MAGNETOM Prisma
The 3T PowerPack for exploration.
80/200 simultaneously

With MAGNETOM.

Leading in research.

In your quest for new insights, you need freedom to explore. No matter the research field you are leading in – powerful high-end MRI solutions support you. You have the opportunity to provide changes that can help answer fundamental questions of mankind. Answers that have the potential to further improve diagnostics capabilities and help fight the most threatening diseases. Brilliant imaging results, cutting-edge technology, strong collaboration, and open architecture help you drive innovation.

You are an MRI leader.

Whether you are just beginning to work with MRI or are at the forefront of research. With Siemens MAGNETOM MRI systems, you can be sure to lead. In your clinical field, your research, your business environment- to achieve our joint mission of advancing human health.

Leading. With MAGNETOM.
MAGNETOM® Prisma is the 3T PowerPack for exploration that offers you a unique 3T platform to help you tackle the most demanding clinical and research challenges of today and the future. Its breakthrough design delivers maximum performance under prolonged high-strain conditions and gives you the power to outperform – in the most ambitious projects.

Exciting new applications deliver higher anatomical detail, and open new possibilities for imaging functional processes and understanding diseases. MAGNETOM Prisma offers the power to explore – to enter new areas of research.

MAGNETOM Prisma offers you the right tools to help translate your research into clinical routine. With the IDEA network – an open and active MRI collaboration and development network – you can exchange and share with other users. New reproducibility standards introduced by Dot (Day optimizing throughput engine) will help you boost your leadership position in MRI. MAGNETOM Prisma will give you the power to succeed – to set the future trends in imaging.

MAGNETOM Prisma
The 3T PowerPack for exploration.
The 3T PowerPack

MAGNETOM Prisma's core technologies

The PowerPack combines a new, unmatched 3T magnet with 80 mT/m @ 200 T/m/s gradients. The latest parallel transmit technology, TimTX TrueShape, enables zooming into specific body regions for enhanced image quality. Furthermore, the Tim 4G integrated coil technology offers remarkable imaging flexibility and supports complex examinations across the whole body.
Leading MRI. Together.

An intensifying demographic shift, the rise of chronic diseases, patients turning into consumers, the pace of innovation, and a broader access to medical imaging across the globe lead to a constantly growing number of examinations, including MRI.

At the same time, this development raises central questions for healthcare providers and industry alike:

• How to manage volume growth with limited resources?
• How to control costs without compromising quality of care?
• How to expand services in either established or growing markets?
• How to continuously strive for clinical excellence in the interest of patients despite economic restraints?

Siemens MR provides answers to these questions by offering a unique combination of MRI technology, software, and clinical applications, supporting you in turning these challenges into opportunities.

With the “DNA of Siemens MR” – Tim, Dot, Trendsetting Applications, and Life Design – we support you to:

• Deliver exceptional image quality and speed in MRI. With Tim.
• Go for consistent results, efficiently. With Dot.
• Expand your MRI services. With Trendsetting Applications.
• Combine higher patient friendliness and sustainability. With Life Design.
MAGNETOM Prisma.

The 3T PowerPack for exploration.

When it comes to tackling the most demanding clinical and research challenges MAGNETOM Prisma is the unique and powerful 3T platform at your side.

- Magnet homogeneity at 40 cm DSV – 0.2 ppm
- Imaging FoV – 50x50x50 cm
- Zero helium boil-off technology
- 80 mT/m @ 200 T/m/s, simultaneously
- High Power Shim – optional
- TimTX TrueShape – standard
- Tim 4G + Dot
- 64 or 128 receive channels
- High-power image reconstructor
- 60 cm bore diameter
The power to succeed
Drive the advancement of human health – all supported by the right tools, the right partner, and the right collaboration network.

The power to explore
Enter new areas of research with groundbreaking applications such as RESOLVE, ZOOMit, and Diffusion Spectrum Imaging (DSI). MAGNETOM Prisma is the ultimate tool for the most demanding clinical and fundamental research.

The power to outperform
Excel with excellent MRI technology: unmatched 3T magnet, 80/200 gradient performance, latest parallel transmit technology, and highest coil element density.
The power to outperform

In the most demanding research projects with extensive long-term studies, you profit from a powerful, robust system. MAGNETOM Prisma is your 3T PowerPack for unlimited imaging and innovation capabilities.

When taking large steps in 3T research, MAGNETOM Prisma helps you keep the pace – boosting your performance in the most challenging research projects.

