

50 MHz to 40 GHz

# N5194A and N5192A <sup>1</sup> UXG Agile Vector Adapter



1. The N5192A is a modified version of the N5194A it is only compatible with the N5191A UXG Analog Signal Generator, Modified Version.

# Configure Your New UXG Agile Vector Adapter

This step-by-step process will help you configure your UXG agile vector adapter. Tailor the performance to meet your requirements.

## Included in the base product

Standard options and accessories come with the UXG base model at no additional charge and do not need to be ordered. They include:

- 512 MSa baseband waveform memory per channel
- 250 MSa/s vector operation
- 512 Gbyte non-volatile waveform memory storage on removable SSD drive
- 120 dB agile power range
- PDW streaming <sup>1</sup>
- One day of on-site startup assistance

## Important note

- When the N5194A UXG vector adapter is used with the N5193A UXG agile signal generator, the N5193A must have options CC1 and SS4 installed.
- When the N5192A UXG vector adapter is used with the N5191A UXG agile signal generator, the N5191A must have options CC1 and SS3 installed.

## Step 1. Select frequency range (required option) <sup>2</sup>

Description	Option number	Additional information
Frequency range from 50 MHz to 20 GHz	N5194A-520	Standard 3.5 mm <sub>(m)</sub> RF output connector
Frequency range from 50 MHz to 20 GHz	N5192A-52E	Standard 3.5 mm <sub>(m)</sub> RF output connector
Frequency range from 50 MHz to 40 GHz	N5194A-540	2.4 mm <sub>(m)</sub> RF output connector

1. Included in base product for N5194A, needs to be ordered as an additional software option (N5192ST1A) for N5192A.

2. All models are tunable down to 10 MHz. Option 540 is tunable up to 44 GHz.

## Step 2. Choose connector configuration

Description	Option number	Additional information
Front panel RF output	N5194A-520	Standard 3.5 mm <sub>(m)</sub> RF output connector
		Includes standard adapter 3.5 mm <sub>(f)</sub> to 3.5 mm <sub>(f)</sub>
	N5192A-52E	Standard 3.5 mm <sub>(m)</sub> RF output connector
		Includes standard adapter 3.5 mm <sub>(f)</sub> to 3.5 mm <sub>(f)</sub>
	N5194A-540	Standard 2.4 mm <sub>(m)</sub> RF output connector
		Includes standard adapters 2.4 mm <sub>(f)</sub> to 2.4 mm <sub>(f)</sub> and 2.4 mm <sub>(f)</sub> to 2.9 mm <sub>(f)</sub>
Type-N <sub>(f)</sub> RF output connector	N5194A-1ED	Replaces standard RF connector with a Type-N <sub>(f)</sub> connector
	N5192A-1ED	Includes standard adapter Type-N <sub>(m)</sub> to 3.5 mm <sub>(f)</sub>
Move RF output to rear panel	N5194A-1EM N5192A-1EM	

## Step 3. Choose baseband generator bandwidth/sample rate

Description	Option number	Additional information
200 MHz modulation bandwidth	Standard	250 MSa/s sample rate
400 MHz modulation bandwidth	N5194A-BB2	2 GSa/s sample rate
	N5192A-BB2	2 GSa/s sample rate
1.6 GHz modulation bandwidth	N5194A-BB1	2 GSa/s sample rate
	N5192A-BB1	2 GSa/s sample rate

## Step 4. Choose baseband generator memory size

Description	Option number	Additional information
512 MSa memory	Standard	
4-6 GSa memory	N5194A-BBM N5192A-BBM	Provides 6 GSa when operating in vector mode (250 MSa/s rate) or 4 GSa when operating in wideband vector mode (2 GSa/s rate)

## Step 5. Choose Doppler shift

Description	Option number	Additional information
Adds frequency offset to each PDW	N5194A-DP1	
	N5192A-DP1	

## Step 6. Choose PDW Streaming Software Options

Keysight offers flexible licensing options with different terms, support subscriptions and types of licensing:

License term		
Perpetual	License is perpetual however a support subscription includes software updates and support for a chosen duration (ie: 12 months up to 60 months). Can be renewed annually.	
Time based	Support subscription includes software updates and support through the license duration	
License type	Description	Use case
Node locked	License may be used on one specified instrument	Locked to one instrument
Transportable	License may be used on one instrument at a time but may be transferred to another	Flexibility to move from instrument to instrument

