

Technical Bulletin

Bulletin No. 031 Rev B
Subject: Field Controller Phone Communication Failure Checklist

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Product Applicability: Evolution 2000 Central Control System with Evolution DX2 Controllers

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1.0 Re-entering Submaster address and phone communication mode DX2 Controllers.

Is Submaster power on? _____.

Re-enter Submaster address and phone communication mode. The key sequence to press is shown below.

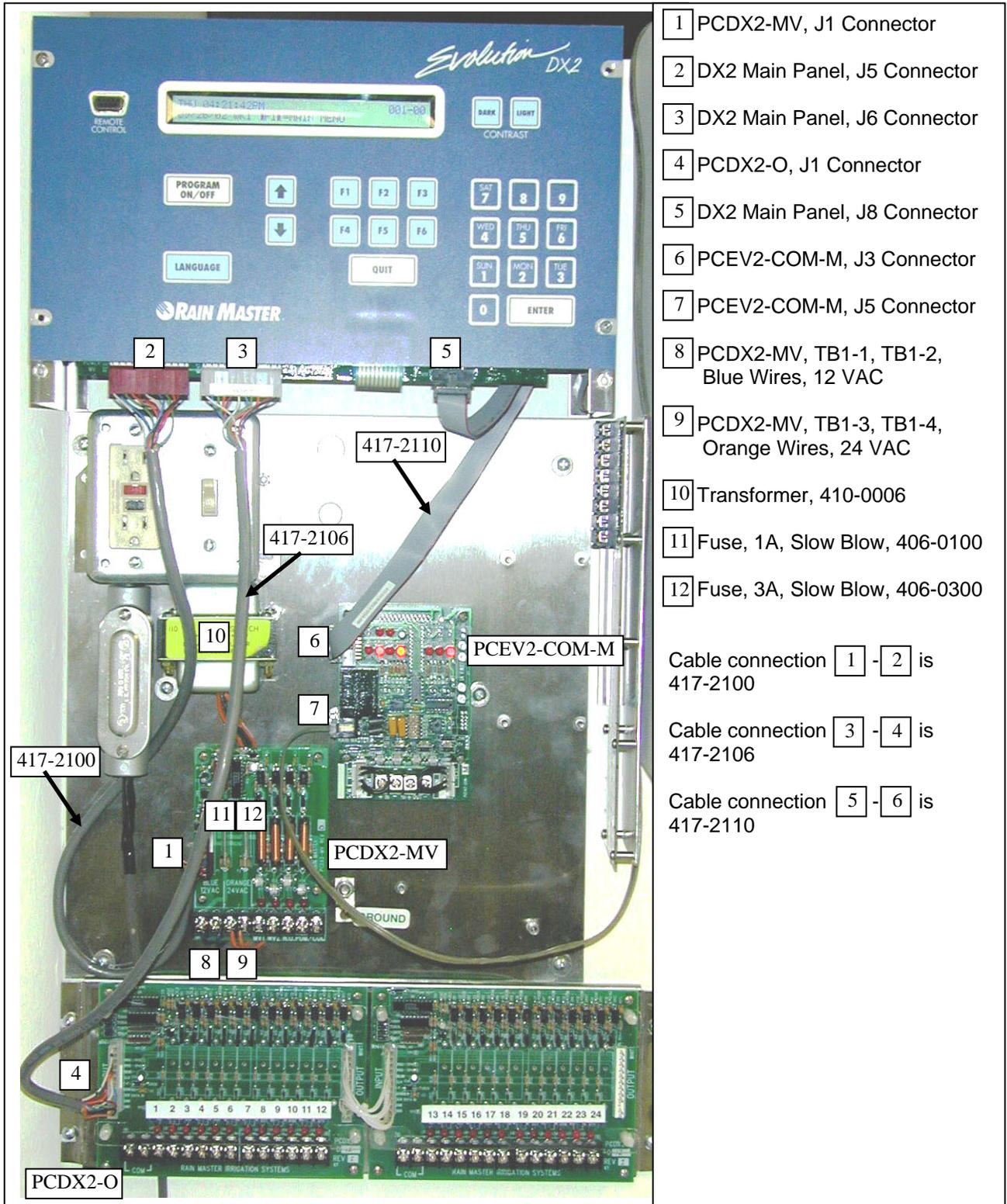
- A) = Pressing QUIT key will ensure you are starting at the base screen.
- B) = Main Menu
- C) = Set Up
- D) = Controller
- E) = Configuration
- F) = Acts As Submaster
- G) You must now select the appropriate "Submaster Communication Type" for your Satellite, = Radio/Wire, = Phone, = Trunk. Select F2 = Phone. _____.
- H) You must now enter the appropriate "Address" for your Satellite. Enter an address in the range of (0-255) and then press . The base screen will be displayed. _____.

