Software Release Notes

S2 Family

Reversing 2-port VNAs of Planar, S, and Cobalt Series

Planar 304/804/814
M5065/5090
S5048/7530/5065/5085/S5180
Cobalt x209/x220
CobaltFX

Version 19.2.3
- Fixed a bug related to the CW time feature

Version 19.2.2
- Fixed a bug in the 'About' window where the model, hardware revision and serial number showed incorrect data

Version 19.2.1
- Added CW Sweep Time function.
- Added command line keys for enabling and configuring the Socket Server and the HiSLIP Server. For full command line help launch the S2VNA application with key /? For example: S2VNA /?
- Updated FET-1854 firmware allowing work with long digital cables up to 20 meters.

Version 19.1.3
- Fixed an issue with the Cobalt DSP firmware that was introduced in S2VNA v19.1.2 and possibly v19.1.1 which prevented the S2VNA software from working consistently with Cobalt VNAs

Version 19.1.2
- Added support for M Series VNAs

Version 19.1.1
- Added support for Keysight U2000 Series USB power sensors
- Added support for Keysight U8480 Series USB power sensors

Version 18.3.3
- Added support for ACM4520.1
- Added print to file function with uncial files names

Version 18.3.2
- Added an option for saving the touchstone file format with either Space or Tab as the separator character
- Fixed a bug in the Time Domain function when the number of points set was more than 50,000

Version 18.3.1
- Fixed a bug with the Vector Mixer Calibration menu. Now the *.s2p file of the mixer automatically de-embeds upon completing the calibration process

Version 18.2.4
- Added T4311 and Z5411 to the predefined list in the calibration table

Version 18.2.3
- Added support for the S5180 VNA
- Updated the operating manual

Version 18.2.2
- Fixed a bug related to the Frequency Offset Mode with S5065/S5085 models
- Added the ability to customize the language shown on the VNA GUI using the language template file (DIY localization) and the language select menu

Version 18.2.1
- Added support for the FET1854 extenders
- Improved the Auto-orientation algorithm for poorly matched test setups

Version 18.2.0
- Improved the Automatic Calibration Module (ACM) functionality with the software

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- Fixed a bug with the "Unknown thru addition" algorithm
- Fixed a bug with the *.CSV file output format when the saving Polar and Smith displays
- Changed the recall state logic. Now recalling the "State Only" file retains the current calibration
- Fixed a bug in the HiSLIP protocol and the SCPI command *OPC?
- Fixed the "CMT S2 and S4 VNA" LabView driver from the "Programming Examples and Guides"
  - o The data fetch vi's had unnecessary delay that slow down the execution
  - o Fixed a bug in the "Send Trigger.vi"
  - o Fixed a bug in the "Wait for Operation Complete.vi"

Version 18.1.5
- Added the definitions of the new calibration kits: S911T, N1801 and S2611
- Fixed a few minor bugs

Version 18.1.2
- Updated the operating manual

Version 18.1.0
- Implemented S-parameters renormalization transformation to the complex reference impedance
- Added the Frequency Auto Adjust Function while measuring a mixer with an internal LO without the ability of having common reference source

Version 17.3.7
- Added support for the C1220 hardware version 2.0

Version 17.3.6
- Added support for the new ACM2509 hardware version 2.0, R&S NRP110T power sensor and third-party frequency extenders

Version 17.3.2
- Introduced new LabView driver using SCPI commands and VISA library
  (The previous driver used COM commands and is not recommended for new developments)
- Added memory FIFO function, up to 8 memory traces
- Fixed limit test issue with log sweep mode
- Fixed a bug with the S5048, S7530 models where the sweep freezes sometimes after powering on
- Improved termination of the VNA application when closing the COM reference

Version 17.2.5
- Driver and installer are digitally signed using an enhanced certificate. Enables driver installation on all Windows versions including fresh (non-upgraded) installations of Windows 10, version 1607 with Secure Boot ON
- Added Invisible Mode feature. Wherein a user can hide the GUI, while programmatically access all the functions

Version 17.2.3
- Both driver and installer are now digitally signed using a CMT certificate. Improves installation and is tested for all Windows versions except fresh (non-upgraded) installations of Windows 10, version 1607 with Secure Boot ON

