US 20240356226A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0356226 A1**

RAMIREZ-SERRANO (43) **Pub. Date: Oct. 24, 2024**

(54) **PLANAR ANTENNA AND METHOD FOR PROVIDING SUCH**

(71) Applicant: **Viessmann Climate Solutions SE**, Allendorf (DE)

(72) Inventor: **Nelson RAMIREZ-SERRANO**, Köln (DE)

(21) Appl. No.: **18/682,930**

(22) PCT Filed: **Sep. 29, 2022**

(86) PCT No.: **PCT/EP2022/077086**

§ 371 (c)(1),
(2) Date: **Feb. 11, 2024**

(30) **Foreign Application Priority Data**

Oct. 11, 2021 (EP) 21201977.2

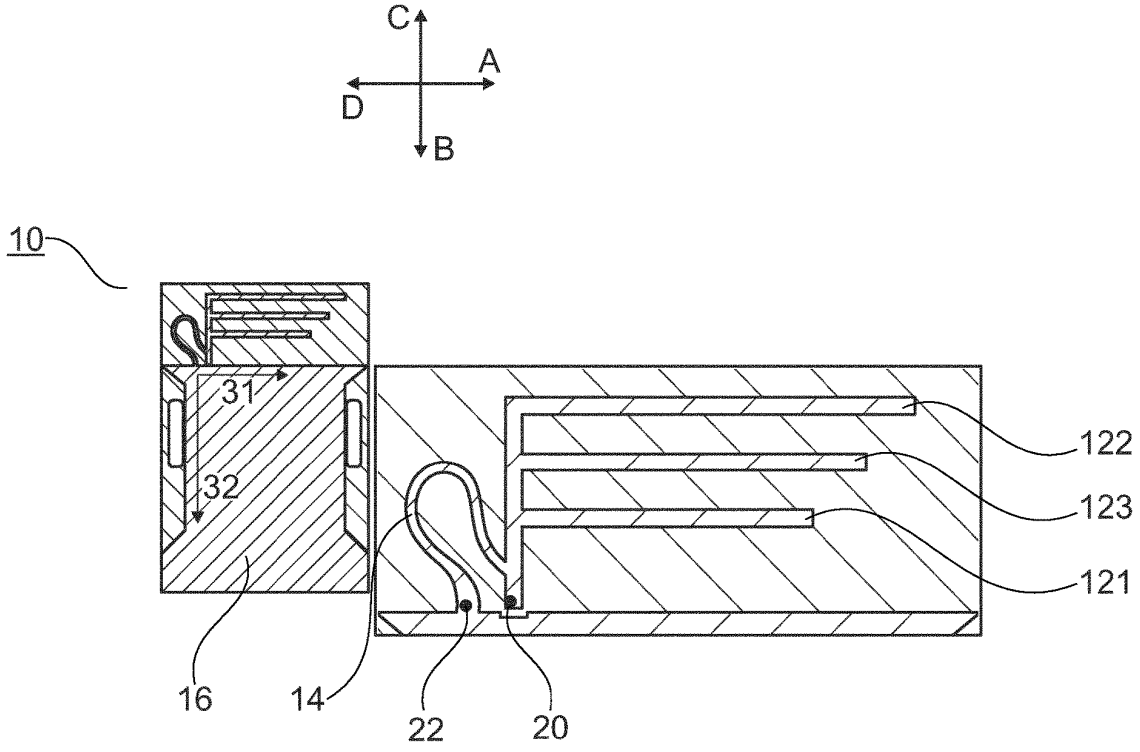
Publication Classification

(51) **Int. Cl.**
H01Q 9/04 (2006.01)
H01Q 5/371 (2006.01)

(52) **U.S. Cl.**
CPC ***H01Q 9/0407*** (2013.01); ***H01Q 5/371*** (2015.01)

(57) **ABSTRACT**

Planar antenna for radiating one or more working frequencies, comprising one or more radiators, a compensation element and a ground plane, wherein: said one or more radiators and said compensation element are configured above a first side of said ground plane; said one or more radiators are configured to connect to a feed point configured on said first side; said compensation element is configured to connect to said feed point and to a connection point configured on said first side; predetermined sizes in relation to said one or more radiators are configured to correspond to predetermined wavelengths under one or more predetermined frequencies; working sizes of said one or more radiators are reduced compared with said predetermined sizes; and working wavelengths under said one or more working frequencies are configured to correspond to said working sizes.



US 20240356228A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0356228 A1

XUE et al. (43) Pub. Date: Oct. 24, 2024

(54) ANTENNA SYSTEM AND ELECTRONIC DEVICE

(71) Applicant: **Huawei Technologies Co., Ltd.**, Shenzhen (CN)

(72) Inventors: **Liang XUE**, Shanghai (CN); **Meng Hou**, Shanghai (CN); **Hanyang Wang**, Reading (GB); **Pengfei Wu**, Shanghai (CN); **Chuanbo Shi**, Shanghai (CN)

(21) Appl. No.: **18/682,612**

(22) PCT Filed: **Aug. 3, 2022**

(86) PCT No.: **PCT/CN2022/109988**

§ 371 (c)(1),
(2) Date: **Feb. 9, 2024**

(30) **Foreign Application Priority Data**

Aug. 11, 2021 (CN) 202110919516.6

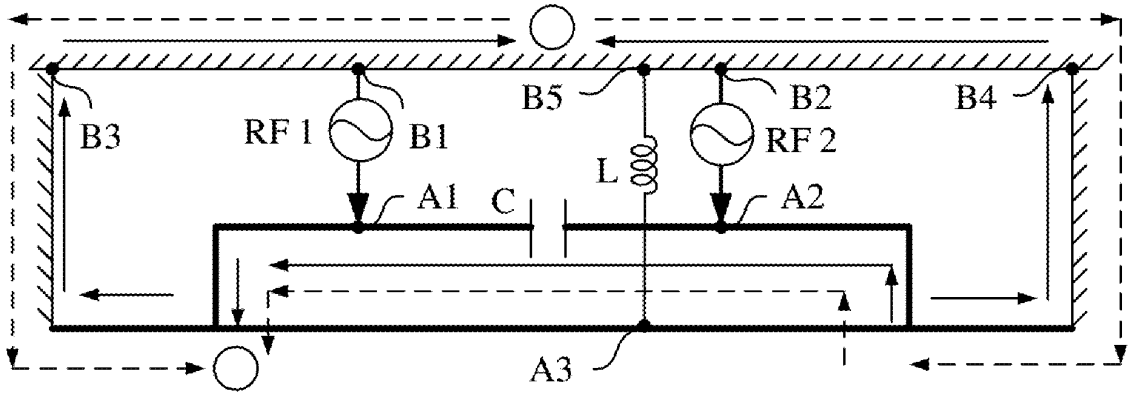
Publication Classification

(51) **Int. Cl.**
H01Q 9/04 (2006.01)
H01Q 1/24 (2006.01)

(52) **U.S. Cl.**
CPC ***H01Q 9/0421*** (2013.01); ***H01Q 1/243*** (2013.01); ***H01Q 9/0442*** (2013.01)

(57) **ABSTRACT**

In some embodiments, an antenna system includes a first antenna and a second antenna. The first and second antenna include a shared first radiator and an additional radiator. Two ends of the first radiator are connected to a ground, each radiator has a first end farther from a first end of the other radiator, and the first end of the second radiator and the first end of the third radiator are separately connected to the first radiator. The second end of the second radiator is disposed opposite a gap to the second end of the third radiator. The first antenna is through a first feeding connection on the second radiator, and the second antenna is through a second feeding connection on the third radiator.



