LTI Microprocessor-based Controller Programming System
for use with Boston Digital Arms™, VariGrip™ and SPM™ controllers

This system is used to connect a personal computer to a prosthetic device containing a Liberating Technologies, Inc. (LTI) or Variety Ability Systems, Inc. (VASI) microprocessor-based prosthetic controller, such as the LTI Boston Digital Arm, LTI VariGrip™ and VASI Single Programming Module (SPM™) controllers. It is intended to be used with the computer's Universal Serial Bus (USB) port, since many new lap-top computers are no longer equipped with serial ports. In addition to providing a convenient method of connecting the computer to the prosthesis, this system provides optical isolation to protect the client from any power passing through from the computer to the prosthesis. This is a safety precaution which can provide up to 2000 volts RMS of isolation. If the optical isolator is not used (i.e. using the computer's RS232 COM port) a lap-top computer on battery power only (unplug the computers power supply from the wall outlet) must be used for client safety.

The system consists of three components:
> 1) uLinks™ USB-to-isolated RS232 converter
> 2) LTI RS232-to-TTL Converter Cable (DB-9 female to mini-USB)
> 3) USB-to-USB cable (computer to uLinks converter)

| uLinks™ Isolator | LTI RS232-TTL converter | USB-to-USB Cable |

All three of the prosthetic controllers; Boston Digital Arm, VariGrip and SPM circuits will be supplied with a female mini-USB connector to be mounted in a convenient location, probably in the forearm. Here, they are easily accessible by simply rolling down the cosmetic glove to access the programming port. The programming connector itself will be flush mounted in the forearm. Alternatively, this programming connector can be left in the forearm and accessed through the wrist, if a quick disconnect wrist is supplied.

LTI Liberating Technologies, Inc.