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[Continued on next page]

(54) Title: CALIBRATION-FREE LOCAL OSCILLATOR SIGNAL GENERATION FOR A HARMONIC-REJECTION MIXER

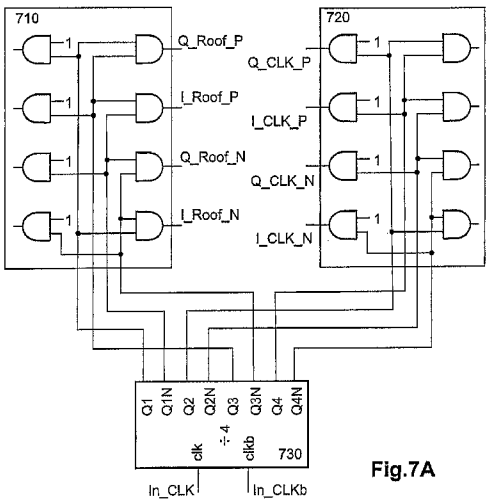

Fig.7A

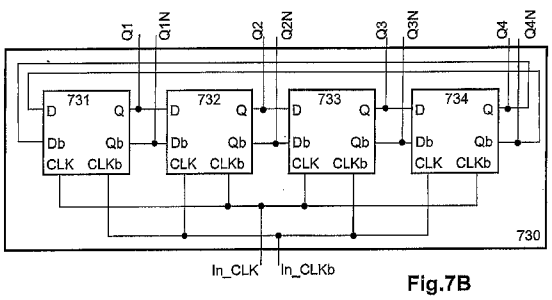

Fig.7B

(57) Abstract: A circuit for producing multiple switching control signals for a harmonic rejection mixer from multiple phases of a digital localoscillator signalis presented, wherein a first waveform combiner circuit is arranged to generate from the multiple phases of the digital local oscillator signalat least one switching control signal by logical combining two from the multiple phases of a digital local oscillator signal, and a second waveform combiner circuit is arranged to generate from the multiple phases of the digital local oscillator signal at least one first switching control signal by logical combining one from the multiple phases of a digitallocal oscillator signal with a predetermined signal having a static logical value. To compensate for phase errors the schematic topology of the first and the second waveform combiner circuit are arranged to be fully symmetrical to each other in that in the first waveform combiner, the circuit part for providing the function of the second waveform combiner is used as adummycircuit, and in the second waveform combiner, a circuit part for providing the function of the first waveform combiner is used as a dummy circuit. Accordingly, the sources for providing the multiple phases of the digital local oscillator signal see the same load, and hence required phase shift is guaranteed.

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FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H03K H03D

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 10 2005 029273 A (INFINION) 28 December 2006 (2006-12-28) paragraph [0063] - paragraph [0064]; figure 6	1-8
A	US 2006/205370 A1 (HAYASHI T.) 14 September 2006 (2006-09-14) paragraph [0023] - paragraph [0053]; figures 1-6	1-8
A	US 2005/239430 A1 (SHAH P.) 27 October 2005 (2005-10-27) paragraph [0044] - paragraph [0071]; figure 4	1-8

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

☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/	Authorized officer
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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102005029273 A	28-12-2006	NONE	
US 2006205370 A1	14-09-2006	NONE	
US 2005239430 A1	27-10-2005	US 2009143031 A1	04-06-2009