



- BW menu
  - RBW and VBW values are now maintained separately for zero-span measurements.
  - The default value of Span/RBW is now 100.
  - A new button to change VBW average type to Log.
- Marker menu
  - A 'Large' setting is now available for the Marker table to view marker readout in a large font.
- Trace menu
  - A new Trace Info button is now available in the Trace menu to show a concise listing of all parameters for the selected trace.
  - 'Reset Sweep' button has been renamed to 'Reset Trace' and moved to the Trace menu.
- Sweep menu
  - 'Manual Trigger' is now called 'Sweep Once'.
  - A new 'Sweep n Averages' button has been added to allow a full set of averages to sweep when the sweep is set to Single.
  - A new 'Auto Sweep Time' button has been added.
  - Trigger sub-menu has been revamped with the ability to add hysteresis to the video trigger level.
  - 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

- 
- Fixed several bugs related to Script Master.

## CDMA Analyzer

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- Improved the Pilot Scanner's Ec/Io 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.

## 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

## LTE Analyzer

- 
- Added support for additional BWs (1.4, 3, 5 MHz).
  - Added a new Spectral Emission Mask measurement under Option 0541 (RF Measurements).
  - Added support for a "PBCH Only" EVM measurement for measurements made over the air (default selection for OTA-Scanner view).
  - Added support for Watts units.
  - Added marker support for Channel Spectrum view.
  - Changed scale of bars in Control Channel Power view and OTA-Scanner view to better match live signals.
  - Changed scale and color of dominance bar to improve readability.
  - Added ability to sync to Reference Signals (RS) on 2nd Tx port (10 MHz BW only).
  - Made significant improvements to reduce false positives in the OTA Scanner measurement.
  - 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.







Added new USB firmware - Users will now be able to update the instrument firmware via a USB memory stick after this firmware update

Added new arrow style to application buttons with sub-menus - Will be solid and shown all the time

Added LTE channel information to the Signal Standards list

Support for new High Accuracy power sensors (requires option 19)

- o MA24104A Inline High power sensor 600 MHz to 4 GHz
- o MA24108A Microwave USB power sensor 10 MHz to 8 GHz
- o MA24118A Microwave USB power sensor 10 MHz to 18 GHz

#### Spectrum Analyzer Enhancements

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New integrated code which includes the Spectrum Analyzer, Interference Analyzer and Channel Scanner

- o This greatly speeds up mode switching between these four measurement modes

General Spectrum Analyzer bug fixes

- o Fixed W and V issue in Field Strength measurement
- o Fixed Zero Span and Counter Marker incompatibility issue
- o Fixed Trace A-B -> C issue
- o Fixed Trace B & C Max & Min hold issues
- o Fixed 750 measurement issue

#### Interference Analyzer Enhancements

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New integrated code which includes the Spectrum Analyzer, Interference Analyzer, Channel Scanner and Power Meter

- o This greatly speeds up mode switching between these four measurement modes

#### Channel Scanner

-----

New integrated code which includes the Spectrum Analyzer, Interference Analyzer, Channel Scanner and Power Meter

- o This greatly speeds up mode switching between these four measurement modes

#### WCDMA Enhancements

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Added support for HSPA+ (64 QAM only)

Added support for DTX (discontinuous transmission)

- o AMR (Adaptive Multi-Rate) support is included in this update

OTA (Over-the-Air) scanner speed improvement- Approximately twice as fast

Improved CDP (Code Domain Power) over the air measurement performance

- o Lower EVM
- o More active channels displayed

Added RMS Phase Error measurement to Modulation Summary screen

Fixed some W-CDMA bugs

- o Improved ghosting issues in Multi-Path measurement
- o CDP and Constellation measurements now synchronized in HSDPA screen (option 65)
- o Fixed manual SC (Scrambling Code) settings in OTA scanner

#### TD-SCDMA Measurement Mode

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Added CDP (Code Domain Power) marker capability

Added CDP Table measurement

Added support for MBMS (Multimedia Broadcast Multicast Service)

Added SCPI (National Instruments VISA) programming support

#### CDMA Enhancements

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### High Accuracy Power Meter Application

- Added support for sensors which will be available in the future

### Interference Analyzer Application

- Minor Signal ID algorithm enhancements

### Spectrum Analyzer Application

- 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

### WCDMA Application

- 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

- No changes



## Channel Scanner Application

- No changes

## EVDO Application

- Added ability to specify a 1.35 MHz span to be used for OBW calculation instead of the standard 2.5 MHz.

## GSM Application

- Added BSIC decoding which replaces TSC as a measurement result.

## High Accuracy Power Meter Application

- No changes

## Interference Analyzer Application

- Fixed a critical bug in Signal ID measurement that would cause the instrument to hang when used in certain spans.

## Spectrum Analyzer Application

- Fixed critical bug that would cause instrument to hang when using fast sweeps and Save On Event
- Fixed several bugs in Limit lines and Markers
- Fixed bug that caused manual RBW/VBW values to not recall correctly
- Revised some warning messages to be more informative (ADC Over range, Mixer Saturation, etc)



## General Features

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- No changes

## Operating System

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- No changes

## CDMA Application

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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.

