

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 June 2022 (02.06.2022)



(10) International Publication Number
WO 2022/113064 A1

- (51) International Patent Classification:
H01Q 21/06 (2022.01) *H01Q 13/08* (2022.01)
- (21) International Application Number:
PCT/IL2021/051363
- (22) International Filing Date:
17 November 2021 (17.11.2021)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
279008 26 November 2020 (26.11.2020) IL
- (71) Applicant: **ELTA SYSTEMS LTD.** [IL/IL]; 100 Yitzchak Hanassi Blvd., P.O.B. 330, 7710201 Ashdod (IL).
- (72) Inventors: **MIZRAHI, Yaniv**; 47/1 Rachel Imenu Street, 7177105 Modi'in (IL). **BAUER, Reuven**; 16/A HaAmoraim Street, 7654959, Rehovot (IL). **LUKOVSKY, Gregory**; 7/5 Begin St., 5442105 Givat-Shmuel (IL).

HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, 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))

- (74) Agent: **KOZLOVICH, Nick**; REINHOLD COHN AND PARTNERS, 26A Habarzel St., 6971037 Tel Aviv (IL).
- (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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,

(54) Title: END-FIRE TAPERED SLOT ANTENNA

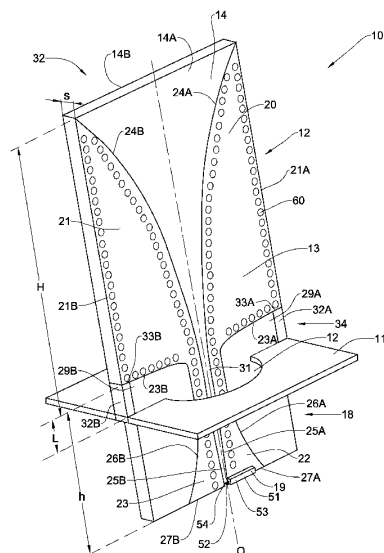


Fig. 1

(57) Abstract: An end-fire tapered slot antenna is described. The antenna includes a conductive ground plane having a pass-through opening recessed therein, and a dual tapered slot element (DTSE) passing through the pass-through opening. The DTSE includes a substrate, a radiating portion including a first and second pairs of radiating wings symmetrically arranged on the opposite sides of the substrate, and a base portion electrically coupled to the radiating portion and including first and second pairs of the legs passing through the pass-through opening of the conductive ground plane. The legs inner edges define a slot line on each side of the substrate having a tapered shape with increasing a distance between the inner edges. Vias elements are arranged along an entire perimeter of the radiating wings electrically connecting the radiating wings and the legs arranged on the opposite sides of the substrate. Electrical shunts are located on each side of the substrate for connecting the radiating wings of the DTSE to the conductive ground plane.