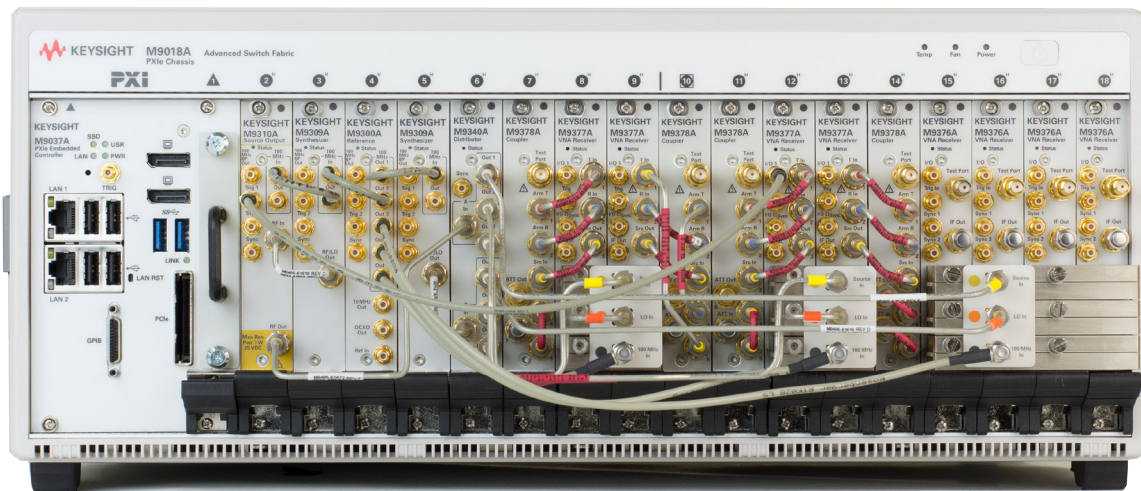


Keysight M9485A

PXIe Multiport Vector Network Analyzer

Configuration Guide



Ordering Guide

The following steps will guide you through configuring your M9485A.

Standard items	
Description	Additional information
M9485A CD-ROM	Includes M9485A application firmware
IO library CD-ROM	Includes Keysight IO library
Start Up Guide	Describes how to set up the M9485A
Socket for wrench - 5/16 inch	Torque wrench is required.
Cable removal tool, SMB/MMCX	

Step 1. Choose primary receiver type and its number of port (mandatory). If two or three of receiver type is required, use step 2 to add the receiver.

Step 1-1. Choose receiver type (Specify the first digit)	
Description	Option Number
Standard Receiver (M9376A)	M9485A-1xx
Configurable test set (M9377A/M9378A/M9378B)	M9485A-2xx
Direct receiver access without coupler (M9377A)	M9485A-3xx

Step 1-2. Choose number of port (Specify the last two digits) ¹	
Description	Available number of ports
Standard Receiver (M9376A)	4 to 24 (2 Step)
Configurable test set (M9377A/M9378A/M9378B)	2 to 12 (2 Step)
Direct receiver access without coupler (M9377A)	2 to 12 (2 Step)
Example:	Option number
4 port of standard receiver (M9376A)	M9485A-104
6 port of configurable test set with bias-tee (M9377A/M9378B)	M9485A-236
8 port of configurable test set (M9377A/M9378A)	M9485A-208
10 port of direct receiver access without coupler (M9377A)	M9485A-310

Step 2. Choose additional receiver (multiple test sets can be ordered if needed).

Description	Option Number
Adding standard receiver (M9376A)	
Add two standard port with 2-way divider	M9485A-400
Add two standard port with 4-way divider	M9485A-401
Add four standard port with 4-way divider	M9485A-402
Adding configurable test set (M9377A/M9378A)	
Add two configurable port with 2-way divider	M9485A-403
Adding direct access receiver(M9377A)	
Add two direct access receiver with 2-way divider	M9485A-404
Add two direct access receiver with 4-way divider	M9485A-405
Add four direct access receiver with 4-way divider	M9485A-406
Adding configurable test set with bias-tee (M9377A/M9378B)	
Add two configurable port with 2-way divider and bias-tee	M9485A-407
Adding modules and cables for 2 chassis	
Add 2-chassis configuration modules	M9485A-410

1. When a configurable test set with bias-tee is required (M9377A/M9378B), use 32 to 42 as the last two digits by adding "30" to available number of ports (e.g. 32 for 2-port, 36 for 6-port)

The following tables show the required options for the combination of receiver type.

