

## B-ALERT ELECTRONIC SYNCH UNIT B-ALERT-ESU

### Multi-Channel External Synchronization

#### *Synchronize B-Alert X10/X24 EEG with Stimulus Presentation & Third-party Hardware*

The optional B-Alert ESU is a multi-channel external synchronization unit that features serial + parallel ports and serves as a communication interface between the B-Alert X10/X24 device and a computer. It allows for precise synchronization of data between the B-Alert hardware and other third-party data acquisition devices.

The B-Alert X10/X24 mobile-wireless EEG system delivers real-time measurements for a variety of research and engineering applications, including closed-loop performance monitoring and simulation training; HCI design assessment; situational awareness and team dynamics monitoring; tools for productivity and training enhancement; and fatigue management.

The B-Alert X10/X24 Wireless EEG system is an ideal platform for adding neuroscience to any study in real-world or simulated environments.

The ESU is helpful if a user is synchronizing with stimulus presentation systems and doesn't have a MP160. If a MP160 system is in use at the same time, it's recommended to use the STP100D to interface with the stimulus presentation system and the CBLX10 to sync the B-ALERT X10/X24 to the MP160.

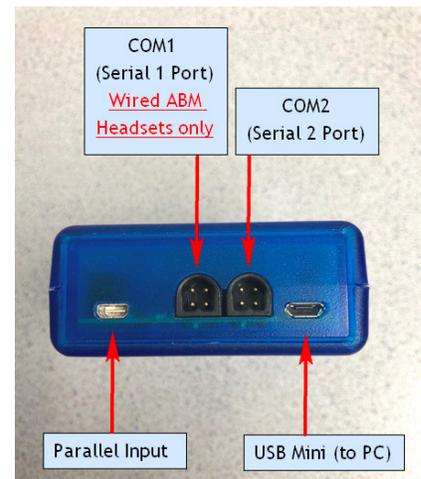
<https://www.biopac.com/product/b-alert-x10-to-uim100c-analog-out/>

Before configuring the ESU settings, the ESU must be paired with the B-Alert unit via a Bluetooth connection.

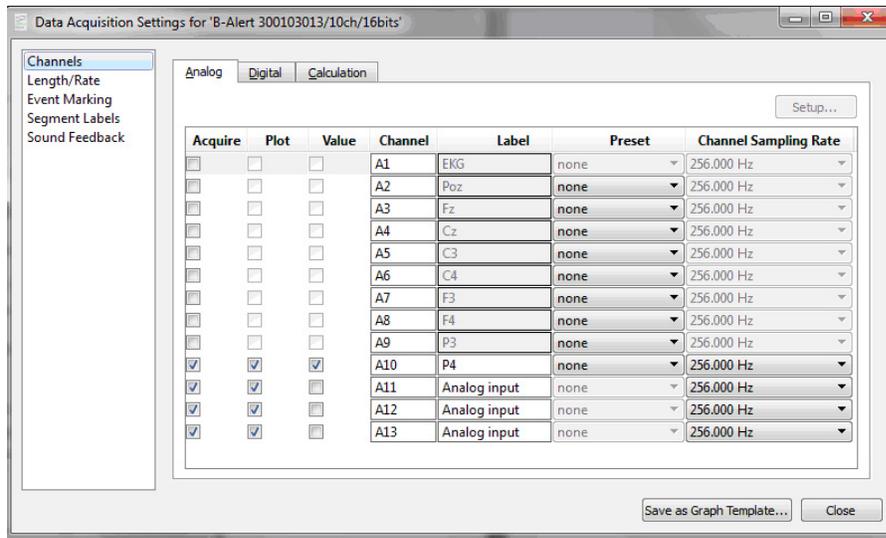
- B-Alert headsets are shipped paired to either a B-Alert Dongle or an ESU. If the pairing is lost, the devices must be re-paired in the *AcqKnowledge* software's "B-Alert > Pair to Bluetooth Dongle" menu.
- For more information, see "Connecting the ESU Unit" section in the B-Alert with *AcqKnowledge* Quick Guide.

