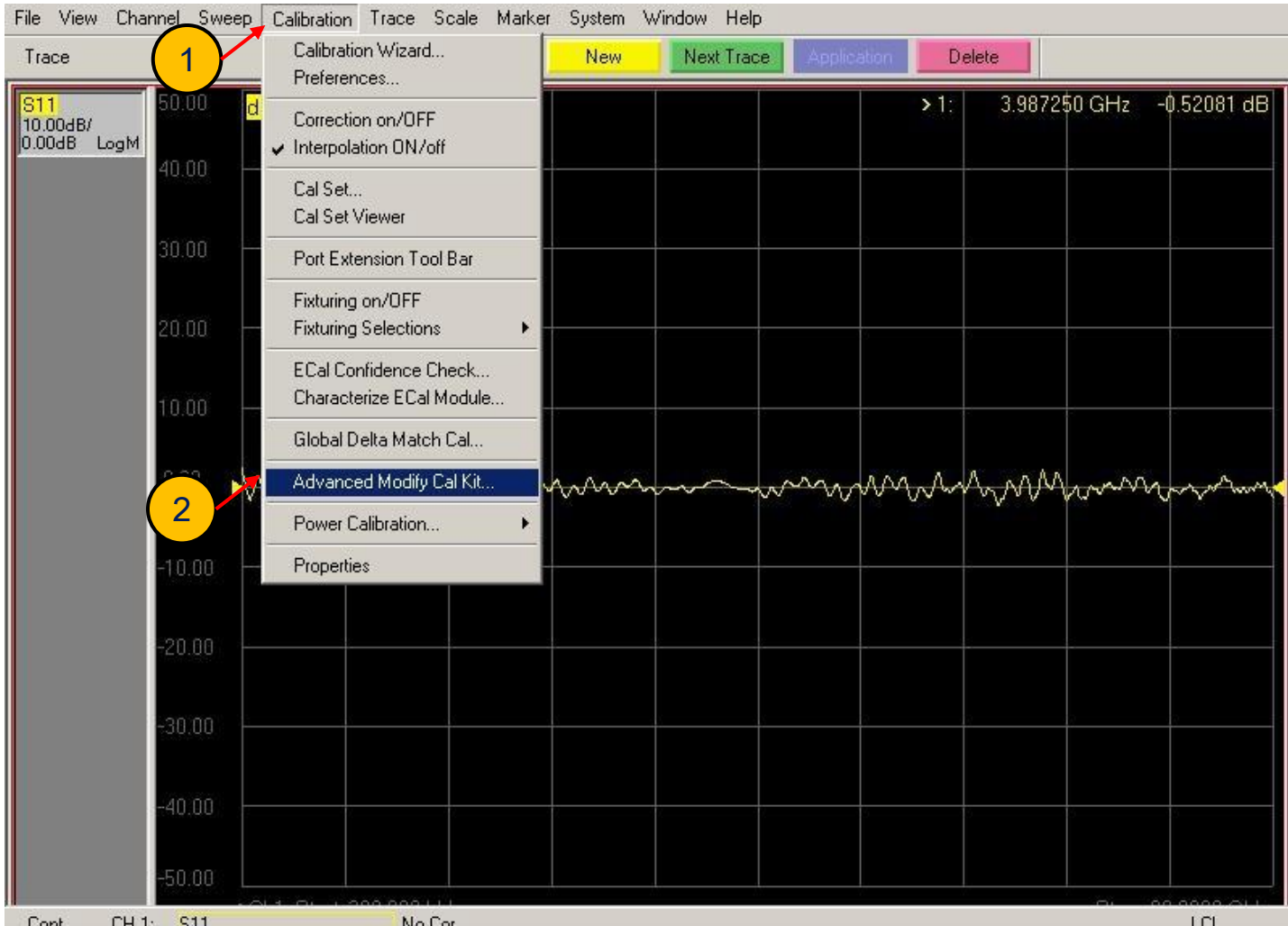


How to define Keysight PNA Cal Kit for TITAN™ Probes

A Step-by-step example for T26-GSG0150 probes,
AC-2 calibration substrate and 20 GHz PNA-L Keysight VNA

