

Search history

Search PN=(WO2016039832) (Results 1)

1:

Search [SP]: 1. a guided surface waveguide probe, comprising: a charge terminal elevated over a lossy conducting medium and a coupling circuit configured to couple an excitation source to the charge terminal, the coupling circuit configured to provide a voltage to the charge terminal that establishes an electric field having a wave tilt (w) that intersects the lossy conducting medium at a tangent of a complex brewster angle (θ_i, b) at a hankel crossover distance (r_x) from the guided surface waveguide probe. 2. the guided surface waveguide probe of claim 1, wherein the coupling circuit comprises a coil coupled between the excitation source and the charge terminal. 3. the guided surface waveguide probe of claim 2, wherein the coil is a helical coil. 4. the guided surface waveguide probe of claim 2, wherein the excitation source is coupled to the coil via a tap connection. 5. the guided surface waveguide probe of claim 4, wherein the tap connection is at an impedance matching point on the coil. 6. the guided surface waveguide probe of claim 4, wherein an impedance matching network is coupled between the excitation source and the tap connection on the coil. 7. the guided surface waveguide probe of claim 2, wherein the excitation source is magnetically coupled to the coil. 8. the guided surface waveguide probe of claim 2, wherein the charge terminal is coupled to the coil via a tap connection. 9. the guided surface waveguide probe of claim 1, wherein the charge terminal is positioned at a physical height (h_p) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $h_{eff} = r_x \tan \theta_i, b = h_{pej} f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and f is a phase of the effective height. 10. the guided surface waveguide probe of claim 9, wherein the phase f is approximately equal to an angle w of the wave tilt of illumination that corresponds to the complex brewster angle. 11. the guided surface waveguide probe of claim 1, wherein the charge terminal has an effective spherical diameter, and the charge terminal is positioned at a height that is at least four times the effective spherical diameter. 12. the guided surface waveguide probe of claim 11, wherein the charge terminal is a spherical terminal with the effective spherical diameter equal to a diameter of the spherical terminal. 13. the guided surface waveguide probe of claim 11, wherein the height of the charge terminal is greater than a physical height (h_p) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $h_{eff} = r_x \tan \theta_i, b = h_{pej} f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and f is a phase of the effective height. 14. the guided surface waveguide probe of claim 13, further comprising a compensation terminal positioned below the charge terminal, the compensation terminal coupled to the coupling circuit. 15. the guided surface waveguide probe of claim 14, wherein the compensation terminal is positioned below the charge terminal at a distance equal to the physical height (h_p). 16. the guided surface waveguide probe of claim 15, wherein f is a complex phase difference between the compensation terminal and the charge terminal. 17. the guided surface waveguide probe of claim 1, wherein the lossy conducting medium is a terrestrial medium. 18. a system, comprising: a guided surface waveguide probe, including: a charge terminal elevated over a lossy conducting medium and a coupling circuit configured to provide a voltage to the charge terminal that establishes an electric field having a wave tilt (w) that intersects the lossy conducting medium at a tangent of a complex brewster angle (θ_0) at a hankel crossover distance (r_x) from the guided surface waveguide probe and an excitation source coupled to the charge terminal via the coupling circuit. 19. the system of claim 18, further comprising a probe control system configured to adjust the guided surface waveguide probe based at least in part upon characteristics of the lossy conducting medium. 20. the system of claim 19, wherein the lossy conducting medium is a terrestrial medium. 21. the system of claim 19, wherein the coupling circuit comprises a coil coupled between the excitation source and the charge terminal, the charge terminal coupled to the coil via a variable tap. 22. the system of claim 21, wherein the coil is a helical coil. 23. the system of claim 21, wherein the probe control system adjusts a position of the variable tap in response to a change in the characteristics of the lossy conducting medium. 24. the system of claim 23, wherein the adjustment of the position of the variable tap adjusts the wave tilt of the electric field to correspond to a wave illumination that intersects the lossy conducting medium at the complex brewster angle (θ_i, b) at the hankel crossover distance (r_x). 25. the system of claim 22, wherein the guided surface waveguide probe further comprises a compensation terminal positioned below the charge terminal, the compensation terminal coupled to the coupling circuit. 26. the system of claim 25, wherein the compensation terminal is positioned below the charge terminal at a distance equal to a physical height (h_p) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $h_{eff} = r_x \tan \theta_i, b = h_{pej} f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and wherein f is a complex phase difference between the compensation terminal and the charge terminal. 27. the system of claim 25, wherein the probe control system adjusts a position of the compensation terminal in response to a change in the characteristics of the lossy conducting medium. 28. a method, comprising: positioning a charge terminal at a defined height over a lossy conducting medium; positioning a compensation terminal below the charge terminal and over the lossy conducting medium, the compensation terminal separated from the charge terminal by a defined distance and exciting the charge terminal and the compensation terminal with excitation voltages having a complex phase difference, where the excitation voltages establish an electric field having a wave tilt (w) that corresponds to a wave illuminating the lossy conducting medium at a complex brewster angle (θ_i, b) at a hankel crossover distance (r_x) from the charge terminal and the compensation terminal. 29. the method of claim 28, wherein the charge terminal has an effective spherical diameter, and the charge terminal is positioned at the defined height is at least four times the effective spherical diameter. 30. the method of claim 28, wherein the defined distance is equal to a physical height (h_p) corresponding to a magnitude of an effective height of the charge terminal, where the effective height is given by $h_{eff} = r_x \tan \theta_i, b = h_{pej} f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and wherein f is the complex phase difference between the compensation terminal and the charge terminal. 31. the method of claim 28, wherein the charge terminal and the compensation terminal are coupled to an excitation source via a coil, the charge terminal coupled to the coil by a variable tap. 32. the method of claim 31, further comprising adjusting a position of the variable tap to establish the electric field with the wave tilt intersecting the lossy conducting medium at the complex brewster angle (θ_i, b) at the hankel crossover distance (r_x). (Results 0)

Search [SP]: cross reference to related application this application is related to u.s. application ser. no. 13/789,538 entitled "excitation and use of guided surface wave modes on lossy media" filed on mar. 7, 2013, and published on sep. 11, 2014 (patent application publication no. us-2014-0252886-a1), and u.s. application ser. no. 13/789,525 entitled "excitation and use of guided surface wave modes on lossy media" filed on mar. 7, 2013, and published on sep. 11, 2014 (patent application publication no. us-2014-0252865-a1). background for over a century, signals transmitted by radio waves involved radiation fields launched using conventional antenna structures. in contrast to radio science, electrical power distribution systems in the last century involved the transmission of energy guided along electrical conductors. this understanding of the distinction between radio frequency (rf) and power transmission has existed since the early 1900's. brief description of the drawings many aspects of the present disclosure can be better understood with reference to the following drawings. the components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the disclosure. moreover, in the drawings, like reference numerals designate corresponding parts throughout the several views. fig. 1 is a chart that depicts field strength as a function of distance for a guided electromagnetic field and a radiated electromagnetic field. fig. 2 is a drawing that illustrates a propagation interface with two regions employed for transmission of a guided surface wave according to various embodiments of the present disclosure. figs. 3a and 3b are drawings that illustrate a complex angle of insertion of an electric field synthesized by guided surface waveguide probes according to the various embodiments of the present disclosure. fig. 4 is a drawing that illustrates a guided surface waveguide probe disposed with respect to a propagation interface of fig. 2 according to an embodiment of the present disclosure. fig. 5 is a plot of an example of the magnitudes of close-in and far-out asymptotes of first order hankel functions according to various embodiments of the present disclosure. figs. 6a and 6b are plots illustrating bound charge on a sphere and the effect on capacitance according to various embodiments of the present disclosure. fig. 7 is a graphical representation illustrating the effect of elevation of a charge terminal on the location where a brewster angle intersects with the lossy conductive medium according to various embodiments of the present disclosure. figs. 8a and 8b are graphical representations illustrating the incidence of a synthesized electric field at a complex brewster angle to match the guided surface waveguide mode at the hankel crossover distance according to various embodiments of the present disclosure. figs. 9a and 9b are graphical representations of examples of a guided surface waveguide probe according to an embodiment of the present disclosure. fig. 10 is a schematic diagram of the guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 11 includes plots of an example of the imaginary and real parts of a phase delay (ϕ_u) of a charge terminal t_1 of a guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 12 is an image of an example of an implemented guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 13 is a plot comparing measured and theoretical field strength of the guided surface waveguide probe of fig. 12 according to an embodiment of the present disclosure. figs. 14a and 14b are an image and graphical representation of a guided surface waveguide probe according to an embodiment of the present disclosure. fig. 15 is a plot of an example of the magnitudes of close-in and far-out asymptotes of first order hankel functions according to various embodiments of the present disclosure. fig. 16 is a plot comparing measured and theoretical field strength of the guided surface waveguide probe of figs. 14a and 14b according to an embodiment of the present disclosure. figs. 17 and 18 are graphical representations of examples of guided surface waveguide probes according to embodiments of the present disclosure. figs. 19a and 19b depict examples of receivers that can be employed to receive energy transmitted in the form of a guided surface wave launched by a guided surface waveguide probe according to the various embodiments of the present disclosure. fig. 20 depicts an example of an additional receiver that can be employed to receive energy transmitted in the form of a guided surface wave launched by a guided surface waveguide probe according to the various embodiments of the present disclosure. fig. 21a depicts a schematic diagram representing the thevenin-equivalent of the receivers depicted in figs. 19a and 19b according to an embodiment of the present disclosure. fig. 21b depicts a

schematic diagram representing the norton-equivalent of the receiver depicted in fig. 17 according to an embodiment of the present disclosure. figs. 22a and 22b are schematic diagrams representing examples of a conductivity measurement probe and an open wire line probe, respectively, according to an embodiment of the present disclosure. figs. 23a through 23c are schematic drawings of examples of an adaptive control system employed by the probe control system of fig. 4 according to embodiments of the present disclosure. figs. 24a and 24b are drawings of an example of a variable terminal for use as a charging terminal according to an embodiment of the present disclosure. detailed description to begin, some terminology shall be established to provide clarity in the discussion of concepts to follow. first, as contemplated herein, a formal distinction is drawn between radiated electromagnetic fields and guided electromagnetic fields. as contemplated herein, a radiated electromagnetic field comprises electromagnetic energy that is emitted from a source structure in the form of waves that are not bound to a waveguide. for example, a radiated electromagnetic field is generally a field that leaves an electric structure such as an antenna and propagates through the atmosphere or other medium and is not bound to any waveguide structure. once radiated electromagnetic waves leave an electric structure such as an antenna, they continue to propagate in the medium of propagation (such as air) independent of their source until they dissipate regardless of whether the source continues to operate. once electromagnetic waves are radiated, they are not recoverable unless intercepted, and, if not intercepted, the energy inherent in radiated electromagnetic waves is lost forever. electrical structures such as antennas are designed to radiate electromagnetic fields by maximizing the ratio of the radiation resistance to the structure loss resistance. radiated energy spreads out in space and is lost regardless of whether a receiver is present. the energy density of radiated fields is a function of distance due to geometric spreading. accordingly, the term "radiate" in all its forms as used herein refers to this form of electromagnetic propagation. a guided electromagnetic field is a propagating electromagnetic wave whose energy is concentrated within or near boundaries between media having different electromagnetic properties. in this sense, a guided electromagnetic field is one that is bound to a waveguide and may be characterized as being conveyed by the current flowing in the waveguide. if there is no load to receive and/or dissipate the energy conveyed in a guided electromagnetic wave, then no energy is lost except for that dissipated in the conductivity of the guiding medium. stated another way, if there is no load for a guided electromagnetic wave, then no energy is consumed. thus, a generator or other source generating a guided electromagnetic field does not deliver real power unless a resistive load is present. to this end, such a generator or other source essentially runs idle until a load is presented. this is akin to running a generator to generate a 60 hertz electromagnetic wave that is transmitted over power lines where there is no electrical load. it should be noted that a guided electromagnetic field or wave is the equivalent to what is termed a "transmission line mode." this contrasts with radiated electromagnetic waves in which real power is supplied at all times in order to generate radiated waves. unlike radiated electromagnetic waves, guided electromagnetic energy does not continue to propagate along a finite length waveguide after the energy source is turned off. accordingly, the term "guide" in all its forms as used herein refers to this transmission mode (tm) of electromagnetic propagation. referring now to fig. 1, shown is a graph 100 of field strength in decibels (db) above an arbitrary reference in volts per meter as a function of distance in kilometers on a log-db plot to further illustrate the distinction between radiated and guided electromagnetic fields. the graph 100 of fig. 1 depicts a guided field strength curve 103 that shows the field strength of a guided electromagnetic field as a function of distance. this guided field strength curve 103 is essentially the same as a transmission line mode. also, the graph 100 of fig. 1 depicts a radiated field strength curve 106 that shows the field strength of a radiated electromagnetic field as a function of distance. of (Results 54)

Search 3 and PD<20140910 (Results 0)
4:

Search [SP]: excitation and use of guided surface wave modes on lossy media disclosed are various embodiments for transmitting energy
5: conveyed in the form of a guided surface-waveguide mode along the surface of a lossy medium such as, e.g., a terrestrial medium by exciting a guided surface waveguide probe. (Results 212)

Search 5 and PD<20140910 (Results 156)
6:

Search 6 and brewster (Results 5)
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Search 6 and Hankel (Results 2)
8:

Search 6 and probe (Results 18)
9:

Search guided surface waveguide probe (Results 57)
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11:

Search waveguide probe (Results 348)
12:

Search 12 and guided surface (Results 58)
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Search 12 and PD<20140910 (Results 231)
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Search 15 and surface* (Results 178)
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Search 15 and guide* (Results 141)
17:

Search 17 and charge terminal (Results 0)
18:

Search 17 and terminal (Results 35)
19:

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Search 20 and PD<20140910 (Results 136)
21:

Search 21 and probe (Results 17)
22:

Title: METHOD OF SECTOR **PROBE** DRIVING AND ULTRASOUND DIAGNOSTIC APPARATUS

Abstract: Source: US2004260179A [EN] The transmitter/receiver for a convex **probe** and linear **probe** are used to drive a sector **probe**. Usually, when an ultrasound diagnostic apparatus using a convex **probe** and linear **probe** uses a sector **probe**, it selects vibration elements of N in number, which is equal to the number of channels of the sector **probe**, out of vibration elements of L in number (N is smaller than L), so that the selected elements are distributed at a virtually constant pitch in the alignment of vibration elements, and turns on only high voltage switches which are connected with the selected vibration elements to implement the sector scanning with the transmitter/receiver. It becomes possible to implement the sector scanning by using the transmitter/receiver having channels less than the number of vibration elements of the sector **probe**.

Classifications:

International (IPC 8-9): A61B8/00 G01N29/00 G01R33/20 G01S7/52 G10K11/34 (Advanced/Invention);

A61B8/00 A61B8/06 A61B8/08 B06B1/02 (Advanced/Non-invention);

A61B8/00 G01S7/52 G10K11/00 (Core/Invention);

A61B8/06 A61B8/08 B06B1/02 (Core/Non-invention)

International (IPC 1-7): A61B8/00 G01N29/00

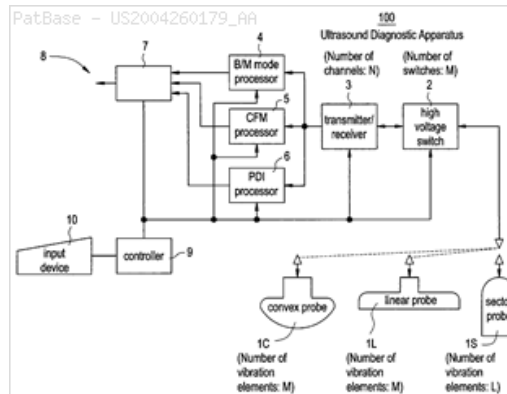
CPC: A61B8/06 A61B8/08 A61B8/13 A61B8/4411 A61B8/488

B06B2201/76 G01S7/52049 G10K11/341

European: G01S7/52S4C G10K11/34C K61B8/06 K61B8/08

K61B8/13 K61B8/44D K61B8/48J L06B201/76

US: 600/437 600/437P 600/447 600/447S 73/628



Family:

Publication number	Publication date	Application number	Application date
CN100376215 C	20080326	CN200410049399	20040609
CN1572257 A	20050202	CN200410049399	20040609
DE102004027796 A1	20041230	DE200410027796	20040608
IN00949DE2004 A	20060623	IN2004DE00949	20040526
JP2004358105 A2	20041224	JP20030163069	20030609
JP3924263 B2	20070606	JP20030163069	20030609
KR101087812 B1	20111129	KR20040041619	20040608
KR20040105608 A	20041216	KR20040041619	20040608
US2004260179 AA	20041223	US20040862718	20040607
US7775112 BB	20100817	US20040862718	20040607

Priority:

JP20030163069 20030609

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Inventor(s): (std): AMAMIYA SHINICHI ; AMEMIYA SHINICHI ; SHINICHI AMEMIYA

Agent(s): ARICHIKA SHINSHIRO; ARMSTRONG TEASDALE LLP

Title: Surface wave directional detection system and method

Abstract: Source: US6075498A [EN] A surface wave directional detection system for determining the direction in which an electromagnetic wave propagating along a metallic surface is travelling includes a first loop **probe** and a second loop **probe probes**. The two loop **probes** are separated by a quarter wavelength so that the two signals induced in the **probes** are out of phase. The first and second loop **probes** are connected by equal length transmission lines to a quadrature hybrid which generates two output signals that vary in magnitude in correspondence with the direction of travel of the electromagnetic surface wave. The two output signals from the quadrature hybrid are provided to RF detectors, which generate output voltage signals that vary in proportion to the magnitude of the output signals from the quadrature hybrid. The outputs of the RF detectors are connected to a comparator, which compares the output voltage signals from the RF detectors and generates an output signal which is indicative of the direction of travel of the electromagnetic surface wave.

Classifications:

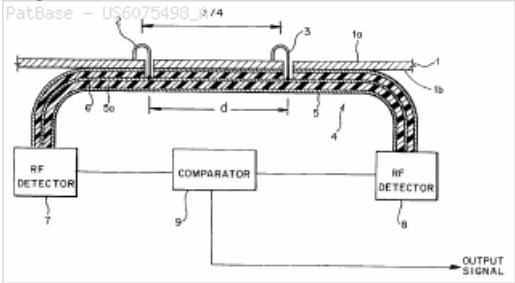
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International (IPC 1-7): G01S5/04 H01Q21/08

CPC: G01R29/0878

European: G01R29/08E3

US: 342/448 343/844



Family:

Publication number	Publication date	Application number	Application date
US6075498 A	20000613	US19930001825	19930108

Priority:

US19930001825 19930108

Probable Assignee: HARRIS CORP

Assignee(s): (std): AMERICAN NUCLEONICS CORP

Assignee(s): EDO COMMUNICATIONS AND COUNTERMEASURES SYSTEMS INC ; EXELIS INC ; HARRIS CORP ; ITT MFG ENTERPRISES LLC

Inventor(s): (std): TALWAR ASHOK K

Title: SIGNAL MODULE WITH REDUCED REFLECTIONS

Abstract: Source: US2008273201A [EN] Signal modules and methods for electrically interfacing with an electronic device are provided. The signal module includes a dielectric and a conductor extending through a surface of the dielectric. The surface of the dielectric is located away from perpendicular relative to an axis of the conductor and is located based on an electromagnetic field produced as a result of a signal flowing through the conductor.

Classifications:

International (IPC 8-9): G01J4/00 G01R1/06 G01R31/26 G01R31/28 G01R31/3183 H01B17/58 H01R13/00

H01R13/646 (Advanced/Invention);

G01R31/26 G01R31/28 G01R31/3183 (Advanced/Non-invention);

G01J4/00 G01R1/06 G01R31/26 G01R31/28 H01B17/58

H01R13/00 (Core/Invention);

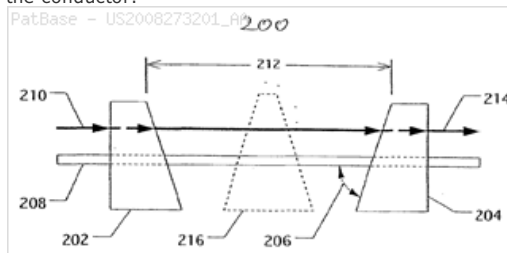
G01R H01B H01R (Subclass/Invention)

International (IPC 1-7): G01R31/28

CPC: G01R1/06 G01R31/2822 G01R31/2889

European: G01R31/28G5C S01R1/06 S01R31/28E3

US: 333/260 333/33 356/369 356/369P

**Family:**

Publication number	Publication date	Application number	Application date
AT451623 E	20091215	AT20050853612T	20051209
CN100593726 C	20100310	CN200580042838	20051209
CN101080643 A	20071128	CN200580042838	20051209
DE602005018255 D1	20100121	DE200560018255T	20051209
EP1825282 A1	20070829	EP20050853612	20051209
EP1825282 B1	20091209	EP20050853612	20051209
HK1111465 A1	20100409	HK20080100887	20080124
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JP5185625 B2	20130417	JP20070546783T	20051209
KR101225519 B1	20130124	KR20077015842	20051209
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US2008273201 AA	20081106	US20050721492	20051209
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WO06065669 A1	20060622	WO2005US44730	20051209

Priority:

US20040635642 20041213

US20040635642P 20041213

WO2005US44730 20051209

US20050721492 20051209

Probable Assignee: INTEST CORP

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Agent(s): SCHWABE SANDMAIR MARX; RATNERPRESTIA

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

Title: WIRELESS NON-RADIATIVE ENERGY TRANSFER

Abstract: Source: US2007222542A [EN] The electromagnetic energy transfer device includes a first resonator structure receiving energy from an external power supply. The first resonator structure has a first Q-factor. A second resonator structure is positioned distal from the first resonator structure, and supplies useful working power to an external load. The second resonator structure has a second Q-factor. The distance between the two resonators can be larger than the characteristic size of each resonator. Non-radiative energy transfer between the first resonator structure and the second resonator structure is mediated through coupling of their resonant-field evanescent tails.

Classifications:

International (IPC 8-9): B60L11/18 B60L9/00 B60M7/00 G01R11/04

G06K19/07 H01F38/00 H01F38/14 H01P1/20 H01P7/00 H01Q7/00

H01Q9/04 H02J17/00 H02J5/00 H02J50/00 H02J50/05 H02J50/12

H02J50/50 H02J50/90 H02J7/00 H02J7/02 H03H7/01 H03H9/00

H04B5/00 H05K13/00 (Advanced/Invention);

H01P7/00 (Advanced/Non-invention);

H01F38/00 H01F38/14 H01P1/20 H01P7/00 H01Q9/04 H02J17/00

H02J7/00 H03H7/01 H03H9/00 H04B5/00 (Core/Invention);

H01P7/00 (Core/Non-invention);

B60L H01Q H02J (Subclass/Invention)

International (IPC 1-7): H02J17/00

CPC: Y02T90/16 B60L11/18 H04B5/0037 B60L2210/20 H01Q7/00 H01Q9/04 Y02T10/725 Y02T90/127 Y02T10/7072

Y10T307/25 Y10T29/4902 H02J50/90 B60L11/182 H02J17/00 Y02T10/7005 Y02T90/122 Y02T90/14 H02J7/025 Y02T10/7088

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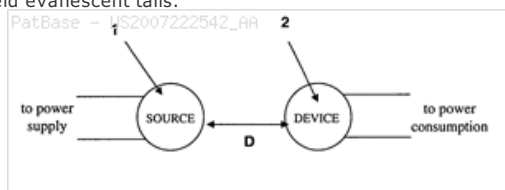
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333/172 333/172S 333/175 333/175S 333/195 333/202 333/202P 333/219 333/219.2 333/219.200P 333/219.200S 333/219P

333/219S



Family:

Publication number	Publication date	Application number	Application date
AU2006269374 AA	20070118	AU20060269374	20060705
AU2006269374 BB	20091008	AU20060269374	20060705
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Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Assignee(s): (std): FISHER PETER H ; JOANNOPOULOS JOHN D ; KARALIS ARISTEDIS ; KARALIS ARISTEIDIS ; KARALIS ARSTEIDIS ; MASSACHUSETTS INST TECHNOLOGY ; KURS ANDRE B ; MARIN SOLJACIC ; MASSACHUSETTS INST OF TECH MIT ; MASSACHUSETTS INST OF TECH ; SOLAJACIC MARIN ; SOLJACIC MARIN ; MOFFATT ROBERT ; SOLIACIC MARIN

Assignee(s): WITRICITY CORP ; NATIONAL SCIENCE FOUNDATION ; MASSACHUSETTS INSTITUTE OF TECHNOLOGY MIT ; MASSACHUSETTS INST ; MASSACHUSETTS INST OF TECHNOLOGY MIT ; MASSACHUSETTS INST OF TECHNOLOGY77 MASSACHUSETTS AVENUECAMBRIDGEMA02139US ; MASSACHUSETTS INST OF TECHNOLOGY ; MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Agent(s): DAVIES COLLISON CAVE PTY LTD; DAVIES COLLISON CAVE; SMART AND BIGGAR; PETERREINS FRANK; PETERREINS SCHLEY; FISH AND RICHARDSON PC; GTC LAW GROUP LLP AND AFFILIATES; FISH AND RICHARDSON P C; WEFERS MARC

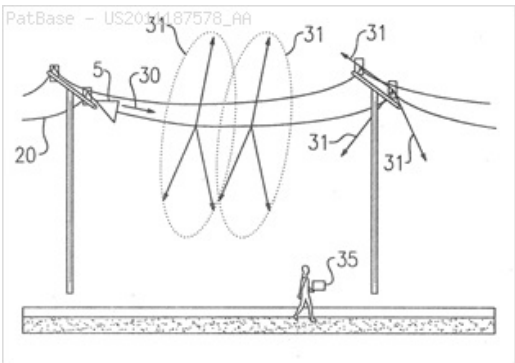
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Title: CONDUCTIVE LINE COMMUNICATION APPARATUS AND CONDUCTIVE LINE RADAR SYSTEM AND METHOD

Abstract: Source: US2011187578A [EN] A conductive line radar comprising at least one signal surface wave launcher, which comprises a signal surface wave transceiver, which is physically attached to a power line. The signal surface wave transceiver transmits a wave signal along the power line with another signal radiating from the wave signal in a plurality of directions along the power line. The at least one signal surface wave transceiver receives reflected signals from a target within a distance of the power line. The at least one signal surface wave launcher includes at least one RF communications transceiver and can be inductively powered from the power line.

