Keysight N9020B MXA Signal Analyzer

Frequency Range Upgrade From RF or Microwave to Millimeter Wave Frequency

KEYSIGHT

INSTALLATION NOTE

Notices

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Frequency Range Upgrade from RF or Microwave to Millimeter Wave Frequency

Products Affected:	MXA N9020B
Serial Numbers:	All
To Be Performed By:	(X) Keysight Service Center
	( ) Personnel Qualified by Keysight
	( ) Customer
Estimated Installation Time:	6.0 Hours
Estimated Adjustment Time:	8.5 Hours
Estimated Verification Time:	Varies with installed options

Introduction

This installation note explains how to upgrade the frequency range of an RF or microwave MXA signal analyzer to either 32 GHz, 44 GHz, or 50 GHz.

The final frequency range of the instrument will be determined by the upgrade option number the customer orders.

Option Ordered	Description
N9020BU-F04	MXA Upgrade from 3.6 GHz to 32 GHz
N9020BU-F05	MXA Upgrade from 3.6 GHz to 44 GHz
N9020BU-F08	MXA Upgrade from 8.4 GHz to 32 GHz
N9020BU-F09	MXA Upgrade from 8.4 GHz to 44 GHz
N9020BU-F11	MXA Upgrade from 13.6 GHz to 32 GHz
N9020BU-F12	MXA Upgrade from 13.6 GHz to 44 GHz
N9020BU-F13	MXA Upgrade from 26.5 GHz to 32 GHz
N9020BU-F14	MXA Upgrade from 26.5 GHz to 44 GHz
N9020BU-F16	MXA Upgrade from 3.6 GHz to 50 GHz
N9020BU-F17	MXA Upgrade from 8.4 GHz to 50 GHz
N9020BU-F18	MXA Upgrade from 13.6 GHz to 50 GHz
N9020BU-F19	MXA Upgrade from 26.5 GHz to 50 GHz

Upgrading the analyzer to a millimeter frequency requires replacing most assemblies and cables from the input connector through the Front End Control assembly.

Some analyzers will currently contain the Option MPB switches, and this kit contains the replacement switch and cabling. If the instrument does not currently contain the MPB option, these MPB replacement parts will not be used.

The new maximum frequency range will be licensed, and you will need to apply frequency range labels to the instrument, and perform the necessary adjustments and performance verification tests.

IMPORTANT

Although the maximum frequency range of the instrument will be upgraded with this kit, the instrument's optional internal preamp frequency will not be updated.

The option is licensed for one instrument model number/serial number combination. The license file that is downloaded from the web will only install on the designated instrument.

NOTE

A software upgrade to the latest revision, or if the software is already the latest version, a re-installation of the current software is required. The procedure that follows tells you when to install the software. This assures that after licensing to the new frequency range, any software related changes to the instrument files will be performed by the software installation.

To verify the current version, press **System**, **Show System** and look for the “Instrument S/W Revision”

The latest revision of the X-Series Signal Analyzers software may be downloaded from: http://www.keysight.com/find/xseries_software.

Contents

Quantity	Description	Part Number
1	Installation Note	This note
1	Option Upgrade Entitlement Certificate	5964-5178
1	J1 2.4mm input connector	N9030-60011
1	A9 Attenuator A, 10 dB	33326-60019
1	A10 Attenuator B, 60 dB	33325-60027
1	Shield, Magnetic, Attenuator A	N9020-00043
1	Shield, Magnetic, Attenuator B	N9020-00044
2	Attenuator Bracket	N9020-00019
1	Cable kit, MXA Option EXM/HL6 with wire markers	N9020-60212
1	W10 Cable assembly, J1 to A9 Input (Semi Rigid)	N9020-20133
1	W11 Cable, semi-rigid, Attenuator A- Attenuator B	N9010-20002
1	W9 Cable, semi-rigid, Attenuator B to Low Band Switch	N9010-20004
1	W8 Cable, semi-rigid, Low band Switch assembly J3 to YTF input (for instruments without MPB)	N9010-20005
1	W7 Cable, semi-rigid, YTF output to Front End assembly J9 (for instruments without MPB)	N9010-20006
1	W19 Cable, semi-rigid, Cal In to attenuator, Reference assembly J701 to Attenuator A	N9010-20010
1	W22 Wire Harness, A15J300 to A12J1	N9020-60059
1	W26 Cable assembly, A13J13 to A15J903, Opt EXM for Opt 503, 508, 513, 526	8121-2027[a]
1	W26 Cable assembly, A13J13 to A15J903, Opt EXM for Opt 532, 544, 550	8121-2025[a]
1	W28 Cable assembly, External Mixing to Front End	N9020-20296
1	W3 Cable assembly, A11J2 to A13J2 (Semi Rigid)	N9020-20131
1	W18 Ribbon Cable, A11J4 to A15J103 or A15J700	N9020-60092
1	SW4 Switch, Transfer, Microwave Preselector Bypass	87222-60031
1	Bracket, Bypass	N9020-00021
1	W45 Cable, semi-rigid, A11J3 to SW4 port 1 (for instruments with MPB)	N9010-20009
1	W48 Cable, semi-rigid, Switch 4 Port 4 to YTF Input (for instruments with MPB)	N9020-20128
1	W47 Cable, semi-rigid, YTF Output to Switch 4 Port 3 (for instruments with MPB)	N9020-20129

Quantity	Description	Part Number
1	W46 Cable, semi-rigid, Switch 4 Port 2 to A13A1J9 (for instruments with MPB)	N9020-20130
1	W36 Cable assembly IF Out, coaxial, 240 mm, A15J902 to A13J7	8121-1862[a]
1	W37 Cable assembly, coaxial, 530 mm, A15J900 to A2J100	8121-1401[a]
1	W39 Cable assembly, coaxial, A15J1100 to rear panel 2nd IF Out	8121-2028[a]
1	Connector Body for switch cable (for instruments with MPB)	1252-1873
1	A11 Low band Switch	N9020-60051
1	Low Band Switch Bracket	N9020-00013
1	A12 YTF Preselector	N9030-60024
1	A12MP1 Gap Pad	5022-7179
1	A13 Front End assembly	N9010-60039
1	A15 Front End Controller	N9020-60172
19	Screw, M3 x 0.5, 8 mm long	0515-0372
3	Screw-Machine W/Crest-Cup-Con-Washer M2.5 x 0.45, 6 mm long	0515-1934
12	Screw, flat head, M3 x 0.5, 6 mm long	0515-1946
2	Screw-Machine 90-DEG-flat-HD M3 x 0.5, 8 mm long	0515-2032
1	Rear panel frequency range upgrade label, 532/ 32 GHz	N9020-80147
1	Rear panel frequency range upgrade label, 544 / 44 GHz	N9020-80148
1	Rear panel frequency range upgrade label, 550 / 50 GHz	N9020-80149
1	Label, nameplate 10 Hz to 32 GHz (N9020B)	N9020-80196
1	Label, nameplate 10 Hz to 44 GHz (N9020B)	N9020-80197
1	Label, nameplate 10 Hz to 50 GHz (N9020B)	N9020-80198

a.These cables are part of Cable kit, Option EXM/HL6 with wire markers

Tools Required

- Personal computer with internet access and USB port
- LAN connection to instrument (allows factory to control unit)
- Disk drive re-initialization software.
- USB storage device with > 2 GB free memory
- USB mouse and keyboard
- T-10 TORX Driver
- T-20 TORX Driver
- 5/16-inch torque wrench
- 1/4-inch open end wrench
- Keysight Calibration and Adjustment Software, N7814A (revision E.21.00 or later)
- Test equipment + computer supported by the Calibration and Adjustment Software
- MXA Signal Analyzer Service Guide.

