

510 (k) Summary

This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of SMDA 1990 and 21 CFR § 807.92.

I. General Information.**Establishment:**

- Address: Siemens Medical Systems, Inc.
186 Wood Avenue South
Iselin, N.J. 08830

Registration Number: 2240869

Contact Person: Mr. Jamie Yieh
Technical Specialist, Regulatory Submissions
(732) 321-4625
(732) 321-4841

Date of Summary Preparation: 5/12/99

Device Name:

- Trade Name: High End Gradients
- Classification Name:
Magnetic Resonance Diagnostic Device, CFR § 892.1000
- Classification: Class II
- Performance Standards:
None established under Section 514 the Food, Drug, and Cosmetic Act.

II. Safety and Effectiveness Information Supporting Substantial Equivalence.

• Device Description:

• Intended Use

The MAGNETOM SYMPHONY with the High End Gradients is a whole body scanner with higher gradient amplitudes. The MAGNETOM SYMPHONY with the High End Gradients is indicated for use as diagnostic imaging device to produce transversal, sagittal, coronal and oblique images of the internal structures of the head or body. The images produced by the MAGNETOM SYMPHONY with the High End Gradients reflect the spatial distribution of protons (hydrogen nuclei) exhibiting magnetic resonance. The NMR properties that determine the image appearance are proton density, spin lattice relaxation time (T1), spin-spin relaxation time (T2) and flow. When interpreted by a trained by a trained physician, these images provide information that can be useful in determining a diagnosis.

• Technological Characteristics

The MAGNETOM Symphony with the new High End Gradients is substantially equivalent to the MAGNETOM Symphony System.

• General Safety and Effectiveness Concerns:

Operation of the MAGNETOM Symphony with the new High End Gradients is substantially equivalent to the commercially available MAGNETOM Symphony System. The following safety parameters with action levels:

- Maximum Static Field
- Rate of Change of Magnetic Field
- RF Power Deposition
- Acoustic Noise Levels

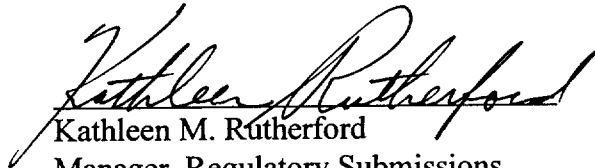
and performance levels

- Specification Volume
- Signal to Noise
- Image Uniformity
- Geometric Distortion
- Slice Profile, Thickness and Gap
- High Contrast Spatial Resolution

specified by the FDA guidance document for MR Diagnostic Devices were evaluated within this notification. The reduction in the minimum rise time of the system will affect both the acoustic noise levels and the rate of change of magnetic field strength (dB/dt), as well as certain performance levels with the system. However, the new levels are not significantly changed and, in the case of safety, parameters remain below the level of concern as outlined by the FDA Guidance.

• **Substantial Equivalence:**

Laboratory testing were performed to support this claim of substantial equivalence and to show that the technological differences do not raise any new questions pertaining to safety and effectiveness.


Kathleen M. Rutherford
Manager, Regulatory Submissions

5/12/99
Date



AUG - 3 1999

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

Jamie Yieh
Technical Specialist, Regulatory Submissions
Siemens Medical Systems, Inc.
186 Wood Avenue South
Iselin, New Jersey 08830

RE: K991652
High End Gradients for Magnetom
Symphony
Dated: May 12, 1999
Received: May 13, 1999
Regulatory Class: II
21 CFR 892.1000/Procode: 90 LNH

Dear Ms. Yieh:

We have reviewed your Section 510(k) notification of intent to market the device referenced above and we have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (Premarket Approval), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the Current Good Manufacturing Practice requirements, as set forth in the Quality System Regulation (QS) for Medical Devices: General regulation (21 CFR Part 820) and that, through periodic QS inspections, the Food and Drug Administration (FDA) will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, FDA may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under sections 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal laws or regulations.

This letter will allow you to begin marketing your device as described in your 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4613. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers Assistance at its toll-free number (800) 638-2041 or (301) 443-6597, or at its internet address "<http://www.fda.gov/cdrh/dsma/dsmamain.html>".

Sincerely yours,

CAPT Daniel G. Schultz, M.D.
Acting Director, Division of Reproductive,
Abdominal, Ear, Nose and Throat,
and Radiological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

510(k) Number (if known) K991652

Device Name: High End Gradients for the MAGNETOM SYMPHONY System

Indications for Use:

The MAGNETOM SYMPHONY with the High End Gradients is a whole body scanner with higher gradient amplitudes. The MAGNETOM SYMPHONY with the High End Gradients is indicated for use as diagnostic imaging device to produce transversal, sagittal, coronal and oblique images of the internal structures of the head or body. The images produced by the MAGNETOM SYMPHONY with the High End Gradients reflect the spatial distribution of protons (hydrogen nuclei) exhibiting magnetic resonance. The NMR properties that determine the image appearance are proton density, spin lattice relaxation time (T1), spin-spin relaxation time (T2) and flow. When interpreted by a trained by a trained physician, these images provide information that can be useful in determining a diagnosis.

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Concurrence of CDRH, Office of Device Evaluation

Prescription Use OR Over-The-Counter Use

David A. Segeman
(Division Sign-Off)
Division of Reproductive, Abdominal, ENT,
and Radiological Devices
510(k) Number K991652