M300 CHANGES

This document is intended to keep a record of major modifications made to the M300 software.

1/11/2022, 2.2.1

Added additional support for 64-channel 1D2D probe.

12/21/2020, 2.2.0

Added support for 64-channel 1D2D probe. Added MoMonitor function. Added mode bit in CipGsSums to enable/disable focus rejection. Added serial MIN protocol support for serial acquisition.

4/27/2020, 2.1.0

Add support for MIL1553 board and acquisition type.

3/07/2019, 2.0.2

Retain text alignment in formulas when writing project tables.

9/12/2018, 2.0.1

Updated formatting of probe file (backward compatible) to allow easier general purpose use of probe files.

06/29/2018, 2.0.0

New versioning system of <major>.<minor>.<bug_fix> instead of 1.<month>.<year> as before. Speed improvements due to better compiler optimization. Fixed probe image DMA timing issue when using CAPS boards. Added acquisition flag to check probe image CRC for CIP grey/mono (requires CAPS board update). Fixed issue with comments added to board files that could cause exponential file growth on project saves.

05/09/2017, 1.05.17

Fixed bug with saving the green yellow as yellow color.

02/07/2017, 1.02.17

Fixed error message for ARINC429.

12/06/2016

Added new functions for CIPMonitor, CIPGSMonitor, CIPSums and CIPGSSums.

09/19/2016

Versions will only change when software actually changes since all version were separated for each application as opposed to have one version for all applications.

09/01/2016

Improvements and bug fixes to CASDPOL code, final version tested with CASDPOL probe and simulator.

07/01/2016

Modified CAS DPOL board to allow 921,600 baud rate for future use if CAS DPOL probe supports it.

06/30/2016

Modified acquisition for CAS DPOL to be master asynchronous event instead of synchronous event. This was done to improve the sampling and allow data to be read more often.

03/30/2016

Support for CAS DPOL probe including acquisition type and three new functions to access the data.

01/01/2016

Modified ASCII output to allow date and time option for automatic output.

06/19/2015

Added a new parameter to the M300 Acquisition tab for Acquisition Monitor.

06/18/2015

Revised the units function to accept "mb" for "mbar" and also change all data values to zero if any of the units specifiers are invalid as opposed to leaving the data values unchanged.

06/08/2015

Revised pos.300 to allow for up to 31 characters per text entry up from 15 characters.

05/29/2015

New acquisition type 91 for ARINC429 interface handle FIFO support. This type can be used to get data from Stormscope WX-1000.

05/14/2015

Revised M300 to work with version 2 of the BC635/BC637 PCI interface cards. For Free Running and External 1 PPS modes the M300 must set the BC635/BC637 clock.

05/05/2015

New feature to check output format against data type so we can give the user a warning about possible invalid output format strings.

03/26/2015

Revised the BC635/BC637 board setup software to support V2 PCI boards. The new version, V2 interface cards didn't work with the M300 system.

03/17/2015

New features to ASCII manager to allow separated output with a variable number of parameters.

03/16/2015

New function, Wx500 to strike data and convert the latitude and longitude position values into a single array so it can be used for output in the ASCII manager.

03/11/2015

New marker position type added for position map display. This adds the capability for the M300 to display strike data with given latitude and longitude of the strike.

03/09/2015

Made considerable improvements to position manager and map drawing for the M300 system.

03/03/2015

Allowed resizing for smaller size for command window, status window, toolbar window, text change window, strip chart group enable window and strip char entry enable window.

11/21/2014

Fix a bug with the formula auto commands. When there were multiple formulas with the same formula number, the auto command didn't restore the formula to auto state. So the formulas were left in override state. The formula lock for the first formula found that matched was the only one being changed, instead of changing all the formulas locks that matched.

11/13/2014

Improvements made to comment character handling for M300. You can now use a semicolon character inside a string parameter. Basically any semicolons inside string parameters are not considered a comment character.

10/10/2014

Improved the M300 integration with the BC635/BC637 interface by not using an invalid date and time when the interface hasn't been properly initialized.

10/1/2014

Removed the Mode parameter from the system board setup. This parameter is no longer used but there was a small section of code that was turning off the Use BC635/BC637 Interface card when a Mode value of 0 was present in the file.

30/9/2014

Improved the QNX 4 clock adjustment feature for the M300 from the SBUS/M300 clock. This will allow systems used as NTP Time Servers to have a higher accuracy. The adjust is nearly done each second in oder to keep the two clock without any drift.

05/22/2014

Limited imaging displays to show only one error message per second (Sync buffer), on a window by window basis. Previously if the quality of the raw data was poor this caused the M300 to generate many errors. This was a problem for Acquisition mode since it generated too many error messages and the system ran out of error buffers as well as this system ran out of time to do its work. For Playback mode this slowed down the M300, since too many error messages were behind displayed in the M300Logger. The displays affected by this were Mono, Grey Scale, CIP and CIP Grey Scale.

02/12/2014

New commands to pause the playback at a particular time. Also a new command to search the data file based on time.

02/11/2014

New button widgets to increase and decrease the playback speed. This provides a quick way to change the playback speed by small amount.

12/05/2013

Fixed an issue with the position display which affected map displays around zero degrees of latitude and longitude.

09/12/2013

New features for position display to support multiple data labels along the flight path.

07/24/2013

New option for BufferTime() function to show time between buffers.

07/17/2013

Fixed M300 option to go into UDP mode, such as 'M300 -udp'.

06/27/2013

Added Protect function to protect formula value from going to zero so as to be used in divide.

05/01/2013

Added support to Nmea function for $SBG01 sentence from IG-500N.

03/21/2013

Added data prefix to csv auto file creation.

03/20/2013

Modified PC Clock mode to allow frequencies greater than 20 Hz.

03/19/2013

Disable Pause button in acquisition mode. The user can use the stop and star if necessary.

02/28/2013

Fix seconds, minute, hour output computation cor ASCII manager time output feature.

12/28/2012

Fixed color issue with usage for RAM and DISK space text.

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11/16/2012

Fix decimate feature for strip chart display.

09/26/12

Performed a sync to hard disk from work space saving and reading functions. This should minimize possible issues with corruption on configurations files.

09/18/12

Cleared all fields in acquisition tab for PC Clock mode. No data from system board is available.

09/17/12

Fixed file close on changing modes. This fixes issue with writing to open file when switching from acquisition to playback mode.

08/22/12

New function for string copy, StrCpy. New function for string concatenation, StrCat.

08/21/12

New function for string print of a value, StrPrt.

04/03/12

Un-selected text entry, for text change feature.

02/20/12

Warning message for 95% and 98% hard drive full added. M300 window will be restored onto the current Photon console and a dialog will show with the 98% hard drive full message.

11/18/11

Added support for latitude and longitude for GPGGA sentence in Nmea function.

11/14/11

Fixed small issues with M300 clock source selection.

10/26/11

The BC635/BC637 board takes a long time to setup. We have the bc635 utility which can now setup the BC635/BC637 boards. The M300 system board entry has been modified to remove the BC635/BC636 modes and clock sources.

