

## Working with Test Setups

This section describes how to do the following tasks:

H Save and recall instrument setups

H Create and run pass/fail tests

Instrument setups are files, stored in memory or on disk, that completely describe how the CTS850 is set up. You can use this feature to ensure that every time a test is run, using an instrument setup, that the CTS850 is configured the same way, thus ensuring consistent results. The disk file is an ASCII format file that consists of SCPI commands. The disk file can be edited with any ASCII file editor.

### CTS850 SDH/PDH Test Set

Pass/fail tests are tests that display a message indicating whether the completed test encountered any of the specified failure conditions. Up to four failure conditions can be specified in a pass/fail test. Pass/fail tests can be configured to save test results to disk or to print out the test results when the test completes.

Jitter tests are a set of standard compliance tests that measure the jitter in a signal or the response of a network to applied jitter. These tests are defined by ITU Standards G.823, G.825, and G.783. For some tests, the CTS850 generates jitter to stimulate a network element and simultaneously measures its response. Results are displayed in numerical and graphical form. You can set parameters to customize most jitter tests.

## Saving and Recalling Instrument Setups

Instrument setups are files stored in memory or on disk that define how the CTS850 is configured. If you regularly set up the CTS850 in the same way, you can save the instrument settings in an instrument setup. Then you can recall the instrument setup whenever you want the CTS850 configured a certain way. This capability saves you time and minimizes the chances of error when setting up the CTS850 for standard tasks.

*NOTE. Instrument setups saved to memory are retained when the instrument is turned off. Instrument setups are retained in memory even if power is removed from the CTS850.*

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### Saving Instrument Setups

To save an instrument setup:

1. Set up the CTS850 as desired. Set all instrument parameters as required.
2. To save an instrument setup to disk, it must have a name. Enter a file name as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE INSTRUMENT SETUPS (see Figure 3 15)	Name	SETUP_XX
			EDIT NAME

- H If you wish to label the setup file as SETUP<Number>, you can save time by selecting **SETUP\_XX**. Once you select SETUP\_XX, select **EDIT NAME** and edit **XX** to the desired number (or letter). Select **DONE** when you are finished editing the setup name. The instrument setup name can be up to eight characters long.
- H Select **EDIT NAME** to enter a name other than SETUP\_XX. Select **DONE** when you are finished editing the setup name. The instrument setup name can be up to eight characters long.

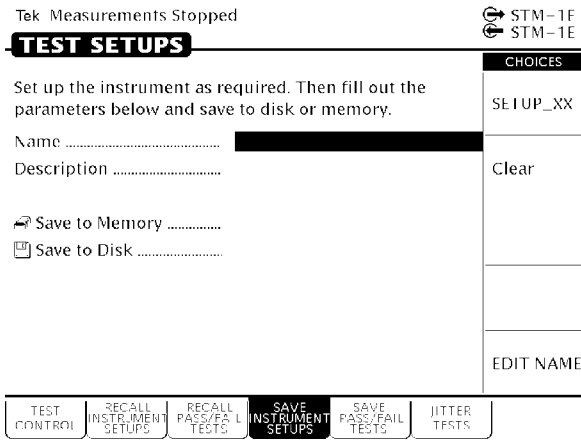


Figure 3 15: The SAVE INSTRUMENT SETUPS Page

3. Enter a description of the instrument setup as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
		Description	EDIT TEXT

H Select **EDIT TEXT** to edit the description of the instrument setup. The description can be up to 24 characters long. To remove an existing description, select **Clear** or **None**.

4. Save the instrument setup to memory as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
		Save to Memory	Memory n

5. Save the instrument setup to disk as follows:

- H Insert a disk to store the file on, if one has not already been inserted.

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
		Save to Disk	Save File

The instrument setup is saved to disk with the name specified on the Name line. Status messages indicate the progress of the file save. Once the file is written to disk, the CTS850 reads the disk directory and updates the file listing shown on the RECALL INSTRUMENT SETUPS page.

Recalling Instrument Setups

To recall an instrument setup from memory:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	RECALL INSTRUMENT SETUPS (see Figure 3 16)	<i>none</i>	Memory
		<i>none</i>	Disk
		select setup	Recall Setup

- H Use the knob to select the desired instrument setup.
- H To recall setups from memory rather than disk, select **Memory** to highlight the Memory listing (see Figure 3 16).
- H To recall setups from disk rather than memory, select **Disk** to highlight the Disk listing.

