows only one type of user-defined calibration kit to be saved in the internal memory. Up to 15 classes can be set up when defining calibration kits, including 12 classes (isolation included) to be used for full 2-port calibration and three calibration classes (THRU, reflect, and line/match for TRL*/LRM* calibration. A maximum of seven standards can be defined for each calibration class.

In contrast, the E5070B/E5071B allows ten types of user-defined calibration kits to be saved in the internal memory, which include the five calibration kits registered beforehand. When setting up calibration classes, OPEN, SHORT, and LOAD can be set up on each port and THRU between ports. Only one standard is allowed for each calibration class.

ECal

Both the 8753ES and E5070B/E5071B support ECal measurement. However, each supports slightly different functions. The 8753ES supports enhanced response calibration, 1-port calibration for S11 and S22, and full 2-port calibration. Although the E5070B/E5071B does not support enhanced response calibration, it does support full 3-port calibration (Options 313, 314, 413, 414) and full 4-port calibration (Options 413, 414), making multi-port calibration possible.

While the 8753ES allows the manual measurement for the THRU standard, the E5070B/E5071B does not. Furthermore, the 8753ES allows a frequency array or module information to be read, but these functions are not supported on the E5070B/E5071B.

Trigger System

The trigger system detects the signal for starting a measurement (trigger) and controls decisions on whether to measure or not measure.

On the 8753ES, the trigger state is available for the pair of a main channel and an auxiliary channel (two pairs: channels 1 and 3 and channels 2 and 4). For each pair, three states are available: Hold, Waiting for Trigger, and Measurement. When a trigger event occurs, one pair of channels in the Waiting for Trigger state are put into a sweep operation. If the other pair is also Waiting for Trigger, then the next trigger event puts it into sweep operation as well. When the sweep condition coupling channels is turned on, the Hold, Waiting for Trigger, and Measurement states are common to all channels. In this case, when a trigger event occurs in the Waiting for Trigger state, all channels are put into sweep operation. For example, when you set channel 1 and 2 to uncouple and sweep each channel, you need to set each channel to Hold state and make trigger events to each channel.

On the E5070B/E5071B, the trigger system involves states of the entire system and those of each of the channels. Since a trigger event is common to all channels, three system-wide states exist: Hold, Waiting for Trigger, and Measurement. On the other hand, two states exist for each channel: Idle and Startup. For a channel in an Idle state, measurement is not performed at all, while for a channel in Startup state, measurements are started in sequence after an event occurs. When all channels are in an Idle state, the E5070B/E5071B is in Hold state when viewed as an entire system. If even one Startup state channel exists, the E5070B/E5071B enters the Waiting for Trigger or Measurement state. Upon a transition from the Waiting for Trigger to the Measurement state, measurement is performed on channels put into Startup state starting with the channel with the smallest channel number.

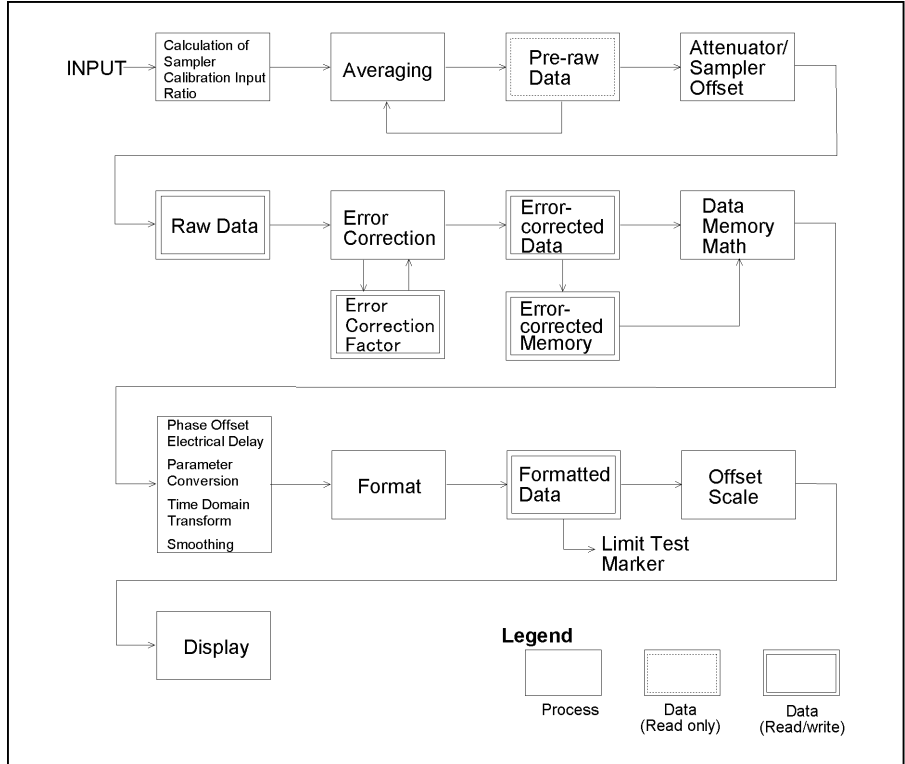
While the 8753ES allows either High or Low input signals from the external trigger line to be selected, the E5070B/E5071B allows only Low input signals to be selected.

Comparing functions of the 8753ES and the E5070B/E5071B
Important Functional Differences

Data Flow

The data flow in the 8753ES is shown in Figure 6-1 while the flow in the E5070B/E5071B is shown in Figure 6-2. As described in “Reading/Writing Data” on page 73, the types of data you can read/write using the 8753ES differ from those you can read/write using the E5070B/E5071B.

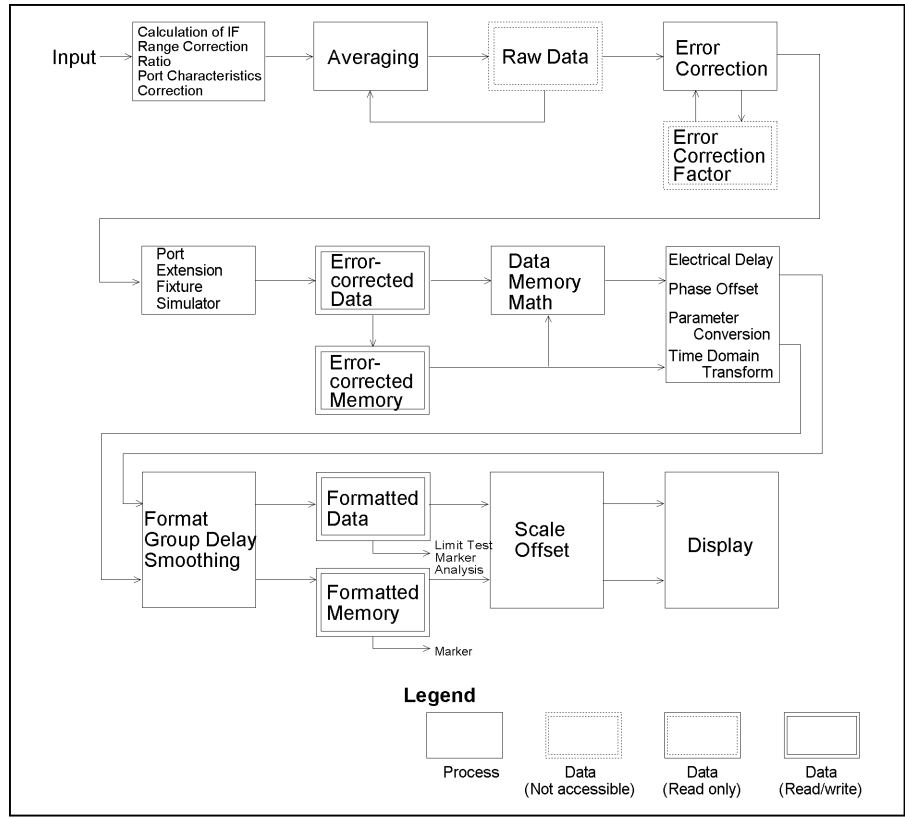
Figure 6-1 8753ES Data Flow



e5070ame002

Figure 6-2

E5070B/E5071B Data Flow



e5070bue069

Reading/Writing Data

Types of data that can be handled by the 8753ES and E5070B/E5071B are listed in Table 3-4.

Table 6-4

Reading/Writing Data

Function	8753ES	E5070B/E5071B
Data transfer format	Intra-device binary IEEE 32-bit floating point IEEE 64-bit floating point ASCII PC-DOS 32-bit floating point	IEEE 64-bit floating point ASCII
Reading/Writing data	Raw data array Calibration coefficient array (before interpolation) Corrected data array Formatted memory array Memory trace Calibration kit array data Power meter calibration coefficient array (before interpolation)	Formatted data array Formatted memory array Corrected data array Corrected memory array Power meter calibration coefficient array (after interpolation)
Reading data	Pre-raw data (in Take4 mode) Calibration coefficient array (after interpolation) Power meter calibration coefficient array (after interpolation) Entry area display All lists in list format	

Screen Display and Marker Functions

The 8753ES allows up to four channels to be displayed on the screen. Up to five markers can be displayed on each channel. Also, one of the displayed markers can be designated as the reference marker. Each channel also supports a fixed marker that can be established at a fixed position.

In contrast, the E5070B/E5071B enables you to have all sixteen channels displayed by opening up nine separate windows on the screen. Sixteen traces can be displayed for each channel, and up to nine markers can be displayed for each trace. In addition to the markers displayed, you can also designate one marker as the reference marker. The E5070B/E5071B, however, does not support fixed markers.

The 8753ES supports the Maximum, Minimum, Target value, and Bandwidth marker functions. The E5070B/E5071B supports all these in addition to a Peak Search function. Using this function, you can determine whether or not to search for a positive or negative peak. In addition, the 8753ES has an additional function to search for the maximum or minimum bandwidth. While the 8753ES allows a target value or search tracking to be established only on the active marker, the E5070B/E5071B allows a target value or search tracking to be established on all markers.

Math Operation Functions on Traces

On the 8753ES, each channel is provided with a memory trace. For this reason, math operations between the data trace and memory trace are supported: “Data / Memory” and “Data – Memory”. On the E5070B/E5071B, however, “Data \times Memory” and “Data + Memory” are supported along with the division and subtraction operations described above.

The trace displays supported on the 8753ES are: “Data trace only”, “Memory trace only”, “Both memory trace and data trace”, and “Data math only”. The E5070B/E5071B supports these functions in addition to “Both data math and memory trace”.

Device Test Functions

The 8753ES supports the limit test, ripple test, and bandwidth test, while the E5070B/E5071B supports only the limit test. For the limit test on the 8753ES, a limit test table is provided for each channel with up to 18 segments are allowed in each table. In contrast, the E5070B/E5071B allows a limit test table to be defined for each trace and up to 100 segments to be defined per table.

Among the items read from the test results, the 8753ES supports a pass/fail for each channel, segment, and point, plus maximum/minimum values for each segment. In contrast, the E5070B/E5071B supports only a pass/fail of the active trace on each channel.

Analytical Functions

Although the 8753ES does not support the fixture simulator function, the E5070B/E5071B does. The fixture simulator supported by the E5070B/E5071B include the balanced-unbalanced transformation function for analyzing balanced devices, and the matching circuit function.

Save/Recall

For storing data, the 8753ES is provided with an internal register, internal disk drive (floppy disk), and external disk drive (connected through the GPIB). In contrast, the E5070B/E5071B provides an internal hard disk drive, and an internal disk drive (floppy disk). While the 8753ES can save or recall the device setup, screen color settings, and test sequences, the E5070B/E5071B is able to save or recall the instrument setup, segment sweep table, and limit line table as well as VBA projects. The 8753ES saves display data in JPEG format while the E5070B/E5071B supports the Windows[®] Bitmap (BMP) and Portable Network Graphics (PNG) format.

Test Sequence Program

Although the 8753ES supports the test sequence program, the E5070B/E5071B provides an environment for developing VBA programs for automatic measurement.

Outputting to a Printer/Plotter

The 8753ES enables you to establish the print area covering an entire sheet or just a 1/4 sheet, and to define traces, the reference line, and colors of warning messages. In contrast, the E5070B/E5071B supports only full-sheet output, and an on/off setting for highlighting the entire screen in connection with color setup.

The 8753ES supports parallel ports, serial ports, and GPIB as printer ports, although the E5070B/E5071B supports only parallel- and USB-connected printers.

GPIB Interface

While the 8753ES uses pass control to pass the controller information to an external PC or instrument, the E5070B/E5071B does not support this function.

LAN Interface

Although the 8753ES does not support a LAN interface, support for LANs is standard on the E5070B/E5071B.

Other Functions

The 8753ES is provided with Take4 mode, mixer measurement function, and harmonics measurement function (Option 002), but the E5070B/E5071B is not provided with these functions.

Comparing Functions

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B	
Measurement	Reset	Can be executed by using the front panel and the GPIB command.	Can be executed by using the front panel, the GPIB command, and telnet.	
	Channel	Number of channels	4 channels	4/9/12/16 channels
		Coupling between channels	Channels 3 and 4 are auxiliary channels for channels 1 and 2 and subject to the same sweep conditions, etc. applicable to channels 1 and 2. Couple/Uncouple between channels 1 and 2 can be set up.	Channels are independent of each other.
	Trace	A trace for each channel	Each channel can accommodate up to 4/9/12/16 traces.	
	Measurement parameter	S-parameters, A, B, R, A/R, B/R, A/B, and analog bus	S-parameters, Mixed-mode S-parameters	
	S-parameter conversion	Impedance (reflection and transmission), admittance (reflection and transmission), and 1/S	←	
	Display format (Data format)	log magnitude, linear magnitude, phase, group delay, Smith chart, polar format, SWR, real, imaginary	log magnitude, linear magnitude, phase, expanded phase, positive phase, group delay, Smith chart, polar format, SWR, real, imaginary	
	Test port output	Number of ports	2 ports	2 ports (Opts. 213/214) 3 ports (Opts. 313/314) 4 ports (Opts. 413/414)
		Frequency	30 kHz to 3 GHz (Std.) 30 kHz to 6 GHz (Opt. 006)	300 kHz to 3 GHz (E5070B) 300 kHz to 8.5 GHz (E5071B)
		Power level	-85 to +10 dBm (Std.) -85 to +8 dBm (Opts. 014/075)	-15 to 10 dBm (Opts. 213, 313, 413) -50 to 10 dBm (Opts. 214, 314, 414)
		Characteristic Impedance	50 Ω(Std.) 75 Ω(Opt. 075)	50 Ω
		Coupled/Uncoupled power levels	You can define Couple/Uncouple between channels and between ports.	Traces are coupled on the same channel, not between channels.
		Power slope function	Available	←
		Turning the output On/Off	Allowed	←
		Power range	Items to be set up	Per port and per channel
	Automatic setting		On/Off setting capability	Manual setting
	Setting range		Range setting with 10 dBm resolution is definable from between -15 and +10 dBm down to between -85 and -60 dBm.	Range setting with 5 dBm resolution is definable from between -15 and 10 dBm down to between -50 and -25 dBm

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B		
Measurement (cont'd.)	Sweep conditions	Number of points (except for the list frequency sweep operation)	3, 11, 21, 26, 51, 101, 201, 401, 801, 1601	Arbitrary value from 2 to 1601	
		Sweep type		linear sweep, log sweep, list sweep, power sweep, and CW time sweep	linear sweep, log sweep, segment sweep, and power sweep
		List frequency sweep	Number of list tables	One for channels 1 and 3 and one for channels 2 and 4, two in total	One for each channel (16 in total)
			Number of segments per table	Up to 30	Up to 201
		Creation of a table using GPIB(SCPI) command	Creating a table using more than one command	Creating a table using a single command	
		Number of points	1 to 1601 points per segment Up to 1601 points in total	2 to 1601 points per segment Up to 1601 points in total	
		Stepped/swept mode	stepped mode and swept mod. Selectable only when list frequency sweep is performed	stepped mode, swept mode, fast stepped mode, and fast swept mode. Selectable also when list frequency sweep is not performed.	
		Sweep of designated segments.	Allowed	Not allowed (Always sweeps all segments.)	
		Sweep time		Automatic, Manual (definable from the shortest time to 24 hours)	Automatic, Manual (range of definable sweep depends on sweep condition)
		IF bandwidth		10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 3.7 kHz, 6 kHz	10 Hz, 15 Hz, 20 Hz, 30 Hz, 40 Hz, 50 Hz, 70 Hz, 100 Hz, 150 Hz, 200 Hz, 300 Hz, 400 Hz, 500 Hz, 700 Hz, 1 kHz, 1.5 kHz, 2 kHz, 3 kHz, 4 kHz, 5 kHz, 7 kHz, 10 kHz, 15 kHz, 20 kHz, 30 kHz, 40 kHz, 50 kHz, 70 kHz, 100 kHz
	Averaging		Can be set from 1 to 999.	Can be set from 1 to 999.	
	Smoothing		The smoothing aperture can be set from 0.05% to 20%.	The smoothing aperture can be set from 0.05% to 25%.	
	Electrical delay	Transmission line	Compatible with coaxial cables and waveguides	Compatible with coaxial cables only	
		Value	Any value from 0 to 10 seconds	Any value from -10 to +10 seconds	
	Phase offset		Any value from -360° to +360°.	Any value from -360° to 360°.	
Setting sweep conditions for Couple/Uncouple		Channels 1 and 3 and channels 2 and 4 are always coupled. Channels 1 and 2 can be set either at Couple or Uncouple.	Traces in the same channel are coupled; traces in different channels are not coupled.		
Trigger mode		Continuous, single, hold, specified number of sweeps	Continuous, single, hold		

Comparing functions of the 8753ES and the E5070B/E5071B
Comparing Functions

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B	
Measurement (cont'd.)	Trigger source	Internal, external (per sweep, per point), manual (per point)	Internal, external (per sweep), bus, manual (per sweep)	
	External trigger line	Can be set to High or Low	Low	
Display	Memory trace	Number	One per channel	
		Data math	Data / Memory Data – Memory	Data / Memory Data × Memory Data – Memory Data + Memory
		Display	Data trace only Memory trace only Simultaneous display of memory traces and data traces Data math only	Data trace only Memory trace only Simultaneous display of memory traces and data traces Data math only Simultaneous display of data math and memory traces
	Frequency display		On/Off setting is definable for all channels.	On/off setting is definable channel by channel.
	Graph layout		Up to four graphs can be displayed.	Windows are assigned to each channel; up to sixteen windows can be displayed. Up to sixteen graphs can be displayed in each window.
	Math between data traces		The results for channel 1/channel 2 can be displayed on the trace for channel 2.	Not available
	Scale	Auto scale	Available	←
		Reference line	Both value and position can be specified.	←
		Scales per division	Definable	←
		Number of divisions	Fixed at 10	Can be set in increments of 2 from 4 to 30.
	Turning the softkey area On/Off		Available	←
	List display		Available	Not available
	List display of Instrument State		Available	Not available
	Color settings		Available	←
	Screen brightness setting		Available	Not available
Turning the LCD On/Off		Available	←	
Turning the update On/Off		Always updates.	Available	

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B	
Calibration	Calibration kit	Available calibration kits: 7 mm: 85031B 3.5 mm: 85033C/D/E N type (50 Ω): 85032B/E/F N type (75 Ω): 85036B/E 2.4 mm: 85056A/D TRL 3.5 mm: 85052C User defined calibration kit	3.5 mm:85033D/E, 85052D N type (50 Ω): 85032B/F N type (75 Ω): 85036B/E Up to six user defined calibration kits can be registered.	
	Calibration type	Not more than two ports	Response calibration Response and isolation calibration Enhanced response calibration S11 1-port calibration S22 1-port calibration Full 2-port calibration TRL*/LRM* Calibration Receiver calibration Power meter calibration	Response calibration (OPEN,SHORT, THRU) Full 1-port calibration Full 2-port calibration TRL Calibration (VBA) The response calibration includes isolation measurement as an option.
		Not less than three ports	Not available	Full 3-port calibration (Opts. 313, 314, 413, and 414 only) Full 4-port calibration (Opts. 413 and 414 only) TRL Calibration (VBA)
	Omission of the isolation measurement		Possible (Can be omitted by designating it using the softkeys on the front panel or sending a GPIB command from the front panel)	Possible (Isolation measurement is performed as an option accompanying a response calibration and 2-, 3-, and 4-port calibration.)
	Power meter calibration		Available	←
	Receiver calibration		Available	Not available
	Adapter removal		Available	Not available
	Velocity factor		Definable	←
	Characteristic impedance of the measurement system		Definable	Definable with fixture simulator
	Port extension		Definable for ports 1 and 2 and inputs A and B	Definable for each port per channel
	Selection between chop sweep and alternate sweep		Can be changed over.	Chop sweep for traces in a channel and alternate sweep between channels
	Error correction		On/Off setting is definable.	←
	Interpolating the calibration coefficient		On/Off setting is definable.	Always On.

