Installation Guide

P-708-SW

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Additional Resources

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<u>Installation and packaging information for P-708-SW</u>

This document is organized into the following sections:

To jump to any section, click on the section listed above or use the FIND tool in your text viewer with the name of the section as shown. If you have not already done so, it is highly recommended you install the software prior to installing the hardware.

This document covers product content, as well as installation and removal procedures. Supplemental information on the P-708-SW distribution can be found in the file:

   README.HTML - Release notes for P-708-SW software.

1. P-708-SW Installation Instructions

<u>Windows-based Hosts</u>
First, install the P-708-SW software distribution. DO NOT insert the board/carrier into the PC prior to software installation.

<u>VxWorks and Integrity-based Hosts</u>
Follow the instructions as documented in the P-708-SW Software User's Manual for installation in a VxWorks or Integrity system.

<u>Linux-based Hosts</u>
See the file *Linux_install.txt* for installation instructions for Linux systems.

<u>P-708-SW Software Installation</u>
You must have administrative privileges to install the P-708-SW software package. To install the software, follow these steps:

a. Exit all programs.

b. Insert the P-708-SW Media into your CD drive. The installation program launches automatically when the CD is inserted into the drive. If it does not, double-click the file SETUP.EXE that is located in the SETUP subdirectory of the P-708-SW CD-ROM.

   *** IMPORTANT NOTE FOR WINDOWS 10 USERS *** Certain Microsoft processes may prevent you from launching our installer for a period of time after logging in to your computer. When running our installer shortly after logging in, you may notice our installer appears briefly, then disappears completely for a period of time, after which it automatically appears again, starts up, and functions normally. At the time of this release, delays of two minutes or less have been commonly observed (although 5-7 minute delays were observed in some cases). There are currently no workarounds available to prevent this behavior, although disabling OneDrive has been shown to decrease the installer startup delay in some cases.

c. The automated installation and device configuration software will guide you through the installation process. Be sure to choose the matching board type you are installing.

d. Upon completing the software installation, power down your system and install the hardware.

Hardware Installation
Note these devices are static sensitive. Before handling the device, attach a static strap to the metal chassis of your system and assure the system is both connected to a grounded power source and powered off.

After installation of the software, insert the hardware device into any available slot and secure it in place with the appropriate fastener. Do not install the hardware until after the software installation has been performed.

Windows Driver Installation
After installing the P-708-SW software, then installing the hardware, restart your system. The Windows Device Manager should detect the new hardware upon startup and device driver installation should occur as described below.

Windows Vista/Server 2008/7/8.0/8.1/Server 2012/10 (32-bit or 64-bit)

The driver installation will occur automatically upon hardware detection.

1. A FOUND NEW HARDWARE dialog may appear after logging in. If it appears, go to step 1(a). If a FOUND NEW HARDWARE dialog has not appeared after a minute has elapsed since logging in, Windows may have silently installed the device - skip to step (2) in this case.
    a. Select 'Locate and install driver software (recommended)'.
    b. When driver installation is complete, the message 'Device driver software installed successfully' appears.
2. Press the *Windows* key and *R* at the same time to display the "Run" window.
3. Type *devmgmt.msc* in the Open box and press <Enter> to open Windows Device Manager.
4. Verify that the device you installed is present beneath the *Abaco Avionics Devices* group. If the device is not present, reboot the system (this subsequent reboot is required on some systems in order for Windows to detect the new card).

Windows XP (32-bit or 64-bit)

1. The FOUND NEW HARDWARE dialog should appear indicating detection of the hardware device just installed.
2. If prompted to connect to Windows Update to search for drivers, select 'No, not this time' and click NEXT.
3. Select 'Install the software automatically (Recommended)' and click NEXT.
4. Under the COMPLETING THE FOUND NEW HARDWARE dialog, click FINISH.
5. Click the START button in the bottom-left corner of the screen.
6. Select 'Run...'.
7. Type *devmgmt.msc* in the 'Open' box and press <Enter> to open Windows Device Manager.
8. Verify that the device you installed is present beneath the *Abaco Avionics Devices* group.
9. If the hardware or device drivers are not shown reboot the system again, (this subsequent reboot is required on some systems in order for Windows to detect the new card).
10. If the FOUND NEW HARDWARE dialog still does not appear after rebooting, contact Abaco Systems Technical Support for Avionics Products per section/paragraph 2-B. below.

2. Configuration Verification

A. Configuration Test
For Windows 7, Vista, XP and Server 2008, access the "P-708 Test Installation" shortcut created in the Abaco P-708-SW program group located by selecting START->PROGRAMS->Abaco P-708-SW on the Task Bar.
For Windows 10/8.1/8, and Server 2012/2008, access the "P-708 Test Installation" shortcut listed under the *Abaco P-708-SW* group in Apps By Name or All Apps, or accessed via the P-708-SW Shortcuts folder.

B. Installation Verification Issues
If initialization was not successful, the card is not properly configured in your system. First, consult the installation chapter of the P-708 User Manual and assure your installation was performed as documented. If you require further assistance, please execute the program cei_probe.exe located in the folder:

>   \Program Files\Condor Engineering\ P-708-SW\Help

Following execution of this program, forward the file CEI Report.txt, (created on your desktop), to avionics.support@abaco.com, specifying "Abaco Avionics Support" in the subject. Please include detailed contact information.

3. P-708-SW Distribution Contents

The P-708-SW Distribution is generally shipped on CD-ROM, though it is available from our website via installation executable. All distributions contain an automated installation utility for Windows hosts.

CD-ROM Contents
The Linux distribution is located on the CD in the folder \Linux Support, with the file "linux_p708_vXXX.tgz". See the file Linux_install.txt for installation instructions for most Linux systems.

The CD-ROM contains a complete image of the files that would be installed by running the setup program, located in the top-level P-708-SW directory. Files to automatically start the setup program exist at the root level of the CD-ROM. If the AUTORUN mechanism is not enabled on your system, execute the file SETUP.EXE located in the DISK1 subdirectory of the SETUP directory.

For any Windows target installation, the following folders and files will be located under the *C:\Program Files\Condor Engineering\P-708-SW* folder by default. The \Examples and \LV folders will also be located here for Windows XP; however, due to write-access restrictions, for all subsequent Windows operating systems these folders are located beneath the folder *C:\Users\Public\Documents\Condor Engineering\P-708-SW*.

Folder and File Names	Contents and Descriptions
\Documentation	
Install.html	-- This file in HTML format
Install.pdf	-- This file in PDF format
Install.txt	-- This file in in text format
Readme.html	-- Release and build notes
Readme.txt	-- Release and build notes in text format
ARINC Tutorial.pdf	-- A tutorial on ARINC protocols
P-708 User Manual.pdf	-- P-708 User's Manual

\Drivers
  The P-708-SW Windows Device Driver Package installed for the respective operating system.

\Help   Installation inspection and reporting tool.

      CEI_PROBE.EXE   -- Installation problem logging application

\Include   Contains the include files (".h" file) for the API and device driver "C/C++" constants and prototypes. This folder also contains other header files used by the API, as described below:

      AR_ERROR.H   -- Error strings for status translations
      CEI_INSTALL.H   -- Generic low-level interface library definitions
      CEI_TYPES.H   -- API Common product data type definitions
      FPGA_708.H   -- P-708 Device Downloadable FPGA program
      FPGA_RP708.H   -- RP-708 Device Downloadable FPGA program
      P708_API.H   -- API interface definitions
      P708_GLB.H   -- API global data declarations
      P708_HW.H   -- API card-specific definitions
      P708UTIL.H   -- API frame record/playback utilities declarations

\Libs   Contains all varieties of P-708 API library files built for use on 32-bit and 64-bit WINDOWS operating systems.

      \Win32 Contains the API library files for any 32-bit WINDOWS operating system. The files in this folder were built with Microsoft Visual C++ v6.0.

      P708_API.LIB   -- P-708 API Library
      P708_API.DLL   -- P-708 API DLL

      \x64   Contains the API library files for any 64-bit WINDOWS operating system. The files in this folder were built with Microsoft Visual Studio 2008.

      P708_API64.LIB   -- P-708 API Library
      P708_API64.DLL   -- P-708 API DLL

        \CVI_LVRT   LabWindows/CVI library files for LabVIEW Real-Time

      P708_API.LIB   -- P-708 API Library
      P708_API.DLL   -- P-708 API DLL

\Source   Contains source and header files for the API.

