Keysight - N5241/2/9A&B Add 4-Port Capabilities - Upgrade Kit (For Version 6 Single-Source Synthesizers) - Installation Guide

To Upgrade PNA-X N5241B or N5242B or N5249B Option 217 to Option 417

For Analyzers with Serial Numbers Prefixed MY/SG/US5201 and Above

Upgrade Kit Order Numbers: N5241BU-617, N5242BU-617, and N5249BU-617

Keysight Kit Number: N5242-60122

This is the Installation Guide for the N5241/2/9A&B Series Microwave Network Analyzers.

Notices

Trademark Acknowledgments

Manual Part Number

Edition

Warranty

Technology Licenses

U.S. Government Rights

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Keysight Add 4-Port Capability Upgrade Kit
Upgrade Kit Number: N5242-60122

Installation Note

Description of the Upgrade

NOTE

In June 2013, the N5241A/AS and N5242A/AS analyzers underwent significant hardware changes. Some components that have 2.4 mm connectors (bias tees, couplers, and some semi-rigid cables) were replaced with components that have 3.5 mm connectors.
If your analyzer's serial number prefix is MY/SG/US5310 and below:
Your analyzer was originally shipped with 2.4 mm components. Bias tees with 2.4 mm connectors are no longer available, so the bias tees and connecting cables included in this kit have 3.5 mm connectors. Since they are interconnected, the 2.4 mm couplers and connecting cables in your analyzer must be replaced with the new 3.5 mm items included in this kit.
If your analyzer's serial number prefix is MY/SG/US5321 and above:
Your analyzer was shipped with 3.5 mm components, so it is not necessary to replace the couplers and connecting cables. These items are included in this kit, but will not be used for your upgrade. Set them aside for possible use in the future.
Be very careful to use the appropriate hardware in your analyzer. Using the wrong hardware can ruin analyzer components, resulting in additional customer costs.

NOTE

If you had an A model PNA-X with Option 219/419 with Option H85 that was upgraded to a B model, please refer to Options 217/417. If you had an A model PNA-X with Option 224/423 with Option H85 that was upgraded to a B model then refer to Option 222/422.

KEYSIGHT
TECHNOLOGIES

This upgrade adds the following items to your N5241B or N5242B or N5249B Option 217 2-port analyzer:

— an additional 26.5 GHZ source board

— an additional 13.5 GHZ source synthesizer board

— an additional mixer brick

— two additional bridges

— four couplers

— two additional source attenuators

— two additional receiver attenuators

— a splitter

— a modified front panel, including 2 new test ports

— many new cables

After installation of this upgrade, your analyzer will be an N5241B Option 417 or N5242B Option 417 or N5249B Option 417 4-port analyzer.

Refer to "Overview of the Installation Procedure" on page 14.

CAUTION	This repair must be done at a service center or a self-maintainer service center! Refer to "Getting Assistance from Keysight" on page 7.

Getting Assistance from Keysight

Installing this upgrade kit requires special skills and experience. If you think you may not be qualified to do the work, or need advice, contact Keysight.

Contacting Keysight

Assistance with test and measurements needs and information on finding a local Keysight office are available on the Web at:
http://www.keysight.com/find/assist

If you do not have access to the Internet, please contact your Keysight field engineer.

NOTE	In any correspondence or telephone conversation, refer to the Keysight product by its model number and full serial number. With this information, the Keysight representative can determine whether your product is still within its warranty period.

If You Have Problems With the Upgrade Kit Contents

Keysight stands behind the quality of the upgrade kit contents. If you have problems with any item in the kit, refer to www.keysight.com and the **Contact Keysight** ( ) link.
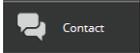
Getting Prepared

| CAUTION | The PNA contains extremely sensitive components that can be ruined if mishandled. Follow instructions carefully when making cable connections, especially wire harness connections.

The person performing the work accepts responsibility for the full cost of the repair or replacement of damaged components. |

To successfully install this upgrade kit, you will need the following:

— A license key - refer to "License Key Redemption" below.

— A PDF copy or a paper copy of the PNA Service Guide - refer to "Downloading the Online PNA Service Guide" below.

— An ESD-safe work area - refer to "Protecting Your Workspace from Electrostatic Discharge" below.

— Correct tools - refer to "Tools Required for the Installation" on page 10.

— Enough time - refer to "About Installing the Upgrade" on page 10.

— Test equipment for the post-upgrade adjustments. To view the equipment list, click the Chapter 3 bookmark "Tests and Adjustments" in the PDF Service Guide[1].

License Key Redemption

| NOTE | If you are unfamiliar with the licensing process, refer to the https://www.keysight.com/us/en/assets/9018-04534/installation-guides/9018-04534.pdf (N5242-90024). |

| NOTE | The enclosed Software Entitlement Certificate is a receipt, verifying that you have purchased a licensed option for the PNA of your choice. You must now use a Keysight Web page to request a license key file for the instrument that will receive the option. |

To enable the option product(s), you must request license key(s) file from the Keysight Software Manager:
http://www.keysight.com/find/softwaremanager:

To complete the request, you will need to gather the following information:

— From the certificate

— Order number

— Certificate number

---

1. See "Downloading the Online PNA Service Guide" on page 9.

— From your instrument

(Instrument information is available in the network analyzer – on the toolbar, click Help, then click About Network Analyzer.)

— Model number

— Serial number

Using the information just gathered, you must request license key(s) from the Keysight Software Manager:
http://www.keysight.com/find/softwaremanager.

You will need to provide an email address, to which Keysight will promptly email your license key file. Refer to "License Key Redemption" on page 8.

Verify the License Contents

Refer to the license message you received from Keysight:

If the model number, serial number, or option number do not match those on the license message you received from Keysight, you will not be able to install the license key file. If this is the case, contact Keysight for assistance. Refer to "Getting Assistance from Keysight" on page 7.

Downloading the Online PNA Service Guide

To view the online Service Guide for your PNA model number, use the following steps:

1. Go to www.keysight.com.

2. In the Search box, enter the model number of the analyzer (e.g., N5232B) and click **Search**.

3. Click **Support** > **Keysight Product Support**.

4. In the **Search Support** area type your instrument's model number (e.g., N2222B).

5. Press **Enter**.

6. Scroll down to the **PRINT DOCUMENTATION** section and click to select **Service Manual**.

   The **Service Manual** for your instrument will be displayed near the top of the right column.

7. Click the hyperlink of the Service Guide title to download the PDF file.

8. When the PDF of the Service Guide is displayed, scroll through the Contents section bookmarks to locate the information needed.

Protecting Your Workspace from Electrostatic Discharge

For information, click on the Chapter 1 bookmark, "Electrostatic Discharge Protection" in the PDF Service Guide[1].

ESD Equipment Required for the Installation

Description	Keysight Part Number
ESD grounding wrist strap	9300-1367
5-ft grounding cord for wrist strap	9300-0980
2 x 4 ft conductive table mat and 15-ft grounding wire	9300-0797
ESD heel strap (for use with conductive floors)	9300-1308

Tools Required for the Installation

Description	Qty	Part Number
T-10 TORX driver - set to 9 in-lbs (1.02 N.m)	1	N/A
T-20 TORX driver - set to 21 in-lbs (2.38 N.m)	1	N/A
5/16-in (8 mm) nutsetter or open end torque wrench- set to 10 in-lbs (1.13 N.m)	1	N/A
5/16-in (8 mm) nutsetter or open end torque wrench - set to 21 in-lbs (2.38 N.m)	1	N/A
3/16-in (5 mm) nutsetter or open end torque wrench - set to 6 in-lbs (0.68 N.m)	1	N/A
5/8-in (16 mm) nutsetter or open end torque wrench - set to 21 in-lbs (2.38 N.m)	1	N/A
1-in (25.4 mm) torque wrench - set to 72 in-lbs (8.15 N.m)	1	N/A
1/4-in (6 mm) open end wrench	1	N/A

CAUTION Use a 5/16-in torque wrench set to 10 in-lbs on all cable connections except the front and rear panel bulkhead connectors. Torque these connections to 21 in-lb.

About Installing the Upgrade

Products affected	N5241B, N5242B and N5249B Option 217
Installation to be performed by	Keysight service center or personnel qualified by Keysight
Estimated installation time	5 hours
Estimated adjustment time	0.5 hours
Estimated full instrument calibration time	5 hours

Items Included in the Upgrade Kit[1]

Check the contents of your kit against the following list. If any part is missing or damaged, contact Keysight Technologies. Refer to "Getting Assistance from Keysight" on page 7.

Table 1   Contents of Upgrade Kit N5242-60122

Ref Desig.	Description	Qty	Part Number
-	Installation note (this document)	1	N5242-90122
-	Software Entitlement Certificate	1	5964-5145
-	China RoHS Addendum	1	9320-6722
A8	26.5 GHz source 2 board	1	5087-7837
A13	13.5 GHz source 2 synthesizer board	1	N5240-60074
A22	Splitter	1	5087-7139
A24	Mixer brick 2	1	5087-7829
A26	Test port 3 bridge	2	5087-7757
A27	Test port 4 bridge		
A30	Test port 3 coupler	2	5087-7813
A31	Test port 4 coupler		
A35	Test port 3 source attenuator	2	33321-60077
A36	Test port 4 source attenuator		
A43	Test port 3 receiver attenuator	2	33321-60078
A44	Test port 4 receiver attenuator		
-	Machine screw, M3.0 x 20, pan head (3 to attach mixer brick 2 to mounting block; 4 to attach 2 bridges to brackets)	7	0515-1410
-	Machine screw, M3.0 x 8, pan head (2 to attach mixer brick 2 to mounting block; 8 to attach 2 src attn. and 2 rcvr attn. to brackets)	12	0515-0372
-	Machine screw, M3.0 x 6, pan head (4 to attach 2 bridges to deck; 6 to attach 2 attn. assy. to deck)	10	0515-0430
-	Machine screw, M4 x 10, pan head (to attach A8 source 2 board to A19 motherboard; A13 source 2 synthesizer board to A19 motherboard)	4	0515-0380
-	Machine screw, M3.0 x 6, 90-DEG flat head (to attach dress panel to test set front plate)	2	0515-1946

1. In addition to the upgrade kit, the shipment includes an Software Entitlement Certificate. Refer to "License Key Redemption" on page 8 for important information about this certificate.

Table 1   Contents of Upgrade Kit N5242-60122

Ref Desig.	Description	Qty	Part Number
-	Machine screw, M3.0 x 14, pan head (2 to attach splitter to mixer brick mounting block)	2	0515-2994
-	Bulkhead connector assembly for test set front plate	12	1250-3805
	SMA male straight 50-ohm	1	1250-4261
-	Lower Dress Panel, 4-port	1	N5240-00009
-	Lower front panel overlay, 4-port (Option 417)	1	N5242-80031
-	Test set front plate, 4-port	1	N5221-00007
-	Gap pad (between each coupler and test set front plate)	4	E4403-20033
-	Vibration mount (between couplers 1 & 3, and 2 & 4)	2	0460-2725
-	Mounting nuts (for port 3 & 4 test port couplers)	2	5022-1087
-	Short (for Mixer Brick A24) (NOT for option 029A)	1	0960-0055
-	Cable guard center, 4-port	1	N5242-00049
-	Tie wrap, to secure cables to side of deck	6	1400-0249
-	Bracket for test port bridge	2	N5242-00006
-	Bracket for source and receiver attenuator	2	N5242-00007
-	Dust cap for test port	4	1401-0214
W2	A13 13.5 GHz source 2 synth board J1207 to A8 26.5 GHz source 2 board P1	1	N5222-20090
W5	A8 source 2 to W6	1	N5222-20062
W6	W5 to A26 port 3 bridge	1	N5222-20041
W7	A8 source 2 to W8	1	N5222-20063
W8	W7 to A27 port 4 bridge	1	N5222-20042
W12	Port 1 CPLR THRU to A29 port coupler	1	N5222-20045
W14	A29 port 1 coupler to front-panel Port 1 CPLR ARM	1	N5222-20030
W16	Port 3 CPLR THRU to A30 port 3 coupler	1	N5222-20049
W17	A26 port 3 bridge to front-panel REF 3 SOURCE OUT	1	N5222-20023
W18	A30 port 3 coupler to front-panel Port 3 CPLR ARM	1	N5222-20015
W20	A31 port 4 coupler to front-panel Port 4 CPLR THRU	1	N5222-20054
W21	A27 port 4 bridge to front-panel REF 4 SOURCE OUT	1	N5222-20025
W22	A31 port 4 coupler to front-panel Port 4 CPLR ARM	1	N5222-20018

Table 1   Contents of Upgrade Kit N5242-60122

Ref Desig.	Description	Qty	Part Number
W24	Port 2 CPLR THRU to A32 port 2 coupler	1	N5222-20053
W26	A32 port 2 coupler to front-panel Port 2 CPLR ARM	1	N5222-20034
W30	Front panel jumpers	6	N5222-20091
W38	REF 3 RCVR R3 IN to A24 mixer brick (R3)	1	N5242-20270
W39	REF 4 RCVR R4 IN to A24 mixer brick (R4)	1	N5242-20271
W42	A21 HMA26.5 to A22 splitter	1	N5222-20009
W43	A22 splitter to A23 mixer brick	1	N5222-20007
W44	A22 splitter to A24 mixer brick	1	N5222-20008
W52	A23 mixer brick (R1) to A20 IF multiplexer (P411)	1	N5242-60021
W53	A23 mixer brick (R2) to A20 IF multiplexer (P412)	1	N5242-60022
W55	A24 mixer brick (D) to A20 IF multiplexer (P801)	1	N5242-60024
W56	A24 mixer brick (R4) to A20 IF multiplexer (P414)	1	N5242-60019
W57	A24 mixer brick (R3) to A20 IF multiplexer (P413)	1	N5242-60020
W58	A24 mixer brick (C) to A20 IF multiplexer (P601)	1	N5242-60023
W60	A20 IF multiplexer (P203) to A12 SPAM (J2)	1	N5242-60013
W62	A20 IF multiplexer (P603) to A12 SPAM (J5)	1	N5242-60015
W67	A10 frequency reference board J7 to A13 13.5 GHz source 2 synth board J5	1	N5242-60030
W75	A26 port 3 bridge to A35 port 3 source attenuator	1	N5222-20002
W76	A35 port 3 source attenuator to front-panel Port 3 SOURCE OUT	1	N5222-20019
W79	A27 port 4 bridge to A36 port 4 source attenuator	1	N5222-20001
W80	A36 port 4 source attenuator to front-panel Port 4 SOURCE OUT	1	N5222-20020
W89	Port 3 RCVR C IN to A43 port 3 receiver attenuator	1	N5222-20021
W90	A43 port 3 receiver attenuator to A24 mixer brick (C)	1	N5242-20306
W91	Port 4 RCVR D IN to A44 port 4 receiver attenuator	1	N5222-20022
W92	A44 port 4 receiver attenuator to A24 mixer brick (D)	1	N5242-20307
-	Ribbon cable, A19 test set motherboard J202 to A35 port 3 source attenuator	2	N5242-60008
-	Ribbon cable, A19 test set motherboard J203 to A36 port 4 source attenuator		
-	Ribbon cable, A19 test set motherboard J206 to A43 port 3 receiver attenuator	2	8121-0982
-	Ribbon cable, A19 test set motherboard J207 to A44 port 4 receiver attenuator		

Table 1   Contents of Upgrade Kit N5242-60122

Ref Desig.	Description	Qty	Part Number
-	Ribbon cable, A19 test set motherboard J213 to A24 mixer brick 2	1	N5242-60006
A PNA Option 217 with Option 029A being upgraded to Option 417 with Option 029A will require the items previously listed and the following items also.			
-	Lower front panel overlay, 4-port (all options with 029)	1	N5242-80034
W140	A24 mixer brick to A55 noise downconverter	1	N5242-20294
W144	A52 port 1 noise bypass switch to A29 port 1 coupler	1	N5242-20304

NOTE Extra quantities of items such as protective plastic caps, screws, cable ties, and cable clamps may be included in this upgrade kit. It is normal for some of these items to remain unused after the upgrade is completed.

Installation Procedure for the Upgrade

The network analyzer must be in proper working condition prior to installing this option. Any necessary repairs must be made before proceeding with this installation.

WARNING This installation requires the removal of the analyzer's protective outer covers. The analyzer must be powered down and disconnected from the mains supply before performing this procedure.

NOTE Some of the following figures provided in this procedure contain bias tees. Bias tees are included in the Option 219/419 upgrade kits and can be ignored for Options 217/417 and 222/422.

Overview of the Installation Procedure

"Step 1. Obtain a Keyword and Verify the Information."

"Step 2. Remove the Outer Cover."

"Step 3. Remove the Inner Cover."

"Step 4. Remove the Front Panel Assembly."

"Step 5. Remove the A19 Test Set Motherboard."

"Step 6. Remove Some Existing Semi-rigid Test Set Cables."

"Step 7. Remove the A23 Mixer Brick Assembly."

"Step 8. Assemble the A24 Mixer Brick and A22 Splitter."

"Step 9. Assemble the A26 and A27 Test Port Bridges."

"Step 10. Install the Mixer Bricks Assembly and Test Port Bridge Assemblies."

"Step 11. Assemble the A35 and A36 Source Attenuators and the A43 and A44 Receiver Attenuators."

"Step 12. Assemble the A29 - A32 Test Port Coupler Assemblies."

"Step 13. Install the LED Boards and Test Port Coupler Assemblies to the Test Set Front Plate."

"Step 14. Install the Bulkhead Connectors in the Test Set Front Plate."

"Step 15. Install the Coupler Plate Assembly to the Deck."

"Step 16. Install the Second Source Boards."

"Step 17. Install the Test Set Cables."

"Step 18. Reinstall the A19 Test Set Motherboard."

"Step 19. Replace the Front Panel's Lower Dress Panel."

"Step 20. Reinstall the Front Panel Assembly."

"Step 21. Install the Front Panel Overlay."

"Step 22. Install the Front Panel Jumper Cables."

"Step 23. Position the Cables and Wires to Prevent Pinching."

"Step 24. Reinstall the Inner Cover."

"Step 25. Reinstall the Outer Cover."

"Step 26. Remove Option 217 License."

"Step 27. Enable Options 417."

"Step 28. Perform Post-Upgrade Adjustments and Calibration."

"Step 29. Prepare the PNA for the User."

Step 1. Obtain a Keyword and Verify the Information

Follow the instructions on the Software Entitlement Certificate supplied to obtain a license key file for installation of this upgrade. Refer to "License Key Redemption" on page 8.

Verify that the model number, serial number, and option number information on the license key match those of the instrument on which this upgrade will be installed.

Once the license key file has been received and the information verified, you can proceed with the installation at step 2.

NOTE	If the model number, serial number, or option number do not match those on your license key file, you will not be able to install the option. If this is the case, contact Keysight for assistance before beginning the installation of this upgrade. Refer to "Contacting Keysight" on page 7.

Step 2. Remove the Outer Cover

For instructions, click the Chapter 7 bookmark "Removing the Covers" in the PDF Service Guide[1].

Step 3. Remove the Inner Cover

For instructions, click the Chapter 7 bookmark "Removing the Covers" in the PDF Service Guide[1].

Step 4. Remove the Front Panel Assembly

For instructions, click the Chapter 7 bookmark "Removing and Replacing the Front Panel Assembly" in the PDF Service Guide[1].

Step 5. Remove the A19 Test Set Motherboard

For instructions, click the Chapter 7 bookmark "Removing and Replacing the A19 Test Set Motherboard" in the PDF Service Guide[1].

---

1. See "Downloading the Online PNA Service Guide" on page 9.

Step 6. Remove Some Existing Semi-rigid Test Set Cables

NOTE Leave the gray flexible cables, the wire harnesses, and the ribbon cables connected where possible. Any that are removed should be labeled for reconnection later.

CAUTION Be careful not to damage the center pins of the semi-rigid cables. Some flexing of the cables may be necessary but do not over-bend them.

1. Place the analyzer bottom-side up on a flat surface.

2. Remove all bottom-side semi-rigid cables except for those in the table below. To see an image showing the location of these cables, click the Chapter 6 bookmark "Bottom RF Cables, 2-Port, Option 217 (S/N Prefixes <6021)" in the PDF Service Guide[1]. Do not discard the cables because some will be reused later in the procedure.

Reference Designator	Type[a]	Qty	Description
W3	SR	1	A5 source (1) to W4
W9	SR	1	A5 source (1) to W10
W45	SR	1	A5 source (1) to W46
Option 029 only:			
W131	SR	1	Adapter, coax, straight, m-m, 50 ohm
W141	SR	1	A55 noise downconverter to A7 noise receiver board LO
W143	SR	1	A55 noise downconverter to A7 noise receiver board RF

a. SR = semirigid coaxial cable.

3. Leave the gray flexible cables, the wire harnesses, and the ribbon cables connected where possible. Any that are removed should be labeled for reconnection later.

Step 7. Remove the A23 Mixer Brick Assembly

Remove the A23 mixer brick assembly from the PNA. For instructions, click the Chapter 7 bookmark, "Removing and Replacing the A23 and A24 Mixer Bricks" in the PDF Service Guide[1].

---

1. See .

Step 8. Assemble the A24 Mixer Brick and A22 Splitter

Refer to Figure 1 in this document for this step. New parts are listed in Table 1 on page 11 of this document.

1. Install the A24 mixer brick (5087-7829) to the mounting block by hand-starting three screws (item ①; 0515-1410). Do not tighten.

2. Install two screws (item ②; 0515-0372) and torque to 9 in-lbs.

3. Go back and torque the three screws (item ①; 0515-1410) to 9 in-lbs.

Figure 1   A24 Mixer Brick Assembly
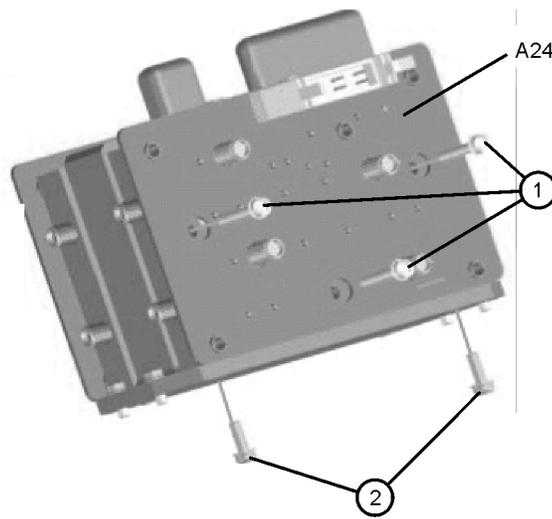
N5242_016_05

Refer to Figure 2 in this document for the remainder of this step.

4. Follow the eleven instructions shown in Figure 2. If the PNA does include Option 029A, omit instruction 2 and the unnumbered instruction to install a splitter – it is already installed. New parts are listed in Table 1 on page 11 of this document.

NOTE   Graphics in this document such as Figure 2 use very brief text to instruct where to connect a cable. For example, text that reads "N5242-60018 IFMUX P201 – BRK1 B" means to connect the N5242-60018 gray flexible cable at the A20 IF MUX board connector P201 and at A23 Mixer Brick 1 connector B.

Figure 2   A23 and A24 Mixer Brick Assembly (0960-0055, 5087-7139, N5242-60017, N5242-60018, N5242-60019, N5242-60020, N5242-60021, N5242-60022, N5242-60023, N5242-60024)

Not needed for Option 029

(2) Install short
0960-0055 @ 10 in-lbs.

Reuse
N5242-60017
IFMUX P1-BRK1 A

(3)

N5242-60022
IFMUX P412-BRK1 R2

(4)

N5242-60021
IFMUX P411-BRK1 R1

(5)

Reuse-Option 029
splitter
5087-7139

(6)

Reuse
N5242-60018
IFMUX P201-BRK1 B

N5242-60024
IFMUX P801-BRK2 D

N5242-60020
IFMUX P413-BRK R3

(7)   (9)

(1) Install splitter 5087-
7139 using 2x screws
0515-2994 @ 9 in-lbs.
Leave screws loose for now

(11) Torque SMA nuts to 10 in-lbs.
NOTE: Position gray cable SMA
connectors on the mixer bricks
as shown in graphics.

(8)

N5242-60019
IFMUX P414-BRK2 R4

(10)

N5242-60023
IFMUX P601-BRK2 C

N5242_016_06

Step 9.Assemble the A26 and A27 Test Port Bridges

Follow the two instructions shown in Figure 3.

Figure 3   A26 and A27 Test Port Bridge Assembly (0515-1410, 5087–7757, N5242-60006)

① Prefab internal bridge 5087- 7757 to bracket N5242·00006 using 2x screws 0515-1410 @ 9 in-lbs.
Note: Orientation of bridge to bracket.

② Now, prefab internal bridge 5087·7757with different orientation as shown in image to the right. See image for details
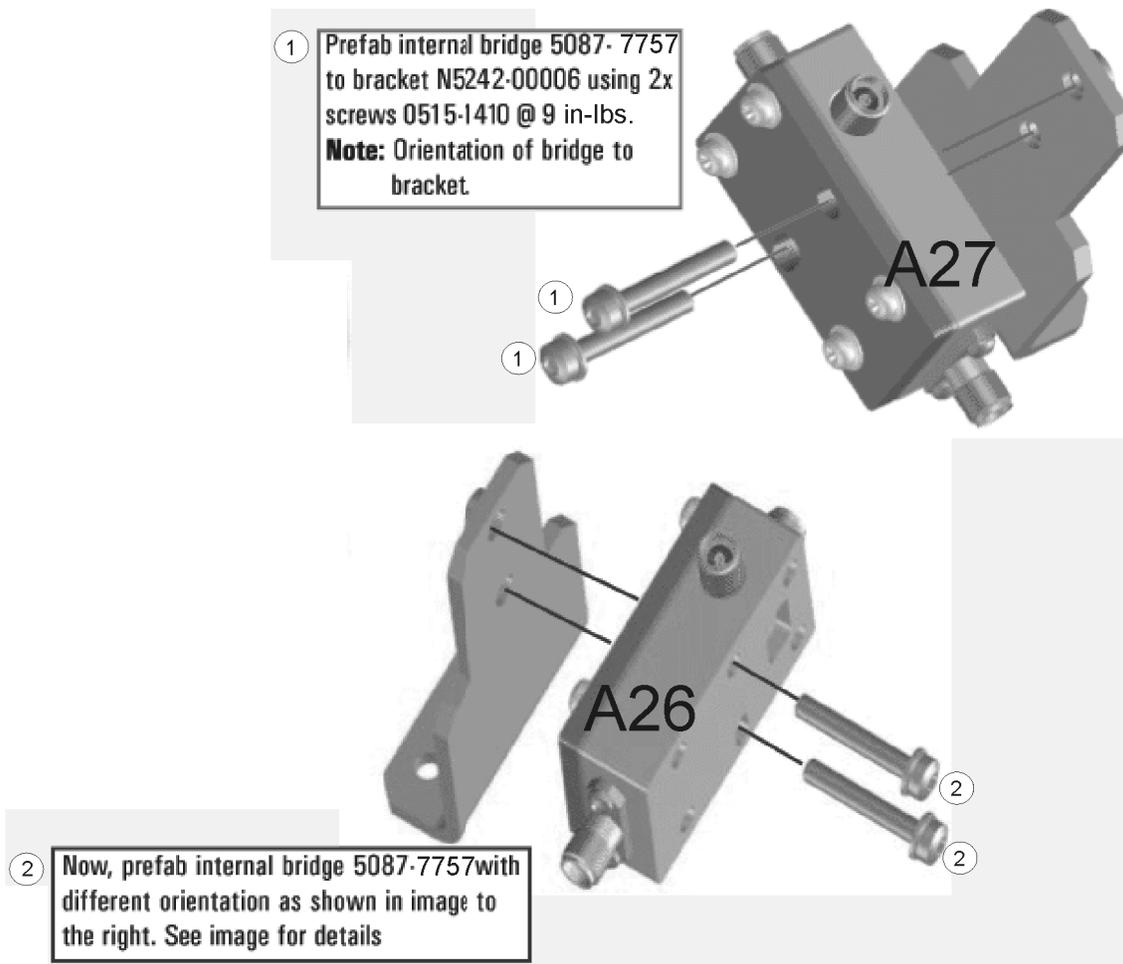
N5242_016_07

Step 10.Install the Mixer Bricks Assembly and Test Port Bridge Assemblies

Follow the two instructions shown in Figure 4.