Comparing functions of the 8753ES and the E5070B/E5071B
Comparing Functions

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function				8753ES	E5070B/E5071B
Calibration (cont'd.)	Defining the calibration kit	Calibration class		S11A (OPEN) S11B (SHORT) S11C (LOAD) S22A (OPEN) S22B (SHORT) S22C (LOAD) Forward Transmission Forward Match Reverse Transmission Reverse Match Response Response & Isolation TRL Thru TRL Reflect TRL Line/Match	OPEN SHORT LOAD THRU (OPEN, SHORT, and LOAD are set for each port; THRU is set between ports)
		Class indication label		Editable	Not editable
		Number of standards that can be registered in calibration classes		Up to seven types	One type
		Type of standard		OPEN, SHORT, LOAD, and THRU Arbitrary Impedance	OPENOPEN, SHORT, LOAD, and THRU Arbitrary Impedance, None
	Standard parameters	Common to standards	Offset delay Offset loss Offset characteristic impedance Frequency range Offset type (coaxial, waveguide)		Offset delay Offset loss Offset characteristic impedance
			Unique to OPEN	C0, C1, C2, C3	←
			Unique to SHORT	Not available	L0, L1, L2, L3
			Unique to LOAD	Type of standard (fixed, sliding, offset)	Not available (the type of standard is treated as fixed load.)
			Unique to THRU	Not available	←
			Arbitrary Impedance	Type of standard (fixed, sliding) Arbitrary Impedance	Arbitrary Impedance
	Standard label		Editable		←
	ECal	Type of calibration		Enhanced response calibration S11 1-port calibration S22 1-port calibration Full 2-port calibration	Response (thru) calibration Full 1-port calibration Full 2-port calibration Full 3-port calibration (Opts. 313/314/413/414) Full 4-port calibration (Opts. 413/414)
		Omission of isolation		Allowed	←
		Manual THRU measurement		Allowed	Not allowed
		Reading the frequency array		Allowed	Not allowed
Reading the module information		Allowed	Not allowed		

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B
Reading/Writing data	Transfer format	Intra-device binary IEEE 32-bit floating point IEEE 64-bit floating point ASCII PC-DOS 32-bit floating point	IEEE 32-bit floating point IEEE 64-bit floating point ASCII PC-DOS 32-bit floating point
	Object to be read/written	Raw data array Calibration coefficient array (before interpolating) Corrected data array Formatted memory array Memory trace Calibration kit array data Power meter calibration coefficient array (before interpolating)	Corrected data array Corrected memory array Formatted data array Formatted memory array Power meter calibration coefficient array (after interpolating)
	Object to be read only	Pre-raw data (in Take4 mode) Calibration coefficient array (after interpolating) Power meter calibration coefficient array (after interpolating)	
	Reading data for a designated point or scope	Allowed only for data traces	Not allowed
Marker	Number of markers	Up to five markers per channel	Nine markers per tracer (exclude reference marker)
	Active marker	One marker per channel	One marker per trace
	Delta marker (Reference marker)	Designates the marker displayed as the reference marker.	You can designate the reference marker independently from the markers displayed.
	Marker coupling	Setting of Couple/Uncouple definable	Setting of Couple/Uncouple definable (coupling available only between markers on the same channel)
	Marker move mode	Continuous/discrete (definable channel by channel)	Continuous/discrete (definable trace by trace)
	Fixed marker	One marker definable per channel	Not available
	Marker value display	On/Off setting for the marker value display definable per channel	All marker values for active traces are displayed on each channel. Display/No Display setting for the marker table displaying all marker values definable

Comparing functions of the 8753ES and the E5070B/E5071B
Comparing Functions

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function			8753ES	E5070B/E5071B
Markers (cont'd.)	Marker search	Search function	Maximum, minimum, target value, bandwidth	Maximum, minimum, target value, peak
		Object of search	Active marker	Arbitrary marker (during remote control) Active marker (when manipulating the front panel)
		Parameters for bandwidth search	Bandwidth, bandwidth center frequency Q factor, loss	Bandwidth, bandwidth center frequency Upper and lower frequency of the bandwidth Q factor, loss
		Target value	Definable for an active marker	Definable for each marker
		Target transition type	Not definable	Setting of Positive/Negative transition definable (per marker)
		Search tracking	On/Off setting definable for the active marker (Markers other than the active marker are always turned off.)	On/Off setting definable for each marker
	Marker reading set at a parameter		Values of the start, stop, center, span, CW frequency, and reference line in the sweep range	Values of the start, stop, center, span, and reference line in the sweep range
	Reading the marker value (for remote control)		Possible for the active marker	Possible for any marker
Device test	Limit test	Limit test table	One per channel Number of segments: Up to 18 per table	One per trace Number of segments: Up to 100 per table
		Offset	Definable	Not definable
		Creating a table by using the GPIB command	Create a table by using two or more commands	Create a table by using one command
		Reading the results	Per channel, Per segment Pass/fail at each point, Number of points per segment that failed the maximum/minimum, Stimulus value at a failed point	Pass/Fail of the active trace on each channel Number of failed points Stimulus value at a failed point
	Ripple test	Available	Not available	
Bandwidth test	Available	Not available (Marker search function can be used for the bandwidth search.)		
Analysis	Fixture simulator		Not available	Available

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B
Status report	Register types	Status byte register Service request enable register Standard event status register Standard event status register B and enable register	Status byte register Service request validation register Standard event status register Operation status register and validation register Questionable status register and validation register
	For limit test	Included in the standard event status register B and validation register	Questionable limit status register Questionable limit status channel register Questionable limit status extra channel register
Save/Recall	Storage	Internal registers Internal disk (floppy disk) External disk (connected through GPIB)	Internal hard disk Floppy disk
	Storage initialization	Possible	Available with mouse
	Save only	LCD screen image	Formatted data array LCD screen image
	Object to be saved/recalled	Instrument State (You can simultaneously save formatted data array for the active trace, raw data array, corrected data array, and LCD images.) Color settings Test sequence	Instrument State (You can simultaneously save formatted data array for the active trace and calibration data.) Segment sweep table Limit line table VBA project
	File formats	Binary form, ASCII form	Binary form
	Format for saving the screen display	JPEG format	Windows [®] Bitmap format, PNG format
	File manipulation	Reading file information Deleting a file	Reading file information Deleting a file or folder Creating a folder Copying a file
Macros	Creating macros	Uses a test sequence.	Uses VBA.
	Automatic execution	Will execute if "AUTO" is given as the name of the sequence 6.	Only auto loading is possible.
System	Self-test	Can be executed by using the front panel and SCPI commands.	Can be executed by using the front panel.
	Internal clock	Available	Available
	Beep sound	On/Off setting definable for completion of actions, warnings, and limit test failures	On/Off setting definable for completion of actions and warnings
	Measuring instrument mode	Can be selected from a standard network analyzer, external signal source (automatic), external signal source (manual), and tuned receiver.	Always a network analyzer

Comparing functions of the 8753ES and the E5070B/E5071B
Comparing Functions

Table 6-5 Functions of the 8753ES vs. the E5070B/E5071B

Function		8753ES	E5070B/E5071B		
Printer / Plotter output	Print range	Entire sheet, 1/4 of a sheet	Entire sheet		
	Color settings	Settings definable for the colors of a trace, reference line, text, and warning messages	Highlighting/No highlighting of all elements		
	Line settings	Possible	Always a solid line.		
	Printer port	Parallel port Serial port GPIB	Parallel port USB		
Others	Time domain transformation		Available	←	
	Take4 mode		Available	Not available	
	Mixer measurement function		Available	Not available	
	Harmonics measurement		Available (Opt. 002)	Not available	
	Key manipulation-related GPIB command		GPIB commands that perform the same processing as do the front panel key and softkey manipulation.	Not available	
	LAN	interface	Not available	10 Base-T and 100 Base-TX	
		protocol	Not available	TCP/IP	
		function	Not available	Telnet, SICL-LAN	
	GPIB	Debug mode		Can be turned On/Off	Not available
		pass control		Available	Not available
		GPIB address setup		The addresses of the main body, controller, external disk, LO control, power meter, printer, and plotter can be specified by using the GPIB command and from the front panel.	The address of the main body can be specified from the front panel. The addresses of the power meter can be specified by using the GPIB command and from the front panel.
		Parallel port		Can be used as a printer or GPIO connector.	For printer use

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Comparing Commands of the 8753ES and E5070B/E5071B

The following table presents a comparison of commands on the Agilent 8753ES and Agilent E5070B/E5071B, listed alphabetically by function.

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Measurement	Reset		PRES	:SYST:PRES	After execution, the *RST on the E5070B/E5071B set the trigger state to Hold.
			RST	*RST	
	Setting up the active channel	Channel 1	CHAN1	:DISP:WIND{1-16}:ACT	The outline of channels and traces on the E5070B/E5071B is described in the "User's Guide."
		Channel 2	CHAN2	(Setting up the active channel) or	
		Channel 3	CHAN3	:CALC{1-16}:PAR{1-16}:SEL	
		Channel 4	CHAN4	(Setting up an active trace on each channel)	
	Reading the active channel		OUTPCHAN	:DISP:WIND{1-16}:ACT? (Reading the active channel) or :CALC{1-16}:PAR{1-16}:SEL? (Reading the active trace on each channel)	
Selection of measurement parameters	S11	S11 ^{*1}	S11 ^{*1}	:CALC{1-16}:PAR{1-16}:DEF S11 ^{*2}	E5070B/E5071B can select S-parameters only.
		RFLP ^{*1}			
	S21	S21 ^{*1}	S21 ^{*1}	:CALC{1-16}:PAR{1-16}:DEF S21 ^{*2}	
		TRAP ^{*1}			
	S12	S12 ^{*1}	S12 ^{*1}	:CALC{1-16}:PAR{1-16}:DEF S12 ^{*2}	
	S22	S22 ^{*1}	S22 ^{*1}	:CALC{1-16}:PAR{1-16}:DEF S22 ^{*2}	
	Aux Input	ANAI ^{*1}		Not available	
	A/R	AR ^{*1}			
	B/R	BR ^{*1}			
	A/B	AB ^{*1}			
	A	MEASA ^{*1}			
	B	MEASB ^{*1}			
	R	MEASR ^{*1}			
		Designates a test port when parameters other than S-parameters are selected.	TS ^T P ^{*1}		
S-parameters conversion	Turning off the transformation function		CONVOFF ^{*1}	:CALC{1-16}:CONV ^{*3}	
	Impedance (reflection)		CONVZREF ^{*1}	:CALC{1-16}:CONV:FUNC ZREF ^{*3}	
	Impedance (transmission)		CONVZTRA ^{*1}	:CALC{1-16}:CONV:FUNC ZTR ^{*3}	
	Admittance (reflection)		CONVYREF ^{*1}	:CALC{1-16}:CONV:FUNC YREF ^{*3}	
	Admittance (transmission)		CONVYTRA ^{*1}	:CALC{1-16}:CONV:FUNC YTR ^{*3}	
	I/S		CONVIDS ^{*1}	:CALC{1-16}:CONV:FUNC INV ^{*3}	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Measurement (cont'd.)	Setting up display formats (data formats)	Log magnitude format	LOGM ^{*1}	:CALC{1-16}:FORM MLOG ^{*3}	When the data format for the E5070B/E5071B is defined in Smith chart or polar format, the format for reading marker values is defined at the same time.
		Phase format	PHAS ^{*1}	:CALC{1-16}:FORM PHAS ^{*3}	
		Group delay format	DELA ^{*1}	:CALC{1-16}:FORM GDEL ^{*3}	
		Smith chart format	SMIC ^{*1}	:CALC{1-16}:FORM SLIN ^{*3} :CALC{1-16}:FORM SLOG :CALC{1-16}:FORM SCOM :CALC{1-16}:FORM SMI :CALC{1-16}:FORM SADM	
		Polar format	POLA ^{*1}	:CALC{1-16}:FORM PLIN ^{*3} :CALC{1-16}:FORM PLOG :CALC{1-16}:FORM POL	
		Linear magnitude format	LINM ^{*1}	:CALC{1-16}:FORM MLIN ^{*3}	
		SWR format	SWR ^{*1}	:CALC{1-16}:FORM SWR ^{*3}	
		Real format	REAL ^{*1}	:CALC{1-16}:FORM REAL ^{*3}	
		Imaginary format	IMAG ^{*1}	:CALC{1-16}:FORM IMAG ^{*3}	
Sweep type selection	Linear sweep	LINFREQ ^{*1*4}	:SENS{1-16}:SWE:TYPE LIN ^{*5}	With the E5070B/E5071B, you cannot select the CW TIME seep.	
		LOGFREQ ^{*1*4}	:SENS{1-16}:SWE:TYPE LOG ^{*5}		
		LISFREQ ^{*1*4}	:SENS{1-16}:SWE:TYPE SEGM ^{*5}		
		POWS ^{*1*4}	:SENS{1-16}:SWE:TYPE POW ^{*5}		
		CW TIME sweep	CWTIME ^{*1*4}		Not available
Setting up the sweep range	Start value	STAR ^{*1*4}	:SENS{1-16}:FREQ:STAR ^{*5} :SOUR{1-16}:POW:STAR ^{*5}		
		STOP ^{*1*4}	:SENS{1-16}:FREQ:STOP ^{*5} :SOUR{1-16}:POW:STOP ^{*5}		
		CENT ^{*1*4}	:SENS{1-16}:FREQ:CENT ^{*5} :SOUR{1-16}:POW:CENT ^{*5}		
		SPAN ^{*1*4}	:SENS{1-16}:FREQ:SPAN ^{*5} :SOUR{1-16}:POW:SPAN ^{*5}		
Sweep time	Setting up the sweep time	SWET ^{*1*4}	:SENS{1-16}:SWE:TIME ^{*5}		
	Automatic setting to the shortest time	SWEA ^{*1*4}	:SENS{1-16}:SWE:TIME:AUTO ON ^{*5}		
Specifying the number of points		POIN ^{*1*4}	:SENS{1-16}:SWE:POIN ^{*5}		
Specifying the IF bandwidth		IFBW ^{*1*4}	:SENS{1-16}:BAND ^{*5}		
Averaging	On/Off setting	AVERO ^{*1*4}	:SENS{1-16}:AVER ^{*5}		
	Specifying the number of times	AVERFACT ^{*1} ^{*4}	:SENS{1-16}:AVER:COUN ^{*5}		
	Restart	AVERREST ^{*1} ^{*4}	:SENS{1-16}:AVER:CLE ^{*5}		
Specifying the power level		POWE ^{*1*4}	:SOUR{1-16}:POW ^{*5}	When the power range setting in one channel differs from that in another channel on the 8753ES, a sweep is not performed on channels whose settings are different from those on the active channel.	

7. Comparing Commands on
8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Measurement (cont'd.)	Setting the power range	Setting the range	POWR ^{*1*4}	:SOUR{1-16}:POW:ATT ^{*5} (attenuator settings)	The E5070B/E5071B is compatible with Options 214, 314, and 414 only. When the power range setting in one channel differs from that in another channel on the 8753ES, a sweep is not performed on channels whose settings are different from those on the active channel.	
			PRAN ^{*1*4}			
	Auto/Manual setting for range changeover	PWRR ^{*1*4}	Not available			
		Attenuator settings	Port 1	ATTP1 ^{*1*4}		:SOUR{1-16}:POW:ATT ^{*5}
	Port 2	ATTP2 ^{*1*4}				
	Power slope	On/Off	SLOPO ^{*1*4}	:SOUR{1-16}:POW:SLOP:STAT ^{*5}		
		Specifying values	SLOPE ^{*1*4}			:SOUR{1-16}:POW:SLOP ^{*5}
	Couple/Uncouple setting for the power level	Between ports	PORTP ^{*1*4}	:SOUR{1-16}:POW:PORT:COUP ^{*5}		On the E5070B/E5071B, coupling does not work between channels.
		Between channels	COUP	Not available		
	Turning the signal source output On/Off		POWT	:OUTP		
SOUP						
Editing the list frequency sweep table	Start of editing	EDITLIST	:SENS{1-16}:SEGM:DATA ^{*5}	The E5070B/E5071B uses one command to edit segments. A segment table also exists for each channel. The 8753ES uses more than one command to set up a segment. Two types of segments can be set up: one for channels 1 and 3 and the other for channels 2 and 4.		
	End of editing	EDITDONE				
	Deleting an entire table	CLEL				
		CLEAL				
	Editing segments	Selection			SEDI	
		End			SDON	
		Addition			SADD	
		Deletion			SDEL	
		Start value			STAR	
		Stop value			STOP	
		Center value			CENT	
		Span value			SPAN	
		Number of points			POIN	
		Sweep step value			STPSIZE	
		IFBW settings are Valid/Not valid.			LISIFBWM	
		IFBW settings			SEGIFBW	
		Power settings are Valid/Not valid.			LISPWRM	
Power		SEGPOWER				

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Measurement (cont'd.)	Selecting list mode	Stepped mode	LISTTYPELST P	:SENS{1-16}:SWE:GEN STEP	On the E5070B/E5071B, the IF bandwidth and power level can be set segment by segment even in swept mode. In addition, you can select stepped/swept mode for the linear sweep.	
		Swept mode	LISTTYPELSW P	:SENS{1-16}:SWE:GEN ANAL		
Setting up segments for the list frequency sweep	All segments are used.		ASEG	Not available	In its segment sweep operation, the E5070B/E5071B sweeps all segments.	
		Only designated segments are used.	SSEG	Not available		
Smoothing	On/Off setting		SMOO* ¹	:CALC{1-16}:SMO* ³		
	Setting up the smoothing aperture		SMOAPER* ¹	:CALC{1-16}:SMO:APER* ³		
	Reading the smoothing aperture	%	SMOAPER?* ¹	:CALC{1-16}:SMO:APER?* ³		
		Unit for stimulus values	OUTPAPER* ¹	Not available		
Setting the electrical delay	Setting values		ELED* ¹	:CALC{1-16}:CORR:EDEL:TIME* ³		
	Setting types	Coaxial cable	COAD* ¹	Not available	The E5070B/E5071B is compatible with coaxial cables only.	
		A waveguide is selected and the cut-off frequency is specified.	WAVD* ¹	Not available		
Specifying the phase offset		PHAO* ¹	:CALC{1-16}:CORR:OFFS:PHAS* ³			
Setting sweep conditions at Couple/Uncouple between channels			COUC	Traces are coupled on the same channel and not coupled between channels.	On the 8753ES, coupling between channels 1 and 2 is set at On/Off. Channels 1 and 3 and channels 2 and 4 are always coupled.	
Setting the trigger mode	Continuous sweep		CONT* ^{1*4} FRER* ^{1*4}	:INIT{1-16}:CONT ON* ⁵	On the E5070B/E5071B, specified number mode cannot be selected.	
	Single sweep		SING* ^{1*4}	:ABOR :INIT{1-16}:CONT OFF* ⁵ :INIT{1-9} (These commands must be sent.)		
	specifying number of sweeps		NUMG* ^{1*4}	Not available		
	Hold		HOLD* ^{1*4}	:INIT{1-16}:CONT OFF* ⁵		
	Setting up external trigger	Per sweep		EXTTON	:TRIG:SOUR EXT* ⁵	On the E5070B/E5071B, the per-sweep setting is valid when the external trigger mode is ON. A manual trigger at each point is not available. The external trigger line is set to Low.
		Per point		EXTTPOIN	Not available	
		Off		EXTTOFF	In :TRIG:SOUR, setting the parameter to EXT causes external trigger mode to automatically turn OFF.	
		Trigger line	High	EXTTHIGH	Not available	
Low	EXTTLOW		Not available			
Manual (at each point)		MANTRIG	Not available			
Suspend sweep and then resume.			REST	Not available		
Specifying the signal source frequency for the power level sweep or CW TIME sweep			CWFREQ* ^{1*4}	:SENS{1-16}:FREQ		

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Screen display	Setting up the active channel	Channel 1	CHAN1	:DISP:WIND{1-16}:ACT	The concepts of a channel and a trace on the E5070B/E5071B are different. For more information, refer to the individual User's Guides.	
		Channel 2	CHAN2	(Setting up the active channel) or		
		Channel 3	CHAN3	:CALC{1-16}:PAR{1-16}:SEL		
		Channel 4	CHAN4	(Setting up the active trace)		
	Reading the active channel		OUTPCHAN	:DISP:WIND{1-16}:ACT? (Reading the active channel) or :CALC{1-16}:PAR{1-16}:SEL? (Reading the active trace)		
	Channel memory	Copying a data trace into the channel memory.		DATI* ¹	:CALC{1-16}:MATH:MEM* ³	
		Display a data trace only.		DISPDATA* ¹	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON* ² :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF* ² :CALC{1-16}:MATH:FUNC NORM* ³ (All three commands above must be sent.)	The last command to be sent by the E5070B/E5071B is the one effective for the active trace. This requires the trace in question to be made the active one before being sent.
		The data trace and memory trace are displayed at the same time.		DISPDATM* ¹	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON* ² :DISP:WIND{1-16}:TRAC{1-16}:MEM ON* ² :CALC{1-16}:MATH:FUNC NORM* ³ (All three commands above must be sent.)	
		Display the result of dividing the data trace by the memory trace.		DISPDDM* ¹ DIVI* ¹	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON* ² :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF* ² :CALC{1-16}:MATH:FUNC DIV* ³ (All three commands above must be sent.)	
		Display the result of dividing the data trace by the memory trace.		DISPDMM* ¹ MINU* ¹	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON* ² :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF* ² :CALC{1-16}:MATH:FUNC SUBT* ³ (All three commands above must be sent.)	
Display the memory trace only.		DISPMEMO* ¹	:DISP:WIND{1-16}:TRAC{1-16}:STAT OFF* ² :DISP:WIND{1-16}:TRAC{1-16}:MEM ON* ² (Both commands above must be sent.)			
Sending the title to the memory trace		TITTMEM* ¹	Not available			

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Screen display (cont'd.)	Turns off the frequency display on the LCD.		FREQ	:DISP:ANN:FREQ OFF	The 8753ES and E5070B/E5071B are both effective on all channels.
	Display channel 2 data/channel 1 data in channel 2.		D1DIVD2	Not available	
	On/Off setting for Channels 3 and 4		AUXC	:CALC{1-16}:PAR:COUN (Specifying the number of traces) enables you to perform the equivalent.	
	On/Off setting for simultaneous display of two channels		DUAC	:DISP:SPL (Setting up a window array in a channel) and :DISP:WIND{1-16}:SPL (Setting up an array of trace graphs) are combined to perform the equivalent.	
	Graph layout	On/Off setting for display splitting	SPLD	:DISP:SPL (Setting up a window array in a channel) and	
			Specifying 1	:DISP:WIND{1-16}:SPL (Setting up an array of trace graphs) are combined to perform the equivalent.	
			2		
			4		
		Upper screen (Channels 1 and 2) and lower screen (Channels 3 and 4)		D2XUPCH2	Not available
		Upper screen (Channels 1 and 3) and lower screen (Channels 2 and 4)		D2XUPCH3	:DISP:SPL (Setting up a window array in a channel) and :DISP:WIND{1-16}:SPL (Setting up an array of trace graphs) are combined to perform the equivalent.
		Upper left (Channel 1), upper right (Channel 2), lower left (Channel 3), lower right (Channel 4)		D4XUPCH2	
		Upper left (Channel 1), upper right (Channel 3), lower left (Channel 2), lower right (Channel 4)		D4XUPCH3	Not available
	Setting up a scale	Executing autoscale	AUTO* ¹	:DISP:WIND{1-16}:TRAC{1-16}:Y:AUTO* ²	
		Setting values	SCAL* ¹	:DISP:WIND{1-16}:TRAC{1-16}:Y:PDIV* ²	
	Setting the reference line	Position	REFP* ¹	:DISP:WIND{1-16}:TRAC{1-16}:Y:RPOS* ²	On the 8753ES, reference lines are set at graticule lines 1 to 10. The E5070B/E5071B allows the number of graticule lines to be changed; you can place as many graticule lines as you need, from zero to the specified number of lines.
Value		REFV* ¹	:DISP:WIND{1-16}:TRAC{1-16}:Y:RLEV* ²		

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Screen display (cont'd.)	List display	Start	LISV*1	Not available	The E5070B/E5071B does not have a list display function.	
		To next page	NEXP*1			
		To previous page	PREP*1			
		Return to the display of measurement results.	RESD*1			
	Displaying the softkey area	On	MENUON	:DISP:SKEY ON		
		Off	MENUOFF	:DISP:SKEY OFF		
	Title	Read	OUTPTITL	:DISP:WIND{1-16}:TITL:DATA?*5		
		Setup	TITL	:DISP:WIND{1-16}:TITL:DATA*5		
	Display the Instrument State status list.		OPEP	Not available		The E5070B/E5071B does not have the function of displaying the Instrument State status list.
	Return the color settings to the initial state.		DEFC	:DISP:COL{1-2}:RES		
	Selecting the object for which colors are set up	Data trace	Channel 1	COLOCH1D	:DISP:COL{1-2}:TRAC{1-16}:DATA	
			Channel 2	COLOCH2D	:DISP:COL{1-2}:TRAC{1-16}:MEM:	
			Channel 3	COLOCH3D	:DISP:COL{1-2}:LIM{1-2}	
			Channel 4	COLOCH4D	:DISP:COL{1-2}:GRAT{1-2}	
		Memory trace	Channel 1	COLOCH1M	:DISP:COL{1-2}:BACK	
			Channel 2	COLOCH2M		
			Channel 3	COLOCH3M		
			Channel 4	COLOCH4M		
		Others	Graticule lines	COLOGRAT		
			Reference line	COLOLREF		
			Character string	COLOTEXT		
			Warning message	COLOWARN		
	Changing colors	Returning to initial values	RSCO			
Tint		TINT				
Color saturation		COLOR				
Brightness		CBRI				
Specifying the screen brightness		BACI	Not available		The E5070B/E5071B allows On/Off setting for backlighting only.	
		INTE				
On/Off setting for the LCD displaying.		BLAD	:SYST:BACK (On/Off setting for the backlighting)		When the E5070B/E5071B is turned ON, the 8753ES is turned OFF, and vice versa.	

