

L8990M

Modular Signal Routing Solution

Introduction

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 or 3U rack mountable enclosure, and 196 switch channels in a 4U or 5U 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.



Form Instructions

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 - 2U or 3U (16 slots) or 4U or 5U (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 enclosure. (Examples of fully configured 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
L3111X1	N1810TL; SPDT Switch, Terminated	20 (B), 26.5(C), 40(D), 50(E), 67 (F)	E	0	1	0
L3113X1	N1810UL; SPDT Switch, Unterminated	20 (B), 26.5(C), 40(D), 50(E), 67 (F)	N	0	1	0
L3114X1	N1811TL; 4-port Bypass Switch, Terminated	20 (B), 26.5(C), 40(D), 50(E), 67 (F)	B	4	1	4
L3117X1	N1812UL; 5-port Bypass Switch, Unterminated	20 (B), 26.5(C), 40(D), 50(E), 67 (F)	B	0	1	0
L3121X1	87106x; SP6T Multiport Switch	20 (B), 26.5(C), 40(D), 50(E), 54 (N), 67 (F)	B	0	1	0
L3121XL	87106x; SP6T Multiport Switch with LEDs	20 (B), 26.5(C), 40(D), 50(E), 54 (N), 67 (F)	B	0	3	0
L3122X1	87104x; SP4T Multiport Switch	20 (B), 26.5(C), 40(D), 50(E), 54 (N), 67 (F)	B	0	3	0
L3122XL	87104x; SP4T Multiport Switch with LEDs	20 (B), 26.5(C), 40(D), 50(E), 54 (N), 67 (F)	B	0	3	0
L3126X1	87406x; 4-port Switch	20 (B)		0	3	0
L3127X1	87606x; 6-port Switch	20 (B)		0	3	0
L3128x	U7108x; SP8T multiport switch	9 (A), 20 (B), 26.5 (C)	A	0	4	0
L3128xL	U7108x; SP8T multiport switch with LEDs	9 (A), 20 (B), 26.5 (C)	A	0	4	0
L3129x	U7110x; SP10T multiport switch	9 (A), 20 (B), 26.5 (C)	A	0	4	0
L3129xL	U7110x; SP10T multiport switch with LEDs	9 (A), 20 (B), 26.5 (C)	A	0	4	0
L3131X1	87222x; Transfer Switch	26.5(C), 40(D), 50(E)	C	0	2	0
L3041X	84904x; Attenuator 1-11dB	26.5(C), 40(D), 50(E)	C	0	2	0
L3042E	84905M; Attenuator 1-60dB	50(E)	C	0	2	0
L3043X	84906x; Attenuator 0-90dB	26.5(C), 40(D), 50(E)	C	0	2	0
L3044X	84907x; Attenuator 0-70dB	26.5(C), 40(D)	C	0	2	0
L3045E	84908x; Attenuator 0-65dB	50(E)	C	0	2	0
L3051B	87300B; Coax Dir. Coupler, 10dB	1-20GHz		0	2	0
L3052B	87300C; Coax Dir. Coupler, 10dB	1-26.5GHz		0	2	0
L3053B	87300D; Coax Dir. Coupler, 10dB	6-26.5GHz		0	2	0
L3054E	87301B; Coax Dir. Coupler, 10dB	10-46GHz		0	2	0
L3055E	87301C; Coax Dir. Coupler, 10dB	10-50GHz		0	2	0
L3056D	87301D; Coax Dir. Coupler, 13dB	1-40GHz		0	2	0
L3057E	87301E; Coax Dir. Coupler, 10dB	2-50GHz		0	2	0
L3032A	LEDs – 2 position	NA		0	2	0
L3033A	LEDs – 4 position	NA		0	2	0
L3034A	LEDs – 6 position	NA		0	2	0
				Total Slots Needed		0

Available to be directly quoted by your local sales representative.

Detailed specifications for the RF components listed above are available online:

<https://www.keysight.com/us/en/products/accessories/switches.html>

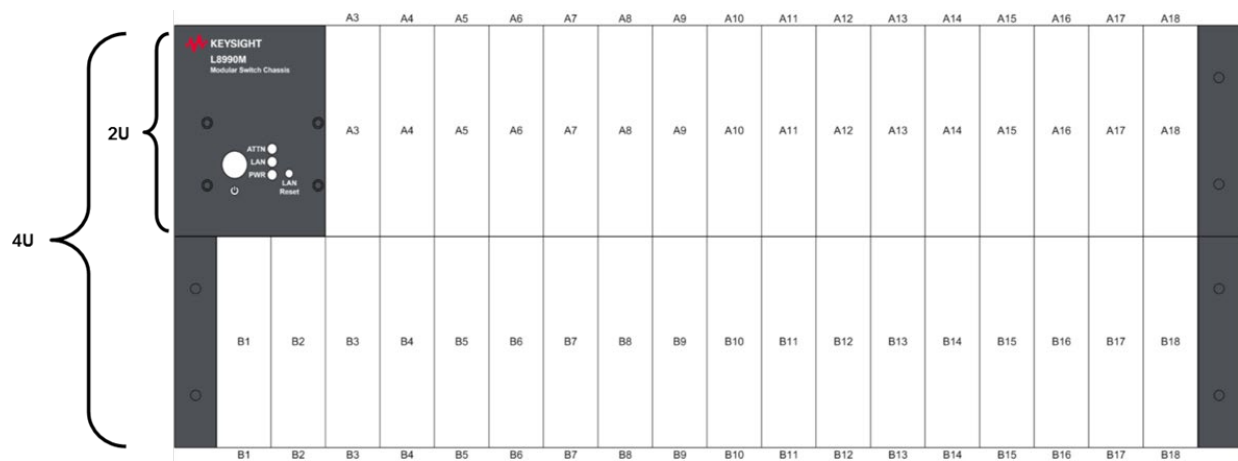
<https://www.keysight.com/us/en/assets/7018-02252/product-fact-sheets/5990-4414.pdf>

<https://www.keysight.com/us/en/assets/7018-06681/technical-overviews/5091-6188.pdf>

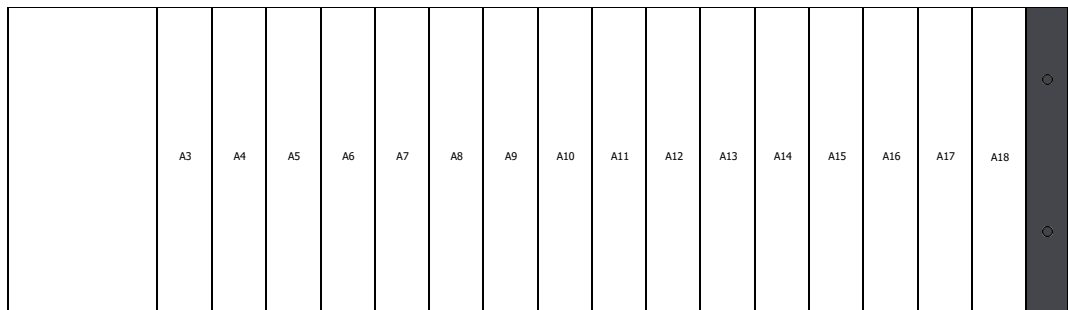
Step 2: Select enclosure and option

- ☐ 2U High Enclosure, front panel Power Button and Status LEDs (16 Slots)
- ☐ 2U High Enclosure, rear panel Power Button and Status LEDs (18 Slots)
- ☐ 3U High Enclosure, front panel Power Button and Status LEDs (16 Slots)
- ☐ 3U 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)
- ☐ 5U High Enclosure, front panel Power Button and Status LEDs (34 Slots)
- ☐ 5U High Enclosure, rear panel Power Button and Status LEDs (36 Slots)
- ☐ L8990V-001, 2U 11 Inch Chassis with no controller or front panel modules**
- ☐ L8990Y-001, Rack Mount Bracket Assy, 2U, Adjustable, 2–5-inch Recess**