2.0 Verify all component connections for DX2 Controllers.

Refer to FIGURE 1 and verify ALL component connections.

- A) Connection #1 = PCDX2-MV (Master Valve Board), J1 connector.
Connection #2 = Main Panel, J5 connector.
Verify connection #1 to Connection #2 using Rain Master Cable Part Number 417-2100. _____.
- B) Connection #3 = Main Panel, J6 connector.
Connection #4 = PCDX2-O (Station Output Board), J1 connector.
Verify connection #3 to Connection #4 using Rain Master Cable Part Number 417-2106. _____.
- C) Connection #5 = Main Panel, J8 connector.
Connection #6 = PCEV2-COM-M (Phone Board), J3 connector.
Verify connection #5 to Connection #6 using Rain Master Cable Part Number 417-2110. _____.
- D) Connection #7 = PCEV2-COM-M (Phone Board), J5 connector.
Verify Phone Communication Cable to Connection #7 (phone jack).

FIGURE 1



- 1 PCDX2-MV, J1 Connector
- 2 DX2 Main Panel, J5 Connector
- 3 DX2 Main Panel, J6 Connector
- 4 PCDX2-O, J1 Connector
- 5 DX2 Main Panel, J8 Connector
- 6 PCEV2-COM-M, J3 Connector
- 7 PCEV2-COM-M, J5 Connector
- 8 PCDX2-MV, TB1-1, TB1-2, Blue Wires, 12 VAC
- 9 PCDX2-MV, TB1-3, TB1-4, Orange Wires, 24 VAC
- 10 Transformer, 410-0006
- 11 Fuse, 1A, Slow Blow, 406-0100
- 12 Fuse, 3A, Slow Blow, 406-0300

Cable connection 1 - 2 is 417-2100

Cable connection 3 - 4 is 417-2106

Cable connection 5 - 6 is 417-2110

3.0 Verify Transformer and Fuses for DX2 Controllers.

Refer to FIGURE 1 and verify 12 VAC, 24 VAC, and Fuses.

- A) Connection #8 = PCDX2-MV (Master Valve Board), TB1 connector, connections 1 & 2, Blue wires.
Connection #9 = PCDX2-MV (Master Valve Board), TB1 connector, connections 3 & 4, Orange wires.
Connection #10 = Transformer, Rain Master Part Number 410-0006.
- B) Are the blue wires from Connection #10 connected to Connection #8? _____.
- C) Are the orange wires from Connection #10 connected to Connection #9?
_____.
- D) With controller power on, do you measure 12VAC at the Master Valve Board TB1 connector blue wires? _____.
- E) With controller power on, do you measure 24VAC at the Master Valve Board TB1 connector orange wires? _____.
- F) Verify fuses on Master Valve board.

NOTE: SWITCH CONTROLLER POWER OFF BEFORE VERIFYING THE FUSES ON THE MASTER VALVE BOARD.

Location #11 = 1A slow blow fuse, Rain Master Part Number 406-0100.

Location #12 = 3A slow blow fuse, Rain Master Part Number 406-0300.

- G) With Satellite power off, perform a continuity check on the fuses. Do the fuses check OK? _____.
- H) With Satellite power off, do the fuses seat properly in the holder? _____.
- I) Turn Satellite power on when finished. _____.

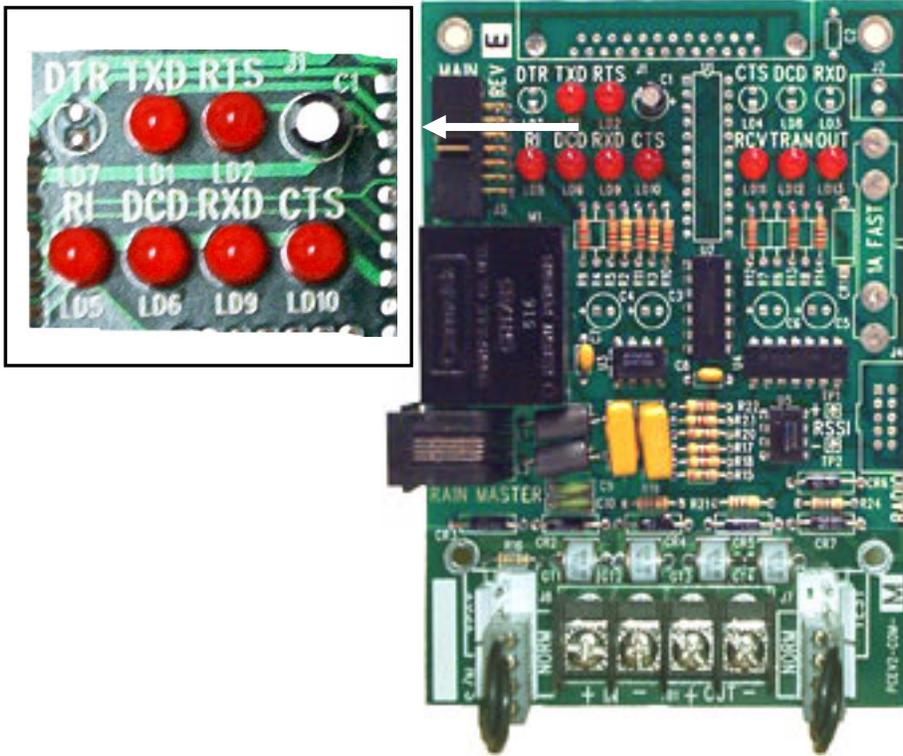
4.0 Monitor communications LED activity indicators.

