

ReadMe.TXT for OptoIntegration Toolkit - Modbus (OPTOINTMB)

3-12-2008

Libraries R3.1c and R3.2b were consolidated into one library: R3.2c. All users of the toolkit version 3.1 can safely use library version R3.2c, regardless of the version of OptoControl or controller firmware.

Software/Firmware compatibility note:

When using OptoControl 2.2, you can use firmware 2.2 or 3.0 only.

When using OptoControl 3.0, you can use firmware 3.0 only.

When using OptoControl 3.1, you can use firmware 3.1, 4.0, or 4.1 only.

When using OptoControl 4.0, you can use firmware 4.0 or 4.1 only.

When using OptoControl 4.1, you can use firmware 4.1 only.

11-06-2006

Updated version numbers are R3.1c and R3.2b.

Updated the MB_TOResponse word to handle the possible problem of older-style radios not waiting for the carrier signal to stabilize before transmitting the message. In this case, there may be some garbage characters at the beginning of the response message. The change will clear the receive buffer when invalid characters are received, and continue processing the incoming message. If the valid portion of the message is not received within the turn-around timeout period, it will process an error.

3-10-2000

The current release of the OptoIntegration Toolkit - Modbus is still R3.1a. However, the Modbus Library file has been updated.

Version R3.2a of the library file is released for users of OptoControl firmware versions R3.1a or newer. Any customers using OptoControl firmware versions R3.1a or newer must use this version of the library file (ModbusR3.2a.lib) as well as OptoControl R3.1a.

Version R3.1b of the library file is released for users of OptoControl firmware versions R3.0b or older. Any customers using OptoControl firmware versions R3.0b or older must use library file version R3.1b (ModbusR3.1b.lib) or older as well as OptoControl R3.0 or older.

One of the things we did in 3.1a was to increase the object type from 16 to 32 bits, which means each object's descriptor increased in size by two bytes. Normally, the controller handles its own allocations, so any changes made in the structure of program objects is handled automatically. However, because subroutines get allocated by OptoControl, OptoControl itself has to know the proper descriptor sizes for every object. Since the previous version of OptoControl (R3.0b) didn't know about the size would be changing in the next version (R3.1a) of firmware, it is not compatible with OptoControl firmware R3.1a (when subroutines are used).

One thing to note when you upgrade -- even though OptoControl R3.1a issues a message saying the strategy will be changed to the 3.1 format, it is only referring to OptoControl's internal strategy database, not the file that gets downloaded to the controller. Because of this, you have to do a

"Compile All" to force the allocations to be modified, followed by a download of the updated strategy.

Changes made to the library file (no changes were made to the subroutines):

- A 5 mSec delay was added prior to turning off RTS for ASCII transmit. This was done to correct a problem with a garbage character being sent at the end of the message due to turning off RTS too quickly.
- OptoControl firmware version R3.1a changed the string object memory structure requiring a change in the library. Without a corresponding change to the library, diagnostic strings would not be available.
- Reduced the size of the SDK transmit and receive buffer arrays from 32,000 bytes each to 4,000 bytes each to accurately reflect the total storage needed for servicing a maximum of 4 serial ports (0 - 3). This reduces the total memory used by the Modbus library file by 56,000 bytes.
- Fixed a previous omission in the ASCII command MB_Receive for handling (the rare) situation where a cr lf (EOM) was received without any : (SOM).
- Added logic to the MB_RTU_Transmit command to make sure length of data in the buffer is valid before transmitting. This is an unlikely possibility.
- Changed logic in RTU command MB_Calc_RevCRC to prevent a long loop if the buffer is empty. This might have exhibited the symptom of "hanging". This is another unlikely possibility.

Note: Version 3.0 of the toolkit was a complete re-write. This was done to improve the ability to troubleshoot and maintain the toolkit.

5-21-99

Version R3.1a is a maintenance release.
All work for R3.1a was done with OptoControl versions R2.2a and b.

Changes from 3.0 to R3.1a include:

- Changed colors of all blocks to make the text easier to read, both on the screen and in print.
- Changed library file to prevent CRC calculation on invalid messages (too short).
- Changed library file for RTU silent period to take into account timer resolution issues.
- Changed RTU transmit/receive logic in all Master subroutines to use turnaround timeout setting. The turnaround timeout value is set when the MBMASTER CONFIGURE MODBUS PORT subroutine is used.
- Changed MODBUS SLAVE (RTU mode) subroutine to properly recognize and process broadcast messages.
- Changed MODBUS SLAVE (RTU mode) subroutine to properly recover from messages that are too large.