

## **General Caution**

Please use a USB Memory Stick for firmware updates.  
Suitable firmware can be found on Anritsu's web site under the instrument library tab.

If there is a firmware update question, please contact Anritsu service support at [www.Anritsu.com](http://www.Anritsu.com), and then click on "Technical Support" for further information.

What will the Customer see in this release?

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## **Application Package for the MS272xC Models: V2.30 05-15-2016**

### **New Features**

#### High Accuracy Power Meter

- Added support for MA243xxA USB power sensors.

### **Enhancements**

#### General

- 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.
- Updated the CableList.txt file to add 9 additional cables in response to customer request.
- Added Support for 4x4 MIMO LTE-FDD measurements.

### **Bug Fixes**

#### General

- 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 where the file type warning message was not shown in the Select File Type dialog.

#### Spectrum Analyzer and Sub-modes

- Fixed an issue where recalling a measurement caused the unit to go to the Gated Sweep menu.

#### LTE and TD-LTE Analyzer

- 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.
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## **Application Package for the MS272xC Models: V2.20 02-12-2016**

## Bug Fixes

### Spectrum Analyzer and Sub-modes

- 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 SPA mode where 'Save On Event' button was hidden after using IA mapping feature.
  - 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 reference level after recalling values from file was wrong. #22224
  - Fixed an issue where the Chinese translation of Trace B & C operation referenced Trace A & B. #23066
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## Application Package for the MS272xC Models: V1.17 10-23-2015

### New Features

#### Spectrum Analyzer and Sub-modes

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

#### High Accuracy Power Meter

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

#### LTE and TD-LTE Analyzer

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

### Miscellaneous

#### General

- 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 the 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

- Added additional monitoring of Battery SMBus to improve the handling of battery charge termination while unit is in operation. #23219.
- 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 several icons used in Night Vision mode for better visibility. #22831
- Corrected a problem where AM/FM/PM mode (Option 509) was not available as an option on MS2723C device. #22269

#### Spectrum Analyzer and Sub-modes

- Added Pan & Zoom functionality for .azm maps inside Coverage mapping measurements for SPA mode. #3217
- Counter Marker accuracy improvements for center frequency of 5 MHz and 10 MHz.
- 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 where a Preset operation soon after a recall could cause problems with GPS measurements. #23186

- Fixed an issue in SPA mode where the reference level after recalling values from file would be wrong. #22224
- Fixed an issue in SPA where the Spurious emissions data was not cleared when doing a preset. #23183

## WCDMA Analyzer

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

## **Bug Fixes**

### General

- Changed the Spanish Language translation of ON/OFF to fit within the allowable space of the Marker Table. #22315
- Fixed an issue where the File type selection in Save dialog was very slow when using the rotary knob. #22559

### Spectrum Analyzer and Sub-modes

- 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 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 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 channel power used to show 0 dBm for smaller span values. #22772
- Fixed an issue in SPA mode where Emission Mask incorrectly reported "Fail" on segments that were actually a "Pass". #21687
- 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 counter marker showed the marker in the wrong location after changing frequencies. #22400
- Fixed an issue in SPA mode where the marker value shown above the graph area varied from the value shown inside the graph after the marker location was moved with the rotary knob. #22083
- 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 SCPI command returned values with incorrect number of decimal point precision. #11751
- 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 Emission Mask would fail at times, even though the measurements were well below the limit lines. #21687
- Fixed an issue where Fast Sweep Mode would periodically pause during the sweep under unique setups. #23002
- 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 RBW could be set to an invalid value in zero span under SPA mode. #21788
- Fixed an issue where recalling spectrogram measurement file caused the instrument to reboot. #21952
- 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 frequency pop-up obscured part of the GPS not locked warning when selecting a frequency within Mapping mode. The GPS message has been moved to the bottom of the map area to prevent the overlap. #22240, #3045

