Power Comm

Release Notes

Version 2.3a

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Revision

PowerComm™ Release Notes

By Logitek Systems

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Release Notes Information

Version 2.3		January 3, 1997	For PowerComm v2.3
Version 2.3a	updated	April 6, 1998	For PowerComm v2.3a
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Release Notes

These release notes are provided to point out problems or situations that could result in data loss, GFE's, runtime aborts, and other operating system problems or anomalies caused by specific or general release platforms and third party products.

In addition this document contains important information about the 2.3 release of PowerComm and corresponds to the revision 2.3 (April 6, 1998) *PowerComm User Manual*.

Release Notes Contents

For more technical details about PowerComm that are not covered in the release notes, refer to the follow areas of the PowerComm documentation:

- Troubleshooting
- Questions & Answers
- Technical Information
- PowerComm Specifications

Pick Operating System Issues

Advanced Pick Problems

Delayed Break Key Bug

On 6.1 (and possibly other versions), the break key is passed back to prior execute levels. This did not used to occur. Consequently, when using the CP-DIR with the monitor option, and you use the real break key, it is possible the program calling CP-DIR will enter the BASIC or system debugger as if the break key had been pressed. To avoid the problem, you can use the alternate break key feature. This is only a problem using the "M" option with CP-DIR.

Advanced Pick DOS Problems

Random Communications Port Hangs

We have seen, with the 5.2.5 version of AP/DOS, the problem of a communications port going to sleep for an unknown reason when running AP/DOS. It seems to happen more frequently when running AP/DOS under Microsoft Windows. We have also seen this version crash with GPF's running under Windows. This appears to be a clock timing problem that was addressed with the 5.2.7 version of AP/DOS.

To alleviate this problem, a couple of things can be tried:

- You can send a message to the communications port with the TCL command message:

  MSG !1 WAKEUP

- You can upgrade to a newer version of AP/DOS without the timing problem. We have not seen this problem occur with version 5.2.7.

- You can try running AP/DOS without Windows when using PowerComm.

Advanced Pick with Flash Problems

Flash Bug with Fast User Exits

We have a found a problem with Flashing PowerComm object code when using the fast user exits option. This shows up as recurring aborts when calling certain user exits. This Flash BASIC bug has been known to occur specifically on release 6.1.4. To eliminate the problem, either disable the fast user exits option in the *Global Parameters Definition* screen or do not Flash PowerComm object code.

Advanced Pick Native Problems

Poor Performance with DigiBoard PC/Xem Communications Controllers

The DigiBoard PC/Xem intelligent communications controller I/O drivers as implemented by Pick Systems do not allow the serial ports to operate at full speed for input. We have seen a maximum throughput of around 500 characters per second regardless of baud rate. It should work at closer to 1,800 characters per second at 19200 baud. If this slowness occurs we recommend you use a dumb serial port for communications work. These are typically labeled com1 or com2. If you must use the DigiBoard ports, you may have to change the communications port default packet size to a lower value than the default of 5,000 bytes to avoid buffer overrun or timeout problems. This may be accomplished by changing field number 22 in the *Port Definition Screen* for the ports effected or all ports by using the "G" item. This poor performance appears to have been corrected on AP/Pro.

When we have configured systems we always make sure at least one standard (dumb) serial port is available for use on the modem. They always seem to work the best.

Advanced Pick Pro Problems

Continuous Disk I/O

We have observed with the 6.1.x release of AP/Pro a memory management bug which can cause the flusher to continuously update the hard disk with changed data several times a second. This is characterized by the disk light flashing and hard disk accesses being heard. This problem occurs when using Pick's TANDEM, CONVERSE and PowerComm. This memory management problem may produce lost characters in PowerComm's direct mode and cause file transfer retransmits. Not all disk subsystems are susceptible to this problem. However, until Pick Systems fixes this (Pick's action item # 17356), you may find improved reliability by using 9600 baud or less.

DigiBoard PC/Xem Communications Controllers

The DigiBoard PC/Xem intelligent communications controller I/O drivers on monitor M78 will not work with PowerComm unless the IGNORE-NULL OFF command is used first. In addition, unless you have the latest M78+ monitor with these ports, full 8 bit XModem and YModem protocols will not work correctly because the driver is stripping out NULLs and XON and XOFF. You may find it more convenient to add this to the 'USER-COLDSTART' item in the MD of DM.

```
IGNORE-NULL OFF
```

Hardware Flow Control on Monitor M78

Pick Systems attempted to add hardware flow control to dumb boards on M78. However, the CTS-ON/OFF commands do not work correctly. You may want to download a more recent version of M78 (e.g. M78.1+) from their web site or BBS to see if they have made substantial improvements before attempting to use the hardware flow control features of M78.