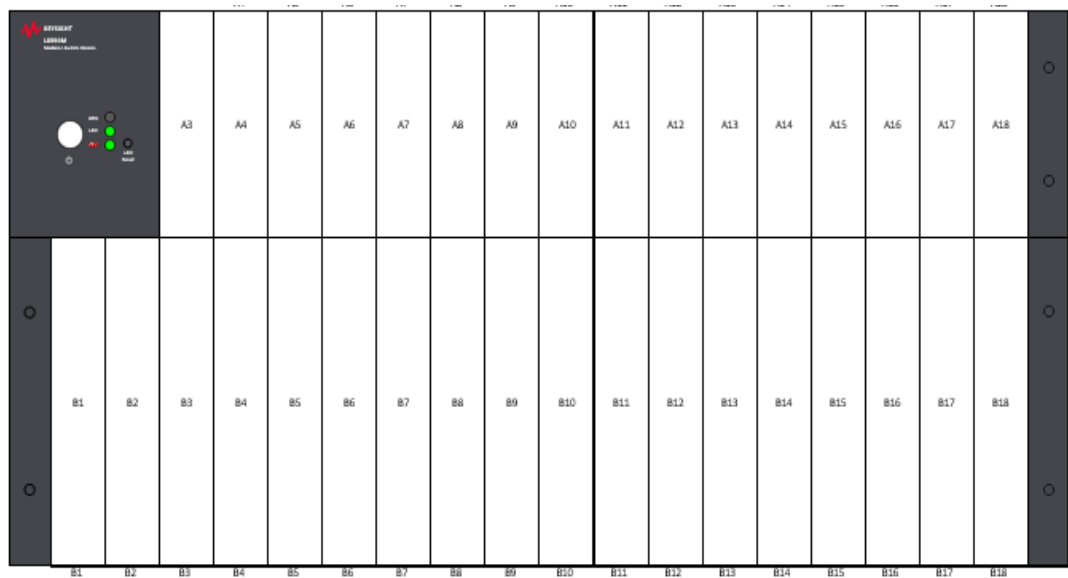
(**Available to be directly quoted by your local sales representative)



3U



5U



Step 3: Select depth

- ☐ 421.6 mm (17 inches) deep (Limited configurations to be reviewed by quoting team)
- ☐ 584 mm (23 inches) deep

