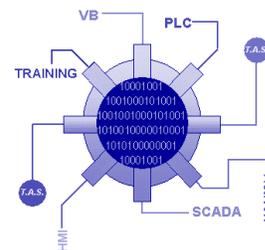# Parijat Controlware, Inc

## PLC Resident Driver Series

## Parijat 3964/3964R Master/Slave Serial Driver

The 3964_SLC.RSS driver has been developed by Parijat Controlware using the state-of-the-art Rockwell Software RSLogix500 software for an AB SLC Family PLC with Channel 0.

This driver may be used with the PLC5 or with any of the other Controllogix family of Programmable Controllers, with minor modifications to support the 3964/3964R communication protocol via Channel 0.

The driver uses Channel 0 of the PLC for communication, and supports both Master (generating internal requests to another 3964/3964R supporting device) and Slave (satisfying external requests from another 3969 supporting device) Modes.

Supports as many data blocks as needed. This is only limited by the available PLC Data Table Memory.

User Programmable retries are supported in order to complete a transaction which develops errors.

The Parijat 3964_SLC.RSS Driver offers full flexibility on relating PLC integer files to Siemens DB.

The average time for a complete and successful Send/Fetch message of 6 data-words is around 0.15 seconds at 9600 Baud.

The Parijat 3964/3964R Driver also includes advanced diagnostics, simple user interface and a very small memory footprint.

No third party hardware is necessary to implement this driver.

A wide variety of other PLC communication drivers are available from Parijat, and new custom drivers can be developed on request.

Parijat Controlware helps you connect one PLC to another PLC, or to another smart industrial device. We develop custom Windows products and applications for use with PLC's and other factory automation projects. Parijat builds custom projects with DotNet , Visual Basic, C++ and a variety of other development platforms. We can also build any .NET Components or ActiveX controls that you may need developed for a specific purpose. Parijat has an HMI/SCADA Development System written in Visual Basic, which provides basic SCADA monitoring, alarming, trending and reporting. With the Parijat HMI/SCADA Development System, any CAD drawings, manuals, vendor data sheets, instrumentation specs, instrument calibration sheets or any other documentation associated with control systems may also be easily integrated with the HMI/SCADA system.

# PCI PLC-resident Drivers: General Information

## Who is PCI?

PCI is Parijat Controlware Inc. & sells as well as supports the world's largest range of communications drivers for Industrial automation, PLC, process control industry applications for Microsoft, Google, Apple, Linux products & ASP.NET core for web portal products. This document outlines various common features & knowledge base to help you make a decision. Welcome to the world of PCI, your exclusive and most mature, experienced (since 1989) source of help in Industrial data acquisition, control, HMI, SCADA and MIS, MRP, ERP or Browser based Internet applications based on **non-proprietary open architecture**.

PCI is the only team member or an extension of your staff, that has been educating since 1992 that you no longer be a slave to the proprietary (3rd party to MS) HMI, SCADA products. PCI can show you and train you how to apply Microsoft's products to solve your mission critical HMI/SCADA challenges, retaining the pluses of legacy 3rd party proprietary solutions, without their disadvantages.

## PLC-resident drivers:

PCI also markets a unique set of drivers that run and reside inside the PLC type controllers. Each facility employing automatic control has many smart field industrial devices made by many diverse vendors that talk different protocols. To interconnect them into a single cohesive control system requires them to share real-time data amongt them. To connect them together, the following methods are traditionally employed:

- Use a computer/PC as a via media
- External protocol converters HW
- Internal 3$^{rd}$ party hardware modules

All of the above solutions have following issues:

- Creates layers of HW,SW
- Dependencies on outside 3$^{rd}$ party vendors
- Processing latencies, delays
- Another potential of failure

PCI solves this issue with a native solution that utilizes native HW from controller vendor.

## Features/Benefits PCI PLC Resident Drivers

### Technical

- Very limited PLC memory usage as compared to Hardware specific modules
- No external wiring or Rack-slot consumption
- Simple usage in your logic  just like regular AOI (Add-On Instruction) or FB (function block)
- Provide High Performance, low payload connectivity to External Field devices.
- Allow your application to read/write data from external field devices very easily.
- Transmission and connection time-out supervision
- Detailed transmission and protocol failure reporting via error codes
- Robust design suitable for real-time, historic and industrial applications
- Powerful pre-built example application with source code is included in the package.
- Complete help with examples.
- No artificial limits on Devices per network and limits on points/tags to read/write.

### Commercial

- No 3$^{rd}$ party license/hardware required

- Enjoy a true single-vendor solution from original Hardware manufacturer.

## Parijat Controlware Delivers
- The logic module to import into your PLC logic (sample example is in ladder logic – contact PCI for FBD, ST etc.)
- The help file and documentation in the above directory.
- The example application, which is fully functional and is ready to bi-directionally communicate with the devices of your choice.

