



US 20230231622A1

(19) **United States**(12) **Patent Application Publication**  
**Kokorich et al.**(10) **Pub. No.: US 2023/0231622 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SATELLITE COMMUNICATION SYSTEM  
WITH HIGH-GROUND ELEVATION ANGLE**(52) **U.S. Cl.**CPC ..... **H04B 7/18539** (2013.01); **H04B 7/19**  
(2013.01); **H04B 7/195** (2013.01)(71) Applicant: **Rovial SAS**, Paris (FR)(72) Inventors: **Mikhail Kokorich**, Payerne (CH);  
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Cooper**, Round Mountain, CA (US)(73) Assignee: **Rovial SAS**, Paris (FR)(21) Appl. No.: **17/576,750**(22) Filed: **Jan. 14, 2022****Publication Classification**(51) **Int. Cl.****H04B 7/185** (2006.01)**H04B 7/19** (2006.01)**H04B 7/195** (2006.01)

(57)

**ABSTRACT**

A satellite receiver for wireless signals having carrier frequencies in the V or the W band of frequencies is described. The satellite receiver may receive the wireless signals at high elevation angles, such as greater than 62°. This high elevation angle may reduce losses, which may allow the satellite receiver to communicate at a data rate of at least 50 Mbps. In order to accommodate these system requirements, the one or more satellites that provide the wireless signals may have eccentric geosynchronous or near-geosynchronous orbits that are inclined relative to an equatorial plane of the Earth, such as an eccentricity between 0.12 and 0.3. Moreover, the one or more satellites may have ground tracks substantially along one or more continents, and may be in view of dense population regions in the one or more continents with a higher frequency than low-density population regions in the one or more continents.