With the requirements of scientists in mind and based on the MAGNETOM Trio experience, the system has been designed for outstanding strength and robustness – embodied in an unmatched 3T magnet and unprecedented gradient performance with the XR 80/200 gradients.

Looking for the best in 3T research? We have it.

MAGNETOM Prisma incorporates excellent MRI technology, enabling faster examinations at higher spatial and temporal resolution. Shape the RF pulse from multiple sources independently to stay at the forefront of MRI application development.

Your benefit? Higher performance.

With the unique 3T PowerPack at its core, MAGNETOM Prisma offers unlimited imaging capabilities and long-lasting stability, even for long examinations. MAGNETOM Prisma empowers you and your research, no matter the field you are in.

Together with the inherent ability to simultaneously improve excitation inhomogeneity while providing effective reduced FoV implementations, the TimTX TrueShape clinical platform is ideally suited to fully capitalize on a wide range of improved imaging approaches that require a practical and fully integrated multichannel transmission platform.

Boada, et al.
MAGNETOM Flash 52, 2/2013, pp. 104-110.
The 3T PowerPack

Outstanding gradient performance
• 80 mT/m @ 200 T/m/s simultaneously, on all axes
• Ultra high-performance cooling for each individual gradient axis
• Force-compensated design for reduced vibrations
• Unprecedented long-term stability and minimized acoustic noise
• 60 cm bore

Parallel transmit technology
• Selective excitation with TimTX TrueShape
• Zoomed imaging with ZOOMit standard
• Interactive interface to develop new applications

New high-performance 3T magnet
• 3T benchmark homogeneity
• FoV 50x50x50 cm
• New high-order shim
• Zero helium boil-off

Tim 4G integrated coil technology
• Highest coil element density
• Designed for maximum SNR and extreme iPAT performance
• Up to 128 independent channels
• Fully digital MRI with Direct RF
• Real-time feedback loop for enhanced performance monitoring during scanning
Empower your MRI research, boost your clinical productivity

Tim 4G+Dot are the direct response to today’s demanding world of healthcare economics.
Tim 4G is Siemens’ innovative coil architecture and receive technology that unlocks imaging power like never before.
Dot engines help take the complexity out of MRI, at the same time enable consistency and reproducibility for your research.
Together, they redefine productivity – with an increase of up to 50%¹.

With Dot, we can now ensure our examinations are far more reproducible and of excellent quality.²

Arnaud Lambert
Technologist
Imagerie Médicale Saint Marie,
Osny, France
Deliver exceptional quality and speed in MRI. With Tim 4G.

In 2003, Siemens launched Tim integrated coil technology, changing MRI forever. Featuring excellent image quality and fast acquisition speed, this proven technology has been installed over 9,000 times to date. Tim’s extended coverage means no repositioning for multiple exams, and more exams per day. The newest generation – Tim 4G – is setting new benchmarks yet again.

Your benefits:
• Up to 204 coil elements in combination with up to 128 RF channels
• Excellent Signal-to-Noise Ratio (SNR) with Tim 4G’s high channel coils
• Consistent image quality with up to 40\% reduction in scan-time

4G Flexibility
• Up to 204 coil elements with up to 128 independent RF channels for higher SNR and speed
• Ultra high-density coil array for an imaging distance up to 205 cm with no coil repositioning
• Light-weight, patient friendly coils allow more flexibility in patient set-up

4G Accuracy
• High resolution imaging from head-to-toe with high channel coils
• All digital-in/digital-out DirectRF architecture with transmit and receive components at magnet for true signal purity and stability
• TimTX TrueForm, providing excellent B1 homogeneity at 3T

4G Speed
• Easier and quicker set-up with improved Tim 4G, DirectConnect and SlideConnect coils
• Tim Dockable Table is mobility done right
• iPAT\(^{2}\) allowing parallel imaging in two directions for fast data acquisition

Go for consistent results efficiently. With Dot.

With Dot Siemens sets the benchmark in MR scanning and productivity. Easily adapt to the patient’s condition or clinical question, consistently achieve reproducible, high-quality results, and consequently reduce exam times and the number of rescans. For true flexibility, consistency and efficiency in every aspect of MRI.

Your benefits:
• Study-specific Dot engines for reduced inter-subject variability
• Accurate intra-subject rescans for increased statistical power
• Potential to reduce the size of group studies and clinical trials
• Enhanced dataset comparability in large multi-site studies

Flexibility. Intuitive protocol management.
Adjust each exam to the patient’s situation or clinical question at hand. Intuitively choose the “High-Resolution Scan” strategy for the highest possible image quality. Or switch to the “Limited Patient Capability” strategy if a patient is being uncooperative.

