Scopus

Document details

Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More...

Full Text View at Publisher

Proceedings - 5th International Conference on Computer and Communication Engineering: Emerging Technologies via Comp-Unication Convergence, ICCCE 2014
4 February 2015, Article number 7031664, Pages 308-311
5th International Conference on Computer and Communication Engineering, ICCCE 2014; Sunway Putra HotelKuala Lumpur; Malaysia; 23 September 2014 through 24 September 2014; Category numberE5413; Code 110844

Simplified channel authentication algorithm for secure quantum key distribution (Conference Paper)

Elwadeya, M.Y.K., Al-Khateeb, K.A.S., Hasbullah, N.F.

Electrical and Computer Engineering Department, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia

Abstract

View references (11)

Quantum key distribution (QKD) is characterized by the implementation of the principles of quantum mechanics in distributing the symmetric cryptographic key between two communicating stations. The quantum channel through which a light beam travels and then examined quantum-mechanically is governed by several quantum cryptographic protocols. This paper presents a simplified algorithm of the quantum authentication process (QAP) of the six-state deterministic quantum protocol (6DP). The proposed setup replaces the nonlinear crystal BBO which is responsible for the second harmonic generation process with a simple polarization splitting using Glan Thompson Polarizer (GTP). © 2014 IEEE.

Author keywords

authentication cryptography deterministic distribution key polarization protocol quantum

Indexed keywords

Engineering controlled terms: Algorithms Authentication Communication channels (information theory) Cryptography Harmonic generation Mobile security Network protocols Nonlinear optics Polarization Quantum theory

Authentication algorithm
deterministic
distribution key
Polarization splittings
quantum
Quantum-cryptographic protocols
Secure quantum key distributions

Engineering main heading: Quantum cryptography

ISBN: 978-147997635-5
Source Type: Conference Proceeding
Original language: English

DOI: 10.1109/ICCCE.2014.93
Document Type: Conference Paper
Volume Editors: Gunawan T.S.
Sponsors: Felda Wellness Corporation,Malaysia Convention and Exhibition Bureau (MyCEB),Malaysian Industry-Government Group for High Technology,University Putra Malaysia,Yayasan Kesejanteran Bandar
Publisher: Institute of Electrical and Electronics Engineers Inc.

References (11)

View in search results format >

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

1 Imre, S.
Quantum communications: Explained for communication engineers
(2013) *IEEE Communications Magazine*, 51 (8), art. no. 6576335, pp. 28-35. Cited 6 times.
doi: 10.1109/MCOM.2013.6576335
View at Publisher

2 Quellette, L.
Quantum key distribtion
(2005) *The Industrial Physicist*
Boston

3 Bennett, C.H., Bessette, F., Brassard, G., Salvail, L., Smolin, J.
Experimental quantum cryptography
(1992) *Journal of Cryptology*, 5 (1), pp. 3-28. Cited 1074 times.
doi: 10.1007/BF00191318
View at Publisher

4 Kak, S.
(2013) *Threshold Quantum Cryptography*. Cited 2 times.
Oklahoma

5 Yeang, C.-P.
Engineering entanglement, conceptualizing quantum information
(2011) *Annals of Science*, 68 (3), pp. 325-350. Cited 3 times.
doi: 10.1080/00033790.2011.588008
View at Publisher

6 Long, X.S.L.
(2011) *Theoretical Efficient High Capacity QKD Scheme*
Key Laboratory for QI&M, Beijing

7 Michel Boyer, D.K.T.M.
QKD with classical bob
(2007) *IEEE First International Conference on Quantum, Nano, and Micro Technologies (ICQNM07)*

8 Abdul Khair, I.B.M.F.
Secure communication with practical two-way QKD protocol and weak +Vacuum decoy state
(2013) *IEEE*
Kuala Lumpur

9 Shaari, J.S., Lucamarini, M., Wahiddin, M.R.B.
Deterministic six states protocol for quantum communication
(2006) *Physics Letters, Section A: General, Atomic and Solid State Physics*, 358 (2), pp. 85-90. Cited 35 times.
doi: 10.1016/j.physleta.2006.05.007
View at Publisher

10 Lucamarini, M., Mancini, S.
Secure deterministic communication without entanglement
(2005) *Physical Review Letters*, 94 (14), art. no. 140501. Cited 258 times.
http://scitation.aip.org/getpdf/servlet/GetPDFServlet?filetype=pdf&id=PRLTAO000094000014140501000001&idtype=cvips
doi: 10.1103/PhysRevLett.94.140501
View at Publisher

11 Cerè, A., Lucamarini, M., Di Giuseppe, G., Tombesi, P.
Experimental test of two-way quantum key distribution in the presence of controlled noise
(2006) *Physical Review Letters*, 96 (20), art. no. 200501. Cited 39 times.
http://oai.aps.org/oai?verb=GetRecord&Identifier=oai:aps.org:PhysRevLett.96.200501&metadataPrefix=oai_apsmeta_2
doi: 10.1103/PhysRevLett.96.200501
View at Publisher

‹ Back to results | 1 of 1 ^ Top of page