Initial instrument Functionality Check

Power on the instrument and allow the instrument to boot up, run the alignments and display the measurement screen. The instrument will probably display a spectrum analyzer screen and you will see the instrument sweeping.

There should be no alignment failures. If there are failures, investigate and fix the problem before continuing.

Analyzer Information

1. Press **System**, **Show System**. Make note of the following information from the Show System screen:

   Product Number _____

   Serial Number _____

   Instrument S/W Revision _____

   Computer System _____

2. Confirm that the Product listed on the Option Upgrade Entitlement Certificate is appropriate for the Product Number noted above. For example, if the Product listed on the Option Upgrade Entitlement Certificate is N9020BU-F09, the Product Number noted above should be N9020B.
3. Check for the presence of the options listed below in the Show System screen. Put a check mark or "X" after the option listed below that appears in the Show System screen.

   N9020B-B40 _____

   N9020B-DP2 _____

   N9020B-MPB _____

4. Press **System**, **Show Hardware**. Note the Part #, Matl Rev, OF Rev, and Hw Id of the Front End Controller in the table below.

Assembly Name	Part #	Matl Rev	OF Rev	Hw Id
Front End Controller				

5. Refer to the data in step 4 above. If the HW ID of the Front End controller is 41, 71, or 170, it will be necessary to perform the Replace A15 Front End Controller procedure.
6. Refer to the data is step 3 above. If any of the options listed are present, it will be necessary to perform the Install Option MPB Switches procedure. Do not perform the Install Option MPB Switches procedure if none of the options listed in step 3 are present.

Remove the Existing Calibration Files

This step is required to assure that if a disk recovery is performed, the recovery process will not choose a cal file previously created for the old frequency range.

1. On the MXA front panel, press **System**, **Minimize**.
2. Press **Start**, **Computer**, **Calibration E:**, and **Align Data Storage**.
3. Locate and delete all CurrentPhysics_xxxx.bak files

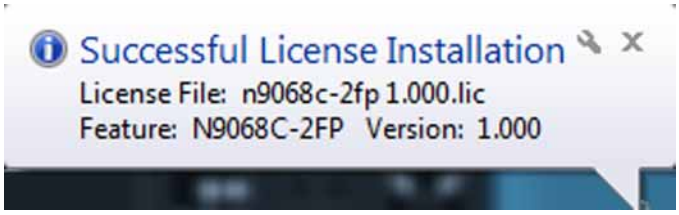
License Installation Procedure over USB

1. Locate the Option Upgrade Entitlement Certificate (5964-5178) from the kit.
2. Redeem the Option Upgrade Entitlement Certificate by following the instructions on the Certificate.
3. After redeeming your Option Upgrade Entitlement Certificate you will receive an email with an attached License File.
4. Locate a USB storage device. Perform a virus scan on this device before use.
5. Save the License File to the root directory of the USB storage device.
6. Connect the USB storage device to the signal analyzer USB port. Windows will detect the new hardware and may display the configuration menu shown in Figure 1. This menu may be configured according to your preferences.

Figure 1 USB Storage Device Configuration Menu

7. The signal analyzer will automatically consume the License File. (This may take a few minutes) When the License File is consumed the Keysight License Manager will display a “Successful License Installation” message similar to the one shown in Figure 2.

Figure 2 Successful License Installation



Alternate Installation Procedure

The License File can be manually installed over USB or LAN by placing the license file in the following folder on the signal analyzer

C:\Program Files\Agilent\licensing

Verify the License Installation

1. Cycle power on the signal analyzer and wait until the analyzer boots to the measurement application screen. The instrument will fail RF Alignment and the noise floor will appear bumpy.
2. Press **System**, **Show System** to display a list of installed options.
3. Verify that the installed option list contains the newly installed N9020B-532, N9020B-544, or N9020B-550 as appropriate.

Contact the division for removal of incompatible license files.

1. Connect the instrument to the LAN. The division will need to log into the instrument and remove the old frequency range.
2. E-mail the division at csg.support@keysight.com.
   Message Subject: Frequency Range Upgrade

   In this e-mail provide:

   Instrument model number and serial number

   The order number from the License Entitlement Certificate

   The LAN address of the instrument
3. The division will e-mail you when the license removal process is complete.

Hardware Removal and Installation

You will be removing almost all front end assemblies, including the Option MPB switches if present, from the input connector to the A15 Front End Control assembly.

1. Power down the instrument, wait till the standby light comes on, and remove the power cord.
2. Remove the instrument outer case, top brace, front frame assembly and right side chassis (RF side bracket). Save all screws for reuse, with the exception of the flat head screws used to secure the top brace.

Remove both input attenuators and attenuator brackets

3. Disconnect all semi rigid cables from both input attenuators.
4. Remove the W19, semi rigid calibrator cable from A16 Reference board J701.Discard this cable.
5. Remove both attenuators by removing the attenuator brackets with the attenuator still attached. Unplug the ribbon cable from both attenuators. The ribbon cable will be used for the new attenuators. Discard the attenuator/brackets.
6. Remove the input connector assembly with the W10 cable still attached by removing the two screws that attach the connector bracket to the instrument frame. Discard.
7. Locate the 2.4 mm input connector in the kit and install it on the instrument frame using the screws just removed.

Remove the A13 Front End assembly (as if you were replacing the A13 assembly)

8. Disconnect all semi rigid and flex coax cables from the top of the assembly. Also disconnect all cables (except the bottom cable) on the right side of the Front End assembly.
9. If a 50 ohm load is installed on A13J8, remove the load for later installation on the replacement mm-wave front end assembly. If W28 is connected to A13J8, remove W28; it will be replaced with a new W28 included in this kit.
10. Disconnect the ribbon cable that attaches to the A15 Front End Control assembly. Only disconnect the end from the A15 Front End Control assembly. This cable will be re connected to the new Front End.
11. Remove the A13 Front End assembly from the instrument by removing the mounting screws. Save the screws for reuse.
12. Remove ribbon cable W17 from the A13 Front End assembly. This cable will be reused.
13. If the analyzer has Option EXM, remove W26 from A13J13 and A15J903; this cable will not be reused.

Remove the Option MPB switches (if present)

14. Remove all semi rigid cables that attach to the MPB switches. Remove both ends of the cables if possible. You will probably need to wait until the A11 Low Band switch removal step to remove some cables completely. These cables will not be reused.

15. Remove the wire harness from the wire harness on the two coax switches by disconnecting the connectors. Leave the wire harness connected at the A15 Front End Control assembly. This cable will be reused.

16. Remove the ribbon cable from the A11 Low Band switch connector header. Leave the ribbon cable connected at the A15 Front End Control assembly. This cable will be reused.

