

DA-681A系列

Preliminary

采用第三代Intel® Core™ Celeron 1047UE 1.4GHz CPU，2个隔离RS-232/422/485和10个隔离RS-485端口，6个LAN端口，VGA，mSATA，USB的x86 1U 19英寸机架式计算机



- > IEC 61850-3, IEEE 1613与IEC 60255. 符合变电站自动化系统需求 (仅DPP与DPP-T款)
- > 第三代Intel® Core™ Celeron 1047UE 1.4 GHz CPU
- > 1个内置DDR3内存插槽
- > 1个用于操作系统的mSATA硬盘与1个用于存储扩展的SATA II硬盘
- > 6个千兆以太网端口, 用于网络冗余
- > 4个USB 2.0端口, 用于外部高速传输设备
- > 2个隔离RS-232/422/485端口与10个隔离RS-485端口
- > 嵌入式Debian 8 Linux (W7E by CTOS)
- > 支持100-240V交流电与直流电电源输入 (单电源与双电源版同时有售)
- > DPP与DPP-T款可选择搭配IRIG-B扩展模块



概述

Moxa DA-681A系列x86机架式嵌入计算机可用于控制、监测、数据采集与协议转换应用。DA-681A设计坚固，适于电力自动化、运输与油气等行业的工业自动化应用。

DA-681A采用第三代Intel® Core™ Celeron 1047UE 1.4 GHz CPU与HM65芯片集，可支持标准x86, 1 x VGA, 4 x USB、6千兆 LAN端口、2个RS/232/422/485 三合一串行端口与10个RS-485 (RS-422定制) 端口。

DA-681A具有一个mSATA Mini-PCIe 插槽并预装了Linux系统；通过CTOS也支持Windows 7 Embedded。

该设备的另一个优点是其串行端口具有2kV的数字隔离防护功能，可确保在恶劣工业环境下通信的可靠性。此外，先进的IEC 61850-3, IEEE 1613与IEC 60255兼容多合一设计及丰富的接口，非常适用于变电站自动化系统应用。

智能恢复功能

对于特定行业的工程人员可能不具备足够的计算机知识，不知道该如何解决操作系统的情况，DA-681A提供了智能恢复功能，非常便于计算机软件错误故障的排除，从而尽量降低停机时间。

Moxa Smart Recovery™是一个自动化BIOS级软件恢复系统，工程人员可通过该系统对操作系统进行自动恢复，从而尽量降低停机时间。

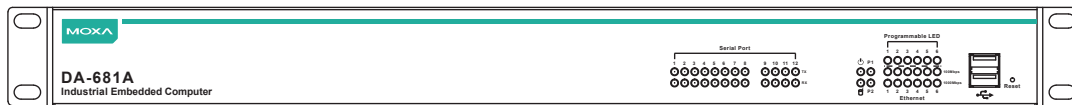
主动监测功能

DA-681A的主动监测功能通过观察CPU使用率、内存使用率、存储分区使用率、CPU与主板工作温度与冗余电源监控器来监测计

算机健康度，并可触发继电器，发出可见或音频报警信号。

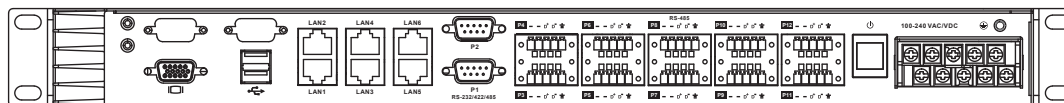
外观

前视图

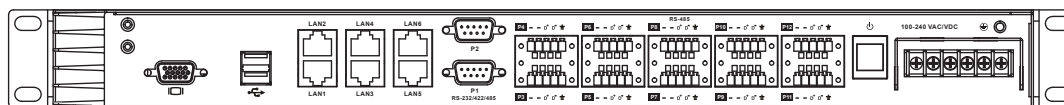


DA-681A-DPP & DA-681A-DPP-T

后视图



DA-681A-SP



硬件规格

计算机

CPU: 第三代Intel Core Celeron 1047UE 1.4 GHz处理器

操作系统: Linux Debian 8 (已预先安装)

*CTOS可支持W7E操作系统

系统芯片组:

芯片组: Intel HM65

BIOS: 64 Mbit Flash BIOS, PCI即插即用, 支持ACPI功能

系统内存: 1个支持DDR3-1066/1333 SO-DIMM SDRAM插槽, 最高可达8 GB, 已内置2GB Linux系统

扩展总线: PCI/104接口 (仅DPP型号)

USB: 兼容USB 2.0, 4个A型接头, 支持系统引导

存储

内建: 8 GB Linux系统 (已安装在mSATA中)

硬盘支持: 2个SATA-300硬盘扩展连接器

显示

图形控制器: Intel HD Graphics (集成)

显存: 动态图像存储器, 可共享系统32 MB内存

显示接口: 可用于VGA输出的CRT接口 (DB15孔式接头)

分辨率: CRT显示器模式的像素分辨率高达2048 x 1536 @ 75 Hz

以太网接口

LAN: 6个10/100/1000 Mbps自适应以太网口

电磁隔离保护: 内建1.5 KV

串口

串口标准:

- 2个RS-232/422/485口 (DB9针式)

- 10个RS-485-2W口 (接线端子)

ESD 保护: 15 kV全信号

突波保护: **4 kV** (仅限DA-681A-I-DPP-T型号)

隔离: **2 kV**数字电流隔离

串口通讯参数

数据位: 5, 6, 7, 8

停止位: 1, 1.5, 2

校验位: None, Even, Odd, Space, Mark

流量控制: RTS/CTS, XON/XOFF, RS-485 ADDC® (自动数据流向控制)

波特率: 50 bps ~ 921.6 Kbps (支持非标波特率; 详见用户手册)

串口信号

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND, RI

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

LED指示灯

系统: 电源, 存储

LAN: 100M x 6 1000M x 6

串口: RS-232/422/485: 2 x Tx, 2 x Rx RS-485: 10 x Tx, 10 x Rx

可编程: 6 LEDs

电源故障: LED x 2 (双电源型号)

开关和按钮

电源开关: 开/关 (后面板)

复位按钮: 用于系统硬件复位 (前面板)

机械特性

外壳: SECC金属板(1 mm)

重量: 4.5 kg

尺寸: 440 x 315 x 45 mm (17.32 x 12.40 x 1.77 in)

安装: 标准19英寸机架

工作环境

工作温度: SP型号: -25 to 55°C (-13 to 131°F) DPP型号: -25 to 55°C

(-13 to 131°F) DPP-T型号: -40 to 70°C (-40 to 158°F)

存储温度: -40 to 85°C (-40 to 185°F)

工作湿度: 5 ~ 95% (无凝露)

防震: 7 mm (2-9 Hz), 20 m/s/s (9-200 Hz), 15 m/s/s (200-500 Hz) @

IEC-61850-3, IEC 60870-2-2/Cm/(3M6)/(4M6), sine wave, 2-500 Hz,

1 Oct/min, 10 cycles, 2 hrs 40 mins per axis

抗冲击: 300 m/s² @ IEC-61850-3, IEC 60870-2-2/Cm/(3M6)/(4M6), half

sine wave, 11 ms

电源需求

电压输入: 单/双电源输入 100至240 VAC/VDC 自适应, 47至63 Hz, 接线端子

功耗: 30 W

安规认证

Safety: LVD, UL, cUL

Electrical Substation: IEC 61850-3, IEC 60255, IEEE 1613

Protection Relay: IEC 60255

EMC: FCC, CE (Class A)

Green Product: RoHS, CRoHS, WEEE

可靠性

报警工具: 内建蜂鸣器和RTC (实时时钟)

