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Frequency Reliant Wireless Power Transfer Link for a Applications of mWatts Devices (Conference Paper)

Adam, I. ✉, Khan, S. ✉, Zaharuddin, Z. ✉, Kader, K.A. ✉, Rahman, F.D.A. ✉, Nordin, A.N. ✉, Musa, N.A.C. ✉, Yaacob, M. ✉

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Abstract

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In general, the resonant inductive wireless power transfer is superior in power efficiency consequently provides longer transfer range over inductive or capacitive wireless power transfer. For that reason, the theoretical analysis and simulation results of the series-to-series wireless power transfer topology were discussed in this paper. The study is conducted to analyze the effect of the coupling coefficient (k) of the coupling coils to the resonant frequency and input impedance of the transmitting circuit. The analysis is conducted by analyzing the equivalent circuit model by using circuit theory. The equivalent circuit model is developed by using the T-equivalent circuit. Further, the result is validated with the circuit simulation using the ISIS Proteus simulation package. The results of the analysis used in developing the highly efficient series-to-series wireless power transfer. © 2018 IEEE.

SciVal Topic Prominence

Topic: Radio | Electric vehicles | resonant wireless

Prominence percentile: 99.796

Author keywords

Inductive Input impedance Resonant Series-to-series

Indexed keywords

Engineering controlled terms: Circuit simulation Electric impedance Electric impedance measurement Energy transfer Equivalent circuits Natural frequencies

Engineering uncontrolled terms: Analysis and simulation Coupling coefficient (k) Equivalent circuit model Inductive Input impedance Resonant Series-to-series Wireless power transfer

Engineering main heading: Inductive power transmission

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References (14)

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- 1 Li, P., Bashirullah, R.
A Wireless Power Interface for Rechargeable Battery Operated Medical Implants
 (2007) IEEE Transactions on Circuits and Systems II: Express Briefs, 54 (10), pp. 912-916. Cited 137 times.
 doi: 10.1109/TCSII.2007.901613
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- 2 Harrison, R.R.
Designing efficient inductive power links for implantable devices
 (2007) Proceedings - IEEE International Symposium on Circuits and Systems, art. no. 4253079, pp. 2080-2083. Cited 155 times.
- 3 Adam, I., Kadir, K.A., Khan, S., Nurashikin, A., Mansor, H.
Inductive resonant power transfer and topology consideration
 (2018) 2017 IEEE 3rd International Conference on Engineering Technologies and Social Sciences, ICETSS 2017, 2018-January, pp. 1-5.
 ISBN: 978-153861611-6
 doi: 10.1109/ICETSS.2017.8324197
[View at Publisher](#)
- 4 Schlierf, R., Horst, U., Ruhl, M., Schmitz-Rode, T., Mokwa, W., Schnakenberg, U.
A fast telemetric pressure and temperature sensor system for medical applications
 (2007) Journal of Micromechanics and Microengineering, 17 (7), art. no. S06, pp. S98-S102. Cited 30 times.
 doi: 10.1088/0960-1317/17/7/S06
[View at Publisher](#)
- 5 Jiang, H., Zhang, J., Lan, D., Chao, K.K., Liou, S., Shahnasser, H., Fechter, R., (...), Roy, S.
A low-frequency versatile wireless power transfer technology for biomedical implants
 (2013) IEEE Transactions on Biomedical Circuits and Systems, 7 (4), art. no. 2220763, pp. 526-535. Cited 44

[View at Publisher](#)

- 6 Johari, R., Krogmeier, J.V., Love, D.J.
Analysis and practical considerations in implementing multiple transmitters for wireless power transfer via coupled magnetic resonance
(2014) IEEE Transactions on Industrial Electronics, 61 (4), art. no. 6517242, pp. 1774-1783. Cited 70 times.
<http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=5410131>
doi: 10.1109/TIE.2013.2263780
[View at Publisher](#)
-

- 7 Khan, I.M., Khan, S., Khalifa, O.O.
Wireless transfer of power to low power implanted biomedical devices: Coil design considerations
(2012) 2012 IEEE Int. Instrum. Meas. Technol. Conf, (1), pp. 2584-2588. Cited 9 times.
-

- 8 Ahlbom, A., Bergqvist, U., Bernhardt, J.H., Cesarini, J.P., Court, L.A., Grandolfo, M., Hietanen, M., (...), Matthes, R.
Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)
(1998) Health Physics, 74 (4), pp. 494-521. Cited 4068 times.
-

- 9 Kurs, A., Karalis, A., Moffatt, R., Joannopoulos, J.D., Fisher, P., Soljacic, M., Soljac, M.
Wireless power transfer via strongly coupled magnetic resonances
(2009) Science (80-.), 83, pp. 83-86.
2007
-

- 10 Arshad, A., Khan, S., Alam, A.H.M.Z., Tasnim, R., Gunawan, T.S., Ahmad, R., Nataraj, C.
An activity monitoring system for senior citizens living independently using capacitive sensing technique
(2016) Conference Record - IEEE Instrumentation and Measurement Technology Conference, 2016-July, art. no. 7520405. Cited 14 times.
<http://ieeexplore.ieee.org/xpl/conferences.jsp>
ISBN: 978-146739220-4
doi: 10.1109/I2MTC.2016.7520405
[View at Publisher](#)
-

- 11 Torla, A.L., Khan, S., Muthalif, A.G., Azman, A.W., Mustafah, Y.M.
Low voltage DC power supply with spike-blocking features
(2013) Conference Record - IEEE Instrumentation and Measurement Technology Conference, art. no. 6555596, pp. 1161-1164. Cited 3 times.
ISBN: 978-146734622-1
doi: 10.1109/I2MTC.2013.6555596
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-

- 12 Nataraj, C., Khan, S., Habaebi, M.H., Muthalif, A.G.A., Arshad, A.
Resonant coils analysis for inductively coupled wireless power transfer applications
(2016) Conference Record - IEEE Instrumentation and Measurement Technology Conference, 2016-July, art. no. 7520343. Cited 8 times.
<http://ieeexplore.ieee.org/xpl/conferences.jsp>
ISBN: 978-146739220-4

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-
- 13 Zhang, Z., Chau, K.T.
Homogeneous Wireless Power Transfer for Move-and-Charge

(2015) IEEE Transactions on Power Electronics, 30 (11), art. no. 7063268, pp. 6213-6220. Cited 33 times.
<http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=4712525>
doi: 10.1109/TPEL.2015.2414453

[View at Publisher](#)

-
- 14 Li, Q., Liang, Y.C.
An Inductive Power Transfer System with a High-Q Resonant Tank for Mobile Device Charging

(2015) IEEE Transactions on Power Electronics, 30 (11), art. no. 7101277, pp. 6203-6212. Cited 16 times.
<http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=4712525>
doi: 10.1109/TPEL.2015.2424678

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