17. Remove the top switch and bracket. The attenuator may still be attached. Discard

18. Remove the bottom switch/bracket. Discard.

Remove the A11 Low Band Switch

19. Remove all semi rigid cables from the Low Band Switch.

20. Remove the two screws holding the Low Band switch bracket to the chassis and remove the Low Band Switch/bracket

Remove the A12 YTF assembly

21. Disconnect all semi rigid cables from the YTF. If Option MPB was present, you already removed these cables. Discard the cables.

22. Disconnect the wire harness from the YTF header. This wire harness will be reused.

23. Remove the YTF by removing the 4 mounting screws on the instrument chassis. If the gap pad is stuck to the instrument frame, remove the gap pad.

Replace the A15 Front End Controller (only if the hardware ID is 41, 71, or 170. See the Analyzer Information section previously).

24. Remove all cables from the A15 Front End Controller

25. Remove the Front End Controller assembly.

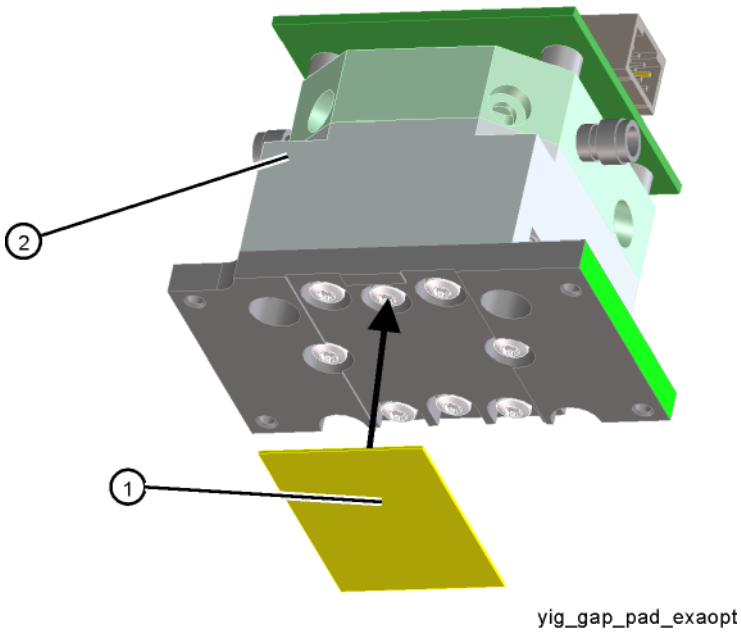
26. Locate the Front End Controller in the kit, install this assembly, and replace all cables. Some of the cables will need to removed again, however, reattaching the cables prevents loss of cables and aids in cable routing.

27. If the hardware ID of the A15 being removed was 71, cable assembly W39 will need to be added. Locate W39, (p/n 8121-2028) in the kit. Connect the end labeled “1100” to A15J1100 on the A15 assembly. Route the cable along the left side of the chassis above the fans toward the rear panel. The other end of the cable will be secured to the rear panel later.

Install the A12 YTF assembly

28. Locate the replacement YTF and Gap pad in the kit. Refer to Figure 3. Install the gap pad (1) (5022-7179) into the recess in the base of the YTF Preselector (2). Peel back one corner of the clear plastic backing on the pink side of the gap pad. Remove the blue backing from the other side. Install the gap pad as shown with the pink side exposed. Carefully peel off the clear backing and smooth the gap pad into the recess.

Figure 3 Gap Pad Installation

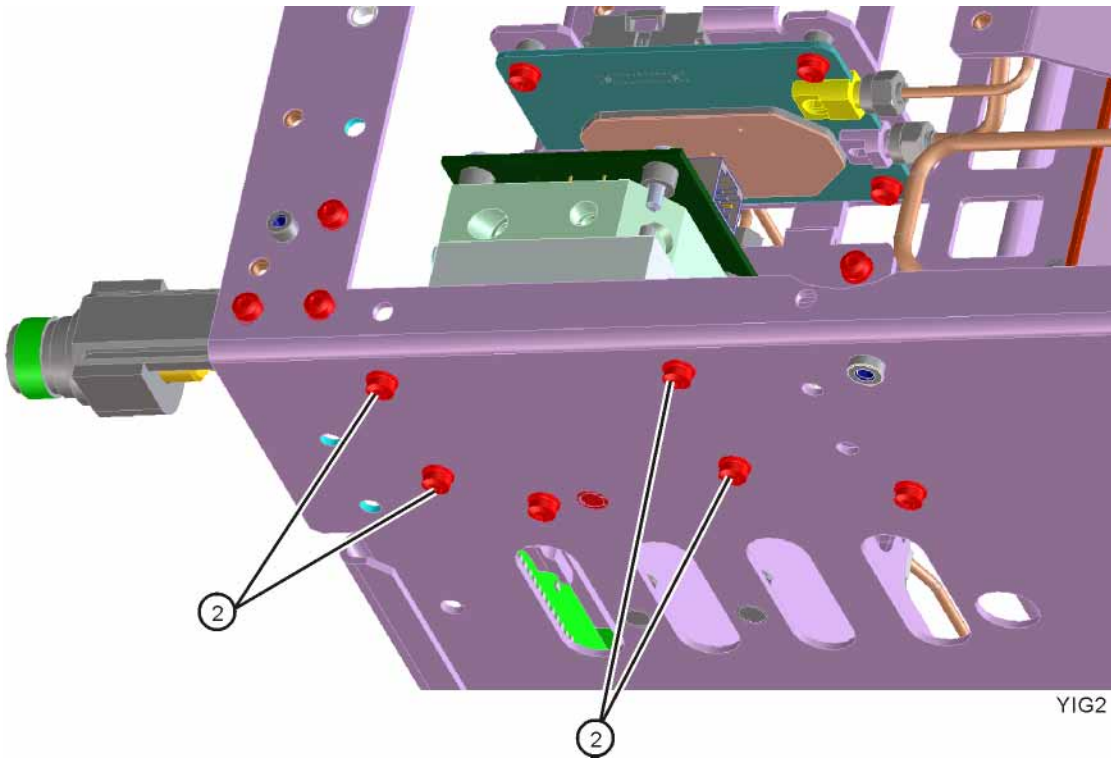


29. Locate the loose end of the W22 wire harness that was removed from the YTF earlier. Position the YTF with the label pointing towards the outside of the instrument and connect the wire harness to the YTF connector header.

30. Position the YTF over the mounting holes in the instrument chassis.

31. Locate four of the 0515-0372 screws (M3 x 0.5, 8mm long) in the kit, and install the YTF. Refer to Figure 4. Torque to 9 inch-pounds.

