



## ESA Series Firmware Revision History – (Standard Memory)

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### Notes:

This document only covers firmware releases that do not require Option B72 (expanded memory) to be installed. Option B72 has been standard in all new ESA analyzers since the end of 2001.

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### Revision A.07.06

#### Approximate Release Date

- This version never shipped in instruments. It was released for download only in February of 2004.

#### New Features for ESA:

- Added support for I/O controller chip on new GPIB, RS232, & floppy disk board assemblies.
- Full Screen display control via SCPI command

#### New Features for EMC:

- Not included in this release

#### ESA Power Suite Utilities:

- Version A.03.06 (released with [A.07.02](#))

#### EMI Measurements:

- Not included in this release

#### Defects Repaired for both ESA and EMC:

- Corrected problem where the Marker could not be placed on Traces 2 or 3 following a Recall of a Save-all Trace.
- Fixed problem on the 1.5 GHz instruments where the Input Overload could be tripped when Auto Alignment process was executing.
- Fixed a problem where the VGA output did not correctly format the VSync Pulse Width, preventing certain external VGA monitors and VGA to PAL converters from functioning properly.
- Prevented the File Rename operation from creating filenames that could not be loaded or deleted (previously it permitted lower case characters).

#### Defects Repaired Specifically for EMC:

- Not included in this release

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## Revision A.07.05

### Approximate Release Date

- November 01, 2001

### New Features for ESA:

- None

### New Features for EMC:

- None

### ESA Power Suite Utilities:

- Version A.03.06 (released with [A.07.02](#))

### EMI Measurements:

- Version A.03.00 (released with [A.06.00](#))

### Defects Repaired for both ESA and EMC:

- For 1.5 GHz instruments (E4401B, E4411B, and E7401A), fixed problem which could be manifested in two circumstances with Auto Alignment ON: 1) the instrument's noise floor would raise on the screen, or 2) after running for a period of time, the "System, Alignments, Align Now All" message would appear on screen.

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## Revision A.07.04

### Approximate Release Date

- August 15, 2001

### New Features for ESA:

- None

### New Features for EMC:

- None

### ESA Power Suite Utilities:

- Version A.03.06 (released with [A.07.02](#))

### EMI Measurements:

- Version A.03.00 (released with [A.06.00](#))

## Defects Repaired for both ESA and EMC:

- Fixed problem where the GPIB Input Buffer was not appropriately 'held-off' upon receipt of a Device Clear. This would cause the instrument to continue to process commands that were pending in the input buffer.
  - Fixed problem where Recalling a State, Trace + State, or Setup, from a firmware version prior to A.06.00 to A.06.00 (or later) would incorrectly restore the Detector setting. This would result in Sample Detector to be used for all measurements regardless of the detector indicated.
  - Fixed problem where a System crash or "freeze" could occur after an extended period of operation under remote control. Particularly with standard memory configuration instruments (non-Option B72).
  - Fixed problem where a System crash could occur if the Sweep Points were changed at the instant a display update is in process.
  - Fixed problem where a System crash could occur if very large or very small values of Marker Noise are displayed in the Marker Table.
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## Revision A.07.03

### Approximate Release Date

- July 01, 2001

### New Features for ESA:

- None

### New Features for EMC:

- None

### ESA Power Suite Utilities:

- Versions A.03.06 (released with [A.07.02](#))

### EMI Measurements:

- Version A.03.00 (released with [A.06.00](#))

## Defects Repaired for both ESA and EMC:

- Fixed problem where amplitude accuracy may be degraded following an Align TG.
- Fixed problem where Traces 2 and 3 were not visible after power-up until a Preset is executed.
- Fixed Adjacent Channel Power problem when measuring NADC signal.
- Fixed problem where Recall Setup, of a setup saved while in a Mode, caused inability to change Modes.
- Fixed problem where the system would crash (White Screen) if Sweep Points were decreased while N dB Points is in use.
- Fixed problem where N dB Points result would not updated as the marker is moved in Single Sweep.