自动重启触发器: 内建WDT (看门狗定时器), 支持1-255级时间间隔系统重启设置, 可由软件编程

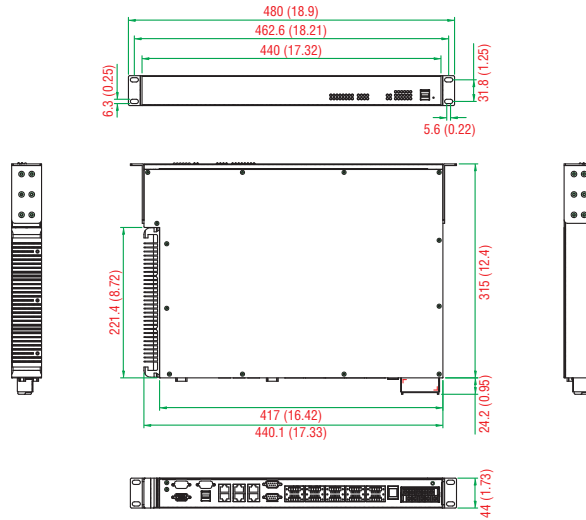
保修

保修期: 3年

详细信息: 参考 www.moxa.com/warranty

尺寸

单位: mm (英寸)



软件规格

Linux

操作系统: Debian 8, 64位

内核版本: GNU/Linux 3.16

文件系统: EXT2, EXT3, EXT4

协议栈: TCP, UDP, IPv4, SNMP v1/v2c/v3, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE

网络安全: OpenVPN, iptables

终端服务器 (SSH): 为两个不信任的主机在没有安全机制的网络之间提供安全的加密通信。

看门狗服务: 在指定时间内通过CPU硬件实现系统重启 (Linux标准API)

系统Shell: DASH(default), BASH

编程语言支持: PHP, Perl Python

Windows Embedded Standard 7 (by CTOS)

操作系统:

- 32-bit or 64-bit supported

- Remote Client

- Remote Procedure Call

应用和服务开发:

- .Net Framework 4.5

- Remote Desktop Protocol 7.1

- COM OLE Application Support

- COM+ Application Support

- MSMQ

网络服务:

- Internet Explorer 11

- IIS 7.0

文件系统和数据存储:

- Windows Data Access Components

- Windows Backup and Restore

诊断:

- Common Diagnostic Tools
- Problem Reports and Solutions

字体: Chinese (Trad. and Simp.), Japanese, Korean, Western, Middle Eastern, South East Asian, and South Asian Fonts

图形和多媒体:

- MPEG DTV-DVD Audio Decoder (MPEG-2, AAC)

- MPEG Layer-3 Audio Codecs (MP3)

- MPEG4 Decoders

- Windows Media Video VC-1 (WMV) Codecs

- DirectX and Windows Device Experience

- Windows Media Player 12

管理:

- Group Policy Management

- Windows Management Instrument (WMI)

- Windows Update

网络:

- Extensible Authentication Protocol (EAP)

- Internet Authentication Service

- Telnet Server

- Bluetooth

- Domain Services

- Network Access Protection

- Network and Sharing Center

- Quality of Service

- Remote Access Service (RAS)

- Telephony API Client

- Windows Firewall

- Wireless Networking

安全:

- Credential Roaming Service
- Credentials and Certificate Management
- Windows Authorization Manager (AZMAN)
- Windows Security Center
- Active Directory Rights Management
- Security Base
- Encrypted File System (EFS)

嵌入式特点:

- Enhanced Write Filter (EWF)
- File-Based Write Filter (FBWF)
- Message Box Default Reply
- Registry Filter
- WSDAPI for .NET

嵌入式自我诊断: SNMP-based remote scripting layer for monitoring, reporting, and control

智能恢复: BIOS level system recovery tool

订购信息

DA-681A系列可选型号

DA-681A-I-SP: 6 Ethernet ports, VGA, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, Single Power (RAM, mSATA, OS not included), -25 to 55°C operating temperature

DA-681A-I-SP-LX: 6 Ethernet ports, VGA, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, Single Power, Linux Debian 8., -25 to 55°C operating temperature

DA-681A-I-DPP: IEC 61850-3 computer with VGA, 6 LAN ports, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, dual power (RAM, mSATA, OS not included), -25 to 55°C operating temperature

