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PCD2.M150 SUMMARY OF FIRMWARE VERSIONS

This document summarizes the changes of all firmware versions that are liberated on the PCD2M150 for production.

Concerning corrected / known bugs:
Only important bugs are listed here. For other bugs, please refer to the file COMSWER.XLS that contains more information about known bugs.

FEATURES OR RESTRICTIONS SPECIFIC TO PCD2.M150

General

- FW update (starting from version 0D0):
  The FW can be updated with the FW downloader. To start this program click "PCD FW downloader" in the "tools" menu from the PG5 Saia Project Manager.

  The FW update can only be done through the PGU port (port 0).

  A FW update is possible with the AMIC FLASH A29040 but not on the ATMEL FLASH 49F040.

- CPLD programming:
  At first power up after a firmware update note that the CPLD will be reprogrammed if its version is different.
  Please do not interrupt this programming sequence which take about 30 seconds, but in some case it can take until 2 min. (LED's are all off while programming, and blinking in the normal boot sequence when finished).

  FW Version history $\leftrightarrow$ CPLD Version

FW Version	..., $94	0A0, 0B0, 0B2, 0B6, 0B7, 0C0, …
CPLD Version	MF26	mF28

- PGU
  Default PGU mode is S-BUS parity therefore PG5, PG4 from version V1.3 upward or PG3 from version β2.0 upwards have to be used.

Memory

- User memory:

User program memory	HW	System Memory	Default Memory configuration
None		128 / 0 kByte	24k prg lines, 32k txt/db
RAM / EPROM			
	1 Mbits	128 / 128 kByte	24k prg lines, 32k txt/db, 128k extended txt/db
	4 Mbits	512 / 128 kByte	96k prg lines, 128k txt/d, 128k extended txt/db
FLASH			
	1 Mbits	112 / 128 kByte	21k prg lines, 28k txt/db, 128k extended txt/db
	4 Mbits	448 / 128 kByte	84k prg lines, 112k txt, 128k extended txt/db

Note:
- At first memory configuration the FW makes an allocation with the maximum space available depending on the RAM/EPROM/FLASH chip.
- Extended txt/db (txd/db number >= 4000) use fast indexed access and support binary zero insertion, lower range txt/db have a slower access and do not support binary zero insertion.
- There is no extended txt/db if no optional memory chip is added.
- With EPROM and FLASH as user program memory the txt/db < 4000 are read only. With RAM the txt/db < 4000 can be set to read only using the WP on board jumper.
- The setting of bindings in LON (LON commissions) is only possible if RAM is used and the read protection jumper is not set.

- EEPROM:
  - The S-Bus configuration is automatically saved in the EEPROM, this means that even if the battery becomes discharged the S-Bus configuration will be safe.
  - There are 50 non-volatile user registers.

Instructions

- NOP
- Instruction set to ~5µs for FB's compatibility   V0A0

- LD=/LDX=
- FB's parameters can be use on the LD and LDX instructions.   V0D0

- SASI
- Text accepts $R parameters.   V0A0
  E.g:"UART:$Ra,$Rb,$Rc,$Rd;MODE:$Re,$Rf;DIAG:FRg,RRh;"

a	Baudrate	110…38400 (numerical value)
b	Bits	7,8 (numerical value)
c	Parity	E,O,N (ASCII coded)
d	Stop	1 or 2 (numerical value)
e	Mode	'MC0', 'SM2', etc. (ASCII coded)
f	Station	Reg. with S-Bus station (numerical value)
g	Diagnostic flags	Reg. with the base diag. flag nbr (0..8191 num. value)
h	Diagnostic register	Reg. with the diag. register nbr (0..4095 num. value)

- SYSRD/SYSWR
- SYSRD/SYSWR/SYSCMP/DEFTR instructions.   V0A0
- SYSWR 1000: System watchdog   V0B0
- SYSRD 660x for serial port mode read back added   V0D0
- SYSRD/SYSWR 7050 to 7081   V0A0
    to read and write the different elements of the clock.
- SYSRD 7090   V0A0
    Function that returns the number of seconds elapsed since 00:00:00;
    January 1; 1970 (coordinated universal time), according to the system clock.

- SF
- IP library   V0A0
  Added SF "ReadIPConfig"   V0E0
- Application library   V0D0
  including SFs "CopyText", "InitDB", "CopyDB2Registers", "CopyRegisters"
  New "CopyBytes" SF   V0F0

Communication

- Serial communication:
  - MC0/1/2/4, MD/SD, MM4   V0A0
  - MC5 mode that deactivate RS-485 drivers directly after completion of
    transmission.   V0C0
  - Freeze function for the MC mode to ensure that no inter-character delay take
    place during the transmission of a frame.   V0F0

- S-Bus:
  - Parity and break modes as master and slave.   V0A0
  - Data-Mode   V0A0
  - Secure Data Mode   V0E0
    Option to disable the S-Bus secure data mode   V0F0
  - Modem+   V0A0

- Gateway (GM/GS). V0A0
- New S-Bus configuration data handling (Station no., config. S-BUS) when inserting a programmed user memory (EPROM/FLASH). V0A0

- S-RIO as master and slave. V005
  The S-RIO master task assumes the communication and the refresh of the process image. The RIO task is activated by a SASI instruction. The SAIA configurator automatically generates the SASI text, the configuration and messages DB. For more information please read the document "Remote I/O with SAIA S-Bus" 26/751 F2.