      P708_API.C   -- P-708 API interface functions
      P708_API.DEF   -- 32-bit P-708 API DLL export definitions
      P708_API64.DEF   -- 64-bit P-708 API DLL export definitions
      P708_DLL.C   -- P-708 DLL initialization/finalization functions
      P708_WIN.C   -- Windows OS-specific functionality
      P708ECHO.C   -- Source for ARINC 708 Record/Playback Demonstration
      P708UTIL.C   -- Source for ARINC 708 Record/Playback Utilities
      TST_CNFG.C   -- Source for a Simple P-708 Wrap Test

P708_SCH.C   -- Windows-based simulated IP-708 frame transmission files
SINGLE_FRAME_SWEEP.C

  \VxWorks   Contains the VxWorks Driver specific source files

P708_VXW.C   -- VxWorks OS-specific API interface functions
TARGET_DEFINES.H   -- More Parameter type definitions

  \VxBus Gen1 Driver   Contains VxWorks 6.x VxBus Gen1 Driver Interface files
      AVIOVXWDRV.C   -- Generic VxWorks VxBus driver source file
      AVIOVXWDRV.H   -- Generic VxWorks VxBus driver header file

    \VxBus Gen1 Driver\Component Installation Files
      Contains the VxWorks 6.x VxBus Gen1 CDF file:
      40AVIOVXWDRV.cdf   -- Generic VxWorks VxBus 6.x Config Definition file

  \VxBus Gen2 Driver   Contains the VxWorks 7 VxBus Gen2 Driver Interface files

    \VxBus Gen2 Driver\abaco_avio   Contains the VxWorks 7 VxBus Gen2 Driver Package

      \VxBus Gen2 Driver\abaco_avio\cdf   Contains the VxWorks 7 VxBus Gen2 CDF file
        40AVIOVXWDRV.cdf   -- Generic VxWorks VxBus 6.x Config Definition file

      \VxBus Gen2 Driver\abaco_avio\h   Contains the VxWorks 7 VxBus Gen2 header files
      AVIOVXBSUPPORT.H   -- Generic VxWorks VxBus driver 'shim' header file
      AVIOVXWDRV.H   -- Generic VxWorks VxBus driver header file

      \VxBus Gen2 Driver\abaco_avio\src   Contains the VxWorks 7 VxBus Gen2 source files
      AVIOVXBSUPPORT.C   -- Generic VxWorks VxBus driver 'shim' source file
      AVIOVXWDRV.C   -- Generic VxWorks VxBus driver source file
      AVIOVXWDRV.MK   -- Generic VxWorks VxBus driver source makefile
      AVIOVXWDRVMETHOD.M -- Generic VxWorks VxBus driver source methods file
      MAKEFILE   -- Generic VxWorks VxBus driver makefile

    \VxBus Gen2 Driver\spec_file   Contains the VxWorks 7 VxBus Gen2 Driver RPM Spec File
      ABACO_AVIO.SPEC   -- VxBus Gen2 RPM spec file

  \VxWorks\VxWorks Legacy PCI Driver   Contains the VxWorks Legacy PCI driver specific
                              source files
      CONDORVXWRTPDRV.C   -- Generic VxWorks driver source file
      CONDORVXWRTPDRV.H   -- Generic VxWorks driver header file
      GEFES_IOCTL.H   -- Driver IOCTL definitions header file
      LOWLEVEL.H   -- Driver prototype definitions header file

  \VxWorks\VxWorks Legacy PCI Driver\Component Installation Files
                          Contains the VxWorks Legacy PCI CDF files
    \PPC
      51_GEIP_PPC_55_PCI.cdf   -- VxWorks 5.5 PowerPC Config Definition file
      51_GEIP_PPC_RTP_6x_PCI.cdf -- Generic VxWorks 6.x PowerPC Config Definition file
    \x86

```
            51_GEIP_x86_55_PCI.cdf        -- VxWorks 5.5 x86 Config Definition file
            51_GEIP_x86_RTP_66_PCI.cdf -- Generic VxWorks 6.3-6.5 x86 Config Definition file
            51_GEIP_x86_RTP_6x_PCI.cdf -- Generic VxWorks 6.6-6.9 x86 Config Definition file


        \Integrity   Contains Integrity-specific driver source

        P708_INT.C                -- Integrity OS-specific interface functionality
        LOWLEVEL.H                -- Driver prototype definitions header file
        MEM_INTEGRITY.C           -- Generic Integrity user driver source file
        CEI_INT_PCI_DRV.C         -- Generic Integrity kernel driver source file
```

