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(71) Applicant (for all designated States except US): **INTER-DIGITAL TECHNOLOGY CORPORATION** [US/US];
3411 Silverside Road, Concord Plaza, Suite 105, Hagley Building, Wilmington, Delaware 19810 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HAQUE, Tanbir** [BD/US]; 35-44 75th Street, Jackson Heights, New York 11374 (US). **KAZAKEVICH, Leonid** [US/US]; 95 Roundtree Drive, Plainview, New York 11803 (US).

(74) Agent: **BALLARINI, Robert, J.**; Volpe and Koenig, P.C., United Plaza, Suite 1600, 30 S. 17th Street, Philadelphia, Pennsylvania 19103 (US).

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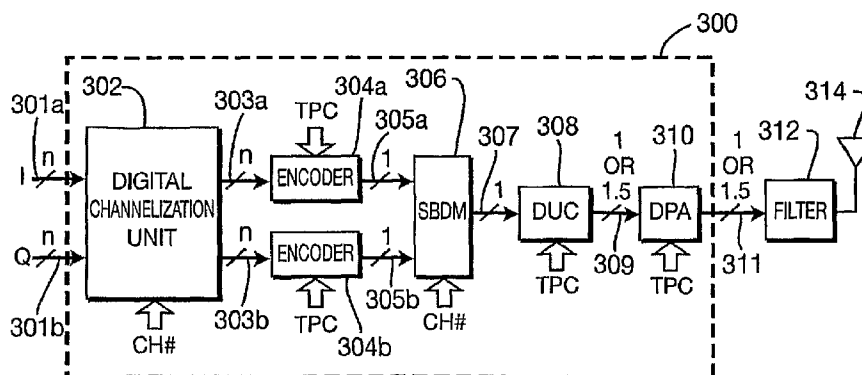
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(54) Title: ONE BIT DIGITAL QUADRATURE MODULATOR



(57) Abstract: In a digital Cartesian modulation transmitter, an encoder generates 1-bit logic signals from in-phase and quadrature signals. A single bit digital modulator multiplexes the 1-bit logic signals for Cartesian I/Q modulation. A digital upconverter (DUG) upconverts the multiplexed 1-bit logic signal. A digital power amplifier (DPA) generates a radio frequency (RF) signal based on the upconverted signal. In a digital polar modulation transmitter, an encoder converts a magnitude signal to a first 1-bit logic signal. A digital phase modulator modulates a carrier using a phase signal to generate a second 1-bit logic signal. A DUC upconverts the second 1-bit logic signal. A first-in first-out (FIFO) memory stores the first 1-bit logic signal. A combiner combines angle information contained in the second 1-bit logic signal with magnitude information contained in the first 1-bit logic signal stored in the FIFO memory. A DPA generates an RF signal based on the combined signal.

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER

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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)

H04L

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 practical, search terms used)

EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 627 499 A (GARDNER STEVEN H [US]) 6 May 1997 (1997-05-06) column 1, line 8 - line 11 column 2, line 47 - line 66 column 3, line 1 - line 23 column 3, line 58 - line 61 column 5, line 9 - line 13 column 5, line 49 - line 65 column 6, line 2 - line 10 figure 2	1-49
X	US 6 339 621 B1 (COJOCARU CHRISTIAN [CA] ET AL) 15 January 2002 (2002-01-15) column 2, line 58 - column 3, line 43 column 8, line 56 - column 9, line 2 figure 6	1-49

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Moreno, Marta

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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	US 2004/081252 A1 (HSU WEICHAN [US]) 29 April 2004 (2004-04-29) page 2, column 1, paragraph 16 page 2, column 2, paragraph 29 page 3, column 1, paragraph 33 - paragraph 35 -----	1, 19, 35, 36, 44, 49

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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US 6339621	B1	15-01-2002	CA 2213156 A1	15-02-1999
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