



(1)

A hybrid printed monopole antenna loaded with dielectric resonator for wideband and circular polarization applications

O. M. Haraz, A. R. Sebak, and T. A. Denidni

Abstract:

This article presents a novel compact circularly polarized antenna with wideband operation. The proposed antenna consists of a microstrip-line-fed printed monopole, a finite truncated ground, and a dielectric resonator (DR). Compared to the printed monopole antenna, the proposed DR-loaded antenna has an increased impedance bandwidth, a large axial ratio bandwidth, and a good realized gain across the desired frequency range. An antenna prototype is fabricated and experimentally tested. The measured antenna impedance match is better than -10 dB over 90% from 4.5 to 11.8 GHz frequency band and the 3-dB axial-ratio bandwidth is better than 35% covering the 5.4–7.65 GHz frequency band.

Keywords:

printed monopole antennas; dielectric resonator antenna; hybrid antennas; dielectric loaded antennas; wideband antennas

Published In:

International Journal of RF and Microwave Computer-Aided Engineering , Volume 22, Issue 5 , Pages 588–593



(2)

Dual-Polarized Dielectric-Loaded Monopole Antenna for Wideband Communication Applications

O. M. Haraz, A. R. Sebak, and T. A. Denidni

Abstract:

A dual-polarized dielectric-loaded monopole antenna for wideband communication applications is presented. The antenna is constructed by using two antenna elements orthogonal to each other. The antenna element consists of a microstripline-fed printed monopole with a finite truncated ground loaded with a dielectric resonator (DR). First, the antenna element is designed, fabricated and experimentally tested. Then the proposed design was extended to develop a dual-polarized antenna. The antenna impedance match is better than 10 dB over 91.3% from 4.4 to 11.8 GHz for both polarizations and the measured isolation between the two polarization ports is better than 20 dB within the frequency band of interest whereas the maximum isolation achieved is 27 dB. The cross-polarization levels in both planes are better than 20 dB. Both theoretical and experimental results in terms of return loss, isolation and radiation pattern are presented and discussed.

Keywords:

Dual-Polarized antennas, Dielectric-Loaded antennas, Monopole Antennas, Wideband Communications

Published In:

IET Microwaves, Antennas and Propagation , Vol. 6, No. 6 , pages 663-669



(3)

A Printed Monopole Antenna with Two Steps and a Circular Slot for UWB Applications

Osama Ahmed and Abdel-Razik Sebak

Abstract:

This letter presents a printed monopole antenna with two steps and a circular slot for ultra-wide band (UWB) applications. The proposed antenna is fabricated and tested. The proposed antenna has a wide frequency bandwidth of 8.4 GHz starting from 3 GHz up to 11.4 GHz for a return loss (S_{11}) of less than -10 dB and gain flatness over the frequency range. Measured results show also that the proposed antenna features satisfactory radiation characteristics within the achieved impedance bandwidth. By introducing a simple and proper narrow slot in the radiating element, frequency-notched characteristics can be obtained and a good band-notched performance in the 5-6 GHz band can be achieved.

Keywords:

Planar monopole antenna, printed circuit board(PCB) antenna, radiation patterns, ultrawide band (UWB) antenna.

Published In:

IEEE Antennas Wireless Propagation Letters , vol.7 , pp. 411-413



(4)

A Novel Maple-Leaf Shaped UWB Antenna with a 5.0-6.0 GHz Band-Notch Characteristic

Osama M. H. Ahmed and Abdel-Razik Sebak

Abstract:

A novel microstrip fed ultra-wideband (UWB) antenna with different band rejection techniques is presented in this paper. The antenna consists of a maple-leaf shaped radiator fed by a microstrip line with a finite ground plane on the other side of the substrate. The size of the UWB antenna is $30.5 \times 35.5 \text{ mm}^2$ which is only about $0.3 \times 0.35 \lambda^2$ at 3 GHz. The calculated impedance bandwidth of the proposed antenna ranges from 3 GHz to 14 GHz with relatively stable radiation patterns. Two different techniques have been implemented to achieve band-notch characteristic in the 5.0-6.0 GHz WLAN frequency band. The first one uses an H-shaped slot cut away from the radiating patch while the other one uses two rectangular slits in the ground plane creating defected ground structure (DGS).

