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SYSTEM JAZZ NOVO

Description:

1. **The Jazz-novo Standard** setup measures following signals (**No.001ABCD**):

- eye movements in the horizontal and vertical directions (1 kHz sampling frequency)
- total haemoglobin and oxyhaemoglobin plethysmography (500 Hz sampling frequency, 650/910 nm wave length)
- microphone signal (8 kHz sampling frequency, 12 bits sampling resolution)

The Jazz-novo Standard communicates with the host PC using an optical fibre link (optical system isolation) and USB connection. The Jazz-novo Standard (basic system) can be enhanced by using the following options.

2. **Vestibulum option (No.002)**

The Jazz-novo system can be equipped with two Uni-axial Rate Gyro (Vestibulum), which are used for measuring the velocity of head rotations about the vertical and horizontal axes. Redirecting of the gaze is usually coupled with involuntary head rotation toward the new gaze position.

The gyroscopes provide the absolute values of the head rotation velocities and due to the existence of Vestibulo Ocular Response (VOR), can be used to cross calibrate the eye movement signals. The Vestibulo option adds following signals:

velocity of horizontal head rotation (1 kHz sampling frequency, 12 bits sampling resolution, $\pm 300^\circ/\text{s}$ measurement range)

velocity of vertical head rotation (1 kHz sampling frequency, 12 bits sampling resolution, $\pm 300^\circ/\text{s}$ measurement range)

head tilt in frontal and sagittal planes (1 kHz sampling frequency)

3. Wireless option (No.003AB)

Complementary to the autonomous recording option is the telemetry facility providing data transfer over a 2.4 GHz short distance radio link. To name just one of the possible Jazz-novo applications, it allows the experimenter to monitor continuously the eye and head behavior of the tested person, when he/she moves freely around the control room.

4. Autonomous recording option (No.004AB)

The Jazz system can also be used as a stand-alone system equipped with the battery powered controller and facility to record data on MMC flash memory card. It fulfils the function of a Hollter type device, allowing one to record whole-day eye and head activity. The idea behind it is that the visual interaction with the normal environment, like the working place or neurological rehabilitation clinic, provides the most natural visual stimuli. In this way ordinary daily activity can become the diagnostic experiment. The data recorder is equipped with automatic time stamping of the beginning and end of the recorded data file (the real time clock including the date).

5. Scene camera option (No.005ABCD)

Studying human operator behavior often requires one to know the type of activity and situational context of the instantaneous operator engagement. To document it, Jazz-novo can be equipped with a scene camera, which – depending on the type of activity – can be attached by optical fiber or wireless transmission (2.4 GHz short distance radio link) to the external VCR or host PC.

6. Synchronic option (No.006ABC)

Jazz-novo with the synchronic option can perform the measurement synchronously with the external triggering signal. It can itself also provide the synchronizing signal necessary to trigger other physiological-data acquisition systems or to synchronize two independent Jazz-novo measurement systems.

Synchronic option through its direct optical input (screen sensor) can be used to synchronize the onset of stimuli displayed on the computer screen with the eye movement data.

System requirement:

- system windows XP
- processor Pentium III or higher
- hard disk free space 20 MB
- USB port