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Calibration	Displaying the softkeys in the calibration menu		CAL1	Not available	
	Selecting a calibration kit	2.4 mm Calibration Kit (85056A/D)	CALK24MM* ⁶	:SENS{1-16}:CORR:COLL:CKIT* ⁵	
		2.92 mm Calibration Kit	CALK292MM* ⁶		
		2.92 mm Calibration Kit (85056K)	CALK292S* ⁶		
		3.5 mm Calibration Kit (85033C)	CALK35MC* ⁶		
		3.5 mm Calibration Kit (85033D)	CALK35MD* ⁶		
		7-16 Calibration Kit (85038)	CALK716* ⁶		
		7 mm Calibration Kit (85031B)	CALK7MM* ⁶		
		N-type 50 Calibration Kit (85032B/E)	CALKN50* ⁶		
		N-type 75 Calibration Kit (85036B/E)	CALKN75* ⁶		
		TRL 3.5 mm Calibration Kit (85052C)	CALKTRLK* ⁶		
	User-defined calibration kit	CALKUSED* ⁶			
	Starting the calibration	Forward enhanced response calibration	CALIERC* ¹	Not available (Enhanced response calibration function not available.)	
		Reverse enhanced response calibration	CALIRERC* ¹		
		Response calibration	CALIRESP* ¹	:SENS{1-16}:CORR:COLL:METH:O	The E5070B/E5071B uses different commands depending on the standard used. Isolation can be performed optionally. Calibration type can be set after measuring standard on the E5070B/E5071B
Response & isolation calibration		CALIRAI* ¹	PEN* ⁵ or :SENS{1-16}:CORR:COLL:METH:S HOR* ⁵ or :SENS{1-16}:CORR:COLL:METH:T HRU* ⁵		
S11 1-port calibration		CALIS11* ¹	:SENS{1-16}:CORR:COLL:METH:S		
S22 1-port calibration		CALIS22* ¹	OLT1* ⁵		
Full 2-port calibration		CALIFUL2* ¹	:SENS{1-16}:CORR:COLL:METH:S OLT2* ⁵		
TRL*/LRM* Calibration	CALITRL2* ¹	Not available			
		The E5070B/E5071B supports the TRL calibration function using VBA.			

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks		
			8753ES	E5070B/E5071B			
Calibration (cont'd.)	Finishing the calibration and calculating the calibration coefficients.	Forward enhanced response calibration	ERCDONE* ¹	Not available	The E5070B/E5071B does not have the enhanced response calibration function.		
			SAVERC* ¹				
		Reverse enhanced response calibration	RERCDONE* ¹				
			SAVRERC* ¹				
		Response calibration	RESPDONE* ¹			:SENS{1-16}:CORR:COLL:SAVE* ⁵	The E5070B/E5071B allows you to use the same command to finish calibration regardless of the type of calibration.
		Response & isolation calibration	RAID* ¹				
		S11 1-port calibration or S22 1-port calibration	SAV1* ¹				
	Full 2-port calibration	SAV2* ¹					
	TRL*/LRM* calibration	SAVT* ¹	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.			
	Starting calibration data measurement	Reflection measurement (Enhanced response calibration)	REFOP* ¹	Not available	The E5070B/E5071B does not have the enhanced response calibration function.		
			REFL* ¹				
		Reflection measurement (2-port calibration)	REFL* ¹	Not available			
		Transmission measurement (enhanced response calibration)	TRAOP* ¹				
		Transmission measurement (2-port calibration)	TRAN* ¹	:SENS{1-16}:CORR:COLL:THRU* ⁵	The E5070B/E5071B performs both transmission and of match measurements.		
		Forward transmission measurement (2-port calibration)	FWDT* ¹				
Forward match measurement (2-port calibration)		FWDM* ¹					
Reverse transmission measurement (2-port calibration)		REVT* ¹					
Forward match measurement (2-port calibration)		REVM* ¹					
Response measurement (response & isolation calibration)		RAIRESF* ¹	:SENS{1-16}:CORR:COLL:OPEN* ⁵ (Open) :SENS{1-16}:CORR:COLL:SHOR* ⁵ (Thru) :SENS{1-16}:CORR:COLL:THRU* ⁵ (Thru)			The E5070B/E5071B uses different commands depending on the standard used.	
Isolation measurement (response & isolation calibration)	RAIISOL* ¹	:SENS{1-16}:CORR:COLL:ISOL* ⁵					
Isolation measurement (enhanced response calibration)	ISOOP* ¹	Not available					

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Calibration (cont'd.)	Starting calibration data measurement (cont'd.)	Isolation measurement (2-port calibration)	ISOL ^{*1}	Not available		
		Forward isolation measurement (2-port calibration)	FWDI ^{*1}	:SENS{1-16}:CORR:COLL:ISOL ^{*5}		
		Reverse isolation measurement (2-port calibration)	REVI ^{*1}	:SENS{1-16}:CORR:COLL:ISOL ^{*5}		
		S11A (OPEN) Measurement	CLASS11A ^{*1}	:SENS{1-16}:CORR:COLL:OPEN ^{*5}		
		S11B (SHORT) Measurement	CLASS11B ^{*1}	:SENS{1-16}:CORR:COLL:SHOR ^{*5}		
		S11C (LOAD) Measurement	CLASS11C ^{*1}	:SENS{1-16}:CORR:COLL:LOAD ^{*5}		
		S22A (OPEN) Measurement	CLASS22A ^{*1}	:SENS{1-16}:CORR:COLL:OPEN ^{*5}		
		S22B (SHORT) Measurement	CLASS22B ^{*1}	:SENS{1-16}:CORR:COLL:SHOR ^{*5}		
		S22C (LOAD) Measurement	CLASS22C ^{*1}	:SENS{1-16}:CORR:COLL:LOAD ^{*5}		
		Offset and LOAD measurement	Measurement without offset	LOAN ^{*1}	Not available	The E5070B/E5071B handles LOAD as a fixed load.
			Measurement with offset	LOAO ^{*1}		
		Sliding LOAD measurement	Measurement after sliding	SLIS ^{*1}	Not available	
			End	SLID ^{*1}		
		Selecting the standard to be measured (corresponding to the softkeys)	1st from the top	STANA ^{*1}	Not available	The E5070B/E5071B has only one type of standard that can be registered in each calibration class; therefore, no corresponding command exists.
			2nd from the top	STANB ^{*1}		
			3rd from the top	STANC ^{*1}		
			4th from the top	STAND ^{*1}		
			5th from the top	STANE ^{*1}		
			6th from the top	STANF ^{*1}		
			7th from the top	STANG ^{*1}		
THRU measurement	TRLT ^{*1}	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.			
S11 Reflection measurement	TRLR1 ^{*1}	Not available				
S22 Reflection measurement	TRLR2 ^{*1}	Not available				

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Calibration (cont'd.)	Starting calibration data measurement (cont'd.)	Port 1 Line/Match measurement	TRLL1*1	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.
		Port 2 Line/Match measurement	TRLL2*1		
		Finishing measuring the standard	DONE*1	Not available	
	Finishing measuring calibration data	Reflection measurement	REFD*1	Not available	The E5070B/E5071B has no similar commands.
		Transmission measurement	TRAD*1	Not available	
		Isolation measurement	ISOD*1	Not available	
		Offset and LOAD measurement	OFLD*1	Not available	
	Setting error correction On/Off	On/Off setting	CORR*1*4	:SENS{1-16}:CORR:STAT*5	
		Setting to OFF	CALN*1*4	:SENS{1-16}:CORR:STAT OFF*5	
		On/Off setting for error correction by interpolation of calibration coefficients	CORI*1*4	Not available	Always On on the E5070B/E5071B
	Omitting the isolation measurement	OMI*1	Not available	On the E5070B/E5071B, isolation measurement is optional.	
	Setting up the characteristic impedance of the measurement system	SETZ*6	:CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:Z0*5 (Fixture simulator)	The E5070B/E5071B enables you to do the equivalent by using the fixture simulator.	
	Specifying the velocity factor	VELOFACT*6	:SENS{1-16}:CORR:RVEL:COAX*5		
Setting up port extension correction	On/Off	PORE*6	:SENS{1-16}:CORR:EXT*5		
	Corrected value for port 1	PORT1*6	:SENS{1-16}:CORR:EXT:PORT{1-4}*5		
	Corrected value for port 2	PORT2*6			
	Corrected value for input A	PORTA*6	Not available	The E5070B/E5071B does not have the input port extension function.	
	Corrected value for input B	PORTB*6			

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed			Command (For footnotes, see page 116.)		Remarks	
				8753ES	E5070B/E5071B		
Calibration (cont'd.)	Adapter removal	Calling data	Port 1	CALSPORT1*6	Not available		
			Port 2	CALSPORT2*6			
		Setting the electrical delay for the adapter		ADAP1*6	Not available		
		Selecting the adapter	Coaxial cable	ADPTCOAX*6	Not available		
			Wave guide	ADPTWAVE*6	Not available		
		Calculating the calibration set		MODS*6	Not available		
	Selecting between alternate sweep and chop sweep	Alternate sweep		ALTAB*6	Not available		On the E5070B/E5071B, traces in the same channel are measured by the same method as the chop sweep. When traces belong to different channels, they are measured by the same method as the alternate sweep.
		Chop sweep		CHOPAB*6	Not available		
	Take4 mode	Turning Take4 mode On/Off		TAKE4	Not available		The E5070B/E5071B does not have the Take4 mode.
		Turning offset correction for the sampler and attenuator On/Off		RAWOFFS			
Turning sampler correction On/Off		SAMC					
Turning spur avoidance On/Off		SM8					
Executing a sweep in Take4 mode		SWPSTART					
Calibrating the receiver	Setting the power reference		REIC*1	Not available	The E5070B/E5071B does not offer receiver calibration.		
	Executing the receiver calibration		TAKRS*1	Not available			
Power meter calibration	Display the softkey for the power meter calibration to specify the power level.		PWRMCAL	Not available			
	Selecting a power meter		POWM	Not available			
	Starting a data sweep for power meter calibration		TAKCS*1	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL*5			
	Editing the calibration coefficients table	Editing start	Sensor A	CALFSENA		Sensor A :SOUR:POW:PORT:CORR:COLL:ASEN:RCF	
			Sensor B	CALFSENB			
	Editing segments	Deleting the entire list		CLEL		Sensor B :SOUR:POW:PORT:CORR:COLL:BS EN:RCF :SOUR:POW:PORT:CORR:COLL:TABL:ASEN:DATA	
				CLEAL			
		Selection	SEDI				
		Addition	SADD				
		Deletion	SDEL				
End		SDON					
Frequency		CALFCALF					
Calibration coefficients	CALFFREQ						

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks		
			8753ES	E5070B/E5071B			
Calibration (cont'd.)	Power meter calibration (cont'd.)	Power loss list editing	Start	POWLLIST	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:TABL:LOSS:DATA* ⁵		
			Deleting the entire list		CLEL		
					CLEAL		
		Editing segments	Selection	SEDI			
			Addition	SADD			
			Deletion	SDEL			
			End	SDON			
			Frequency	POWLFREQ			
		Loss	POWLOSS				
		Specifying the number of measurements per point		NUMR	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:AVER* ⁵		
	Defining the GPIB reading from the power meter as the title		PMTRTIT	Not available			
	Selecting a power sensor	Sensor A	USESENSA* ^{1*4}	Not available			
		Sensor B	USESENSB* ^{1*4}				
	Executing a calibration	Per sweep		PWMCEACS* ¹	Not available	The E5070B/E5071B does not have per sweep mode.	
		One time		PWMCONES* ¹	:SOUR{1-16}:POW:PORT{1-4}:CORR* ⁵		
		Off		PWMCOFF* ¹			
	Specifying to Use/Not Use the power loss list		PWRLOSS* ^{1*4}	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:TABL:LOSS* ⁵			
	Defining the calibration kit	Start of defining the calibration kit		MODI1	Not available	The E5070B/E5071B has no command for starting/ending kit definition. The calibration kit assigned for each channel is already defined.	
		End of defining the calibration kit		STDD	Not available		
		Setting up the calibration kit label		LABK	:SENS{1-16}:CORR:COLL:CKIT:LAB		
		Defining the selected calibration kit as a user calibration kit		SAVEUSEK	Not available		On the E5070B/E5071B, Any calibration kit numbers can be assigned as user calibration kits.
	Defining the calibration class	S11A (OPEN)	SPECS11A	:SENS{1-16}:CORR:COLL:CKIT:ORD:OPEN	The E5070B/E5071B uses a parameter to specify a port.		
		S11B (SHORT)	SPECS11B	:SENS{1-16}:CORR:COLL:CKIT:ORD:SHOR			
S11C (LOAD)		SPECS11C	:SENS{1-16}:CORR:COLL:CKIT:ORD:LOAD				
S22A (OPEN)		SPECS22A	:SENS{1-16}:CORR:COLL:CKIT:ORD:OPEN				
S22B (SHORT)		SPECS22B	:SENS{1-16}:CORR:COLL:CKIT:ORD:SHOR				
S22C (LOAD)		SPECS22C	:SENS{1-16}:CORR:COLL:CKIT:ORD:LOAD				
Forward match		SPECFWDM	:SENS{1-16}:CORR:COLL:CKIT:ORD:THRU	Registering a standard in the THRU calibration class on the E5070B/E5071B is equivalent to registering one standard in four types of calibration classes on the 8753ES.			
Forward transmission		SPECFWDT	(definition of the calibration class THRU)				
Reverse match		SPECREVM					
Reverse transmission		SPECREVT					

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks		
			8753ES	E5070B/E5071B			
Calibration (cont'd.)	Defining the calibration kit (cont'd.)	Defining the calibration class (cont'd.)	Response	SPECRESP	Not available	The E5070B/E5071B is not provided with any response class.	
			Response & isolation	SPECRESI			
			TRL line/match	SPECTRLL	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.	
			TRL thru	SPECTRLT			
			TRL reflection	SPECTRLR			
			TRL ref. forward match	SPECTRFM			
			TRL line forward match	SPECTLFM			
			TRL line forward trans.	SPECTLFT			
			TRL ref. reverse match	SPECTRRM			
			TRL line reverse match	SPECTLRM			
			TRL line reverse trans.	SPECTLRT			
			TRL thru forward match	SPECTTFM			
			TRL thru forward trans.	SPECTTFT			
			TRL thru reverse match	SPECTTRM			
			TRL thru reverse trans.	SPECTTRT			
			End of definitions	CLAD			Not available
	Editing the calibration class label	S11A (OPEN)	LABES11A	Not available	The E5070B/E5071B does not allow you to edit the calibration class label.		
						LABETRFM	
			S11B (SHORT)			LABES11B	LABETLFM
							S11C (LOAD)
			S22A (OPEN)			LABES22A	LABETLFT
							LABETRRM
			S22B (SHORT)			LABES22B	LABETLRM
							S22C (LOAD)
			Forward match			LABEFWDM	LABETTFT
							LABETTFM
			Forward transmission			LABEFWDT	LABETTRM
							LABETTRT
			Reverse match			LABEREVM	LABERESP
							LABERESI
			Reverse transmission			LABEREVT	LABETRLR
							LABETRLT
			Response			LABERESP	LABERESI
LABETRLR							
Response & isolation	LABERESI	LABETRLT					
		LABETRLR					
TRL line/match	LABETRLR	LABETRLT					
		LABETRLT					
TRL thru	LABETRLT	LABETRLR					
		LABETRLR					
TRL reflection	LABETRLR	LABETRLT					
		LABETRLT					
Setting up the reference for the TRL*/LRM* calibration	Reflect	SETRREFL	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.			
	Thru	SETRTHRU					
Designating the number of the standard to be defined and starting definition of the standards		DEFS	Not available				

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Calibration (cont'd.)	Defining the calibration kit (cont'd.)	End of defining the standards		KITD	Not available	
		Setting up the standard label		LABS	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:LAB	
	Setting up the type of standard	OPEN standard		STDTOOPEN	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE OPEN	
		SHORT standard		STDTSHOR	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE SHOR	
		LOAD standard		STDLOAD	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE LOAD	
		THRU standard		STDDELA	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE THRU	
		Arbitrary impedance		STDARBI	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE ARBI	
	Specifying the calibrated value of a standard	Offset delay		OFSD	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:DEL	Setup items of the calibrated value are the same as standard type items.
		Offset loss		OFSL	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:LOS	
		Offset impedance		OFSZ	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:Z0	
		C0		C0	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C0	Setup is effective for the OPEN standard only. (8753ES/E5070B/E5071B Common)
		C1		C1	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C1	
		C2		C2	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C2	
		C3		C3	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C3	
		Terminal impedance		TERI	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:ARB	Setup can be performed only when Arbitrary Impedance is used for setup. (8753ES/E5070B/E5071B Common)
		Types of LOAD standards	Fixed	FIXE	Not available	The E5070B/E5071B handles all as fixed load.
			Sliding	SLIL		
	Offset		OFLS			
	Frequency range	Minimum	MINF	Not available	The E5070B/E5071B does not allow you to set the frequency range.	
		Maximum	MAXF			
	Setting up the offset type	Coaxial cable	COAX	Not available	The E5070B/E5071B treats the offset type as a coaxial cable.	
		Wave guide	WAVE			
End of defining standards		STDO	Not available	The E5070B/E5071B does not have the command for ending definition.		
Options for TRL*/LRM* calibration.	Specifying the characteristic impedance	Standard	CALZLINE	Not available	The E5070B/E5071B supports the TRL calibration function using VBA.	
		System	CALZSYST			

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Calibration (cont'd.)	ECal	Setting up the active module	A	ECALMODSEL A	Not available	E5070B/E5071B activate the ECal module connected first.
			B	ECALMODSEL B		
	Executing calibration	Forward enhanced response calibration		ECALERC	Not available	The E5070B/E5071B does not allow you to perform an enhanced response calibration.
				ECALRERC		
		1-port calibration	S11	ECALS11	:CALC{1-16}:CORR:COLL:ECAL:SO LT1 1	
			S22	ECALS22	:CALC{1-16}:CORR:COLL:ECAL:SO LT1 2	
		Full 2-port calibration		ECALS22	:CALC{1-16}:CORR:COLL:ECAL:SO LT2	
		Turning the omission of isolation On/Off		ECALOMII	:CALC{1-16}:CORR:COLL:ECAL:IS OL	
	Designating the averaging factor for isolation		ECALISOAVG	Not available		
	Module information	Reading the selected module		ECALAB?	Not available	
		Reading the product number and serial number		ECALMODID		
	Calibration frequency array	Reading the frequency array		ECALFREQS	Not available	
		Designating the size of the frequency array to be read		ECALNFREQS		
	Interruption	Turning Manual THRU Measurement On/Off		ECALMANTH RU	Not available	E5070B/E5071B can not pause the ECal.
		Reading during Interruption/Execution		ECALPAUSED		
		Resuming a suspended ECal		ECALCONT		

