

BrainRT software for Philips IntelliVue

BrainRT is the all-in-one software for real-time acquisition from Philips IntelliVue bedside monitors. Suitable for different applications, the BrainRT interface simplifies both clinical and research measuring methods. Respiratory signals, SaO₂, Transcutaneous CO₂, intravenous blood pressure, Near Infrared Spectrometry (NIRS) are some of the signals available with the Philips IntelliVue monitor.

Philips IntelliVue monitor

This bedside monitor is used for real-time monitoring and has interfaces to a vast range of equipment and sensors. All of these signals can be recorded and reviewed with the BrainRT software.

Supported models

BrainRT supports all models from the Philips IntelliVue **MP** and **MX** Series.

Communication interface

Two options of communication between BrainRT software and Philips IntelliVue:

- IP protocol
- Serial link (cable between monitor and PC)

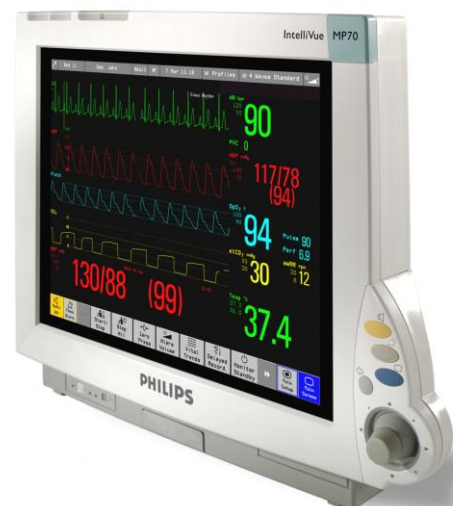
IntelliVue Measurement protocol

Two options for acquisition with BrainRT:

- 'On the fly' signal selection when you start the measurement
- Preconfigured measurement protocol

Video recordings with BrainRT

Add synchronized video recordings from an IP camera or handy-cam for optimal patient monitoring.



Philips IntelliVue monitor MP70

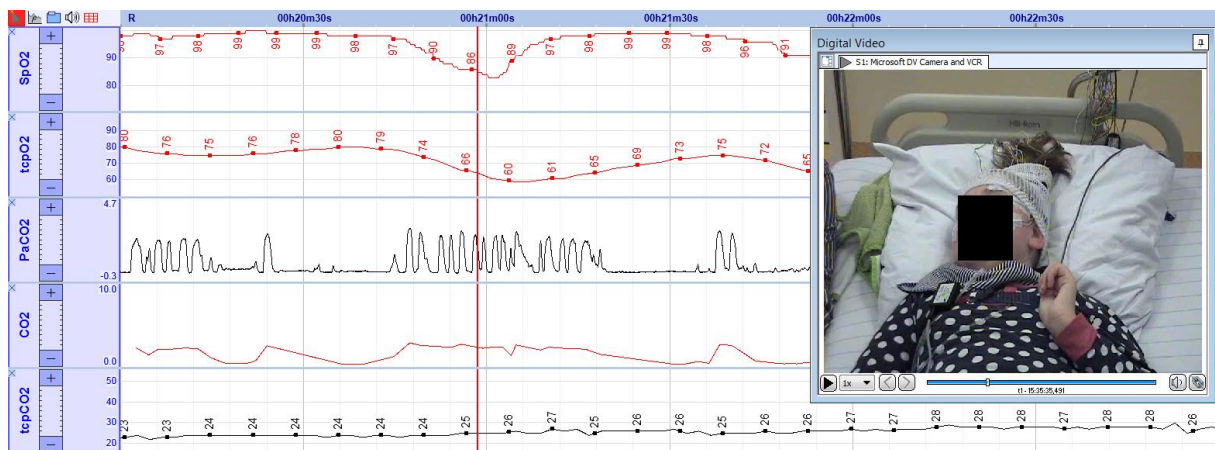


Applications for the BrainRT IntelliVue interface

The BrainRT IntelliVue interface is a useful tool both for clinical and research applications. Not only can you store data for investigation, with the BrainRT interface you have unlimited possibilities for real time or offline review and data analyses.

Blood gases monitoring

With BrainRT, you can monitor blood gases in different ways: oximetry, transcutaneous O₂ and CO₂, CO₂ from a capnograph etcetera. The report automatically calculates time above 45 mmHg PaCO₂, along with End Tidal CO₂ levels and many more parameters.



Blood gases measurement with Philips IntelliVue: SpO2, tcpO2, PaCO2 (capnograph), EtCO2 and tcpCO2

Polygraphy recordings using IntelliVue monitor

If you are interested in the sleep pattern and respiration of patients in the monitoring unit, you can use BrainRT to store and analyze the IntelliVue signals. Video recordings give extra insight into the patient's status. Using the automatic analyses, you can get an automatic report of respiratory events, desaturations, hypoventilation etcetera.

Intensive care monitoring

Patients on the ICU are continuously monitored. With BrainRT, you can easily analyze the signals in real time, store and review the signals from the patient monitor for further evaluation of treatment and patient follow-up.

CFM Monitoring

BrainRT software includes the Cerebral Function Monitor (CFM) analysis. With its **real time CFM analysis**, the BrainRT software generates the CFM trend of one or more EEG channels.

The EEG signals can come from different sources:

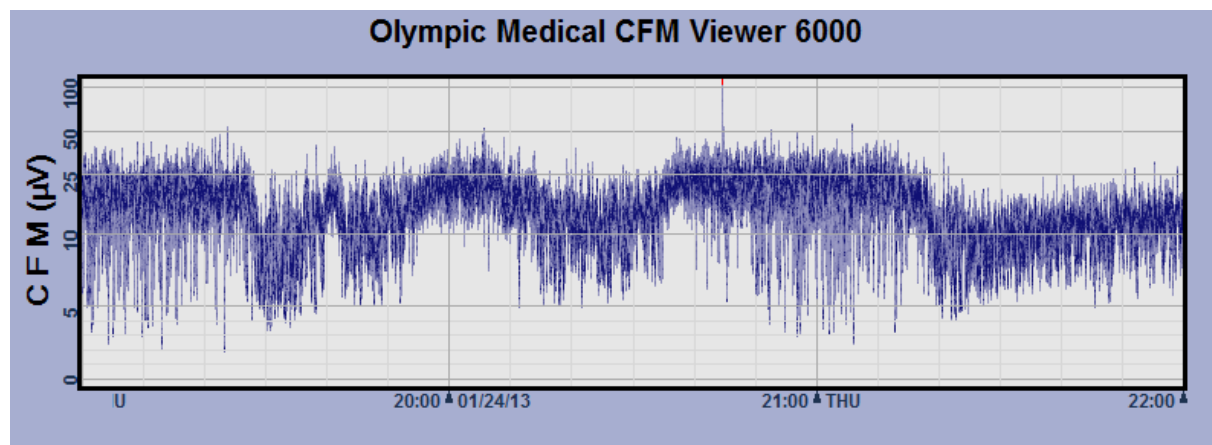
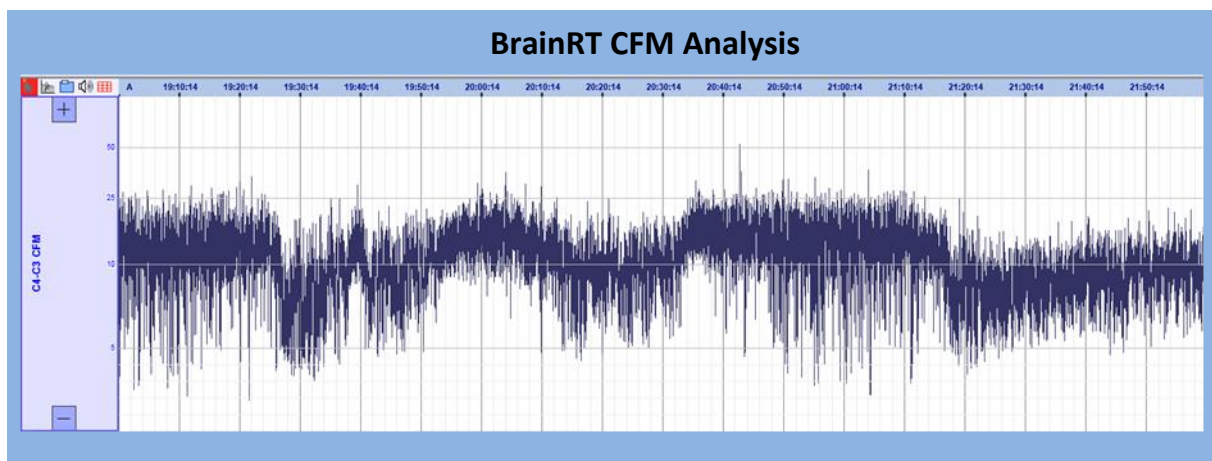
- EEG module of the Philips IntelliVue monitor
- EEG signals from other amplifiers compatible with the BrainRT software



Philips IntelliVue EEG module (2 channels)

