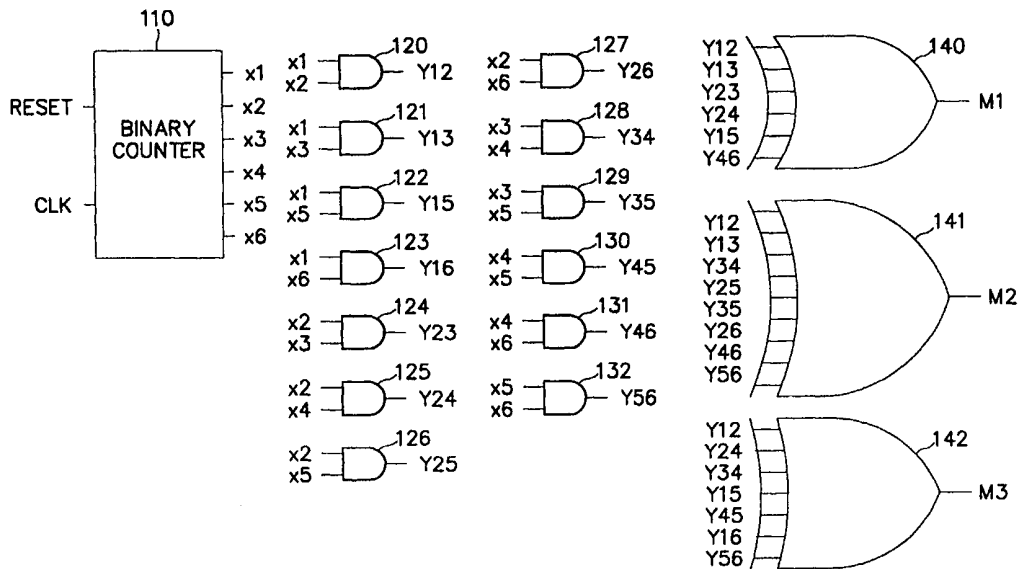




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<p>(21) International Application Number: PCT/KR99/00384 (22) International Filing Date: 20 July 1999 (20.07.99) (30) Priority Data: 1998/29576 20 July 1998 (20.07.98) KR (71) Applicant: SAMSUNG ELECTRONICS CO., LTD. [KR/KR]; 416, Maetan-dong, Paldal-gu, Suwon-shi, Kyungki-do 442-370 (KR). (72) Inventors: KIM, Jae-Yoel; Sanpon 9-danji Baekdu Apt. #960-1401, Sanpon-dong, Kunpo-shi, Kyonggi-do 435-041 (KR). AHN, Jae-Min; Puleun Samho Apt. #109-303 Irwonpon-dong, Kangnam-gu, Seoul 135-239 (KR). JEONG, Joong-Ho; 63-34, Chamwon-dong, Socho-gu, Seoul 137-030 (KR). YANG, Kyeong-Cheol; 50, Youido-dong, Yongdungpo-gu, Seoul 150-010 (KR). (74) Agent: LEE, Keon-Joo; Mihwa Building, 110-2, Myon- gryun-dong 4-Ga, Chongro-gu, Seoul 100-524 (KR).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> (88) Date of publication of the international search report: 27 April 2000 (27.04.00)</p>

(54) Title: QUASI-ORTHOGONAL CODE MASK GENERATING DEVICE IN MOBILE COMMUNICATION SYSTEM



(57) Abstract

A device for generating a quasi-orthogonal code mask in a communication system. A counter generates first to eighth counter signals x1-x8 representing Bent functions. A logic operator receives the first to eighth counter signals x1-x8 and performs an operation, for example $x1*x2 + x1*x3 + x1*x4 + x1*x5 + x1*x7 + x1*x8 + x2*x6 + x2*x7 + x3*x4 + x3*x5 + x3*x6 + x4*x5 + x4*x6 + x4*x7 + x4*x8 + x5*x7 + x7*x8 + x1 + x2 + x5 + x7$, to generate a mask signal.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC ⁷ : H 04 L 27/30; H 04 B 7/216; H 04 J 13/00; G 06 F 17/14 According to International Patent Classification (IPC) or to both national classification and IPC		
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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5596518 A (TOYOKURA et al.), 21 January 1997 (21.01.97), column 4, lines 6-54; column 7, lines 5-45; claim 7.	1 2-21
X A	US 5546423 A (SEHIER et al.), 13 August 1996 (13.08.96), column 4, lines 42-67; claims 1,7.	1 2-21
A	EP 0565506 A2 (ERICSSON), 13 October 1993 (13.10.93), page 8, line 54 - page 11, line 53; page 15, lines 49-52.	1-21
A	US 5136611 A (KIRIMOTO et al.), 04 August 1992 (04.08.92), claims 1,6. -----	1-21
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/KR 99/00384

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
US	A	5596518	21-01-1997	JP	A2	8185389	16-07-1996
				JP	B2	2901896	07-06-1999
				KR	B1	150350	15-10-1998
US	A	5546423	13-08-1996	CA	AA	2125444	10-12-1994
				EP	A1	629059	14-12-1994
				FR	A1	2706704	23-12-1994
				FR	B1	2706704	13-07-1995
EP	A2	565506	13-10-1993	AU	A1	40269/93	18-11-1993
EP	A3	565506	25-05-1994	AU	B2	665254	21-12-1995
				BR	A	9305479	11-10-1994
				CA	AA	2110995	28-10-1993
				FI	A0	935526	09-12-1993
				FI	A	935526	14-01-1994
				JP	T2	6511371	15-12-1994
				MX	A1	9301960	01-10-1993
				NZ	A	251900	28-10-1996
				SG	A1	43043	17-10-1997
				US	A	5353352	04-10-1994
				WO	A1	9321709	28-10-1993
				US	A	5550809	27-08-1996
				US	A	5742678	21-04-1998
				US	A	5771288	23-06-1998
				AU	A1	33220/95	07-03-1996
				AU	A1	12144/99	04-03-1999
				AU	B2	703405	25-03-1999
				BR	A	9508876	30-12-1997
				CA	AA	2197640	22-02-1996
				CN	A	1159872	17-09-1997
				EP	A1	776555	04-06-1997
				FI	A0	970637	14-02-1997
				FI	A	970637	11-04-1997
				JP	T2	10507322	14-07-1998
				NO	A0	970667	13-02-1997
				NO	A	970667	16-04-1997
				WO	A1	9605668	22-02-1996
US	A	5136611	04-08-1992	JP	A2	3272486	04-12-1991
				JP	B2	2527104	21-08-1996
				DE	A1	4102095	14-08-1991
				DE	C2	4102095	12-01-1995
				GB	B2	2241624	02-03-1994
				GB	A0	9101346	06-03-1991
				GB	A1	2241624	04-09-1991