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Reading/Writing data	Transfer format designation	Intra-device binary format	FORM1	Not available		
		IEEE 32-bit floating point format	FORM2	:FORM:DATA REAL32 :FORM:BORD NORM		
		IEEE 64-bit floating point format	FORM3	:FORM:DATA REAL :FORM:BORD NORM		
		ASCII format	FORM4	:FORM:DATA ASC		
		PC-DOS 32-bit floating point format	FORM5	:FORM:DATA REAL32 :FORM:BORD SWAP		
	Raw data array	Array 1 (S11)	Read	OUTPRAW1*1	Not available	The E5070B/E5071B does not allow you to read/write the raw data array.
				OUTPRAF1*1		
			Write	INPURAW1*1		
		Array 2 (S21)	Read	OUTPRAW2*1		
				OUTPRAF2*1		
			Write	INPURAW2*1		
		Array 3 (S12)	Read	OUTPRAW3*1		
				OUTPRAF3*1		
			Write	INPURAW3*1		
		Array 4 (S22)	Read	OUTPRAW4*1		
OUTPRAF4*1						
Write			INPURAW4*1			
Calibration coefficient array data	Before interpolating	Read	OUTPCALC*1	Not available	The E5070B/E5071B does not allow you to read/write the calibration coefficient array.	
		Write	INPUCALC*1			
		End of writing	SAVC*1			
	After interpolating	Read	OUTPICAL{01-12}*1			
Corrected data array	Read		OUTPDATA*1	:CALC{1-16}:DATA:SDAT?	The E5070B/E5071B does not have any high-speed data transfer command.	
	Read (high-speed data transfer)		OUTPDATF*1			
	Write		INPUDATA*1			:CALC{1-16}:DATA:SDAT
Memory trace	Read		OUTPMEMO*1	:CALC{1-16}:DATA:SMEM?	The E5070B/E5071B does not have any high-speed data transfer command.	
	Read (high-speed data transfer)		OUTPMEMF*1			
Formatted data array	Read		OUTPFORM*1	:CALC{1-16}:DATA:FDAT?*3	The E5070B/E5071B does not have any high-speed data transfer command.	
	Read (high-speed data transfer)		OUTPFORMF*1			
	Write		INPUFORM*1			:CALC{1-16}:DATA:FDAT*3

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed			Command (For footnotes, see page 116.)		Remarks		
				8753ES	E5070B/E5071B			
Reading/Writing data (cont'd.)	Reading trace data at a designated point	Designating the point		SELPT*1	Not available	The E5070B/E5071B does not allow you to read trace data in a range that you have limited.		
		Read		OUTPDATP*1				
	Reading trace data for a designated measurement range	Specifying the range	Upper limit value	SELMAXPT*1				
			Lower limit value	SELMINPT*1				
		Read		OUTPDATR*1				
	Reading a Pre-Raw Data Array (in Take4 mode)			OUTPPRE*1			Not available	The E5070B/E5071B does not allow you to read/write pre-raw data array.
	Calibration kit array data	Read		OUTPCALK			Not available	The E5070B/E5071B does not allow you to read/write the calibration kit array.
		Write		INPUKALK				
	Power meter calibration coefficient array	Port 1	Before interpolating	Read			OUTPPMCAL1	Not available
				Write			INPUPMCAL1	Not available
After interpolating			Read	OUTPIPMCL1	:SOUR{1-16}:POW:PORT1:CORR:DATA?			
			Write	Not available	:SOUR{1-16}:POW:PORT1:CORR:DATA			
Port 2		Before interpolating	Read	OUTPPMCAL2	Not available			
			Write	INPUPMCAL2	Not available			
		After interpolating	Read	OUTPIPMCL2	:SOUR{1-16}:POW:PORT2:CORR:DATA?			
			Write	Not available	:SOUR{1-16}:POW:PORT2:CORR:DATA			
Reading the entry area display			OUTPACTI	Not available				
Reading error information from the error cue			OUTPERRO	:SYST:ERR?				
All lists at the time when the lists are displayed			OUTPPRINAL	Not available				
Learn string	Designating revisions		SELL	Not available	The E5070B/E5071B does not allow you to read/write the learn string.			
	Read	OUTPLEAS						
		LRN?						
Write	INPULEAS							
	LRN							
Reading product information			OUTPIDEN	*IDN?				
Reading a product's serial number			OUTPSERN	Included in the value read from *IDN?				
Reading the installed options			OUTPOPTS	*OPT?				

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Markers	Activate the marker and move it to the designated stimulus value.	Marker 1	MARK1* ¹	:CALC{1-16}:MARK{1-10}:ACT* ⁷ (Setting up the active marker) :CALC{1-16}:MARK{1-10}:X* ⁷ (Specifying the stimulus value of the marker) These two commands enables you to perform the equivalent.	
		Marker 2	MARK2* ¹		
		Marker 3	MARK3* ¹		
		Marker 4	MARK4* ¹		
		Marker 5	MARK5* ¹		
	Move to the designated point		MARKBUCK* ⁸	Not available	
	Setting up the marker move mode	Continuous mode	MARKCONT* ⁸	:CALC{1-16}:MARK{1-10}:DISC OFF* ⁵	
		Discrete mode	MARKDISC* ⁸	:CALC{1-16}:MARK{1-10}:DISC ON* ⁵	
	Specifying Couple/Uncouple between channels	Couple	MARKCOUP* ⁸	:CALC{1-16}:MARK{1-10}:COUP ON* ⁵	On the E5070B/E5071B, Couple/Uncouple between traces in the same channel is specified.
		Uncouple	MARKCOUP* ⁸	:CALC{1-16}:MARK{1-10}:COUP OFF* ⁵	
	On/Off setting for all marker value displays		DISM* ¹	Not available	The E5070B/E5071B always displays all marker values.
	Turning off all markers and the marker function		MARKOFF* ¹	:CALC{1-16}:MARK{1-10}* ⁷ can be used to turn off the marker display but the function remains turned on)	
	Delta marker(Reference marker)	Turning off the delta marker	DELO* ¹	:CALC{1-16}:MARK:REF OFF* ³	The E5070B/E5071B assigns marker 10 as the delta marker.
		Designating a delta marker	DELR* ¹	Not available	
	Designating the position of a fixed marker	Auxiliary measured value	MARKFAUV* ¹	Not available	The E5070B/E5071B does not have the fixed marker function.
Stimulus value		MARKFSTI* ¹			
Designated point		MARKFVAL* ¹			
Position of the active marker		MARKZERO* ¹			
Selecting readout format on a Smith chart	Admittance	SMIMGB	Not available	On the E5070B/E5071B, readout format is specified when setting up data format.	
	Linear magnitude	SMIMLIN			
	Log magnitude	SMIMLOG			
	Real/Imaginary	SMIMRI			
	Impedance	SMIMRX			
Selecting readout format on a polar display	Linear magnitude	POLMLIN			
	Log magnitude	POLMLOG			
	Real/Imaginary	POLMRI			

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Markers (cont'd.)	Setting the marker value at a different value	Starting value for the sweep range	MARKSTAR* ⁸	:CALC{1-16}:MARK{1-10}:SET STAR* ⁷	
		Ending value for the sweep range	MARKSTOP* ⁸	:CALC{1-16}:MARK{1-10}:SET STOP* ⁷	
		Center value of the sweep range	MARKCENT* ⁸	:CALC{1-16}:MARK{1-10}:SET CENT* ⁷	
		Span value of the sweep range	MARKSPAN* ⁸	Not available	
		Reference value	MARKREF* ⁸	:CALC{1-16}:MARK{1-10}:SET RLEV* ⁷	
		CW frequency value	MARKCW* ⁸	Not available	
	Reading the marker value of the active marker		OUTPMARK* ⁸	:CALC{1-16}:MARK{1-10}:X?* ⁷ (stimulus value) :CALC{1-16}:MARK{1-10}:Y?* ⁷ (stimulus value) allows you to read the marker value of any marker.	The return value from 8753ES includes the both of stimulus value and response value
	Specify the electrical length so that the group delay becomes zero at the position of the active marker.		MARKDELA* ⁸	:CALC{1-16}:MARK{1-10}:SET DEL* ⁷	
Marker search	Turning off the search function		SEAOFF* ⁸	Not available	The E5070B/E5071B requires you to send two commands, one for designating the search type and the other for executing the search.
		Maximum	MARKMAXI* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MAX* ⁷	
			SEAMAX* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:EXEC* ⁷	
		Minimum	MARKMINI* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MIN* ⁷	
	SEAMIN* ⁸		:CALC{1-16}:MARK{1-10}:FUNC:EXEC* ⁷		
	Target search	Left side	SEAL* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TYPE LTAR* ⁷ :CALC{1-16}:MARK{1-10}:FUNC:EXEC* ⁷	
		Right side	SEAR* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TYPE RTAR* ⁷ :CALC{1-16}:MARK{1-10}:FUNC:EXEC* ⁷	
		Specifying the search value	SEATARG* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TARGET ARG* ⁷	
	Bandwidth search	On/Off	WIDT* ⁸	:CALC{1-16}:MARK:BWID* ⁷	
		Specifying parameters	WIDV* ⁸	:CALC{1-16}:MARK{1-10}:BWID:TYPE HRU* ⁷	
	Turning the tracking On/Off	TRACK* ⁸	:CALC{1-16}:MARK{1-10}:FUNC:TRACK* ⁷		
Statistics analysis	On/Off	MEASTAT* ⁸	:CALC{1-16}:MST* ³		
	Reading the results	OUTPMSTA* ⁸	:CALC{1-16}:MST:DATA?* ³		

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Device test	Limit test	Turning the limit test On/Off	LIMITEST* ¹	:CALC{1-16}:LIM* ³		
		Turning the limit line display On/Off	LIMLINE* ¹	:CALC{1-16}:LIM:DISP* ³		
	Limit Editing the test list	Start of editing	EDITLIML	:CALC{1-16}:LIM:DATA* ³ is used to set up the limit test table.		
			End of editing		EDITDONE	
		Deleting the entire list	CLEL		:CALC{1-16}:LIM:DATA 0* ³	
			CLEAL			
		Setting the marker value at the offset along the Y-axis	LIMIMAOF		:CALC{1-16}:LIM:DATA* ³ is used to set up the limit test table.	
		Editing segments	Selection		SEDI	
			Addition		SADD	
			Deletion		SDEL	
			End		SDON	
			Boundary value		LIMS	
			Upper limit value		LIMU	
			Lower limit value		LIML	
			Delta value		LIMD	
			Center valuer		LIMM	
	Sloping line		LIMITSL			
	Flat line		LIMTFL			
	Single point		LIMTSP			
	Setting the boundary value at the active marker's response value	MARKSTIM				
Setting the center value at the active marker's response value	MARKMIDD					
Specifying the offset	Along the X-axis	LIMISTIO	Not available	The E5070B/E5071B does not allow the offset to be specified.		
	Along the Y-axis	LIMIAMPO				
	Turning the function On/Off that records the maximum and minimum for each segment	MINMAX	Not available			

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks			
			8753ES	E5070B/E5071B				
Device test (cont'd.)	Limit test (cont'd.)	Reading the results	Reading the pass/fail of a channel	OUTPLIM{1-4}	:CALC{1-16}:LIM:FAIL?*3 (Reading the pass/fail of a active trace)	The E5070B/E5071B has a different returned value.		
			Intra-segment maximum measured value	OUTPAMAX	Not available	The E5070B/E5071B does not allow you to read data for each segment/each point.		
			Intra-segment minimum measured value	OUTPAMIN	Not available			
			Number of valid segments and results for each segment	OUTPSEGAF	Not available			
			Maximum/minimum in all segments	OUTPSEGAM	Not available			
			Designating the segment to be read by OUTPSEGF and OUTPSEGM	SELSEG	Not available			
			Pass/Fail of the designated segment	OUTPSEGF	Not available			
			Maximum/Minimum of the designated segment	OUTPSEGM	Not available			
			Point information	OUTPLIML	Not available			
			Information on the position of the active marker	OUTPLIMM	Not available			
			Information on a failed point and the number of failed points	OUTPLIMF	Not available		The E5070B/E5071B allows you to read the number of points by using :CALC{1-16}:LIM:REP:POIN?, and the stimulus value by using :CALC{1-16}:LIM:REP?, but other values cannot be read.	
			Number of failed points, and the stimulus and measured values of the failed points	OUTPFAIP	Not available			
			Ripple test	Ripple limit editing	Turning the ripple test On/Off	RLIMTEST	Not available	The E5070B/E5071B does not have the ripple test function.
					Turning the limit line display On/Off	RLIMLINE		
Start of editing	EDITRLIM							
End of editing	EDITDONE							
Deleting all of the limits	CLEL							
		CLEAL						

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed			Command (For footnotes, see page 116.)		Remarks	
				8753ES	E5070B/E5071B		
Device test (cont'd.)	Ripple test (cont'd.)	Ripple limit editing (cont'd.)	Editing the band	Selection	SEDI	Not available	The E5070B/E5071B does not have the ripple test function.
				Addition	SADD		
				Deletion	SDEL		
				End	SDON		
				Upper limit value	RLIMM		
				Start value	RLIMSTR		
				Stop value	RLIMSTP		
			Displaying the ripple value	Absolute value	RLIMVALABS		
				Margin	RLIMVALMAR		
				Off	RLIMVALOFF		
	Reading the results	Information on failed points	Magnitude of ripples in all valid bands	OUTPRPLBND ALL			
			Designated band results	OUTPRPLBND PF			
			Magnitude of designated bands ripples	OUTPRPLBND VAL			
Bandwidth test	Turning the bandwidth test On/Off			BWLIMTEST* ¹	Not available	The E5070B/E5071B allows the bandwidth to be displayed but not to be tested.	
				BWLIMDISP* ¹			
				BWLIMDB* ¹			
				BWLIMMAX* ¹			
				BWLIMMIN* ¹			
	Reading the results	Bandwidth, center value, Q value		OUTPMWID* ¹	Not available		
				OUTPMWIL* ¹			:CALC{1-16};MARK{1-10}:BWID:D ATA?* ⁷
	Bandwidth, center value, Q value, loss		BWLIMVAL* ¹	:CALC{1-16};MARK{1-10}:BWID:D ATA?* ⁷			
	Reading the bandwidth value		BWLIMSTAT* ¹	Not available			
Status report	Clearing the status byte register, event status register, and valid register.			CLES	*CLS		
				CLS			
	Reading the status byte register			OUTPSTAT	*STB?		
				STB?	*STB?		
	Setting up the service request valid register		SRE	*SRE			
	Reading the event status register		ESR?	*ESR?			
Setting up the event status valid register		ESE	*ESE				

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks		
			8753ES	E5070B/E5071B			
Status report (cont'd.)	Event status register B	Read	ESB?	Not available	The E5070B/E5071B have questionable channel limit fail registers, which report result of llimit test.		
		Setting up valid registers	ESNB	Not available			
	When all operations on standby have been completed, bit 0 of the event status register is set.	OPC	*OPC	8753ES reports the completion of the next command. E5070B/E5071B reports the completion when all commands being executed have been completed.			
Save /Recall	Instrument State	Save	Internal register	SAVE	:MMEM:STOR	On the E5070B/E5071B, the same command is used regardless of the type of media.	
				SAVEREG			
			Internal disk	STOR			
		Call	Internal register	RECA	:MMEM:LOAD		
				RECAREG			
			Internal disk	LOAD			
	Naming a file to be saved			TITF	Designated by using parameters before the file is saved.		
	Selecting the format of the Instrument State file.	ASCII format		SAVUASCI	Not available		
		Binary format		SAVUBINA			
	Selecting the data to be saved in a file	Corrected data array		EXTMDATA* ¹	:MMEM:STOR:STYP* ³		The E5070B/E5071B can save the Instrument State plus corrected data array and calibration data. (The 8753ES Instrument State file contains calibration data.)
		Raw data array		EXTMRW* ¹	Not available		
		Trace data		EXTMFORM* ¹	Not available		
		LCD screen display		EXTMGRAP	Not available		
		Measurement data only		EXTMDATO* ¹	Not available		
	Test sequence	Save		STORSEQ	Not available		
Load		Floppy disk	LOADSEQ				
LCD screen image	Save		SAVEJPG	:MMEM:STOR:IMAG	Image files on the E5070B/E5071B are stored in Windows® Bitmap or PNG format, while the 8753ES saves files in JPEG format.		
Measurement data (CSV format)	Save		SAVECSV* ¹	:MMEM:STOR:FDAT* ³			
Saving color settings	Save		SVCO	Not available			
	Load		RECO	Not available			

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Save/Recall (cont'd.)	Selecting media for saving files	Internal memory	INTM	Not available	The E5070B/E5071B allows the media to be selected by designating the drive name at the time the file is saved. A file can be saved on either the internal hard disk drive or to the floppy disk drive.
		Floppy disk drive	INTD	Not available	
		External disk drive	EXTD	Not available	
		Designating the external disk number	DISCUNIT	Not available	
		Partition on the external disk to be designated	DISCVOLU	Not available	
	Designating the storage format	DOS	FORMATDOS	Not available	The E5070B/E5071B is compatible with the DOS format only.
		LIF	FORMATLIF		
	Initializing the storage medium	Floppy disk	INID	Not available	On the E5070B/E5071B, the storage media can be initialized using a mouse.
		Specifying the size of the LIF directory	DIRS	Not available	The E5070B/E5071B is compatible with the DOS format only.
		External disk	INIE	Not available	
Save/Recall register	Giving a title		TITR	Not available	The E5070B/E5071B stores all data on the hard disk or to a floppy disk.
			TITREG	Not available	
	Clear	Clearing the designated number	CLEA	Not available	
		All clear	CLEARREG	Not available	
File manipulation	Deletion	PURG	:MMEM:DEL		
	Reading the file title from the disk	REFT	Not available		
Test sequence	Creating/Revising a new sequence		NEWSEQ	Not available	The E5070B/E5071B does not have the test sequence function. Macros are created using VBA.
	Selecting a test sequence		Q	:PROG:NAME	
			SEQ	(Selecting a VBA program)	
	Reading a test sequence		OUTPSEQ	Not available	
	Executing the selected sequence		DOSEQ	:PROG:STAT RUN (Executing the selected VBA program)	
	Stopping the selected sequencer		PTOS	:PROG:STAT STOP (Stopping the selected VBA program)	
	Resuming a stopped test sequence		CONS	Not available	
	Executing another sequence from the test sequence		GOSUB	Not available	
	Naming the test sequence	Name	TITSEQ	Not available	
		Displaying the softkey menu for setup	TITSQ	Not available	
	Specifying waiting time in the test sequence		SEQWAIT	Not available	
	Displaying the softkey menu while the test sequence is in progress.		SHOM	Not available	
	Specifying the status bit in the event status register		ASSS	Not available	

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks
			8753ES	E5070B/E5071B	
Test sequence (cont'd.)	GPIO	Designating the bit number of the input port to be used for branching	PARAIN	Not available	The E5070B/E5071B does not have a test sequence function. Macros are created using VBA.
		Setting the designated bit	SETBIT	Not available	
		Clearing the designated bit	CLEABIT	Not available	
		Setting all bits	PARAOUT	Not available	
	TTL output	Set to High after ending sweep	TTLHPULS	Not available	
		Set to Low after ending sweep	TTLPULS	Not available	
		Always set to High	TTLOH	Not available	
		Always set to Low	TTLOL	Not available	
	Loop counter	Setting values	LOOC	Not available	
		Subtract one.	DECRLOOC	Not available	
		Add one.	INCRLOOC	Not available	
	Branching	Executes the sequence when the designated GPIO bit is set to High.	IFBIHIGH	Not available	
		Executes the sequence when the designated GPIO bit is set to Low.	IFBILOW	Not available	
		Executes the sequence when the loop counter is at zero.	IFLCEQZE	Not available	
		Executes the sequence when the loop counter is not at zero.	IFLCNEZE	Not available	
		Executes the sequence when the limit test fails.	IFLTFAIL	Not available	
		Limit test passes, and the sequence executes.	IFLTPASS	Not available	
	Specifying the bit for selecting the attenuator in the test set.	Forward	TSTIOFWD	Not available	
		Reverse	TSTIOREV	Not available	
	Clearing the designated sequence from the register		CLEASEQ	Not available	
	Ending editing of the test sequence		DONM	Not available	
	Copying the test sequence		DUPLSEQ	Not available	

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
System	Reset		PRES	:SYST:PRES	After execution, the *RST on the E5070B/E5071B set the trigger state to Hold.	
			RST	*RST		
	Executes a self-test and returns the results.		TST?	Not available		
	Internal clock	Setting the date	SETDATE	:SYST:DATE		
		Reading the date	READDATE	:SYST:DATE?		
		Setting the time	SETTIME	:SYST:TIME		
		Reading the time	READTIME	:SYST:TIME?		
	Setting up the beep sound	On/Off operations at the time an action is completed	BEEPDONE	:SYST:BEEP:COMP:STAT		
		On/Off at the time the limit test fails	BEEPFAIL	Not available	On the E5070B/E5071B, the beep sound for a failed limit test is set up based on the beeper setup for the warning sound.	
		On/Off at the time a warning occurs	BEEPWARN	:SYST:BEEP:WARN:STAT		
		Sounds the beep sound.	EMIB	:SYST:BEEP:COMP:IMM (Beep sound when an action completes) or :SYST:BEEP:WARN:IMM (Beep sound when a warning occurs)		
	Selecting the measurement mode	Standard network analyzer	INSMNETA	Not available	The E5070B/E5071B is always considered a standard network analyzer.	
		External source (automatic)	INSMEXSA			
		External source (manual)	INSMEXSM			
		Tuned receiver	INSMTUNR			
Printer/Plotter output	Printing	Plotter	PLOT	Not available		
		Printer	LCD screen	PRINALL	:HCOP	
	Test sequence		PRINSEQ	Not available	The E5070B/E5071B does not have the test sequence function.	
	List display		PRINTALL	Not available	The E5070B/E5071B does not have the list display function.	
	Output the LCD screen to the printer by using a PCL raster dump.		OUTPPRIN	:HCOP		
	The LCD screen in the HP-GL is output from the GPIB port.		OUTPPLOT	Not available	The E5070B/E5071B does not allow output from the GPIB.	
	Setting the line type		LINTDATA	Not available	The E5070B/E5071B always gives the data trace in a solid line.	
		Memory trace	LINTMEMO			
	Setting up the printer	Return to the initial state		DEFPRINT	Not available	On the E5070B/E5071B, the printer setup is executed by using the front panel.
		Setting up for printing	Color	PRIC		
Monochrome			PRIS			

