Optim Engineering *CBA* **III** © Optim Engineering

Computerized Battery Analyzer Software Version 2.1

CBA Multi Upgrade

This addendum explains the additional features provided by a Multi CBA software upgrade. This upgrade provides operation of up to 12 CBAIII's on one computer. A Multi CBA license also includes operation with the Pro License features for each CBA. To purchase a Multi license visit **www.optimengineering.com** or contact us.

Computer system requirements

CBAIII's only (CBA and CBAII not supported)
Windows XP SP3 (supported at this time)
Desktop computer (laptop computers not supported)
At least a 400 watt PC power supply
Available PCI slots for additional USB connections (1 PCI slot per 4 CBA's).
Pentium 2 GHz or better
Running other applications not recommended when in use
Internal USB ports (root hub) required (external hubs will not work)

While the Multi CBA system may run on other Windows platforms it has not been tested and we only support XP SP3 at this time. We recommend that the computer be dedicated for testing batteries. Do not expect to run other applications while testing batteries. Do not connect or disconnect USB devices while testing batteries.

This section is specific to Multi CBA operation only. Refer the rest of this help documentation for complete instructions to operatate each CBA.

Connection and Installation

For Multi CBA operation you may plug multiple CBA's directly into the USB ports of a desktop computer. Do not use a laptop computer, or expect a laptop computer to work! If you wish to have more CBAs than you have available USB ports, you may add internal USB PCI bus cards supplied and supported by Optim Engineering. Do not use attempt or expect to use ANY make or model "external" USB hub!

The internal USB PCI bus cards we supply are installed in your computer as any PCI card. To install the driver files connect to the Internet so that the Windows plug & play system will automatically install the drivers from Windows Update. If you cannot put the computer on-line you may request the driver installation files from us.

Each card has four ports available at the back of the card slot. It does not matter which CBA is plugged into which port on which USB card or computer USB ports, but it is recommended that

the CBA's are all either plugged directly into the computer, or into the cards; not a combination of both.
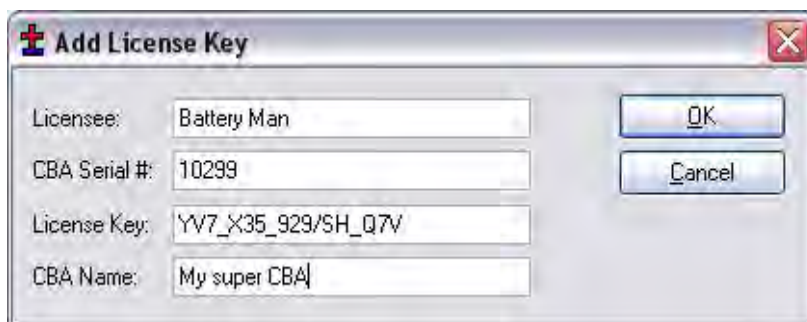
Before installing a Multi CBA system you should have already installed and run a stand-alone system with one CBA. You should also have studied the rest of the help files and become familiar with the operation using one CBA.

Go to "Help", "About CBA" and check that you have our CBA software version 2.1.0.14 or later. If you have an earlier version, visit our web page and download and install the latest version update.

Connect each additional CBA, one at a time, up to twelve. Please wait for the message to pop up in the bottom right corner of the screen, "Your hardware is ready to use", before plugging in the next CBA. When you have all CBAs connected and installed, check Windows device manager to see that the correct number of CBA's appear at the bottom of the hardware listings under "Universal Serial Bus controllers".

Setup and Numbering

Disconnect all of the CBAs except the one that you have the license code for. Re-boot the computer. With the license registration code at hand, click "Tools", "License Keys and Names…", "Add" and then copy and paste the licensee name, CBA Serial # and license code into the registration screen (if you manually type in be sure that it is exactly correct). The program will prompt you to close and re-start the program for the changes to take effect.
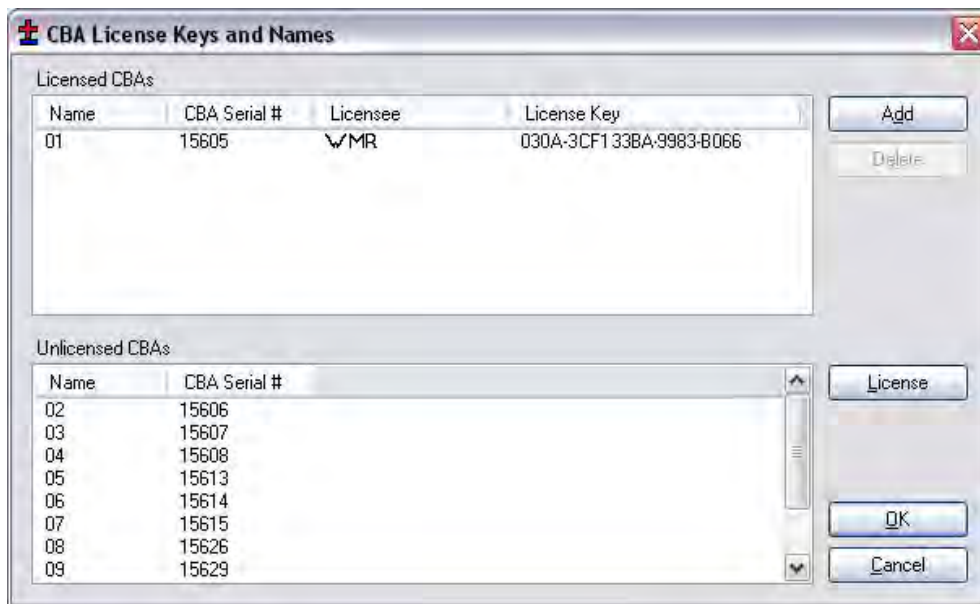