Create a New Cal Kit



Insert New One

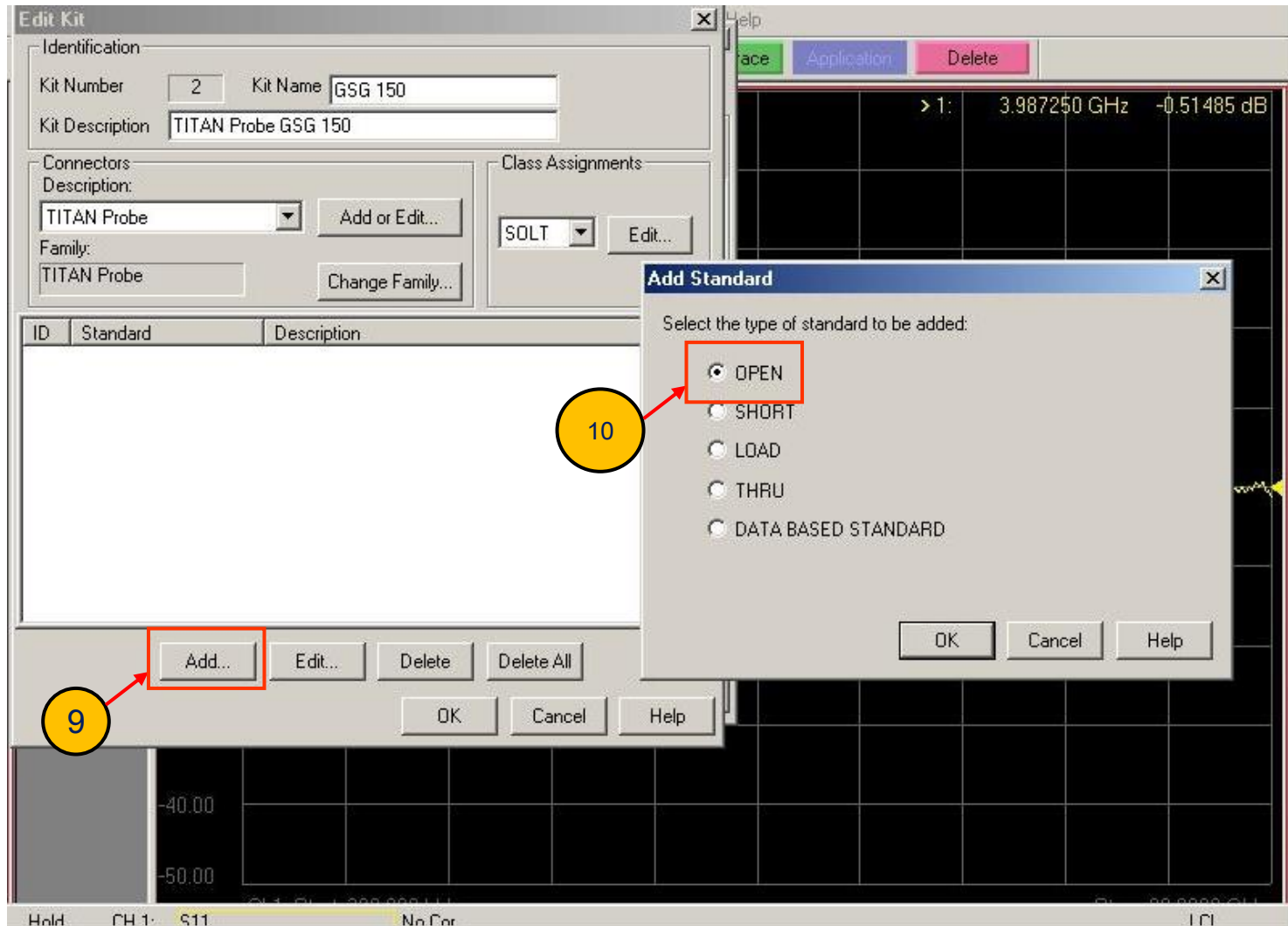
The screenshot shows the 'Edit PNA Cal Kits' window with a list of installed kits. The 'Insert New...' button is highlighted with a red box and a yellow circle labeled '3'. An arrow points from this button to the 'Edit Kit' dialog box. In the dialog, the 'Kit Number' field contains '2', and the 'Kit Name' and 'Kit Description' fields are highlighted with red boxes and a yellow circle labeled '4'. A yellow callout box with the text 'Key in the Kit name and Description' points to these fields.

