

## General Caution

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Please use a USB Memory Stick for firmware updates.  
Suitable firmware can be found on Anritsu's web site under the instrument library listings.  
If your existing firmware is older than v1.58, please use Master Software Tools and the Ethernet interface for firmware updates.

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? MT8222A Application Package V1.80 07/23/2012

## General Features

- -Updated Antenna File to V2.03  
    Additional Anritsu Antenna selections have been added to the files  
    Anritsu\_2000-1659-R  
    Anritsu\_2000-1660-R  
    Anritsu\_2000-1645-R\_lowband  
    Anritsu\_2000-1645-R\_highband  
    Anritsu\_2000-1648-R

## Spectrum Analyzer

- - Fix a problem in firmware that had problems with DSP FPGA older than 3.04  
- Fixed the problem of which 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.  
- Disallow recalling of a setup if the instrument is in measurement recall mode.

## AM-FM-PM Analyzer

- - No changes

## Interference Analyzer

- - Fixed the problem of which the spectrum sweep doesn't reset after it has been recorded into the spectrogram trace under some circumstances.  
- Improved timing accuracy of sweep interval in RSSI

## Channel Scanner

- - Fixed the problem of which the signal standard list window was dismissed prematurely when user has selected an invalid signal standard such as "NONE."

#### PIM Analyzer

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- Added support the new PIM Master model MW8209A
- Changed the way calibration is performed in distance-to-PIM mode.
- Reset MW8209A 900MHz upper frequency limit from 970MHz to 960MHz.
- 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.

#### Power Meter

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- No changes

#### High Accuracy Power Meter

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

#### Cable and Antenna Analyzer

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- No changes

#### CDMA Analyzer

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- No changes

#### EVDO Analyzer

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- Fixed the problem which the pass/fail mode would report incorrect spurious emission test result.

#### GSM Analyzer

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- No changes

#### TD-SCDMA Analyzer

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- No changes

#### WCDMA Analyzer

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- Fixed a lock failure problem at certain frequencies.

#### LTE Analyzer

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- 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



PIM Analyzer

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- PIM Analyzer mode is now standard on all models that include Spectrum Analyzer (no longer tied to the option 419)
- Added support for Distance-to-PIM measurement for PIM Master with option 420.

Power Meter

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- No changes

High Accuracy Power Meter

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- No changes

Cable and Antenna Analyzer

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- No changes

CDMA Analyzer

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- Pilot Scanner no longer displays gray bars for noise

EVDO Analyzer

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

GSM Analyzer

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- No changes

TD-SCDMA Analyzer

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

WCDMA Analyzer

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- New SCPI commands to read RF and Demod summary measurements

LTE Analyzer

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- No changes

Fixed WiMAX Analyzer

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- No changes



- Gated Sweep Setup (Option 90) is now more responsive and has separate controls for the gate view (zero span).

- Improvements and bug fixes to the Field Strength measurement.

## Interference Analyzer

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- New Interference Mapping capability added.
- Fixed a bug where the 'Save' window would also be saved when saving to jpeg from Spectrogram measurements.

## Channel Scanner

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- Fixed several bugs related to Script Master.

## PIM Analyzer

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- Initial Release

## Power Meter

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- No changes

## High Accuracy Power Meter

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- No changes

## Cable and Antenna Analyzer

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- No changes

## CDMA Analyzer

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- Improved the Pilot Scanner's  $E_c/I_0$  sensitivity to about -35 dB when 'Meas Speed' is set to slow. As a result of this improvement, the y-axis for this view has been increased to 45 dB.

## EVDO Analyzer

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- No changes

## GSM Analyzer

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- No changes

## TD-SCDMA Analyzer

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- No changes

## WCDMA Analyzer

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#### Interference Analyzer Application

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- Minor Signal ID algorithm enhancements

#### Spectrum Analyzer Application

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- Fixed several bugs related to Markers and Limit lines
- Users can now enter a specific marker frequency value without the instrument 'snapping' to the closest valid freq point
- Added Support for Option 90 - Gated Sweep
- Added a new Emission Mask measurement
- Fixed bug where Saved Measurement files contain Trace B and Trace C data even though they are not being used. They are now saved only when the traces are ON when saving

#### T1/E1 Application

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- Fixed a bug that would cause T1/E1 setup windows to show black boxes (instead of green ones with black text) if a user changed modes from the Interference Analyzer mode

#### Cable and Antenna Analyzer Application

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- Added support to allow peak search between markers 5,6
- Fixed a bug where DTF setups wouldn't recall properly at certain frequencies

#### WCDMA Application

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- Watts unit selection will now scale power results dynamically to mW, uW, pW, etc
- Added support for 'Script Master' which allows a user to run tests based on scripts generated in MST
- Fixed a bug in the EVM calculation that caused some signals to report a higher symbol EVM

#### Fixed WiMAX Application

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- No changes

#### Mobile WiMAX Application

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- Added a new Preamble Scanner measurement to the OTA option (Option 37)
- Added Max/Min information to Spectral Flatness measurement

#### TD-SCDMA Application

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- Added HSDPA support
- Added Spectral Emission Mask measurement

#### TD-SCDMA Application

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- Revised Signal Standards





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- No changes

#### Channel Scanner Application

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- Fixed a bug where measurement accuracy was off by several dB on some versions of HW  
- Fixed a bug where channel powers and channels (in 'scan channels' mode) recalled from a setup are different from when they were saved.

#### CW Signal Generator Application

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- No changes

#### DVB-T/H Application

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- No changes

#### DVB-T/H SFN Application

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- No changes

#### EVDO Application

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- No changes

#### GSM Application

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- Added support for demodulating Siemens BTS model 240

#### High Accuracy Power Meter Application

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- No changes

#### Interference Analyzer Application

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- New measurement called 'Signal ID' added  
- In spectrogram, change sweep interval to best accommodate for changes in time span instead of clipping the time span.  
- Fixed Spectrogram color map so that it goes from black to red instead of black to blue.  
- Changed incorrect warning messages in RSSI when the screen had not yet filled up with data  
- Fixed a bug where measurement accuracy was off by several dB on some versions of HW  
- Signal standards forced a change in span when channel numbers were changed - this has been changed to no longer change span when channel numbers are changed

#### Spectrum Analyzer Application

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- Sweep improvements in graphic update of the screen  
- Front panel response improved  
- Added Zero-span markers and limits  
- Added save/recall functionality for Trace B and Trace C





- Updated Signal Standards list with UMTS Bands X, XI

Operating System

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- No changes

CDMA Application

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- No changes

Channel Scanner Application

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- No changes

CW Signal Generator Application

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- No changes

DVB-T/H Application

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- Initial Release

DVB-T/H SFN Application

-----  
- Initial Release

EVDO Application

-----  
- No changes

GSM Application

-----  
- No changes

High Accuracy Power Meter Application

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- No changes

Interference Analyzer Application

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- No changes

Spectrum Analyzer Application

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- No changes

T1/E1 Application

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- No changes



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- Added support for Band Class 6. Carrier BW selection now restricted to 3 values.
  - Added RBW value to marker display and changed resolution of marker readout to kHz.
  - Carrier Freq and Freq Error now show tenth of Hz in display.
  - Internal high accuracy (with GPS option) will now be retained as expected.
  - Saved traces were losing freq precision from MHz to Hz. More digits were added after the decimal point (from 6 to 9) to some freq values that require tenth-Hz precision.

#### GSM Application

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- Internal high accuracy (with GPS option) will now be retained as expected.
  - Pass/Fail defaults would show small negative values as failures. Test limits have been updated.
  - Freq Error had a factor of 10 offset. The error is now fixed.

#### High Accuracy Power Meter Application

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- Added support for the MA24106A USB Power Sensor.

#### Interference Analyzer Application

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- Failure of storage location (int CF, USB, ext CF) full is now displayed correctly.
  - There were previous problems with the autosave feature for RSSI and spectrogram measurements. In some cases, duplicate files were saved when the autosave was triggered. Also, some longer-duration measurements would terminate after only 3 hours. Both of these issues have been fixed.
  - Better reporting for spectrogram measurements trying to set very large save times in very large memory devices. Previously, this may have resulted in an error that said the device did not have capacity.
  - User is no longer allowed to modify the Min Sweep Time parameter when in RSSI mode. A message appears on the screen requesting that the user modify the Time Interval and Span parameters instead.
  - Previously, When doing a Preset from RSSI mode, the trace appeared to be squished on the left side of the graph when measurement is resumed under the preset conditions. Settings are now properly cleared during the preset operation.
  - Display of parameters was improved in RSSI mode. Previously, when updating a parameter value, the red text in the upper-left of the plot on the display would get garbled as the parameter value (or parameter text) changed. The text would become clear again when the next point of data was received and displayed. This was most noticeable when the Time Interval parameter was large (i.e. 5 seconds).
  - Unit will not hang up in fast sweep conditions (large RBW, narrow span).
  - Error message display was improved so that critical error messages would not be missed.
  - Previously, the min/max parameters of the Signal Strength measurement could be set backwards (i.e. min > max). This is no longer allowed.
  - Improved autoscale feature of the Signal Strength measurement.

### Spectrum Analyzer Application

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- Some new strings were added to the local language translations.
- Added upgrades to move limit.
- Added vertical limit lines.
- Added limit mirror.
- Improved warnings for marker 1 reference.
- Improved warnings for full screen conflict.
- Changing signal standard channel will no longer revert the span back to 3x the channel width.
- Video Trigger Levels are now validated to avoid unreasonable values.

### T1/E1 Application

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- No change

### Cable and Antenna Analyzer Application

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- Improved recall of marker data.
- Added Cal Mode (Standard or FlexCal) for combinations of Cal Type (1-Port or 2-Port) and Cal Power (Low or High).
- The system will now allow the user to input a stop frequency that is smaller than the start frequency.
- New calibration warning messages when 1-port calibration is active and the user attempts to switch to 2-port channels.
- Improved spur avoidance down to 1 MHz.
- Request that CABLE\_LOSS\_AVERAGE added to info for MST.

### WCDMA Application

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- Added a Span button under Channel Spectrum that allows a user to toggle between 10 MHz and 5 MHz spans for more accurate OBW measurements in a multi-carrier environment.
- Added more digits to the carrier frequency and frequency error measurements on the display.
- Improved behavior When recalling a pass/fail measurement. Previously, the ESC key would not exit recall mode properly.
- Improved the spectrum emission mask measurement. Previously, the instrument would hang if left to measure spectrum emission mask repeatedly for a long time.
- Internal high accuracy (with GPS option) will now be retained as expected.
- Spectrum Emission Mask: measurement results for highest levels in each zone of the spectrum emission mask measurement would report the correct level but it reported incorrect frequencies. This is now working.

### Fixed WiMAX Application

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- Internal high accuracy (with GPS option) will now be retained as





Spectrum Analyzer Mode

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- Fixed bug where recall limit would fail and give no indication it failed. Now it does not fail.

Interference Analyzer Mode

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- No changes

Channel Scanner Mode

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- No changes

WCDMA Signal Analyzer Mode

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- Fixed bug where mode changes with GPS connected caused frequency accuracy errors.
- Improved how the zoom area is shown in codogram, CDP and HSDPA views

GSM/EDGE Signal Analyzer Mode

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- Fixed bug where mode changes with GPS connected caused frequency accuracy errors.

Fixed WiMAX Signal Analyzer Mode

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- Added support for 5ms and 10ms frame lengths
- Added ability to use RF power to do a rough trigger in power vs. time when no preamble is found. This prevents trace from jumping around even when the DL preamble is not found.

Mobile WiMAX Signal Analyzer Mode

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- Initial release

High Accuracy Power Meter Mode

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- No changes

CDMA Signal Analyzer Mode

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- Fixed bug so carrier frequency reports the measured value correctly.
- Fixed bug where mode changes with GPS connected caused frequency accuracy errors.

EVDO Signal Analyzer Mode

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- Fixed bug where mode changes with GPS connected caused frequency accuracy errors.

PM Mode

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- No Change

VNA Mode

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- No changes

## Channel Scanner Mode

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- No changes

## WCDMA Signal Analyzer Mode

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- CDP view would take up to 1 minute to refresh after closing an input window, this has been fixed.
  - Traffic analysis measurement capabilities are added using both code utilization and amplifier capacity.
  - Frequency error measurements now has averaging which can be enabled/disabled.
  - Max amplifier output power was not being set correctly under certain conditions. Now it is properly set.

## GSM/EDGE Signal Analyzer Mode

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- No changes

## Fixed WiMAX Signal Analyzer Mode

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- Remote commands that set signal or channel standards did not correctly update the frequency or channel, now it does.
  - Auto range time was slow, it is now a little faster.

## High Accuracy Power Meter Mode

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- With max-hold on, When relative power is turned on the data would be lost. This bug has been fixed.

## CDMA Signal Analyzer Mode

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- Invalid PN numbers were caused when power offset was non-zero. This bug has been fixed.
  - 'Slow' measurement mode now averages over more chips to get better frequency error accuracy.

## EVDO Signal Analyzer Mode

- 
- Invalid PN numbers were caused when power offset was non-zero. This bug has been fixed.

## PM Mode

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- No Change

## VNA Mode

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- No Change

## T1 Analyzer

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- No Change

## T1 Analyzer Mode with Fractional payloads

- VF measurement function was observed to become inactive during a measurement.  
Fixed to keep the measurement going even when we move between views.
- VF measurement flashes a wrong value in the Power box when the Audio Monitor is turned on.  
Fixed so that the screen displays the right values with or without Audio Monitor turned on.
- Subchannel editing from the menu buttons allowed entering invalid numbers when using the key pad.  
Fixed to allow only the valid ranges for the Subchannel numbers.

#### T3 Analyzer Mode with Fractional payloads

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- Fixed SelfTest to display all the test results.