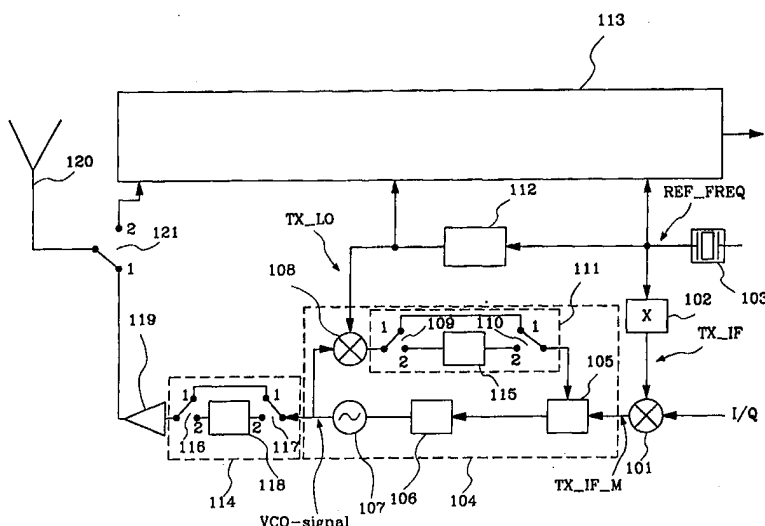




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(54) Title: ARRANGEMENT IN A COMMUNICATION SYSTEM



(57) Abstract

The invention relates to an apparatus for transmitting RF signals in two widely separated frequency bands. The RF signals in the two frequency bands have the same modulated bandwidth. The apparatus utilizes essentially the same radiocommunication apparatus structure as in a radiocommunication apparatus designed for only one frequency band. RF signals for one frequency band are obtained when a first frequency multiplier (118) is connected, thereby generating RF signals by multiplying VCO signals from a VCO (107) by a factor k . The RF signals for the other frequency band are obtained from said VCO (107) when the first frequency multiplier (118) is not connected. When the first frequency multiplier (118) is connected, the modulated bandwidth of the VCO signals will also be multiplied by the factor k . This is compensated in a phase locked loop (104) by connecting a second frequency multiplier (115), having the same multiplication factor k , at the same time as the first multiplier (118) is connected. The second multiplier (115) affects the bandwidth of the modulated VCO signal so that it will be k times smaller. The bandwidth of the modulated VCO signal is then recreated by the first multiplier (118).

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International application No.

PCT/SE 97/01872

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: H04B 1/04, H04B 1/25 According to International Patent Classification (IPC) or to both national classification and IPC		
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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
WO 9610871 A1	11/04/96	AU 3728395 A	26/04/96
		CA 2200960 A	11/04/96
		EP 0783804 A	16/07/97
		FI 971244 A	30/05/97
		IL 115462 D	00/00/00
		US 5722053 A	24/02/98
		ZA 9507751 A	31/05/96
