

1) Family number: 10232086 (US4622558A)

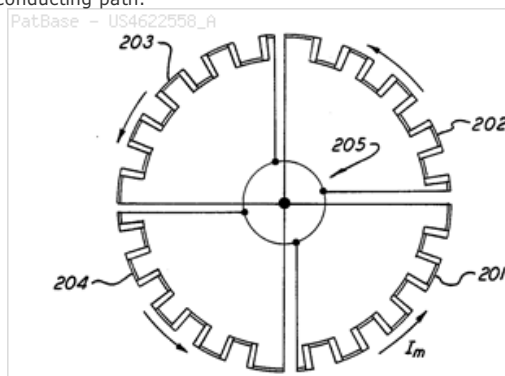
© PatBase

Title: Toroidal antenna

Abstract: An electrically small, efficient electromagnetic structure, that may be used as an antenna or waveguide probe, having an electromagnetically closed, velocity-inhibiting conducting path, for supporting a standing, inhibited-velocity wave in response to the flow of an electrical current through the path and a process for establishing the standing wave. Use of the structure is particularly advantageous at the lower end of the electromagnetic spectrum, where various embodiments produce purely vertically polarized radiation in directional and omnidirectional patterns. Various embodiments of the structure include multiple conducting paths and image means to complete the conducting path.

Classifications:

International (IPC 8-9): H01Q1/36 H01Q11/08 H01Q19/00
H01Q21/00 H01Q21/06 H01Q21/20 H01Q7/00 H01Q9/04
H01Q9/26 (Advanced/Invention);
H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 (Advanced/Non-invention);
H01Q1/36 H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 H01Q7/00
H01Q9/04 (Core/Invention)
International (IPC 1-7): H01Q11/08 H01Q11/12 H01Q11/14
H01Q21/00 H01Q21/26 H01Q7/00
CPC: H01Q1/36 H01Q7/00 H01Q9/04 H01Q9/265
European: H01Q1/36 H01Q7/00 H01Q9/04 H01Q9/26B
US: 343/742 343/744



Family:

Publication number	Publication date	Application number	Application date
AU198172644 A1	19820114	AU19810072644	19810708
AU548541 B2	19851219	AU19810072644	19810708
CA1186049 A1	19850423	CA19810381325	19810708
EP0043591 A1	19820113	EP19810105311	19810709
JP57042203 A2	19820309	JP19810106325	19810709
US4622558 A	19861111	US19850795721	19851107
US4751515 A	19880614	US19860888494	19860723

Priority:

US19800167329 19800709 CA19810381325 19810708 US19830514176 19830715
US19850795721 19851107 US19860888494 19860723

Probable Assignee: CORUM JF

Assignee(s): (std): CORUM J F ; CORUM JAMES F ; CORUM JANES F ; JIEEMUZU EFU KORAMU

Assignee(s): CORUM JF

Inventor(s): (std): CORUM J F ; CORUM JAMES F ; CORUM JANES F ; JEEMUZU EFU KORAMU ; JIEEMUZU EFU KORAMU

Inventor(s): JF CORUM ; J F CORUM ; JAMES F CORUM

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; SIM AND MCBURNEY

Designated states: DE FR GB

2) Family number: 65154366 (US2017077616A)