Classifications:

International (IPC 8-9): G01S13/00 G01S13/02 G01S13/04
G01S13/08 G01S13/32 G01S13/58 G01S13/86 G01S13/87 G01S7/35
G08B13/24 H01P3/10 H01Q1/46 H04B1/38
H04B3/54 (Advanced/Invention)
CPC: G01S13/04 G01S13/32 G01S13/86 G01S13/87
European: G01S13/04 G01S13/32 G01S13/86 G01S13/87
US: 342/104 342/104S 342/118 342/118S 342/27 342/27P 342/52
342/52S 342/53 342/53S 342/55 342/55S 342/59 375/219 375/219S



Family:

Publication number	Publication date	Application number	Application date
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Priority:

US20100658217 20100204

Probable Assignee: SAAB SENSIS CORP

Assignee(s): (std): EDWARD BRIAN ; FARNETH MIKE ; MCMAHON STEPHEN E ; ROUGAS JOHN A ; SENSIS CORP ; VALOVAGE EDWARD M

Assignee(s): SAAB SENSIS CORP

Inventor(s): (std): EDWARD BRIAN ; FARNETH MIKE ; MCMAHON STEPHEN E ; ROUGAS JOHN A ; VALOVAGE EDWARD M

Agent(s): BURR AND BROWN; BURR STEPHEN P ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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

Title: METHOD AND APPARATUS FOR ADAPTIVELY CONTROLLING ANTENNA PARAMETERS TO ENHANCE EFFICIENCY AND MAINTAIN ANTENNA SIZE COMPACTNESS

Abstract: Source: US2006132360A [EN] An antenna for a communications device having configurable elements controlled to modify an antenna impedance and/or an antenna resonant frequency to improve performance of the communications device. The antenna impedance is controlled to substantially match to an output impedance of a power amplifier that supplies the antenna with a signal for transmission. The antenna resonant frequency is controlled to overcome the effects of various operating conditions that can detune the antenna or in response to an operable frequency band.

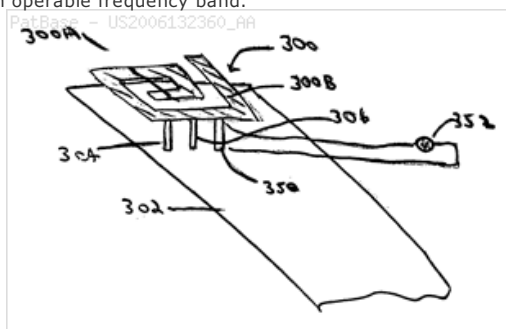
Classifications:

International (IPC 8-9): H01P11/00 H01Q1/24 H01Q1/38 H01Q1/50 H01Q11/12 H01Q13/08 H01Q5/00 H01Q5/01 H04B1/04 H04B1/40 H04B1/48 H04M1/00 H04Q11/12 (Advanced/Invention); H01Q11/12 H04B1/04 H04B1/48 (Advanced/Non-invention); H01P11/00 H01Q1/24 H01Q1/38 H01Q1/50 H01Q11/00 H01Q13/08 H01Q5/00 H04B1/04 H04B1/40 H04B1/44 (Core/Invention)

CPC: H01Q1/50 H01Q1/243 H01Q9/0421 H01Q9/045 H01Q9/0442 Y10T29/49016

European: H01Q1/24A1A H01Q9/04B2 H01Q9/04B5

US: 29/600 29/600S 343/700.0MS 343/700MS 343/702 343/702P 343/745 343/858 343/861 343/861P 455/103 455/121 455/121S 455/127.3 455/129 455/129P 455/550.1 455/575.7



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■ WO07143616 A2	20071213	WO2007US70347	20070604
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Priority:

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 WO2007US70347 20070604

Probable Assignee: SKYCROSS CO LTD

Assignee(s): (std): CAIMI FRANK M ; CHEN PING ; O NEILL GREGORY A JR ; O NEILL GEORGE A JR ; SKYCROSS INC ; SKY CROSS INC ; O NEILL JR GREGORY A ; JO YOUNG MIN

Assignee(s): NXT CAPITAL LLC ; ACHILLES TECHNOLOGY MANAGEMENT CO II INC ; NXT CAPITAL LLC ITS SUCCESSORS AND ASSIGNS AGENT AND LENDER AS ; SKYCROSS KOREA CO LTD ; SKYCROSS CO LTD ; SQUARE ; SQUARE 1 BANK ; EAST WEST BANK ; HERCULES CAPITAL INC F K A HERCULES TECHNOLOGY GROWTH CAPITAL INC

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Inventor(s): O NEILL GEORGE ; O NEILL GREGORY A ; O NEILL GREGORY AJR ; O'NEILL JR GREGORY A ; O NEILL GREGORY ; O NEILL GEORGE AJR ; O NEILL GEORGE A ; CAIMI FRANK

Agent(s): BEUSSE WOLTER SANKS MORA AND MAIRE P A; JOHN L; BEUSSE WOLTER SANKS MORA AND MAIRE PA

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Non-disturbing electric field sensor using piezoelectric and converse piezoelectric resonances

Abstract: Source: US6107791A [EN] This invention relates to an electric field sensor for near field measurement. The electric field sensor of the present invention uses both piezoelectric and converse piezoelectric resonances. Composed of no metallic parts, the **probe** of the sensor minimizes field disturbance. The most distinguished feature of this **probe** is that a signal is transmitted outside neither electrically nor optically, but mechanically.

Classifications:

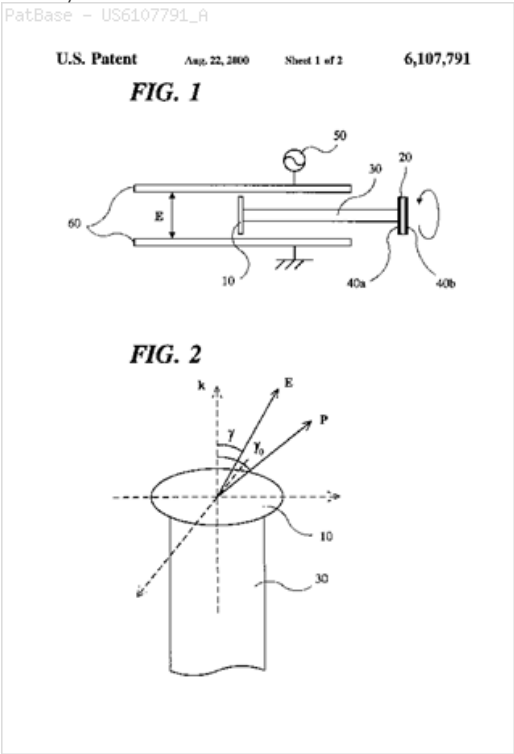
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G01R29/08 G01R31/00 (Core/Invention)

International (IPC 1-7): G01R31/00

CPC: G01R29/0878

European: G01R29/08E3

US: 324/72.5 324/727



Family:

Publication number	Publication date	Application number	Application date
KR100216885 B1	19990901	KR19970034824	19970725
KR19990011643 A	19990218	KR19970034824	19970725
US6107791 A	20000822	US19980108424	19980630

Priority:

KR19970034824 19970725

Probable Assignee: KOREA ADVANCED INST OF SCIENCE AND TECHNOLOGY

Assignee(s): (std): KOREA ADVANCED INST SCI AND TECH

Assignee(s): KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY ; KOREA ADVANCED INST ; KOREA ADVANCED INST OF SCIENCE AND TECHNOLOGY

Inventor(s): (std): LEE SOON CHIL ; LEE SUN CHIL

Title: Toroidal antenna

Abstract: Source: US4622558A [EN] 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:

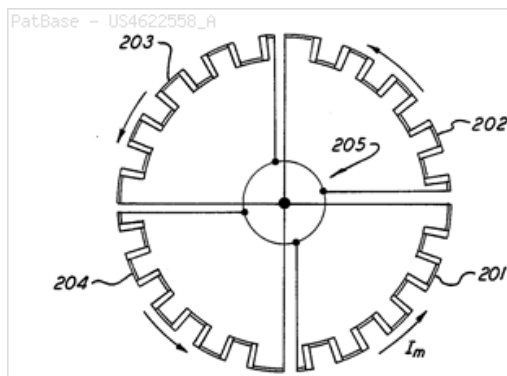
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H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 (Advanced/Non-invention);
H01Q1/36 H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 H01Q7/00
H01Q9/04 (Core/Invention)

International (IPC 1-7): H01Q11/08 H01Q11/12 H01Q11/14
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CPC: H01Q1/36 H01Q7/00 H01Q9/04 H01Q9/26B

European: H01Q1/36 H01Q7/00 H01Q9/04 H01Q9/26B

US: 343/742 343/744



Family:

Publication number	Publication date	Application number	Application date
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EP0043591 A1	19820113	EP19810105311	19810709
JP57042203 A2	19820309	JP19810106325	19810709
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US4751515 A	19880614	US19860888494	19860723

Priority:

CA19810381325 19810708 US19800167329 19800709 US19850795721 19851107
US19830514176 19830715 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

Title: INDUCTIVE POWER TRANSFER SYSTEM

Abstract: Source: US2015207334A [EN] An inductive power transfer system comprises a transmitter coil TX and a receiver coil RX spaced from the transmitter coil. A transmitter circuit comprises the transmitter coil and is in the form of a Class E amplifier with a first inductor Uchoke and a transistor in series between the terminals of a power supply, a first transmitter capacitor Cpar in parallel with the transistor between the first inductor and a power supply terminal, a primary tank circuit in parallel with the first transmitter capacitor, the primary tank circuit comprising the transmitter coil and a second transmitter capacitor Cres arranged in parallel with the transmitter coil, and a third transmitter capacitor Cser in series with the first inductor between the first transmitter capacitor and the primary tank circuit. The transistor is arranged to switch at a first frequency f_d and the capacitance of the second transmitter capacitor is selected such that the resonant frequency f_{OTX} of the primary tank circuit is greater than the first frequency. The receiver circuit comprises a Class E rectifier having a first receiver capacitor CL arranged in parallel with a load RL and a secondary tank circuit in parallel with the first receiver capacitor. The secondary tank circuit comprises the receiver coil and a second receiver capacitor Cres arranged in parallel or series with the receiver coil. A first diode Dr2 is provided between the secondary tank circuit and the first receiver capacitor. The capacitance of the second receiver capacitor is selected such that the resonant frequency f_{oRX} of the secondary tank circuit differs from the first frequency, so that the secondary tank circuit operates in semi-resonance and maintains some reactive impedance. The transmitter circuit is configured to vary the first frequency, in order to achieve a desired impedance of the primary tank circuit.

Classifications:

International (IPC 8-9): G01R31/04 H01F37/00 H01F38/14
H02J17/00 H02J5/00 H02J50/00 H02J50/10 H02J50/12 H02J50/40
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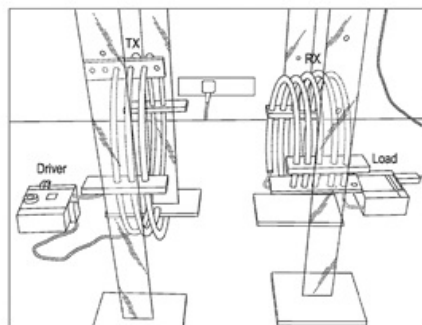
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H02J17/00 (Core/Invention)

CPC: H01F38/14 G01R31/04 H03F3/2176 H02J17/00 H02M7/537
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US: 307/104 320/108

PatBase - US2015207334_AA

**Family:**

Publication number	Publication date	Application number	Application date
CA2817288 AA	20140224	CA20132817288	20130530
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EP2888801 A1	20150701	EP20130726845	20130531
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GB201309691 A0	20130717	GB20130009691	20130530
GB201321267 A0	20140115	GB20130021267	20131202
GB2505278 A1	20140226	GB20130009691	20130530
GB2505278 B2	20161221	GB20130009691	20130530
IN02341DN2015 A	20150828	IN2015DN02341	20150323
JP2015532084 T2	20151105	JP20150527959T	20130531
KR20150048188 A	20150506	KR20157007471	20130531
MX2013006253 A1	20140903	MX20130006253	20130531
MX338521 B	20160419	MX20150010574	20130531
SG11201501219R A1	20150330	SG20151101219	20130531
US2015207334 AA	20150723	US20130423387	20130531
US2016204645 AA	20160714	US20150952097	20151125
US9899877 BB	20180220	US20130423387	20130531
WO14029961 A1	20140227	WO2013GB51456	20130531
WO14191760 A1	20141204	WO2014GB51656	20140530

Priority:

GB20120015152 20120824 GB20130009691 20130530 WO2013GB51456 20130531
GB20130021267 20131202 WO2014GB51656 20140530

Probable Assignee: DRAYSON WIRELESS LTD

Assignee(s): (std): DRAYSON TECH EUROPE LTD ; DRAYSON WIRELESS LTD ; IMP INNOVATIONS LTD ; MITCHESON PAUL DAVID ; YATES DAVID CHRISTOPHER ; RANGEL MANUEL PINUELA ; LAWSON JAMES

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Inventor(s): (std): DAVID CHRISTOPHER YATES ; LAWSON JAMES ; LUCYSZYN STEPAN ; MANUEL PINUELA RANGEL ; MITCHESON PAUL ; MITCHESON PAUL DAVID ; PAUL DAVID MITCHESON ; PINUELA RANGEL MANUEL ; PINUELA RANGEL MAUEL ; RANGEL MANUEL PINUELA ; STEPAN LUCYSZYN ; YATES DAVID ; YATES DAVID CHRISTOPHER ; YATES DAVID

Inventor(s): YATES DAVID CHRISTOPHERGB ; PINUELA RANGEL MANUELGB ; MITCHESON PAUL DAVIDGB ; LUCYSZYN STEPANGB

Agent(s): GOWLING LAFLEUR HENDERSON LLP ; GOWLING WLG CANADA LLP ; HOFFMANN EITLE ; SUNSTEIN KANN MURPHY AND TIMBERS LLP ; HARRISON GODDARD FOOTE LLP LONDON OFFICE ; KILBURN AND STRODE LLP

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

Title: LOCALIZED WAVE GENERATION VIA MODEL DECOMPOSITION OF A PULSE BY A WAVE LAUNCHER

Abstract: Source: US2011018650A [EN] Implementations for exciting two or more modes via modal decomposition of a pulse by a wave launcher are generally disclosed.

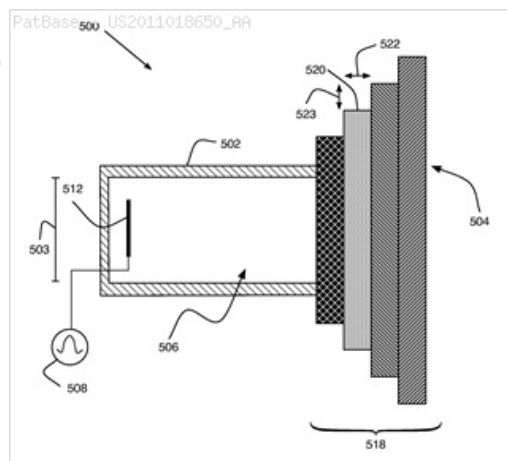
Classifications:

International (IPC 8-9): H01P1/00 H01P1/16 H01P3/00 H01P3/12 H01P3/123 H01Q13/02 H01Q13/06 H01Q15/00 H01Q19/08 H01Q3/00 H01Q3/26 H04B3/04 (Advanced/Invention)

CPC: H01P3/00 H01P1/16 H01Q13/025 H01Q13/06 H01Q19/08

European: H01Q13/02E H01Q13/06 H01Q19/08

US: 333/157 333/20 333/20P 333/21R 343/762 343/772



Family:

Publication number	Publication date	Application number	Application date
JP2013500680 T2	20130107	JP20120522833T	20100611
JP5355793 B2	20131127	JP20120522833T	20100611
US2011018650 AA	20110127	US20090510040	20090727
US2014043107 AA	20140213	US20130058147	20131018
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Priority:

US20090510040 20090727 US20130058147 20131018 WO2010US38321 20100611

Probable Assignee: NEW JERSEY INST OF TECHNOLOGY

Assignee(s): (std): NEW JERSEY TECH INST ; NIVER EDIP ; SALEM MOHAMED A ; SALEM MOHAMED ; KAMEL ALADIN HASSAN

Assignee(s): NEW JERSEY INST OF TECHNOLOGY ; NEW JERSEY INSTITUTE OF TECHNOLOGY

Inventor(s): (std): KAMEL ALADIN HASSAN ; NIVER EDIP ; SALEM MOHAMED ; SALEM MOHAMED A ; KAMEL ALADIN H

Agent(s): OMIKRON IP LAW GROUP; TURK IP LAW LLC; LYNCH JAMES J

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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

Title: ACTIVE POWER SPLITTER

Abstract: Source: US2010259312A [EN] A circuit topology in accordance with a system, method and device for an active power splitter with an input and at least two outputs which allows the use of negative feedback and thus improving stability and linearity without substantially increasing the noise figure of the system is provided.

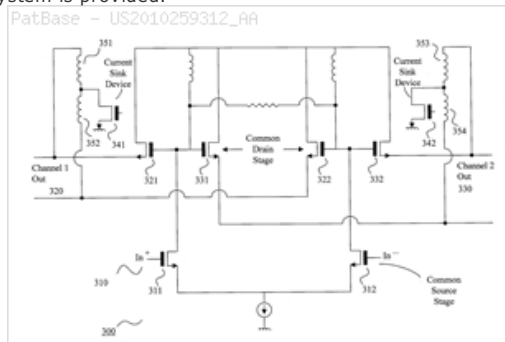
Classifications:

International (IPC 8-9): G01S7/02 G06G7/12 H01F7/08 H01P1/12 H01P1/161 H01P3/00 H01P5/12 H01Q1/02 H01Q1/24 H01Q1/27 H01Q1/28 H01Q1/52 H01Q13/02 H01Q15/00 H01Q15/24 H01Q19/00 H01Q19/18 H01Q21/00 H01Q21/06 H01Q21/22 H01Q21/24 H01Q21/30 H01Q23/00 H01Q25/00 H01Q25/02 H01Q3/00 H01Q3/12 H01Q3/24 H01Q3/26 H01Q3/28 H01Q3/30 H01Q3/34 H01Q3/36 H01Q5/00 H01Q9/14 H03F1/00 H03F1/26 H03F1/32 H03F3/189 H03F3/26 H03F3/68 H03H11/36 H03H17/00 H03K17/00 H04B1/00 H04B1/02 H04B1/04 H04B1/10 H04B1/16 H04B1/38 H04B1/44 H04B7/00 H04B7/005 H04B7/04 H04B7/0408 H04B7/10 H04B7/12 H04B7/185 H04K1/02 H04L25/49 H04L27/00 H04L5/16 H04W72/04 (Advanced/Invention); H03F3/68 H04W36/00 (Advanced/Non-invention); H01P5/12 H01Q1/24 H01Q13/02 H01Q15/00 H01Q15/24 H01Q21/24 H01Q3/24 H01Q3/26 H01Q3/30 H01Q3/36 H01Q5/00 H01Q9/14 H03F3/189 (Core/Non-invention)

CPC: H01Q13/02 H01Q21/061 G06G7/12 H01Q3/34 H01Q1/02 H04B7/10 H01Q25/00 H04B1/44 H04L5/16 H01P1/122 H01P1/161 H01Q1/247 H01Q3/2647 H01Q3/30 H01Q21/24 H01Q25/02 H01Q1/28 H01Q21/245 H04B7/0408 H04B7/18593 H04B7/18515 H01Q1/523 H01Q21/30 H01Q3/28 H01Q3/26 H01Q3/36 H01Q15/242 H01Q21/22 H01Q1/288 H01Q1/27 H04W72/0413 H04W72/042 H04W72/0453 H04B7/1858 H01Q3/2617 H01Q21/065

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US: 1/1 327/355 327/416 327/416P 327/552 327/552S 330/124.00RP 330/124R 330/149 330/151 330/252 330/253 330/295 333/117 333/117P 333/21A 333/248 335/256 335/256P 342/352 342/354 342/354P 342/361 342/362 342/363 342/365 342/368 342/368S 342/372 342/372P 342/372S 342/373 342/373P 343/700MS 343/705 343/753 343/756 343/756P 343/756S 343/761 343/761S 343/771 343/772 343/776 343/853 343/853S 343/904 370/277 370/278 370/331 375/146 375/295 375/295P 375/296 375/299 375/301 455/127.2 455/127.200P 455/13.3 455/130 455/130S 455/232.1 455/232.100S 455/273 455/276.1 455/291 455/296 455/303 455/307 455/63.4 455/91 455/91P 455/91S

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AU2010315822 AA	20110512	AU20100315822	20100413
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Priority:

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US20160162953	20160524	US20160212111	20160715		

Probable Assignee: VIASAT INC

Assignee(s): (std): BUER KENNETH V ; CORMAN DAVID W ; CROCKETT DON ; CROCKETT DONALD E ; LLORENS DEL RIO DANIEL ; KITCHEN JENNIFER ; HANCHARIK DAVID ; MENON GAURAV ; JAIN NITIN ; LAIDIG DAVID ; DEL RIO DANIEL LLORENS ; VIASAT INC ; SAUNDERS DAVID R ; RUNYON DONALD LAWSON ; TIEZZI FERDINANDO ; VACARRO STEFANO ; ZIENKEWICZ ROB ; TOR JOSH ; WACHTER FRIEDHELM ; VOSS JOHN DANIEL

Assignee(s): VIASAT INC CARLSBAD ; UNION BANK NA ; UNION BANK NA AGENT FOR SECURED PARTIES AS ; MUFG UNION BANK NA AGENT AS

Inventor(s): (std): BUER KENNETH V ; CORMAN DAVID W ; CROCKETT DON ; CROCKETT DONALD E ; DEL RIO DANIEL LLORENS ; HANCHARIK DAVID ; JAIN NITIN ; KITCHEN JENNIFER ; LAIDIG DAVID ; LLORENS DEL RIO DANIEL ; MENON GAURAV ; RUNYON DONALD LAWSON ; SAUNDERS DAVID R ; TIEZZI FERDINANDO ; TOR JOSH ; VACARRO STEFANO ; WACHTER FRIEDHELM ; ZIENKEWICZ ROB ; VOSS JOHN DANIEL ; VOSS JOHN D ; RUNYON DONALD L ; CORMAN DAVID ; SAUNDERS DAVID ; ROB ZIENKEWICZ ; DAVID W CORMAN ; DAVID R SAUNDERS

Inventor(s): ZIENKEWICZ ROB CHANDLER ; SAUNDERS DAVID R SCOTTSDALE ; CORMAN DAVID W GILBERT

Agent(s): FB RICE; FB RICE PTY LTD; K AND H BONAPAT; CURLEY DONNACHA JOHN; MOORE BARRY; SNELL AND WILMER LLP USM VIASAT; SNELL AND WILMER LLP; SNELL AND WILMER; VIASAT INC; PLATT JOHN H; PLATT JOHN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 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 PE PG PH PL PT RO RS RU 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

Title: WIRELESS ENERGY TRANSFER, INCLUDING INTERFERENCE ENHANCEMENT

Abstract: Source: US2009284083A [EN] Disclosed is an apparatus for use in wireless energy transfer, which includes a first resonator structure configured for energy transfer with a second resonator structure over a distance D larger than characteristic sizes, L_1 and L_2 , of the first and second resonator structures. A power generator is coupled to the first structure and configured to drive the first resonator structure or the second resonator structure at an angular frequency away from the resonance angular frequencies and shifted towards a frequency corresponding to an odd normal mode for the resonator structures to reduce radiation from the resonator structures by destructive far-field interference.

Classifications:

International (IPC 8-9): H01F38/14 H01F5/00 H01P7/00 H01Q1/02
H01Q1/24 H01Q7/00 H02J17/00 H02J50/12 H02J7/02 H03H9/00

H04B5/02 (Advanced/Invention);

H01P7/00 H02J17/00 (Core/Invention);

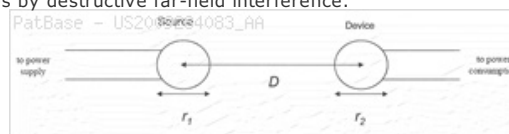
H01P H01Q H02J (Subclass/Invention);

CPC: H02J7/025 H02J50/12 H01Q1/248 H01Q1/02 H01Q7/00

H02J17/00

European: H01Q1/02 H01Q1/24E H01Q7/00 H02J17/00

US: 307/104 307/104P 333/235 333/235S

**Family:**

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AU2009246310 BI	20150402	AU20090246310	20090514
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CN102099958 B	20131225	CN200980127634	20090514
CN103647137 A	20140319	CN201310585104	20090514
CN103647137 B	20151118	CN201310585104	20090514
DE602009037065 D1	20160512	DE200960037065T	20090514
EP2281322 A1	20110209	EP20090747588	20090514
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EP2281322 B1	20160323	EP20090747588	20090514
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HK1195972 A1	20161125	HK20140109425	20140918
IN07357CN2010 A	20110902	IN2010CN07357	20101115
JP2011523844 T2	20110818	JP20110509705T	20090514
KR101478269 B1	20141231	KR20107028149	20090514
KR20110014649 A	20110211	KR20107028149	20090514
US2009284083 AA	20091119	US20090466065	20090514
US2012068549 AA	20120322	US20110288308	20111103
US8076801 BB	20111213	US20090466065	20090514
WO09140506 A1	20091119	WO2009US43970	20090514

Priority:

CN200980127634 20090514 EP20090747588 20090514 US20080127661P 20080514
US20090466065 20090514 WO2009US43970 20090514 US20110288308 20111103

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Assignee(s): (std): HAMAM RAFIF E ; JOANNOPOULOS JOHN D ; KARALIS ARISTEIDIS ; MASSACHUSETTS INST TECHNOLOGY ; SOLJACIC MARIN

Assignee(s): WITRICITY CORP ; MASSACHUSETTS INST ; MASSACHUSETTS INST OF TECHNOLOGY ; MASSACHUSETTS INST OF TECHNOLOGY CAMBRIDGE ; MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Inventor(s): (std): SOLJACIC MARIN ; SOLJACIC MARIN M ; KARALIS ARISTEIDIS A ; JOANNOPOULOS JOHN D JD ; HAMAM RAFIF E RE ; ARISTEIDIS KARALIS ; HAMAM RAFIF E ; JOANNOPOULOS JOHN D ; KARALIS ARISTEIDIS ; MARIN SOLJACIC

Inventor(s): RAFIF E HAMAM ; JOHN D JOANNOPOULOS ; SOLJACIC MARIN BELMONT ; KARALIS ARISTEIDIS BOSTON ; JOANNOPOULOS JOHN D BELMONT ; HAMAM RAFIF E TORONTO

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; SMART AND BIGGAR; PETERREINS SCHLEY PATENT U RECHTSANWAELE; PETERREINS FRANK; PETERREINS SCHLEY; FISH AND RICHARDSON PC; WEFERS MARC M

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Coupling port for multiple capacitor, distributed inductor resonator

Abstract: Source: US5045825A [EN] A broadband, varactor-tuned shorted coax resonator is provided with a single point coupling port that facilitates coupling of discrete circuitry to the distributed resonator. The coupling port is defined by adding a second shorted coax line across the end of the first. The outer conductors of the two lines are interconnected. The inner conductors of the two lines are serially coupled and define a coupling gap, either along their length or at their ends, across which discrete circuitry can be connected. In a preferred form of the invention, the discrete circuitry is positioned in a region within the periphery of one of the inner conductors in order to provide an electromagnetic shield for the circuitry.

