86100A/B/C Infiniium DCA Series
Firmware Release Notes

86100C/86100B/86100A Release Notes
A.04.11 Release Notes, Released December 10, 2004 (Differences from Release A.04.10)
A.04.10 Release Notes, Released November 1, 2004 (Differences from Release A.04.00)
A.04.01 Release Notes, Released June 23, 2004 (Differences from Release A.04.00)
A.04.00 Release Notes, Released February 19, 2004 (Differences from Release A.03.05)

86100B/86100A Release Notes
A.03.05 Release Notes, Released April 21, 2003 (Differences from Release A.03.04)
A.03.04 Release Notes, Released October 10, 2002 (Differences from Release A.03.03)
A.03.03 Release Notes, Released July 18, 2002 (Differences from Release A.03.01)

86100A-Only Release Notes
A.03.01 Release Notes, Released February 15, 2002 (Differences from Release A.02.20)
A.02.20 Release Notes, Released August 2, 2001 (Differences from Release A.02.10)
A.02.10 Release Notes, Released May 1, 2001 (Differences from Release A.02.01)
A.02.01 Release Notes, Released January 30, 2001 (Differences from Release A.02.00)
A.02.00 Release Notes, Released November 29, 2000 (Differences from Release A.01.22)
A.01.22 Release Notes, Released September 6, 2000 (Differences from Release A.01.21)
A.01.21 Release Notes, Released August 9, 2000 (Differences from Release A.01.20)
A.01.20 Release Notes, Released July 11, 2000 (Differences from Release A.01.13)
A.01.13 Release Notes, Released May 2, 2000 (Differences from Release A.01.12)

86100C/86100B/86100A Release Notes

A.04.11 Release Notes, Released December 10, 2004 (Differences from Release A.04.10)

New Feature List

- **None**

Defects Fixed

- Repaired Autoscale function resulting in 3 eyes being displayed on Graticule with 86105C reference receivers.
- Resolved TDR cannot set scale to Ohms after default setup on channels 2 and 4. Previously, only channels 1 and 3 could be set to Ohms.
- Fixed average power monitor offset showing up on some reference receiver monitor. Added additional settling time when setting the gain of the average power monitor.
- Repaired Extinction ratio calibration creating offset when 86107A precision timebase is active. The dark level measured during extinction ratio cal is too high when the cal is performed with precision timebase on.
- Fixed O/E calibration failing on 86105C Option 100 modules. Added an additional signal path to allow for completion of calibration for 86105C #100.
- Added support for 86105C unfiltered path.

Known Issues:

- 86119A (Optical Sampling Oscilloscope) - customers should not upgrade to 4.11 software at this time since the executable will fail to run properly.

A.04.10 Release Notes, Released November 1, 2004 (Differences from Release A.04.01)

New Feature List

- Support for 86105C Reference Receiver Module
- Provide the Enhanced Jitter Analysis Software Package (#200), which includes all previous jitter separation measurement capability, demonstrated in #100. The following jitter related features have been included as well:
    - The Bathtub jitter feature consists of two parts: the ability to display a plot of the extrapolated bathtub curve against the measured TJ histogram and the ability to select the BER at which TJ is measured.
    - Increase pattern length supported by jitter mode to 2^16
    - The Jitter Frequency Analysis feature will provide insight into the frequency content of periodic jitter. It will analyze both jitter that is correlated to the data rate (sub-rate jitter) as well as jitter that is uncorrelated from the data rate (asynchronous PJ). The items of interest are: jitter frequency, jitter magnitude, and relationship of jitter frequency to bit rate (i.e. is it a sub-rate)
    - Added a Frequency component shape graph. After frequency analysis is turned on, the user will be able to display the shape of the jitter associated with a particular frequency. This aids in the identification of complicated jitter waveforms such as square waves, which has a large number of harmonically related frequencies.
- Added Advanced Waveform Analysis (#201).
    - Built-in Linear Feedforward Equalizer application with up to 15 digital tap filter values
    - Integrated MATLAB interface to allow signal processing using MATLAB (customer must purchase and install their own MATLAB licenses separately)
    - Allow the customer to save and recall pattern waveforms which are long single-valued waveforms that span multiple bits, up to the entire pattern length of 2^23. Up to 4096 points can be saved for each bit, which allows the file to be exported to other software applications like Excel or MATLAB for further analysis
- Support for 86100C Mainframe
- The following features are available only with 86100C mainframe:
    - Added Windows XP Operating System Service Pack 2. We recommend that all existing 86100C with Service Pack 1 installed update to Service Pack 2 because the additional security capabilities.
    - The following feature is also available for 86100C mainframe and Option 001 Wide Bandwidth Trigger. Pattern Lock ("Eyeline") trigger will work when an 86107A precision time base module installed.
    - The following feature is available with 86100C mainframe with Option 001 and Option 100 Jitter Software. Enabled 86107A precision time base to work in jitter mode, which reduces the noise floor of jitter measurements down to 200 fs in most circumstances.
- Enhancements for 86100A/B/C Mainframes
    - Allow the 86107A precision time base modules to operate over continuous frequency bands. No hardware upgrade needed to existing modules, but customers must either provide their own filter or a clean sine wave with low total harmonic distortion.