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Printer/Plotter output (cont'd.)	Setting up the printer (cont'd.)	Color	Trace data	PCOLDATA	Not available	On the E5070B/E5071B, color setup is allowed only for turning highlighting of the entire screen On/Off.
			Graticule lines	PCOLGRAT		
			Memory trace	PCOLMEMO		
			Reference line	PCOLREFL		
			Text	PCOLTEXT		
			Warning message	PCOLWARN		
	Setting the printer port	GPIB	Parallel port	PRNPRTHPIB	Not available	On the E5070B/E5071B, the printer setup is executed by using the front panel.
			Serial port	PRNPRTPARA		
			Serial port	PRNPRTSERI		
	Setting the printer type	HP DeskJet 540/850C	HP DeskJet	PRNTYP540	Not available	On the E5070B/E5071B, the printer setup is executed by using the front panel.
			HP DeskJet	PRNTYPDJ		
			Epson ESC/P2	PRNTYPEP		
			HP LaserJet	PRNTYPLJ		
			HP PaintJet	PRNTYPPJ		
			HP ThinkJet	PRNTYPTJ		
	Handshake mode		PRNHNDSHK	Not available		
	Turning the automatic feed On/Off		PRNTRAUTF	Not available		
	Serial port baud rate		PRNTRBAUD	Not available		
	Sending a form feed		PRNTRFORF	Not available		
Plotter setup	Returning to the initial state		DFLT	Not available	The E5070B/E5071B does not support plotters.	
	Setting the print scope	Entire sheet	FULP			
		Lower-left 1/4 of a sheet	LEFL			
		Upper-left 1/4 of a sheet	LEFU			
		Lower-right 1/4 of a sheet	RIGL			
		Upper-right 1/4 of a sheet	RIGU			
	Turning the plot On/Off	Trace data	PDATA			
		Graticule lines	PGRAT			
		Memory trace	PMEM			
		Marker	PMKR			
		Softkey	PSOFT			
		Text	PTEXT			
	Pen number	Trace data	PENNDATA			
		Graticule lines	PENNGRAT			
		Memory trace	PENNMAR			
		Marker	PENNMEMO			
		Text	PENNTEXT			
	Pen speed	High speed	PLOSSLOW			
		Low speed	PLOFAST			
Setting up the scale	FULL	SCAPFULL				
	GRAT	SCAPGRAT				

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Printer/Plotter output (cont'd.)	Plotter setup (cont'd.)	Plotter port	Disk	PLTPRTDISK	Not available	The E5070B/E5071B does not support plotters.
			GPIB	PLTPRTHPIB		
			Parallel port	PLTPRTPARA		
			Serial port	PLTPRTSERI		
	Plotter type	PCL5-compatible	PLTTYPHPGL			
		Plotter	PLTTYPLTR			
	Handshake mode		PLTHNSHK			
	Turning the automatic feed On/Off		PLTTRAUTF			
	Serial port baud rate		PLTTRBAUD			
	Sending a form feed		PLTTRFORF			
	Setting up printing		Initialization	DEFLTPIO		
Turning the timestamp print On/Off		TIMESTAM	Not available	On the E5070B/E5071B, always display the timestamp on LCD.		
Naming a file to receive plot output.		TITP	Not available			
Test set	Confirming the test set connection		TESS	Not available		
	Switching the changeover for the test set	Setting up Continuous/Stop	CSWI	Not available	On the E5070B/E5071B, always continuous.	
		Specifying the number of times to change over.	TSSWI			
Time domain transformation	Turning the transformation On/Off		TIMDTRAN	:CALC{1-16}:TRAN:TIME:STAT		
	Selecting the mode	Low-pass impulse	LOWPIMPU	:CALC{1-16}:TRAN:TIME		
		Low-pass step	LOWPSTEP	:CALC{1-16}:TRAN:TIME:STIM		
		Bandpass	BANDPASS			
	Display the softkeys for setting up the gate		SPEG	Not available		
	Turning the time-domain gate On/Off		GATEO	:CALC{1-16}:FILT:TIME:STAT		
	Time-domain gate time	Start	GATESTAR	:CALC{1-16}:FILT:TIME:STAR		
		Stop	GATESTOP	:CALC{1-16}:FILT:TIME:STOP		
		Center	GATECENT	:CALC{1-16}:FILT:TIME:CENT		
		Span	GATESPAN	:CALC{1-16}:FILT:TIME:SPAN		
	Form of the time-domain gate	Minimum	GATSMINI	:CALC{1-16}:FILT:TIME:SHAP		
		Normal	GATSNORM			
		Wide	GATSWIDE			
		Maximum	GATSMAXI			
	Demodulation function	Off	DEMOOFF	Not available		
		AM modulation	DEMOAMPL	Not available		
		Phase modulation	DEMOPHAS	Not available		
	Setting up the display	Maximum	WINDMAXI	:CALC{1-16}:TRAN:TIME:KBES		
		Minimum	WINDMINI			
		Normal	WINDNORM			
Specifying values		WINDOW				
Turning use of the memory trace On/Off		WINDUSEM	Not available			
Freq low-pass measurement		SETF	:CALC{1-16}:TRAN:TIME:LPRF			

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Others (cont'd.)	Mixer measure ment	Turning the frequency offset mode On/Off	FREQOFFS	Not available	The E5070B/E5071B does not have the mixer measuring function.	
		Selecting the down conversion.	DCONV			
		Selecting the up conversion.	UCONV			
		Reading the frequency of the external RF signal source.	OUTPRFFR			
		Specifyi ng LO	Turning control On/Off			LOCONT
			Frequency			LOFREQ
			Setting the frequency in sweep mode			LOFSWE
			Starting frequency			LOFSTAR
			Stop frequency			LOFSTOP
			Power			LOPOWER
			Setting the power in sweep mode			LOPSTAR
			Start power			LOPSTOP
			Stop power			LOPSWE
			Setting the signal source			RF > LO
	RF < LO	RFLTLO				
	Setting up the display	Setup screen	VIEMOFF			
		Measurement screen	VIEMON			
	LO frequency is used in the offset mode.		VOFF			
	Harmonics measurement mode	Turning off the measurement mode.	HARMOFF	Not available		The E5070B/E5071B does not have the harmonics measurement mode.
		2nd harmonics measurement	HARMSEC			
3rd harmonics measurement		HARMTHIR				
Key manipul ation related comman ds	Performing the same processing as with the front panel key designated.		KEY	Not available		
	Performs the same processing as with the [↑] key on the front panel.		UP	Not available		
	Performs the same processing as with the [↓] key on the front panel.		DOWN	Not available		
	Returns the code of the last key manipulated on the front panel.		KOR?	Not available		
			OUTPKEY	Not available		
	Displaying the softkey menu corresponding to the front panel key.	[Avg]	MENUAVG	Not available		
		[Cal]	MENUCAL	Not available		
		[Copy]	MENUCOPY	Not available		
		[Display]	MENUDISP	Not available		
		[Format]	MENUFORM	Not available		
[Marker]		MENUMARK	Not available			
	[Meas]	MENUMEAS	Not available			

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Correspondence (by function)**

Function	Item to be specified/executed		Command (For footnotes, see page 116.)		Remarks	
			8753ES	E5070B/E5071B		
Others (cont'd.)	Key manipulation related commands (cont'd.)	Displaying the softkey menu corresponding to the front panel key. (cont'd.)	[Marker Fctn]	MENUMRKF	Not available	
			[Power]	MENUPOWE	Not available	
			[Save/Recall]	MENURECA	Not available	
			[Save/Recall]	MENUSAVE	Not available	
			[Scale Ref]	MENUSCAL	Not available	
			[Seq]	MENUSEQU	Not available	
			[Marker Search]	MENUSRCH	Not available	
			[Sweep Setup]	MENUSTIM	Not available	
			[Sweep Setup]	MENUSWEE	Not available	
	[System]	MENUSYST	Not available			
		Performing the same processing as with the designated softkey.	SOFT{1-8}	Not available		
		Editing softkey labels	WRSK	Not available		
	GPIB	Turning the debug mode On/Off		DEBU	Not available	
		Setting to talker/listener mode		TALKLIST	Not available	
		Sending the title character string	Peripherals	TITTPERI	Not available	
Power meter			TITTPMTR			
Printer			TITTPRIN			
pass control		USEPASC	Not available			
Setting the GPIB address		Controller	ADDRCONT	Not available	The E5070B/E5071B does not allow these GPIB addresses to be specified.	
			PCB			
		External disk drive	ADDRDISC	Not available		
		LO source	ADDRLSRC			
		Peripheral	ADDRPERI			
	Plotter	ADDRPLOT				
	Printer	ADDRPRIN				
	Power meter	ADDRPOWM	:SYST:COMM:GPIB:PMET:ADDR			
Specifying uses of the parallel port	GPIB use	PARALGPIO	Not available	The E5070B/E5071B uses the GPIO for the printer.		
	Printer use	PARALCPY				
Service mode	ALC control	ALC	Not available			
	Setting the analog bus On/Off	ANAB	Not available			

- *1. Effective for the active channel (8753ES)
- *2. Effective for channels and traces designated in the command. (E5070B/E5071B)
- *3. Effective for the active trace designated in the command (E5070B/E5071B)
- *4. Effective both for the main and auxiliary channels. (8753ES)
- *5. Effective for the channels designated in the command. (E5070B/E5071B)
- *6. Effective for all channels (8753ES)
- *7. Effective command for the marker number, designated within that command, on the active trace in the channel having the channel number also designated in that command. (E5070B/E5071B)
- *8. Effective command for the active marker (8753ES)

8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
[A]		
AB	Select A/B measurement and display the traces.	Not available (A/B measurement not available.)
ADAPI	Set up the electrical delay in the adapter removal calibration.	Not available
ADDRCONT	Specify the controller GPIB address.	Not available
ADDRDISC	Specify the GPIB address of the external disk drive.	Not available
ADDRLSRC	Specify the GPIB address of the LO source.	Not available
ADDRPERI	Specify the GPIB addresses of peripherals.	Not available
ADDRPLOT	Specify the GPIB address of the plotter.	Not available
ADDRPOWM	Specify the GPIB address of the power meter.	:SYST:COMM:GPIB:PMET:ADDR
ADDRPRIN	Specify the GPIB address of the printer.	Not available (Not compatible with a GPIB printer.)
ADPTCOAX	Select the adapter-coaxial in the adapter removal calibration.	Not available
ADPTWAVE	Select the adapter-waveguide in the adapter removal calibration.	Not available
ALC	Control ALC (for service use).	Not available
ALTAB	Set to an alternate measurement mode.	Not available (The sweeping of traces on the same channel is performed in chop measurement mode, while traces between different channels is performed in alternate mode.)
ANAB	On/Off setting for the analog bus (for service use)	Not available
ANAI	Select the measurement of the signal input to the AUX Input and display the trace.	Not available (Measurement parameters are S-parameters only.)
AR	Select the A/R measurement and display the traces.	Not available (Measurement parameters are S-parameters only.)
ASEG	All segments are used during the list frequency sweep.	Not available (All segments are always used.)
ASSS	Specify the sequence bit of the event status register.	Not available
ATTP1	Specify the value for the attenuator at port 1.	:SOUR{1-16}:POW:ATT
ATTP2	Specify the value for the attenuator at port 2.	(Channels are used for setup.)
AUTO	Perform autoscale.	:DISP:WIND{1-16}:TRAC{1-16}:Y:AUTO
AUXC	Set channels 3 and 4 On/Off.	Using the command :CALC{1-16}:PAR:COUN enables you to do the equivalent.
AVERFACT	Specify the averaging factor.	:SENS{1-16}:AVER:COUN
AVERO	Set the averaging On/Off.	:SENS{1-16}:AVER
AVERREST	Restart the averaging.	:SENS{1-16}:AVER:CLE
[B]		
BACI	Specify the screen brightness.	Not available (On/Off setting for the backlight only allowed)
BANDPASS	Select the BANDPASS mode in the time-domain transformation.	:CALC{1-16}:TRAN:TIME BPAS
BEEPDONE	Set the beep (n) sound at the end of an action On/Off.	:SYST:BEEP:COMP:STAT
BEEPFAIL	Set the beep (n) sound for the limit test FAIL On/Off.	Not available (Setting is the same as for the warning beep sound.)
BEEPWARN	Set the warning beep (n) sound On/Off.	:SYST:BEEP:WARN:STAT
BLAD	Set the display On/Off.	:SYST:BACK (Set the LCD backlight On/Off) The On/Off relation on the 8753ES is opposite that on the E5070B/E5071B.
BR	Select the B/R measurement and display the traces.	Not available

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
BWLIMDB	Specify the value indicating the position of the bandwidth (attenuation from the peak) in the bandwidth test.	Not available (Can perform the bandwidth search but does not have the test function.)
BWLIMDISP	Set the bandwidth value display in the bandwidth test On/Off.	
BWLIMMAX	Specify the upper limit value in the bandwidth test.	
BWLIMMIN	Specify the lower limit value for the bandwidth test.	
BWLIMSTAT	Read the results of the bandwidth test.	
BWLIMTEST	Set the bandwidth test On/Off.	
BWLIMVAL	Read the bandwidth value during the bandwidth test.	
[C]		
C0	Specify the C0 value of the OPEN standard.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C0
C1	Specify the C1 value of the OPEN standard.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C1
C2	Specify the C2 value of the OPEN standard.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C2
C3	Specify the C3 value of the OPEN standard.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:C3
CAL1	Cause the softkey for the calibration menu.	Not available (Can be ignored in the case of replacement)
CALFCALF	Specify the calibration coefficients while editing the calibration coefficients table for the power sensor to be used in power meter calibration.	Not available
CALFFREQ	Specify the frequency while editing the calibration coefficients table for the power sensor to be used for power meter calibration.	
CALFSENA	Start editing the calibration coefficients table for power sensor A to be used for power meter calibration.	
CALFSENB	Start editing the calibration coefficients table for power sensor B to be used for power meter calibration.	
CALIERC	Start measuring data in forward enhanced response calibration.	Not available (Enhanced response calibration function not available.)
CALIFUL2	Start measuring data in full 2-port calibration.	:SENS{1-16}:CORR:COLL:METH:SOLT2
CALIRAI	Start measuring data in response & isolation calibration.	:SENS{1-16}:CORR:COLL:METH:OPEN :SENS{1-16}:CORR:COLL:METH:SHOR :SENS{1-16}:CORR:COLL:METH:THRU (The commands differ depending on the standard used in the isolation calibration.)
CALIRERC	Start measuring data in reverse enhanced response calibration.	Not available (Enhanced response calibration function not available.)
CALIRESP	Start measuring data in response calibration.	:SENS{1-16}:CORR:COLL:METH:OPEN or :SENS{1-16}:CORR:COLL:METH:SHOR or :SENS{1-16}:CORR:COLL:METH:THRU (The commands differ depending on the standard used in the isolation calibration.)
CALIS11	Start measuring data in S11 1-port calibration.	:SENS{1-16}:CORR:COLL:METH:SOLT1 (You must designate a port with the parameter.)
CALIS22	Start measuring data in S22 1-port calibration.	
CALITRL2	Start measuring data in TRL*/LRM* 2-port calibration.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B	
CALK24MM	Select 2.4 mm Calibration Kit (85056A/D) as the default calibration kit.	:SENS{1-16}:CORR:COLL:CKIT	
CALK292MM	Select 2.92 mm Calibration Kit as the default calibration kit.		
CALK292S	Select 2.92 mm Calibration Kit (85056K) as the default calibration kit.		
CALK35MC	Select 3.5 mm Calibration Kit (85033C) as the default calibration kit.		
CALK35MD	Select 3.5 mm Calibration Kit (85033D) as the default calibration kit.		
CALK716	Select 7-16 Calibration Kit (85038) as the default calibration kit.		
CALK7MM	Select 7 mm Calibration Kit (85031B) as the default calibration kit.		
CALKN50	Select N-type 50 Calibration Kit (85032B/E) as the default calibration kit.		
CALKN75	Select N-type 75 Calibration Kit (85036B/E) as the default calibration kit.		
CALKTRLK	Select TRL 3.5 mm Calibration Kit (85052C) as the default calibration kit.		
CALKUSED	Select a user-defined calibration kit as the default calibration kit.		
CALN	Set the error correction to Off.		:SENS{1-16}:CORR:STAT OFF
CALSPORT1	Call the data on port 1 for adapter removal calibration.		Not available
CALSPORT2	Call the data on port 2 for adapter removal calibration.		
CALZLINE	Set the characteristic impedance for TRL*/LRM* 2-port calibration at the impedance value of the standard.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)	
CALZSYST	Set the characteristic impedance for TRL*/LRM* 2-port calibration at the characteristic impedance value of the measurement system.		
CBRI	Specify the display color brightness for the items selected.	Not available (Color setup is allowed only for turning highlighting of the entire screen On/Off.)	
CENT	Specify the center value of the sweep range.	:SENS{1-16}:FREQ:CENT (Cannot be used for segment editing.) :SOUR{1-16}:POW:CENT	
CHAN1	Specify channel 1 as the active channel.	:DISP:WIND{1-16}:ACT (Specifying the active channel) or :CALC{1-16}:PAR{1-16}:SEL (Specifying the active channel) For an outline of channels and traces, refer to the "Users' Guide."	
CHAN2	Specify channel 2 as the active channel.		
CHAN3	Specify channel 3 as the active channel.		
CHAN4	Specify channel 4 as the active channel.		
CHOPAB	Set the system to chop measurement mode.	Not available (Traces on the same channel are measured using the same method as the chop sweep. When traces belong to different channels, they are measured using the same method as the alternate sweep.)	
CLAD	Complete the class designation in defining the calibration kits.	Not available (Can be ignored in the case of replacement.)	
CLASS11A	Measure S11A.	:SENS{1-16}:CORR:COLL:OPEN	
CLASS11B	Measure S11B.	:SENS{1-16}:CORR:COLL:SHOR	
CLASS11C	Measure S11C.	:SENS{1-16}:CORR:COLL:LOAD	
CLASS22A	Measure S22A.	:SENS{1-16}:CORR:COLL:OPEN	
CLASS22B	Measure S22B.	:SENS{1-16}:CORR:COLL:SHOR	
CLASS22C	Measure S22C.	:SENS{1-16}:CORR:COLL:LOAD	
CLEA	Clear the register for saving/recalling the designated number.	Not available	
CLEABIT	Clear the designated GPIO bit.	Not available (No GPIO interface)	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
CLEAL	Clear the entire list.	Segment Sweep Table SENS{1-16}:SEGM:DATA makes overwrite Segment Sweep Table Limit Test Table CALC:LIM:DATA 0 Calibration Facotor (Power Sensor A) :SOUR:POW:PORT:CORR:COLL:TABL:ASEN: DATA 0 Calibration Factor (Power Sensor B) :SOUR:POW:PORT:CORR:COLL:TABL:BSEN:D ATA 0 Power Loss Data :SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:T ABL:LOSS:DATA 0
CLEARALL	Clear all registers for saving/recalling.	Not available (:MMEM:DEL can be used to erase files stored on the internal hard disk.)
CLEAREG	Clear the register for saving/recalling the designated number.	
CLESEQ	Clear the designated sequence.	Not available (Test sequence function not available.)
CLEL	Clear the lists designated.	Segment Sweep Table SENS{1-16}:SEGM:DATA makes overwrite Segment Sweep Table Limit Test Table CALC:LIM:DATA 0 Calibration Facotor (Power Sensor A) :SOUR:POW:PORT:CORR:COLL:TABL:ASEN: DATA 0 Calibration Factor (Power Sensor B) :SOUR:POW:PORT:CORR:COLL:TABL:BSEN:D ATA 0 Power Loss Data :SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:T ABL:LOSS:DATA 0
CLER	Clear all limits for the ripple test.	Not available (Ripple test function not available.)
CLES	Clear the status byte register, event status register, and enable register.	*CLS
CLS		
COAD	Select coaxial as the type of electrical delay.	Not available (Always treated as coaxial.)
COAX	Select coaxial in specifying the offset when defining a standard.	Not available (Always treated as coaxial.)
COLOCH1D	Select the data trace and limit in channel 1 to specify their colors.	:DISP:COL{1-2}:TRAC{1-16}:DATA :DISP:COL{1-2}:TRAC{1-16}:MEM :DISP:COL{1-2}:LIM{1-2} :DISP:COL{1-2}:GRAT{1-2} :DISP:COL{1-2}:BACK
COLOCH1M	Select the memory trace in channel 1 to specify its color.	
COLOCH2D	Select the data trace and limit line in channel 2 to specify their colors.	
COLOCH2M	Select the memory trace in channel 2 to specify its color.	
COLOCH3D	Select the data trace and limit line in channel 3 to specify their colors.	
COLOCH3M	Select the memory trace in channel 3 to specify its color.	
COLOCH4D	Select the data trace and limit line in channel 4 to specify their colors.	
COLOCH4M	Select the memory trace in channel 4 to specify its color.	
COLOGRAT	Select a graticule line to specify its color.	
COLOTEXT	Select a character string to specify its color.	
COLOR	Specify the saturation of the display colors for the selected items.	
COLOLREF	Select the reference line to specify its color.	
COLOWARN	Select a warning message to specify its color.	
CONS	Resume execution of a suspended test sequence.	