Figure 4 YTF Preselector Screws

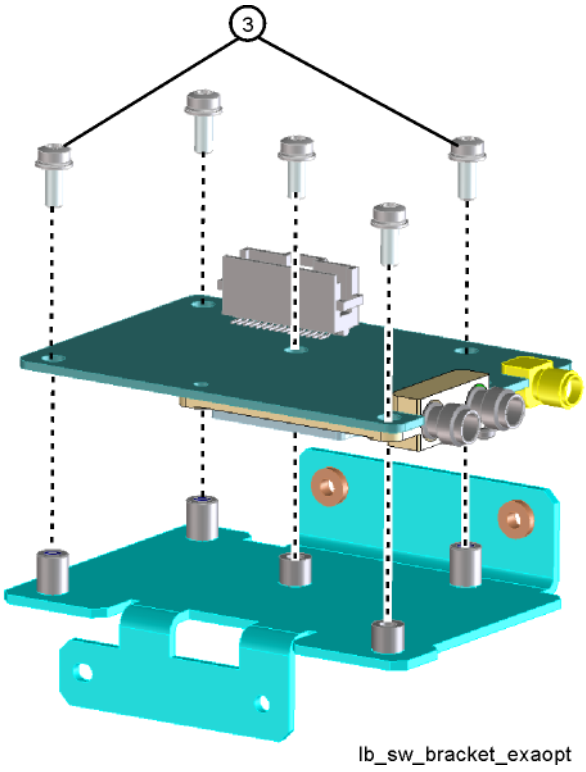


Install the A11 Low band Switch Assembly

32. Locate the replacement A11 Low Band switch assembly and the Low Band Switch Bracket (N9020-00013) in the kit.

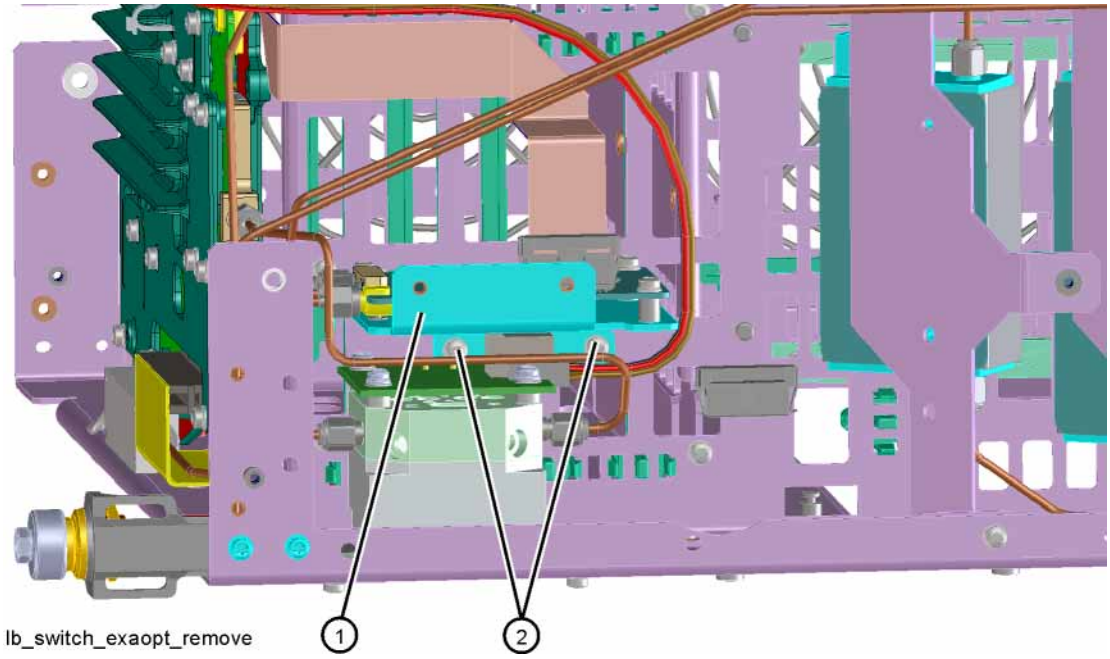
33. Refer to Figure 5 to see how to mount the Low Band Switch to the Bracket.

Figure 5 Low Band Switch and Bracket



34. Refer to Figure 6. Place the switch/bracket into place in the chassis and secure with two screws (0515-0372). Torque to 9 inch-pounds starting with the screw closest to the front of the instrument.

Figure 6 Low Band Switch Installation

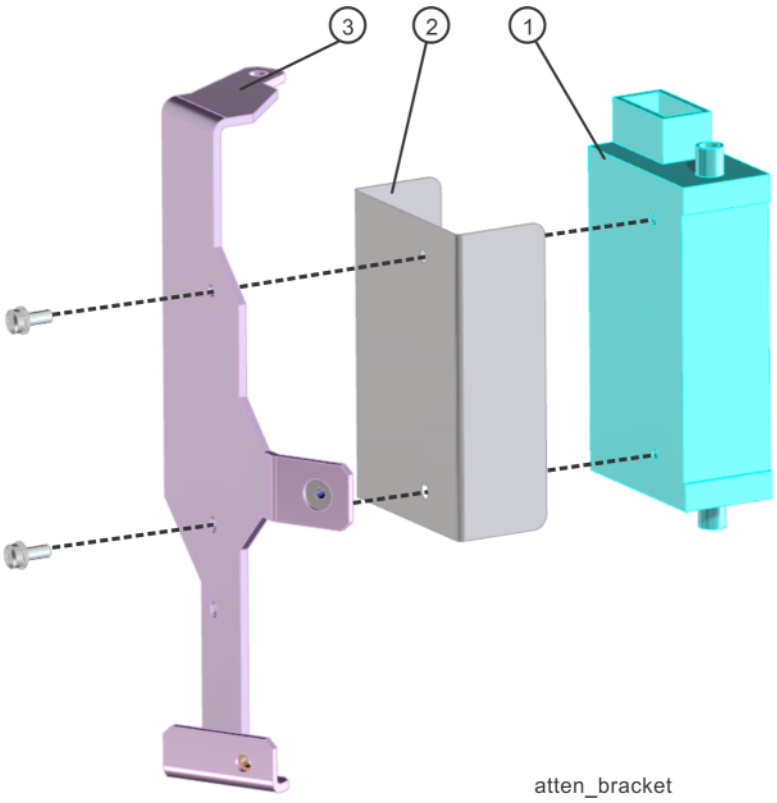


Assemble the Attenuators onto brackets and install the attenuators

35. In the upgrade kit, locate Attenuator bracket, N9020-00019. Locate Attenuator magnetic Shield, N9020-00044. Locate A10 Attenuator 33325-60027, and locate 2, 0515-0372 screws.