Published In:

Progress In Electromagnetics Research PIER C , vol. 11 , pp. 39-49



(5)

Experimental Investigation of New Ultra Wide band In-Phase and Quadrature-Phase Power Splitters

Osama M. H. Ahmed and Abdel-Razik Sebak

Abstract:

The design and realization of a new in-phase and quadrature-phase power splitters for ultra wideband (UWB) applications are described in this paper. The in-phase power splitter is first designed and then the quadrature-phase power splitter (QPS) is developed using the designed in-phase power splitter, a conventional microstrip transmission line (MS) TL, and a well-synthesized metamaterial (MM) TL. The phase response of the MM TL is synthesized to achieve the desired 90° phase difference over an UWB frequency range. Two splitters were designed, implemented for UWB operation and experimentally demonstrated. To examine the performances of the proposed splitters, even-odd mode analysis, numerical simulations and experimental measurements were carried out. The comparison between simulated and experimental results shows a good agreement. Results show that the proposed in-phase power splitter has good insertion loss with equal power split, acceptable return loss at all ports and satisfactory isolation performances within the whole UWB frequency range. The proposed QPS has an output amplitude imbalance of less than 2.4 dB and a phase error of less than $+15^\circ$ from 3.0-9.0 GHz (100% FBW).

Published In:

Journal of Electromagnetic Waves and Applications , Vol. 23 , pp. 2261-2270



(6)

Planar Ultrawideband Antenna Array for Short-Range Wireless Communications

Osama M. H. Ahmed and Abdel-Razik Sebak

Abstract:

In this article, novel 2-element and 4-element planar ultra- ideband (UWB) antenna arrays with bidirectional radiation patterns based on identical UWB antenna elements for UWB communications applications have been proposed, simulated and experimentally investigated. Each array is constructed by means of feeding omni-directional printed UWB monopole antennas with a UWB power divider. The proposed 2-element antenna array yields an impedance bandwidth of 110% (3.1–10.6 GHz) covering the whole UWB frequency bandwidth while the impedance bandwidth is multi-band in case of the 4-element antenna array because of the increasing effect of mutual coupling among antenna elements. The calculated gain of the 2-element and 4-element array is quite stable with about 3 and 6 dB higher than that of the single element, respectively. Both measured and calculated E-plane radiation patterns of the array and the single element are almost the same while the H-plane radiation patterns of the array are distinctively bidirectional compared to the omni-directional pattern of the single element.

Keywords:

ultra-wideband (UWB); printed monopole antenna; UWB power divider; planar antenna arrays

Published In:

Microwave and Optical Technology Letters , Vol. 52 Issue 5 , Pages 1061 – 1066



(7)

-Study of Elliptical Slot UWB Antennas with A 5.0-6.0GHz Band Notch Capability

A. Elboushi, O. M. Ahmed, A. R. Sebak

Abstract:

Two microstrip fed ultra-wideband (UWB) antennas with different band rejection techniques are presented in this paper. The designed antennas consist of a defected ground plane with an elliptical slot and two different radiator shapes. The first design is composed of a half circular ring radiator element while the second one uses a crescent shaped radiator. The radiators are fed by a 50- microstrip line with a tapered microstrip transition to ensure good impedance matching. The calculated impedance bandwidth of the proposed antenna ranges from 3 GHz to 14 GHz with relatively stable radiation patterns. To achieve band-notch characteristic in the 5.0-6.0 GHz WLAN frequency band, two different techniques have been implemented. The first technique uses a C-shaped slot etched in the ground plane while the other one uses another C-shaped slot in the feed line.

Published In:

Progress In Electromagnetics Research PIER C , vol. 16 , pp. 207-222



(8)

Size Reduction and Bandwidth Enhancement of a UWB Hybrid Dielectric Resonator Antenna for Short-Range Wireless Communications

O. M. H. Ahmed, A. R. Sebak, and T. A. Denidni

Abstract:

In this paper, a novel hybrid dielectric resonator (DR) antenna for Ultra-wideband (UWB) short-range wireless communications is proposed. The proposed antenna consists of a microstrip fed monopole loaded with a half cylindrical dielectric resonator antenna of Rogers RO3010 mounted on RT5880 substrate with a finite ground plane. The microstrip line fed monopole antenna is on the other side of the substrate. Compared to the conventional circular cylindrical DR mounted on a finite ground plane (reference antenna), the proposed antenna has a reduction in the antenna size by about 30% with a bandwidth increase by about 22% than the reference antenna. The proposed antenna has a good impedance bandwidth. In addition, the proposed antenna has a quite higher and more stable gain than that of reference antenna. Moreover, the antenna has a good omni-directional radiation patterns in the H-plane. The proposed antenna is considered a good candidate for UWB short-range wireless communication systems.

