

EPTA GUIDELINES FOR CHECKING DIGITAL EMG/EP MACHINES

AT EACH RECORDING

- Visually check cables, check enough disc/recording space, check that stimulators are plugged in and functioning, and check correct date and time.
- Apply an internal calibration signal, average this, and measure display average with cursor to check sensitivity, DC offset, display alignment, time-base and appearance of filters.
- Check macro settings are as expected for the test to be performed, i.e. LFF, HFF and montage.
- Measure electrode impedances.

EVERY THREE MONTHS

- Check physical condition of whole system, recorder, reader and server. Check cables, head-box, network points, printer, keyboard, cable connections and siting.
- Perform housekeeping : check montages and default settings, delete unwanted word files, complete archiving.
- Using the external signal generator with attenuator box check the following at recorder and check at reader:
 - Sensitivity
 - Step sensitivity
 - Amplitude linearity
 - Display Speed
 - Noise
 - Accuracy of montages
 - Filters.
 - Check averager

NEW MACHINE OR SOFTWARE UP-DATE

- Perform the three month check, and in addition, using the external signal generator, check :
 - Full frequency response graph
 - Common Mode Rejection Ratio
 - A-D converter

Minimum Specification for External Signal Generator

Frequency Range	0.1-200Hz
Frequency accuracy	±1% of full scale
Amplitude accuracy	±5% on 0.5 volt peak to peak range
Sinusoidal distortion	less than 0.5%
Square wave mark-space ratio	1:1±1%
Output impedance	50Ω
Trigger facility	

Any instrument used to check the calibration of another must, itself, be certified as calibrated to an appropriate standard.

The EPTA sub-group used a Thurlby-Thandar TG1010A available along with an annually renewable calibration certificate from Thurlby Thandar Instruments Ltd.

EPTA 1179 Attenuator EEG Performance Checker.

This should be used along with the signal generator to attenuate the signal and provide connections to all the amplifiers to enable the recommended tests to be performed.

This has now been updated and is available as the Digitimer model D179. (October 2007)



Available from:

Digitimer Ltd., 37 Hydeway, Welwyn Garden City, AL7 3BE

t: 01707 328347

f: 01707 373153

e: sales@digitimer.com

w: www.digitimer.com