- PROFIBUS FMS with PCD7.F700:
  - Base functionality V0A0
    10 channels (10...19) and 100 objects (100...199).
  - Extension (at least SPROF $137 is needed) V0A0
    possibility to map objects on DBs, read/write indicator, multicast/broadcast link, watchdog.
  - Extension for profile GA V0A0

- PROFIBUS DP: V007
  - Master mode with PCD7.F750.
  - Slave mode with PCD7.F77x.
  - Introduced signed values V0B0

- LON with PCD7.F80x:
  - Base functionality V0A0
  - LON enhancement with new functionality poll and alias (LON 1.5). V0C0

- Communication on TCP_IP with PCD7.F650/F652:
  - S-Bus over UDP/IP V0C0
  - "Open data mode" over TCP or UDP V0C0
  - SMTP E-Mail support V0D0
  - DHCP / UDP with the PCD7.F655 V0D0

- Web server V0D0
  - S-Web Alarming V0B0

- DHCP / UDP with the PCD7.F655 V0D0

- PGU switches automatically to 38.4 kBds (requires PG5 V1.2). V0C0

- Up to 2 ports could be configured/assigned at 38.4 kBds at the same time. V0C0

- It is possible to configure/assign port 0 (or 1) at 38.4 kBds and port 1 (or 0) at19.2 kBds. V0C0

Miscellaneous

- New features for PG5. V0B0
  - New OUTL and OUTLX instructions
  - New synchronization for a bloc downloads in mode "RUN"
  - Possibility to upload data (SEDIT and SFUP) in a synchronized manner.

- XOB
  - XOB 20, 25: interrupt inputs XOB's V0A0
  - XOB 17, 18, 19: User XOB's V0A0

This XOB's which can be provoked via S-BUS telegram (STXM chan, 0, k 4000, k 17..19) or SYSWR command (K4017..K4018). The XOB's are only executed if the CPU is in RUN or CONDITIONAL RUN.

- XOB 7: System overload XOB   V0A0
- XOB 14/15: Cyclic XOB's
  can be executed from 5 ms to 1000s with 1ms steps   V0A0
- New XOB handling.   V0A0
  During the execution of a XOB other XOBs are queued and executed at the end of the first one.

• Calculation of week and day number   V007
  The PCD compute the day and the week number based on the date using the same algorithm as in the PG. The command 'Write Clock' corrects automatically the week number or day number if they are wrong.

• Password mechanism.   V003

V0F1

Major corrections and changes

• IP communication doesn't work anmore.

Modifications realized by SWER number

1554
Serial communication: If a PCD port is bombarded by an external source, the "DUART HW ERROR" mays occure after a restart cold of system.

1553
IP: IP communication doesn't work anymore.

Information for FW update.			
FW update file	**Checksum**	**FLASH Label**	**FLASH Art n° / type**
PCD2M150_0F1.blk	---	PCD2.M15/25 V0F1/1	4 502 7341 0 ---
		PCD2.M15/25 V0F1/2	Amic 29040B-70

V0F0

Major corrections and changes

• New option to deactivate the S-Bus secure data mode.

• Freeze function for the MC mode to ensure that no inter-character delay takes place during the transmission of a frame.

Modifications realized by SWER number

1551
WEB: In a specific Web application "WEB stack overflow" occurs (KR-PC-09-034). Web stack size is now about twice as big.

1548
Interpreter: If the INI/DEI operand is outside the valid range, the index register is not incremented/decremented and the ACC is set. This can result in an endless loop. ACC has to be reset in this case.
Example: INI   R xxxx [>8191]
                  JR   H -1

1547
Serial communication: Introduce a new option to deactivate the S-Bus secure data mode.

1546

Interpreter: Get instruction doesn't work when the source is a text and the destination is the last register (R 4095).

1545

Interpreter: Add a new SF to transfer byte between Register, DBs or Texts (the number of DB and Texts has to be bigger than 4000).

1544

Serial communication: In an S-Bus data mode request telegram, special characters (=>B5 and C5) in the "secure" header are not replaced by the DLE sequence. This result that on 2 / 255 telegrams no response is send back + some specific telegrams with length B5 or C5.

1543

Crash: The PLC crashes (bus error) when a user attempts to read 255 elements from DB over S-Bus.
Note: Rcount is now limited to 0x64.

1533

Serial communication: New freeze function to ensure that no inter-character delay takes place during the transmission of a frame using STXD instructions in MC mode. The transmission of characters is stopped if the freeze flag (optional parameter in the mode definition) is set and restarted once it is reset.
Eg: UART:115200,8,N,1;MODE:MC0,**Fnn**;DIAG:Fnn,R10;TBUF:512"

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0F0.blk	---	PCD2.M15/25 V0F0/1	4 502 7341 0 ---
		PCD2.M15/25 V0F0/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0F0 _BOOT_0A4_1.hex	F363	PCD2.M15/25 V0F0/1	4 502 7341 0 ---
PCD2M150_0F0 _BOOT_0A4_2.hex	98C8	PCD2.M15/25 V0F0/2	Amic 29040B-70

V0E6

Major corrections and changes

- Write text not possible through the Web interface

Modifications realized by SWER number

1542

WEB: The PLC crashes (68k address error) when a user attempts to write a text >= 4000 from the WEB interface.

1541

PCD2.M250: PC104 (M250) interface is not working.

1538

Serial communication: Exceptionally, on some CPU, it happens, on a channel assigned in MC mode, that characters are not sent. This occurs if an internal variable is no more correctly initialised after a RAM lost (eg. After deficient battery).

1536

Interpreter: Some SFs don't clear the error flag if executed sucessfully.

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E6.blk	---	PCD2.M15/25 V#0E6/1	4 502 7341 0 ---
		PCD2.M15/25 V0E6/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E6 _BOOT_013_1.hex	4569	PCD2.M15/25 V0E6/1	4 502 7341 0 ---
PCD2M150_0E6 _BOOT_013_2.hex	DC7D	PCD2.M15/25 V0E6/2	Amic 29040B-70

V0E3

Major corrections and changes

- Web server improvement

Modifications realized by SWER number

1530

WEB: Sometimes it's impossible for the browser to continue to load the pages because the web server is blocked, the response is always "NR"(not ready).