Published In:

Progress in Electromagnetics Research Letters PIER L , vol. 19 , pp. 19-30



(9)

Numerical and Experimental Investigation of a Novel Ultrawideband Butterfly Shaped Printed Monopole Antenna with Bandstop Function

O. M. H. Ahmed, A. R. Sebak

Abstract:

In this paper, a novel compact butterfly shaped printed monopole antenna for ultra-wideband (UWB) applications is presented. The proposed antenna is designed with a standard printed circuit board (PCB) process for suitable integration with other microwave components. The antenna prototype is designed then fabricated and tested experimentally. The calculated impedance bandwidth of the proposed antenna ranges from 3 GHz to 13 GHz for a 10 dB reflection coefficient (S_{11}) while the measured impedance bandwidth ranges from 3 GHz to 10.8 GHz covering the whole UWB frequency range. The measured antenna radiation patterns show relatively stable radiation patterns with almost constant gain over the whole frequency band of interest. By introducing a slit ring resonator (SRR) in the feedline, a bandstop of 830MHz from 5.0 to 5.83 GHz for band rejection of wireless local area network (WLAN) can be achieved. So, the proposed antenna is considered a good candidate for future UWB communication systems.

Published In:

Progress In Electromagnetics Research PIER C , vol. 18 , pp. 111-121



(10)

Compact UWB printed monopole loaded with dielectric resonator antenna

O. M. H. Ahmed, A. R. Sebak and T. A. Denidni

Abstract:

A novel compact ultra-wideband (UWB) printed monopole loaded with a dielectric resonator (DR) antenna is proposed. The antenna consists of a microstrip fed monopole printed on a substrate with a truncated ground plane loaded with a DR. The bandwidth is enhanced by making an inner groove inside the DR and controlling the slot width of the truncated ground.

Published In:

IET Electronics Letters , vol. 47, No. 1 ,



(11)

A Novel Printed Monopole Antenna for Future Ultrawideband Communication Systems

O. M. H. Ahmed, A. R. Sebak

Abstract:

In this letter, a novel microstrip line-fed printed monopole antenna for ultra-wideband (UWB) short-range wireless communications is proposed. The proposed antenna consists of a trapezoidal-shaped patch with two elliptical-shaped cuts from its edge forming a bell-shaped cut. Experimental results shows that the designed antenna operates over impedance bandwidth 3.2–11.4 GHz for return loss S_{11}

Published In:

Microwave and Optical Technology Letters , Vol. 53, Issue 8 , pages 1837–1841



(12)

Mutual Coupling Effect on Ultrawideband Linear Antenna Array Performance

O. M. H. Ahmed, and A. R. Sebak

Abstract:

This paper studies the mutual coupling effect between array elements of two- and four-element ultra-wideband (UWB) linear arrays on their performances. For simplicity, it is assumed that both antenna arrays are fed by independent microstrip lines with the same power amplitudes and equal phases. From our study, array bandwidth improvement is achieved for both array types when the mutual coupling is strong enough or inter-element spacing is small. The mutual coupling also enhances the array realized gain especially in the mid-frequency band (5–8.5 GHz) while it deteriorates the gain outside that frequency range. Proper tuning for inter-element spacing with enough mutual coupling enhances the array realized gain at most frequencies and makes it more stable across the desired frequency range. From the radiation pattern results, the grating lobes appear in UWB arrays when the element spacing is greater than two wavelengths at the upper edge frequency, 10.6GHz, or half wavelength at the lower edge frequency 3.1 GHz. Two fabricated array prototypes with corporate feed are fabricated and tested to validate the theoretical analysis. The effect of using T-junction power divider is clear on the reflection coefficient $|S_{11}|$. Both numerically simulated and experimental results successfully demonstrate our analysis.

Published In:

International Journal of Antennas and Propagation , vol. 2011, Article ID 142581 , 11 pages, 2011. doi:10.1155/2011/142581



(13)

Design of Half Elliptical Ring Monopole Antennas with Elliptical Slot in Ground Plane for Future UWB Applications

O. M. Ahmed, A. Elboushi, and A. R. Sebak

Abstract:

In this letter, a microstrip fed ultra-wideband (UWB) antenna with different band rejection techniques is presented. The designed antennas consist of a defected ground plane with an elliptical slot and elliptical shaped radiating element. The measured and calculated impedance bandwidth of the proposed antenna ranges from 3 to 14 GHz for a return loss (S_{11}) less than -10 dB. Also, it has a relatively stable radiation patterns over its whole frequency band of interest. Two different techniques have been proposed to achieve band-notch characteristic in the 5.0- to 6.0-GHz wireless local area network frequency band. The first one uses L-shaped parasitic strip into the radiating patch, whereas the other one uses two rectangular slits cut away from the ground plane creating defected ground structure. The proposed antenna is considered a good candidate for UWB applications.