DPT SCSI Disk Controllers

The following DPT disk controllers do not work well with AP/Pro and communications. Symptoms include massive loss of data at 19200 even with the block size well below 100 bytes. The time length of DMA transfers with these products appears to be the cause. At 9600 baud, these controllers may work out ok.

- DPT model 2022 (ISA)
- DPT model 2044 (PCI)
- DPT model 2144 (PCI)

The following controller is ok at 19200 until Cache RAM is added:

- DPT model 2024 (PCI)

Adaptec 2940 (PCI) SCSI Disk Controller

We have recently tested this controller on M78 and PowerComm with very good results. It also benchmarks quite well.

Default order of Ports on AP/Pro

On AP/Pro, the default order of the standard IBM com1 and 2 serial ports are reversed from R83. Com1 is port 2 and com2 is port 1.

Pick R83 Problems

Data Carrier Detect Problems

On Pick R83, the DCD-ON command is used to automatically log off a port when the DCD signal is lost from a modem. This can leave a port stuck in the debugger with the only way to fix it is a system coldstart. To reproduce, hook up a break out box to the port and change the state of the carrier detect pin (pin 8 on a 25 pin cable) and watch from another port using the WHERE 1 (Z) command to see the port eventually enter the debugger with a referencing illegal frame abort. It is an unreliable feature on this release. We have not tried it on other releases.

10 Second Flush Feature

Pick Systems has added a feature to the 3.1 version of Pick R83 to help deal with the problem of frames in memory not being written to the hard disk in certain situations. This can occur when a print job is printing but the parallel printer it is printing to is off-line. If the system should go down in this situation, many write-required frames could still be in memory.

Pick's solution, was not to correct the printing problem, but to create a watchdog timer that wakes up every 10 seconds, regardless of system activity, and send a few write-required frames to the hard disk. The theory being that eventually all of write-required memory will be written to the disk, 10 seconds at a time.

This feature, designed to prevent a major dose of GFE's, can cause problems with data communications. During this write to the disk mode, it is possible for the disk I/O to take longer than the amount of time several characters could be received. During this period, data coming in over a serial port can be lost when running at higher baud rates of 19200 or above.

To alleviate this problem, a couple of things can be tried:

- Remove the 10 second flush feature. Call Pick Systems for patching instructions.
- Use a smarter disk controller that can handle the writes quicker; like a write-caching controller.
- Lower the baud rate to 9600 or less.
- Use a smaller packet size.

If you are utilizing the CP-SEND and CP-RECV commands, you will not lose data, it will just take extra retries required to move the data. It is, however, possible to create so many retries as to terminate the data transfer attempt. These retry attempts can be modified in the *Port Definition* screen if necessary.

Potential System Crash with Pick's SET-PORT Bug

The Pick command "SET-PORT" is used to set and return a port's communications parameters including the baud rate, parity, word length and stop bits. However, on R83 the SET-PORT command can intermittently crash the system when a port is sending or receiving data at the same time. This SET-PORT command is used in the PowerComm CP-STATUS-PORT command to show the current port communications parameters. Because of the potential for the SET-PORT command to crash the system, we have removed its use in the CP-STATUS-PORT command unless you override with the "O" option. If you use the "O" option, at your own risk, you should only do so when the port is not sending or receiving data. Otherwise you may crash the system and create GFE's.

Potential System Crash with Pick's SET-SCT Command

We have discovered a problem that may occur when using the cartridge tape SET-SCT command with the "M" option and running PowerComm. If a communications port is running and you use the SET-SCT (M) command, the system may hang resulting in GFE's. Likewise, if the tape is running using the "M" option and a communications port is started the system may hang. The problem only occurs when using the "M" option which uses the *maximum* amount of tape buffers. To reduce the possibility of this crash, you can eliminate the "M" option or start a communications port with a smaller buffer size. For running one communications port on a 640K system, the maximum buffer sizes of 10,000 bytes is suggested. This value may be changed globally in the *Port Definition Screen* by using the "G" item and changing field numbers 12 and 13 to 10,000. If you plan on running multiple communications ports and using the tape drive with the "M" option, you may have to reduce the 10,000 to 5,000 for 2 ports, etc.

