



CB-04 Communication Module

**Quick Start Guide
Rev 1.3 6/15/06**

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Chapter 1

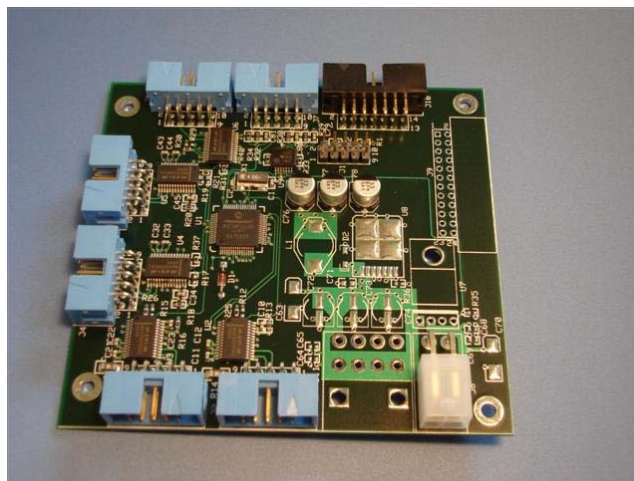
CB-04 Communications Module

1.1 General Description

The CB-04 System Communications Module is used in system configurations containing multiple MP-xx and/or XP-xx Management Modules. It physically connects to the Serial Port on up to four Management Modules, and combines the serial data from these modules into a single output stream that can be monitored through one port on a PC or by one LCD Display. An operator, connected through a CB-04, can view the set-up data and battery status of all attached components, and can re-configure or re-prioritize settings and actions.

Using the CB-04 and four MP-08's or XP-08's it is possible to build a 3000 Watt-Hour (32 battery pack) system with a single point of control and status. The CB-04 supports the LCD display option, LCD16x2, for displaying the fuel gauge status for the combined group of batteries. The power down policy for the overall system can be set to shutdown when an end-of-discharge event is detected such as capacity below "X" percent.

1.2 Picture of CB-04



1.3 Getting Started

Ground yourself by touching a metal surface before getting started. Static charges on your body can damage electronic components. Handle the CB-04 by the edge; do not touch board components. OceanServer recommends using a static ground strap. Before cabling the CB-04 to one of the supported IBPS modules (MP-xx or XP-xx) be sure no Battery Packs or Power Supply is attached. Also, insure the device that the CB-04 is going to be used in is not being powered by another power source prior to installation.

1.4 Recommended Cables

OceanServer offers various cables for the CB-04. Below are the standard cables OceanServer offers:

IDC serial cable for connecting the CB-04 to the MP/XP-xx Controller Modules (19-00042-xx) Available in three lengths, 6", 18" or 36", sold separately.

IDC10 to DB9M Serial Cable – DTK pin out (19-00010-00)
Converts Serial RS232 on OceanServer CB-04 to DB9 Male allowing user to interface the Intelligent Battery and Power System via industry standard serial cable.

To Host Serial Cable – DB9F to DB9F, 1:1 wiring (19-00011-00)
Extends length of OceanServer Serial Port Conversion Cable, 19-00010-00, and converts active end to female allowing user to connect to serial port on host PC. Used for diagnostic and/or ongoing status reporting.

Momentary On/Off Switch Cable, (19-00027-00)
Provides shutdown signal to the load

All cables can be found on OceanServer's Online Store:

<http://www.oceanserver-store.com/cables.html>

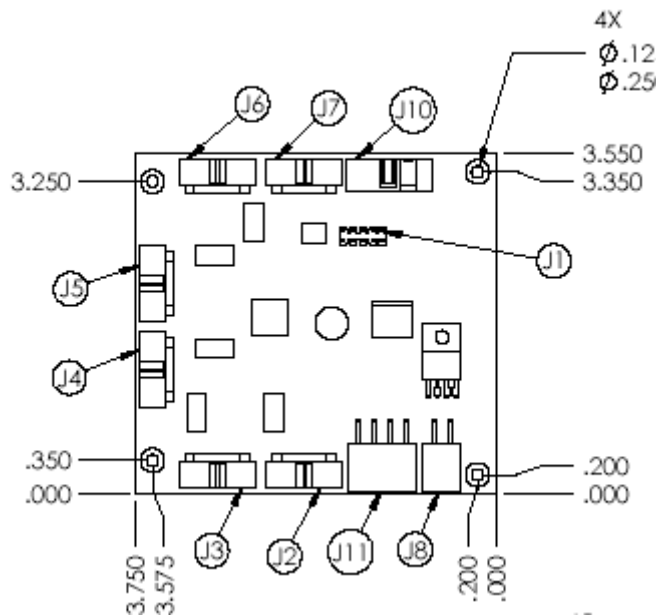
Chapter 2

CB-04 Communications Module

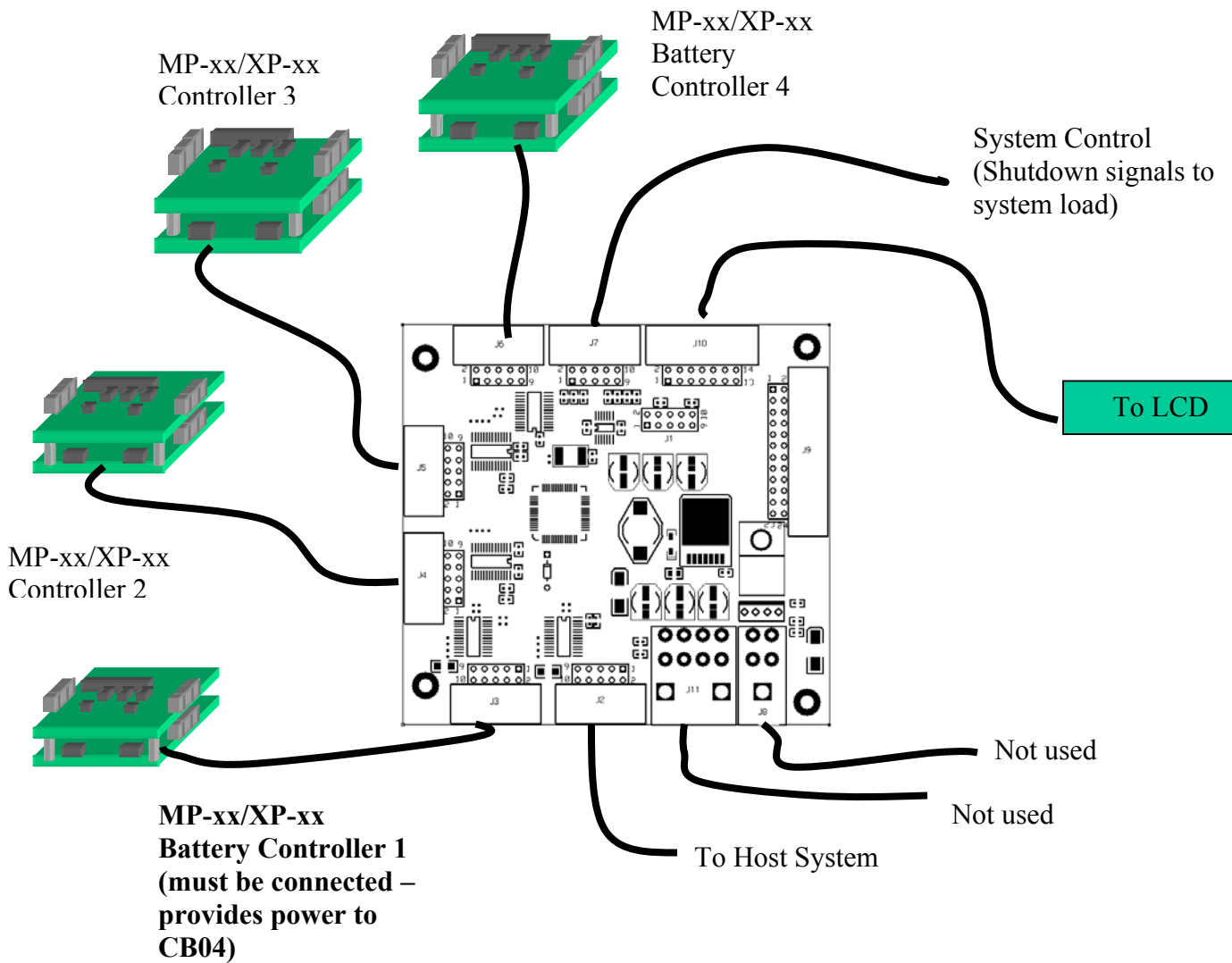
2.1 CB-04 Dimensions

Below you will find the dimensions of the module. OceanServer also provides both mechanical drawings and IGES files as additional design resources. These files can be found on OceanServer's download page.

<http://www.ocean-server.com/download.html>



2.2 CB-04 Typical Configuration and Connection Notes



Connection Notes:

- The CB04 is used to combine the data from up to 4 MP-xx/XP-xx controllers. This allows one RS232 data path to supply data to a host system and control the external system.
- The CB04 Module can be connected to a PC or other system through an RS232 serial port when connected to J2 through our converter cable (19-00010-00). The converter cable connects to J2 and has a DB9 style connector to connect to a standard serial cable (19-00011-00).
- J3 connects to the RS232 port (J8) of the MP-xx/XP-xx controller 1. A controller must be installed into this connector since it supplies the power to the CB04. A 1:1 cable is used to connect to J3 (19-00042-xx).
- J4, J5, and J6 connect to the RS232 port (J8) of MP-xx/XP-xx controllers 2-4. J4 connects to controller 2, J5 connects to controller 3, and J6 connects to controllers 4. A 1:1 cable is used to connect to J4, J5, and J6 (19-00042-xx).
- J7 is used for external control, similar to J1 of the MP-xx/XP-xx controllers.
- A 2 pin header connector attached to a switch (cable 19-00027-00) and connected to J7 pins 1 and 2 can be used to put the CB04 microcontroller to sleep and to drive 2 external on/off signals. Two switch types are supported, a toggle switch and a momentary pushbutton switch (normally open). The momentary switch can be configured so that momentarily pushing the switch and holding for 3 seconds will turn on the system (same for turning off).
- A 2 pin header attached to J7 pins 3 (GND) and 4 (signal) can be used to bring one of the external on/off signals to the MP-xx/XP-xx controllers, or to your system.
- A 2 pin header attached to J7 pins 5 (GND) and 6 (signal) can be used to bring the 2nd external on/off signal to the MP-xx/XP-xx controllers, or to your system. These signals duplicate copies of the same signal to support multiple loads.
- J10 is used to control the external LCD display.