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
CONT	Set the trigger mode to continuous mode.	:INIT{1-16}:CONT ON
CONVIDS	Transform the S-parameter measurement data into inverted S-parameters.	:CALC{1-16}:CONV:FUNC INV :CALC{1-16}:CONV ON
CONVOFF	Set the S-parameter transformation function to Off.	:CALC{1-16}:CONV OFF
CONVYREF	Transform the S-parameter measurement data into impedances (reflections).	:CALC{1-16}:CONV:FUNC YREF :CALC{1-16}:CONV ON
CONVYTRA	Transform the S-parameter measurement data into impedances (transmissions).	:CALC{1-16}:CONV:FUNC YTR :CALC{1-16}:CONV ON
CONVZREF	Transform the S-parameter measurement data into impedances (reflections).	:CALC{1-16}:CONV:FUNC ZREF :CALC{1-16}:CONV ON
CONVZTRA	Transform the S-parameter measurement data into impedances (transmissions).	:CALC{1-16}:CONV:FUNC ZTR :CALC{1-16}:CONV ON
COPYFRFT	Copy a label from the file title.	Not available
COPYFRRT	Copy a label from the register title.	Not available
CORI	Set the error correction by interpolation of calibration coefficients to On/Off.	Not available (Always On)
CORR	Set the error correction On/Off.	:SENS{1-16}:CORR:STAT
COUC	Set the sweep condition at Couple/Uncouple between channels.	The sweep condition is not coupled between channels. The sweep condition for traces on the same channel is coupled.
COUP	Set the power level at Couple/Uncouple between channels.	You can do the same thing in the channel and trace setup.
CSWI	Set the switch changeover in the test set to Continuous/Stop.	Not available
CWFREQ	Specify the signal source frequency for the power level sweep or CW TIME sweep.	:SENS{1-16}:FREQ
CWTIME	Set the sweep type to CW TIME.	Not available (CW TIME sweep function not available.)
[D]		
D1DIVD2	Display on channel 2 the result of dividing the measurement on channel 2 by that on channel 1.	Not available
D2XUPCH2	Places two graphs on the LCD screen: an upper one (for channels 1 and 2) and a lower one (for channels 3 and 4).	Not available
D2XUPCH3	Places two graphs on the LCD screen: an upper one (for channels 1 and 3) and a lower one (for channels 2 and 4).	:DISP:SPL (Sets up the channel window layout.) and :DISP:WIND{1-16}:SPL (Sets up the trace graph layout.) are combined to enable you to perform the equivalent.
D4XUPCH2	Places four graphs on the LCD screen: one in the upper left (for channel 1), one in the upper right (for channel 2), one in the lower left (for channel 3), and one in the lower right (for channel 4).	
D4XUPCH3	Places four graphs on the LCD screen: one in the upper left (for channel 1), one in the upper right (for channel 3), one in the lower left (for channel 2), and one in the lower right (for channel 4).	Not available
DATI	Save the measurement data in memory.	:CALC{1-16}:MATH:MEM
DCONV	Select Down Convert in the mixer measurement.	Not available (Mixer measurement function not available.)
DEBU	Set the GPIB debug mode On/Off.	Not available
DECRLOOC	Subtract one from the loop counter value.	Not available (Test sequence function not available.)
DEFC	Return the color settings of all items to their initial states.	:DISP:COL{1-2}:REF
DEFLPRINT	Return the printer setup to its initial state.	Not available
DEFLTCPIO	Return the copy setup to its initial state.	Not available
DEFS	In defining calibration kits, start defining each standard.	Not available (You do not need to send the command for defining a standard.)
DELA	Set the display format to the group delay format.	:CALC{1-16}:FORM GDEL

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
DELO	Turn off the delta marker mode.	:CALC{1-16}:MARK:REF OFF
DELR	Designate the delta marker as the designated marker.	Not available (Marker 10 is assigned as the delta marker.)
DELRFIXM	Designate the delta marker as a fixed delta marker.	Not available (No functions for fixed markers are available.)
DEMOAMPL	Display the AM modulated component only.	Not available (Demodulation function not available.)
DEMOOFF	Turn off the demodulation function.	
DEMOPHAS	Display the phase-modulated component only.	
DFLT	Return the plotter setup to its initial state.	Not available (Plotters are not supported.)
DIRS	Specify the size of the directory used in initializing a disk with LIF.	Not available (The LIF format is not supported.)
DISCUNIT	Specify the external disk to be used for Save/Recall.	Not available
DISCVOLU	Specify the partition on the external disk to be used for Save/Recall.	Not available
DISM	Set the LCD screen for all marker values to On/Off.	Not available (Always displays all marker values.)
DISPDATA	Display data traces.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF :CALC{1-16}:MATH:FUNC NORM (All three commands must be sent.)
DISPDATM	Display the data trace and memory trace at the same time.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM ON :CALC{1-16}:MATH:FUNC NORM (All three commands must be sent.)
DISPDMM	Display the result of dividing the data trace by the memory trace.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF :CALC{1-16}:MATH:FUNC DIV (All three commands must be sent.)
DISPDMM	Display the result of subtracting the memory trace from the data trace.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF :CALC{1-16}:MATH:FUNC SUBT (All three commands must be sent.)
DISPMEMO	Display the memory trace.	:DISP:WIND{1-16}:TRAC{1-16}:STAT OFF :DISP:WIND{1-16}:TRAC{1-16}:MEM ON (Both commands must be sent.)
DIVI	Display the result of dividing the data trace by the memory trace.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF :CALC{1-16}:MATH:FUNC DIV (All three commands must be sent.)
DONE	When two or more standards exist in a calibration class, complete the measurement of the calibration data.	Not available (Only one type of standard is assigned to each calibration class.)
DONM	Complete the editing of the test sequence.	Not available (Test sequence function not available.)
DOSEQ	Start executing the selected test sequence.	Not available (Test sequence function not available.)
DOWN	Performs the same processing as pressing the [↓] key on the front panel.	Not available
DUAC	Set the simultaneous two-channel display On/Off.	:DISP:SPL (Sets up the channel window layout.) and :DISP:WIND{1-16}:SPL (Sets up the trace graph layout) are combined to enable you to perform the equivalent.
DUPLSEQ	Copy the test sequence.	Not available (Test sequence function not available.)
[E]		

Comparing Commands of the 8753ES and E5070B/E5071B
**8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
ECALAB?	Read the selected ECAL module.	Not available
ECALCONT	Resume the suspended ECAL operation.	Not available
ECALDONE	Read to see if the ECal operation has ended.	Not available
ECALERC	Perform ECal forward enhanced response calibration.	Not available (Performing the enhanced response calibration is not allowed.)
ECALFREQS	Read the calibration frequency array store in the ECal module.	Not available
ECALFUL2	Perform ECal full 2-port calibration.	:CALC{1-16}:CORR:COLL:ECAL:SOLT2
ECALISOAVG	Specify the averaging factor during isolation measurement using the ECal module.	Not available
ECALMANTHRU	Set the manual THRU measurement for ECal On/Off	Not available (Always performs automatic measurement)
ECALMODID	Read the product number and serial number of the ECal module.	Not available
ECALMODINF	Read the information on the ECal module.	Not available
ECALMODSELA	Select module A as the active module.	Not available
ECALMODSELB	Select module B as the active module.	Not available
ECALNFREQS	Specify the size of the calibration frequency array to be read from the ECal module.	Not available
ECALOMII	Set the omission of isolation for ECal On/Off.	:CALC{1-16}:CORR:COLL:ECAL:ISOL (The On/Off relation on the 8753ES is opposite that on the E5070B/E5071B.)
ECALPAUSED	Read to see if the ECal operation is interrupted.	Not available
ECALRERC	Perform ECal reverse enhanced response calibration.	Not available (Cannot perform enhanced response calibration.)
ECALS11	Perform ECal S11 1-port calibration.	:CALC{1-16}:CORR:COLL:ECAL:SOLT1 1
ECALS22	Perform ECal S22 1-port calibration.	:CALC{1-16}:CORR:COLL:ECAL:SOLT1 2
EDITDONE	Complete editing the tables.	Not available (Each table is edited using one command; there is no corresponding command.)
EDITLIML	Start editing the limit test table.	Not available (:CALC{1-16}:LIM:DATA is used to edit the limit test table.)
EDITLIST	Start editing the list (segment) sweep table.	Not available (:SENS{1-16}:SEGM:DATA is used to edit the segment table.)
EDITRLIM	Start editing the ripple limit.	Not available (Ripple test function not available.)
ELED	Specify the electrical delay value.	:CALC{1-16}:CORR:EDEL:TIME
EMIB	Sounds beeps during the test sequence.	:SYST:BEEP:COMP:IMM (beep sound when an action completes) or :SYST:BEEP:WARN:IMM (beep sound when a warning occurs)
ENTO	Cause the entry area display to disappear from the LCD screen.	Not available (The entry area is not displayed in remote control.)
ERCDONE	Complete the measurement of forward enhanced response calibration and calculate the calibration coefficients on the basis of the data obtained.	Not available (Enhanced response calibration function not available.)
ESB?	Read the value of event status register B.	Not available (Register corresponding to event status register not available.)
ESE	Specify the value of the event status valid register.	*ESE
ESNB	Specify the value of event status valid register B.	Not available (Register corresponding to event status valid register B not available.)
ESR?	Read the value of the event status register.	*ESR?
EXTD	Designate the external disk drive as the storage to be manipulated.	Not available (Storing data to the external disk drive is not allowed.)

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
EXTMDATA	Determine whether or not to save corrected data along with the device status.	:MMEM:STOR:STYP (Selection of the contents to be saved (v) in the Instrument State file)
EXTMDATO	Save the data array selected only.	Not available (:MMEM:STOR:FDAT can be used to save the formatted memory array for the active trace on the active channel.)
EXTMFORM	Determine whether or not to save trace data along with the device status.	Not available
EXTMGRAP	Determine whether or not to save the LCD screen along with the device status.	Not available (Adding images on the LCD screen to the Instrument State file is not allowed.)
EXTMRAW	Determine whether or not to save raw data along with the device status.	Not available (Adding raw data is not allowed.)
EXTTOFF	Turn off the external trigger mode.	Not available (Automatically turns off if a setting other than external trigger is selected in :TRIG:SOUR.)
EXTTON	Set to the external trigger mode (per sweep).	:TRIG:SOUR EXT
EXTTHIGH	Set the external trigger line to High.	Not available (The external trigger line is set to Low.)
EXTTLOW	Set the external trigger line to Low.	
EXTTPOIN	Set to the external trigger mode (point by point).	Not available
[F]		
FIXE	In defining the calibration kits, set the type of LOAD to fixed load.	Not available (The LOAD standard is treated as fixed LOAD)
FORM1	Select the intra-device binary format for data transfers.	Not available (Selecting the intra-device binary format is not allowed.)
FORM2	Select the IEEE 32-bit floating point format for data transfers.	:FORM:DATA REAL32 :FORM:BORD NORM
FORM3	Select the IEEE 64-bit floating point format for data transfers.	:FORM:DATA REAL :FORM:BORD NORM
FORM4	Select the ASCII format for data transfers.	:FORM:DATA ASC
FORM5	Select the PC-DOS 32-bit floating point format for data transfers.	:FORM:DATA REAL32 :FORM:BORD SWAP
FORMATDOS	Select DOS as the storage format.	Not available (Not compatible with the LIF format)
FORMATLIF	Select LIF as the storage format.	
FREQO	Cause the frequency display on the LCD screen to disappear.	:DISP:ANN:FFREQ OFF (Executing this command does not increase the coverage of the graph.)
FREQOFFS	Set the frequency offset mode in the mixer measurement On/Off.	Not available (Mixer measurement function not available.)
FRER	Set the trigger mode to continuous mode.	:INIT{1-16}:CONT ON
FULP	Set up the system for full page plotting.	Not available (Plotters are not supported.)
FWDI	Start measuring the data from the forward isolation in 2-port calibration.	:SENS:CORR:COLL:ISOL (Measures isolation bi-directionally.)
FWDM	Start measuring the data from the forward match in full 2-port calibration.	:SENS:CORR:COLL:THRU (Measures both transmission and match.)
FWDT	Start measuring the data from the forward transmission in full 2-port calibration.	
[G]		
GATECENT	Specify the center value for the time-domain gate.	:CALC{1-16}:FILT:TIME:CENT
GATEO	Set the time-domain gate On/Off.	:CALC{1-16}:FILT:TIME:STAT
GATESPAN	Specify the span value of the time-domain gate.	:CALC{1-16}:FILT:TIME:SPAN
GATESTAR	Specify the start value of the time-domain gate.	:CALC{1-16}:FILT:TIME:STAR
GATESTOP	Specify the stop value of the time-domain gate.	:CALC{1-16}:FILT:TIME:STOP
GATSMAXI	Set the shape of the time-domain gate to maximum.	:CALC{1-16}:FILT:TIME:SHAP MAX
GATSMINI	Set the shape of the time-domain gate to minimum.	:CALC{1-16}:FILT:TIME:SHAP MIN

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
GATS NORM	Set the shape of the time-domain gate to normal.	:CALC{1-16}:FILT:TIME:SHAP NORM
GATSWIDE	Set the shape of the time-domain gate to wide.	:CALC{1-16}:FILT:TIME:SHAP WIDE
GOSUB	Perform another sequence from the test sequence.	Not available (Test sequence function not available.)
[H]		
HARMOFF	Set the harmonics measurement mode to Off.	Not available (Harmonics measurement mode not available.)
HARMSEC	Select 2nd harmonics measurement.	
HARMTHIR	Select 3rd harmonics measurement.	
HOLD	Stop the sweep operation (Hold mode)	:INIT{1-16}:CONT OFF
[I]		
IDN?	Read the product information.	*IDN?
IFBIHIGH	Execute the test sequence when the designated GPIO bit is at High.	Not available (Test sequence function not available.)
IFBILOW	Execute the test sequence when the designated GPIO bit is at Low.	Not available (Test sequence function not available.)
IFBW	Specify the IF bandwidth.	:SENS{1-16}:BAND
IFLCEQZE	Execute the test sequence when the loop counter is at zero.	Not available (Test sequence function not available.)
IFLCNEZE	Execute the test sequence when the loop counter is at a value other than zero.	Not available (Test sequence function not available.)
IFLTFAIL	Execute the test sequence when the limit test fails.	Not available (Test sequence function not available.)
IFLTPASS	Execute the test sequence when the limit test passes.	Not available (Test sequence function not available.)
IMAG	Set the display format to Imaginary.	:CALC{1-16}:FORM IMAG
INCRLOOC	Add one to the loop counter reading.	Not available (Test sequence function not available.)
INID	Initialize the floppy disk.	Not available (Able to execute using a mouse)
INIE	Initialize the external disk.	Not available
INPUCALC	Enter data into the calibration coefficient array.	Not available (No access is allowed to the calibration coefficient array.)
INPUCALK	Enter data into the calibration kit array.	Not available (No access is allowed to the calibration kit array.)
INPUDATA	Enter data into the corrected data array.	:CALC{1-16}:DATA:SDAT
INPUFORM	Enter data into the formatted array.	:CALC{1-16}:DATA:FDAT
INPULEAS	Enter the learn string.	Not available (Reading/Writing the learn string is not allowed.)
INPUPMCAL1	Enter data into the power meter calibration array for channel 1.	Not available
INPUPMCAL2	Enter data into the power meter calibration array for channel 2.	
INPURAW1	Enter data into raw data array 1 (S11).	Not available (Reading/Writing the raw data array is not allowed.)
INPURAW2	Enter data into raw data array 2 (S21).	
INPURAW3	Enter data into raw data array 3 (S12).	
INPURAW4	Enter data into raw data array 4 (S22).	
INSMEXSA	Select the external source (auto) as the measuring instrument mode.	Not available (Always a standard network analyzer)
INSMEXSM	Select the external source (manual) as the measuring instrument mode.	
INSMNETA	Select the standard network analyzer as the measuring instrument mode.	
INSMTUNR	Select the tuned receiver as the measuring instrument mode.	

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
INTD	Designate the floppy disk drive as the storage to be manipulated.	Not available (When the file is saved in drive A using the file save command:MMEM:SAVE, it is saved to the floppy disk drive.)
INTE	Specify the brightness of the LCD screen.	Not available (Only On/Off setting for the backlight is allowed.)
INTM	Designate the internal memory as the storage to be manipulated.	Not available (Designated by the file Read/Write command.)
ISOD	Complete the measurement of data from the isolation of full 2-port calibration.	Not available (Data measurement completion command not available.)
ISOL	Start measuring the data from the isolation of full 2-port calibration.	Not available (Data measurement completion command not available.)
ISOOP	Start measuring the data from the isolation of one-bus 2-port calibration.	Not available (Data measurement completion command not available.)
[K]		
KEY	Performs the same processing as pressing the designated key on the front panel.	Not available (No command available equivalent to the front panel key manipulation in terms of processing.)
KITD	Complete the operation for defining calibration kits.	Not available (No command available for ending defining operations.)
KOR?	Read the information for the previous front panel manipulation.	Not available
[L]		

Comparing Commands of the 8753ES and E5070B/E5071B
**8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B	
LABEFWDM	Give an arbitrary name to the Forward Match calibration class.	Not available (Editing of calibration class labels is not allowed.)	
LABEFWDT	Give an arbitrary name to the Forward Transmission calibration class.		
LABERESI	Give an arbitrary name to the Response & Isolation calibration class.		
LABERESP	Give an arbitrary name to the Response calibration class.		
LABEREVM	Give an arbitrary name to the Reverse Match calibration class.		
LABEREVT	Give an arbitrary name to the Reverse Transmission calibration class.		
LABES11A	Give an arbitrary name to the S11A (OPEN) calibration class.		
LABES11B	Give an arbitrary name to the S11B (SHORT) calibration class.		
LABES11C	Give an arbitrary name to the S11C (LOAD) calibration class.		
LABES22A	Give an arbitrary name to the S22A (OPEN) calibration class.		
LABES22B	Give an arbitrary name to the S22B (SHORT) calibration class.		
LABES22C	Give an arbitrary name to the S22C (LOAD) calibration class.		
LABETRL	Give an arbitrary name to the TRL Line/Match calibration class.		
LABETRLT	Give an arbitrary name to the TRL Thru calibration class.		
LABETRLR	Give an arbitrary name to the TRL Reflection calibration class.		
LABETLFM	Give an arbitrary name to the S11B (SHORT) calibration class.		
LABETLFT	Give an arbitrary name to the S11C (LOAD) calibration class.		
LABETLRM	Give an arbitrary name to the S22B (SHORT) calibration class.		
LABETLRT	Give an arbitrary name to the S22C (LOAD) calibration class.		
LABETRFM	Give an arbitrary name to the S11A (OPEN) calibration class.		
LABETRRM	Give an arbitrary name to the S22A (OPEN) calibration class.		
LABETTfM	Give an arbitrary name to the Forward match calibration class.		
LABETTfT	Give an arbitrary name to the Forward Transmission calibration class.		
LABETTRM	Give an arbitrary name to the Reverse Match calibration class.		
LABETTRT	Give an arbitrary name to the Reverse Transmission calibration class.		
LABK	Give an arbitrary name to the user-defined calibration kit label.		:SENS{1-16};CORR:COLL:CKIT:LAB
LABS	Give an arbitrary name to the calibration standard.		:SENS{1-16};CORR:COLL:CKIT:STAN{1-21};LAB
LEFL	Set up the system so the object is output through the plotter onto the lower-left 1/4 of a sheet.	Not available (Plotters are not supported.)	
LEFU	Set up the system so the object is output through the plotter onto the upper-left 1/4 of a sheet.		
LIMD	Specify the limit delta value for the limit test.	Not available (:CALC{1-16};LIM:DATA is used to perform all the limit table setup work.)	
LIMIAMPO	Specify the offset along the Y-axis in the limit range for the limit test.		
LIMILINE	Set the limit line display On/Off.	:CALC{1-16};LIM:DISP	
LIMIMAOF	Set the marker value at the offset along the Y-axis in the limit range for the limit test.	Not available	
LIMISTIO	Specify the offset along the X-axis in the limit range for the limit test.	Not available	
LIMITEST	Set the limit test On/Off.	:CALC{1-16};LIM	

7. Comparing Commands on 8753ES and ENA

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
LIML	Specify the lowest value of the limit for the limit test.	Not available (:CALC{1-16}:LIM:DATA is used to perform all the limit table setup work.)
LIMM	Specify the center value of the limit for the limit test.	
LIMS	Specify the boundary value of the segment in the limit test.	
LIMTFL	Select a flat line as the limit type in the limit test.	
LIMTSL	Select a sloping line as the limit type in the limit test.	
LIMTSP	Select a single point as the limit type in the limit test.	
LIMU	Specify the highest value of the limit in the limit test.	
LINFREQ	Select linear sweep as the type of sweep.	:SENS{1-16}:SWE:TYPE LIN
LINM	Select the linear magnitude format as the display format.	:CALC{1-16}:FORM MLIN
LINTDATA	Specify the line type for data traces.	Not available (Always a solid line)
LINTMEMO	Specify the line type for memory traces.	
LISFREQ	Select the list frequency sweep as the type of sweep.	:SENS{1-16}:SWE:TYPE SEGM
LISIFBWM	Make the segment-by-segment IFBW setup for the list frequency sweep Valid/Invalid.	Not available (The :SENS{1-16}:SEGM:DATA command takes care of the entire segment setup.)
LISPWRM	Make the segment-by-segment power level setup for the list frequency sweep Valid/Invalid.	Not available (The :SENS{1-16}:SEGM:DATA command takes care of the entire segment setup.)
LISTTYPELSTP	Select the stepped list mode to perform the list frequency sweep.	:SENS{1-16}:SWE:GEN STEP(E5070B/E5071B change stepped/swept mode for the linear sweep.)
LISTTYPELSWP	Select the swept list mode to perform the list frequency sweep.	:SENS{1-16}:SWE:GEN ANAL (E5070B/E5071B change stepped/swept mode for the linear sweep. The swept mode also allows the IF bandwidth and power level to be specified segment by segment.)
LISV	Display the measurement results in a list.	Not available (List display function not available.)
LOAD	Call the Instrument State from a file on the disk.	:MMEM:LOAD
LOADSEQ	Call the test sequence from a file on the disk.	:MMEM:LOAD:PROG (Call a macro created with VBA.)
LOAN	If LOAD is defined as offset LOAD, measure LOAD without the offset.	Not available (LOAD is treated as fixed LOAD.)
LOAO	If LOAD is defined as offset LOAD, measure LOAD with the offset.	
LOCONT	Set the LO control On/Off.	Not available (LO control function not available.)
LOFREQ	Specify the LO frequency.	
LOFSTAR	Specify the starting frequency for LO.	
LOFSTOP	Specify the ending frequency for LO.	
LOFSWE	Select the sweep mode for the LO frequency.	
LOGFREQ	Select the log sweep as the type of sweep.	
LOGM	Select the log magnitude format as the display format.	:CALC{1-16}:FORM MLOG
LOOC	Specify the loop counter reading.	Not available (Test sequence function not available.)
LOPOWER	Specify the power level for LO.	Not available (LO control function not available.)
LOPSTAR	Specify the starting power level for LO.	
LOPSTOP	Specify the ending power level for LO.	
LOPSWE	Select the power sweep mode for LO.	
LOWPIMPU	Select the LOWPASS IMPULSE mode for the time-domain transformation.	
LOWPSTEP	Select the LOW PASS STEP mode for the time-domain transformation.	:CALC{1-16}:TRAN:TIME LPAS :CALC{1-16}:TRAN:TIME:STIM STEP
LRN	Perform Setup/Read of the learn string.	Not available (Setup/Read of the learn string is not allowed.)
[M]		

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
MANTRIG	Select the manual trigger mode (point by point).	Not available
MARK1	Activate marker 1 and move it to the designated position.	:CALC{1-16}:MARK{1-10} (Marker On/Off) and :CALC{1-16}:MARK{1-10}:X (Marker stimulus value) are combined for execution.
MARK2	Activate marker 2 and move it to the designated position.	
MARK3	Activate marker 3 and move it to the designated position.	
MARK4	Activate marker 4 and move it to the designated position.	
MARK5	Activate marker 5 and move it to the designated position.	
MARKBUCK	Move the active marker to the designated point.	Not available (Specify the stimulus value when moving the marker.)
MARKCENT	Change the sweep center value to the stimulus value at the position of the active marker.	:CALC{1-16}:MARK{1-10}:SET CENT
MARKCONT	Select the mode in which the marker moves on the trace continuously.	:CALC{1-16}:MARK{1-10}:DISC OFF
MARKCOUP	Select the mode in which markers are coupled between channels.	:CALC{1-16}:MARK:COUP ON (Coupled between traces on the same channel)
MARKCW	Change the CW frequency value to the frequency value at the position of the active marker.	Not available (CW TIME sweep function and power sweep function not available.)
MARKDELA	Specify the electrical length so that the group delay is zero at the position of the active marker.	:CALC{1-16}:MARK{1-10}:SET DEL
MARKDISC	Select the mode in which the marker moves from one point to another on the trace.	:CALC{1-16}:MARK{1-10}:DISC ON
MARKFAUV	Move the fixed marker to the position of the designated auxiliary measured value.	Not available (Fixed marker function not available.)
MARKFSTI	Move the fixed marker to the position of the fixed stimulus value.	
MARKFVAL	Move the fixed marker to the position of the designated measured value.	
MARKMAXI	Move the active marker to the position of the maximum value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MAX :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
MARKMIDD	Set the center value of the limit in the delta limit test to the measured value at the position of the active marker.	Not available
MARKMINI	Move the active marker to the position of the minimum value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MIN :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
MARKOFF	Set all markers and the marker function to Off.	Not available
MARKREF	Change the reference value to the measured value at the position of the active marker.	:CALC{1-16}:MARK{1-10}:SET RLEV
MARKSPAN	Change the span value of the sweep range to the stimulus value at the position of the active marker.	Not available (The stimulus value is not allowed to be set to the span value of the sweep range.)
MARKSTAR	Change the starting value of the sweep range to the stimulus value at the position of the active marker.	:CALC{1-16}:MARK{1-10}:SET STAR
MARKSTIM	Set the boundary value of the segment in the limit test to the stimulus value at the position of the active marker.	Not available
MARKSTOP	Change the ending value of the sweep range to the stimulus value at the position of the active marker.	:CALC{1-16}:MARK{1-10}:SET STOP
MARKUNCO	Select the mode in which the markers are not coupled between channels.	:CALC{1-16}:MARK{1-10}:COUP OFF (Turn off the coupling between traces on the channel.)
MARKZERO	Move the fixed marker to the position of the active marker.	Not available (Fixed marker function not available.)
MAXF	In defining calibration kits, specify the maximum frequency value.	Not available
MEASA	Select measurement A and display the traces.	Not available(The E5070B/E5071B does not have absolute value measuring function.)
MEASB	Select measurement B and display the traces.	
MEASR	Select measurement R and display the traces.	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
MEASTAT	Set the statistics analysis function On/Off.	:CALC{1-16}:MST
MENUAVG	Display the softkey menu appearing when the [Avg] key is pressed.	Not available (No command is available that displays the softkey menu corresponding to each key.)
MENUCAL	Display the softkey menu appearing when the [Cal] key is pressed.	
MENUCOPY	Display the softkey menu appearing when the [Copy] key is pressed.	
MENUDISP	Display the softkey menu appearing when the [Display] key is pressed.	
MENUFORM	Display the softkey menu appearing when the [Format] key is pressed.	
MENUMARK	Display the softkey menu appearing when the [Marker] key is pressed.	
MENUMEAS	Display the softkey menu appearing when the [Meas] key is pressed.	
MENUMRKF	Display the softkey menu appearing when the [Marker Fctn] key is pressed.	
MENUOFF	Set the softkey menu display to Off.	
MENUON	Set the softkey menu display to On.	:DISP:SKEY ON
MENUPOWE	Display the softkey menu appearing when the [Power] key is pressed.	Not available (No command is available that displays the softkey menu corresponding to each key.)
MENURECA	Display the softkey menu appearing when the [Save/Recall] key is pressed.	
MENUSAVE	Display the softkey menu appearing when the [Save/Recall] key is pressed.	
MENUSCAL	Display the softkey menu appearing when the [Scale Ref] key is pressed.	
MENUSEQU	Display the softkey menu appearing when the [Seq] key is pressed.	
MENUSRCH	Display the softkey menu appearing when the [Marker Search] key is pressed.	
MENUSTIM	Display the softkey menu appearing when the [Sweep Setup] key is pressed.	
MENUSWEE	Display the softkey menu appearing when the [Sweep Setup] key is pressed.	
MENUSYST	Display the softkey menu appearing when the [System] key is pressed.	
MINF	In defining calibration kits, specify the minimum frequency value.	Not available (Specifying the frequency band is not allowed.)
MINMAX	Set the function for recording the maximum and minimum for each segment in the limit test to On/Off.	Not available
MINU	Display the result of subtracting the memory trace from the data trace.	:DISP:WIND{1-16}:TRAC{1-16}:STAT ON :DISP:WIND{1-16}:TRAC{1-16}:MEM OFF :CALC{1-16}:MATH:FUNC SUBT (All three commands must be sent.)
MODI1	Start defining the calibration kits.	Not available
MODS	Calculate the new calibration set using the adapter removal function.	Not available
[N]		
NEWSEQ	Create/Revise a test sequence.	Not available (Test sequence function not available.)
NEXP	Go to next page while the list is displayed on the LCD screen.	Not available (List display function not available.)
NOOP	Wait for a while without doing anything.	Not available
NUMG	Perform the sweep operation the specified number of times.	Not available
NUMR	Specify the number of power meter readings.	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:A VER

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
[O]		
OFLD	Complete the offset LOAD measurement.	Not available (The LOAD standard is treated as fixed LOAD.)
OFLS	In defining calibration kits, select the offset LOAD as the type of LOAD.	
OFSD	Specify the offset value of the electrical delay.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:DEL
OFSL	Specify the loss offset.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:LOSS
OFSZ	Specify the offset value of the characteristic impedance.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:Z0
OMII	Omit the isolation measurement when performing calibration.	Not available (Isolation measurement is treated as an option.)
OPC	When the next command have been completed , set bit 0 of the event status register standby.	*OPC(When all operations on standby have been completed, set bit 0 of the event status register.)
OPEP	Display the list of Instrument State statuses on the LCD screen.	Not available
OUTPACTI	Read the entry area value.	Not available
OUTPAMAX	Read the maximum of the measured values in the segments in the limit test.	Not available
OUTPAMIN	Read the minimum of the measured values in the segments in the limit test.	Not available
OUTPAPER	Read the smoothing aperture value.	:CALC{1-16}:SMO:APER?
OUTPCALC{01-12}	Read the calibration coefficient array.	Not available (Reading/Writing the calibration coefficient array is not allowed.)
OUTPCALK	Read the data about the calibration kit setup.	Not available (Reading/Writing the calibration kit array is not allowed.)
OUTPFARPLPT	Read the information about fails in the ripple test.	Not available (Ripple test function not available.)
OUTPCHAN	Read the active channel.	:DISP:WIND{1-16}:ACT? (Reading of the active channel) :CALC{1-16}:PAR{1-16}:SEL? (Reading of the active trace)
OUTPDATA	Read the corrected data array.	:CALC{1-16}:DATA:SDAT?
OUTPDATF	Read the corrected data array. (High-speed data transfer command)	:CALC{1-16}:DATA:SDAT? (High-speed data transfer command not available.)
OUTPDATP	Read the trace data at the designated point.	Not available
OUTPDATR	Read the trace data at points within the designated range.	Not available
OUTPERRO	Read error information from the error cue.	:SYST:ERR?
OUTPFAIP	Read the number of failed points and the stimulus value at points in the limit test.	Not available (The number of points can be read by :CALC{1-16}:LIM:REP:POIN?, and the stimulus value by :CALC{1-16}:LIM:REP?, but the measured values cannot be read.)
OUTPFORF	Read the formatted data array. (High-speed data transfer command)	:CALC{1-16}:DATA:FDAT? (High-speed data transfer command not available.)
OUTPFORM	Read the formatted data array.	:CALC{1-16}:DATA:FDAT?
OUTPICAL{01-12}	Read the interpolated calibration coefficient array.	Not available (Reading/Writing the calibration coefficient array is not allowed.)
OUTPIDEN	Read the product information.	*IDN?
OUTPIPMCL{1-2}	Read the interpolated power meter calibration array.	:SOUR{1-16}:POW:PORT{1-2}:CORR:DATA?
OUTPKEY	Read the code of the key you last pressed.	Not available
OUTPLEAS	Read the learn string.	Not available (Reading/Writing a learn string is not allowed.)

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
OUTPLIM{1-4}	Read the results of the limit test.	:CALC{1-16}:LIM:FAIL? (Read the result of the active trace on the specified channel. The value read from the results is different from that obtained by the 8753ES.)
OUTPLIMF	Read the information on the failed points and the number of failed points in the limit test.	Not available (You can read the number of failed points by using :CALC{1-16}:LIM:REP:POIN?.)
OUTPLIML	Read the results of the limit test for each point.	Not available
OUTPLIMM	Read the results of the limit test at the position of the active marker.	Not available
OUTPMARK	Read the value of the active marker.	:CALC{1-16}:MARK{1-10}:X? (Stimulus value) :CALC{1-16}:MARK{1-10}:Y? (Response value) can be used to read the marker value, but you must designate the channel and marker in the command.
OUTPMEMF	Read the data about the memory trace. (High-speed data transfer command)	:CALC{1-16}:DATA:SMEM? (High-speed data transfer command not available.)
OUTPMEMO	Read the data about the memory trace.	:CALC{1-16}:DATA:SMEM?
OUTPMSTA	Read the results of the statistics analysis.	:CALC{1-16}:MST:DATA?
OUTPMWID	Read the results of the bandwidth search (bandwidth, center value, and Q value).	:CALC{1-16}:MARK{1-10}:BWID:DATA? (The array read contains data on the loss value.)
OUTPMWIL	Read the results of the bandwidth search (bandwidth, center value, Q value, and loss value).	:CALC{1-16}:MARK{1-10}:BWID:DATA?
OUTPOPTS	Read the information about the installed options.	*OPT?
OUTPPLOT	Outputs the LCD screen to the GPIB port in HP-GL format.	Not available (The LCD screen is not allowed as output from the GPIB.)
OUTPPMCAL{1-2}	Read the power meter calibration array.	Not available
OUTPPRE{1-4}	Read the pre-raw data (command for Take4 mode)	Not available (Reading/Writing pre-raw data is not allowed.)
OUTPPRIN	Outputs the LCD screen to the printer in PCL raster dump format.	:HCOP
OUTPPRINALL	Prints out all lists when lists are displayed.	Not available (List display function not available.)
OUTPRAF{1-4}	Read the raw data array (High-speed data transfer command).	Not available (Reading/Writing raw data array is not allowed.)
OUTPRAW{1-4}	Read the raw data array.	
OUTPRFFR	Read the frequency of the external RF signal source.	Not available (External RF signal source cannot be used.)
OUTPRPLBNDAL	Read the magnitudes of ripples in the ripple test in all valid bands.	Not available (Ripple test function not available.)
OUTPRPLBNDPF	Read the Pass/Fail of the ripple test in the designated band.	Not available (Ripple test function not available.)
OUTPRPLBNDVA	Read the results of the ripple test and magnitudes of ripples in the designated band.	Not available (Ripple test function not available.)
OUTPSEGAF	Read the number of segments and segment-by-segment test results in the limit test.	Not available (Segment-by-segment test results are not allowed to be read.)
OUTPSEGAM	Read the maximum value/minimum value in all segments in the limit test.	
OUTPSEGF	Display the results in the designated segment in the limit test.	
OUTPSEGM	Display the maximum value/minimum value in the designated segment.	
OUTPSEQ{1-6}	Read the contents of the test sequence.	Not available (Test sequence function not available.)
OUTPSERN	Read the product serial number.	Included in the value read from *IDN?
OUTPSTAT	Read the value of the status byte register.	*STB?
OUTPTITL	Read the title on the LCD screen.	:DISP:WIND{1-16}:TITL:DATA?
[P]		

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
PDATA	Determine whether or not to output the data trace when plotting.	Not available (Plotters are not supported.)
PGRAT	Determine whether or not to output graticule lines when plotting.	
PMEM	Determine whether or not to output the memory trace when plotting.	
PMKR	Determine whether or not to output markers when plotting.	
PSOFT	Determine whether or not to output softkeys when plotting.	
PTEXT	Determine whether or not to output the text when plotting.	
PARAIN{0-4}	Specify the bit number of the GPIO input port to be used for branching in the test sequence.	Not available (Test sequence function not available.)
PARAOUT{0-255}	Specify the output from the GPIO output port for all bits at the same time.	Not available (GPIO output is not supported.)
PARALGPIO	Set up the parallel port for GPIO use.	Not available (Parallel port is intended for the printer.)
PARALCPY	Set up the parallel port for printer use.	
PAUS	Insert a pause into the test sequence.	Not available (Test sequence function not available.)
PCB{0-30}	Specify the GPIB address where control is returned.	Not available (Pass control function not available)
PCOLDATA{1-4}	Specify the color for the data trace for printing.	Not available (Color setup is allowed only for turning highlighting of the entire screen On/Off.)
PCOLGRAT	Specify the color for graticule lines for printing.	
PCOLMEMO{1-4}	Specify the color for the memory trace for printing.	
PCOLREFL	Specify the color for the reference line for printing.	
PCOLTEXT	Specify the color for text for printing.	
PCOLWARN	Specify the color for warning messages for printing.	
PENNDATA{0-10}	Specify the pen number for the data trace for plotting.	Not available (Plotters are not supported.)
PENNGRAT{0-10}	Specify the pen number for the graticule lines for plotting.	
PENMARK{0-10}	Specify the pen number for the marker for plotting.	
PENMEMO{0-10}	Specify the pen number for the memory trace for plotting.	
PENNTXT{0-10}	Specify the pen number for text for plotting.	
PHAO{0-360}	Specify the phase offset.	:CALC{1-16}:CORR:OFFS:PHAS
PHAS	Select the phase format as the display format.	:CALC{1-16}:FORM PHAS
PLOSSLOW	Set the pen speed for plotting to Slow.	Not available (Plotters are not supported.)
PLOFAST	Set the pen speed for plotting to Fast.	
PLOT	Start plotting.	
PLTHNDSHK	Select the handshake mode for the plotter.	
PLTPRTDISK	Select the disk as the plotter port.	
PLTPRTHPIB	Select GPIO as the plotter port.	
PLTPRTPARA	Select the parallel port as the plotter port.	
PLTPRTSERI	Select the serial port as the plotter port.	
PLTTRAUTF	Set the plotter auto feed On/Off.	
PLTTRBAUD	Specify the baud rate for the serial port when using the plotter.	
PLTTRFORF	Send a form feed to the plotter.	
PLTTYHPGL	Select a PCL5-compatible printer as the plotter type.	
PLTTYPLTR	Set up the plotter type in the plotter.	
PMTRTTIT	Select the GPIB reading from the power meter as the title.	
POIN	Specify the number of points.	:SENS{1-16}:SWE:POIN (Cannot be used for editing segments.)

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
POLA	Select the polar format as the display format.	:CALC{1-16}:FORM PLIN :CALC{1-16}:FORM PLOG :CALC{1-16}:FORM POL (you have to select the marker value reading format also.)
POLMLIN	Select LIN as the marker value reading format when using the polar format.	Not available (Selected at the same time the polar format is selected as the data format.)
POLMLOG	Select Log as the marker value reading format when using the polar format.	Not available (Selected at the same time the polar format is selected as the data format.)
POLMRI	Select Re/Im as the marker value reading format when using the polar format.	Not available (Selected at the same time the polar format is selected as the data format)
PORE	Set the port extension On/Off.	:SENS{1-16}:CORR:EXT
PORT1	Specify the port extension correction value for port 1.	:SENS{1-16}:CORR:EXT:PORT{1-4}
PORT2	Specify the port extension correction value for port 2.	
PORTA	Specify the port extension correction value for input A.	Not available (Port extension correction for input is not allowed.)
PORTB	Specify the port extension correction value for input B.	
PORTP	Select Couple/Uncouple between ports for the power level.	:SOUR{1-16}:POW:PORT:COUP
POWE	Specify the power level.	:SOUR{1-16}:POW
POWLFREQ	Create the power loss list for power meter calibration.	Not available
POWLLIST		
POWLLOSS		
POWM	Specify the type of power meter.	
POWR{00-07}	Specify the power range of the signal source.	Specify the power range by using :SOUR{1-16}:POW:ATT to designate the attenuator.
POWS	Select the power level sweep as the type of sweep.	:SENS{1-16}:SWE:TYPE POW
POWT	Set the signal source output On/Off.	:OUTP
PRAN{0-7}	Specify the power range of the signal source.	Specify the power range by using :SOUR{1-16}:POW:ATT to designate the attenuator.
PREP	Go back to the previous page while the list is displayed on the LCD screen.	Not available (List display function not available.)
PRES	Reset	:SYST:PRES
		*RST(Stop sweeping.)
PRIC	Select color printing.	Not available (Printer setup executed by using the front panel.)
PRIS	Select black-and-white printing.	
PRINALL	Start printing the LCD screen.	:HCOP
PRINSEQ	Start printing the test sequence.	Not available (Test sequence function not available.)
PRINTALL	Start printing the list.	Not available (List display function not available.)
PRNHNSHK	Select the handshake mode for the printer.	Not available
PRNPRTHPIB	Select GPIB as the printer port.	Not available (GPIB printers are not supported.)
PRNPRTPARA	Select the parallel port as the printer port.	Not available
PRNPRTSERI	Select the serial port as the printer port.	Not available
PRNTRAUTF	Set the printer auto feed On/Off.	Not available
PRNTRBAUD	Specify the baud rate of the serial port when using the printer.	Not available
PRNTRFORF	Send a form feed to the printer.	Not available

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B
PRNTYP540	Select the HP DeskJet 540/850C as the printer.	Not available (Printer setup executed by using the front panel.)
PRNTYPDJ	Select the HP DeskJet as the printer.	
PRNTYPEP	Select the Epson ESC/P2 as the printer.	
PRNTYPLJ	Select the HP LaserJet as the printer.	
PRNTYPPJ	Select the HP PaintJet as the printer.	
PRNTYPTJ	Select the HP ThinkJet as the printer.	
PTOS	Stop the designated sequence.	:PROG:STA STOP(Stop the VBA program.)
PURG	Delete the file.	:MMEM:DEL
PWMCEACS	Calibrate the power meter at every sweep.	Not availabl
PWMCOFF	Turn Off the power meter calibration.	:SOUR{1-16}:POW:PORT{1-4}:CORR OFF
PWMCONES	Calibrate the power meter in one sweep operation.	:SOUR{1-16}:POW:PORT{1-4}:CORR ON
PWRLOSS	Determine whether or not to use the power loss list for calibrating the power meter.	:SOUR{1-16}:POW:PORT{1-4}:CORR:TABL:L OSS
PWRMCAL	Cause the softkey for the power meter calibration menu to appear and specify the power level for calibration.	Not availabl
PWRR	Set the signal source power range changeover to Manual/Auto.	Not available (Always on Manual)
[Q]		
Q	Select the test sequence.	:PROG:STA STOP(Select the VBA program.)
[R]		
RAID	Calculate the calibration coefficients for the response & isolation calibration.	:SENS{1-16}:CORR:COLL:SAVE
RAISOL	Execute the isolation measurement for the response & isolation calibration.	:SENS{1-16}:CORR:COLL:ISOL
RAIRESP	Start measuring the response for the response and isolation calibration.	:SENS{1-16}:CORR:COLL:THRU
RAWOFFS	Set the offset of the sampler and attenuator On/Off. (Take4 mode)	Not available
READDATE	Read the date from the internal clock.	:SYST:DATE?
READTIME	Read the time from the internal clock.	:SYST:TIME?
REAL	Select the real format as the display format.	:CALC{1-16}:FORM REAL
RECA	Recall the Instrument State status from the internal register.	:MMEM:LOAD
RECAREG		
RECO	Recall the color settings for the LCD screen.	Not available (Color setup is allowed only for turning highlighting of the entire screen On/Off.)
REFD	Complete the reflection data measurement for the 2-port calibration.	Not available (You do not need to send any completion command.)
REFL	Start measuring the reflection data for the 2-port calibration.	Not available (You do not need to send any start command.)
REFOP	Start measuring the data for reflection in the one-bus 2-port calibration (forward enhanced response calibration).	Not available (Calibration function not available.)
REFP	Specify the position of the reference line.	:DISP:WIND{1-16}:TRAC{1-16}:Y:RPOS
REFV	Specify the value for the reference line.	:DISP:WIND{1-16}:TRAC{1-16}:Y:RLEV
REFT	Read the title of the file from the disk.	Not available
REIC	Specify the power reference value for the receiver calibration.	Not available (Receiver calibration function not available.)
RERCDONE	Complete the data measurement for the reverse enhanced response calibration and calculate the calibration coefficients on the basis of the data obtained.	Not available (Enhanced response calibration function not available.)
RESC	Resume the measurement of the calibration data interrupted immediately before.	Not available (Calibration resumption function not available.)