Before restarting the CBA program re-connect all of the CBAs that you expect to use and re-boot the computer. When you re-start the program with all of the CBAs connected you should see all of the CBA green LED's come on.

You are now ready to organize your CBAs. In order to keep track of which CBA is testing which battery we suggest that you physically number each CBA. You can then use the software to name each CBA so the matching number appears in the program.

Since the program initially "finds" the CBAs by serial number, it does not matter how you have plugged them or how you arranged them on your bench. It is only necessary that each CBA is "Named" with the same number, both physically and in the software.

To match the CBAs physical numbering with software numbering, click "Tools", "License Keys and Names". You will see a table containing the "Licensed CBAs" and "Unlicensed CBAs" with serial numbers next to each. Right click the "Name" field for the first CBA and left click "Identify". Look to see which number CBA has the LED blinking. Double left click the name for that one and type in a two digit number (i.e. 01,02…) that corresponds to the physical numbers you have numbered the CBAs with. Do this for all of the CBAs. It is not necessary that you arrange the CBAs in order by serial number as this example screen is shown.

Note: once you have done this numbering, if you unplug any or all CBAs and you plug them back in, even differently, they will remain correctly numbered.

NOTE: do not unplug the USB cables with the program running.

Testing Multiple Batteries:

You are now ready to test batteries. It is necessary that you are already familiar with testing batteries one at a time with a single CBA. If not, go back and read the help for using the CBA system for battery analysis.

A very important issue using the CBA, especially with multiple CBA's, is to correctly keep track of your tests. Our software deliberately requires a test name for each test. By default it uses that name for the file name when you save the completed test file. However, you may change that file name when you save the test, if you wish.

The logical way to keep track of tests is by using a unique number for each battery. If you're testing the same batteries over and over you may wish to include the cycle number as part of the test name. You might also wish to make the date or time part of the name but Windows will put time and date stamps on the saved file, but this is not visible on a graph. This version of the software does allow putting notes on a graph with date and time or you could make that

information part of the test name. Be certain to choose test and file names that allow you to keep track of the test data in a way that is satisfactory for your needs.

To start a new test, from a blank screen, click the "New Test document" Icon below "File". This will bring up small window asking which CBA you wish to use. Pick one of the CBA's listed and a "New Test" window will pop up along with a tabbed blank graph window behind it. Connect the battery, select a test profile or type in test name test parameters, for the battery, and start the test.

Continue until all of your batteries are being tested or all the CBAs are in use. In a given time the first test will complete and the corresponding tabbed graph will pop up over the others, a completed test window will pop up and the software will "beep" your computer speaker until you save the test and disconnect the discharged battery.

NOTE: you will notice that the test graph tabs come up in the order that you select the next test. If you would like to re-arrange the order you may click on the tab with your left mouse button, holding it down, and drag the tab over to a new location.

When a test is completed on a CBA you may start testing another battery while the other CBAs are running. Disconnect the battery and click "Test", "New" and select "New Document", it will remind you to save the file. Connect the next battery and type in the test info and start the test. Do this procedure in order as indicated for best results.

NOTE: if you are in the process of connecting another battery and starting a new test when a test completes, it will pop up a notice that a test is completed and switch the tab to the completed graph. If this happens simply close the completed test notice window and finish starting the new test. Even though the tab corresponding to the new test has switched to a completed test you may still start the one you were trying to start where you expected.

Congratulations, you have a multi channel battery analyzer system completely setup and running.

NOTE: If you disconnect the CBAs and reconnect them re-start your computer so that Windows correctly connects them and enumerates them. Do not expect them to all work if you disconnect them and reconnect them while the computer is running.