Monitor PCEV2-COM-M Board LED activity indicators per FIGURE 2 of this document. At the Central Control, monitor the Phone Modem LED activity indicators per FIGURE 3A or FIGURE 3B.

- A) From the Rain Master Central PC, "Blue Panel operation", select the Satellite to test. Path is – "Manual Operations", "Blue Panel".
- B) Press the "Update" key.
- C) Does the Controller Base Screen appear? _____.
- D) Does an Error Code message appear? _____.
- E) Repeat several times. Does it consistently communicate? _____.
- F) Does it consistently fail? _____.
- G) Make note of the Error Code Message. _____.
- H) IF YOU ARE STILL UNABLE TO COMMUNICATE WITH THE SATELLITE, STOP, AND CONTACT RAIN MASTER TECHNICAL SUPPORT AT (800) 777-1477.

FIGURE 2
PCEV2-COM-M
 (Communications Board for Telephone Communications Type)

LED CONDITIONS



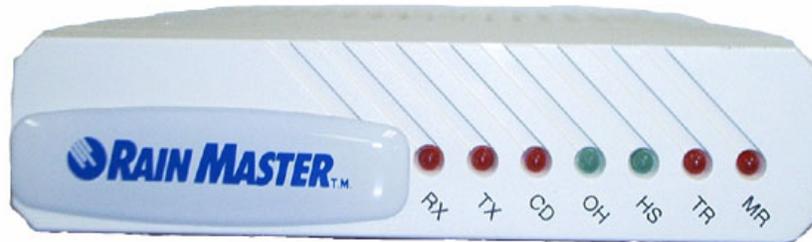
- Disregard RCV, TRAN, and OUT LED's. They indicate communication activity between controllers over the hardwire connection.
- When communications ARE NOT in process, only the CTS LED is lit. TXD, RTS, RI, DCD, and RXD are off. (CTS = ON. TXD, RTS, RI, DCD, RXD = OFF).
- When an incoming call is detected at the controller, the RI LED will flash. An attempt to establish a modem to modem connection will then be initiated. (CTS = ON. RI = FLASH. TXD, RTS, DCD, RXD = OFF).
- When a modem to modem connection is established (Blue Panel), the DCD LED will light. (CTS = ON. DCD = ON. TXD, RTS, RI, RXD = OFF).
- When a key press is sent from the Central Computer, the RXD LED will flash. (CTS = ON. DCD = ON. RXD = FLASH. TXD, RTS, RI = OFF).

FIGURE 3A
EV-MOD-PHONE
(Central Control Computer Modem)
LED INDICATOR STATES



- Initialize RS232 communication port(s). Path is – “Configuration”, “Configure Ports”, “Change port configuration”. (HS, AA, MR = ON. TX, RX = FLASH. OH, CD = OFF).
- Established a modem to modem connection (Blue Panel). (HS, AA, MR = ON. TX = FLASH. Then HS, AA, MR, OH = ON. Controller phone number is dialed. Modem connection established, RX = FLASH. Then HS, AA, MR, OH, CD = ON).
- With modem to modem connection established, send key press from Central Control Computer. (HS, AA, MR, OH, CD = ON. TX, RX = FLASH).
- Disconnect. (OH, CD will turn off. HS, AA, MR = ON. OH, CD, RX, TX = OFF).

FIGURE 3B
EV-MOD-PHONE
(Central Control Computer Modem)
LED INDICATOR STATES



- Initialize RS232 communication port(s). Path is – “Configuration”, “Configure Ports”, “Change port configuration”. (HS, MR, TR = ON. TX, RX = FLASH. OH, CD = OFF).
- Established a modem to modem connection (Blue Panel). (HS, MR, TR = ON. TX = FLASH. Then HS, MR, TR, OH = ON. Controller phone number is dialed. Modem connection established, RX = FLASH. Then HS, MR, TR, OH, CD = ON).
- With modem to modem connection established, send key press from Central Control Computer. (HS, MR, TR, OH, CD = ON. TX, RX = FLASH).
- Disconnect. (OH, CD will turn off. HS, MR, TR = ON. OH, CD, RX, TX = OFF).

END OF BULLETIN