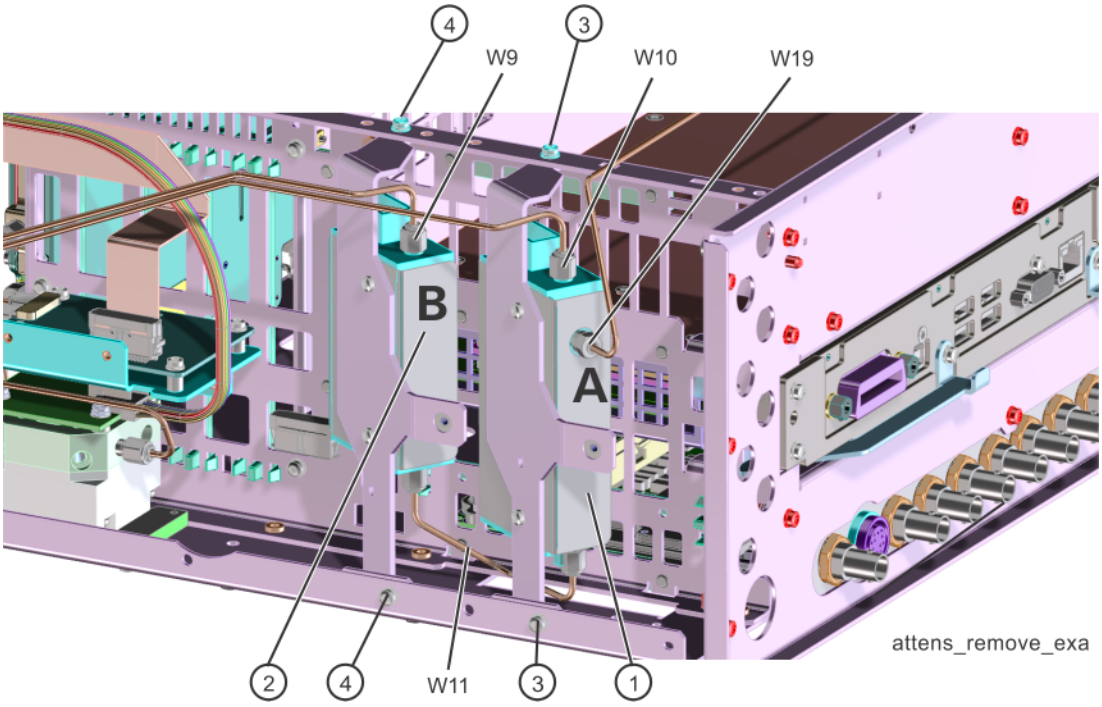
36. Refer to Figure 7. With the attenuator (1) positioned with the ribbon cable connector pointing up, place magnetic shield (2) onto attenuator, then place attenuator bracket (3) over magnetic shield, align the mounting holes and secure together with 2, 0515-0372 screws. Torque to 9 inch-pounds.

Figure 7 Attenuator and Bracket



37. Install the attenuator assembly into the instrument as shown in Figure 8. This is attenuator “B” (A10) attenuator, and it mounts toward the front of the instrument. Secure with 2, 0515-0372 screws from the kit (4). Torque to 9 inch-pounds.

Figure 8 Attenuator Installation



38. Attach the attenuator ribbon cable that controls this attenuator.

39. In the retrofit kit, locate Attenuator bracket, N9020-00019. Locate Attenuator magnetic Shield, N9020-00043. Locate A9 Attenuator 33326-60019, and locate 2, 0515-0372 screws.

40. Refer to Figure 7. With the attenuator (1) positioned with the ribbon cable connector pointing up, place magnetic shield (2) onto attenuator, then place attenuator bracket (3) over magnetic shield, align the mounting holes and secure together with 2, 0515-0372 screws. Torque to 9 inch-pounds.

41. Install the attenuator assembly into the instrument as shown in Figure 8. This is attenuator “A” (A9) attenuator, and it mounts toward the rear of the instrument. Secure with 2, 0515-0372 screws from the kit (3). Torque to 9 inch-pounds.

42. Attach the ribbon cable that controls this attenuator.

43. Locate semi rigid cable W11, N9010-20002 in the kit. Attach this cable between the output of Attenuator A and input of Attenuator B. See Figure 8.

44. Locate semi rigid cable W19, N9010-20010 in the kit. Install the cable from attenuator A Cal In to A16 Reference assembly J701. Torque to 10 inch-pounds.

Install the replacement A13 Front End Assembly

45. Locate the A13 Front End assembly in the kit. The A13 is secured to a metal shipping fixture. Remove the metal fixture.

46. Reattach ribbon cable W17 to the RF Front End assembly.

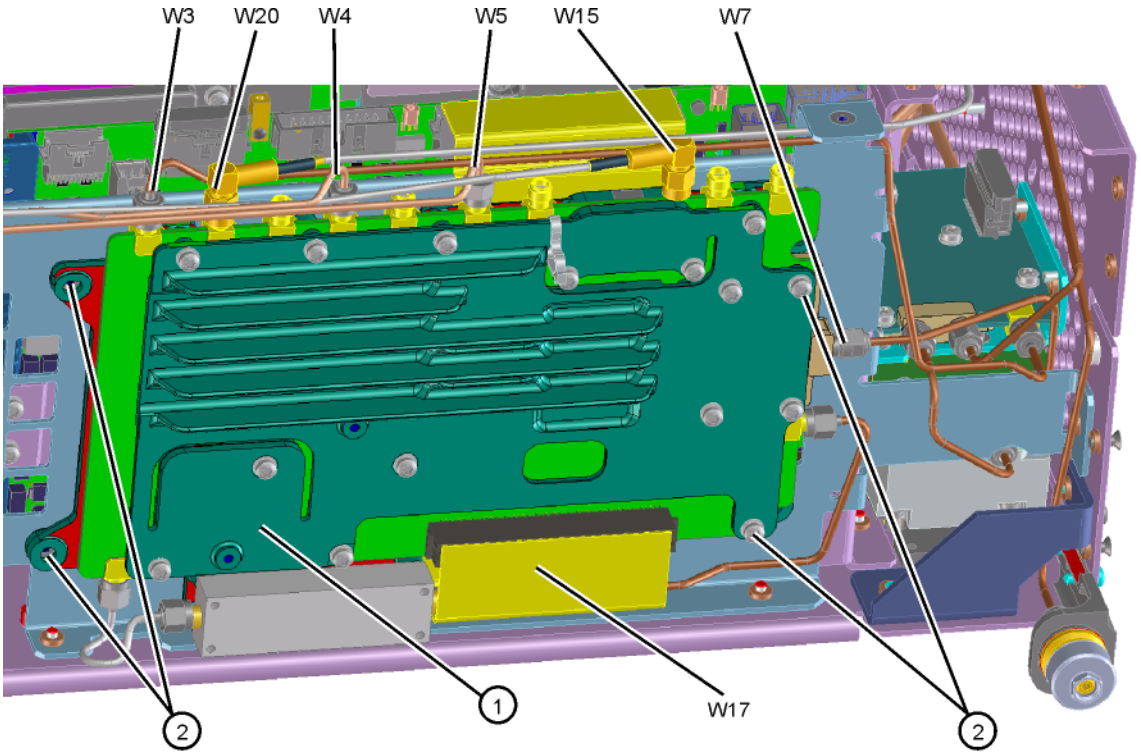
47. See Figure 9. Place the RF Front End assembly into the chassis. Replace the four screws (2). Torque to 9 inch-pounds.

48. Reattach the cables W3, W4, W5, W7, and W20 (or W40) to the RF Front End assembly (1). Torque the semi-rigid cables to 10 inch-pounds.

49. Locate W36, 8121-1862 in the cable kit. Install between A15J902 and A13J7.

50. If the analyzer does not have Option EXM, re-install the 50 ohm termination removed from the microwave assembly onto A13J8 of the new assembly. If the analyzer has Option EXM, locate W28 in this kit and connect it to A13J8.

Figure 9 Installation of Front End Assembly



front_end_parts_mmW_remove

51. If the analyzer has Option EXM, install the W26 cable assembly included in this kit, 8121-2025 between A15J903 and A13J13. Note that the kit includes two versions of W26, one with part number 8121-2025 and the other with 8121-2027; use the 8121-2025 cable.

