HydroLynx

ScadaLynx 50386 DCU
Version Updates
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Version   Date
        Changes
2.01.09   02/13/2020
1. Fixed SDI-12 multiple concurrent command use of read data expected count.

2.01.08   02/02/2020
1. Always set add destination flag on ALERT2 packet. This will undo any previous destination address set.
2. Reset ALERT2 TDMA packet count after TDMA holdoff time expires.
3. Set high repeat range on A2X board to prevent when no repeat enabled on com port.
4. Added A2X board status report interval and offset programming.
5. Modified ALERT1 debug display of bits received when ALERT1 receive done. Debug display only when program started with /r command.
6. Fixed toolbox file double read of first block when read command wakes up 50386.

2.01.07   08/28/2019
1. Aligned version number with ScadaLynx Toolbox and 50388.
2. Added A2X communication watchdog. Force reboot if communication with A2X lost fails for 5 minutes. GPS time read every minute is used for communication test.
3. Fixed GPS time read loss that happened when power-down occurred before A2X response.
4. Added receiver, repeater, and transmit packet counts to each com port. Count can be assigned to a virtual point for radio transmit and data logging. Count are reset after a timed interval transmit or data logging.
5. Added status type assignment to virtual pointers for reset count and com port packet counts.
6. Increased ALERT2 receiver and repeater buffer size to handle larger packets from A2X.
7. Fixed ALERT2 packet size read error for larger packets.
8. Removed ALERT2 transmit hold while waiting for ALERT2 receiver to finish.
9. Fixed ScadaLynx Toolbox SDI-12 script and test execution on com ports not labeled as console type.

2.00.28   05/28/2019
1. Fixed ALERT2 TDMA time errors when frame size was not multiple of one second, for example frame length 7500 milliseconds.
2.
3. Added test to restore TDMA transmit frame after switch to replay frame. When GPS time is read, the frame length is also read. If the frame length does not match the configuration transmit frame length, it is set to the configuration transmit frame length.

4. Fixed ALERT2 test transmit command selection on console.
5. Display ALERT2 test transmit command results, debug level>0 no longer required for display.

2.00.27   03/25/2019
1. Added time change limit test to GPS time read to prevent time jump to 2029 on GPS time read error. After GPS time sync, GPS time cannot change by more than one year.
2. Fixed ALERT2 repeat on network ports.
3. Display ALERT2 repeat on monitor for ALERT2 radio port when A2X does the repeat.

2.00.26   02/25/2019
1. Added SDI-12 script feature to send D0, D1, D2 and so on until number of data values read. Use tag readDataExpected to set number of data values returned by M or C command.
2. Added SDI-12 script file SQ3.sdi for Sommer water discharge sensor.

2.00.25   02/11/2019
1. Added ALERT2 HDR support for three formats:
   1.1. ALERT2 Encoder for transmitters and LDR repeater
   1.2. ALERT2 Repeater for LDR repeater.
   1.3. ALERT2 Network for network output.
2. Added ALERT2 tab to ScadaLynx Toolbox communication port programming.
3. Fixed SDI-12 command success or failure return to ScadaLynx Toolbox.
4. Fixed test transmit data and tone command success return to ScadaLynx Toolbox.
5. Added CS475A.sdi script file for Campbell Scientific Radar Water Level Sensor.

2.00.24   08/17/2018
1. Fixed ALERT2 binary decode error for A2X receiver when unknown command received with length greater than 4 bytes.
2. Fixed ALERT2 time quality packet display.
3. Added ALERT2 encryption state display.
4. Added ALERT2 Airlink packet display.
5. Display radio port carrier detect state change even if ALERT1 radio port disabled.
6. Set ScadaLynx Toolbox address to 1 when 0 to support 50388 communication.

2.00.23   08/10/2018
7. Fixed error in Read DCU DataLog that returned not data when a single point was selected.

2.00.22   05/24/2018
1. Corrected peak wind computation error that reset peak wind speed to last computed value instead of maximum computed value over computation period.
2. Added display of wind speed, peak wind, and other computation types at sample intervals when diagnostic level set to 1 or higher. When the diagnostic level is set, the sample interval wind speed is displayed and followed by the computed average or peak wind speed.
3. Fixed alarm reset errors that caused continuous rebooting when digital point alarm reset values were not set to 0. ScadaLynx toolbox now sets digital point alarm reset values to 0 when a configuration file is saved to protect older firmware versions.