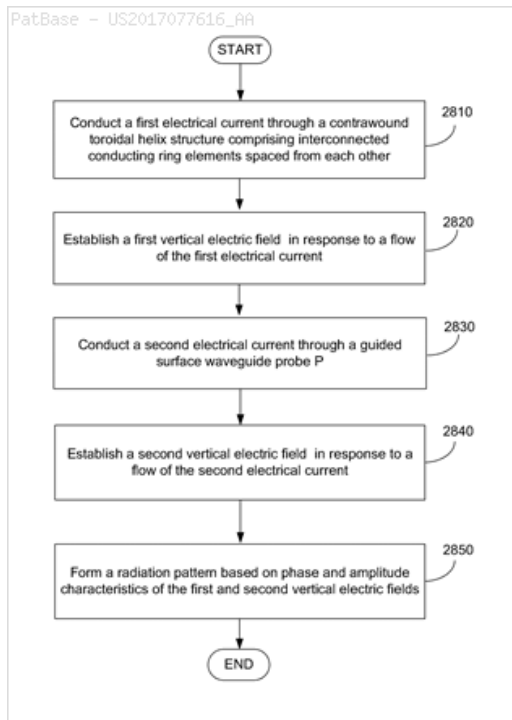
© PatBase

Title: HYBRID PHASED ARRAY TRANSMISSION

Abstract: Disclosed are various embodiments of an electromagnetic hybrid phased array system. One such embodiment includes a guided surface waveguide probe, and a contrawound toroidal helix antenna collocated with the guided surface waveguide probe in which the contrawound toroidal helix comprises ring elements spaced from each other and wrapped around the guided surface waveguide probe. The system further includes a signal source applied to at least the guided surface waveguide probe, such that the guided surface waveguide probe and the contrawound toroidal helix contribute individual vertical electric fields to form a radiation pattern based on the phase and amplitude characteristics of the individual vertical electric fields.

Classifications:

International (IPC 8-9): H01P3/00 H01P5/00 H01Q H01Q1/00
H01Q1/12 H01Q1/36 H01Q11/08 H01Q21/08 H01Q21/29 H01Q3/26
H01Q3/28 H01Q3/30 H01Q9/30 H01Q9/34 H02J50/20
H02J50/23 (Advanced/Invention);
H01Q1/36 H01Q11/08 (Advanced/Non-invention);
H01Q (Subclass/Invention)
International (IPC 1-7): H01Q1/12 H01Q11/08 H01Q3/26 H01Q3/30
H01Q9/30 H01Q9/34
CPC: H01Q21/29 H01Q3/28 H01Q3/30 H01Q11/08 H01Q9/30
H01Q1/36 H01Q3/2629 H02J50/23
US: 342/371

**Family:**

Publication number	Publication date	Application number	Application date
AU2016320708 AA	20180510	AU20160320708	20160819
AU2016320708 BB	20181025	AU20160320708	20160819
BR112018004910 A2	20181009	BR20181104910	20160819
CA2997742 AA	20180306	CA20162997742	20160819
CL2018000618 A1	20180706	CL20180000618	20180309
CN108352594 A	20180731	CN201680065188	20160819
CO20180002499 A2	20180521	CO20180002499	20180307
CR20180160 A	20180807	CR20180000160	20160819
EA201890683 A1	20180831	EA20180090683	20160819
EP3347942 A1	20180718	EP20160764002	20160819
ID201808150 A	20180803	ID2018P0001763	20160819
IL257950 A0	20180531	IL20160257950	20160819
IN201817008292 A	20180601	IN201817008292	20180306
JP2018528750 T2	20180927	JP20180513317T	20160819
KR20180049052 A	20180510	KR20187009726	20160819
MA42076 A1	20180831	MA20160042076	20160819
MX2018002883 A1	20180618	MX20180002883	20160819
PE08192018 A1	20180509	PE20180000356	20160819
PH2018500528 A	20180829	PH20180500528	20180309
TW201711271 A	20170316	TW20160128777	20160906
US2017077616 AA	20170316	US20150849962	20150910
US2019027841 AA	20190124	US20180126475	20180910
US10103452 BB	20181016	US20150849962	20150910
WO17044287 A1	20170316	WO2016US47675	20160819

Priority:

US20150849962 20150910 WO2016US47675 20160819 US20180126475 20180910

Probable Assignee: CPG TECHNOLOGIES LLC

Assignee(s): (std): CPG TECH LLC ; CPG TECHNOLOGIES LLC

Assignee(s): PINZONE BASIL F JR ; CORUM JAMES F ; CORUM KENNETH L

Inventor(s): (std): BASIL F PINZONE JR ; CORUM JAMES ; CORUM KENNETH ; PINZONE BASIL F JR ; PINZONE JR BASIL F ; PINZONE JR ; KENNETH L CORUM ; JAMES F CORUM ; CORUM KENNETH L ; CORUM JAMES F

Inventor(s): JR BASIL PINZONE F ; PINZONE BASIL F

Agent(s): FB RICE PTY LTD; ROBIC; ESTUDIO CLARKE MODET AND CO CHILE LIMITADA; CAROLINA MERCEDES DAZA MONTALVO; WILLIAMS POWELL; MELINDA SE SH; THOMAS HORSTEMEYER LLP; DAURELIO MICHAEL J ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW