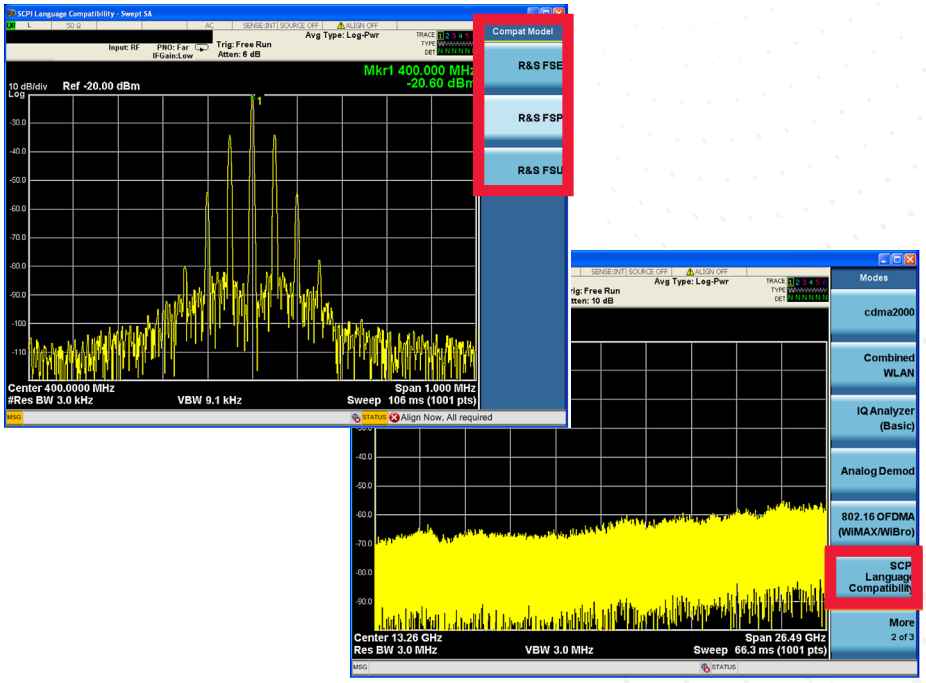
TECHNICAL OVERVIEW

SCPI Language Compatibility

X-Series Measurement App, Traditional UI N9062EM0D



KEYSIGHT TECHNOLOGIES

SCPI Language Compatibility Measurement Application

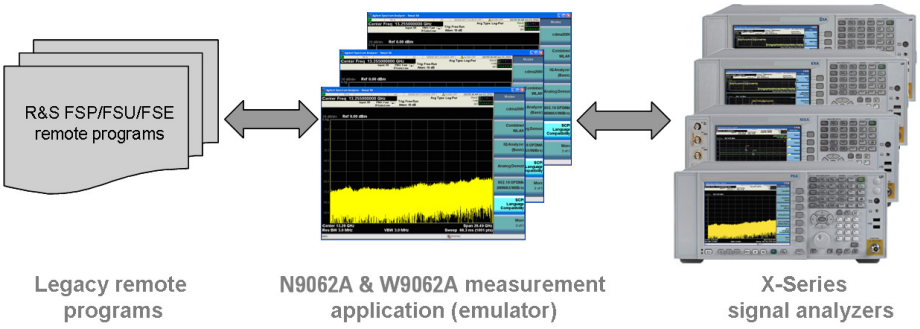


Figure 1. A simplified working block diagram for the SCPI language compatibility application

The SCPI language compatibility measurement application transforms the X-Series signal analyzers into SCPI commands compatibility mode, by supporting over 278 SCPI commands from R&S FSP/FSU/FSE/ESU/FSV/FSL spectrum analyzers. This application enables the X-Series signal analyzers to easily replace the R&S FSP/FSU/FSE/ESU/FSV/FSL spectrum analyzers in remotely controlled, automated test equipment (ATE) systems, with minimal or no modifications to your currently used measurement software. Figure 1 shows a simplified working block diagram for the X-series N9062EM0D application.

X-Series measurement applications can help you:

- Gain more insight into device performance with intuitive display and graphs for your application. Select from our library of over 25 different measurement applications.
- Ensure that your design meets the latest standard. Updates are made to the X-Series measurement applications as standards evolve.
- Apply the same measurement science across multiple hardware platforms for consistent measurement results over your design cycle from R&D to production.
- Choose the license structure that meets your business needs. We provide a range of license types (node-locked, transportable, floating or USB portable) and license terms (perpetual or time-based).