Defects Fixed

- Repaired remote rise time measurement always returns data from lowest channel
- Fixed Remote Command to measure Extinction Ratio Factor (:MEAS...:ERF)
- Resolved Differential TDR Inverted channel marker values reporting incorrect value
- Addressed Auto Scale incorrectly aligns in time when multiple waveforms present on screen. There is now an optional bit rate parameter for the ":AUToscale" remote command. If bit rate information provided remotely, autoscale is much more robust (and much quicker!). Note that this parameter only applies to NRZ eye diagrams and clock signals.
- Repaired start of mask test aligns immediately even without sufficient data. Alignment will now be postponed up to 5 seconds if there is not enough data to align.
- Added remote command for reading TDR excess reactance. Added :MARKer:REACtance query command. It returns the value as follows: <reactance_value>,<units> where reactance value is in scientific notation and units are F or H. When there is no reactance value, a value of zero is returned and units of F.

- Repaired the remote command Disk:Simage to Network drive breaking after excessive calls because a network drive resource was being opened and not closed.
- Fixed error in Scope Measurement - :MEASure:DELTatime [source][,source]]. Instrument behavior is now consistent with documentation.
- Resolved Channel Input-Autoscale failed to send error message on marginally large signals. The correct notification occurs now for clipped signals.
- Repaired Horizontal scale being incorrect for clock signals while in jitter mode by adjusting the scales properly.
- Repaired remote command :System:DSP cmd with parameter '%' or '?' does't seem to work by fixing the instrument parser to recognize some more special characters.
- Fixed color pallet being incorrect when screens are saved in .JPG mode.
- Resolved 'Control at limit error' showing up when loading old setups by fixing the setting with the screen savers. There was a difference between 86100A/B and 86100C setups.
- Resolved Scope Measurement - :MEASure:TMIN returns Err: -224,Illegal parameter value.
- Repaired Channel Input - :CHAN:FDES? does not return Headers when :system:header on
- Changed default gain settings for 86117A Module Initialization to improve field servicing
- Fixed remote command Trig:Plock:Autodetect turns off pattern lock if autodetect fails
- Corrected Color grade incorrect when loading database memory in oscilloscope mode
- Repaired Histogram - Measure:Histogram:ppos?returns 9.99999E+37 while in TDR mode
- Fixed STM64_OC192SuperFEC_12_5.msk mask file. It should be a scaled version of the STM-64 OC-192 mask (rectangular, not hexagonal).
- *OPC now operates properly in Jitter Mode. *OPC, OPC? and *WAI should work properly now when switching to jitter mode using :SYStem:MODE JITTer or :DISK:LOAD "filename.jd",JDMemory.
- Disable mainframe ID check so 86110A is never reported when the instrument is queried
- Precision time bases 86107 using in geographies with Eastern time zones were reporting incorrect timebases. Setting the precision timebase time reference is limited in its repetition rate when pressing the dialog button. The way this timing is done has been changed so that it is no longer affected by changes to the system clock. Improved autoscaling with small signal levels
- 83495A Clock Recovery user interface for low loop BW should say 300 kHZ not 30 kHz
- Repaired differential TDT normalized individual response looking like wrong scale

A.04.01 Release Notes, Released June 23, 2004 (Differences from Release A.04.00)

New Feature List

- None

Defects Fixed

- Fixed TDR measurement issue that was present on the 86100C only. Added 250 uS delay to allow step generator to settle.
- Fixed a modal dialog box defect on 86100C. If there was no trigger signal applied while in jitter mode, autoscale would proceed. Instead of reporting an autoscale failure due to an invalid trigger signal, it was possible that the 'pattern lock lost' dialog would appear in an endless loop.
- Fixed an 86100C jitter mode sequence that could cause the software to lock up.