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
RESD	Return the list display screen for the measurement results to the normal graph screen.	Not available (List display function not available.)
RESPDONE	Calculate the calibration coefficients for the response calibration.	:SENS{1-16}:CORR:COLL:SAVE
REST	Interrupt the sweep and start sweeping over again.	Not available
REVI	Start measuring the data for reverse isolation of the full 2-port calibration.	:SENS{1-16}:CORR:COLL:ISOL
REVM	Start measuring the data for reverse match of the full 2-port calibration.	Not available (You do not need to send any start command.)
REVT	Start measuring the data for reverse transmission of the full 2-port calibration.	
RFGTLO	Set the signal source frequency to a value greater than LO.	Not available (Mixer measurement function not available.)
RFLTLO	Set the signal source frequency to a value smaller than LO.	
RFLP	Select the S11 measurement.	:CALC{1-16}:PAR{1-16}:DEF S11
RIGL	Set up the system so the object is output through the plotter onto the lower-right 1/4 of a sheet.	Not available (Entire screen is always output.)
RIGU	Set up the system so the object is output through the plotter onto the upper-right 1/4 of a sheet.	
RLIMLINE	Set the ripple limit line display On/Off.	Not available (Ripple test function not available.)
RLIMM	Specify the upper limit value for the ripple test.	
RLIMSTP	Specify the frequency band stop value for the ripple test.	
RLIMSTR	Specify the frequency band start value for the ripple test.	
RLIMTEST	Set the ripple test On/Off.	
RLIMVALABS	Set the ripple value display (absolute) On.	
RLIMVALMAR	Set the ripple value display (margin) On.	
RLIMVALOFF	Set the ripple value display Off.	
RSCO	Return the color setup to the initial state.	Not available (Color setup is allowed only for turning highlighting of the entire screen On/Off.)
RST	Reset	:SYST:PRES *RST(Stop sweeping)
[S]		
S11	Select the S11 measurement.	:CALC{1-16}:PAR{1-16}:DEF S11
S12	Select the S12 measurement.	:CALC{1-16}:PAR{1-16}:DEF S21
S21	Select the S21 measurement	:CALC{1-16}:PAR{1-16}:DEF S12
S22	Select the S22 measurement	:CALC{1-16}:PAR{1-16}:DEF S22
SADD	Add segments while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SAMC	Set the sampler correction On/Off.	Not available
SAV1	Complete the data measurement for 1-port calibration and calculate the calibration coefficients on the basis of the data obtained.	:SENS{1-16}:CORR:COLL:SAVE
SAV2	Complete the data measurement for 2-port calibration and calculate the calibration coefficients on the basis of the data obtained.	:SENS{1-16}:CORR:COLL:SAVE
SAVC	Finish writing from the external data to the calibration coefficient array.	Not available (Reading/Writing the calibration coefficient array is not allowed.)
SAVE	Save the Instrument State status into the internal register.	:MMEM:STOR
SAVECSV	Save the measurement data in CSV format.	:MMEM:STOR:FDAT
SAVEJPG	Save the LCD screen image as a JPEG format file.	:MMEM:STOR:IMAG (Stored in Windows® Bitmap format/PNG format.)
SAVERC	Complete the data measurement of the forward enhanced response calibration and calculate the calibration coefficients on the basis of the data obtained.	Not available (Enhanced response calibration function not available.)

Comparing Commands of the 8753ES and E5070B/E5071B
**8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
SAVEREG	Save the Instrument State status in the internal register.	:MMEM:STOR
SAVEUSEK	Save the selected calibration kit as a user calibration kit.	Not available
SAVRERC	Complete the data measurement for the reverse enhanced response calibration and calculate the calibration coefficients from the data saved.	Not available (Enhanced response calibration function not available.)
SAVT	Complete the data measurement for the TRL*/LRM* 2-port calibration and calculate the calibration coefficients on the basis of the data obtained.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)
SAVUASCI	Select ASCII as the format for saving data.	Not available (Stored in binary format)
SAVUBINA	Select binary as the format for saving data.	
SCAL	Specify the Y-axis scale for displaying traces.	:DISP:WIND{1-16}:TRAC{1-16}:Y:PDIV
SCAPFULL	Select FULL as the plotting scale.	Not available (Plotters are not supported.)
SCAPGRAT	Select GRAT as the plotting scale.	
SDEL	Delete segments while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SDON	Complete the editing of segments while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SEAL	Search for the left target value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE LTAR :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
SEAMAX	Search for the maximum value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MAX :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
SEAMIN	Search for the minimum value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE MIN :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
SEAOFF	Set the marker search function Off.	Not available
SEAR	Search for the right target value.	:CALC{1-16}:MARK{1-10}:FUNC:TYPE RTAR :CALC{1-16}:MARK{1-10}:FUNC:EXEC (Both commands must be sent.)
SEATARG	Specify the target value.	:CALC{1-16}:MARK{1-10}:FUNC:TARG
SEDI	Select the number of the segment to be edited while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SEGIFBW	Specify the IFBW of segments while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SEGPOWER	Specify the POWER segment while editing tables.	Not available (Each table is edited using one command; there is no corresponding command.)
SELMAXPT	Specify the point at the upper limit of the range for reading.	Not available (Limiting the range for reading is not allowed.)
SELMINPT	Specify the point at the lower limit of the range for reading.	
SELPT	Specify the point for reading.	
SELSEG	Select the segment for reading.	
SELBND	Select the band for reading.	
SELL	Select REDIVISION of a learn string.	Reading/Writing a learn string is not allowed.
SEQ	Select the test sequence.	Not available
SEQWAIT	Specify the waiting time in the test sequence.	(Test sequence function not available.)
SETBIT	Set the designated bit in the GPIO port to 1.	Not available (GPIO is not supported.)
SETDATE	Set the date of the internal clock.	:SYST:DATE
SETF	Measure low pass frequencies.	:CALC{1-16}:TRAN:TIME:LPFR
SETRTHRU	Select THRU as the reference for the TRL*/LRM* 2-port calibration.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)
SETRREFL	Select REFLECT as the reference for the TRL*/LRM* 2-port calibration.	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
SETTIME	Set the time of the internal clock.	:SYST:TIME
SETZ	Specify the characteristic impedance of the measurement system.	:CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:Z0 (Allowed on the fixture simulator)
SHOM	Specify the softkey display in the test sequence.	Not available (Test sequence function not available.)
SING	Perform one sweep operation. (Single mode)	Not available
SLID	Finish measuring a sliding load.	Not available (The LOAD standard is treated as fixed LOAD.)
SLIL	In defining calibration kits, select sliding LOAD as the type of LOAD.	
SLIS	Make measurements after sliding the sliding LOAD.	
SLOPE	Specify the power slope value.	:SOUR{1-16}:POW:SLOP
SLOPO	Set the power slope On/Off.	:SOUR{1-16}:POW:SLOP:STAT
SM8	Set the spur avoidance function On/Off (Take4 mode).	Not available (not in Take4 mode)
SMIC	Select the Smith chart format as the display format.	:CALC{1-16}:FORM SLIN :CALC{1-16}:FORM SLOG :CALC{1-16}:FORM SCOM :CALC{1-16}:FORM SMI :CALC{1-16}:FORM SADM (Designate any one of the above commands, and select the marker value read format at the same time. Åj
SMIMGB	Select G+jB as the marker value read format when using the Smith chart format.	Not available (Selected at the same time the Smith chart format is selected as the data format)
SMIMLIN	Select LIN as the marker value read format when using the Smith chart format.	
SMIMLOG	Select LOG as the marker value read format when using the Smith chart format.	
SMIMRI	Select Re/Im as the marker value read format when using the Smith chart format.	
SMIMRX	Select R+jX as the marker value read format when using the Smith chart format.	
SMOOAPER	Specify the smoothing aperture.	:CALC{1-16}:SMO:APER
SMOOO	Set the smoothing On/Off.	:CALC{1-16}:SMO
SOFR	Display the firmware version on the screen.	Not available
SOFT{1-8}	Perform the same processing as pressing the designated softkey.	Not available
SOUP	Set the signal source output On/Off.	Not available (Always On)
SPAN	Specify the span value of the sweep range.	:SENS{1-16}:FREQ:SPAN (Cannot be used for editing segments.) :SOUR{1-16}:POW:SPAN
SPECFWDM	In defining calibration kits, specify the standard for forward match.	:SENS{1-16}:CORR:COLL:CKIT:ORD:THRU (Definition of the Thru calibration class) Registering the Thru standard as the calibration class is equivalent to registering one standard in all calibration classes necessary for the thru measurement of full 2-port calibration on the 8753ES.
SPECFWDT	In defining calibration kits, specify the standard for forward transmission.	
SPECRESP	In defining calibration kits, specify the standard for response.	Not available (In the response measurement, the standards defined in the calibration classes of OPEN, SHORT, LOAD, and THRU are used. Therefore, a calibration class for response does not exist.)
SPECRESI	In defining calibration kits, specify the standard for response (response & isolation).	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B	
SPECREVM	In defining calibration kits, designate a standard for reverse match.	:SENS{1-16}:CORR:COLL:CKIT:ORD:THRU (Definition of the Thru calibration class) Registering the Thru standard as the calibration class is equivalent to registering one standard in all calibration classes necessary for the thru measurement of full 2-port calibration on the 8753ES.	
SPECREVT	In defining calibration kits, designate a standard for reverse transmission.		
SPECS11A	In defining calibration kits, designate a standard for S11A.	:SENS{1-16}:CORR:COLL:CKIT:ORD:OPEN (Designate a port by using a parameter.)	
SPECS11B	In defining calibration kits, designate a standard for S11B.	:SENS{1-16}:CORR:COLL:CKIT:ORD:SHOR (Designate a port by using a parameter.)	
SPECS11C	In defining calibration kits, designate a standard for S11C.	:SENS{1-16}:CORR:COLL:CKIT:ORD:LOAD (Designate a port by using a parameter.)	
SPECS22A	In defining calibration kits, designate a standard for S22A.	:SENS{1-16}:CORR:COLL:CKIT:ORD:OPEN (Designate a port by using a parameter.)	
SPECS22B	In defining calibration kits, designate a standard for S22B.	:SENS{1-16}:CORR:COLL:CKIT:ORD:SHOR (Designate a port by using a parameter.)	
SPECS22C	In defining calibration kits, designate a standard for S22C.	:SENS{1-16}:CORR:COLL:CKIT:ORD:LOAD (Designate a port by using a parameter.)	
SPECTRLL	In defining calibration kits, designate a standard for TRL Line/Match.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)	
SPECTRLT	In defining calibration kits, designate a standard for TRL Thru.		
SPECTRLR	In defining calibration kits, designate a standard for TRL Reflection.		
SPECTRFM	In defining calibration kits, designate a standard for TRL Reflection Forward Match..		
SPECTRRM	In defining calibration kits, designate a standard for TRL Reflection Reverse Match..		
SPECTLFM	In defining calibration kits, designate a standard for TRL Line Forward Match.		
SPECTLFT	In defining calibration kits, designate a standard for TRL Line Forward Transmission.		
SPECTLRM	In defining calibration kits, designate a standard for TRL Line Reverse Match.		
SPECTLRT	In defining calibration kits, designate a standard for TRL Line Reverse Transmission.		
SPECTTFM	In defining calibration kits, designate a standard for TRL Thru Forward Match.		
SPECTTFT	In defining calibration kits, designate a standard for TRL Thru Forward Transmission.		
SPECTTRM	In defining calibration kits, designate a standard for TRL Thru Reverse Match.		
SPECTTRT	In defining calibration kits, designate a standard for TRL Thru Reverse Transmission.		
SPEG	Cause the softkey in the gate setup menu to appear.		Not available
SPLD	Set the split display On/Off.		:DISP:SPL (Setting up the window array for a channel) and :DISP:WIND{1-16}:SPL (Setting up the array of trace graphs) are combined to perform the equivalent.
SPLID1	Select one-screen display.		
SPLID2	Select two-screen display.		
SPLID4	Select four-screen display.		
SRE	Specify the value of the service request valid register.	*SRE	
SSEG	Use only the designated segment for the list frequency sweep.	Not available (All segments are always used.)	

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
STANA	Execute measurement of the standard displayed in the first softkey from the top.	Not available (No command for this is available because only one standard can be registered in each calibration class.)
STANB	Execute measurement of the standard displayed in the second softkey from the top.	
STANC	Execute measurement of the standard displayed in the third softkey from the top.	
STAND	Execute measurement of the standard displayed in the fourth softkey from the top.	
STANE	Execute measurement of the standard displayed in the fifth softkey from the top.	
STANF	Execute measurement of the standard displayed in the sixth softkey from the top.	
STANG	Execute measurement of the standard displayed in the seventh softkey from the top.	
STAR	Specify the start value of the sweep range.	:SENS{1-16}:FREQ:STAR (Cannot be used for editing segments.) :SOUR{1-16}:POW:STAR
STB?	Read the value of the status byte register.	*\$STB?
STDD	In defining calibration kits, complete the defining job for each standard.	Not available (Takes effect automatically upon sending the setup command.)
STDTARBI	Select Arbitrary Impedance as the type of standard being defined.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE ARBI
STDTDELA	Select Delay/Thru as the type of standard being defined.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE THRU
STDTLOAD	Select LOAD as the type of standard being defined.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE LOAD
STDTOPEN	Select OPEN as the type of standard being defined.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE OPEN
STDTSHOR	Select SHORT as the type of standard being defined.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:TYPE SHOR
STOP	Specify the stop value of the sweep range.	:SENS{1-16}:FREQ:STOP (Cannot be used for editing segments.) :SOUR{1-16}:POW:STOP
STOR	Save the Instrument State status to the file.	:MMEM:STOR
STORSEQ	Save the test sequence to the file.	Not available (Test sequence function not available.)
STPSIZE	Specify the sweep step values between points in the segment.	Not available
SVCO	Save the color setup for the LCD screen.	Not available (No function available that saves the setup for colors only.)
SWEA	Automatically sets the sweep time to the shortest possible.	:SENS{1-16}:SWE:TIME:AUTO ON
SWET	Specify the sweep time.	:SENS{1-16}:SWE:TIME
SWPSTART	Initialize the sweep (in connection with Take4).	Not available (Take4 mode not available.)
SWR	Select the SWR format as the display format.	:CALC{1-16}:FORM SWR
[T]		
TAKCS	Start the sweep to acquire the data for the power meter calibration.	:SOUR{1-16}:POW:PORT{1-4}:CORR:COLL
TAKRS	Start the sweep to acquire the data for the receiver calibration.	Not available
TAKE4	Set the system to the Take4 mode.	Not available (Take4 mode not available.)
TALKLIST	Select the talker/listener mode.	Not available (Can be set up from the front panel.)
TERI	Specify the terminal impedance when defining standards.	:SENS{1-16}:CORR:COLL:CKIT:STAN{1-21}:ARB
TESS?	Check to see if the test set is connected.	Not available (Test set cannot be used.)

Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands excluded)

8753ES	Function overview	E5070B/E5071B	
TIMDTRAN	Set the time-domain transformation On/Off.	:CALC{1-16}:TRAN:TIME:STAT	
TIMESTAM	Set the output time stamp from the printer/plotter On/Off.	Not available (Printed image include the timestamp because LCD always display it).	
TINT	Specify the hue of the display color for the selected item.	Not available (Color setup is allowed only for turning highlighting of the entire screen On/Off.)	
TITF	Assign a file name to the file for saving.	Not available (Assigned when saved)	
TITL	Assign a title to the LCD screen.	:DISP:WIND{1-16}:TITL:DATA	
TITP	Assign a file name to the file that receives plot output.	Not available (Plot output to a file is not allowed.)	
TITR	Assign a name to the register for Save/Recall.	Not available (Register for Save/Recall not available.)	
TITREG	Assign a name to the register for Save/Recall.		
TITSEQ	Name the test sequence.	Not available (Test sequence function not available.)	
TITSQ	Display the softkey for naming the test sequence.		
TITMEM	Send the title to the memory trace.	Not available	
TITPERI	Send the title to the GPIBaddresses of the peripherals.	Not available	
TITPMTR	Send the title to the GPIBaddress of the power meter.	Not available	
TITPRIN	Send the title to the GPIB address of the printer.	Not available	
TRACK	Set the search tracking function On/Off.	:CALC{1-16}:MARK{1-10}:FUNC:TRAC	
TRAD	Complete measuring the data to be transmitted on full 2-port calibration or enhanced response calibration.	Not available (Enhanced response calibration function not available.)	
TRAN	Start measuring the data to be transmitted on full 2-port calibration or enhanced response calibration.	Not available (Enhanced response calibration function not available.)	
TRAOP	Start measuring the data to be transmitted on the one-bus 2-port calibration.	Not available (One-bus 2-port calibration function not available.)	
TRAP	Select the S21 measurement.	:CALC{1-16}:PAR{1-16}:DEF S21	
TRLL1	In measuring the data on TRL*/LRM* 2-port calibration, measure the data on Line/Match of port 1.	Not available (The E5070B/E5071B supports the TRL calibration function using VBA.)	
TRLL2	In measuring the data on TRL*/LRM* 2-port calibration, measure the data on Line/Match of port 2.		
TRLR1	In measuring the data on TRL*/LRM* 2-port calibration, measure the data on S11 reflection.		
TRLR2	In measuring the data on TRL*/LRM* 2-port calibration, measure the data on S22 reflection.		
TRLT	In measuring the data on TRL*/LRM* 2-port calibration, measure the data on THRU.		
TSSWI	Specify the number of sweep operations in switch changeover in the test set.		Not available (Always continuous)
TST?	Perform the self-test and read the results of the test.		Not available
TSTIOFWD	Specify the bit in the test set in which the forward attenuator is set up.	Not available	
TSTIOREV	Specify the bit in the test set in which the reverse attenuator is set up.		
TSTP	Select the port to be used when S-parameters are not measured.	Not available (Only S-parameters can be selected.)	
TTLHPULS	Set up the system so that the pulse from Low to High can be output to TTL when sweep operations are finished.	Not available	
TTLLPULS	Set up the system so that the pulse from High to Low can be output to TTL when sweep operations are finished.		
TTLOH	Always set TTL output to High.		
TTLOL	Always set TTL output to Low.		
[U]			

**Comparing Commands of the 8753ES and E5070B/E5071B
8753ES vs. E5070B/E5071B Command Comparison (8753ES-only commands
excluded)**

8753ES	Function overview	E5070B/E5071B
UCONV	Select the Up conversion in the mixer measurement.	Not available (Mixer measurement function not available.)
UP	Perform the same processing as pressing the [↑]key.	Not available
USEPASC	Select the pass control mode.	Not available (Cannot be set in pass control mode.)
USESENSA	Select A as the sensor for the power meter.	Not available
USESENSB	Select B as the sensor for the power meter.	
[V]		
VELOFACT	Specify the velocity factor of the transmission line.	:SENS{1-16}:CORR:RVEL:COAX
VIEMOFF	Display the mixer measurement setup on the LCD screen.	Not available (Mixer measurement function not available.)
VIEMON	Display the traces of the mixer measurement on the LCD screen.	
VOFF	Use the LO frequency for the offset mode.	
[W]		
WAIT	Wait for the sweep operation to end.	Not available
WAVD	Select waveguide as the type of electrical delay and specify the cutoff frequency.	Not available (Always treated as coaxial cables)
WAVE	Select waveguide as the offset setting in defining standards.	Not available
WIDT	Set the bandwidth search function On/Off.	:CALC{1-16}:MARK:BWID
WIDV	Specify the parameters for the bandwidth search.	:CALC{1-16}:MARK{1-10}:BWID:THRU
WINDMAXI	Set the maximum window size for the time-domain transformation.	:CALC{1-16}:TRAN:TIME:KBES 13
WINDMINI	Set the minimum window size for the time-domain transformation.	:CALC{1-16}:TRAN:TIME:KBES 0
WINDNORM	Set the normal window size for the time-domain transformation.	:CALC{1-16}:TRAN:TIME:KBES 6
WINDOW	Set the window size to an arbitrary value for the time-domain transformation.	:CALC{1-16}:TRAN:TIME:KBES
WINDUSEM	Set the use of memory traces for the time-domain transformation On/Off.	Not available
WRSK	Assign an arbitrary name to the softkey currently displayed.	Not available (Changing the softkeys is not allowed.)