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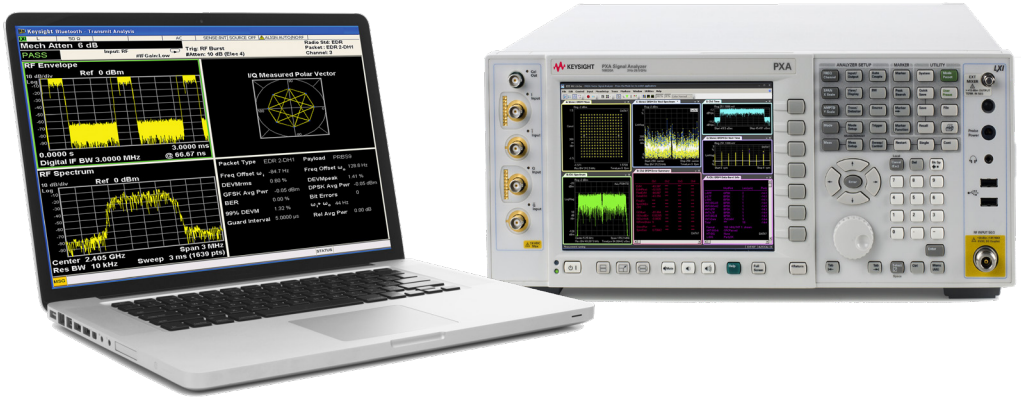

Top Features

The SCPI language compatibility measurement application provides an emulation process that enables the user's legacy FSP/FSU/FSE/ESU/FSV/FSL program and X-Series signal analyzers to understand each other: Not only does this application make the X-Series understand the legacy commands for the correct implementations, it also makes the response from the X-Series signal analyzers such as measurement results and query results, understandable to the legacy remote program.

By running the SCPI language compatibility measurement application, the X-Series signal analyzers support and emulate the following spectrum analyzer functions from your legacy FSP/FSU/FSE/ESU/FSV/FSL remote programs:

- General-purpose spectrum analysis settings: frequency, span, amplitude, RBW, VBW, sweep, detectors, trace averaging, data format and more
- General and delta marker functions, as well as marker noise, band power and power density functions
- Limit line and limit check functions
- Limit check for spectrum emission measurements
- Power measurements: channel power, ACP
- Statistical measurement function: CCDF
- Trace data transfer and IQ data handling
- File saving and screen copy

Refer to *N9062A & W9062A SCPI Language Compatibility User Guide* (literature number N9062-90001) for a complete list of compatible SCPI commands.

Two ways to access the application

The SCPI language compatibility application emulates FSP/FSU/FSE/ESU/FSV/FSL spectrum analyzers in SCPI programming environment only, but you can access this mode in two ways:

Depending upon use cases, some of the legacy commands may not technically be possible for the emulation due to the substantial differences in the architecture and implementation between the legacy and X-Series analyzers.

The SCPI language compatibility application supports commands from the spectrum analyzer mode of legacy FSP/FSU/FSE/ESU/FSV/FSL instruments, including major commands for channel power, OBW/ACP measurements, and IQ traces. Commands from other options or modes are not supported. If a command or query is valid for FSP/FSU/FSE/ESU/FSV/FSL products but not supported by the SCPI language compatibility application, the X-Series analyzers generate an error message, indicating that this type of SCPI command is not covered in this application.

The SCPI language compatibility application only emulates the FSP/FSU/FSE/ESU/FSV/FSL spectrum analyzers in SCPI commands programming environment. It does not support the same front panel operations, user interfaces and measurement screen displays.

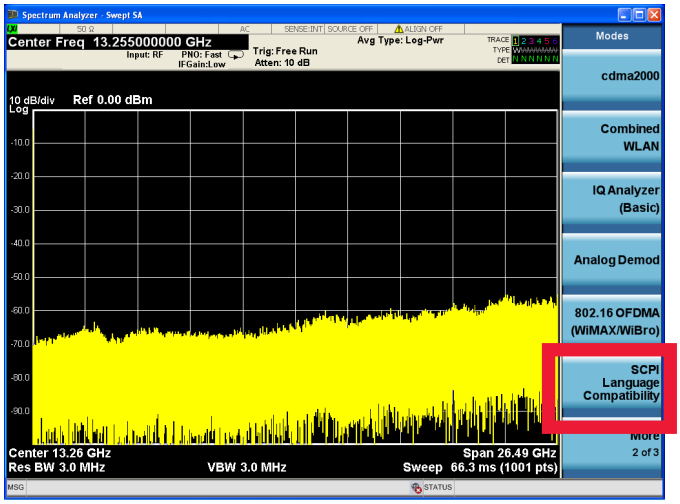

Figure 2. Accessing the SCPI language compatibility mode

1. Front panel access

Use the "SCPI Language Compatibility" soft-key under the "Mode" menu

2. Remote access

Activate the SCPI command mode
:INST SCPIRLC
::INST:SELect 270

Ordering Information

Flexible licensing and configuration

- **Perpetual:** License can be used in perpetuity.
- **Time-based:** License is time limited to a defined period, such as 12-months.
- **Node-locked:** Allows you to use the license on one specified instrument/computer.
- **Transportable:** Allows you to use the license on one instrument/computer at a time. This license may be transferred to another instrument/computer using Keysight's online tool.
- **Floating:** Allows you to access the license on networked instruments/computers from a server, one at a time. For concurrent access, multiple licenses may be purchased.
- **USB portable:** Allows you to move the license from one instrument/computer to another by end-user only with certified USB dongle, purchased separately.
- **Software support subscription:** Allows the license holder access to Keysight technical support and all software upgrades

You Can Upgrade!

