



Choices in mind

At Cambridge Research Systems, our reputation is founded on values of scientific rigour and integrity. You can be confident that our tools provide the precision and control needed for scientific applications, while remaining practical and affordable – the engineering philosophy which we have held since our incorporation in 1989.

Our culture is to collaborate openly with academic partners and other like-minded companies, enabling us to deliver integrated, single-source solutions from a broad range of specially selected, high quality equipment. We offer you the flexibility and choice you need to advance our understanding of the brain.





Displays

BOLDscreen LCD displays are MR Safe. They are the ideal choice for new sites or those upgrading rear projection installations. Offering outstanding image quality for scientific applications, BOLDscreen can also be used for patient entertainment during clinical scanning sessions.

With BOLDscreen the advantages are clear

Designed from the ground up for fMRI, BOLDscreens display high contrast, high resolution images; delivered with no time lag, and no dropped or interpolated frames. Compared to goggles, they're much cheaper to buy and are easier to integrate with a wider range of other devices, especially eye trackers.

Safe at the exit of the magnet bore

BOLDscreens are designed to be sited directly at the rear of the bore, to the side or end of the bed. They can be viewed directly, via headcoil mounted mirrors or with prism glasses. They're far simpler to specify and setup than projectors, and cost less to maintain (no expensive bulb changes required).



→ BOLDscreen

24" LCD monitor with SuperBright LED backlight

The high-quality IPS panel has native 8-bit colour resolution, 1000:1 contrast ratio and 5ms Grey-to-Grey response time. It accepts a digital DVI input and outputs 24-bit RGB images at a resolution of 1920x1200. Perfect for displaying calibrated visual stimuli.

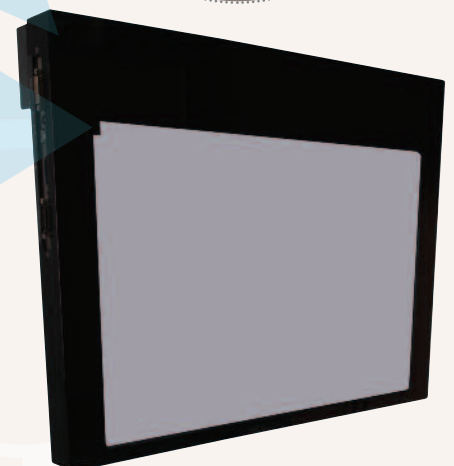
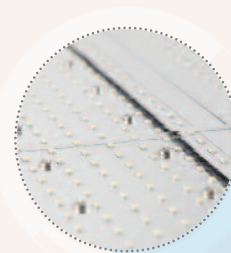
Custom SuperBright technology

White LED matrix backlight produces peak white at up to 1000cd.m⁻², which results in highly saturated chromatic displays. Sophisticated optical design ensures excellent uniformity across a wide area with no image processing required.

Stability and repeatability

Integrated real-time backlight calibration ensures luminance reaches the target level from switch-on and remains constant over time.

www.crsLtd.com/boldscreen





→ BOLDscreen 3D

23" LCD monitor with support for 3D

The full HD TN panel with integral LED backlight supports a complete range of 2D and 3D displays. It accepts a digital DVI input and outputs 24-bit RGB images at a resolution of 1920x1080. Display dichoptic stimuli for stereoscopic and binocular vision experiments and deliver the wow factor during patient entertainment with 3D movies.

A truly outstanding performer

BOLDscreen 3D uses the latest FPR 3D technology. This delivers bright, flicker-free images, with minimal ghosting; participant wears lightweight, MR Safe, passively polarized glasses.

www.crs ltd.com/boldscreen-3d

→ BOLDscreen Trolley

Our height-adjustable, portable stand facilitates fast repositioning of BOLDscreen monitors between scanning sessions and does not compromise the field of view. It's easy and safe for one person to operate.

www.crs ltd.com/boldscreen-trolley



Eye Tracking

→ LiveTrack AV for fMRI

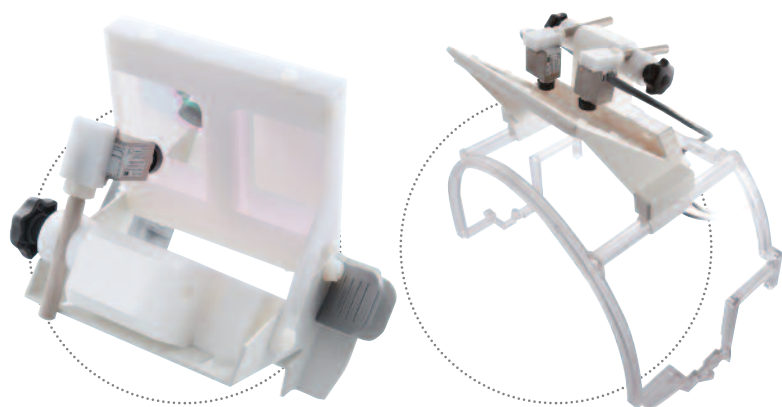
Affordable 60Hz video eye tracking

LiveTrack delivers real-time estimates of eye rotation, direction of gaze coordinates and pupil size. Close to the eye imaging arrangement is compact, easy to set up and delivers more robust tracking than a remote system.



