

BTTracker

Potential Applications

- Monitoring of static B field exposures
 - Epidemiological studies
 - Personal health and safety
- Mapping of B fields
 - Assessment of work environments for personnel in the periphery of MRI installations
 - Acceptance testing of field maps of MRI installations and major reworks
- dB/dt monitoring
 - Check procedures and work practices for minimal risks
 - Immediate alarm feedback



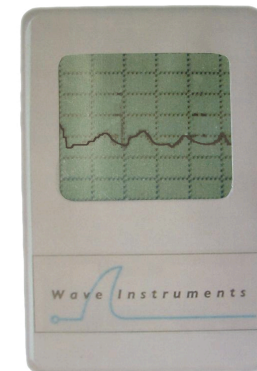
Wave Instruments Pty. Ltd. is a medical device design company developing products and services related to monitoring, diagnosis and logging of physiologically relevant parameters. Being a spin-off company of the University of Queensland, we have exclusive licence to four technologies that are being developed through to product.

- Magnetic field dosimetry
- Remote oximetry
- Cardiac logging and predictive algorithms
- Non-invasive cardiac catheter tracking systems

Further details regarding products under development can be found at:

www.waveinstruments.com.au

BTTracker



Personal magnetic field dosimeter for health care professionals and industrial exposure logging.

Amid growing concerns within the MRI industry of potential health risks to workers due to prolonged exposure to static magnetic fields a prototype device suitable for typical MRI technologist B field exposures and exposure to transient effects has been developed and trialled.

Static fields are generally regulated on the basis of the best empirical evidence available, principally due to the lack of personal logging systems.

This technology will now permit accurate logging of real exposure over time periods reflecting the normal work cycle of the individual.

Meaningful recording of time averaged exposures to static B fields and the as yet, unreported dB/dt exposure can be examined. With further consideration, alarm thresholds can be incorporated to notify the subjects and employer of the accumulated B field dose reaching predetermined limits. dB/dt limits may also be set to provide feedback regarding work practices around high B field systems.

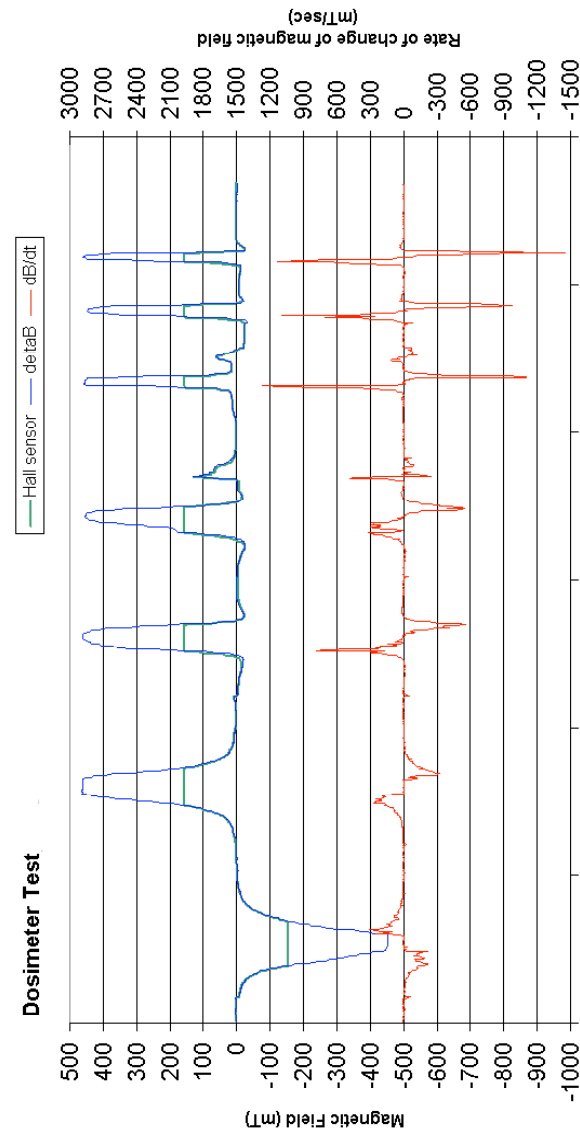
Other occupational groups may also benefit from B field logging, especially those involved in electrical power work and induction smelters where prolonged unspecified exposures may exist.

BTracker

Specifications*

| | |
|------------------|--|
| Physical size | 70 x 35 x 12 mm |
| Weight | less than 150 gm |
| MR Compatibility | tested to 4T (no functional failure, no torsional effects) |
| Resolution | 100 uT (1 Gauss) |
| Range | +/- 5 T |
| Resolution dB/dt | 400 uT/s |
| Range dB/dt | +/- 2 T/s |
| Sample Rate | (up to) 110 sample/s |
| Memory | 16 MB MMC |
| Record length | 31 hours (3 orthogonal components sampled at 10 Hz) |
| Interface | MMC reader |

* Preliminary specifications reflect existing prototypes and may not be implemented on final products.



Magnetic field exposure profile recorded using **BTracker** around the perimeter of a clinical MR system. The upper trace (blue) shows the B field exposure whilst the lower trace displays dB/dt. Both measures represent the sums of orthogonal recording axes.