## Other Options (Contact PCI for details)
- Source code.
- Technology transfer services.
- Additional training on the products & their plumbing level details.

## Transports
Parijat drivers support various physical transports (These are generally available for most drivers. Please consult PCI) as follows.
- TCP/IP
- UDP
- RS232
- RS485/422
- VPN
- Cell service
- Wifi and other wireless technologies

Contact Parijat for an expert opinion on your system configuration and start making a move towards open systems.

*If you like to have some feature(s) not currently supported, please share with us and if appropriate, may be added. If you need a driver developed for any protocol not currently supported, please let us know. The list of drivers available being built is expanded regularly. Please email support@parijt.com for tech support.*

9/1/2020   10/2/2020

# GENERAL INFO: Parijat Software Projects

## Introduction

Parijat Controlware Inc. (PCI) is in business since 1989, serving any manufacturing, oil & gas etc., supply chain management projects worldwide. PCI initially built its reputation on the ability to provide quality and extremely reliable control and safety systems for the oil and gas industry. PCI has successfully completed projects for several end users, in various industries. **PCI forte is programming & diagnosing PLCs, HMI/SCADA systems & related business, enterprise applications.**

PCI design/builds end to end turn-key automation control systems from field devices to mobile devices to the top end of enterprise applications, including order fulfillment.  PCI adopts a wide range of controllers like Rockwell/Allen-Bradley, Siemens, ABB, Schneider, Emerson/GE, Honeywell, Automation Direct, Opto22, Mitsubishi, Omron, Toshiba etc. PCI uses Microsoft Visual Studio .NET technology for HMI/SCADA or products Like Rockwell – PlantPax, FT/RSView/Panelview; Schneider – Wonderware, Archestra, Indusoft, ClearScada, Citect, Telvent; Siemens – WinCC; GE-IP – Proficy, iFix, Cimplicity; Iconics, Inductive Automation, etc. Client has the choice to pick what precise combination to use. Best features & economies are achievable from Microsoft & Rockwell combination. Solutions are neutral or agnostic to the control systems hardware, networking & all other related peripheral control equipment.

PCI own products always use contemporary technologies. The database of choice is latest version of MS SQL Server. Only single copy of data employed from end-to-end. Products may be further customized to nth degree of client's needs. Virtualized, cloud & local hosted servers are fully supported.
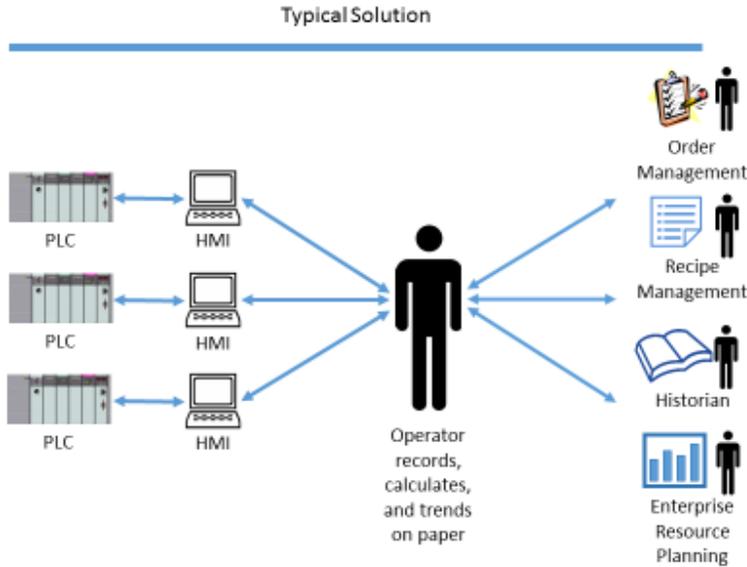
## PCI PLC Infrastructure

Additional features available when Parijat PLC program Infrastructure is employed

-Online relevant PLC code viewable in HMI

- Built-in simulation and override capability that may be invoked anytime for testing, training, troubleshooting or get around failed equipment/hardware etc.

