L8990M Modular Signal Routing Solution

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The Keysight L8990M Modular Signal Routing Solution provides a simple and flexible platform for RF switching and signal conditioning with signal frequencies up to 67 GHz. The L8990M platform can support up to 128 switch channels in a 2U rack-mountable enclosure, and 196 switch channels in a 4U high enclosure. This flexibility provides the capability to route and condition signals to test a wide range of RF and telecommunication products and devices.

This step-by-step form guides you through the process for configuring and requesting a quote for the L8990M Modular Signal Routing Solution.

Step 1: Identify frequency - identify the modules required and quantity needed for each module.
Step 2: Select enclosure height - select 2U (16 slots) or 4U (34 slots).
Step 3: Select enclosure depth - select 421.6 mm (17 inches) or 584 mm (23 inches) deep.
Step 4: Determine slot placement - identify slot placement of modules in the 2U or 4U enclosure.
         (Examples of fully configured 2U and 4U modular options are on pages 5 and 6.)
Step 5: Specify standard accessories (if any).
Step 6: Specify custom capabilities (if any).
Step 7: Provide your contact information.
Step 8: Save and email completed form to quotes.adsys@keysight.com

Step 1: Identify frequency

Using the table below, identify the modules and frequency you require and enter the quantity needed for each module.
The following standard modules support our most popular RF components. Many are maintained in stock for expedited delivery.
Substitute B-F for x in the Module number to complete the number.

Module	Description	Frequency, GHz	Select Frequency	Qty Needed	# Slots Required	Total Slots Filled
L3111x[1]	N1810TL; SPDT switch, terminated	20 (B), 26.5 (C), 40 (D), 50 (E), 67 (F)				
L3113x[1]	N1810UL; SPDT switch, unterminated	20 (B), 26.5 (C), 40 (D), 50 (E), 67 (F)				
L3114x[1]	N1811TL; 4-port bypass switch, terminated	20 (B), 26.5 (C), 40 (D), 50 (E), 67 (F)				
L3117x[1]	N1812UL; 5-port bypass switch, unterminated	20 (B), 26.5 (C), 40 (D), 50 (E), 67 (F)				
L3121x[1]	87106x; SP6T multiport switch	20 (B), 26.5 (C), 40 (D), 50 (E), 54 (N), 67 (F)				
L3122x[1]	87104x; SP4T multiport switch	20 (B), 26.5 (C), 40 (D), 50 (E), 54 (N), 67 (F)				
L3126x[1]	87406x; 4-port switch	20 (B)				
L3127x[1]	87606x; 6-port switch	20 (B)				
L3131x[1]	87222x; transfer switch	26.5 (C), 40 (D), 50 (E)				
L3121xL	87106x; SP6T multiport switch with LEDs	20 (B), 26.5 (C), 40 (D), 50 (E), 54 (N), 67 (F)				
L3122xL	87104x; SP4T multiport switch with LEDs	20 (B), 26.5 (C), 40 (D), 50 (E), 54 (N), 67 (F)				
L3041x	84904x; attenuator 1-11 dB	26.5 (C), 40 (D), 50 (E)				
L3042E	84905M; attenuator 1-60 dB	50 (E)				
L3043x	84906x; attenuator 0-90 dB	26.5 (C), 40 (D), 50 (E)				
L3044x	84907x; attenuator 0-70 dB	26.5 (C), 40 (D)				
L3045E	84908x; attenuator 0-65 dB	50(E)				
L3051B	87300B; coax dir. coupler, 10 dB	1-20 GHz				
L3052B	87300C; coax dir. coupler, 10 dB	1-26.5 GHz				
L3053B	87300D; coax dir. coupler, 10 dB	6-26.5 GHz				
L3054E	87301B; coax dir. coupler, 10 dB	10-46 GHz				
L3055E	87301C; coax dir. coupler, 10 dB	10-50 GHz				
L3056D	87301D; coax dir. coupler, 13 dB	1-40 GHz				
L3057E	87301E; coax dir. coupler, 10 dB	2-50 GHz				
L3032A	LEDs – 2 position	NA				
L3033A	LEDs – 4 position	NA				
L3034A	LEDs – 6 position	NA				

1. Available to be directly quoted by your local sales representative

Total slots needed:

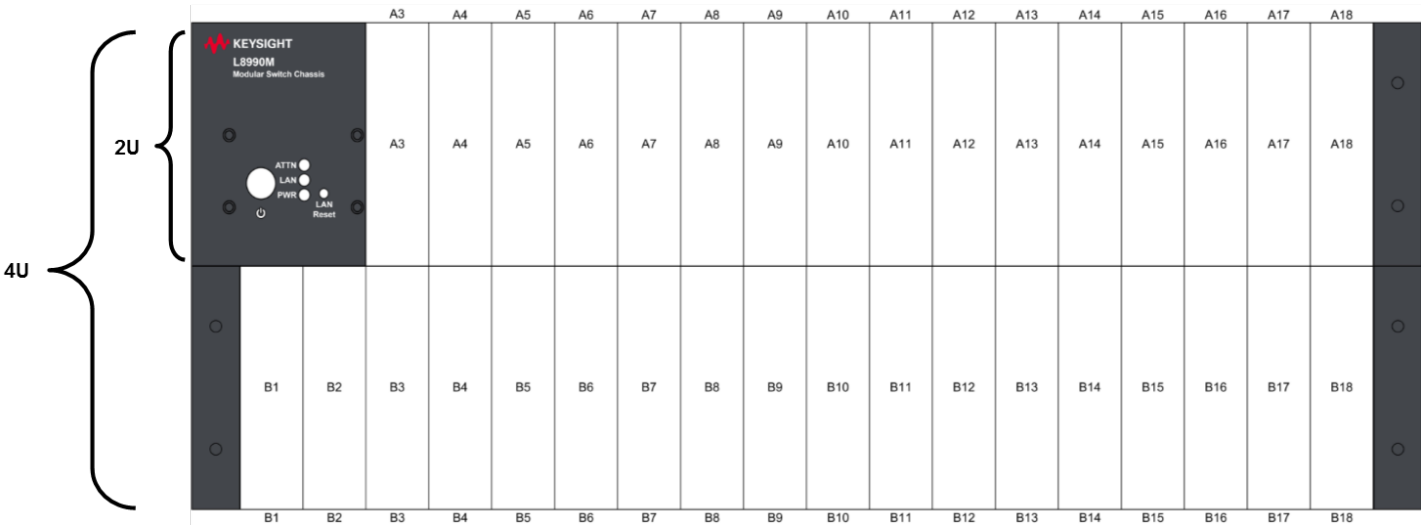Detailed specifications for the RF components listed above are available online:
http://literature.cdn.keysight.com/litweb/pdf/5989-6031EN.pdf
https://www.keysight.com/us/en/assets/7018-02252/product-fact-sheets/5990-4414.pdf
https://www.keysight.com/us/en/assets/7018-06681/technical-overviews/5091-6188.pdf

Step 2: Select enclosure and options

❏   2U High enclosure, front panel power button and status LEDs (16 slots)

❏   2U High enclosure, rear panel power button and status LEDs (18 slots)

❏   4U High enclosure, front panel power button and status LEDs (34 slots)

❏   4U High enclosure, rear panel power button and status LEDs (36 slots)

❏   L8990V-001, 2U 11 inch chassis with no controller or front panel modules [1]

❏   L8990Y-001, rack mount bracket assy, 2U, adjustable, 2-5 inch recess [1]

1.   Available to be directly quoted by your local sales representative

Step 3: Select depth

❏   269.2 mm (11 inches) deep

❏   421.6 mm (17 inches) deep

❏   584 mm (23 inches) deep

Step 4: Determine slot placement and quantity

Using the list of modules, you identified above, in Step 1, and the enclosure you selected in Step 2, enter the slot location for each of your modules in the 'Slot Placement' field, in the chart below. Available slot locations for the 2U are A3–A18 or A1–A18. Available slot locations for the 4U are A3–B18, or A1–B18. Keysight will include blank filler panels in all empty slots. If you need more slots than one chassis can accommodate, list the modules needed and Keysight can configure a multi-chassis solution.

