

HaneSOM

Small embedded system on module

Quick start guide

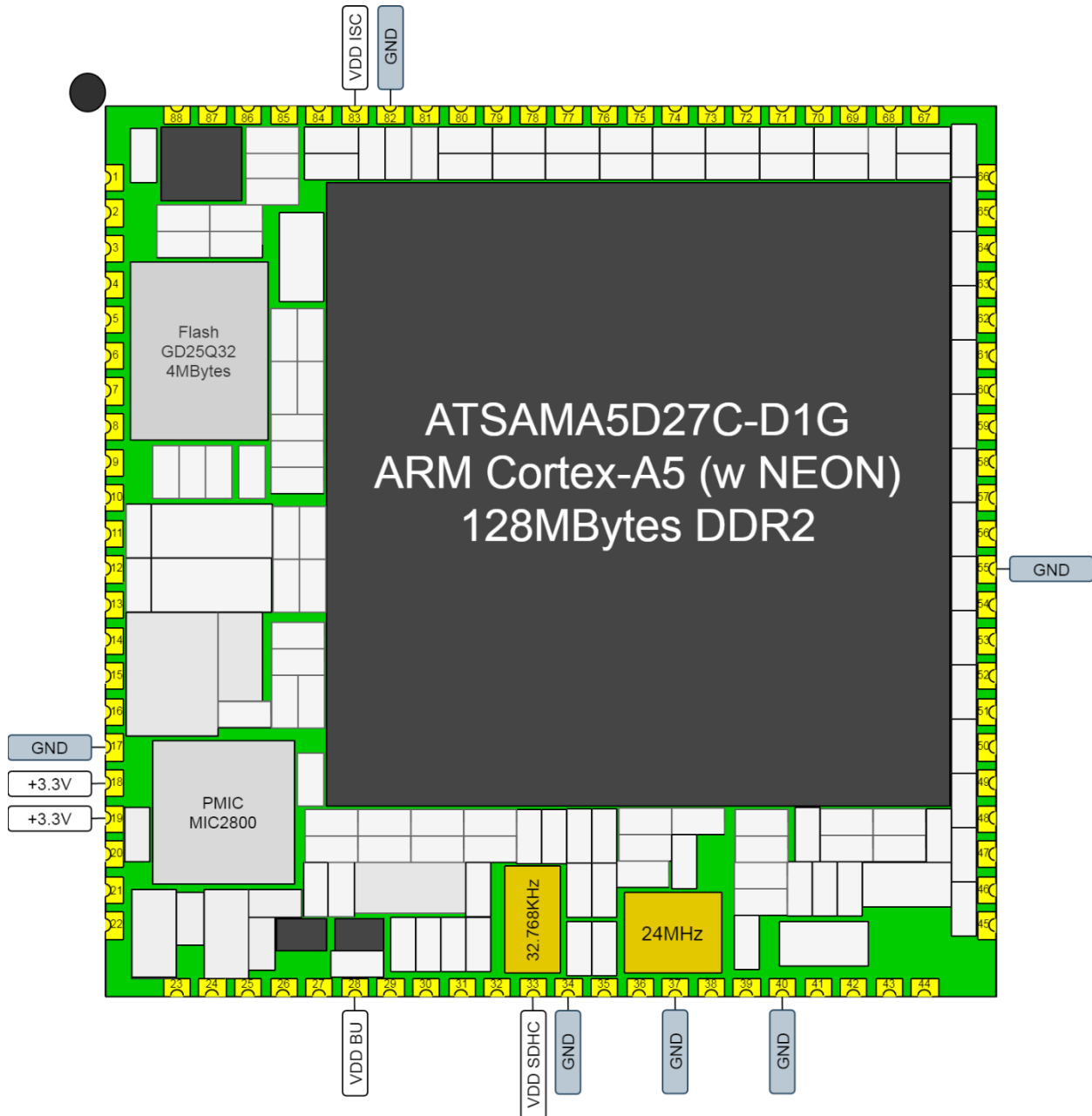
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How to start

If you are designing your own board – you need to consider next important items:

1. Power supply rails:

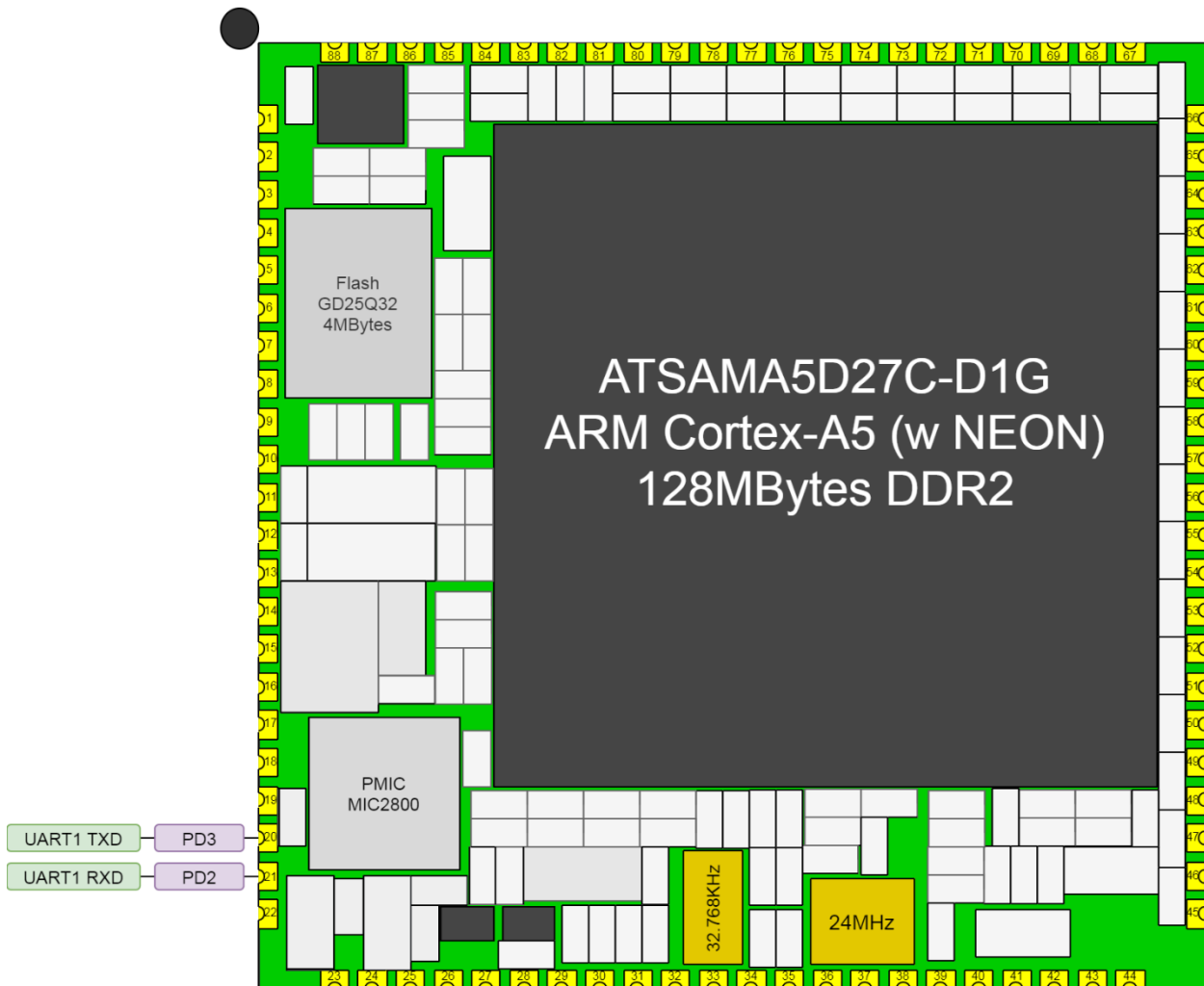


Pin	Description
18, 19	+3.3V power line
17, 34, 37, 40, 55, 82	GND
33	SDMMC0 power supply (1.8V or 3.3V)
28	RTC power supply (1.6 .. 3.6V)
83	Camera ISC pins power (1.65 .. 3.6V)



IMPORTANT: Board has 3x 0-ohm resistors for connecting +3.3V power line, VDD BU power line, VDD SDHC and VDD ISC power lines together.