Version 17.2.2
- Added support for the model C4220
- Added the ability to assign a marker's color

Version 17.2.1
- Implemented the Max/Min Trace Hold Function

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Version 17.2.0
- Added HiSLIP protocol functionality: an update to TCP/IP functionality of the instrument
- Updated SxVNA programming manual to reflect additional SCPI commands
- Fixed a bug related to the external reference setting on S5065 and S5085 models

Version 17.1.3
- Fixed a bug affecting measurement results of models S5065 and S5085

Version 17.1.2
- Improved the CSV save function with one-click, multi-trace saving and advanced formatting options

Version 17.1.1
- Added new trigger functions: averaging trigger and calibration trigger source (including point trigger for calibration)

Version 16.4.5
- Added support for Cobalt auxiliary voltmeter input module

Version 16.4.2
- Fixed a bug related to limit test that would prevent a measurement point from being tested

Version 16.4.1
- Added a new Security Level feature to hide frequency values during measurement

Version 16.3.2
- Fixed a bug SCPI command interface bug related to the SELected]:MARKer:FUNCtion:DOMain group of commands

Version 16.3.1
- Fixed a bug related to establishing a TCP Socket Server connection after calibration

Version 16.3.0
- Added a new automation interface: SCPI commands can be sent over TCP/IP socket

Version 16.2.5
- Added support for new instruments: C2220, C1209 v2 (extended dynamic range), S5065 and S5085

Version 16.2.4
- Fixed a bug in the MCM plugin when used jointly with the Port Extension function

Version 16.2.3
- Special version temporarily enabling (unspecified) S5048 operation from 9 kHz

Version 16.2.2
- Fixed a bug in the Unknown Thru Addition function related to loading calibration coefficients from a state file

Version 16.2.1
- Fixed various minor bugs
- Changed the step increment of the power input field to 0.1 dB

Version 16.1.0
- Fixed a bug related to IFBW settings below 10 Hz in the S5048 and S7530 models
- Changed the application icon

Software Release Notes

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Version 15.4.0
- IMPORTANT: All instruments in the S2 Family (reversing 2-Port VNAs) now share a common installer and software; instrument type can be dynamically detected or manually set on the System->Misc Setup menu. Version 16.1.0 supports the Planar 304/804/814, S5048/7530, and Cobalt 1209/1220 instruments
- IMPORTANT: This software release includes significant changes to the name of the COM interface. Legacy programs written in C# and VB.NET may experience issues related to the COM server name change, necessitating a code modification and recompile
- IMPORTANT: This software release includes significant changes to demo/simulator mode: during installation, select whether the software should run in a demo/simulator mode or not. This setting can be changed later on the System->Misc Setup menu
- IMPORTANT: The version number now reflects the year of release, major, and minor revisions; it is unified across software families
- The program can be limited to connect with any particular VNA instrument type and/or serial number
- Added two kits (N611/12/911/12 S/N Axx, Bxx and N611/12 S/N 4xx, 5xx, 6xx) to the predefined calibration kit table
- Added simulation mode for forthcoming instruments
- Added Reverse Sweep (sweeping from higher frequencies to lower frequencies)
- Improved the Gating algorithms with respect to window roll-off effects
- Changed the COM interface to the more universal name: IS2VNAPtr
- Added a new more universal name for the COM server: S2VNA.Application

Version 3.52
- Fixed a problem with figures in the Operating Manual

Version 3.51
- Added new plug-in for matched circuit modelling
- Updated automation examples and guides
- Modified the auto port extension function; now the full frequency range is used to determine extension delay
- Fixed a bug related to port extension not working when de-embedding is active
- Fixed a bug related to the beep sound at the end of a calibration sweep

Version 3.50
- Fixed a bug related to incorrect marker position when recalling a saved state file

Version 3.49
- Added Adapter Removal calibration
- Added the Autoscale All function
- Added Unknown Thru Addition calibration
- Added support for plugin programs
- Added a user prompt when loading touchstone file with stimulus settings different from the active settings
- Reworked programming examples and guides
- Removed the frequency adjustment function
- Fixed a bug related to disappearance of the Cal Kits table below the plot window
- Fixed a bug related to power level setting when an a state file created in a version the program predating the port power coupling feature is recalled
- Fixed a bug related to time position of the sampling window relative to a trigger event when an external trigger is used