1529

WEB: At first Web server access after a PLC restart (or Web reset) the Web server keeps the hand much longer than specified in the configuration (20..300ms depending of the RAM disk size and the system).

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E3.blk	---	PCD2.M15/25 V0E3/1	4 502 7341 0 ---
		PCD2.M15/25 V0E3/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E3 _BOOT_013_1.hex	9E7A	PCD2.M15/25 V0E3/1	4 502 7341 0 ---
PCD2M150_0E3 _BOOT_013_2.hex	6373	PCD2.M15/25 V0E3/2	Amic 29040B-70

V0E2

Major corrections and changes

- Web server improvement

Modifications realized by SWER number

1528
WEB: An "active and non ack" display filter is wanted.

1527
Communication DP: Allow to reassign the DP slave in order to reset and reinitialise the module.

1526
WEB: On the default WEB pages the new SAIA logo should be displayed (Control Systems and Components and no more Smart solutions for comfort and safety).

1525
Communication S-Rio: On S-Rio, the communication stops after the 1st XOB 30 call. The error occurs only if the XOB is programmed.

1524
Interpreter / SF:
In the Application library the SFs ClearMem/ReadMem/WriteMem crash if the parameter is a DB instead of a Register.

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E2.blk	---	PCD2.M15/25 V0E2/1	4 502 7341 0 ---
		PCD2.M15/25 V0E2/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E2 _BOOT_013_1.hex		PCD2.M15/25 V0E2/1	4 502 7341 0 ---
PCD2M150_0E2 _BOOT_013_2.hex		PCD2.M15/25 V0E2/2	Amic 29040B-70

V0E0

Major corrections and changes

- Alarming has been added
- S-Bus secure data mode has been added
- Profibus-DP supports now signed value
- Improvement of the PCD immunity against bus error
- Ethernet broadcast telegrams salvo could block the IP communication

Modifications realized by SWER number

1523
Interpreter: If the CSF function doesn't exist then the system crashes (e.g.: IP library, function IPSend).

1522
CSF: Add a CSF (19) into IP library to read IP configuration (IP address, Subnet Mask and Default Gateway).

1518
Serial communication: S-BUS PGU is no more reassigned when the timing interval between SASI off on assigned port and the SASI off on S-BUS PGU port is smaller than 1second.

1517
Graftec: System crashes if going step by step with Graftec editor when no CSB is used in the user program.
The bug occurs with PG5 SP1.4.130 but not with PG5 1.3

1515
IP communication: IP communication is blocked when the server is bombarded by the clients. Especially with broadcast telegrams.
Note: this bug only occurs on the IP module F655 but not on F650.
The F655 "forgets" to generate again the interrupt when the new message is not got out of the mailbox by the PCD.

1509
Interpreter: In CSF Copytext at the $F, and $I handling, Bit 7 was always 0 (not read).

1508
Web server: In CGI Alarming, delete sorted by Type is wanted.

1505
Interpreter: At the CSF Copy text function (CSF 6, 0), source and destination Txt/DB register indirect addressing is wanted.

1503
System: No more possible to go on line with PGU on a PCD without IP-Module but with an IP-configuration when the RAM is lost (bad battery).

1499
System: If a crash occurs in the XOB 0, the CPU goes in HALT even if the SW_Wachtdog is active.

1498
Interpreter / **Web**: Alarming has been added.

1497
S-Bus: S-Bus Secure data mode has been added.

1496
Profibus DP: Supports now signed value transfer on Profibus-DP protocol

1495
Web: Text PPOs are limited to 32 characters. 64 is wanted.

1492
Interpreter: CSF [6, 0] (copy text) doesn't work correctly when the included text is empty. The converted text contains other characters.

1491
System: At bus error a retry is wanted before getting in halt.

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E0.blk	---	PCD2.M15/25 V0E0/1	4 502 7341 0 ---
		PCD2.M15/25 V0E0/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0E0 _BOOT_013_1.hex	A12E	PCD2.M15/25 V0E0/1	4 502 7341 0 ---
PCD2M150_0E0 _BOOT_013_2.hex	5580	PCD2.M15/25 V0E0/2	Amic 29040B-70

V0D3

Major corrections and changes

• By fast repeated power-up power-down cycles the RTC got set back and memory corruption occurred (booter V012).

• The Web Server and E-Mail handling has been improved

Modifications realized by SWER number

1489
Interpreter: Access to text/DB with number ≥ 32 768 are not check correctly and in few case this could crash the CPU. Normal text/DB range is 0..5999/6999/7999 and such accesses never occur with SAIA tools but are possible with specific applications (e.g. a supervision system).

1485

Web: Not all HTML form values are written to the PLC media.

1484

LON: At LON alias use LON transmission is slow, blocking, or blocks the whole PCD.

1483

Web: Access to the default web pages some times cases a system crash.

1482

System: Amic flash chip wanted for user memory chip mounting.

1481

Interpreter / **E-Mail:** The CSF (convert text) doesn't work if an including text of text converting is empty. The CSF stops converting and ignore the remaining text.

Information for FW update.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0D3.blk	---	PCD2.M15/25 V0D3/1	4 502 7341 0 ---
		PCD2.M15/25 V0D3/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
PCD2M150_0D3 _BOOT_013_1.hex	D849	PCD2.M15/25 V0D3/1	4 502 7341 0 ---
PCD2M150_0D3 _BOOT_013_2.hex	CC0D	PCD2.M15/25 V0D3/2	Amic 29040B-70

V0D0

Major corrections and changes

- The Web Server has been added.

