

MR and MEG compatible Geodesic EEG Systems

whole head EEG systems with high spatial resolution for use in MR and MEG environments



- **State-of-the-art design** - special Field Isolation Containment System (FICS) for the amplifier that can be used inside the scanner room
- **High density whole head coverage** - full scalp coverage for the highest spatial resolution data - choose from 32, 64, 128, or 256 channels
- **Versatility** - can be used as an EEG-fMRI or EEG-MEG multimodal imaging system or as a stand-alone EEG system; channel counts can be increased as your needs change
- **MR artifact handling** - hardware and software for gradient and ballistocardiogram artifact removal

EGI's MR and MEG compatible EEG systems

Combine the power of whole head, dense array EEG (dEEG) and fMRI or MEG in an integrated system.

Systems are available with 32, 64, 128, or 256 EEG channels, and include MR-compatible hardware and software that work together to minimize and remove imaging-related artifacts. The MR-compatible GES 400 systems have been used in up to 3T MR environments for functional imaging (EPI)* and are compatible with 7T MR environments.

The ideal platform for multimodal imaging

The MR-compatible GES 400 systems use special MR and MEG compatible EEG sensors, amplifier, and software. The unique I/O sync box allows EGI amplifiers to be synchronized with the MR or MEG clock.

Net Amps amplifiers

EGI's Net Amps amplifiers are designed specifically for EGI's Geodesic Sensor Nets and provide the low noise and high sensitivity required for acquiring high-quality EEG data. The amplifier fits neatly inside the Field Isolation Containment System (FICS) for use in MR or MEG environments.

The Geodesic Sensor Net (GSN)

The Geodesic Sensor Net allows you to apply dense arrays of sensors quickly and easily with no scalp abrasion or glues. The unique design provides an exceptionally comfortable and low stress experience for your participants, which is especially critical for an MR environment where the subjects are in a supine position.

Use with a simple saline solution for shorter recordings, or an inexpensive paste or gel for long term recording.

Net Station software

EGI's Net Station software provides full acquisition, review, and analysis functions in a complete package. Software includes a full MR artifact reduction tool package, including gradient artifact removal and ballistocardiogram (BCG) artifact removal.

Net Station software saves data files in Metafile Format (MFF), which can be exported to MATLAB, EEGLAB, FieldTrip, or your own custom software.

*Contact EGI for more information regarding available sequences (info@egi.com).



Features of MR and MEG compatible GES 400 series

Versatility. Use in the MR or MEG environment or in the lab. There is no need for separate systems.

Reduced noise. The Field Isolation Containment System (FICS) features shielding and radio frequency (RF) filtering that significantly reduce the effect of noise sources in the MR environment.

Artifact removal. Net Station software suppresses MR gradient artifact contamination of the EEG during acquisition so you can examine the quality of the EEG before the study is completed.

For offline data processing, EGI's Net Station MR module provides tools for the cleaning of MR gradient artifacts and suppression of ballistocardiogram (BCG) artifacts. Files can be exported for use with third-party software.



Physiological measurements

MR and MEG compatible GES 400 products provide support for 32 auxiliary channels using two Physio16 MR input boxes and Net Station 5 software.

Products

GES 400 with MR and MEG compatibility - EGI's foundation product for EEG-fMRI research features EGI's ADAPT amplifier technology, with:

- a built-in Intel processor that supports remote software and firmware updates
- state-of-the-art electronics
- fiber optic signal input and output for optimal digital bandwidth and an extra level of safety isolation
- built-in clock sync port for MR and MEG applications

GES 410 with MR and MEG compatibility - this is the GES 400 MR and MEG compatible system, but allows sampling rates of up to 20 kHz.

Upgrade package - if you already own a GES 400 or GES 410 system, you can configure it for MR and MEG environment with a simple upgrade package.

MR and MEG compatible GES 400 series

Feature	GES 400	GES 410
EEG channel count	32, 64, 128, or 256	32, 64, 128, or 256
Amplifier	Net Amps 400	Net Amps 410
On-board microprocessor	Intel Atom 1.6 GHz	Intel Atom 1.6 GHz
Potential sampling rate	8 kHz*	20 kHz*
Supports multiple acquisitions	yes	yes
Supports MP4 video capture	yes	yes
I/O Connection	Fiber Optic Ethernet	Fiber Optic Ethernet
Digital (TTL) inputs	16 bits (8 supported in Net Station software)	16 bits (8 supported in Net Station software)

Net Amps 400 and 410 amplifiers are compatible with Net Station 4.5.5 and beyond.

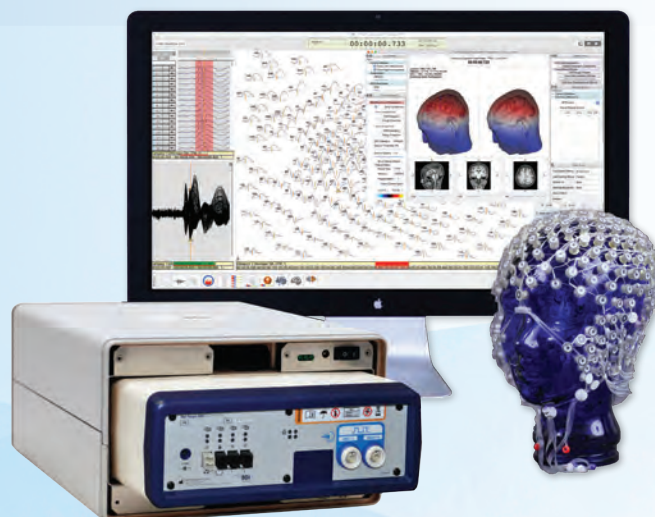
*Amp Server Pro SDK is required to realize the highest sampling rates.

To schedule a demo, or for more information, contact info@egi.com or visit us at www.egi.com

Geodesic EEG System™ (GES) 400 /410 with MR and MEG compatibility

A complete MR and MEG compatible system is configured with:

- Net Amps™ amplifier and wall mount
- iMac or MacBook Pro computer
- Net Station™ software with artifact removal module
- hospital grade isolation transformer
- Field Isolation Containment System (FICS)
- GES™ Clock Sync I/O
- HydroCel™ Geodesic Sensor Net™ MR (32, 64, 128, or 256 channels)
- MR Net support kit
- equipment case
- system manuals
- installation and basic training
- 1 year Support Contract



Related Products and Upgrades

- Geodesic EEG System™ MR upgrade package (for existing GES 400/410 systems)
 - Field Isolation Containment System (FICS)
 - Net Station™ MR Tool package with artifact removal
 - GES Clock Sync I/O
- HydroCel™ Geodesic Sensor Net™ MR (32, 64, 128, or 256)
- Physio16™ MR input box
- E-Prime® Experiment Control System for stimulus presentation
- GeoSource™ 3 Research source estimation software
- Geodesic Photogrammetry System™ for sensor localization
- Amp Server™ Pro SDK

Support and Training

A member of EGI's renowned international Training and Technical Support Team will install your system and provide your lab with a tutorial for basic use. Your support contract will enable you to obtain the support you need to keep your system running at peak performance.

Each purchase of a GES product includes tuition waivers to EGI Schools or workshops that provide in-depth learning for any member of your team. EGI also offers custom training for new lab members, or for anyone wanting to learn more about using the GES system to its maximum potential.



To schedule a demo, or for more information, contact info@egi.com

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