Module	Description	Qty needed	# Slots required per module	Slot location(s)
L3111x	N1810TL; SPDT switch, terminated			
L3113x	N1810UL; SPDT switch, unterminated			
L3114x	N1811TL; 4-port bypass switch, terminated			
L3117x	N1812UL; 5-port bypass switch, unterminated			
L3121x	87106x; SP6T multiport switch			
L3122x	87104x; SP4T multiport switch			
L3126x	87406x; 6-port switch			
L3127x	87606x; 6-port switch			
L3131x	87222x; transfer switch			
L3121xL	87106x; SP6T multiport switch with LEDs			
L3122xL	87104x; SP4T multiport switch with LEDs			
L3041x	84904x; attenuator 1-11 dB			
L3042E	84905M; attenuator 1-60 dB			
L3043x	84906x; attenuator 0-90 dB			
L3044x	84907x; attenuator 0-70 dB			
L3045E	84908x; attenuator 0-65 dB			
L3051B	87300B; coax dir. coupler, 10 dB			
L3052B	87300C; coax dir. coupler, 10 dB			
L3053B	87300D; coax dir. coupler, 10 dB			
L3054E	87301B; coax dir. coupler, 10 dB			
L3055E	87301C; coax dir. coupler, 10 dB			
L3056D	87301D; coax dir. coupler, 13 dB			
L3057E	87301E; coax dir. coupler, 10 dB			
L3032A	LEDs – 2 position			
L3033A	LEDs – 4 position			
L3034A	LEDs – 6 position			

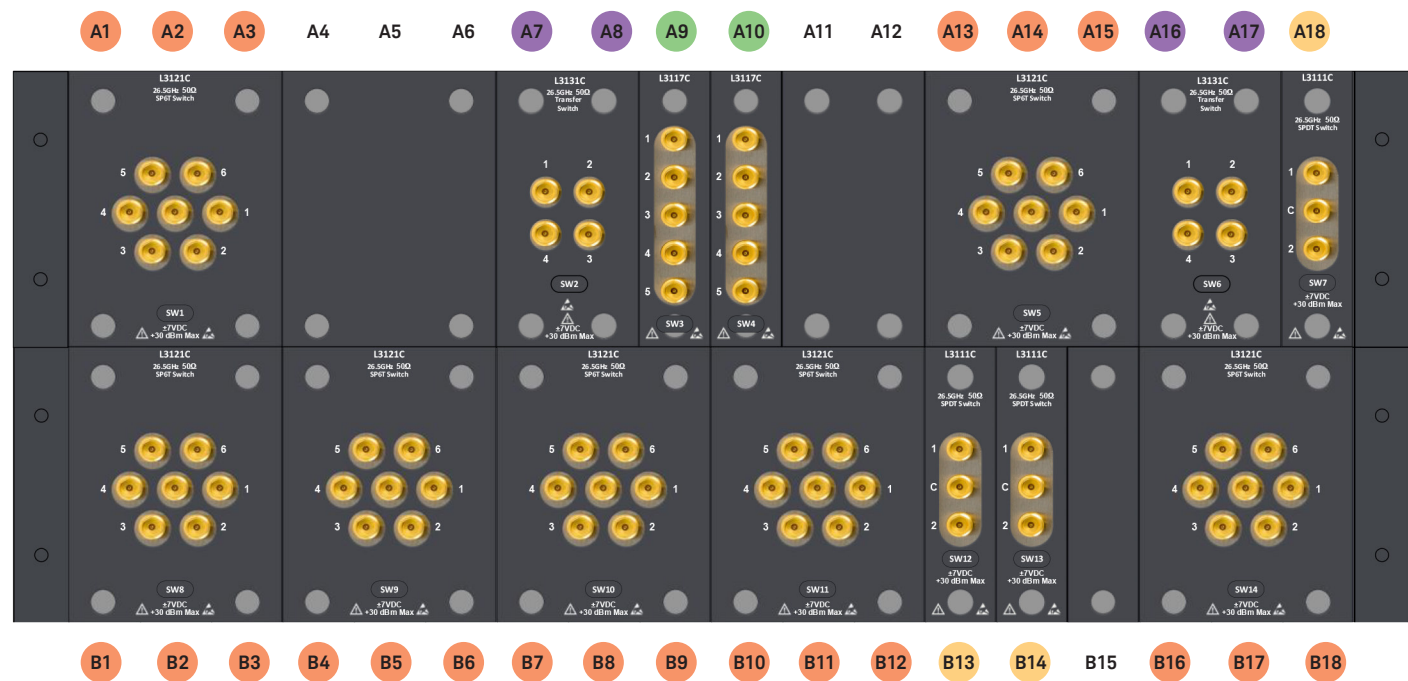# Step 5: 2U configuration – slot placement example

This example uses the configured L8990M Modular Switch Chassis below as a reference to determine the desired slot placement for a 2U Chassis. The fillable slot locations are identified above the unit, for reference. Keysight will include blank filler panels in all empty slots.