ID	Kit Name	Description
1	85052B	3.5 GHz sliding load
2	ASP100	
3	GSG 150	FOR ASP 150UM
4	hrf01-03	hrf01-03
5	Probe	TITANGS200-1
6	Titan GS/SG 200	AC3 200
7	AC5-test-Pitch800	Allstron
8	AC5-Pitch800	Allstron-GS/SG
9	AC5	Allstron-GS/SG
10	CS-11	
11	AC-3	TITAN GS/SG
12	AC-3_Pitch100	TITAN-GS/SG
13	100M-700M	100M-700MHz
14	100M to 500M	100M to 500M
15	500M to 3.5G	500M to 3.5G
16	eason	TRL_THRU
17	HSF_SB_SOLT	HSF_SB_SOLT_10G

Add / Edit Connector

The image shows two overlapping software windows. The background window is titled 'Edit Kit' and contains fields for 'Kit Number' (2), 'Kit Name' (GSG 150), and 'Kit Description' (TITAN Probe GSG 150). It has a 'Connectors' section with a dropdown menu and an 'Add or Edit...' button, which is circled in red and labeled with a yellow circle containing the number 5. Below this is a table with columns 'ID', 'Standard', and 'Description'. The foreground window is titled 'Add or Edit Connector' and has fields for 'Connector Family' (TITAN Probe) and 'Description' (TITAN Probe). The 'Frequency Range' section has 'Min' (0) and 'Max' (26000) fields, both labeled with a yellow circle containing the number 7. The 'Gender' section has radio buttons for 'Male', 'Female', and 'No Gender' (selected). The 'Impedance' section has a 'Z0' field (50) labeled with a yellow circle containing the number 8. A yellow callout box with the text 'Key in the connector Family.' points to the 'Connector Family' field, labeled with a yellow circle containing the number 6. Another yellow callout box with the text 'Define the Frequency range and Gender.' points to the 'Frequency Range' and 'Gender' sections. The 'Add or Edit Connector' window has 'OK', 'Cancel', 'Apply', and 'Help' buttons at the bottom.

Add Standard (OPEN)



Define OPEN Model Parameters

Edit Kit

Identification
Kit Number: 2 Kit Name: GSG 150
Kit Description: TITAN Probe GSG 150

Connectors
Description: TITAN Probe
Family: TITAN Probe

ID	Standard

Opens

Identification
Standard ID: 1 Label: OPEN
Open Description: TITAN Probe open

Frequency Range
Min: 0 MHz
Max: 26000 MHz

Connector: TITAN Probe

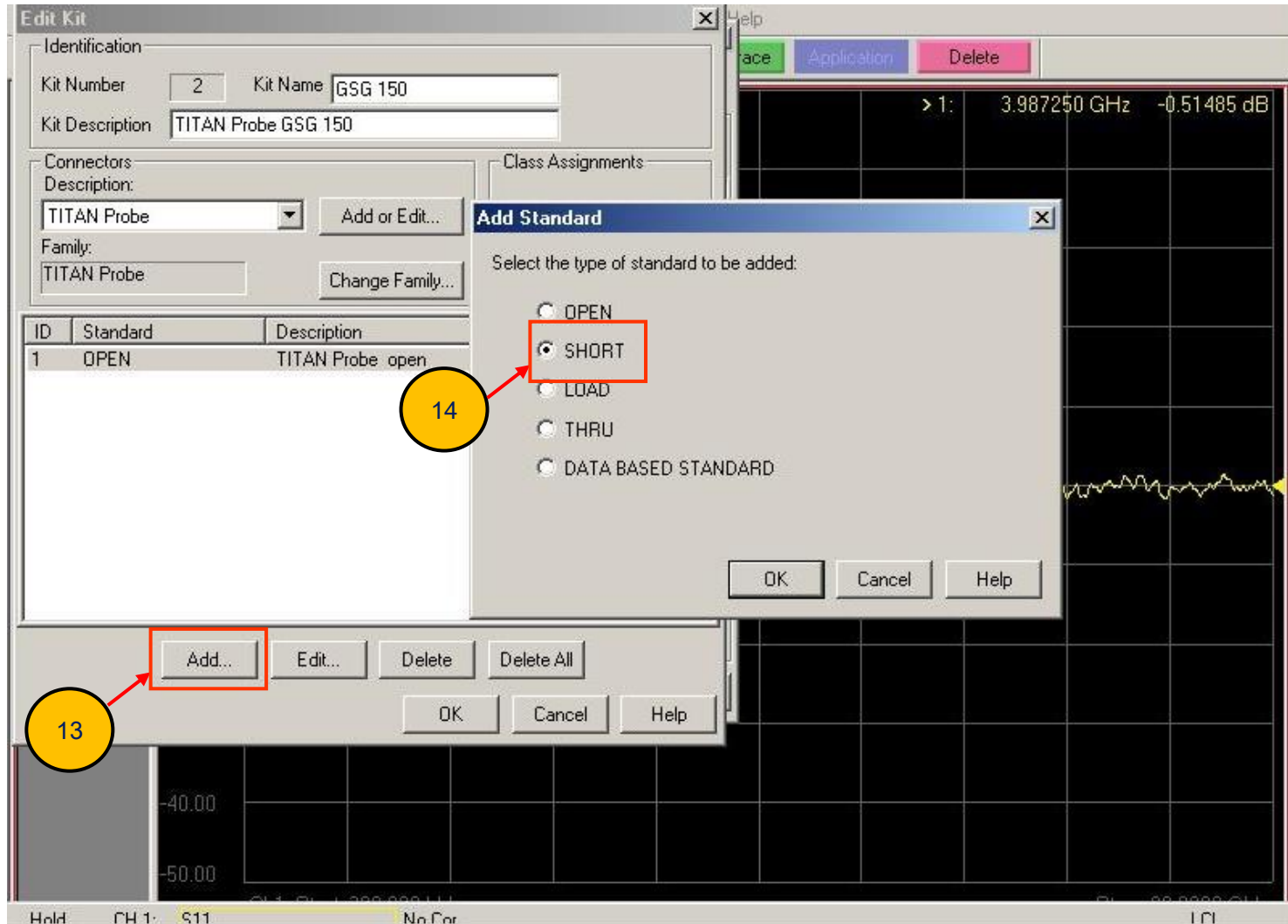
Open Characteristics
C0: 5.3 F(e-15) **C-Open fF**
C1: 0 F(e-27)/Hz
C3: 0 F(e-45)/Hz^3

Delay Characteristics
Delay: 0 pSec
Loss: 0 Gohms/s
Z0: 50 ohms

Graph: > 1: 3.987250 GHz -0.51485 dB

Buttons: Add... Edit... Clear OK Cancel Apply Help

Add Standard (SHORT)



Define SHORT model parameters

Edit Kit

Identification
Kit Number: 2 Kit Name: GSG 150
Kit Description: TITAN Probe GSG 150

Connectors
Description: TITAN Probe
Family: TITAN Probe

ID	Standard	Description
1	OPEN	TITAN Probe open
2	SHORT	TITAN Probe short

Shorts

Identification
Standard ID: 2 Label: SHORT
Short Description: TITAN Probe short

Frequency Range
Min: 0 MHz
Max: 26000 MHz

Connector: TITAN Probe

Short Characteristics
L0: 12.3 H(e-12) **L-Short pH** H(e-33)/Hz²
L1: 0 H(e-24)/Hz L3: 0 H(e-42)/Hz³

Delay Characteristics
Delay: 0 pSec Loss: 0 Gohms/s
Z0: 50 ohms

Buttons: Add... Edit... Delete... OK

Add Standard (LOAD)

The screenshot displays the 'Edit Kit' window and an 'Add Standard' dialog box. The 'Edit Kit' window shows the following information:

- Identification: Kit Number 2, Kit Name GSG 150, Kit Description TITAN Probe GSG 150
- Connectors: Description: TITAN Probe, Family: TITAN Probe
- Table:

ID	Standard	Description
1	OPEN	TITAN Probe
2	SHORT	TITAN Probe

The 'Add Standard' dialog box prompts the user to 'Select the type of standard to be added:' with the following options:

- OPEN
- SHORT
- LOAD
- THRU
- DATA BASED STANDARD

The 'LOAD' option is selected and highlighted with a red box. A yellow circle with the number 18 points to the 'LOAD' option. Another yellow circle with the number 17 points to the 'Add...' button in the 'Edit Kit' window. The background shows a graph with a signal trace and a frequency of 3.987250 GHz.

Define LOAD Model Parameters

The screenshot shows the 'Edit Kit' software interface with the 'Loads' dialog box open. The dialog box is used to define model parameters for a load. The 'Identification' section includes 'Standard ID' (3), 'Label' (LOAD), and 'Load Description' (TITAN Probe load). The 'Frequency Range' section is highlighted with a red box and includes 'Min' (0 MHz) and 'Max' (26000 MHz). The 'Load Type' section includes radio buttons for 'Fixed Load', 'Sliding Load', 'Arbitrary Impedance', and 'Offset Load'. The 'Delay Characteristics' section is highlighted with a red box and includes 'Delay' (0.003 pSec) and 'Z0' (500 ohms). A yellow callout box highlights the 'L-Term pH/495' parameter. The 'Offset Load Definition' section includes 'First Offset Standard', 'Second Offset Standard', and 'Load Standard' (OPEN). The 'Edit Kit' window in the background shows a table with columns 'ID', 'Standard', and 'Description'. The table contains two rows: '1 OPEN TITAN Probe open' and '2 SHORT TITAN Probe short'. A yellow circle with the number '19' is placed over the table, and another yellow circle with the number '20' is placed over the 'Add...' button. The status bar at the bottom of the 'Edit Kit' window shows '6 objects' and 'CH 1: S11'.

ID	Standard	Description
1	OPEN	TITAN Probe open
2	SHORT	TITAN Probe short

6 objects

CH 1: S11

L-Term pH/495

Add Standard (THRU / LINE)

The screenshot shows the 'Edit Kit' dialog box with the following fields:

- Kit Number: 2
- Kit Name: GSG 150
- Kit Description: TITAN Probe GSG 150
- Connectors: Description: TITAN Probe
- Family: TITAN Probe

The 'Add Standard' dialog box is overlaid, showing the following options:

- OPEN
- SHORT
- LOAD
- THRU
- DATA BASED STANDARD

Buttons in the 'Add Standard' dialog: OK, Cancel, Help.

Buttons in the 'Edit Kit' dialog: Add..., Edit..., Delete, Delete All, OK, Cancel, Help.

Table in the 'Edit Kit' dialog:

ID	Standard	Description
1	OPEN	TITAN Probe
2	SHORT	TITAN Probe

Background plot: Frequency 3.987250 GHz, Amplitude -0.51485 dB.

Define THRU / LINE Model Parameters

Edit Kit

Identification
Kit Number: 2 Kit Name: GSG 150
Kit Description: TITAN Probe GSG 150

Connectors
Description: TITAN Probe
Family: TITAN Probe

ID	Standard	Description
1	OPEN	TITAN Probe open
2	SHORT	TITAN Probe short
3	LOAD	TITAN Probe load

Thru/Line/Adapter

Identification
Standard ID: 4 Label: THRU
Thru Description: Insertable thru standard

Frequency Range
Min: 0 MHz
Max: 26000 MHz

Delay Characteristics
Delay: 1.10 pSec Loss: 0 Gohms/s
Z0: 50 ohms

Connectors
Port: TITAN Probe Port: TITAN Probe

Buttons: Add... Edit... Delete... OK Clear OK Cancel Apply Help

CH 1: S11 No Cor LCL

For Help, click Help Topics on the Help Menu.

THRU / LINE Delay for AC2, AC3 and AC5 Substrates

AC2	Electrical length of line, ps	
	Thru	1.10
	Line 1 (0309)	3.00
	Line 2 (0509)	6.50
	Line 3 (0709)	13.00
	Line 4 (1309)	25.50
	Line 5 (0101)	38.50

AC3	Electrical length of line, ps	
	Thru	1.10
	Line 1 (0110)	3.00
	Line 2 (0310)	6.50
	Line 3 (0510)	13.00
	Line 4 (1110)	25.50
	Line 5 (0101)	38.50

AC5	Electrical length of line, ps	
	Thru	5
	Line 1 (0109)	26
	Line 2 (0309)	42
	Line 3 (1009)	47

Class Assignment for Standards

Standard class	Standard numbers	Standard Type
S ₁₁ A	1	OPEN
S ₁₁ B	2	SHORT
S ₁₁ C	3	LOAD
S ₂₂ A	1	OPSN
S ₂₂ B	2	SHORT
S ₂₂ C	3	LOAD
FORWARD TRANSMISSION	4	THRU
FORWARD MATCH	4	THRU
REVERSE TRANSMISSION	4	THRU
REVERSE MATCH	4	THRU
ISOLATION	-	OMMNIT

Start the SOLT Calibration

The screenshot displays the 'Calibration Wizard: Begin Calibration' dialog box in a software application. The dialog is titled 'Calibration Wizard: Begin Calibration' and contains three radio button options for selecting a calibration method:

- SmartCal (GUIDED Calibration): Use Mechanical Standards
- UNGUIDED Calibration (Response, 1-port, 2-port): Use Mechanical Standards
- Use Electronic Calibration (ECal)

Additional text in the dialog includes: 'Select calibration preference.', 'Not sure about preferences? Assistance is available in the online Help.', and a checkbox for 'Save this choice and don't show this page next time.' (which is unchecked). Navigation buttons at the bottom are '< Back', 'Next >', 'Cancel', and 'Help'.