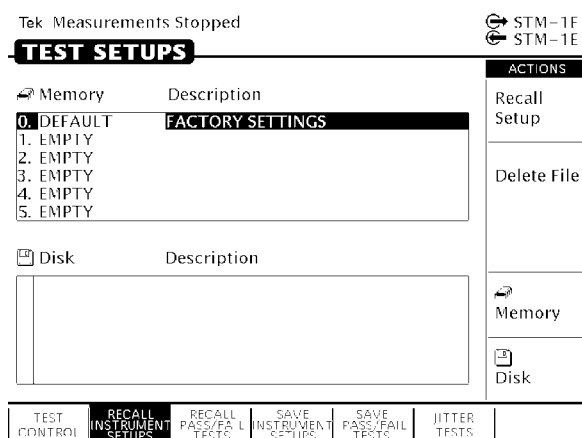


Figure 3 16: The RECALL INSTRUMENT SETUPS Page

The disk file listing displays up to six file names at a time. If more than six files are on disk, the file listing automatically scrolls when you turn the knob.

### Recalling the Default Factory Setup

To recall the default factory setup (initialize the CTS850):

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	RECALL INSTRUMENT SETUPS (see Figure 3 16)	<i>none</i>	Memory
		0. Default	Recall Setup

Recall the default settings whenever you want to restore the CTS850 to a known state. For a listing of the factory default settings, go to the Specifications section in the Appendix of this user manual.

### Deleting Instrument Setups from Disk

You can delete instrument setups from disk using the Delete File action.

To delete an instrument setup from disk:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	RECALL INSTRUMENT SETUPS (see Figure 3 16)	none	Disk
		select setup	Delete File

H Use the knob to select the file to delete (see Figure 3 17).

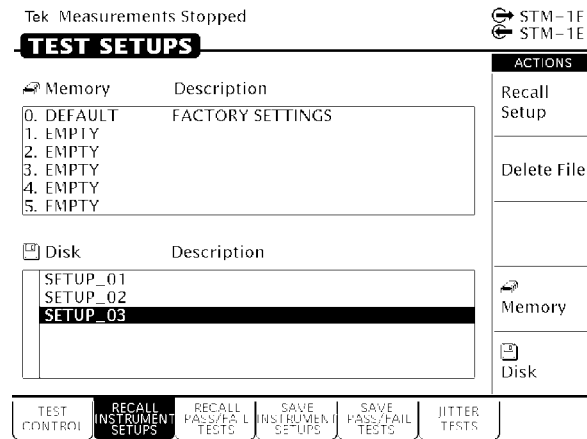


Figure 3 17: Selecting a Disk File for Deleting

After you select Delete File, status messages appear indicating the progress of the file deletion. When the file has been deleted, the file listing updates.

## Pass/Fail Tests

A pass/fail test is an easy way to run a test and get a simple response stating whether or not the CTS850 encountered the specified errors during the test. When a pass/fail test completes, the CTS850 displays a message stating that either the test passed or failed. Pass/fail tests are set up in the TEST SETUPS menu on the SAVE PASS/FAIL TESTS page (see figure below). A pass/fail test consists of instrument setup information and the parameters described in *Parameters of a Pass/Fail Test*.

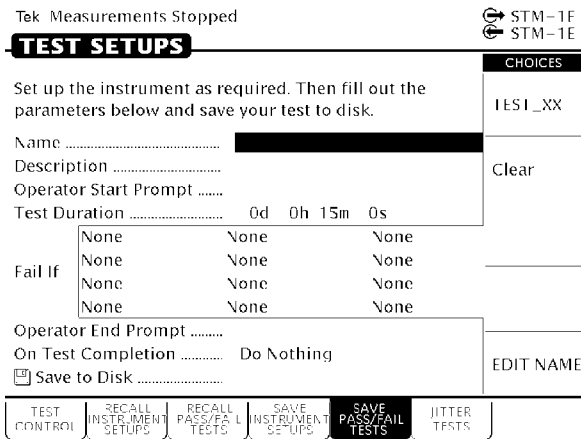


Figure 3 18: The SAVE PASS/FAIL TESTS Page

### Parameters of a Pass/Fail Test

A pass/fail test has the following parameters (some parameters are optional):

- H** Name. The name of the test, a mandatory parameter. It can be up to eight-characters long. The name of the test also serves as the file name for the test when you save it to disk.

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*NOTE. A pass/fail test can only be saved on disk. It cannot be saved in memory.*

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- H Description. An optional, 24-character field that describes the test.
- H Operator Start Prompt. An optional, 72-character field that is displayed at the beginning of the test. You can use the operator start prompt to provide instruction to the operator prior to the beginning of the test.
- H Test Duration. A required parameter that sets the length of the test.
- H Fail If conditions. The specific conditions that define whether a test has failed.
- H Operator End Prompt. An optional, 72-character field that is displayed at the end of the test. You can use the operator end prompt to provide instruction to the operator after the test is completed.
- H On Test Completion. A required parameter that defines the action to be taken when a test completes.

#### **Fail If Conditions**

A Fail If condition is what determines if a test passes or fails. There are three elements to a Fail If condition: condition type, specific condition, and threshold (see Table 3 4).

The condition type describes the general condition that indicates a test has failed. For each condition type (except None), there is list of specific conditions and thresholds used to determine when a test fails. None indicates that no condition type has been assigned.

The specific condition describes the type of failure used to determine when a test fails. The specific conditions that define a failure depend on the condition type (see Table 3 4).

The threshold is the level at which a test fails (see Table 3 4). For example, for the condition types Alarm and Failure, the threshold for any specific condition is Detected or Not Detected.



- H Detected. If the specified condition is detected, the test fails.
- H Not Detected. If the specified condition is not detected, the test fails.

**Table 3 4: Fail If Conditions of a Pass/Fail Test**

Condition Type	Specific Condition	Threshold
Alarm SDH and/or PDH	Any	Detected/Not Detected
	MS AIS	Detected/Not Detected
	MS RDI	Detected/Not Detected
	AU AIS	Detected/Not Detected
	HP RDI	Detected/Not Detected
	TU AIS	Detected/Not Detected
	LP RDI	Detected/Not Detected
	PDH RAI	Detected/Not Detected
	PDH AIS	Detected/Not Detected
Failure	Any	Detected/Not Detected
	LOS (Loss of Signal)	Detected/Not Detected
	LOF (Loss of Frame)	Detected/Not Detected
	OOF (Out of Frame)	Detected/Not Detected
	AU LOP (Loss of AU Pointer)	Detected/Not Detected
	TU LOP (Loss of TU Pointer)	Detected/Not Detected
	TU LOM (Loss of TU Multiframe)	Detected/Not Detected
	Pattern Sync	Detected/Not Detected

Table 3 4: Fail If Conditions of a Pass/Fail Test (Cont.)

Condition Type	Specific Condition	Threshold
Error Ratio	Any	>1.0e 9
	RS B1	>1.0e 8
	MS B2	>1.0e 7
	Path B3	>1.0e 6
	TU Path BIP	>1.0e 5
	LP REI	1.0e 4
	Payload Bit 2 Mb/s CRC	1.0e 3 User Defined
Error Count	Any	>0
	RS B1	>10
	MS B2	>100
	Path B3	>1000
	TU Path BIP	User Defined
	LP REI	
	Payload Bit 2 Mb/s CRC	
Errored Seconds	Any	>0
	RS B1	>1
	MS B2	>10
	Path B3	>60
	TU Path BIP	User Defined
	LP REI	
	Payload Bit 2 Mb/s CRC	
Pointer	AU NDFs	>0
	AU Ptr Justify	>1
	TU NDFs	>10
	TU Ptr Justify	>60 USER DEFINED
Jitter	Hit Seconds	>0
		>1
		>10
		>60
		USER DEFINED

## Creating a Pass/Fail Test

To create a pass/fail test:

1. Set up the CTS850 as required to perform the desired test.

Set all transmit and receive parameters as necessary. When the pass/fail test is recalled, the CTS850 is set up exactly as it was when the pass/fail test was saved.