- On board programming using a boot sector has been added

- LON transmit buffer overflow protection has been added and the interrupt handling for LON and the serial interface have been further optimized

- LON message and alias handling has been enlarged for multiple addressing uses.

- Serial interface handling generally has been optimized

- New CSF functions for text copying and DB copying have been added and a SYSRD for serial mode port check has been added.
New S-Bus telegrams and IL/AWL extension have been added.

- LD= and LDX= added, and Graftec RSB accepts register now

- IP handling has been extended and corrected

Modifications realized by SWER number

1477
Interpreter: In the CSF copy text (or STXT) if the source text contains one or more <0> (e.g. text 1: "Temp A: $R0001 <0>; Temp B: $R0002;") then only the text until the 1st <0> is processed.

1476
Interpreter: CSF copy text parameter 3, K 0 use caused the PCD to malfunction.

1475
Interpreter: A CSF function for production and fabrication information reading from EEPROM is wanted.

1474
Interpreter: LD= and LDX= is wanted.

1473
Interpreter: Register indexed RSB for Graftec is wanted.

1472
IP communication: Introduced DHCP Client support with the PCD7.F655

1471
S-Bus: Multiple read and write medias (R,T,C,I,O,F) S-Bus telegrams are wanted, in "reduced" and broadcast mode not to be supported.

1468
IP communication: In S-BUS UDP, the SRXM special function calls with K 2000, 3000 and 6000 did not work.

1467
IP communication: Error when moving DBs with STXM and SRXM in S-BUS UDP.

1466
IP communication: In S-BUS UDP, the STXM special function call with K 4000 did not work.

1464
S-Bus: If on an S-Bus slave ports two telegram are received directly one after another after the response of the first 3 or more byte junk data has been sent. The deactivation of the transmitter in polled mode directly after telegram finishing has been added and the "receive converter" has been deactivated. This works only if ONE telegram is sent during response sending.

1461
PCD Startup: A new startup LED signalization is used that is compatible with all other new PCD classic standard firmware versions.

1454
IP communication: After the CSFs "GetEEPROM" and "SetEEPROM" for the PCD7.F650, the mailbox between PCD and PCD7.F650 got blocked. No further telegrams could be sent from PCD7.F650 to the PCD.

1451

IP communication: In Open Data Mode: when calling "addSap", "connect" and "disconnect" functions on the PCD7.F650, the error return value got ignored on the PCD. The NEXE flag had not been set.

1430

S-Bus: For S-Bus read / write register and text/DB external access the upper register and db / text number limits have to be adapted to the higher NT limits.

1419

Interpreter: New CSF [lib 6, function 1&2] to copy byte by byte from a DB to registers and vice versa.

1416

Serial communication: The CPU performance at the use of the asynchronous serial communication (S-Bus, MC) has been optimised.

1411

Interpreter: New SYSRD 660x instruction to read mode of port [0..6] which is assigned or configured on PCD. The mode is returned in a register in ASCII format.

1405

LON: At very heavy LON loading and using in parallel serial ports at 38,4 kBd / 19,2 kBd (2ports, PGU included), LON did not start up properly getting repeatedly in resynchronisation (this could not be reproduced on the M170). On the 38,4 kBd port frame / break errors occurred (this happened also on the M170).

1404

LON: At very heavy LON loading and with using 38,4 kBd / 19,2 kBd in parallel on the serial ports a buffer overrun occurs and LON got stuck with TBSY hanging for all NV that are transmitted. On fast CPU (e.g. M170) the stuck problem could not be reproduced but the overrun error happened.

1400

Interpreter: New CSF "Copy Text" implemented:
The function CopyText copies a text into a text or db. The formats (@,$,…) are supported in a source text as well.

1390

LON: At LON broadcast domain wide use a second and all further message were only sent once.

1389

LON: At LON broadcast / alias use a binding problem with multiple selector use (tool error) causes loss of transmission. All second and further NV on a single selector were only sent once.

1359

Serial communication: With high baudrates (especially 38.4kBd) it happened that communication made retries due to overrun error.

FW update file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0D0.blk	---	PCD2.M15/25 V0D0/1	4 502 7341 0 ---
		PCD2.M15/25 V0D0/2	Amic 29040B-70

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0D0 _BOOT_011_1.hex	B4B9	PCD2.M15/25 V0D0/1	4 502 7341 0 ---
D2M150_0D0 _BOOT_011_2.hex	9B24	PCD2.M15/25 V0D0/2	Amic 29040B-70

V0C5

Major corrections and changes

• Modem applications (Fupla Modem library) don't work correctly if the PCD also contains a modem configuration (SWER 1459).

Modifications realized by SWER number

1459
Modem applications (Fupla Modem library) don't work correctly if the PCD also contains a modem configuration**.**
Undo and redo on S-Bus PGU modem works is set to be working the same way that in a fupla modem program.
To use an undo/redo on S-Bus PGU modem, the user has to do an " SASI diag after doing an SASI off with option ("MODE:OFF,x,y,z" z is not used by FW) in order know when the SASI off is done.

1458
The read/write text S-Bus commands should also be supported in S-Bus reduced mode.

1456
Read EEPROM from S-Bus over IP through a gateway fails.

1448
If the user program is in FLASH or EPROM, the S-Bus station number, written using SYSWR 6000, is overwritten by the configuration after a restart.

1447
S-Bus communications (configured) fails after a few minutes if DP slave communication is assigned but no master is on the bus.