Consistency. Quality results for each exam.
Your results need to be consistent and of high quality, and your daily schedule has to be met. Dot partners you in meeting all those different needs with dedicated functionality for the clinical question at hand. For nearly 88\% of all MRI exam requests, there is a Dot engine available.

Efficiency. Up to 20\% shorter exam slots.
Dot enables you to reduce exam time by up to 20\% and generally makes scheduling more predictable (exam-time variation less than one minute\(^{1,2}\)). Also time-consuming software interaction is reduced dramatically (by up to 45\%).
MAGNETOM Prisma – boosting your power in research

Brain connectivity
Body physiology
Organ morphology
Tissue metabolism
Quantitative MRI
Brain connectivity
Whole-brain DTI Tractography

C-spine DTI Tractography

Body physiology
Cardiac Flow Imaging

Organ morphometry
High resolution knee with excellent FatSat
Tissue metabolism
Spectroscopy
Imaging

Quantitative MRI
Zoomed High Resolution
Imaging of the pelvis
The power to explore

Enter new areas of research and set the future trends in healthcare. Exciting applications will be your vehicle to open up new possibilities to help unravel and understand disease.

Advanced applications such as DWI, SWI, resting state fMRI, dynamic angiography, perfusion, and DSI acquisition – or your own research applications. MAGNETOM Prisma is your companion – no matter the path your taking or the route you are choosing. It will support you with unmatched 3T power and hand you virtually unlimited imaging possibilities.

Explore new territories
MAGNETOM Prisma allows you to visualize detail in the finest anatomical structures and reveals valuable functional information. Develop your own applications and sequences – adapted to your research needs. Profit from consistent and reproducible results that will boost your research.

Your benefit? Finding answers.
A prism in its raw form breaks light into a wide spectrum of colors. MAGNETOM Prisma does the same, only in MR research. MAGNETOM Prisma is the tool that, when enabled by your scientific knowledge and expertise, will open up a wide breadth of applications looking to answer the numerous questions that MR research poses. From brain functionality, to body physiology, organ morphometry, tissue metabolism or quantitative MRI, MAGNETOM Prisma delivers the answers that you are looking for.

Whole brain DSI
514 directions, b-max 8000, voxel 2.0x2.0x3.0 mm.
Image rendering courtesy of TrackVis.

MAGNETOM Prisma has the power to lead to better expertise and innovative research in the future. Beside the improved gradient system, the 64-ch Head/Neck allows us to get better signals from the cortex and also cover the cerebellum and the neck very well. That allows exploring new research fields which are difficult to do on other 3T scanners.?

Prof. Rainer Goebel, PhD
Professor, Maastricht University &
Scientific Director, Scannexus,
Maastricht, The Netherlands
The power to succeed

There is one elementary goal that unites everybody active in the research field: You want to make a difference in the lives of others. A spirit of innovation fuels your desire to understand disorders and disease. In short: You strive to advance human health.

In MRI research, there are two forces driving the future of healthcare: You aspire to transfer ideas from the lab into the clinical routine. We, as Siemens, aspire to translate research results into products. This shared impulse is basis for a solid partnership that relies on collaboration, support, and trust.

With MAGNETOM Prisma we offer Dot, our workflow solution for more consistent and reliable results. The extremely high degree of reproducibility across repeated scans is not just offered for exams of the same volunteer, but for group studies, or even multisite clinical research projects. By creating project-specific programs you are able to hold on to needed examination steps and ensure the same parameters for future scans, giving added statistical value to your results.

This smart technology is another feature that makes MAGNETOM Prisma the unique tool, placing you at the forefront of collaborative basic and high-clinical research.

Collaborate & succeed

As part of the largest and most active research community, you are able to get in touch with like-minded people, discuss ideas, and easily profit from this intensive exchange.

“Research is driven by people. The more people you know, the better you are linked, the better research will be after all.”