2.00.21   04/13/2018
1. Repeat control actions even if point scaled data value does not change.
2. Write data from communication packets sets event flag to use TBR reporting for remote rain gauges.
3. Added reset control command.
4. Fixed program crash caused by errors in calibration computing huge numbers.
5. Fixed rain and water level rollover for very large numbers.

2.00.20   06/22/2017
1. Added lasttimeout parameter to SDI-12 set time limit on data received on COM ports
2. Fixed two point calibration use for non-analog sensors.
3. Fixed relative offset change of ALERT2 sensor ID numbers when offset stored in configuration file.
4. Fixed ALERT1 TDMA transmit hang when slot length too short.
5. Added receive and repeat data report logging to ALERT2 COM ports.
6. Added P900SER.sdi script to provide timeout on flashing light slave data.
7. Always display station ID in log data display.

2.00.19   03/27/2017
1. Fixed ALERT2 transmit of digital status points with same sensor ID.
2. Added force reply on ALERT2 control using reply TDMA parameters.
3. Added control action to transmit current data in response to poll command.
4. Added lower limit, upper limit, at limit, and change limit alarm types for points.
5. Added programmable setpoint for lower, upper, at, and change limit alarms.
6. ScadaLynx format will store data values for points from control station ID.
7. Store digital input and output units in configuration file; display OnOff if not defined.
8. Added time sync data format; set point data time stamp to current time when transmitted.
9. Adjust control time sync time received by one second for travel time.
10. Fixed display of SDI-12 point data sample when changed on test interval.
11. Return radar water level 0.0 when sensor validity check fails.
12. Added evapotranspiration index computation (ETO) to point sampling tab.
13. Fixed error in reading configuration file names containing spaces from lynx386.ini.

2.00.18   09/08/2016
1. Count bytes transmitted in TDMA slot to prevent overrun. Buffer packets that will not fit in TDMA slot to transmit next frame.
2. Reset ALERT2 repeater encoder board baud rate to 19200 if set to 9600.

2.00.17   07/08/2016
1. Fixed display of TBR report data with decimal precision.
2. Fixed display of MMR negative report data.

2.00.16   06/20/2016
1. Buffer ALERT2 repeat packets when transmit slot full then transmit on next frame.
2. Buffer ALERT2 timed report packets when transmit slot full with repeat packets.
3. Added source and destination address to ScadaLynx packet display.

4. Display ScadaLynx packets in toolbox monitor even if for a different toolbox address.
5. Set point ALERT1 Id to ALERT2 sensor Id.
6. Added control action to sync DCU time with point data report received. This allows a time sync point to be defined that when received will update the local DCU time to the point data time set by the remote.
7. Added OnOff data type to display virtual points like digital status with On/Off data values.

2.00.15   04/27/2016
1. Read GOES radio GPS time 5 seconds before minute to sync time before sample time.
2. Added GPS sample interval to ScadaLynx Toolbox GOES communication port receiver tab. Default is 1 hour.
3. Modified install to prevent overwriting of ScadaLynx.ini file containing COM port and network configuration. Now deliver ScadaLynx.inx in distribution that is copied to ScadaLynx.ini on new installs.

2.00.14   04/12/2016
1. Fixed ALERT2 packet size computation on I/O point tab for combined digital status.
2. Added support for ALERT2 binary output on COM ports not connected to ALERT2 encoder. These ports are not sent ALERT2 configuration commands or have GPS time read. Non ALERT2 encoder ports are defined by 0 AirLink power up timer on transmit tab.
3. Do not use TDMA delay for ALERT2 output on COM ports with TDMA not enabled. Allows immediate streaming of ALERT2 binary data on COM port not connected to ALERT2 encoder.
4. Added support for MANT header modification of hop limit and append of repeater source address when repeat of ALERT2 packets through COM ports not connected to ALERT2 encoder.
5. Disabled ScadaLynx protocol detection and switch on COM port 3 to 6. This allows multiple COM ports connected to same network interface to use different protocols (e.g. ALERT2 and ScadaLynx).

2.00.13   02/12/2016
1. Fixed ALERT2 force transmit when test mode enabled and GPS time not synced.
2. Added lower and upper limits to analog, serial, virtual input Scaling tab. When lower and upper limits are defined and not equal, if scaled data value is lower than lower limit, reset to limit or if scaled data value is greater than upper limit, reset to limit.
3. Fixed ScadaLynx packet repeat through radio modem for Connect to Remote DCU button.

2.00.12   01/29/2016
1. Added TDMA to ALERT1 transmit.
2. Fixed ALERT2 Receiver Control Address range 0 to 65534.
3. Added ALERT2 packet size and limit computation on I/O point tab.
4. Label ALERT1 and ALERT2 ranges in repeat range list as A1 and A2, not DCU and ID.
5. Disable independent source address on ALERT2 encoder PCB.
6. Added TEST command to SDI-12 script. Script command terminates if test fails. For example: TEST $value != 0
7. Added Campbell Scientific Radar Water Level Sensor SDI-12 script file CS475.sdi .Test for

no stage reading error before filing data.
8. Modified Sutron Radar Sensor SDI-12 script file RLR0003.sdi to test for valid stage before filing data.

2.00.11   11/03/2015
1. Send ALERT1 concentrator packets to ALERT2 encoder after 20 reports are buffered. This allows the encoder to prepare the FEC before the transmit slot time.
2. Do not wait to repeat ALERT1 concentrator packets when GPS not locked. Only transmitters wait to transmit timed data when GPS not locked.
3. Fixed time stamp display of ALERT1 data reports in concentrator packets received.
4. Fixed DST time display for new start and end times.
5. Do not allocate buffer space for disabled COM ports.
6. Do no allocate repeater buffer space for COM ports that do not repeat on other ports.
7. Eliminated test diagnostic messages from release to reduce program size for 2/.5 PCOS.

2.00.10   09/24/2015
1. Added ALERT2 pass/block.
2. Removed ALERT2 encoder serial port programming.
3. ALERT2 repeater baud rate changed to 19200.

2.00.09   08/14/2015
1. Added ALERT2 test transmit of 5 second tone.
2. Reduced ALERT2 timed report packet size:
    2.1. Combine ALERT2 data with different time stamps in same MANT packet using the time offset sensor ID 255.
    2.2. Holdoff ALERT2 timed data reports until 1 second before TDMA time slot to allow combining of rain gage event reports with timed reports in the same MANT packet.
    2.3. Encode ALERT2 rain gage timed data reports as GSR instead of TBR to reduce timed report packet size.
3. Fixed lynx386.log create when file does not exist.
4. Fixed log file time stamp on reboot.
5. Power down immediately after watch dog timer power up without delaying 1 second for time sync to decrease stand by power drain.

2.00.08   06/03/2015
1. Added ALERT2 receive packet decoding.
2. Added ALERT2 control using destination address.
3. Fixed ALERT2 multiple hold off packet error for GPS drift.

2.00.07   04/09/2015
1. Save data from ScadaLynx packets in local point with matching point ID.
2. Added serial port repeat in ASCII.

2.00.06   02/27/2015
1. Fixed ALERT2 timed transmit packet error that used different packets for each sensor.
2. Fixed ALERT2 encoder serial port programming on startup.

3. Fixed DCU offset on DCU page to support numbers larger than 32767.
4. Added timed offset and random check box to ALERT2 transmit tab under TDMA parameters. When used, timed reports are sampled on time but transmit in the TDMA time slot for its time frame after waiting the timed offset interval. The random check box makes the timed offset wait a random number of seconds from 0 to the timed offset; the transmit still occurs at the proper time slot in the time frame.
5. Changed TMDA defaults to have Slot Centered.

2.00.05   12/18/2014
1. Fixed ALERT2 configuration programming for repeater firmware since it returns the MANT IND source address command when the general source address is read.
2. Restored DCU offset to DCU page to add offset to DCU ID switches. This lets users set an ALERT2 network ID as the offset, e.g. 20000, then add ID switches 0 – 9999.
3. Fixed test transmit button to transmit on ALERT2 when ALERT1 port function is receiver.

2.00.04   11/18/2014
1. Fixed loss of timed reports after and rain gauge event.

2.00.03   10/01/2014
1. Fixed analog sensor power on time wait for multiple points on same analog input.

