

General Caution

Please use a USB Memory Stick for firmware updates.

If there is a firmware update question, please contact Anritsu service support at <https://www.anritsu.com/test-measurement/contact-us> for further information.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B
Application Package : V4.20
Release Date : Quarterly Release Jan. 2021

Information below may not apply to every model/option in Product list

*** IMPROVEMENTS ***

-> Software - PIM

[SPH-4510] DTP overlay previously had to be re-applied/measured every time a user switched to another PIM measurement mode (Swept PIM or PIM vs. Time). with this fix the DTP overlay will stay active between PIM measurement modes. This will save the technician time in the field since they will only need a single DTP overlay measurement per antenna.

*** BUG FIXES ***

-> Software - SPA and Sub-apps

[SPH-4939] Fixed an issue in PIM Hunting mode when a user changed the default settings the unit did not remember the last settings.

[SPH-4947] Fixed an issue where the PIM Hunter Menu button would show up in IA mode of operation.

[SPH-4950] Fixed a problem when switching between PIM Analyzer mode (1st generation/legacy PIM Master receiver mode) and PIM Hunting mode in our spectrum analyzers. The sweep in PIM Hunting mode stopped and the left side parameters were not reset.

[SPH-4952] Fixed an issue in PIM Hunting mode. When manually changing the span (normal spectrum analyzer function) and resetting to Zero span or using last span. PIM Hunting mode would not restart. PIM Hunting mode is a Zero Span measurement.

[SPH-4983] Fixed an issue in PIM Hunting mode under certain conditions when switching from PIM Hunting mode to another measurement mode (ie. LTE) the unit would freeze up or reboot.

[SPH-4984] Fixed an issue when in PIM Hunting mode the sweep would slow down if power cycled or switched back and forth between other modes.

-> Software - PIM

[SPH-4674] Fixed an issue where the MW82119B PIM Master was not remembering non-default F1 and F2 settings.

[SPH-4954] Fixed an issue where user defined F1 and F2 values and calibration were lost going between High band and Low band in the MW82119B-0700 700 MHz PIM Master. The unit will now remember both the F1 and F2 values and the calibration between High band and Low band.

[SPH-4958] Fixed an issue in PIM Hunting mode when the 1 KHz RBW was used the trace sweep would stop.

[SPH-4968] Resolved an issue using the SCPI command (programming language) to recall the residual PIM value returned the wrong value.

[SPH-4986] Fixed an issue in PIM Hunting mode when the 1 KHz RBW was used the trace sweep would stop.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T

Application Package: V4.00

Release Date : Quarterly Release Sept. 2020

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - SPA and Sub-apps

[SPH-4917] Resolved an issue where it was not possible to set Zero Span time markers to negative values remotely. This change applies only to Spectrum Analyzer (SPA) modes.

*** IMPROVEMENTS ***

-> Software - SPA and Sub-apps

[SPH-4809] Added .csv file save format for the Cable/Antenna analyzer (CAA) measurements.

*** BUG FIXES ***

-> Software - CAA

[SPH-4935] In response to numerous customer requests, dual trace .dat measurement files will no longer result in 2 individual files saved. Dual trace .dat measurement files saved are fully compatible with Line Sweep Tools (LST). This change affects the Cable/Antenna analyzer (CAA) mode only.

[SPH-4936] Fixed an issue in PIM Hunting mode when the RBW was set at 1 KHz the sweep could freeze.

[SPH-4937] Fixed an issue where the attenuation level was changing based on the Reference Level setting. For the PIM Hunting application this behavior has been changed so that the value stays the same and the default is 0 dB attenuation.

[SPH-4957] Resolved an issue where certain combinations of start/stop frequency and number of data points could result in spikes appearing after calibration.

-> Software - SPA and Sub-apps

[SPH-4949] Fixed an issue where the Spectrum graph in PIM Hunting measurement covered the Center Frequency as well as Span and other annotations in (ms/s) after switching

mode from SPA PIM Hunting to AM-FM-PM => PIM Analyzer => Spectrum Analyzer.

-> Software - VNA

[SPH-4830] Resolved an issue where recalling a [Trace + Memory]/2 measurement resulted in the Trace Math function being re-applied.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V3.90

Release Date : Release May. 2020

Information below may not apply to every model/option in Product list

*** IMPROVEMENTS ***

-> Software - CAA

[SPH-2095] The following cables have been added per customer requests: RLCX-SL 158R, RLCX-SL 114R, RLCX-SL 078R, RLCX-SL012R, RLCX-SL038R, RLCX-SL014R, RLCX-SL012S, RLCX-SL038S, RLCX-SL014S, RLCX-SL012R FPR.

[SPH-4778] CSV file format added to File Save Menu.

-> Software - VNA

[SPH-2095] The following cables have been added per customer requests: RLCX-SL 158R, RLCX-SL 114R, RLCX-SL 078R, RLCX-SL012R, RLCX-SL038R, RLCX-SL014R, RLCX-SL012S, RLCX-SL038S, RLCX-SL014S, RLCX-SL012R FPR.

*** BUG FIXES ***

-> Software - CAA

[SPH-4731] Resolved an issue where sometimes the last point marker value displayed would not match the last point data in the saved measurement.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V3.80

Release Date : Release Jan. 2020

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - LTE

[SPH-4852] Adding initial support for TD-LTE measurements for S412E.

-> Software - PIM

[SPH-4844] Added Support for MW82119B-0703 option.

-> Software - OS/Base

[SPH-4806] Added support for amplitude blanking capability in S11 and S21 Log Mag graph types only, for models with option 007 installed.

-> Software - SPA and Sub-apps

[SPH-4808] New PIM Hunting mode, used for PIM Hunting applications on rooftops with the PIM Hunting probe or Yagi antennas.

*** BUG FIXES ***

-> Software - P25/P25p2

[SPH-4884] Corrected an error on the Band plan. The frequency and channel numbers for P25 will now be correct.

-> Software - PTC

[SPH-4798] Improved Trigger Timeout message responsiveness.

-> Software - VNA

[SPH-4760] Resolved an issue in VNA Mode where saving a measurement + JPG could result in repeated file confirmation messages.

What will the customer see in this release?

Product : MS271xE, MT821xE, MS2720T, MT822xB, MT8220T

Application Package : V3.71

Release Date : Quarterly Release October 2019

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - CAA

[SPH-4784] Added (Trace + Memory)/2 feature to Trace Memory. Allows users to reduce or eliminate peak-to-peak ripple caused by standing waves when making 1-port cable loss measurements.

*** BUG FIXES ***

-> Software - DMR2

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - NXDN

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - dPMR

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - NBFM

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - TETRA

[SPH-4000] regional language Support for S412E LMR Master is available.

[SPH-4690] Fixed an issue where TETRA Base Station Receiver Sensitivity loading of customer patterns did not operate correctly. Added a softkey to display BCC, MCC, and MNC of

loaded BSRS custom patterns.

-> Software - P25/P25p2

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - PTC

[SPH-4000] regional language Support for S412E LMR Master is available.

-> Software - PDT

[SPH-4000] regional language Support for S412E LMR Master is available.

What will the customer see in this release?

Product : S412E, MT822xB, MT8220T

Application Package: V3.60

Release Date : Quarterly Release August 2019

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - DMR2

[SPH-4680] Add new MS 1031 5% BER signal pattern to DMR Analyzer.

-> Software - PTC

[SPH-4721] Rename Options 721 and 722 from PTC" to "PTC-ITCR".

[SPH-4723] Added remote commands for PTC-ACSES

[SPH-4724] Added PTC-ACSES save/recall setups and measurements.

[SPH-4726] New PTC-ACSES graph implementation.

[SPH-4727] New PTC-ACSES icon.

-> Software

[HHMP-21] Added DMR MS 1031 5% BER pattern.

[HHMP-78] Released options 731 and 732, PTC-ACSES Analyzer and Coverage Mapping.

*** IMPROVEMENTS ***

-> Software - CPRI

[SPH-4766] Added BBU Emulation script support for Nokia/ALu radios RRH4x45-1900 and R2x50-80L1.

*** BUG FIXES ***

-> Software

[HHMP-245] Rename Options 721 and 722 from PTC" to "PTC-ITCR"."

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T

Application Package: V3.50

Release Date : Quarterly Release April 2019

Information below may not apply to every model/option in Product list

*** IMPROVEMENTS ***

-> Software - CPRI

[SPH-4627] Added Samsung and Huawei to PIM Aid radio preset selections.

*** BUG FIXES ***

-> Software - SPA and Sub-apps

[SPH-4691] Fixed an issue where field strength measurement settings might not properly apply after power cycle.

-> Software - OS/Base

[SPH-4617] Fixed an issue in S412E where setting the Input Power Warning to ON would prevent the 'available firmware update message' from displaying when appropriate during power-up.

[SPH-4713] Fixed an issue where automatic firmware updates would not execute in S412E under some circumstances.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V3.40

Release Date : Quarterly Release January 2019

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - CAA

[SPH-4535] Added cal coefficient support for cal kits with 4.3-10 connectors.

-> Software - PTC

[SPH-4442] Added common American Association of Railroads (AAR) frequency standards to our Signal Standards lists, and made them available in PTC mode.

-> Software - SPA and Sub-apps

[SPH-4566] Added dBuW, dBmA, and dBuA units in SPA mode.

-> Software - VNA

[SPH-4535] Added cal coefficient support for cal kits with 4.3-10 connectors.