US 20240357027A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0357027 A1

LEE et al. (43) Pub. Date: Oct. 24, 2024

(54) **ELECTRONIC DEVICE COMPRISING ANTENNA FORMED BY SEGMENTED STRUCTURE**

(71) Applicant: **Samsung Electronics Co., Ltd.**, Suwon-si (KR)

(72) Inventors: **Kyungjae LEE**, Suwon-si (KR); **Sungkoo PARK**, Suwon-si (KR); **Soonho HWANG**, Suwon-si (KR); **Junwoo KIM**, Suwon-si (KR); **Seunghwan KIM**, Suwon-si (KR); **Jaebong CHUN**, Suwon-si (KR)

(21) Appl. No.: **18/758,756**

(22) Filed: **Jun. 28, 2024**

Related U.S. Application Data

(63) Continuation of application No. PCT/KR2022/021759, filed on Dec. 30, 2022.

(30) **Foreign Application Priority Data**

Dec. 31, 2021 (KR) 10-2021-0194736
Mar. 3, 2022 (KR) 10-2022-0027757

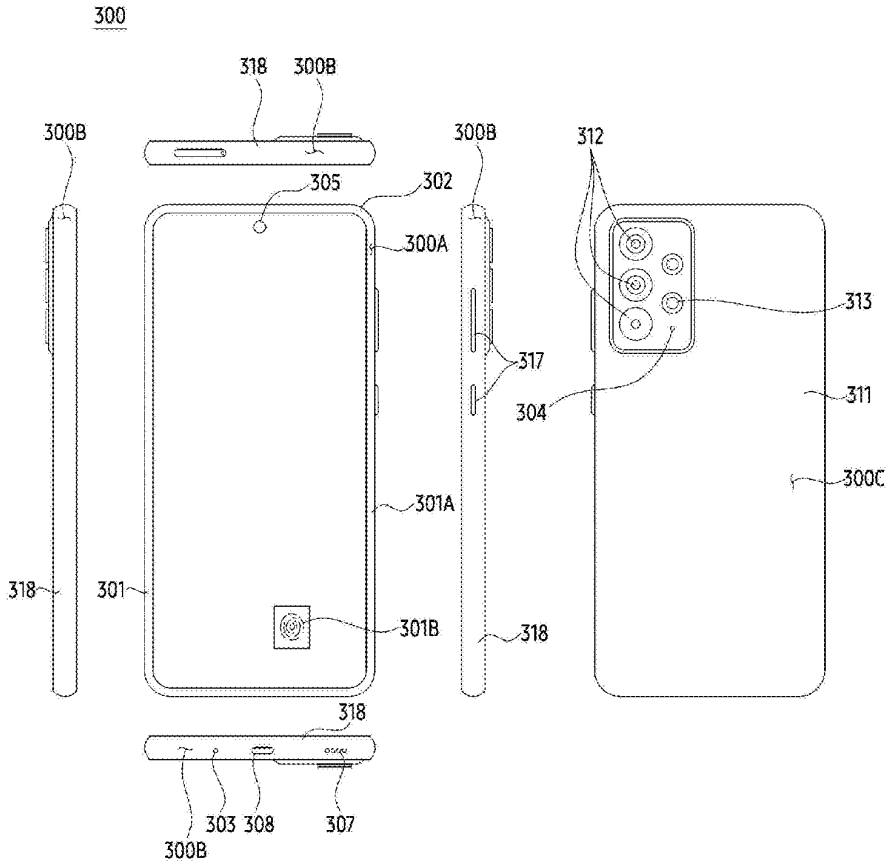
Publication Classification

(51) **Int. Cl.**
H04M 1/02 (2006.01)
H01Q 1/24 (2006.01)
H01Q 5/335 (2006.01)

(52) **U.S. Cl.**
CPC ***H04M 1/026*** (2013.01); ***H01Q 1/243*** (2013.01); ***H01Q 5/335*** (2015.01)

(57) **ABSTRACT**

An electronic device according to an embodiment comprises: a housing which includes a first conductive portion disposed at a first edge, a second conductive portion disposed at the first edge and a second edge perpendicular to the first edge, and a third conductive portion disposed at the second edge; a feeder which feeds power to a feeding point disposed in at least one of the first conductive portion and the second conductive portion; a connection element which can electrically connect the first conductive portion, the second conductive portion, and the third conductive portion to each other; and a processor. A first electrical path from the feeding point to one position of the first conductive portion may be different from a second electrical path from the feeding point to one position of the third conductive portion.



330: 300A, 300B, 300C

US 20240364011A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0364011 A1**

Abraham et al. (43) **Pub. Date: Oct. 31, 2024**

(54) **PLANAR INVERTED-F ANTENNA SUPPORTING COMMUNICATION OF WIRELESS BROADBAND SIGNALS AND LOCATION SIGNALS WITHIN A SINGLE ELEMENT**

(71) Applicant: **PetPace LTD**, shefayim (IL)

(72) Inventors: **Lior Abraham**, Shefayim (IL); **Asaf Dagan**, Shefayim (IL); **Oren Elime**, Shefayim (IL)

(21) Appl. No.: **18/138,746**

(22) Filed: **Apr. 25, 2023**

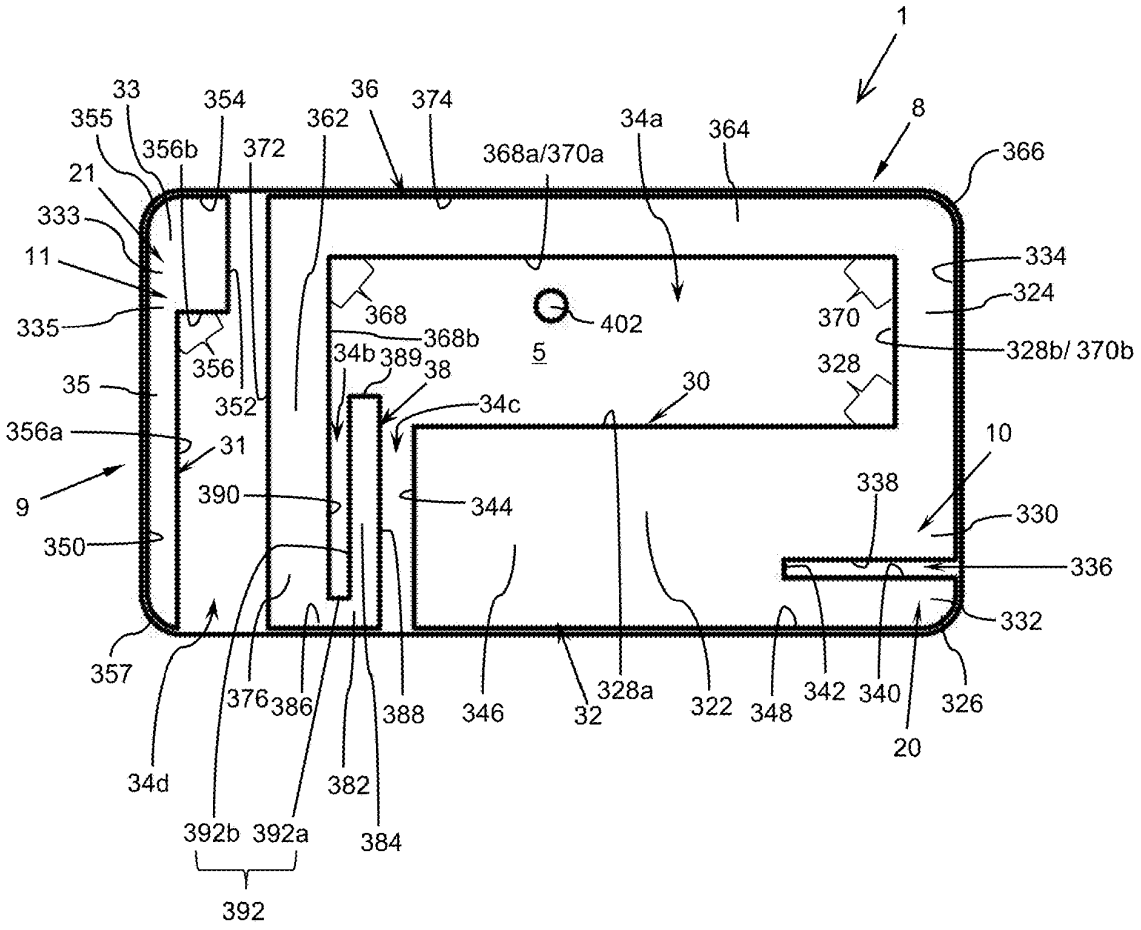
Publication Classification

(51) **Int. Cl.**
H01Q 9/04 (2006.01)

(52) **U.S. Cl.**
CPC ***H01Q 9/0414*** (2013.01); ***H01Q 9/0421*** (2013.01)

(57) **ABSTRACT**

A planar inverted-F antenna has a first planar radiating element, a first feed element electrically connected to a first area of the first planar radiating element, and a first ground element electrically connected to a second area of the first planar radiating element. The first planar radiating element is a multi-band radiating element configured to operate at a plurality of frequency bands including at least one frequency band at which location signals are communicated and multiple frequency bands at which wireless broadband signals are communicated. The first planar radiating element supports, within a single radiating element, communication of location signals and communication of wireless broadband signals. In certain embodiments, the first planar radiating element has a first substantially L-shaped region, a second substantially L-shaped region inverted with respect to, and forming a continuation of, the first region, and a third region forming a continuation of the first or second region.



US 20240372257A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2024/0372257 A1**

(43) **Pub. Date: Nov. 7, 2024**

CHOI et al.

(54) **MULTIBAND DIPLEXER AND BROADBAND ANTENNA COMPRISING SAME**

(71) Applicant: **INTELLIAN TECHNOLOGIES, INC.**, Pyeongtaek-si (KR)

(72) Inventors: **Woo Chang CHOI**, Osan-si (KR); **Seung Woong CHOI**, Hwaseong-si (KR)

(21) Appl. No.: **18/683,691**

(22) PCT Filed: **Jun. 8, 2022**

(86) PCT No.: **PCT/KR2022/008079**

§ 371 (c)(1),
(2) Date: **Feb. 14, 2024**

(30) **Foreign Application Priority Data**

Aug. 19, 2021 (KR) 10-2021-0109516

Publication Classification

(51) **Int. Cl.**

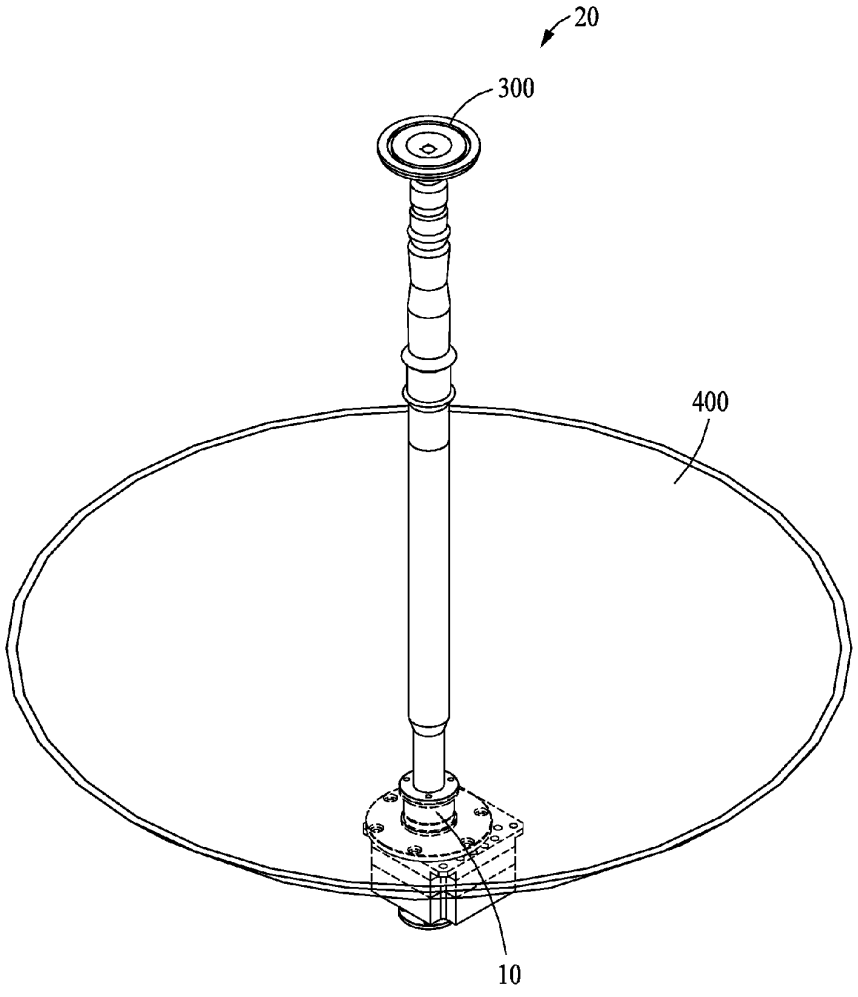
H01Q 5/55	(2006.01)
H01P 3/06	(2006.01)
H01Q 13/02	(2006.01)
H01Q 15/14	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 5/55*** (2015.01); ***H01P 3/06*** (2013.01); ***H01Q 13/02*** (2013.01); ***H01Q 15/14*** (2013.01)

(57) **ABSTRACT**

A multiband diplexer for an antenna to separate a multiband wireless signal includes a first signal passing unit connected to a side of a single feed horn of the antenna and configured to pass a first band signal and a second signal passing unit positioned coaxially with the first signal passing unit and configured to pass a second band signal, and the multiband diplexer is configured to separate the first band signal and the second band signal from a signal received by the single feed horn, in which at least one of the first signal passing unit and the second signal passing unit is configured to suppress a higher order mode.



US 20240372263A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0372263 A1**

Su et al. (43) **Pub. Date: Nov. 7, 2024**

(54) **DISTRIBUTED MONOPOLE ANTENNA FOR ENHANCED CROSS-BODY LINK**

(71) Applicant: **Meta Platforms Technologies, LLC**, Menlo Park, CA (US)

(72) Inventors: **Wenjing Su**, San Jose, CA (US); **Jiang Zhu**, Cupertino, CA (US); **Bruno Cendon Martin**, Palo Alto, CA (US); **Geng Ye**, Union City, CA (US); **Yixiang Li**, Fremont, CA (US); **Umar Azad**, San Jose, CA (US); **Prathap Valale Prasannakumar**, San Jose, CA (US); **Amin Tayebi**, San Jose, CA (US)

(21) Appl. No.: **18/670,406**

(22) Filed: **May 21, 2024**

Related U.S. Application Data

(63) Continuation of application No. 17/862,993, filed on Jul. 12, 2022, now Pat. No. 12,021,319.

(60) Provisional application No. 63/332,677, filed on Apr. 19, 2022.

Publication Classification

(51) **Int. Cl.**

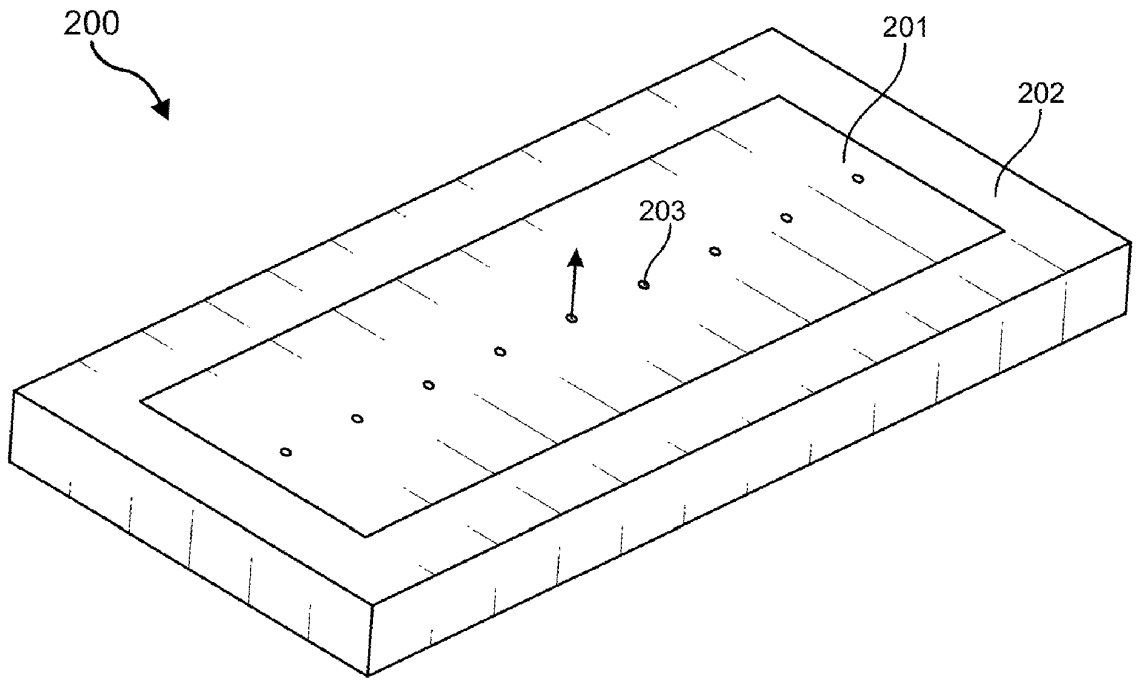
H01Q 9/30	(2006.01)
H01Q 5/48	(2006.01)
H01Q 21/08	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 9/30*** (2013.01); ***H01Q 5/48*** (2015.01); ***H01Q 21/08*** (2013.01)

(57) **ABSTRACT**

The disclosed distributed monopole antenna may include a first conductive plate and a second conductive plate. The distributed monopole antenna may also include multiple different vias that electrically connect the first conductive plate to the second conductive plate. Still further, the distributed monopole antenna may include an antenna feed electrically connected to at least one of the vias. Various other systems, methods of manufacturing, and wearable electronic devices that implement distributed monopole antennas are also disclosed.



US 20240372273A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0372273 A1

WANG et al. (43) Pub. Date: Nov. 7, 2024

(54) ANTENNA SYSTEM, METHOD, AND WIRELESS COMMUNICATION DEVICE

(71) Applicant: **Honor Device Co., Ltd.**, Shenzhen (CN)

(72) Inventors: **Yi WANG**, Shenzhen (CN); **Yuan XU**, Shenzhen (CN); **Ziyan ZHANG**, Shenzhen (CN); **Kunpeng WEI**, Shenzhen (CN)

(73) Assignee: **Honor Device Co., Ltd.**, Shenzhen (CN)

(21) Appl. No.: **18/032,053**

(22) PCT Filed: **Dec. 21, 2022**

(86) PCT No.: **PCT/CN2022/140644**

§ 371 (c)(1),
(2) Date: **Apr. 14, 2023**

(30) **Foreign Application Priority Data**

Mar. 10, 2022 (CN) 202210240268.7

Publication Classification

(51) **Int. Cl.**

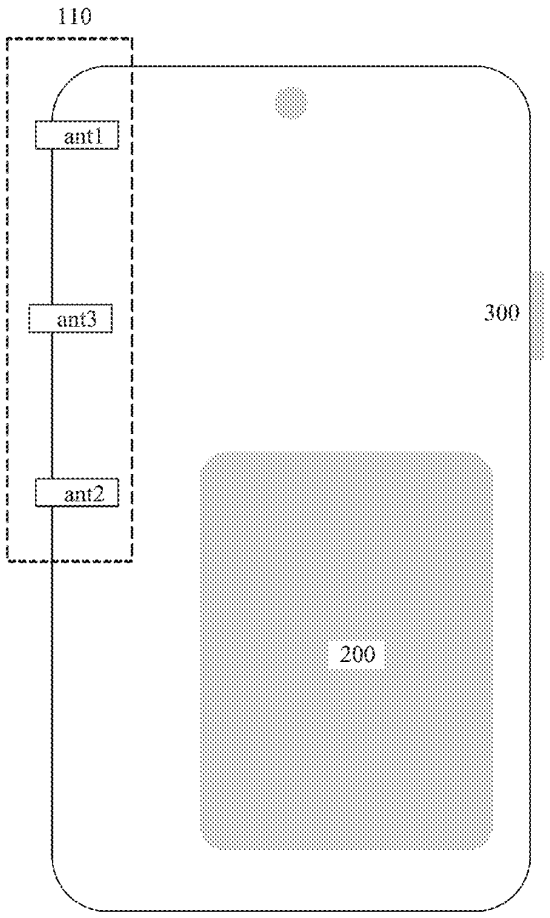
H01Q 21/30	(2006.01)
H01Q 9/42	(2006.01)
H04B 1/401	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 21/30*** (2013.01); ***H01Q 9/42*** (2013.01); ***H04B 1/401*** (2013.01)

(57) **ABSTRACT**

This application provides an antenna system related to the field of terminal technologies. The system includes: a radio frequency chip, a controller, and a plurality of antennas, where the radio frequency chip is connected to the plurality of antennas: a first antenna, a second antenna, . . . , and an Nth antenna by a power amplifier and switches, where the first antenna is a to-be-improved antenna, an ith antenna is an auxiliary antenna; and the controller determines that a frequency band in which an antenna of the wireless communication device operates belongs to a preset to-be-improved frequency band of the first antenna; determines whether the ith antenna operates; and sets a load status of a radio frequency input end of the ith antenna and adjusts a switch or Tuner state on the ith antenna side when the ith antenna does not operate.