Keywords:

bandstop;defected ground structure;elliptical antennas;L-shaped parasitic strip;rectangular slits;slot antennas;ultrawideband

Published In:

Microwave and Optical Technology Letters , Vol. 54, No. 1 , pages 181-187



(14)

Numerical and Experimental Investigations of Defected Ground Triangular Shaped Power Divider for C-Band Applications

O. M. H. Ahmed, A. Elboushi, A. R. Sebak and T. A. Denidni

Abstract:

In this letter, the numerical and experimental investigation of triangular-shaped microstrip power divider is designed for C-band applications using defected ground structure (DGS). Numerical simulations are carried out using different computer-aided design tools based on different numerical techniques, i.e., Ansoft HFSS and CST Microwave Studio. Good agreement is found between the calculated results using both HFSS and CST. A parametric study is carried out to address the effect of DGS parameters on the performance of the proposed triangular-shaped microstrip power divider. A power divider prototype is fabricated and tested experimentally. Measured results agree well with numerically calculated results.

Published In:

Microwave and Optical Technology Letters , Vol. 54, No. 4 , pages 1022–1028



(15)

Efficient single-band and dual-band antennas for microwave imaging and hyperthermia treatment of brain tumors

Ali, M.M.M.; Haraz, O.; Elshafiey, I.; Alshebeili, S.; Sebak, A.-R.

Abstract:

NULL

Keywords:

NULL

Published In:

Control System, Computing and Engineering (ICCSCE), 2014 IEEE International Conference on , 28-30 Nov. 2014. doi: 10.1109/ICCSCE.2014.7072788 , vol., no. , pp.597,600,



(16)

On using Gaussian excitation amplitudes to improve the antenna array radiation characteristics

Ahmed, M.F.A.; Haraz, O.M.; Kaddoum, G.; Alshebili, S.A.; Sebak, A.-R.

Abstract:

NULL

Keywords:

NULL

Published In:

Applied Electromagnetics (APACE), 2014 IEEE Asia-Pacific Conference on , 8-10 Dec. 2014. doi:
10.1109/APACE.2014.7043760 , vol., no. , pp.131,134



(17)

A novel 94-GHz dipole bow-tie slot antenna on silicon for imaging applications

Haraz, O.M.; Abdel-Rahman, M.; Alshebili, S.A.; Sebak, A.-R.

Abstract:

NULL

Keywords:

NULL

Published In:

Applied Electromagnetics (APACE), 2014 IEEE Asia-Pacific Conference on, 8-10 Dec. 2014. doi: 10.1109/APACE.2014.7043811 , vol., no. , pp.59, 62



(18)

Butterfly-shaped slot coupled microstrip 90° hybrid couplers for K- and Ka-band millimeter-wave radar applications

Alaqeel, Abdulrahman; Shaman, Hussein; Almorqi, Sultan; Haraz, Osama; Alshebeili, Saleh; Sebak, Abdel-razik

Abstract:

NULL

Keywords:

NULL

Published In:

Microwave Symposium (MMS), 2014 14th Mediterranean , 12-14 Dec. 2014. doi: 10.1109/MMS.2014.7088964. , vol., no. , pp.1,3



(19)

Hairpin microstrip bandpass filter for millimeter-wave applications

Shaman, Hussein; Almorqi, Sultan; Haraz, Osama; Alshebeili, Saleh

Abstract:

NULL

Keywords:

NULL

Published In:

Microwave Symposium (MMS), 2014 14th Mediterranean, 12-14 Dec. 2014. doi: 10.1109/MMS.2014.7088919 , vol., no. , pp.1, 4



(20)

Millimeter-wave microstrip diplexer using elliptical open-loop ring resonators for next generation 5G wireless applications

Shaman, Hussein; Almorqi, Sultan; Haraz, Osama; Alshebeili, Saleh; Sebak, Abdel-razik

Abstract:

NULL

Keywords:

NULL

Published In:

Microwave Symposium (MMS), 2014 14th Mediterranean, 12-14 Dec. 2014. doi: 10.1109/MMS.2014.7088988. , vol., no. , pp.1,4



(21)

Design of Dual-Band Phased Array Antenna System with Layered Cylindrical Human Tissue Model for Hyperthermia Treatment and Microwave Imaging Applications

M. M. M. Ali, O. M. Haraz, I. Elshafiey, S. Alshebeili and A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 32nd National Radio Science Conference (NRSC), 6th of October City, Greater Cairo, Egypt, 24-26 March 2015. ,
NULL , NULL