All of our X-Series application options are license-key upgradeable.

UP GRADE

SCPI Language Compatibility measurement application (N9062EM0D)

Software License Type	Software License	Support Subscription (12-month) [1,2]
Node-locked perpetual	R-Y5C-001-A[2]	R-Y6C-001-L[2]
Node-locked 12-month	R-Y4C-001-L[1]	Included
Transportable perpetual	R-Y5C-004-D[2]	R-Y6C-004-L[2]
Transportable 12-month	R-Y4C-004-L[1]	Included
Floating perpetual	R-Y5C-002-B[2]	R-Y6C-002-L[2]
Floating 12-month	R-Y4C-002-L[1]	Included
USB portable perpetual	R-Y5C-005-E[2]	R-Y6C-005-L[2]
USB portable 12-month	R-Y4C-005-L[1]	Included

One month software support subscription extensions [3]

Support Subscription	Description
R-Y6C-501[3]	1-month of software support subscription for node-locked license
R-Y6C-502[3]	1-month of software support subscription for floating license
R-Y6C-504[3]	1-month of software support subscription for transportable license
R-Y6C-505[3]	1-month of software support subscription for USB portable license

1. All time-based X-Series measurement application licenses includes a 12-month support contract which also includes the 12-month software support subscription as same duration.
2. Support contract must bundle software support subscription for all perpetual licenses in the first year. All software upgrades and Keysight support are provided for software licenses with valid support subscription.
3. After the first year, software support subscription may be extended with annual or monthly software support subscription extension.

For a complete list of specifications refer to the appropriate specifications guide.

PXA: **www.keysight.com/find/pxa_specifications**
MXA: **www.keysight.com/find/mxa_specifications**
EXA: **www.keysight.com/find/exa_specifications**
CXA: **www.keysight.com/find/cxa_specifications**

Try Before You Buy!

Evaluate a full-featured version of our X-Series measurement application with our ***FREE*** trial. Redeem one 30-day trial license of each measurement application online at: **www.keysight.com/find/X-Series_apps_trial**

Hardware Configurations

To learn more about compatible platforms and required configurations, please visit: **www.keysight.com/find/X-Series_apps_platform**

Software Models & Options

To learn more about X-Series measurement application licensing, model numbers and options, please visit: **www.keysight.com/find/X-Series_apps_model**

Hardware Configuration

For optimizing the SCPI Language Compatibility measurement application, Keysight recommends a minimum level of instrument hardware functionality at each instrument performance point. Supported instruments include:

Benchtop:

- PXA N9030A
- MXA N9020A
- EXA N9010A
- CXA N9000A

N90x0A X-Series signal analyzer

Capability	Instrument Option	Benefit
Analysis bandwidth	10 or 25 MHz as default or higher	**Required**: Wider analysis bandwidth options such as 25/40/85/160 MHz can be selected depending on the specified signal analyzer model
Precision frequency reference	-PFR	**Recommended**: For enhanced frequency accuracy and repeatability for lower measurement uncertainty
Electronic attenuator	-EA3	**Recommended**: Fast and reliable attenuation changes ideal for manufacturing without the wear associated with mechanical attenuators up to 3.6 GHz in 1 dB steps
Pre-amplifier	3.6 GHz (-P03) or higher	**Recommended**: For maximizing the measurement sensitivity
Fine resolution step attenuator	-FSA	**Recommended**: Useful for maximizing useable dynamic range to see signals
Analog baseband I/Q inputs	-BBA on PXA and MXA only	**Optional**: To extend measurements at baseband if required by device under test

M9290A CXA-m PXIe signal analyzer

Description	Model-Option	Additional information
Frequency range 3, 7.5, 13.6 or 26.5 GHz	M9290A-F03, F07, F13, or F26	One required
Analysis bandwidth 25 MHz	M9290A-B25	Optional
Preamplifier, 3, 7.5, 13.6 or 26.5 GHz	M9290A-P03, P07, P13 or P26	One required
Fine resolution step attenuator	M9290A-FSA	Optional
Precision frequency reference	-PFR	Optional

Additional Resources

Literature

Description	Publication number
N9062A & W9062A SCPI Language Compatibility User Guide	N9062-90001

Web

Product pages:
www.keysight.com/find/N9062D

X-Series applications:
www.keysight.com/find/X-Series_Apps

X-Series signal analyzers:
www.keysight.com/find/X-Series

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

KEYSIGHT TECHNOLOGIES

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