2. Set the name of the pass/fail test as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS (see Figure 3 18)	Name	TEST_XX
			EDIT NAME
			Clear

- H If you wish to name the test file as TEST<Number>, you can save time by selecting **TEST\_XX**. Once you select TEST\_XX, select **EDIT NAME** and edit XX to the desired number (or letter). Select **DONE** when you are finished editing the setup name.
- H Select **EDIT NAME** to enter a name other than TEST\_XX for the pass/fail test. Select **DONE** when you are finished editing the test name.
- H Select **Clear** to remove an existing name.

3. Enter a description of the pass/fail test as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	Description	EDIT TEXT
			None
			Clear

H Select **EDIT TEXT** to enter a description of the test, up to 24 characters long. Select **DONE** when you are finished editing the description.

H Select **None** if you do not want to use a description.

H Select **Clear** to remove an existing description.

4. Enter an operator start prompt as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	Operator Start Prompt	Default
			Clear
			Preview
			EDIT TEXT

H Select **Default** to enter the default prompt TEST IS ABOUT TO START!.

H Select **Clear** to remove any previously entered prompt text.

H Select **Preview** to see how the prompt text you have entered appears in the pass/fail test dialog box. Select **EXIT** to remove the preview.

H Select **EDIT TEXT** to enter an operator start prompt, up to 72 characters long. The prompt appears on the display as three lines of 24 characters. Select **DONE** when you are finished editing the prompt.

5. Set the test duration as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	Test Duration	5 min
			15 min
			1 hour
			Continuous
			USER DEFINED

H Select **USER DEFINED** to enter a time other than one of the preset choices. The maximum duration is 99 days, 23 hours, 59 minutes, 59 seconds.

6. Highlight the first entry in the first column of the Fail If table (see Figure 3 19). Select one of the preset choices to specify a condition type.

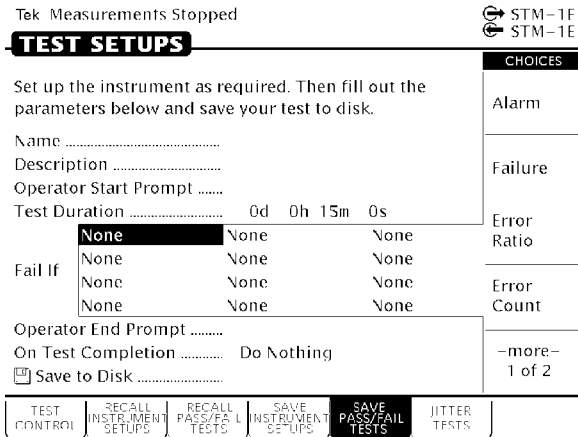


Figure 3 19: Entering Fail If Conditions

7. Highlight the first entry in the second column (see Figure 3 19). If you wish to specify a specific condition, select one of the preset choices.
8. Highlight the first entry in the third column (see Figure 3 19). Select one of the preset choices to set the threshold. Select **USER** to specify a threshold other than one of the preset choices. (USER is not available for Alarm or Failure condition types.)
9. Repeat steps 6 through 8 as necessary to specify additional Fail If conditions. A maximum of four Fail If conditions can be specified.

**10.** Enter an operator end prompt as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	Operator End Prompt	Default
			Clear
			Preview
			EDIT TEXT

- H Select **Default** to enter the default prompt TEST HAS ENDED!.
- H Select **Clear** to remove any previously entered prompt text.
- H Select **Preview** to see how the prompt text you have entered appears in the pass/fail test dialog box. Select **Exit** to remove the preview.
- H Select **EDIT TEXT** to enter an operator end prompt, up to 72 characters long. The prompt appears on the display as three lines of 24 characters. Select **DONE** when you are finished editing the prompt.

**11.** Specify the action to be taken when the test completes as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	On Test Completion	Do Nothing
			Print Summary
			Save to Disk

- H Select **Do Nothing** if you do not want any action taken at test completion.



- H Select **Print Summary** to print the test results when the test completes.
- H Select **Save to Disk** to create a disk file of the test results when the test completes.

12. Save the pass/fail test to disk as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUP	SAVE PASS/FAIL TESTS	Save to Disk	Save File

### Running a Pass/Fail Test

To run a pass/fail test:

1. Insert the disk containing the pass/fail test into the disk drive.
2. Select the pass/fail test to run as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUP	RECALL PASS/FAIL TESTS	<i>none</i>	Disk
		select disk file name	Recall

**NOTE.** The Disk action displays only files with the extension .TST.

Selecting Recall begins the recall of the pass/fail test.