2.3 Key Connector Layouts

Figure # 1 CB04 RS232 Port To the Host

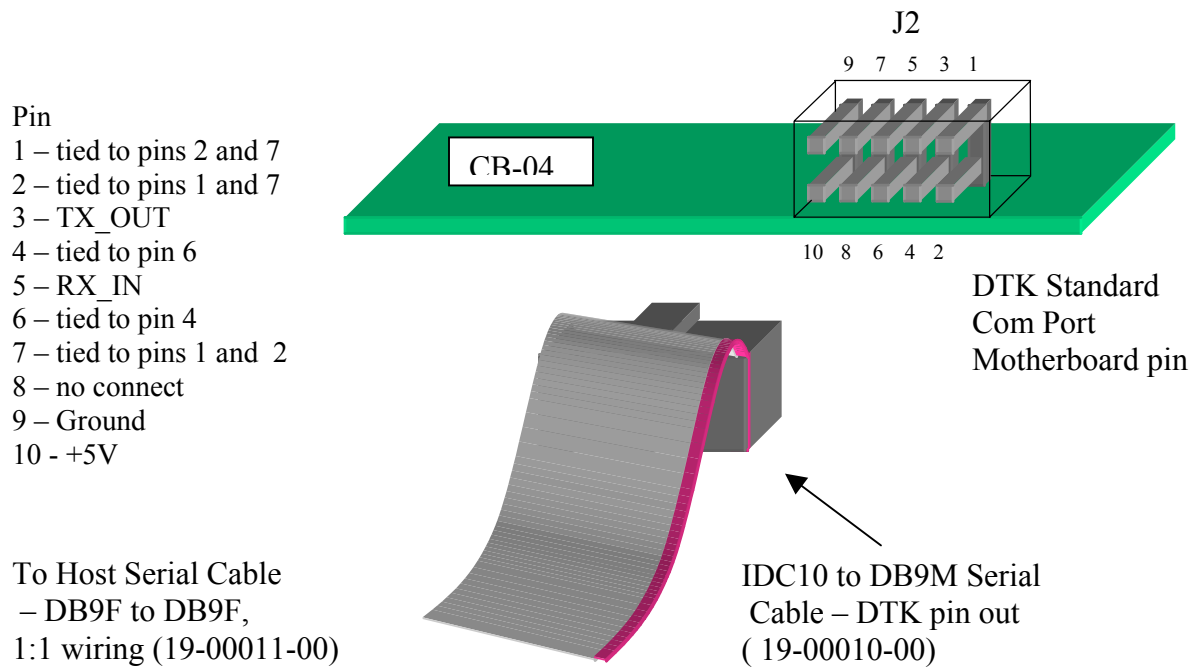


Figure # 2 CB-04 RS232 Ports to the MP-xx or XP-xx

Pin

- 1 – tied to pins 2 and 7
- 2 – tied to pins 1 and 7
- 3 – RX_IN
- 4 – tied to pin 6
- 5 – TX_OUT
- 6 – tied to pin 4
- 7 – tied to pins 1 and 2
- 8 – no connect
- 9 – Ground
- 10 - +5V (on J3 only)