Module	Description	Qty needed	# Slots required	Total slots filled	Slot placement (Enter slot ID found on template above)
L3111x	N1810TL SPDT switch, terminated	4	1	4	A7, A8, A9, A10
L3113x	N1810UL SPDT switch, unterminated		1		
L3114x	N1811TL 4-port bypass switch, terminated		1		
L3117x	N1812UL 5-port bypass switch, unterminated		1		
L3122x	87104x SP4T multiport switch	1	3	3	A12, A13, A14
L3122xL	87104x SP4T multiport switch with LEDs		3		
L3121x	87106x SP6T multiport switch	1	3	3	A15, A16, A17
L3121xL	87106x SP6T multiport switch with LEDs		3		
L3131x	87222x transfer switch	1	2	2	A3, A4
L3126x	87406x 6-port matrix switch		3		
L3041x	84904x attenuator 1-11 dB		2		
L3042x	84905x attenuator 1-11 dB		2		
L3044x	84907x attenuator 0-70 dB		2		
L3043x	84906x attenuator 0-90 dB		2		
L3032A	LEDs – 2 position		1		
L3033A	LEDs – 4 position		1		
L3034A	LEDs – 6 position		1		

Step 5: 4U configuration – slot placement example

This example uses the configured L8990M Modular Switch Chassis below as a reference to determine the desired slot placement for a 4U Chassis. The fillable slot locations are identified above the unit, for reference. Keysight will include blank filler panels in all empty slots.

Module	Description	Frequency (B/C/D/E/F)	Qty needed	# Slots required	Total slots filled	Slot placement (enter slot ID found on template above)
L3111x	N1810TL SPDT switch, terminated	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 67 GHz	3	1	3	A18, B13, B14
L3113x	N1810UL SPDT switch, unterminated	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 67 GHz		1		
L3114x	N1811TL 4-port bypass switch, terminated	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 67 GHz		1		
L3117x	N1812UL 5-port bypass switch, unterminated	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 67 GHz	2	1	2	A9, A10
L3122x	87104x SP4T multiport switch	20 GHz, 26.5 GHz, 40 GHz		3		
L3122xL	87104x SP4T multiport switch with LEDs	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 54 GHz, 67 GHz		3		
L3121x	87106x SP6T multiport switch	20 GHz, 26.5 GHz, 40 GHz	7	3	21	A13-A15, B1-B12, B16-B18
L3121xL	87106x SP6T multiport switch with LEDs	20 GHz, 26.5 GHz, 40 GHz, 50 GHz, 54 GHz, 67 GHz		3		
L3131x	87222x transfer switch	20 GHz, 26.5 GHz, 40 GHz, 50 GHz	2	2	4	A7, A8, A16, A17
L3126x	87406x 6-port matrix switch	20 GHz		3		
L3041x	84904x attenuator 1-11 dB	26.5 GHz, 40 GHz		2		
L3042x	84905x attenuator 1-11 dB	50 GHz		2		
L3044x	84907x attenuator 0-70 dB	26.5 GHz, 40 GHz		2		
L3043x	84906x attenuator 0-90 dB	26.5 GHz, 40 GHz, 50 GHz		2		
L3032A	LEDs – 2 position	NA		1		
L3033A	LEDs – 4 position	NA		1		
L3034A	LEDs – 6 position	NA		1		

Step 6: Specify standard accessories (if any)

Flexible RF cables: specify the desired cable lengths (6", 8", 12"), frequencies (26.5 GHz, 40 GHz, 50 GHz, 67 GHz) and quantities. Rack mount kit.

Step 7: Specify custom capabilities (if any)

Custom modules: identify the specific component (manufacturer and part number) or otherwise describe the desired component and identify the desired slot location(s) from the diagram in Step 3.

Semi-rigid RF cables: identify the specific modules and port for each end of each cable – please provide a block diagram or sketch (hand-drawn is acceptable and can be pasted into the field below).

Step 8: Provide your contact information and any other pertinent information

Step 9: Save and email completed form to quotes.adsys@keysight.com

To request pricing and delivery, simply send an email to quotes.adsys@keysight.com.
Please mark your request with L8990M or Modular Signal Routing Solution and attach the completed form.

Keysight will respond to this request within one to two business days. In most cases, the Keysight response will summarize the requested configuration and provide budgetary pricing and delivery. If the request includes custom capabilities, the initial Keysight response may consist of questions or other desired clarifications, and delivery will be extended to include the necessary design time.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

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