

朵遮波抵急筵簾钨蛸芒荏抓燃播幼烁抵杪

Overall scheme design of audio acquisition system for substation equipment

冽鲸鲸 Zizi Dong 冽劫劫 Tingting Dong 冽镒 Jun Dong

兴滥遮稻猎抵悞蛸仇饵 涎伪兴滥 325000 澳合

Wenzhou Electric Power Construction Co., LTD. Wenzhou Zhejiang 325000 China

于峭 璁ツ朵钨钨钨八朵遮波澳摄钨璁抓抵急罢挨 姿棋楼富诘朵遮波抓袄纭幼妈シ彪荏抓朵钨钨抵急醛蛸拙仙非愁菜蠖卑狼 非能シ八虔酮棟瘠 彪荏拙仙幼坞爵狼钨卑粉抓苻爵璁韦炆踟 安雍百阮泉漫シ八同 婢染蹙谏汽簇朵遮波抵急筵簾优 庐钨蛸芒荏 就酝爵朵钨钨纭极筵茶尔抓就阮钨蛸 踏悞炆笈抓脸招旦煽シ

Abstract As one of the most important equipment in the substation, the transformer directly affects the operation state of the substation. Traditional transformer equipment fault monitoring completely depends on manual completion. In order to prevent miscalculation, traditional monitoring methods require high experience of staff and lack timeliness. Therefore, this paper studies and proposes the audio feature acquisition system of substation equipment to realize the real-time acquisition of transformer operation sound signal, which has a good application prospect.

于初瘵柏ツ筵簾钨蛸 朵遮波 极筵彪墨蹙

Key words audio acquisition; substation; sound sensor

0 菱璧

筵簾瘵拭芒荏夫筵簾钨蛸芒荏搔瘤旦朵遮波抵急钨蛸筵 簾抓疤璁颞弊芒荏シ挨岫拾椹 筵簾钨蛸芒荏遏蔽就阮钨蛸朵 遮波痕茹里袄纭扉洼澳宝瘵抓极筵茶尔 钧捏悞钨蛸笈抓极 筵茶尔减共插兢 擗筵簾瘵拭芒荏遏蔽爵钨蛸戴抓极筵茶尔 祇纭瘵拭 钧卸阙浪挨特抓蕴货韩极シ极筵茶尔蔽盾艘竣簾岳 铲殒芒群 Mel Frequency Cepstrum Coefficient MFCC 优庐硃 铈瘵裴磷拾 祇纭瘵拭 糯戴朵遮波抵急袄纭扉洼澳极筵抓朵 佃琨露 擗番葡同祇纭醛麒棋认盾瘵埋 蔽藏绑奢笈衡管俳抵 急シ朵遮波抵急筵簾抓钨蛸芒荏搔挨傲蠹里疾升抓芒荏 嗽己 就阮抵急袄纭极筵抓就阮钨蛸夫瘵膺 部禄朵遮波抵急抓筵 簾瘵拭颞弊爱蔽伎需就阮吩研 枋朵遮波抵急抓极筵茶尔遏 蔽就阮彪煜 八番蕨朵遮波抓苻大袄颞价旧恢仇シ

1 朵遮波抵急筵簾钨蛸芒荏抓伉弊申化

朵遮波钨急抓筵簾钨蛸芒荏兆伐互伉弊抵仍士能 滇篷 筵簾及枣獬硬シ旅奇殆蹙シ蔽伎需研茶獬硬シ筵簾及枣獬硬シ极 筵彪墨蹙鄱シ八绊部燃傲芒荏瞳里袄颞 祇包伉弊抵仍芒荏痕 就蚘申化阮璁璁殂由申珊シ

1.1 极筵彪墨蹙

谁葡筵簾仙梭苕嗜遏霰 朵钨钨痕袄纭扉洼澳宝瘵极筵 簾岳挨岫罹痕 50 Hz~1 kHz 藹矮吵芳抓栗辆挨岫碍辩偏扉 30 dBシ八绊愁幼炳钨蛸朵钨钨抓极筵茶尔 蠓璁钧极筵抓钨 蛸簾岳抵旧禄鸵 50 Hz~1 kHz 谨核诘冀挨包シ八康遏嗽钨蛸 戴朵钨钨袄纭极筵抓混沱优庐 康遏嗽蹙俊钨蛸璁洼澳抓例 暖茶尔 婢染申珊绊 HSL-22HA-HIFI-S 愁矾化跳插踪劈筵 蹙 净搔燃傲芒荏钨蛸极筵茶尔抓疤抵急罢挨シ八插麒爵朵遮 波钨蛸极筵双婢群葡抓苻挨漫 钧愁矾化跳插踪劈筵蹙抓钨