- Fixed an issue where the trace showed erroneous data when sweep mode was changed while a sweep was in progress. #21868
- 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
- Fixed issue where measurement value "Distortion/Total Vrms" was not updated properly in GUI when in single sweep mode. #21597
- Fixed the issue in Channel Scanner mode where power readings and graph were updated in frequency scanner mode, for invalid frequencies. #21603

#### WCDMA Analyzer

- 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

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### **Application Package for the MS272xC Models: V1.16 05-15-2014**

#### **New Features**

##### General

- 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 in V2.07 to include Anritsu Antenna 2000-1715-R

##### Spectrum Analyzer and Sub-modes

- 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 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
- Save Measurement and JPG feature added for AM/FM/PM mode. #21670
- User can now select FM scale % values with a minimum of 0.01%. #21502

##### LTE and TD-LTE Analyzer

- 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.

## Enhancements

### General

- Added separate message dialog box when deleting folders with file type selection of "All file" types. #21672
- Changed color for magenta to a darker shade when in "Black on White" Display mode, for better visibility of traces and text. #21738
- Corrected error message displayed to a more meaningful one, when saving files with target memory nearly full.
- Free space on the storage device will be checked before JPGs can be saved. #21369
- 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
- The PASS/FAIL indicator text is now easier to read in the PIM application when using the Black and White color profile.
- 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 in V2.06 by adding 3 antennas.  
Updated the CableList.txt file in V3.05 by adding 13 cables.  
Updated the Signal Standards File in V2.10 by 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 in V3.06, by adding support for an additional manufacturer of RG58C-U Cable with a propagation velocity of 0.656
- Updated the Support File, Signal Standards in V2.11, Correcting the Starting Channel number for TD\_LTE Band 41 (2496-2690 MHz) to 39650. #21874

### Spectrum Analyzer and Sub-modes

- Corrected back button behavior in detection menu for SPA mode, to properly return to previous menu.
- Display format of amplitude units on graph is now changed. Units are displayed only on top and bottom of the grid. #22145
- Improved Spur avoidance in performance mode at 8.4 GHz, 8.6 GHz and 8.8 GHz Frequencies.
- Made improvements in Counter Marker accuracy. #20982
- Main Channel power no longer shows invalid values when Span is less than Main Channel BW. #20922
- When recalling saved setup, invalid channels/frequencies are shown as "---" and readings are masked out corresponding to the invalid channels. #21603

### LTE and TD-LTE Analyzer

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

### WCDMA Analyzer

- 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

- 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 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 File and directory naming. Files or directories with leading spaces in their names are prevented from being saved. #21560
- 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

- Added a Gate delay maximum value, and set it to 100 ms. #21441
- Fixed an error in the header where the Detection information was omitted 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 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 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 an issue with the Limit Envelope Offset when using linear units of measure. #21558
- Fixed single sweep not sweeping when manually triggered with auto sweep time turned on. #20981
- Fixed the Auto Save for Spurious Emissions when RBW & VBW are <1 MHz RBW & VBW, showing as 0 Hz. #21208

## High Accuracy Power Meter

- 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

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

## CDMA Analyzer

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

#### GSM Analyzer

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

#### LTE and TD-LTE Analyzer

- 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

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

#### WCDMA Analyzer

- 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

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

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### **Application Package for the MS272xC Models: V1.14 10-27-2014**

#### **New Features**

##### General

- Added "Delete All Points" confirmation for Coverage Mapping functions in all modes. #18221
- Added EEPROM snapshot feature adds a folder named "Anritsu\_Snapshot" in internal memory.  
Added EEPROM Snapshot files may be deleted for security purposes.  
Added EEPROM Snapshot feature does not apply to units with security option 7.
- Added GPS location in radians to saved measurement file headers.
- Added icons for night vision display mode in the save/recall dialog.
- Added support for passive GPS antenna.
- Added support for saving images (jpg) and measurement files simultaneously.
- Added the ability to install field-upgradeable options from a license file located on a USB drive.
- Added the capability to automatically turn on when power is applied to a unit. The menu for controlling this capability is in the system menu. Requires IPL/SPL/ataBoot version 3.25 or later. Contact Anritsu Customer Service to update IPL/SPL/ataBoot.
- Added the firmware package version number to saved measurement files.