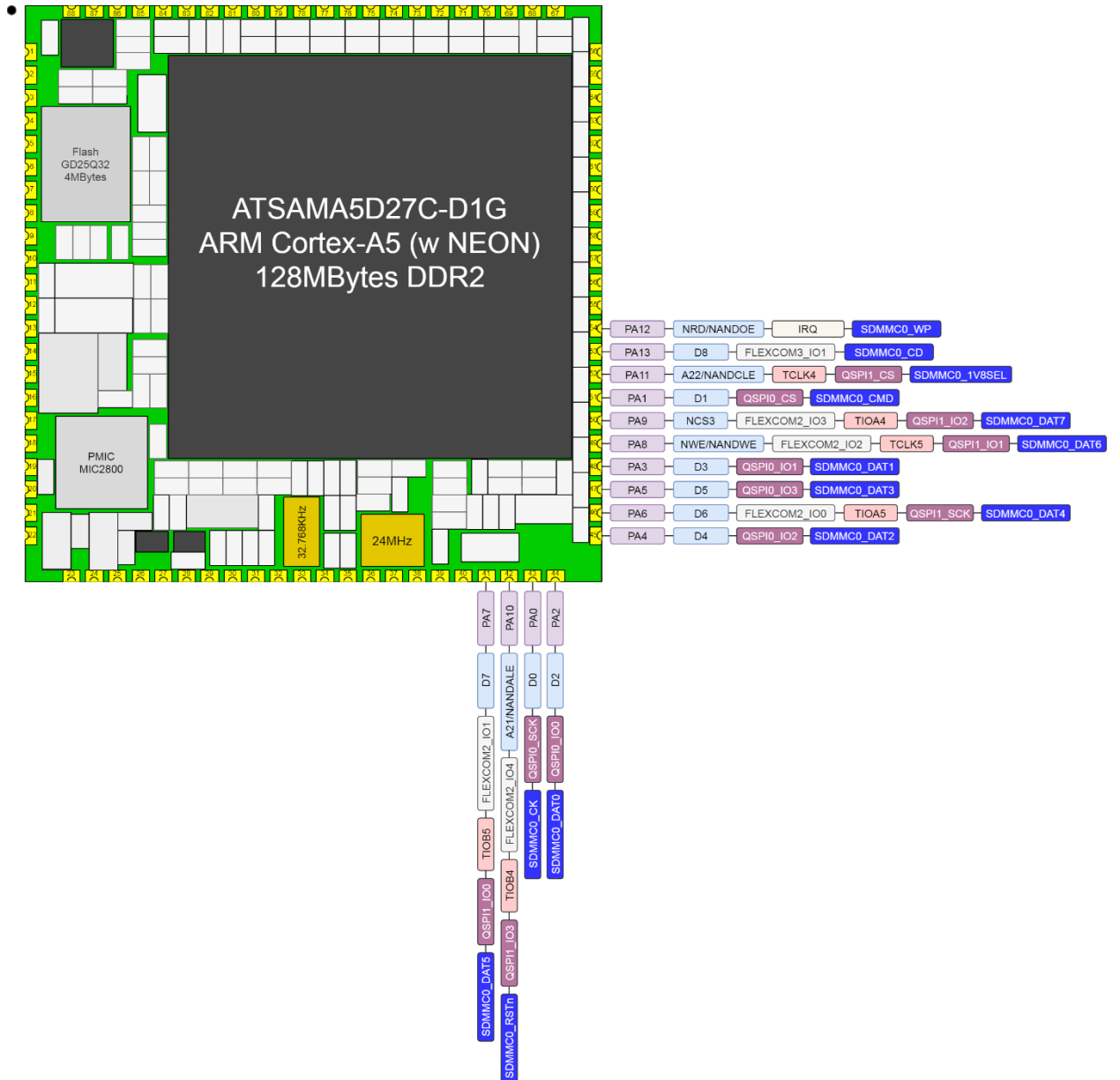
2. Debug UART (Linux console output):