双幼妈汽旦抵旧 疤璁抵弈顿群悞 鼎极极钨双シ拖跳钨蛸 5 s 抓筵簾シ艳双簾岳 8 kHz艳双芸辆八 16 炳 蔽同佞插钨蛸群 葡抓苻挨漫 纫藏番蕨群葡奢笈衡爵颞^[1]シ

1.2 旅奇殆蹙

朵钨钨袄纭阮极筵茶尔疾升几双シ筵簾钨蛸芒荏璁就阮 钨蛸极筵茶尔 就酝爱筵簾颞弊芒荏罢疋抓就阮彪煜 爵厄奇 殆蹙抓群葡及枣嗽稻璁韦炆踟シ疤奇殆蹙碍备璁悞炆翼抓撑 兢据铈夫级抵浓磕嗽稻 盗擗颞碍嗽伎踟シ爵同 婢染申珊 STM32F103ZET6 旅及枣蹙钨八疤奇獬硬 嗽己学隼筵簾钨蛸 芒荏爵极筵茶尔抓钨蛸蠓韦蔽盾极筵茶尔抓彪煜璁韦シ净搔 摄憩阙朵遮波抵急极筵钨蛸芒荏部招抓疤奇獬硬^[2]シ

1.3 筵簾及枣獬硬

爵朵遮波抵急多簇抓极筵茶尔祇纭就阮钨蛸夫瘵瘵 碍 备璁韦钨急钨蛸抵急 祇璁韦钨蛸抵急率箐悞楷认瘵拭芒荏 夫筵簾优庐钨蛸芒荏 祇双柠嗽佞插钨蛸戴抓筵簾颞铈志俐 陀咳钨蛸戴抓朵钨钨筵簾抓颞铈铈姿棋楼富摄玟抓瘵拭瘵认 享嗜シ恢绑同 痕莞朵遮波钨急筵簾钨蛸芒荏阮 爵绑筵簾及 枣獬硬蠓璁水级熙抹 厨率璁璁嗽爵极筵茶尔祇纭跳甑铈铈 膺シ八同 婢染申珊 VS1053 筵簾蒺璇璁獬硬 厨嗽己钨招 PCM 蒺膺幼吝爵朵钨钨多簇抓极筵茶尔祇纭瘵膺 笨擗摄翼 蛸辆衡祇钨朵钨钨抓极筵茶尔蔽招钨瘵拭シ

1.4 蔽伎需研茶獬硬

朵遮波抵急筵簾钨蛸芒荏爱朵遮波抵急筵簾瘵拭颞弊 罢疋蠓璁就酝茶每蚌研 蠓璁就酝蔽伎需研茶シ璁就酝祇傲盗 嗽 芒荏率箐钨急需蕊奇殆獬硬シ谁葡朵遮波抵急筵簾钨蛸芒 荏抓狼钨钨钨夫蠓韦 帷憩脸漫榴播申珊需蕊獬硬抓初瘵シ鹞 级 棕獬硬祇璁璁己峻 璁嗽学隼莱稠各芒荏抓璁韦シ好同 筵 簾钨蛸芒荏申招绊 DM9000 蔽伎需棋堕獬硬拾就酝蔽伎需研 茶盗嗽シ

顿摠染援

- [1]腿究壤.恢绑筵簾桎呆瘁拭抓柔卑超究朵遮陂抵急痕萃拙妨爱醛蜞七蚰[J].旅化遮嗉脸招.2020 02 31-34.
- [2]赂栽.恢绑媵煽毫颞抓疤近陂盯藩痕萃拙妨爱醛蜞七孰蹙谏[J].旅化遮嗉脸招.2019 12 12-15.
- [3]浆洒 筵县伪 封鲈.瘁镭吝朵遮陂抵急筵簾脾芥优庐艳蜻夫桎认瘁拭苕菥[J].遮愨狼肢.2019.06 67-71+74.
- [4]腮怎 文燥 月疔.柔卑超究朵遮陂遮稻抵急筵簾拙仙盾醛蜞桎认苕菥[J].杪塾生仙铎爱奇殆.2017.11 10-11.
- [5]非猎陟 艘鲈 蚓蔗鄙.恢绑苻爵峻悟朵剖抓遮稻苕菥愨悟肃仙纫塙[J].遮稻苕菥插俳爱奇殆.2020.07 6-8.