Universal Controller
Product Data Sheet

Specifications

Physical Description:	4.7" x 2.9" x 1.0" (L x W x H)
Weight:	92 grams
Housing material:	ABS plastic
Number of Tactors:	**Base Configuration** – (8) connections using mini-jack channels, OR a 20-pin MDR locking connector **Optional Distributed Configuration** – connect to additional "slave" controllers using an EAI-bus (15-pin Micro-D connector)
Tactor Firing Limits:	Maximum of 4 Tactors can be continuously ON (at max gain)
Host Device Connection:	**Standard** - mini-B USB, **Optional** - Bluetooth or RS-232 (serial)
Power Supply:	100-240 V input, 9 VDC output, medical grade *
Current Draw (Quiescent/Max):	50 mA/1,000 mA at 9 VDC
Operating Software:	Tactor Development Kit (TDK), compatible with Windows, Android and Linux

*Optional rechargeable battery available

Product Description

The Universal Controller is the latest generation ATA tactor controller. It contains the interface to a host device (Android, Linux, or Windows) and provides the necessary functionality to allow the host device to address and independently control the actuation, frequency and amplitude of each of eight tactors channels.

The Universal Controller is the recommended driver for EAI's C-series (linear actuator design) and EM (motor based) tactors. A host device connects to the Universal Controller via a standard mini-B USB plug or via an optional Bluetooth wireless or serial connection.

Applications

- Haptic research
- Tactile arrays
- Wearable tactile feedback
- Biomedical: Sensory substitution, vestibular feedback
- Automotive haptics
- Immersive entertainment
- Gaming
- Haptic displays

Operation

The Universal Controller communicates using EAI's Tactor Development Kit (TDK) and application programming interface (API). The TDK is compatible with Microsoft Windows, Android and as a special option, Linux operating systems and MATLAB. The Windows version of the TDK comes with a User Interface (UI) that allows for basic control and testing of the Universal Controller. The TDK-UI can pulse individual Tactors as well as play preset sequences or optional TActions. The TDK API allows programmers to directly interface with the controller and handling connection to the host, two-way communication to the controller device. The gain, frequency, number of tactors, pulse characteristics and waveforms (including complex frequency mixing, noise and ramp signals) can all be user configured at rates of up to 1500 commands per second.

The EAI Universal Controller can optionally act as a **"bus-master"** for various distributed configurations. In these configurations, the Universal Controller is connected to one or more additional controllers that act as "slaves" requiring only one connection to the host. These configurations allow for control of an additional 56 Tactor nodes or four additional Universal Controllers through one master unit. The communication between master-slave controllers is via a custom EAI-bus.

Mechanical Layout
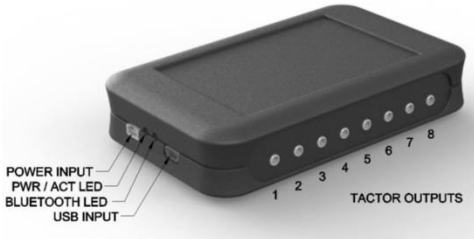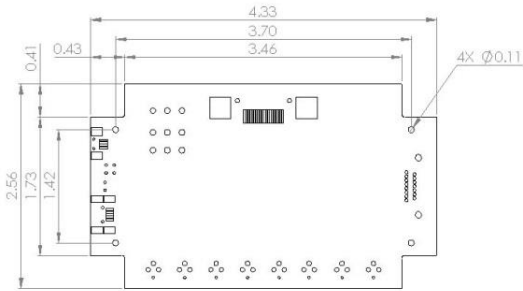
Contact EAI for Additional Information

EAI offers complete turnkey vibrotactile systems and a range of tactors products – please contact us for details.