SVA1000X Firmware Revision History

Version	Revision
V3.2.2.6.2R5 2024/6/12	Notice: This firmware must be upgraded from V3.2.2.4.0 or later. If your analyzer has an earlier version, please update to V3.2.2.4.0 first and then proceed to update to the latest version. New Functionality: • Add Picture Viewer • Add Open Source Acknowledge • Add Remote Control Mode, when entering, the interface displays system time, limit status, system messages, etc., shielding UI refresh. SCPI: DISPlay:WINDow:ENABle ON|OFF • Save the configuration every 60 seconds, and load it when Power On is turned Last • SA/VNA mode Limit Setup adds Fail to Save, which automatically saves screenshot and trace data when the Limit Test result is Fail. It can only be used when Fail to Stop is turned ON Improvements: • Preset optimization: When pressing the Preset button, it will first jump to the Preset menu instead of directly performing Preset; Touch Assist's Preset adds preset option • Optimization System Info display content • When taking screenshots, do not capture the message indicating successful screenshot • Limit the length of numbers entered on the screen and keypad • Add SCPI commands to read system messages:SYSTem:MESSage? • Added screenshot function under the Help window • Set the FFT menu to invalid when the SA mode cannot select FFT • SA mode can open the Freq Counter for markers other than marker 1 • The SA mode peak table displays the peak of the current trace • The SA mode peak table displays the peak of the current trace, rather than the current marker's trace • The dBc parameter range of the SA mode OBW is changed to negative numbers • When Noise Marker is turned on in SA mode, set Detect Type to Average • In SA/MA/EMI mode, Wait for Trigger is displayed only if Trigger is not triggered for 2 seconds. • Add Display Line in SA/VNA/DTF/MA/EMI mode • When using markers in SA/VNA/DTF/MA/EMI modes, display the marker info enlarged in the upper left corner of the screen • SA/EMI mode display more information of limit fail and pass • Return more marker information when using SCPI command :CALCulate#:MARKer#:Y? in SA mode • The MA mode supports the SCPI command: TRACe#[:DATA]? to get trace data • SCPI command for setting marker X in MA mode: TRACe#:MARKer#:X supports specifying time units

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	Solved Issues: • Fix the problem of the inconsistency between the numerical accuracy displayed in SA mode Freq menu Ref Offset and the status bar on the left • Fix the problem of Marker display unit error when Noise Marker is turned on in SA mode • Fix the problem of the SCPI command TRACe#:MODE in the SA mode setting trace type, which causes a crash when the selected trace exceeds the range. • Fix the problem of not adding Freq Offset to the marker x value in SA mode • Fix the problem of Correction errors when switching between X-Scale Lin and Log in SA mode • Fix the problem of inconsistent units and settings for values obtained by SCPI commands :DISPlay:WINDow:TRACe:Y:RLEVel? in SA/EMI mode • Fix the problen where Sweep Time may be incorrect when set EqLPF to Auto in MA mode
V3.2.2.6.0R7 2023/5/3	Notice: This firmware must be upgraded from V3.2.2.4.0 or later. If your analyzer has an earlier version, please update to V3.2.2.4.0 first and then proceed to update to the latest version. New Functionality: • Add ECal in VNA mode • Add three new formats in VNA mode: Unwrap Phase/Real/Imaginary • Add Z Reflection in VNA mode • Add PM demodulation in MA mode • The time of analog demodulation in MA mode is adjustable Improvements: • Add SCPI command in VNA mode: Set the format Unwrap Phase/Real/Imaginary: CALCulate#[:SELected]:FORMat adds three new parameters for UWPH/REAL/IMAG Set Z Reflection: CALCulate#:TRACe#:CONVersion:FUNCtion OFF/ZREFlection Get the marker y value for Phase format with unwrap phase value: CALCulate#:FSCan:MARKer#:Y? Add SCPI commands for Calibration: Select Open Calibration [:SENSe#]:CORRection:COLLect:METHod[:RESPonse]:OPEN Select Short Calibration [:SENSe#]:CORRection:COLLect:METHod[:RESPonse]:SHORt Select Enhance calibration [:SENSe#]:CORRection:COLLect:METHod:ENHAnced Select Through Calibration [:SENSe#]:CORRection:COLLect:METHod[:RESPonse]:THRU Select 1 Port Calibration[:SENSe#]:CORRection:COLLect:METHod:SOLT1 • Add SCPI commands in MA mode: Set the scan time: [:SENSe]:SWEep:TIME Set the demodulation type: ADEMod:STYLe (new parameter is PM) Get AM parameters: FETCh:AM#? Get FM parameters: FETCh:FM#?