09/26/11

Support for new AIMMS20 data. Id 4, Id 5 and Id 29 sentences now supported.

09/21/11

Added types for text entries to display data and tables without units.

09/16/11

New address for CAPS interface for 0x7B00 and 0x7B02 added to board dialogs, cip image display and cgs image display windows.

07/06/11

Fixed a problem with the CDP/CDPPBP acquisition. The reset flag will not be used to send the setup command to the probe. The CDP/CDPBP doesn't support the reset flag. Changed the CDP/CDPPBP/SPP100 acquisition to send the setup command at most once per second. In the past if the data rate for the acquisition was greater than 1 hz, this caused the M300 to send the setup command more than once per second. This is necessary and will cause problems with the interface to the probes.

07/05/11

Modified trigger parsing to display a message if an invalid trigger was found. The parsing was improved to prevent some possible M300 crashes on invalid trigger data.

05/24/11

Modified factor initialization to allow strings to have commas, open brackets and close brackets within the double quotes. For example, the "STM1,20" is a valid string. The comma, open bracket and close bracket are used as token delimiter and this previously caused a problem.

05/23/11

Modified SrAscii() function to terminate on null character or length. If desired number of elements requested is less than available in the data, we now zero the missing values.

04/11/11

Protected offset field for GetData() function. Will not allow offset less than zero.

04/08/11

Fixed small display issue for several widgets in 2D Board dialog.

04/07/11

Modified project open, new, save as and delete dialogs to replace project path name with a combo box widget. The project path combo box widget has history and remembers 20 most recent project paths. This facilities dealing with several projects from different paths.

Removed project path from file properties. This is now replaced wit the project path from above.

04/06/11

Fixed bug with pause button for UDP mode. The pause stopped the work proxy but never restarted.

04/05/11

Added paths for data (sea), ASCII (csv), pictures (pic) to the file properties dialogs. This facilitates placement of files in the M300. It allows for separation of data and tables.

03/10/11

Fixed bug with ASCII output. Clicking project and then save would turn off ASCII output. The ASCII manager uses a buffer to keep the output of the line and this was getting freed in the wrong place (save routine not the free routine).

03/09/11

Fixed issue with rdr.300 table parsing (GnLineValid function had invalid parameter). This caused the height time indicator display not to work. It populated the display window partially.

03/08/11

Added warning message for acquisition events in asynchronous buffers with possible invalid frequency.

03/07/11

Added line number to factor error message from formula table.

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03/01/11

New development system for QNX 4.

02/24/11

Fixed text marker in map files.

02/14/11

New feature to keep history for project open path. Changed widget for path from text to drop down combo box.

02/04/11

Fixed table insert feature for '*.asc,' '*.lup'. After new versions for the asc.300 and lup.300 there was an omission on modifying the table insert feature.

02/03/11

Fixed ASCII manager seconds output format.

02/02/11

Fixed small issue with saving tables. Any table with no entries but with comments was mistakenly saved from project to project.

02/01/11

Improved buffer timing for asynchronous buffers. The previous implementation required triggers at a high rate to handle asynchronous data. This new implementation will require more reasonable trigger rates in formulas and all places where triggers are used. THIS IS A RECOMMEND UPGRADE TO THE M300 SYSTEM.

01/19/11

Added TTemp() function.

12/22/10

Added CountEdges() function.

12/01/10

Added TasP() function.

11/19/10

Changes made to CIP and CIP-GS (CGS) image acquisition to turn off the DMA channel when done with acquisition.

10/14/10

Improved table parsing to check for valid version string for all M300 tables. Board table now checks for valid board type and '=' separator character before loading board file.

09/22/10

New function to compute DayOfYear.

09/14/10

Changed the network queue buffer size used for acquisition events from 16KB to 256 KB.

09/10/10

Revised/fixed 2D Grey display to keep track of time bar position.

09/09/10

Fixed PromoBins function.

08/12/10

New Set function to initialize a formula array to a value or a sequence of values.

08/11/10

Allow points in the stp.300. New type parameter to select points/lines.

08/10/10

Modified Ge, Gt, Eq, Le and Lt functions to allow comparisons to be made on any size array.

08/06/10

PromoData and PromoBins functions to handle Promo2000 data.

08/04/10

Changed AIMMS20/ADP acquisition to allow for ID22 sentences. Both ports can be acquired with the AIMMS20 acquisition type. This way the ID22 sentences are validated for correctness.

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M300 Changes

07/23/10

Modified AIMMS20/ADP purge command to allow supporting new feature to turn on/off all purge ports. This only works with AIMMS20/ADP systems with modified firmware to support this change.

07/16/10

New System() function to return M300 operational mode (ACQ, PB, UDP). This allow triggers based on the operational mode, such as storing and retrieving secondary acquisition data.

05/07/10

Modified Status Info acquisition to allow retrieval of M300, QNX 4 and BC635/BC367 time in sec and nsec.

05/06/10

In acquisition proxy we will only use the BC635/BC637 time if the board is synced or setup to use external clock. In acquisition proxy we will use M300 time or BC635/BC637 time to adjust QNX 4 time. This allows for use of NTP server and keeping all the times synced together.

04/22/10

BC635/BC637 fixed several issues. Improved wait after each access to PCI card. Set time function had a possible problem. New internal/external clock source had a bug with the default value and it was using 0 for the clock source.

04/20/10

Network Binary Buffered Acquisition type 90. New start time variable to buffer entry.

03/05/10

Fixed tab order for board dialogs.

03/04/10

Add select clock source (internal or external) for BC635/BC637 option in System board dialog.

02/16/10

Fixed minor issues with grids for divisions. Fixed issue with labels for axis bins.

02/04/10

Support for CDPPBP probe. New CountBy function to support PBP data.

01/25/10

Restart command added. Also bad file descriptor error added for acquisition type 37 (Serial ASCII).

01/13/10

Modified 2D Grey display and 2dg.300 file to allow timebars to be display between particles. The M300 fakes the time bar with a slice fully on.

12/30/09

Added option to asc.300 table to allow use of ASCII record state. Some ASCII entries that output to serial devices might not want to be turn on/off by the ASCII record state. This way we can provide an option to ignore the ASCII record state.

12/29/09

Added option to load a project from command line option. For example, 'M300 -project /test/fssp', will run and open the /test/fssp project.

12/28/09

Added command to change primary/secondary position for windows. Use 'wnd primary' or 'wnd secondary'.

12/10/09

Changed Nmea() function to strictly enforce the NMEA data format before looking at data. Check sum used as a well as basic syntax for NMEA data. No invalid data will get into M300 fields/formulas.

12/09/09

Fixed ASCII column output.

12/07/09

If the M300 runs out of sync buffers to use, then we display an error count. In the status pane, top line for system all the way at the right.

11/24/09

Increase stack size for M300 code to allow for larger values to be allocated from stack. Previous value was 96k bytes. New value is 51200k (50 mb).