Classifications:

International (IPC 8-9): H01P5/08 H01P7/04

H03B5/18 (Advanced/Invention);

H01P5/08 H01P7/04 H03B5/18 (Core/Invention)

International (IPC 1-7): H01P5/08 H01P7/04 H03B5/18

CPC: H01P7/04

European: H01P7/04

US: 331/101 331/117D 331/177V 331/96 331/97 333/219 333/222 333/223 333/250

PatBase - US5045825_R

U.S. Patent

Sep. 3, 1991

Sheet 1 of 4

5,045,825

FIG. 1 Prior Art

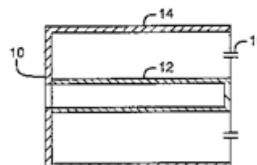
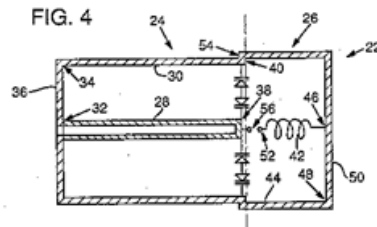


FIG. 4



Family:

Publication number	Publication date	Application number	Application date
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DE69119309 T2	19960912	DE19916019309T	19910704
EP0466400 A2	19920115	EP19910306085	19910704
EP0466400 A3	19921007	EP19910306085	19910704
EP0466400 B1	19960508	EP19910306085	19910704
JP3183677 B2	20010709	JP19910190606	19910704
JP4348602 A2	19921203	JP19910190606	19910704
US5045825 A	19910903	US19900549332	19900705
US5130673 A	19920714	US19910720313	19910625

Priority:

US19900549332 19900705 US19910720313 19910625

Probable Assignee: AGILENT TECHNOLOGIES INC

Assignee(s): (std): HEWLETT PACKARD CO

Assignee(s): HEWLETT PACKARD CO HP ; HEWLETT PACKARD CO PALO ALTO CALIF US ; HEWLETT PACKARD COMPANY ; AGILENT TECHNOLOGIES INC

Inventor(s): (std): BAATON ERU MAKUJIYANKIN ; MCJUNKIN BARTON ; MCJUNKIN BARTON L

Inventor(s): MCJUNKIN BARTON SPOKANE WA 99206 US

Designated states: DE FR GB IT

Title: METHOD AND APPARATUS FOR SUPPLYING CONTACTLESS POWER

Abstract: Source: US6515878B [EN] A method and apparatus for supplying contactless power. Electrical power is transferred from a power source to a load through a primary energy converter that can be connected to the power source, through a primary inductive loop connected to the primary energy converter and a secondary pickup coil magnetically coupled to the primary inductive loop, and then to a secondary energy converter. The power factor for the transfer of electrical energy is one. Multiple loads can receive power from the power source and, where the loads are located in zones, collisions between the loads can be prevented.

Classifications:

International (ipc 8-9): B60L15/00 B60L5/00 H02J3/36 H02J5/00 H02M1/00 H02M1/42 H02M7/48 (Advanced/Invention);

H02M1/42 (Advanced/Non-invention);

B60L15/00 B60L5/00 H02J3/36 H02J5/00 H02M1/00

H02M7/48 (Core/Invention)

International (ipc 1-7): B60L15/00 H02J3/36 H02J5/00 H02M5/458

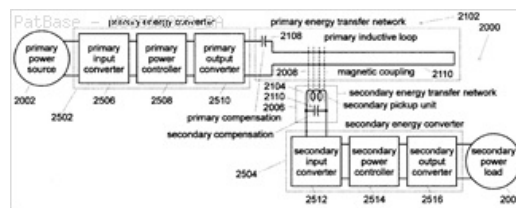
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H02M7/4807 H02M2001/007 Y02T10/645 H02J50/12 H02J50/40

H02J5/005

European: B60L15/00B1 B60L5/00B H02J5/00T H02M1/00B H02M1/42B H02M7/48 H02M7/48H T02M1/00P1

US: 191/10 307/10.1 307/101 363/37

**Family:**

Publication number	Publication date	Application number	Application date
AT346415 E	20061215	AT19980939305T	19980807
AU199887765 A1	19990301	AU19980087765	19980807
DE69836468 D1	20070104	DE19986036468	19980807
DE69836468 T2	20070913	DE19986036468T	19980807
EP0929926 A1	19990721	EP19980939305	19980807
EP0929926 A4	20010725	EP19980939305	19980807
EP0929926 B1	20061122	EP19980939305	19980807
ES2278417 T3	20070801	ES19980939305T	19980807
PT929926 T	20070330	PT19980939305T	19980807
US6515878 BA	20030204	US19980131074	19980807
WO9908359 A1	19990218	WO1998US16566	19980807

Priority:

US19970054937P 19970808 US19980131074 19980807 WO1998US16566 19980807

Probable Assignee: MEINS SINSLEY PARTNERSHIP

Assignee(s): (std): JOHN D SINSLEY ; JURGEN G MEINS ; MEINS JUERGEN ; MEINS JURGEN G ; SINSLEY JOHN D ; SINSLEY JOHN

Assignee(s): MEINS SINSLEY PARTNERSHIP ; MEINS SINSLEY PARTNERSHIP A PARTNERSHIP OF NORTH C ; MEINS JUERGEN G

Inventor(s): (std): MEINS JUERGEN G ; MEINS JURGEN G ; SINSLEY JOHN D ; SINSLEY JOHN ; MEINS JUERGEN

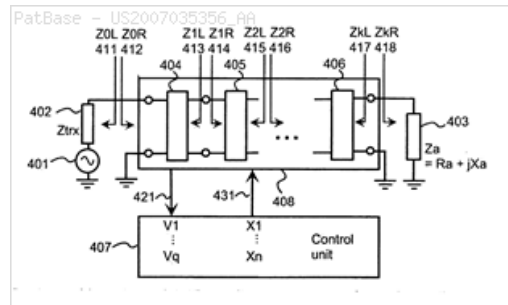
Inventor(s): JOHN D SINSLEY ; JURGEN G MEINS

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CY CZ DE DK EE ES FI FR GB GE GH GM GR HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

Abstract: Source: US2007035556A [EN] An impedance matching system may be used, for example, for impedance matching between a transmitter/receiver front-end and an antenna in a mobile communication device. In a tuneable impedance matching system according to the invention a tuneable impedance matching circuit (508) is used also as a measuring circuit for obtaining a value of a load impedance. A real part and an imaginary part of a load impedance (503) is calculated based on voltages measured on nodes of the tuneable impedance matching circuit and on known component values of the tuneable impedance matching circuit. Values for adjustable electrical components (504, 505) of the tuneable impedance matching circuit are determined based on the obtained load impedance value and on an impedance matching condition.

International (IPC 8-9): H03H21/00 H03H7/38 H03H7/40
H04B1/38 (Advanced/Invention);
H03H21/00 (Advanced/Non-invention);
H03H7/38 H04B1/38 (Core/Invention);
H03H21/00 (Core/Non-invention)

European: H03H7/38 H04B1/04C H04B1/18



Publication number	Publication date	Application number	Application date
EP1915819 A1	20080430	EP20060778498	20060814
EP1915819 A4	20120222	EP20060778498	20060814
US2007035356 AA	20070215	US20050204770	20050815
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WO07020324 A1	20070222	WO2006F100276	20060814

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ
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NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ
UA UG US UZ VC VN ZA ZM ZW

Title: WIRELESS ENERGY TRANSFER FOR VEHICLES

Abstract: Source: US2012119575A [EN] A vehicle powering wireless receiver for use with a first electromagnetic resonator coupled to a power supply. The wireless receiver includes a load configured to power the drive system of a vehicle using electrical power, and a second electromagnetic resonator adapted to be housed upon the vehicle and configured to be coupled to the load, wherein the second electromagnetic resonator is configured to be wirelessly coupled to the first electromagnetic resonator to provide resonant, non-radiative wireless power to the second electromagnetic resonator from the first electromagnetic resonator; and wherein the field of at least one of the first electromagnetic resonator and the second electromagnetic resonator is shaped using a conducting surface to avoid a loss-inducing object.

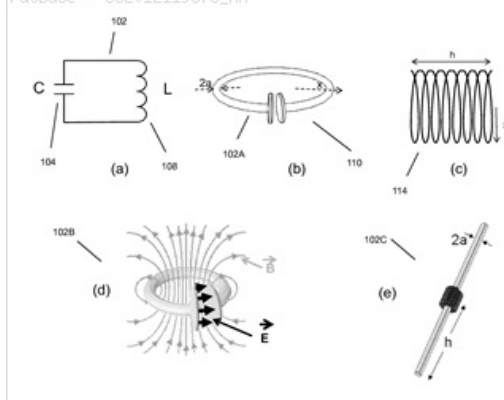
Classifications:

International (IPC 8-9): B60L1/00 B60L11/18 B60L3/00 B60L3/04 H02H11/00 H02J17/00 H02J5/00 H02J7/00 H02J7/02 H03H7/40 (Advanced/Invention)

CPC: B60L11/182 B60L3/003 B60L3/0069 B60L3/04 B60L11/1824 B60L11/1831 B60L11/1833 B60L11/184 B60L11/1842 B60L11/1844 B60L11/1846 B60L11/1848 B60L11/185 H02J5/005 H02J7/0027 H02J7/025 H02J17/00 H03H7/40 B60L2200/12 B60L2200/18 B60L2200/36 B60L2200/40 B60L2200/42 B60L2210/10 B60L2210/30 B60L2210/40 B60L2230/22 B60L2230/30 B60L2230/32 B60L2240/36 B60L2240/525 B60L2240/527 B60L2240/529 B60L2240/662 B60L2240/72 B60L2250/10 B60L2250/16 B60L2270/32 Y02T10/7094 Y02T90/125 Y02T90/16 Y02T90/163 Y02T10/7005 Y02T10/7241 Y02T10/7216 Y02T90/169 Y02T90/14 Y02T90/128 Y02T90/127 Y02T90/122 Y02T10/7055 Y04S10/126 Y04S30/14 Y02E60/721 B60L2200/26 Y02P90/60 Y02T10/7088 Y02T10/7291 Y02T90/121 Y10T307/707 Y10T307/718 Y10T307/729 H02J50/12 H02J50/50 H02J50/60 H02J50/70 H02J50/80 H02J50/90

US: 307/10.1 307/104 307/149 307/326 307/82 307/84 307/86 307/9.1 320/108 455/44 455/65

PatBase - US2012119575_AA

**Family:**

Publication number	Publication date	Application number	Application date
US2012119575 AA	20120517	US20110276295	20111018
US89333594 BB	20150113	US20110276295	20111018

Priority:

US20080100721P 20080927	US20080108743P 20081027	US20080121159P 20081209
US20090142796P 20090106	US20090142880P 20090106	US20090142818P 20090106
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Probable Assignee: WITRICITY CORP

Assignee(s): (std): CAMPANELLA ANDREW J ; HALL KATHERINE L ; KARALIS ARISTEIDIS ; KESLER MORRIS P ; WITRICITY CORP ; SOLJACIC MARIN ; KURS ANDRE B

Inventor(s): (std): CAMPANELLA ANDREW J ; HALL KATHERINE L ; KARALIS ARISTEIDIS ; KESLER MORRIS P ; KURS ANDRE B ; SOLJACIC MARIN

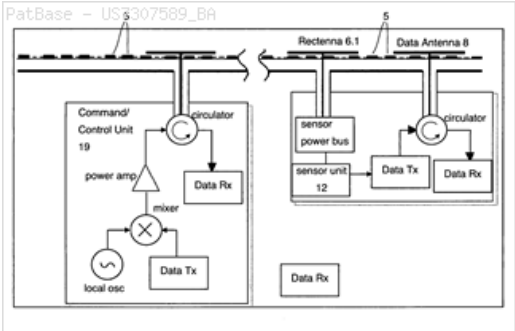
Agent(s): FISH AND RICHARDSON PC

Title: LARGE-SCALE ADAPTIVE SURFACE SENSOR ARRAYS

Abstract: Source: US7307589B [EN] An adaptive surface has a dielectric surface with a repeating pattern of electrically conductive structures disposed thereon or therein, the dielectric surface in combination with repeating pattern of electrically conductive structures forming a metasurface for binding surface waves thereto. A plurality of actuators on the dielectric surface alter the shape of the metasurface in response to control signals. A plurality of sensors on the dielectric surface for measuring a desired parameter and converting it to data. A plurality of rectennae disposed on the dielectric surface for providing electrical power to said actuators and to said sensors. A plurality of data antennas are disposed on or in the dielectric surface, the data antennas being coupled with data receivers and data transmitters for receiving data from an external source for controlling the actuators and for transmitting data from said sensors to an external receiver.

Classifications:

International (IPC 8-9): H01Q1/38 (Advanced/Invention);
H01Q1/38 (Core/Invention)
CPC: H01Q15/147 H01Q1/248 H02J17/00 H02J50/27
European: H01Q1/24E H01Q15/14D H02J17/00
US: 343/700MS 343/853



Family:

Publication number	Publication date	Application number	Application date
US7307589 BA	20071211	US20050324064	20051229

Priority:

US20050324064 20051229

Probable Assignee: HRL LABORATORIES LLC

Assignee(s): (std): HRL LAB LLC

Assignee(s): HRL LABORATORIES LLC

Inventor(s): (std): SIEVENPIPER DANIEL F ; MASSEY CAMERON G ; GREGOIRE DANIEL

Agent(s): LADAS AND PARRY

Search history

Search PN=(WO2016039832) (Results 1)

1:

Search [SP]: 1. a guided surface waveguide probe, comprising: a charge terminal elevated over a lossy conducting medium and a coupling circuit configured to couple an excitation source to the charge terminal, the coupling circuit configured to provide a voltage to the charge terminal that establishes an electric field having a wave tilt (w) that intersects the lossy conducting medium at a tangent of a complex brewster angle (θ_i, b) at a hankel crossover distance (rx) from the guided surface waveguide probe. 2. the guided surface waveguide probe of claim 1, wherein the coupling circuit comprises a coil coupled between the excitation source and the charge terminal. 3. the guided surface waveguide probe of claim 2, wherein the coil is a helical coil. 4. the guided surface waveguide probe of claim 2, wherein the excitation source is coupled to the coil via a tap connection. 5. the guided surface waveguide probe of claim 4, wherein the tap connection is at an impedance matching point on the coil. 6. the guided surface waveguide probe of claim 4, wherein an impedance matching network is coupled between the excitation source and the tap connection on the coil. 7. the guided surface waveguide probe of claim 2, wherein the excitation source is magnetically coupled to the coil. 8. the guided surface waveguide probe of claim 2, wherein the charge terminal is coupled to the coil via a tap connection. 9. the guided surface waveguide probe of claim 1, wherein the charge terminal is positioned at a physical height (hp) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $heff = rx \tan \theta_i, b = hpej f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and f is a phase of the effective height. 10. the guided surface waveguide probe of claim 9, wherein the phase f is approximately equal to an angle w of the wave tilt of illumination that corresponds to the complex brewster angle. 11. the guided surface waveguide probe of claim 1, wherein the charge terminal has an effective spherical diameter, and the charge terminal is positioned at a height that is at least four times the effective spherical diameter. 12. the guided surface waveguide probe of claim 11, wherein the charge terminal is a spherical terminal with the effective spherical diameter equal to a diameter of the spherical terminal. 13. the guided surface waveguide probe of claim 11, wherein the height of the charge terminal is greater than a physical height (hp) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $heff = rx \tan \theta_i, b = hpej f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and f is a phase of the effective height. 14. the guided surface waveguide probe of claim 13, further comprising a compensation terminal positioned below the charge terminal, the compensation terminal coupled to the coupling circuit. 15. the guided surface waveguide probe of claim 14, wherein the compensation terminal is positioned below the charge terminal at a distance equal to the physical height (hp). 16. the guided surface waveguide probe of claim 15, wherein f is a complex phase difference between the compensation terminal and the charge terminal. 17. the guided surface waveguide probe of claim 1, wherein the lossy conducting medium is a terrestrial medium. 18. a system, comprising: a guided surface waveguide probe, including: a charge terminal elevated over a lossy conducting medium and a coupling circuit configured to provide a voltage to the charge terminal that establishes an electric field having a wave tilt (w) that intersects the lossy conducting medium at a tangent of a complex brewster angle (θ_0) at a hankel crossover distance (rx) from the guided surface waveguide probe and an excitation source coupled to the charge terminal via the coupling circuit. 19. the system of claim 18, further comprising a probe control system configured to adjust the guided surface waveguide probe based at least in part upon characteristics of the lossy conducting medium. 20. the system of claim 19, wherein the lossy conducting medium is a terrestrial medium. 21. the system of claim 19, wherein the coupling circuit comprises a coil coupled between the excitation source and the charge terminal, the charge terminal coupled to the coil via a variable tap. 22. the system of claim 21, wherein the coil is a helical coil. 23. the system of claim 21, wherein the probe control system adjusts a position of the variable tap in response to a change in the characteristics of the lossy conducting medium. 24. the system of claim 23, wherein the adjustment of the position of the variable tap adjusts the wave tilt of the electric field to correspond to a wave illumination that intersects the lossy conducting medium at the complex brewster angle (θ_i, b) at the hankel crossover distance (rx). 25. the system of claim 22, wherein the guided surface waveguide probe further comprises a compensation terminal positioned below the charge terminal, the compensation terminal coupled to the coupling circuit. 26. the system of claim 25, wherein the compensation terminal is positioned below the charge terminal at a distance equal to a physical height (hp) corresponding to a magnitude of an effective height of the guided surface waveguide probe, where the effective height is given by $heff = rx \tan \theta_i, b = hpej f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and wherein f is a complex phase difference between the compensation terminal and the charge terminal. 27. the system of claim 25, wherein the probe control system adjusts a position of the compensation terminal in response to a change in the characteristics of the lossy conducting medium. 28. a method, comprising: positioning a charge terminal at a defined height over a lossy conducting medium; positioning a compensation terminal below the charge terminal and over the lossy conducting medium, the compensation terminal separated from the charge terminal by a defined distance and exciting the charge terminal and the compensation terminal with excitation voltages having a complex phase difference, where the excitation voltages establish an electric field having a wave tilt (w) that corresponds to a wave illuminating the lossy conducting medium at a complex brewster angle (θ_i, b) at a hankel crossover distance (rx) from the charge terminal and the compensation terminal. 29. the method of claim 28, wherein the charge terminal has an effective spherical diameter, and the charge terminal is positioned at the defined height is at least four times the effective spherical diameter. 30. the method of claim 28, wherein the defined distance is equal to a physical height (hp) corresponding to a magnitude of an effective height of the charge terminal, where the effective height is given by $heff = rx \tan \theta_i, b = hpej f$, with $\theta_i, b = (\pi/2) - \theta_i, b$ and wherein f is the complex phase difference between the compensation terminal and the charge terminal. 31. the method of claim 28, wherein the charge terminal and the compensation terminal are coupled to an excitation source via a coil, the charge terminal coupled to the coil by a variable tap. 32. the method of claim 31, further comprising adjusting a position of the variable tap to establish the electric field with the wave tilt intersecting the lossy conducting medium at the complex brewster angle (θ_i, b) at the hankel crossover distance (rx). (Results 0)

Search [SP]: cross reference to related application this application is related to u.s. application ser. no. 13/789,538 entitled "excitation and use of guided surface wave modes on lossy media" filed on mar. 7, 2013, and published on sep. 11, 2014 (patent application publication no. us-2014-0252886-a1), and u.s. application ser. no. 13/789,525 entitled "excitation and use of guided surface wave modes on lossy media" filed on mar. 7, 2013, and published on sep. 11, 2014 (patent application publication no. us-2014-0252865-a1). background for over a century, signals transmitted by radio waves involved radiation fields launched using conventional antenna structures. in contrast to radio science, electrical power distribution systems in the last century involved the transmission of energy guided along electrical conductors. this understanding of the distinction between radio frequency (rf) and power transmission has existed since the early 1900's. brief description of the drawings many aspects of the present disclosure can be better understood with reference to the following drawings. the components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the disclosure. moreover, in the drawings, like reference numerals designate corresponding parts throughout the several views. fig. 1 is a chart that depicts field strength as a function of distance for a guided electromagnetic field and a radiated electromagnetic field. fig. 2 is a drawing that illustrates a propagation interface with two regions employed for transmission of a guided surface wave according to various embodiments of the present disclosure. figs. 3a and 3b are drawings that illustrate a complex angle of insertion of an electric field synthesized by guided surface waveguide probes according to the various embodiments of the present disclosure. fig. 4 is a drawing that illustrates a guided surface waveguide probe disposed with respect to a propagation interface of fig. 2 according to an embodiment of the present disclosure. fig. 5 is a plot of an example of the magnitudes of close-in and far-out asymptotes of first order hankel functions according to various embodiments of the present disclosure. figs. 6a and 6b are plots illustrating bound charge on a sphere and the effect on capacitance according to various embodiments of the present disclosure. fig. 7 is a graphical representation illustrating the effect of elevation of a charge terminal on the location where a brewster angle intersects with the lossy conductive medium according to various embodiments of the present disclosure. figs. 8a and 8b are graphical representations illustrating the incidence of a synthesized electric field at a complex brewster angle to match the guided surface waveguide mode at the hankel crossover distance according to various embodiments of the present disclosure. figs. 9a and 9b are graphical representations of examples of a guided surface waveguide probe according to an embodiment of the present disclosure. fig. 10 is a schematic diagram of the guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 11 includes plots of an example of the imaginary and real parts of a phase delay (fu) of a charge terminal t1 of a guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 12 is an image of an example of an implemented guided surface waveguide probe of fig. 9a according to an embodiment of the present disclosure. fig. 13 is a plot comparing measured and theoretical field strength of the guided surface waveguide probe of fig. 12 according to an embodiment of the present disclosure. figs. 14a and 14b are an image and graphical representation of a guided surface waveguide probe according to an embodiment of the present disclosure. fig. 15 is a plot of an example of the magnitudes of close-in and far-out asymptotes of first order hankel functions according to various embodiments of the present disclosure. fig. 16 is a plot comparing measured and theoretical field strength of the guided surface waveguide probe of figs. 14a and 14b according to an embodiment of the present disclosure. figs. 17 and 18 are graphical representations of examples of guided surface waveguide probes according to embodiments of the present disclosure. figs. 19a and 19b depict examples of receivers that can be employed to receive energy transmitted in the form of a guided surface wave launched by a guided surface waveguide probe according to the various embodiments of the present disclosure. fig. 20 depicts an example of an additional receiver that can be employed to receive energy transmitted in the form of a guided surface wave launched by a guided surface waveguide probe according to the various embodiments of the present disclosure. fig. 21a depicts a schematic diagram representing the thevenin-equivalent of the receivers depicted in figs. 19a and 19b according to an embodiment of the present disclosure. fig. 21b depicts a

schematic diagram representing the norton-equivalent of the receiver depicted in fig. 17 according to an embodiment of the present disclosure. figs. 22a and 22b are schematic diagrams representing examples of a conductivity measurement probe and an open wire line probe, respectively, according to an embodiment of the present disclosure. figs. 23a through 23c are schematic drawings of examples of an adaptive control system employed by the probe control system of fig. 4 according to embodiments of the present disclosure. figs. 24a and 24b are drawings of an example of a variable terminal for use as a charging terminal according to an embodiment of the present disclosure. Detailed description to begin, some terminology shall be established to provide clarity in the discussion of concepts to follow. First, as contemplated herein, a formal distinction is drawn between radiated electromagnetic fields and guided electromagnetic fields. As contemplated herein, a radiated electromagnetic field comprises electromagnetic energy that is emitted from a source structure in the form of waves that are not bound to a waveguide. For example, a radiated electromagnetic field is generally a field that leaves an electric structure such as an antenna and propagates through the atmosphere or other medium and is not bound to any waveguide structure. Once radiated electromagnetic waves leave an electric structure such as an antenna, they continue to propagate in the medium of propagation (such as air) independent of their source until they dissipate regardless of whether the source continues to operate. Once electromagnetic waves are radiated, they are not recoverable unless intercepted, and, if not intercepted, the energy inherent in radiated electromagnetic waves is lost forever. Electrical structures such as antennas are designed to radiate electromagnetic fields by maximizing the ratio of the radiation resistance to the structure loss resistance. Radiated energy spreads out in space and is lost regardless of whether a receiver is present. The energy density of radiated fields is a function of distance due to geometric spreading. Accordingly, the term "radiate" in all its forms as used herein refers to this form of electromagnetic propagation. A guided electromagnetic field is a propagating electromagnetic wave whose energy is concentrated within or near boundaries between media having different electromagnetic properties. In this sense, a guided electromagnetic field is one that is bound to a waveguide and may be characterized as being conveyed by the current flowing in the waveguide. If there is no load to receive and/or dissipate the energy conveyed in a guided electromagnetic wave, then no energy is lost except for that dissipated in the conductivity of the guiding medium. Stated another way, if there is no load for a guided electromagnetic wave, then no energy is consumed. Thus, a generator or other source generating a guided electromagnetic field does not deliver real power unless a resistive load is present. To this end, such a generator or other source essentially runs idle until a load is presented. This is akin to running a generator to generate a 60 hertz electromagnetic wave that is transmitted over power lines where there is no electrical load. It should be noted that a guided electromagnetic field or wave is the equivalent to what is termed a "transmission line mode." This contrasts with radiated electromagnetic waves in which real power is supplied at all times in order to generate radiated waves. Unlike radiated electromagnetic waves, guided electromagnetic energy does not continue to propagate along a finite length waveguide after the energy source is turned off. Accordingly, the term "guide" in all its forms as used herein refers to this transmission mode (tm) of electromagnetic propagation. Referring now to fig. 1, shown is a graph 100 of field strength in decibels (db) above an arbitrary reference in volts per meter as a function of distance in kilometers on a log-db plot to further illustrate the distinction between radiated and guided electromagnetic fields. The graph 100 of fig. 1 depicts a guided field strength curve 103 that shows the field strength of a guided electromagnetic field as a function of distance. This guided field strength curve 103 is essentially the same as a transmission line mode. Also, the graph 100 of fig. 1 depicts a radiated field strength curve 106 that shows the field strength of a radiated electromagnetic field as a function of distance. (Results 54)