Henrik Michaely, MD
Associate Professor of Radiology
Section Chief Vascular and Abdominal Imaging Institute of Clinical Radiology and Nuclear Medicine Mannheim, Germany

Statement from 2011
Siemens’ collaboration presence spans the globe

Our history of 3T success

- **2000**: Usability syngo®
- **2001**: Dedicated 3T head scanner
  - MAGNETOM Allegra
- **2003**: 3T goes Whole body
  - MAGNETOM Trio
- **2004**: Unique applications
  - e.g. 3D Inline fMRI
- **2005**: 3T + Tim
  - MAGNETOM Trio + Tim
- **2007**: 70cm + TrueForm
  - MAGNETOM Verio
Siemens Magnet Technology, Oxford, UK

Siemens MR Global Headquarter, Erlangen, Germany

Siemens CT DC IN, Bangalore

Siemens MR-Center, Shenzhen, China

2009
Tim 4G + Dot
MAGNETOM Skyra

2010
3T + PET
Biograph mMR

2011
TimTX TrueShape and syngo
ZOOMit
Introduced with MAGNETOM Skyra

2012
The key to 3T
MAGNETOM Spectra

2013
The 3T PowerPack for exploration
MAGNETOM Prisma
MAGNETOM Prisma equips you with the needed competitive edge – the edge that enables you to do things that others cannot do. It may facilitate privileged access to research funding and could make your institution more attractive to top talents on the international academic market.

Your benefit? Networking.
With the innovation leader and trendsetter Siemens by your side, you benefit from deep knowledge, close collaboration, and support, based on Siemens’ strong history in 3T research.

From optimal installation to reliable support, you can count on a valuable partner – and the power to succeed.

Join the community

- **Freedom to develop**
  Open development platform supporting the largest and most active 3T MR research and development community

- **Freedom to exchange**
  Yearly IDEA users meeting at the ISMRM and the possibility to exchange developments among users

- **Freedom to innovate**
  Application of hundreds of revolutionary techniques in all fields of medicine and research currently tested by users across the globe.

More than 70% of scientific publications on 3T MRI publications are on MAGNETOM systems.

www.mr-idea.com
To gain access to the online community, please contact: idea.med@siemens.com

More than 70% of scientific publications on 3T MRI publications are on MAGNETOM systems.
Customer Care

Customer Services
Siemens’ solutions help you maintain uptime, improve performance, and optimize workflow for sustainable healthcare, while ensuring that your staff is trained to deliver the highest quality results possible. You can depend on us as a trusted partner.

MORE Clinical Expertise
Enhanced expertise, greater efficiency, and high productivity thanks to education, consulting services, and personalized training. Our dedicated application specialists will help you to effectively use your systems to ensure a high level of satisfaction for your business and your patients.

www.siemens.com/uptime-services

EVOLVE
Up-to-date, powerful hardware and software are key factors for enhancing the performance and diagnostic quality of your systems. Evolve helps you to keep pace with rapidly developing technological advances throughout the complete life cycle of your system.

www.siemens.com/syngo-evolve

Customized Service Agreements
Different needs call for individual service agreements. That is why we have structured our technical services in modules and additional options. By selecting the best combination of modules and options, we develop an individualized Performance Plan that ensures an optimal service solution for your situation.

www.siemens.com/performance-plans

Redefine your MRI system
Redefine your MRI system with options and upgrades. Keep pace with innovations and keep your system state of the art during its entire product lifecycle. Get your personalized recommendation and discover new coils and clinical software applications. Try them out with a software trial license and experience how you can redefine your system to meet your needs.

www.siemens.com/redefine

MAGNETOM World
MAGNETOM World is the community of Siemens MR users worldwide, providing you with relevant clinical information at your fingertips. There you will find application tips and clinical methods to optimize your daily work. Lectures and presentations from experts in the field will allow you to be exposed to new ideas and alternative clinical approaches. Take inspiration yourself at:

www.siemens.com/magnetom-world
MAGNETOM Prisma.
The 3T PowerPack for exploration.

- Unmatched 3T magnet
- Outstanding gradient performance: 80/200 simultaneously
- Unlimited imaging and innovation capabilities
- Exciting new applications

Leading.
With MAGNETOM.
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Please find fitting accessories: www.siemens.com/medical-accessories

1Data on file; results may vary.
2The statements by Siemens’ customers described herein are based on results that were achieved in the customer’s unique setting. Since there is no “typical” setting and many variables exist there can be no guarantee that other customers will achieve the same results.
3University Hospital Essen, GER, Brain Dot Engine Workflow Study
4Zhongshang Hospital Fudan University, CN, Abdomen Dot Engine Workflow Study
570% of the results from a Google Scholar search of "3T" included the word "MAGNETOM".
6Not a commercial offering, Siemens collaboration agreement necessary
7Collaborators subject to applicable regulatory requirements.

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Order No. A91MR-730-1C-7600 | Printed in Germany | CC 1861 1213X. | © 12.2013, Siemens AG

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