D3 SCO Unix Problems

LIST-LINES reports incorrect information

On tested versions of D3/SCO, the list-lines occasionally displays incorrect bogus information, like 5 data bits and baud rates of 0. When PowerComm starts a port using CP-START, the wrong information can cause the CP-START command to fail with a message like: *Word length of "5" is invalid*, and abort. To work around this problem, you may have to explicitly set the port parameters ahead of time.

D3 on Unix, AIX or Linux

Initial Installation

In order to load PowerComm into the boot ABS, you will need to start a pick process using the -b option:

```
D3 -b
```

This will unlock the ABS area for this process. Otherwise you may received an ABS LOCKED message during the PowerComm installation steps.

D3/ProPlus & D3/Linux

Multiprocessor Systems

A problem with input buffers becoming corrupted has been reproduced by Pick Systems (using converse) (#438297) on a multiprocessor dual Pentium pro system. Until this issue is resolved, run linux in single (uni) processor mode by entering **linux up** at the lilo boot prompt.

XModem and YModem Issues

D3/ProPlus and D3/Linux releases do not allow full 256 character communications without installing a patch from Pick Systems to correct a problem with the break key setting. The problem is that SET-BREAK OFF does not allow character 255 to be received. The patch enables the transmission of character 255 after issuing the SET-BREAK OFF command. Contact Logitek Systems or Pick Systems for this patch if needed.

However, newer versions of D3 Linux now include the **ignore-signal** command that is needed for this fix. If the command is in the DM account, make sure it is also installed properly in the POWERCOMM account as well.

To implement the fix for the PowerComm server program, you will need to modify the logon proc for the PowerComm server program:

In LSCP,PROC the item is called CP:COMM

Starting with PowerComm serial number 230387, the update has been implemented to use the new ignore-signals command, otherwise update the proc as follows:

```
    CP:COMM
001 PQ
002 C RUN COMM PORT FOR A/P SYSTEMS
003 C
004 C TDB.1 04-02-2001 Added d3/linux ignore-signals command in order to get
005 C                   full 256 character input
006 C
007 C - ORIGINAL CODE -
008 RI
009 C-- HESC-DATA
010 C-- P
011 C-- HBRK-DEBUG
012 C-- P
013 C-- HSET-BREAK OFF
014 C-- PH
015 C
016 C TDB.1
017 C
018 C - Suppress output using PH in case command is not available, ie d3/nt
019 C
020 HESC-DATA
021 PH
022 HSET-BREAK OFF
023 PH
024 HXONOFF (F
025 PH
026 HXCS-ON
027 PH
028 HIGNORE-SIGNALS OFF
029 PH
030 HIGNORE-SIGNAL OFF
031 PH
032 C
033 C TDB.1 end rev
034 C
035 HRUN LSCP,BP CP.COMM.PORT (E)
036 P
037 HOFF
038 P
```

Note: The only adverse affect of using this new version is that xon/xoff will always be disabled when the communications port is started even if you used the CP-START with the (X) option. In this case, you will have to update the communications port settings manually after it is started. We've never used the (X) option when starting a port so this most likely will not effect anyone.

D3/NT

Using XModem or YModem with CRC on D3/NT

In order to use XModem or YModem with CRC, you must also make sure PCB0 is set to 256 or higher. Use the WHAT command to show this setting. If instead you use checksum XModem or YModem, you do not have to make this change. However, you will see an error message regarding LSCPDATA140.DLL not loaded on the screen during installation.

To make this change, follow Pick System's notes (reproduced here) to make the change. In their instructions, they neglected to mention that 256 in step 4 is a **STRING** value:

```
Changing PCB 0

The PCB 0 is currently located at the frame 0x80 (128 decimal), leaving room for only 5 data frames. To
increase the number of frames, the system on which the Virtual code is loaded must be re-configured to move
the PCB 0 at a different location. Moving it to 0x100 (256 decimal), for example, would leave up to 133 data
frames. This section describes the procedure.

IMPORTANT: If there is any data in the VME, a full save and restore must be performed. If there is no data
in the VME (a virgin install or all data is in the FSI), a full restore must be done.

1.        Optionally backup the VME.

2.        Shutdown the VME.

3.        Using the Windows Registry Editor (regedit.exe), open the following registry key:

HKEY_LOCAL_MACHINE
  Software
    PickSystems
      D3
        CurrentVersion
          D3Vme
            Pick0

4.        Add or modify the following value:

          Pcb0            256

5.        Restore the VME:
          cd c:\progra~1\d3\d3programs
          d3vme /restore
```

D3/NT Service Pack Updates

If you upgrade D3/NT using Pick's update patches, the ABS file is cleared out. As a result, the PowerComm user mode definitions are also cleared. To correct this situation, re-run the install program from DM TCL:

```
INSTALL-POWERCOMM
```

And choose the "L" option to load modes. You do not need to re-load the PowerComm software diskette. You do not need to re-load the DLL's unless you completely re-install D3/NT. If the verb 'INSTALL-POWERCOMM' is missing, see the last section in the PowerComm *Release Notes* about *Re-installing PowerComm after upgrading the DM account*.