(22)

Broadband Millimeter-Wave Rectangular Reflectarray Antenna Utilizing Novel Polarization Insensitive Multi-Resonant Unit Cells

M. M. M. Ali, O. M. Haraz, S. Alshebeili and A.-R. Sebak

Abstract:

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Keywords:

NULL

Published In:

The 2015 32nd National Radio Science Conference (NRSC), 6th of October City, Greater Cairo, Egypt, 24-26 March 2015. ,
NULL , NULL



(23)

Constant Refractive Index Lens Printed Yagi Antenna for Automotive Radars

F. Alsolamy, A. AlAmoudi, S. Almorqi, O. Haraz, S. Alshebeili, A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015 , NULL , NULL



(24)

Broadband 4 x 4 Butler Matrix for K- and Ka- Bands

A. Alaqeel, S. Almorqi, O. Haraz, M. Ashraf, S. Alshebeili and A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(25)

Broadband Phase Shifter for K- and Ka- Bands Beam-Steering Networks

A. Alaqeel, S. Almorqi, M. Algassim, O. Haraz, S. Alshebeili and A.-R. Sebak

Abstract:

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Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(26)

Analysis and Design of a Metal-Backed RFID Tag Antenna

A. Elboushi, O. M. Haraz, K. Jamil, A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(27)

Four-Element Dual-Band Printed Slot Antenna Array for the Future 5G Mobile Communication Networks

O. M. Haraz, M. M. M. Ali, A. Elboushi, A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(28)

Polarization Insensitive Ka-band Reflectarray Antenna

R. Elsharkawy, A.-R. Sebak, A. Saleeb, O. M. Haraz, M. Hindy, E.-S. M. El-Rabaie

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(29)

A Millimeter-Wave Circular Reflectarray Antenna for Future 5G Cellular Networks

O. M. Haraz, and M. M. M. Ali

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(30)

Design of a 28/38 GHz Dual-Band Printed Slot Antenna for the Future 5G Mobile Communication Networks

O. M. Haraz, M. M. M. Ali, S. Alshebeili and A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(31)

Efficient SAR Localization for Hyperthermia Treatment of Cancer Cells by Applying a Dual-Band 8-Element Phased-Array

M. M. M. Ali, O. M. Haraz, I. Elshafiey, S. Alshebeili, A.-R. Sebak

Abstract:

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Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(32)

Wideband Compact Vivaldi Antenna Loaded with Dielectric Lens for Millimeter-wave Applications

M. A. Ashraf, O. Haraz, A.-R. Sebak, S. Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting, Vancouver, July 19-25, 2015. , NULL , NULL



(33)

28/38-GHz Dual-Band Millimeter Wave SIW Array Antenna with EBG Structures for 5G Applications

Nadeem Ashraf, O. Haraz, M. A. Ashraf, Saleh Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The International Conference on Information and Communication Technology Research (ICTRC2015), Abu Dhabi, UAE, May 17-19, 2015. , NULL , NULL



(34)

Single Layer Polarization Independent Reflectarray Antenna for Future 5G Cellular Applications

R. Elsharkawy, A.-R. Sebak, M. Hindy, O. M. Haraz, A. Saleeb, El-Sayed M. El-Rabaie

Abstract:

NULL

Keywords:

NULL

Published In:

The International Conference on Information and Communication Technology Research (ICTRC2015), Abu Dhabi, UAE, May 17-19, 2015. , NULL , NULL



(35)

8x8 Patch Antenna Array with Polarization and Space Diversity for Future 5G Cellular Applications

O. M. Haraz, M. A. Ashraf, S. Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The International Conference on Information and Communication Technology Research (ICTRC2015), Abu Dhabi, UAE, May 17-19, 2015. , NULL , NULL



(36)

Design of A Chipless UWB RFID Tag Using CPW Circular Monopole Antennas and Multi-Resonators

Muhammad A. Ashraf, Osama M. Haraz, Mohammed R. AlShareef, Hatim M. Behairy, S. Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The 15th edition of the IEEE International Conference on Ubiquitous Wireless Broadband ICUWB 2015, Montreal, Canada, from October 4th to 7th, 2015. , NULL , NULL



(37)

Compact Size Enhanced Gain Switched Beam Conformal Antipodal Tapered Slot Antenna System for 5G MIMO Wireless Communication

Muhammad A. Ashraf, Osama M. Haraz, Saleh Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The 11th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 19-21 Oct. 2015, Abu Dhabi, UAE. , NULL , NULL



(38)

Single-Band PIFA MIMO Antenna System Design for Future 5G Wireless Communication Applications

Osama M. Haraz, Mohammad Ashraf , Saleh Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

The 11th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob),
19-21 Oct. 2015, Abu Dhabi, UAE. , NULL , NULL



(39)

A novel butterfly-shaped multilayer backward microstrip hybrid coupler for ultrawideband applications

Ahmed, O. M. H., Sebak, A.-R. and Denidni, T. A.