2.00.02   09/17/2014
1. Fixed ALERT wind event transmit after reading wind direction.
2. Display wind direction when event wind run displayed.
3. Fixed program start time in log file.
4. Added serial port output transmit format that displays point data as:
      MM/DD/YYYY HH:MM:SS ID DATA UNITS

2.00.01   09/11/2014
1. Fixed SDI-12 reading assignment to point data when unit ID=0.
2. Fixed logging to store station ID and sensor ID for ALERT2 stations.
3. Log and transmit combined digital status bits with same sensor ID.
4. Buffer ALERT2 data reports on startup until GPS time sync or timeout.
5. Do not report GPS status on startup until GPS time sync or timeout.
6. Set GPS sync timeout with ALERT2 receiver sample period, default is 15 minutes.
7. On GPS time drift transmit timed data reports in frame following sample time. This prevents random TDMA transmissions colliding with GPS time synced stations that have the same timed report interval.
8. Fixed used of station and source address ID numbers > 32767.
9. When DCU ID changed, show button to update ALERT2 source address.
10. Do not reset point timers on minor GPS time updates, prevents wind speed reset to 0.
11. Fixed Read DCU Data Log ALERT2 point ID selection.

2.00.00   06/24/2014
12. Added ALERT2 transmit and receive protocol.

1.32.19   04/09/2015
1. Save data from ScadaLynx packets in local point with matching point ID.
2. Added serial port repeat in ASCII.

1.32.18   11/18/2014
1. Fixed loss of timed reports after and rain gauge event.

1.32.17   10/01/2014
2. Fixed analog sensor power on time wait for multiple points on same analog input.

1.32.16   09/17/2014
1. Fixed ALERT wind event transmit after reading wind direction.
2. Display wind direction when event wind run displayed.
3. Fixed program start time in log file.
4. Added serial port output transmit format that displays point data as:
    4.1.1.   MM/DD/YYYY HH:MM:SS ID DATA UNITS

1.32.15   06/24/2014
1. Fixed control condition logic for control off action for flasher control from level stations.
2. Fixed toolbox monitor display to ignore blank lines caused by data tab clock update.

1.32.14   04/10/2014
1. Fixed toolbox timing on 1200bps microwave modem packets for Windows 7 USB to serial.

1.32.13   04/29/2013
1. Added Alternate ID for Modbus register.
2. Removed Modbus start register from com port receiver for Modbus protocol.
3. Added timestamp to Status bar.
4. Data page status bar time stamp updates every second.
5. Calibrate virtual inputs when raw data set by an input point.

1.32.12   03/11/2013
1. Changed GOES data place holder length to one / when data missing for sample.

1.32.11   10/23/2012
1. Fixed error in displaying long Orbcomm data messages.
2. Increased wait for Orbcomm data message ACK for long messages.
3. Changed point reporting scheme pick list to be numerically sorted.

1.32.10   10/01/2012
1. Fixed combined Alert transmission of digital input and output points with same point ID.
2. Fixed display of digital input and output point data on toolbox data tab for read all point data.
3. Fixed display of digital input and output point data on sample, test, and timed intervals.

1.32.09   09/12/2012
1. Fixed premature GOES data string formatting for points with computation intervals.

1.32.08   06/06/2012
1. Fixed control condition testing of more than one point.
2. Fixed toolbox transfer of control condition parameters to 50386 DCU.
3. Changed continuous PCOS digital input and output sampling so time of last sample is not changed unless the data value changed. This prevents multiple packet transmits on satellite radios.

1.32.07   04/02/2012,04/22/2013
1. Do not turn off sensor power on power down if always on.
2. Added timestamp to Status bar.
3. Data page status bar time stamp updates every second.

1.32.06   01/26/2012
1. Fixed timeout on serial sensor sampling that persisted for next sample.
2. Fixed print of point computation type and compute from point.
3. Fixed error that prevented toolbox data tab display of point data after read.
4. Fixed toolbox reconnect after reset with remote inter-packet delay.

1.32.05   12/16/2011
1. Fixed ADC analog sensor sample error caused by uncleared done flag.
2. Fixed serial sensor sampling on multiple serial ports.
3. Fixed ScadaLynx Toolbox port add operation to copy previous port parameters.
4. Fixed reconnect errors after reset by increased delay before reconnect.
5. Fixed time sync from Toolbox or base station.
6. Eliminated connect read version retries by adding a short delay after connect.
7. Eliminated redundant display of sensor sample results if scaled data value not changed.
8. Added serial sensor script command execution from console and ScadaLynx Toolbox.