Third Party Hardware and Software Related Problems

Pick R83 Problems

Monolith's Intelligent Communications Boards

Monolith Corporation's Flexcom intelligent communications port board products were implemented specifically to lessen the load on the CPU on Pick R83 and AP/Native systems. They accomplish this on the output side quite well. However, the last time we tested the input capabilities of this product, it performed poorly. It was possible to enter the debugger on the port by typing real fast. A subsequent version corrected that problem but they never could get the board to receive larger blocks of data without dropping characters. They may have fixed the problem by now. But if you find that you cannot send data to a Flexcom port from another system in large blocks, this is probably the problem. In addition, the Flexcom product may not be able to support the break key base address feature.

When we have configured systems we always make sure at least one standard (dumb) serial port is available for use on the modem. They always seem to work the best.

Modular Software's PC-CACHE Product

Normally, Pick only reads or writes one sector (or frame) at a time. The PC-CACHE product's goal is to speed up disk access by reading and or writing multiple sectors from and to the hard disk at once. However, when PC-CACHE is running, the interrupts on the system are turned off for the complete duration of the read or write. This amount of time is much greater than the normal amount of time which can cause a large amount of data loss with communications. In addition, we have found the write caching portion of this product extremely annoying because of the tremendous amount of dropped characters while typing.

Modular Software has confirmed the problem but has not actively made an effort to change it. Disabling the write caching feature of PC-CACHE can help the most since the write phase of PC-CACHE seems to take the longest to execute.

To alleviate this problem, a couple of things can be tried:

- Disable the write-caching feature.
- Reduce the amount of data sent at once by using a smaller block size.
- Try reducing the baud rate down on the port to get a more stable throughput.
- Try sending files to the system when other users are less likely to be using the system.

We have found the best solution with this product is to let a hardware disk caching controller do the write caching, and let PC-CACHE run in read caching mode only.

Monolith's Fast Cache Product

This is the same product as PC-CACHE repackaged with a few extra tools. The same information about PC-CACHE in the prior paragraph applies to this version as well.

Advanced Pick Pro Problems

Modular Software's Full View Product

You must disable full view on the communications port on AP/Pro. Refer to the full view documentation. You could add the commands necessary to the DM USERS file for the CP:COMM logon item.

Modular Software's PicLan Product

On slower ISA based machines, PicLan can effect reliable communications port throughput causing excessive retries. Reducing the block size and/or the baud rate may help. On faster PCI machines with PCI network cards, PicLan did not seem to effect communications.

General Notes about Xmodem/Ymodem testing

We've tested PowerComm Xmodem and Ymodem protocols with the following third party terminal emulation products.

wIntegrate 3.0.3, AccuTerm 97 v3.1f and HyperTerminal (with MS Windows).

However, wIntegrate version 4 (the 32 bit version) does not properly handle Ymodem and alludes to problems in the release notes about buffer synchronization issues. We have tested their Xmodem 1k protocol (which runs as fast as Ymodem) and it does not have the halting problem.

These tests all worked with direct serial and TCP/IP modes. However, on D3NT we were not successful in using TCP/IP with these protocols.

PowerComm Information

Precautions about Recover Overflow Space Utilities

PowerComm obtains frames from the overflow table for buffers it uses during communications. When these frames are obtained, they are linked together and the frames numbers are saved in the LSCP.TBL,BUFFER file. For subsequent use, the frame numbers are quickly obtained from this data file avoiding the linking step. Since these frames are located in this data file, the data file is marked as a "DY" file type so the file is never backed up to tape. And, upon a file restore, the file will be empty and new space will automatically be obtained as needed.

However, third party overflow recover verbs do not know about these frames that have been allocated to PowerComm. Therefore, the CP-CLEAR PowerComm TCL command should be used to release this space before using any overflow recover command or utility. Refer to the PowerComm documentation for the CP-CLEAR command options to release this space.

