

SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 14 89 7098

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 2 533 241 A2 (SAMSUNG ELECTRONICS CO LTD [KR]; UNIV SOGANG IND UNIV COOP FOUN [KR]) 12 December 2012 (2012-12-12) * paragraphs [0041] - [0045], [0063], [0111]; figures 1-6 *	1-15	INV. A61B8/00 G01N29/24 G10K11/34 B06B1/02 B06B1/06
X	US 2009/112091 A1 (CHIANG ALICE M [US] ET AL) 30 April 2009 (2009-04-30) * paragraphs [0027], [0029], [0038], [0106] - [0131], [0189]; figures 4, 5, 27 *	1,10	
A	US 2007/244392 A1 (TEZUKA SATORU [JP]) 18 October 2007 (2007-10-18) * paragraphs [0036] - [0039], [0051] - [0058]; figures 1-5 *	1-15	
A	US 6 318 179 B1 (HAMILTON JAMES D [US] ET AL) 20 November 2001 (2001-11-20) * column 3, line 42 - column 4, line 7 *	1-15	
A	US 2014/133270 A1 (HSIA CHIN [TW] ET AL) 15 May 2014 (2014-05-15) * paragraphs [0020] - [0026]; claim 4 *	1-15	
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)
			B06B G01N G10K
Place of search		Date of completion of the search	Examiner
The Hague		18 January 2018	Vollmer, Thorsten
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	

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

EP 14 89 7098

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.

18-01-2018

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 2533241	A2	12-12-2012	CN	102813530 A	12-12-2012
			EP	2533241 A2	12-12-2012
			KR	20120136453 A	20-12-2012
			US	2012316437 A1	13-12-2012

US 2009112091	A1	30-04-2009	NONE		

US 2007244392	A1	18-10-2007	CN	1802036 A	12-07-2006
			JP	4575108 B2	04-11-2010
			JP	2006110140 A	27-04-2006
			US	2007244392 A1	18-10-2007

US 6318179	B1	20-11-2001	DE	10129345 A1	07-03-2002
			JP	4808334 B2	02-11-2011
			JP	2002113003 A	16-04-2002
			US	6318179 B1	20-11-2001

US 2014133270	A1	15-05-2014	CN	103812477 A	21-05-2014
			TW	201418752 A	16-05-2014
			US	2014133270 A1	15-05-2014

专利名称(译)	超声探头和超声成像设备		
公开(公告)号	EP3167806A4	公开(公告)日	2018-02-28
申请号	EP2014897098	申请日	2014-07-10
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
[标]发明人	CHO KYUNG IL SONG JONG KEUN		
发明人	CHO, KYUNG IL SONG, JONG KEUN		
IPC分类号	A61B8/00 G01N29/24		
CPC分类号	A61B8/00 B06B1/0207 B06B1/0607 G10K11/346 G01N29/24 A61B8/4494 A61B8/145 A61B8/4444 A61B8/5207 G01N29/2406 G01N29/2437		
其他公开文献	EP3167806A1		
外部链接	Espacenet		

摘要(译)

本公开的实施例提供了一种超声探头，其包括单个大面积ASIC，其中多个超声换能器元件被结合。根据一个实施例，一种超声探头包括：换能器阵列，包括多个换能器元件，被配置为发送或接收超声波；以及集成电路，其中换能器阵列被结合，包括与多个换能器元件对应的多个驱动元件，其中集成电路包括时间延迟表，该时间延迟表被配置为输出关于各个超声波发送和接收的时间延迟信息。多个换能器元件。



European Patent Office
 Patents and Trademarks
 Division
 12560 Luxembourg
 Luxembourg

**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

Application Number
 EP 14 89 7098

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to:	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 533 241 A2 (SAMSUNG ELECTRONICS CO LTD [KR]; UNIV SOGANG IND UNIV COOP FOUN [KR]) 12 December 2012 (2012-12-12) * paragraphs [0041] - [0045], [0063], [0111]; figures 1-6	1-15	INV: A61B8/00 G01N29/24 G10K11/34 B06B1/02 B06B1/06
X	US 2009/112991 A1 (CHIANG ALICE M [US] ET AL) 30 April 2009 (2009-04-30) * paragraphs [0027] - [0029], [0038], [0106] - [0131], [0185]; figures 4, 5, 27	1, 10	
A	US 2007/244392 A1 (TIZUKA SATORU [JP]) 18 October 2007 (2007-10-18) * paragraphs [0036] - [0039], [0051] - [0058]; figures 1-5	1-15	
A	US 6 318 179 B1 (HAMILTON JAMES D [US] ET AL) 20 November 2001 (2001-11-20) * column 3, line 42 - column 4, line 7	1-15	
A	US 2014/133270 A1 (HSIA CHIN [TW] ET AL) 15 May 2014 (2014-05-15) * paragraphs [0020] - [0026]; claim 4	1-15	H01M 2/20 H01M 2/22 H01M 2/24 H01M 2/26 H01M 2/28 H01M 2/30 H01M 2/32 H01M 2/34 H01M 2/36 H01M 2/38 H01M 2/40 H01M 2/42 H01M 2/44 H01M 2/46 H01M 2/48 H01M 2/50 H01M 2/52 H01M 2/54 H01M 2/56 H01M 2/58 H01M 2/60 H01M 2/62 H01M 2/64 H01M 2/66 H01M 2/68 H01M 2/70 H01M 2/72 H01M 2/74 H01M 2/76 H01M 2/78 H01M 2/80 H01M 2/82 H01M 2/84 H01M 2/86 H01M 2/88 H01M 2/90 H01M 2/92 H01M 2/94 H01M 2/96 H01M 2/98 H01M 3/00 H01M 3/02 H01M 3/04 H01M 3/06 H01M 3/08 H01M 3/10 H01M 3/12 H01M 3/14 H01M 3/16 H01M 3/18 H01M 3/20 H01M 3/22 H01M 3/24 H01M 3/26 H01M 3/28 H01M 3/30 H01M 3/32 H01M 3/34 H01M 3/36 H01M 3/38 H01M 3/40 H01M 3/42 H01M 3/44 H01M 3/46 H01M 3/48 H01M 3/50 H01M 3/52 H01M 3/54 H01M 3/56 H01M 3/58 H01M 3/60 H01M 3/62 H01M 3/64 H01M 3/66 H01M 3/68 H01M 3/70 H01M 3/72 H01M 3/74 H01M 3/76 H01M 3/78 H01M 3/80 H01M 3/82 H01M 3/84 H01M 3/86 H01M 3/88 H01M 3/90 H01M 3/92 H01M 3/94 H01M 3/96 H01M 3/98 H01M 4/00 H01M 4/02 H01M 4/04 H01M 4/06 H01M 4/08 H01M 4/10 H01M 4/12 H01M 4/14 H01M 4/16 H01M 4/18 H01M 4/20 H01M 4/22 H01M 4/24 H01M 4/26 H01M 4/28 H01M 4/30 H01M 4/32 H01M 4/34 H01M 4/36 H01M 4/38 H01M 4/40 H01M 4/42 H01M 4/44 H01M 4/46 H01M 4/48 H01M 4/50 H01M 4/52 H01M 4/54 H01M 4/56 H01M 4/58 H01M 4/60 H01M 4/62 H01M 4/64 H01M 4/66 H01M 4/68 H01M 4/70 H01M 4/72 H01M 4/74 H01M 4/76 H01M 4/78 H01M 4/80 H01M 4/82 H01M 4/84 H01M 4/86 H01M 4/88 H01M 4/90 H01M 4/92 H01M 4/94 H01M 4/96 H01M 4/98 H01M 5/00 H01M 5/02 H01M 5/04 H01M 5/06 H01M 5/08 H01M 5/10 H01M 5/12 H01M 5/14 H01M 5/16 H01M 5/18 H01M 5/20 H01M 5/22 H01M 5/24 H01M 5/26 H01M 5/28 H01M 5/30 H01M 5/32 H01M 5/34 H01M 5/36 H01M 5/38 H01M 5/40 H01M 5/42 H01M 5/44 H01M 5/46 H01M 5/48 H01M 5/50 H01M 5/52 H01M 5/54 H01M 5/56 H01M 5/58 H01M 5/60 H01M 5/62 H01M 5/64 H01M 5/66 H01M 5/68 H01M 5/70 H01M 5/72 H01M 5/74 H01M 5/76 H01M 5/78 H01M 5/80 H01M 5/82 H01M 5/84 H01M 5/86 H01M 5/88 H01M 5/90 H01M 5/92 H01M 5/94 H01M 5/96 H01M 5/98 H01M 6/00 H01M 6/02 H01M 6/04 H01M 6/06 H01M 6/08 H01M 6/10 H01M 6/12 H01M 6/14 H01M 6/16 H01M 6/18 H01M 6/20 H01M 6/22 H01M 6/24 H01M 6/26 H01M 6/28 H01M 6/30 H01M 6/32 H01M 6/34 H01M 6/36 H01M 6/38 H01M 6/40 H01M 6/42 H01M 6/44 H01M 6/46 H01M 6/48 H01M 6/50 H01M 6/52 H01M 6/54 H01M 6/56 H01M 6/58 H01M 6/60 H01M 6/62 H01M 6/64 H01M 6/66 H01M 6/68 H01M 6/70 H01M 6/72 H01M 6/74 H01M 6/76 H01M 6/78 H01M 6/80 H01M 6/82 H01M 6/84 H01M 6/86 H01M 6/88 H01M 6/90 H01M 6/92 H01M 6/94 H01M 6/96 H01M 6/98 H01M 7/00 H01M 7/02 H01M 7/04 H01M 7/06 H01M 7/08 H01M 7/10 H01M 7/12 H01M 7/14 H01M 7/16 H01M 7/18 H01M 7/20 H01M 7/22 H01M 7/24 H01M 7/26 H01M 7/28 H01M 7/30 H01M 7/32 H01M 7/34 H01M 7/36 H01M 7/38 H01M 7/40 H01M 7/42 H01M 7/44 H01M 7/46 H01M 7/48 H01M 7/50 H01M 7/52 H01M 7/54 H01M 7/56 H01M 7/58 H01M 7/60 H01M 7/62 H01M 7/64 H01M 7/66 H01M 7/68 H01M 7/70 H01M 7/72 H01M 7/74 H01M 7/76 H01M 7/78 H01M 7/80 H01M 7/82 H01M 7/84 H01M 7/86 H01M 7/88 H01M 7/90 H01M 7/92 H01M 7/94 H01M 7/96 H01M 7/98 H01M 8/00 H01M 8/02 H01M 8/04 H01M 8/06 H01M 8/08 H01M 8/10 H01M 8/12 H01M 8/14 H01M 8/16 H01M 8/18 H01M 8/20 H01M 8/22 H01M 8/24 H01M 8/26 H01M 8/28 H01M 8/30 H01M 8/32 H01M 8/34 H01M 8/36 H01M 8/38 H01M 8/40 H01M 8/42 H01M 8/44 H01M 8/46 H01M 8/48 H01M 8/50 H01M 8/52 H01M 8/54 H01M 8/56 H01M 8/58 H01M 8/60 H01M 8/62 H01M 8/64 H01M 8/66 H01M 8/68 H01M 8/70 H01M 8/72 H01M 8/74 H01M 8/76 H01M 8/78 H01M 8/80 H01M 8/82 H01M 8/84 H01M 8/86 H01M 8/88 H01M 8/90 H01M 8/92 H01M 8/94 H01M 8/96 H01M 8/98 H01M 9/00 H01M 9/02 H01M 9/04 H01M 9/06 H01M 9/08 H01M 9/10 H01M 9/12 H01M 9/14 H01M 9/16 H01M 9/18 H01M 9/20 H01M 9/22 H01M 9/24 H01M 9/26 H01M 9/28 H01M 9/30 H01M 9/32 H01M 9/34 H01M 9/36 H01M 9/38 H01M 9/40 H01M 9/42 H01M 9/44 H01M 9/46 H01M 9/48 H01M 9/50 H01M 9/52 H01M 9/54 H01M 9/56 H01M 9/58 H01M 9/60 H01M 9/62 H01M 9/64 H01M 9/66 H01M 9/68 H01M 9/70 H01M 9/72 H01M 9/74 H01M 9/76 H01M 9/78 H01M 9/80 H01M 9/82 H01M 9/84 H01M 9/86 H01M 9/88 H01M 9/90 H01M 9/92 H01M 9/94 H01M 9/96 H01M 9/98 H01M 10/00 H01M 10/02 H01M 10/04 H01M 10/06 H01M 10/08 H01M 10/10 