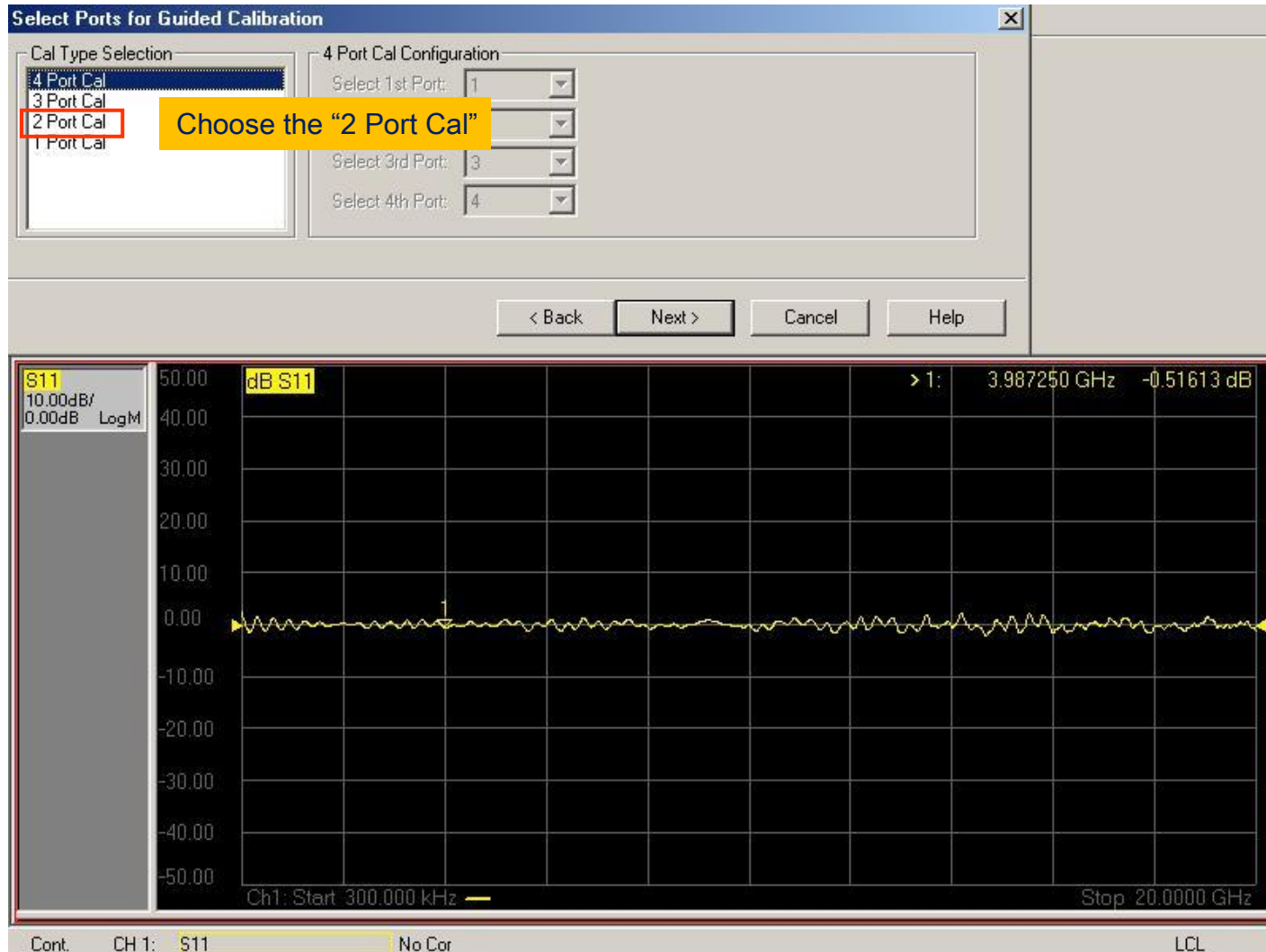
Background elements include a menu bar with 'File', 'View', 'Channel', 'Calibration', 'Trace', 'Scale', 'Marker', 'System', 'Window', and 'Help'. The 'Calibration' menu is open, showing options like 'Calibration Wizard...', 'Preferences...', 'Correction on/OFF', 'Interpolation ON/off', 'Cal Set...', 'Cal Set Viewer', 'Port Extension Tool Bar', 'Fixturing on/OFF', 'Fixturing Selections', 'ECal Confidence Check...', 'Characterize ECal Module...', 'Global Delta Match Cal...', 'Advanced Modify Cal Kit...', 'Power Calibration...', and 'Properties'. A yellow circle with the number '1' is placed over the 'Calibration Wizard...' menu item. Another yellow circle with the number '2' is placed over the 'SmartCal' option in the dialog.

The main window shows a plot of S11 (dB) versus frequency. The plot title is 'S11' and the y-axis is 'dB S11'. The x-axis is labeled 'Ch1: Start 300.000 kHz'. The plot shows a signal fluctuating around 0 dB. A yellow circle with the number '1' is also present over the plot area.

