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PCD2.M5xx0 FW 1.16.52 Release Note

1 Summary of Firmware versions

The under summary presents a short description of all firmware versions which are set on PCD2M5xx0 at the production (official versions and exceptionally some intermediate versions $).

2 Important:

Update to this FW from a version of 1.14.xx or older deletes the user program, the medias and the onboard file system is formatted, all data on the flash (file system, backup program & DB's) are deleted.
If a program backup on an external device is existing it will be restored!

To take the full advantages of the PCD3 features PG5 2.0 SP1 or newer is required.

Delete the SRAM & internal file system on Power-On with push button:
After a power-on hold the push button during system start until the run/halt LED is flashing red (4Hz). If the button is released in this section the SRAM will be deleted and the system starts like no battery and empty SuperCAP.
If the push button holds longer until the run/halt LED is flashing alternate the SRAM will be deleted and the internal file system is format.

3   Features or restrictions specifications

3.1 General

- Needed Programming Tool
  Not usable with PG3 & PG4
  To program a PCD2.M5xx0 a PG5 V $1.4.131 or newer has to be used.
- Register extension:
  Up to 16383 Registers.
- FBox library
- FW update
  The FW can be updated with the FWdnld.exe program located in the PG5
  directory.
- CPLD programming:
  There is no CPLD programming.
- Default PGU mode is S-BUS parity
- New Configuration with PG5 2.0 SPI for: 1.14.00
  - FTP /File system
  - New web-server / HTTP direct
  - TCPIP/ enhancements:
    - DHCP/DNS
    - SNTP
    - PPP
    - SNMP
  - Bluetooth
- Program Backup as backup File   **1.16.22**
  - "old" backup file "*. sbackup "   **1.10.00**
  - backup file ".SBAK"   **1.16.22**
  - Configuration Backup to backup File (only for ".SBAK" file)   **1.16.22**
  - Media Backup to backup File (only for ".SBAK" file)   **1.16.22**
- Clear Mapped Media   **1.16.42**

3.2 Not implemented features on PCD2.M5xx0

- Mode MM4
- LAN2:
- Mode D
- S-Bus-RIO as master.
- PROFIBUS FMS
- LON

3.3 Memory

- User memory: **1.06.16**

System	HW Revision	User memory Code/Text/DB (RAM)	Default Memory configuration	Onboard File System
M5440 M5540	HW >=D	1024 Kbytes	96k prg lines, 128k txt, 384k ext.	-

Note: At first memory configuration the FW makes an allocation with the maximum space available depending on the RAM/EPROM/FLASH chip.
- EEPROM: **1.06.16**
  - The S-Bus configuration is automatically saved in the EEPROM, this means that even if the battery or super cap becomes discharged the S-Bus configuration will be safe.
  - There are 50 non-volatile user registers.
- Registers:
  - Up to 16383 Registers **1.06.16**
- Flags:
  - Up to 14336 Flags **1.14.02**
- DB backup (SYSWR 3xxx):
  - Fix size for onboard flash 256kB **1.16.24**

3.4   Instructions

- SYSWR 900x   or SYSWR 300x   **1.06.16**

- Peripheral instructions   **1.08.19**

- Temporary Data   **1.10.16**

- 2000 FB's, 1000 PB's, 32 COB's   **1.10.16**

- PB, FB call depth of 31.   **1.08.19**

- IEEE floating point instruction for single and double   **1.10.16**

- Signed extension instruction EXTB, EXTW   **1.10.16**

- SF for text   **1.10.16**

3.5   Communication

- Serial port
  - The port 0 has RS 232/RS485 switch   **1.06.16**
  - The port 0 have a full RS 232 (a modem can be equipped)   **1.06.16**
  - The port 1 have a full RS 232 if it is equipped with F121   **1.06.16**
  - The port 2 have a full RS 232 if it is equipped with F121   **1.06.16**
  - The port 3 is for RS485 or Profi-S-Net as port 10   **1.06.16**

- New Serial port with PCD2.F2xxx
  - Port 100 & 101 on Slot 0   **1.10.16**
  - Port 110 & 111 on Slot 1   **1.10.16**
  - Port 120 & 121 on Slot 2   **1.10.16**
  - Port 130 & 131 on Slot 3   **1.10.16**

- Serial communication:
  - Baudrates up to 115k Baud on port 0,1, 2 & 3   **1.06.16**
  - No Baudrates < 1200 on all port   **1.06.16**

- S-Bus:
  - Baudrates up to 115k Baud on port 0,1, 2 & 3   **1.06.16**
  - No break modes as master and slave.   **1.06.16**
  - No parity modes as master (SM1) on port 2 & 3.   **1.06.16**
  - CSF for Send/Recv.   **1.06.16**

- Modem:
  - Auto answer modem on port 0 and 1 (analog & ISDN)   **1.06.16**

- PROFIBUS DP:
  - Transfer of signed values possible.   **1.10.16**
  - Master mode on Port 8 with PCD7.F7500   **1.10.16**
  - Slave mode with MPI/S-Net port 10.   1.10.16