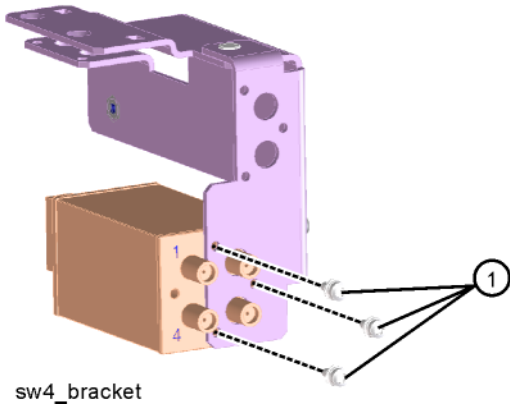
Install Option MPB Switches if Instrument Originally Contained This Option

NOTE Do not perform this procedure unless the analyzer has one or more of the following options: N9020B-B40, N9020B-DP2, N9020B-MPB. If none of these options are present, skip to the "Verify installation of the Ribbon and Wire Harness Cables to the Front End Control Assembly" procedure.

52. Locate the preselector bypass transfer switch (87222-60031), the bypass bracket (N9020-00021) and the three M2.5x0.45 6mm long screws (0515-1934) in the kit.

53. Refer to Figure 10. Mount the preselector bypass transfer switch (SW4) to the bypass bracket using the three 0515-1934 screws (1) as shown. Note the location of ports 1 and 4 on the transfer switch relative to the bracket as shown in Figure 10. Torque to 6 inch-pounds.

Figure 10 SW4 Bracket



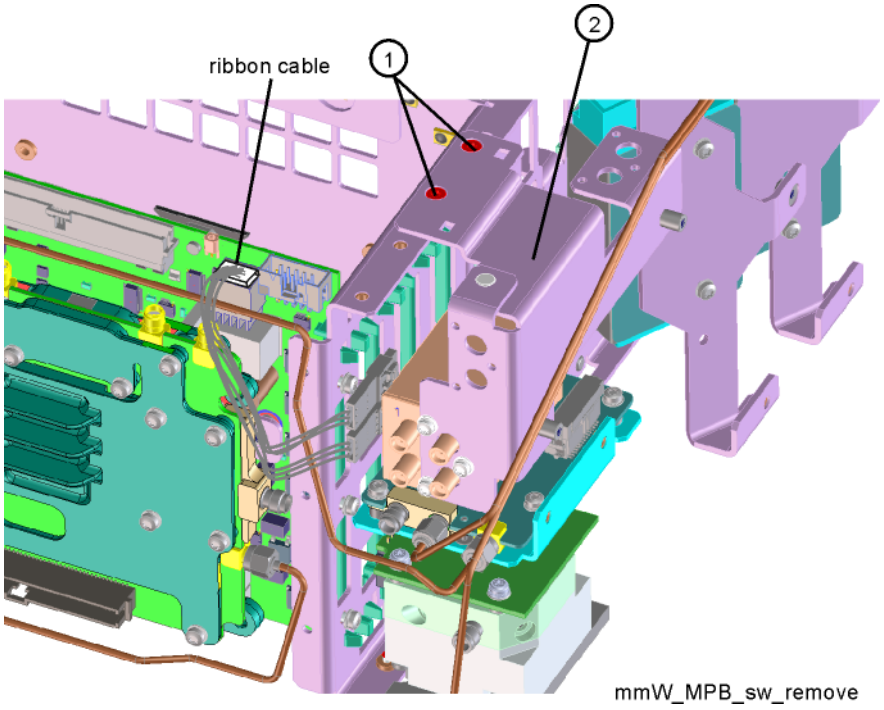
54. Locate the switch control cable harness (W30) that should be connected to Front End Controller J801. Locate the connector body housing receptacle (1252-1873) in the kit. Note that one end of the W30 harness has two 3-contact connectors, one with wire colors of green, black, and purple and the other with wire colors green, black and orange. Insert the connector body housing receptacle into the connector with the green, black, and orange wires.

55. Connect the remaining 3-contact connector, with the green, black, and purple wires, to the pigtail harness on SW4.

56. Orient the two 3-contact connectors of the W30 harness such that the connectors are just to the left of ports 1 and 4 of SW4.

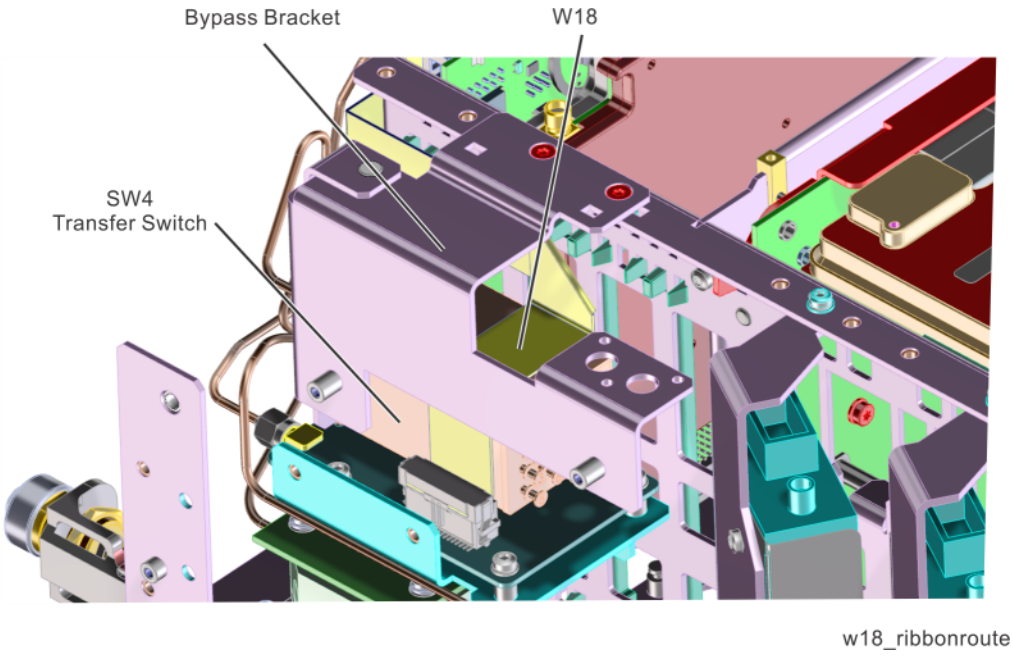
57. Refer to Figure 11. Secure the bypass bracket (2) to the chassis using two 0515-2032 screws (1) included in the kit. Torque to 9 inch pounds.