1.32.04   11/15/2011
1. Prevent powerdown when 1 second from TDMA transmission to allow early wakeup for transmit preparation.
2. Prevent powerdown when event report pending. Allows GPS sync state change to transmit before powerdown.
3. Fixed GPS sync state change reporting to support event reports.
4. Fixed multiple GPS sync starts when one already running.
5. Fixed program hang when sensor power turned off during GPS sync.
6. Fixed GPS start of time sync packet which speeds up synchronization.
7. Added GPSSER.sdi script for GPS sync state sampling and reporting.
8. Added lastvalue flag to SDI/Serial sensor scripts to return last value of point. This allows GPS sync state that is set by the GPS timed polling to be filed by the script file.
9. Fixed SDI-12 communication timing to work with Keller SDI-12 PT.
10. Added Keller SDI-12 PT script file.
11. Fixed SDI-12 concurrent measurement samples to start measurements on all sensors. Do not wait for SDI-12 concurrent measurement to finish before requesting other sensors measurements.

12. Fixed analog sensor samples to do sample after individual sensor power on wait met. Do not wait for first sensor sampled to have its sensor power on wait met.
13. Fixed Orbcomm Rainfall event reporting so first event is transmitted immediately and additional tips are transmitted every 5 minutes.

1.32.03   09/19/2011
1. Added Orbcomm Quake 1000 radio support.
2. Added multiple sample reporting in reporting scheme.
3. Added reporting format in reporting scheme.

1.32.02   08/02/2011
1. Fixed ScadaLynx packet display error loop when data report NAK received.
2. Fixed ScadaLynx test transmit data premature radio key.
3. Fixed ScadaLynx packet report to station use.
4. Added HyperTerminal program to installation for Windows 7 support.

1.32.01   06/16/2011
1. Merged 1.31.08 and 1.31.09 version changes with 1.32.00.
2. Fixed DI event reporting for DI:9 – DI:12.
3. Fixed toolbox field edit spin control use for Windows 7.
4. Separated test and event report transmit holdoff timers.
5. Added event force in report action to override event report transmit holdoff timer.
6. Added timeout alarm action.
7. Added control actions: set, none, add.

1.31.09   05/24/2011
1. Fixed vector wind direction computation when wind speed is 0.
2. Combine ScadaLynx data reports into one packet when added to holdoff buffer.
3. Fixed ScadaLynx packet repeat misdirection when only source address in pass/block list.
4. Fixed SDI unit address stuck at 0.
5. Changed SDI-12 default receive marking limit to 7.000 millseconds.

1.31.08   02/15/2011
1. Fixed repeat talkback when duplicate reports received in same second.
2. Added serial input port point script logic.
3. Repeat ScadaLynx packet if either source or destination is in pass/block list.
4. Fixed 5th order scaling equation.

1.32.00   04/19/2010
1. Added GPS time sync on COM2.
2. Added ALERT transmit TDMA.
3. Added logging of repeated data as well as received data.

1.31.07   11/02/2009
1. Alarms override transmit holdoff timers.
2. Fixed test radio crash when no communication ports defined.

1.31.06   08/05/2009
1. Fixed read data failure caused by transmit buffer overflow.
2. Append multiple point data reports to the same packet.
3. Limit multiple point data report packet size to < 512 bytes.
4. Force point read data completion after multiple point read packets.
5. Clear modem line before dialing from toolbox to eliminate no carrier false errors.

1.31.05   02/13/2009
1. Fixed receive hang when corrupt ScadaLynx format headers had very large packet lengths.
2. Transmit ScadaLynx preamble and data packets together to prevent microwave drop outs.
3. Remove left over temporary files on program start.
4. Disable point samples during file downloads.
5. Added new SDI-12 script file commands to set default sample and set value commands.
6. Added set value command selection for SDI-12 scripts to be used by Toolbox Data page.
7. Send data value to SDI-12 sensor when changed on Toolbox Data page.
8. Send data value to SDI-12 sensor when set on console using Test, Set raw or scaled data

1.31.04   02/23/2008
1. Fixed use of scaling equation when computing wind speed.
2. Fixed error of continued reporting when all point reporting tests were deleted.
3. Added display of input voltages when doing a two point calibration.
4. Fixed test page display field width so mVdc input voltages can be fully seen.

1.31.03   09/11/2007
1. Fixed warning that toolbox version was out of date.
2. Do not display SDI-12 retry timeout after wait completion.

1.31.02   07/25/2007
1. Fixed digital input alarm triggers for high and low states.
2. Fixed ScadaLynx Toolbox to work with different screen DPI settings.

1.31.01   04/27/2007
1. Fixed ADC calibration to work application program versions that do not support voltage range.

