

Fibre-Optic Response Pad System



Description:

The response box system consists of two hand-held devices, each with 4 colored buttons. The buttons emulate key presses on the computer. More specifically, the right hand corresponds to the numbers 1 (index finger) through 4 (pinky finger) across the top of the keyboard and the left hand corresponds to the numbers 6 (index finger) through 9 (pinky finger). The number “5” is reserved for the trigger (see below). Similar responses boxes are installed at the simulator.

Website: <http://www.curdes.com/usbforp.htm>

MR Safe Video Camera



Description:

The MRI-compatible video camera allows for in-bore monitoring and recording of subject behavior during fMRI. It can be placed in a variety of positions using its articulating mount. Typically the camera is positioned on the top of bore (i.e. on the Velcro strip) and aimed down towards the subjects head. The video camera is connected to the TV on the MR console as well as to the stimulus computer (BUZZARD). A custom-built software application allows for recording and time-stamping of the video signal.

Website: <http://www.mrc-systems.de/englisch/products/mrcamera.html>

Projector + Screen



Description:

The projector and screen allow for the simplest form of visual display. Subjects look through the rear facing mirror at the screen located at the back of the magnet. The only connection necessary is the monitor cable located on the stimulus desk.

Website: <http://www.projectorcentral.com/NEC-MT1065.htm>

Trigger (Synchronization with Scanner)

The recommended approach is to design your program to accept the number “5” (as if you pressed “5” at the top of the keyboard, not on the numeric keypad). This indicates the start of the fMRI scan and the first timepoint in the resulting fMRI dataset. Subsequent “fives” will be sent every TR (i.e. every 2 or 3 seconds, depending on your scan parameters), which could either be ignored or used for more advanced time-locking.

Avotec Silent Scan Communication System



Description:

The Avotec Silent Scan is used to provide calibrated auditory stimuli to subjects inside the scanner or to record subject speech. The headphones also allow the technologist or experimenter to communicate with the individual in the scanner. The system is connected via the headphone connector at the stimulus desk.

Website: <http://avotec.org/silentscan.htm>

MR-Confon Audio System



Description:

The MR-Confon audio system can be used to provide auditory stimuli to subjects inside the scanner (subject speech can also be recorded via a separate microphone system) instead of the Avotec Silent Scan system and provides somewhat better audio quality. The headphones also allow the technologist or experimenter to communicate with the individual in the scanner. The system is connected via the headphone connector at the stimulus desk. NOTE: This system is only compatible with the 12-channel head coil and **will not work with the 32-channel head coil.**

Website: <http://www.mr-confon.de/en/products/headphones.html>

MR Safe Prescription Glasses



Description:

The goggles are a means to provide corrective eyewear inside the MRI scanner. The lens inserts are easily changed based on the needs of your subject. The kit includes 24 sets of prescription lenses (+6.00 to -6.00 sphere) in 1/2 diopter increments.

Website: <http://www.safevision.net/mri.html>

MR Compatible EEG System

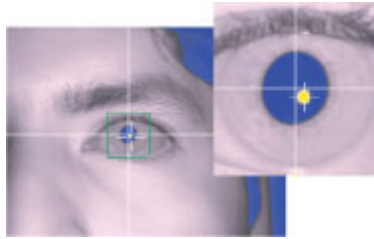


Description:

The Brainvision MR Compatible EEG system provides full EEG recording within the MR scanner, allowing for simultaneous fMRI-EEG recordings. The system consists of small and large [EEG caps](#), [amplifier](#), sandbags to minimize wire movement in the scanner, and a dedicated computer for EEG recording with [BrainVision Analyzer](#) software, all organized on a single rolling cart. This system can be time synchronized with fMRI recordings via the scanner's trigger signal. EOG, EMG, ECG, GSR, and other signals can also be recorded via the [BrainAmpExG MR](#) amplifier.

Website: http://www.brainproducts.com/products_by_apps.php?aid=2

MR Compatible Eye Tracker

**Description:**

The SR Research EyeLink 1000 system is an MR compatible eye tracker that allows for eye tracking to be carried out on a subject lying in the MR scanner. The system consists of a [camera](#)/[mount](#), mirror system, and [dedicated host computer](#).

Website: http://www.sr-research.com/solutions_fmri.html

Drawing Tablet

**Description:**

The fMRI-compatible drawing tablet allows realistic drawing and writing movements to be captured within the scanner. The tablet interfaces with the PC via USB and emulates the function of a mouse. A small switch on the end of the stylus is received by the computer as a joystick button press. Drawing motions are displayed to the user via MR-compatible goggles or using the projector and screen. The user should be instructed to keep the stylus upright and in contact with the tablet surface at all times so that the cursor position is not lost. To draw the user simply presses down on the tablet, thus activating the switch. Experimenters wishing to use the tablet will need to keep in mind how the system interfaces with the computer and design their programs accordingly.

Website: None

Avotec Silent Vision Display System

**Description:**

The Avotec Silent Vision system provides high-resolution (1024x768) video display inside the magnet. The head coil-mounted goggles are fully adjustable and provide prescription correction between plus and minus 6. The system is also capable of separate left and right eye display. Due to the immersive nature of the device it is particularly applicable to virtual reality and emotion studies. NOTE: The Avotec cannot currently be used in conjunction with the matrix coil.

Website: <http://www.avotec.org/silentvision.htm>