1446
Fatal errors (e.g. "bus quit failure", "68k address error", ...) can occur if using SYSWR 70xx.

1425

In mode MC1 during STXT / STXD the XBSY / TBSY flag is sometimes cleared though the port is still waiting to send characters. This happens at transmission pauses (e.g. waiting for a CTS input reactivation) und during the change from one queued transmission to another. A clear only after all pending transmissions are handled is wanted.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0C5_1.hex	0E04	PCD2.M15/25 V0C5/1	4 502 7341 0 ---
D2M150_0C5 _2.hex	6905	PCD2.M15/25 V0C5/2	Atmel 49F040-70

V0C4

Major corrections and changes

• A lot of corrections and improvement was done on IP (see SWERs 1428, 1427, 1426, 1418, 1391, 1388, 1363, 1354, 1352, 1342, 1334)

• Introduced a CSF for the Ethernet PHY-Chip configuration.

Modifications realized by SWER number

1428

Implemented the CSF for IPSetLocalConfig incl. update of the Extended Header. Introduced the function IpAddrToStrConfig for the case that a register with value 0 is passed as an IP-parameter.

1427

Lose data in Open Data Mode when more data is read from the socket than memory is available to save the data.

1426

Problem with detecting the end of a serial line test on the PCD7.F650.

1424

Mode MC0, STXT/STXD:
XBSY/TBSY was sometimes cleared even though the port was still sending characters.

1422

SASI off on port S-BUS PGU (slave) is possible.

1421

If the 1st or the 4th character of the projects name is a special character (ASCII code greater than 127) then the checksum is not correctly calculated: With Flash/EPROM memory: PC goes in HALT and Sbug displays "checksum fail".
With RAM: PCD is not in Halt, but there is a history entry: "Modified Program".

1418

The gateway on S-BUS over IP responds to requests even if the addressed station in the S-BUS serial network is not present. This issue generates some kind of "phantom" telegrams.

1417

After XOB 0 execution the RESI /RST pin is not pulled. LON did not restart.

1407

EEPROM access over gateway failed.

1401

Introduced the possibility to have a serial number and mechanism related with (e.g. "check licence" CSF).

1399

Access to flashcard over gateway fails.

1398

Firmware Download over gateway fails.

1392

Web server communication is not possible over gateway.

1391

In TCP Open Data Mode, the commands "SendData", "SendDataRev", "ConnectTCP" and "DisconnectTCP" use the same intern variable for the Port & Node. Conflicts and phantom telegrams can result.

1388

In S-Bus over IP, the special SRXM call k5xxx is not working.

1376

CSF set-/getEEPROM doesn't detect that the EEPROM is missing on the PCD7.F650.

1373

Especially with external interrupts (e.g. XOB 20/25), in some circumstances the system indicates a system overload (XOB 7) even if this is not the case.

1372

Some SYSWR instructions (7000, 7001, 7050…) expect a register as 2nd parameter. If that parameter is a constant (K) various failures are possible, for example:

- Program stops, RUN LED remain turned on.

- Communication is lost.

- A valid result is not available (no register for the return value).

1364

Implemented a CSF for PHY-Chip configuration of the PCD7.F650.

1363

On S-Bus and Open data mode over IP an indication, if the physical link is present, is wished (for example with XBSY flag).

1354

In Open Data mode over IP, it should be possible to send a text formatted with TAG, to include in it media value or clock.

1335

New DBX SEG to hide functions or a whole user program.

1334

Limit the TCP/IP Open Data mode ports to 32 (PCD1=16).

1335

New DBX SEG to hide functions or a whole user program.

1334

Limit the TCP/IP Open Data mode ports to 32 (PCD1=16).

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0C4_1.hex	4079	PCD2.M15/25 V0C1/1	4 502 7341 0 ---
D2M150_0C4 _2.hex	6A25	PCD2.M15/25 V0C1/2	Atmel 49F040-70

V0C2

Major corrections and changes

• Once the SW watchdog has occurred, the PCD no more restarts (only with FW version V0C1).

Modifications realized by SWER number

1413

Once the SW watchdog has occurred, the CPU no more restarts. A clear of the system RAM is necessary, and even this could be help less.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0C2_1.hex	C9B6	PCD2.M15/25 V0C2/1	4 502 7341 0 ---
D2M150_0C2 _2.hex	A240	PCD2.M15/25 V0C2/2	Atmel 49F040-70

V0C1

Major corrections and changes

• If a PCD7.F650 module is used no bus quit failure will occurred at power on, independent of the HW of the IP Module (SWER 1368)**.**

Modifications realized by SWER number

1368
On PCD1.M130.F650 and PCD2.M150.F650, depending of the HW of the IP Module, a bus quit failure can occur at power on.

1358
With S-Rio if XOB 30 is programmed, the S-Rio communication stops after the 1st call to the XOB 30.
A diagnostic DB < 4000 gives an error during execution of the SASI.
Another assignation mode than RM1 gives an error.

1352
In Open Data mode over TCP/IP if an Accept should done it can happen that a new telegram is received during process the accept. Then the accept gives an error and the communication does no more work correctly.

1350
The master SRIO task does not work with baudrates other than 38.4 and 76.8 kBauds.

1345

Using FMS and trying to transfer object of the type Floating point, the PCD stay stuck in the SRXM or if other partner was trying to write floating point into the PCD.

1343
If an S-Bus (DATA mode) response telegram is corrupted that the last byte is equate to C5 then a retry is done but the answer will not be correctly interpreted. (B5 will be put in the msB of the answer).

1342
STXM/SRXM on S-Bus over IP: destination (for STXM) or source (for SRXM) media is tested with the limit of the station and if it doesn't fit, the command isn't executed and error flag is set. i.e. PCD1 cannot send to outputs > 61.