Abstract:

NULL

Keywords:

NULL

Published In:

Microw. Opt. Technol. Lett. , 54 , 2231-2237



(40)

Dense Dielectric Patch Array Antenna with Improved Radiation Characteristics Using EBG Ground Structure and Dielectric Superstrate for Future 5G Cellular Networks

Haraz, O.M.; Elboushi, A; Alshebeili, S.A; Sebak, A

Abstract:

NULL

Keywords:

NULL

Published In:

IEEE Access , vol.2, no. , pp.909, 913



(41)

Low-cost High Gain Printed Log-Periodic Dipole Array Antenna with Dielectric Lenses for V-band Applications

O. M. Haraz, A.-R. Sebak, S. A. Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

IET Microwaves, Antennas and Propagation , 12 , NULL



(42)

Performance Investigations of Quasi-Yagi Loop and Dipole Antennas on Silicon Substrate for 94 GHz Applications

Osama M. Haraz, Mohamed Abdel-Rahman, Najeeb Al-Khalli, Saleh Alshebeili, and Abdel Razik Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

International Journal of Antennas and Propagation, , vol. 2014 , 9 pages



(43)

-Ultra-Wideband 4×4 Butler Matrix Employing Trapezoidal Shaped Microstrip-Slot Technique

O. M. Haraz, A.-R. Sebak, S. A. Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

Springer- Wireless Personal Communications , 2014 , 13 pages



(44)

Design of a printed log-periodic dipole array antenna with high gain for millimeter-wave applications

Haraz, O. M., Sebak, A.-R. and Alshebeili, S. A.

Abstract:

NULL

Keywords:

NULL

Published In:

Int J RF and Microwave Comp Aid Eng , 25 , 185-193



(45)

Performance investigation of V-band PLPDA antenna loaded with a hemispherical dielectric lens for millimeter-wave applications

Haraz, O. M., Sebak, A.-R. and Alshebeili, S. A.

Abstract:

NULL

Keywords:

NULL

Published In:

Microw. Opt. Technol. Lett. , 57 , 630-634



(46)

Design of ultrawideband multilayer slot-coupled vertical microstrip transitions employing novel patch shapes

Haraz, O. M., Sebak, A.-R. and Alshebeili, S. A.

Abstract:

NULL

Keywords:

NULL

Published In:

Microw. Opt. Technol. Lett. , 57 , 747-756



(47)

Study the Effect of Using Low-Cost Dielectric Lenses with Printed Log-Periodic Dipole Antennas for Millimeter-Wave Applications

Osama M. Haraz, Abdel Razik Sebak, and Saleh Alshebeili

Abstract:

NULL

Keywords:

NULL

Published In:

International Journal of Antennas and Propagation, , vol. , 7 pages



(48)

Electromagnetically-Coupled Millimeter-Wave Antenna Array with Non-Uniform Distributions for 60 GHz ISM Applications

O. M. Haraz

Abstract:

NULL

Keywords:

NULL

Published In:

Progress In Electromagnetics Research Letters , Vol. 53 , 71-76



(49)

Design of a Compact Dual-Band Folded-Waveguide Bandpass Filter using Multilayer Waveguide Resonators

S. K. Almorqi, H. Shaman, J. S. Hong, O. M. Haraz

Abstract:

NULL

Keywords:

NULL

Published In:

Int J RF and Microwave Comp Aid Eng , Volume 25, Issue 9 , pages 780-788



(50)

Millimeter-Wave Microstrip Diplexer using Elliptical Open-Loop Ring Resonators for Next Generation 5G Wireless Applications.