A.04.00 Release Notes, Released February 19, 2004 (Differences from Release A.03.05)

New Feature List

- Extinction Ratio correction factor
- Support for 83495A Clock Recovery Module
- Added software licensing. Permits the installation of optional software features.
- Support for 86100C Mainframe
    - The following features are available only with 86100C mainframe
        - Added Windows XP Operating System. This allows user to access Windows features and applications.
        - Disk recovery from D: partition. Allows recovery from software crash of main C: partition without external CD

        - Uses standard Windows Installer to upgrade software
- The following features are available only with 86100C mainframe and Option 001 Wide Bandwidth Trigger
    - Pattern Lock ("Eyeline") trigger. Will display single valued waveforms for repetitive patterns.
    - Auto-detection of pattern parameters. Relieves user of task of entering length and bit rate manually.
- The following features are available with 86100C mainframe with Option 001 and Option 100 Jitter Software
    - Added Jitter Mode. This is a fourth mode for the instrument that provides measurements of timing jitter.
    - Separation and display of jitter components. Adds the pull down graphical display area.
    - Save and recall of jitter memory. For use with jitter analysis data.

Defects Fixed

- Improved Touch Screen calibration for 86100C
- Fixed a debug assertion related to 54754A differential reference plane calibration
- Fixed a problem with saving an Instrument setup file on top of an existing setup file
- Fixed TDR remote command problem: If the right module is set to ON4 and TDTdest is Channel 3 and you issue the command to turn on both 3 and 4 an assertion error happens. The exact command was :TDR4:STIM ON3AND4;RESP3:TDTDest CHANNEL1
- Fixed problem with normalization of 54753A TDR module
- Fixed incorrect differential normalization (risetime of second channel). This was only broken in revision 3.06.
- Fixed a function that returns whether the TDR stimulus is differential/common mode or not. The incorrect value was returned if two TDR modules were installed and the right module was differential or common mode.
- Fixed a problem when using two TDR modules. Previously, when the command TDR2:STIM ON2 was followed by the command TDR2:STIM OFF, the left module was correctly turned off. However the right module was then inaccessible.
- Fixed problem where differential TDT cal data was not being saved and recalled correctly
- Fixed defects that were causing normalization cal data to be invalidated unnecessarily
- Fixed problem where TDT reference plane was lost when switching between stimulus channels
- Fixed defect where instrument could hang with the following command sequence in TDR mode: *rst;*cls;:autoscale;*opc?
- Fixed a problem with repetitive remote loading of instrument setup files
- Fixed a defect in the code that loads TDR/TDT cal data files. TDT data was being loaded but not fully resolved as valid.
- The :DIGitize command now works correctly with RESPonse<N> parameters. To digitize differential responses the type of each response must be specified by turning on the response before executing the :DIGitize command.

86100B/86100A Release Notes

A.03.05 Release Notes, Released April 21, 2003 (Differences from Release A.03.04)

New Feature List

- Added support for the new N1022A probe adaptor. This probe adaptor provides support for the InfiniiMax 3.5 to 7 GHz probes. This includes the following Agilent probes: 1131A, 1132A, 1134A, 1156A, 1157A and 1158A.
- Added support for horizontal mask alignment recommendation as per ITU-T G.691 for STM16 mask testing. This allows the mask center region to be positioned optimally along the horizontal axis to achieve the minimum number of mask violations. Along with this implementation, the following mask file was added:
    - STM016_G.691_V2.0.msk

- Added the following NRZ masks to support testing to the Fibre Channel Physical
- Interface (FC-PI) Rev 13 standard for the following data rates: 1063, 2125 and 4250 MB/s. The mask file names are as follows:
    - FC1063_PI_R13_Dec01.msk
    - FC2125_PI_R13_Dec01.msk
    - FC4250_PI_R13_Dec01.msk
- Added support for the new 750 GHz bandwidth 86119A Optical Sampler

