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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

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Alexei Ivanov

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US009905938B2

(12) **United States Patent**
So et al.

(10) **Patent No.:** **US 9,905,938 B2**
(45) **Date of Patent:** ***Feb. 27, 2018**

(54) **DUAL POLARIZED HIGH GAIN AND WIDEBAND COMPLEMENTARY ANTENNA**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 388 days.
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **14/608,711**

(22) Filed: **Jan. 29, 2015**

(65) **Prior Publication Data**
US 2016/0226156 A1 Aug. 4, 2016

(51) **Int. Cl.**
H01Q 21/24 (2006.01)
H01Q 9/04 (2006.01)
H01Q 9/26 (2006.01)

(52) **U.S. Cl.**
CPC **H01Q 21/24** (2013.01); **H01Q 9/0421** (2013.01); **H01Q 9/26** (2013.01)

(58) **Field of Classification Search**
CPC **H01Q 9/16; H01Q 9/0407; H01Q 21/26; H01Q 21/28**

(Continued)

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(57) **ABSTRACT**

A dual polarized high gain and wideband complementary antenna is presented herein. A dual polarized antenna can include a ground plane, a folded dipole portion electrically coupled to the ground plane, a shorted patch antenna portion including an open end that is electrically coupled to the folded dipole portion, and a metal plate located at a bottom portion of the dual polarized antenna. In one example, the folded dipole portion can include four folded dipoles. Further, the open end of the shorted patch antenna portion can be electrically coupled to the folded dipole portion using the metal plate. Further, the dual polarized antenna can include two ports—each port including a pair of feeding sources, and each feeding source configured to generate an electric dipole and a magnetic dipole. In another example, magnitudes of the electric dipoles can be equivalent, and magnitudes of the magnetic dipoles can be equivalent.

20 Claims, 26 Drawing Sheets

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