Figure 4   A23, A24 Mixer Bricks Installation and A26, A27 Test Port Bridges Installation (0515-0374, 0515-0430)

Reuse screws

1 Install MXB block assy to deck using 4x screws 0515-0374@ 9 in-lbs. Make sure to orient the MXB as shown.

2 Install 2x internal bridge assys to deck using 4x screws 0515-0430 @ 9 in-lbs.
Note: Orientation and position of bridge assys
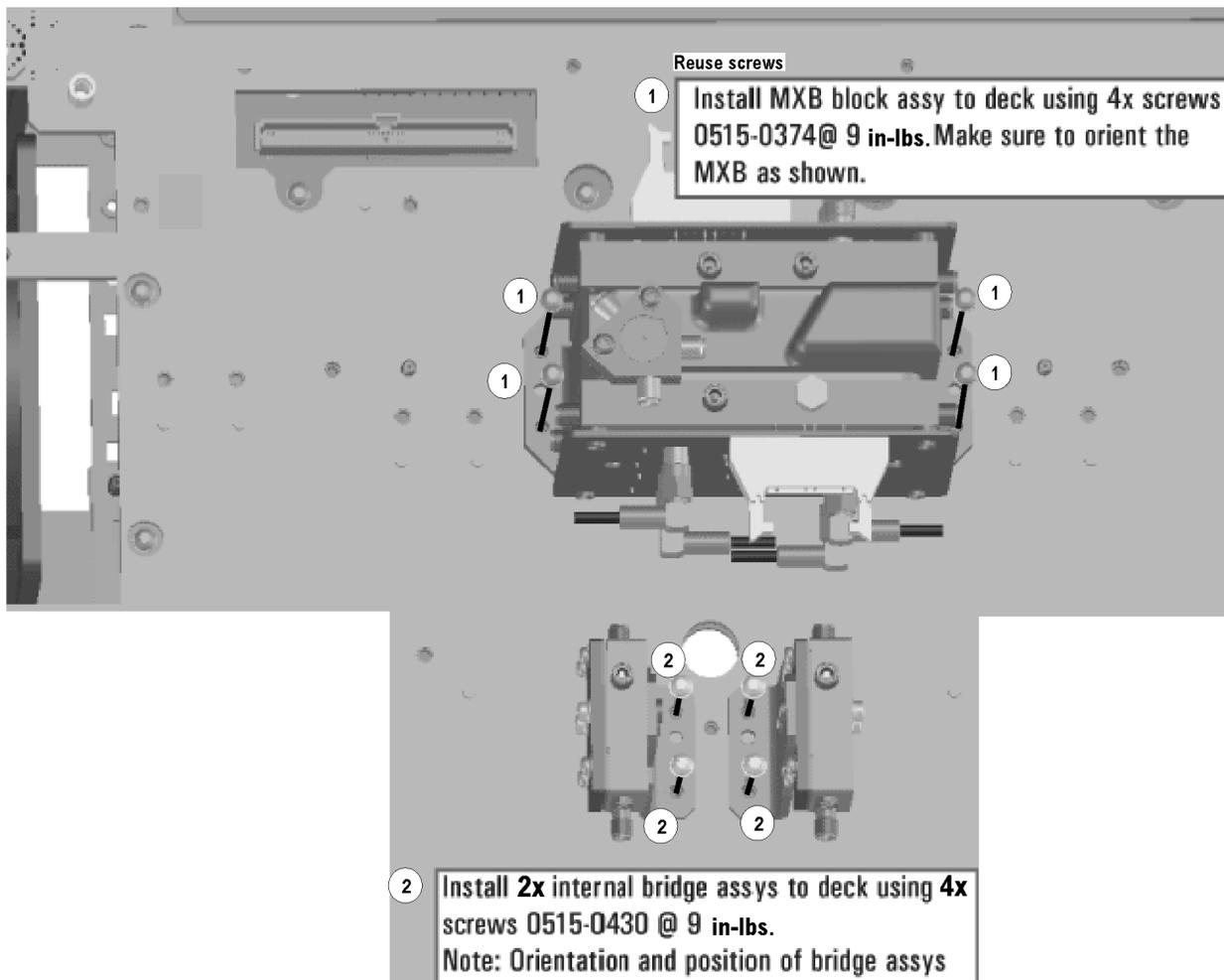
N5242_016_08

Step 11.Assemble the A35 and A36 Source Attenuators and the A43 and A44 Receiver Attenuators

Follow the five instructions shown in Figure 5.

Figure 5   A35, A36 Source Attenuators Assembly and A43, A44 Receiver Attenuators Assembly (0515-0372, 8121-0982, 33321–60077, 3321–60078, N5242-00007, N5242-60008)

1. Prefab 2x ribbon cable N5242-60008 onto 2x source atten 33321-60077.

2. Discard cable that comes with atten 33321-60078. Prefab 2x ribbon cable 8121-0982 onto 2x receiver atten

ribbon cable N5242-60008

ribbon cable 8121-0982

3. Prefab source atten to bracket N5242-00007 using 2x screws 0515-0372 @ 9 in-lbs.

4. Prefab receiver atten to bracket using 2x screws 0515-0372 @ 9 in-lbs.

5. Repeat steps 3 and 4 except swap the source and receive atten position within bracket. There should be a total of 2 buil

bracket N5242-00007

Step 12.Assemble the A29 – A32 Test Port Coupler Assemblies

1. Remove the A29 test port 1 coupler and A32 test port 2 coupler from the PNA. For instructions, click the Chapter 7 bookmark, "Removing and Replacing the A29 - A32 Test Port Couplers" in the PDF Service Guide[1].

2. If your analyzer's serial number prefix is MY/SG/US5321 and above: Using pliers, remove the adhesive bumper on the A29 test port 1 coupler and on the A32 test port 2 coupler.

---

1. See "Downloading the Online PNA Service Guide" on page 9.

3. If your analyzer's serial number prefix is MY/SG/US5310 and below: Discard the test port couplers you just removed from the PNA. These old couplers have 2.4 mm connectors and must be replaced with the new couplers (3.5 mm connectors) included in the kit.

4. Follow the two instructions shown in Figure 6. New parts are listed in Table 1 on page 11 of this document.

Figure 6   A29 – A32 Test Port Coupler Assembly (0460-2725, 5087-7813, E4403-20033)

gap pad
E4403-20033

vibe mount
0460-2725

1. Remove tan adhesive liner from 4x gap pad E4403-20033.
Adhere to 4x coupler **5087-7813.**
Remove blue adhesive liner

2. Remove adhesive liner from 2x vibe mount 0460-2725.
Adhere to 2x couplers. Center vibe mount on coupler body
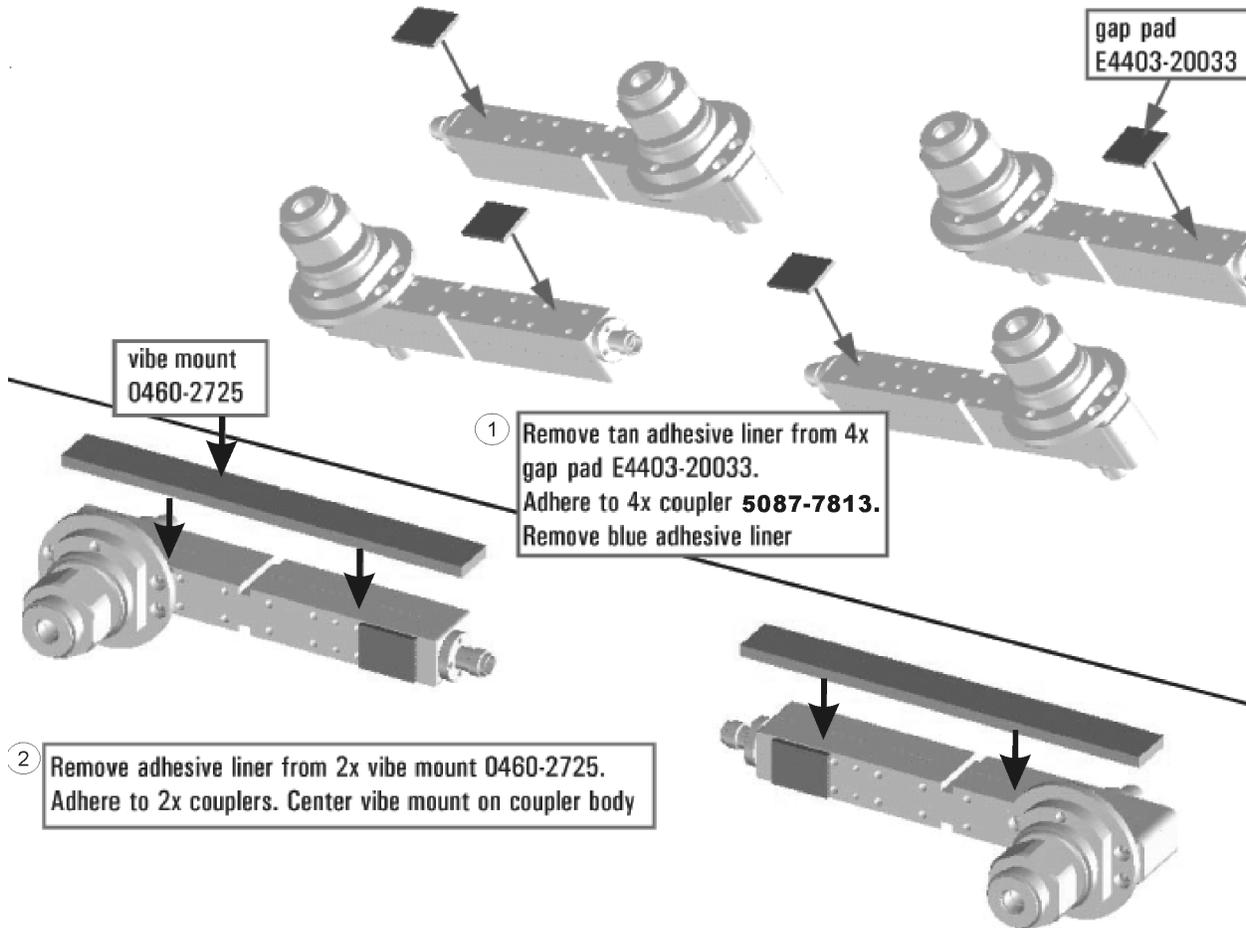
N5242_01

Step 13.Install the LED Boards and Test Port Coupler Assemblies to the Test Set Front Plate

1. Remove two screws from each LED board and remove the boards from the 2-port test set front plate of the PNA.

2. If your analyzer's serial number is MY/SG/US5321 and above:
   Remove the bulkhead connectors from the 2-port test set front plate of the PNA. They will be installed later in the 4-port test set front plate.

3. Remove the 2-port test set front plate from the test set deck.

4. Follow the two instructions shown in Figure 7.

Figure 7   LED Board Assemblies and Test Port Coupler Assemblies Installation (0515-1521, 5022-1087, 5087-7710, N5222-00007, N5240-60051)

1 Prefab 2x LED boards N5240-60051to test set front plateN5222-00007using 4x screws 0515-1521 @ 9 in-lbs.
Reuse screws

Reuse 2x nuts

2 Prefab 4x couplers 5087-7710 onto front plate.
Note: Port 1/3 and 2/4 couplers must be installed at the same time. **Hand-tighten** 4x mounting nuts 5022-1087. **Do not torque**

port 2/4

Port 1/3

Note: Front plate has been made transparent for the purpose of clarity in viewing

N5242_016_12

Step 14.Install the Bulkhead Connectors in the Test Set Front Plate

Refer to Figure 8 for this procedure. New parts are listed in Table 1 on page 11.

1. If your analyzer's serial number is MY/SG/US5321 and above:
   Locate the bulkhead connectors you removed earlier from the 2-port test set front plate of the PNA. Use these and the new bulkhead connectors included in the kit for the remainder of this step.

2. From the back side of the test set front plate, insert a bulkhead connector into a hole in the plate.

3. Install 1x washer and 1x nut. Hand tighten nut and ensure bulkhead connector hexagon nut, on the back side of test set front plate, is aligned to the test set subpanel hexagon indent.

4. Repeat previous two steps for the remaining bulkhead connectors.

5. Torque nuts, on the front side of test set front plate, to 21 in-lbs.

Figure 8   Bulkhead Connectors Installation
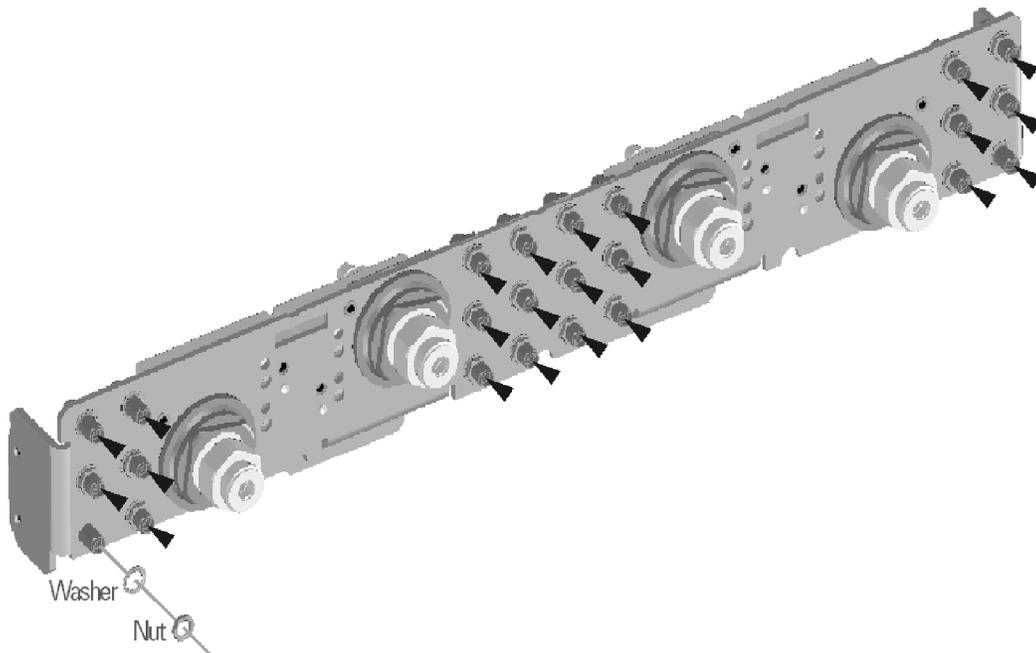
N5242_004_09

Step 15.Install the Coupler Plate Assembly to the Deck

Follow the four instructions shown in Figure 9.

Figure 9   Coupler Plate Assembly Installation (0515-0372, 0515-1227)

Reuse screws

1 Install coupler plate assy to deck. Hand-tighten 4x screws 0515-0372. **Do not torque.**

Reuse screws

2 Install 4x screws 0515-1227 @ 9 **in-lbs**. Alternate sides in torque sequence.

3 Torque the 4x screws in step 1 to 9 **in-lbs**.

4 Torque 4x coupler mounting nuts to 72 **in-lbs**.
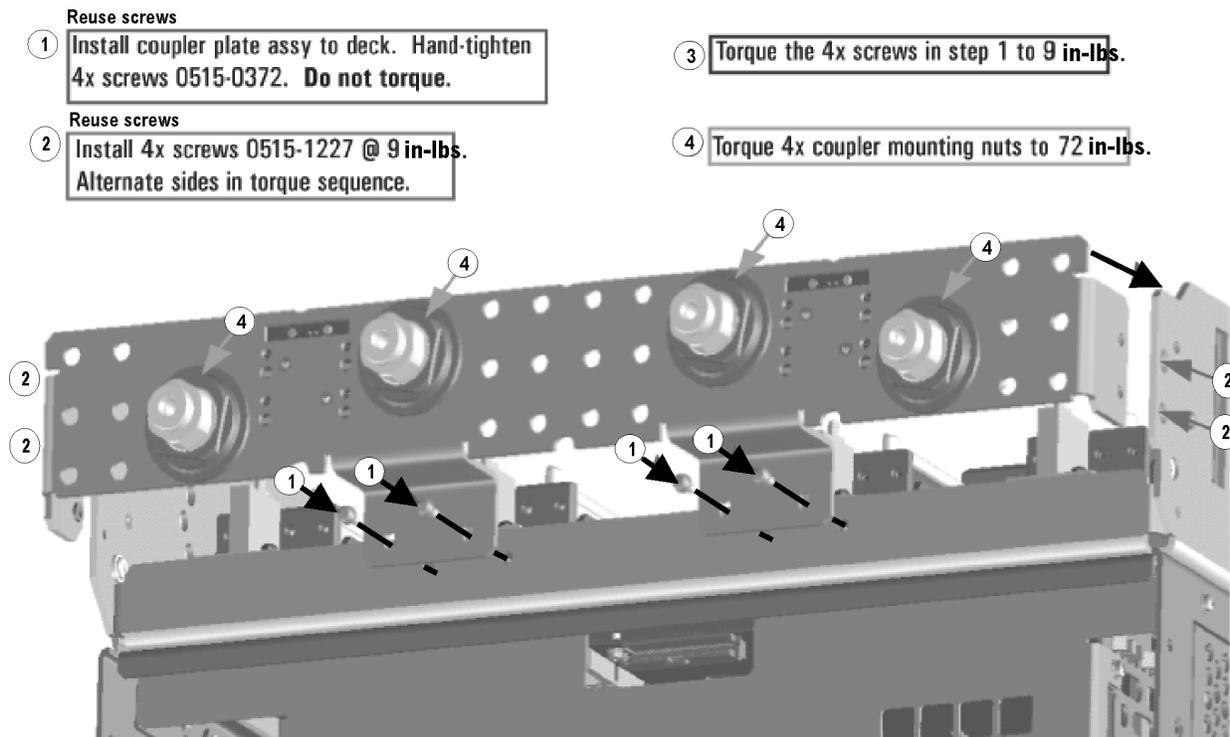
N5242_016_13

Step 16.Install the Second Source Boards

Install Cables on Source 2 Board

Refer to Figure 10 of this document for this part of this step. New parts are listed in Table 1 on page 11 of this document.

1. Attach new cables W5 (N5222-20062) and W7 (N5222-20063) to the A8 26.5 GHz source 2 board as shown. Make sure that both cables are parallel to the A8 26.5 GHz source board as shown in the END VIEW. Cable W5 is the longer of the two cables.

2. Use a 5/16-in torque wrench set to 10 in-lbs to tighten the cable connectors.

Figure 10   Second Source Boards Installation, Part 1

N5242_016_49
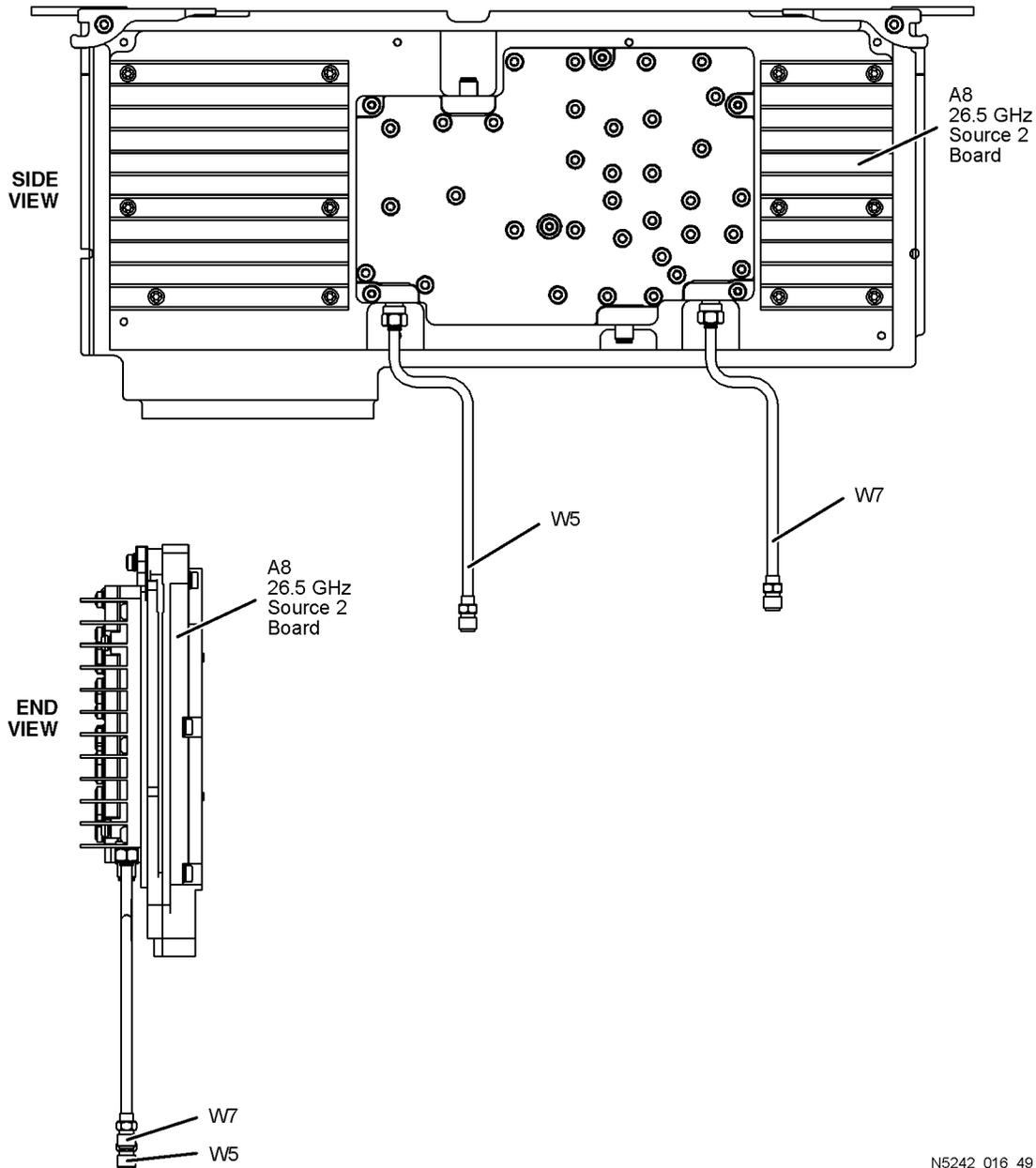
Install Cable on Source 2 Synthesizer Board

Install gray flex cable W67 (N5242-60030) to connector J5 of the Source 2
Synthesizer board. The loose end of the cable will be connected on the A10
frequency reference board (J7) after the Source 2 Synthesizer board has been
installed in the analyzer.

Install the Second Source Boards into the Analyzer

Refer to Figure 11 for this part of this step of the procedure. New parts are listed in Table 1 on page 11.

1. Install the A8 26.5 GHz source 2 board (5087-7837) and the A13 13.5 GHz source 2 synthesizer board (N5240-60074) in the analyzer as shown. Secure the A8 26.5 GHz source 2 board with two screws (item ①; 0515-0380) and torque to 21 in-lbs.

2. Connect cable W2 (N5222-20090) between the A8 26.5 GHz source 2 board and the A13 13.5 GHz source 2 synthesizer board as shown. Be sure to position the cable in the wire looms as shown. Tighten the cable connectors to 10 in-lbs using a 5/16-in torque wrench.

3. Connect the loose end of gray flex cable W67 (N5242-60030) to the A10 frequency reference board (J7). (The other end of this cable was previously connected to J5 of the source 2 synthesizer board.)

Figure 11   Second Source Boards Installation, Part 3

A13
13.5 GHz
Source 2
Synthesizer
Board

W57

A8
26.5 GHz
Source 2
Board

W2

n5242_003_08
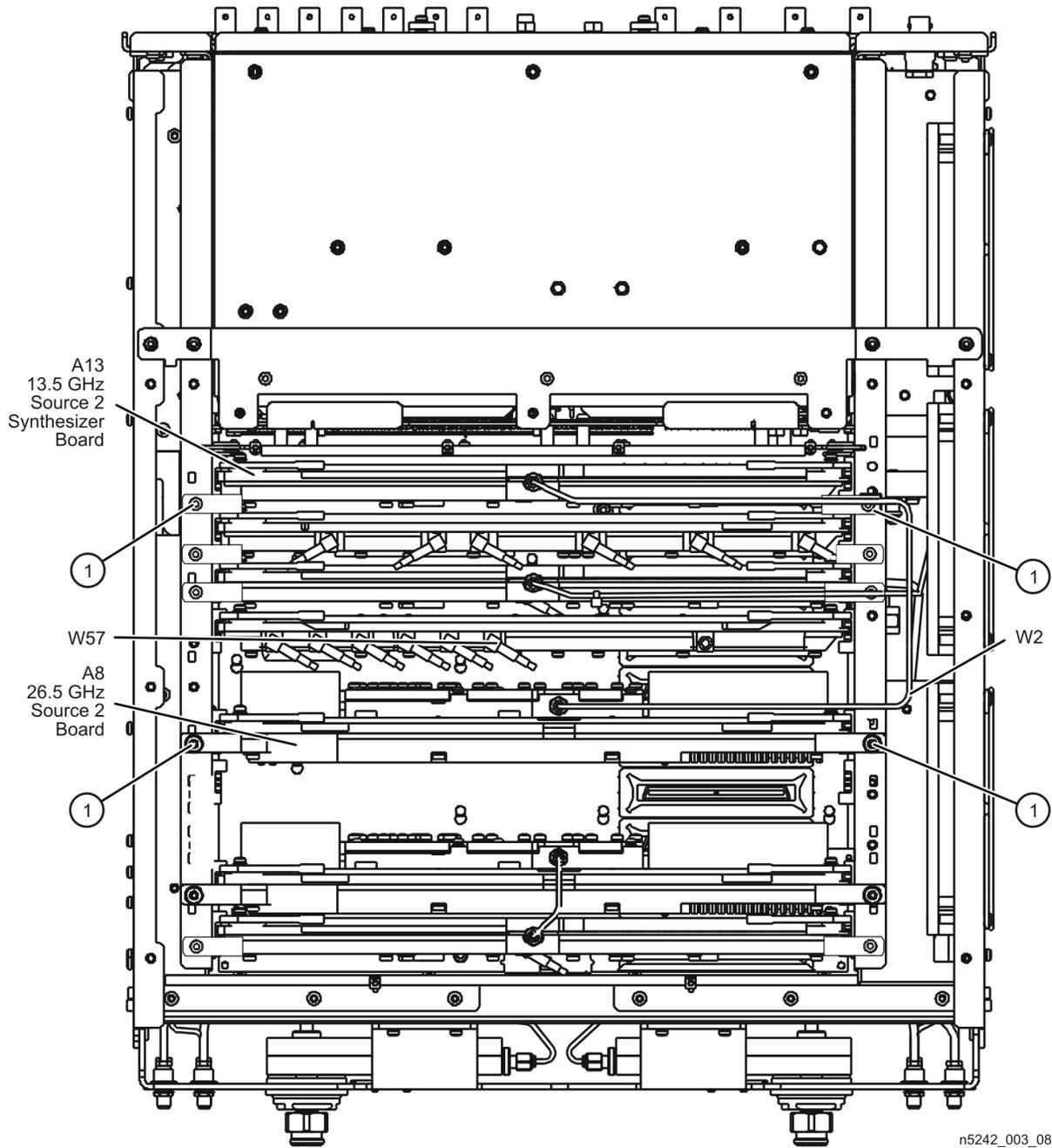
Step 17. Install the Test Set Cables

CAUTION	Follow instructions carefully when making cable connections, especially wire harness connections. Incorrect connections can destroy components, resulting in additional customer costs.

CAUTION	Be careful not to damage the center pins of the semi-rigid cables. Some flexing of the cables may be necessary but do not over-bend them.

CAUTION	Use a 5/16-in torque wrench set to 10 in-lbs on all cable connections except the front and rear panel cable connectors. Torque these connections to 21 in-lb.

NOTE	Cables that are to be reinstalled are designated with "reuse." Part numbers in a normal weight font are for analyzers with serial numbers MY/SG/US5310 and below. Part numbers in a bold font are for analyzers with serial numbers MY/SG/US5321 and above.

Install the following semi-rigid cables in the order listed. To see images showing the location of these cables, click the Chapter 6 bookmark "Bottom RF Cables, 4-Port, Option 417 (S/N Prefixes <6021)" in the PDF Service Guide[1]. New parts are listed in Table 1 on page 11.

For all analyzer serial numbers:

— W26 (N5222-20034) A32 port 2 coupler to front-panel Port 2 CPLR ARM

— W93 (reuse) (N5242-20047 or **N5222-20037**) Port 2 RCVR B IN to A45 port 2 receiver attenuator

— W84 (reuse) (N5242-20046 or **N5222-20036**) A37 port 2 source attenuator to front-panel Port 2 SOURCE OUT

— W135 (reuse) (Opt 029A only) (N5242-20073 or **N5242-20278**) Front-panel Port 2 RCVR B IN to A45 port 2 receiver attenuator

— W128 (reuse) (Opt 029A only) (N5242-20134 or **N5242-20303**) A53 port 2 bypass switch to front-panel Port 2 SOURCE OUT

— W127 (reuse) (Opt 029A only) (N5242-20116 or **N5242-20292**) A37 port 2 source attenuator to A53 port 2 bypass switch

— W130 (reuse) (Opt 029A only) (N5242-20133) A53 port 2 bypass switch to A54 port 2 bridge

— W129 (reuse) (Opt 029A only) (N5242-20117 or **N5242-20293**) A53 port 2 bypass switch to A54 port 2 bridge

For all analyzer serial numbers:

---

1. See "Downloading the Online PNA Service Guide" on page 9.

— W91 (N5222-20022) Port 4 RCVR D IN to A44 port 4 receiver attenuator

— W22 (N5222-20018) A31 port 4 coupler to front-panel Port 4 CPLR ARM

— W80 (N5222-20020) A36 port 4 source attenuator to front-panel Port 4 SOURCE OUT

— W20 (N5222-20054) A31 port 4 coupler to front-panel Port 4 CPLR THRU

— W24 (N5222-20053) Port 2 CPLR THRU to A32 port 2 coupler

— W39 (N5242-20271) REF 4 RCVR R4 IN to A24 mixer brick (R4)

— W89 (N5222-20021) Port 3 RCVR C IN to A43 port 3 receiver attenuator

— W18 (N5222-20015) A30 port 3 coupler to front-panel Port 3 CPLR ARM

— W76 (N5222-20019) A35 port 3 source attenuator to front-panel Port 3 SOURCE OUT

— W38 (N5242-20270) REF 3 RCVR R3 IN to A24 mixer brick (R3)

— W14 (N5222-20030) A29 port 1 coupler to front-panel Port 1 CPLR ARM

— W87 (reuse) (N5242-20041 or **N5222-20031**) Front-panel Port 1 RCVR A IN to A42 port 1 receiver attenuator

— W72 (reuse) (N5242-20038 or **N5222-20028**) A34 port 1 source attenuator to front-panel Port 1 SOURCE OUT

— W125 (reuse) (Opt 029A only) (N5242-20126 or **N5242-20296**) A52 port 1 bypass switch to A38 port 1 bypass tee

— W132 (reuse) (Opt 029A only) (N5242-20072 or **N5242-20277**) Front-panel Port 1 RCVR A IN to A42 port 1 receiver attenuator

— W124 (reuse) (Opt 029A only) (N5242-20125 or **N5242-20295**) Front-panel Port 1 CPLR THRU to A52 port 1 bypass switch

— W123 (reuse) (Opt 029A only) (N5242-20127 or **N5242-20297**) A52 port 1 bypass switch to front-panel Port 1 SOURCE OUT

— W144 (Opt 029 only) (N5242-20304) A52 port 1 noise bypass switch to A29 port 1 coupler

— W12 (N5222-20045) Port 1 CPLR THRU to A29 port coupler

— W16 (N5222-20049) Port 3 CPLR THRU to A30 port 3 coupler

* Loosen 3x screws on A33 Reference Mixer Switch board, then slide the board to the rear of the instrument to connect the following two cables (N5242-20042 or **N5222-20032** and N5242-20043 or **N5222-20033**).

— W36 (reuse) (N5242-20042 or **N5222-20032**) Front-panel REF 1 RCVR R1 IN to A33 reference mixer switch

— W35 (reuse) (N5242-20043 or **N5222-20033**) A33 reference mixer switch to front-panel REF 1 SOURCE OUT

— W122 (reuse) (Opt 029A only) (N5242-20128) A34 port 1 source attenuator to A52 port 1 bypass switch

— W83 (reuse) (N5242-20002 or **N5222-90001**) A28 port 2 bridge to A37 port 2 source attenuator

— W25 (reuse) (N5242-20048 or **N5222-20038**) A28 port 2 bridge to front-panel REF 2 SOURCE OUT
* Secure W25 (N5242-20048) to side of deck with 1x tie wrap (1400-0249)

— W126 (reuse) (Opt 029A only) (N5242-20066 or **N5242-20272**) A28 port 2 bridge to A37 port 2 source attenuator

— W137 (reuse) (Opt 029A only) (N5242-20074 or **N5242-20279**) A28 port 2 bridge to front-panel REF 2 SOURCE OUT

— W79 (N5222-20001) A27 port 4 bridge to A36 port 4 source attenuator

— W75 (N5222-20002) A26 port 3 bridge to A35 port 3 source attenuator

— W17 (N5222-20023) A26 port 3 bridge to front-panel REF 3 SOURCE OUT

— W21 (N5222-20025) A27 port 4 bridge to front-panel REF 4 SOURCE OUT

* Use 1/4" wrench to hold source cable connectors when tightening mating semi-rigid cables

— W10 (reuse) (N5242-20053 or **N5222-20043**) W9 to A28 port 2 bridge

— W8 (N5222-20042) W7 to A27 port 4 bridge

— W90 (N5242-20306) A43 port 3 receiver attenuator to A24 mixer brick (C)

— W71 (reuse) (N5242-20005 or **N5222-20002**) A25 port 1 bridge to A34 port 1 source attenuator

— W46 (reuse) (N5242-20090 or **N5222-20061**) W45 to rear-panel EXT TSET DRIVE RF OUT (J6)

— W4 (reuse) (N5242-20050 or **N5222-20040**) W3 to A25 port 1 bridge

— W121 (reuse) (Opt 029A only) (N5242-20067 or **N5242-20273**) A25 port 1 bridge to A34 port 1 source attenuator

— W6 (N5222-20041) W5 to A26 port 3 bridge

— W37 (reuse) (N5242-20009 or **N5222-20003**) A33 reference mixer switch to A23 mixer brick (R1)
* Secure W37 (N5242-20009) to side of deck with 3x tie wrap (1400-0249)

— W88 (reuse) (N5242-20010 or **N5222-20004**) A42 port 1 receiver attenuator to A23 mixer brick (A)

— W13 (reuse) (N5242-20011 or **N5222-20005**) A25 port 1 bridge to A33 reference mixer switch

— W136 (reuse) (Opt 029A only) (N5242-20068 or **N5242-20274**) A33 reference mixer switch to A23 mixer brick (R1)

— W133 (reuse) (Opt 029A only) (N5242-20069 or **N5242-20275**) A42 port 1 receiver attenuator to A23 mixer brick (A)

— W94 (reuse) (N5242-20016 or **N5222-20010**) A45 port 2 receiver attenuator to A23 mixer brick (B)

— W92 (N5242-20307) A44 port 4 receiver attenuator to A24 mixer brick (D)

— W40 (reuse) (N5242-20049 or **N5222-20039**) Front-panel REF 2 RCVR R2 IN to A23 mixer brick (R2)

— W134 (reuse) (Opt 029A only) (N5242-20070 or **N5242-20276**) A45 port 2 receiver attenuator to A23 mixer brick (B)

— W138 (reuse) (Opt 029A only) (N5242-20075 or **N5242-20280**) Front-panel REF 2 RCVR R2 IN to A23 mixer brick (R2)

— W140 (Opt 029 only) (N5242-20294) A24 mixer brick to A55 noise downconverter

— W47 (reuse) (N5242-20089 or **N5222-20060**) A23 mixer brick to rear-panel EXT TSET DRIVE LO OUT (J5)

— W41 (reuse) (N5242-20110 or **N5222-20067**) A11 13.5 GHz synthesizer to A21 HMA26.5
   * Route cable through deck cutout to A11 synthesizer board.

— W30 (reuse 6x) (E8356-20072 or **N5222-20091**) Front panel jumpers

Step 18. Reinstall the A19 Test Set Motherboard

1. For instructions on reinstalling the board, click the Chapter 7 bookmark "Removing and Replacing the A19 Test Set Motherboard" in the PDF Service Guide[1].

2. Install the following new ribbon cables in the order listed. To see an image showing the location of these cables, click the Chapter 6 bookmark "Bottom Ribbon Cables and Wire Harnesses, 4-Port, Option 417 (including Option 029A" in the PDF Service Guide[1]. New parts are listed in .

   — Ribbon cable, N5242-60006 from J213 to A24 mixer brick (2)

   — Ribbon cable (8121-0982), A19 test set motherboard J206 to A43 port 3 receiver attenuator

   — Ribbon cable (8121-0982), A19 test set motherboard J207 to A44 port 4 receiver attenuator

   — Ribbon cable (N5242-60008), A19 test set motherboard J202 to A35 port 3 source attenuator

---

1. See .

— Ribbon cable (N5242-60008), A19 test set motherboard J203 to A36 port 4 source attenuator

## Step 19. Replace the Front Panel's Lower Dress Panel

Before the front panel's lower dress panel can be replaced, the 2-port lower dress panel and the lower front panel label must be removed from the front panel assembly. Refer to Figure 12. New parts are listed in Table 1 on page 11.

1. Remove the 2-Port lower front panel label (item ①).

2. Remove the 10 screws (save the screws for reuse) from the 2-port dress panel and remove the dress panel (item ② and ③ respectively).

3. Reassemble the front panel's lower dress panel assembly with the new 4-port lower dress panel (N5240-00009) by reversing the order of step 2 in the instructions previously followed.

NOTE	**IMPORTANT!** To avoid possible damage to the lower front panel overlay (label), do not attempt to attach the lower front panel label until "Step 21. Install the Front Panel Overlay" on page 35.

Figure 12 Replacing the Front Panel's Lower Dress Panel and label

(10 places)
②   ③

① Peel off liner of lower overlay.
② Align and apply to the front frame assembly.
PART SEQUENCE:
①②

①
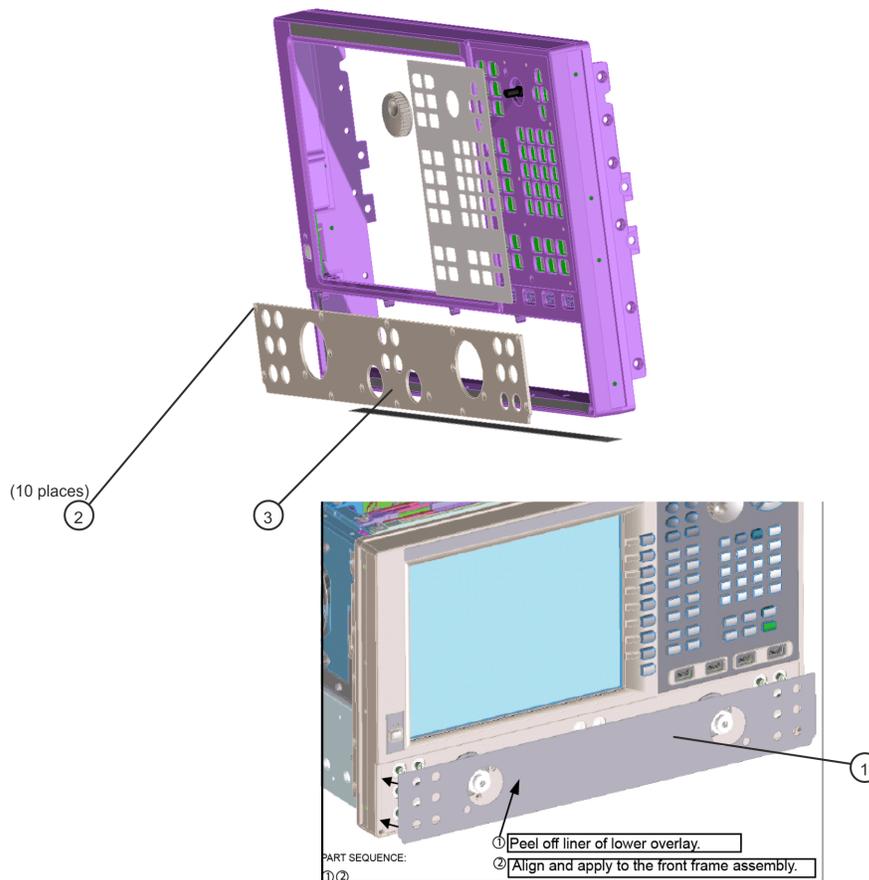
Step 20. Reinstall the Front Panel Assembly

For instructions on reinstalling the front panel assembly, click the Chapter 7 bookmark "Removing and Replacing the Front Panel Assembly" in the PDF Service Guide[1].

