Philips Electroencephalography (EEG) measurement module produces real-time waveforms from two channels for indicating overall brain function. Software algorithms filter typical artifacts from eye movement, bulbus movement, and pulse, among others. Compressed Spectral Array analysis converts raw EEG waveforms to condensed color displays to assist the clinician in clarifying patterns in long-term recordings.

**EEG analysis with parameters to aid the clinician**
- Two channels of raw EEG real-time waves
- Compressed Spectral Array (CSA) for each channel of EEG
- Up to three graphical frequency trends within the CSA
- EEG reports with CSA trends and waveforms
- Continuous impedance measurements for each electrode

**Real-time, continuous measurement and analysis for a variety of clinical environments**
The EEG module is designed for continuous real-time monitoring of adult, pediatric, and neonatal patients in anesthesia and intermediate/critical care environments.

**EEG measurement provides an additional source of information to identify changes in patient status and to monitor the response to certain hypnotic drugs.**

**EEG monitoring in the OR**
Philips EEG module can be used in the OR during surgical procedures where cerebral circulation is at risk, such as carotid endarterectomy or cardiovascular procedures with extra-corporeal circulation and/or circulatory arrest.
EEG monitoring in the ICU and NICU

In the ICU, Philips EEG monitoring can be used to monitor patients with acute impairment of cerebral function (e.g., brain trauma or subdural hemorrhage), during deep sedation with barbiturates, and for titration of anti-convulsive therapies or elevated intracranial pressure.

EEG measurement is particularly useful in the NICU for detecting silent seizures, during which the baby does not exhibit movement.

Careful signal filtering and control

EEG signals are susceptible to interference from a wide variety of sources, from a patient’s eye movement, or concurrent electrocardiographic signals. Low filters can be employed to reject ECG artifacts, while high filters may be used to eliminate muscle and line frequency artifacts.

The module continuously measures and displays electrode-to-skin impedance on each electrode and provides impedance range limits to alert the clinician to check or change electrodes. These range limits must be controlled on an absolute basis and, ideally, equalized across all electrodes. The software allows clinicians to configure up to five montages or lead placements (based on the International 10-20 standard) to meet their monitoring needs.

Comprehensive documentation

Users can print CSA and EEG data on demand or at scheduled intervals via the IntelliVue monitor. Each printout includes the last six seconds of real-time waves and CSAs, all calculated numerics, current settings for scale and filter.

Each of the two EEG channels may display one real-time waveform, one Compressed Spectral Array (CSA), and both power and frequency numerics:
- Total power (TP)
- % TP in each frequency band (Delta, Theta, Alpha, Beta)
- Spectral edge frequency (SEF)
- Mean dominant frequency (MDF)
- Peak power frequency (PPF)

Philips Commitment to Measurement Technologies

Philips is committed to providing best-in-class standard clinical measurements as well as innovative measurements to support clinicians’ decisions at the patient’s side.

- Maintaining and advancing the performance of existing, widely used standard-of-care measurements
- Investing heavily in research, development, and clinical validation of new, innovative parameters and algorithms
- Working with strategic partners to integrate next-generation measurements and technologies
- Providing interfaces to more than 100 third-party specialty measurement devices through the Philips VueLink module

References

Arbour R. Continuous nervous system monitoring. EEG, the bispectral index and neuromuscular transmission. AACN Clin Issues. 2003 May; 14(3): 185-207.
