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Turpin et al.(10) **Pub. No.: US 2023/0231324 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **MULTI-BAND LENS ANTENNA SYSTEM**

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(71) Applicant: **All.Space Networks Limited**, Reading (GB)**Publication Classification**(72) Inventors: **Jeremiah P. Turpin**, Linthicum, MD (US); **Clinton P. Scarborough**, Darlington, MD (US); **Daniel F. DiFonzo**, Rockville, MD (US); **Brian Murphy Billman**, Baltimore, MD (US)(51) **Int. Cl.**
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(57) **ABSTRACT**

A multi-band antenna system that includes a first antenna array and a second antenna array. The first antenna array includes a plurality of lens sets, each including a lens and feed element(s) configured to transmit and/or receive electromagnetic signals that pass through the lens. The second antenna array includes a plurality of antenna elements, each disposed between two of the lenses of the first array.