— Be sure to install the two new screws (0515-1946) in the front panel, next to test ports 3 and 4. Torque these screws to 9 in-lbs.

Step 21. Install the Front Panel Overlay

To see an image of the front panel overlay, click the Chapter 6 bookmark "Front Panel Assembly, Front Side, All Options" in the PDF Service Guide[1]. New parts are listed in Table 1 on page 11.

1. Remove the protective backing from the new front panel overlay (N5242-80031 or N5242-80034).

2. Loosely place the overlay in the recess on the front panel.

3. Placing two fingers at the middle, press the overlay firmly onto the frame while sliding your fingers in opposite directions towards the ends of the overlay. Repeat on all areas of the overlay.

Step 22. Install the Front Panel Jumper Cables

For instructions on installing the W30 front panel jumpers (N5222-20091), click the Chapter 7 bookmark "Removing and Replacing the Front Panel Assembly" in the PDF Service Guide[1].

Step 23. Position the Cables and Wires to Prevent Pinching

On the top side of the PNA, carefully position the gray flex cables so they can't be pinched between the covers and the rails.

On the bottom side of the PNA, carefully fold or push down the ribbon cables and wires so they can't be pinched between the hardware and the outer cover. Ribbon cables and wires must never be positioned on top of hardware.

Step 24. Reinstall the Inner Cover

For instructions, click the Chapter 7 bookmark "Removing the Covers" in the PDF Service Guide[1].

Step 25. Reinstall the Outer Cover

For instructions, click the Chapter 7 bookmark "Removing the Covers" in the PDF Service Guide[1].

---

1. See "Downloading the Online PNA Service Guide" on page 9.

Step 26. Remove Option 217 License

Procedure Requirements

— The analyzer must be powered up and operating to perform this procedure.

— The Network Analyzer program must **not** be running.

— A keyboard and mouse must be connected to the network analyzer.

Option 217 License Removal Procedure

1. To start the Keysight License Manager, press **Start** > **Keysight License Manager** > **Keysight License Manager**. A Keysight License Manager dialog box will appear.

2. Right click the on the desired option and click **Delete**.

3. In the Keysight License Manager dialog box that appears, press or click **Yes** to confirm delete.

4. A message displays stating that the option removal was successful.

5. Restart the PNA Analyzer application: Press **File** > **Exit**.

6. In the Exit NA Application dialog box that opens, press **OK**.

Step 27. Enable Options 417

Procedure Requirements

| NOTE | For this step, you will need a USB flash drive. |

— The analyzer must be powered up and operating to perform this procedure.

— The Network Analyzer program must be running.

— Refer to the license message you received from Keysight: Verify that the analyzer's model and serial numbers match those on the license message you received from Keysight.

— A keyboard and mouse must be connected to the network analyzer.

Option Enable Procedure

1. Locate the email(s) from Keysight which contain license file attachments. These emails are a result of "Step 1. Obtain a Keyword and Verify the Information" on page 16.

2. Copy the license file(s) from the email(s) to the **root directory** of the USB flash drive.
More than one license file may be copied to the USB flash drive.

<table>
<tr><td>NOTE</td><td>A single license file may contain more than one feature.</td></tr>
</table>

3. Insert the USB flash drive into the PNA's USB drive slot. Within 5 seconds, the PNA should display a small "New license installed" message.

Else, load the license key file(s), manually mover your license file(s) to `C:\Program Files\Agilent\licensing`. It may take Keysight Manager an extra ~5 seconds to enable the licenses.

<table>
<tr><td>NOTE</td><td>Attempting to re-install a license file that is already installed may generate a "Corrupt Media" error message. Ignore this message.</td></tr>
</table>

4. Disconnect the USB flash drive from the PNA.

5. On the analyzer, click or press to open the KLM software from your PNA's Windows taskbar by pressing Start > More Programs > **Keysight License Manager folder** > **Keysight License Manager** and verify the options are correct

Option Verification Procedure

Once the analyzer has restarted and the Network Analyzer program is again running:

1. On the analyzer's Help menu, press About Network Analyzer.

2. Once the Network Analyzer program is running:

— Press **Help** > **About NA** and verify that Option 417 is listed in the PNA application.

<table>
<tr><td>NOTE</td><td>If the option has not been enabled or if the older option license has not been removed, perform the prior steps again. If the options are still not correct, contact Keysight Technologies. Refer to "Getting Assistance from Keysight" on page 7.</td></tr>
</table>

3. After successful installation of all upgrades, some features require some adjustments to ensure the instrument meets its specified performance. Refer to the Adjustments (i.e., Diagnostic Tools, Utilities, and Adjustments) topic in the PNA Online Help:
https://rfmw.em.keysight.com/wireless/helpfiles/N52xxB/help.htm.

Step 28. Perform Post-Upgrade Adjustments and Calibration

Adjustments

NOTE	**IMPORTANT!**

IMPORTANT!

The 10 MHz reference crystal oscillator is the most accurate after running for three hours. The 10 MHz Frequency Reference Adjustment can be run after the PNA has warmed up for 90 minutes, and the other adjustments can be completed in the order presented, but then the 10 MHz Frequency Reference Adjustment should be repeated after the PNA has been able to warm up for three hours.

The following adjustments must be made due to the hardware changes of the analyzer.

— 10 MHz frequency reference adjustment

— EE default adjustment: Synth Src2 only

— synthesizer bandwidth adjustment (This test is only required when the EE default adjustment is not sufficient)

— IF gain adjustment

— source adjustment

— receiver characterization

— receiver adjustment

— IF response adjustment (Option S93090xA/B, S93093A/B, or S93094A/B Only)

— noise figure adjustment (Option 029 with option S93029A/B Only)

These adjustments are described in the PNA Service Guide and in the PNA on-line HELP. A list of equipment required to perform these adjustments is also found in the service guide.

To view this service guide information, click the Chapter 3 bookmark "Tests and Adjustments" in the PDF Service Guide[1].

After the specified adjustments have been performed, the analyzer should operate and phase lock over its entire frequency range.

EEPROM Backup

The analyzer uses arrays of correction constants to enable the analyzer to produce accurate, leveled source signals and receive clean test signals. These constants are stored in non-volatile EEPROM memory and in flash memory files.

---

1. See "Downloading the Online PNA Service Guide" on page 9.

The adjustments listed here generate new correction constants. The analyzer must have a backup of this new data in case any of the data becomes corrupted.

To store the backup data, perform these steps:

— Navigate to the EEPROM Backup Utility, located at:

—   Windows 7 -- `C:\Program Files (x86)\Keysight\Network Analyzer\Service\eebackup.exe`

    — Windows 10 -- `C:\Program Files\Keysight\Network Analyzer\Service\eebackup.exe`

— Run the program.

— Click Backup EEPROM.

— Click Backup TSMB Mme.

— Click Backup Synth Mem. (Applies to Version 7 Synthesizers Only)

— Click Exit when the program has finished.

Figure 13   EEPROM Backup Menu
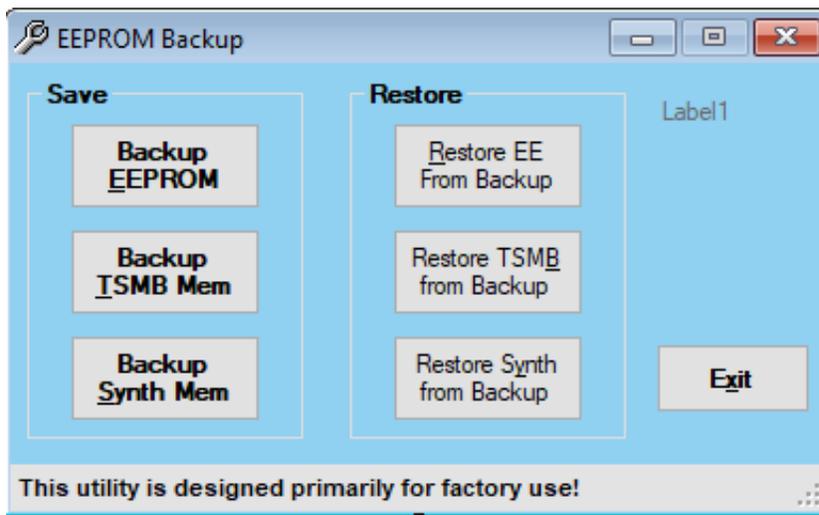
Operator's Check

Perform the Operator's Check to check the basic functionality of the analyzer. For instructions, click the Chapter 3 bookmark "Tests and Adjustments" in the PDF Service Guide[1].

If you experience difficulty with the basic functioning of the analyzer, contact Keysight. Refer to "Contacting Keysight" on page 7.

Calibration

Although the analyzer functions, its performance relative to its specifications has not been verified. It is recommended that a full instrument calibration be performed using the analyzer's internal performance test software. To view information on the performance test software, click the Chapter 3 bookmark "Tests and Adjustments" in the PDF Service Guide[1].

Step 29. Prepare the PNA for the User

1. If necessary, reinstall front jumper cables.

2. Install the cable guards, pushing them over the front jumper cables until the cushioning material touches the front panel of the PNA.

3. Install the dust caps on the test ports.

4. Clean the analyzer, as needed, using a damp cloth.

KEYSIGHT
TECHNOLOGIES

N5242-90122