- Profi-S-IO:
  - Transfer of signed values possible.   **1.06.16**
  - Master / Slave mode with MPI/S-Net port 10.   **1.06.16**
  - Master / Slave mode with MPI/S-Net port 2 (with max baudrate = 187.5Kb)   **1.06.16**

- MPI for Terminal R/W OP   **1.06.16**
  (please contact SAIA-Burgess Controls for more information)

- Communication on TCP_IP :
  - Classless inter domain router   **1.06.16**
  - S-Bus over IP   **1.06.16**
  - "Open data mode" over IP with max. 32 ports / 32 connections   **1.06.16**
  - S-Bus GWY Master over IP   **1.06.16**
  - 255 ARP table entries   **1.10.16**

- WEB server   **1.06.16**

- WEB server with HTTP direct connection   **1.06.16**

- WebServer2   **1.10.16**

- PPP (Point to Point Protocol)   **1.10.16**
  - Configuration through file, WEB-CGI and CSF
  - No FBox support
  - All serial ports available

- SNTP (Simple Network Time Protocol)   **1.10.16**
  - Configuration through file and WEB-CGI

- DHCP   **1.10.16**

- DNS   **1.10.16**

- SNMP   **1.14.00**

- PING   **1.14.03**

- Config Tags for eDisplay   **1.10.16**

- PGU switches automatically to 115 kBds.   **1.06.16**

- No limitation with the baudrate configured/assigned.   **1.06.16**

- Profi-S-Bus:

  - Master & Slave mode with MPI/S-Net port 10.   **1.06.16**

  - Profi-S-Bus GWY Master.   **1.06.16**

- Multi PGU (incl. modem)   **1.06.16**

- CAN on Port 10, PCD3.M6340 only (PG5 V$1.3.127 or higher)   **1.10.16**

- S-Bus over USB   **1.06.16**

- MODBUS Driver over TCPIP, UDP and serial   **1.10.16**
  - Accessible over CSF calls only
  - Serial port 0, 1, 2 and 3.
  - No support for F2xx serial lines (port 100 .. 131)
  - No FBox support

- Lon IP
  - Support the LonIP Module PCD3/7.R580/581.   **1.14.00**

- Ether-S-IO
  - Support Ether-S-IO RIO   **1.16.00**

- M-BUS Communication modules supported (PCD2.F2700, PCD2.F2710, PCD2.F2720, PCD2.F2730)
  - Support for these modules with "Frame" protocol **1.16.48**

- DALI Communication modules supported (PCD2.F2610)
  - Support for these modules with "Frame" protocol **1.16.48**

3.6 Miscellaneous

- IL code of analogue modules W1, W2 & W5 must change (see manual). **1.06.16**

- New features for PG5. **1.06.16**
  - 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 20-21: interrupt inputs XOB's **1.06.16**
  - XOB 14, 15, 25-29 Time Cyclic Alarm **1.06.16**
    - can be executed from 1 ms to 1000s with 1ms steps **1.06.16**
    - can be executed only one time with SYSWR 41xx **1.06.16**
  - XOB 17, 18, 19: User XOB's **1.06.16**
    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 **1.06.16**
  - XOB 1 and 2 Status call (see manual) **1.06.16**
  - XOB 1 and 2 Status call (see manual) **1.06.16**
  - New XOB handling.
    The XOB's are split in 2 priorities. A higher prior XOB can interrupt the lower prior XOB. (see manual) **1.06.16**
  - XOB 32-63: configurable for CAN **1.10.16**

- Calculation of week and day number **1.06.16**
  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. **1.06.16**

- Copy user program from flash to SRAM without PG **1.06.16**

- File system. **1.06.16**
  - CSF asynchron **1.06.16**
  - 6 File devices (2 internal, 4 external Flashcards) **1.06.16**
  - Onboard File system for config files **1.10.16**

- FTP server **1.06.16**

- SD Flash Modules PCD2.R6xxx are supported on the IO Slots 0..3 **1.06.16**
  - Allow to overwrite data on a SD card file system. **1.10.16**

- Alarm DB **1.06.16**
  - Number of parameters changed **1.06.16**

- Data Initialisation DBX **1.10.16**

- "Memory lost" history entry **1.10.16**
- "I/O Module B160" supported **1.16.51**

4 <u>Information for FW updating.</u>

If the Bootloader does not support the FW download via SBUS network the Download Fails.
Please try then with the RUN/STOP switch.

4.1 FW update on old FW (or old Booter)

Before starting the FW update the FW must be set in the Loaderstate:

1. PLC power on

2. Switch the RUN/STOP switch two times up and down while RUN LED is blinking. The LEDs indicate that there is no FW.

! After the completion of a FW download, shown by the FW downloader taskbar, the code is then copied from the RAM to the FLASH. During this procedure, which takes about 30 sec, the RUN, HALT and ERROR LED's blink in a certain sequence.