Step 4: Determine slot placement and quantity

Module	Description	Qty Needed	Slots Required Per Module	Total Slots Filled	Slot Location (Enter the slot ID from the template above)
L3111X	N1810TL; SPDT Switch, Terminated	0	1	0	
L3113X	N1810UL; SPDT Switch, Unterminated	0	1	0	
L3114X	N1811TL; 4-port Bypass Switch, Terminated	0	1	0	
L3117X	N1812UL; 5-port Bypass Switch, Unterminated	0	1		
L3121X	87106x; SP6T Multiport Switch	0	3	0	
L3121XL	87106x; SP6T Multiport Switch with LEDs	0	3	0	
L3122X	87104x; SP4T Multiport Switch	0	3	0	
L3122XL	87104x; SP4T Multiport Switch with LEDs	0	3	0	
L3126X	87406x; 6-port Switch	0	3	0	
L3127X	87606x; 6-port Switch	0	3	0	
L3128x	U7108x; SP8T multiport switch	0	4	0	
L3128xL	U7108x; SP8T multiport switch with LEDs	0	4	0	
L3129x	U7110x; SP10T multiport switch	0	4	0	
L3129xL	U7110x; SP10T multiport switch with LEDs	0	4	0	
L3131X	87222x; Transfer Switch	0	2	0	
L3151X	87106x; SP6T Multiport Switch with LEDs	0	3	0	
L3152X	87104x; SP4T Multiport Switch with LEDs	0	3	0	
L3041X	84904x; Attenuator 1-11dB	0	2	0	
L3042E	84905M; Attenuator 1-60dB	0	2	0	
L3043X	84906x; Attenuator 0-90dB	0	2	0	
L3044X	84907x; Attenuator 0-70dB	0	2	0	
L3045E	84908x; Attenuator 0-65dB	0	2	0	
L3051B	87300B; Coax Dir. Coupler, 10dB	0	2	0	
L3052B	87300C; Coax Dir. Coupler, 10dB	0	2	0	
L3053B	87300D; Coax Dir. Coupler, 10dB	0	2	0	
L3054E	87301B; Coax Dir. Coupler, 10dB	0	2	0	
L3055E	87301C; Coax Dir. Coupler, 10dB	0	2	0	
L3056D	87301D; Coax Dir. Coupler, 13dB	0	2	0	
L3057E	87301E; Coax Dir. Coupler, 10dB	0	2	0	
L3032A	LEDs – 2 position	0	1	0	
L3033A	LEDs – 4 position	0	1	0	
L3034A	LEDs – 6 position	0	1	0	
L3021A	Modular 1 Slot Blank Panel	0	1	0	
L3022A	Modular 2 Slot Blank Panel	0	2	0	
L3023A	Modular 3 Slot Blank Panel	0	3	0	
L3027A	Modular 1 Slot Tall Blank Panel	0	1	0	
L3028A	Modular 2 Slot Tall Blank Panel	0	2	0	
L3029A	Modular 3 Slot Tall Blank Panel	0	3	0	
L3090A	Modular 1 Slot Extension Panel for use in	0	1	0	
L3091A	tall slots when using a standard module	0	2	0	
L3092A	Modular 2 Slot Extension Panel for use in	0	3	0	
				Total Slots Needed	

Step 5: 2U Configuration – Slot placement example

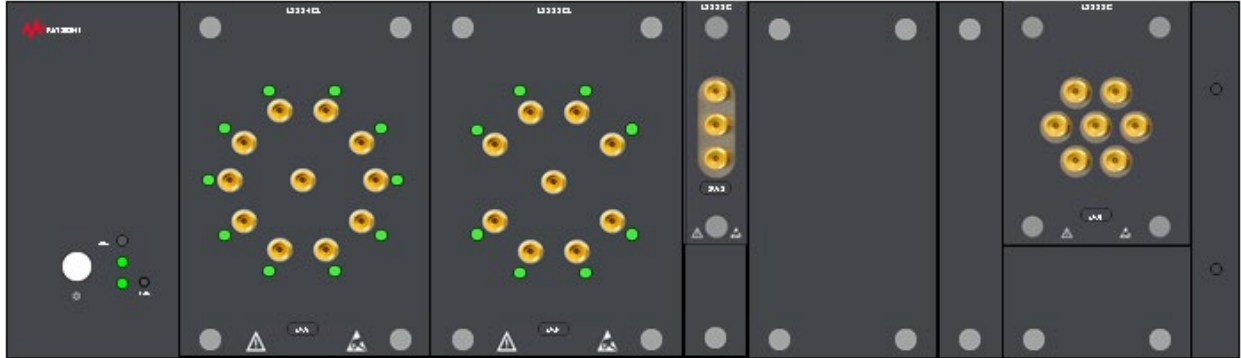
This example uses the configured L8990M Modular Switch Chassis below as a reference to determine the desired slot placement for a 2U Chassis. The fillable slot locations are identified above the unit, for reference. Keysight will include blank filler panels in all empty slots.