11/23/09

New feature to specify formula stack depth. Default value is 2500 double values. User can change this if necessary. The stack depth can be changed without recompiling the M300 software. It is however still limited by the size of the stack assigned at compile time.

11/19/09

New m300l (m300 logger) application. This allows m300m to trigger error messages without blocking. Previous version of m300m used the M300Logger and hence blocked while sending error messages.

11/13/09

Modified ASCII configuration files to allow for binary output on user selected basis. We can't determine when binary or ASCII output is required otherwise. New format for type to allow for this.

11/02/09

Fixed a problem with asc.300 crashing on output to a non-existing serial port. It's not possible to output from asc.300 unless there is a valid serial port.

10/30/09

Fixed a problem with Lookup (lup.300). On old style, lookup number entry, several print statements for the error used a bad format on print which cause M300 to crash. The same also was true for Probe (prb.300).

10/08/09

Fixed secondary acquisition manager. It used the model directory pointer instead of the pointer to the start of the buffer. Also improved the string copy to formula result space.

10/07/09

New command for list output to do a one time run for an list entry. The entry must be in the off state. The entry will be turned on for one run and then returns to the off state. If the entry is on, this command has no effect.

LST from [to] FIRE

10/06/09

M300 projects files permissions changed to immediately change the permissions after user input.

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10/05/09

Modified M300 ASCII output to allow for zero value output on binary data. Since c uses zero has the terminating character this was not possibly with c strings. Now using memory copy and special handle for zero data value.

09/09/09

Fixed bug with M300 ASCII entries for network output data. Board entry for network used, but not set for instances where board was turned off. Noticed M300 would crash on exit. This is related to the last fix.

06/23/09

Fixed issue with M300, 'netsend' and 'netrecv' to make sure these were terminated when no longer needed. M300 in ASCII manager forgot to disconnect the network board entries causing this problem.

06/09/09

Fixed bug with CAMAC Analog acquisition type insert in acquisition setup dialog. The AqTypeGet() function was missing the CAMAC Analog type.

06/04/09

Modified M300 to allow user to select desired mode from command line. Acquisition mode is the default. Playback and UDP allowed with command line start up.

06/03/09

Modified lookup (lup.300) to allow rows and columns for data. New function to get lookup data, LookupGet(). New function to set lookup data, LookupSet().

05/28/09

Found bug with Serial ASCII acquisition for acquisition type 37. The acquisition event only ran if new data came in. The M300 would not look at the data left over in the internal buffer to see if there was some data that needed to be looked at. This manifested as a small delay in the data coming in.

05/07/09

New options in file properties dialog to select default printer or window capture driver. The buttons in the window capture now will print to default printer or capture driver.

04/30/09

Fixed a bug with playback mode which didn't restart the timer to read the data. Occasionally playback will shutdown the read timer, specially when there is no place to put new data into the shared memory. This was a problem discovered on IBM ThinkPad T30 laptop. Which the playback speed set for 0.01.

04/07/09

New buttons for X vs. Y display to select entries and groups. These are similar to the strip chart buttons.

04/06/09

Fix strip chart command parsing. Add command to turn strip chart group on.

04/03/09

Add commands for X vs. Y entries. Add command to turn X vs. Y group on.

04/02/09

Add state and group to xvy.300 table.

03/23/09

Increased the maximum size of the ASCII output from 8K to 64k. This is the total number of bytes used to build up a buffer before calling the write function. So this is the limit for the ASCII configuration file. The limit per print statement/line in ASCII output file is 8k. This number is the same as before.

02/03/09

Modified MaxSiz() function to allow for mode parameter. Implemented new mode for MaxSiz() function based on actual maximum value from y array.

Added MinSiz() function. This function is similar to MaxSiz(), except it does minimum comparison instead of maximum.

01/19/09

Add Serial Binary acquisition event, type 89. This is a generic data acquisition type for serial binary data from SEA Serial interface or Serial Port. Updated triggers for this new type.

12/10/08

Fix issue with strip chart group feature (click for home/end/previous/next). If only one group or no group was used for a particular window, then the strip charts were turned off. Now we don't do anything under these circumstances.

12/04/08

Improved playback mode. When buffer is busy the and can't be used, the read manager goes to sleep as opposed to keep trying and using up CPU time. This frees up the CPU for whichever process is getting behind.

11/24/08

For M300 in playback mode the timer to work is too fast. This causes m300m to use excessive CPU time checking to see if it's okay to load another buffer in shared memory. New version shuts off timer while there is no buffer to load data. Then once a buffer is free, the timer is allowed to start again.

This improves UDP broadcast of data during playback mode.

11/11/08

Forced System board non acquisition state to on all the time and disable it from System board dialog. The M300 needs certain information from the system board (such as frequency), even when not in acquisition mode.

11/10/08

M300 in playback and UDP mode will display a warning if the system frequency on the board table doesn't match the original raw data. It is critical that these two match in order for the triggers to work. Data playback is not guaranteed if the system frequency doesn't match the actual data. It's not possible to have the M300 fix this.

11/06/08

Buffer 251 (COMMAND), buffer 252 (ERROR), buffer 254 (SECONDARY ACQUISITION) were already automatically added to a project if missing from buf.300. Now the M300 also changes the buffer count to 16 buffers for the above mentioned buffers. This is to avoid serious issues with saving the M300 raw data. If using a previous version of the M300 the user must change the buffer counts for these buffers to 16 or greater.

11/05/08

New command to purge AIMMS/ADP instrument. The user can supply the purge time or just use the default value from the board table.

11/04/08

New AIMMS board to support AIMMS and ADP. AIMMSData() function support sentence for id 11 and id 12 (ADP data). M300 automatically converts SerialPort or Serial board entries into AIMMS board entry.

10/21/08

Added support for CAMAC 1D256 (1D Advanced) interface to M300. This board and all it's features are now fully operational.

10/09/08

Added support for CAMAC 1D interface card to M300. This board and all it's features are now fully operational.

10/03/08

Modified Serial board dialog to support higher baud rates which are possible with the Quad Serial board. Baud rates greater than or equal to 57600 are only supported by Quad Serial board. The highest baud rate for Serial board is 38400.

09/30/08

Released new board for CIPGS (CIP Grey Scale) probe. This includes acquisition event, formulas, display, TAS control, etc.

09/24/08

CAS and CASPBP boards can be configured for 57600 and 56818 baud. CIP and CIPGS boards can be configured for 57600 and 55550 baud.

9/23/08

Board Reset performed on board done (not board initialization). This improves issues using DMA for CAPS board.

09/22/08

Fixed bug with ASCII output. There was a buffer which was being used and was under the 8192 size.

09/09/08

Fixed issue with invalid trigger life for SYNC trigger when changing system frequency for System board.

09/05/08

Added more higher baud rates to serial type board entries (such as CASPBP, CAS, etc...). The maximum baud rate is dependent on your hardware. Check which board is providing support for a particular port to see if you are capable of getting the desired baud rate.

08/20/08

New special trigger once on play for frequency (OnceOnPlay).