Figure 11 Securing Bypass Bracket to Chassis



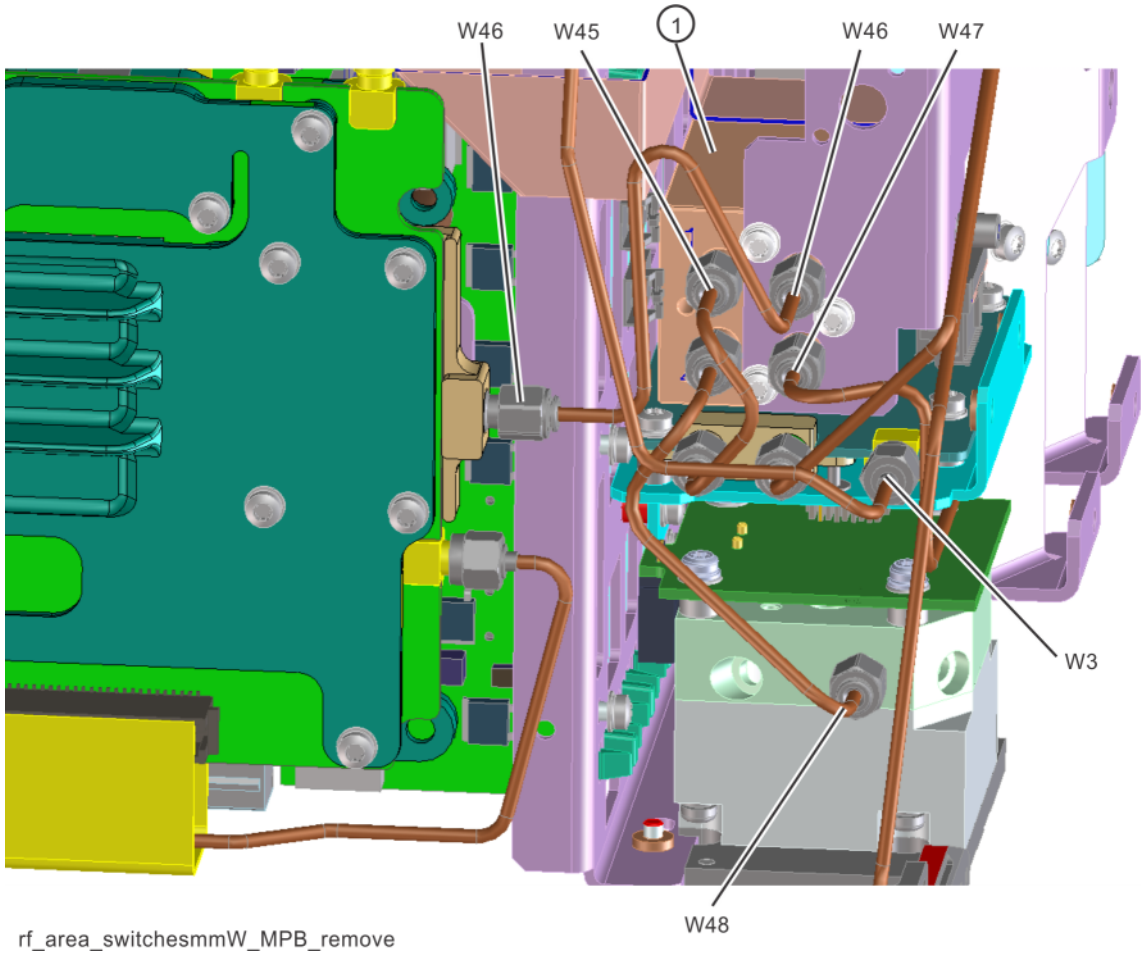
58. Refer to Figure 12. Route ribbon cable W18 between the SW4 Transfer Switch and the bypass bracket. Connect W18 to A11J4.

Figure 12 W18 Ribbon Cable Routing



Installing New Coax Cables

Figure 13 Installing New Coax Cables



59. Refer to Figure 13. Locate W48 N9020-20128 semi-rigid coax cable in the kit. Install W48 between the input of the A12 Preselector and Port 4 of the SW4 Transfer Switch. Torque to 10 inch-pounds.

60. Locate W45 N9010-20009 semi-rigid coax cable in the kit. Install W45 between A11J3 and Port 1 of the SW4 Transfer Switch. Torque to 10 inch-pounds

61. Locate W47 N9020-20129 semi-rigid coax cable in the kit. Install W47 between the output of the A12 Preselector and Port 3 of the SW4 Transfer Switch.
Torque to 10 inch-pounds

62. Re-install W9 semi-rigid coax cable between the output of the A10 Input Attenuator B and A11J1. Torque to 10 inch-pounds

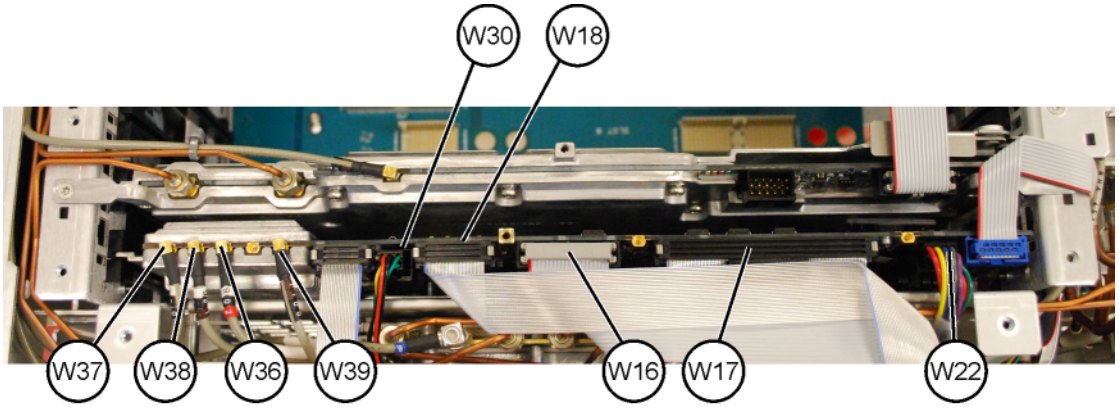
63. Locate W46 N9020-20130 semi-rigid coax cable in the kit. Install W46 between A13J9 and Port 2 of the SW4 Transfer Switch. Torque to 10 inch-pounds

64. Re-install W3 semi-rigid coax cable between A11J2 and A13J2.
Torque to 10 inch-pounds.

Verify installation of the Ribbon and Wire Harness Cables to the Front End Control Assembly

65. Refer to Figure 14. Determine where ribbon cables W16, W17, and W18 attach, and also where wire harnesses W22 and W30 attach.

