

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局

(43) 国际公布日
2014 年 3 月 27 日 (27.03.2014)



(10) 国际公布号
WO 2014/044149 A1

- (51) 国际专利分类号:
H04L 12/26 (2006.01)
- (21) 国际申请号: PCT/CN2013/083418
- (22) 国际申请日: 2013 年 9 月 12 日 (12.09.2013)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
201210358215.1 2012 年 9 月 24 日 (24.09.2012) CN
- (71) 申请人: 航天科工深圳(集团)有限公司 (AEROSPACE SCIENCE & INDUSTRY SHENZHEN (GROUP) CO., LTD.) [CN/CN]; 中国广东省深圳市福田区深南大道 4019 号航天大厦 B 座 5 楼, Guangdong 518000 (CN)。
- (72) 发明人: 许珍 (XU, Zhen); 中国广东省深圳市福田区深南大道 4019 号航天大厦 B 座 5 楼, Guangdong 518000 (CN)。
- (74) 代理人: 深圳中一专利商标事务所 (SHENZHEN ZHONGYI PATENT AND TRADEMARK OFFICE); 中国广东省深圳市福田区深南中路 1014 号老特区报社四楼西区 (5 号信箱), Guangdong 518028 (CN)。

- (81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。
- (84) 指定国 (除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

本国际公布:

- 包括国际检索报告(条约第 21 条(3))。

(54) Title: SIMULATION METHOD AND SYSTEM FOR POWER LINE CARRIER COMMUNICATION SYSTEM

(54) 发明名称: 一种电力线载波通信系统的仿真方法、系统

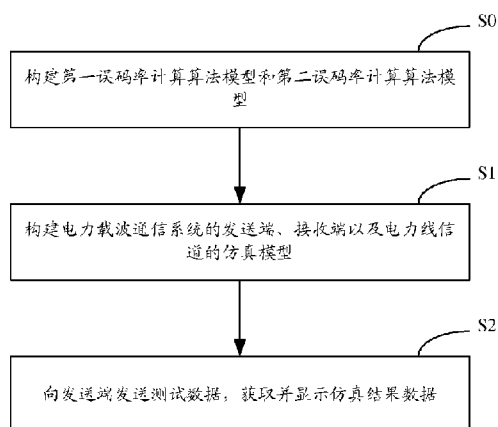


图 1 /FIG. 1

- S0 Constructing a model of a first error rate calculation algorithm and a model of a second error rate calculation algorithm
- S1 Constructing simulation models of a sending end, a receiving end and a power line channel of a power carrier communication system
- S2 Sending test data to the sending end, and obtaining and displaying simulation result data

(57) Abstract: The present invention belongs to the technical field of simulation of power line carrier communications. Provided are a simulation method and system for a power line carrier communication system. In a simulation model of a sending end and a simulation model of a receiving end which are constructed by the method and system, each of a channel encoding model and a channel decoding model comprises an ARM core chip and a simulation model of a peripheral logic circuit thereof; the sending end comprises a simulation model of an RS error correction encoding algorithm of the ARM core chip; and the receiving end comprises a simulation model of an RS error correction decoding algorithm of the ARM core chip. Because the ARM core chip has a stronger data processing capability and has lower costs than a DSP chip or an FPGA chip generally, combining the RS error correction encoding and decoding algorithms therewith can achieve the operation of RS cyclic error correction codes having a higher error correction capability at low costs, and the RS error correction encoding and decoding algorithms can ensure the stable transmission of power line carrier signals.

(57) 摘要:

[见续页]

WO 2014/044149 A1



本发明属于电力线载波通信的仿真技术领域，提供了一种电力线载波通信系统的仿真方法、系统。该方法及系统所构建的发送端的仿真模型和接收端的仿真模型中，信道编码模型和信道解码模型均包括 ARM 核心芯片及其外围逻辑电路的仿真模型，且发送端包括 ARM 核心芯片的 RS 纠错编码算法仿真模型、接收端包括 ARM 核心芯片的 RS 纠错解码算法仿真模型。由于 ARM 核心芯片具有较强的数据处理能力，且成本普遍较 DSP 芯片或 FPGA 芯片低，将其与 RS 纠错编解码算法结合，可低成本实现具有较高纠错能力的 RS 循环纠错码的运算，该 RS 纠错编解码算法能够保证电力线载波信号的稳定传输。