

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 May 2005 (12.05.2005)

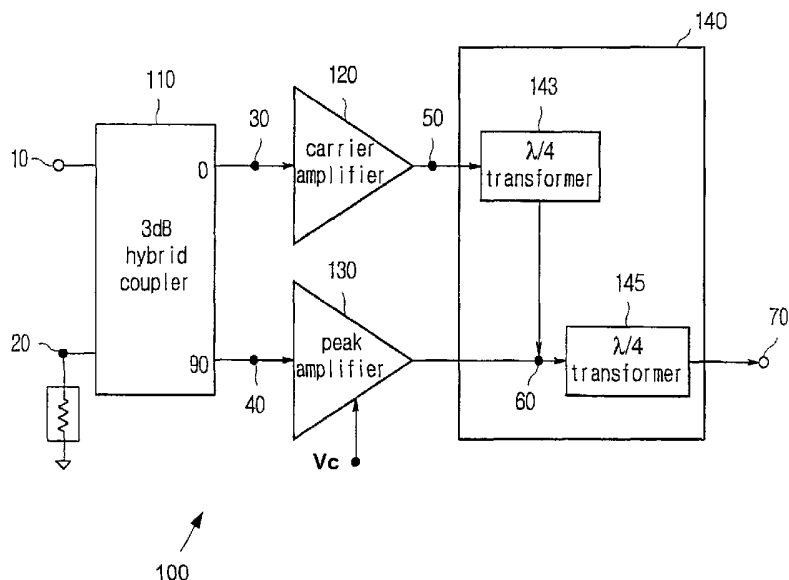
PCT

(10) International Publication Number
WO 2005/043747 A3

- (51) International Patent Classification⁷: **H03F 3/68**
 - (21) International Application Number: PCT/US2004/034797
 - (22) International Filing Date: 19 October 2004 (19.10.2004)
 - (25) Filing Language: English
 - (26) Publication Language: English
 - (30) Priority Data: 10/690,923 21 October 2003 (21.10.2003) US
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 - (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
 - (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report

[Continued on next page]

(54) Title: HIGH LINEARITY DOHERTY COMMUNICATION AMPLIFIER WITH BIAS CONTROL



(57) Abstract: The present invention relates to bias control of a power amplification circuit of a mobile device for improving the efficiency and the linearity properties of the power amplifier. In one embodiment, the power amplifier improves these properties by receiving a voltage control signal to bias a supplemental amplifier so that the power amplifier operates in a Doherty mode in a low output power range and in a non-Doherty mode in a high output power range. In the non-Doherty mode, the supplemental amplifier is biased as a class AB amplifier via the received voltage control signal to satisfy the non-linear operational requirements of the power amplifier in the high output power range. The power amplifier generates the voltage control signal based upon power levels of signals received from a remote base station.

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

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
9 September 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/34797

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : H03F 3/68 US CL : 330/124R, 295, 127, 134, 136, 84 According to International Patent Classification (IPC) or to both national classification and IPC</p>																			
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) U.S. : 330/124R, 295, 127, 134, 136, 84</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet</p>																			
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>US 5,420,541 A (Upton et al) 30 May 1995 (30.05.1995), see entire document.</td> <td>1-35</td> </tr> <tr> <td>X</td> <td>US 5,757,229 A (Mitzlaff et al) 26 May 1998 (26.05.1998), see column 2, lines 16-31.</td> <td>1, 2, 6-9, 11, 12, 14, 16-26, 29-31, 33-35</td> </tr> <tr> <td>---</td> <td></td> <td>-----</td> </tr> <tr> <td>Y</td> <td></td> <td>13, 15, 27, 32</td> </tr> <tr> <td>A</td> <td>US 5,880,633 A (Leizerovich et al) 03 March 1999 (03.03.1999), see entire document.</td> <td>1-35</td> </tr> </tbody> </table>		Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	A	US 5,420,541 A (Upton et al) 30 May 1995 (30.05.1995), see entire document.	1-35	X	US 5,757,229 A (Mitzlaff et al) 26 May 1998 (26.05.1998), see column 2, lines 16-31.	1, 2, 6-9, 11, 12, 14, 16-26, 29-31, 33-35	---		-----	Y		13, 15, 27, 32	A	US 5,880,633 A (Leizerovich et al) 03 March 1999 (03.03.1999), see entire document.	1-35
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.</p>																			
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td></td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td>"&" document member of the same patent family</td> </tr> </table>		"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means		"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family								
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<p>Date of the actual completion of the international search</p> <p>18 July 2005 (18.07.2005)</p>	<p>Date of mailing of the international search report</p> <p>21 JUL 2005</p>																		
<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450</p> <p>Facsimile No. (703) 305-3230</p>	<p>Authorized officer</p> <p>Jose Dees <i>Jose Dees</i></p> <p>Telephone No. 571-272-1569 <i>JD</i></p>																		

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/34797

Continuation of B. FIELDS SEARCHED Item 3:
EAST, NPL (IEEE)