US 20240380099A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2024/0380099 A1**

(43) **Pub. Date: Nov. 14, 2024**

Göttl et al.

(54) **MULTI-BAND ANTENNA AND MOBILE COMMUNICATION BASE STATION**

(71) Applicant: **Telefonaktiebolaget LM Ericsson (publ)**, Stockholm (SE)

(72) Inventors: **Maximilian Göttl**, Frasdorf (DE); **Florian Leinenbach**, Kolbermoor (DE); **Thomas Ettstaller**, Bad Aibling (DE); **Christoph Staita**, Oberaudorf (DE)

(21) Appl. No.: **18/682,179**

(22) PCT Filed: **Aug. 11, 2021**

(86) PCT No.: **PCT/EP2021/072392**

§ 371 (c)(1),
(2) Date: **Feb. 8, 2024**

Publication Classification

(51) **Int. Cl.**

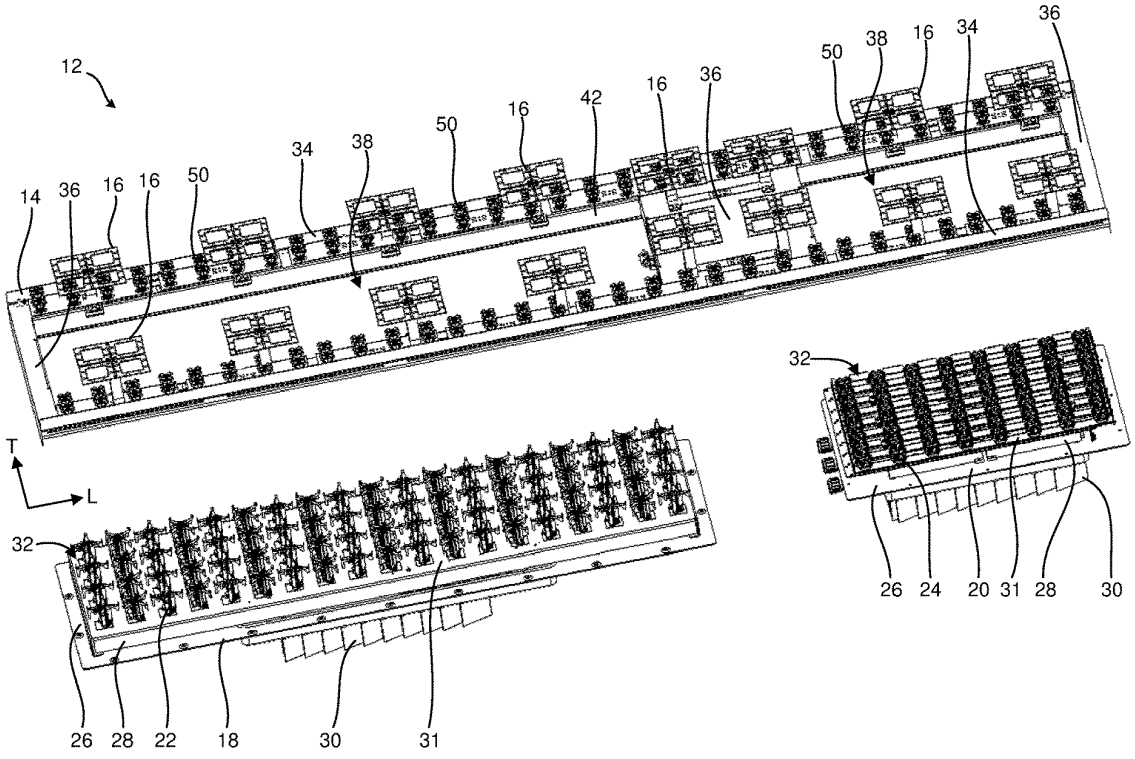
H01Q 1/24	(2006.01)
H01Q 5/42	(2006.01)
H01Q 19/10	(2006.01)
H01Q 21/06	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 1/246*** (2013.01); ***H01Q 5/42*** (2015.01); ***H01Q 19/10*** (2013.01); ***H01Q 21/061*** (2013.01)

(57) **ABSTRACT**

A multi-band antenna has first radiators, second radiators, a frame and at least one insert. The frame comprises a frame reflector surface, the first radiators are mounted to the frame, and the frame defines at least one window for receiving the at least one insert. The insert comprises a base having an insert reflector surface, the second radiators are mounted to the insert, and the base is located in the at least one window. The frame reflector surface and the insert reflector surface together form a common reflector for the first radiators. Further, a mobile communication base station is shown.



US 20240380103A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2024/0380103 A1**

(43) **Pub. Date: Nov. 14, 2024**

NAM et al.

(54) **ELECTRONIC DEVICE COMPRISING ANTENNA**

(71) Applicant: **Samsung Electronics Co., Ltd.**, Suwon-si (KR)

(72) Inventors: **Hojung NAM**, Suwon-si (KR); **Kyoungmok KIM**, Suwon-si (KR); **Jaeho LIM**, Suwon-si (KR); **Myeongjun KONG**, Suwon-si (KR); **Soonho HWANG**, Suwon-si (KR)

(21) Appl. No.: **18/781,686**

(22) Filed: **Jul. 23, 2024**

Related U.S. Application Data

(63) Continuation of application No. PCT/KR2023/000175, filed on Jan. 4, 2023.