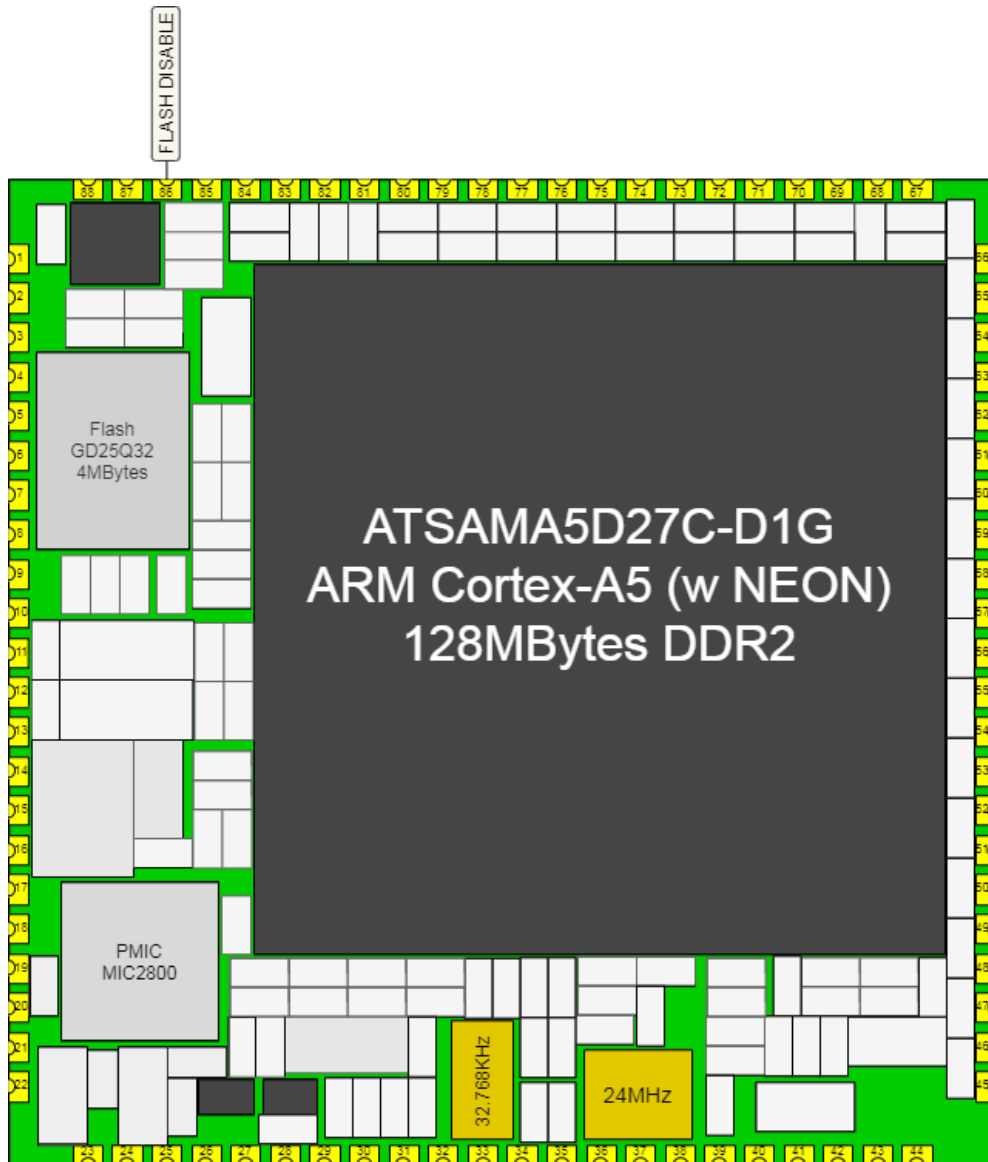
UART	Description
UART1	Default settings: 115200bps, 8bit, 1 stop bit, no parity

This UART1 port also used by BootROM, Bootstrap, Uboot and Linux as debug messages output.