*** IMPROVEMENTS ***

-> Software - LTE

[SPH-4590] Added Band 71, the new 600 MHz LTE Band to the signal standard list.

*** BUG FIXES ***

-> Software - LTE

[SPH-4597] Fixed an issue where recalled 4x4 MIMO LTE measurement would not properly display the green/grey antenna icons.

-> Software - ISDBT/SFN

[SPH-4687] Corrected the antenna.txt file so that it would behave correctly in ISDB-T mode.

-> Software - VNA

[SPH-4689] Fixed an issue in field mode that unnecessarily limited scale settings in Field Mode VSWR measurements.

-> Software - SPA and Sub-apps

[SPH-3745] Fixed a corner case error with averaging in Interference Analysis Field Strength measurement.

[SPH-4458] Antenna selection list now includes EMI antennas when 'All' is selected.

-> Software - PIM

[SPH-4642] Changed the time/date text layout in the PIM Calibration Due popup.

[SPH-4644] Addressed an issue that could cause an option 600 or 902 instrument to lock up when they are set to high band and perform a calibration via the SCPI command:

CAL:PIM:FULL ON

-> Software - OS/Base

[SPH-4593] Fixed an issue where unit would hang during power-up under certain conditions after recalling a VNA setup from SPA mode.

-> Software - CAA

[SPH-4593] Fixed an issue where unit would hang during power-up under certain conditions after recalling a VNA setup from SPA mode.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T

Application Package: V3.30

Release Date : Quarterly Release October 2018

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - TETRA

[SPH-3853] External - Used Training Sequence symbols to determine BER for both allocated and unallocated signal bursts.

*** BUG FIXES ***

-> Software - ISDBT/SFN

[SPH-3731] Fixes an issue where over a 100 ISDBT files were saved into a folder which resulted in the unit slowing down in time. Files are now saved in multiple folders with date and timestamp.

-> Software - VNA

[SPH-4026] Fixes an issue where the application would hang in Transmission Measurement mode when recalling a set up file to put the unit into Cable and Antenna Analyzer Mode, and then attempting to run an OSL calibration.

[SPH-4028] Fixes an issue where the SPA Amplitude Menu would show up in Transmission Measurement Mode.

[SPH-4605] Fixed an issue in VNA mode where glitches would appear at 375MHz and 1500 MHz after a calibration.

-> Software - SPA and Sub-apps

[SPH-3745] Fixed a corner case error with averaging in Interference Analysis Field Strength measurement

[SPH-3951] Disabled the use of Start Freq and Stop Freq in Interference Analysis mode. Center Freq is the proper way to set frequency in this mode.

[SPH-4547] Fixed an issue with field strength limits under V/m units setting

-> Software - TETRA

[SPH-3570] Fixed a bug in TETRA where some units would not recall the correct Tx Output pattern as part of a recalled measurement or setup

[SPH-3943] Fixed an issue in TETRA app where recalling a measurement or setup would not correctly recall the Tx pattern.

-> Software - OBSAI

[SPH-3738] Fixed an issue where the system time would not recall properly under some saved measurement conditions

-> Software - CPRI

[SPH-3738] Fixed an issue where the system time would not recall properly under some saved measurement conditions

What will the customer see in this release?

Product : MT822xB, MT8220T

Application Package: V3.22

Release Date : Release August 2018

Information below may not apply to every model/option in Product list

*** IMPROVEMENTS ***

-> Software - LTE

[SPH-4012] Added RS Power information for all antennas present in LTE OTA Tx Test screen

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V3.20

Release Date : Quarterly Release beginning July 2018

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - TETRA

[SPH-4471] Motorola EBTS added to Base Station Selections in Tetra Base Station Sensitivity Tests

-> Software - NB-IoT

[SPH-4569] Fixes an issue where performing a preset does not set the center frequency of the analyzer correctly. Similar behavior can be noticed during setup and measurement recall.

-> Software - PIM

[SPH-4546] Changed the default F2 frequencies for Option 700 to 764 / 761 MHz for low / high band, respectively.

-> Software - OS/Base

[SPH-4429] Improved battery charge algorithm.

*** BUG FIXES ***

-> Software - DMR2

[SPH-3621] Fixes an issue where the Back soft button is inactivated incorrectly after pressing Max/Min Active Graph soft button

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - NXDN

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - VNA

[SPH-4504] Fixes an issue where in Dual Channel mode, the Smith Chart marker table TR1 and TR2 readout text would overwrite each other.

-> Software - dPMR

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - OS/Base

[SPH-4426] Fixed the issue where saving files to a USB memory via the MMEMoRY:SToRe:JPEG command failed when the usr folder was not present in the USB memory.

-> Software - TETRA

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - NBFM

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - P25/P25p2

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

-> Software - PTC

[SPH-3797] Fixes an issue where ENTER button from keypad to collect new data points from Coverage Mapping doesn't work.

What will the customer see in this release?

Product : MS271xE, MT821xE, MS2720T, MT822xB, MT8220T

Application Package: V3.13

Release Date : Release beginning April 2018

Information below may not apply to every model/option in Product list

*** BUG FIXES ***

-> Software - NB-IoT

[SPH-4568] - Fixed a bug where NB-IoT was adversely affected by other options.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, MS2720T, MT822xB, MT8220T

Application Package: V3.12

Release Date : Quarterly Release beginning April 2018

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - LTE

[SPH-4436] Change MIMO auto detect threshold in LTE and TD-LTE applications, so that the unit is less likely to assume that noise is another active antenna.

-> Software - NB-IoT

[SPH-4545] Initial release of NB-IOT application(option 887)

-> Software - CPRI

[SPH-4551] Initial release for PIM over CPRI functionality(option 754) in MT8220T and MT822xB.

[SPH-4005] Added support in CPRI Base Band Unit Emulation for RRH models RRH2x60-850, RRH2x60-1900A, and RRH2x40-07L-AT

*** BUG FIXES ***

-> Software - LTE

[SPH-3833] Fixed an issue where values for PHICH and PDCCH in LTE application did not export correctly into Master Software Tools.

-> Software - SPA and Sub-apps

[SPH-3940] Fixed an issue in spectrum analyzer mode where adding multiple markers, and/or setting markers beyond the instrument's frequency range, could cause the instrument to lock up.

-> Software - OS/Base

[SPH-4360] Fixed an issue where the GPS information in the title would disappear after recalling a setup file.

-> Software - CPRI

[SPH-3737] Fixes an issue where the waterfall moves in the wrong direction after recalling a measurement file.

[SPH-3537] Fixes an issue where recalled limit lines were drawn at the default values and not at the saved values.

[SPH-4006] Fixed issue where available free space was not displaying during the File Save function.

What will the customer see in this release?

Product : S33xE, S36xE

Application Package: V3.02

Release Date : Special Production Support Release April 2018

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - CAA

[SPH-4491] Resolved issues with new hardware support for production.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V3.00

Release Date : Quarterly Release beginning January 2018

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - CAA

[SPH-3864] Added additional save type Measurement and JPG" to the uWave VNA family."

-> Software - PIM

[SPH-3921] PIM Measurement Tx1 range adjusted to cover 731 MHz to 734.5 MHz

-> Software - VNA

[SPH-3864] Added additional save type Measurement and JPG" to the uWave VNA family."

*** BUG FIXES ***

-> Software - VNA

[SPH-3591] Fixes an issue with Cable Loss mode where limit lines would change after a calibration was completed.

[SPH-3646] Fixes an issue where the touch screen functionality would be disabled due to the Attention" dialog moving behind the main form window."

-> Software - CPRI

[SPH-2932] Fixed an issue in single sweep CPRI Spectrogram where it would not always stop the measurement after one sweep.

[SPH-3536] Fixed an issue - Limits can now only be recalled if the limits were saved in the same mode of operation (SPA, CPRI, OBSAI) as is currently running on the unit.

-> Software - OS/Base

[SPH-3572] Fixed an issue where the GPS tag does not disappear even though GPS is off. This would occur when recalling a trace with GPS data then switching to a live trace and switching modes.

[SPH-3739] Fixed an issue where the unit didn't display an error message when setting the Save Location to USB, then removing the USB, and pressing the camera icon to save a screenshot.

[SPH-3829] Fixed an issue where the option list on the boot up screen was beyond the right edge.

-> Software - OBSAI

[SPH-3536] Fixed an issue - Limits can now only be recalled if the limits were saved in the same mode of operation (SPA, CPRI, OBSAI) as is currently running on the unit.

-> Software - P25/P25p2

[SPH-3321] Fixed an issue with file format. Saving control channel files now places each group of associated data on its own line, when recalled with a text editor.

-> Software - CAA

[SPH-3646] Fixes an issue where the touch screen functionality would be disabled due to the Attention" dialog moving behind the main form window."

[SPH-3837] Fixes an issue where the Dmax value could be manually set to a value that was large then the calculated Dmax value.

What will the customer see in this release?

Product : MT822xB, MT8220T

Application Package: V2.91

Release Date : Release December 2017

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - CPRI

[SPH-3937] Added RET device scan as standard addition to BBU Emulation option 760. Added RET device control option 761

*** BUG FIXES ***

-> Software - CPRI

[SPH-2932] CPRI Spectrogram - Fixed a bug where single sweep would not always stop the measurement after one sweep.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T

Application Package: V2.90

Release Date : Quarterly Release beginning October 2017

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - LTE

[SPH-3136] Added Option 886 for 256 QAM extension to FD-LTE and TD-LTE applications

[SPH-3777] Fixed an issue in TD-LTE that would cause constellation to occasionally make bad measurements on valid 256 QAM input signals. (MS2720T Only)

Fixed an issue where changing modes directly to LTE or TD-LTE after a factory default would not correctly display a 256-QAM constellation (MS2720T Only)

[SPH-3188] Added 3GPP Release 13 Spectral Emission Masks for frequencies > 3 GHz in LTE & TD-LTE measurements.

