Document details

Back to results | 1 of 2 Next

Proceedings of the 2018 7th International Conference on Computer and Communication Engineering, ICCCE 2018
16 November 2018, Article number 8539255, Pages 124-129
7th International Conference on Computer and Communication Engineering, ICCCE 2018; Kuala Lumpur; Malaysia; 19 September 2018 through 20 September 2018; Category numberCFP1839D-USB; Code 142740

Comparative Analysis of UWB Balance Antipodal Vivaldi Antenna for Array Configuration (Conference Paper)

Shaikh, F.A.[a], Khan, S.[a], Alam, A.Z.[a], Baillargeat, D.[b], Habaebi, M.H.[a], Yaacob, M.B.[a], Shah, J.[c], Shahid, Z.[d]

[a]Dept. of ECE, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia
[b]Dept. of Research, XLIM University of Limoges, Limoges, France
[c]Dept. of ECE, Faculty of Eng, University of Kuala Lumpur (Unikl), Kuala Lumpur, Malaysia

View additional affiliations

Abstract

View references (20)

In this paper, an Ultra-wideband Balance Antipodal Vivaldi Antenna in planar and h-plane array configuration is presented. The comparison of four elements of BAVA array in both planes has been observed. Each element of an antenna printed on the glass-reinforced epoxy laminate material (FR4) with a thickness of 1.5mm and relative permittivity of 4.3. The dimension of every single element is 60.75mm times 66mm approximately. The array elements of both planes almost cover the whole UWB frequency range with the reflection coefficient of -10dB. Based on the simulation results, the array elements in planar configuration showing good reflection and works well at 3.2GHz frequency while the configuration in h-plane the array elements works well at 7GHz of frequency. In planar configuration , the operating frequency of antenna elements is shifting as a result of the distance between inter elements which intensification in wavelength. The array elements in h-plane produce more gain up to 10.2 dB with good radiation patterns as compared to the planar plane. The antenna design and optimization development are verified using CST simulation software. © 2018 IEEE.

SciVal Topic Prominence

Topic: Antennas | Slot antennas | vivaldi antenna

Prominence percentile: 91.299

Author keywords

AVA BAVA UWB VSWR and CST

Indexed keywords

Engineering controlled terms: Antenna arrays | Computer software | Directional patterns (antenna) | Microstrip antennas

Engineering uncontrolled terms: Antipodal Vivaldi antenna | Array configurations | BAVA | Comparative analysis | Planar configurations | Relative permittivity | Simulation software | VSWR and CST

Engineering main: Ultra-wideband (UWB)

heading:

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

Funding details

Funding sponsor	Funding number	Acronym
	RIGS 15-147-0147	
	RIGS 16-067-0231	

Funding text

ACKNOWLEDGMENT The authors acknowledge the financial assistance of this research which is supported by the IIUM Research Management Center (RMC) via Research Initiative Grant Scheme (RIGS) with the grant number RIGS 15-147-0147 and RIGS 16-067-0231.

ISBN: 978-153866991-4
DOI: 10.1109/ICCCE.2018.8539255
Source Type: Conference Proceeding
Document Type: Conference Paper
Original language: English
Publisher: Institute of Electrical and Electronics Engineers Inc.

References (20)

View in search results format >

All | Export | Print | E-mail | Save to PDF | Create bibliography

1 Natarajan, R., George, J.V., Kanagasabai, M., Kumar Shrivastav, A.
A Compact Antipodal Vivaldi Antenna for UWB Applications

(2015) IEEE Antennas and Wireless Propagation Letters, 14, art. no. 7058372, pp. 1557-1560. Cited 31 times.
www.ieee.org
doi: 10.1109/LAWP.2015.2412255

View at Publisher

2 Sorocki, J., Piekarz, I., Gruszczynski, S., Wincza, K.
Approach to the design of wideband antenna arrays with reduced coupling between elements