- Reverted N dB Points behavior back to which predates firmware Release 6 (it was changed in Release 6 to coincide with the documented behavior): If a marker is active when N dB Points is turned ON, the N dB Results will be obtained based on the active marker. If no marker is active when N dB Points is turned ON, a peak search will be performed and the N dB Results will be obtained based on the highest signal (ignoring the LO Feedthru). The documentation will be changed to reflect the behavior.
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## Revision A.07.02

### Approximate Release Date

- May 15, 2001

### New Features for ESA:

- Support for Option 290 (8590 Series Programming Code Compatibility)

### New Features for EMC:

- None

### ESA Power Suite Utilities:

- Version A.03.06
- Added Burst Power Measurement
- Added Power Statistics (CCDF) Measurement
- Added Quick Setups for Popular Cell Comms Formats and Bluetooth
- Added ACPR Enhancements
  - Multiple offsets
  - Noise Correction
  - Bar Graph View
  - RRC Filtering
- Detector changed to SAMPLE and sweeptime changed to AUTO for NADC Base Station ACP measurements.
- Default Res BW for NADC (Mobile and Base Station) ACP measurements changed to 1 kHz.
- Adj Channel Power measurement title changed to Adj Channel Power - Peak Method when Radio Std set to NADC and Device set to MS.
- Improved behavior in low-memory situations.
- Fixed crash caused by changing number of trace points during reference level optimization.

### EMI Measurements:

- Version A.03.00 (released with [A.06.00](#))

### Defects Repaired for both ESA and EMC:

- Fixed problem where AM Demod did not dwell in Tune & Listen mode
- Fixed the anomalous "Query Unterminated" SCPI error occurrences

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## Revision A.06.00

### Approximate Release Date

- April 01, 2001

### New Features for ESA:

- Support for Option 106 and the Bluetooth Measurement Personality
- Support for Option UKB (Low Frequency Extension) in 26.5 GHz models (E4407B & E7405A)
- Support for Option 120 (ACPR Dynamic Range Extension)
- Support for Option 060 (Reduced Emissions)
- Added Front Panel access to the "IF Gain Auto/Fixed" mode of the Narrow Resolution Bandwidths (< 1 kHz). Fixed IF Gain reduces sweep time, thus increasing throughput when a fixed dynamic range is acceptable. (Firmware Revision A.05.00 enabled this capability via the Remote interface :DISPlay:WINDow:TRACe:Y[:SCALe]:LOG:RANGe:AUTO)
- Added dBuA and Amp units to the available choices of Amplitude Units.
- Refined algorithm for ignoring the LO Feed through while using the Marker Peak Search function.
- Added new printers to the list of supported printers.
- Frequency Offset lower frequency limit is extended to match to upper limit (-500 THz).

### New Features for EMC:

- All the aforementioned features for ESA, plus the accumulation of features that were introduced in ESA with Firmware Revisions A.05.00, A.04.00, and A.03.00.

### ESA Power Suite Utilities:

- Version A.02.01

### EMI Measurements:

- Version A.03.00

### Defects Repaired for both ESA and EMC:

- Limit Line Margins did not scale correctly in Linear Amplitude Scale.
- GPIB Device Clear did not conform to IEEE 488.2.
- Limit Lines recalled from memory restore to destination Limit Line Number.
- Corrected a System Crash (White Screen) when remotely setting numerous frequency parameters without invoking a sweep or measurement.
- The power up alignment is now also performed if the instrument is configured to power up in User Preset or Last State.
- Recall of State with Segmented Sweep did not erase previous Segmented Sweep Table.
- Remote command :CALC:MARK:MODE? query is consistent when there is no marker turned on.