-> Software - PIM

[SPH-3658] SPH-3658 Adds support for the SCPI command MMEMory:DElete for deleting setup and measurement files.

-> Software - VNA

[SPH-2592] Increases the number of markers from 8 to 12 in VNA mode (S412E, MS202xB, MS203xB, MS202xC, MS203xC Instruments, VNA and Field measurement views).

*** IMPROVEMENTS ***

-> Software - DMR2

[SPH-2941] Added remote command to maximize/minimize the active graph type. (See Programming manual for details)

*** BUG FIXES ***

-> Software - VNA

[SPH-2451] Fixes an issue where the Cable List Window was not remaining the top-most form and would move behind the VNA graph.

[SPH-2593] Changes the S412E, MS202xB, MS203xB, MS202xC, MS203xC Instruments Limit Line Feature such that each measurement mode can now have independent limit line settings.

-> Software - OS/Base

[SPH-3237] Fixed the issue where using the arrow keys to move around the indoor map was slow in the Spectrum Analyzer mode.

Fixed the issue where moving the cursor around the indoor map failed after recalling a AZM file.

Fixed the issue where pressing the Enter key didn't record data points in indoor map in Spectrum Analyzer mode.

-> Software - NBFM

[SPH-2811] Fixed a bug in NBFM that would cause beep with every sweep when Auto Scan is On.

-> Software - CPRI

[SPH-3029] Fixed a bug that could prevent the second waterfall graph from displaying in a Dual Display recalled spectrogram measurement.

What will the customer see in this release?

Product : MT822xB, MT8220T

Application Package: V2.81

Release Date : Quarterly Release beginning July 2017

Information below may not apply to every model/option in Product list

*** BUG FIXES ***

-> Software - LTE

[SPH-2922] In LTE-EMF mode, when the EMF antenna is disconnected, error messages have been reorganized to have better readability.

[SPH-2924] In WCDMA-EMF mode, when the EMF antenna is disconnected, error messages have been reorganized to have better readability.

-> Software - VNA

[SPH-2594] Fixed an issue with multiple markers and touching the trace, which was causing the nearest marker to become active and move to the touched location. The new behavior is such that touching the trace will result in the marker that is already active to move to the location that was touched.

[SPH-2595] Fixed an issue where when Marker on trace" was set to "All" (in field mode for example) the marker would not update correctly when the start or stop frequency was changed."

-> Software - CPRI

[SPH-2708] Preset now set Spectrogram Record to 'Off' state

[SPH-2898] Starting with MST V2.36.8 and unit firmware V2.8x, MST will support multiple traces from OBSAI and CPRI applications.

[SPH-2969] Corrected preset values for limit lines in CPRI and OBSAI applications.

[SPH-2970] Fixed a bug where CPRI/OBSAI limit lines would not correctly export to Master Software Tools. Also requires MST v2.36.8

[SPH-2971] Lower Limit line default value corrected in CPRI and OBSAI to match the RF applications

[SPH-3232] Fixed a bug where internal time base would not always lock to external or GPS reference in CPRI mode

-> Software - SPA and Sub-apps

[SPH-2841] Fixes an issue where EMI antenna selection was off by one.

[SPH-3138] Fixes rounding error of BW value in Channel Scanner file after Scriptmaster scan.

-> Software - OS/Base

[SPH-3237] Fixed the issue where using the arrow keys to move around the indoor map was slow in the Spectrum Analyzer mode. Also fixed the issue where moving the cursor around the indoor map failed after recalling a AZM file.

-> Software - OBSAI

[SPH-2975] Fixed a bug where Single Sweep mode would occasionally cause the Layer 2 Alarms display to flicker

-> Software - P25/P25p2

[SPH-3147] Mapping data collection for is now limited to 8 hours or 60,000 points of data collection to avoid memory overrun issues.

-> Software - CAA

[SPH-2424] Fixed an issue where the unit would hang if a SCPI preset was issued and the Cable list table dialog was open.

NOTE: THIS FIX ALSO APPLIES TO THE PIM MASTER.

[SPH-2548] Fixed an issue where the marker would not move when adjusting the twiddle knob to the left.

[SPH-3114] Fixed an issue where Marker-to-Peak and Marker-to-Valley were shifted 1 pixel to the left when recall a measurement file type .dat.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V2.71

Release Date : Quarterly Release beginning May 2017

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - OBSAI

[SPH-2517] Added OBSAI RF LTE option

-> Software - CPRI

[SPH-2963] Implemented support for Samsung radios which uses IQ mapping method 3

[SPH-3042] Added Samsung Radio Preset to Radio Preset selection

Added ability to select CPRI IQ Mapping method 3

[SPH-3050] Added informational messages that Auto Detect works only with CPRI mapping method 1

[SPH-3052] Added informational messages that Pan and Zoom functions only for Display 1.

[SPH-3053] Fixed a bug to turn off the SFP Tx diode when not in use

*** IMPROVEMENTS ***

-> Software - DMR2

[SPH-2156] Tx Output will now synchronize to Base Station downlink signal

-> Software - VNA

[SPH-2402] The limit line behavior in the Cable and Antenna mode of the BTS Master has been enhanced. With this update, the limit line settings for each measurement type will be unique for that measurement and will persist even if the measurement type is changed.

*** BUG FIXES ***

-> Software - SPA and Sub-apps

[SPH-2337] Fixes an issue where Emission Mask measurements produced erroneous pass/fail results under certain conditions.

[SPH-2504] Fixed an issue where Field Strength measurements in Coverage Mapping did not display the correct results for non-dBm units

-> Software - OS/Base

[SPH-2860] Added support for commands with a block data parameter for the raw socket SCPI interface.

-> Software - TETRA

[SPH-2397] Fixed a bug where saved .mtd files were not correctly storing EVM data.

-> Software - NBFM

[SPH-2891] Fixed a bug in NBFM where changing DCS value could corrupt the Signal Generator pattern outputs for all LMR demod applications

-> Software - CAA

[SPH-2393] Fixed an issue with the Back soft key in the Application Options menu that would not return the user back to the System Menu once they have entered into the Bias Tee menu.

-> Software - PTC

[SPH-2455] SOURce:DM:PATtern and SOURce:DM:PATtern? remote commands are now functional

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V2.60

Release Date : Quarterly Release beginning January 2017

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - DMR2

[SPH-1811] DMR2 Application nomenclature changed to DMR" Remote command remain compatible."

-> Software - CAA

[SPH-2508] Added support for easyTest in the VNA Master (MS20xxB series) and LMR Master (S412E).

[SPH-1506] Added a SCPI command to allow saving of .dat measurement files.

-> Software - LTE

[SPH-2296] Added limited support for TD-LTE 4x4 MIMO

-> Software - VNA

[SPH-2508] Added support for easyTest in the VNA Master (MS20xxB series) and LMR Master (S412E).

[SPH-1506] Added a SCPI command to allow saving of .dat measurement files.

-> Software - CPRI

[SPH-2180] For Option 751 CPRI - Added the ability to show two spectrum or spectrogram graphs which can display up to four separate AxC groups (traces).

[SPH-2448] Added support for CPRI line rate 8 (10.1376 Gbps)
[SPH-2449] Added support for compressed LTE sampling rate on 20 MHz LTE signals
[SPH-2640] Auto Detect improved with Ericsson presets

*** IMPROVEMENTS ***

-> Software - OS/Base

[SPH-2515] Web UI tab removes model information.

*** BUG FIXES ***

-> Software - LTE

[SPH-47] Fixed a bug in LTE EMF recalled measurements where RS values might recall improperly
[SPH-2240] Fixed an issue that prevented 4x4 MIMO time alignment data from recalling properly to unit.
[SPH-2788] Shift-1 Preset is now prevented while a recalled measurement is displayed.

-> Software - SPA and Sub-apps

[SPH-1988] Fixes a bug where the zero span max RBW value was incorrectly limited in the GUI and as a result was out of sync with the actual RBW value.

-> Software - OS/Base

[SPH-1812] NOT DONE - Fixed an issue where black on white and color on white schemes were not displaying correctly in some LMR Master modes.

-> Software - HiPM

[SPH-1667] Fixed a bug where the unit would unexpectedly attempt to zero the sensor after recalling a measurement
[SPH-2381] Fixes an issue where the Quick name buttons were not saved with the setup in Hi-PM mode.

-> Software - TETRA

[SPH-2376] Save on Event .csv measurement files are updated to contain results for recently-added RMS Vector Error and Peak Vector Error measurements.

-> Software - VSG

[SPH-1800] BTS Master VSG now allows up to 48 waveforms to be loaded

-> Software - P25/P25p2

[SPH-2373] Fixed an issue that could cause the unit to hang when recalling setups for an application other than the current one.

[SPH-2501] Updated remote DISPLAY:TRACe<Tr>:FORMat:SIGAnalyzer command/query parameters to match the Programming Manual.

-> Software - WiMAX

[SPH-2309] Fixed a bug where the unit would intermittently hang when displaying Spectral Emission Mask

What will the customer see in this release?

Product : MS271xE, MT821xE, MS2720T, MT822xB, MT8220T

Application Package: V2.51

Release Date : Quarterly Release beginning October 2016

Information below may not apply to every model/option in Product list

*** BUG FIXES ***

[SPH-2694] - Fixed an issue with TD-LTE application becoming unresponsive in several measurement views, including the default "Summary" screen while Bandwidth selection is greater than 10 MHz.

What will the customer see in this release?

Product : S33xE, S36xE, MS271xE, MT821xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MT822xB, MT8220T, MW82119B

Application Package: V2.50

Release Date : Quarterly Release beginning October 2016

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - TETRA

[SPH-2147] Added Residual Carrier Magnitude measurement to the Summary display

[SPH-2149] TETRA remote queries :FETCh:SIGAnalyzer? :READ:SIGAnalyzer? :MEASure:SIGAnalyzer? will now contain two additional values in the response for Peak Vector Error and Residual Carrier Magnitude

[SPH-1603] Added Police Digital Trunking Options 563 and 562

-> Software - OS/Base

[SPH-119] Improved error message on LTE trace save failure when trying to save before the end of the first sweep.

-> Software - NBFM

[SPH-1919] Remote command :FETCh:SIGAnalyzer? updated so the second returned value in the string will represent the value indicated by the Summary Freq Disp front panel setting. (Carrier Frequency or Frequency Error)

-> Software - VNA

[SPH-1921] Added select SCPI commands to support VNA Field Mode.

*** BUG FIXES ***

-> Software - VNA

[SPH-2307] Resolved an issue with marker interpolation on Smith Charts or Polar Charts that caused stray lines to be drawn over the entire screen. This issue only affected VNA mode in the VNA Master products.

-> Software - SPA and Sub-apps

[SPH-282] Fixed an issue where Markers on Result traces do not jump to the right frequency when markers are toggled between traces.

[SPH-2182] In SPA field strength graph, negative antenna factors show correctly over frequency.

-> Software - OS/Base

[SPH-1642] Fixed a typo in the power limit warning message at boot.

[SPH-1653] Clearing old messages when changing modes from a recall state.

[SPH-1681] Fixed a black out of the web interface remote display in Chrome when selecting a different browser tab then selecting the remote display tab.

[SPH-1863] Fixed an issue where SPA application performed a LO Null search on the second application load after a master reset.

[SPH-1889] Fixed a problem where user defined calibration files were getting deleted on entering the PIM application a second time after a master reset.

What will the customer see in this release?

Product : MT822xB, MT8220T
Application Package: V2.41
Release Date : Quarterly Release Update September 2016
Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - LTE

[SPH-1567] Adding new feature eMBMS for FDD-LTE to measure Cell ID and received eMBMS signal power.

-> Software - OS/Base

[SPH-119] Improved error message on LTE trace save failure when trying to save before the end of the first sweep.

-> Software - CPRI

[SPH-1636] CPRI board ID will now appear in the CPRI Application Self Test Information box

[SPH-1725] Adding new feature to CPRI, BBU Emulation for Alcatel Lucent. Option 760.

*** IMPROVEMENTS ***

*** BUG FIXES ***

-> Software - SPA and Sub-apps

[SPH-282] Fixed an issue where Markers on Result traces do not jump to the right frequency when markers are toggled between traces.

-> Software - OS/Base

[SPH-1863] Fixed an issue where SPA application performed a LO Null search on the second application load after a master reset.

[SPH-1889] Fixed a problem where user defined calibration files were getting deleted on entering the PIM application a second time after a master reset.

What will the customer see in this release?

Product : S33xE, S36xE, S412E, MS202xB, MS203xB, MS202xC, MS203xC, MS2720T, MS822xB, MT8220T, MW82119B

Application Package: V2.40

Release Date : Quarterly Release beginning July 2016

Information below may not apply to every model/option in Product list

*** NEW FEATURES ***

-> Software - VNA

[SPH-1744] Added support for interpolated markers in VNA mode. When marker values are set via the numeric keypad or via SCPI, interpolation will be used if the desired marker x-axis value is not an actual measurement point. Markers will continue to snap to the nearest point if the twiddle knob or the arrow keys are used to set their location.

-> Software - dPMR

[SPH-1656] Added remote command support for dPMR.

-> Software - SPA and Sub-apps

[SPH-1914] New trace result types Max Hold and Total Max Hold added to EMF Measurements.

-> Software - OS/Base

[SPH-116] Added Quick Name Matrix support to Transmission Mode.

[SPH-1858] Added EasyTest repeat script capability to those models that support EasyTest scripts.

-> Software - TETRA

[SPH-1565] Added remote command support for RMS, Peak Vector Error and Residual Carrier Feed Through.

-> Software - CPRI

[SPH-1804] Added option 413 Ethernet replacing option 411 on select E-series models, option 413 is compatible with all other options.

-> Software - P25/P25p2

[SPH-36] P25P2 - Added four new Control Channel summary displays - Active Control Channel Summary, Adjacent Site Summary, Band Plan Summary, Backup Control Channel Summary.

*** IMPROVEMENTS ***

-> Software - OS/Base

[SPH-1510] Fixed an issue where web server popups were showing up off screen on pages that can be scrolled.

*** BUG FIXES ***

-> Software - DMR2

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

-> Software - NXDN

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

-> Software - VNA

[SPH-502] Resolved an issue that prevented the instrument settings from getting preset after a measurement file was recalled.

-> Software - HiPM

[SPH-1606] Fixed a bug in High Accuracy Power Meter mode where max power for the MA24106A sensor could not be set up to +23 dBm.

-> Software - OS/Base

[SPH-104] Fixed an issue where Option 31 (GPS) was listed as an add-on option in MT8220T. It is standard in this model.

[SPH-107] Fixed an issue where instruments would respond to multiple IP addresses.

[SPH-1859] Fixed the issue where the instrument would hang at the last step when executing an easyTest script with the maximum number of steps(500) allowed.

-> Software - SPA and Sub-apps

[SPH-283] VBW set to correct bandwidth in Zero Span after presetting the instrument.

[SPH-284] Enabled ability to turn on Markers after sending Preset command over SCPI.

[SPH-289] Initial attenuation level values are restored after going in and out of Coverage Mapping.

[SPH-298] Fixed an issue where sweep time was not estimated correctly after preset

[SPH-302] Preset SCPI command now resets Auto RBW from Off to On when C/I is turned On.

[SPH-303] RBW/VBW ratio returns to default value after AM/FM/PM mode switching.

[SPH-304] Navigation hard keys when map is not loaded works in Coverage Mapping.

[SPH-305] Fixed an issue where a mode switch, after Esc-On, from SPA into IA and then back into SPA, will cause the Save On Event button to vanish.

[SPH-307] Fixed an issue where IFBW state indicator in the status window displays incorrectly.

[SPH-325] Fixed an issue where recalling a measurement file with field strength units would not recall correctly.

-> Software - TETRA

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

[SPH-1443] Fixed an issue where 'Received Pwr' of the summary display did not show power with in acceptable range.

[SPH-1513] TETRA - Fixed a bug where recalled measurements would not correctly populate values in the Summary Table

-> Software - NBFM

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

-> Software - P25/P25p2

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

[SPH-1665] Modified SCPI command to include new Summary display graphs in P25 P2 Analyzer measurement

[SPH-1690] Fixed Motorola Base Station Test in P25 Phase 2 app. Removed additional sampling that was added when when implementing FDMA Control Channel measurement. Additional sampling was causing improper delay estimation for re-sync of signal pattern.

-> Software - PTC

[SPH-660] Fixed an issue with pan and zoom with indoor maps where data points would not zoom in sync with the map.

[SPH-1555] EVM and other summary measurements were adversely affected by PTC burst selection method when frequency offset between transmitter and receiver was more than about 150Hz. The burst selection method was optimized to increase the frequency offset capability to at least +/- 340Hz. This should allow customers to measure the standard of +/- 330Hz Wayside requirement.

Changed 'IQ Imbal' to 'IQ Offset' to better reflect all combined DC offsets (LO leakage, IQ DC Offset, etc...). Measurement now responds to changes in IQ DC Offset injection

What will the customer see in this release?

Product : MT8220T

Application Package: V2.30

Release Date : May 19, 2016

*** NEW FEATURES ***

General [1]

- Allow WEB server admin login to access all instrument control capabilities. QDF-79

LTE and TD-LTE Analyzer [1]

- Added Support for 4x4 MIMO LTE-FDD measurements.

High Accuracy Power Meter [1]

- Added support for MA243xxA USB power sensors.

*** ENHANCEMENTS ***

General [4]

- Substantial updates to Japanese language translation files for SPA and System applications.
- Substantial updates to Chinese language translation files for all applications.
- Updated Signal Standards files to include LTE Bands 29,30,31,32, and 66A to keep up with recent standards releases.
- Disclaimer notice on web server login page. QDF-81

CPRI [3]

- Added functionality to Quick Save IQ Data in CPRI.
- CPRI will always revert back to its last-used setup regardless of the "Share CF & Pwr Offset" setting.
- Corrected recalled spectrogram colors to match that of measurement.

*** BUG FIXES ***

General [5]

- Fixed an issue where the instrument would display an incorrect IP address when using a Zyxel mobile router powered by the instrument's USB

port. #23728

- Fixed an issue where the status window reported an invalid IP address of 169.254.x.x if the window was opened shortly after the Ethernet cable was plugged in. #23045
- Fixed an issue where the first time recalling a setup resulted in wrong marker info. #23367
- Fixed an issue with the first attempt to login to the web server after a timeout. QDF-80
- Fixed an issue where the file type warning message was not shown in the Select File Type dialog.