## 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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- Speed 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
- Added relative reference and scale for trace math
- Added the message "**\*Settings changed, sweep data invalid\***" when a sweep has not been completed with the new setting
- Min/Max hold on Trace B



- Fixed a signal standard problem where changing span would invalidate the signal standard but not removing it from the screen
- Added resizable marker table
- Added sweep progress indicator at the bottom of the graph
- Fixed a problem where turning on Counter Marker in a narrow span would crash the system
- More robust GPS behavior
- Sweep time display is more stable and accurate

#### WCDMA Application

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- SCPI support added for changing Span in Channel Spectrum view

#### Fixed WiMAX Application

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- Fixed a bug where Alternate ACP when BW = 6MHz was junk (~+46dBm)

#### Mobile WiMAX Application

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- Added support for Compressed DL-MAP
- Added support for 3.5MHz and 7MHz BWs
- Added display of 48 bit BS ID
- Fixed a bug in demodulation when total number of symbols > 12
- Fixed a problem where Constellation display did not display data from all the bursts
- Fixed some bugs in Power vs. Time delta markers when multiple markers are selected

#### TD-SCDMA Application

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WCDMA Signal Analyzer Mode

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- No changes

GSM/EDGE Signal Analyzer Mode

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- No changes

Fixed WiMAX Signal Analyzer Mode

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- No changes

Mobile WiMAX Signal Analyzer Mode

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- No changes

High Accuracy Power Meter Mode

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- No changes

CDMA Signal Analyzer Mode

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- No changes

EVDO Signal Analyzer Mode

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- No changes

What will the Customer See in this release?

MS2723B/MS2724B Application Package V1.21 11/26/2007

#### General Features

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- Previously, Gigabit and Terabit 'GB/TB of free memory' message used integer so it looked like the device was smaller than it was. For example, using a 2GB CF with 1.7GB remaining displayed '1GB of free memory', now it displays '1.7GB' instead.

#### Operating System

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- Disconnect/reconnect of 10-Mbit Ethernet would previously only sometimes recover. Also, when disconnected, the instrument would slow down noticeably. This has been fixed.

#### CDMA Application

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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.

#### Channel Scanner Application

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- Previously, recalling setups with custom channel scanning resulted in invalid, dashed-out channel numbers on the display. This has been fixed so that the correct channel numbers will be displayed.

- Previously, MS2723B could have wrong values from 12.999990GHz - 13GHz under various circumstances (including RBW < 30kHz). This was fixed.

#### EVDO Application

-----

- 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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- Modified SCPI command names to be more consistent.
- 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).
- Previously, MS2723B could have wrong values from 12.999990GHz - 13GHz under various circumstances (including RBW < 30kHz). This was fixed.
- 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.



What will the Customer See in this release?

MS2723B/MS2724B Application Package V1.17 9-27-2007

#### General Features

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- In some situations the instrument may have failed to boot up completely using the previous version of firmware. This issue is now fixed.

#### Operating System

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- No changes

#### Spectrum Analyzer Mode

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- No changes

#### 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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- No changes



GSM/EDGE Signal Analyzer Mode

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- No changes

Fixed WiMAX Signal Analyzer Mode

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- No changes

Mobile WiMAX Signal Analyzer Mode

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- No changes

High Accuracy Power Meter Mode

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- No changes

CDMA Signal Analyzer Mode

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- No changes

EVDO Signal Analyzer Mode

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- No changes





## General Features

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- No changes

## Operating System

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- No changes

## Spectrum Analyzer Mode

-----

- No changes

## Interference Analyzer Mode

-----

- No changes

## Channel Scanner Mode

-----

- Preamp is now turned on for Ref Level below -50dBm

## WCDMA Signal Analyzer Mode

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- No changes

## GSM/EDGE Signal Analyzer Mode

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## General Features

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- Fixed bug with recall limit.

## Operating System

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- Fixed bug where some Asian characters would not display correctly.

## 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.
- Fixed bug where TG output power did not use the reference level offset value correctly.

## Interference Analyzer Mode

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- No changes

## Channel Scanner Mode

-----

- No changes

## WCDMA Signal Analyzer Mode

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



## Operating System

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- Improved OS codeload process--mainly fixed OS codeload failures.

## Spectrum Analyzer Mode

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- Marker frequency resolution was lost on saved measurements. Now recalled measurements show the correct resolution.
- Marker peak search on slow sweeps did not work correctly on the first sweep. Now the correct data is searched.
- Extensive limit upgrades. Save/recall limit, limit envelope, limit absolute/relative, move limit (by frequency).
- Application self-test displays overall status better now.
- Some warning/error messaging has improved details.
- Certain types of lock failures have been prevented. Also, one LO's failure should no longer cause another LO to 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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- 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.





- In some cases, the Status window was not big enough to show everything. This is now a scrollable list box.

#### Operating System

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#### Spectrum Analyzer Mode

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- Recall setups with manual RBW and/or VBW settings would not function properly. This has been fixed.

#### Interference Analyzer Mode

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- Saved measurements may now be recalled from external devices successfully (CF/USB).

#### Channel Scanner Mode

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- Saved measurements may now be recalled from external devices successfully (CF/USB).
- When Max Hold is set to the 5- second setting, after a few minutes, the unit hangs. This issue is now resolved

#### WCDMA Signal Analyzer Mode

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- Previously, the control channel display was not updating when the user would cycle through the "abs", "rel", "delta" options. This has been fixed.
- Saved measurements may now be recalled from external devices successfully (CF/USB).
- The display artifact for "M7" on the CDP display has been removed.
- Measurement sub-menus are now persistent. Previously, the menu would go back to the "Demod" or other higher-level menu when a value was entered.







## General Features

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- Initial Product Introduction Release.

## Spectrum Analyzer Mode

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## Interference Analyzer Mode

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## Channel Scanner Mode

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## WCDMA Signal Analyzer Mode

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## HI PM Analyzer Mode

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