Version 3.48
- Added Trigger scope function
- Added ability for user to erase the User Characterization from an attached Auto Calibration Module (ACM)
- Changed behavior of Port Switching Delay function; disabled by default due to incompatibility with certain earlier hardware revisions

Software Release Notes

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- Added a COM command SCPI.SENSe(Ch).SELected.CORRection.Status to allow for checking the active trace's correction status (Planar 804/1 only)

Version 3.47
- Added support for AutoCal Module (ACM) characterization using segment sweep mode, enabling ACM to be used down to 20 kHz
- Added support for the 4-port AutoCal Module ACM8400T
- Added support for 2-Port, One-path Calibration using ACM
- Added auto port extension feature
- Added support for waveguide calibrations and waveguide calibration kit definitions
- Made enhancements to port switchover delay behavior:
    - Reduced minimum port switching delay from 10 msec to 0 msec
    - Added Stimulus Port Switching Delay setting to maximize port power level accuracy when stimulus direction is changing; the delay value applied depends on the analyzer model: 40 ms for Planar-804/1, 10 ms for other models

Version 3.46
- Changed Fdata property to read/write from read only

Version 3.45
- Added support for Planar 804M. Build "a" adds calibration comparison functionality

Version 3.44
- Changed processing order of the Time Domain/Gating function and the S-parameter conversion function: now Time Domain/Gaiting precedes S-parameter conversion (Analysis > Conversion)
- Added new COM commands to switch ON/OFF the display of various GUI elements

Version 3.43
- Added general s-parameter conversion
- Added overload indication and power trip function (S5048, S7530)
- Added support of the SC4000 75-Ohm Autocal Module
- Fixed a bug related to incorrect impedance marker value with Smith (R+jX) chart display format when the Port Impedance Conversion function is active

Version 3.42
- Added function "Restore Previous Session"
- Fixed a few bugs

Version 3.41
- Extended Time Doman functionality
    - Unit selection of seconds, meters, or feet
    - Reflection Type selection of either Round Trip or One Way
    - Cable correction function allowing for velocity factor and cable loss correction
    - Cable data can be entered manually or selected from a cable table
    - Cable table includes commonly used cables and can be extended by the user
    - Cable table data is saved when the program is closed
    - Added related remote commands (see PM)
- Fixed bugs introduced in version Version 3.40 related to the GUI display
- Added an indication of a failed S2P file load

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Version 3.40
- Added description of the CMT N611, N612 Cal Kits
- Changed the recall state logic: recalling the "State Only" file retains the current calibration
- The IFBW button is now duplicated in the "Stimulus" menu

Version 3.39
- Added independent port power control feature
- Added Source/Receivers frequency offset feature
- Added Point feature for external trigger
- Added new COM command to support features above

Version 3.38
- Added access to all 4 receivers when absolute measurements are performed. Receiver data is now complex valued. Both GUI and COM allow setting of all receiver/stimulus combinations and retrieving of complex data

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Version 3.36
- Fixed miscellaneous bugs
- Changed COM server registration method. Now the COM server is registered during the software installation procedure or by using the keyword /REGSERVER
- Added the automatic USB driver installation in the software installation procedure

Version 3.35
- Fixed a bug with the AutoCal confidence check function in a one port scenario

Version 3.34
- Added SCPI.CALCulate(Ch).SELected.MARKer.MATH.FLATness.DATA
- Added SCPI.CALCulate(Ch).SELected.MARKer.MATH.FLATness.STATe
- Added SCPI.CALCulate(Ch).SELected.MARKer.MATH.FLATness.DOMain.STARt
- Added SCPI.CALCulate(Ch).SELected.MARKer.MATH.FLATness.DOMain.STOP

Version 3.33
- Added new function "Band Limit". The Function checks whether the frequency of a minimum (case of Notch) or maximum (case of Peak) of the trace falls within a specified frequency band

Version 3.32
- Fixed bug related to segment table loading; previously if any segment except the first contained only 1 point, the next segment indicated an invalid start frequency value

Version 3.31
- Fixed a bug in SCPI.CALCulate(Ch).SELected.SMOothing.APERture
- Added a new COM command to remote load Touchstone file to the memory trace:
  SCPI.MMEMory.LOAD.SNP.TRACe(Tr).MEMory = File
- Added new COM command to remote load Touchstone file to the S-parameters: SCPI.MMEMory.LOAD.SNP.DATA = File
- Added new COM/DCOM application object names "S5048.Application" and "S7530.Application". COM/DCOM application object may be created using these names as well as "Obzor304.Application" and "Obzor804.Application"

Version 3.30
- Fixed an access violation error in the AutoCal procedure. The error was introduced in the previous version of software.

