



(43) International Publication Date
12 September 2013 (12.09.2013)

- (51) International Patent Classification:
H03M 1/26 (2006.01)
- (21) International Application Number:
PCT/US2013/029613
- (22) International Filing Date:
7 March 2013 (07.03.2013)
- (25) Filing Language:
English
- (26) Publication Language:
English
- (30) Priority Data:
61/607,743 7 March 2012 (07.03.2012) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

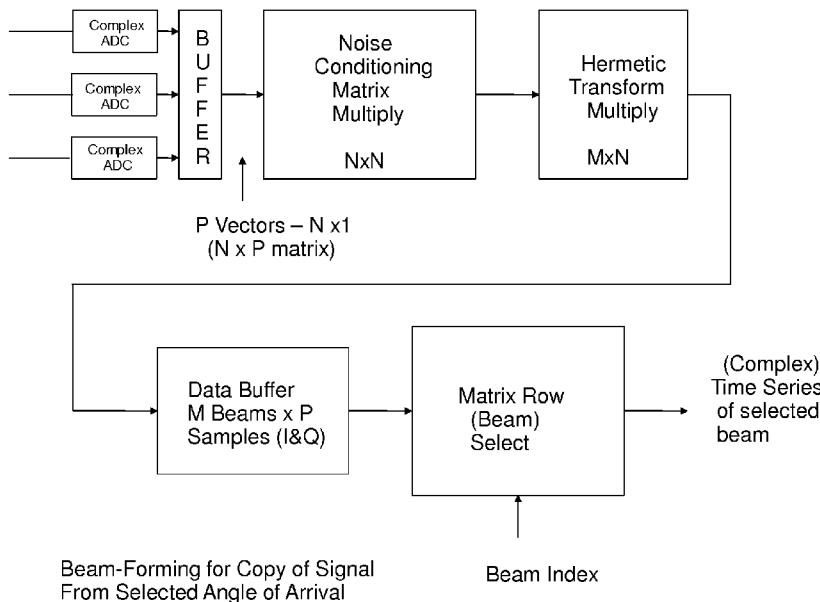
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

- (88) Date of publication of the international search report:
9 July 2015

(54) Title: DEVICES AND METHODS USING THE HERMETIC TRANSFORM



(57) Abstract: Systems and methods are described using a Hermetic Transform, as well as related transforms, for applications such as directional reception and/or transmit of signals using phased-array devices and systems. The systems and methods include identifying a direction of arrival for a mobile communicating device.

FIG. 1



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 13/29613

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H03M 1/26 (2013.01) USPC - 341/126 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC(8): H03M 1/26 (2013.01) USPC: 341/126 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 342/368 (keyword limited; terms below) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatBase; Google Scholar; Google Patents; FreePatentsOnline. Search terms used: hermetic-transform linear-transform, directional-reception directional-transmit, signal radio wave, phased-array, array manifold, phased-array, null, transfer, spatial, mobile, spectral-density, quadrature, in-phase, average, square, noise-conditioning-matrix ...		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2008/0260066 A1 (CAI et al.) 23 October 2008 (23.10.2008) entire document, especially Abstract; Figs.3A, 4; para [0053], [0054], [0058], [0059], [0064], [0085], [0110], [0111], [0124], [0133], [0134], [0168], [0173], [0174], [0178], [0179], [0180], [0213]	1 - 20
Y	US 2009/0239551 A1 (WOODSUM) 24 September 2009 (24.09.2009) entire document, especially Abstract; para [0009], [0026], [0044], [0089], [0090], [0095], [0099], [0102], [0109]	1 - 20
Y	US 2011/0288823 A1 (GUPTA) 24 November 2011 (24.11.2011) entire document, especially Abstract; para [0019], [0101], [0103], [0114], [0115]	4
Y	US 2005/0141545 A1 (FEIN et al.) 30 June 2005 (30.06.2005) entire document, especially Abstract; para [0030], [0149]	11
A, P	US 2012/0262328 A1 (SHINONAGA et al.) 18 October 2012 (18.10.2012) entire document	1 - 20
A	US 2006/0053005 A1 (GULATI) 09 March 2006 (09.03.2006) entire document	1 - 20
A	US 2005/0101253 A1 (PAJUKOSKI et al.) 12 May 2005 (12.05.2005) entire document	1 - 20
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Date of the actual completion of the international search 19 April 2013 (19.04.2013)		Date of mailing of the international search report 08 MAY 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774