How to configure:

1. Choose License type
2. Choose License term
  - **For perpetual licenses:** Choose support subscription duration
  - **For time-based licenses:** Choose license duration (support is included through license time-period)

## N5192A – N5192ST1A PDW Streaming for N5192A only

License term					
License type	Perpetual			Time-based	
Node-locked	R-Y5B-001-A • Plus support duration	12-month	R-Y6B-001-L	6-month	R-Y4B-001-F
		24-months	R-Y6B-001-X	12-month	R-Y4B-001-L
		36-months	R-Y6B-001-Y	24-month	R-Y4B-001-X
		60-months	R-Y6B-001-Z	36-month	R-Y4B-001-Y
Transportable	R-Y5B-004-D • Plus support duration	12-month	R-Y6B-004-L	6-month	R-Y4B-004-F
		24-months	R-Y6B-004-X	12-month	R-Y4B-004-L
		36-months	R-Y6B-004-Y	24-month	R-Y4B-004-X
		60-months	R-Y6B-004-Z	36-month	R-Y4B-004-Y

## N5194A – N5194326A Real Time Pulse Generation for N5194A <sup>1</sup>

License term					
License type	Perpetual			Time-based	
Node-locked	R-Y5B-001-A • Plus support duration	12-month	R-Y6B-001-L	6-month	R-Y4B-001-F
		24-months	R-Y6B-001-X	12-month	R-Y4B-001-L
		36-months	R-Y6B-001-Y	24-month	R-Y4B-001-X
		60-months	R-Y6B-001-Z	36-month	R-Y4B-001-Y
Transportable	R-Y5B-004-D • Plus support duration	12-month	R-Y6B-004-L	6-month	R-Y4B-004-F
		24-months	R-Y6B-004-X	12-month	R-Y4B-004-L
		36-months	R-Y6B-004-Y	24-month	R-Y4B-004-X
		60-months	R-Y6B-004-Z	36-month	R-Y4B-004-Y

1. Option N5194326A is subject to ITAR export regulations. For more information, please contact your Keysight sales representative.

Extension to support contracts for perpetual licenses	
R-Y6B-501	12-months support subscription for node-locked licenses
R-Y6B-504	12-months support subscription for transportable licenses

### Step 7. Choose accessories

Description	Option/Model number
Front handle kit	1CN106A
Rack mount flange kit	1CM110A
Rack mount flange kit with handles	1CP104A
Additional 512 Gbyte SSD drive tray assembly	1CC150A
External 6 GHz reference source	U3039ACK1
Microwave coaxial cables	
Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(f)</sub> , 16 inch (406 mm) length	1CC102A
Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(m)</sub> , 18 inch (457 mm) length	1CC103A
Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(f)</sub> , 48 inch (1219 mm) length	1CC105A
Triggering cables and adapters	
Coax cable assembly, BNC <sub>(f)</sub> to SMB <sub>(f)</sub> , 3 inch (76 mm) length	1CC110A
Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 18 inch (457 mm) length	1CC111A
Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 48 inch (1219 mm) length	1CC113A
Coax cable assembly, BNC <sub>(m)</sub> to BNC <sub>(m)</sub> , 12 inch (305 mm) length	1CC114A
Coax cable assembly, BNC <sub>(m)</sub> to BNC <sub>(m)</sub> , 24 inch (610 mm) length	1CC115A

### Step 7. Choose accessories (Continued)

Description	Option/Model number
Triggering cables and adapters (Continued)	
Coax cable assembly, BNC <sub>(m)</sub> to BNC <sub>(m)</sub> , 48 inch (1219 mm) length	1CC116A
SMB(f)-SMA(f) coax adapter	1CC118A
BNC(m) to SMA(f) coax adapter	1CC119A
RF coaxial cables	
Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 12 inch (305 mm) length	1CC120A
Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 18 inch (457 mm) length	1CC121A
Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 36 inch (914 mm) length	1CC122A
Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 48 inch (1219 mm) length	1CC123A
Digital data cables	
USB cable (Type A-B), 6 foot (1.8 m) length	1CC130A
LVDS cable, 1.5 m length	1CC131A
BCD cable, 1.5 m length	1CC132A
10 Gigabit fiber optic cable, 2 m length, and two SFP+ transceivers	1CC133A
Power splitters and accessories	
Four-way power splitter, 5.4 GHz to 6.8 GHz, SMA <sub>(f)</sub> connectors	1CC140A
50 ohm coax termination, SMA <sub>(m)</sub> connector	1CC149A
Hybrid power divider, 0.5 GHz to 26.5 GHz, 3.5 mm <sub>(f)</sub> connectors	87302C

