

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
28 September 2023 (28.09.2023)



(10) International Publication Number
WO 2023/183521 A1

- (51) International Patent Classification:
H01Q 3/12 (2006.01)
- (21) International Application Number:
PCT/US2023/016133
- (22) International Filing Date:
23 March 2023 (23.03.2023)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
63/322,719 23 March 2022 (23.03.2022) US
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DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:
— with international search report (Art. 21(3))

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- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,

(54) Title: ANTENNA SUBREFLECTOR WITH CONSTANT PHASE CENTERING AND 3D TRACKING

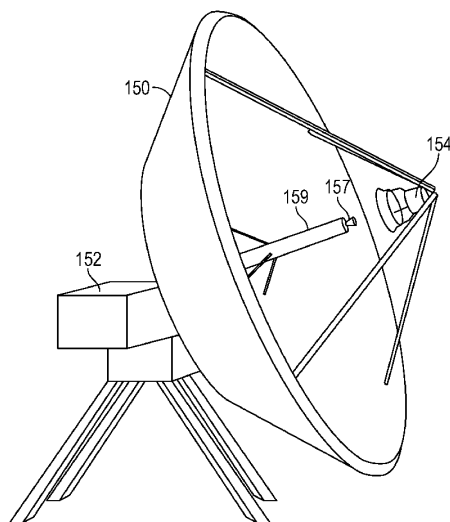


FIG. 2

(57) Abstract: A dual reflector earth station antenna (ESA) system for transmitting uplink in a first frequency band and receiving downlink in a second frequency band, the ESA system comprises a reflector; a reflector tracking assembly coupled to the reflector and configured to control the direction of the reflector; a feed horn coupled to the reflector and optimized for a near-constant phase center for both the first frequency band and the second frequency band; a subreflector tracking assembly including a subreflector, configured for tracking in the X, Y and Z-axes and supported proximate a focal point of the reflector; and a control system in communication with the subreflector tracking assembly and comprising at least one processor. The processor is configured to adjust the subreflector of the subreflector tracking assembly along X, Y and Z axes of the reflector until a signal gain of the reflector antenna is maximized.



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