

Title (en)
Broadband phased array transducer design with frequency controlled two dimension capability and methods for manufacture thereof

Title (de)
Entwurf eines Breitbandigen phasengesteuerten Gruppenwandlers mit frequenzkontrollierter zwei-dimensionale Fähigkeit und Verfahren zu seiner Produktion

Title (fr)
Conception d'un ensemble de transducteurs à commande de phase capable d'émission bidirectionnelle contrôlée par fréquence et procédé pour sa production

Publication
EP 0641606 B1 20000202 (EN)

Application
EP 94306515 A 19940905

Priority
• US 11786893 A 19930907
• US 11786993 A 19930907

Abstract (en)
[origin: EP0641606A2] There is provided a transducer array with a plurality of piezoelectric elements having a minimum and maximum thickness. In one embodiment, the maximum thickness is less than or equal to 140 percent of the minimum thickness. In an alternate embodiment, the maximum thickness is greater than 140 percent of the minimum thickness and the transducer array is capable of simulating the excitation of a wider aperture twodimensional transducer array. One or more matching layers may be used to further increase bandwidth performance. In addition, a two crystal transducer element as well as a composite transducer structure may be formed using the principles of this invention.

IPC 1-7
B06B 1/06; G10K 11/34

IPC 8 full level
G01N 29/24 (2006.01); **A61B 8/00** (2006.01); **B06B 1/06** (2006.01); **G01S 7/02** (2006.01); **G10K 11/32** (2006.01); **H04R 17/00** (2006.01); **H04R 31/00** (2006.01); **H10N 30/20** (2023.01); **H04R 17/08** (2006.01)

CPC (source: EP)
B06B 1/0622 (2013.01); **B06B 1/0644** (2013.01); **G10K 11/32** (2013.01); **H04R 17/08** (2013.01)

Citation (examination)
EP 0397961 A2 19901122 - HEWLETT PACKARD CO [US]

Cited by
EP1591067A4; CN1111112037A; CN108025333A; CN103278570A; CN111465455A; WO2009071889A3; US9796956B2; US11214789B2; US11179747B2; US11420136B2; US11007457B2; US10737953B2; US11459540B2; US10662402B2; US9752114B2; US11541423B2; WO9744142A1; WO2017008066A1; US10322949B2; US10953436B2; US9745548B2; US10710006B2; US10947493B2; US6984922B1; US10106770B2; US11021699B2; US9783775B2; US10350514B2; US11322676B2; US10370635B2; US11474085B2; US11678865B2; WO2019236409A1; WO2023079358A3; WO2004091812A3; WO2019133271A1; US9744483B2; US10814253B2; US11708572B2; US10640760B2; US10975368B2; US11318497B2; US9701955B2; US10427956B2; US10724029B2; US11085035B2; US9745569B2; US10308928B2; US10967298B2; US11377651B2; US10689609B2; US10704021B2; US9738867B2; US10662404B2; US10785574B2; TWI716786B

Designated contracting state (EPC)
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
EP 0641606 A2 19950308; EP 0641606 A3 19960612; EP 0641606 B1 20000202; AT E189415 T1 20000215; AU 688334 B2 19980312; AU 7020994 A 19950323; CA 2129946 A1 19950308; CA 2129946 C 19980929; DE 69422867 D1 20000309; DE 69422867 T2 20001207; JP 3478874 B2 20031215; JP H07107595 A 19950421

DOCDB simple family (application)
EP 94306515 A 19940905; AT 94306515 T 19940905; AU 7020994 A 19940810; CA 2129946 A 19940811; DE 69422867 T 19940905; JP 19920094 A 19940824