(2017) 2017 Conference on Microwave Techniques, COMITE 2017, art. no. 7932361.
ISBN: 978-150904594-5
doi: 10.1109/COMITE.2017.7932361

View at Publisher

3 Bourqui, J., Campbell, M.A., Sill, J., Shenouda, M., Fear, E.C.
Antenna performance for ultra-wideband microwave imaging

(2009) RWS 2009 IEEE Radio and Wireless Symposium, Proceedings, art. no. 4957403, pp. 522-525. Cited 8 times.
ISBN: 978-142442699-7
doi: 10.1109/RWS.2009.4957403

View at Publisher

4 Tiang, S.S., Hathal, M.S., Anwar, N.S.N., Ain, M.F., Abdullah, M.Z.
Development of a compact wide-slot antenna for early stage breast cancer detection featuring circular array full-view geometry (Open Access)

(2014) International Journal of Antennas and Propagation, 2014, art. no. 309321. Cited 8 times.

http://www.hindawi.com/journals/ijap/
doi: 10.1155/2014/309321

View at Publisher

5 Khor, W.C., Bialkowski, M.E., Abbosh, A., Seman, N., Crozier, S.
An ultra wideband microwave imaging system for breast cancer detection

(2007) IEICE Transactions on Communications, E90-B (9), pp. 2376-2381. Cited 62 times.
http://ietcom.oxfordjournals.org/cgi/reprint/E90-B/9/2376
doi: 10.1093/ietcom/e90-b.9.2376

View at Publisher

6 Perdana, M.Y., Hariyadi, T., Wahyu, Y.
Design of vivaldi microstrip antenna for ultra-wideband radar applications (Open Access)

(2017) IOP Conference Series: Materials Science and Engineering, 180 (1), art. no. 012058. Cited 3 times.
http://www.iop.org/EJ/journal/mse
doi: 10.1088/1757-899X/180/1/012058

View at Publisher

7 Gazit, Ehud
IMPROVED DESIGN OF THE VIVALDI ANTENNA.

(1988) IEE Proceedings H: Microwaves, Antennas and Propagation, 135 (2), pp. 89-92. Cited 309 times.
doi: 10.1049/ip-h-2.1988.0020

View at Publisher

8 Elsheakh, D.M., Eltresy, N.A., Abdallah, E.A.
Ultra wide bandwidth high gain Vivaldi antenna for wireless communications
(Open Access)

(2017) Progress in Electromagnetics Research Letters, 69, pp. 105-111. Cited 3 times.
http://www.jpier.org/PIERL/pierl69/16.17060507.pdf
doi: 10.2528/PIERL17060507

View at Publisher

9 Moosazadeh, M., Kharkovsky, S., Case, J.T., Samali, B.
Improved Radiation Characteristics of Small Antipodal Vivaldi Antenna for Microwave and Millimeter-Wave Imaging Applications

(2017) IEEE Antennas and Wireless Propagation Letters, 16, art. no. 7891602, pp. 1961-1964. Cited 16 times.
www.ieee.org
doi: 10.1109/LAWP.2017.2690441

View at Publisher

10 Nassar, I.T., Weller, T.M.
A Novel Method for Improving Antipodal Vivaldi Antenna Performance

(2015) IEEE Transactions on Antennas and Propagation, 63 (7), art. no. 7101855, pp. 3321-3324. Cited 59 times.
doi: 10.1109/TAP.2015.2429749

View at Publisher

11 Elboushi, A., Joanes, D., Derbas, M., Khaled, S., Zafar, A., Attabibi, S., Sebak, A.R.
Design of UWB antenna array for through-wall detection system

(2013) IEEE Symposium on Wireless Technology and Applications, ISWTA, art. no. 6688802, pp. 349-

354. Cited 6 times.
http://ieeexplore.ieee.org/
ISBN: 978-147990156-2
doi: 10.1109/ISWTA.2013.6688802

View at Publisher

12 Ahsan, S., Kosmas, P., Sotiriou, I., Palikaras, G., Kallos, E.

Balanced antipodal Vivaldi antenna array for microwave tomography

(2014) 2014 IEEE Conference on Antenna Measurements and Applications, CAMA 2014, art. no. 7003359. Cited 6 times.
ISBN: 978-147993678-6
doi: 10.1109/CAMA.2014.7003359

View at Publisher

13 Shaikh, F.A., Khan, S., Zaharudin, Z., Alam, A.H.M.Z., Rahman, F.D.B.A., Badron, K.B., Yaacob, M.B., (...), Ahmed, S.F.