Defects Fixed

- Improved color contrast between mask regions when saving screens with Invert Background Color checked. Previously, the mask margins appeared to be the same color as the mask.
- Corrected problem when loading waveform memories, scale and offset limits were incorrect. They were too limited when channel attenuation was a large value.
- Corrected problem with dropouts on channels when in differential TDR mode.
- Corrected problem with dropouts using high bandwidth modules when in TDT mode.
- Corrected problem with signal response being clipped when performing a differential TDR normalization
- Corrected problem with multiple presses of Stop/Single button causing data acquisition to halt.
- Corrected problem with Autoscale not completing when Histograms are enabled and acquisition is stopped.
- Corrected documentation with remote Programmer's Guide. Had incorrect syntax for probe calibration. Indicated command was :CAL:PROB:CHAN<n>, should be :CAL:PROB CHAN<N>.
- Corrected debug assertion when the remote query :TRIGger:GATed? was sent.
- Corrected problem with :HARDcopy:DPRinter 0 printing remote command halting application.

A.03.04 Release Notes, Released October 10, 2002 (Differences from Release A.03.03)

New Feature List

- Add new vertical mask alignment method as specified by the OFSTP-4A standard. Alignment method can be selected from either GUI or remote access. GUI selection is done through Eye Boundary tab in the Configure Measurements dialog. Vertical alignment can be performed as originally implemented using the entire display (Vtop/Vbase) or as specified by OFSTP-4A, using the eye boundary 1/0 levels
- Modified NRZ eye measurement algorithms for rising and crossing point to better detect sharper edges
- 86117A/B optimized gain settings for better performance
- The following new modules are supported:
    - 86109B Opt K10 – An enhanced version of the 86109B O/E receiver with 40 GHz optical bandwidth and 50 GHz electrical bandwidth
    - 86116B – High speed O/E receiver with 65 GHz optical bandwidth and warranted 80 GHz electrical bandwidth, typically 90 GHz

Defects Fixed:

- Mask files 10GbE_10_3125_May02.msk and 10GbE_9_953_May02.msk modified to align to eye boundary to be compliant with OFSTP-4A standard
- Corrected a problem with histogram mean always returning invalid data
- Corrected problems with TDR and TDT calibrations, markers and interactions with 54754A, 54753A, 83484A and other modules
- Corrected a problem with response waveform not yielding excess reactance
- *RST was not resetting source for math functions to channel1
- *RST was returning Error 241 Hardware missing
- Pressing Default Setup with no modules was displaying "Entry was not a valid selection" in the Dynamic Text Area

- Corrected problem with software upgrade process, cycling power too quickly could prevent upgrade from completing

---

A.03.03 Release Notes, Released July 18, 2002 (Differences from Release A.03.03)

New Feature List

- Add warning when attempting to save a file to a full floppy disk
- Add RZ/NRZ Eye mode selection GUI button
- Renamed horizontal and vertical calibration dialog box to avoid confusion with the precision timebase module
- TDR Differential Normalization feature added
- New masks: Infiniband, 10 GbE, Xaui
- Changes to electrical channel offset DAC for 86101A and 86103A modules
- The following new modules are supported:
    - 86105B
    - 86107A Opt 010
    - 86117A/B
    - 86118A

Defects Fixed:

- Modified the RZ algorithm to take care of unsymmetrical edges
- Corrected a problem with mask file names with a zero instead of an “O” i.e. STM64_OC192 written as STM64_0C192”
- Acquisition Limits misbehave with long patterns is now fixed

---

86100A-Only Release Notes

A.03.01 Release Notes, Released February 15, 2002 (Differences from Release A.02.20)

New Feature List

- Ability to acquire multiple channels at once in Eye Mode
- Ability to make measurement and mask analysis on multiple eyes at the same time
- Measurement results tab has a new look
    - clear meas button replaced by “x” on meas results tab
    - tab up/down button replaced by “∇” on meas results tab
- Parametric mask creation
- Ohms/Division setting added for TDR mode
- Ability to annotate and delete individual measurements
- Support for the following new modules:
    - 86111U
    - 86111A
    - 86115B
    - 86113A
    - 86102A
    - 86103B
    - 86116A
    - 86107A
    - 83494A Options 103 and 107

Defects Fixed:

- When filter is turned on, autoscale switches filter when completed for no reason
- Trigger setting changes after autoscale
- System crash when non-TDR module is autoscaled in TDR mode