Fast setup, monocular and binocular tracking

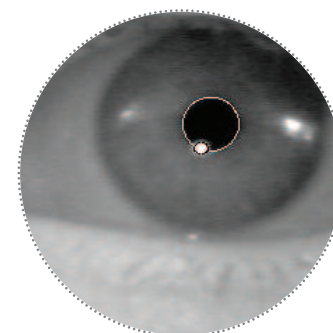
Compact, MR Safe cameras with an integrated IR illumination source are mounted directly on the head coil, avoiding all the difficulties of remote camera systems. A range of opto-mechanical mounts are available to support different head coils; monocular and binocular configurations for tracking with one or two cameras.





Dedicated eye tracking hardware

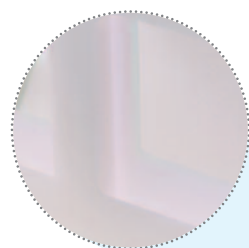
Bespoke embedded hardware identifies the pupil and corneal reflection, then calculates eye rotation. Video images, tracked eye position and pupil size data relayed to host computer via USB interface.



Custom dichroic filter: transparent in IR, reflects visible light.

Camera can image through the filter, but cannot be seen by the participant.

Participant views image reflected from filter, but cannot see the camera.



Monitor participant's behaviour via live video

Live video stream from each eye tracking camera is produced concurrently with the data. Get instant feedback to know where your participant is looking.

Very easy integration

Works with Presentation, ePrime, MATLAB, Python and your own custom software. Compatible with Windows, Mac OS X and GNU/Linux.

www.crsi.com/livetrack-fmri



Behavioural Responses

Impressive feedback

These MR Safe response kits enable you to assess a range of behavioural responses and can synchronise their data with a TTL trigger from your scanner. They are compatible with Presentation, SuperLab, ePrime software and can also work with your own code.



→ FORP Fibre Optic Response Kit

Versatile USB interface delivers total flexibility across a wide range of hand-held pads and grips, trackballs, joysticks and custom devices.

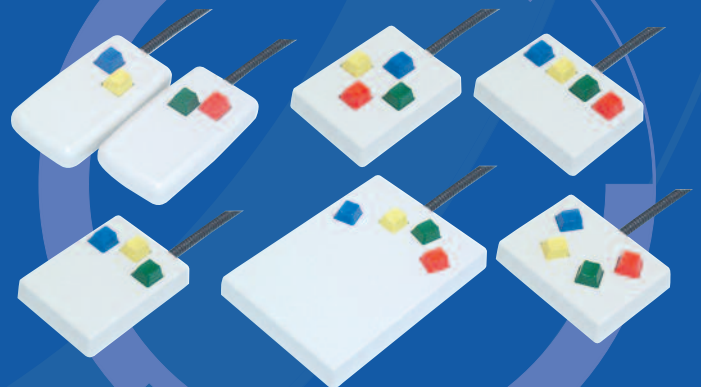
www.crsLtd.com/forp



→ Lumina Fibre Optic Response Pads

The Lumina LP-400 is a reliable and robust patient response system featuring large push buttons; these response pads are all about ease of use, pure and simple.

www.crsLtd.com/lumina





Audio

Our modular audio and bi-directional communication solution helps participants cope with MRI-related acoustic noise and can also be used to deliver calibrated auditory stimuli for fMRI.



→ MR Confon

Hear the difference

Circumaural, closed-back headphones are available in a number of sizes and cable routing arrangements to suit different headcoil designs; superior gradient noise dampening compared to simple pneumatic solutions. Insert soft, memory foam cushions between the head and contact points of the coil to provide even better isolation, reduce bone conduction and improve patient comfort.

Dual driver design

Unique electro-dynamic driver uses the magnetic field of the MRI scanner to drive the headphone membrane; produces powerful speakers with an excellent frequency response across a wide range. Additional piezo-electric driver can be fitted to some designs; enables headphones to be used outside the bore too.