Detection and analysis of metal impairment inside wall using UWB modified antipodal vivaldi antenna

(2018) 4th IEEE International Conference on Engineering Technologies and Applied Sciences, ICETAS 2017, 2018-January, pp. 1-5. Cited 2 times.
ISBN: 978-153862106-6
doi: 10.1109/ICETAS.2017.8277856

View at Publisher

14 Ardelina, N., Setijadi, E., Mukti, P.H., Manhaval, B.

Comparison of array configuration for Antipodal Vivaldi antenna

(2015) Proceeding - 2015 International Conference on Radar, Antenna, Microwave, Electronics, and Telecommunications, ICRAMET 2015, art. no. 7380771, pp. 40-45. Cited 3 times.
ISBN: 978-146739424-6
doi: 10.1109/ICRAMET.2015.7380771

View at Publisher

15 Shaikh, F.A., Khan, S., Zaharudin, Z., Alam, A.H.M.Z., Yaacob, M.B., Shahid, Z., Rahman, F.D.B.A., (...), Badron, K.B.

Ultra-wideband antipodal Vivaldi antenna for radar and microwave imaging application

(2018) 2017 IEEE 3rd International Conference on Engineering Technologies and Social Sciences, ICETSS 2017, 2018-January, pp. 1-4. Cited 2 times.
ISBN: 978-153861611-6
doi: 10.1109/ICETSS.2017.8324143

View at Publisher

16 Abbosh, A.M., Bialkowski, M.E.

Design of ultrawideband planar monopole antennas of circular and elliptical shape

(2008) IEEE Transactions on Antennas and Propagation, 56 (1), pp. 17-23. Cited 176 times.
doi: 10.1109/TAP.2007.912946

View at Publisher

17 Ba, H.C., Shirai, H., Ngoc, C.D.

Analysis and design of antipodal Vivaldi antenna for UWB applications

(2014) 2014 IEEE 5th International Conference on Communications and Electronics, IEEE ICCE 2014, art. no. 6916735, pp. 391-394. Cited 14 times.
ISBN: 978-147995051-5
doi: 10.1109/CCE.2014.6916735

View at Publisher

18 Shaikh, F.A., Khan, S., Alam, A.Z., Habaebi, M.H., Khalifa, O.O., Khan, T.A.

Design and analysis of 1-to-4 wilkinson power divider for antenna array feeding network

(2018) 2018 IEEE International Conference on Innovative Research and Development, ICIRD 2018, pp. 1-4.
http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8370763
ISBN: 978-153865696-9
doi: 10.1109/ICIRD.2018.8376338

View at Publisher

19 CST Microwave Studio, Ver. 2015 Computer Simulation Technology. Cited 2 times.
Framing-ham, MA, USA

20 Shaikh, F.A., Khan, S., Zaharudin, Z., Zahirul Alam, A.H.M., Rahman, F.D.B.A., Badron, K.B., Baillargeat, D., (...), Shahid, Z.

Recognition of metal objects inside wall using antipodal vivaldi antenna

(2018) Indonesian Journal of Electrical Engineering and Computer Science, 11 (1), pp. 27-35. Cited 2 times.
http://www.iaescore.com/journals/index.php/IJEECS/article/download/12638/8630
doi: 10.11591/ijeecs.v11.i1.pp27-35

View at Publisher

< Back to results | 1 of 2 Next > ^ Top of page