(30) **Foreign Application Priority Data**

Jan. 28, 2022 (KR) 10-2022-0013359

Publication Classification

(51) **Int. Cl.**

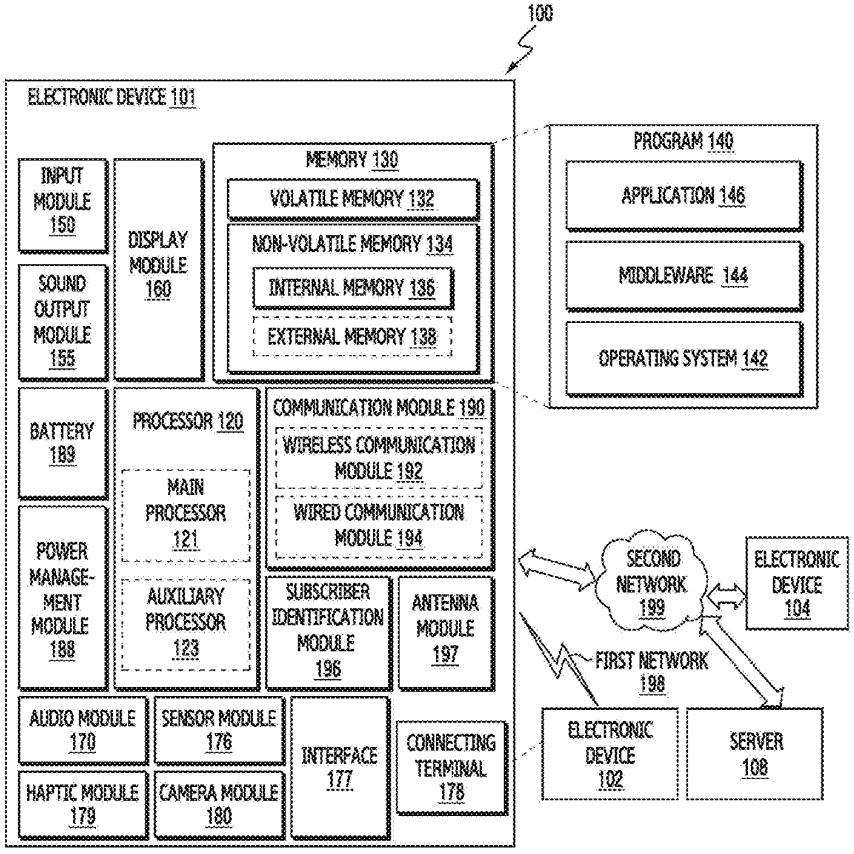
H01Q 1/38 (2006.01)
H01Q 1/24 (2006.01)
H01Q 13/10 (2006.01)
H01R 13/24 (2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 1/38*** (2013.01); ***H01Q 1/243*** (2013.01); ***H01Q 13/10*** (2013.01); ***H01R 13/2407*** (2013.01)

(57) **ABSTRACT**

An electronic device according to an embodiment comprises: a printed circuit board; a first electronic component electrically connected to the printed circuit board; a second electronic component electrically connected to the printed circuit board and facing one side surface of the first electronic component; a first conductive plate including a feeding point supporting the first electronic component and electrically connected to the printed circuit board; a second conductive plate spaced apart from the first conductive plate and supporting the second electronic component; and a plurality of bridges connecting the first conductive plate with the second conductive plate to form a slot, wherein a wireless communication circuit may be configured to communicate with an external electronic device through at least one frequency band using the first conductive plate and the second conductive plate.



US 20240380109A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0380109 A1**

CHANG et al. (43) **Pub. Date: Nov. 14, 2024**

(54) **MOBILE DEVICE SUPPORTING WIDEBAND OPERATION**

(71) Applicant: **Acer Incorporated**, New Taipei City (TW)

(72) Inventors: **Kun-Sheng CHANG**, New Taipei City (TW); **Ching-Chi LIN**, New Taipei City (TW)

(21) Appl. No.: **18/366,158**

(22) Filed: **Aug. 7, 2023**

(30) **Foreign Application Priority Data**

May 11, 2023 (TW) 112117456

Publication Classification

(51) **Int. Cl.**

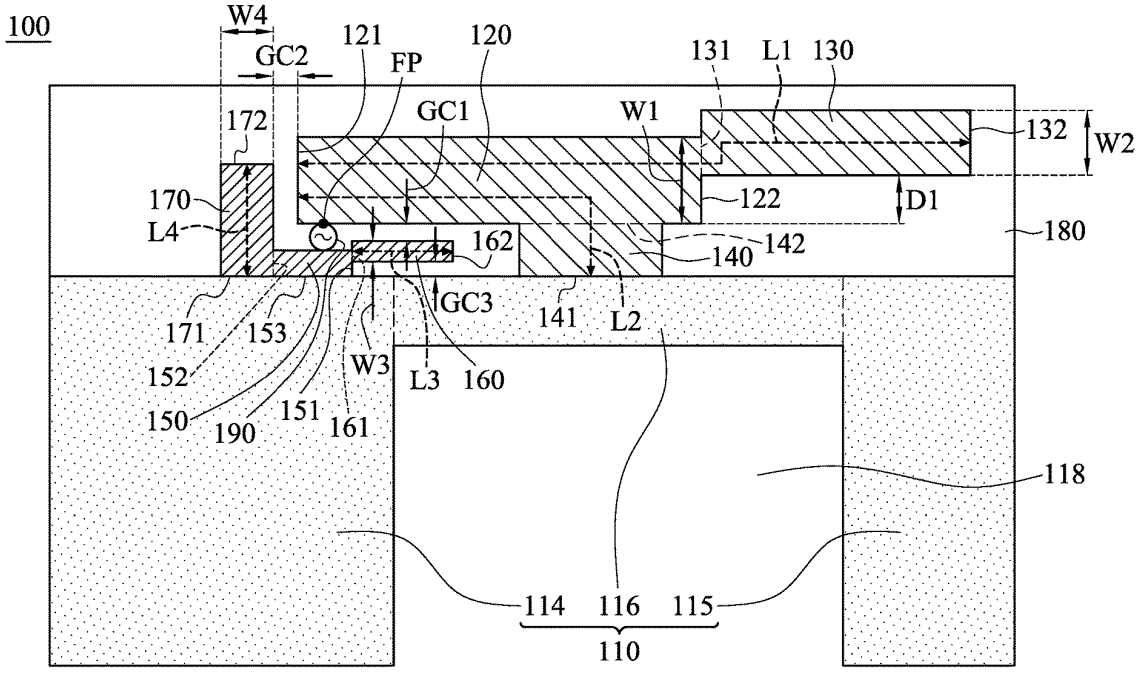
H01Q 5/307	(2006.01)
H01Q 1/22	(2006.01)
H01Q 1/38	(2006.01)
H01Q 1/48	(2006.01)
H01Q 5/20	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 5/307*** (2015.01); ***H01Q 1/2266*** (2013.01); ***H01Q 1/38*** (2013.01); ***H01Q 1/48*** (2013.01); ***H01Q 5/20*** (2015.01)

(57) **ABSTRACT**

A mobile device includes a ground element, a first radiation element, a second radiation element, a third radiation element, an extension ground element, a fourth radiation element, and a fifth radiation element. The ground element has a notch region. The first radiation element has a feeding point. The second radiation element is coupled to the first radiation element. The first radiation element is coupled through the third radiation element to the ground element. The extension ground element is coupled to the ground element. The fourth radiation element is coupled to the extension ground element. The fifth radiation element is coupled to the extension ground element. An antenna structure is formed by the ground element, the first radiation element, the second radiation element, the third radiation element, the extension ground element, the fourth radiation element, and the fifth radiation element.