##### Spectrum Analyzer and Sub Applications

- Added SCPI command ":DISPlay[:WINDow]:TRACe:Y[:SCALe]:RLEVel:AUTO IMMEDIATE". See Programming Manual for details.
- Added SCPI command ":SENSe:FREQuency:REFeRence:SOURce?". See Programming Manual for details.
- Adding initial support for the MA2700A Antenna

##### LTE Analyzer

- Added New SCPI command ": MEASure:RF:SEM:TABLE?" See the Programming Manual for details.
- Added support for LTE-A Carrier Aggregation measurements.

- Added Time Alignment Error measurement for carrier aggregated signals.

#### TD-LTE Analyzer

- Add U/D Link Configuration parameter and open up cyclic prefix button for TD-LTE.
- Added additional Scanner improvements.
- Added manual selection of SEM mask including a number of non-standard masks.
- Added New SCPI command ": MEASure:RF:SEM:TABLE?" See the Programming Manual for details.
- 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 Tx Time Alignment.
- Update the Pass/Fail scripts to add support for new measurement parameters (Frame EVM, OSTP, Time Alignment Error)

#### **Miscellaneous**

##### General

- Updated signal standard file to V2.08.
- Updated System Level Russian language translations.

#### **Enhancements**

##### General

- Added a special case for the battery self-test so that it doesn't indicate failure when the battery is not installed, but it indicates that there was no response from the battery so that the user can decide if there is a failure or not. #9981
- 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 label to show the free space on the currently selected save location.
- Added line-wrapping for option numbers in the System Status dialog. #19979
- Added more descriptive file save error messages. #16298
- Added more improvements to System Level Russian language translations. #19993
- Added restrictions for special characters and spaces when naming filenames and folders. #9868
- Changed Display Settings menu buttons from "Invert Black & White" to "Color on White" and also changed "Black & White" to "Black on White".
- Changed low battery warning sound interval. #15829
- Changed the battery capacity limits: If the capacity is less than or equal to 11%, the instrument displays a warning message.
  - If the capacity is less than or equal to 8%, the instrument beeps when the capacity changes.
  - If it is below 6%, the instrument will be shut down.
- Displaying >1 hr for sweep time estimates over 1 hour instead of showing ~1.2 hours.
- Improved error handling when overwriting existing files and folders. #14794
- Improved GPS frequency accuracy during temperature changes. #19096
- Improved handling of Recall KML Points & Map when the map is not available. #18638
- Raw socket SCPI interface added.
- Restricted the ability to copy from a parent directory into a sub-directory. #14794



- The limit values truncation issue is now fixed in Cable and Antenna Analyzer SPA and PIM modes.

## Spectrum Analyzer and Sub Applications

- Add Chinese translation of 'Burst Detect' in the SPA Application.
- Added a message saying that Spurious Emissions is getting turned off when switching to the unsupported Interference Analyzer mode.
- Added feature to flip marker box below trace if it would exceed the top of the graph area. #7969
- Added scrolling through the table selection when in Signal ID "Single Scan and Review" mode. #12456
- Added support for longer antenna names. #18714
- Added support for sweep time measurement in sample detection mode.
- Added sweep range validity checking to CS channels. #1860
- Allowing setting of center frequency to max value while in zero span. #16018
- Applying Antenna Correction factors when using traces B and C. #15463
- Changed C/I measurement file to always write out trace B parameters.  
This makes C/I measurements consistent with other measurements that contain a trace B.
- Changed delta markers to follow corresponding reference marker when they are off-screen. #9453
- Changed message for available space from number of files to actual bytes remaining. #16298
- Changed minimum value for recalled center frequency to 0 Hz in Spectrum Analyzer application after power cycle. #20021
- Channel Scanner Custom Scan frequency list can now use the full frequency range of the instrument. #16450
- Disabled access to the limit menu and all limit-line related SCPI commands when Emission Mask is enabled. #16848
- 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 IA mapping measurement not updating for a long time when the instrument boots up in IA mapping mode.
- Improved IF Output distortion in zero span. #17472
- Improved reference level offset calculation in Emission Mask. #20204
- Improved sweep time prediction in quasi-peak detection mode.
- 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 resolution for marker time in zero span mode. #10642
- Limit line restored when exiting Emission Mask measurement. #12069
- Limited Emission Mask to 12 segments (13 limit points). #12553
- 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
- Selecting "Set Demod Freq to Current Marker Freq" button turns on marker, if off, and demodulation frequency will be the last-edited marker frequency in AM/FM demodulation mode. #17425
- Sped up the measurement update rate for IA mapping.
- Updated Channel Scanner Measurements button text from 'Units Display' to 'Power Display'. #11033
- Updated SPA Application Chinese translations. #18427
- Updated the C/I measurements button text of "Min Sweep Time" to "Sweep Time". #9805
- When Save On Event is active, recalling setup/measurement/limit line files are disallowed. #16295

## LTE Analyzer

- Added SCPI commands for displaying and returning the SEM results table. See Programming Manual for details.

- Backspace Key added to the marker frequency/time termination menus in LTE. #15566
- Changed SCPI Command case for conformance issues. Changed REPEat to REPeat, RECALL to RECall and DEFAULT to DEFault. #15060
- 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 demod and over the air measurements.
- Removed erroneous "bch signal" field while in the constellation measurement view.

#### TD-LTE Analyzer

- Add 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
- Added SCPI commands for displaying and returning the SEM results table. See Programming Manual for details.
- Added support for Base Stations with no sync on Tx2
- Backspace Key added to the marker frequency/time termination menus in LTE. #15566
- Changed SCPI Command case for conformance issues. Changed REPEat to REPeat, RECALL to RECall and DEFAULT to DEFault. #15060
- 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

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

#### Operating System

- 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.
- Improved dynamic memory management with Windows 7 hosts. #15322
- Improved error handling for WiFi TCP data transfer functions.
- Improved field option upgrade operations.
- 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

- Fixed a problem where ":SENSe:FREQuency:STARt" SCPI command truncates the last digit when setting frequency beyond 4,294,967,295 Hz. #15669
- Fixed a problem with displaying large System Level Russian fonts. #16851
- Fixed a problem with pressing '1' when Signal Standards List is displayed. #17293
- Fixed a rounding issue from tenths of Hz for frequencies. #16170
- Fixed a SCPI update for ":SENSe:GPS" when instrument is displaying a recalled trace. #12000
- 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 save file overwrite behavior not prompting the user to confirm a file overwrite operation. #15975
- 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 Menu screen help window would not close. #17387
- 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 the Spurious Emission menu could show up in the IA mode.
- 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 setting the date to Feb 29 on a leap year. #13709
- Fixed extensions for EVDO measurements after switching application mode. #15503
- Fixed limit line resolution issue when saving measurement files allowing external PC Tools to recreate the limit line. #10370
- Fixed the French translation for "Save Measurement As". #19074
- Marker display now shows smaller values properly without error in placement of decimal point.
- Recording time now calculates based on available storage space. #7192

## Spectrum Analyzer and Sub Applications

- 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 save on event issue with "Save Then Stop" interacting with "Crossing Limit" and "Sweep Complete". #16842
- Fixed a SCPI command ":AFPanalyzer:RFSPectrum:DATA?" result, see Programming Manual for details on this command. #15100
- Fixed a SCPI command ":CALCulate:LIMit:POINt:Y?". see Programming Manual for details on this command. #17464
- Fixed an amplitude inaccuracy problem with quasi-peak detection enabled.
- 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 Channel Scanner mode where Ref Levels units shows pW when it should be dBm. #16198
- Fixed an issue in IA mode where the limit line would not get reset properly following a preset. #19998
- Fixed an issue in IA Signal ID measurement mode, where the SS/Cont buttons were not kept in sync with the overall SS/Cont status. #7805
- 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 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 "GPS Hi Accy Freq Ref" did not display following a preset. #15355
- Fixed an issue where a counter marker's location on the screen would not match its actual frequency. #15671

- Fixed an issue where Display All Traces could lock up the unit. #15701
- Fixed an issue where Frequency Reference = "GPS High Accuracy" was not always reported correctly. #19181
- Fixed an issue where GPS High Accuracy could sometimes fail to update on screen. #15433
- Fixed an issue where Preamp warning message did not reflect RL Offset. #12425
- Fixed an issue where pressing the color power scale in Spectrogram view would disable the twiddle knob. #15172
- 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 Power Meter did not take into account the impedance loss of impedance matching adapter for 75 ohm systems. #13981
- Fixed an issue where the reference level offset was not applied to SCPI command ":DISPlay:WINDow:TRACe:Y:RLEVel?". #11751
- Fixed an issue where the Spectrogram would show incorrect trace position in dBuV, dBmV, dBV. #15988
- Fixed an issue where the Spurious Emission menu could show up in the IA mode.
- Fixed an issue where the twiddle knob does not work properly in Zero span. #17626
- Fixed an issue where the use of the twiddle knob within the Channel Scanner Custom List Edit mode could hang the unit if scrolling beyond the available channel slots. #8250
- Fixed an issue where trace A was not shown even when it was enabled. #15147
- Fixed an issue where user could attempt to recall a measurement while in a Save on Event setting. #16295
- Fixed an issue where Video trigger level with RL Offset was not displayed properly. #11523
- Fixed an issue with "preset" when field strength is enabled. #19595
- Fixed an issue with "Sweep Once" in IA Spectrogram mode. #10982
- Fixed an issue with an IA mode measurement switch which could cause 'Settings changed, sweep data invalid' to display unnecessarily.
- Fixed an issue with Audio demodulation of a narrow band FM tone. #15208
- Fixed an issue with changing RBW and VBW values in signal strength and RSSI affecting non-zero RBW and VBW in spectrum measurements. #13645
- Fixed an issue with channel power parameters save/recall with different units. #2149
- Fixed an issue with determining marker placement while in zero span mode. #11797
- Fixed an issue with Field Strength measurement: antenna factor display is no longer affected by changes in the reference level offset. #10628
- Fixed an issue with Limit Envelope not work correctly when Units = Volts or Watts. #11726
- Fixed an issue with recalling setups without counter markers enabled did not reset existing counter markers. #12159
- Fixed an issue with the "blinking" of the first point in spa sweep.
- Fixed an issue with unit conversions for channel power parameters. #2149
- Fixed an issued with IA mapping measurement update became very fast after changing center frequency, after a preset.
- Fixed an unstable measurement in zero span for RBW 300kHz measurement setups. #16942
- Fixed Auto Reference level not working in IA mode.
- Fixed channel power units displayed in the table in Adjacent Channel Power Ratio and Carrier/Interference. #2149
- Fixed colors for Coverage Mapping plotted points and RSSI value. #14673
- Fixed duplicate signal appearing under narrow VBW in fast sweep mode. #16860
- Fixed incorrect measurement with No FFT sweep mode, RBW = 1 Hz, and VBW > 1 Hz. #14875
- Fixed marker snapping to center when recalling zero-span measurements. #12178
- Fixed marker units not getting updated immediately after switching units. #18516
- Fixed occasional freeze when measurement units are non-dBm based.
- Fixed problem where instrument lost setup after multiple power cycles when measurement units are in dBuV. #16596
- 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

#### EVDO Analyzer

- Fixed an issue where "CALCulate:MARKer:STATe OFF ON 0 1 " remote command did not always update the state of Marker on unit. #15593.
- Fixed an issue where Recalled RF Summary measurement shows "--" instead of "PASS" for Spurious Emission value. #15478
- Fixed an issue where the unit could hang when presetting after turning all markers off in some EVDO measurements. #16235
- Fixed an issue with Recalled marker table values for Spurious Emission measurement not correct. #13128

#### CDMA Analyzer

- Fixed an issue where "CALCulate:MARKer:STATe OFF ON 0 1 " remote command did not always update the state of Marker on unit. #15593.
- Fixed an issue where Recalled RF Summary measurement shows "--" instead of "PASS" for Spurious Emission value. #15478
- Fixed an issue where the unit could hang when presetting after turning all markers off in some CDMA measurements. #16235
- Fixed an issue with Recalled marker table values for Spurious Emission measurement not correct. #13128
- Fixed an issue with Recalling a CDP display to correctly display Page and Sync values of the saved measurement. #20216

#### GSM Analyzer

- Fixed an issue where a sweep was triggered when switching from Channel Spectrum to Multi-Channel mode with Single Sweep mode. #15482
- Fixed an issue with Frequency changing to 1 GHz after mode switch. #14432
- Fixed an issue with GSM - Power Vs Time (slot) recall measurement. #14451

#### LTE Analyzer

- 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 of inaccurate Lock Fail messages during mode switches. #12352
- Fixed an issue that could prevent the OTA Scanner from correctly reporting Dominance when there are 3 signals being received. #13349
- Fixed an issue to insure RS sync type only allows normal cyclic prefix measurements.
- Fixed an issue where ESC from unusual setup ACLR trace could cause a hang up. #15792
- Fixed an issue where LTE & TD-LTE modes could not create shortcuts. #15743
- Fixed an issue where Reference Level would shift briefly while locking to external Reference and in Auto Level Mode. #10731
- Fixed an issue where the RSRP measurement in Channel Scanner was not stable. #20496
- Fixed an issue where the SCPI command ":MEAS:RF:SEM?" was returning incorrect results. #13910
- Fixed an issue while recalling some LTE measurement files. #15622
- Fixed an issue with (OTA scanner), menu was not being updated when entering a scanner submenu. #12132
- Fixed an issue with recalling a file in LTE Pass/Fail mode, causing the unit to lock up with hour glass. #20473,16058

#### TD-LTE Analyzer

- 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 of inaccurate Lock Fail messages during mode switches. #12352
- Fixed an issue that could prevent the OTA Scanner from correctly reporting Dominance when there are 3 signals being received. #13349
- Fixed an issue to insure RS sync type only allows normal cyclic prefix measurements.
- Fixed an issue where ESC from unusual setup ACLR trace could cause a hang up. #15792
- Fixed an issue where LTE & TD-LTE modes could not create shortcuts. #15743
- Fixed an issue where Reference Level would shift briefly while locking to external Reference and in Auto Level Mode. #10731
- Fixed an issue where the RSRP measurement in Channel Scanner was not stable. #20496
- Fixed an issue where the SCPI command ":MEAS:RF:SEM?" was returning incorrect results. #13910
- Fixed an issue while recalling some LTE measurement files. #15622
- Fixed an issue with (OTA scanner), menu was not being updated when entering a scanner submenu. #12132
- 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.
- Removed the sub frame 0 text for Power vs Resource Blocks in TD-LTE. Measurement is across all subframes.

#### TD-SCDMA Analyzer

- Fixed an issue where Measurements/RF Measurement/Power vs. Time/Slot Selection, did not return to the correct menu. #2580
- Fixed an issue with OTA Tau Scan mode freezing. #16282
- Fixed an issue with PvT mask and 64-QAM feature support.
- Fixed an issue with reading slot powers from the measurement file. #14752
- Fixed an issue with recalled CDP measurement not displaying the correct coloring for the graph. #8338
- Fixed an issue with recalling a PVT measurement from a channel spectrum mode and pressing 'Esc' twice to get back to channel spectrum and then switching to Spectral Emission would could cause system freeze.
- Fixed an issue with the Power vs Time Mask.
- Fixed an issue with updating the recalled values in the CDP Table Window. #14757