08/19/08

Fix sync buffer life save for triggers.

08/18/08

Fix board name saving for triggers. Board with state off is still saved as long as it doesn't conflict with a board with state on.

08/05/08

New Incloud function to use with SEA WCM-2000 system to determine if it's in cloud.

07/30/08

New function for standard deviation called StDev.

07/23/08

New math/stack operators called Swap2, Swap4 and Swap8. These are used to perform byte swapping.

07/22/08

New functions for Slope and Intercept. Slope, returns the slope of a linear regression line through the given data points. Intercept, calculates the point at which a line intersect the y-axis by using a best fit regression line plotted through the given data points.

06/30/08

Removed maximize command. Not used and not needed.

06/26/08

Added auto button to text formula edit window.

06/25/08

New M300 main window layout. Removed the mode bar. Changed the size for Acquisition, Playback and UDP buttons. These are now part of the main toolbar. This is in anticipation of the new features to come with separate Command, Status and Toolbar windows.

06/24/08

New View Menu. Can turn on/off Command, Status or Toolbar windows.

06/23/08

Added command to position display to change the auto percent value. A negative value between -1 and -10 disables the auto percent. A value between 1 and 10 enables it.

06/20/08

Fix strip chart range command bug.

06/17/08

Fixed and improved axis x and y label display. The full extent of each label is used.

06/05/08

Fixed bug with X vs. Y display. When using an array of values with a number of entries (memory), greater than 1, there was a problem with computing the index for the data display. The system generated an index less than zero and this caused the M300 to crash on exit, not to mention invalid data for display.

04/03/08

Fixed sample bug with acquisition type list and insert button for acquisition setup dialog.

04/02/08

Implemented acquisition event sampling offset. Modified acq.300 file to add acquisition event sample offset. Sample offset not stored in M300 data, only stored in acq.300 file.

03/31/08

Several fixes involving fast and slow synchronous buffer and acquisition events.

03/18/08

New board entry for CAMAC Analog E205/E210. Also acquisition event for CAMAC Analog, type 1.

02/18/08

New simnet utility to simulate data on network sockets. This utility is similar to the simser utility, with the exception that the data will be transmitted over the network port instead of serial port.

02/11/08

Changed ASCII manager (asc.300) maximum line size from 2048 to 8192 characters per line.

01/21/08

Fixed bug, when display windows are off the Formula Watch and Alter button is disable as well as the Window menu.

01/15/08

New command for ASCII output to do a one time run for an ASCII entry. The entry must be in the off state. The entry will be turned on for one run and then returns to the off state. If the entry is on, this command has no effect.

ASC from [to] FIRE

01/14/08

Fixed bug with home and end buttons for Formula Watch and Alter (fwa). In case there was a trigger at the start of the formula table with no formula entries bellow (two triggers in a row and no formula entries). This caused the home button not to work.

The same issue was true if there was a trigger at the end of the formula table, followed by no formula entries. This time the end button would not work.

Fixed a bug with the Primary/Secondary window position feature. If all display windows were closed (for example, the Toggle Display Windows button was up), clicking on the Primary/Secondary window button would crash the system. The reason for this was due to trying to resize window widgets that were closed. To fix this we only resize the window widgets if they are open.

01/09/08

For synchronous 1 hz buffer the expected time interval between buffers is 1 second. Made changes to check for this and reset triggers, in case the time interval is less than 1 second.

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01/03/08

The CIP board initialization did a reset to the CAPS board (this was removed). The board reset would change the settings for the CAS/CDP/SPP100 channel (assuming the CIP entry was last in order, in the board table). If the CIP entry is first, then the CAS/CDP/SPP100 channel would have re-initialized the channel as needed (it worked okay). With this fix board order is not relevant for the CIP/CAS/CDP/SPP100.

12/03/07

New feature to rename window name. There is a new window name text box in the window tab for the M300. Also a new command to rename a window.

11/16/07

LrnPos() function didn't return a value in case of no data. This left the return value for the formula un-initialized. As a consequence the pos.300 table was causing the M300 to crash during the position display.

Also fixed position to limit latitude, ± 90 degrees and longitude, ±180 degrees.

11/15/07

M300Logger had used un-initialized 'head' variable, to get record state from shared memory. This caused M300Logger to crash badly.

11/08/07

Fixed issue with board entry lookup. Originally the system only looked for an entry that matched. Now it looks for entries that are in the 'on' state first. If no entry is found with the 'on' state, then it will return an entry that matches, even if it's 'off'.

This fixes an issue with the ASCII manager using a serial port board entry. When there were other board entries that were turned off but using the same port, they were erroneously selected to be used.

11/07/07

Fixed serial board address issue in the M300 board dialogs for CAS, CIP and SPP boards.

09/22/07

Added new features to strip chart displays to select group and entries.

09/18/07

Group field added to strip charts (stp.300).

09/13/07

New file commands to create and close M300 binary files.

09/12/07

New feature to change formula value or text entry name directly from the text window display. User selects a single text entry and then presses the insert key to get a change dialog box.

09/05/07

New ASCII commands.

07/20/07

Fixed bug in control function for Arinc429Out. Didn't check ARINC transmit enable bit properly.

07/17/07

Fixed a bug in text entry allocation. When there was no valid formula, it skipped allocating data for all other formulas.

07/13/07

Added feature to allow Arinc429Out function to output raw data.

07/24/07

Fixed negative index bug. Several M300 functions, including Array(), never checked for negative value for index. This caused a serious bug with memory usage and very unpredictable behavior for the M300 software.

07/20/07

Fixed lookup file save. Also fixed bug, which allowed user to put more points in memory than allocated. This caused a nasty memory override bug.

07/16/07

Fixed triangle marker for position display. It was drawn upside down. Also added the code to draw the circle marker.

06/01/07

Found bug with screen/console switching closed windows. The M300 tried to switch a closed window and crashed. This has been fixed to skip screen switching for closed windows.

05/11/07

New function to retrieve data from raw acquisition tag. The function is called GetData(). It supports all the M300 data types.

05/11/07

New acquisition type 85 for "Network Binary" data.

05/10/07

Network workers for send and receive to sockets. These work through shared memory.

04/25/07

New acquisition type 84 for "Network ASCII" data.

03/16/07

New function to support Applanix POS AV data, PosAvData().

03/09/07

New acquisition type 83 for Applanix POS AV (Position Orientation System), "Network POSAV".

03/08/07

New board entry for Network. User specifies IP address and Port number/name.

03/05/07

Fix position map display to make it so that position uses first (primary position) for auto position feature (re-center).

02/27/07

New command to pause/un-pause a window.

02/06/07

Fix a problem with buffer allocation that created files with invalid M300 data. Internal links to shared memory buffers where wrong causing the wrong data to be written.

01/30/07

New feature to toggle window position/size scheme. User has primary and secondary window schemes.

01/24/07

Fixed bug when user clicked on the File menu and then the Exit menu item. If user had modified the project and clicked the cancel button, the M300 window would close but the system was still running.