Search 3 and PD<20140910 (Results 0)
4:

Search [SP]: excitation and use of guided surface wave modes on lossy media disclosed are various embodiments for transmitting energy conveyed in the form of a guided surface-waveguide mode along the surface of a lossy medium such as, e.g., a terrestrial medium by exciting a guided surface waveguide probe. (Results 212)

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Search 6 and Hankel (Results 2)
8:

Search 6 and probe (Results 18)
9:

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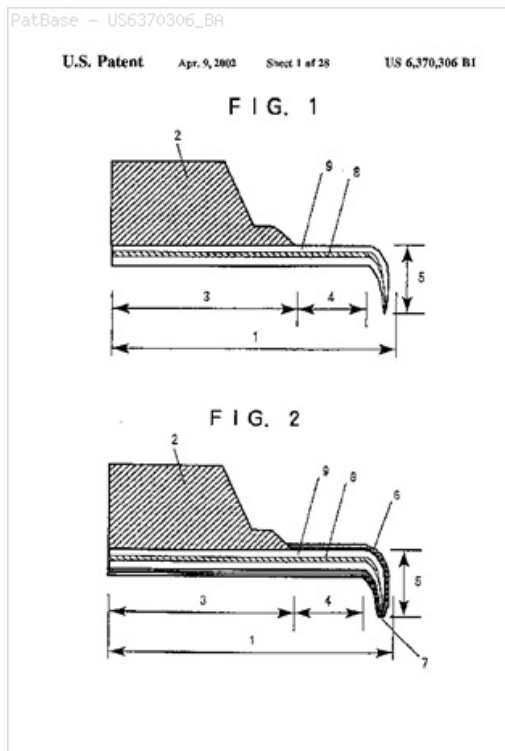
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19:

Title: OPTICAL **WAVEGUIDE PROBE** AND ITS MANUFACTURING METHOD

Abstract: Source: US6370306B [EN] The present invention has an object to obtain an optical **waveguide probe** which is formed in a hook form to illuminate and detect light by a manufacture using a silicon process. This optical **waveguide probe** is formed in a hook form and structured by an optical waveguide 1 sharpened at a probe needle portion 5 and formed of dielectric and a substrate 2 supporting this optical waveguide 1. This optical waveguide 1 is formed overlying the substrate 2. The optical waveguide 1 is structured by a core 8 to transmit light and a cladding 9 smaller in refractive index than the core 8.

Classifications:

International (IPC 8-9): B82Y20/00 B82Y35/00 G01B11/30 G01B7/34 G01N37/00 G01Q10/00 G01Q60/06 G01Q60/18 G01Q60/22 G01Q60/24 G01Q60/38 G02B21/00 G02B6/12 G02B6/132 G02B6/24 G02B6/26 (Advanced/Invention); G01B11/30 G02B6/12 G02B6/24 (Core/Invention)
International (IPC 1-7): G01B11/30 G01B7/34 G01N37/00 G02B21/00 G02B6/02
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European: B82Y15/00 B82Y20/00 B82Y35/00 G01B11/30 G01Q10/00 G01Q60/06 G01Q60/18 G01Q60/22 G01Q60/24 G01Q60/38 G02B6/132 G02B6/24A G02B6/26B G12B21/06 G12B21/08
US: 385/12 385/129 385/130 385/131 385/132 385/14 385/31 385/32 385/49 850/33 977/862



Family:

Publication number	Publication date	Application number	Application date
DE69839763 D1	20080904	DE19986039763	19981215
EP0964251 A1	19991215	EP19980959218	19981215
EP0964251 A4	20020410	EP19980959218	19981215
EP0964251 B1	20080723	EP19980959218	19981215
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EP1705475 A3	20070502	EP20060013102	19981215
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JP4412620 B2	20100210	JP19990532362T	19981215
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US6370306 BA	20020409	US19990367407	19991109
WO9931514 A1	19990624	WO1998JP05664	19981215

Priority:

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JP19980215780 19980730	JP20080131247 19981215	JP20100112087 20100514
WO1998JP05664 19981215	WO1998JP05664 19981215	

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Agent(s): WATKIN TIMOTHY LAWRENCE HARVEY ; CALDERBANK THOMAS ROGER

Designated states: DE FR GB JP US

Title: PROBE, MANUFACTURING METHOD THEREFOR AND SCANNING PROBE MICROSCOPE

Abstract: Source: US5960147A [EN] A tip of a probe is sharpened and a level difference portion 6 in a boundary zone between a base portion 5 and an elastic functioning portion 4 is formed into a tapered configuration. The diameter of the elastic functioning portion 4 is made smaller than that of the base portion 5. Also, a part of the elastic functioning portion 4 is shaped into a constricted configuration. Also, the probe material is an optical fiber and this probe is composed of a core portion 2 that propagates light therethrough and clad portions 3 that differ in refractive index from each other. And the portion of the probe that excludes a aperture is clothed by a metal film cladding 7.

Classifications:

International (IPC 8-9): G01B11/24 G01B11/30 G01B5/20 G01B7/34 G01L1/00 G01N21/17 G01N37/00 G01Q20/04 G01Q60/18 G01Q60/22 G01Q60/32 G01Q60/38 G01Q70/10 G01Q70/16 G02B21/00 G02B6/26 G12B21/06 (Advanced/Invention); G01B11/30 G01B7/34 G01N37/00 G01Q20/00 G01Q60/18 G01Q60/24 G01Q70/00 G02B21/00 G02B6/26 (Core/Invention)

International (IPC 1-7): G01B11/24 G01B11/30 G01B5/20 G01L1/00 G01N21/17 G01N23/00 G01N37/00 G02B21/00 G02B6/02

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European: B82Y15/00 B82Y20/00 B82Y35/00 G01Q240/302 G01Q60/06 G01Q60/18 G01Q60/22 G01Q60/38 G12B21/06

US: 250/306 250/311 359/368 385/123 385/127 385/133 385/146 385/147 385/31 385/39 385/43 385/902 850/33 850/57 850/60 977/862 977/878

PatBase - US5960147_A

U.S. Patent Sep. 28, 1999 Sheet 1 of 6 5,960,147

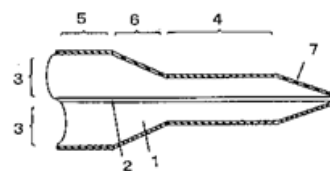


FIG. 1

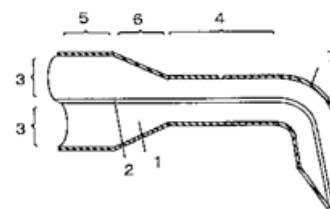


FIG. 2

Family:

Publication number	Publication date	Application number	Application date
CA2200992 AA	19971009	CA19972200992	19970325
DE69736449 D1	20060921	DE19976036449	19970306
DE69736449 T2	20061130	DE19976036449T	19970306
EP0801318 A2	19971015	EP19970103779	19970306
EP0801318 A3	19980401	EP19970103779	19970306
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JP10104244 A2	19980424	JP19960340068	19961219
JP2903211 B2	19990607	JP19960340068	19961219
US5960147 A	19990928	US19970821533	19970321

Priority:

CA19972200992 19970325 JP19960086894 19960409 JP19968689496 19960409
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Probable Assignee: SII NANOTECHNOLOGY INC

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Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: DE FR NL

Title: NEAR FIELD SCANNING OPTICAL MICROSCOPE HAVING A TAPERED WAVEGUIDE

Abstract: Source: US5272330A [EN] An optical system useful, e.g., for near-field scanning optical microscopy is provided. The system incorporates a probe having improved properties. In one embodiment, the probe comprises a tapered and partially metallized portion of a single-mode optical fiber.

Classifications:

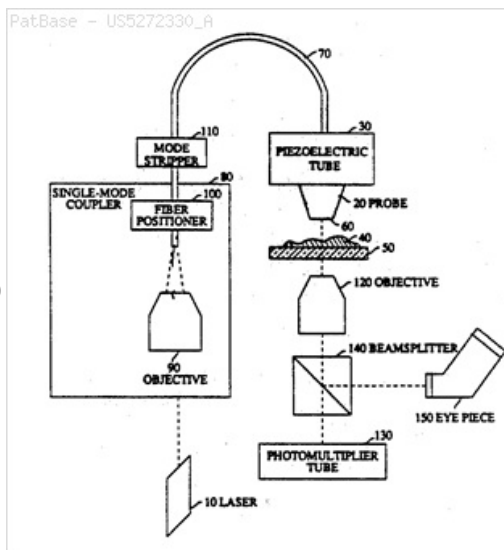
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G02B6/26 G11B5/00 G11B9/00 G12B21/06 H01L21/268 H01L21/469
H01S3/00 H04N1/04 (Advanced/Invention);
G11B27/36 G11B33/10 G11B5/09 (Advanced/Non-invention);
G01N13/10 G01Q60/18 G02B21/00 G02B21/02 G02B21/32
G02B26/10 G02B5/20 G02B6/00 G02B6/02 G02B6/10 G02B6/26
G11B5/00 G11B9/00 G12B21/00 H01L21/02
H01S3/00 (Core/Invention);
G11B27/36 G11B33/00 G11B5/09 (Core/Non-invention)

International (ipc 1-7): G01B11/30 G01N13/14 G01N21/63
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G11B2005/001 G11B2005/0021

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US: 250/216 250/227.2 250/227.26 250/461.1 359/368 359/385
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**Family:**

Publication number	Publication date	Application number	Application date
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DE69308421 T2	19970918	DE19936008421T	19930729
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EP0583112 A1	19940216	EP19930306002	19930729
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Priority:

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Probable Assignee: AT AND T CORP

Assignee(s): (std): AT AND T CORP ; AT AND T BELL LAB ; AMERICAN TELEPHONE AND TELEGRAPH

Assignee(s): AMERICAN TELEPHONE AND TELEGRAPH CO ; AT AND T BELL LABORATORIES ; AMERICAN TELEPHONE AND TELEGRAPH COMPANY ; AT AND T CORP NEW YORK N Y US ; AMERICAN TELEPH AND TELEGR CO ; AMERICAN TELEPH AND TELEGR CO ATT ; AMERICAN TELEPHONE AND TELEGRAPH CO A CORP OF NEW ; AMERICAN TELEPHONE AND TELEGRAPH CO A CORP OF NEW YORK ; BETZIG ROBERT ERIC ; JPMORGAN CHASE BANK AS COLLATERAL AGENT ; LUCENT TECHNOLOGIES INC ; JPMORGAN CHASE BANK COLLATERAL AGENT AS ; TRAUTMAN JAY KENNETH ; HELLMAN FRANCES ; GYORGY ERNST MICHAEL ; WOLFE RAYMOND

Inventor(s): (std): AANSUTO MAIKERU JIYOOJII ; BETZIG ROBERT E ; BETZIG ROBERT ERIC ; FURANSHISU HERUMAN ; GYORGY ERNST M ; GYORGY ERNST MICHAEL ; HELLMAN FRANCES ; JIEI KENESU TORAUTOMAN ; JIEI KENESU TORAUTOMAN ; REIMONDO UORUFU ; ROBAATO ERITSUKU BETSUTOZUITSU ; WOLFE RAYMOND ; TRAUTMAN JAY K ; TRAUTMAN JAY KENNETH

Inventor(s): TRAUTMAN JAY KENNETH BEDMINSTER NEW JERSEY 07921 US ; TRAUTMAN JAY KENNETH BEDMINSTER NEW JERSEY... ; WOLFE RAYMOND NEW PROVIDENCE NEW JERSEY 07974 US ; TRAUTMAN JAY KENNETH BEDMINSTER NEW JERSEY 07921 U ; HELLMAN FRANCES SAN DIEGO CALIFORNIA 92130 US ; GYORGY ERNST MICHAEL MADISON NEW JERSEY 07940 US ; BETZIG ROBERT ERIC CHATHAM NEW JERSEY 07928 US ; TRAUTMAN JAY KENNETH CHATHAM NEW JERSEY 07928 US ; ROBERT ERIC BETZIG

; RAYMOND WOLFE ; JAY KENNETH TRAUTMAN ; FRANCES HELLMAN ; ERNST MICHAEL GYORGY ;
ROBAATO ERITSUKU BETSUTOZUITSUGU

Agent(s): KIRBY EADES GALE BAKER; OKABE MASAO; KATO NOBUAKI

Designated states: DE FR GB

Title: Electro-optic modulator

Abstract: Source: US5005932A [EN] An electro-optic modulator (10) includes a pair of optical waveguide channels (20, 22) formed in an X-cut lithium niobate substrate (12) and an overlying RF coplanar waveguide (36). A periodic electrode structure (48) of the intermittent interaction type employs a plurality of middle stubs (52) to maintain the phase of the RF drive frequency in phase with the optical signal. The modulator (10) also utilizes shorter stubs (64) and tapered inlets (42) and outlets (44) to match and transform impedances.

Classifications:

International (IPC 8-9): G02F1/035 G02F1/225 G02F1/313

H01S3/10 (Advanced/Invention);

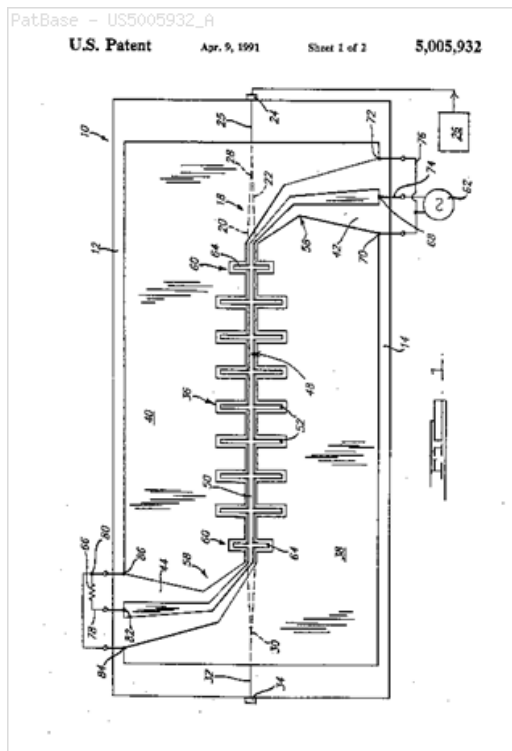
G02F1/01 G02F1/29 (Core/Invention)

International (IPC 1-7): G02B5/14 G02B6/10 G02F1/035 G02F1/225 G02F1/313 G02F1/35 G02F2/00 H01S3/10

CPC: G02F1/2255 G02F1/3134

European: G02F1/225H G02F1/313C4

US: 359/279 372/12 385/3 455/612



Family:

Publication number	Publication date	Application number	Application date
CA2026337 AA	19910507	CA19902026337	19900927
CA2026337 C	19940802	CA19902026337	19900927
DE69023608 D1	19951221	DE19906023608	19901030
DE69023608 T2	19960704	DE19906023608T	19901030
EP0427092 A2	19910515	EP19900120820	19901030
EP0427092 A3	19920226	EP19900120820	19901030
EP0427092 B1	19951115	EP19900120820	19901030
ES2079416 T3	19960116	ES19900120820T	19901030
IL95852 A0	19910718	IL19900095852	19901001
IL95852 A1	19930221	IL19900095852	19901001
JP1927545 C3	19950425	JP19900300931	19901106
JP3203716 A2	19910905	JP19900300931	19901106
JP6052342 B4	19940706	JP19900300931	19901106
KR19910010225 A	19910629	KR19900017846	19901105
KR950000406 B1	19950119	KR19900017846	19901105
NO904650 A	19910507	NO19900004650	19901026
NO904650 A0	19901026	NO19900004650	19901026
TR25859 A	19930901	TR19900001057	19901106
US5005932 A	19910409	US19890432933	19891106

Priority:

CA19902026337 19900927 US19890432933 19891106

Probable Assignee: RAYTHEON CO

Assignee(s): (std): HUGHES AIRCRAFT CO

Assignee(s): HUGHES AIRCRAFT CO LOS ANGELES CALIF US ; HUGHES AIRCRAFT COMPANY ; POPA ADRIAN E ; RAYTHEON CO ; SCHAFFNER JAMES H ; BRIDGES WILLIAM B ; HE HOLDINGS INC

Inventor(s): (std): EIDORIAN II POPA ; JIEEMUSU EICHI SHIYAFUNAA ; POPA ADRIAN E ; BRIDGES WILLIAM B ; SCHAFFNER JAMES H ; UIRIAMU BII BURITSUJISU

Inventor(s): SCHAFFNER JAMES H CHATSWORTH CALIFORNIA 91311 US ; BRIDGES WILLIAM B PASADENA CALIFORNIA 91103 US ; POPA ADRIAN E NEWBURY PARK CALIFORNIA 91320 US

Agent(s): SIM AND MCBURNEY; SANFORD TCOLB AND CO

Designated states: CH DE ES FR GB GR IT LI SE

Title: LOW PROFILE ACTIVE ELECTRONICALLY SCANNED ANTENNA (AESA) FOR KA-BAND RADAR SYSTEMS

Abstract: Source: US2004150554A [EN] A vertically integrated Ka-band active electronically scanned antenna including, among other things, a transitioning RF waveguide relocater panel located behind a radiator faceplate and an array of beam control tiles respectively coupled to one of a plurality of transceiver modules via an RF manifold. Each of the beam control tiles includes a respective plurality of high power transmit/receive (T/R) cells as well as dielectric waveguides, RF stripline and coaxial transmission line elements. The waveguide relocater panel is preferably fabricated by a diffusion bonded copper laminate stack up with dielectric filling. The beam control tiles are preferably fabricated by the use of multiple layers of low temperature co-fired ceramic (LTCC) material laminated together. The waveguide relocater panel and the beam control tiles are designed to route RF signals to and from a respective transceiver module of four transceiver modules and a quadrature array of antenna radiators matched to free space formed in the faceplate. Planar type metal spring gaskets are provided between the interfacing layers so as to provide and ensure interconnection between mutually facing waveguide ports and to prevent RF leakage from around the perimeter of the waveguide ports. Cooling of the various components is achieved by a pair of planar forced air heat sink members which are located on either side of the array of beam control tiles. DC power and control of the T/R cells is provided by a printed circuit wiring board assembly located adjacent to the array of beam controlled tiles with solderless DC connections being provided by an arrangement of "fuzz button" electrical connector elements.

Classifications:

International (IPC 8-9): H01P1/04 H01P1/26 H01P11/00 H01P3/16 H01P5/08 H01P5/10 H01P5/107 H01Q1/42 H01Q19/06 H01Q21/00 H01Q21/06 H01Q23/00 H01Q3/26 H05K3/46 H05K7/20 (Advanced/Invention);
H01P1/04 H01P1/24 H01P11/00 H01P3/00 H01P5/08 H01P5/10 H01Q1/42 H01Q19/00 H01Q21/00 H01Q21/06 H01Q23/00 H01Q3/26 H05K3/46 H05K7/20 (Core/Invention)
International (IPC 1-7): G01S13/00 G01S7/28 H01P11/00 H01P3/16 H01P5/08 H01P5/107 H01Q1/42 H01Q13/00 H01Q19/06 H01Q21/00 H01Q21/06 H01Q23/00 H01Q3/22 H01Q3/24 H01Q3/26 H05K3/46 H05K7/20

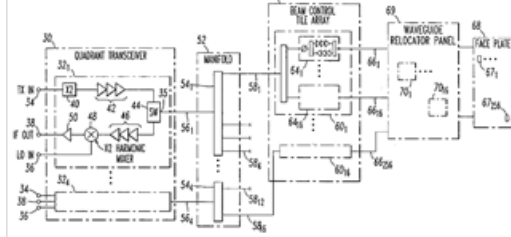
CPC: H01P1/047 H01P1/268 H01P5/085 H01P5/107 H01Q1/422

H01Q3/26 H01Q21/0037 H01Q21/0087 H01Q21/064 H01Q23/00 H01P1/04 H01P1/26 H01P5/08 H01P5/10 H01Q1/42

European: H01P1/04D H01P1/26E H01P5/08C H01P5/107 H01Q1/42C H01Q21/00D5 H01Q21/00F H01Q21/06B2 H01Q23/00 H01Q3/26

US: 333/125 342/147 342/157 342/175 342/368 342/371 342/372 342/81 343/754 343/772

PatBase - US2004150554_AA

**Family:**

Publication number	Publication date	Application number	Application date
AU2004211179 AA	20040826	AU20040211179	20040203
DE602004001041 D1	20060706	DE200460001041T	20040203
DE602004001041 T2	20061012	DE200460001041T	20040203
EP1590859 A1	20051102	EP20040707740	20040203
EP1590859 B1	20060531	EP20040707740	20040203
US2004150554 AA	20040805	US20030358278	20030205
US2005146479 AA	20050707	US20050060774	20050218
US6975267 BB	20051213	US20030358278	20030205
US7132990 BB	20061107	US20050060774	20050218
WO04073113 A1	20040826	WO2004US02982	20040203

Priority:

US20030358278 20030205

US20050060774 20050218

WO2004US02982 20040203

Probable Assignee: NORTHROP GRUMMAN SYSTEMS CORP

Assignee(s): (std): BLOCK STEVEN D ; HANDLEY STEVE ; HANDLEY STEVEN S ; HEFFNER CRAIG ; HINTON TUJUANA ; KRAFCSEK DAVID ; KUSS FRED C ; STENGER PETER A ; LACOUR KEVIN ; SISK ROBERT ; WISE CARL D ; PAQUIN JOSEPH ; WALTERS ANDREW ; MCMONAGLE BRIAN T ; NORTHROP GRUMMAN CORP

Assignee(s): NORTHROP GRUMMAN SYSTEMS CORP ; NORTHROP GRUMMAN CORP LOS ANGELES

Inventor(s): (std): BLOCK STEVEN D ; BLOCK D ; HANDLEY STEVE ; HANDLEY STEVEN S ; HEFFNER CRAIG ; HINTON TUJUANA ; KRAFCSEK DAVID ; KUSS C ; KUSS FRED C ; LACOUR KEVIN ; MCMONAGLE BRIAN T ; MCMONAGLE T ; PAQUIN JOSEPH ; PAQUIN JOSEPH H ; STENGER PETER A ; SISK ROBERT ; STENGER A ; WALTERS ANDREW ; WISE CARL D ; WISE D

Inventor(s): ANDREW WALTERS ; WISE CARL ; STENGER PETER ; STEVE HANDLEY ; STEVEN D BLOCK ; TUJUANA HINTON ; PETER A STENGER ; ROBERT SISK ; MCMONAGLE BRIAN ; KUSS FRED ; JOSEPH PAQUIN ; KEVIN LACOUR ; HANDLEY STEVEN ; BLOCK STEVEN ; BRIAN T MCMONAGLE ; CARL D WISE ; CRAIG HEFFNER ; DAVID KRAFCSEK ; FRED C KUSS

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; BIRCH STEWART KOLASCH AND BIRCH; BIRCH STEWART KOLASCH AND BIRCH LLP

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

Title: METHOD AND A DEVICE FOR MEASURING DIELECTRIC CHARACTERISTICS OF MATERIAL BODIES

Abstract: Source: US2010001747A [EN] The inventive method for measuring dielectric characteristics of material bodies consists in generating a microwave signal, in dividing said signal into reference and sounding signals, in irradiating a body with the microwave signal when a **waveguide probe** contacts a tested material, in receiving the reflected, reference and total signals and in detecting said signals. The irradiation is carried out by means of a waveguide wave, the propagation number of which in the free space of the **waveguide probe**, which is filled with a prism-shaped dielectric insert, "[$\epsilon \sin^2 k_2 - (\pi b/b)^2 + (\pi a/a)^2$]", where ϵ is the specific inductive capacity of the material; a and b are the length and the width of the cross-section of a rectangular waveguide; m and n are integer numbers representing the indexes of propagation modes in the dielectric-filled waveguide and k is the propagation number of a used millimeter radiation for an empty free space $k = 2\pi\nu/c$, where ν is frequency and c is a speed of light in vacuum. A device for carrying out said method is also disclosed.