Version 3.29
- Planar 304 and 804 only: Start frequency was changed to 100 kHz. Factory calibration of the instruments produced after March 2013 starts from 100 kHz. Factory calibration of the instruments produced before March 2013 starts from 300 kHz. The power level accuracy of the instruments produced before march 2013 is out of specification from 100 kHz to 300 kHz (typical error is not greater than 3 dB). If needed the instrument may be recalibrated across the full frequency range at an authorized service center
- Planar 804 only: modified spur reduction algorithm

Version 3.28
- Fixed bug in the COM command SCPI.SENSe(Ch).SEGMent.DATA. Error description: Number of Points of first segment always was assigned 1, irrespective of actual parameter
- Fixed bug in the COM command SCPI.SENSe(Ch).FREQuency.DATA when the sweep type is SEGMent. Error description: Abnormal program termination
- Enhanced COM remote control compatibility with MATLAB. Problem description: arguments passed from MATLAB to COM server as a one-dimensional array are converted to two-dimensional arrays when passed. Problem solved
- Updated Operating and Programming Manuals

Version 3.27

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- COM command SCPI.CALCulate(Ch).SELected.LIMit.DATA now supports Single Point Limit function

Version 3.26
- Corrected definition of Maury 8050A/Y, 8050B, 8850P/Q, 8860A calibration kits
- Fixed bug with printing via menu system > print > print embedded (blank image sometimes)
- Installation and driver pack test on Windows 8 64-bit and 32 bit is Ok

Version 3.25
- Added Maury calibration kits definition: 8050A/Y, 8050B, 8850P/Q, 8860A

Version 3.24
- Corrected limit test issue when frequency span is zero or too small

Version 3.22
- Number of points increased to 500001 for 8 GHz version, and to 200001 for Version 3.2 GHz

Version 3.21
- Added new *Multiline* TRL option in 2-Port TRL Calibration menu

Version 3.20
- AutoCal remote control command set. All undocumented yet commands has been added to Programming manuals

Version 3.19
- Fixed bug with external reference source switching. Bug was only present in Version 3.17 and Version 3.18

Version 3.18
- Load Touchstone File Data feature added

Version 3.17
- Several small bugs fixed

Version 3.16
- Extended the application of Port Extension feature to Frequency Offset Mode

Version 3.15
- Fixed an Access Violation Error

Version 3.14
- Added Single Point Limit function
- Added Folder History; last opened folder appears by default
- Fixed a bug related to On Screen Keyboard in Edit Title Label menu
- Fixed a bug related to scroll in Display > Properties > Font Size > Soft Button menu
- Added Bold Property setting in the Font Menus
- Fixed a bug related to loading Cal Kits from file
- Discontinued the continuous limit test beep warning feature

Version 3.13
- Added continuous beep warning in the limit test mode as per customer request

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TECHNOLOGIES

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Version 3.11
- Calibration kit Agilent 85032F is selected by default
- Executable renamed to Planar.exe. This change applies to Planar 304/1 and 804/1 models. It can be renamed by the user if necessary.

Version 3.10
- User interface of "unknown thru" calibration is improved. Definitions of all calibration kits are augmented to include an "unknown thru" standard in order to simplify the user choosing between "conventional thru" and "unknown thru" calibration

Version 3.9
- Bug fixed related to frequency setting error during performance tests (7.6.7, 7.6.8)

Version 3.8
- Fixed a bug which was causing receiver noise floor rise of 20 dB when the user switches the 10 MHz reference source to external and then back to internal. The problem appeared when IFBW was > 10 kHz. The issue has been resolved by a software workaround

Version 3.6
- Offset Delay in "unknown thru" definition appears as AUTO when Offset Delay equals to zero
- Instrument doesn't return to LOCAL state if changed to REMOTE state by SCPI command via the LAN interface. Bug fixed