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	Get PM parameters: FETCh:PM#? • Add system SCPI command: *OPC for EMI mode Exit remote status: SYSTem: LOCal for all mode Solved Issues: • Fix the problem that the bandwidth of the emi filter in SA mode • Fix the problem that setting the TG Level in SA mode may cause TG to have no output • Fix the problem that the n dB Marker measurement results in SA mode are inconsistent with the OBW measurement results • Fix the problem that there is an invalid frequency menu in Harmonic in SA mode • Fix the problem that the SCPI command: READ:ADEMod? would return an invalid value when reading the analog demodulation measurement results in MA mode • Fix the abnormality of the first scan in EMI mode • Fix the problem that setting rbw may crash when qpd is not enabled in EMI mode • Fix an issue where 'micro' relative units represented by 'u' were not recognized when reading files
V3.2.2.5.1R1 2022/5/10	Notice: This firmware must be upgraded from V3.2.2.4.0 or later. If your analyzer has an earlier version, please update to V3.2.2.4.0 first and then proceed to update to the latest version. Improvements: • Optimize the Ref level and Att couple • Add SCPI commands in MA Mode •READ:ADEMod:AVG? •[:SENSe]:ADEMod:FM:DEVI? •[:SENSe]:ADEMod:FM:DRIFt? •[:SENSe]:BWIDth[:RESolution] •[:SENSe]:BWIDth[:RESolution]? •[:SENSe]:BWIDth:EQLPf •[:SENSe]:BWIDth:EQLPf? •CALCulate:MARKer#:PTPeak • Add Cable Atten to correct cable loss in DTF Mode • Add .trc file in EMI Mode • Add .lic file auto scan Solved Issues: • Fix pi/4 DPSK 和 pi/8 DPSK decode errors in MA mode • Fix calibration error when port extension on in VNA mode • Fix fft frequency error in narrow span in SA mode • Fix trace avg calculation error in SA mode • Fix the zero sweep type when fft in SA mode

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V3.2.2.5.0R1 2021/9/30	**Notice:** This firmware must be upgraded from V3.2.2.4.0 or later. If your analyzer has an earlier version, please update to V3.2.2.4.0 first and then proceed to update to the latest version. **New Functionality:** • Add Ext Trigger Delay from 0-10 seconds in SA Mode • Add Limit in Log mag and Lin mag format; add calibration average; add s1p touchstone file save in VNA mode **Improvements:** • VNA sweep points up to 10001; Scale down to 0.001 in Smith chart; • MA Filter type Nyquist change to Raised Cosine to align SCPI command; improve filter performance in low frequency • EMI RBW/Step from 1 to 3 **Solved Issues:** • SA fix the difference between marker and peak and marker style; Fix Center Freq error; Fix limit fail to stop error; Fix Auto frequency error; In normalization, auto re-normalized after any setting changes • VNA Phase error; STA file saving error; CSA file loading error; S21 calibration error; Enhanced calibration error • EMI frequency offset error; saving std lim path error • Web browser cannot change IP, and cannot login after changing password
V3.2.2.4.0R2 2021/2/9	**Notice:** This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. • Fix the VNA option license error on some SVA1015 and SVA1075 units
V3.2.2.4.0 2021/1/15	**Notice:** This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. • Fix TG switch error at small RBW • Fix Help and Limit file lost when Factory reset • Fix Auto open delay unit error in VNA mode • Fix CNR calc error when no peak found • Fix OBW result overflow • Fix Harmonic calc error at 100Hz RBW • Fix Reflection Open+Short calibration action • Fix spectrum amplitude error in DMA mode • Optimize EMI .csv file content to all signal list

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	• Optimize EMI peak search • Optimize Auto cal process • Add Peak search to Spectrum in DMA mode • This version con not be rolled back
V3.2.2.3.3R1 2020/12/01	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Add EMI filter in SA for EMI option Solved Issues: • Optimize the TG flatness and control procedure • Optimize Help • Fix Correction, .csv file, add peak numbers to 20 in EMI mode • Fix ADC overload warning error, and time unit error in Calibration in VNA Mode • Fix amplitude error in DMA Mode Fix upgrade failure issue
V3.2.2.3.2 2020/09/09	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Add user defined VNA calibration kits • Add VNA 0 span calibration Solved Issues: • Fix avg power bug in EMI Mode • Fix amplitude bug in AMA Mode • Fix peak search bug in SCPI command
V2.2.1.2.8 2020/07/20	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Update EMI option to a new EMI measurement mode • Added more VNA calibration kits with N/3.5mm type connectors to 4.5G/9.0GHz • Added *.CSA file type to store instrument setup and calibration data in one file for easy recall and use of a saved state. • Update user calibration data format. CAUTION: User calibration data taken with previous firmware revisions will no longer be

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	compatible with the instrument after upgrading to V2.8. You will have to store new user calibration files if you update the instrument. • VNA Port 1 output power and Port2 input Att adjustable Improvements: • Improve TG output harmonic performance • Update Help file Solved Issues: • Fix some ADC overload warning • Fix Ch Power calculation bug in small span
V2.2.1.2.7 2020/05/12	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Add Limit mask offset in SA mode • Frequency LOG scale in VNA mode • Add OPEN、SHOT、enhanced response in VNA mode • Add 85033D/E Cal kit in VNA mode • Save/recall .cal file in VNA mode • Port 1 power (TG) adjustable in VNA mode • Zero span in VNA mode Improvements: • Smooth the glitch in Phase format in VNA mode Solved Issues: • Fixed AM and FM symbol rate error, Lpf coefficient error, in AMA mode • Fixed Filter bandwidth error in DMA mode • Fixed Freq counter error in SA mode • Fixed Harmonic error in SA mode • Help Display error
V2.2.1.2.5 2019/11/11	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. Improvements: • Optimize trace, marker, signal track, TG normalization in SA Mode • Optimize calibration flow, calibration algorithm and sweep speed in VNA Mode • Optimize web server UI

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	Solved Issues: • Fixed video trigger fail, errors in Harmonic measurement in SA Mode • Fixed admittance error, port extensions error in VNA Mode • Fixed spectrum amplitude error, meas error, waveform discontinue in MA Mode • Fixed English help, system message
V2.2.1.2.2 2019/8/1	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Add a spectrum view, marker for MA Mode • Add mode couple for center frequency • Add system message Improvements: • Optimize .sta file, trace interpolation for VNA Mode • Optimize PSK/QAM clock sync ability for MA Mode Solved Issues: • Fixed AVG, Math bug for VNA Mode • Fixed Date&Time set bug
V2.2.1.2.1 2019/6/1	Notice: This firmware must be upgraded from V2.1.1.1.12a or later. If your SVA1000X has an earlier version, please update to V2.1.1.1.12a first and then proceed to update to the latest version. New Functionality: • Add CNR, Harmonic measurement in AMK options for SA Mode • Add port extensions, user cal kit, new marker functions, correction switch, multi-traces and multi-format overlay display for VNA Mode • Extend xQAM, MSK, xPSK modulation analysis in DMA option for MA Mode • Add new marker functions, multi-traces and multi-format overlay display for MA Mode • Add SCPI commands for VNA and MA Modes • Add some system functions: Screen Annotation in Display menu, FTP server for file transfer Improvements: • Optimize UI, refresh and response for all Modes • Optimize SCPI commands for basic control, such as INIT, *OPC?, *ESR, Abort, etc. • Optimize Log scale axes, Peak search, Auto tune, TG normalization for SA Mode • Optimize S11 and S21 simultaneous measurement, calibration control, trace control and auto scale for VNA Mode

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	• Optimize some system functions: Power Saving, IP config Solved Issues: • Fixed OBW Transmit Freq Error • Fixed bugs during Mode switch
V2.1.1.1.13 2018/11/1	New Functionality: • Screen saver for power saving • VNC View only for web server • VNA: .csv file for each format, Expand Phase for marker Improvements: • VNA: Auto Scale, min Scale to 0.1 dB • DTF: logistic scale for RL display Solved Issues: • Invalid Demod time in FM • Scale in TG • Wrong units in Markers and peaks • Boot or Mode start lock up • Udisk display wrong files • SCPI command incompatible • Min span to 10kHz in AMK power measurement
V2.1.1.1.12a 2018/8/8	1. Spectrum Analysis mode：Improved the stability of sweep and interface. 2. VNA mode: fasten the VNA sweep speed; expand the minimum span from 10M to 10 kHz. 3. Modulation Analysis mode: add trigger, optimize the modulation analysis algorithm. 4. Add user port number selection for web server.