

CerebraLogik - Dual Channel EEG and aEEG

Front End EEG Amplifier for Mennen Medical VitaLogik & Menntor Monitors



Continuous Electroencephalographic (EEG) monitoring gives direct information on brain function in newborn infants needing intensive care. To improve the possibilities of long-term monitoring, the EEG can be time-compressed and recorded with a reduced number of electrodes. A trend measure of the EEG, the amplitude-integrated EEG (aEEG), has proved capable of giving relevant information in newborn infants of differing levels of maturity. The electrocortical background activity gives information on the level of brain activity, which is associated with outcome in both term asphyxiated infants and in preterm infants. The aEEG also reveals subclinical epileptic seizure activity, and can be used for evaluation of anti-epileptic treatment¹.

For this reason, aEEG has become a part of the routine neurological care in the neonatal units, especially in full-term infants with Hypoxic-Ischemic-Encephalopathy and in infants suspected of seizures. Its prognostic value after birth asphyxia is well established and seizure detection has improved with the new digital aEEG devices with access to the "real" EEG².

aEEG can be classified according to pattern or voltage criteria, both equally good methods. The voltage classification is easier to use for clinicians with little experience in reading aEEG, but one should always try to assess the underlying pattern³.

	Voltage classification	aEEG trace 6cm/hour	Pattern classification	
Normal Trace	Normal lower margin >5µV upper margin >10µV		CNV Continuous Normal Voltage	Normal Trace
			DNV Discontinuous Normal Voltage	
Abnormal Trace	Moderately abnormal lower margin ≤5µV upper margin >10µV		BS Burst Suppression	Abnormal Trace
			LV Low Voltage	
	Severely abnormal lower margin <5µV upper margin <10µV		FT Flat Trace (isoelectric)	

Classifications of 5 example traces by using the pattern recognition method (right) and voltage method (left) to assess the aEEG background at 3 to 6 hours of age³. (Adapted from Thoresen M., et al.³)

[1] Hellström-Westas L. & Rosén I., Semin. Fetal Neonatal. Med. 2006; 11(6): 503-511. [2] Toet M.C., Lemmers P.M., Early Hum. Dev. 2009;85(2):77-84. [3] Thoresen M., et al., Pediatrics. 2010; 126(1): e131-e139.

Front End EEG Amplifier & aEEG for Mennen Medical VitaLogik & Menntor Monitors

The CerebraLogik is a two or single channel differential EEG amplifier that interfaces with VitaLogik & Menntor monitors. It has a clip for attachment to an infant basinet or patient bed. The CerebraLogik interface cable is connected to the UIM input of the VitaLogik & Menntor monitors, and can be activated via the UIM menu. The EEG display shows real time EEG with a 3 hour display of compressed Amplitude Integrated EEG – aEEG, at the speed of 6 cm/hour on a semi logarithmic voltage axis. The EEG and aEEG can be monitored, stored and displayed simultaneously with the other vital signs monitored on the VitaLogik & Menntor.

EEG and aEEG data can be exported from the monitor to a USB key (via the USB connector on the monitor) and transferred to any PC. The CerebraLogik Viewer software for the PC enables downloading a patient's data in order to study sections or the complete procedure of the patient. Remote reviewing and storing of aEEG sections or full aEEG sessions of up to 7 days on a PC is easy and feasible with this tool.



aEEG on CritiCool Pro System

The CerebraLogik can also be connected to the Criticool Pro, thus providing the staff a complete "one-stop-shop" workstation for hypothermia treated patients:

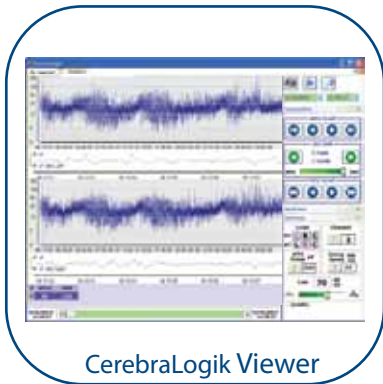
- Monitor and Record Vital signs
- Monitor and Record EEG and aEEG
- Regulate Hypothermia.



CerebraLogik Front



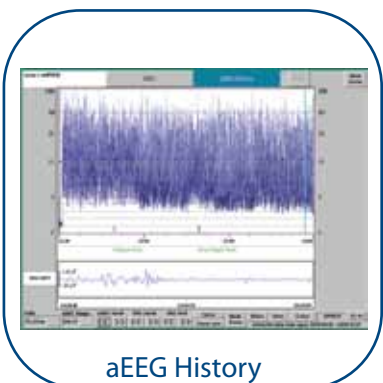
CerebraLogik Back



CerebraLogik Viewer

CerebraLogik Viewer - The Viewer software package is provided with each CerebraLogik to enable viewing of aEEG sections or full aEEG sessions of up to 7 days on your PC. Use a USB key (via the USB connector on the monitor) to transfer EEG and aEEG data to any PC. The CerebraLogik Viewer software for the PC enables downloading a patient's data in order to study sections or the complete procedure of the patient.

- Export aEEG sections or full aEEG sessions of up to 7 days to PC
- Practical and easy tool
- Study and review data remotely
- Store data on PC



aEEG History

aEEG History - CerebraLogik interface to VitaLogik provides aEEG and EEG real time and History display.

- Real time two channel EEG
- 3 hour panel of aEEG
- History panel for full case review of aEEG and EEG
- Parallel monitoring and display of "Common" and invasive monitor vital signs
- Event Marking
- Save, Mark and Export aEEG Sections to PC or Network