H01M 10/12 H01M 10/14 H01M 10/16 H01M 10/18 H01M 10/20 H01M 10/22 H01M 10/24 H01M 10/26 H01M 10/28 H01M 10/30 H01M 10/32 H01M 10/34 H01M 10/36 H01M 10/38 H01M 10/40 H01M 10/42 H01M 10/44 H01M 10/46 H01M 10/48 H01M 10/50 H01M 10/52 H01M 10/54 H01M 10/56 H01M 10/58 H01M 10/60 H01M 10/62 H01M 10/64 H01M 10/66 H01M 10/68 H01M 10/70 H01M 10/72 H01M 10/74 H01M 10/76 H01M 10/78 H01M 10/80 H01M 10/82 H01M 10/84 H01M 10/86 H01M 10/88 H01M 10/90 H01M 10/92 H01M 10/94 H01M 10/96 H01M 10/98 H01M 11/00 H01M 11/02 H01M 11/04 H01M 11/06 H01M 11/08 H01M 11/10 H01M 11/12 H01M 11/14 H01M 11/16 H01M 11/18 H01M 11/20 H01M 11/22 H01M 11/24 H01M 11/26 H01M 11/28 H01M 11/30 H01M 11/32 H01M 11/34 H01M 11/36 H01M 11/38 H01M 11/40 H01M 11/42 H01M 11/44 H01M 11/46 H01M 11/48 H01M 11/50 H01M 11/52 H01M 11/54 H01M 11/56 H01M 11/58 H01M 11/60 H01M 11/62 H01M 11/64 H01M 11/66 H01M 11/68 H01M 11/70 H01M 11/72 H01M 11/74 H01M 11/76 H01M 11/78 H01M 11/80 H01M 11/82 H01M 11/84 H01M 11/86 H01M 11/88 H01M 11/90 H01M 11/92 H01M 11/94 H01M 11/96 H01M 11/98 H01M 12/00 H01M 12/02 H01M 12/04 H01M 12/06 H01M 12/08 H01M 12/10 H01M 12/12 H01M 12/14 H01M 12/16 H01M 12/18 H01M 12/20 H01M 12/22 H01M 12/24 H01M 12/26 H01M 12/28 H01M 12/30 H01M 12/32 H01M 12/34 H01M 12/36 H01M 12/38 H01M 12/40 H01M 12/42 H01M 12/44 H01M 12/46 H01M 12/48 H01M 12/50 H01M 12/52 H01M 12/54 H01M 12/56 H01M 12/58 H01M 12/60 H01M 12/62 H01M 12/64 H01M 12/66 H01M 12/68 H01M 12/70 H01M 12/72 H01M 12/74 H01M 12/76 H01M 12/78 H01M 12/80 H01M 12/82 H01M 12/84 H01M 12/86 H01M 12/88 H01M 12/90 H01M 12/92 H01M 12/94 H01M 12/96 H01M 12/98 H01M 13/00 H01M 13/02 H01M 13/04 H01M 13/06 H01M 13/08 H01M 13/10 H01M 13/12 H01M 13/14 H01M 13/16 H01M 13/18 H01M 13/20 H01M 13/22 H01M 13/24 H01M 13/26 H01M 13/28 H01M 13/30 H01M 13/32 H01M 13/34 H01M 13/36 H01M 13/38 H01M 13/40 H01M 13/42 H01M 13/44 H01M 13/46 H01M 13/48 H01M 13/50 H01M 13/52 H01M 13/54 H01M 13/56 H01M 13/58 H01M 13/60 H01M 13/62 H01M 13/64 H01M 13/66 H01M 13/68 H01M 13/70 H01M 13/72 H01M 13/74 H01M 13/76 H01M 13/78 H01M 13/80 H01M 13/82 H01M 13/84 H01M 13/86 H01M 13/88 H01M 13/90 H01M 13/92 H01M 13/94 H01M 13/96 H01M 13/98 H01M 14/00 H01M 14/02 H01M 14/04 H01M 14/06 H01M 14/08 H01M 14/10 H01M 14/12 H01M 14/14 H01M 14/16 H01M 14/18 H01M 14/20 H01M 14/22 H01M 14/24 H01M 14/26 H01M 14/28 H01M 14/30 H01M 14/32 H01M 14/34 H01M 14/36 H01M 14/38 H01M 14/40 H01M 14/42 H01M 14/44 H01M 14/46 H01M 14/48 H01M 14/50 H01M 14/52 H01M 14/54 H01M 14/56 H01M 14/58 H01M 