High Accuracy Power Meter [1]

- Fixed an issue with zeroing external USB high accuracy sensors.

Cable and Antenna Analyzer mode [1]

- Fixed an issue with trace smoothing in BTS instruments. #22457

LTE and TD-LTE Analyzer [3]

- Fixed an issue where TD-LTE OTA Carrier Aggregation Measurement did not detect MOD signal. #23779
- Fixed an issue where the recalled channel power did not match the initially saved value. #22962
- Fixed an issue with "Cell ID" defaulting to 0 upon reselecting the Sync menu.

What will the customer see in this release?

Product : MT8220T

Application Package: V2.20

Release Date : February 5, 2016

*** NEW FEATURES ***

Spectrum Analyzer and Sub-modes [1]

- Expanded capabilities to allow easyTest to enable more complex test scripts to be executed. easyTest scripts will also be able to save files to a single directory allowing for a simplified process for retrieving test results. ECAA-9

Cable and Antenna Analyzer [1]

- Expanded capabilities to allow easyTest to enable more complex test scripts to be executed. easyTest scripts will also be able to save files to

a single directory allowing for a simplified process for retrieving test results. ECAA-9

*** ENHANCEMENTS ***

General [2]

- easyTest will now replace existing measurements with the same name when performing an automatic file save operation.
- Updated the CableList.txt file to add 9 additional cables in response to customer request.

CPRI [4]

- Aggregation field in Auto Detect now displays "ON or OFF" instead of "0 or 1". #23201
- Fixed an issue where booting up with port 2 active did not recognize the CPRI signal unless the user toggled between port 1 and port 2.
- Improved "Reserve Bits" and "Aggregation" field values to prevent wrapping
- Removing ?Indications of Excessive Signal Level? messages Which are not applicable in CPRI

What will the customer see in this release?

Product : MT8220T

Application Package: V1.12

Release Date : January 8, 2015

*** NEW FEATURES ***

General [1]

- Enabled IQBitwidth field when Radio preset selection is custom #23122

CPRI [1]

- Added support for option 751 along with two new CPRI measurements for option 751. SFP Reading and Layer 2 Alarms.

*** MISCELLANEOUS ***

General [1]

- Adjusted LCD Horizontal and Vertical timing to work with display manufacturer revision changes.
Updated SPL/IPL to V3.60 and ATABoot revision to V3.71 for improved handling of battery charge termination while unit is in the powered down state.
SPL/IPL and ATABoot are only available for update at Factory or Customer Service Centers.

*** ENHANCEMENTS ***

General [3]

- Added ?Active Client Detection? to enable a user to maintain instrument control via the instrument?s WEB page, until the browser is closed for more than 1 minute
- Added a warning that appears when downloading multiple files via a WEB browser now indicates that the process may make the instrument unresponsive until the download is completed. If there is an error during the process, another message will appear to suggest a smaller download. #22945
- Added additional monitoring of Battery SMBus to improve the handling of battery charge termination while unit is in operation. #23219.

Spectrum Analyzer and Sub-modes [1]

- Added Pan & Zoom functionality for .azm maps inside Coverage mapping measurements for SPA mode. #3217

CPRI [5]

- Added a SCPI command support to reading CPRI board ID and Core FPGA version.
- Disabled ENTER key handling when auto detect window is active to prevent the window from closing. #23116
- Show "Recording Time" button only when "Record" is ON. #23169
- The sweep is cleared from the screen when no CPRI signal is detected
- Updated auto detect message to say 'highlighted buttons' rather than 'green buttons' to accommodate non-color display modes. #23166

*** BUG FIXES ***

General [3]

- Fixed an issue in WEBserver where SPL/IPL versions did not show. #23041

- Fixed an issue that could cause the Quick Name or the Quick Name Matrix button configuration to become undefined after a setup was saved via a remote command or PC tool and recalled at a later time. #22810
- Fixed an issue where the Menu buttons were outlined in red when the Display Blank feature was activated on a PIM Master instrument. #22944

Spectrum Analyzer and Sub-modes [16]

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Fixed an issue in SPA mode where 'Save On Event' button was hidden after using IA mapping feature.

- Fixed an issue in coverage mapping where the direction hard keys would not function when a GPS map was not loaded.
- Fixed an issue in IA RSSI mode where color of the trace changed erroneously from yellow to red while recalling a measurement. #23007
- Fixed an issue in power meter where the saved setup values did not account for the offset settings. #23199
- Fixed an issue in SPA mode that prevented changing reference level using the rotary knob or arrow keys on the device. #22630
- Fixed an issue in SPA mode where a Preset operation soon after a recall could cause problems with GPS measurements. #23186
- Fixed an issue in SPA mode where changing the sweep time in Zero Span using the rotary knob or arrow keys would cause the value to fluctuate before settling to the set value. #22803
- Fixed an issue in SPA mode where enabling Gated Sweep after turning ON channel power measurement would turn off the measurement, when exiting the gated sweep settings menu. #22929
- Fixed an issue in SPA mode where setting detection to Quasi Peak did not allow the correct range of permitted RBW values for this detection standard. #22918
- Fixed an issue in SPA mode where the GPS maps Pan/Zoom functionality would not work. #3217
- Fixed an issue in SPA mode where the number of points for the limit envelope was not updated properly when the limit envelope shape was changed. #22821
- Fixed an issue in SPA mode where the reference level after recalling values from file was wrong. #22224
- Fixed an issue in SPA where the Spurious emissions data was not cleared when doing a preset. #23183
- Fixed an issue in Spectrogram mode where invalid data was shown on screen when the view setting for the trace was set to 'blank'. #22819
- Fixed an issue where recalling a measurement caused the unit to go to the Gated Sweep menu.
- Fixed an issue where the Chinese translation of Trace B & C operation referenced Trace A & B. #23066

CPRI [4]

- Fixed an issue when Escape was pressed before CPRI auto detection was completed could result in a reboot. #23149
- Fixed an issue where CPRI - Spectrogram Time cursor could show negative numbers, while trying to move the cursor back to 0. #23165
- Fixed an issue where the configuration fields were not disabled while auto detect was in progress. #23118
- Fixed an issue which allowed the attempted setting of a menu shortcut to CPRI Autodetect functions on touch screen instruments. #23113

What will the customer see in this release?

Product : MT8220T

Application Package: V1.09

Release Date : October 9, 2015

*** BUG FIXES ***

Spectrum Analyzer and Sub-modes [1]

- Fixed an issue where Fast mode measurement results above 7 GHz could sometimes be obviously incorrect.

What will the customer see in this release?

Product : MT8220T

Application Package: V1.08

Release Date : August 28, 2015

*** NEW FEATURES ***

General [1]

- Adding CPRI analyzer mode (Option 750) to MT8220T and MT822xB.

Spectrum Analyzer and Sub-modes [1]

- Enabled editing center frequency when in measurement setup menu of the coverage mapping mode. #21664

High Accuracy Power Meter [1]

- Added support for the MA24208A and MA24218A High Accuracy power sensors.

LTE and TD-LTE Analyzer [1]

- Added ability to demodulate LTE FDD/TDD without the sync signal for all bandwidths.

*** ENHANCEMENTS ***

General [4]

- Added the ability to lock an instrument from Telnet and FTP connections.
After setting the remote password and rebooting the unit, the unit will no longer allow Telnet and FTP connections.
To remove the lock, either do a factory reset or remove the remote password by setting it to blank. #22432
- Changed certain icons used in Night Vision mode for better visibility. #22831
- Improved start-up power management to prevent reboot when first turned on after being off for a while, especially with less than full battery or running on external power. #21153
- WEB browser file download attempts are no longer possible with iOS devices. #22499

Spectrum Analyzer and Sub-modes [1]

- Counter Marker accuracy improvements for center frequency of 5 MHz and 10 MHz.

WCDMA Analyzer [1]

- Added SENS:FREQ:SIG:CHAN SCPI commands for WCDMA/UMTS mode. See Programming manual for details. #22665

*** BUG FIXES ***

General [10]

- Changed the Spanish Language translation of ON/OFF to fit within the allowable space of the Marker Table. #22315
- Fixed an issue in easyTest module where a script with auto advance step would run till end when a dialog window is open on screen. #22554
- Fixed an issue in the Web UI of the device where the MENU button would occasionally not be displayed, when using Internet Explorer version 10/11. #22535
- Fixed an issue in Web interface where the Remote Control screen did not show the instrument menu button when accessed through Safari browser. #22158
- Fixed an issue in WEB UI of device where scale on the graph showed incorrect units under certain conditions. #22659
- Fixed an issue in Web UI where some elements on the screen were not displayed properly in the browser, in SPA mode. #22659
- Fixed an issue where dragging an open dialog box would leave tracers on the screen. #21961

- Fixed an issue where the File type selection in Save dialog was very slow when using the twiddle knob. #22559
- Fixed an issue where the login button would not work on WEB server UI when accessing the device remotely with Safari browser. #22155
- Fixed an issue with file save error message shown on WEB server UI. Providing more relevant information as to the cause of the error. #21444

Spectrum Analyzer and Sub-modes [13]