DA-681A-I-DPP-LX: IEC 61850-3 computer with VGA, 6 LAN ports, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, dual power, Linux Debian 8., -25 to 55°C operating temperature

DA-681A-I-DPP-T: IEC 61850-3 computer with VGA, 6 LAN ports, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, dual power (RAM, mSATA, OS not included), -40 to 70°C operating temperature

DA-681A-I-DPP-T-LX: IEC 61850-3 computer with VGA, 6 LAN ports, 2 RS-232/422/485 ports, 10 RS-485 ports, mSATA, SATA, USB, dual power, Linux Debian 8., -40 to 70°C operating temperature

包装清单

- DA-681A嵌入式计算机
- 机架安装套件
- 软件文档及光盘
- 快速安装指南 (打印版)
- 保修卡

建议产品组合

| Operating System | System Memory | mSATA for OS |
|------------------------------------|---------------|--------------|
| Windows Embedded Standard 7 32 bit | ≥ 4 GB | ≥ 8 GB |
| Windows Embedded Standard 7 64 bit | ≥ 4 GB | ≥ 16 GB |
| Linux Debian 8 | ≥ 2 GB | ≥ 4 GB |


DA系列型号规格对照表

| Model Name | Serial Ports | | Giga LAN Port | Storage | | | Expansion PCI-104 (for IRIG-B) | System | | | Power | Relay | IEC 61850-3 IEEE/1613 IEC 60255 |
|--------------------|--------------|--------|---------------|---------|-------|-----|--------------------------------------|--------|-----|-------|-------|-------|---------------------------------------|
| | 3-in-1 | RS-485 | | SATA | mSATA | USB | | OS | RAM | mSATA | | | |
| DA-681A-I-SP | 2 | 10 | 6 | 1 | 1 | 4 | - | - | - | - | 1 | - | - |
| DA-681A-I-SP-LX | 2 | 10 | 6 | 1 | 1 | 4 | - | Linux | 2G | 8G | 1 | - | - |
| DA-681A-I-DPP | 2 | 10 | 6 | 1 | 1 | 4 | 1 | - | - | - | 2 | 1 | ✓ |
| DA-681A-I-DPP-LX | 2 | 10 | 6 | 1 | 1 | 4 | 1 | Linux | 2G | 8G | 2 | 1 | ✓ |
| DA-681A-I-DPP-T | 2 | 10 | 6 | 1 | 1 | 4 | 1 | - | - | - | 2 | 1 | ✓ |
| DA-681A-I-DPP-T-LX | 2 | 10 | 6 | 1 | 1 | 4 | 1 | Linux | 2G | 8G | 2 | 1 | ✓ |



选购配件

| Model Name | Expansion Module | Accessory | |
|--------------------|---------------------------|------------|-----------------|
| | DA-IRIGB-4DIO-PCI104-EMC4 | USB Dongle | DA-681A HDD Kit |
| DA-681A-I-SP | - | ✓ | ✓ |
| DA-681A-I-SP-LX | - | ✓ | ✓ |
| DA-681A-I-DPP | ✓ | ✓ | ✓ |
| DA-681A-I-DPP-LX | ✓ | ✓ | ✓ |
| DA-681A-I-DPP-T | ✓ | ✓ | ✓ |
| DA-681A-I-DPP-T-LX | ✓ | ✓ | ✓ |

扩展模块 (可单独购买)

| | Model | Description |
|---|---------------------------|--|
|  | DA-IRIGB-4DIO-PCI104-EMC4 | Time synchronization expansion module, 1 IRIG-B signal input port, 3 digital inputs, 4 digital outputs (DA-681A-I-DPP series only) |

选购配件 (可单独购买)

| | Model | Description |
|---|-----------------|---|
|  | DA-681A HDD Kit | HDD/SSD installation package, supports single HDD/SSD. |
|  | USB Dongle Kit | USB dongle kit installation package. This kit can be installed inside the DA-681A and is suited for security applications. For example, the license activate USB dongle for SCADA or the backup image storage for Smart Recovery. |