O. M. Haraz, N. Ashraf, S. Almorqi, H. Shaman, S. Alshebeili, A.-R. Sebak

Abstract:

NULL

Keywords:

NULL

Published In:

Microw. Opt. Technol. Lett. , 58 , 106-110



(51)

Optimized Broadband and Dual-Band Printed Slot Antennas for Future Millimeter Wave Mobile Communication

Nadeem Ashraf, Osama M. Haraz, Mohamed M. M. Ali, Mohamed A. Ashraf, Saleh A. Alshebili

Abstract:

NULL

Keywords:

NULL

Published In:

AEU - International Journal of Electronics and Communications , Volume 70, Issue 3 , Pages 257-264



(52)

Broadband and 28/38-GHz Dual-Band Printed Monopole/Slot Antennas for the Future 5G Cellular Communications

O. M. Haraz

Abstract:

NULL

Keywords:

NULL

Published In:

Journal of Infrared, Millimeter, and Terahertz Waves , NULL , pp.1-10



(53)

Design of Multilayered K-Band and Ka-Band Slot-Coupled Microstrip 90° Hybrid Couplers Employing Circular Ring Patch Shapes

A. Alaqeel, S. Almorqi, O. M. Haraz, S. A. Alshebeili, A.-R. Sebak

Abstract:

NULL

Keywords:

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Wireless Personal Communications , 92 , pp. 653-666



(54)

Novel UWB Trapezoidal and Butterfly Shaped Microstrip Phase Shifters Using Multilayered PCB Technology

O. M. Haraz, A.-R. Sebak

Abstract:

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Keywords:

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Published In:

Applied Computational Electromagnetics Society Journal , 31 (11) , pp. 1309 - 1314



(55)

UWB Monopole Antenna Chipless RFID Tags Using 8-Bit Open Circuit Stub Resonators

Osama M. Haraz, M. A. Ashraf, S. Alshebeili, Mohammed R. AlShareef, Hatim M. Behairy

Abstract:

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Keywords:

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Published In:

7th Microwave and Radar Week (MRW), May 9-12, 2016 , NULL , NULL



(56)

6-Element 28/38 GHz Dual-Band MIMO PIFA for Future 5G Cellular Systems

Yahya A. M. K. Hashem, Osama M. Haraz, and El-Deek M. El-Sayed

Abstract:

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Keywords:

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Published In:

2016 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting Fajardo, Puerto Rico, June 26 - July 1, 2016 , NULL , NULL



(57)

Design of a Dual-Band Printed Slot Antenna with Utilizing a Band Rejection Element for the 5G Wireless Applications

Mohamed Mamdouh M. Ali, Osama Haraz, and Saleh Alshebeili

Abstract:

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Keywords:

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Published In:

2016 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting Fajardo, Puerto Rico, June 26 - July 1, 2016 , NULL , NULL



(58)

Design of UWB Chipless RFID Tags Using 8-Bit Open Circuit Stub Resonators

Osama M. Haraz, Muhammad A. Ashraf, S. Alshebili, Mohammed R. AlShareef, Hatim M. Behairy

Abstract:

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Keywords:

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Published In:

The 17th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Montréal, QC, Canada, July 10th – 13th, 2016 , NULL , NULL



(59)

Time Analysis of Frequency Coded Chipless RFID Tag Based on CPW Multi-Band Resonators

Mohammed R. AlShareef, Muhammad A. Ashraf, Osama M. Haraz, Hatim M. Behairy and S. Alshebili

Abstract:

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Published In:

The 17th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Montréal, QC, Canada, July 10th - 13th, 2016 , NULL , NULL



(60)

Broadband Printed Slot Antenna for the Fifth Generation (5G) Mobile and Wireless Communications

Mohamed Mamdouh M. Ali, Osama M. Haraz, Saleh Alshebeili, and Abdel-Razik Sebak

Abstract:

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Keywords:

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Published In:

The 17th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Montréal, QC, Canada, July 10th - 13th, 2016 , NULL , NULL



(61)

Tri-band compact ACS-fed meander-line antenna for wireless communications

A. A. R. Saad, A. A. Ibrahim, O. M. Haraz, and A. Elboushi

Abstract:

NULL

Keywords:

NULL

Published In:

International Journal of Microwave and Wireless Technologies , doi:10.1017/S1759078717000745 , page 1 of 9



(62)

High-Gain Broadband Antennas for 60-GHz Short-Range Wireless Communications

H. Osama, A. Sultan, S. Abdel-Razik, and A. A. Saleh

Abstract:

NULL

Keywords:

NULL

Published In:

Wideband, Multiband, and Smart Reconfigurable Antennas for Modern Wireless Communications , A. M. Mohammad, Ed.,
ed Hershey, PA, USA , pp. 72-122



(63)

Properties of Silica-Based Aerogel Substrates and Application to C-Band Circular Patch Antenna

Mohamed Abdel-Rahman, Osama M. Haraz, Nadeem Ashraf Muhammad Fakhar Zia, Usama Khaled Ibrahim Elsahfey, Saleh Alshebeili, Abdel Razik Sebak

Abstract:

Silica aerogel is a lightweight and low-permittivity dielectric material that possesses attractive features for use as an antenna substrate. In this paper, we characterize the radio frequency and microwave dielectric permittivity properties of substrates composed of silica aerogel encapsulated in polymer aerogel in the frequency range from 10 MHz to 8.5 GHz. Characterized silica-based aerogel substrates show relative permittivity values varying between 1.055 and 1.25 and loss tangent values ranging from 5.08×10^{-4} to 0.0206. Silica-based aerogel substrates thus have the potential of use in designing antennas with high gain and large bandwidth. Validation is presented by characterizing the performance of a manufactured C-band circular patch antenna on silica-based aerogel substrate. The performance is also compared to a design that uses Rogers Duroid RT5880 substrate. The results reveal that the silica aerogel substrate antenna at 7.2 GHz provides 1.5 dB increase in gain, 88% enhancement in bandwidth and 68.5% reduction in mass, in comparison with the antenna on RT5880 substrate.

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Silica aerogel low-permittivity substrate high-gain antenna wideband antenna

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Journal of Electronic Materials , NULL , PP.1-7



(64)

New Innovative Millimeter-Wave Antenna/Array Solutions for Future Next Generation of 5G Cellular Communications

O. M. Haraz, A. A. Younis

Abstract:

NULL

Keywords:

NULL

Published In:

The Second International Conference on Multidisciplinary Research ICMR, Red Sea (Egypt) , NULL , NULL



(65)

Two Efficient Unit Cell Designs for Polarization Independent 5-G Reflectarrays

R. Elsharkawy, A. R. Sebak, M. Hindy, O. M. Haraz, A. A. Saleeb, E. S. M. El-Rabaie

Abstract:

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Keywords:

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Published In:

Minufiya Journal of Electronic Engineering Research, , vol. 25 , NULL



(66)

-Ultra-Wideband 4×4 Butler Matrix Employing Trapezoidal Shaped Microstrip-Slot Technique

Haraz, Osama Mohamed; Sebak, Abdel-Razik; Alshebeili, Saleh A.

Abstract:

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Keywords:

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Published In:

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(67)

Study the effect of using low-cost dielectric lenses with printed log-periodic dipole antennas for millimeter-wave applications

Haraz, Osama M.; Sebak, Abdel Razik; Alshebeili, Saleh

Abstract:

NULL

Keywords:

NULL

Published In:

International Journal of Antennas and Propagation , v. 2015 , NULL



(68)

Performance investigation of V-band PLPDA antenna loaded with a hemispherical dielectric lens for millimeter-wave applications

Haraz, Osama M.(1,2); Sebak, Abdel-Razik(1,3); Alshebeili, Saleh A.(1,4)

Abstract:

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Keywords:

NULL

Published In:

Microwave and Optical Technology Letters , v 57, n 3 , p 630-634



(69)

Design of Multilayered K-Band and Ka-Band Slot-Coupled Microstrip 90° Hybrid Couplers Employing Circular Ring Patch Shapes

Alaqeel, Abdulrahman; Almorqi, Sultan; Haraz, Osama M.; Alshebeili, Saleh A.; Sebak, Abdel-Razik

Abstract:

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Keywords:

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Published In:

Wireless Personal Communications , v 92, n 2 , p 653-666



(70)

Optimized broadband and dual-band printed slot antennas for future millimeter wave mobile communication

Ashraf, Nadeem; Haraz, Osama Mohamed; Ali, Mohamed Mamdouh Mahmoud; Ashraf, Mohamed Ahmad; Alshebili, Saleh Abdullah Saleh

Abstract:

NULL

Keywords:

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Published In:

AEU - International Journal of Electronics and Communications , v 70, n 3 , p 257-264



(71)

Design of a compact dual-band folded-waveguide bandpass filter using multilayer waveguide resonators

International Journal of RF and Microwave Computer-Aided Engineering

Abstract:

NULL

Keywords:

NULL

Published In:

International Journal of RF and Microwave Computer-Aided Engineering , v 25, n 9 , p 780-788



(72)

Multi-band slot loaded microstrip antenna for breast imaging

Abdel-Raheem, Mohammad A.; Khaled, Elsayed Esam M.; Haraz, Osama M.

Abstract:

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Keywords:

NULL

Published In:

National Radio Science Conference, NRSC, Proceedings , v 2018-March , p 481-488



(73)

Triple-band electrically coupled loop antenna (ECLA) for biomedical implantation purposes

Muhammadmahfouz, Abdullah; Ibrahim, Ali Ahmed Younis; Haraz, Osama M.

Abstract:

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Keywords:

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Published In:

National Radio Science Conference, NRSC, Proceedings , v 2018-March , p 475-480