- Stop Menu item behaves as Stop/Single
- Source parameter is not being accepted with 'MEASure' subsystem commands
- Sending DISP:PERS INF in eye mode sets it to CGR
- Screen capture when in color grade saves files in grayscale
- Saving .jpg on full diskette results in 0 record length file
- Remote uploaded waveform memories are not stored on disk
- Remote command returns mainframe calibrated when it is not; added :CAL:REC CHAn<N> command
- Quickmeasure attempts to measure waveform memories in eye mode
- Querying waveform values without waveform displayed hung the GUI
- Probe calibration hangs up box after remote command. We no longer initiate optical cal if chan is electrical.
- Need more digits in read-out of X Markers at low time/div setting
- MTEST:START fails after running MTEST:LOAD on bad mask name, but displays no warning
- MTEST:SAVE .msk saves as '.msk.pcm ? Measurement Results Tab drops in height when changing modes
- Measurement limits do not work when restored from saved setups
- Mask test align failure does not cause an error in the queue
- Mask margins not working with CG-GS waveforms
- Markers could be moved outside of the window
- Incorrect max string length reported with remote SYST:DSP command
- Inconsistent behavior when saving a file to a full floppy
- Horizontal Scale/Division setting didn't do anything
- Can't remove unused measurement from measurement results tab
- Binblock download of versus function does not work
- Autoscale resets transducer conversion factors
- Autoscale hung when acquisition stopped before using autoscale
- Autoscale failure on math waveform turns on other waveforms
- :VIEW CGM does not work after BLANk if a measurement command is sent first
- :DISplay:DATa? returns inconsistent color scheme
- :DISK:LOAD returns error 46 if in Oscilloscope mode
- TDR fails vertical calibration if Threshold is set to "Units"
- RZ eye width algorithm seems to place L open too close to mean; modified algorithm for unsymmetrical edges
- Module Delta Temperature reflects Mainframe temperature, not module
- Module calibration time comes from 2 different sources ; problem during daylight savings time change
- Measurement Limit Test still displays measurement after it's been turned off
- Histogram tab stops displaying histogram data after math function
- Delta Y now only shows value in Measurement Results tab when the units are the same
- Databases dump when switching between RZ & NRZ measurements
- Cannot select CGM as source with :WAVEFORM:SOURCE+B34 command
- Cannot change channel offset for differential TDR channels
- :WAVEFORM:DATA? Returns incorrect values in ASCII mode
- :MEAS:CGRADE:JITTER? Does not return correct values; wasn't using source specified in :MEAS:SOURCE
- :CHAN#:UNIT:ATT, :CHAN#:UNIT:OFF and :CHAN#:PROBE now blocked when stimulus is on

---

A.02.20 Release Notes, Released August 2, 2001 (Differences from Release A.02.10)

New Feature List

- Japanese Language Help
- Support for 86106B

- Support for 86109B
- Support for 86102U

Defects Fixed:

- Fixed defect that prevents the mask margins from being enabled when a setup file containing margin information is loaded.
- Fixed defect that forced users to reload masks after performing an autoscale while running mask test.
- The acquisition speed while eye measurements are turned on, which had been previously degraded by a factor of four or five, is now fixed.
- GPIB disk store goes to setup directory instead of specified directory, this is now fixed.
- Resolved a problem with the RZ remote query for contrast ratio which causes the instrument to crash while in eye mode.
- The remote command mask load (MTES:LOAD) does not work in "C:\User Files\Directory, this defect has been resolved.
- Modules insufficiently inserted produce an error message in the mainframe that tell the user to reinsert with more force.

A.02.10 Release Notes, Released May 1, 2001 (Differences from Release A.02.01)

New Feature List

- New Return to Zero measurements
- Added math function MIN/MAX
- Added JPEG and TIFF File Support
- Added scope measurements Vavg, Tmin, Tmax, Tedge, Delta Time
- Added Histogram Measurement Peak
- Ability to Show Histograms Window Boundary at all times when Histograms feature is turned on
- Added remote command to save screen image to hard or networked drive
- Added remote command to save file in any supported format

Defects Fixed:

- DCA crashes after default setup while in TDR mode
- Remote command :MARKER:Y1POSITION? now correctly returns answer in volts or ohms
- Resolved measurement resolution issue, introduced in version A.02.01. In Eye Mode on electrical channels the vertical scale resolution was fixed at 10 mV.
- Fixed text on Limit Setup button doesn't reset
- Filter rate values displayed correctly now
- Instrument Hangs when trying to move Y-Axis Markers
- Waveform colors no longer changed when invert waveform background color is selected
- Mask save screen command no longer overwrites previous data
- The remote command :MTESt:SCALe:SOURce query now returns SCPI standard character text, e.g. "CHAN1"
- Fixed a release assertion problem when mapping a Sun Unix drive
- Disk error message addressed because file overwriting itself
- Long Filenames entered from File\Save menu causes problem
- Waveform memory2 tab highlighted but information is about Waveform memory1
- Resolved a problem with mask load & reset after print causes illegal op & shutdown
- Fixed Display Data Query in INVERT format & printout showing non-invert
- Measurment Results Duplicate entry in Setup & Info
- Fixed remote command :DISPlay:LABel causes DCA to freeze in some remote sequences
- Can't format floppy drive when full of waveform files
- Signal goes to the bottom of screen at various vertical scale settings i.e. 6.1mV/div
- Fixed remote command :WAV:FORM WORD;SOURC CGR;DATA?

Measurement Enhancement:

- Improved built in Jitter measurement. The algorithm now uses a smaller window (3 pixels high) about the crossing point of the eye.

  The EYE measurement is based on the histogram database.

  In the case of jitter measurement, we need a "window" with vertical boundares of [y1,y2] and horizontal [x1,x2]. The jitter value is simply derived from the histogram within this window, e.g. the jitter RMS is the standard deviation of the histogram. The smaller the window, the smaller the jitter.

  In firmware versions previous to A.02.10, 5% of the [Ymax,Ymin] is used, assuming that the "crossing" position is Ycross,

  then

  y1 = Ycross - 5%(Ymax-Ymin)/2 and y2 = Ycross + 5%(Ymax-Ymin)/2

  (Ymax is the max value in the database , Ymin the minimum)

  In this version, A.02.10, it is changed to:

  y1 = Ycross - 1, y2 = Ycross + 2

  Since 5%(Ymax-Ymin) >> 3 in most cases, therefore the current Y window is much smaller, when leads into smaller jitter measurement results

---

A.02.01 Release Notes, Released January 30, 2001 (Differences from Release A.02.00)

New Feature List

- None

Defects Fixed:

- Fixed a defect that can cause instrument lock-up if the markers are used below 40uW/div and off the 1/2/5 sequence.
- Fixed a defect that caused linearity correction problems in 83486A modules. This resulted in potential vertical accuracy problems with these modules.
- Fixed a defect that incorrectly identified the 83486A module and options. This also affected all modules that had an option number.

Factory Only Enhancement:

- Relaxed the test limits for timebase linearity on the horizontal calibration routine to help with production yield. This change has no impact on instrument performance.

A.02.00 Release Notes, Released November 29, 2000 (Differences from Release A.01.22)

New Feature List

- Added Time Domain Reflectometry capabilities. The Agilent 54753A and 54754A TDR plug-in modules will work with the 86100A.
- Added the following Scope Measurements - Vbase, Vtop, Frequency, Pos Width, Neg Width, Duty Cycle, Vamp Eye, Bit Rate and Jitter RMS and Jitter Peak to Peak.
- Changed the finest resolution of the timebase from 10ps/div to 2ps/div.
- Changed the wavelength limit on User Optical Calibration from 1600 to 1625nm; however functionality beyond 1600 nm is not warranted or supported.

- Added the ability to create custom masks on a PC and input them into the DCA through the file manager.
- Provided the ability to remotely program the clock recovery modules.
- Added Zoom Box, the ability to zoom into a signal with multiple levels and to zoom back out.
- Added a wait cursor and new message give visual feedback that something is happening when a user inserts a module into the chassis.
- The Marker Select dialog box now supports OK/Cancel functionality.

