

STMEPM PROGRAMMABLE STIMULATOR FOR E-PRIME

The STMEPM Programmable Stimulation System for E-Prime allows a user to interface the STMISOLA Stimulator with E-Prime to control the stimulus frequency and stimulus intensity for real-time stimulus delivery changes based on a subject's responses.

The system includes

- STMISOLA Constant Current and Constant Voltage Linear Isolated Stimulator
- USB 4-ch D/A Unit
- Software Utility (STMISOLA<--> E-Prime) with sample E-Prime experiment
- Interface cables



The sample E-Prime experiment provides the necessary interface commands to communicate with the D/A unit. The D/A unit provides the STMISOLA with the appropriate voltage levels to stimulate a subject. The system supports up to four STMISOLA (and includes one).

IMPORTANT: The Current Feedback Monitor Cable ([CBLCFMA](#)) is recommended for use with any voltage stimulator; to isolate CBLCFMA output, use INISO and HLT100C. Always make sure to place the electrodes on the participant at least 10 minutes before starting any electrical stimulation. Use a CBLCFMA to monitor and record the actual current delivered to the participant at ALL times. A large enough change in current delivered to the participant will alter the subjective perception of the stimulation. Thus, an unpleasant shock may become painful if more current starts being delivered or become ineffectual if less current is being delivered than during threshold identification. Changes in the levels of delivered current are due to changes in impedance. Changes in impedance could be due to a number of factors: gel saturating the skin over time; gel drying up – over longer period of times; hydration level of participant; sweating; decoupling of electrodes and skin due to motion artifacts; etc. Read [Safe Use of Electrical Stimulators](#) – Application Note 257 for Comprehensive Safety Guidelines for Performing Electrical Stimulation on Subjects

SPECIFICATIONS

STMISOLA: see Constant Current and Constant Voltage Linear Isolated Stimulator specs

CBLEPM connection cable x 4: 3.5 mm to 2 x tinned wire (STMISOLA to D/A card)

D/A Unit: High-speed multifunction module with eight 13-bit, 1 MS/s analog inputs and four 12-bit, 1 MS/s analog outputs

- Four 12-bit, ± 10 V analog outputs with 1 MS/s update rate
- USB-bus powered (type: 2.0 high speed; compatibility: 1.1 or 2.0)
- 8 single-ended/4 differential analog inputs
- 13-bit resolution
- 1 MS/s sample rate
- Single-ended ranges: ± 10 V, ± 5 V, ± 2.5 V or 0 to 10 V
- Differential ranges: ± 20 V, ± 10 V, or ± 5 V
- 16 digital I/O lines
- Two 32-bit counters
- One 32-bit PWM timer output

MRI COMPATIBILITY

The STMEPM should **not** be used in an MRI and should not be used in stimulating subjects who are to be placed in an MRI. For electrical stimulation requirements in MRI or fMRI, use STMEPM-MRI.