

# Streamline Series Vector Network Analyzer (P5027M and P5028M)

Compact form. Zero compromise.

## Introduction

The freedom of portable network analysis doesn't have to mean a compromise in performance. P502xM Series is a compact 4-port Vector Network Analyzer (VNA) which dramatically reduces your size of test.

With software applications like enhanced time domain analysis with TDR and automatic fixture removal, you can easily characterize passive components with the same performance of a benchtop setup.



# P502xM Series Configurations

| Model 1, 2, 3, 4, 5 | Description               | Test port connectors |
|---------------------|---------------------------|----------------------|
| P5027M              | 100 kHz to 44 GHz, 4-port | 2.4 mm (f)           |
| P5028M              | 100 kHz to 53 GHz, 4-port | 1.85 mm (f)          |

1. P502xM Series VNAs include Thunderbolt 3 cable assembly for connection with a host PC (800-mm, P/N: 8121-3588), power supply (external AC-DC adapter, P/N: 0950-6166), and power cord.
2. Option 400 is the only test set option for P502xM. Option 400 indicates four test ports.
3. P502xM Option 400 include one flexible control cable (P/N: M9800-61601) and one semi-rigid cable (P/N: M9800-61602) for the connection on the front panel. Both cable assemblies are included in Y1730A Option 001 (Interconnect cables for multipoint configuration of 1-slot M980xA)
4. P502xM Series VNAs do not have calibration options such as Option 1A7.
5. Refer to [www.keysight.com/find/VNATBTConnectivity](http://www.keysight.com/find/VNATBTConnectivity) for troubleshooting the connection of a host PC with Streamline Series VNA.

## Measurement Application Software

Software applications for Keysight Streamline Series Vector network analyzer enable you to investigate, characteristic, and troubleshoot your designs in a variety of measurement applications. Features are field-upgradeable and are added via software license keys. See the Keysight Streamline Series VNA Configuration Guide ([3121-1254.EN](#)) for more details.

| Description                            | Model number | Additional information               |
|----------------------------------------|--------------|--------------------------------------|
| Automatic fixture removal              | S97007B      |                                      |
| Time domain analysis                   | S97010B      |                                      |
| Enhanced time domain analysis with TDR | S97011B      | Includes all capabilities of S97010B |

## Specifications in Brief

Contact Keysight sales representatives for more details about the technical specifications and typical performance of P502xM Series.

### Specification (spec)

Warranted performance. Specifications include guardbands to account for the expected statistical performance distribution, measurement uncertainties, and changes in performance due to environmental conditions. All specifications and characteristics apply over a  $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$  range (unless otherwise stated) after a 60-minute warm up period. The instrument must be within its calibration cycle.

### Typical (typ.)

Expected performance of an average unit at a stable temperature between  $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$  for 60 minutes prior to turn-on and during operation; does not include guardbands. It is not covered by the product warranty. The instrument must be within its calibration cycle.

## P502xM series performance

|                                                 |           |                                                                      |
|-------------------------------------------------|-----------|----------------------------------------------------------------------|
| System dynamic range (spec), 10 Hz IF bandwidth | At 4 GHz  | 130 dB                                                               |
|                                                 | At 20 GHz | 125 dB                                                               |
|                                                 | At 40 GHz | 112 dB                                                               |
| Maximum output power (spec)                     | At 4 GHz  | 8 dBm                                                                |
|                                                 | At 20 GHz | 7 dBm                                                                |
|                                                 | At 40 GHz | 2 dBm                                                                |
| Receiver compression at test port (spec)        | At 4 GHz  | 0.2 dB (mag), / 5 degree (phase), at +8 dBm input power at test port |
|                                                 | At 20 GHz | 0.2 dB (mag), / 5 degree (phase), at +7 dBm input power at test port |
|                                                 | At 40 GHz | 0.2 dB (mag), / 5 degree (phase), at +2 dBm input power at test port |
| Trace noise (spec) <sup>1</sup>                 | At 4 GHz  | 0.0018 dB rms / 0.024 degree rms                                     |
|                                                 | At 20 GHz | 0.0036 dB rms / 0.032 degree rms                                     |
|                                                 | At 40 GHz | 0.0072 dB rms / 0.048 degree rms                                     |
| Temperature stability (typ.)                    | At 4 GHz  | 0.005 dB/deg.C (mag) / 0.1 degree/deg.C (phase)                      |
|                                                 | At 20 GHz | 0.01 dB/deg.C (mag) / 0.2 degree/deg.C (phase)                       |
|                                                 | At 40 GHz | 0.01 dB/deg.C (mag) / 0.3 degree/deg.C (phase)                       |
| Damage level                                    | -         | +27 dBm or $\pm$ 35 VDC (Warranted)                                  |

1. Transmission and reflection trace noise in a 10 kHz IF bandwidth. Measured at maximum specified power.

# Resources

Keysight Vector Network Analyzer web page: [www.keysight.com/find/na](http://www.keysight.com/find/na)

Keysight Streamline Series Vector Network Analyzer web page: [www.keysight.com/find/usb-vna](http://www.keysight.com/find/usb-vna)

Vector Network Analyzer Software web page: [www.keysight.com/find/vnasoftware](http://www.keysight.com/find/vnasoftware)

Streamline Series Vector Network Analyzer, Configuration guide: [3121.1254.EN](#)



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](http://www.keysight.com).

This information is subject to change without notice. © Keysight Technologies, 2025,  
Published in USA, May 19, 2025, 3125-1244.EN