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**LOU et al.**(10) **Pub. No.: US 2023/0231320 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **ARRAY ANTENNA****H01Q 13/08** (2006.01)**H01Q 1/08** (2006.01)(71) Applicant: **QuantumZ Inc.**, Kaohsiung City (TW)(52) **U.S. Cl.**CPC ..... **H01Q 21/065** (2013.01); **H01Q 9/0407**  
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**ABSTRACT**

An array antenna includes a flexible substrate formed by stacked liquid crystal polymer (LCP) layers and has at least one feed point. At least one serial antenna is arranged on the flexible substrate, and a microstrip is extended from the feed point to connect a plurality of radiating elements in series to form the serial antenna. The tail end one of the radiating elements of the serial antenna is connected to one end of a ground microstrip, and another end of the ground microstrip is short-circuited to the ground. The length of the ground microstrip is approximately one fourth of the wavelength of the center frequency of the array antenna. Feeding sections where microstrips feeding to the radiating elements are in a horn and/or groove shape. Desired frequency and bandwidth may be obtained by adjusting lengths and widths of feeding sections respectively.