1341
1) After execution of instruction TEST 20 (serial channels) the gateway (configuration) doesn't work until a restart cold.
2) The PCD goes off line if TEST 20 is executed continuously.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0C1_1.hex	CA9C	PCD2.M15/25 V0C1/1	4 502 7341 0 ---
D2M150_0C1 _2.hex	A1CA	PCD2.M15/25 V0C1/2	Atmel 49F040-70

V0C0

Major corrections and changes

- The serial communication, especially at 19.2 or 38.4 kBds, sometimes blocks particularly when LON or Profibus DP is also active (SWER 1288).
- Various Profibus DP corrections were done (SWERs 1300, 1267, 1241, 1199, 1171).
- LON corrections and modifications were done (SWERs 1303-1298, 1250, 1222, 1190).
- The software watchdog functionality was improved. Now, the PCD always disables the software watchdog when it is switched in STOP or CONDITIONAL RUN. Also at each watchdog failure an entry is done in the history table (SWER 1270).
- MC mode
- No more character will be lost during SASI off if TBSY is low.
- By sending character check TFUL (and not TBSY) in order to not have a delay between each character (SWER 1235).

Modifications realized by SWER number

1325
The CPU's internal status register SR, saved in berr_info in the case of a CPU crash, is no overwritten anymore after a restart of the PCD.

1324
In the case of a CPU-crash the stack will be copied to get more informations about the crash.

1318
Sometimes the DP network is stoked in a FDL status, and no update of data is done between the master and the slave, sometimes the watchdog of the slave reach the end, and the error can be detected.

1312
A "bus quit failure" occurs if in the TFRI instruction the source or destination register / timer / counter) is negative. E.g. TFRI DB DB_pnt, R R_pos, R R_Dst_pnt with R_Dst_pnt = -1.

1311
A SASI GM on port 0 or 1 can cause any kind of problems. Known effects are:
- CPU crash
- Loss of S-Bus communication on port 2 or 3.

1308
Graftec: Download block on run is not possible if COB 15 is used (COB 15 is running). A Message Box appears: Timed out waiting for blocks to be switched.

1303
LON: At message sending with an out of range CodeID the LON-driver is hanging up.

1302

LON: The use of a not bound message tag sets the new "non-bound message tag" bit 27 instead of the 'interface error' bit 16 in the diagnose register.

1301
LON: Message Tag doesn't work with the new SNET, Fupla and LonMaker. The address table index is kept to 0x0f, LonMaker does not update it when it writes the address table info.

1300
LON: At first use after a new program download at unbound value the driver is still called. The transmission LED lights up but nothing is sent and a NAK is returned. LON should return an unbound diagnosis without a driver call. After commission with an unbound value the problem is gone.

1299
LON: At NV out ring buffer use overflow caused diagnose register Bit 'interface error' setting with transmission loss without any warning before.

1298
LON: The use of a not bound NV sets the new "not bound NV out" bit 19 instead of the 'interface error' bit 16 in the diagnose register.

1288
The serial communication (S-Bus, MC, ..) on COM 2, 3, ... sometimes blocks when LON or Profibus DP is also active. After a restart it works again for a while. This is especially found with the PCD1 at 19,2 kBds and 38,4 kBds.

1281
Reset IO signal is being activated for at least 1ms for projects with PCD3.LIO.

1276
S-Bus configuration (Gateway, modem, TCP/IP) should not put the PCD in Halt if there is not enough memory space in the EEPROM for the data.

1274
The command "Display CPU-Status" in the SAIA debugger returns only 1 line of information (CPU number, platform and FW version) over Master Gateway. The PRODUCTION INFORMATION (System ID, Hardware Version, Modifications, Fab. Date) is not returned.

1270
If the software watchdog is activated and the PCD is set into the STOP state, then it restarts because of a watchdog failure. Also a history entry is only made when XOB 0 exists and the SYSWR 1000 with the option 2 was executed.
The PCD should always disable the software watchdog when it is switched in STOP or CONDITIONAL RUN and at each watchdog failure an entry should be done in the history table.

1268
Instruction DSP doesn't work well on fast (25MHz) PCD's. Some numbers are not correctly printed out to the display, but the value in the display register is correct.

1267
Profibus DP Master doesn't work on some PCDs. Sometimes the data transfer is not done.

1263

If you put an EPROM (or a FLASH), which has an S-Bus configuration and a password protection, on a PCD that has no S-Bus setting, the result is "no-S-Bus" instead of the S-Bus setting present in the EPROM.
The S-Bus setting will be enabled if you write a station number (e.g. with Write s-bUs-station cmd or SYSWR K 6000) on this system.

1258

Downloading a DB in run causes a 68k Address Error.

1250

Error at some specific LON connection binding (unacknowledged / repeated).

1248

It is now possible to configure/assign one port at 38.4 kBds and the other at 19.2 kBds on the internal DUART (port 0 & 1).
It is possible to configure/assign the 2 ports of a DUART at 38.4 kBds but the number of ports at 38.4 kBds are limited to number of ports for the system divided by 2 (PCD1 can only have 1 port at 38.4 kBds at the same time).

1247

Possibility to switch the PGU port from 9.6 kBds to 38.4 kBds.
See DDEPFW6143.

1235

In MC mode, the tbsy (or xbsy) flag is reset during the transmission of the 2 last characters, therefore these characters could be lost during a SASI OFF.
!!! Now tbsy is reset at the end of transmission. This could result in a delay (at 9600 baud ,8bits,N,1stop : 2ms) between each character if communication is controlled with tbsy instead of tful.

1233

After a restart on a password protected PCD, the PCD goes into reduced protocol after about from 5 to 10 minutes, and the password has to be entered again.