#### WCDMA Analyzer

- Fixed an issue that could cause the unit to lockup when switching from WCDMA (remote commands) with marker or marker once turned on and off.
- Fixed an issue where a preset from band spectrum did not restore default center frequency. #13683
- Fixed an issue where the unit could hang when presetting after turning all markers off in some WCDMA measurements. #16235
- 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
- Fixed an issue with recalling a band spectrum trace. #6312
- Fixed an issue with switching between single and continuous sweep after changing measurement views. #16413
- Fixed an issue with the Pass/Fail mode. It now sweeps after pressing esc/enter on an empty scriptmaster list. #11518
- Fixed an issue with the SCPI command ":MEAS:ACLR?" returning an extra comma at the beginning of response. #15255

#### Fixed WiMAX Signal Analyzer

- Fixed an issue with SCPI command :TRACe:PREamble? SPEC reporting back the wrong span. #11836
- Fixed an issue with the displayed scale not matching the Button scale per division. #14481

#### Mobile WiMAX Signal Analyzer

- Fixed an issue related to the mask lines showing up incorrectly during a spectral flatness measurement recall. #14475
- Fixed an issue with SCPI command :TRACe:PREamble? SPEC reporting back the wrong span. #11836
- Fixed an issue with the displayed scale not matching the Button scale per division. #14478

### High Accuracy Power Meter

- 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

### Operating System

- Fixed battery charge LED response and improved battery charging operations. #18488
- Saving instrument setup on power down has been sped up to prevent loss of setup information.

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## **Application Package for the MS272xC Models: V1.13 03-20-2012**

### General Features

- Added a new feature that automatically pops up a firmware update window when a USB stick containing new firmware is attached to the instrument.

### Spectrum Analyzer

- Fixed the problem where marker jumps onto trace A when user presses button to search next peak to the left/right.
- Stopped displaying antenna factor in field strength measurement if the spectrum measurement is outside of the valid antenna's frequencies.
- Disallowed recalling of a setup if the instrument is in measurement recall mode.
- Fixed a bug where RSSI was not reflecting Ref Level Offset correctly in coverage mapping mode.
- Fixed a bug where a Counter marker's location on the screen would not match it's actual frequency.
- Sweep Time is now displayed with an initial 'estimate' for the first sweep and updated to measured values in subsequent sweeps.
- Added support for new units - dBW, A and dBA and Watt/cm2 in Field Strength mode.
- Added support for 'Burst Detect' mode under Sweep Types.

### Interference Analyzer

- Fixed a problem where the spectrum sweep doesn't reset after it has been recorded into the spectrogram trace under some circumstances.

### Channel Scanner

- Fixed a bug where the signal standard list window was dismissed prematurely when user has selected an invalid signal standard such as "NONE."

### PIM Analyzer

- Added support for PIM Master model MW8209A
- Added additional Cal/Measure capability for MW8208A DTP measurement
- Implemented PIM SCPI command for changing between DTP and PIM.
- Bug fix to keep display from updating PIM measurement during DTP Cal.
- Changed the way calibration is performed in distance-to-PIM mode.

Power Meter

- No changes

High Accuracy Power Meter

- Added support for the new power sensor model MA24240A, and MA24105A.

CDMA Analyzer

- No changes

EVDO Analyzer

- Fixed a bug where pass/fail mode would report incorrect spurious emission test result.

GSM Analyzer

- No changes

TD-SCDMA Analyzer

- No changes

WCDMA Analyzer

- No changes

LTE Analyzer

- Added Tx Time Alignment measurement
- Added support for EVM measurements on each control channel
- Added support for PHICH and PDCCH control channel measurements
- Added overall EVM and EVM per modulation type in the Power vs RB view - this allows EVM measurements over the full frame
- Added OSTP measurement to the Power vs RB view
- Added ability to manually select masks for Spectral Emission mask test

TD-LTE Analyzer

- No changes

Fixed WiMAX Analyzer

- No changes

Mobile WiMAX Analyzer

- No changes

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**Application Package for the MS272xC Models: V1.11 06-13-2011**

General Features

- Temperature reading in status window now displays both in Celsius and Fahrenheit
- Fixed a bug that would sometimes include the save dialog when saving as a jpeg

CDMA Analyzer

- Pilot Scanner no longer displays gray bars for noise



#### Channel Scanner

- Fixed several bugs related to Script Master.