Classifications:

International (IPC 8-9): G01N21/17 G01R27/00 G01R27/26

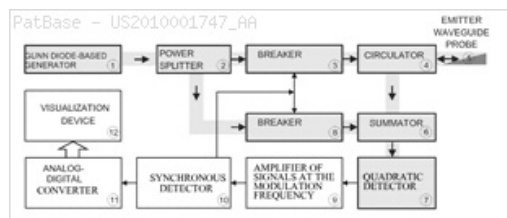
G01R31/12 (Advanced/Invention);

G01N21/17 G01R27/00 G01R27/26 G01R31/12 (Core/Invention)

CPC: G01N22/00 G01R27/06

European: G01N22/00 S01R27/06

US: 324/637 324/638 324/642 324/702 324/702P



Family:

Publication number	Publication date	Application number	Application date
■ RU2331894 C1	20080820	RU20070107047	20070214
■ US2010001747 AA	20100107	US20090537771	20090807
■ US7868627 BB	20110111	US20090537771	20090807
■ WO08108682 A1	20080912	WO2008RU00046	20080125

Priority:

RU20070107047 20070214 WO2008RU00046 20080125

Probable Assignee: JOINT STOCK CO HIGH TECH

Assignee(s): (std): JOINT STOCK CO AND LSQUO HIGH TECH AND RSQUO ; JOINT STOCK CO HIGH TECH ; JOINT STOCK COMPANY AND LSQUO HIGH TECH AND RSQUO ; TURKOVSKIY IVAN IVANIVICH ; JOINT STOCK COMPANY HIGH TECH ; KOMPANIJA VYSOKIE T AOOT NPR

Assignee(s): OTKRYTOE AKTSIONERNOE OBSHCHESTVO NAUCHNO PROIZVODSTVENNAJA KOMPANIJA VYSOKIE TEKHNOLOGII ; JOINT STOCK CO 'HIGH TECH'

Inventor(s): (std): TURKOVSKIY IVAN IVANOVICH ; TURKOVSKIY IVAN I ; TURKOVSKIY IVAN IVANIVICH

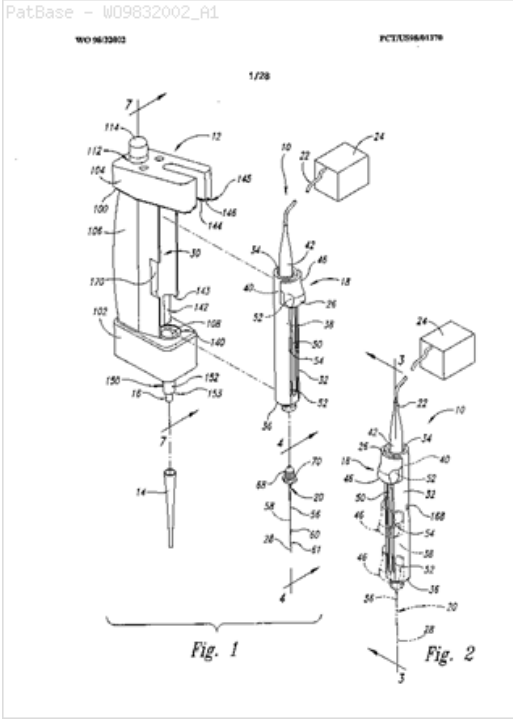
Agent(s): HOUSTON ELISEEVA; HOUSTON ELISEEVA LLP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: PIPETTE AND CARRIER ASSEMBLY FOR A SENSOR

Abstract: The sensor assembly (10) is releasably attached to the sample drawing device (12), such as a pipette and has a sensor carrier (18) with a coupling member (26) attached to a wave-guide cable (22, 208) connected to the electromagnetic radiation source (204). The sensor (20) has a connecting member (68) connectable to the coupling member and a probe (56) projecting from the connecting member. A probe cover (32) is attached to the coupling member and positionable to selectively expose or protectively contain the probe. The sensor (20) is removably received in a protective storage housing when the sensor is removed from the sensor carrier. The sample drawing device includes a drawing mechanism (112) for drawing a selected sample into a sample container (14) and an ejector (150) for ejection of the sample container (14). The sample drawing device is connected to a pneumatic tube (302) that communicates with the sample container, thereby oscillating the sample within the sample container relative to the sensor.

Classifications:
International (IPC 8-9): G01N21/03 G01N35/10 (Advanced/Invention); G01N21/03 G01N35/10 (Core/Invention)
International (IPC 1-7): B01L3/02 G01N21/03
CPC: G01N21/03 G01N35/10 G01N2035/1055 G01N2035/1062
European: G01N21/03 G01N35/10 S01N35/10F5C S01N35/10F5E



Family:

Publication number	Publication date	Application number	Application date
AU199861343 A1	19980807	AU19980061343	19980122
WO9832002 A1	19980723	WO1998US01370	19980122

Priority:

US19970787427 19970122 WO1998US01370 19980122

Probable Assignee: EBI SENSORS INC

Assignee(s): (std): BIACORE AB ; DAWSON STEFAN ; EBI SENSORS INC ; HERBAI ERIK ; IVARSSON BENGT ; JORGENSEN RALPH ; OSTLIN HENRIK ; SODERGREN JAN ; LINDBERG BENGT

Inventor(s): (std): DAWSON STEFAN ; JORGENSEN RALPH ; LINDBERG BENGT ; OSTLIN HENRIK ; HERBAI ERIK ; IVARSSON BENGT ; SODERGREN JAN

Inventor(s): STEFAN DAWSON ; JAN SODERGREN ; RALPH JORGENSEN ; ERIK HERBAI ; HENRIK OSTLIN ; BENGT IVARSSON ; BENGT LINDBERG

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

Title: RADIO FREQUENCY TRANSDUCER

Abstract: Source: US2825875A [EN] 767,612. Waveguides; impedance matching. STANDARD TELEPHONES and CABLES, Ltd. July 16, 1954 [July 22, 1953], No. 20749/54. Class 40 (8). The inner and outer conductors 7, 5 of a coaxial **guide** are connected to a transducer comprising conductors 1, 2 separated by dielectric 3, the transducer being connected to a single or double conductor transmission line. As shown in Fig. 1, the conductor 2 has a tapered end 2c and is replaced by a conductor 2a on the same side of the dielectric 3 as the conductor 1, whilst the conductor 1 is continued to form a conductor 1a of a transmission line comprising conductors 1a, 2a. In a modification, Fig. 11, the coaxial **guide** 25 is coupled to a single conductor 21a by terminating the conductor 22 in a slot 24. In a further modification, Fig. 4, the conductors 11, 12 are tapered at 11a, 12a where they are connected to the tapered parts of conductors 14, 15. The conductors 11, 12 may overlap the conductors 14, 15 (see Fig. 7, not shown). The conductors 14, 15 may be wholly or partly embedded in dielectric material (see Figs. 8 to 10, not shown). Specification 761,764 is referred to.

Classifications:

International (IPC 8-9): B07C3/00 C07D261/18 C07D317/66 F16B13/06 G05D16/06 G05D23/12 G09F7/00 H01B7/00 H01F7/02 H01J23/00 H01J23/065 H01J23/087 H01J23/42 H01J25/38 H01J29/38 H01J29/64 H01J3/02 H01P1/02 H01P1/18 H01P1/203 H01P1/209 H01P3/08 H01P5/02 H01P5/08 H01P5/107 H01P5/12 H01P5/18 H01P5/22 H01Q1/24 H01Q9/06 H03L7/04 (Advanced/Invention); B07C3/00 C07D261/00 C07D317/00 G05D16/04 G05D23/01 G09F7/00 H01B7/00 H01F7/02 H01J23/00 H01J23/02 H01J25/00 H01J29/10 H01J29/58 H01J3/00 H01P1/02 H01P1/18 H01P1/20 H01P3/08 H01P5/02 H01P5/08 H01P5/10 H01P5/12 H01P5/16 H01Q1/24 H01Q9/04 H03L7/02 (Core/Invention)

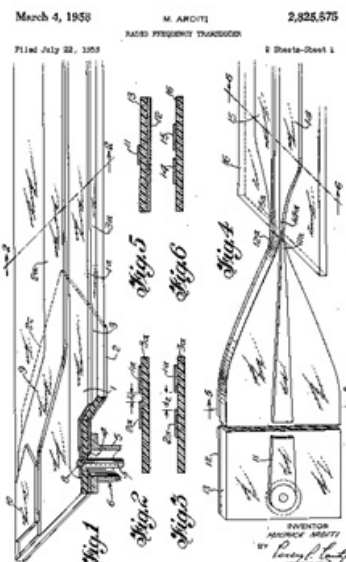
International (IPC 1-7): F16B13/00 F16B13/06 H01P1/18 H01P1/203 H01P1/209 H01P3/08 H01P5/02 H01P5/08 H01P5/12 H01P5/18 H01P5/22 H01Q23/00 H03B3/04

CPC: B07C3/006 H01P1/184 H01P1/20363 H01P1/20381 H01P1/209 H01P3/085 H01P5/02 H01P5/08 H01P5/107 H01P5/12 H01P5/187 H01Q1/247 H01Q9/065 H03L7/04 H01B7/00 H01P1/02 H01P1/18 H01P3/08 H01P5/22 H01P5/225 H01P3/081 H01P5/085 C07D261/18 C07D317/66 G09F7/00 H01F7/02 H01F7/0278 H01J3/029 H01J23/00 H01J23/065 H01J23/087 H01J23/0873 H01J23/42 H01J25/38 H01J29/38 H01P5/185 H01P3/088 H01P1/2039 H01P5/184 H01J29/64 F16B13/068 H01P1/203 G05D16/0605 G05D23/125

European: 124BG12B3G4D4B4/G2C 124BG5G2C1 B07C3/00C3 C07D261/18 C07D317/66 F16B13/06D4B G05D16/06C G05D23/12D G09F7/00 H01B7/00 H01F7/02 H01F7/02C1 H01J23/00 H01J23/065 H01J23/087 H01J23/087B H01J23/42 H01J25/38 H01J29/38 H01J29/64 H01J3/02AB H01J3/02T H01P1/02 H01P1/18 H01P1/18E H01P1/203 H01P1/203C2B H01P1/203C2D H01P1/203D H01P1/209 H01P3/08 H01P3/08B H01P3/08C H01P3/08D H01P5/02 H01P5/08 H01P5/08C H01P5/107 H01P5/12 H01P5/18D H01P5/18D1 H01P5/18D2 H01P5/22 H01P5/22C H01Q1/24D H01Q9/06B H03L7/04

US: 313/45 315/3.5 315/39.3 315/5.35 315/5.46 333/116 333/120 333/204 333/205 333/21R 333/236 333/238 333/246 333/24R 333/33 333/34 333/35 335/210 335/211 343/781R 343/818 343/846 411/24 455/259 455/263 455/281 455/325 455/327 455/328 455/338

PatBase - US2825875_R



Family:

Publication number	Publication date	Application number	Application date
AT328231 B	19760310	AT19730007496	19730829
AT749673 A	19750515	AT19730007496	19730829
AU197361291 A1	19750417	AU19730061291	19731011
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BE532225 A	00000000		00000000
BE533239 A	00000000		00000000
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CH317717 A	19561130		19530506
CH325991 A	19571130		19540325
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DE1005145 B	19570328	DE1954I008941	19540722
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DE1036950 B	19580821	DE1953I007223	19530507
DE1042048 B	19581030	DE1953I007225	19530507
DE2249762 A1	19740418	DE19722249762	19721011
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DE2249762 C3	19800508	DE19722249762	19721011
ES195878 U	19750201	ES19730195878U	19731005
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GB749337 A	19560523	GB19540008111	19540319
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GB761761 A	19561121	GB19530012110	19530501
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GB809482 A	19590225	GB19560014706	19560511
IT999608 A	19760310	IT19730069897	19731004
NL178182 B	19850902	NL19730013759	19731007
NL178182 C	19860203	NL19730013759	19731007
NL7313759 A	19740416	NL19730013759	19731007
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US2825875 A	19580304	US19530369643	19530722
US2833995 A	19580506	US19520286765	19520508
US2851629 A	19580909	US19540407731	19540202
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Priority:

DE1954L019900 19540914	DE19722249762 19721011	DE19752539941 19750909
US19520286761 19520508	GB19530031592 19531113	GB19530008393 19530326
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US19530031592 19531113		

Probable Assignee: INT STANDARD ELECTRIC CORP

Assignee(s): (std): HEINRICH LIEBIG TE PFUNGSTADT BONDSREPUBLIC DUTS ; INT STANDARD ELECTRIC CORP ; ITT ; LIEBIG H ; LIEBIG ; LIEBIG H ; LIEBIG HEINRICH ; STANDARD TELEPHONE AND RADIO SA ; STANDARD TELEPHON AND RADIO AG ; STANDARD TELEPHONES CABLES LTD ; LIEBIG HEINRICH CRUMSTADTER STRASSE 23 PFUNGSTADT

Assignee(s): LIEBIG HEINRICH CRUMSTADTER STRASSE ; LIEBIG HEINRICH CRUMSTADTER STRASSE 23 PFUNGSTADT ALLEMAGNE ; STANDARD TELEPHONE ET RADIO S A ; LIEBIG HEINRICH DT ; LIEBIG HEINRICH 6102 PFUNGSTADT ; STANDARD TELEPHON U RADIO AG ; STANDARD TELEPHONES AND CABLES LTD ; INT TELEPHONE AND TELEGRAPH CORP ; HEINRICH LIEBIG TE PFUNGSTADT BONDSREPUBLIC DUTSLAND ; HEINRICH LIEBIG

Inventor(s): (std): PARZEN PHILIP ; MERKEL ROBERT JOSEPH ; MAURICE ARDITI ; LEWIN LEONARD ; LEVINE DONALD JAY ; KEMP JOHN ; JOHN KEMP ; JACK ELEFANT ; GRIEG DONALD D ; ENGELMANN HERBERT F ; ELEFANT JACK ; DUKES JOHN MARCUS CUTHBERT ; DESCHAMPS GEORGES A ; CUTHBERT DUKES JOHN MARCUS ; CASABONA ANTHONY MICHAEL ; CASABONA ANTHONY M ; ARDITI MAURICE ; WERNER KLEIN ; WALTER FRIZ ; JOHN POHL WALTER ; GERHARD OSSWALD ; CONWAY BURKE PETER FRANCIS ; CECIL ROGERS DOUGLAS ; CECIL EAGLESFIELD CHARLES ; LIEBIG HEINRICH ; HEINRICH LIEBIG ; GEORGES A DESCHAMPS ; DOUGLAS CECIL ROGERS ; CHARLES CECIL EAGLESFIELD ; ANTHONY MICHAEL CASABONA ; KOSTRIZA JOHN A

Inventor(s): A DESCHAMPS GEORGES ; BURKE PETER FRANCIS CONWAY ; FRIZ WALTER ; EAGLESFIELD CHARLES CECIL ; ROGERS DOUGLAS CECIL ; POHL WALTER JOHN ; OSSWALD GERHARD ; KLEIN WERNER ; MICHAEL CASABONA ANTHONY ; LIEBIG HEINRICH 6102 PFUNGSTADT

Title: TRANSMISSION LINE ARC DETECTING AND ELIMINATING SYSTEM WHEREIN THE ENERGY SOURCE IS CONTINUALLY DISABLED AND ENABLED

Abstract: Source: GB1038409A [EN] 1,038,409. Transistor switching circuits; protecting valve circuits. RAYTHEON CO. Jan. 16, 1964 [Feb. 7, 1963], No. 2032/64. Headings H3T and H3W. [Also in Division H2] Arcing in a waveguide 20 is detected by determining the difference between the magnitudes of the micro-wave energy on each side of the arc. In Fig. 1 couplers 21, 29 are connected to the output port 17 of a high power amplifier 16, e.g. a klystron or magnetron, and to the load end of the waveguide 20, the couplers housing microwave detectors, e.g. rectifiers, 25, 30 providing respectively negative and positive output signals. These signals are applied to a resistance network such that when the signals are unbalanced due to an arc, a negative voltage signal is applied to the grid 47 of the first section of a double triode 45 biasing that section towards cut-off. The resulting positive voltage appearing at the junction of resistors 53, 54 turns on a thyatron 71 to produce a positive output signal across a resistor 94. Should, however, the detector 25 fail, a positive voltage signal is applied to the grid 47 causing the first section to conduct more heavily so that the other section of the double triode conducts less, resulting in the turning on of a thyatron 80 to produce the output signal across resistor 94. In either case, the output signal turns on a controlled rectifier 90 to provide a negative pulse to the gate and anode circuits of a controlled rectifier 120. The rectifier 120 is turned off, so that the voltage drop across a resistor 124 disappears and a ferrite switch 14, maintained in the "on" condition by this voltage drop, is placed in the "off" condition to cut-off the supply of energy to the amplifier and waveguide. The rectifier 90 remains turned on for a short period until charged capacitors 108, 110 have discharged. The rectifier 90 then turns off and a transistor 101 becomes conducting to recharge these capacitors. The rectifier 120 then turns on, after a capacitor 115 has discharged, to restore the supply to the amplifier and waveguide. This cycle of operation is repeated should a further arc or arcs occur until the dust, c. causing the arcing is vaporized. Reference is made to a modified arrangement in which the supply of D.C. power to the amplifier 16 is interrupted when arcing occurs. Should the coupler 21 be arranged on the waveguide, then a probe electrode, Fig. 2 (not shown), is arranged between the coupler and the window 18 of the amplifier, the probe being connected to a detection circuit which provides a signal to operate the switch control circuit shown in Fig. 1 when an arc occurs in the waveguide between the coupler 21 and the amplifier window 18.

Classifications:

International (IPC 8-9): G01R29/00 H01P1/30 H02H1/00 H02H7/00

H03F1/54 H05B6/66 (Advanced/Invention);

G01R29/00 H01P1/30 H02H1/00 H02H7/00 H03F1/52

H05B6/66 (Core/Invention)

International (IPC 1-7): H01P1/30 H02H1/00 H02H7/00 H02H7/20

CPC: G01R29/00 H01P1/30 H02H1/0015 H02H7/00 H03F1/54

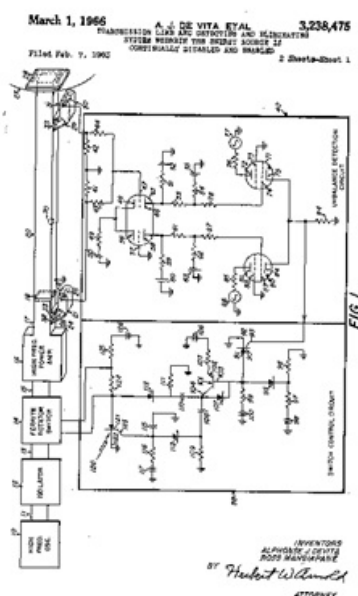
H05B6/666

European: G01R29/00 H01P1/30 H02H1/00C2 H02H7/00 H03F1/54

H05B6/66S H05B9/00B2E

US: 333/17.1 361/1 361/74 455/117 455/129

PatBase - US3238475_H



Family:

Publication number	Publication date	Application number	Application date
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GB1038409 A	19660810	GB19640002032	19640116
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NL302267 A	00000000		00000000
SE307605 B	19690113	SE19640001527	19640207
US3238475 A	19660301	US19630256857	19630207

Priority:

FR19640959265 19640103 US19630256857 19630207

Probable Assignee: RAYTHEON CO

Assignee(s): (std): RAYTHEON CO

Assignee(s): RAYTHEON COMPANY

Inventor(s): (std): DE VITA A ; DE VITA ALPHONSE J ; JOSEPH DEVITA ALPHONSE ; MANGIAPANE R ; MANGIAPANE ROSARIO ; ROSARIO MANGIAPANE

Inventor(s): VITA ALPHONSE J DE

Title: Optimized **guided** wave communication system

Abstract: Source: US4730888A [EN] The present invention relates to an optimized **guided** wave microwave or lightwave communication system or network wherein a plurality of directional couplers (14, 17) (a) are disposed along a bus-like wave guiding means (13, 16), and (b) include separate coupling coefficients which are optimized. More particularly, the present invention relates to a **guided** wave communication system or network including, for example, a head-end unit (15) which is coupled to one end of a bus-like wave guiding means. Separate directional couplers are disposed along the wave guiding means to couple lightwave or microwave signals either (a) into the bus-like wave guiding means (13) from separate transmitters (11), or (b) from a bus-like wave guiding means (16) to separate receivers (12). The directional couplers disposed along a guiding means each include a separate coupling coefficient which is optimized to only couple enough of the lightwave or microwave energy onto or from the associated guiding means so that either (a) the head-end unit receives a minimal signal power level from each transmitter or (b) the receivers receive a minimal signal power level from the head-end unit, respectively, to provide a predetermined bit error rate regardless of their distance from the head-end unit along the associated wave guiding means.

Classifications:

International (IPC 8-9): H04B10/00 H04B10/20 H04B10/213

H04J14/08 (Advanced/Invention);

H04B10/00 H04B10/20 H04B10/213 H04J14/08 (Core/Invention)

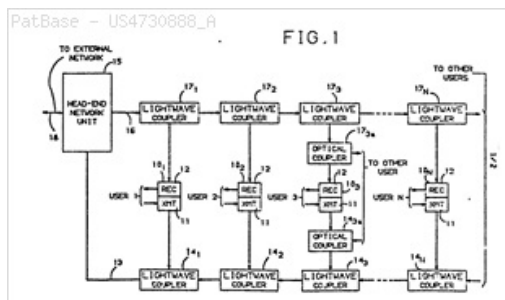
International (IPC 1-7): G02B6/28 H01P3/00 H04B10/00 H04B10/20

H04B9/00 H04J14/00 H04L11/00

CPC: H04J14/08

European: H04J14/08

US: 350/96.16 385/24 398/167.5 455/612



Family:

Publication number	Publication date	Application number	Application date
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DE3789626 D1	19940526	DE19873789626	19870211
DE3789626 T2	19940915	DE19873789626T	19870211
EP0234804 A2	19870902	EP19870301166	19870211
EP0234804 A3	19891004	EP19870301166	19870211
EP0234804 B1	19940420	EP19870301166	19870211
JP2710307 B2	19980210	JP19870035979	19870220
JP62200832 A2	19870904	JP19870035979	19870220
KR19870008400 A	19870926	KR19870001371	19870219
US4730888 A	19880315	US19860831461	19860220

Priority:

CA19870528289 19870127 US19860831461 19860220

Probable Assignee: AMERICAN TELEPHONE AND TELEGRAPH

Assignee(s): (std): AMERICAN TELEPHONE AND TELEGRAPH

Assignee(s): AMERICAN TELEPHONE AND TELEGRAPH CO ; AMERICAN TELEPHONE AND TELEGRAPH CO AT AMP AMP ; AMERICAN TELEPHONE AND TELEGRAPH CO AT AND T ; BELL TELEPHONE LABORATORIES INC ; T BELL LABORATORIES ; AMERICAN TELEPHONE AND TELEGRAPH COMPANY ; BELL TELEPHONE LABORATORIES INC A CORP OF NEW YORK ; AMERICAN TELEPHONE AND TELEGRAPH CO NEW YORK N Y ; AMERICAN TELEPHONE AND TELEGRAPH CO NEW YORK N Y US ; AMERICAN TELEPHONE AND TELEGRAPH COMPANY AT and T BELL LABORATORIES ; WHALEN MATTHEW S ; DARCIE THOMAS E ; AMERICAN TELEPH AND TELEGR CO ; AMERICAN TELEPH AND TELEGR CO ATT

Inventor(s): (std): DARCIE THOMAS EDWARD ; WHALEN MATTHEW STEPHEN ; WHALEN MATTHEW S ; DARCIE THOMAS E ; TOOMASU EDOWAADO DAASHII ; MASHIYUU SUTEFUEN HOAAREN

Inventor(s): DARCIE THOMAS EDWARD HAZLET NEW JERSEY 07730 US ; DARCIE THOMAS EDWARD HAZLET NEW JERSEY 07730 ; WHALEN MATTHEW STEPHEN RUMSON NEW JERSEY 07760 US ; WHALEN MATTHEW STEPHEN RUMSON NEW JERSEY 07760

Agent(s): KIRBY EADES GALE BAKER

Designated states: DE GB NL

Title: MICROSTRIP LINE AND MICROWAVE DEVICE USING THE SAME

Abstract: Source: US6445345B [EN] The present invention provides a low cost microstrip line with low loss and a microwave device using the microstrip line. The microstrip line comprises (a) a dielectric substrate for general purpose use with relatively high loss in a microwave frequency, (b) a strip conductor foil disposed on the front surface of the substrate, (c) a metal plate for grounding disposed in contact with the back of the dielectric substrate, and (d) an air layer formed on a portion of the metal plate for grounding, the portion facing to the strip conductor foil.