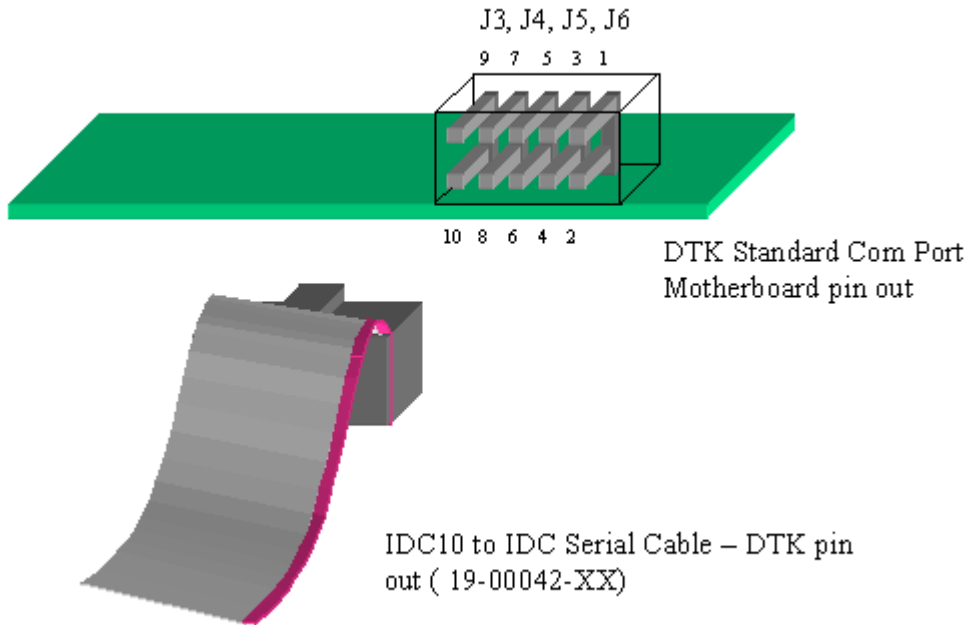
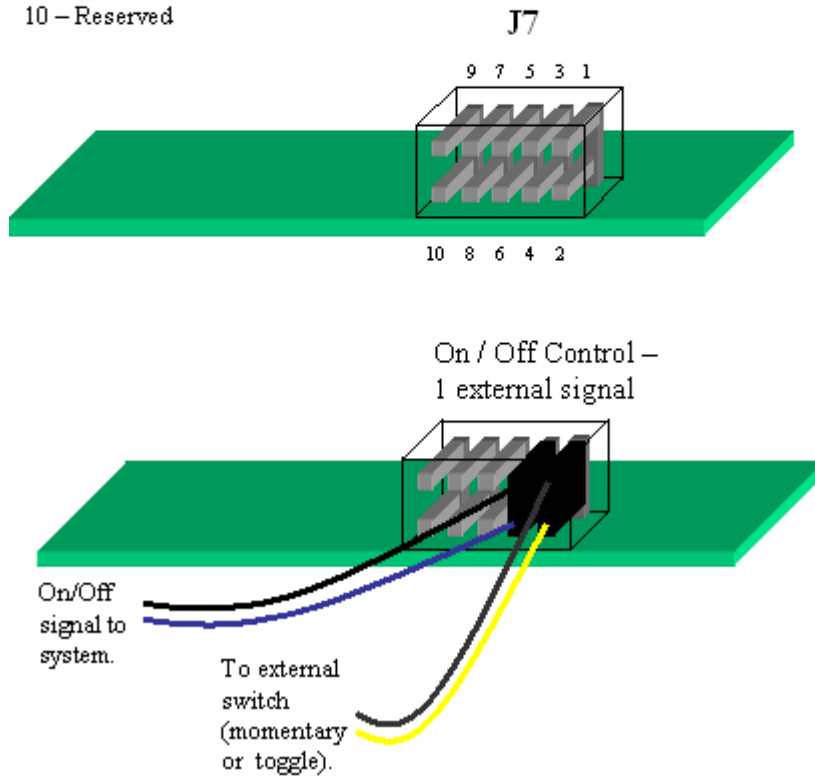


FIGURE # 3 CB-04 RS232 Port
To the Host

- Pin
- 1 – Ground
 - 2 – External On/Off switch (weak pull-up to 5V input)
 - 3 – Ground
 - 4 – Shutdown signal (TTL), turn off DC-DC or Load
 - 5 – Ground
 - 6 - Shutdown signal (TTL), turn off DC-DC or Load
 - 7 – Ground
 - 8 – Reserved
 - 9 – Ground
 - 10 – Reserved



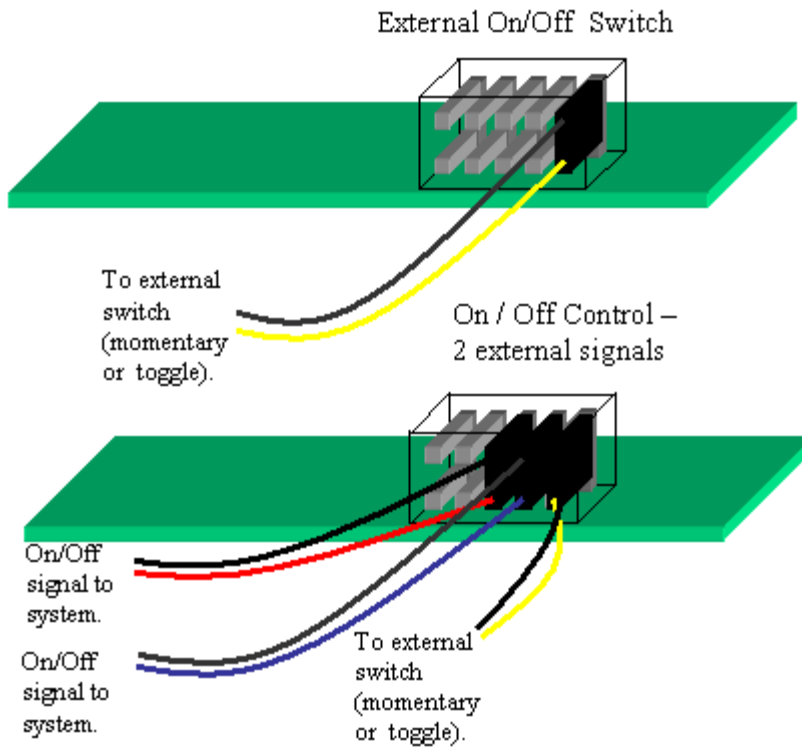
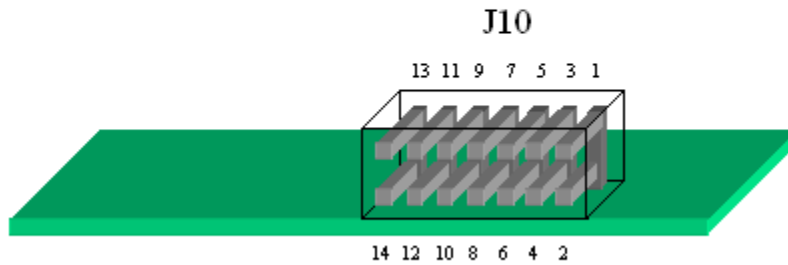
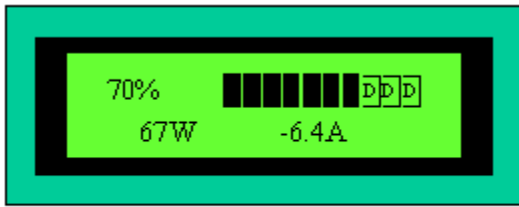


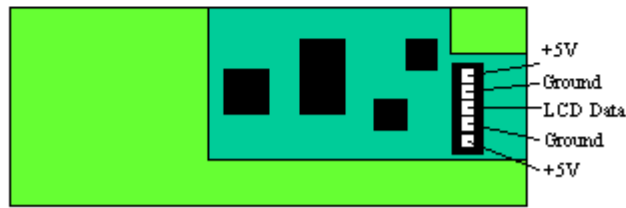
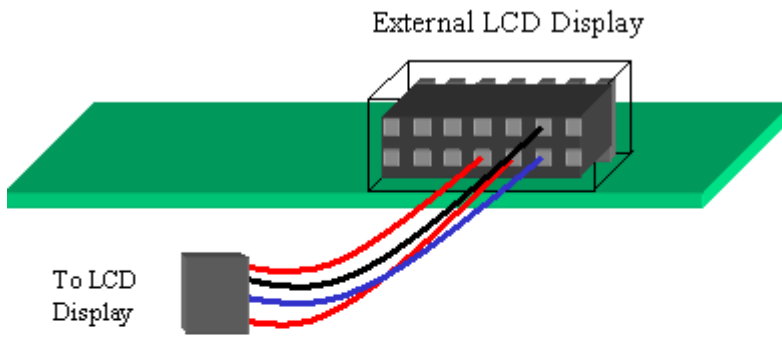
FIGURE # 4 CB-04 LCD Display Control

Pin	
1 - Ground	8 - LCD Power
2 - +5V	9 - Ground
3 - Ground	10 - Reserved
4 - LCD Data	11 - Ground
5 - Ground	12 - +5V
6 - LCD Power	13 - Ground
7 - Ground	14 - NC





LCD Display



Side 2

Customer Support

Send technical questions to: support@ocean-server.com

Or call us at 508-678-0550 during normal business hours.

Related Publications:

Please visit our download page and download our latest Hardware User Guides and FAQs guide.

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