#### EVDO Analyzer

- Pilot Scanner no longer displays gray bars for noise
- New SCPI commands to read RF summary measurements

#### GSM Analyzer

- No changes

#### High Accuracy Power Meter

- No changes

#### Interference Analyzer

- Improved timing accuracy of sweep interval in RSSI

#### Spectrum Analyzer

- Fixed a bug where Save-on-event would continue to save after switching to other modes
- Fixed a bug in the saved measurement file that caused Reference Level Offset to be incorrectly read and applied in Master Software Tools
- Fixed a bug where Quasi-peak detection wouldn't use the correct CISPR RBW filters
- Fixed a bug with Option 89 (IF Output) where the button to turn on the output wouldn't work correctly
- Fixed a bug where level accuracy was affected by ~2 dB with the 3 MHz RBW filter in certain spans

#### PIM Analyzer

- Initial Release

#### WCDMA Analyzer

- Fixed a bug where "Preamble scanner Error" message would not get cleared even when error conditions got cleared

#### Fixed WiMAX Analyzer

- No changes

#### Mobile WiMAX Analyzer

- Fixed a bug where "Preamble scanner Error" message would not get cleared even when error conditions got cleared

#### TD-SCDMA Analyzer

- New SCPI commands to read RF and Demod summary measurements
- FETCh:DEMod:CDP? SCPI command now returns the correct PCDE value

#### LTE Analyzer

- Added Power vs. RB measurement
- Added support for Freq Error averaging
- Added indicator for EVM Auto status
- Added Indicator for which Antenna was detected
- Added support for EVM Max Hold
- Added RSRP, RSRQ, SINR measurements to Scanner
- Added TxTest measurement
- Added support for in-instrument Mapping
- Added additional SCPI commands

#### TD-LTE Analyzer

- Added Power vs. RB measurement
  - Added support for Freq Error averaging
  - Added indicator for EVM Auto status
  - Added Indicator for which Antenna was detected
  - Added support for EVM Max Hold
  - Added RSRP, RSRQ, SINR measurements to Scanner
  - Added TxTest measurement
  - Added support for in-instrument Mapping
  - Added additional SCPI commands
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### **Application Package for the MS272xC Models: V1.09 02-02-2011**

#### CDMA Analyzer

- No changes

#### Channel Scanner

- Fixed several bugs related to Script Master.

#### EVDO Analyzer

- No changes

#### GSM Analyzer

- No changes

#### High Accuracy Power Meter

- No changes

#### Interference Analyzer

- No changes

#### Spectrum Analyzer

- Several bug fixes

#### WCDMA Analyzer

- No changes

#### Fixed WiMAX Analyzer

- No changes

#### Mobile WiMAX Analyzer

- Added 'Timing Error' result to Modulation Summary view
- Fixed a bug where Manual DL-MAP settings would cause an error message while performing modulation analysis

#### TD-SCDMA Analyzer

- No changes

#### LTE Analyzer

- Fixed a bug with PBCH Power measurements where results were 6 dB higher when directly connected to a Transmitter.
- Fixed a bug in PCFICH power calculation for certain physical cell ID values.
- Fixed a bug with control channel power measurements when BW=15 MHz
- Added a new Table view that shows Total Powers for Control Channel Power measurements.
- Added SCPI remote command support

#### TD-LTE Analyzer

- Initial Release

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### **Application Package for the MS272xC Models: V1.05 09-17-2010**

#### General Features

V1.05 is the initial release for Customers

#### CDMA Application

#### Channel Scanner Application

#### EVDO Application

#### GSM Application

#### High Accuracy Power Meter Application

#### Interference Analyzer Application

#### Spectrum Analyzer Application

#### T1/E1 Application

#### Cable and Antenna Analyzer Application

#### WCDMA Application

#### Fixed WiMAX Application

#### Mobile WiMAX Application

#### TD-SCDMA Application