

## **Microstim firmware appraisal**

The firmware is fixed during manufacture and unless the memory becomes corrupt (stopping the Microstim functioning) the only errors can be in the misuse of switches by the user otherwise the unit stops.

Each switch is double pole, powering on the instrument whilst it is pressed. Simultaneously the pattern of stimuli is activated.

There are only four switches so the maximum combination is limited. The maximum risk is an electric shock up to  $\geq 90$  V, pulse width of 200  $\mu$ s.

The firmware is designed to produce short interval pulses at maximum setting  $\geq 90$  V, at a maximum current of  $\geq 90$  mA.

There are many Microstims world-wide that have been in use for up to 30 years. There have been no complaints of firmware malfunction.

There is a continuous flow through of Microstims for service. No firmware failures or microprocessor failures have been found.

It is safe to conclude that the firmware has now been validated by sheer numbers.

Other manufacturers' units use either identical or similar patterns of stimuli function.

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