Do Not Save and Restore the DY Files

There is a "DY" file in the PowerComm account named "LSCP.TBL,BUFFER" that should never be backed up and restored. This is not a problem on R83 systems with the "SAVE" command. However, on Advanced Pick it is now possible, with SAVE verb options, to back up and restore DX and DY files. **DO NOT BACK UP AND RESTORE THE DY FILES IN THE POWERCOMM ACCOUNT**. You could experience GFE's as a result. Do not use the TCL commands "SAVE", "T-LOAD", "T-DUMP" or any of the communications commands to transfer the data in these DY files. Refer to the previous topic for more information.

PowerComm Software Update

PowerComm Communications Library (PCL)

PowerComm now includes the PCL which uses PowerComm to automate system to system communications under program control. Refer to the documentation enclosed to get started.

Advanced Pick and D3 Terminology

The PowerComm reference manual refers to primarily 2 versions of Pick; R83 and Advanced Pick or AP. The D3 version of the Pick Operating System, also known as Advanced Pick v7.0 is simply a name change from Pick Systems. Therefore, references to Advanced Pick in the PowerComm documentation is also applicable to D3.

Recommended Changes

The current default for block size adjusting is automatic whenever a packet is rejected. However, this may inadvertently reduce the packet size below the optimum level for the rest of the transfer. To eliminate this automatic block size adjusting, the parameter *"Overrun buffer adjust down"* can be changed from the default of .50 (50%) to 1.00 (100%). This may be changed globally by using CP-MENU, selection option "2", entering "G" and <ENTER>, followed by "." and <ENTER>, "23" and <ENTER>, "1.00" <ENTER>, "." and <ENTER>, "F" and <ENTER> to file. Note that some recent versions of PowerComm currently shipping have already had this change made for you.

```
Port definition                                    Port: 19 CD DEV.CP
                                                        Page 5 of 7
  1 Port number or (G)lobal.......  G


  ----------------------------------------------------------------------
    [Data transfer: CP-SEND, CP-RECV]:        [Global Settings]

 19 Default S/R packet size.........  5000     (     )
 20 Packet ack. timeout (sec).......  10       (     )
 21 Max. number of retries..........  15       (     )
 22 First block adjust down (%).....  0.05     (     )
 23 Overrun buffer adjust down (%)..  1.00     (     )
 24 Overrun buffer adjust up (%)....  1.15     (     )
 25 Overrun buffer stabilize (%)....  0.85     (     )
 26 Overrun buffer min. size (%)....  0.10     (     )
 27 Block number check count........  10       (     )



File 'LSCP.TBL,CONTROL'
Command (n=field#/Pn=Page#/F=File/D=Delete/E=Exit/C=Copy/Q=Quit) :_____
```

Re-installing PowerComm after upgrading the DM account

If you install a new DM account after an upgrade you will need to make sure PowerComm is installed into the ABS area. To re-run the installation without restoring from the original diskettes, create a Q pointer and run the install program as shown:

```
:ED MD LSCP
new item
top
.I
001+Q
002+POWERCOMM
003+LSCP
004+
top
.FI
[221] 'LSCP' filed.

:RUN LSCP LSCP.INSTALL

PowerComm Installation Utility
(c) Copyright 1989-97 Logitek Systems

For Advanced Pick SCO/Unix Systems


Installation Options

* - All options below

L - Load modes
U - Update coldstart proc/macro
C - Compile included sample programs

Enter option letter(s) or '*' for all options (*/L/U/C/Q=Quit):
```

Choose "*" for all options. You may want to re-create your ABS dump and ABS data diskettes after loading PowerComm into the ABS area.

PowerComm Software Issues

D3/NT

Installation Change for D3/NT

You must perform an additional step *before* installing PowerComm on D3/NT. Insert the PowerComm *Supplemental D3/NT Disk* in to the NT server and Run SETUP.EXE. This will extract 2 DLL's to the **C:\Program Files\D3\D3Programs** directory.

Possible Aborts After Coldstart on D3/NT

If PowerComm aborts from after a coldstart, you may need to remove the frames that have been allocated as temporary buffer workspace by PowerComm. You may want to add the following command to the user-coldstart. Use this command to release all frames:

```
CP-CLEAR (ARU
```

Package on D3/NT with FSI Accounts

If you use CP-PACKAGE to create a new FSI account on D3/NT (using the R option and naming the account FSI:accountname) you will need to issue the CP-PACKAGE command in the DM account. Or create the empty FSI account first in the DM account. If the FSI account does not exist, PowerComm uses NT_CREATE-ACCOUNT followed by QS.UPD (which can only be run in the DM account). See the source code in DM,BP, for more details.