- Fixed an issue in SPA mode where channel power used to show 0 dBm for smaller span values. #22772
- Fixed an issue in SPA mode where Emission Mask used to report "Fail" on segments that are actually a "Pass". #21687
- Fixed an issue in SPA mode where the marker value shown above graph area varied from the value shown inside the graph. #22083
- Fixed an issue in SPA mode, where counter marker showed marker in wrong location when switching frequency. #22400
- Fixed an issue where Emission Mask would fail at times, even though the measurements were well below the limit lines. #21687
- Fixed an issue where more than 255 antenna factor points were not properly accepted by the device when reading an antenna.txt file. #21854
- Fixed an issue where sweep time was not updated properly when auto sweep time was enabled in SPA mode. #22210
- Fixed an issue where the attenuation level was set incorrectly upon recalling a measurement in IA mode. #21981
- Fixed an issue where the SCPI command returns values with incorrect number of decimal point precision in SPA mode. #11751
- Fixed an issue where trace shows erroneous data when sweep mode changes while a sweep is in progress. #21868
- Fixed an issue with selecting a frequency within Mapping mode, the frequency pop-up obscures part of the GPS not locked warning. GPS message has been moved to the bottom of the map area to prevent the overlap. #22240, #3045
- Fixed an issue with the "Distortion/Total Vrms" value returned by the SCPI data query did not match the value displayed in the table. #21597
- Fixed an issue with the Limit Envelope Offset when using linear units of measure. #21558

Cable and Antenna Analyzer [3]

- Fixed an issue in Cable and Antenna Analyzer mode where a screen touch outside any notification window during Calibration would cause the device to go into an unresponsive state. #22428
- Fixed an issue in Cable and Antenna Analyzer mode where presetting the unit after a recall operation could leave the device in an inconsistent state. #22552
- Fixed an issue in Cable and Antenna Analyzer mode where turning the limits ON via SCPI would not work as expected soon after a factory reset of the instrument. #22461

WCDMA Analyzer [1]

- Fixed an issue in WCDMA module where presetting right after a measurement recall from file would cause inability of device to make any measurements. #22574

What will the customer see in this release?

Product : MT8220T

Application Package: V1.06

Release Date : March 27, 2015

*** NEW FEATURES ***

General [4]

- Added a Web Server function for Ethernet-enabled instruments to allow easy remote control from a HTML 5 WEB browser.
- Added an error message pop up during Code Loading to notify the user in the case the USB stick does not have enough space to store all of the user files from the instrument. #20524
- File sort method and sort order will now be persistent through window closes.
- Updated the Support File, Antenna.txt to include Anritsu Antenna 2000-1715-R

Spectrum Analyzer and Sub-modes [8]

- A new message is displayed with instructions to change span, when IQ capture in zero span is attempted. #21138
- Added a new SCPI command, "CALCulate:MARKer#:MAXimum:NEXT" to move the marker to the highest peak anywhere in the trace which is lower than the current marker.
If the given marker is not on, the command turns it on and sets it to the second highest peak in the trace.
The command uses the existing peak threshold values to determine what is and is not a peak.
- Added a special key combination (Shft+9+5+3) which loads a frequency calibration button in the System Menu to allow Customer Field Calibration of the 10MHz Reference for SPA only measurements. See the Maintenance Manual for details on use. #20761
- Added commands to check for end of sweep in SPA and LTE modes.
 - 1) In LTE/TD-LTE mode :[SENSe:]LTE:STATus? Returns 1 when sweep is complete. Returns 0 when sweep is in progress.
 - 2) In SPA mode :[SENSe:]SWEep:STATus? Returns 1 when sweep is complete. Returns 0 when sweep is in progress.See Programming Manual for details.
- Added Span Setting to ACPR coverage mapping mode. #20923
- Added warning message when turning on markers 2-6 with marker 1 reference ON.
With Marker 1 reference turned ON, turning on other markers with Delta markers OFF now turns On the Delta Marker with warning message. #21472
- Improved speed for INST:NSEL command in Base application. See Programming Manual for details.
- User can now select FM scale % values with a minimum of 0.01%. #21502

LTE and TD-LTE Analyzer [2]

- Added commands to check for end of sweep in SPA and LTE modes.
 - 1) In LTE/TD-LTE mode :[SENSe:]LTE:STATus? Returns 1 when sweep is complete. Returns 0 when sweep is in progress.
 - 2) In SPA mode :[SENSe:]SWEep:STATus? Returns 1 when sweep is complete. Returns 0 when sweep is in progress.See Programming Manual for details.
- Improved speed for INST:NSEL command in Base application. See Programming Manual for details.

*** ENHANCEMENTS ***

General [7]

- Added more information to an error message that pops up when attempting to run an easyTest script in the wrong application mode. #20775
- Free space on the storage device will be checked before JPGs can be saved. #21369
- The same file type used when SAVING a measurement is initially selected when opening the RECALL measurement dialog.
- Updated Support files.
 - Updated the Antenna.txt file, adding 3 antennas.
 - Updated the CableList.txt file, adding 13 cables.
 - Updated the Signal Standards File, replacing 43 Standards that had been previously removed. (CDMA, Fixed WiMAX, TD-LTE, and a number of the 700MHz bands)
- Updated the Support File, CableList.txt by adding support for an additional manufacturer of RG58C-U Cable with a propagation velocity of 0.656
- Updated the Support File, Signal Standards to V2.11, Correcting the Starting Channel number for TD_LTE Band 41 (2496-2690 MHz) to 39650.

#21874

- Updated WCDMA shortcut images. #21191

Spectrum Analyzer and Sub-modes [7]

- Changed the lower limit of the CS Frequency BW from 0 to 1 Hz. #21663
- Improved Counter Marker Stability. #20559
- Limited minimum sweep time entry to 7 us. #20406
- Made improvements in Counter Marker accuracy. #20982

- Main Channel power no longer shows invalid values when Span is less than Main Channel BW. #20922
- UI updates are now consistent after Spurious Emission segment changes via SCPI. #18981
- When recalling saved setup, invalid channels/frequencies are shown as "--" and readings are masked out corresponding to the invalid channels. #21603

Cable and Antenna Analyzer [3]

- Fixed the Back button on the Bias Tee menu section.
- Limit Lines are now turned OFF when Clear Limit button is pressed #20690.
- Preset operation from remote is now disallowed when unit is in measurement recall mode. #20961

LTE and TD-LTE Analyzer [1]

- Added functionality to decode signals with 2ms delay between them in LTE and TD-LTE modes

WCDMA Analyzer [1]

- Added error reporting for ADC over range in Band Spectrum measurements within the WCDMA mode.
The error will inform the user to adjust the Reference Level.

*** BUG FIXES ***

General [12]

- Files or directories with leading spaces in their names cannot be saved. #21560
- Fixed an issue where "fW" was displayed when "fA" was expected. #20911
- Fixed an issue where a Save/Recall message would partially cover the parameter status area. #20786
- Fixed an issue where icons in Save/Recall window were not being updated to match the current color scheme of the device. #20996
- Fixed an issue where the Save On Event button would show up in IA Mapping measurement mode. #21471
- Fixed an issue with an overflowing USB SCPI command queue by increasing the buffer size from 50 to 500.
This solves a problem where the queue was overflowing from SCPI commands. #21312
- Fixed an issue with changing the instrument device name to close the dialog box cleanly. #21135
- Fixed an issue with limit line value not having enough resolution in Cable and Antenna Analyzer, VSWR, SPA and PIM modes. #10370
- Fixed an issue with 'Save Measurement As' to properly handle multiple '_' in the filename. #20540
- Fixed an issue with the date/time window focus, shifting behavior after an error encountered while attempting to set a leap year date in a non

leap year. #21366

- Fixed an issue with the Save/Recall dialog screen size. Enlarged the screen to allow entire warning messages to fit. #20113
- Updated Portuguese translation tables to eliminate 3 erroneous Russian translations from WiMAX mode.

Spectrum Analyzer and Sub-modes [19]

- Added a Gate delay maximum value, and set it to 100 ms. #21441
- Fixed a problem where manually setting a sweep time with a narrow span on single sweep mode caused a very inaccurate actual sweep time to be reported. #20558
- Fixed an error in the header information generated in Spectral Emissions Spurious Emission files. #21207
- Fixed an issue in zero span, where Marker units are sometimes in Hz, after changing from log amplitude units to linear amplitude units. #20626
- Fixed an issue where ADC Over Range Error message did not appear on the screen when a marker was not located within the ADC Over Range area of the trace. #20493
- Fixed an issue where Center Frequency displayed did not compensate for the Offset Frequency setting in IQ Capture menus. #21688
- Fixed an issue where not all coverage mapping measurement mode settings were not set properly to default values while performing preset. #20920
- Fixed an issue where the BW could be set to 0 in Channel Scanner Custom Scan list.
This is now limited to 1 Hz. #21960
- Fixed an issue where the Save On Event button would show up in IA Mapping measurement mode. #21471
- Fixed an issue where the spectrogram trace count did not reset with Sweep Interval if the Trace mode was set to average. #20609
- Fixed an issue where there were differences between the recalled measurement and JPEG files color and location of vertical reference lines.
#20341
- Fixed an issue with limit line value not having enough resolution in Cable and Antenna Analyzer, VSWR, SPA and PIM modes. #10370
- Fixed an issue with recalled Spectrogram colors corrected to match the colors during measurement. #20584
- Fixed an issue with some error messages that erroneously referred to "Time Span" instead of "Recording Time" #21062
- Fixed an issue with Sweep Once when invoked via SCPI command. #18978
- Fixed an issue with the header units for Attenuation in Spurious Emission file. #21568
- Fixed an issue with the Input Attenuation setting after loading a saved setup file. #21482
- Fixed single sweep not sweeping when manually triggered with auto sweep time turned on. #20981
- Fixed the Frequency units in Spurious Emissions measurement. #21208

Cable and Antenna Analyzer [10]

- Cable list window no longer truncates cable names. #21298
- Fixed a problem where after a measurement file recall, GPS status could not be changed

- Fixed a problem where the instrument can start another calibration when a calibration operation is already in progress.
- Fixed an issue preventing the current temperature from updating, while operating outside calibration temperature window. #21076
- Fixed an issue to restore RF Immunity to its original setting after an RF calibration is aborted. #20584
- Fixed an issue where the GPS state could not be changed after recalling a Cable and Antenna Analyzer measurement. #20963
- Fixed an issue where the user could not choose to discard/keep settings from recalled trace, when the recalled trace settings matched the currently running settings.
- Fixed an issue with Signal Standard start/stop frequency calculation.
- Fixed an issue with the "Marker" text when selecting DTF measurement.
- When changing start frequency via Left side status touch panel, the other parameters are now properly updated on screen. #21241

High Accuracy Power Meter [2]

- Fixed an issue with the Save Measurement button in High Accuracy Power Meter. Now it correctly selects a measurement file type instead of a setup file type. #21088
- Hi Accuracy Power Meter summary window now correctly clears with preset command. #21352

EVDO Analyzer [1]

- Fixed an issue where the tau limits in the EVDO Pass/Fail measurement view were incorrectly recalled.