12/21/06

New AimmsData function to retrieve AIMMS data from acquisition tag.

12/18/06

New acquisition async type 82 for AIMMS data (AIMMS10 and AIMMS20). New trigger for this type.

12/05/06

Fixed Units function for psi to mbar conversion.

12/04/06

Fix small problem with seaserver, which is responsible for auto naming files.

11/27/06

Modified CIP serial acquisition. Debug information added to parameter 1 (setup/data) and parameter 2 (status).

11/16/06

New TamdarData function to retrieve Tamdar data from acquisition tag.

11/15/06

New acquisition async type 81 for Tamdar data. New trigger for this type.

10/23/06

Modified the creating of 'bmp', 'tif', and 'jpg' files to allow full path in name.

09/28/06

New formula command to hold current value (fml formula hold).

09/27/06

Small correction made to OdSums() function. When the state changed from accumulate to run it took an extra second to clear. Now it doesn't need the extra time to clear and restart run mode.

09/20/06

Increased the maximum formula stack size to 2500 elements. Also added an error message indicating if the user tries to go above the maximum.

09/19/06

Added support for CoDO() function to support PMF board for digital output. One port, 16 bits.

09/18/06

Added support to Volts() function for gain 3, -1.25 to 1.25. This is necessary for the PMF board.

09/15/06

CoPMFDA function to support DA output out of the two channels for the PMF board.

09/14/06

New board for PMF (PowerDAQ Multi-Function). Use SEA Analog acquisition type to acquire data from the board. Also use digital input acquisition from this board.

06/21/07

Added 1D256 Counts data size computation for acquisition setup dialog.

06/08/06

New function to select a string based on comparison, StrSel().

06/08/06

New feature to Buttons (btn.300) to allow formula for onLabel and offLabel. This give the capability to change the buttons labels with click or new data from another source.

06/07/06

Fixed comment save feature for all tables to allow storing comments at the end of file.

05/04/06

Fixed mysterious bug with serial port initialization. The M300 Manager (m300m) runs at very high priority for acquisition mode. The Board initialization was started after going high priority. The system didn't have enough time to finish calls to setup baud rate. This was noted by bad data on serial ports (specially ascii output).

05/03/06

New CoPCIDACDA() function to control Analog Output values for PCIDAC board.

05/02/06

New board added, PCIDAC. This board supports Analog Output, Digital I/O.

04/28/06

Support for 9513 Counters Acquisition Type 68. This used to be called 1D Counters. This acquisition type can be used from a 1D board or the CYCTM board.

04/27/06

New board added, CYCTM. This board support either 10 or 20 counters.

04/05/06

Fix stop button disable under certain Playback conditions.

04/03/06

Fix ppi display scheme selection.

03/31/06

New function to unpack ARINC 708 data, Arinc708Data().

03/29/06

New board for Ballard 708.

03/28/06

New acquisition type for Ballard 708 ARINC data (type 80).

03/14/06

Fix CasPbpData function. Backward counts were bad. This function can only do 1 sample at time. To handle more than 1 Hz data, the CAS PBP should be acquired in a faster synchronous buffer.

03/09/06

Added usage message for M300.

03/08/06

Fixed a bug with variable names. The maximum old length was 32-3=29. The new maximum length is 64. Added maximum size (64 characters) to text name widget to prevent problems in the future.

03/07/06

Change to allow M300 to run in the background. No need to run 'M300 &', just run 'M300'. User must set an alias for m300 to set equal to M300. This way we can run M300 using 'm300'. This also fixes the issues with passing parameters to the M300. Using the m300 script scheme didn't allow for parameter passing.

03/03/06

Added warning message to inform of missing file. This was in response to files getting copied with a DOS/FAT partition and having invalid case in the file name.

02/06/06

Fixed bug with closing window after creating for some of the window types.

01/31/06

New feature to start M300 with an empty project. Use 'M300 -np &' to start M300 with no project.

12/5/05

Fixed edit problems with text callback. Font sample was being overwritten.

12/02/05

Fixed window zero length for all window tables. There was a missing file close statement.

09/08/05

Improved buffer dialog display by using buffer type names along side buffer number.

09/07/05

No secondary acquisition entries are created unless a valid formula is presented. Error message indicates invalid or unknown formula in saq.300.

09/06/05

Tweaks made to shared memory structure to allow better view of shared memory.

08/30/05

Fix bug with first buffer acquired after File Info data (first real buffer of file). The M300 worker shared acquisition initialization was using the wrong buffer and it overwrote the first buffer acquired.

08/26/05

Output to serial devices via ASCII table (asc.300) can be turned off by turning off the state of the serial board. A serial port board entry must be present for ASCII output to work on a serial port.

08/22/05

Fixed/improved axis label sizing. Less size was requested to allow more labels to fit.

08/17/05

Fixed Pump on command for SPP200. The flags field has a control bit for the Pump on/off. If the range is a 1, then the Pump is turned on. Otherwise the Pump is turned off.

08/01/05

Fixed problem with properties window for Formula Watch and Alter. It didn't allow change since it could not get dimension for raw or group widget. Switched to use main window size instead.

07/26/05

Fixed problem with SPP-200 data. The incorrect data size was used to determine the number of channels. Since the size didn't match, nothing was done.

07/15/05

New BIF (buffer information) & BFA (buffer flow analyzer) window types. New options in window new dialog.

07/15/05

Removed the view menu.

07/15/05

New trigger type. Type "Always" equal -3. Trigger will be performed for all buffers.

07/13/05

Fix for 1D256 board non acquisition state. Code was missing.

07/12/05

Fix for SrInteger() function.

07/05/05

Upgraded most acquisition routines to display error message for board time-outs.

06/29/05

Upgrade to CIP Image display. New display uses standard image display functions. Hash and age added.

06/23/05

Fixed Sums1D() bug with CIP serial data.

04/07/05

Trigger commands where not working. It turns out there was an omission in the trigger code when the formula number was added. The formula number was missing the default value of -1.

04/06/05

Finished table save and read feature for color. Colors can now be specified in name or hexadecimal value for all tables. This feature was only available in the txt.300 file previously.

04/05/05

Improved board address modification. Use should be able to change board address without having to make any other changes in the tables. The M300 software will modify all previous board links with the new address.

04/05/05

Some '*.prb' and '*.map' files where incorrectly omitted from the table save feature.

04/04/05

Playback tab was not getting active, if user initially picked acquisition mode. This was a tiny bug introduced with the new feature to run acquisition mode on machines without the system interface using the PC clock.

04/04/05

Quick table reference updated. The '/test/tables' directory should have the latest format for all tables and short command reference as well.

02/10/05

If user changed playback period value while paused, the M300 would no restart after pause was lifted. If the playback period was changed again, the system would start. This was fixed to change the playback speed even when paused.

02/09/05

New feature to lock all windows. There is a global lock button which blocks all windows from getting input. In addition each window can also be locked by the individual lock button on the window.

02/04/05

New command to open/close all windows. Use 'wnd on' to open all windows. Use 'wnd off' to close all windows. This can be done when generation ASCII files to make the system run faster with no displays.