1) Combination of standard receiver and configurable test set

		Number of ports for configurable test port ¹						
		0	2	4	6	8	10	12
Number of ports for standard receiver	0	n/a	202	204	206	208	210	212
	2	n/a	202+400	204+400	206+400	208+400	210+400	n/a
	4	104	104+403	104+403*2	206+402+410	104+403x4+410	210+402	n/a
	6	106	106+403	106+403x2+410	106+403x3+410	106+403x4+410	n/a	n/a
	8	108	108+403	108+403x2+410	108+403x3+410	108+403x4+410	n/a	n/a
	10	110	110+403+410	110+403x2+410	110+403x3+410	n/a	n/a	n/a
	12	112	112+403+410	112+403x2+410	112+403x3+410	n/a	n/a	n/a
	14	114	114+403	114+403x2	n/a	n/a	n/a	n/a
	16	116	116+403	116+403x2	n/a	n/a	n/a	n/a
	18	118	118+403	n/a	n/a	n/a	n/a	n/a
	20	120	120+403	n/a	n/a	n/a	n/a	n/a
	22	122	n/a	n/a	n/a	n/a	n/a	n/a
	24	124	n/a	n/a	n/a	n/a	n/a	n/a


 = 1 Chassis Configuration  = 2 Chassis Configuration

Example

If your required configuration is 4 ports of standard receiver and 8 ports of configurable test port, order M9485A-104, four of M9485A-403 and M9485A-410.

2) Combination of standard receiver and direct access receiver

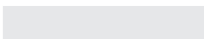
		Number of ports for direct access receiver						
		0	2	4	6	8	10	12
Number of ports for standard configuration standard receiver	0	n/a	302	304	306	308	310	312
	2	n/a	302+401	304+400	306+401	308+400	310+401	312+400+410
	4	304	104+404	104+406	306+402	308+402	310+402+410	312+402+410
	6	106	106+405	106+406	306+401+402	308+400+402+410	310+401+402+410 ²	312+400+402+410
	8	108	108+404	108+406	108+404+406+410	108+406x2+410	108+404+406x2+410	312+402x2+410
	10	110	110+405	110+406+410 ³	110+405+406+410 ⁴	110+406x2+410 ³	310+401+402+410 ²	312+400+402x2+410
	12	112	112+404+410	112+406+410	112+404+406+410	112+406x2+410	112+404+406x2+410	312+402x3+410
	14	114	114+405	114+406	114+405+406	114+406x2	114+405+406x2	n/a
	16	116	116+404	116+406	116+404+406	116+406x2	n/a	n/a
	18	118	118+405	118+406	118+405+406	n/a	n/a	n/a
	20	120	120+404	120+406	n/a	n/a	n/a	n/a
	22	122	122+405	n/a	n/a	n/a	n/a	n/a
	24	124	n/a	n/a	n/a	n/a	n/a	n/a


 = 1 Chassis Configuration  = 2 Chassis Configuration

1. Use 232/234/236/238/240/242/407 instead of 202/204/206/208/210/212/403 for configurations with bias-tee (M9378B)
2. 400 can be used instead of 401
3. 404+405 x1 can be used instead of 406 x1
4. 404 x1 can be used instead of 405 x1

3) Combination of direct access receiver and configurable test set

		Number of ports for configurable port ¹						
		0	2	4	6	8	10	12
Number of ports for direct access receiver	0	n/a	202	204	206	208	210	212
	2	302	302+403	302+403x2	206+404+410	208+403	210+404	n/a
	4	304	304+403	304+403x2	206+406+410	304+403x4+410	210+406	n/a
	6	306	306+403	306+403x2+410	306+403x3+410	306+403x4+410	n/a	n/a
	8	308	308+403	308+403x2+410	308+403x3+410	308+403x4+410	n/a	n/a
	10	310	310+403+410	310+403x2+410	310+403x3+410	n/a	n/a	n/a
	12	312	312+403+410	312+403x2+410	312+403x3+410	n/a	n/a	n/a

 = 1 Chassis Configuration

 = 2 Chassis Configuration

Step 3. Add an M9300A PXIe frequency reference

Description	Model-option	Additional information
PXIe frequency reference	M9485A-300	One M9300A 100 MHz frequency reference required to run the M9485A and meet M9485A data sheet specifications

Step 4. Choose software option

Description	Model-option	Additional information
Automatic fixture removal	M9485A-007	Transportable license
Frequency offset mode	M9485A-009	Transportable license
Time domain analysis	M9485A-010	Transportable license
Basic RF Pulse Measurements	M9485A-025	Transportable license
Noise Figure Measurements ²	M9485A-028	Transportable license
Gain Compression Application	M9485A-086	Transportable license
N-port calibrated measurement	M9485A-551	Required for > 4-port configurations; transportable license ³

