

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
26 August 2021 (26.08.2021)



(10) International Publication Number  
**WO 2021/167524 A1**

(51) International Patent Classification:

*H01Q 21/00* (2006.01) *H04B 7/0452* (2017.01)  
*H04B 7/02* (2018.01)

(21) International Application Number:

PCT/SG2020/050079

(22) International Filing Date:

17 February 2020 (17.02.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant: **TIVACI CORPORATION PTE LTD**  
[SG/SG]; 264A Tanjong Katong Road, Singapore 437051 (SG).

(72) Inventors: **CASTILLO, Byron Del**; c/o TiVACI Corporation Pte Ltd, 264A Tanjong Katong Road, Singapore 437051 (SG). **KWA, Kaoh Wee Edward**; c/o TiVACI Corporation Pte Ltd, 264A Tanjong Katong Road, Singapore 4370501 (SG).

(74) Agent: **SPRUSON & FERGUSON (ASIA) PTE LTD**;  
P.O. Box 1531, Robinson Road Post Office, Singapore 903031 (SG).

(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, HR, HU, ID, IL, IN, IR, IS, 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).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

(54) Title: A COMMUNICATION SYSTEM, A COMMUNICATION APPARATUS AND A COMMUNICATION METHOD IN ASSOCIATION THERETO

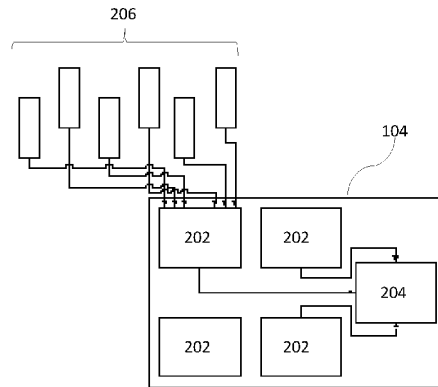


Fig.2

(57) Abstract: There is provided a communication system/apparatus. The communication system/apparatus can include at least one controller module and a plurality of unit modules. The plurality of unit modules can be coupled to the controller module. Each of the unit module can be capable of being coupled to a plurality of antennas. The plurality of antennas can be coupled to the unit modules form an antenna array. The antenna array can be capable of being arranged in a manner so as to form an effective multipath.

[Continued on next page]

WO 2021/167524 A1

**Published:**

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE