

# Product Change Notification

PCN-2026-01 · SAM9X-CM System-on-Module · Hardware v2.1 → v2.2

Ronetix Development Tools GmbH announces hardware revision v2.2 of the SAM9X-CM System-on-Module. Form, fit, pinout and software remain unchanged. The only functional change is the reversed logic of the boot-mode jumper.

## Notification Details

|                        |                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------|
| PCN number             | PCN-2026-01                                                                                              |
| Issue date             | 12 October 2026                                                                                          |
| Affected products      | All SAM9X-CM modules, ordering code SAM9xx[-256][-PHY][-I]-CM (see Ordering Codes and Assembly Variants) |
| Revision               | v2.1 (old) → v2.2 (new)                                                                                  |
| Type of change         | Change of PCB manufacturer; minor layout change (crystal Y1, boot-mode jumper)                           |
| Form / fit             | Unchanged: same dimensions, mounting holes, edge connector and pinout                                    |
| Function               | Unchanged, except the reversed boot-mode jumper logic                                                    |
| Software / BSP         | No change required                                                                                       |
| First shipment of v2.2 | To be confirmed                                                                                          |

## Reason for Change

Ronetix has changed the supplier of the printed circuit board for the SAM9X-CM. The board was re-released as hardware revision v2.2 for the new supplier's manufacturing process. With this revision two positions were updated: the main crystal Y1 moved to a smaller SMD package, and the two boot jumpers J1 / J2 were merged into a single jumper J1.

## Description of Change

Two positions change. All other components, their values and their manufacturers remain as in v2.1.

| Ref.   | v2.1 (old)                                                 | v2.2 (new)                                                                       | Effect                                  |
|--------|------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------|
| Y1     | 12.000 MHz crystal, HC-49/S SMD package                    | 12.000 MHz crystal, 3.2 × 2.5 mm SMD package                                     | None. Same frequency, smaller footprint |
| J1, J2 | J1 and J2 fitted = normal boot; both open = ROM bootloader | J2 removed; J1 not assembled. J1 open = normal boot; J1 shorted = ROM bootloader | Jumper logic reversed                   |
| PCB    | Previous supplier, marked v2.1                             | New supplier, marked v2.2                                                        | None. Same outline and thickness        |
| Others | —                                                          | Unchanged                                                                        | None                                    |

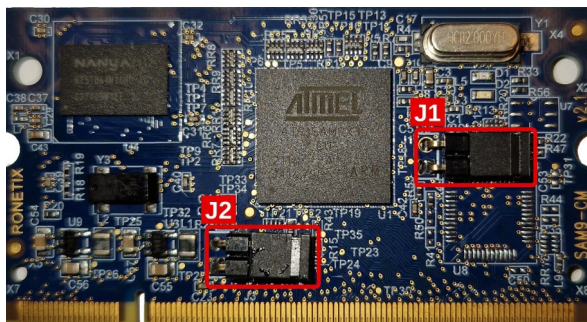
## Boot-Mode Jumper

The AT91SAM9Xx5 ROM code boots from the external boot memory if it holds a valid program; otherwise it starts the SAM-BA monitor (internal ROM bootloader) on USB. The jumper disconnects the boot memory to force the ROM bootloader.

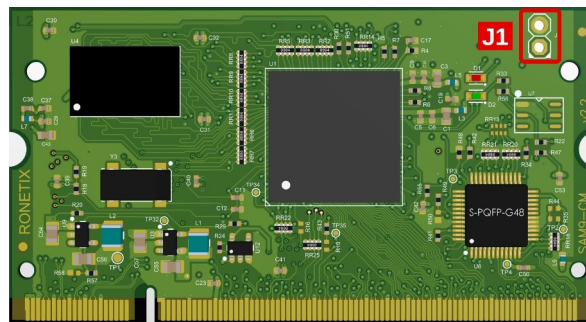
| Board state                            | v2.1 (J1 + J2)                       | v2.2 (J1 only)                             |
|----------------------------------------|--------------------------------------|--------------------------------------------|
| Normal boot from on-board flash        | J1 and J2 <b>closed</b> (as shipped) | J1 <b>open</b> (as shipped, not assembled) |
| Enter internal ROM bootloader (SAM-BA) | J1 and J2 <b>open</b>                | J1 <b>shorted</b>                          |

## Board Views

Both revisions share the same outline, mounting holes and edge connector. The HC-49/S crystal at the top right of v2.1 is gone; J1 now occupies that corner as two unassembled pads.



Hardware v2.1 (old) – top side, J1 and J2 marked



Hardware v2.2 (new) – top side, 3D view, J1 marked

## Impact

Hardware v2.2 is a drop-in replacement for v2.1. Carrier boards, enclosures, Linux / U-Boot images and application software require no change.

Action is required only where the internal ROM bootloader is used, e.g. for production programming or board recovery:

- **v2.1:** remove J1 and J2 to enter the ROM bootloader; refit both for normal operation.
- **v2.2:** short the two J1 pads to enter the ROM bootloader; remove the short for normal operation. No jumper is needed for normal operation.
- Update production instructions, test fixtures and user documentation that describe the jumper setting.
- With mixed stock, check the revision on the silkscreen (v2.1 / v2.2) before setting the jumper.

No change in electrical characteristics, timing, power consumption, temperature range or reliability is expected.

## Ordering Codes and Assembly Variants

Part numbers (ordering code and assembly variant), v2.1 and the corresponding v2.2:

| Part number v2.1 (old)       | Part number v2.2 (new)        | CPU         | Ethernet PHY | Temp. range  |
|------------------------------|-------------------------------|-------------|--------------|--------------|
| <b>SAM9X25-I-CM</b> v2.1-7   | <b>SAM9X25-I-CM</b> v2.2-20   | AT91SAM9X25 | No           | -40...+85 °C |
| <b>SAM9X25-PHY-CM</b> v2.1-6 | <b>SAM9X25-PHY-CM</b> v2.2-21 | AT91SAM9X25 | Yes          | 0...+70 °C   |
| <b>SAM9X35-CM</b> v2.1-6     | <b>SAM9X35-CM</b> v2.2-22     | AT91SAM9X35 | No           | 0...+70 °C   |

## Identification and Timeline

- **Silkscreen:** the revision is printed on the board edge next to the product name ("v2.1" / "v2.2").
- **Marking label:** line 1 (ordering code) is unchanged; line 2 changes from v2.1-x to v2.2-NN, where NN is the assembly variant (e.g. v2.2-20).
- **Ordering:** existing ordering codes remain valid. v2.2 is shipped against them as v2.1 stock is used up.
- **First shipment of v2.2:** to be confirmed.

For questions regarding this change please contact your Ronetix sales representative or [office@ronetix.at](mailto:office@ronetix.at).

Vienna, 12 October 2026