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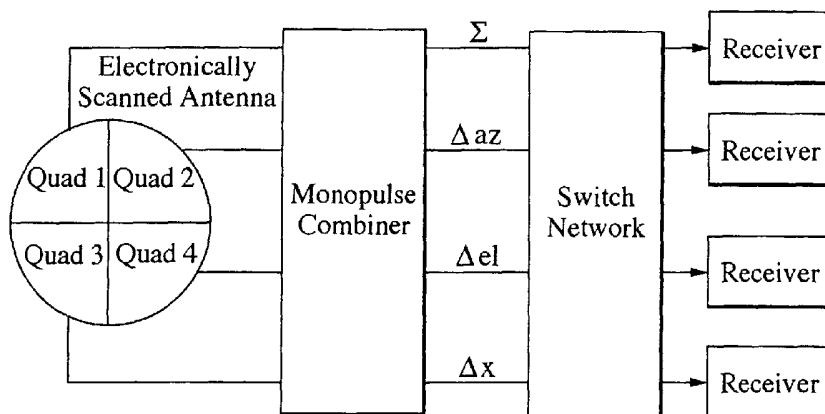
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(54) Title: DYNAMIC SIGNAL ROUTING IN ELECTRONICALLY SCANNED ANTENNA SYSTEMS



(57) **Abstract:** An electronically scanned antenna array system with dynamic signal routing to a set of receivers. A monopulse electronically scanned antenna (ESA) has a plurality of antenna elements divided into subarrays. ESA beam steering phase shifters are associated with the respective subarrays of antenna elements, such that the output signals from the respective antenna elements associated with the respective quadrants are phase shifted and summed to provide respective subarray signals. A monopulse network responsive to the subarray signals provides monopulse outputs to a set of receivers. A beam steering controller provides phase shift commands to the ESA phase shifters to set the phase shift associated with the respective phase shifters of the subarrays. The controller commands the ESA phase shifters to modulate the phase shift of selected quadrants. The phase shifts associated with the subarrays are selectively set to either 0 or 180 degrees relative to one of the subarrays by adding the desired subarray phase shift (0 or 180 degrees) to the beam steering phase command at each element. This produces the main array signals. By setting the subarray's phase shifts, the main array signals are appropriately steered to the desired receivers. The dynamic signal routing can also be used with non-electronically scanned systems.



WO 02/093682 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01Q25/02 G01S13/44 H01Q3/36

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)

IPC 7 H01Q G01S H01P

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, PAJ, 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 3 380 053 A (CONNOLLY TERRENCE E) 23 April 1968 (1968-04-23) figures 1,3 column 2, line 3 - line 61 column 3, line 11 - column 5, line 10 column 6, line 55 - column 8, line 15 ---	1-3,5,6, 8-11,13
A	US 5 128 682 A (KRUGER BRADFORD E) 7 July 1992 (1992-07-07) abstract; figures 3,5,6 column 4, line 23 - line 68 column 5, line 32 - column 6, line 43 column 6, line 60 - column 8, line 23 --- -/--	1,9



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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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	EP 0 373 634 A (HUGHES AIRCRAFT CO) 20 June 1990 (1990-06-20) abstract; figures page 4, line 1 - line 33 page 7, line 15 - line 26; table ---	1,9
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