US 20240380115A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0380115 A1**

HUSSAIN (43) **Pub. Date: Nov. 14, 2024**

(54) **SUB-GHZ CIRCULARLY POLARIZED UWB MIMO ANTENNA**

(71) Applicant: **KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**, Dhahran (SA)

(72) Inventor: **Rifaqat HUSSAIN**, Dhahran (SA)

(73) Assignee: **KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**, Dhahran (SA)

(21) Appl. No.: **18/314,449**

(22) Filed: **May 9, 2023**

Publication Classification

(51) **Int. Cl.**

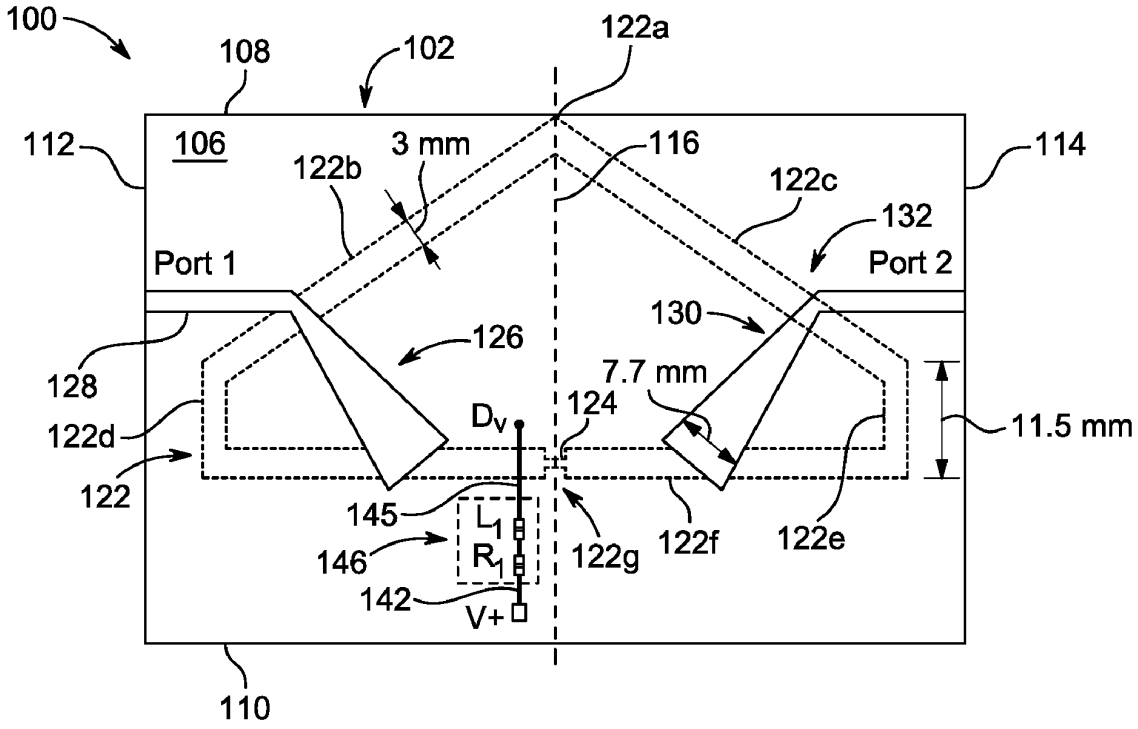
H01Q 13/10	(2006.01)
H01Q 1/28	(2006.01)
H01Q 13/02	(2006.01)
H01Q 21/24	(2006.01)
H04B 7/0413	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 13/106*** (2013.01); ***H01Q 1/288*** (2013.01); ***H01Q 13/0241*** (2013.01); ***H01Q 21/24*** (2013.01); ***H04B 7/0413*** (2013.01)

(57) **ABSTRACT**

A dual port, slot-based multiple-input-multiple-output (MIMO) antenna is described. The antenna includes a dielectric circuit board, a metallic layer, four tapered feed horns and adjustable voltage sources. A first pentagonal loop slot line and a second pentagonal loop slot line are etched into the metallic layer. The tapered feed horns are located on an opposite side of the dielectric circuit board and are connected to input signal sources. Adjustable voltage sources are connected to varactor diodes of the first and seconds pentagonal loop slot line. The antenna resonates with circular polarization at resonant frequency in an ultra-high frequency sub-GHz range of about 578 MHz to about 929 MHz when an input signal is applied to each feedline. A dual port, slot-based single element antenna is also described.



US 20240380123A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0380123 A1**

KANG (43) **Pub. Date: Nov. 14, 2024**

(54) **DOUBLE SLOT ARRAY ANTENNA DESIGN METHOD AND DOUBLE SLOT ARRAY ANTENNA DESIGNED THEREBY**

(71) Applicant: **HL KLEMOVE CORP.**, Incheon (KR)

(72) Inventor: **Yun Su KANG**, Gyeonggi-do (KR)

(21) Appl. No.: **18/442,070**

(22) Filed: **Feb. 14, 2024**

(30) **Foreign Application Priority Data**

Feb. 16, 2023 (KR) 10-2023-0020870
Feb. 1, 2024 (KR) 10-2024-0015997

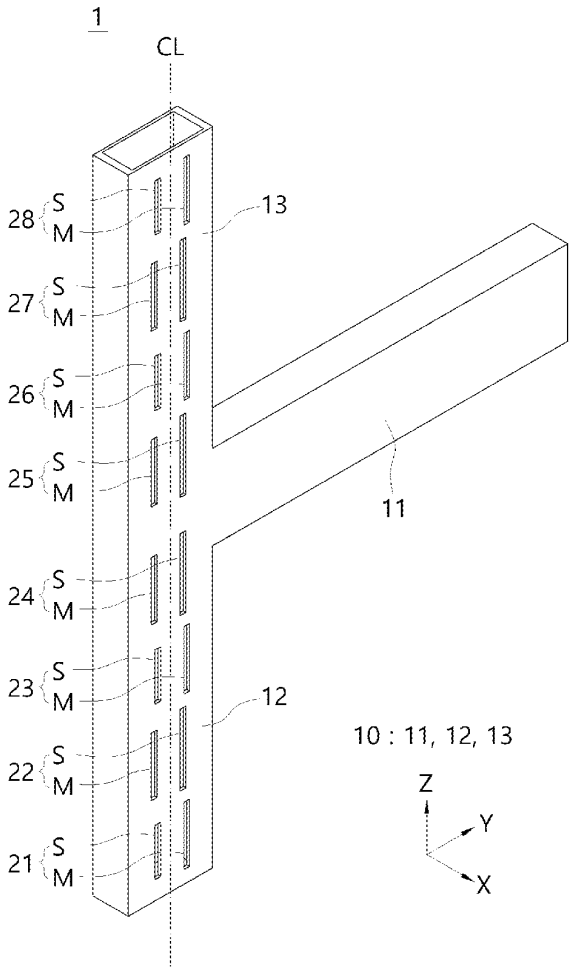
Publication Classification

(51) **Int. Cl.**
H01Q 21/00 (2006.01)
G06F 30/17 (2006.01)
H01Q 13/10 (2006.01)

(52) **U.S. Cl.**
CPC ***H01Q 21/005*** (2013.01); ***G06F 30/17*** (2020.01); ***H01Q 13/10*** (2013.01)

(57) **ABSTRACT**

A method for designing a double slot array antenna and a double slot array antenna designed thereby are disclosed. The method for designing the double slot array antenna, includes the steps of: (a) setting the number of radiation elements of a double slot structure arranged in a waveguide of an array antenna to be designed, and setting a radiated power ratio required for each of the radiation elements; (b) modeling a simulation model for each of the radiation elements; (c) setting an offset distance of a main slot of each of the radiation elements applied to the simulation model; (d) deriving azimuth beam patterns for cases in which an offset distance and a length of a sub-slot of each of the radiation elements applied to the simulation model are changed; (e) selecting a similar azimuth beam pattern similar to a target azimuth beam pattern among the derived azimuth beam patterns; (f) calculating a radiated power ratio for the case corresponding to the similar azimuth beam pattern; and (g) comparing the calculated radiated power ratio with the set radiated power ratio to determine a design value of each of the radiation elements.