### Step 8. Choose Calibration Options

Description	Option number
Commercial calibration certificate with test data	N5194A-UK6 N5192A-UK6
Calibration + Uncertainties + Gaurdbanding	N5194A-1A7
ANSI Z540-1-1994 calibration	N5194A-A6J
Calibration Assurance Plan, Return to Keysight, 3 years	R50C-011-3
Calibration Assurance Plan, Return to Keysight, 5 years	R50C-011-5
Calibration Assurance Plan, Return to Keysight, 7 years	R50C-011-7
Calibration Assurance Plan, Return to Keysight, 10 years	R50C-011-10

## Step 9. Choose startup assistance service options

Description	Option number
Startup assistance, 1 -1 999 hours (one day included standard)	PS-S20-05
Remote scheduled assistance, 1 – 999 hours	PS-S10
Custom services to be qualified by Keysight	RPS-X10

## Upgrade Your Existing UXG

Fast license-key upgrades for options that do not require additional hardware:

1. Place an order for the upgrade with Keysight and request to receive the software entitlement certificate through email.
2. Redeem the certificate through the Web by following the instructions on the certificate.
3. Install the license file using Keysight License Manager.
4. Begin using the new capability.

Installation, calibration and verification information is available at:

[www.keysight.com/find/UXG\\_upgrades](http://www.keysight.com/find/UXG_upgrades)

Description	Option number	Requirements	Additional information
Upgrade baseband memory from 512 MSa to 4/6 GSa	N5194AU-BBM N5192AU-BBM	None	Customer installable – software, license key
Upgrade sample rate from 250 MSa/s to 2 GSa/s	N5194AU-BB1 N5192AU-BB1	None	Customer installable – software, license key
Upgrade bandwidth from 200 MHz to 400 MHz	N5194AU-BB2 N5192AU-BB2	None	Customer installable – software, license key
Adds frequency offset to each PDW	N5194AU-DP1 N5192AU-DP1	None	Customer installable – software, license key

# N5193A/91A and N5194A/92A UXG Connection Diagram <sup>1</sup>

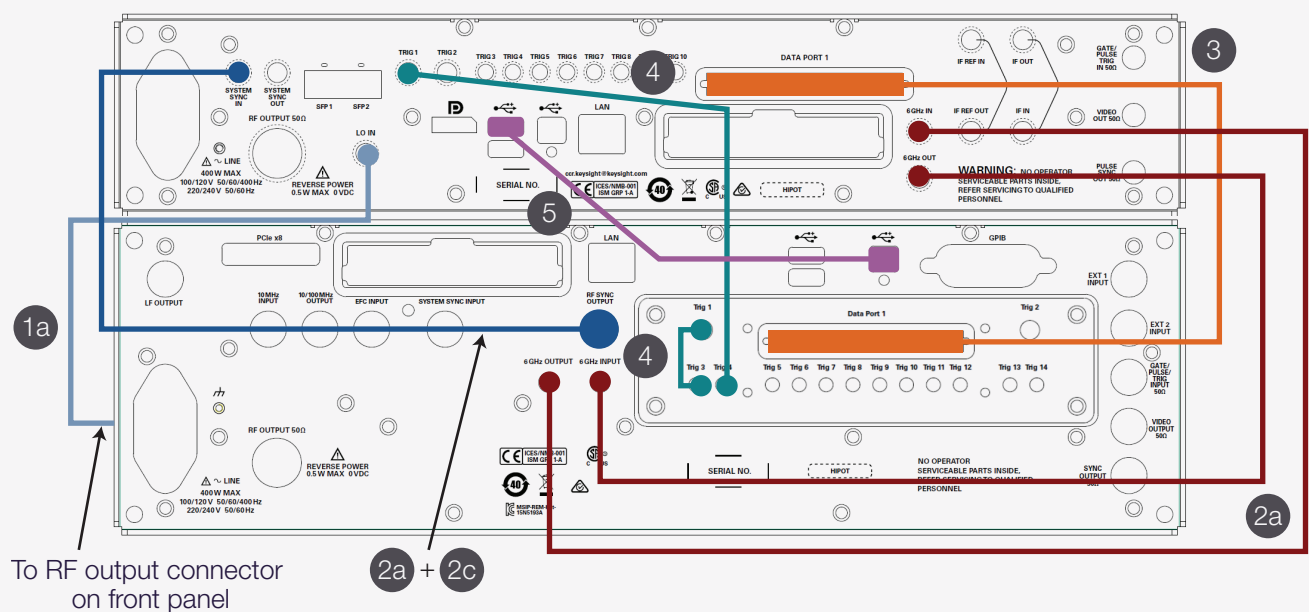


Figure 1a: One N5193A/91A (Option 520 with standard front panel RF connector) + One N5194A/92A.

Note: If using an N5193A/91A opt 540 unit (40 GHz model), add an 11901D 2.4 mm<sub>(f)</sub> to 3.5 mm<sub>(m)</sub> adapter on the RF output connector.

Item	Model number	Qty	Description
1a	1CC105A	1	Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(f)</sub> , 48" length
2a	1CC121A	3	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 18" length
2c	1CC119A	1	BNC <sub>(m)</sub> to SMA <sub>(f)</sub> adapter
3	1CC131A	1	LVDS cable, 1.5 m length
4	1CC111A	2	Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 18" length
5	1CC130A	1	USB cable (Type A-B), 6' length

1. The N5192A is only compatible with the N5191A and the N5194A is only compatible with the N5193A.



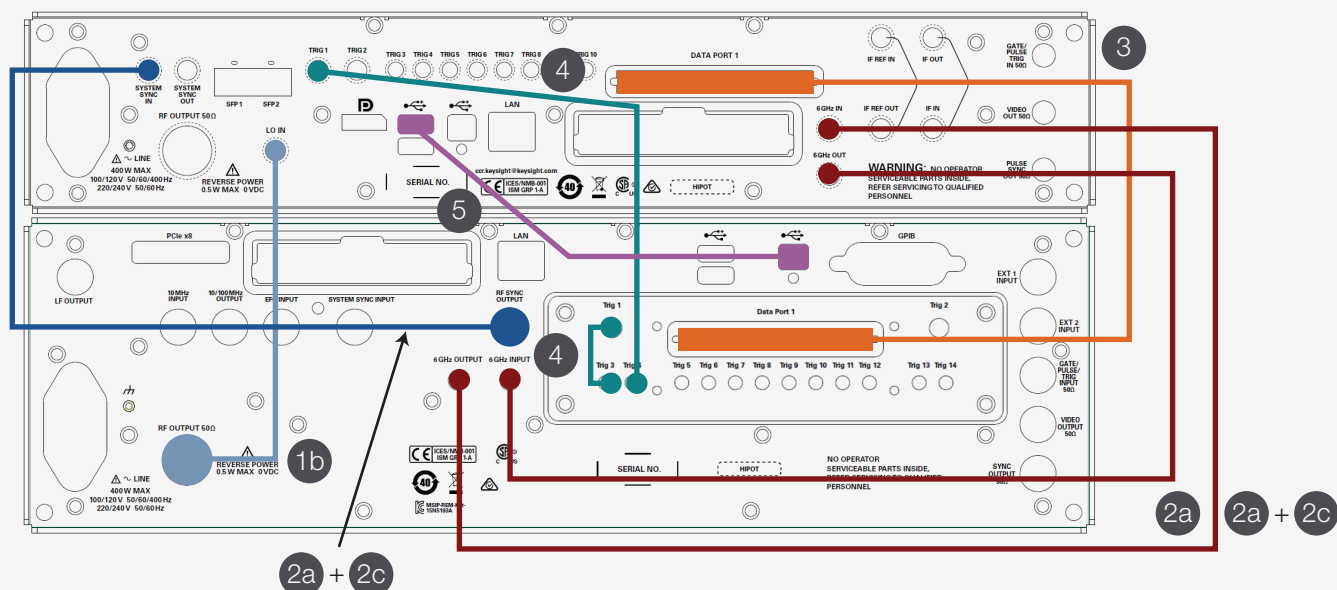


Figure 1b: One N5193A/91A (Option 520 with Option 1EM rear panel RF connector) + One N5194A/92A.

Note: If using an N5193A/91A opt 540 unit (40 GHz model), add an 11901D 2.4 mm<sub>(f)</sub> to 3.5 mm<sub>(m)</sub> adapter on the RF output connector.