Step 5. Add a chassis

Description	Model-option	Additional information
PXIe 18-Slot Chassis	M9018B/19A	If the total number of receiver slot is more than 12, two M9018B/19As are required. Note: Total number of slot = [# of standard receiver] x 1 + [# of configurable test set] x 2 + [# of direct receiver access port] x 1. Standard receiver (M9376A) takes 1 slot per port, configurable test set (M9377A and M9378A/B) takes 2 slots per port, and direct receiver access without coupler (M9377A) takes 1 slot per port
Protective Cover Kit for 18-Slot PXIe Chassis	M9018-80022	Includes one protective cover (M9018-01206) and eight screws (0515-1114)

1. Use 232/234/236/238/240/242/407 instead of 202/204/206/208/210/212/403 for configurations with bias-tee (M9378B).

2. For noise figure measurements, it is recommended to add an external switch at VNA source port. Please contact technical support for more detail.

3. M9485A runs as maximum 4-port receiver configuration without Option 551.

Step 6. Add a PCIe cable interface for 2-chassis configuration

Description	Model-option	Additional information
PCIe cable interface	M9022A	PCIe cable interface for 14 to 24-port configurations. If M9037A is used as controller, no M9022A is required (M9485A options 114 to 124 include one M9022A and M9037A has one PCIe port) Other cases require one additional M9022A. ¹

Step 7. Select controller (either embedded controller or via PC)

To use an embedded controller, select either M9036A or M9037A

M9037A high-performance embedded controller

Description	Model-option	Additional information
PXIe embedded controller	M9037A	Intel i7-4700EQ quad-core processor at 2.4 GHz, USB 2.0 (4), USB 3.0 (2), LAN (10/100/1000) (2), DisplayPort (2), GPIB and SMB trigger
Windows Embedded Standard 7 (64 bit)	M9037A-WE6	
Windows Embedded Standard 7 (32 bit)	M9037A-WE3	
Memory, 8 GB	M9037A-M08	8 GB or more is recommended for M9485A
Memory, 16 GB	M9037A-M16	
USB keyboard and optical mouse	Y1206A	
Display port-to-DVI adapter	Y1261A	
Display port cable	Y1262A	
Display port-to-VGA adapter	Y1263A	

To use your desktop PC as a controller

Description	Model-option	Additional information
PCIe desktop adapter	M9048B/49A	PCIe x8 or x16 card slot is required in your desktop PC
PCIe cable interface	M9022A/23A	If you have a 2-chassis configuration, two M9022As or one M9023A is required. ¹
PCIe cable x8, 2.0m	Y1202A	
Air inlet kit: M9018B/19A chassis	Y1214B	Required for empty slot-1 in M9018B/19A chassis.

1. Please refer to the M9022A/23A data sheet (5992-0377EN) for more details.

Software Upgrades

Model-option	Description	Upgrade model-option	Customer installable?	Additional information
M9485A-007	Automatic fixture removal	M9485AU-007	Yes	Transportable license
M9485A-009	Frequency offset mode	M9485AU-009	Yes	Transportable license
M9485A-010	Time domain analysis	M9485AU-010	Yes	Transportable license
M9485A-025	Basic RF Pulse Measurements	M9485AU-025	Yes	Transportable license
M9485A-028	Noise Figure Measurements	M9485AU-028	Yes	Transportable license
M9485A-086	Gain Compression Application	M9485AU-086	Yes	Transportable license
M9485A-551	N-port calibrated measurement	M9485AU-551	Yes	Transportable license

Hardware Upgrades

Refer to M9485A Post-Purchase Upgrades in Keysight.com for adding port configurations.

Literature Resources

Description	Publication number
<i>M9485A</i> data sheet	5992-0756EN
<i>M9485A</i> brochure	5992-0757EN
<i>Network Analyzer</i> selection guide	5989-7603EN
<i>M9111A PXIe High-Speed Source/Measure Unit</i> data sheet	5992-1541EN
<i>MM9341A/B PXIe Digital and Analog I/O</i> data sheet	5992-1856EN
<i>M9379A RF Amp Module</i> data sheet	5992-1795EN

Web Resource

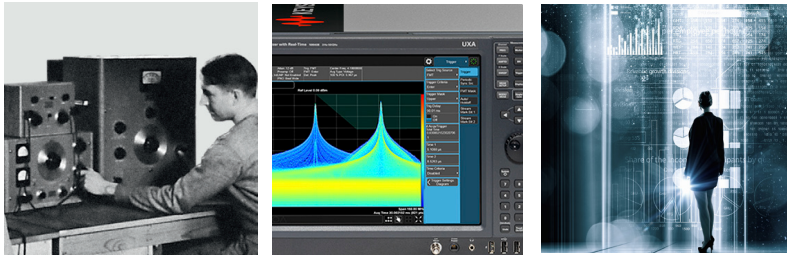
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