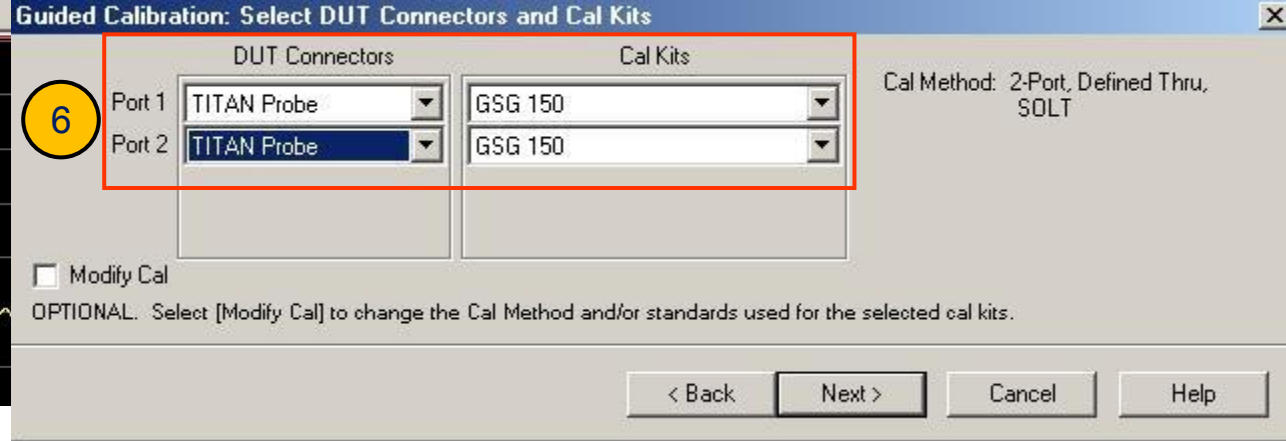
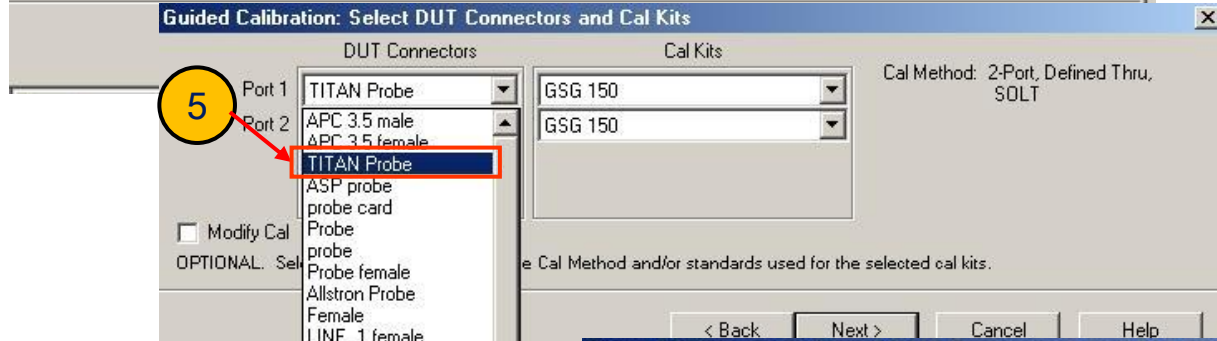
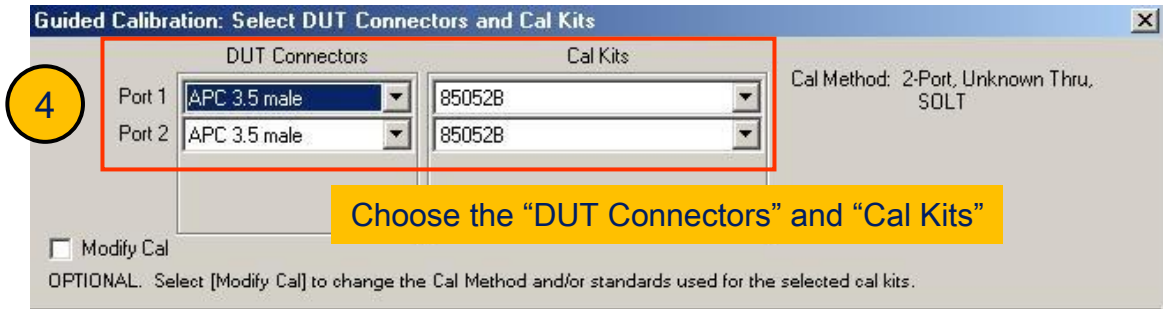
At the bottom of the window, there is a status bar with 'Cont. CH 1: S11 No Cor' and 'LCL'.