As the file recall begins, the TEST BEGIN dialog box appears (see Figure 3 20). The first line of text in the dialog box is the file name. The second line of text is the test description. The third line informs the user that the file was recalled successfully. The

fourth line states how to begin the test. The fifth line is the operator start prompt.

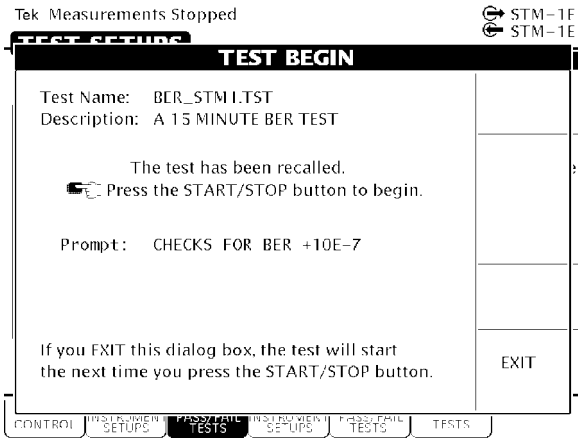


Figure 3 20: The TEST BEGIN Dialog Box

**3. To run the pass/fail test immediately, press START/STOP.**

The pass/fail test will begin. When the test is completed, the CTS850 displays either TEST PASSED! or TEST FAILED!.

If you decide not to run the test, select **EXIT** from the dialog box.

**4. Select EXIT to remove the dialog box after the test completes.**

**5. Press RESULTS to see the detailed results of the test.**

A test does not have to be run when it is recalled from disk. After the TEST BEGIN dialog box appears, you can exit the dialog box by selecting **EXIT**. You can then select the SAVE PASS/FAIL TESTS page and edit the parameters of the pass/fail test.

### Changing an Existing Pass/Fail Test

You do not have to create a pass/fail test from the beginning every time. You can recall an existing test, edit the parameters of the test, and then save it under a new name.

To change an existing pass/fail test:

1. Insert the disk containing the pass/fail test into the disk drive.
2. Select the pass/fail test to edit as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	RECALL PASS/FAIL TESTS	<i>none</i>	Disk
		select disk file name	Recall

**NOTE.** The Disk action displays only files with the extension *.TST*.

As the file recall begins, the TEST BEGIN dialog box appears (see Figure 3 20).

3. Select **EXIT** to remove the dialog box.
4. Select **SAVE PASS/FAIL TESTS**.
5. Edit the parameters of the pass/fail test as necessary.
6. If you want to save the edited pass/fail test under a different name, change the Name of the test. You do not have to change the name of the test file to save it to disk.

7. Save the pass/fail test to disk as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	SAVE PASS/FAIL TESTS	Save to Disk	Save File

H If you select Save File without changing the name of the file, a Disk dialog box appears asking if you want to overwrite the existing file. To overwrite the file, select **Overwrite**. If you do not want to overwrite the file, select **Cancel**.

#### Deleting a Pass/Fail Test from Disk

Delete a pass/fail test from disk as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TEST SETUPS	RECALL PASS/FAIL TESTS	select file name	Delete File

H If necessary, select **Disk** from the list of actions to display the names of the files on disk (see Figure 3 21).

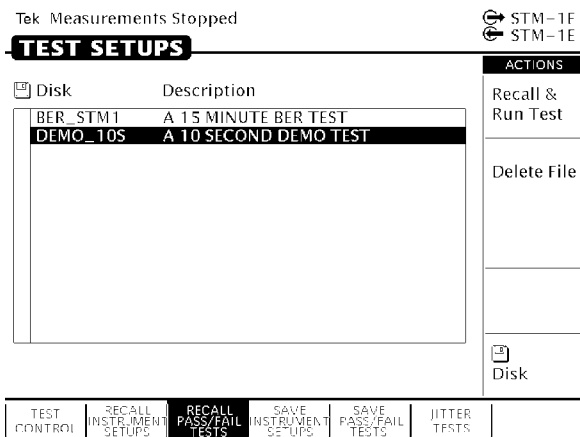


Figure 3 21: Selecting a Pass/Fail Test for Deleting

After you select Delete, status messages appear indicating the progress of the file deletion. The file list updates after the file is deleted.