1222

Download of a LON project over Gateway by using PG4 Version 2.0.210 is not executed.

1214

The last character of the module type (e.g. PCD2.M15¢ or PCD2.M15`) is sometimes incorrect in the PG. PG displays six characters but only five characters are initialised in the PCD.

1212

A Program that has more ST/TR than allowed in a system results in unpredictable problems.
The PG limited this to 2000 until now. However this has now been changed (PCS1.C8 max. 200 ST/TR, M170 max. 6000 ST/TR).

1199 – 30.08.2001

Profibus DP. If a slave is disconnected/reconnected to the master, then some times the input media's of the slave in the master are reset to 0 for a short time.

1190

On LON broadcast explicit message read request (incoming) without explicit message configured an answer with empty message was returned. The PCD / LON should not respond. Same error than SWER 1177 (The original correction from IBT did not work).

1184
The serial ports COM 2&3 on a LON module F802 or 804 doesn't work correctly, when the LON part of the module is configured.

1171
If a SASI DP master is performed a 2nd time the CPU blocks.

1168
Customers using LON requested for polled Variables to be implemented.
Info:
The polling function is called with a pcd_send with the READ_IND service. A polled binding uses an address table entry at the receiver side. LON IBT V1.5 update with added SNET adaptations.

1167
Customers using LON requested for Alias Variables to have the new binding constraints supported. LON IBT V1.5 update with added SNET adaptations.

1166
A non-bound variable (NV Update) was sent unsolicited to the network. On a Neuron based node, unbound variables are not sent at all.
Info:
This was fixed in release 1.3 of the driver but not released by SAIA. The original specs intended to have the Application programmer deciding on sending a NV update or not.

1165
Customers using LON requested Turnaround Binding features to have extended configuration features available.

1164
With LON in certain sequences of loading backup data / tool updates, the selector table could be matched up. The problem can be solved in downloading a new unbound backup and by the use of the installation tools replace function.
Corrupted selector table => no more LON communication.

1163
With LON PCD responds with nv_fetch response (code 0x33) instead of the expected nv_update as result of the poll request. If pcd_send finds state&0xff000000) != 0, a fetch response is sent, otherwise a poll response is sent.

1162
LON customer requested to get control over the sender's address in relation with incoming messages.

1076
PG5 has got the possibility to read the type of the modules which can be put on the slots B1 and B2.

1066

MC4 mode does not deactivate RS-485 drivers directly after completion of transmission (like PCD4.MXX5 v$c4). Added new mode MC5.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0C0_1.hex	4809	PCD2.M15/25 V0C0/1	4 502 7341 0 ---
D2M150_0C0_2.hex	A8D2	PCD2.M15/25 V0C0/2	Atmel 49F040-70

V0B7

Major corrections and changes

• Corrected the PROFIBUS DP-MASTER SASI instruction which fails (PROF DP fail 2 in history) with FW version V0B6 (SWER 1213).

Modifications realized by SWER number

1213
The SASI instruction with PROFIBUS DP-MASTER always fails (PROF DP fail 2 in history). Impossible to use this functionality.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0B7_1.hex	7BE0	PCD2.M15/25 V0B7/1	4 502 7341 0 ---
D2M150_0B7_2.hex	CCC3	PCD2.M15/25 V0B7/2	Atmel 49F040-70

V0B6

Major corrections and changes

• PROFIBUS DP Master was no more working at 12Mbps with the new firmware V1.1 on modules PCD7.F750. It fails during the PROFIBUS SASI instruction (SWER 1195).

• If an error occurred in the XOB13 then the XOB was executed until its end and then restarted immediately, causing an endless loop if the error is still present (SWER 1181).

• Some corrections were done in relation with the download in RUN and the synchronous dataview (SWERs 1174, 1172, 1170, 1160, 1159).

Modifications realized by SWER number

1196

When error is happening in the XOB16, and then the function DIAG is used in the XOB13, the diag instruction will indicate a totally wrong line of the software.

1195

PROFIBUS DP Master is not working anymore at 12Mbps with the new firmware V1.1 on the modules PCD7.F750. It fails during the initialization of the PROFIBUS (SASI).

1189

Before the PCD access the dual port RAM of the DP Master module, it locks the access and some time the locking was hold for a too long time, this was making a strange behaviour on the PROFIBUS DP network

1185

On PCD2M150 and M170.DP, SASI instruction for DP master doesn't work. Error flag is set and "PROF DP FAIL 2" is written to history.

1183

If a bus error occurs, a redesign PCD is not always set in HALT. Every 2nd time the PCD remains in RUN without notifying anything.

1182

Using the LDX instruction to set timer/counter causes a bus quit failure when the sum of the index register and the number of the timer/counter is bigger than 8191.

1181

If an error occurred in the XOB13, then it was executed until its end and then restarted immediately, causing an endless loop (if the error was still present).

1174

Download block in run from PG5 downloader doesn't work correctly.
a) After download block in run, the PCD returns an error message to the PG. The telegram from the PG is correct.
b) The "download block in run" deletes blocks which are not used anymore. If the address of the block to be changed equals 0, the corresponding pointer in the block table is not cleared immediately.

1173

ROM 4Mb as memory for the user program doesn't work.

1172

In PG5 synchronous dataview (Saia IL Editor) the ACU information is not correct. In fact it is the actual ACU (ACTA) and not the OR combination between actual ACU (ACTA) and OR ACU (ORA).

1170

A download of a block while the PCD is running causes a timeout error in PG5 before the timeout has exceeded.

1161

On V0B2, a DP Slave SASI produces a bus error and the PCD goes in halt.