-Extremely powerful control diagnostics – ask for more details

-Simplified single step MOC (management of change)
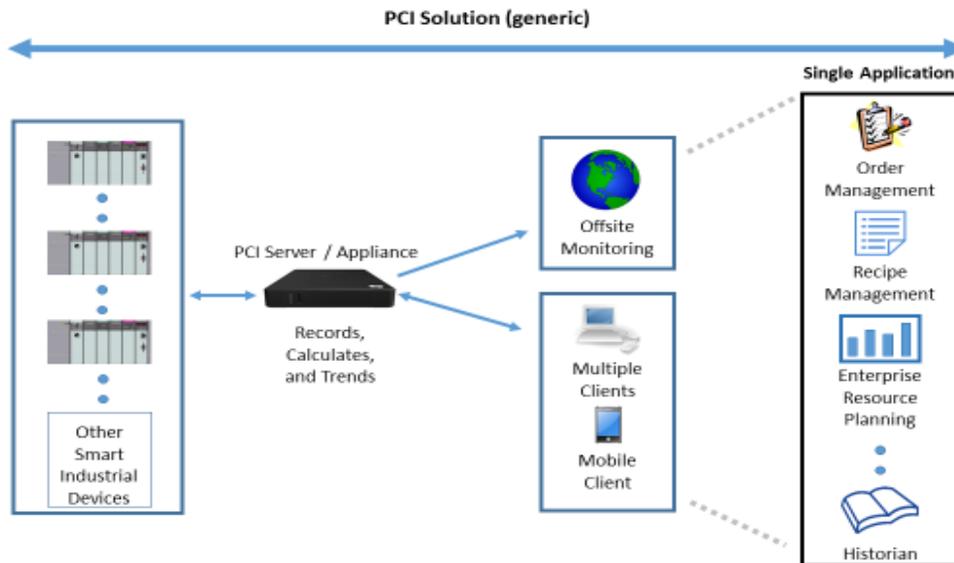
- Live integrated drawings, user manuals etc.

## Traditional, Typical Solutions

Typically, system solutions use multiple products from different vendors, running on Microsoft Windows. This results in a heterogeneous solution with multiple copies of data & multiple dependencies on non-Microsoft vendors. Also, there are vulnerabilities to human data entry errors.



## PCI Solutions

PCI solution integrates all of above layers into a single Parijat product management System with a single copy of data. However, if there are adequate technical reasons in the project in question, then the solution may be broken out also into desired islands, maintains data integrity & avoids human errors.

## Other Options

-Use your choice of control systems HW, smart field devices or any HMI/SCADA system. If one does not exist, we shall provide one.

-Source code is available. Contact us.

-Technology transfer services

-Additional training on the products & their behind-the-scenes plumbing details

-Leasing or lease/purchase option of whole or part of system.

## Supported Operating Systems

Desktop PCs - MS Windows 10 or earlier (32 & 64 bit); MS Windows Server (any version)

Mobile Hardware - Use commodity iPads or Androids or Surface units for scanning, HMI or user interface, throughout the enterprise. Native mobile apps not just a virtual desktop. Use wireless ISA100, Wi-fi, IR, Bluetooth, BLE4, cell network or broadband of client's choice.

## Features/Benefits

-ERP/MES capability built-in or may interface with external products like SAP, Oracle, Dynamics etc.

-CMMS capability built-in or may interface with external 3rd party packages like InFor, Maximo

-Interface to any HMI/SCADA or PLC

-Test or debug simulation support (with source version control)

-Decision support, AI (Artificial Intelligence), Big-data, Iiot (Industrial Internet of Things)

-MS Azure Streaming Analytics, MS Streaminsight support, Google Analytics, AWS

-Inter-user Chatting, Video Analytics support

-Integrated intelligent documents, drawings, c/e diagrams

-Maintenance CMMS, user, SNMP, documentation, asset management

-Operator comments of various types, with history

- Alarm management & notifications by various means

-Extensive Incident, Events management

-iBeacons, Eddystone, Zigbee, Lorawan, RFID device support
- Multi-lingual via Localization. Auto language switching.

-Standard and custom reports.

-scripting via MS Visual Studio, typically not with MS Office (e.g. VBA or VBScript) tools

-Redundant or clustered servers, multiple communication paths amongst resources.

- Automatic vital, critical data backup at cloud or multiple locations

- Archive the history data time limited only by storage space

-Control system hardware vendor neutral. E.g. Rockwell/AB, GE-IP, Siemens, Schnieder, etc.

- Use Ladder, Structured Text, Function Blocks, IEC-61131 etc.
-Versions may be supplied in current MS Visual Studio to MS VB6 & MS SQL Server (any version).
-Can also work with HMI/SCADA systems like Rockwell, Schnieder, Siemens, ABB, Emerson, Honeywell

etc. using any fieldbus like ModbusTCP, ASI-bus, Profibus, Devicenet, Controlnet, Canbus, Ethercat, EthernetIP, etc. in any combination.

PCI carries full insurance for General & professional liability, etc. & comply with ISNetworld, Ariba, Avetta, SAM (Cage code) etc. All of PCI field personnel carry TWIC cards with H2S and Land Safety Training & have completed the IDAC HSE Rig pass course which includes SafeGulf and SafeLand USA.

2/9/2020, 9/25/2017

*If you like to have some feature(s) not currently supported, please share with us. We want to give you a solution that matches your needs. Please email support@parijt.com for tech support.*