CDMA Analyzer [1]

- Fixed incorrect reporting of Channel Power in Master Software Tools operations with measurement files. #21151

GSM Analyzer [1]

- Fixed an issue where the Sweep Type button was inconsistent with the actual state in the GSM mode.

LTE and TD-LTE Analyzer [1]

- Fixed an issue with SCPI commands for carrier aggregation.
The wrong number of dashes("--") were being returned for the data string when an invalid signal was detected.

TD-SCDMA Analyzer [1]

- Fixed an issue where saved RF measurements were incorrectly recalled in TD-SCDMA. #21197

WCDMA Analyzer [2]

- Fixed an issue where "single" wasn't properly highlighted in the sweep menu in WCDMA when switching from another mode. #20987
- Fixed an issue where the signal standard text wasn't displayed when switching from another mode into WCDMA band spectrum measurement. #20858

Mobile WiMAX Signal Analyzer [1]

- Fixed an issue where Mobile WiMAX files were incorrectly recalled using remote commands. #21065

What will the customer see in this release?

Product : MT8220T

Application Package: V1.05

Release Date : 10/29/2014

*** NEW FEATURES ***

General [6]

- Added "Delete All Points" confirmation for Coverage Mapping functions in all modes. #18221
- Added custom Quick Name Matrix information in setup files for PIM, VNA and Cable and Antenna Analyzer applications.
- Added easyTest scripting support for MT8220T.
- Added GPS location in radians to saved measurement file headers.
- Added MA2700A compass calibration images.
- Added the firmware package version number to saved measurement files.

Spectrum Analyzer and Sub Applications [1]

- Added support for easyTest in Spectrum Analyzer application.

Cable and Antenna Analyzer [1]

- Added displaying of time marker in DTF mode. #1108

LTE Analyzer [2]

- Added support for LTE-A Carrier Aggregation measurements.
- Added Time Alignment Error measurement for carrier aggregated signals.

TD-LTE Analyzer [13]

- Added additional Scanner improvements.
- Added automatic detection and manual setting of cyclic prefix for TD-LTE.
- Added Frame EVM in Power vs RB screen.
- Added manual selection of SEM mask including a number of non-standard masks.
- Added OSTP in Power vs RB screen.
- Added PHICH, PDCCH control channels and EVM on all control channels.
- Added SCPI commands to set/query cyclic prefix and the up-down link configuration.
- Added SEM unwanted emissions improvements.
- Added support for LTE-A Carrier Aggregation measurements.
- Added Time Alignment Error measurement for carrier aggregated signals.
- Added Tx Time Alignment.
- Added U/D Link Configuration parameter.
- Update the Pass/Fail scripts to add support for new measurement parameters (Frame EVM, OSTP, Time Alignment Error).

*** MISCELLANEOUS ***

General [1]

- Updated System Level Russian language translations.

*** ENHANCEMENTS ***

General [14]

- Added a timer that automatically dims the display of the instrument when it is operating under battery power to save power.
"Auto-Dim" feature is enabled in System Options -> Display -> Brightness menu.
Each Model has its own unique default time. Most are approximately 15 minutes. #2521
- Added a warning message to the SAVE FILE dialog to indicate excessive files saved in a single directory, which may slow down file access performance.
- Added ellipses for long names when using quick name matrix buttons. #19341
- Added line-wrapping for option numbers in the System Status dialog. #19979
- Added more improvements to System Level Russian language translations. #19993

- Allowing setup file shortcuts under the Menu Button to use spaces in the name. #19355
- Displaying >1 hr for sweep time estimates over 1 hour instead of showing ~1.2 hours.
- Improved Escape key handling when running easyTest scripts. #19733
- Improved GPS frequency accuracy during temperature changes. #19096
- Improved handling of Recall KML Points & Map when the map is not available. #18638
- Improved mode switch time into VNA and Cable and Antenna Analyzer applications.
- Improved output power accuracy for CDP test.
- Improved touchscreen interface for Ethernet dialog. #18622
- Raw socket SCPI interface added.

Spectrum Analyzer and Sub Applications [22]

- Added a message saying that Spurious Emissions is getting turned off when switching to the unsupported Interference Analyzer mode.
- Added support for longer antenna names. #18714
- Added support for sweep time measurement in sample detection mode.
- Added the ability to continue capturing bearings with the MA2700A after switching from Interference Mapping to Interference Analyzer Spectrum measurement.
- Automatically change sweep mode to Performance when starting IQ capture. #19493
- Changed delta markers to follow corresponding reference marker when they are off-screen. #9453
- Changed minimum value for recalled center frequency to 0 Hz in Spectrum Analyzer application after power cycle. #20021
- Improved auto reference level adjustment for field strength mode as measurement units are changed. #18642
- Improved auto reference level adjustment with delta markers while changing units.
- Improved counter marker peak search operation. #19891
- Improved DTF accuracy for narrow frequency spans for BTS Masters. #18710
- Improved the RSSI in Interference Analyzer mode auto-scale to better position the trace on screen. #17657
- Improved zero span narrow VBW performance in Interference Analyzer Spectrum mode. #19248
- Increased maximum value of RSSI time span to 7 days ($60*60*24*7 = 604800$ seconds).
- Increased the max burst detect span to 15MHz for MT8220T.
- Modified the MT8220T VSG and Cable and Antenna Analyzer temperature compensation calibration for improved stability during fast temperature changes.
- Preset will now default the upper envelope limit number of points to 20.
- Removing Auto Ref Level button from all SPA submodes except for SPA, PM, and IA.
- Revised the EEPROM error message. #18651
- Saturation and ADC over-range error messages are cleared more quickly in zero span and IA signal strength modes.
- Selecting "All Measurements Off" now will turn coverage mapping off, so last span will be restored. #19502

- Updated SPA Application Chinese translations. #18427

Cable and Antenna Analyzer [3]

- Add SCPI query command for MT8220T Cable and Antenna Analyzer RF port output power. See the Programming Manual for details.
- Changed the button label from "Window" to "Windowing". #18289
- Recalling a measurement from the Trace menu requires the setup to match current setup for the trace to be recalled.

LTE Analyzer [5]

- EVM Max hold values (peak max and rms max) reset when either the BW, Frequency, Cyclic Prefix, EVM mode, or EVM max hold changes.
- Fixed an issue where the Antenna icons were not being saved onto a JPEG.
- For RF pass/fail measurements, the progress bar performance has been improved.
- Remove an inaccurate warning message from modulation and over the air measurements.
- Removed erroneous "bch signal" field while in the constellation measurement view.

TD-LTE Analyzer [7]

- Add U/D Link Config to status bar for TD-LTE.
- Added EVM(overall and by mod type) in mod summary screen.
- Added Frame EVM (overall and by mod type) in Power vs RB screen.
- CP mode now shows "--" if no signal detected or modulation error.
- EVM Max hold values (peak max and rms max) reset when either the BW, Frequency, Cyclic Prefix, EVM mode, or EVM max hold changes.
- Fixed an issue where the Antenna icons were not being saved onto a JPEG.
- For RF pass/fail measurements, the progress bar performance has been improved.

WCDMA Analyzer [1]

- Added SCPI commands [SENSe:]DEMod:INput:ATTENuation and [SENSe:]DEMod:NOise:CALibration. See the Programming Manual for details.

Vector Signal Generator [1]

- Added some delay and made changes to the messages displayed during the load standard patterns to prevent intermittent pattern load failures.

Operating System [7]

- Added additional error handling for USB incoming communication errors with Windows 7 systems. #15322
- Added check for 100% charge, so battery charger will not restart if the battery is full.

- Added support for newer NAND file storage hardware.
- Adjusted the SDRAM clock frequency to eliminate display flicker at extreme temperatures.
- Improved error handling for WiFi TCP data transfer functions.
- Improved timing of motherboard self test to prevent false reports of -5.8 Volt failures.
- Improved video controller operation to prevent unstable screen at extreme temperatures.