Item	Model number	Qty	Description
1b	1CC102A	1	Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(f)</sub> , 16" length
2a	1CC121A	3	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 18" length
2c	1CC119A	1	BNC <sub>(m)</sub> to SMA <sub>(f)</sub> adapter
3	1CC131A	1	LVDS cable, 1.5 m length
4	1CC111A	2	Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 18" length
5	1CC130A	1	USB cable (Type A-B), 6' length

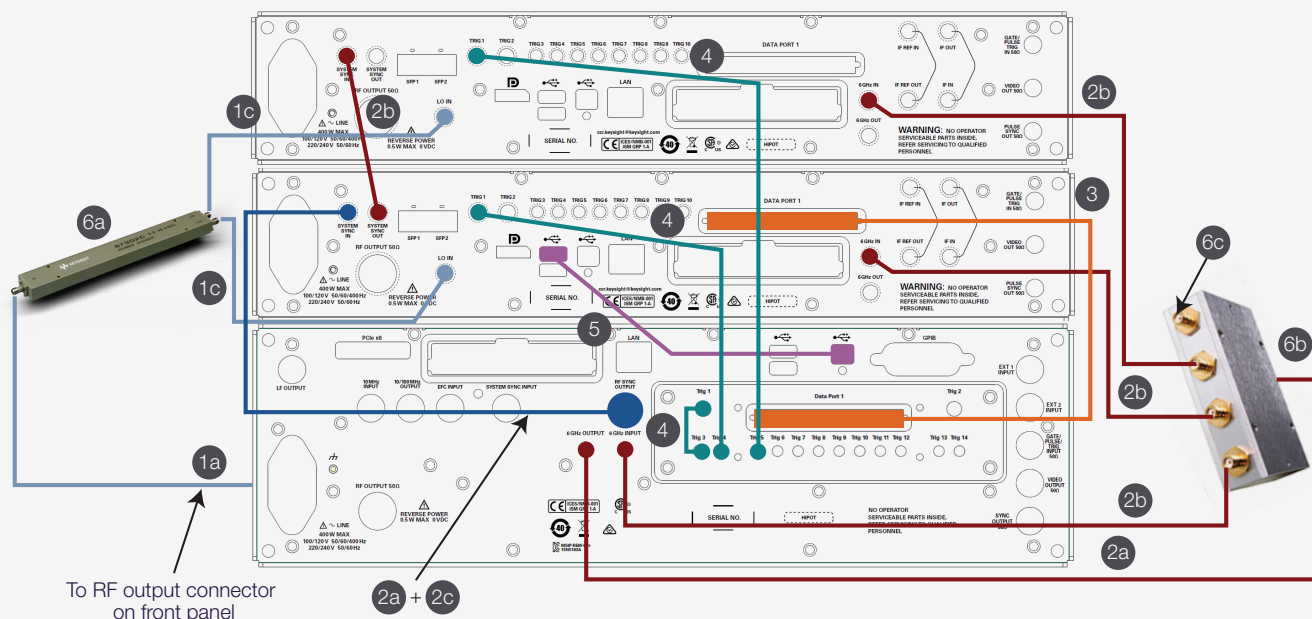


Figure 2a: One N5193A/91A (Option 520 with standard front panel RF connector) + Two N5194A/92A.

Note: If using an N5193A/91A opt 540 unit (40 GHz model), add an 11901D 2.4 mm<sub>(f)</sub> to 3.5 mm<sub>(m)</sub> adapter on the RF output connector.

Item	Model number	Qty	Description
1a	1CC105A	1	Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(f)</sub> , 48" length
1c	1CC103A	2	Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(m)</sub> , 18 inch length
2a	1CC121A	2	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 18" length
2b	1CC120A	4	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 12" length
2c	1CC119A	1	BNC <sub>(m)</sub> to SMA <sub>(f)</sub> coax adapter
3	1CC131A	1	LVDS cable, 1.5 m length
4	1CC111A	3	Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 18" length
5	1CC130A	1	USB cable (Type A-B), 6' length
6a	87302C	1	Hybrid power divider, 0.5 GHz to 26.5 GHz, 3.5 mm <sub>(f)</sub> connectors
6b	1CC140A	1	Four-way power splitter, 5.4 GHz to 6.8 GHz, SMA <sub>(f)</sub> connectors
6c	1CC149A	1	50 Ω coax termination, SMA <sub>(m)</sub> connector

