

**From:** Beck Roland

**Tel.:** 528

**Date:** 22/01/1999

**Subject:** PCD6.M1/M2

**FW VERSION V00A**

**Doc #:** Vers\_00A.doc

## **1. INTRODUCTION**

This version is identical to V09E. V00A comprise a minimum number of new features (no more place in EPROM) and only the essential corrections were made since V009.

**Only this version is compatible with the firmware version V002 of the PCD6.M3, due to the new RTC management. Older version are not compatible anymore.**

## **2. NEW FEATURES AND MODIFICATIONS SINCE V009**

- The startup routine has been modified for compatibility with PCD6.M3 CPUs.
- The “Reserve Int” routine has been corrected and no more “68k Invalid OPC” error happens if this interrupt routine is called.
- Instruction SOCL is now possible on port configured as Sbus PGU
- New RTC management. That means:
  - Calculation of WEEK NUMBER and DAY NUMBER is compliant to ISO8601 and Year 2000.
  - The day number and the week number are irrelevant when loading time values (WTIME, STXM...).

## **3. MODIFICATIONS REALISED - BY SWER NUMBER**

### **3.1 (between V009..V00A)**

SWER	Date	Description
11	21/08/95	Spurious interrupts when using more than one processor which could cause a crash.
12	14/09/95	The user program name of CPU 0 was corrupted when using more than one processor and making a restart cold.
13	14/09/95	
14	21/11/95	
15	29/04/96	The error “CPU SYNCH ERROR” occurred on CPU’s 1 to 6 occasionally after a restart cold.
16	20/05/96	The S-BUS Gateway didn’t work correctly on CPU’s 1 - 6 if a restart cold 1 - 6 was made.
17	07/06/96	When using S-Bus PGU, the CPUx does not go in Stop after a Restart Cold/Warm x command if communication is active on an other CPU.
18	02/09/96	On PCD6.M220/M260 port RS-485 are active after startup.

19	05/09/96	On multi-CPU's system the CPU, occasionally after a restart cold the CPU's detect an HW error.
21	04/10/96	On PCD6, Sbus PGU PLM assignation causes trouble on CPUs without a PGU port assignation. On this CPUs the port 3 does not work properly.
234	04704/95	The break length definition doesn't work correctly with SM0/SS0 modes for SBUS. The Break length was effectively half the length defined in the SASI at 19200 baud.
240	16/06/95	Problem with the COPY instruction.
247	08/08/95	Problem with memory extension security when used on multiple CPU systems.
249	21/08/95	Ill_auto and ill_int provoke sometimes a buserror.
250	22/08/95	The pause between the break and the first character is too short in SM0 SBUS mode for certain modems. This has now been modified so that the pause between the break and the first character of the telegram is the same size as the break.
260 266	06/10/95 22/11/95	Error flag concept: This has now been clarified in the following manner :- <ul style="list-style-type: none"><li>• If the Error flag is set then XOB 13 is called in all cases.</li><li>• All existing instructions, which can affect the error flag, will also clear the flag when they have been executed correctly.</li><li>• The error LED is set only when there is an XOB provoked which has not been programmed i.e. a programming error.</li></ul> See the document 'The new error flag concept', LB-EPFW6-032, rev 01, for more details.
245 264 278	04/08/95 20/11/95 27/03/96	If a PCD had been powered up without any SBUS configuration and then a user program EPROM was equipped containing a valid SBUS configuration, then it would not be detected. This error has now been corrected and works in the following way. <ul style="list-style-type: none"><li>• If a station number has been initialised in the PCD system RAM before the user program EPROM is equipped then this number is kept.</li><li>• If there was no station number initialised in the PCD system RAM before the user program EPROM is equipped then the station number read from the user program EPROM.</li><li>• If the battery fails during power-down then the S-BUS header is reinitialised to the contents of the user program EPROM.</li></ul>
290	05/09/96	Gateway in multiple CPU system does no more work after a restart cold CPU n (n!=0).