*** BUG FIXES ***

General [17]

- Fixed an intermittent hang up when recalling setups from a touchscreen menu shortcut. #19066
- Fixed an issue in Spectrum Analyzer mode that did not show a warning dialog when saving a measurement file with existing filename. #20011
- Fixed an issue related to defaults on Quick Name features causing unit lockup. #20441
- Fixed an issue that did not list all files in the Recall dialog. #19989
- Fixed an issue that displayed "Successfully Saved File to USB1" when the save operation failed due to the disk being full.
- Fixed an issue where ":MMEMory:DIRectory?" command was returning incorrect filenames and extensions. #19358
- Fixed an issue where Coverage Mapping points did not map correctly on touch screens if base jpg was smaller than the map region on the screen. #17810
- Fixed an issue where negative volts or watts was being displayed as huge negative femto-Volt or femto-Watt values. #14636
- Fixed an issue where pressing the back button in the Script Master menu in GSM/EDGE would go to the incorrect menu.
- Fixed an issue where pressing the touchscreen enter key twice when saving a JPEG obscured the graph with the Save dialog. #19775
- Fixed an issue where the instrument would shut down after scrolling to the bottom of the System Status window using the touchscreen.
- Fixed an issue where the user could not use the left/right arrow keys to navigate the buttons in the "Confirm File Delete" dialog when the instrument language was set to French. #19073
- Fixed an issue where under unique conditions, the counter marker could show incorrect frequency values.
- Fixed an issue with incorrect values being displayed for marker frequency, for values less than 1 Hz (positive and negative values).
- Fixed an issue with the touchscreen user interface for remote user passwords. #18640.
- Fixed the French translation for "Save Measurement As". #19074
- Marker display now shows smaller values properly without error in placement of decimal point.

Spectrum Analyzer and Sub Applications [36]

- Added 0|1 as valid parameters to the SCPI Command ":CALCulate:MARKer:TABLE:STATe" command for consistency with Programming Manual. #20089
- Fixed a display issue with external trigger level line appearing when External Trigger selected. #18623

- Fixed a limitation on Reference Level Offset while in Field Strength dBm/m² measurements. #18650
- Fixed a problem with instruments not remembering field strength measurement setup state following power cycle.
- Fixed a SCPI command ":AFPanalyzer:RFSPpectrum:DATA?" result, see Programming Manual for details on this command. #15100
- Fixed an interaction of Reference Level and Reference Level Offset that could cancel out Antenna Factors in Field Strength measurements. #18642
- Fixed an intermittent issue with Presetting the instrument in Zero Span Mode. #20439
- Fixed an issue in IA mode where the limit line would not get reset properly following a preset. #19998
- Fixed an issue in Spectrum Analyzer mode that did not show a warning dialog when saving a measurement file with existing filename. #20011
- Fixed an issue involving SCPI command to change Trigger Mode to Free Run.
- Fixed an issue preventing triggering from working while in IA Spectrum zero span mode. #12671
- Fixed an issue relating to intermittent inaccurate "Fatal EEPROM Error" messages.
- Fixed an issue that did not list all files in the Recall dialog. #19989
- Fixed an issue to restore the Reference level correctly when Field Strength is turned On/Off with linear units (Volt, Watt and A).
- Fixed an issue when incrementing or decrementing sweep times with arrow keys or twiddle knob.
- Fixed an issue where a counter marker's location on the screen would not match its actual frequency. #15671
- Fixed an issue where an unsupported feature "IF power gated sweep" could show up for MT8220T.
- Fixed an issue where Frequency Reference = "GPS High Accuracy" was not always reported correctly. #19181
- Fixed an issue where some parameters were not recalled for gated sweep setups. #18278
- Fixed an issue where Spurious Emissions Mask amplitude was not set correctly for the first segment added to empty table. #18877
- Fixed an issue where the Spurious Emission menu could show up in the IA mode.
- Fixed an issue where the triggering function was disabled in IA mode. #18274
- Fixed an issue where the twiddle knob does not work properly in Zero span. #17626
- Fixed an issue where under unique conditions, the counter marker could show incorrect frequency values.
- Fixed an issue with "preset" when field strength is enabled. #19595
- Fixed an issue with the Spectrogram sweep interval timer constantly adjusting the reference level.
- Fixed auto ref level not working in IA mode.
- Fixed colors for Coverage Mapping plotted points and RSSI value. #14673
- Fixed incorrect measurement with No FFT sweep mode, RBW = 1 Hz, and VBW > 1 Hz. #14875
- Fixed marker units not getting updated immediately after switching units. #18516
- Fixed occasional freeze when measurement units are non-dBm based.
- Fixed recalling a limit line in IA Spectrogram mode. #17841
- Fixed setting wrong Reference Level when noise marker is turned on.
- Fixed squelch amplitude bug in AM demodulation mode below 8 MHz. #18621

- Fixed the Channel Power Measurement table not getting drawn after recalling measurement file or using several related SCPI commands. #19518,#18917
- Improved volume control for IQ Waveform capture. #18239

Cable and Antenna Analyzer [18]

- Fixed a problem when recalling traces that do not match current resolution or DTF Start/Stop distances. #19498
- Fixed a problem with 1-port and 2-port phase full scale. #20660
- Fixed a problem with instrument not holding calibration when available memory was low. #19597
- Fixed a problem with marker on recall DTF trace giving a wrong value.
- Fixed an issue causing Autoscale to adjust bottom beyond minimum value. #12362
- Fixed an issue where Cable and Antenna Analyzer no longer produces superfluous calibration files which could consume all available storage space on the instrument in rare cases.
- Fixed an issue where markers in the 2-port phase measurement didn't report correctly. #20685
- Fixed an issue where the limit line value was reset when the limit on/off is toggled. #20667
- Fixed an issue where the limit value was truncated to the nearest lower integer value. #20667
- Fixed an issue where the Marker Menu could unexpectedly show up when changing Measurement modes. #18711
- Fixed an issue where the number of data points did not set back to original value after a calibration. #18722
- Fixed an issue where VSWR limit lines could not be set to certain values. #20545
- Fixed an issue with 'Black on White' and 'Color on White' color schemes not working for VNA and Cable and Antenna Analyzer graphs. #19045
- Fixed an issue with manual save jpeg step in easyTest scripts which opened the save window with the wrong file type.
- Fixed an issue with SCPI command to switch modes with a marker ON causing an instrument lockup condition. #18492
- Fixed an issue with the SCPI command "trace:data?" to bottom out at -120 dB to match what is seen on the screen of the instrument.
- Fixed an issue where Immunity status was not restored after an RF cal. #20818
- Fixed marker table on/off to allow translation. #19590

CDMA Analyzer [2]

- Fixed an issue where CDMA pilot scan recalls the wrong power values. #18304
- Fixed an issue with Recalling a CDP display to correctly display Page and Sync values of the saved measurement. #20216

GSM Analyzer [1]

- Fixed an issue where pressing the back button in the Script Master menu in GSM/EDGE would go to the incorrect menu.

LTE Analyzer [10]

- Added antenna detection in Tx Test measurement. #20496
- Fixed an intermittent issue with the instrument freezing when changing parameters or changing measurements within LTE.
- Fixed an issue in Tx Test measurement, where a displayed Delta Value was shown, even when a single Tx Antenna was in use.
- Fixed an issue where the RSRP measurement in Channel Scanner was not stable. #20496
- Fixed an issue with an EVM mode dependence on EVM max hold functionality.
EVM Max hold toggling does not affect EVM mode while switching measurements. #20808
- Fixed an issue with an EVM mode parameter not getting Preset when PBCH setup in effect. #20809
- Fixed an issue with recalling a file in LTE Pass/Fail mode, causing the unit to lock up with hour glass. #20473,16058
- Fixed an issue with the Back button in Power vs Resource Block menu in LTE and TD-LTE modes returning to the wrong menu. #20765
- Fixed an issue with the MEASure:RF:SEM? causing other MEASure:RF commands to fail.
- Spectral Emission Mask status now shows "--" instead of "Fail" when measurement is not complete in LTE and TD-LTE modes.

TD-LTE Analyzer [10]

- Added antenna detection in Tx Test measurement. #20496
- Fixed an issue in Tx Test measurement, where a displayed Delta Value was shown, even when a single Tx Antenna was in use.
- Fixed an issue where the RSRP measurement in Channel Scanner was not stable. #20496
- Fixed an issue with an EVM mode dependence on EVM max hold functionality.
EVM Max hold toggling does not affect EVM mode while switching measurements. #20808
- Fixed an issue with an EVM mode parameter not getting Preset when PBCH setup in effect. #20809
- Fixed an issue with TD-LTE control channel power, so PHICH now shows N/A when uplink/downlink set to either 1,2,4, or 5.
- Fixed an issue with the Back button in Power vs Resource Block menu in LTE and TD-LTE modes returning to the wrong menu. #20765
- Fixed an issue with the MEASure:RF:SEM? causing other MEASure:RF commands to fail.
- Removed the sub frame 0 text for Power vs Resource Blocks in TD-LTE. Measurement is across all subframes.
- Spectral Emission Mask status now shows "--" instead of "Fail" when measurement is not complete in LTE and TD-LTE modes.

WCDMA Analyzer [1]

- Fixed an issue where turning on the Marker Table while in single sweep mode could blank out the trace until another sweep was triggered. #18164

High Accuracy Power Meter [2]

- Fixed an issue that caused strange behavior of two buttons ("Reverse Lower Limit" and "Reverse Upper Limit") in HI-PM mode with MA24105A power sensor attached when connected to MST. #16431
- Fixed an issue that corrected order of magnitude for percent of duty cycle in HI-PM mode for MA24105A power sensor. #17756

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