- Signal level significantly above the Reference Level in Narrow Resolution Bandwidths, in Linear Amplitude Scale, caused displayed trace to wrap from top of screen to bottom.
- SCPI command AVERage:CLEar correctly resets the Trace Averaging counter when in Single Sweep mode.
- Markers are now turned off when transitioning to or from Segmented Sweep.
- SCPI command STATus:PREset resets all appropriate registers.
- SCPI operation of N dB Points corresponds to what is documented in the Programmer's Guide.
- SCPI CONF? Correctly reports the current configuration.
- Switching windows with large frequency offset operates correctly.
- SCPI SYSTem:PRESet (or \*RST) did not resume display updating if the display was previously disabled.
- On 1.5 GHz instruments (E4401B, E4411B, and E7401A), the Local Oscillator became unstable when tuning the instrument from high to low frequencies.
- In Segmented Sweep, Peak Searching a marker in a Zero Span segment could result in the marker leaving the segment. (In a Zero Span segment, markers are to remain within the segment.)
- Limit Lines: Reduced the smallest increment of time for Time Based Limits.
- Improved accuracy of Band Power and Noise Marker for Narrow Resolution Bandwidths.
- The Restart hardkey behaves similarly to Single Sweep when Trace Averaging is in use.
- Limit Lines: remote control setting for Relative Limit Lines incorrectly converted amplitude values.
- Fixed problem where Power-On User Preset or Power-On Last did not correctly restore Zone Span settings.
- Fixed problems with Linear Amplitude Scale in Peak Table and Marker Next Peak functions.
- Help Text: several corrections.

#### Defects Repaired Specifically for EMC:

- Corrected problem where Antenna Units and Amplitude Units were inconsistent when frequency ranges were changed via the Meas Setup menu.
- The Display Line takes into account the Quasi-Peak 10x gain.

### Revision A.05.03

#### Approximate Release Date

- February 01, 2001

#### New Features for ESA:

- None

#### New Features for EMC:

- This revision is not available on EMC

#### ESA Power Suite Utilities:

- Version A.01.03 (released with [A.05.00](#))

#### Defects Repaired for ESA:

- Reduced the incidents of SCPI "Query Unterminated" errors from GPIB.
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### Revision A.05.01

#### Approximate Release Date

- November 01, 2000

#### New Features for ESA:

- Support for the new display controller chip.

#### New Features for EMC:

- This revision is not available on EMC.

#### ESA Power Suite Utilities:

- Version A.01.03 (released with [A.05.00](#))

#### Defects Repaired for ESA:

- Repair LO reclocking defect in 1.5 GHz instruments (E4401B, E4411B, and future release of E7401A). This manifested itself as "Align Now All, required" with noise floor near or at Top Of Screen.
  - For Option AJ4: enabled Aux Video Out at all times (previously output was blanked when not sweeping).
  - Frequency response corrections properly being applied at a center frequency of 100KHz, AC Coupled mode.
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### Revision A.05.00

#### Approximate Release Date

- September 01, 2000

#### New Features for ESA:

- Added Segmented Sweep
- Added support for Option UKB (Low Frequency Extension)
- In Zero Span, Sweep Points settable between 2 and 8192.
- Increased throughput with Marker use.
- Added new printers to the list of supported printers.
- Added nano-second units terminator (ns) for Time Units.

#### New Features for EMC:

- This revision is not available on EMC.

#### ESA Power Suite Utilities:

- Version A.01.03

#### Defects Repaired for ESA:

- Fixed problem where saving screen images failed when large number of Sweep Points and multiple Traces were in use.
  - Fixed problem where turning Marker Table ON or OFF restarted Trace Averaging.
  - Fixed problem where 3 GHz Tracking Generators would generate a "Source Unlevel" messages when sweeping from 10KHz to 100KHz.
  - Fixed problem where Marker Resolution was insufficient with large values of Sweep Points.
  - Fixed problem where Align TG did not take into account the user's selection of Reference Level.
  - Fixed problem where Band Power Markers did not operate in Zero Span.
  - Fixed problem with "rollover" values (near midnight) when entering Time and Date.
  - Fixed problem where Reverse Window Meta Files were being stored as gif instead of wmf files.
  - Grayed-out the Video Trigger softkey when RBW < 1kHz.
  - Fixed some inaccuracies in the Help Text.
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