Start the SOLT Calibration

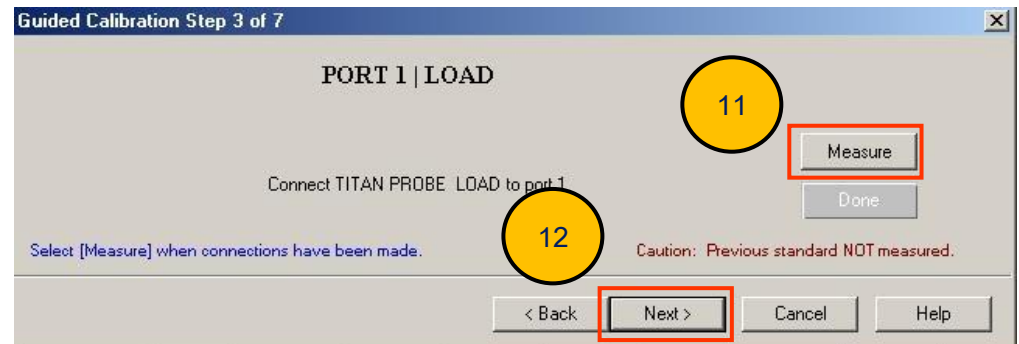
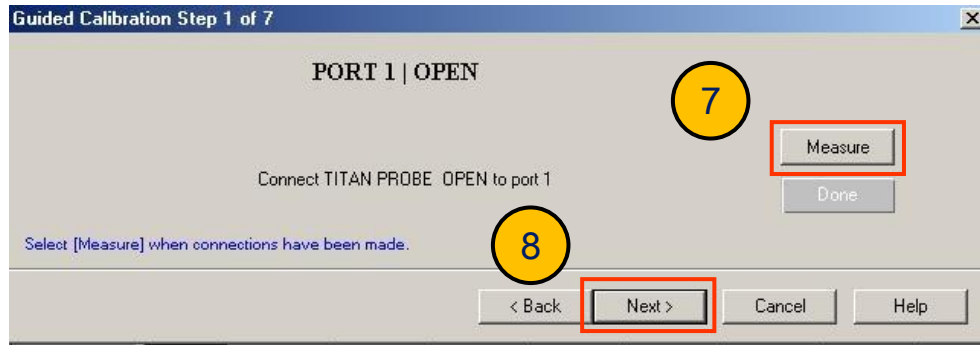
3



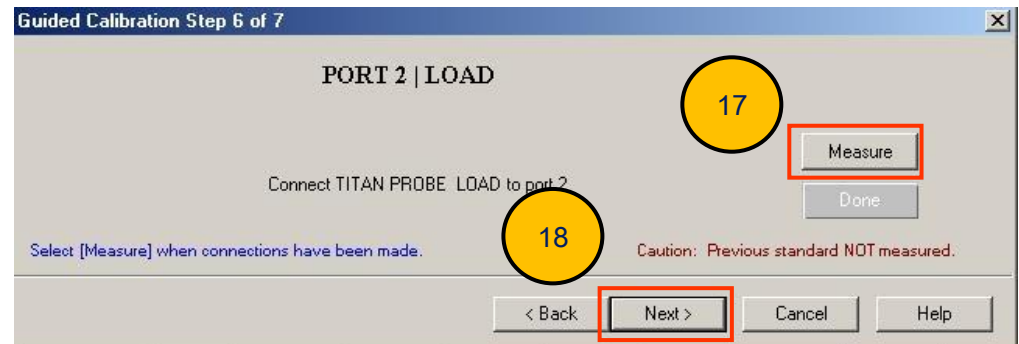
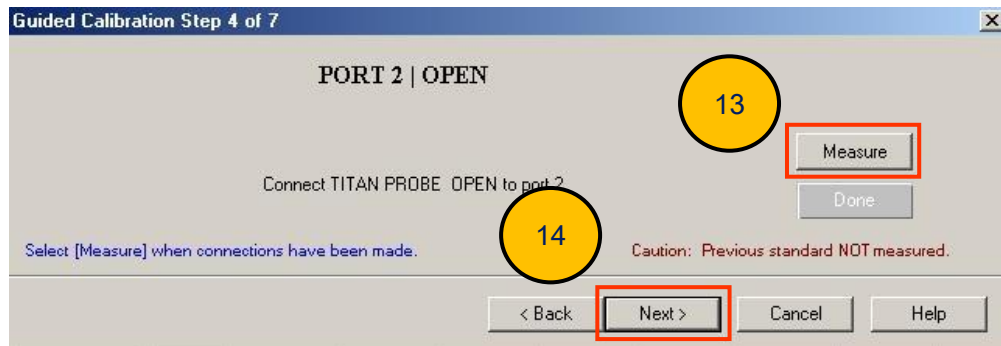
Start the SOLT Calibration



Start the SOLT Calibration



Start the SOLT Calibration



Start the SOLT Calibration



Thank You

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