### 3.2 (since VB98)

SWER	Date	Description
30	12/02/97	Minor modification for "reserve int"
31	25/04/97	crash of CPU when extension rack is switched off
32	01/05/97	Failure in startup6 (usr_prog_tst). The CPU thinks the user program is always in EPROM.
33	04/09/97	When an M1/M2 CPU is equipped with a R1xx and the extern reset is asserted during the power up, the CPU stops.
34	24/9/97	When connected with SBUS then then command stop own CPU on CPU 1 stops Cpu2 too.
35	24/09/97	The LAN2 module works only with Cpu0.
230	17/02/95	Problem with MD/SD mode when transmitting the RTC, the week number is sometimes false.
232	31/03/95	Problem with DTR signal with MODEM+. The DTR signal is not cleared after a SASI "MODE:OFF".
238	13/04/95	The 'read stn number' telegram doesn't work when using the GWY.
242	24/07/95	The routine FW fail_histo: need to be modified.
252	06/09/95	The STXM instruction waits only 1/16 <sup>th</sup> of the defined time-out time before making a retry. This can cause modem communications problems.
261	27/10/95	The DIAG instruction does not work correctly with password set.

262	27/10/95	Wrong Timeout, Ts and Tn delay at 38.4 KBd.
270	24/01/96	The CALL68 instruction could make a restart cold. There isn't any clear outputs mechanism on the PCD6.M1/2. The /RESI signal is never affected (HW reason).
283	04/06/96	If the power supply was cut to a modem during the initialisation phase for S-BUS with modems then the modem would not correctly complete the initialisation phase.
284	24/06/96	Problem with Ts and Tn delay.
286	16/07/96	Problem with Ts and Tn delay.
289	04/06/96	On a gateway port the command SRXM to a counter does not work correctly.
291	04/06/96	With S-BUS PGU download of XOB, FB, PB,... the FW did sometimes 'Bus error'.
294	09/01/97	Extension Memory initialisation failure on partial text.
295	13/01/97	SBUS configuration when user program is copied in EPROM. New mechanism.
306	05/06/97	If in the XOB 11 the COB who's produce the XOB is stooped then the program never return in the COB.
308	18/07/97	Command 'Write Clock' doesn't correct automatically the week number or day number if they are wrong.
318	01/05/97	Port #1 S-BUS PGU not possible in RS-422.
1002	10/11/97	The Run/Halt switch doesn't work in every case.
307	10/07/97	Bad calculation of week number, when 1st. of January is on Thursday.
1006	14/01/98	
1031	20/04/98	The instruction WTIME does not accept bad entries for the day and week number. Sets Error Flag if so.

#### **4. MODIFICATIONS NOT REALISED - BY SWER NUMBER**

SWER	Date	Description
10	21/8/95	TEST 100 instruction doesn't work correctly when using a PCD6.M1/2 before version 'C'.
126	23/09/92	SCOB instruction doesn't work correctly.
124	16/9/92	Problems with PID instruction.
125	04/05/92	
177	10/12/93	
143	05/07/93	SYSRD & SYSWR not implemented in the PCD6.M1/2.
187	16/03/94	
194	17/05/94	
204	16/03/94	
215	07/10/95	
236	10/04/95	
253	06/09/95	A display serial ports command to show the status of all serial ports in the debugger.
263	16/11/95	New SASII and SCONI command.
265	26/11/95	A write protection mechanism for all systems based on the mechanism proposed for the PCD1. This cannot be implemented on other systems until we have EEPROM.
268	22/01/96	A NOP instruction of the same fixed execution time in all PCD's.
269	23/01/96	FW goes in halt after a power up when it recognised that the memory extension had been corrupted. The FW should go into RUN so that the corruption can be detected by the test instruction.
272	28/01/96	The PCD1 now calculates the week number based on the date using the same algorithm as is used in the PG3. Modify the FW so that this algorithm is used for all PCD systems. This is a good idea as each year we have the problem on the PCD6/PCD4/PCD2 that the week number passes to week 53.
239	08/05/95	FW team modifications not implemented in the PCD6.
243	28/07/95	
258	14/09/95	
259	18/09/95	
273	28/02/96	
274	04/03/96	The read system version (SYSRD K 5200) doesn't work.