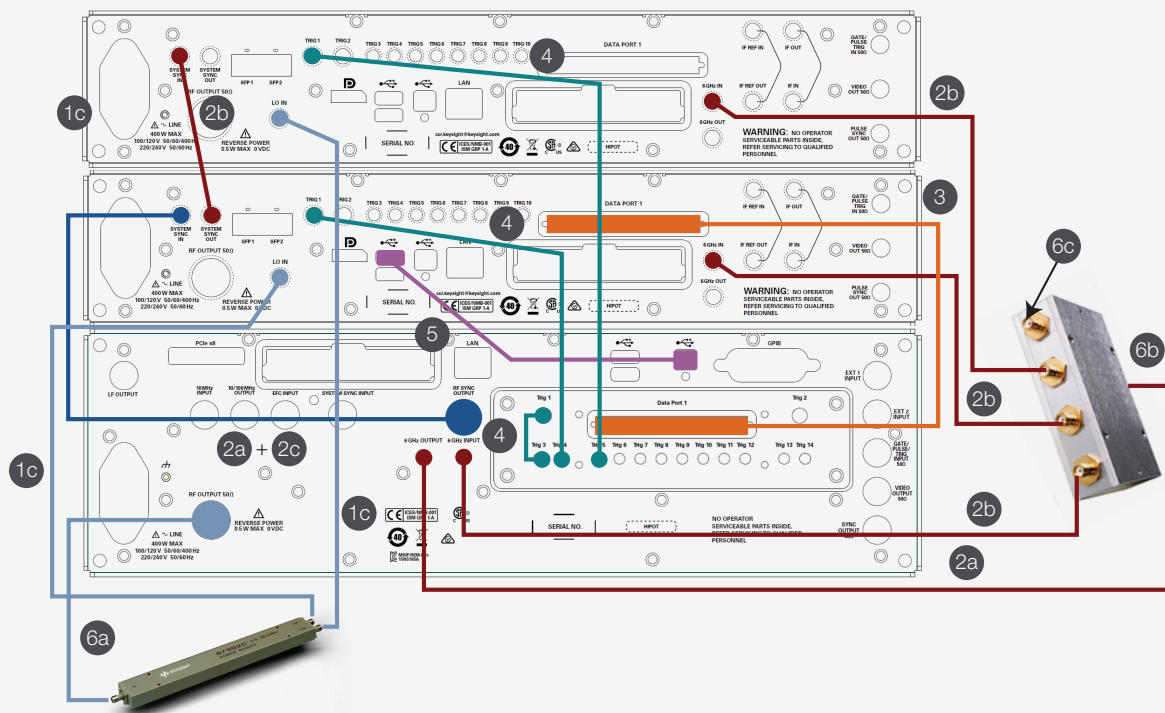


Figure 2b: One N5193A/91A (Opt 520 w/Opt 1EM rear panel RF connector) + Two N5194A/92A.

Note: If using an N5193A/91A opt 540 unit (40 GHz model), add an 11901D 2.4 mm<sub>(f)</sub> to 3.5 mm<sub>(m)</sub> adapter on the RF output connector.

Item	Model number	Qty	Description
1c	1CC103A	2	Coax cable assembly, 3.5 mm <sub>(m)</sub> to 3.5 mm <sub>(m)</sub> , 18 inch length
2a	1CC121A	2	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 18" length
2b	1CC120A	4	Coax cable assembly, SMA <sub>(m)</sub> to SMA <sub>(m)</sub> , 12" length
2c	1CC119A	1	BNC <sub>(m)</sub> to SMA <sub>(f)</sub> coax adapter
3	1CC131A	1	LVDS cable, 1.5 m length
4	1CC111A	3	Coax cable assembly, SMA <sub>(m)</sub> to SMB <sub>(f)</sub> , 18" length
5	1CC130A	1	USB cable (Type A-B), 6' length
6a	87302C	1	Hybrid power divider, 0.5 GHz to 26.5 GHz, 3.5 mm <sub>(f)</sub> connectors
6b	1CC140A	1	Four-way power splitter, 5.4 GHz to 6.8 GHz, SMA <sub>(f)</sub> connectors
6c	1CC149A	1	50 Ω coax termination, SMA <sub>(m)</sub> connector

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