C:\Users\Public\Documents\Condor Engineering\P-708-SW\Examples
                                   -- Example files in source, with Projects and Windows executables

```
   \C
        \Win32 -- 32-bit Windows operating systems files

        TST_CFG.EXE               -- Executable for a simple ARINC 708 internal wrap test
        TST_CFG.BAT               -- Batch file launching the ARINC 708 internal wrap example application
                                     with all arguments defined to invoke execution of select subroutines
        P708ECHO.EXE              -- Demonstration of ARINC 708 record/playback utilities
        P708ECHO.BAT              -- Batch file launching the ARINC 708 record/playback utilities example
                                     application


        \x64 -- 64-bit Windows operating systems files

        TST_CFG64.EXE             -- Executable for a simple ARINC 708 internal wrap test
        P708ECHO 64.EX            -- Demonstration of ARINC 708 record/playback utilities

     \Net        -- Visual Studio 2008 .Net sample projects

        \A708NetClass  -- Solution for a P-708 VB-based API Class Library (DLL wrapper)
        \Arinc708Example -- Solution for a C# console application using the VB Class Library
```

C:\Users\Public\Documents\Condor Engineering\P-708-SW\LV

```
        readme.html               -- brief documentation for the ARINC 708 LabVIEW Instrument Driver

        Subfolders containing the 32-bit ARINC 708 LabVIEW Instrument Driver, including an Example VI
        and project, Real-Time projects, API VI Set, and documentation.
```


32-bit Windows Operating System Specific Files:

The following files will be located under the Windows\System32 folder.

```
        P708_API.DLL              -- 32-bit P-708 API DLL for WINDOW, built with Visual C++ v6.0
        CEI_INSTALL.DLL           -- 32-bit Generic Abaco Avionics Device Driver Interface Library
        CEI_UNINSTALL.DLL         -- 32-bit Generic Abaco Avionics Distribution Uninstaller Library
        CEI_REMOVE.EXE            -- 32-bit Generic Abaco Avionics Distribution Uninstaller Executable
```

<u>64-bit Windows Operating System Specific Files:</u>

The following files will be located under the Windows\SysWow64 folder.

P708_API.DLL   -- 32-bit P-708 API DLL for WINDOW, built with Visual C++ v6.0
CEI_INSTALL.DLL   -- 32-bit Generic Abaco Avionics Device Driver Interface Library
CEI_UNINSTALL.DLL   -- 32-bit Generic Abaco Avionics Distribution Uninstaller Library
CEI_REMOVE.EXE   -- 32-bit Generic Abaco Avionics Distribution Uninstaller Executable

The following files will be located under the Windows\System32 folder.

P708_API64.DLL   -- 64-bit P-708 API DLL for WINDOWS, built with Visual Studio 2008
CEI_INSTALL_64.DLL   -- 64-bit Generic Abaco Avionics Device Driver Interface Library

4. Removing P-708-SW software or hardware components

For Windows 7, Vista, XP and Server 2008, invoke the Uninstall shortcut created for the installed device in the P-708-SW program group, located by selecting START->PROGRAMS->Abaco P-708-SW on the Task Bar. For Windows 8, 8.1, 10, and Server 2012, display "Apps by name" or expand "All apps", invoke the uninstall via the respective shortcut created for the installed device.

Each installed device uninstall shortcut will have been created corresponding to the device you installed, appended with an iteration/device number. This number corresponds to the number of devices installed. For instance, DEV_0 is the first device and DEV_2 is the third device. This allows you to delete any device on a per-device basis; however, the first device installed must be the last device removed. The drivers for the individual device you specify will be removed but all other devices will be left unaffected.

If the device you are removing is the first device, the software will be removed as well. Thus, if you have only installed a single device, selecting it in the Add/Remove Programs applet and clicking Add/Remove will cause all software and device drivers to be removed from your system.