New button to open/close all windows.

02/03/05

New command to enable/disable all ASCII output. Use 'asc on' to turn on ASCII output. Use 'asc off' to turn off ASCII output. ASCII output can be disabled during playback mode for faster playback.

New button to enable/disable ASCII output.

01/31/05

New command to allow user to toggle between two consoles. The current console and the last console. The format for the command is 'scn last'.

12/13/04

New feature to automatically name the M300 binary files with the '.sea' extension.

12/10/04

Fixed file auto create name for M300 binary files. The work space settings need to be retrieve prior to using these for the naming convention otherwise the defaults are used.

12/09/04

Security for iButton changed to allow device to communicate without hardware flow. This was supposed to be the desired configuration but the software was not changing the options for the serial port. Under certain circumstances the security would hang up the system.

11/29/04

Added btn.300 and cfg.300 to insert tables.

11/02/04

New feature to allow multiple commands to be executed. Multiple commands can be separated using the '@' character. This feature is valid for all tables except command table (cmd.300) where this is not necessary.

11/01/04

When using more than one window for buttons, there was a problem where the buttons were placed. Normally in the wrong window.

10/15/04

No change to SEA source. New library from QNX to fix problem with capturing multiple windows. Code re-compiled and re-linked with new library. User's also need to upgrade the phlib_s11 file.

09/21/04

Fixed a bug with 'serread' utility. When the data coming in was large it would cause an overflow on the output buffer and crash the utility with a SIGSEGV. Increased the size of the output buffer and this bug should not posed any further problems.

01/09/04

Increased the size of the shared memory objects used. The acquisition uses 25 MB instead of 1 MB and the info uses 64 KB instead of 32 KB. This allows for more acquisition buffers to be created to keep data during periods of heavy usage.

12/10/03

Fixed rectangle extent for table entry in text display. The position for the text entry was also fixed to read the value from the table (as opposed to the extent computed).

12/09/03

Improved skip tables on read for a data file. The work trigger is set for maximum speed until the table section is done. Then it's set for the desired speed.

12/08/03

When the user hit the Next Buffer button we unnecessarily left the timer that trigger the work proxy going. This has been fix to kill the time and minimize CPU usage.

12/08/03

Fixed bug with callback for new text entry. The callback omitted to copy the window name to the newly created text entry. The result was an invalid text entry in the txt.300 file once the project was saved.

12/01/03

New feature in M300 to limit the M300 data file to less than 2 GB. The system will automatically start a new file once the file limit size is reached. It starts with the original name and then appends _a before the '.sea' extension. It will create new files all the way up to _z.

11/12/03

Added timebar widget and callback to HVPS display.

11/11/03

Fixed problem with HVPS image display. There was an invalid value for the draw buffer which cause the system to look past valid data and subsequent crash.

10/20/03

Position display can automatically reposition display map and change center of latitude and center of longitude to fit current aircraft position.

10/17/03

Discovered problem with position map display. Points that are too far from center latitude and center longitude will cause horizontal lines to be drawn across the screen. There is no way to fix this problem at the moment. User's are advised not to use points that are to far off from the desired location. The M300 system is not meant to handle an entire map of the world, back correctly handle a large area of interest.

10/15/03

Worked on position control box to nudge the map display in all different directions.

10/14/03

Map display had a problem with extra conversion into radians when system was trying to compute "x,y" position.

10/10/03

Fixed and made improvements to all window dialogs (color, properties, etc...). These need to close when windows are closed/deleted. Also fixed an issue with window delete and the links from objects in the window.

10/01/03

Improved issue with proxy duration time. Applications that require a large amount of memory will affect the proxy duration time when they exit. The amount of memory used by the security features was minimized improving this issue with proxy duration.

09/29/03

Fixed problem with system frequency. The wrong system frequency value was used before buffer insert. There is a new message to set the system frequency before calling buffer insert.

09/28/03

New command to clear error message in main M300 window (clear error).

09/19/03

New commands to restore, maximize, front and back on an M300 window. Same commands for M300 Main Application window.

09/18/03

New commands to clear list, skew-t and x vs. y displays.

09/17/03

Altitude marks and text added to skew-t display.

09/10/03

Window type and sort feature added to window tab.

09/09/03

Fix bugs with several text callback used for text entry edit.

09/05/03

New KeyIndex function to perform integer key lookup.

08/29/03

Fixes and improvements to skew-t display.

08/28/03

New functions to convert relative humidity to dew point and vice versa. The function names are RHToDewPoint() and DewPointToRH().

08/27/03

Fix acquisition type 65. When buffers were small and there was more data than it could fit in the buffer, there was an erroneous computation for data size. The maximum number of bytes in a block is 4096. Acquisition type 65 can be used in synchronous and asynchronous buffers for serial port and serial interface.

08/26/03

ASCII manager opens output file before first write, instead of when table is read. This was done to facilitate changing projects without overwriting output file. Not a bug just a convenience.

08/13/03

New function to handle getting data from GPS NMEA sentences. The function is called NMEA(). Data for this function has to be in serial NMEA format, which means the data can come from any serial port. This function can't be used to unpack NMEA data to the SEA GPS interface. For the SEA GPS interface you must use the traditional method.

08/12/03

New option to disable boards during Playback and UDP modes.

08/11/03

Added option to save/restore history counts for file, project, menu.

08/11/03

Added option to control PDM hide/restore state. When M300 starts/stops or enters/exits, the user has the option to have PDM hidden/restored.

08/08/03

Synchronous buffers for frequencies less than and greater than 1 Hz are now possible.

08/01/03

Added "run" command to allow user to run any application from M300.

07/09/03

Change compile options to do Pentium processor.

07/03/03

New information to store project name, flight id, aircraft type, aircraft id, operator name and comments. This is stored in a new project file (prj.300). Broadcast project information to remote clients.

07/03/03

New status/error message area in M300 main window.

07/03/03

New command entry message box in M300 main window.

07/02/03

New error message displayed when IRQ 3 is used by another process (usually Dev.ser, when the second serial port is not disabled).

07/02/03

Improved error messages with error message log under the reserved acquisition tag for errors.

07/02/03

Application log option to allow messages to be displayed or suppressed from PtTerm window.

07/01/03

New option in ImageView used to suppress text information and speed through image display.

07/01/03

New improved age display in all images displays. Image age displayed on top left corner of the image display. This allows for small vertical windows to have the age displayed.

07/01/03

New priority hog utility to test process execution under heavy loads.

06/30/03

Fixed insert tables (some tables missing). Added new lbl.300 and lst.300 (*.lst).

06/25/03

Ascii output modified to work like the new list display. Maximum frequency fixed to match.

06/24/03

New List display (lst.300). Displays data in a PtList widget complete with scrollbar.

06/23/03

Modified new window dialog to allow for more possible display types. Added pop-up text for buttons and made the buttons smaller to save space.

06/18/03

Store command messages.

06/20/03

Store error messages.

