York Equipment Integrations
Service Information Bulletin

Date: 09/24/2009 REV: SBEI_010E
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To: JCI Field Service Organization

Subject : Native **BACnet** and native **Modbus** RTU Communications Setup of the YCAL/YCUL /YCWL/ YLAA with IPU II (031-02630-xxx) board coupled with a IPU II I/O Board (031-02550-000)

BACnet MS/TP Setup

STEP 1: Connect your BACnet MS/TP Network to Port 1 on the IPU II I/O Board (031-02550-000) as shown on ***Diagram 1***

STEP 2: Set up YCAL/YCUL/YCWL Port 1 (P1) for BACnet Communications .

To access the communication parameters

1: Press the PROGRAM key once,
2: Next press the DOWN ARROW key four times
3: Then press the ENTER key until you arrive at the (P1) Port 1 settings.

Now set:

1: DE Modifier Address (number entered is multiplied by 100) :Set as required by network
2: DE Modifier Offset (number entered is added to DE Modifier Address). Set as required by Network (see note 1 below)
3: P1 Protocol : Set to BACNET
4: P1 Manual MAC Address : Set to 0-127. This device acts as a Master
5: P1 Baud rate : Set as required by network
6: P1 Parity : Set to NONE
7: P1 Stop Bits: Set to 1

NOTE 1: The BACnet DE Instance is determined by adding the (DE MODIFIER ADDRESS x 100) with the DE MODIFIER OFFSET. However if the DE MODIFIER OFFSET is set to a -1, the BACnet DE Instance will now be determined by adding the (DE MODIFIER ADDRESS x 100) with the *P1 MANUAL MAC ADDRESS* setting. DE Instances should be limited to values between **1** and **4,194,303**. It is recommended not set the MAC Address of the chiller to 0 as this has been reported to cause issues in the past.

NOTE: You must always cycle power to the Microboard following port setups.

if MODIFIER OFFSET is < 0 than DE INSTANCE = (DE MODIFIER ADDRESS x 100) + MANUAL MAC ADDRESS
if MODIFIER OFFSET is > 0 than DE INSTANCE = (DE MODIFIER ADDRESS x 100) + MODIFIER OFFSET

the Chiller MAC Address should NEVER be set to 0 !

MODBUS Setup

- ***NOTE!!:*** *Native Modbus functionality is available only on IPU2 based equipment running version* ***MMC.13.03.xx*** *PN 031-02755-001 (released 3/17/2008) or later. If you require Modbus functionality and your firmware version is prior to this release, you must upgrade your 031-02755-001 firmware. Please contact the Chiller Equipment Service Technical support group for assistance on upgrading chiller firmware.*

STEP 1: Connect your Modbus Network to Port 2 on the YCAL IPU II I/O Board (031-02550-000) as per ***Diagram 1***

Note: You have the option of Modbus RS232 or RS485 communications for port 2 communications. Port 2 communications can be directed to either TB2 or TB3 (see ***diagram 1*** *for wiring)*

STEP 2: Set up YCAL/YCUL/YCWL/YLAA Port 2 (P2) for Modbus Communications .

To access the communication parameters

1: Press the PROGRAM key once,
2: Next press the DOWN ARROW key four times
3: Then press the ENTER key until you arrive at the (P2) Port 2 settings.

Now set:
DE Modifier Address: Set to 1
DE Modifier Offset : Set to 0
P2 Protocol : Set to Modbus Server
P2 Manual MAC Address : Set to 0-127 (as required by network)
P2 Baud rate: Set to 19.2K (or as required by network)
P2 Parity: Set to NONE (or as required by network)
P2 Stop Bits : Set to 1
P2 Hw Select Bit: Set to RS-485 *or* RS-232 (as required by site network)

NOTE: You must always cycle power to the Microboard following port setups.

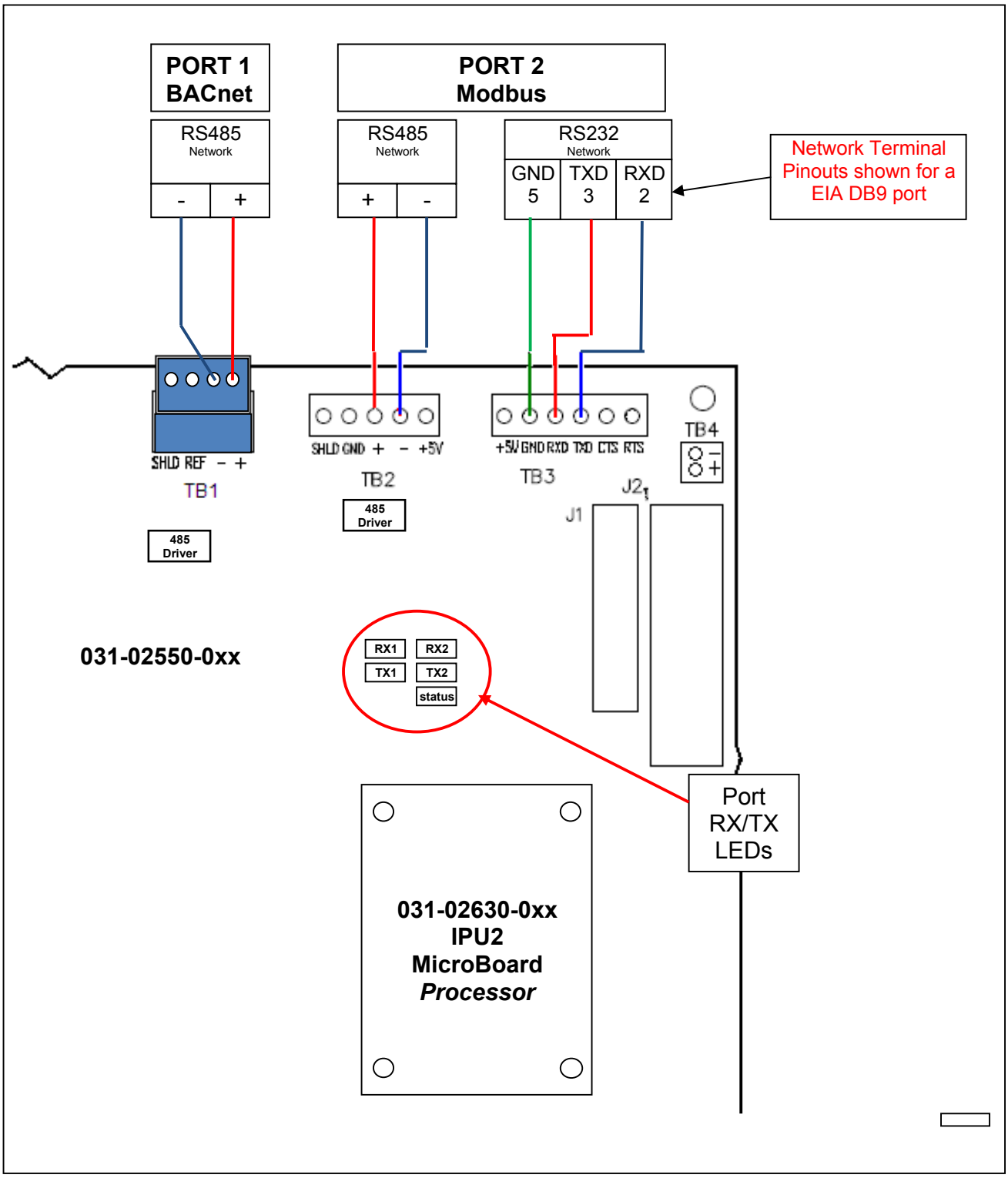
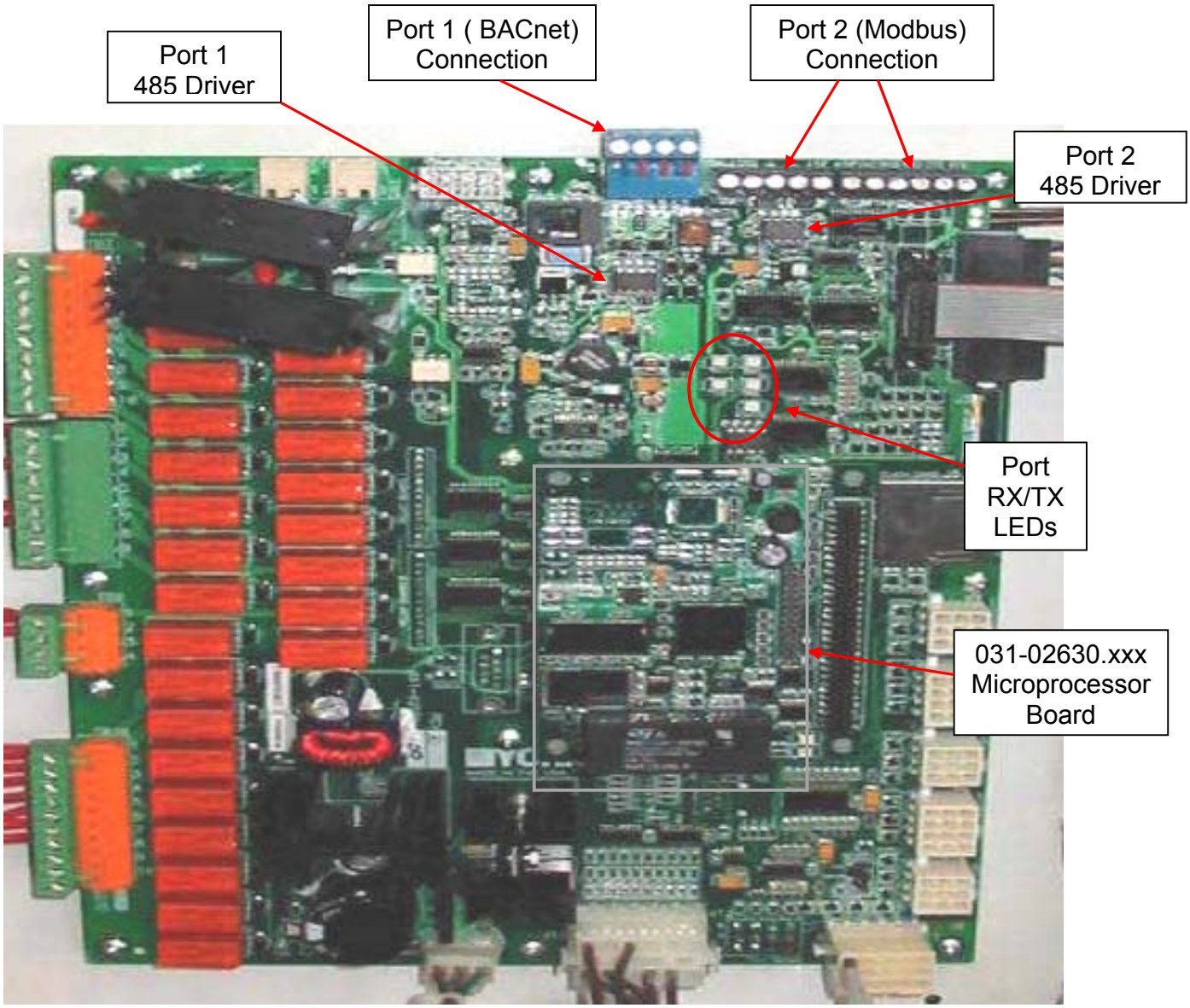


Diagram 1



Actual photo of 031-02550-xxx showing locations of Port 1 and Port 2

For more details on how to operate the Equipment User Interface please contact your local JCI Equipment Service Representative and ask for the Equipment IOM (Operating Manual). Please have the model number of the unit at hand as well as the controls version of the firmware currently operating on the equipment.