Figure 14 Front End Control Cables Installation



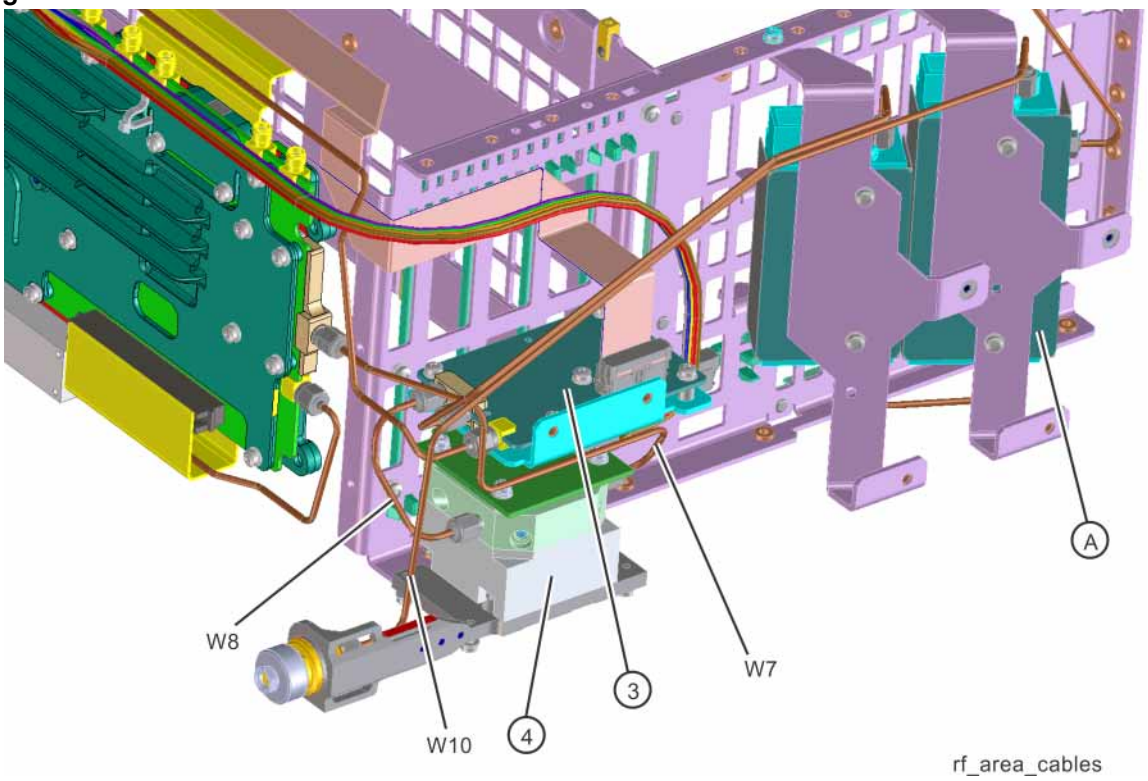
66. Press down on the W18 ribbon cable header on the Front End Control assembly to assure it did not become loose during the installation. Also assure the ribbon cable is routed where it will not get damaged when the covers are replaced.

67. Attach the wire harnesses, W22 and W30, as shown in Figure 14. Assure the wire harnesses are routed so they will not get damaged when the covers are replaced.

Install W8 and W7 if Option MPB is not present

68. Refer to Figure 15. Locate W8, semi rigid cable, N9010-20005 in the kit and attach this cable between Low Band switch (3) A11J3, and YTF Input (4) (left side SMA connector on YTF). Torque to 10 inch-pounds.

Figure 15 RF Section



69. Locate W7, semi rigid cable, N9010-20006 in the kit and attach this cable between A13J9 on the Front End assembly to A12 Output (right side SMA connector on YTF) as shown in Figure 15. Torque to 10 inch-pounds.

70. Locate W10 N9020-20133 in the kit and install between Attenuator A and the input connector. Torque to 10 inch-lbs.

Complete the Hardware Installation

71. Replace the right side chassis, and front frame assembly.

72. Replace the power cord and power on the instrument to assure the instrument boots up. Some auto align failures may occur. The instrument should sweep full span (31.99 GHz if Option 532, 43.99 GHz if Option 544, or 49.99 GHz if Option 555). Turn on the 50 MHz calibrator signal and tune the instrument to 50 MHz. Verify the 50 MHz signal is present.

73. Shut down the instrument. Once the instrument is completely shut down remove the power cord.

74. Replace the top brace, instrument cover, and feet. Use the 0515-1946 screws included in the kit to secure the top brace.

Instrument Software Installation

Upgrade the software to the latest revision, or reinstall the current version (if available) when the customer does not want to upgrade. Software installation assures that after licensing to the new frequency range, any software related changes to the instrument files will be performed by the software installation.

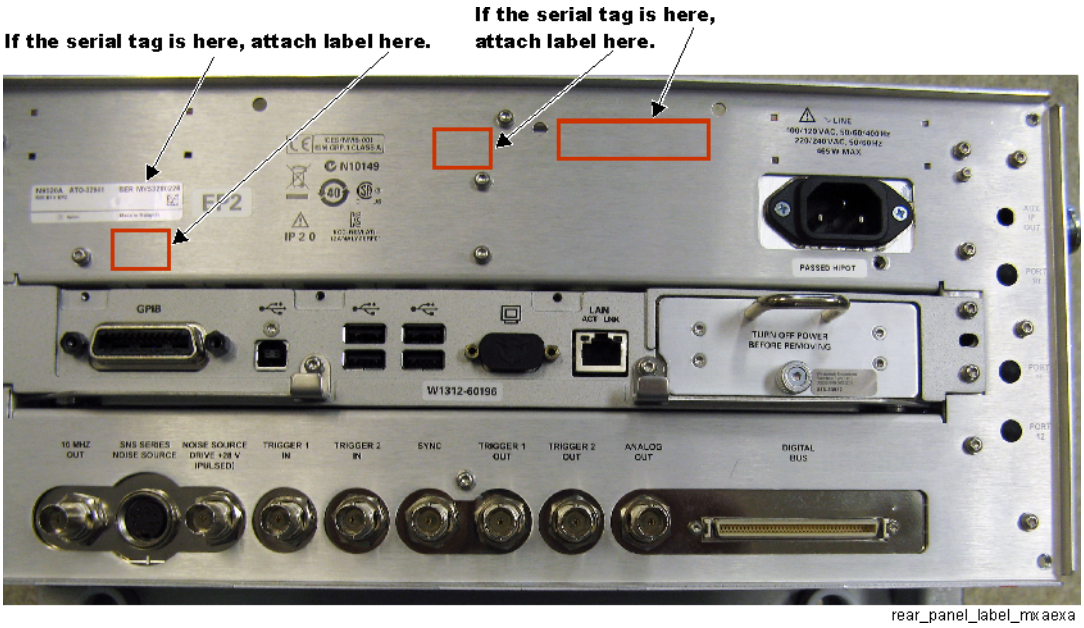
To verify that the current version, press **System**, **Show System** and look for the “Instrument S/W Revision”

The latest revision of the X-Series Signal Analyzers software may be downloaded from http://www.keysight.com/find/xseries_software.

Re-label Instrument with New Frequency Range

1. Locate the correct rear panel label that indicates the new frequency range of the analyzer. The rear panel labels are printed with the option number and frequency range. Example: “544 44 GHz”.
2. Remove the bar code portion of the label and discard this bar code portion. Apply this label to the rear panel as shown in Figure 16.

Figure 16 Rear Panel Label



3. Locate the correct front panel nameplate that indicates the new frequency range of the analyzer.
4. Peel off the existing nameplate.
5. Remove any residual adhesive from the front frame where the nameplate was removed.
6. Remove the backing from the new nameplate and carefully apply to the front frame. Press down evenly to ensure good adhesion.

Utilities, Adjustments, and Performance Verification Tests

Utilities Required

None

Adjustments Required

Perform all possible adjustments.

Performance Testing Required

Perform all Performance Verification Tests

For assistance, contact your nearest Keysight Technologies Sales and Service Office. To find your local Keysight office access the following URL, or if in the United States, call the following telephone number:

http://www.keysight.com/find/assist

1-800-829-4444 (8 am - 8 pm ET, Monday - Friday)

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