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
L3122X	87104x SP4T Multiport Switch	1	3	3	A12, A13, A14
L3121X	87106x SP6T Multiport Switch	1	3	3	A15, A16, A17
L3131X	87222x Transfer Switch	1	2	2	A3, A4

Step 5: 3U Configuration – Slot placement example

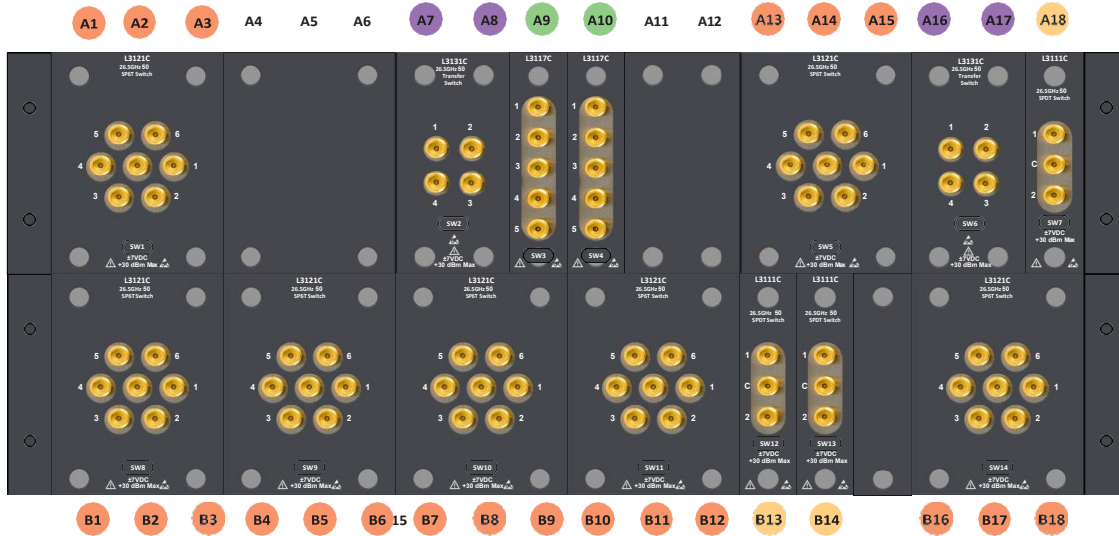
This example uses the configured L8990M Modular Switch Chassis below as a reference to determine the desired slot placement for a 3U Chassis. The fillable slot locations are identified above the unit, for reference. Keysight will include blank filler panels in all empty slots. When using a standard height module in a 3U chassis, a blank panel is installed below the module to enable mounting in the tall slot.



Module	Description	Qty Needed	# Slots Required	Total Slots Filled	Slot Placement (Enter slot ID found on template above)
L3129xL	U7110x; SP10T multiport switch with LEDs	1	4	4	A3, A4, A5, A6
L3128xL	U7108x; SP8T multiport switch with LEDs	1	4	4	A7, A8, A9, A10
L3111X	N1810TL; SPDT Switch, Terminated	1	1	1	A11
L3090A	Modular 1 Slot Extension Panel	1	1	1	A11
L3029A	Modular 3 Slot Tall Blank Panel	1	3	2	A12, A13, A14
L3027A	Modular 1 Slot Tall Blank Panel	1	2	1	A15
L3121X	87106x SP6T Multiport Switch	1	3	3	A16, A17, A18
L3092A	Modular 3 Slot Extension Panel	1	3	3	A16, A17, A18

