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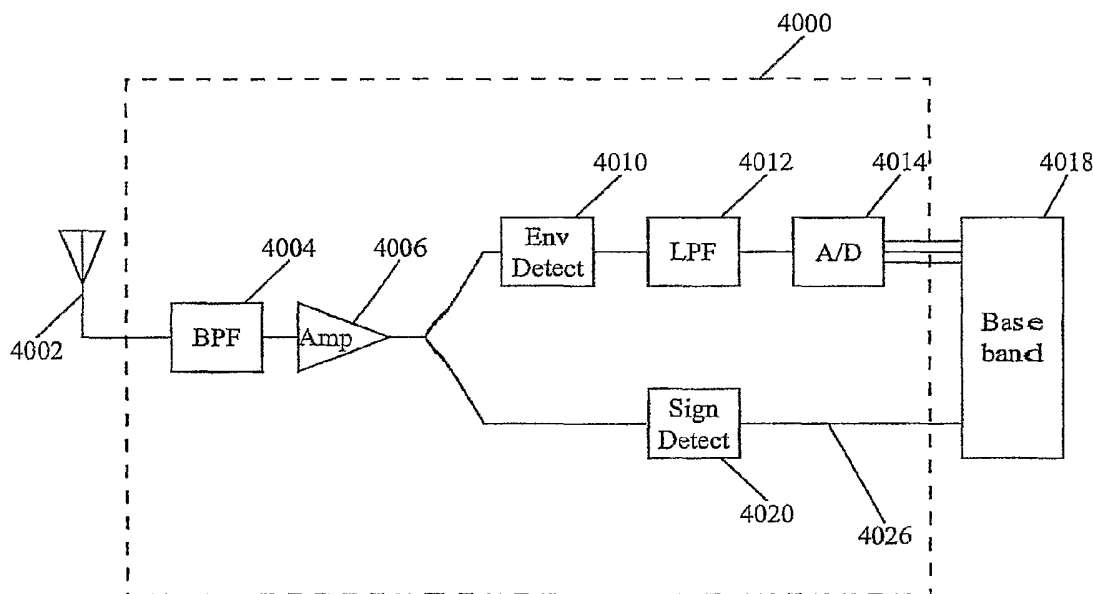
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(54) Title: ULTRA-WIDEBAND COMMUNICATION APPARATUS AND METHODS



(57) Abstract: Apparatus and methods of ultra-wideband communication are provided. In one embodiment, an ultra-wideband transmitter comprises a pulser that receives a first data stream comprising high and low signal values. The pulser generates ultra-wideband pulses corresponding to the high signal values. A second pulser receives a second data stream and generates ultra-wideband pulses corresponding to the second data stream high signal values. A combiner then combines the ultra-wideband pulses and generates a combined plurality of ultra-wideband pulses, and a filter filters and shapes the plurality of ultra-wideband pulses prior to transmission.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, IEEE Xplore, Ei Compendex, INSPEC, NTIS: National Technical Information Service, JICST-EPlus - Japanese Science & Technology, PASCAL, Current Contents Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2003/0108133 A1 (RICHARDS) 12 June 2003 (12.06.2003) figure 2; paragraphs 4, 36, 38, 40, 67	1,4,5,7,10,11 and 17 ----- 2,3,6,8,9,12-16 and 18
Y	US 6,781,470 B2 (ROGERSON) 24 August 2004 (24.08.2004) column 4, lines 61-67; column 5, lines 1-5; column 19, lines 63-67; column 20, lines 1-3	2,3,8,9,15,16
Y	US 2003/0067963 A1 (MILLER et al) 10 April 2003 (10.04.2003) paragraph 134	6, 12
Y	US 2004/0087291 A1 (WADA) 06 May 2004 (06.05.2004) paragraph 130; figure 19	13
Y	US 6,606,350 B2 (DRESS JR et al) 12 August 2003 (12.08.2003) column 8, lines 22-26	14
Y	US 2003/0040328 A1 (YONA et al) 27 February 2003 (27.02.2003) abstract	18
A	US 2004/0174828 A1 (SIWIAK et al) 09 September 2004 (09.09.2004) paragraph 249	3, 9
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A	US 6,603,818 B1 (DRESS JR et al) 05 August 2003 (05.08.2003) see entire document	1-22
A	US 2003/0053555 A1 (MCCORKLE et al) 20 March 2003 (20.03.2003) see entire document	1-22
A, P	US 6,937,667 B1 (FULLERTON et al) 30 August 2005 (30.08.2005) see entire document	1-22

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 2005/0207351 A1 (INAGAWA) 22 September 2005 (22.09.2005) see entire document	1-22
A, P	US 2005/0159129 A1 (IIDA) 21 July 2005 (21.07.2005) see entire document	1-22
A, P	US 6,946,981 B1 (ZILBERMAN et al) 20 September 2005 (20.09.2005) see entire document	1-22