1.31.00   03/20/2007
1. Added Security access to control DCU programming.
2. 50386 SLB Test button and ScadaLynx 50386 Toolbox Test Transmit Data button transmits test data on Scada radio when ALERT radio disabled.

1.30.00   06/29/2006
1. Added ALERT transmit feature to add a delay between ALERT data packets. This modification was not successful and was abandoned.

1.29.20   02/13/2007
1. Fixed loss of pending ALERT radio timed transmissions when DCU time set.

2. Do not display point data samples unless test or transmit time unless debug on. Eliminates unnecessary displays for frequent computations such as wind vector.
3. Added application restart support to toolbox for network connections.
4. Network and telephone number connection parameters saved in ScadaLynx.ini file.
5. Fixed point input assignment in toolbox when point moved.
6. Fixed table read when table added to existing point.
7. Fixed rain gauge data count read from NVRAM on program start.
8. Fixed error on GOES radio port that sent ScadaLynx error messages to radio.

1.29.19   01/12/2007
1. Added timed and event transmit hold timers with random feature.
2. Fixed error that logged timed data with time of last data write or counter reset.
3. Fixed error in computing next counter reset time. Previous version reset time to 12/23.
4. Added DCU file browse, read, and delete in toolbox. Previous versions only had file send.
5. When sending configurations to connected DCU, check if configuration, script, or table files are up to date. If not up to date, download files. Previous program versions always downloaded files.

1.29.18   12/11/2006
1. Synchronize DCU time with GOES radio GPS after each message sent to radio.
2. Removed Null padding at end of GOES timed messages.
3. Added random reporting baud rate to GOES Signal Engineering radio setup.
4. Added repeat of timed data in GOES Signal Engineering radio setup.
5. Added repeater talkback test selection: ID and Data or ID only.
6. Added ADC voltage input range selection: 0-5Vdc, 0-1Vdc, 0-100mV, 0-55mV, 0-25mV.
7. Added ALERT transmit high and low tone feature. Previous transmit tone button renamed to Transmit dual tones.
8. Added transmit data, tones, and no tone to ALERT port transmit setup.
9. Added repeated format translation from ALERT to ScadaLynx and ScadaLynx to ALERT.
10. Fixed Toolbox error that crashed program when all controls were deleted.

1.29.17   11/14/2006
1. Added support for multiple input commands in SDI-12 scripts.
2. Fixed addressing of SDI-12 units when multiple concurrent reads are used.
3. Fixed program hang on multiple SDI-12 reads that would cause watchdog timer reboots.
4. Added Test script command to halt script execution on errors before data is filed.
5. Force sensor power off on command even if program thinks power is already off. Corrects problem of losing sensor power on state when all parameters are sent by the toolbox software.
6. Eliminated divide by zero error on reading wind direction when VREF is not connected.
7. Eliminated divide by zero error if communication port baud rate set to zero.
8. Fixed Test Transmit message display for GOES transmitters.
9. When a com port uses RTS to request transmit and waits for CTS, continue with transmit on CTS timeout unless flow control set to RTS/CTS. Required for GEOSAT radios.

1.29.16   08/18/2006
1. Fixed Send All Parameters error that disabled report actions for COM port 2 and above.

2. Added support for GOES Signal Engineering radio.
3. Added test transmit alarm data feature.
4. Added timeout to clear samples that never complete and prevent the DCU from powering down.
5. Fixed error that prevented a point sample after a data event or data write.
6. Fixed peak wind computation so max wind speed saved for computation interval.
7. Discard duplicate logged data reports.
8. Fixed non-console serial port receive error when a packet matched the start of a ScadaLynx leader.
9. Increased wait time on toolbox when a write configuration command is sent to the 50386 DCU. This was done to prevent command retries while waiting for the flash write to finish.
10. Disable MODBUS communication status display until diagnostic level set to 1 or greater.