1160

In the SAIA debugger, the command "File Load Cob" of an additional COB causes a CPU crash (68k invalid address, 68k invalid OPC,…), only with PGU S-Bus protocol.

1159
In synchronous dataview (Saia IL Editor) if the program has a jump forward then the buffer was not filled with the correct datas. The jump command has no data but the line before the jump entry has some datas.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0B6_1.hex	7C8D	PCD2.M15/25 V0B6/1	4 502 7341 0 ---
D2M150_0B6_2.hex	CE27	PCD2.M15/25 V0B6/2	Atmel 49F040-70

<u>V0B2</u>

<u>Major corrections and changes</u>

• Corrected the COB supervision time. In a program with only one COB, XOB 11 was called even if the supervision time wasn't exceeded (SWER 1151).

• Write EEPROM (SYSWR k 20xx) is reliable again (SWER 1150).

<u>Modifications realized by SWER number</u>

1155
The CPLD cannot be reprogrammed when the user changes the firmware version for a PCD which is equipped with CPLD made with AEM (005) mask (0.5um).

1154
S-Bus doesn't work with ports 2 and 3.

1153
S-RIO doesn't work with ports 2 and 3.

1152
SYSRD K 5210 must return back 70h and not 0 for FW-Version 070.
A bug fix version must return a value too (#81 returns 81h).

1151
XOB 11 is called, even if the COB supervision time has never exceeded. If the supervision time is 2s then the XOB 11 will be called every 2s. If there is one COB more (for example COB 1) then the XOB 11 will not be called anymore.

1150
If a Write EEPROM (SYSWR k 20xx) occurs during the background "read RTC" task (every 250ms) the value written in the EEPROM is not reliable.

1148

The instruction "DIAG" gives the wrong program line numbers of the block calls (Nesting level information) and entirely wrong informations when the error occurred within XOB 16.

1147

Instructions MOV (with digit), DSP and WTIME change P/N status flags. Instructions DIGO and DIGOR set the E and N status flags with negative values.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0B2_1.hex	E029	PCD2.M15/25 V0B2/1	4 502 7341 0 ---
D2M150_0B2_2.hex	D84D	PCD2.M15/25 V0B2/2	Atmel 49F040-70

V0B0

Major corrections and changes

• Test 400: The information of media corruption is now memorized until next TEST 400 and no more cleared by the start-up (SWER 1138).

• After use of FLASH and putting back RAM memory, the PCD can be in a state where each restart modifies the program. This result in "Invalid OPC" or at least wrong code. If no extended header is configured this appears at line 2630 and 5361 (SWER 1142).

• At power on, flag 0 was set low and flag 2 was set high (SWER 1141).

• S-BUS Gateway master (SASI GM) does not work on ports 0 & 1 (SWER 1140).

Modifications realized by SWER number

1146

The software watchdog in PCD2 doesn't work.

1144

After an STH (or another bit instruction except ACC) a SOCL set the signal even if ACCU is low.

1142

In some case after each restart, value 0x55 is written at address 402AAA and 0x0A at address 405555. This causes "Invalid OPC" or at least wrong code at line 2630 and 5361 (if no extended header)

1141

At power on, flag 0 is set low and flag 2 is set high.

1140

S-BUS Gateway master (SASI GM) does not work on port 0 & 1.

1139

SNVTs are always sent as ACK'd service even if they were bound as UACK'd service.

1138

The information of media corruption has to be memorised until next TEST 400 and not cleared by the start-up.

1137

The information of media corruption has to be memorized until next TEST 400 and not cleared by the start-up.

1135

In some cases, after a reset SB (RSB) in a parallel branch, the grafcet doesn't wait correctly the rendez-vous the next times this branch is executed.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0B0_1.hex	573C	PCD2.M15/25 V0B0/1	4 502 7341 0 ---
D2M150_0B0_2.hex	89A0	PCD2.M15/25 V0B0/2	Atmel 49F040-70

V0A0

Major corrections and changes

• Some corrections were made on Profibus-FMS concerning problem on opening/closing channels and transferring "octet string" objects (SWERs 1123, 1124, 1130).

Modifications realized by SWER number

1133

Profibus-DP: SCON 16 Instruction doesn't work correctly.

1130

Profibus-FMS communication blocks if a lot of SCON instructions are performed at the same time.

1125

Send the date to a display with STXT on XOB 16 gives: dd.mm.yy. (mode MC1).

1124

Profibus-FMS: Reading of "octet string" objects mapped on flags doesn't work. The program work's without problems with FW 006.

1123

Profibus-FMS: Transfer of DB's
Only the first 8 Elements of a DB are transferred.

1117

Problem with the Gateway function. If the gateway executes a STXM instruction in his program, it overloads the S-Bus net and blocks the communication.

1109

Introduce a new time function that returns the number of seconds elapsed since midnight (00:00:00), January 1, 1970, coordinated universal time, according to the system clock. DD-PFW6-048 Rev. 10.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_0A0_1.hex	5485	PCD2.M15/25 V0A0/1	4 502 7341 0 ---
D2M150_0A0_2.hex	75C8	PCD2.M15/25 V0A0/2	Atmel 49F040-70

V$93

This Version is the first FW for pilot customers. It is based on the $73 of the PCD2.M110/M120.
The PCD2.M150 is about twice as fast as a PCD2.M110/M120.
The CPU is clocked at 25MHz, the RAM is on 16 bits and FW is in FLASH 70ns → 0 wait state access.

Information for PROM programming.

Hex file	Checksum	FLASH Label	FLASH Art n° / type
D2M150_$93_1.hex	E771	PCD2.M15/25 V$93/1	4 502 7341 0 ---
D2M150_$93_2.hex	8543	PCD2.M15/25 V$93/2	Atmel 49F040-70