3. SD/eMMC or QSPI Flash interface (as an additional boot source)

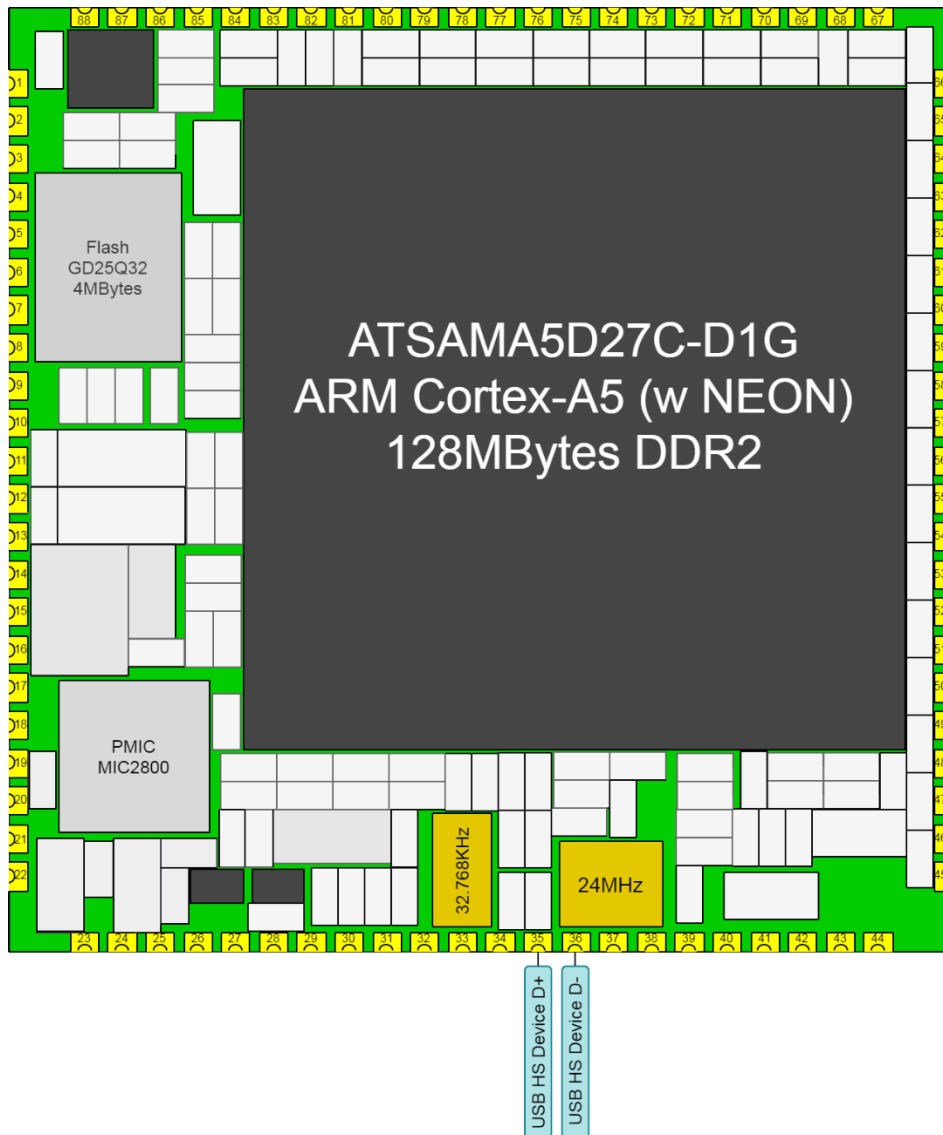


4. Onboard QSPI Flash disable option



Pin	Description
86	FLASH_DISABLE pin 1 (high) or floating – Onboard QSPI Flash enabled; 0 (low) – Onboard QSPI Flash disabled.

5. USB device for SAM-BA



Pin	Description
35	USB device D+
36	USB device D-

USB Device pins can be directly connected to the HostPC. We recommend to protect USB lines with ESD diodes (with low capacitance, for example Nexperia PUSB3FR4Z).

If these pins will be connected to Host PC and SAMA5D2 will not find valid firmware in all bootable media – bootROM will automatically will jump into SAM-BA mode.

In this case, the HostPC will be able to detect USB device with VID_PID: 03EB_6124. This device will be used by default when running SAM-BA software on Host PC side.

6. Software programming using SAM-BA

6.1. Running SAM-BA under Windows machine.

You need to download “sam-ba_3.5-win32-hanesom.zip” archive and unpack archive on your disk.

In the folder you can find BAT file “sam-ba_3.5\hanesom-programit.bat”. This BAT file will call “sam-ba_3.5\hanesom-qspiflash-usb.qml” script for programming into QSPI Flash:

1. AT91Bootstrap
2. Uboot

Additionally this script will set proper boot order.



IMPORTANT: Boot order will be retained till VDD BU (pin 28) powered properly. In case you need to set permanent boot order – need to use Fuses. Need to be careful while setting boot order using Fuses, in case of mistake, module will be lost boot ability forever. Burning wrong fuses is not a subject to replace a module.

“sam-ba_3.5\firmware” folder has HaneSOM prebuilt firmware.

Running SAM-BA under Linux machine.

You need to download “sam-ba_3.5-hanesom-linux_x86_64.tar.gz” archive and unpack archive on your disk.

In the folder you can find SH file “sam-ba_3.5\hanesom-programit.sh”. This Shell script file will call “sam-ba_3.5\hanesom-qspiflash-usb.qml” script for programming into QSPI Flash:

1. AT91Bootstrap
2. Uboot



IMPORTANT: Boot order will be retained till VDD BU (pin 28) powered properly. In case you need to set permanent boot order – need to use Fuses. Need to be careful while setting boot order using Fuses, in case of mistake, module will be lost boot ability forever. Burning wrong fuses is not a subject to replace a module.

“sam-ba_3.5\firmware” folder has HaneSOM prebuilt firmware.