1.29.15   05/03/2006
1. Added ALERT complementary pair transmission for alarm reporting. Alarm format is set on port transmit tab. Alarm format is used when a point report action has alarm format selected.
2. Added use alarm report repeat option to report action. Alarmed reports will be repeated at the test interval.
3. Control actions are based on point number instead of point type and type number.
4. Added control conditions that must be met for a control to be performed. Control setup is now divided into two tabs: Actions and Conditions.
5. Fixed analog sensor sampling error that caused continuous sampling loop on ADC error.
6. Fixed exclusive alarm checking to be greater or less than limit instead of greater than or equal or less than or equal to limit.
7. Added (rating) table file selection to point scaling page. Table must contain comma or tab separated pairs of data.
8. Fixed skip of point sampling caused by point data writing.
9. Point sampling time length now uses a millisecond timer instead of a seconds timer. This fixes error in shortened point sampling for one minute periods.
10. Fixed error in wake up when radio carrier detect received during power down cycle.
11. Added wind gust sampling using Sub mode B to H425A SDI-script file.

1.29.14   10/26/2005
1. Removed delay on power up while waiting for millisecond time sync. This allows ALERT radio data receive to work better on weak signals. The Pulse Counter read from the PIC is delayed until the millisecond time is synced to keep the peak wind computation accurate.
2. Examining a UD counter reset time in the toolbox no longer prompts to save the file when the reset time is not changed.

1.29.13   08/23/2005
1. Fixed reporting of SDI-12 sensors when concurrent command used. Previous versions only reported first sensor.

1.29.12   08/04/2005
1. Fixed PCOS Digital Input and Output read data display on console and toolbox.
2. Do not change configuration files for a control command until output pulse timers are done.

1.29.11   06/10/2005

1. Added support for SDI-12 concurrent measurement command. Point sampling continues after a concurrent command is sent. The sensor is sampled later after the concurrent wait timer expires.
2. Wind speed is averaged over the computation period not just the sample period. Peak wind is computed each sample period.
3. Peak wind and wind speed computation prescales are not written to the IOPIC. This allows different prescales for peak wind and wind speed from the prescale for the wind run.
4. Terminate SDI-12 scripts when input requested for point sample. Eliminates program hang when an improper SDI-12 script command is assigned as a point=s measure command.

1.29.10   05/28/2005

1. Fixed peak wind computation by tracking time to the millisecond.
2. Wind run will read the wind direction even if the point is not defined.
Analog and serial input points can have their own sensor power on times defined. This overrides the sensor power wait defined in DCU settings.
3. Writing data to a point will not cause a report to log or transmit unless the change criteria is met.
4. Fixed digital change alarm.
5. Fixed error that prematurely terminated logged data reads when redundant packets were buffered by the toolbox program.

1.29.09   03/30/2005

1. Fixed alarm reset error that used upper limit instead of upper reset.
2. Added a separate control off pulse timer.
3. Control reset actions cancelled if following active control is still on.
4. Toolbox data page display is updated when point configuration is changed.
5. Toolbox sends control files to the DCU when controls are sent.
6. Toolbox remembers when a control file or point script is sent to a DCU to eliminate repeat sends.

1.29.08   03/01/2005

1. Fixed problem with unsquelched Alert receive data that caused a program reboot.
2. Fixed ASend SDI-12 commands@ text in help.
3. Fixed SDI-12 reading assignment to Sutron 8210 data.
4. Clear data success flag on Sutron 8210 data not received.
5. Increased toolbox window size of control file name to prevent file name extension truncation.

1.29.07   12/06/2004

1. Reset PIC watchdog timer while searching for logged data.
2. Save multiple time positions in logged data files to expedite time search.
3. Display point ID data bit number when transmitting.
4. Display Alert receive framing errors only when debug level is 1 or greater.
5. Increase toolbox read logged data wait timer by 15 seconds for first request.

1.29.06   10/27/2004
1. Added pulse timer in seconds to digital output controls.
2. Added transmit repeat for alarm transmissions.
3. Fixed receiver check of talk back data reports to prevent identical reports received in the same packet from rejecting all but the first report. The receiver timer is used to determine if a report is in the same packet. Identical reports received after the receive timer expires are considered to be in a different packet and so are still rejected by the talk back logic. This fix allows multiple alarm reports to pass through a repeater.
4. Set event flag when point data value written.
5. Check alarms if event flag set even when value does not change.
6. Send modem initialization commands to modem on com port initialization.
7. Alarms re-triggered after reset even if value does not change.
8. Toolbox two point calibrations now copied to point scaling when OK clicked.
9. Toolbox SDI-12 sample script command is no longer reset when other script commands are used for testing.
10. Toolbox sets a default retry timer of 5 seconds for com ports added to program.
11. Toolbox deletes point control actions when a point is deleted.
12. Toolbox displays received data report message only if monitor diagnostics are on.
13. Toolbox fixed problem that prevented reporting schemes from being sent to DCU.

1.29.05   08/23/2004
1. Do not write INI file if configuration file name is blank. Return error if write command from toolbox.
2. Toolbox saves file when DCU identification is sent.
3. Default to Save As when Save selected with blank configuration filename.

1.29.04   06/29/2004
1. Fixed error in log data wait for communications to finish before logging.
2. Fixed error in receiving single point test and alarms that prevented more than one test or alarm from being sent successfully.
3. Prevent BIOS crash when receiving data and switching configuration files.
4. Display power down and not done diagnostic messages on monitor.
5. Do not increment reset count when switching configuration files.
6. Quit alert data transmit if write error, prevents hang in alert transmit loop.
7. Toolbox fixed raw data spin increment for SI and VI point types.

1.29.03   06/10/2004
1. Fixed Alert receive crash caused by continuous unsquelched radio noise.
2. Send diagnostic messages to connected ScadaLynx Toolbox as plain text. Previously diagnostic text messages were only sent to terminal program console connection.
3. Fixed error that prevented read point data requests from completing.
4. Rename older version log and data files to new version name when possible. If new version log files exist, delete older version log file names.
5. Limit log file length to 64Kbytes. Delete log file if it gets too long then create new file.
6. Toolbox fixed read point data command so it waits for the success message.
7. Toolbox fixed data updating on point and data pages.

8. Toolbox fixed re-display of points on data page after changing configuration files.
9. Toolbox reports actions are now counted even if not enabled in the configuration file.
10. Toolbox added display of version patch X.XX.XX Patch in Help/About.

1.29.02   05/03/04
1. Toolbox fixed program hang on startup due to print page margin initialization.
2. Toolbox fixed error in searching for point tests or alarms.
3. Toolbox eliminated unused report test read from configuration files.
4. Toolbox forces a page display update when parameters read from DCU.
5. Toolbox executes a real all instead of a single read on points, reports, controls, and port tabs if there are no entries on the page.
6. Toolbox displays an error message asking for you to select if no points, reports, controls, or ports selected for a send, and send all not checked.
7. Toolbox only sends report actions that are defined.
8. Toolbox clears ALERT receive control parameters by default.
9. Toolbox added communication support for application versions before 1.29.00.
10. Toolbox repeater ranges are now unlimited. Toolbox only sends defined ranges.
11. Toolbox will not repeat send an SDI-12 script files to a DCU after it has already been sent. File name test is not case sensitive.

1.29.01   10/12/2003
1. Toolbox changed all RTU references to DCU.
2. The Toolbox DCU connection is no longer terminated when a new configuration file is opened.
3. Toolbox added spin control to calibrating voltage object on test page.
4. Toolbox forces a re-display of active page if any changes detected.
5. Toolbox eliminated use of Private Profile logic to read and write configuration files to speed up file I/O.
6. Toolbox fixed program crash that occurred when program was terminated while the monitor display was active or when incoming data tried to update the monitor after it was closed.
7. Toolbox now remembers individual folders for configuration, data, SDI script, text and transfer files.
8. Toolbox control actions are no longer limited to 16. Only defined control actions are sent to the DCU.
9. Toolbox does not display the report to DCU and telephone number for log data report action.
10. Toolbox displays data units for digital points.
11. Toolbox does not send point, report, control or port delete commands to connected DCU when deleted on toolbox. Toolbox now asks if user wants to send all points, reports, controls or ports to connected DCU after a delete.
12. Toolbox port display refreshed when port identification changed.
13. Toolbox updates counter reset interval when point changed. Hide counter reset time if reset interval is none.
14. Toolbox GOES transmitter type selected in transmit format instead of port function.
15. Toolbox uses returned station number after a connect for all future communication until a disconnect. This allows changes to the DCU number to be sent to the connected DCU.

1.29.00   09/12/2003
1. New version release renamed application program files from scda5096 to lynx386.
2. Use short sensor power on wait (100ms) for battery test, analog input test, ADC calibration, and SDI-12 commands.
3. Sensor power on command does not wait for sensor power on wait timer to expire.
4. Toolbox added test buttons to Goes Seimac Transmitter Setup.
5. Toolbox forces a configuration write after all sends.
6. Toolbox forces an INI file write after Identification send or Send-all.
7. Toolbox repeater ranges are no longer limited to 100. They are now unlimited.
8. Toolbox added Replace and Delete buttons for report action editing.