Synapsys VHIT

Video Head Impulse Test

DESCRIPTION

Synapsys Video Head Impulse Test (VHIT) allows to assess the vestibular-ocular-reflex (VOR) by measuring, recording, displaying, and analyzing eye and head movements.
Differently from all the other video-HIT devices available on the market, Synapsys VHIT does not require the patient to wear any goggles: all the measurements and results are given by the analysis of the head and eyes movements, captured by a remote camera placed at 1 meter from the patient.

PRODUCT CONFIGURATIONS

Synapsys VHIT is available in two scalable software versions:

- VHIT Basic – Analysis of the lateral canals only
- VHIT Plus –Analysis of all the six canals

HARDWARE SPECIFICATIONS

- Remote camera
- Motor-free: no device movements needed for camera framed area adjustments
- Height adjustment through monopod

SOFTWARE SPECIFICATIONS

- Analysis of VOR (Vestibulo-Ocular reflex), overt and covert saccades
- Canalogram Ulmer and results table
- Voice messages
- Video recording and playback for each maneuver

REQUIRED SOFTWARE

VHIT software is installed as module in Maestro software: possibility to manage patients' data in a unique database, store and print exam reports.

SENSOR SPECIFICATIONS

Type:	CMOS Mono
Max Resolution:	1456 x 1088 pixels (cropped to 752 x 400 pixels)
Pixel size:	3.45 x 3.45 µm
Sensor class:	1/3"
Shutter type:	Global

TIMINGS

Max Frame rate used: 100 fps
Exposure time: 2.4 ms

CAMERA PROPERTIES

Focal length: 20 mm / 0.787 in.
Field of vision (total): 7.3° (Horizontal), 3.9 ° (Vertical)

CAMERA CONTROLS

Gain control: automatic
Exposure control: manual (fixed)

COMPUTER INTERFACE

Connection: through USB port
USB cable length: 3 m / 118.1 in

POWER SUPPLY

Power supply: 12V DC – 1A, through an external medical grade 100-240 Vac 50/60 Hz power
Power supply cord length: 5m / 196.85 in.

MECHANICS

Device Size (WxDxH): 40 x 10 x 30 cm / 15.7 x 3.9 x 11.8 in.
Device Weight: 2 kg / 4.4 lb (cable excluded)
Monopod Size: adjustable in the range between 710-1070 mm / 27.9-42.1 in.
Monopod Weight: 4 kg / 8.8 lb

ILLUMINATION

Image acquisition provided under illumination by a grid of 7x8 IR LEDs
IR LEDs peak wavelength: 830 nm
Power per LED: 70mW/sr

PC MINIMUM REQUIREMENTS

CPU: Intel® i5, 6th generation or above, 8 GB RAM
Graphics card: with at least 256 Mb of dedicated memory
USB connection: At least 1 USB 3.0 port
Operating System: Windows 10-64 bits and Windows 11

FREIGHT PACKING

Size (WxDxH): 80 x 40 x 20 cm / 31.5 x 15.7 x 7.9 in.
Gross weight: approx. 9.5 kg / 20.9 lb

APPLICABLE STANDARDS

Software: IEC 62304, IEC 82304-1
Cybersecurity: IEC 81001-5-1
Electrical safety: IEC 60601-1
EMC: IEC 60601-1-2
Biocompatibility: ISO 10993-1
Safety of lamps: IEC 62471
Risk management: EN ISO 14971/A11, ISO TR 24971
Usability: IEC 62366-1, IEC 60601-1-6
Processing: ISO 17664-2
Environmental testing: IEC 60068-2-31

MDR CLASSIFICATION

Class IIa (Classification rules: 10,11, (Annex VIII, MDR 2017/745))
Notified body: TÜV SÜD Product Service GmbH (0123)

INCLUDED PARTS

- VHIT device
- Adjustable supporting monopod
- 10 VHIT Adhesive targets
- 1,5mt measuring tape
- Medical grade power supply with cables
- USB connection cable
- Synapsys Software Suite
- USB Dongle Key
- User manual

PRODUCT CODES

10738: Synapsys VHIT Basic
10739: Synapsys VHIT Plus
10740: Software upgrade from VHIT Basic to VHIT Plus

Synapsys VHIT is developed by **INVENTIS S.r.l.**
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The Inventis Quality System complies with ISO 13485 standard.