US 20240380128A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0380128 A1**

Lee et al. (43) **Pub. Date: Nov. 14, 2024**

(54) **ANTENNA MODULE FOR A DEVICE IN MOTION**

(71) Applicants: **TE Connectivity Solutions GmbH**, Schaffhausen (CH); **Tyco Electronics AMP Korea Co., Ltd.**, Kyongsangbuk-DO (KR)

(72) Inventors: **Chang Hyun Lee**, Suwon (KR); **Kiran Vanjani**, Fremont, CA (US); **Xing Yun**, Middletown, PA (US); **Jung-Hoon Kim**, Suwon (KR); **Dong Wook Park**, Suwon (KR)

(21) Appl. No.: **18/607,871**

(22) Filed: **Mar. 18, 2024**

Related U.S. Application Data

(60) Provisional application No. 63/500,769, filed on May 8, 2023.

Publication Classification

(51) **Int. Cl.**

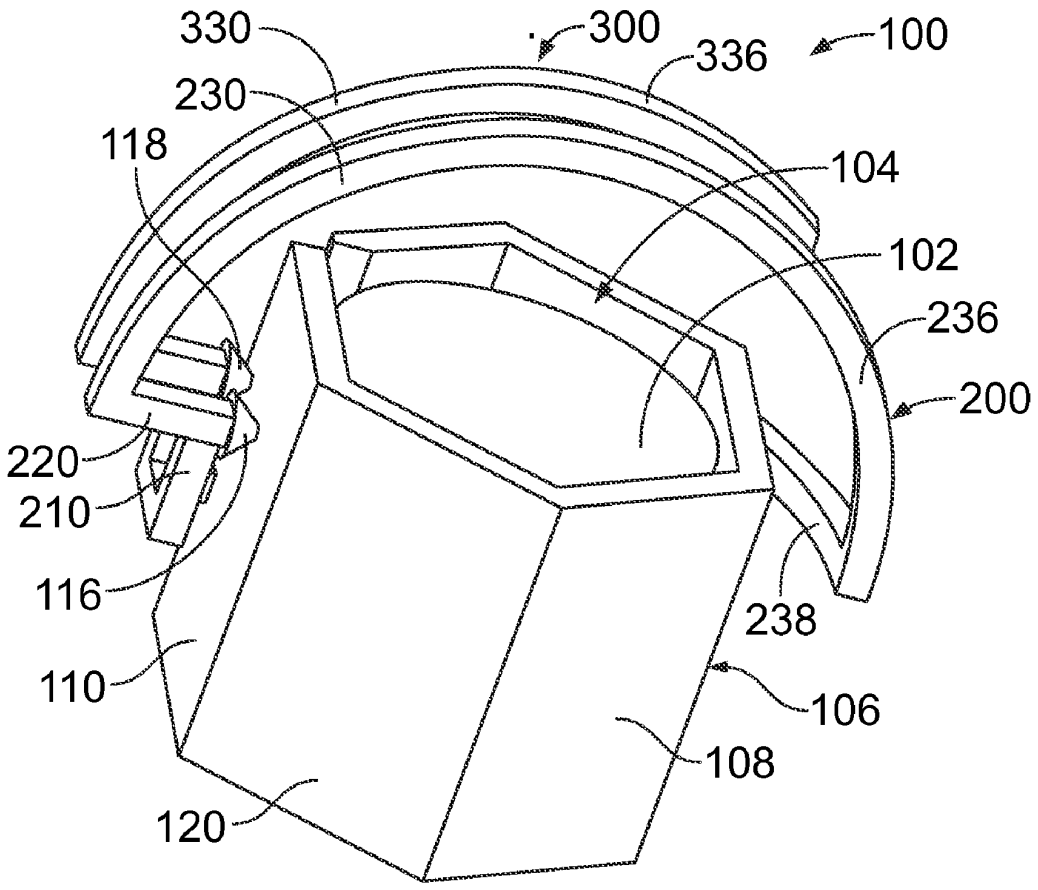
H01Q 21/20	(2006.01)
H01Q 1/42	(2006.01)
H01Q 5/48	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 21/205*** (2013.01); ***H01Q 1/42*** (2013.01); ***H01Q 5/48*** (2015.01)

(57) **ABSTRACT**

An antenna module is provided and includes a flexible circuit having a first antenna feed and a second antenna feed. The antenna module includes a ground plane. The antenna module includes a first antenna element coupled to the first antenna feed. The first antenna element includes a first ground short stub coupled to the ground plane. The first antenna element includes a first radiating element defining an omnidirectional radiation pattern. The first radiating element includes a first main segment extending along a first arcuate path. The antenna module includes a second antenna element coupled to the second antenna feed. The second antenna element includes a second ground short stub coupled to the ground plane. The second antenna element includes a second radiating element defining an omnidirectional radiation pattern. The second radiating element includes a second main segment extending along a second arcuate path oriented parallel to the first arcuate path. The first and second antenna elements have a transmission coefficient lower than −10 dB.



US 20240380130A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0380130 A1**

WANG et al. (43) **Pub. Date: Nov. 14, 2024**

(54) **ANTENNA, ULTRA WIDE BAND ANTENNA ARRAY, AND ELECTRONIC DEVICE**

(71) Applicant: **Honor Device Co., Ltd.**, Shenzhen (CN)

(72) Inventors: **Yu WANG**, Shenzhen (CN); **Zhijun Zhang**, Shenzhen (CN)

(21) Appl. No.: **18/275,497**

(22) PCT Filed: **Dec. 14, 2022**

(86) PCT No.: **PCT/CN2022/138846**

§ 371 (c)(1),
(2) Date: **Aug. 2, 2023**

(30) **Foreign Application Priority Data**

Mar. 24, 2022 (CN) 202210295360.3

Publication Classification

(51) **Int. Cl.**

H01Q 21/30	(2006.01)
H01Q 1/22	(2006.01)
H01Q 9/04	(2006.01)

(52) **U.S. Cl.**

CPC ***H01Q 21/30*** (2013.01); ***H01Q 1/22*** (2013.01); ***H01Q 9/0414*** (2013.01); ***H01Q 9/0421*** (2013.01); ***H01Q 9/0442*** (2013.01); ***H01Q 9/0457*** (2013.01)

(57) **ABSTRACT**

This application provides an antenna, an ultra wide band antenna array, and an electronic device, where the antenna operates in a target frequency band and is arranged on a metal substrate, and the antenna includes a first radiation patch, a second radiation patch, a first short-circuit wall, and a second short-circuit wall, a projection of the first radiation patch on the metal substrate overlaps with a projection of the second radiation patch on the metal substrate, a projection of the first short-circuit wall on the metal substrate does not overlap with a projection of the second short-circuit wall on the metal substrate, the first short-circuit wall is respectively connected to the first radiation patch and the metal substrate, the second short-circuit wall is respectively connected to the first radiation patch and the second radiation patch.