Assembly & Installation Notes:
This new pc board sits on top of the existing backup battery and along with the optical serial isolation built into **ROVDOG2008_Interface** pc board complete the galvanic/copper isolation from the nearby ROV. In addition to the new boards, there are a few other changes which are documented here.

Need photos to insert in this document.

BEFORE:
   I.   **ROV Penetrator- 4 conductors**
        a. **(3)** +24 VDC & **(1)** COM_IN go to **50W 24-12 VDC Power Supply**
             i. Connectors: Molex 3.00mm Micro-Fit single row receptacle, 4 position (power lines doubled up, 5A rating=not necessary)
        b. **(4)** Tx, **(2)** Rx RS232 serial lines go directly via up to the BL1700 microcontroller board (note lack of common)
             i. Connectors: DB9 mated connectors to IDC 2x5 on BL1700
   II.   **50W 24-12 VDC Power Supply**
        a. +12V & +24V are supplied to the CG5 Interface board and distributed from there.
   III.   **Backup Battery**
        a. Connects to **50W 24-12 VDC Power Supply**
             i. Charging is just +12 VDC current limited by 50 ohms. Battery will never fully charge and competes for available power at the worst time (dead battery & cold gravimeter)

  Note on RS232 serial connections:
With the big end of the DB9 up,
  Looking into a female DB9, Pin1 top right & Pin 5 top left
  Looking into a male DB9, Pin 1 top left & Pin 5 top right
From a laptop with a male DB9 connector,
 Pin 2 Rx   Receive / Uplink / Input   which must connect to a Pin 2 Tx down the line
 Pin 3 Tx   Transmit / Downlink / Output which must connect to a Pin 3 Rx down the line
 Pin 5   Com which must connect to a Pin 5 Com down the line

AFTER:
   I.   ROV Penetrator- 4 conductors
        a. +24 VDC, COM_IN, Tx, Rx go to new board
             i. Connectors: : Molex 3.00mm Micro-Fit single row receptacle, 6 position (1 unused)
   II.   New Board: **ROVDOG2007Iso**
        a. +24 VDC, COM_IN go to 50W 24-12 VDC Power Supply
             i. Connector: Pigtail w/ Molex 3.00mm Micro-Fit single row receptacle, 4 position (power lines doubled up, 5A rating=not necessary)
        b. +15 VDC, COM_OUT go to BL1700
             i. Connectors:
        c. Isolated Tx, Rx to BL1700
        d. +12 VDC, COM_OUT from 50W 24-12 VDC Power Supply
             i. Connectors
        e. +12V, +12VB, COM_OUT to **CG5 Interface Board**

III.   50W 24-12 VDC Power Supply
    a. Modifications
        i.   Remove JU2 (isolates COM_IN & COM_OUT, check w/ ohmmeter)
        ii. Jump TP6-TP9 w/ 20ga or heavier wire (or remove D1)
        iii. J2 (backup battery) not used, tape over to avoid confusion
        iv. D1, D2, dual LED function all moved to new board, **ROVDOG2007Iso**
           (ok to either remove or just leave on the board)
        v.   R7, R8 not needed
IV.   Backup Battery
    a. Connects to new board, **ROVDOG2007Iso**
V.   ROVDOG Dwg 1024 **CG5 Interface Board**
Original +12V will now only supply the main CG5 power (CG5PWR header) and the CG5 digital power (J1-11). In the event of a ROV +24V power failure, the small backup battery will now only supply the above.
Original +24V line previously powered the BL1700 via J3.
The BL1700 is now powered directly via the new ROVDOG2007Iso 15.3V DC/DC convertor.
Now the same 2 red wires now provide the CG5 Interface board with +12V that is now not on the backup battery.
    a. Modifications to CG5 Interface board
        i.   Drill out 3 small via from top, just break the copper connection
           1. Just left of J3 white silkscreen
           2. Just below TP1
           3. Just left of TP13
        ii. Break land to +12V connection to U3, big 7805 voltage regulator
        iii. Connect the above to TP2
           (note that C1, C2, L2, J3, R13, D2 (LED) are no longer used.)
        iv. Confirm your work with an ohmmeter:
           1. J2-1,2 just connect to CG5PWR & J1-11
           2. J2-5,6 connect to other +12V

Connectors:
J3 & J7 are Molex C-Grid 0.1" latching types.
J3 1x4 70553-0003 latching RA header   DigiKey WM4902-ND
    50-57-9404 latching mating connector DigiKey WM2902-ND

J7 1x2 70553-0001 latching RA header   DigiKey WM4900-ND
    50-57-9402 latching mating connector DigiKey WM2900-ND
(J7 was power for the separate serial isolation board which is no longer used.
 Same function is now on the 2008 Interface board.)

Order Crimp Socket Pins 22-24AWG CRIMP 15AU:
    Molex 16-02-1124   DigiKey WM2573CT-ND