14/60 H01M 14/62 H01M 14/64 H01M 14/66 H01M 14/68 H01M 14/70 H01M 14/72 H01M 14/74 H01M 14/76 H01M 14/78 H01M 14/80 H01M 14/82 H01M 14/84 H01M 14/86 H01M 14/88 H01M 14/90 H01M 14/92 H01M 14/94 H01M 14/96 H01M 14/98 H01M 15/00 H01M 15/02 H01M 15/04 H01M 15/06 H01M 15/08 H01M 15/10 H01M 15/12 H01M 15/14 H01M 15/16 H01M 15/18 H01M 15/20 H01M 15/22 H01M 15/24 H01M 15/26 H01M 15/28 H01M 15/30 H01M 15/32 H01M 15/34 H01M 15/36 H01M 15/38 H01M 15/40 H01M 15/42 H01M 15/44 H01M 15/46 H01M 15/48 H01M 15/50 H01M 15/52 H01M 15/54 H01M 15/56 H01M 15/58 H01M 15/60 H01M 15/62 H01M 15/64 H01M 15/66 H01M 15/68 H01M 15/70 H01M 15/72 H01M 15/74 H01M 15/76 H01M 15/78 H01M 15/80 H01M 15/82 H01M 15/84 H01M 15/86 H01M 15/88 H01M 15/90 H01M 15/92 H01M 15/94 H01M 15/96 H01M 15/98 H01M 16/00 H01M 16/02 H01M 16/04 H01M 16/06 H01M 16/08 H01M 16/10 H01M 16/12 H01M 16/14 H01M 16/16 H01M 16/18 H01M 16/20 H01M 16/22 H01M 16/24 H01M 16/26 H01M 16/28 H01M 16/30 H01M 16/32 H01M 16/34 H01M 16/36 H01M 16/38 H01M 16/40 H01M 16/42 H01M 16/44 H01M 16/46 H01M 16/48 H01M 16/50 H01M 16/52 H01M 16/54 H01M 16/56 H01M 16/58 H01M 16/60 H01M 16/62 H01M 16/64 H01M 16/66 H01M 16/68 H01M 16/70 H01M 16/72 H01M 16/74 H01M 16/76 H01M 16/78 H01M 16/80 H01M 16/82 H01M 16/84 H01M 16/86 H01M 16/88 H01M 16/90 H01M 16/92 H01M 16/94 H01M 16/96 H01M 16/98 H01M 17/00 H01M 17/02 H01M 17/04 H01M 17/06 H01M 17/08 H01M 17/10 H01M 17/12 H01M 17/14 H01M 17/16 H01M 17/18 H01M 17/20 H01M 17/22 H01M 17/24 H01M 17/26 H01M 17/28 H01M 17/30 H01M 17/32 H01M 17/34 H01M 17/36 H01M 17/38 H01M 17/40 H01M 17/42 H01M 17/44 H01M 17/46 H01M 17/48 H01M 17/50 H01M 17/52 H01M 17/54 H01M 17/56 H01M 17/58 H01M 17/60 H01M 17/62 H01M 17/64 H01M 17/66 H01M 17/68 H01M 17/70 H01M 17/72 H01M 17/74 H01M 17/76 H01M 17/78 H01M 17/80 H01M 17/82 H01M 17/84 H01M 17/86 H01M 17/88 H01M 17/90 H01M 17/92 H01M 17/94 H01M 17/96 H01M 17/98 H01M 18/00 H01M 18/02 H01M 18/04 H01M 18/06 H01M 18/08 H01M 18/10 H01M 18/12 H01M 18/14 H01M 18/16 H01M 18/18 H01M 18/20 H01M 18/22 H01M 18/24 H01M 18/26 H01M 18/28 H01M 18/30 H01M 18/32 H01M 18/34 H01M 18/36 H01M 18/38 H01M 18/40 H01M 18/42 H01M 18/44 H01M 18/46 H01M 18/48 H01M 18/50 H01M 18/52 H01M 18/54 H01M 18/56 H01M 18/58 H01M 18/60 H01M 18/62 H01M 18/64 H01M 18/66 H01M 18/68 H01M 18/70 H01M 18/72 H01M 18/74 H01M 18/76 H01M 18/78 H01M 18/80 H01M 18/82 H01M 18/84 H01M 18/86 H01M 18/88 H01M 18/90 H01M 18/92 H01M 18/94 H01M 18/96 H01M 18/98 H01M 19/00 H01M 19/02 H01M 19/04 H01M 19/06 H01M