Classifications:

International (IPC 8-9): H01P3/08 H01P5/107

H05K1/02 (Advanced/Invention);

H01P3/08 H01P5/10 H05K1/02 (Core/Invention)

International (IPC 1-7): H01P3/08 H01P5/107 H01Q1/36 H05K1/02 H05K1/18

CPC: H01P3/081 H01P3/084 H01P5/107 H05K1/024 H05K3/0061 H05K2201/09745 H05K2201/10166

European: H01P3/08B H01P3/08B2 H01P5/107 H05K1/02C4B T05K1/02F T05K201/09C5J T05K201/10A21 T05K3/00L1

US: 333/26 343/700.0MS 343/700MS 343/772 343/878

PatBase - US6445345_BA

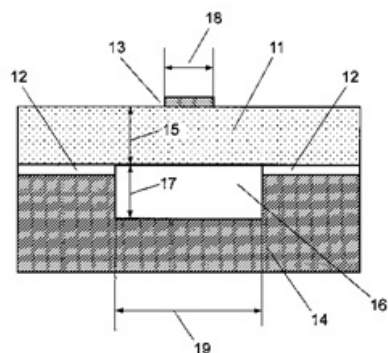
U.S. Patent

Sep. 3, 2002

Sheet 1 of 8

US 6,445,345 B1

FIG. 1



Family:

Publication number	Publication date	Application number	Application date
CN1205693 C	20050608	CN20001037765	20001229
CN1309439 A	20010822	CN20001037765	20001229
DE60128843 D1	20070726	DE20016028843	20010212
DE60128843 T2	20080228	DE20016028843T	20010212
EP1126542 A1	20010822	EP20010301213	20010212
EP1126542 B1	20070613	EP20010301213	20010212
JP2001230606 A2	20010824	JP20000036134	20000215
US6445345 BA	20020903	US20000666200	20000921

Priority:

JP20000036134 20000215

Probable Assignee: MATSUSHTIA ELECTRIC INDUSTRIAL CO LTD

Assignee(s): (std): MATSUSHITA ELECTRIC IND CO LTD

Assignee(s): MATSUSHITA ELECTRIC INDUSTRIAL CO ; MATSUSHITA ELECTRIC INDUSTRIAL CO LTD ; MATSUSHTIA ELECTRIC INDUSTRIAL CO LTD ; PANASONIC CORP

Inventor(s): (std): HIBINO YASUHIRO ; KAMIMOTO RYUICHI ; KIRIMURA KAZUYUKI ; KITAMURA HIROKAZU ; RYUICHI KAMIMOTO ; KOICHI KITAMURA ; KAZUYUKI KIRIMURA ; KITAMURA KOICHI ; KAMIMOTO RIYUUICHI

Designated states: DE FR GB

Title: ELECTRON GUN FOR ELECTRON DISCHARGE TUBE

Abstract: Source: GB674758A [EN] 21015/49. Class 39 (i). An arrangement for focusing a space charge limited electron beam 17 in a tunnel 9 in which the divergence of the beam is counteracted by an axial magnetic field, has electrostatic focusing of the beam so that it converges from the cathode 15 and is substantially parallel to the axis of the tunnel at the entrance 12 thereof and is substantially free from magnetic influence up to that point. The tunnel 9 is positioned between two pole-pieces 10, 11, the former being hollow and containing the cathode 15 and a focusing electrode 16, its inner surface acting as anode and forming an entrance tunnel of diameter d^1 and throat diameter d . Design of the electron gun gives the appropriate shape of beam, which is also obtainable by special guns having shaded pole-pieces. The diameter of tunnel 9 is larger than the entrance aperture d . The gun is shown applied to a two resonator klystron with drift tube 19 and resonant cavities 20, 21 each comprising a pair of discs, one 22 of nickel iron with a coefficient of expansion the same as glass and the other 23 of copper, the discs being clumped together by annular collars 24, 25. Tuning is by adjustable screws 26. Tubular extensions 30, 31 are aligned with drift tube 19 to give interaction gaps 32, 33. Hollow pole-pieces 34, 35 house the electron gun and collector electrode respectively and are joined as a magnetic circuit by a permanent magnet 43 and yoke arms 44. The pole 34 is thick enough to screen the gun from the magnetic field. The focusing arrangement is similarly applied to a travelling wave tube, Fig. 4 (not shown), the helix being supported on quartz rods and fitted with probes and enclosed at each end by wave-guides. The magnetic circuit is completed as in Fig. 3. Beams of non-circular cross-section, e.g. rectangular, may be employed.

Classifications:

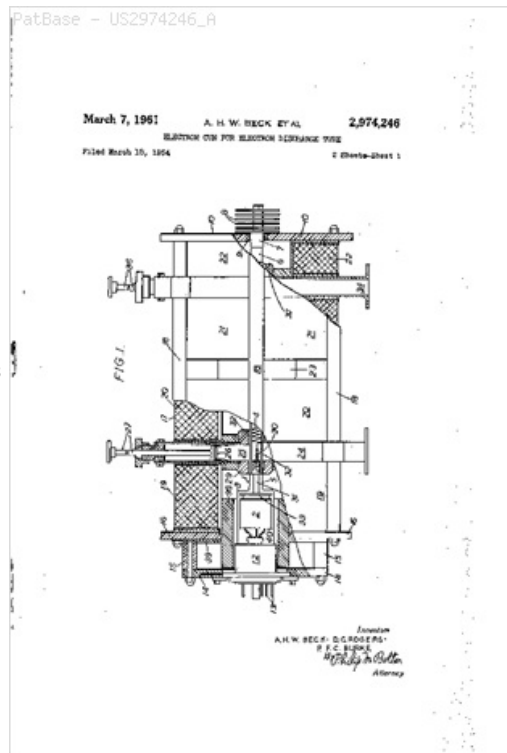
International (IPC 8-9): C07D261/18 C07D317/66 G05D16/06 G05D23/12 G09F7/00 H01F7/02 H01J23/00 H01J23/065 H01J23/08 H01J23/087 H01J23/36 H01J23/42 H01J25/12 H01J25/38 H01J29/38 H01J29/58 H01J3/02 H03H2/00 (Advanced/Invention); C07D261/00 C07D317/00 G05D16/04 G05D23/01 G09F7/00 H01F7/02 H01J23/00 H01J23/02 H01J25/00 H01J29/10 H01J29/58 H01J3/00 H03H2/00 (Core/Invention)

International (IPC 1-7): H01J23/32 H01J25/50 H04J3/16 H04J3/18 H04M15/04 H04M3/42 H04Q11/04

CPC: H01J23/36 H03H2/006 H01J23/065 H01F7/02 H01J3/027 H01J23/00 H01J23/087 H01J23/0873 H01J25/38 H01J3/029 H01J23/08 H01J25/12 H01J29/58 G09F7/00 H01J23/42 H01J29/38 C07D261/18 C07D317/66 H01F7/0278 G05D16/0605 G05D23/125

European: 124BG12B3G4D4B4/G2C 124BG5G2C1 C07D261/18 C07D317/66 G05D16/06C G05D23/12D G09F7/00 H01F7/02 H01F7/02C1 H01J23/00 H01J23/065 H01J23/08 H01J23/087 H01J23/087B H01J23/36 H01J23/42 H01J25/12 H01J25/38 H01J29/38 H01J29/58 H01J3/02AB H01J3/02G H01J3/02T H03H2/00T1

US: 313/148 313/443 315/3.5 315/39 315/39.3 315/5.46 333/34

**Family:**

Publication number	Publication date	Application number	Application date
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FR66255 E	19560628		00000000
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FR73056 E	19600922	FR19580755344	19580107
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FR993374 A	19511030		19490817
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GB687573 A	19530218	GB19490021013	19490812
GB748945 A	19560516	GB19530008392	19530326
GB748946 A	19560516	GB19530008393	19530326
GB762107 A	19561121	GB19530028269	19531014
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GB787181 A	19571204	GB19540018181	19540621
NL147915 B	00000000		00000000
NL69550 C	00000000		00000000
US2555349 A	19510605	US19480044869	19480818
US2829299 A	19580401	US19500176925	19500801
US2974246 A	19610307	US19540417116	19540318

Priority:

19490812	DE1954L019900	19540914	GB19530008393	19530326
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Probable Assignee: INT STANDARD ELECTRIC CORP

Assignee(s): (std): INT STANDARD ELECTRIC CORP ; LITTON CHARLES V ; SIEMENS AG ; SIEMENS BERLIJN EN MUENCHEN BON AG ; STANDARD TELEPHONES CABLES LTD

Assignee(s): SIEMENS BERLIJN EN MUENCHEN BONDSREPUBLIC DUITSLAND AG ; STANDARD TELEPHONES AND

CABLES LTD

Inventor(s): (std): LITTON CHARLES V ; WILMARTH ROBERT WILLIAM ; ROGERS DOUGLAS CECIL ; BURKE PETER
FRANCIS CONWAY ; WILLIAM BECK ARNOLD HUGH ; POHL WALTER JOHN ; CONWAY BURKE PETER
FRANCIS ; CECIL ROGERS DOUGLAS ; BECK ARNOLD HUGH WILLIAM

Title: Single toroid hybrid mode RF phase shifter

Abstract: Source: US5170138A [EN] A miniaturized waveguide mode ferrite RF phase shifter is efficiently transitioned to a matched impedance microstrip transmission line mode at either end to result in an ultra small, efficient and lightweight essentially "planar" phase shifter device having a single ferrimagnetic toroid.

Classifications:

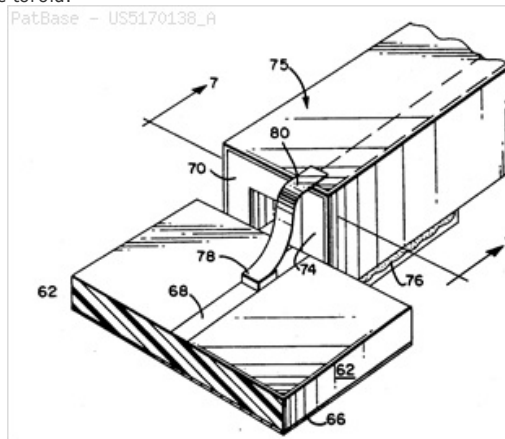
International (ipc 8-9): H01P1/165 H01P1/18 H01P1/195 H01P5/04 H01P5/10 H01P5/107 (Advanced/Invention); H01P1/165 H01P1/18 H01P5/04 H01P5/10 (Core/Invention)

International (ipc 1-7): H01P1/165 H01P1/18 H01P1/195 H01P5/04 H01P5/107 H01P5/12 H01Q3/36 H03H1/00

CPC: H01P1/195 H01P5/04

European: H01P1/195 H01P5/04

US: 333/128 333/24.1 333/26 333/33



Family:

Publication number	Publication date	Application number	Application date
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AU633019 B2	19930121	AU19890043654	19891023
BRPI8906028 A	19901002	BR1989PI06028	19891117
CA1322232 A1	19930914	CA19890609953	19890831
DE68927515 D1	19970116	DE19896027515	19890914
DE68927515 T2	19970605	DE19896027515T	19890914
DE69227628 D1	19981224	DE19926027628	19920911
DE69227628 T2	19990722	DE19926027628T	19920911
EP0389672 A2	19901003	EP19890117046	19890914
EP0389672 A3	19920108	EP19890117046	19890914
EP0389672 B1	19961204	EP19890117046	19890914
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EP0586760 B1	19981118	EP19920308268	19920911
IL92073 A1	19940412	IL19890092073	19891022
JP2288401 A2	19901128	JP19900049147	19900228
JP3122110 B2	20010109	JP19900049147	19900228
KR19900015443 A	19901027	KR19890014151	19890930
KR970008293 B1	19970522	KR19890014151	19890930
US5075648 A	19911224	US19890330617	19890330
US5170138 A	19921208	US19910669959	19910315

Priority:

CA19890609953 19890831 EP19920308268 19920911 US19910669959 19910315
US19890330617 19890330

Probable Assignee: EMS TECHNOLOGIES INC

Assignee(s): (std): ELECTROMAGNETIC SCIENCES INC ; EMS TECHNOLOGIES INC ; ELECTROMAGNETIC SCIENCES INC A

Assignee(s): ELECTROMAGNETIC SCIENCES INC A GEORGIA CORPORATIO ; EMS TECHNOLOGIES INC NORCROSS GA US ; ELECTROMAGNETIC SCIENCES INC A CORP OF NEVADA ; ELECTROMAGNETIC SCIENCES INC A CORP OF GA ; ELECTROMAGNETIC SCIENCES INC A GEORGIA CORP ; SUNTRUST BANK ; EREKUTOROMAGUNETEITSUKU SAIENSUIZU INC ; ROBERTS ROGER G ; MONTGOMERY JAMES P ; ALEXANDER JEFF M ; BANK OF AMERICA NATIONAL ASSOCIATION DOMESTIC A AS ; BANK OF AMERICA NATIONAL ASSOCIATION DOMESTIC ADMI

Inventor(s): (std): JIEEMUSU PII MONTGOMERII ; JIEFU EMU AREKISANDAA ; ROJIYAA JII ROBAATSU ; ROBERTS ROGER G ; MONTGOMERY JAMES P ; ALEXANDER JEFF M ; SHARON THOMAS E ; ROBERTS ROGER C

Inventor(s): ROBERTS ROGER G AUBURN GEORGIA 30203 US ; MONTGOMERY JAMES P ROSWELL GEORGIA 30075 US ; ALEXANDER JEFF M CLARKSTON GEORGIA 30021 US ; ROBERTS ROGER C AUBURN GEORGIA 30203 US ; SHARON THOMAS E ALPHARETTA GEORGIA 30201 US ; ROGER G ROBERTS ; JAMES P MONTGOMERY ; JEFF M ALEXANDER

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; FINLAYSON AND SINGLEHURST; REINHOLD COHN AND PARTNERS

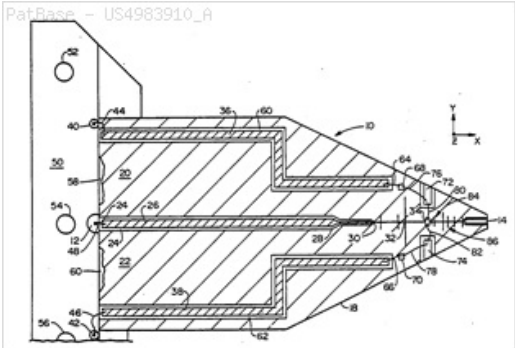
Designated states: AT BE CH DE DK ES FR GB GR IT LI LU MC NL PT SE

Title: Millimeter-wave active probe

Abstract: Source: US4983910A [EN] A millimeter-wave active probe for use in injecting signals with frequencies above 50GHz to millimeter-wave and ultrafast devices and integrated circuits including a substrate upon which a frequency multiplier consisting of filter sections and impedance matching sections are fabricated in uniplanar transmission line format. A coaxial input and uniplanar 50 ohm transmission line couple an approximately 20 GHz input signal to a low pass filter which rolls off at approximately 25 GHz. An input impedance matching section couples the energy from the low pass filter to a pair of matched, antiparallel beam lead diodes. These diodes generate odd-numberd harmonics which are coupled out of the diodes by an output impedance matching network and bandpass filter which suppresses the fundamental and third harmonics and selects the fifth harmonic for presentation at an output.

Classifications:

International (IPC 8-9): G01R1/067 G01R1/24 G01R31/26
H01L21/66 (Advanced/Invention);
G01R1/00 G01R1/067 G01R31/26 H01L21/66 (Core/Invention)
International (IPC 1-7): G01R1/00 G01R1/04 G01R1/06 G01R1/067
G01R1/24 G01R31/26 H01L21/66
CPC: G01R1/06772
European: G01R1/067H
US: 324/158F 324/158P 324/72.5 324/754 324/754.06 324/754.07
324/762.01 324/762.03 333/32 333/33



Family:

Publication number	Publication date	Application number	Application date
JP2064467 A2	19900305	JP19890127739	19890519
US4983910 A	19910108	US19880196998	19880520
US5003253 A	19910326	US19890318744	19890303
US5231349 A	19930727	US19900585425	19901224

Priority:

US19880196998 19880520 US19890318744 19890303 US19900585425 19901224

Probable Assignee: UNIV LELAND STANFORD JUNIOR

Assignee(s): (std): UNIV LELAND STANFORD JUNIOR ; UNIV STANFORD

Assignee(s): BOARD OF TRUSTEES OF LELAND STANFORD JUNIOR UNIV ; STANFORD UNIV ; STANFORD UNIVERSITY ; THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY ; UNIV LELAND STANFORD JR

Inventor(s): (std): BLOOM DAVID M ; DEBITSUDO EMU BURUUMU ; GORAMUREZA MAJIDEII AFUYA ; MAJIDI AHY GHOLAMREZA

Title: ELECTRON DISCHARGE DEVICE WITH HELIX-TO-WAVEGUIDE COUPLING MEANS

Abstract: Source: GB1054560A [EN] 1,054,560. Travelling wave tubes. VARIAN ASSOCIATES. Dec. 18, 1963, No. 50068/63. Heading H1D. A high frequency electron discharge device comprises a slow wave structure in the form of a multifilar helix and a rectangular waveguide coupled to the slow wave structure through a transitional coupling structure consisting of a pair of coupling sections coupled to the helices of the multifilar helix at one end thereof and coupled by means of oppositely directed antenna probes to the waveguide at the other end thereof, the probes lying in a common transverse plane of the waveguide. The slow wave structure is a bifilar helix and the coupling sections consist of coaxial lines. The position of the antenna probes with the waveguide and the provision of a reactive iris ensures that the helix and the waveguide are coupled over a wide frequency range. The bifilar helix is supported by four 90-degree spaced orientated dielectric rods, the rods being notched so that opposite pairs of rods support one helix but do not contact the other helix. A D.C. voltage is applied between the helices so as to focus the beam.

Classifications:

International (IPC 8-9): H01J23/083 H01J23/26 H01J23/50 H01J25/40 (Advanced/Invention);

H01J23/00 H01J23/02 H01J23/16 H01J25/00 (Core/Invention)

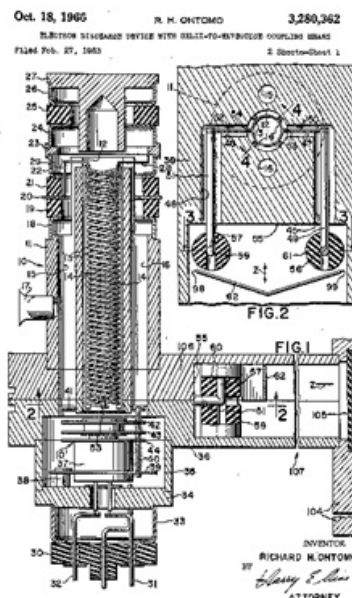
International (IPC 1-7): H01J23/32 H01J25/34

CPC: H01J23/083 H01J23/26 H01J23/50 H01J25/40

European: H01J23/083 H01J23/26 H01J23/50 H01J25/40

US: 315/3.6 333/27 333/33

PatBase - US3280362_R



Family:

Publication number	Publication date	Application number	Application date
DE1491507 A1	19690213	DE19631491507	19631212
FR1384990 A	19650108	FR19640960528	19640116
GB1054560 A	00000000		00000000
US3280362 A	19661018	US19630261362	19630227

Priority:

FR19640960528 19640116 US19630261362 19630227

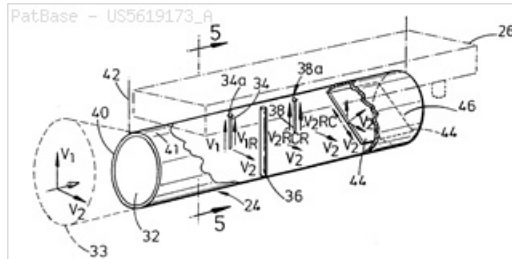
Probable Assignee: VARIAN ASSOCIATES

Assignee(s): (std): VARIAN ASSOCIATES

Inventor(s): (std): H OHTOMO RICHARD ; OHTOMO RICHARD H

Abstract: Source: US5619173A [EN] PCT No. PCT/GB92/01065 Sec. 371 Date May 2, 1994 Sec. 102(e) Date May 2, 1994 PCT Filed Jun. 15, 1992 PCT Pub. No. WO/92/22938 PCT Pub. Date Dec. 23, 1992A dual polarisation **waveguide probe** system for use with a satellite dish (10) for receiving satellite signals orthogonally polarised in the same frequency band and for providing improved isolation between these polarised satellite signals is disclosed. The probe system has a waveguide (28) incorporated in a low-noise block receiver (12) into which two probes (34, 38) are located for receiving linearly polarised energy of both orthogonal senses. The probes (34, 38) are located in the same longitudinal plane on opposite sides of a single cylindrical bar reflector (36) which reflects one sense of polarisation and passes the orthogonal signal with minimal insertion loss, and then reflects the rotated orthogonal signal. The probes (34, 38) are spaced $\lambda/4$ from the reflector (36). A reflection rotator (44) is also formed using a thin plate which is orientated at 45 DEG to the incident linear polarisation with a short circuit (46) spaced approximately a quarter wavelength ($\lambda/4$) behind the leading edge of the plate (43). This structure splits the incident energy into two equal components in orthogonal planes, one component being reflected by the leading edge (43) and the other component being reflected by the waveguide short circuit (46). The resultant 180 DEG phase shift between the reflected components causes a 90 DEG rotation in the plane of linear polarisation upon re-combination so that the waveguide outputs (34a, 38a) are located in the same longitudinal plane. Various embodiments and advantages of the invention are described.

US: 333/125 333/137 333/21A 343/756



Publication number	Publication date	Application number	Application date
AT175815 E	19990115	AT19920913228T	19920615
AU199220195 A1	19930112	AU19920020195	19920615
DE69228193 D1	19990225	DE19926028193	19920615
DE69228193 T2	19990909	DE19926028193T	19920615
EP0611488 A1	19940824	EP19920913228	19920615
EP0611488 B1	19990113	EP19920913228	19920615
ES2128352 T3	19990516	ES19920913228T	19920615
GB9113090 A0	19910807	GB19910013090	19910618
RU2107361 C1	19980320	RU19930058597	19931214
RU93058597 A	19971110	RU19930058597	19931214
US5619173 A	19970408	US19940167893	19940502
WO9222938 A1	19921223	WO1992GB01065	19920615

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CS DE DK ES FI FR GA GB GN GR HU IT JP KP KR LI LK
LU MC MG ML MN MR MW NL NO PL RO RU SD SE SN TD TG US

Title: SIGNAL TRANSMISSION APPARATUS, ELECTRONIC INSTRUMENT AND SIGNAL TRANSMISSION METHOD

Abstract: Source: US2012093041A [EN] A signal transmission apparatus includes: a transmission section adapted to transmit a transmission object signal as a radio wave; a reception section adapted to receive the radio wave transmitted from the transmission section and output an electric signal corresponding to the received radio wave; and a connection section adapted to connect a first housing and a second housing of an electronic instrument pivotably around a center axis; the connection section having a radio signal transmission line formed therein by which wireless transmission can be carried out between the transmission section and the reception section.

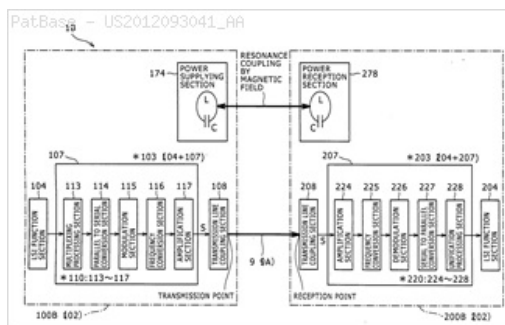
Classifications:

International (IPC 8-9): H01P1/06 H04B1/034 H04B7/00 H04L5/14 H04W88/02 (Advanced/Invention)

CPC: H04B1/034 H01P1/06

European: H04B1/034

US: 1/1 370/280 370/280P 455/90.3 455/90.300S



Family:

Publication number	Publication date	Application number	Application date
CN102457309 A	20120516	CN201110305778	20111011
CN102457309 B	20161214	CN201110305778	20111011
JP2012089998 A2	20120510	JP20100233696	20101018
JP5671933 B2	20150218	JP20100233696	20101018
US2012093041 AA	20120419	US20110200919	20111005
US9287903 BB	20160315	US20110200919	20111005

Priority:

JP20100233696 20101018

Probable Assignee: SONY SEMICONDUCTOR SOLUTIONS CORP

Assignee(s): (std): KAWASAKI KENICHI ; SONY CORP ; TAKEDA TAKAHIRO

Assignee(s): SONY SEMICONDUCTOR SOLUTIONS CORP

Inventor(s): (std): KAWASAKI KENICHI ; KENICHI KAWASAKI ; TAKAHIRO TAKEDA ; TAKEDA TAKAHIRO

Agent(s): HAZUKI INT LLC

Title: Toroidal antenna

Abstract: Source: US4622558A [EN] 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:

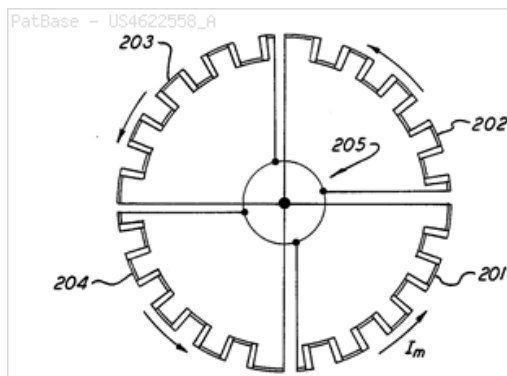
International (IPC 8-9): H01Q1/36 H01Q11/08 H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 H01Q7/00 H01Q9/04 H01Q9/26 (Advanced/Invention); H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 (Advanced/Non-invention); H01Q1/36 H01Q19/00 H01Q21/00 H01Q21/06 H01Q21/20 H01Q7/00 H01Q9/04 (Core/Invention)

International (IPC 1-7): H01Q11/08 H01Q11/12 H01Q11/14 H01Q21/00 H01Q21/26 H01Q7/00

CPC: H01Q1/36 H01Q7/00 H01Q9/04 H01Q9/26B

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:

CA19810381325 19810708 US19800167329 19800709 US19850795721 19851107
US19830514176 19830715 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

Title: Delivery arrangement for a laser medical system

Abstract: Source: US4917083A [EN] A delivery arrangement for CO₂ (carbon dioxide) laser radiation is described which is particularly designed for laser medical systems. The delivery arrangement has three components--an articulated arm connectable to a CO₂ laser head, a **waveguide probe** for directing CO₂ laser radiation to an operating site, and a coupler for conditioning CO₂ laser radiation emanating from the arm for coupling into the **waveguide probe**.