To configure the ESU in *AcqKnowledge* 5.0.5 or above:

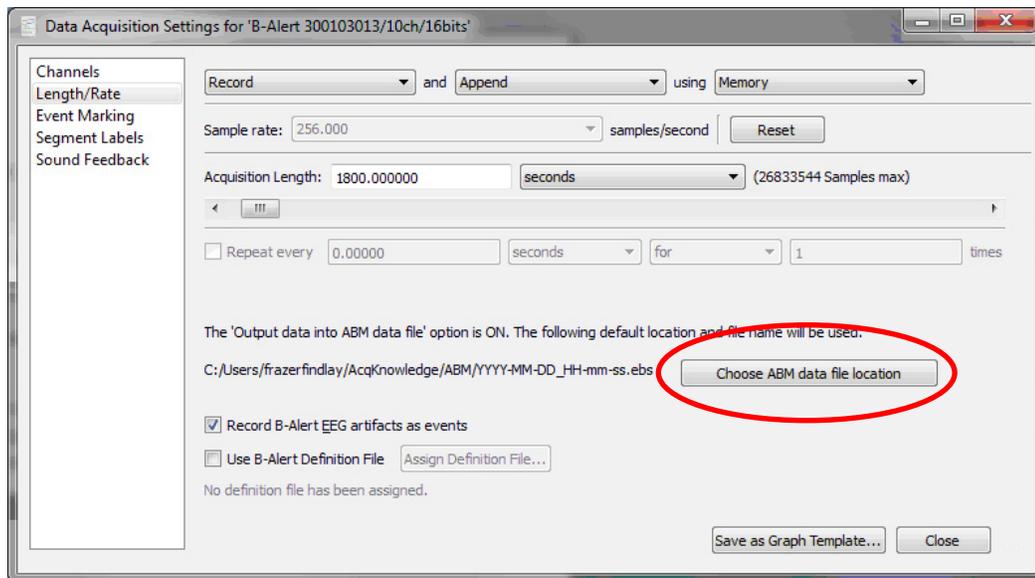
1. Connect the B-Alert ESU device to the computer that will run *AcqKnowledge* to record data from the B-Alert headset. A blue LED will blink inside the ESU box.  
**Note** When the ESU device is being used with the B-Alert headset the B-Alert Bluetooth dongle is not required. The headset will communicate directly with the ESU.
2. Connect the COM port and /or Parallel port between the computer and the ESU device.



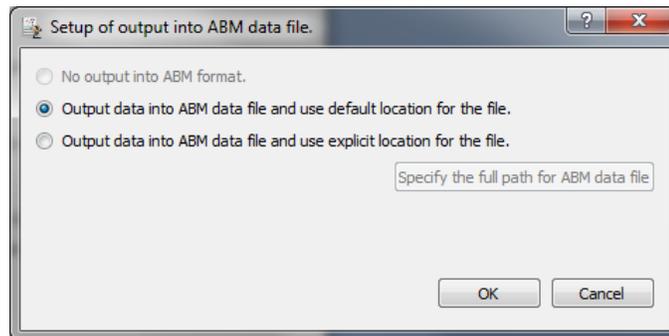
3. Turn on the B-Alert headset. When the headset is interfaced with the ESU unit, the blue LED inside the ESU unit will stop blinking and the LED on the B-Alert headset will turn solid green.
4. Launch *AcqKnowledge*.
5. Select B-Alert > Set Up Data Acquisition > Channels and enable the required channels.
  - The COM port channels are displayed on Analog channels A11-A13 and the Parallel port channels are digital channels D0-D7.
  - One channel of EEG must be selected for the system to work even when testing the ESU marker system.



6. Select B-Alert > Set Up Data Acquisition > Length/Rate and open the ABM data file location option.



7. Select the Output data into ABM data file and choose default location or explicit location for the file.



8. Click the AcqKnowledge Start button and the system will record and display the EEG data and the event marker information from the ESU.