Amplify your options

Easy to operate for routine clinical use, yet still offer sufficient flexibility and control of auditory stimuli for fMRI. Stereo amplifiers are perfectly matched to the filter set and headphones; all designs have digital optical inputs to connect the signal source. Starter f mkII+ drives two headphones, external speakers, and supports a participant microphone. Digital I/O interface supports integration with the MRI scanner and AudioFile.

Bi-directional communication

Compact scanner operator microphone sited in the console room can be combined with an Optoacoustics noise-cancelling version mounted to the headphone; provides clear, simultaneous, bi-directional communication.

www.crs ltd.com/mrconfon

→ AudioFile

Deliver auditory stimuli with synchronous triggers

Designed for scientific applications where timing and synchronisation of stimulus streams are critical. Supports real-time streaming directly from a host computer and buffered playback of files stored on a high capacity SD card. Both modes automatically generate TTL-compatible triggers at the true onset of the auditory stream.

Perfectly connected

A full complement of analogue and digital outputs: headphone, line and optical S/PDIF for connection to third-party amplifiers. Integrates with MR Confon amplifier: stimulus presentation can be gated using trigger pulses generated by the MRI sequence.

www.crs ltd.com/audiofile



CAMBRIDGE RESEARCH SYSTEMS



Patient Entertainment

Reassuring performance

Research subjects and patients alike can often become anxious and restless in the magnet bore, particularly during long MRI sequences. These products are designed to make the experience more relaxing, enabling you to obtain higher quality data with fewer lost scans.

→ Harmony

Compatible with any MRI system up to 3T, Harmony includes an MR Safe LCD display mounted on a portable stand, stereo headphones and an operator microphone.

Patients can watch DVDs, listen to music, or look at a slideshow of photographs. The compact Entertainment Hub is located in the MRI operator room and is connected directly to the display and audio system; its integrated full HD display precisely mirrors the images presented to the patient and the built-in speakers repeat the audio stream heard by the patient.

www.crsLtd.com/harmony



Patient Comfort



→ MediGoggle & MediGlasses

MediGoggles and MediGlasses allow participants with reduced acuity to see clearly within the scanner room and bore. Lenses are supplied in sets with a wide range of optical powers, and simply pop in to provide the appropriate correction for each individual.

www.crsLtd.com/medigoggle
www.crsLtd.com/mediglasses

→ NoMoCo Pillow

These sets of 12 memory foam pads provide superb comfort, support and sensory feedback. This reduces patient discomfort, minimises head movement and can eliminate the need for motion correction. Two fabric options available: Vinyl Coated or Healthcare Fabric.

www.crsLtd.com/nomoco



Tomographic Imaging

New possibilities

fNIRS makes it possible to run studies that would otherwise be very difficult or even impossible to consider with other functional imaging techniques. It's ideal for use by the bedside, with freely movement participants, and even in group studies. The non-invasive, light-weight nature of the technology makes it particularly suitable for use with paediatric subjects including neonates and infants.

The equipment interfaces with a variety of headgear and optical probes; turn-key solutions are available for standard topography, neonatal/infant imaging, and multimodal acquisition with EEG or MRI. Imagers include digital I/O for precise event marker triggering, and support real-time data streaming for neurofeedback.

NIRScout systems employ an open data format; compatible with a variety of open-source analysis solutions and NIRx's proprietary NAVI software.

www.crsLtd.com/nirscout

→ NIRScout

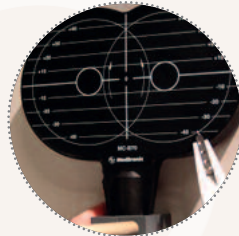
The NIRScout is an ultra compact fNIRS neuroimaging solution which offers the versatility and scalability to fit a broad range of research applications at very competitive price. For example: investigating motor sensory functions, traumatic brain injury, learning/attention disorders and brain computer interfaces.

Flexible configuration

From 8 sources and 4 detectors, to 16 sources and 24 detectors, NIRScout can even be configured so that two separate systems operate in tandem, yielding up to 32 sources and 48 detectors (768 channels per frame).



Software Tools



→ BrainVoyager QX

Data is nothing without the ability to visualise, interrogate and interpret it. BrainVoyager QX contains everything you need for the analysis and visualisation of structural and functional MRI, DTI, EEG and MEG data.

www.crsLtd.com/brainvoyager

→ BrainVoyager TMS Neuronavigator

BrainVoyager TMS provides real-time image-guided Neuronavigation, facilitating very precise and accurate coil positioning; critical for successful use of TMS in cognitive neuroscience studies.

www.crsLtd.com/brainvoyager-tms

Please contact Cambridge Research Systems

Tel: +44 1634 720707

USA/Canada Toll Free: 1 866 846 2929

Email: enquiries@crsltd.com

www.crsLtd.com



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