Defects Fixed:

- Fixed a defect that was causing the trace to jump to the top of the graticule when vertical offset was increased (the trace was moved down the screen).
- Release assertion on accessing algorithm for ACVrms. The MeasID for ACVrms and its corresponding HelpID were not in the measurement help search list.
- Fixed issues with waveform memory dialog box.
- Fixed a defect where 40 GBit/s would not highlight in the timebase dialog, when the user would choose it via the BitRateCtrl.
- Fixed a defect where failure occurred while bringing up saved waveform from file.
- Fixed a defect where saving screen image in .ps or .eps format causes a crash. A data buffer wasn't being allocated large enough which caused the stack and memory to be corrupted.
- The :DISK commands: CDIRectory and DIRectory now accept the long form of the token WAVeforms. WAVeforms was misspelled in the yuc code.
- "Orphan" radio controls - single radio controls which are not grouped with any other controls - now appear as text labels. These "display only" radio controls do not respond to any user action.
- 83485B and 86106A modules were defaulting to incorrect bandwidth for optical channels. Changed code to default optical channels to high bandwidth. The user can still set to low bandwidth via remote interface only.
- BackLight will not go off. Fixed this defect by ensuring that the screen saver timer only resets in the event of an actual change in mouse coordinates.
- WAV:DATA? returns extra carriage return. Carriage return only appears at the end of the output stream.
- The title of the cal failed dialog specifies the type of cal that failed instead of a generic 'Calibration failed' title.
- Exceeding # of display labels hangs the instrument. When the user tries to create more than 32 labels from the remote, a dialog box is displayed. The user needs to click on the continue button to continue. Since the front panel is locked by the remote, the user cannot continue. The dialog was replaced with a message in the display and a remote error.
- Default Setup was generating hardware missing errors when clock recovery modules were installed.
- Module channels of non clock modules were not being enabled when a clock module was installed upon default setup or module install.
- Measurement queries repeated in fast succession caused invalid result to be returned.
- Resolved MEAS:RES returning bad data.
- Fixed issue where the electrical bandwidth for 86106A and 86109A modules are incorrect. Changed Module script to reflect the actual bandwidth. Made changes so that the correct IFGain is used for building the acquisition look through table.
- Remote command to create directories only accepts drive A: or User Files, resolved.
- Remote disk commands don't permit the use of mapped drives, resolved.
- Autoscale resets power units from dBm to Watts when Quick measure is on, resolved.
- Autoscale improved to accommodate more waveforms.

Factory Only Enhancements

- Improved timebase calibration routine by making the polynomial calibration internal. This allows field timebase calibration, prior revisions can not be supported.

A.01.22 Release Notes, Released September 6, 2000 (Differences from Release A.01.21)
(Not Supported)

New Feature List:

- None

Defects Fixed:

- The eye crossing algorithm is now more tolerant of heavily filtered eye waveforms. The Start-Mask-Test will align to larger variety of eye waveforms. Eye Measurements, which rely on an accurate eye crossing point, will perform better on these filtered waveforms.

A.01.21 Release Notes, Released August 9, 2000 (Differences from Release A.01.20)
(Not Supported)

New Feature List:

- None

Defects Fixed:

- None

Factory-only Enhancement:

- New routine added to increase the efficiency of the factory horizontal calibration process. This improvement does not change the functionality of the product.

A.01.20 Release Notes, Released July 11, 2000 (Differences from Release A.01.13)
(Not Supported)

New Feature List:

- External Scaling for vertical channel and trigger
- LAN capability for printing and file sharing

Defects Fixed:

- With external keyboard connected, pressing ALT F4 allowed access to Windows which is bad. This "feature" is now unavailable.
- Vertical cal temperature window is changed from >1 deg C to >5 deg C.
- Changed variable persistence default time to 300 ms.
- If the touchscreen is disabled and a message, such as "Autoscale Failed" is displayed, the instrument will appear to be locked up because there is no way to dismiss the Message Box. The fix was to re-enable the touchscreen before displaying the Message box and the disabling it after it has been dismissed.
- If a vertical calibration fails and the module is removed before dismissing the Message Box an illegal operation error occurs. The Fix is to check for the presence of the module before reading from it.
- Timebase resolution changed from 3 digits to 4, giving the same behavior as the 83480A.
- Remotely invoking an extinction ratio cal, where a vertical cal is required, brings up a dialog box that cannot be cleared. The dialog box is replaced with a status message in the status bar.
- Remotely sending the TEDGE command caused various problems. The fix is to only allow TEDGE? query and to reject TEDGE command.

- Remotely selecting vertical markers from a time waveform to a versus waveform caused a "data out of range" error message; this has been fixed.
- Invalid dates remotely sent to the instrument cause several problems, which are now resolved.

A.01.13 Release Notes, Released May 2, 2000 (Differences from Release A.01.12) (Not Supported)

New Feature List:

- None

Defects Fixed:

- User Vertical Calibration routine that causes vertical calibration failures