

**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

Application Number
EP 14 88 3577

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 482 095 A2 (GEN ELECTRIC [US]) 1 August 2012 (2012-08-01)	3,4,6	INV. A61B8/00 G01S7/52 G01S15/89 G10K11/34
A	* abstract *; figures 1-5,8-15 * * paragraph [0001] - paragraph [0006] * * paragraph [0030] - paragraph [0059] *	1,2,5,7, 8,13	
E	EP 2 980 803 A1 (HITACHI LTD [JP]) 3 February 2016 (2016-02-03) * paragraph [0002] - paragraph [0003]; figures 1-4, 8 * * page 4, line 8 * * page 8, lines 6-41 *	3,9,12	
X,D	US 2013/107671 A1 (AMEMIYA SHINICHI [JP]) 2 May 2013 (2013-05-02)	3,9,12	
A	* abstract *; figures 1-6, 11 * * column 0041 - column 0092 *	10,11	
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			TECHNICAL FIELDS SEARCHED (IPC) G01S G10K G11C
Place of search Munich		Date of completion of the search 26 January 2018	Examiner Zaneboni, Thomas
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			

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present (supplementary) European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present (supplementary) European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present (supplementary) European search report has been drawn up for those parts of the European patent application which relate to the first mentioned in the claims, namely claims:

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-8, 13

Ultrasound probe comprising a delay unit with memory elements, wherein the same electric charge is accumulated to two or more memory elements for increasing the time delay or wherein the time delay is decreased either by increasing the period during which the signal is written on one memory elements or by not reading out a voltage level from one or more of the memory elements.

2. claims: 9-12

Ultrasound probe with a delay unit including a voltage storage output unit and a control signal generating unit, wherein the reflected wave is a differential input signal and the voltage storage output unit comprises switches and an operational amplifier.

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

EP 14 88 3577

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-01-2018

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			US 2013107671 A1	02-05-2013

专利名称(译)	超声波探头和使用其的超声波成像装置		
公开(公告)号	EP3111849A4	公开(公告)日	2018-03-07
申请号	EP2014883577	申请日	2014-02-26
[标]申请(专利权)人(译)	株式会社日立制作所		
申请(专利权)人(译)	HITACHI , LTD.		
当前申请(专利权)人(译)	HITACHI , LTD.		
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发明人	NAKAGAWA, TATSUO MASUZAWA, HIROSHI KAJIYAMA, SHINYA		
IPC分类号	A61B8/00		
CPC分类号	A61B8/5207 G01S7/52025 G01S7/5208 G01S15/8915 G10K11/346 A61B8/145 A61B8/4444 A61B8/4494 G01S7/52046		
其他公开文献	EP3111849A1		
外部链接	Espacenet		

摘要(译)

配置了可以动态改变延迟时间的紧凑型延迟电路。探针包括模拟存储单元，其累积对应于由多个电容器303上的声阻抗之间的差产生的超声波的反射波的电荷，并且又将累积在电容器303上的电荷输出到模拟存储器。在累积电荷时，当输入增加反射波的延迟时间的控制信号CtIs_I时，模拟存储单元205将相同的电荷累积在两个或更多个电容器303上预定的时间段，或者输出当电荷输入控制信号CtIo_I时，模拟存储单元205输出累积在一个电容器303上的电荷达预设时间。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to item:	CLASSIFICATION OF THE APPLICATION (IPC)
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X	EP 2 482 095 A2 (GEN ELECTRIC [US]) 1 August 2012 (2012-08-01) * abstract +; figures 1-5, 8-15 * * paragraph [0001] - paragraph [0006] * * paragraph [0030] - paragraph [0059] *	3, 4, 6 1, 2, 5, 7, 8, 13	INT. A61B8/00 G01S7/52 G01S15/89 G10K11/34
E	EP 2 980 803 A1 (HITACHI LTD [JP]) 3 February 2016 (2016-02-03) * paragraph [0002] - paragraph [0003]; figures 1-4, 6 * * page 6, line 6 * * page 8, lines 6-41 *	3, 9, 12	
X, D	US 2013/107671 A1 (AMENIYA SHINICHI [JP]) 2 May 2013 (2013-05-02) * abstract +; figures 1-6, 11 * * column 0041 - column 0092 *	3, 9, 12 10, 11	
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The JP3111849 patent report has been printed on the last page of this report.			
Munich		26 January 2018	Zaneboni, Thomas
CATEGORY OF CITED DOCUMENTS			
X: particularly relevant document		E: useful information, supporting the invention	
D: document of the same category with another		P: document cited in the application	
Y: non-relevant document		L: document cited for other reasons	
T: intermediate document		A: member of the same patent family, corresponding document	