06/16/03

Secondary acquisition support (saq.300).

06/02/03

Modified buffer structure in shared memory to allow Secondary Acquisition, Command messages and Error messages to be stored.

05/07/03

Added error message for invalid factors.

05/01/03

New command to turn on/off label displays.

04/30/03

New widget label data display. This is not a regular display, but a specialized display that runs after the ASCII manager and puts data into a label widget string.

04/17/03

New variable in file properties to control the delta time to cause initialization reset. There was an issue with the Average() function resetting to zero when there was a problem in the time data (same or backwards time).

04/04/03

New pause button to pause acquisition, playback and udp. Change the way play, stop and next buffer work. Stop clears the initialization flag (play used to do this). The desired effect is to be able to hit play and next buffer or pause several times without having the board re-initialization. This will only be done after the stop button is hit.

04/03/03

Moved particle age to top left corner of image display. The age will appear when greater than or equal to 5 and disappear when it's zero (new images are coming in).

02/13/03

Fixed and improved time axis. In specific the strip chart time range can now be selected via the window properties.

02/12/03

Window grid displayed after background clear. This is done to minimize grid flicker.

02/04/03

New and improved commands for strip charts, window, position, formula and other general commands.

01/20/03

New window properties to change render flags, window state and managed flags. This allows controls for each window that will permit the user to control title, border, resize, menu, close, min, max, front most and console switch.

01/13/03

Improved acquisition to handle A/D boxes that were turned off without a major time-out. Added warning/error message for boxes that are turned off. This has been done for the Analog Input acquisition type as well as the PMX acquisition type.

01/06/03

New window commands for command table.

12/12/02

Modification to Strip Charts, X vs. Y and Probe Distribution plots to had split capability between the raw widget for the graphical display and the units area.

12/06/02

New Unfold function used to unfold Piraq 2 stagger Doppler data.

12/05/02

Piraq 2 support finally done. Acquisition events and board setup added.

10/28/02

Changed Text Manager to handle strings up to 2048 characters long.

10/25/02

Changes to security manager.

10/21/02

Started to add support for Piraq 2 board.

10/07/02

Added tcflow call to all serial port devices.

10/04/02

Security changes to use serial device key.

09/18/02

Wind Bards active on position display with full redraw capabilities.

09/16/02

Fixed several issues with the position display. The main one revolved around a crash problem when the position window was resized to a larger size. The crash was caused by a read to an invalid shared memory area.

09/13/02

Fixed tic.300, cmd.300 and pos.300 to save comments. There are some limitations on saving comments from some tables, in special the tic.300 and cmd.300 tables. Comments can only be saved properly when specified before a '.' or '#' lines. Any comments specified at the end of any text table will be lost when the M300 saves the tables.

09/12/02

New function to allow formula manager to skip a block of formulas (Skip).

08/07/02

New board to support Arinc561. Acquisition routines and board setup.

08/06/02

Triggered Command Manager (tic.300) finalized.

08/05/02

Function Key Command Manager (cmd.300) finalized.

07/12/02

New position markers to support 24x24 and also the regular 16x16 pixels.

07/08/02

Fixed OdSums() [Sums1D()] function to skip header (2 bytes) for CAS data. The counts returned where off by one bin.

06/28/02

Fixed/improved get factor code to allow access to serial data types right from the tag number.

06/27/02

Fixed 'serread' and M300 to setup serial port parameters correctly. The 'serread' utility now has new parameters to setup data bits, stop bits and parity.

06/21/02

Improved RawView utility to ignore null data when doing ASCII mode.

06/20/02

Several improvements to the Serial acquisition types. These acquisition types can now read data from the SEA Serial interface and from the serial port. They will also place data in either the Synchronous or Asynchronous buffers.

06/19/02

Commands can be parsed from the command table and stored into the system. Function keys will recognize the commands from the command table. The only part left to do is to write the command interpreter, which is coming up next.

05/10/02

In case of power failure to the M300 system, the M300 binary file did not have the best chance for keeping all the data. The M300 performed the write to the file, but the QNX file system would not update the file structure information to reflect the latest write. We found a function call in c to perform a file system synchronization on the given file (fsync). The user can now control how often this function gets called, ensuring that only a small amount of data will be lost in case of power failure. This option is available through the file properties dialog.

05/02/02

Started to add Command Manager for M300 Data Acquisition System.

05/02/02

Fixed trigger problem. The secondary trigger type was read incorrectly. There was a typo in the code, which caused the trigger type from the primary trigger to be used instead.

05/01/02

Fixed ARINC 429 transmit problem. The software was trying to write 8 ARINC words into the FIFO, but there are some hardware issues preventing the data from being transmitted correctly. At the moment we only transmit one ARINC word at a time. This is a very small performance issue for the software, but it works. Also changed the priority of the m300c module to 14. This should allow ARINC output to be processed above other more mundane tasks.

04/27/02

Fixed client name for M300 software in About dialog. Before it was fixed to display "SEA, Inc.". Now it will display the correct client name, as all the other utilities.

04/01/02

Each different window type has a different small icon to identify the window type. These icons appear in the taskbar.

03/21/02

New function STRTOD(). This is the equivalent of the C function with the same name (string to double function).

New function STRTOL(). This is the equivalent of the C function with the same name (string to long function).

New function STRTOUL(). This is the equivalent of the C function with the same name (string to unsigned long function).

03/07/02

Two new functions added AltP() and IasP(). These functions perform the inverse computation for the PAlt() and PIas() functions respectively. Both functions return pressure in mb.

03/06/02

Fixed a bug with the comment entry. If you have a project and then add an entry to the acquisition table, it would caused the system to crash when the tables were getting saved. The acquisition was not clearing the comment entry when the acquisition entry was created.

02/02/02

Fixed two bugs with the Printing. The first one was related to the window size. This needs to be different for a real printer as opposed to a file capture. Also fixed a problem with the wrong window getting printed. The global window pointer was being used and then changed, since the print does allow for background processing. We take a snapshot of the window pointer and use this instead.

02/02/02

Added support to acquisition type 34, Digital Input to handle the digital input data from the ATDAQ141X board.

Added support to acquisition type 33, Analog Input to handle the analog input data from the ATDAQ141X board.

Updated the Volts() function to support type 34 data from the ATDAQ141X board.

01/31/02

New function to control digital output CoDO(). This function will support the DT2817, the CYPDISO and the ATDAQ141X boards.

New function to support DA channels on the ATDAQ141X board. The function is called CoATDAQ141XDA().

01/30/02

New board entry for ATDAQ141X. This supports the ATDAQ1411 and ATDAQ1412 boards.

01/18/02

Added 0x7300, 0x7302, 0x7700, 0x7702 to CIP address combo box.

Modified CIP.300 to add scale and ageLimit. Still need the code to use these and new widget for the CIP window.

Update trigger to save names for trigger type. Before it only handled trigger type as an integer.

01/16/02

New prototype for Areas() function with frequency added.

01/15/02

Worked on the Median() function again. Introduced a mode parameter that will allow the user to select between old mode (area) and new mode (bins) for the median computation.