276	26/03/96	Adaptations for XOB 8 (invalid opcode) in multi-CPU environments.
280	30/04/96	FW team modifications.
282	14/05/96	JPI instruction to accept values greater than 8191, for example up to 32 bits.
293	05/12/96	A Sbus Write time tlg with an invalid value (ie month =13) can block up the slave.
296	16/01/96	SBUS PGU and SBUS PLM doesn't give the same diagnostic on restart if F1xx module is missing.
297	04/02/97	On MC4 mode, it is necessary to deactivate the driver directly after the transmission. This was done only on a special version for PCD4.
305	03/06/97	Introduce a watchdog on S-Bus.
311	04/11/97	Problem with instruction STXT on displays if format is with leading zeroes. I.e value -01.1 is displayed as 0-1.1
313	22/08/97	Make possible to transmit register with floating point value with the STXT instruction on mode C.
316	26/09/97	When a PCD, which works with S-BUS, has a BUS Quit Failure, the failure affects the howl S-Bus.
1003	24/11/97	If an error occurred in XOB 16 the XOB 13 isn't called.
1010	06/02/98	This is a wish to modify the TFR and STXT Inst.
1013 1014 1015 1016 1017	20/02/98	New functionalities wishes for PG4
1021	19/03/98	If a SBUS telegram provoked a bus error (with display/write byte or erase flash) the PCD stay in an end less loop.
1029	02/04/98	The instruction following the NCOB is sometimes executed before the COB switching.

## **5. SWERS CANCELLED - BY SWER NUMBER**

SWER	Date	Description
127	22/10/92	Instruction to be able to read the active transition by AWL program.
130	27/01/93	A request for a new 'Make Block' telegram for improved memory management for the PG4.
132	30/03/93	When in trace in GRAFTEC, if a condition is TRUE in the transition then the transition is active, but the next step has already been executed.
160	04/08/93	A new formats to be able to read the RTC directly into a text for transmission.
174	19/11/93	To be able to format a text in floating point.
199	20/07/94	Modification to SICL instruction.
271	15/02/96	Problems with the STXT and SASI instructions. Analysis to see behaviour of these instructions when incorrectly programmed.
275	19/03/96	Adaptation of the DTR signal for modems. At present the DTR signal drops for about 6mS after a restart cold. This does not cause problems for Hayes compatible modems which support the S25 register. This is not critical.
277	26/03/96	FW team modifications.
281	09/05/96	FW team modifications.
288	02/08/96	FW team modifications not implemented in the PCD6.
301	10/03/97	On S-Bus, in a write telegram the PCD doesn't check consistency between the parameter "number of media's" and the number of data. If "number of media" = 32 and only 16 values are transmit then any (non-sense) value is written on the last 16 media.
310	31/07/97	Communication modes MD0/SD0 don't work in RS485. (Not possible for FULL-Duplex in RS485)
312	18/07/97	Implement a mechanism to Clear the Led-Error.
315	24/09/97	Ts and Tn delays are not respected after a command "Clear Timers".

1008	20/01/98	Crash when downloading big programs in a multiple CPUs system. Cannot be reproduced!
1018	06/03/98	Data mode, sets 0x400 in diagnostic register when invalid telegram

### ***Information for PROM programming.***

**Hex File:**            D6\_00A\_1.hex  
                              D6\_00A\_2.hex

**EPROM:**                PCD6.M1xx V00A/1        CKS: 5CE8  
                              PCD6.M1xx V00A/2        CKS: 9978