IZ2M/IZ2MH Stimulators

WITH **synapse**

Ready

Battery/Power LEDs

Start/Stop   Armed

Battery Power   Mains Power

This fast facts sheet provides basic reference information for the IZ2M/IZ2MH Stimulator and related devices. See the System 3 Manual for more detailed information.

The stimulator is available with 32 or 64 channels and standard (M) or high current (MH) versions.

Arming Sequence. Before the stimulator can be armed the RZ processor must be connected to the stimulator and the battery should be fully charged. If the stimulation circuit is loaded and running, it MUST NOT be actively sending stimulus signals on any channels.

The instructions below provide step-by-step sequence and more detail about each stage of device operation.

Step one. Boot—Press the battery power button to power on. The blue LED on the mains power switch blinks until the device comes up to optimal temperature.

See the LED Indicator table to the right for safety fault or communication failure LED light patterns. When all safety checks have passed, both the blue (Power) and yellow (Ready) LEDs will be lit (no flashing), indicating the device is ready to arm.

Step two. ARM—Hold down the Start/Stop button for 3 seconds. When the red LED flashes the Start/Stop button may be released and the red (Armed) LED will remain lit. See the LED Indicator table to the right for fault LED light patterns.

Step three. Stimulate—Send stimulation (up to 10 channels) from the RZ processor. Once the device is armed, by default all channels are open and open/close state can be controlled from run-time applications. The stimulator will deliver stimulation to the subject whenever stimulation signals are received from the RZ processor.

The stimulator faults and returns to safe mode (all channels open/no curent output possible) if either of the below occurs:
· Stimulation is attempted on more than 10 channels.
· More than 100 mA total output is detected by the compliance board.
  Note: It's not possible to reach 100 mA under normal conditions.

Step four. STOP—Press Start/Stop button. Press the Start/Stop button at any time to stop stimulation immediately and revert to safe mode.

Output Voltage   +/- 12 V
IZ2M Output Current   +/- 300 µA up to 40 kOhm load
IZ2MH Output Current +/- 3 mA up to 4 kOhm load

LED Indicators

Status	LEDs		
	Blue*	Yellow	Red
Power on (Safe Mode)	blink	off	off
Ready to ARM	solid	solid	off
Arming	solid	solid	blink
Ready to Stim (Armed)	solid	solid	solid
Safety Fault	blink	off	off
Com Failure	solid	blink	off
Safety Fault/Com Error	blink	off	off

*When actively stimulating (no faults) the Blue LED also blinks to indicate temperature deviation from optimal.

Power Status Lights

Running from mains	green
Running from battery	red

Battery Level Lights

Power Level	# of LED's Lit
Fully charged	4
Not fully charged	3-2
Critically low, charge immediately	1

Stim Lights
Labeled by channel number, each LED indicates the voltage at the corresponding electrode site.

Channel output is > +/- 150 mV	green
Channel output is > +/- 10 V (clipping)	red

System Set-up. Before connecting the system hardware, ensure that the TDT drivers, PC interface, and RZ and zBus devices are installed, setup, and configured according to the installation guide provided with your system.

Connect to power. Connect the power connector on the IZ2M/IZ2MH back panel to a mains power outlet using the provided AC power cable. Using the mains power switch on the front panel, set to ON to charge the battery or set to OFF for battery operation.

Connect the stimulator to the RZ base station using the provided duplex fiber optic cable.
Connect the fiber optic cable from the stimulator's fiber optic port labeled Fiber to the fiber optic port labeled To IZ2 on the back side of the RZ. Use the RED labels to match up the color coded fiber connectors and be sure to line up the notch and keys on each.
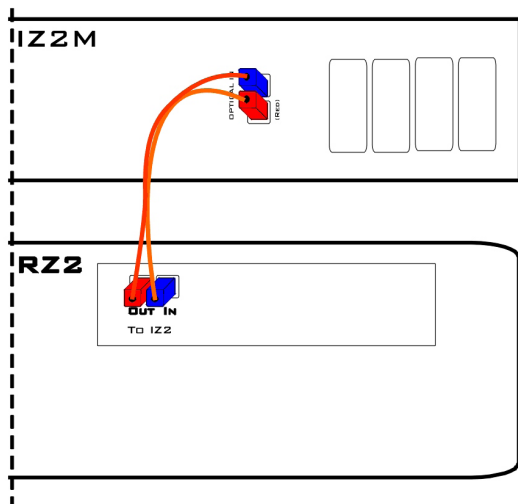
Connect electrodes. Connect the DB26 output connectors on the stimulator to the stimulating electrodes using your preferred method such as direct wiring or a custom pass through connector (available from TDT).

Power on. Power on the base station, then use the battery power button on the front panel to power on the stimulator. The hardware is ready for use.

If using the system with other devices, or preamplifiers, see the documentation for those devices for hardware connection information.

Synapse Rig Configuration. The first time the IZ2M is used, it must be configured in the rig. When the specialized DSPI card mounted in the RZ device is detected, an IZ2 will be added to the rig hardware tree. Click the check box to the left of the IZ2 icon to enable the device. In the options area, select the model and number of channels.

Synapse IZ2M Options.
Click the IZ2M in the Processing Tree to display and set hardware options.

Mini-DB26 Connector Stim Out Pinouts
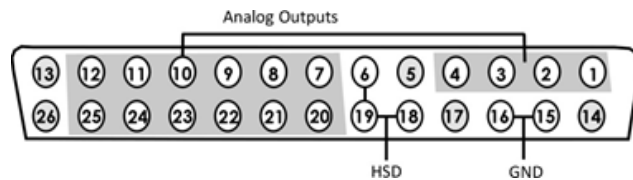
Pin	Channel	Pin	Channel
1	1	14	Reserved
2	2	15	GND
3	3	16	GND
4	4	17	Reserved
5	Reserved	18	HSD
6	HSD	19	HSD
7	5	20	6
8	7	21	8
9	9	22	10
10	11	23	12
11	13	24	14
12	15	25	16
13	Reserved	26	Reserved

Note: Contact TDT technical support (386-462-9622 or support@tdt.com) before attempting to make any custom connections to pins 6, 18, or 19.

support@tdt.com
www.tdt.com