

Title (en)
PHASED ANTENNA ARRAY

Publication
EP 0056984 B1 19851106 (DE)

Application
EP 82100406 A 19820121

Priority
DE 3102110 A 19810123

Abstract (en)
[origin: EP0056984A1] 1. Phase-controlled aerial array with a plurality of individual radiator elements or lines of radiator elements each with a respective phase shifter (PS), which are connected through a common distributor network with a common feed line (Sp), wherein the target distribution of the relative amplitudes of the individual radiator elements (1 to 6) is determined by the location (X1 to X6) of the individual radiator element within the radiator array and by the desired aerial polar diagram, characterised thereby, that a readstore for the individual setting of the controllable phase shifters has setting values stored therein, which are so dimensioned in accordance with the deviation of the measured course of the actual relative amplitudes of the individual radiator elements (1 to 6) from the target distribution that the setting value ϕ_{n-B} for the control of the phases of the nth radiator element is connected by the relationship see diagramm : EP0056984,P4,F1 with the measured amplitude distribution PA (x) in the aerial aperture in dependence on the co-ordinates x extending parallelly to the polar diagram section being considered and the desired polar diagram shape PF (δ) in dependence on the angle of the beam direction δ , wherein $\delta(x)$ is so defined that see diagramm : EP0056984,P4,F3 and wherein x_n is the co-ordinate of the nth aerial element, D is the diameter of the aerial aperture, $-\delta_0$ is the angle, at which the radiation shall start, and λ_0 is the operating wave length and the phase displacement ϕ_{const} is as desired, but equal for all radiator elements.

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