Step 5: 4U Configuration – Slot placement example

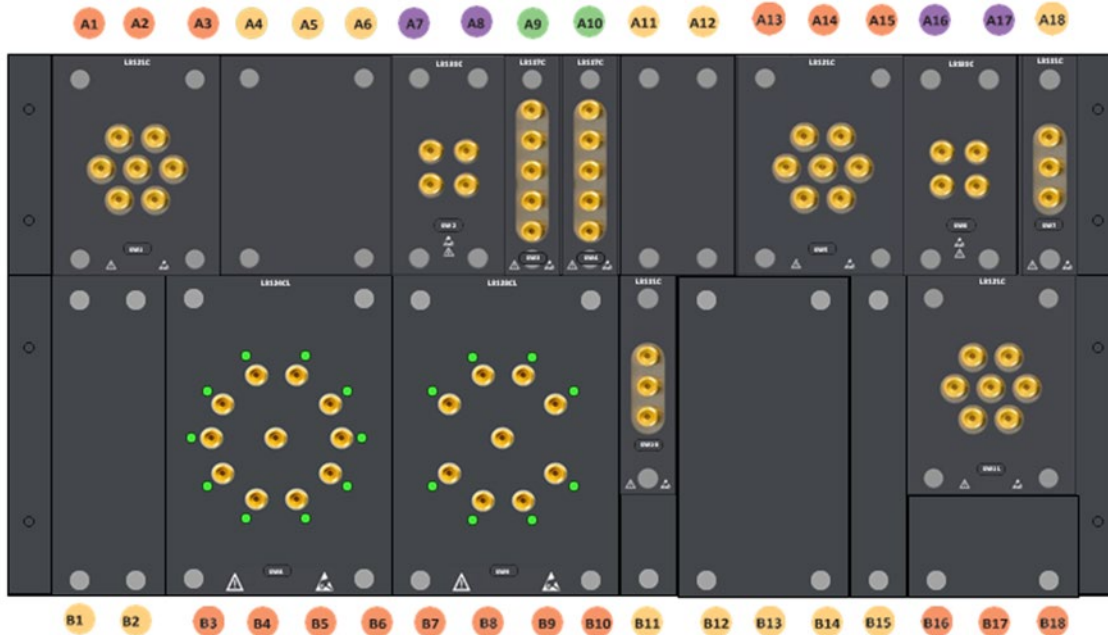
This example uses the configured L8990M Modular Switch Chassis below as a reference to determine the desired slot placement for a 4U Chassis. The fillable slot locations are identified above the unit, for reference. Keysight will include blank filler panels in all empty slots.



Module	Description	Qty Needed	# Slots Required	Total Slots Filled	Slot Placement (Enter slot ID found on template above)
L3111X	N1810TL SPDT Switch, Terminated	3	1	3	A18, B13, B14
L3117X	N1812UL 5-port Bypass Switch, Underterminated	2	1	2	A9, A10
L3121X	87106x SP6T Multiport Switch	7	3	21	A1-A3, A13-A15, B1-B12, B16-B18
L3131X	87222x Transfer Switch	2	2	4	A7, A8, A16, A17

Step 5: 5U 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. When using a standard height module in a 3U chassis, a blank panel is installed below the module to enable mounting in the tall slot.



Module	Description	Qty Needed	# Slots Required	Total Slots Filled	Slot Placement (Enter slot ID found on template above)
L3111X	N1810TL SPDT Switch, Terminated	3	1	2	A18, B11
L3090A	Modular 1 Slot Extension Panel	1	1	1	B11
L3117X	N1812UL 5-port Bypass Switch, Underminated	2	1	2	A9, A10
L3121X	87106x SP6T Multiport Switch	7	3	21	A1-A3, A13-A15, B16-B18
L3092A	Modular 3 Slot Extension Panel				B16-B18
L3131X	87222x Transfer Switch	2	2	4	A7, A8, A16, A17
L3129x L	U7110x; SP10T multiport switch with LEDs	1	4	4	A3, A4, A5, A6
L3128x L	U7108x; SP8T multiport switch with LEDs	1	4	4	A7, A8, A9, A10
L3029A	Modular 3 Slot Tall Blank 1 Panel		3	2	B12, B13, B14
L3028A	Modular 2 Slot Tall Blank 1 Panel		2	2	B1,B2
L3027A	Modular 1 Slot Tall Blank 1 Panel		2	1	B15
L3022A	Modular 2 Slot Blank Panel	1	2	2	A11, A12
L3023A	Modular 3 Slot Blank Panel	1	3	3	A3, A4, A5

Step 6: Specify standard accessories (if any)

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

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

Send an email to quotes.adsys@keysight.com.

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.

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.



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