01/14/02

Fixed the problem with turning acquisition events on/off. The buffer directory size and data size need to be computed every time, before the buffer is passed to the M300 manager.

01/11/02

Added code for the Inverse Velocity Acceptance Ratio 1D Advanced functions. This means that the OdIVarAdv() and IVar1DAdv() functions should be fully operational.

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01/10/02

Changed/fixed the Median() function as per Lyle's request to fix a problem discovered by GE. All references to the size (x) have been removed from the computation of median.

01/09/02

Fixed a bug in RawView with the data mode. An invalid data mode value would cause the RawView utility to display the directory section and then it would hang with the invalid data mode. The RawView utility now checks for an invalid data mode in the RawView.cfg file. The appropriate default values are used when this happens.

01/09/02

Fixed a bug with the date from the table insert data. The system used the localtime() function from C to get the time. This function returns the month from 0-11, instead of 1-12 as expected.

01/09/02

BUG. If all synchronous acquisition events are turned off there is a problem in the data. This was tested before and found to be working, but something has changed. This will have to be fixed, but for now the solution is to have at least one synchronous event in the acquisition table.

12/28/01

Color Dialog improved with more options. The color picker tool had been changed for all displays which currently have color support.

12/27/01

Fixed bug in HTI display. The altitude/reflectivity lookup/click feature was not working. This was broken after the window shifting/grid was improved.

12/26/01

Fixed a bug for missing OdIVar() function name.

Fixed LrnPos() to be able to handle latitude and longitude with extra precision (double).

12/25/01

Fixed a bug/typo for SumsHvps() function. We had been using HvpsSums() instead in several places, including documentation.

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12/17/01

The existing IRIG-B support had to be re-engineered because all the fixes we tried fell short of providing the desired results. The new approach has the M300 reading the IRIG-B clock and then using the traditional increment from the M300 system. This was necessary to avoid jitter on the clock. The user can provide a minimum acceptable difference which the system uses to reset the M300 clock when the difference from the IRIG-B clock varies by more than this amount.

12/16/01

Fixed proxy duration to use mode R for counter 5. This was done to fix a bug with zeros and negative values for the IRQ duration and proxy latency and duration values. This problem was worst at higher system frequencies.

12/14/01

Improved file open and file new dialogs. Added '*.sea' attribute.

Text edit feature added.

Font selection improved, to use the same guidelines as the color dialog.

12/12/01

Fixed a bug. Project New, Board Setup, Insert System board, crash. `GnResourcesInit()` not called for ProjectNew() function.

Fixed a bug. Empty project, board setup, add System board. Acquisition button not enabled.

11/29/01

Fixed a bug in IArray(Tag#, ...) function for 1D Basic data type. This was actually a bug in the FaGet() function which was missing the 1D type.

Tom noticed that the rows & columns feature for the table text entry were switched. He fixed this, but now, all setup tables have the row/columns switched.

11/28/01

New function to get serial data. SrData(tag, index, count, mode).

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M300 Changes

11/23/01

Support for CIP probe. This has added a new board type for the CIP board. New function, CipData() to access the CIP data. New display for the CIP image. New acquisition events for the CIP and CIP image data. New control function to control the TAS clock, CoCipTas().

11/22/01

New function to control file output on/off, CoFile(sate).

New function to quit M300 software, CoQuit(). New function to shutdown M300 system, CoShutdown().

M300 software can now be started with a file name. This will ensure that the system runs and store the data to the given file, without user input.

11/16/01

Support for CAS probe. New board entry for CAS board type. New function for CasData() to access CAS data. New acquisition event for CAS data.

11/12/01

New board entry for CYPDISO digital I/O board. Control function CoDT2817() updated to support this board. Digital acquisition event support for this board added.

11/09/01

New board type for GPIBPCII board. This allows the M300 to interface with GPIB devices using the GPIB board entry and the new seagpib utility.

11/08/01

Somehow the /2000/msc0010/001019f3.sea file got messed up. The M300 tables were store at the beginning of the data, instead of the M200 tables. I'm not sure how this happened or which program caused it. I suspect the M300 software is somehow responsible for this. I just wanted to make a note of it for the record. If this happens again, I will have to investigate and fix this problem.

11/01/01

Added feature to save playback speed to the M300.cfg file.

09/28/01

Play, play BUG. Fixed play button to block/disable play/stop.

09/27/01

New M300 control module (m300c). This module is necessary to allow the M300 to have control/output functions without delay. The Arinc429Out() function was added.

08/10/01

Added HVPS board entry to support HVPS probe. New acquisition types to support HVPS data. New display for HVPS images. Functions to access the data HvMask(), HvTiming(), HvSums().

08/06/01

Formula table doesn't save board name.

If the board address changes, formula table doesn't know about new address.

07/18/01

Fixed index limit not set on setup for Formula Watch and Alter (FWA).

06/22/01

Fixed position problem, convert tables, file name with path. Call GnConvertFileName() function.

06/06/01

This is not a bug, but something to watch out for and add to the documentation. If the user has a project with a board that uses IRQ and then this project goes to another node, then there could be an interrupt conflict. We had a project here which had 2D Grey board using IRQ 12, from an

M200 system. This was okay for M200, but IRQ 12 is used by the mouse. So in the QNX system, this would cause input to die, which would kill mouse and keyboard input. This only happens on acquisition mode, because that's were the IRQ is used. In playback mode it was okay. Also, if a system didn't have the 2D Grey board, the acquisition for the board would get turned off and it would be okay. The only problem was if there was a board and we were in acquisition mode.

Convert bug in text table (txt.300) fixed.

Fixed a bug for the xvy with memory, mode == 1, problem on first point after redraw.

Formula -1 (F-1) fix needed.

The hsa needs to be fixed.

Convert hsatbl.txt.

TxEntryAbsolute(add window pointer).

05/14/01

Support for new board type for SeaDA board. New control function CoSeaDa() to control the analog output voltage.

05/01/01

Fixed bug with Spp300 going bad with -1 for range.

Probe file save bad? Multiple entries in probe file (repeated).

File new, when clicking on file new, there was a large size to the dialog. This was caused by the info structure, which must be zero before the call. memset(&in, 0, sizeof(...)); Fixed.

04/24/01

2D Grey acquisition would not work. 2D Grey Advanced acquisition would not work. They worked if you run playback mode first. Running acquisition for these, the system hang.

1D256 had a bug. The input instruction can't be a long. It has to be input word from the same address.

Playback didn't work on several test directories.

cnvtbls had problem with 2D Grey, Lookup and Formula tables on Ed Emery's tables. Fixed.

Limits are not working.

Trigger needs to be clear.

01/23/01

New function control D/A on CYDDA board. CoCYDDA(board, voltage, channel, mode). New board entry for CYDDA board.

New functions Rand(select), RandData(value, scale, offset, min, max), RandSeed(seed).

01/19/01

There was a bug in the median function for large number of particles in the first bins. It returned a negative median. Fixed.