Spectra 102
Transcranial Colour Doppler

USB Compatible Transcranial Colour Doppler

PORTABLE

Transcranial Colour Doppler

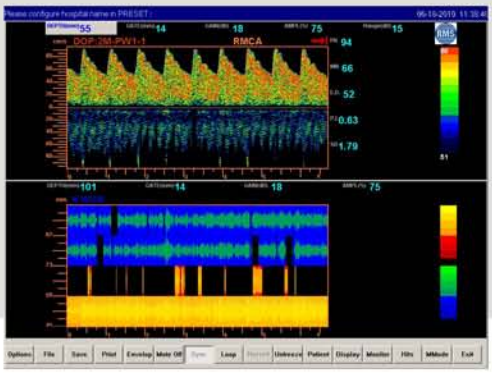
Advantage of TCD

- TCD procedures are safe, noninvasive method and painless. No special precautions are necessary.
- It can be performed at the bedside and consequently be repeated as needed.
- TCD also used as a continuous monitoring device, which no other device can't do the continuous monitoring of the cerebral circulation.
- TCD is frequently less expensive than other vascular imaging techniques.
- Contrast agents are not used in TCD procedure
- TCD give real time information of homodynamic indices

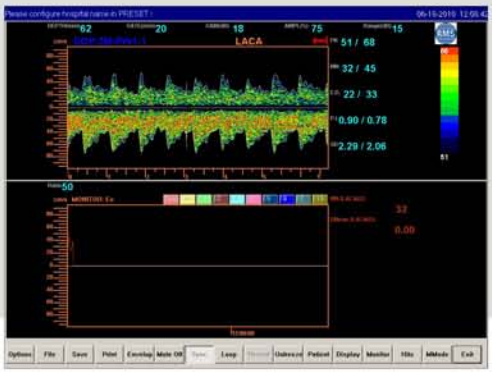
Purpose of TCD

TCD has proven to be a safe, fast and reliable procedure for measuring the rate of blood flow velocity. Combined with other tests, this information can be used to locate restrictions in the blood vessels in the brain, and to track changes in blood flow over time. TCD can offer valuable information about the location of blockage or a clot that has caused a stroke and can help monitor the patient's response to therapy after a stroke. TCD is used to evaluate brain death, head injury, rupture of vessels and in surgical procedures such as heart bypass surgery or procedures requiring anesthesia. A full TCD exam may last 30 to 45 minutes, although a longer examination may be necessary in patients with known cerebrovascular disease.

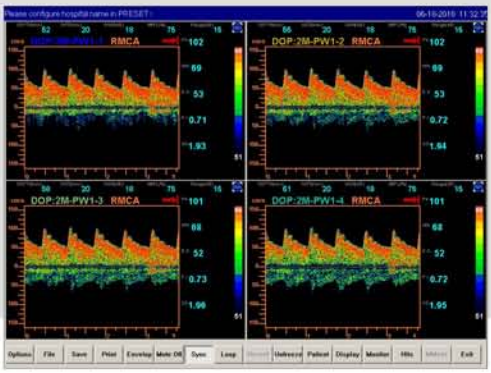
Headband (optional)



M-Mode



Monitor Mode



Realtime Multiple Depth continues monitoring

FUNCTIONS & FEATURES

1. **Multi-depth M-mode**
   Multi-depth M-Mode can quickly detect blood flow signals at different sampling depths simultaneously and realize the following benefits.
   A) Improve detection of cerebral blood vessels efficiently,
   B) To compare spectra of abnormal and normal vessel segments to help diagnose vascular spasm, stenosis occlusion,
   C) To observe HITS (High Intensity Transient Signals) embolic signals)
   D) To compare spectrum of lesion and normal region to help diagnosis of vascular spasm and stenosis.
   E) To observe the moving trace of embolus and distinguish them.

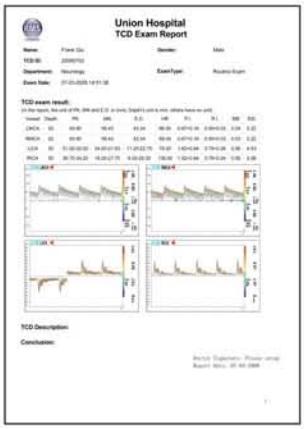
2. **Audio & Spectra Storage and Playback**
   It can record complete clinical information including audio & spectra for follow-up and consultation. Full digital design enables the synchronous playback without time limitation, playback of raw audio, M-Mode and FFT spectra using the powerful Transcranial Colour Doppler reader software package, which provides convenience for clinicians and scientific research and communication.

3. **Professional Emboli Detection and Record**
   With professional thrombus us-distingusihing technology, automatically detect and record embolus, synchronous playback of embolus spectra and audio.

4. **Automatic Report Output and Preview**
   The Transcranial Colour Doppler provides complete report and printout functions for clinician comments and findings. Together with complete flexibility for FFT, M-Mode and results tale printouts improve reporting efficiency. The reports are configured in MS-WORD and offer a high degree of customization for the clinic or hospital. The spectral image can also be saved in various formats for presentations in PowerPoint.

5. **Continuous Monitoring System**
   Using dynamic monitoring mode with-depth and multi-channel features, the Transcranial Colour Doppler provides real-time, bilateral trend monitoring for VMR studies or during intra-operative procedures to evaluate the cerebral hemodynamics of the patients. All data is saved and can be replayed and post-processed using the extensive analysis tools available as standard on the Transcranial Colour Doppler.

6. **Free Match, Flexible Application**
   Compact main unit, connected to the tabletop or laptop computer through USB interface, can be used as a tabletop or portable TCD. For spot check, it can be packed in a lap top computer bag, so it is very easy to carry.



Technical Specification:

- Operating System : MS Windows 2000/XP
- Transducer frequency : 2 MHz,4 MHz
- Adjustable Gain : 1-40 db
- Transmit Power : Max 224 mW adjustable
- Frequency Spectrum : 128 dots,256 dots,512 dots FFT
- PW sampling volume : 4mm-20mm(2mm phase)
- PW Max. Measurement Scale : 512 cm/sec
- Depth : 5mm-136mm

Calculation parameters:

- Peak Systolic Velocity
- Average Velocity
- Systolic/Diastolic Ratio
- Diastolic end Velocity
- Resistance index
- Pulstility index
- Heart Rate
- Thrombosis count(HITS)
- Frequency band width index(SBI)

TCD Applications:

- Diagnosis of cerebral arterial ischemia, cerebrovascular stenosis and occlusion, cerebrovascular spasm, intracranial arteriovenous malformation, and subclavian steal syndrome.
- Detection of intracranial hypertension and indirect verification of brain death.
- Observation and treatment guidance of the occurrence and development of cerebrovascular spasm after subarachnoid hemorrhage and prediction of prognosis.
- Research on migraine, and ischemic cerebrovascular diseases.
- Detection and follow-up of crebral thrombosis.

Since R&D is a continuous process, features & specifications subject to change without notice.

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Certifications: ISO 9001:2008, EN ISO 13485:2003