Classifications:

International (IPC 8-9): A61B18/20 G02B6/42 (Advanced/Invention); A61B18/00 (Advanced/Non-invention)

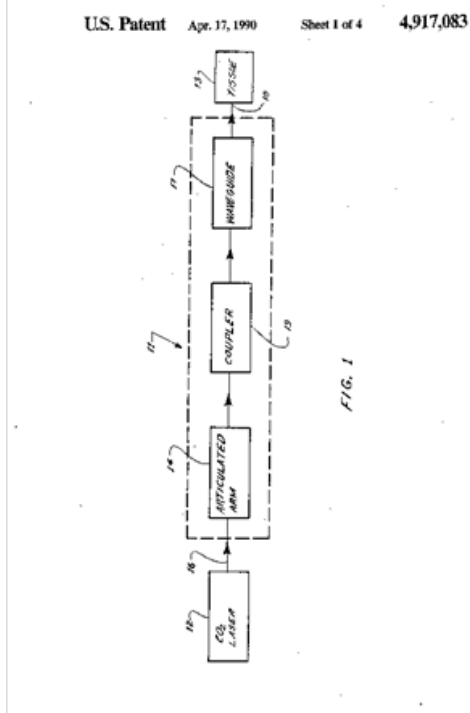
International (IPC 1-7): A61B17/36 G02B6/36 G02B7/26

CPC: A61B18/201 A61B2018/2025 A61B2218/005 G02B6/4296

European: A61B18/20B G02B6/42H K61B18/20F4 K61B218/00D2C

US: 385/75 606/15 606/16 606/19

PatBase - US4917083_A



Family:

Publication number	Publication date	Application number	Application date
EP0336045 A1	19891011	EP19880312274	19881223
IL88747 A0	19890731	IL19880088747	19881220
JP1227750 A2	19890911	JP19890011802	19890120
US4917083 A	19900417	US19880164236	19880304
US5097525 A	19920317	US19900501651	19900329

Priority:

US19880164236 19880304 US19900501651 19900329

Probable Assignee: LASERSCOPE

Assignee(s): (std): HERAEUS LASER SONITSUKUSU INC ; HERAEUS LASERSONICS INC ; HERAEUS SURGICAL INC

Assignee(s): LASERSCOPE ; SILICON VALLEY BANK ; HERAEUS LASERSONICS INC 3420 CENTRAL EXPRESSWAY SA ; HERAEUS SURGICAL INC WAS KNOWN AS HERAEUS MEDICAL ; CIT HEALTHCARE LLC ; COOPER LASERSONICS INC ; COOPER LASERSONICS INC A CORP OF DE

Inventor(s): (std): CLANCY MICHAEL G ; DEKA BIMAL K ; GARCIA GERALD W ; HARMAN STUART ; HARRINGTON JAMES A ; JIEEMUSU EE HARINGUTON ; MAIKERU JII KURANSHII

Designated states: DE FR GB

Title: APPARATUS AND METHODS FOR SOLAR ENERGY CONVERSION USING NANOCOAX STRUCTURES

Abstract: Source: US2007047056A [EN] An apparatus and method for solar conversion using nanocoax structures are disclosed herein. A nano-optics apparatus for use as a solar cell comprising a plurality of nano-coaxial structures comprising an internal conductor surrounded by a semiconducting material coated with an outer conductor; a film having the plurality of nano-coaxial structures; and a protruding portion of the an internal conductor extending beyond a surface of the film. A method of fabricating a solar cell comprising: coating a substrate with a catalytic material; growing a plurality of carbon nanotubes as internal cores of nanocoax units on the substrate; oxidizing the substrate; coating with a semiconducting film; and filling with a metallic medium that wets the semiconducting film of the nanocoax units.

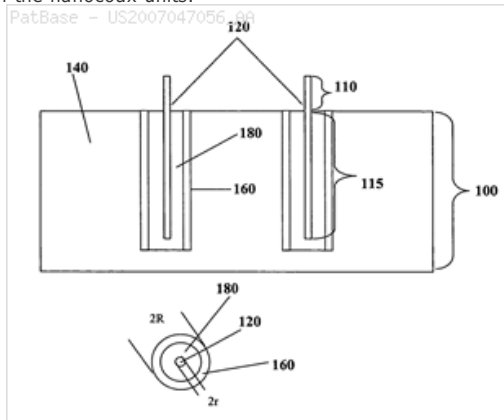
Classifications:

International (IPC 8-9): B32B15/00 B82B1/00 B82B3/00 G01B5/28 G01C3/12 G02B27/28 G02B27/40 G02B5/30 G02B6/00 G02B6/06 G02B6/32 G02B7/04 G02F1/01 G02F1/015 G02F1/03 G02F1/07 G02F1/29 G03F7/00 H01J3/14 H01L21/00 H01L21/4763 H01L21/82 H01L25/00 H01L27/00 H01L29/00 H01L29/76 H01L29/82 H01L31/00 H01L31/0352 H01L31/04 H01L31/042 H01L31/075 H01L31/18 H02N6/00 (Advanced/Invention); G02F1/03 H01L21/00 H01L25/00 H01L29/00 H01L29/76 H01L31/04 (Advanced/Non-invention); B32B15/00 B82B1/00 B82B3/00 G01B5/28 G01C3/00 G02B27/28 G02B27/40 G02B5/30 G02B6/00 G02B6/06 G02B6/32 G02B7/04 G02F1/01 G02F1/29 G03F7/00 H01J3/00 H01L21/00 H01L21/02 H01L21/70 H01L25/00 H01L27/00 H01L29/00 H01L29/66 H01L31/00 H01L31/04 H01L31/042 H02N6/00 (Core/Invention)

CPC: G02F1/292 G02F1/293 G02F1/3501 G02F1/3515 G02F2001/3507 Y10S385/902 Y10S977/834 G01Q60/22 B01J23/755 B01J37/348 G03F7/70325 G02B2207/101 G03F7/70275 G03F7/70308 H01L31/07 G02F1/3534 G02B1/007 G02B6/107 G02F1/015 G02F1/0338 G02F2202/36 B82Y30/00 Y02E10/50 H01L51/0048 H01L51/4213 H01L31/1804 H01L31/035227 Y02P70/521 Y02E10/547

European: B82Y10/00 B82Y15/00 B82Y20/00 B82Y30/00 B82Y35/00 G01Q60/22 G02B1/00M3 G02B6/10S G02F1/015 G02F1/29D G02F1/29L G02F1/35A G02F1/35C G02F1/35W3 G03F7/20T16 G03F7/70F12 G03F7/70F18 G03F7/70F22 H01L31/0224B2 H01L31/0248 H01L31/0352 H01L31/0352C2 H01L31/0352C3 H01L31/18 L01J23/755 L01J37/34C S02B207/101 S02F1/03G S02F1/35A6 S02F1/35C S02F202/36 Y02E10/50

US: 136/243 136/244 136/246 136/252 136/255 136/256 136/259 250/214.1 250/216 250/216P 250/234 252/501.1 257/621 257/E31.032 257/E31.032S 355/67 355/67S 355/77 355/77S 359/245 359/245P 359/248 359/279 359/315 359/320 359/484.06 359/484.060S 359/485.05 359/485.050P 359/486 359/486P 385/116 385/120 385/123 385/15 385/33 385/902 438/3 438/3P 438/73 438/73S 977/834 977/834S

**Family:**

Publication number	Publication date	Application number	Application date
CN101313404 A	20081126	CN200680030910	20060824
CN101313404 B	20100519	CN200680030910	20060824
EP1917556 A2	20080507	EP20060802264	20060824
EP1917556 A4	20110330	EP20060802264	20060824
EP1917556 B1	20160810	EP20060802264	20060824
EP1917557 A2	20080507	EP200608050509	20060824
EP1917557 A4	20150722	EP200608050509	20060824
JP2009506546 T2	20090212	JP20080528023T	20060824
JP2009508694 T2	20090305	JP20080528156T	20060824
JP2015062241 A2	20150402	JP20140225300	20141105
JP5925861 B2	20160525	JP20140225300	20141105
KR20080037683 A	20080430	KR20087004348	20060824
KR20080069958 A	20080729	KR20087004314	20060824
US2007047056 AA	20070301	US20060401606	20060410
US2007081242 AA	20070412	US20060509398	20060824
US2007105240 AA	20070510	US20060509271	20060824
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US2011308564 AA	20111222	US20110092512	20110422
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US7634162 BB	20091215	US20060509271	20060824
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US7943847 BB	20110517	US20060509269	20060824
US8431816 BB	20130430	US20110092512	20110422
WO07025004 A2	20070301	WO2006US33010	20060824
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WO07025013 A2	20070301	WO2006US33023	20060824
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WO07025023 A3	20090423	WO2006US33047	20060824
WO07025066 A2	20070301	WO2006US33119	20060824
WO07025066 A3	20071115	WO2006US33119	20060824
WO07086903 A2	20070802	WO2006US13331	20060410
WO07086903 A3	20090409	WO2006US13331	20060410
WO07120175 A2	20071025	WO2006US32452	20060824
WO07120175 A3	20080807	WO2006US32452	20060824
WO07120175 A9	20081231	WO2006US32452	20060824

Priority:

JP20080528156 20060824 JP20080528156T 20060824 US20050710948P 20050824

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US20060509398 20060824	US20060509271 20060824	US20060509209 20060824
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US20060799293P 20060509	US20110092512 20110422	WO2006US33119 20060824

Probable Assignee: TRUSTEES OF BOSTON COLLEGE

Assignee(s): (std): KEMPA KRZYSZTOF ; KEMPA KRZYSZTOF J ; NAUGHTON MICHAEL ; NAUGHTON MICHAEL J ; REN ZHIFENG ; RYBCZYNSKI JAKUB A ; WANG YANG ; TRUSTEES BOSTON COLLEGE

Assignee(s): TRUSTEES OF BOSTON COLLEGE ; THE TRUSTEES OF BOSTON COLLEGE

Inventor(s): (std): KEMPA KRZYSZTOF J ; KEMPA KRZYSZTOF ; KEMPA KRZYSZTOF J ; NAUGHTON MICHAEL ; NAUGHTON MICHAEL J ; REN ZHIFENG ; RYBCZYNSKI JAKUB A ; WANG YANG ; ZHIFENG REN ; MICHAEL J NAUGHTON ; KRZYSZTOF J KEMPA ; JAKUB A RYBCZYNSKI

Inventor(s): RYBCZYNSKI JAKUB

Agent(s): WALLIS HELEN FRANCES MARY ET AL; WALLIS HELEN FRANCES MARY; OKABE HIROSHI; YAMADA TAKUJI; TANAKA MITSUO; INABA KAZUHISA; GREENBERG TRAUIG LLP; DAVID J; DANIELLE T; JOANNA T; ROMAN; DYKEMAN DAVID J

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN 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 MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: AN IMMUNOASSAY APPARATUS HAVING AT LEAST TWO WAVEGUIDES AND METHOD FOR ITS USE

Abstract: Source: US4775637A [EN] The unit consists of a cuvette and light guiding means comporting more than one waveguide element in contact with the solution to be analyzed. During operation, signals issuing from said waveguide elements provide data on two or more parameters in the solution substantially simultaneously.

Classifications:

International (IPC 8-9): G01N21/03 G01N21/27 G01N21/59

G01N21/77 G01N33/543 G01N33/72 (Advanced/Invention);

G01N21/55 G01N30/74 (Advanced/Non-invention);

G01N21/03 G01N21/25 G01N21/59 G01N21/77 G01N33/543

G01N33/72 (Core/Invention);

G01N21/55 G01N30/00 (Core/Non-invention)

International (IPC 1-7): G01N21/00 G01N21/03 G01N21/27

G01N21/59 G01N21/75 G01N33/543 G01N33/552 G01N33/72

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G01N21/03 G01N21/6428 G01N21/7703

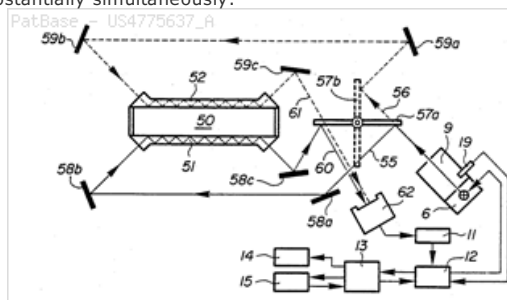
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S01N21/64H

US: 250/227 250/227.21 250/227.32 250/302 250/365 356/246

356/445 422/401 422/57 422/68 422/82.11 436/165 436/172

436/527 436/67 436/805



Family:

Publication number	Publication date	Application number	Application date
CA1272618 A1	19900814	CA19850497200	19851209
DE3480490 D1	19891221	DE19843480490	19841210
EP0185126 A1	19860625	EP19840810601	19841210
EP0185126 B1	19891115	EP19840810601	19841210
ES549766 A0	19890316	ES19850549766	19851210
ES8900201 A1	19890316	ES19850549766	19851210
JP1917979 C3	19950407	JP19850276145	19851210
JP6041912 B4	19940601	JP19850276145	19851210
JP61184442 A2	19860818	JP19850276145	19851210
US4775637 A	19881004	US19850804845	19851205

Priority:

EP19840801601 19841210 EP19840810601 19841210

Probable Assignee: PRUTEC LTD

Assignee(s): (std): BATTELLE MEMORIAL INST ; BATTELLE MEMORIAL INSTITUTE ; PRUTEC LTD

Assignee(s): PRUTEC LIMITED ; BATTELLE MEMORIAL INST 7 ROUTE DE DRIZE 1227 CAROU ; BATTELLE MEMORIAL INST 7 ROUTE DE DRIZE 1227 CAROUGE GENEVA SWITZERLAND

Inventor(s): (std): KUROOSU DANE ; RANARUDO EMU SUTERURANDO ; REVILLET GEORGES ; SUTHERLAND RANALD ; SUTHERLAND RANALD M ; DAHNE CLAUD ; DAHNE CLAUD ; JIYORUJIE RUBIRE

Inventor(s): JORUJE RUBIRE

Designated states: AT BE CH DE FR GB IT LI LU NL SE

Title: Filling level measuring device

Abstract: Source: US2002026828A [EN] A filling level measuring device with a transmitting and receiving device (1) and a waveguide (6, 7), one end of which (6a, 7a) is coupled to the transmitting and receiving device (1) and the other end of which (6b, 7b) is immersed in a filling material (11), to which waveguide (6, 7) electromagnetic waves from the transmitting and receiving device (1) can be conducted, while electromagnetic waves reflected in the waveguide (6, 7) can be used in the transmitting and receiving device (1) for measuring the filling level, and the other end (6b, 7b, 28b) exhibits a wave absorption device (26, 27, 29, 17, 18, 22) for at least partial absorption of the conducted electromagnetic waves.

Classifications:

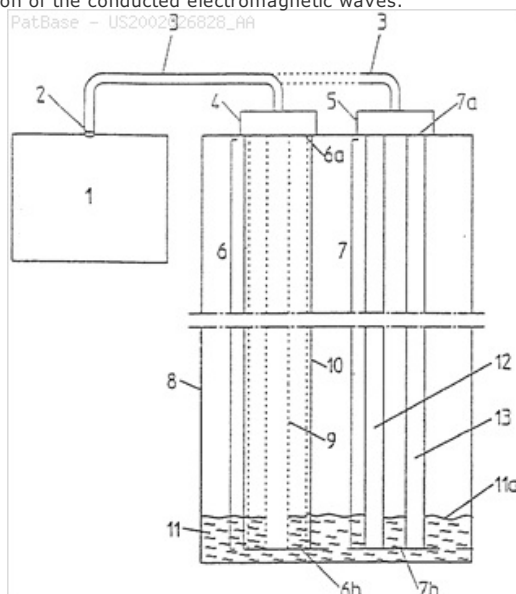
International (IPC 8-9): G01F23/284 (Advanced/Invention)

International (IPC 1-7): G01F23/28 G01F23/284 G08B21/00

CPC: G01F23/284

European: G01F23/284

US: 340/612 73/290 73/290R 73/290V 73/304R 73/629



Family:

Publication number	Publication date	Application number	Application date
DE10043838 A1	20020404	DE20001043838	20000906
EP1186869 A2	20020313	EP20010117908	20010724
EP1186869 A3	20030102	EP20010117908	20010724
US2002026828 AA	20020307	US20010930180	20010816
US6662648 BB	20031216	US20010930180	20010816

Priority:

DE20001043838 20000906 US20010273338P 20010306 US20010930180 20010816

Probable Assignee: VEGA GRIESHABER KG

Assignee(s): (std): FEHRENBACH JOSEF ; GRIESHABER VEGA KG ; GRIESSBAUM KARL

Assignee(s): VEGA GRIESH ER ABKG ; VEGA GRIESHABER KG

Inventor(s): (std): GRIESSBAUM KARL ; GRIESBAUM KARL ; FEHRENBACH JOSEF

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

Title: Optical immunoassay for microbial analytes using non-specific dyes

Abstract: Source: US5496700A [EN] The presently disclosed invention relates to a method of rapid detection and identification of microorganisms including bacteria, viruses, rickettsiae and fungi. The method involves staining all microorganisms or fragments thereof in a sample. The stained sample is introduced onto an optical waveguide coated with a capture molecule specific for the microorganism of interest, and the bound microorganism or fragment thereof is then optically detected. For example, detection of B. anthracis and Salmonella was achieved in times of approximately one minute. The sensitivity of this method is on the order of about 3 cells/ μm^2 .

Classifications:

International (IPC 8-9): C12Q1/68 C12Q1/70 G01N33/543

G01N33/566 G01N33/569 (Advanced/Invention)

International (IPC 1-7): C12Q1/00 C12Q1/68 C12Q1/70 G01N33/53 G01N33/543 G01N33/554 G01N33/566 G01N33/567 G01N33/569

CPC: G01N33/569 G01N2400/50

European: G01N33/569 S01N400/50

US: 435/4 435/5 435/6 435/6.1 435/6.18 435/7.1 435/7.2 435/7.21 435/7.3 435/7.32 435/7.92 435/7.93 436/501 436/518

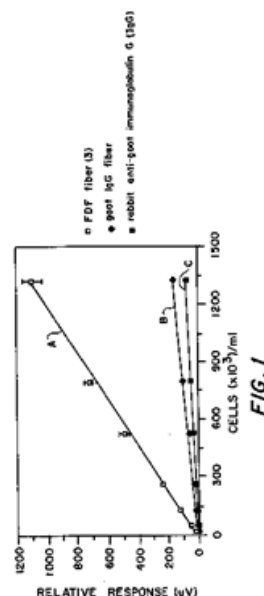
PatBase - US5496700_A

U.S. Patent

Mar. 5, 1996

Sheet 1 of 6

5,496,700



Family:

Publication number	Publication date	Application number	Application date
CA2169267 AA	19960205	CA19942169267	19940804
EP0712494 A1	19960522	EP19940925171	19940804
EP0712494 A4	19991006	EP19940925171	19940804
US5496700 A	19960305	US19930102933	19930806
USH1775 H1	19990105	US19950422103	19950414
WO9504930 A1	19950216	WO1994US08752	19940804

Priority:

US19930102933 19930806

US19950422103 19950414

WO1994US08752 19940804

Probable Assignee: NAVY UNITED STATES OF AMERICA

Assignee(s): (std): GOVERNMENT OF THE UNITED STATES AS REPRESENTED BY ; US ARMY ; US GOV SEC NAVY ; US HEALTH

Assignee(s): WIJESURIYA DAYAWEERA C ; SECRETARY OF NAVY AS US GOV ; THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE NAVY ; THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE NAVY ; SECRETARY OF NAVY ; SHRIVER LAKE LISA C ; SECRETARY OF NAVY CHIEF OF NAVAL RESEARCH OFFICE O ; SECRETARY OF NAVY US ; THE GOVERNMENT OF THE UNITED STATES REPRESENTED B ; THE UNITED STATES OF AMERICA AS REPRESENTED BY THE ; THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS ; GOVERNMENT OF THE UNITED STATES AS REPRESENTED BY THE SECRETARY OF THE NAVY THE ; GOVERNMENT OF UNITED STATES REPRESENTED BY SECRETA ; JAMES ELIZABETH A ; LIGLER FRANCES S ; NAVY UNITED STATES OF AMERICA

Inventor(s): (std): WIJESURIYA DAYAWEERA C ; SHRIVER LAKE LISA C ; SCHRIVER LAKE LISA C ; LIGLER FRANCES S ; JAMES ELIZABETH A

Agent(s): OGILVY RENAULT

Designated states: AT BE CA CH DE DK ES FR GB GR IE IT JP KR LU MC NL PT SE

Title: Waveguide for a level measuring device operating with microwaves

Abstract: A probe part (130) has one or more signal **guides** (119) and two screening **guides** (131a,131b) that are enclosed by a support (132). A connector part (110) has a linking device (114,118) for connecting the **guides** to electronic connections for measurement that generate microwave signals.

Classifications:

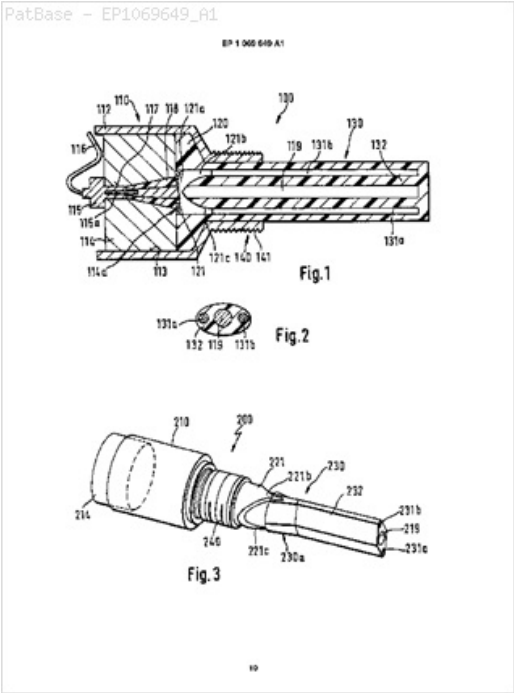
International (IPC 8-9): G01F23/284 G01N22/00 H01Q1/22 H01Q13/08 (Advanced/Invention);

G01F23/284 G01N22/00 H01Q1/22 H01Q13/08 (Core/Invention)

International (IPC 1-7): G01F23/284 G01N22/00 H01Q1/22 H01Q13/08

CPC: G01F23/284 H01Q1/22 H01Q1/225 H01Q13/08

European: G01F23/284 H01Q1/22 H01Q1/22E H01Q13/08



Family:

Publication number	Publication date	Application number	Application date
CA2314027 AA	20010115	CA20002314027	20000713
DE59912561 D1	20051020	DE19995012561	19990715
EP1069649 A1	20010117	EP19990113686	19990715
EP1069649 B1	20050914	EP19990113686	19990715
JP2001066177 A2	20010316	JP20000211645	20000712
JP3423674 B2	20030707	JP20000211645	20000712

Priority:

CA20002314027 20000713 EP19990113686 19990715

Probable Assignee: ENDRESS AND HAUSER GMBH AND CO

Assignee(s): (std): ENDRESS AND HAUSER GMBH AND CO KG ; ENDRESS HAUSER GMBH CO

Assignee(s): NEUHAUS JOACHIM ; REIMELT RALF ; BAUM GUNTHER ; ENDRESS AND HAUSER GMBH AND CO

Inventor(s): (std): BAUM GUNTHER ; NEUHAUS DIPL PHYS ; NEUHAUS JOACHIM ; NEUHAUS JOACHIM DIPL PHYS ; REIMELT DIPL ING ; REIMELT RALF ; REIMELT RALF DIPL ING

Agent(s): SMART AND BIGGAR

Designated states: DE FR GB IT

Title: Apparatus and method for inspection of pipes and tubes using **guided** wave probe

Abstract: Source: US5892162A [EN] An apparatus and method for directing ultrasonic and magnetostrictively generated mechanical waves from an exterior point to an interior point within a small diameter tube, pipe, or cylindrical structure. The present invention incorporates an external mechanism for generating waves in a cylindrical waveguide tube gun of a size small enough for insertion into the target tube and configured so as to maintain mechanical contact with an inside diameter of the target tube. Standard ultrasonic wave generating devices or magnetostrictive/mechanical wave generating coils are positioned on the waveguide external to the target tube and generate appropriate mechanical waves through the waveguide to a point interior to the target tube. A mechanical interface between the waveguide and the inside diameter surface of the tube is positioned and provided at a point within the target tube to transfer both the interrogating waves and the received return signal waves between the target tube and the waveguide. Appropriate sensor devices for ultrasonic and/or magnetostrictive/mechanical waves are positioned to receive the returned signals and interpret the impedance mismatches that indicate flaws, supports and geometric variations in the tubular wall. Appropriate signal reception, amplification, and filtration elements are positioned to convert the received signal into a signal voltage suitable for display and processing.

Classifications:

International (IPC 8-9): B06B1/04 G01H11/00 G01H17/00 G01H3/00 G01M3/00 G01M3/08 G01M3/24 G01M99/00 G01N29/04 G01N29/22 G01N29/24 G01N29/265 G01N29/28 G01S7/521 (Advanced/Invention); G01H11/00 (Advanced/Non-invention); B06B1/02 G01H11/00 G01H3/00 G01M3/00 G01M3/24 G01N29/22 G01N29/24 G01N29/26 G01N29/28 G01S7/521 (Core/Invention)

International (IPC 1-7): G01H11/00 G01H17/00 G01H3/00 G01M19/00 G01M3/08 G01M3/24 G01N29/00 G01N29/10 G01N29/24

CPC: B06B1/045 G01H3/00 G01M3/005 G01M3/243 G01N29/223

G01N29/2412 G01N29/2462 G01N29/265 G01N29/28

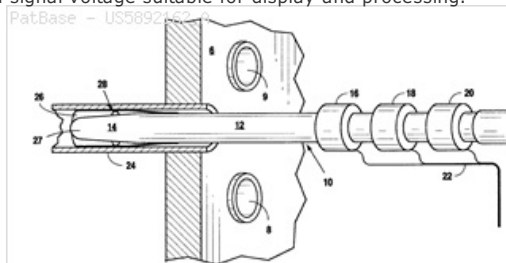
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European: B06B1/04B G01H3/00 G01M3/00C G01M3/24B

G01N29/22B G01N29/22L G01N29/24B G01N29/24G G01N29/265 G01N29/28 G01S7/521 S01N291/042F S01N291/044

S01N291/263D

US: 73/40.5A 73/405A 73/591 73/592 73/661 73/865.8



Family:

Publication number	Publication date	Application number	Application date
AU199924686 A1	20000807	AU19990024686	19990125
AU199924686 A5	20000807	AU19990024686	19990125
JP2002535644 T2	20021022	JP20000595121T	19990125
JP4102029 B2	20080618	JP20000595121T	19990125
KR100590667 B1	20060619	KR20017009309	19990125
KR20010109283 A	20011208	KR20017009309	19990125
MXPA01007534 A1	20030714	MX2001PA07534	19990125
US5892162 A	19990406	US19970972379	19971118
WO0043746 A1	20000727	WO1999US01506	19990125

Priority:

KR20017009309 20010725 US19970972379 19971118 WO1999US01506 19990125

Probable Assignee: SOUTHWEST RESEARCH INST

Assignee(s): (std): SOUTHWEST RES INST

Assignee(s): SOUTHWEST RESEARCH INST ; SOUTHWEST RESEARCH INSTITUTE

Inventor(s): (std): BROPHY JOSEPH W ; PETERSON RONALD H ; SPINKS ROBERT L

Inventor(s): ROBERT L SPINKS ; RONALD H PETERSON ; JOSEPH W BROPHY

Agent(s): MASUI CHUJI; SHAMOTO ICHIO; KOBAYASHI YASUSHI; TOMITA HIROYUKI; CHIBA AKIO

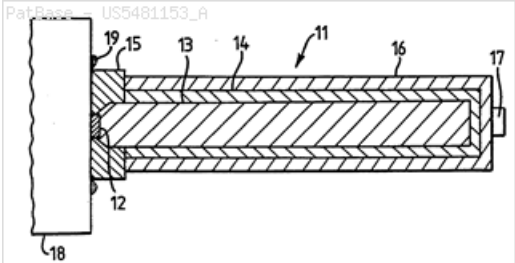
Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

Title: Acoustic non-destructive testing

Abstract: Source: US5481153A [EN] PCT No. PCT/GB92/02253 Sec. 371 Date Aug. 22, 1994 Sec. 102(e) Date Aug. 22, 1994 PCT Filed Dec. 4, 1992 PCT Pub. No. WO93/11528 PCT Pub. Date Jun. 10, 1993. An acoustic probe comprising a piezoelectric ceramic transducer element energizable to emit ultrasonic signals in a first direction and in a second direction opposite to the first, and mountable on a sample to be tested so as to transmit thereto signals emitted in the said first direction, is further provided, according to the invention, with a rod-shaped acoustic waveguide having one end coupled to the transducer element to receive signals emitted by the transducer element in the said second direction and to transmit them along the waveguide, with lossy cladding material acoustically coupled to the surface of the waveguide at least at a part thereof remote from its one end, and with coupling means surrounding and mechanically secured and acoustically coupled to the ceramic element and the said one end of the waveguide, the coupling means having a surface adapted to be secured to the sample to be tested and to transmit thereto signals emitted by the transducer element.