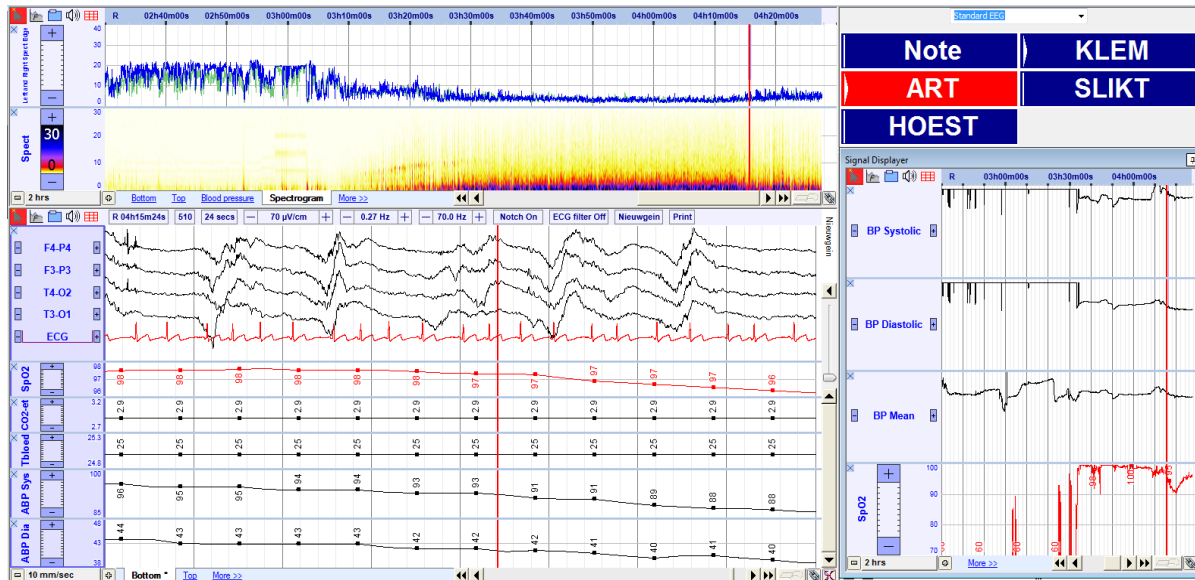
In the two examples below, we make a comparison between the BrainRT CFM trend (first graph) and the Olympic CFM trend (second graph). Both trends are calculated on the same signal, and BrainRT produces the same results as the dedicated CFM monitor.

Adding Burst-Suppression analysis to the CFM monitor functionality, BrainRT software offers a complete analysis package for neonatal monitoring.



Monitoring during Carotid Artery Surgery

During Carotid Artery Surgery, the EEG measurement is a valuable tool for monitoring the patient's status. With the BrainRT Philips IntelliVue interface, it is possible to measure the EEG signals in synchrony with vital signals such as SaO₂, CO₂, blood pressure, blood temperature and events from the patient monitor.



Carotid Surgery acquisition of EEG signals and Philips IntelliVue monitor at Sint Antonius Hospital, Nieuwegein

Real-time BrainRT analyses

The real-time BrainRT analyses include:

- SpO₂ & CO₂ analysis
- ECG analysis
 - Heart Rate trend
 - Tachycardia, bradycardia
 - Ictal tachycardia
- Blood pressure analysis:
 - Systolic, diastolic and mean blood pressure
 - Baroreflex sensitivity
 - PTT
- Respiratory analysis
- EMG analysis
- EEG analyses:
 - CFM
 - Brain Symmetry Index (BSI)
 - Burst-Suppression
 - Spectrogram
 - Spectral edge
 - Power bands
 - Mean phase coherence
 - Entropy
 - Wave detection (spindles, alpha, delta, theta, beta)

Add IntelliVue signals to your EEG/PSG recordings

When recording EEG or PSG signals, you can add IntelliVue signals with the BrainRT interface. This allows better insight into the relation between EEG activity, respiration, blood pressure, blood gases and other signals which were previously not available as synchronized data.

Intensive care monitoring

For patients on the ICU, EEG monitoring data can be combined with vital signals from the bedside monitor using the BrainRT interface.

Monitoring during surgery

During surgery, you can record both EEG signals and vital signals such as blood pressure and heart rate. During carotid surgery, you can even record the TCD images as digital video signal in BrainRT.

Neonatal EEG monitoring

In Neonatal monitoring units such as the NICU, EEG monitoring is more complete when you also record cardiovascular data and cerebral oxymetry. This is possible using the BrainRT interface.

Extended PSG recordings

During PSG recordings, you can add transcutaneous CO₂, O₂, blood pressure and many more signals by using the BrainRT interface.

Hardware solutions for EEG and PSG recordings

BrainRT offers different hardware options for EEG and PSG recordings.

The Schwarzer AHNS recorder offers up to 44 channels, the Morpheus recorder offers up to 34 channels.

Schwarzer AHNS



Morpheus



If you already have a BrainRT acquisition system, you can add synchronized Philips IntelliVue signals to the EEG/PSG signals and video recordings of your device. Contact OSG for more information!