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(71) Applicants:
• **MEDISON CO., LTD.**
Kangwon-do 250-870 (KR)
• **Samsung Life Welfare Foundation**
Yongsan-gu
Seoul 140-210 (KR)

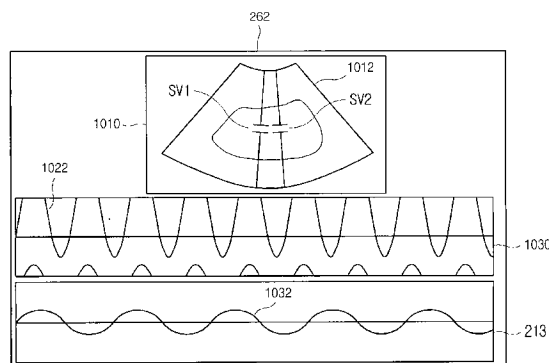
(72) Inventors:
• **Kim, Cheol An**
Gangnam-gu
Seoul 135-280 (KR)
• **Park, Jung Ho**
Gangnam-gu
Seoul 135-280 (KR)
• **Park, Seung Woo**
Gangnam-gu
Seoul 135-807 (KR)
• **Park, Min Young**
Gangnam-gu
Seoul 135-280 (KR)
• **Yoo, Bong Soo**
Gangnam-gu
Seoul 135-280 (KR)

(74) Representative: **Lorenz, Markus**
Lorenz & Kollegen
Alte Ulmer Strasse 2
89522 Heidenheim (DE)

(54) **Ultrasound diagnostic system and method for displaying doppler spectrum images of multiple sample volumes**

(57) The embodiment of the present invention provides an ultrasound diagnostic system, including: an ultrasound diagnosis unit for transmitting ultrasound signals to a target object and receiving ultrasound echo signals to acquire B-mode image signals and Doppler spectrum image signals; a processor for forming at least one B-mode image based on the B-mode image signals and forming a plurality of Doppler spectrum images for a plurality of sample volumes designated on the B-mode image based on the Doppler spectrum image signals; a user input unit for allowing a user to input selection information indicating locations and sizes of the plurality of sample volumes; and an image display unit for displaying at least one B-mode image and the plurality of Doppler spectrum images.

FIG. 10





EUROPEAN SEARCH REPORT

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EP 06 02 5939

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 03/019227 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]) 6 March 2003 (2003-03-06) * abstract; figures 1-6 * * page 3, line 17 - page 4, line 2 * * page 4, line 19 * * page 5, line 1 - page 6, line 22 * -----	1-18	INV. G01S15/89 A61B8/08
X	US 5 615 680 A (SANO AKIHIRO [JP]) 1 April 1997 (1997-04-01) * abstract; figures 12,14,16 * * column 8, line 62 - column 9, line 10 * * column 13, line 17 - line 25 * * column 13, line 66 - column 14, line 34 * -----	1,6-10, 16-18 1-18	
Y			
A	EP 1 016 880 A2 (GEN ELECTRIC [US]) 5 July 2000 (2000-07-05) * abstract; figures 5-9 * * paragraph [0046] - paragraph [0060] * -----	1-5, 10-15	
A	US 2004/127798 A1 (DALA-KRISHNA PRAVEEN [US] ET AL) 1 July 2004 (2004-07-01) * abstract; figures 3,4 * * paragraph [0003] - paragraph [0004] * * paragraph [0059] - paragraph [0060] * * claims 1-4 * -----	1,6-10, 16-18	TECHNICAL FIELDS SEARCHED (IPC) G01S A61B
A	US 2003/013963 A1 (BJAERUM STEINAR [NO] ET AL) 16 January 2003 (2003-01-16) * figures 5-8 * * paragraph [0036] - paragraph [0044] * -----	1,6-10, 16-18	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 July 2009	Examiner Knoll, Bernhard
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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30-07-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03019227	A1	06-03-2003	CN 1549933 A 24-11-2004
			EP 1423728 A1 02-06-2004
			JP 2005500888 T 13-01-2005
			US 2004102706 A1 27-05-2004
			US 2003045797 A1 06-03-2003

US 5615680	A	01-04-1997	NONE

EP 1016880	A2	05-07-2000	DE 69937284 T2 03-07-2008
			JP 2000197634 A 18-07-2000
			US 2002116141 A1 22-08-2002

US 2004127798	A1	01-07-2004	AU 2003251988 A1 09-02-2004
			US 2005080336 A1 14-04-2005
			US 2005245822 A1 03-11-2005
			US 2007083118 A1 12-04-2007

US 2003013963	A1	16-01-2003	NONE

专利名称(译)	超声诊断系统和显示多个样本体积的多普勒频谱图像的方法		
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当前申请(专利权)人(译)	MEDISON CO. , LTD. 三星生命福利基金		
[标]发明人	KIM CHEOL AN PARK JUNG HO PARK SEUNG WOO PARK MIN YOUNG YOO BONG SOO		
发明人	KIM, CHEOL AN PARK, JUNG HO PARK, SEUNG WOO PARK, MIN YOUNG YOO, BONG SOO		
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其他公开文献	EP1798573A2		
外部链接	Espacenet		

摘要(译)

本发明实施例提供一种超声诊断系统，包括：超声诊断单元，用于向目标对象发送超声信号，接收超声回波信号，获取B模式图像信号和多普勒频谱图像信号;处理器，用于基于B模式图像信号形成至少一个B模式图像，并基于多普勒频谱图像信号形成用于在B模式图像上指定的多个样本体积的多个多普勒频谱图像;用户输入单元，用于允许用户输入指示多个样本体积的位置和大小的选择信息;图像显示单元，用于显示至少一个B模式图像和多个多普勒频谱图像。

FIG. 10