Classifications:

International (IPC 8-9): B06B1/06 G01N29/24 G10K11/24 H04R17/00 (Advanced/Invention)
International (IPC 1-7): B06B1/06 G01N29/24 G10K11/02 H01L41/08 H04R17/00
CPC: B06B1/0681 G10K11/24
European: B06B1/06E6F G10K11/24
US: 310/327 310/334



Family:

Publication number	Publication date	Application number	Application date
EP0615647 A1	19940921	EP19920924784	19921204
GB9126082 A0	19920205	GB19910026082	19911206
JP7501617 T2	19950216	JP19930509974T	19921204
US5481153 A	19960102	US19940244550	19940822
WO9311528 A1	19930610	WO1992GB02253	19921204

Priority:

GB19910026082 19911206 WO1992GB02253 19921204

Probable Assignee: BRITISH TECHNOLOGY GROUP LTD

Assignee(s): (std): BRITISH TECH GROUP ; NAT RES DEV

Assignee(s): BRITISH TECHNOLOGY GROUP LIMITED ; BRITISH TECHNOLOGY GROUP LTD

Inventor(s): (std): TURNER CHARLES W ; TURNER CHARLES WILLIAM ; TURNER CHARLES WILLIAM BADGERS

Inventor(s): TURNER CHARLES WILLIAM 3 BADGERS HILL

Designated states: AT BE CH DE DK ES FR GB GR IE IT JP LU MC NL PT SE US

Title: APPARATUS AND METHOD FOR MEASURING CONSTITUENT CONCENTRATIONS WITHIN A BIOLOGICAL TISSUE STRUCTURE

Abstract: Source: US2008319285A [EN] Apparatus for minimally invasively measuring concentrations of constituents contained within a biological tissue structure includes a microwave energy source arranged generate a range of microwave frequencies, a first antenna coupled to the microwave energy source and arranged to transmit at least a portion of the microwave energy into the tissue structure, a second antenna arranged to receive at least a portion of the microwave energy transmitted through the tissue structure, a signal processor arranged to determine the resonant frequency of the received microwave energy, and a data processor arranged to provide an output of the concentration of constituents within the biological tissue structure according to the determined resonant frequency.

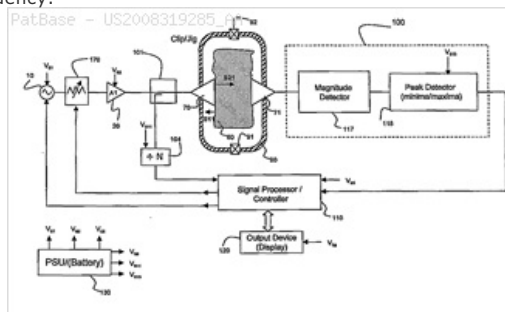
Classifications:

International (IPC 8-9): A61B5/00 A61B5/05 A61B5/145 G01N22/00 G01N33/48 G01N33/483 (Advanced/Invention); G01N33/487 (Advanced/Non-invention); A61B5/00 A61B5/05 A61B5/145 G01N22/00 G01N33/48 G01N33/483 (Core/Invention); G01N33/487 (Core/Non-invention)

CPC: A61B5/6848 A61B5/145 A61B5/68 A61B5/6825 A61B2562/02 A61B2562/043 A61B2562/046 G01N27/3271 A61B5/14546 A61B5/05 A61B5/0507 A61B5/14532

European: A61B5/05 A61B5/05M A61B5/145 A61B5/145G A61B5/145P A61B5/68 A61B5/68B2J A61B5/68D1B G01N22/00 G01N33/483 K61B562/02 K61B562/04B K61B562/04D S01N27/327B

US: 600/309 600/309P 600/316 600/430 600/430S



Family:

Publication number	Publication date	Application number	Application date
DE602006043011 D1	20141023	DE200660043011T	20060706
DK1949084 T3	20141215	DK20060764908T	20060706
EP1949084 A1	20080730	EP20060764908	20060706
EP1949084 B1	20140910	EP20060764908	20060706
ES2525582 T3	20141226	ES20060764908T	20060706
GB200513810 A0	20050810	GB20050013810	20050706
GB200515277 A0	20050831	GB20050015277	20050726
GB200613492 A0	20060816	GB20060013492	20060706
GB2428093 A1	20070117	GB20050013810	20050706
GB2428299 A1	20070124	GB20060013492	20060706
GB2428801 A1	20070207	GB20050015277	20050726
HK1095631 A3	20070511	HK20070102180	20070227
JP2009500096 T2	20090108	JP20080519998T	20060706
US2008319285 AA	20081225	US20060994818	20060706
US8882670 BB	20141111	US20060994818	20060706
WO07003955 A1	20070111	WO2006GB02514	20060706

Priority:

EP20060764908 20060706 GB20050013810 20050706 GB20050015277 20050726
WO2006GB02514 20060706

Probable Assignee: ORSUS MEDICAL LTD

Assignee(s): (std): CREDENT MEDICAL LTD ; FERLIN MEDICAL LTD ; HANCOCK CHRISTOPHER P ; HANCOCK CHRISTOPHER PAUL ; MICROONCOLOGY LTD

Assignee(s): ORSUS MEDICAL LTD ; CHRISTOPHER PAUL HANCOCK

Inventor(s): (std): HANCOCK CHRISTOPHER PAUL

Inventor(s): HANCOCK CHRISTOPHER PAUL MICROONCOLOGY LTD ; CHRISTOPHER PAUL HANCOCK

Agent(s): DENNEMEYER AND ASSOCIATES SA; WARDLE CALLUM TARN; YEADON MARK; VALLEJO JUAN PEDRO; MARSHALL GERSTEIN AND BORUN LLP

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

Title: METHOD AND APPARATUS FOR INSPECTION OF HIGH FREQUENCY AND MICROWAVE HYBRID CIRCUITS AND PRINTED CIRCUIT BOARDS

Abstract: Source: US2006152232A [EN] The invention relates to a method and apparatus for the inspection of high frequency and microwave circuits such as printed test circuit boards. The invention uses a probe or antenna (3) which is separated from the device under test (DUT) (2). The invention provides a relatively long central protruding conductor (8) for the antenna (3) which protrudes from its shielding (7). In the method, the antenna (3) is used to acquire microwave electromagnetic field measurements in a near field region of a test point of the DUT (2). Generally, this is done at two test positions with a difference in separation (DELTA) between the apex (8) of the antenna (3) and the DUT (2). The two test results calculated and recorded and the difference of the microwave properties of the two tests is obtained to provide information about the operation of the DUT (2). The antenna (3) can be either a straight electric field antenna or loop antenna. Further, the antenna (3) can be inclined to the vertical and thus it is possible, by taking a series of measurements, to obtain both the phase and frequency of the currents being carried by the DUT (2) when it is energised.

Classifications:

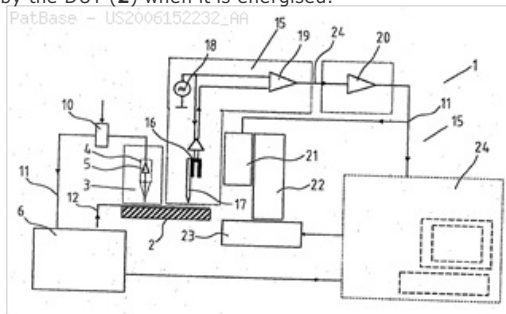
International (IPC 8-9): G01R15/12 G01R29/08 G01R31/02 G01R31/30 G01R31/302 G01R31/304 (Advanced/Invention); G01R15/00 G01R29/08 G01R31/02 G01R31/28 (Core/Invention)

International (IPC 1-7): G01R15/12 G01R29/08 G01R31/02 G01R31/302 G01R31/304

CPC: G01R29/0864 G01R31/2822 G01R31/309

European: G01R29/08E G01R31/28E3 G01R31/309

US: 324/750 324/750.02 324/754.31



Family:

Publication number	Publication date	Application number	Application date
AU2003303279 AA	20040714	AU20030303279	20030214
EP1579228 A1	20050928	EP20030813704	20030214
IE20030102 A1	20040630	IE20030000102	20030214
US2006152232 AA	20060713	US20030539598	20030214
WO04057355 A1	20040708	WO20031E00022	20030214

Priority:

IE20020000985 20021220 IE20030000102 20030214 WO20031E00022 20030214

Probable Assignee: TRINITY COLLEGE DUBLIN

Assignee(s): (std): KANTOR ROMAN ; TRINITY COLLEGE DUBLIN ; SHVETS IGOR ; THE PROVOST FELLOWS AND SCHOLARS OF THE COLLEGE OF

Assignee(s): THE PROVOST FELLOWS AND SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN ; THE PROVOST FELLOWS AND SCHOLARS OF THE COLLEGE OF THE HOLY UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN ; THE PROVOST FELLOWS AND SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN ; PROVOST FELLOWS AND SCHOLARS OF COLLEGE OF ; PROVOST FELLOWS AND SCHOLARS OF COLLEGE OF HOLY AN ; PROVOST FELLOWS AND SCHOLARS OF COLLEGE OF HOLY AND UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN ; PROVOST FELLOWS AND SCHOLARS OF COLLEGE OF HOLY UN ; PROVOST FELLOWS AND SCHOLARS OF COLLEGE OF THE HOLY

Inventor(s): (std): IGOR SHVETS ; KANTOR ROMAN ; ROMAN KANTOR ; SHVETS IGOR

Agent(s): BIRCH STEWART KOLASCH AND BIRCH

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: INSTRUMENT FOR TEMPERATURE AND CONDITION MONITORING OF ADVANCED TURBINE BLADES

Abstract: Source: US2004179575A [EN] An on-engine radiation thermometer that simultaneously measures, through a common optical **waveguide probe**, long wavelength infrared radiation and short wavelength radiation, enables accurate temperature measurement and condition monitoring of ceramic thermal barrier coatings used on metal blades of gas turbine engines. This in turn enables operation at higher combustion temperatures, thereby optimizing coating use, and provides warning signals that are indicative of potential blade failure due to barrier coating spall and other conditions.

Classifications:

International (IPC 8-9): G01J5/00 G01J5/08 (Advanced/Invention); G01J5/00 G01J5/08 (Core/Invention)

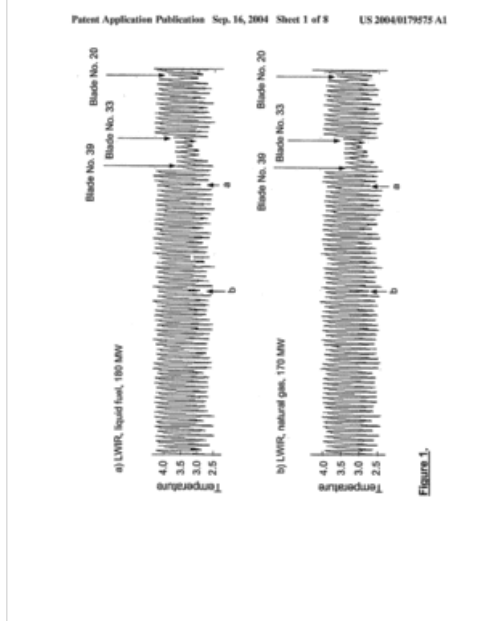
International (IPC 1-7): G01J5/00

CPC: G01J5/08 G01J5/0022 G01J5/0088 G01J5/0818 G01J5/0821 G01J5/0846 G01J5/0862

European: G01J5/00D G01J5/00U G01J5/08 G01J5/08B12 G01J5/08B17 G01J5/08B5 G01J5/08B5A

US: 374/121 374/121P 374/13 374/130 374/130S

PatBase - US2004179575_AA



Family:

Publication number	Publication date	Application number	Application date
US2004179575 AA	20040916	US20040755424	20040112

Priority:

US20030442181P 20030123 US20040755424 20040112

Probable Assignee: ADVANCED FUEL RESEARCH INC

Assignee(s): (std): MARKHAM JAMES R

Assignee(s): ADVANCED FUEL RESEARCH INC ; ENERGY UNITED STATES DEPARTMENT OF

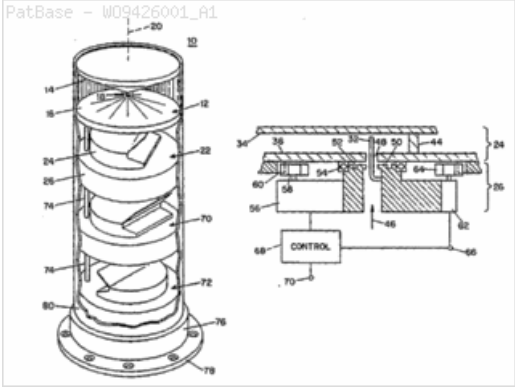
Inventor(s): (std): MARKHAM JAMES R

Title: STEERABLE ANTENNA SYSTEMS

Abstract: A 60 GHz LAN antenna uses a simplified rotary joint to enable antenna steering. A lower gain omnidirective antenna (12) used for signal acquisition is coaxially mounted with a steerable directive antenna (22) used for communication. The steerable antenna (22) includes a reflector (24) rotatable about a central axis (20) with the rotatable section of a simplified rotary joint (Fig. 2C). A waveguide (46) is coupled to the fixed portion of the rotary joint and signals are coupled from the waveguide to the reflector via a probe element (32) which is positioned on the central axis. This combination, enabling use of direct waveguide-to-reflector signal coupling, overcomes the need for a waveguide-to-waveguide or a coax-to-coax rotary joint. Three or more steerable antennas (22, 70, 72) can be coaxially stacked with one omnidirective acquisition antenna (12) and automatic steering can be implemented to communicate in different directions. Particular embodiments use a pillbox antenna (24) or dielectric lens (84).

Classifications:

International (IPC 8-9): H01Q13/04 H01Q19/13 H01Q21/28
H01Q3/20 (Advanced/Invention);
H01Q13/00 H01Q19/10 H01Q21/00 H01Q3/00 (Core/Invention)
International (IPC 1-7): H01Q13/04 H01Q19/13 H01Q21/28
H01Q3/20
CPC: H01Q3/20 H01Q13/04 H01Q19/138 H01Q21/28
European: H01Q13/04 H01Q19/13D H01Q21/28 H01Q3/20



Family:

Publication number	Publication date	Application number	Application date
WO9426001 A1	19941110	WO1994US04786	19940429

Priority:

US19930055445 19930430

Probable Assignee: HAZELTINE CORP
Assignee(s): (std): HAZELTINE CORP
Inventor(s): (std): MERENDA JOSEPH T ; LOPEZ ALFRED R
Designated states: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

Title: Biosensor and chemical sensor probes for calcium and other metal ions

Abstract: Source: US5496522A [EN] The present invention relates to chemical sensor and biosensor probes for measuring low concentration of metals and metal ions in complex samples such as biological fluids, living cells, and environmental samples. More particularly the present invention relates to a gel-based Indo-1 and Fura-2 chemical sensor probes for the measurement of low concentrations of calcium, cadmium, magnesium and the like. Also disclosed is a detector device using the sensors of the present invention.

Classifications:

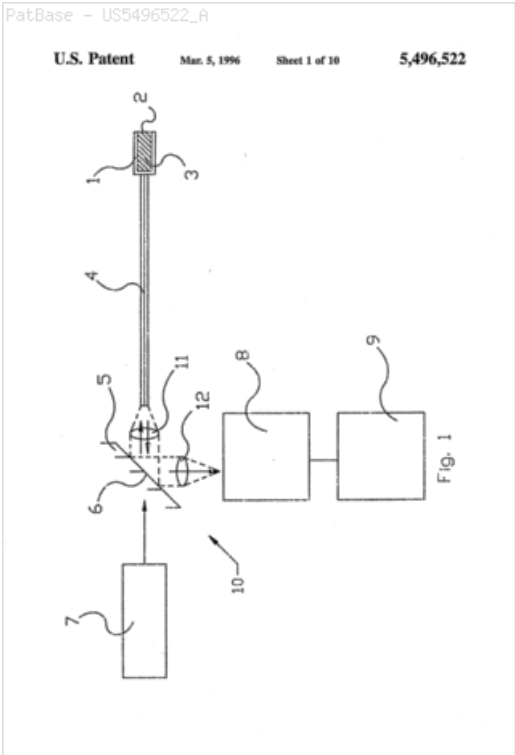
International (IPC 8-9): G01N21/64 (Advanced/Invention); G01N21/64 (Core/Invention)

International (IPC 1-7): G01N21/0

CPC: G01N21/643 G01N21/648 G01N21/7703

European: G01N21/64H2 G01N21/64P8 G01N21/77B

US: 422/82.05 422/82.07 422/82.08 436/79 549/352



Family:

Publication number	Publication date	Application number	Application date
US5496522 A	19960305	US19940192429	19940207

Priority:

US19940192429 19940207

Probable Assignee: MARTIN MARIETTA ENERGY SYSTEMS INC

Assignee(s): (std): MARTIN MARIETTA ENERGY SYSTEMS

Assignee(s): MARTIN MARIETTA ENERGY SYSTEMS INC

Inventor(s): (std): VIALLET PIERRE ; VO DINH TUAN

Title: Microstrip to coplanar waveguide transitional device

Abstract: Source: US4851794A [EN] A novel transition device is disclosed capable of being used in an integrated circuit comprising a substrate having a first planar surface upon which at least one circuit element is formed and a second planar surface upon which a ground metallization is formed, said first planar surface being spaced from and parallel to the second planar surface, said at least one circuit element being connected to a metal strip and having an open end terminating on said first planar surface, a coplanar grounding station disposed on the first planar surface and situated adjacent to and spaced from said open end, said coplanar grounding station being free of any electrically conducting path between said metal strip and said coplanar grounding station and between said ground metallization and said coplanar grounding station. The expression grounding station as used herein may be defined as a planar structure comprising of at least one metallized patch situated to and spaced from a strip transmission line, said patch lying parallel to and separated from a ground plane of said line, said patch not being electrically connected to said transmission line.

Classifications:

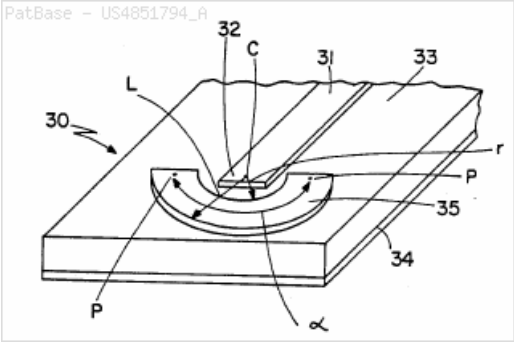
International (IPC 8-9): H01P5/08 (Advanced/Invention);
H01P5/08 (Core/Invention)

International (IPC 1-7): H01P5/08

CPC: H01P5/08

European: H01P5/08

US: 324/158P 324/537 333/247 333/33



Family:

Publication number	Publication date	Application number	Application date
US4851794 A	19890725	US19870106211	19871009

Priority:

US19870106211 19871009

Probable Assignee: BALL AEROSPACE AND TECHNOLOGIES CORP

Assignee(s): (std): BALL CORP

Assignee(s): BALL AEROSPACE AND TECHNOLOGIES CORP

Inventor(s): (std): WILLIAMS DYLAN F ; MIERS TOMMY H

Title: FREQUENCY MULTIPLIER

Abstract: Source: US3239744A [EN] (Claim 1) 1. In combination, a pair of broadly resonant waveguide circuits having a minimum operating frequency range eqtial to approximately one half that of the lower operating frequency and with each having an electrically conductive wall, said electrically conductive walls in electrical engagement with each other and having a common opening therethrou.-h, a non-linear capacitive couplin.structure having a predominantly reactive electrical characteristic in the common opening and extendin.- into the respective waveguides, the structure being arranged to couple one of the pair of resonant waveguide circuits to the other of the pair of resonant wave-uide circuits with capability for frequency conversion therebetween.

Classifications:

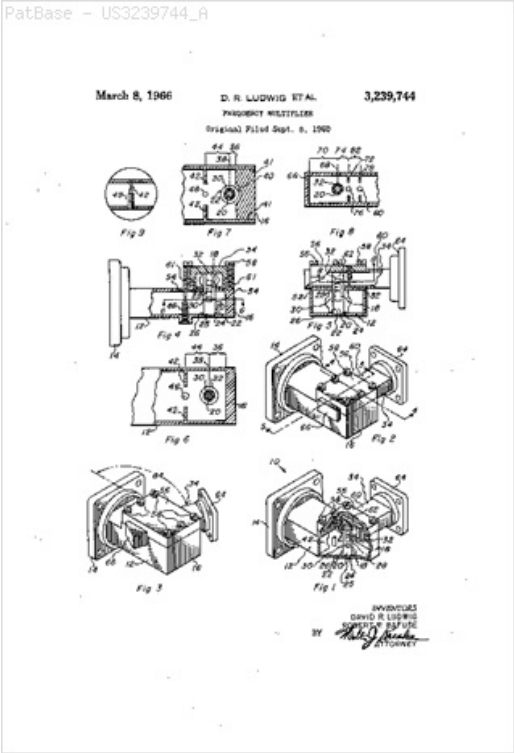
International (IPC 8-9): H03B19/18 (Advanced/Invention); H03B19/00 (Core/Invention)

International (IPC 1-7): H03B19/00

CPC: H03B19/18

European: H03B19/18

US: 330/4.6 330/4.9 333/218



Family:

Publication number	Publication date	Application number	Application date
US3239744 A	19660308	US19650452442	19650416

Priority:

US19650452442 19650416

Probable Assignee: GEN ELECTRONIC LAB INC
Assignee(s): (std): GEN ELECTRONIC LAB INC
Assignee(s): GENERAL ELECTRONIC LABORATORIES INC
Inventor(s): (std): LUDWIG DAVID R ; RAFUSE ROBERT P

Title: Arrangement for amplifying microwaves

Abstract: Source: DE3150237A1 [EN] In this arrangement, the power to be amplified is divided in a first waveguide series branch into a plurality of smaller power components, these are in each case amplified via semiconductor amplifiers and combined in the correct phase by a second waveguide series branch connected as combining network.

Classifications:

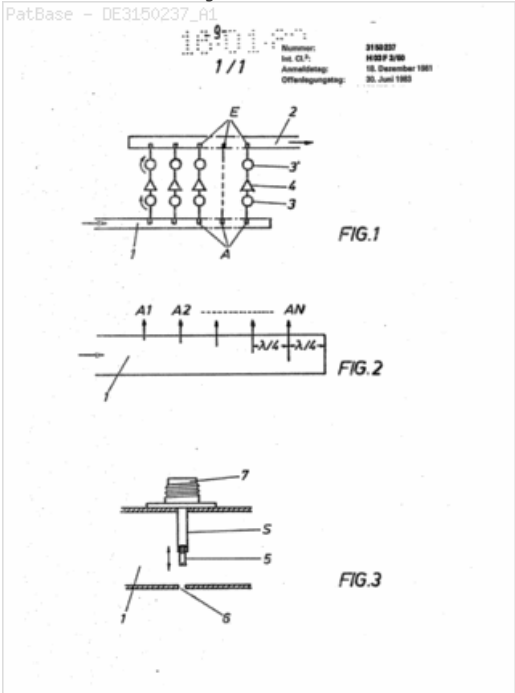
International (IPC 8-9): H03F3/60 H03F3/68 (Advanced/Invention);

H03F3/60 H03F3/68 (Core/Invention)

International (IPC 1-7): H03F3/60

CPC: H03F3/605 H03F3/68

European: H03F3/60D H03F3/68



Family:

Publication number	Publication date	Application number	Application date
DE3150237 A1	19830630	DE19813150237	19811218

Priority:

DE19813150237 19811218

Probable Assignee: LICENTIA GMBH
Assignee(s): (std) LICENTIA GMBH
Assignee(s): LICENTIA PATENT VERWALTUNGS GMBH
Inventor(s): (std) HAMILTON COLIN DR ; RUPP ALOIS DIPL ING
Inventor(s): HAMILTON COLIN DR BSC PH D