

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0232248 A1 Kokorich et al.

Jul. 20, 2023 (43) **Pub. Date:**

(54) SATELLITE RECEIVER WITH DYNAMICALLY SELECTED SWITCHED ANTENNA ELEMENTS

(71) Applicant: Rovial SAS, Paris (FR)

Inventors: Mikhail Kokorich, Payerne (CH);

Raghunath Das, Gaithersburg, MD (US); Peter S. Ruderman, San Francisco, CA (US); Brian Adam Cooper, Round Mountain, CA (US)

Assignee: Rovial SAS, Paris (FR)

Appl. No.: 17/576,809 (21)

(22) Filed: Jan. 14, 2022

Publication Classification

(51) Int. Cl.

H04W 16/28 (2006.01)H04B 7/185 (2006.01) (52) U.S. Cl.

CPC H04W 16/28 (2013.01); H04B 7/18539 (2013.01); H04B 7/18547 (2013.01); H01Q 3/247 (2013.01)

(57)ABSTRACT

A satellite receiver with a switchable array of antenna elements for receiving wireless signals from at least a satellite is described. The antenna elements may be dynamically selected based at least in part on a location and motion of the satellite receiver, and a location and a motion of at least the satellite that provides wireless signals. Moreover, the antenna elements may also be dynamically selected based at least in part on utilization and/or availability of a terrestrial wireless communication network that communicates with the satellite receiver. The satellite receiver may predict availability of communication with at least the satellite. Furthermore, the array of antenna elements may provide improved power efficiency, pointing accuracy and/ or isotropic gain relative to an array of antenna elements without switched antenna elements, such as for carrier frequencies in the V or the W band of frequencies.

