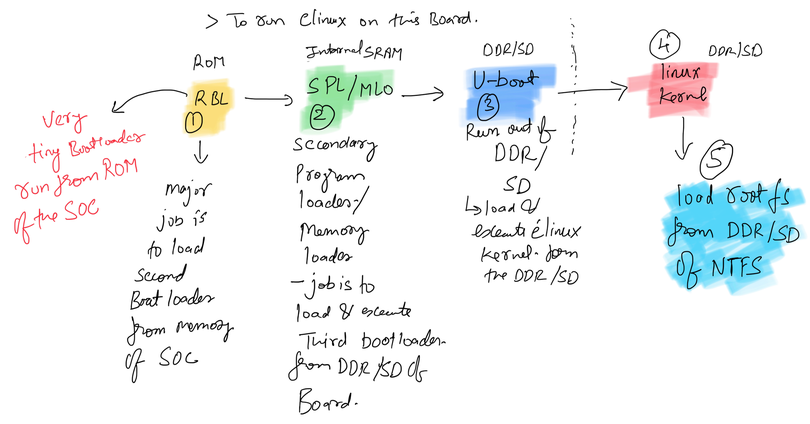
Boot stage of BBB → Target AM335x

> To run Linux on this Board.



- Terminal used in Ubuntu
  - ↳ minicom
  - → Sudo minicom
  - → insert the USB TTL & driver. To see the terminal device assigned.
  - → Sudo minicom -S
    - ↳ config menu / Setup
  - → Serial port setup
    - → Set the field according Baud rate = 115200 8N1

What all things are need to Boot SBC / embed. Platform

- Target board → BBB
  - → Soc → AM3358

→ 4 Software Component

① RBL → Rom bootloader.
- → given by Vendor
- → very small / tiny
- → no source code
- → limited functionality

major Job for RBL is to run the 2nd Stage Bootloader SPL or MLO

② SPL / MLO
- ↳ secondary Program loader / memory loader
- ↓
- Job is to load 3rd Stage bootloader. (U-boot)
- ↓ from ddr memory of board

③ U-boot
- ↳ load the linux Kernel from the DDR /

④ linux kernel.

Boot option (BBB)

↳ Boot Sources.
1. NAND Flash
2. NOR Flash
3. USB
4. eMMC
5. SD
6. Ethernet
7. UART
8. SPI

SYSBOOT [4:0] is one of the register of soc & it 5 bits decide order.

if SYSBoot [4:0]
0001
↓
Boot from UART0
↓ ×
NOR flash
↓ ×
MMC0
↓ ×
SPI0

Boot Source order is decided by SYSBoot [4:0]

on BBB there are circuit as.

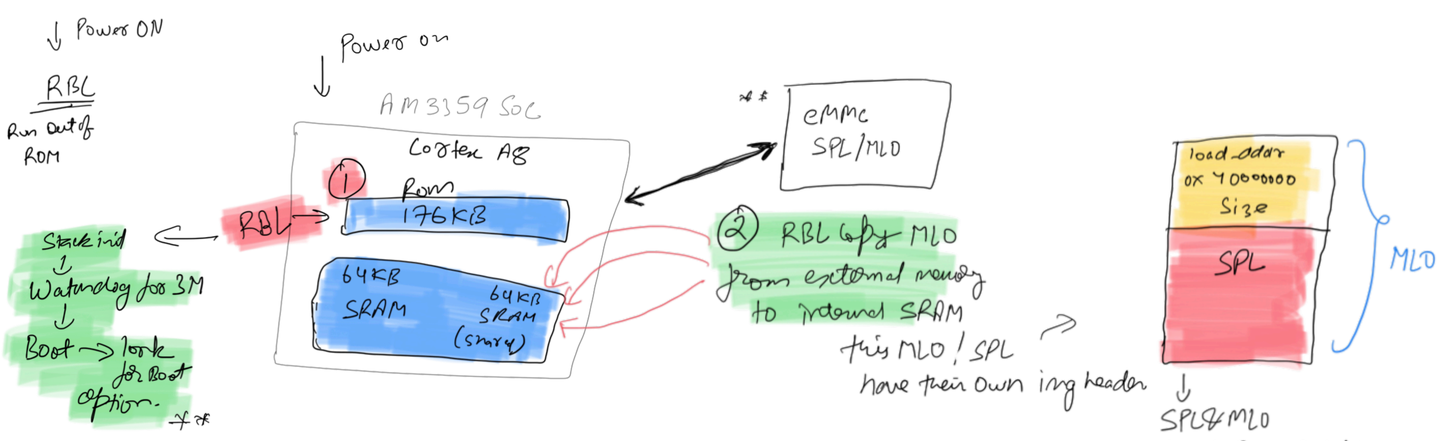
On on Power on

	SYS_Boot 0 = 0	
	SYS_Boot 1 = 0	= SYSBOOT [4:0] = 11100
S2 Button is connect. ←	SYS_Boot 2 = 1	
	SYS_Boot 3 = 1	
	SYS_Boot 4 = 1	

↓ when Press Signal ground.

Released 1110
1. mmc1 (emmc)
2. mmc0 (SD)
3. UART0
4. USB0

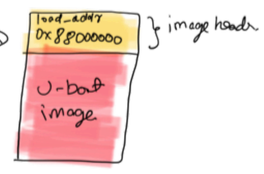
Pressed 11000
1. SPI0
2. MMC0 (SD Card)
3. USB
4. UART

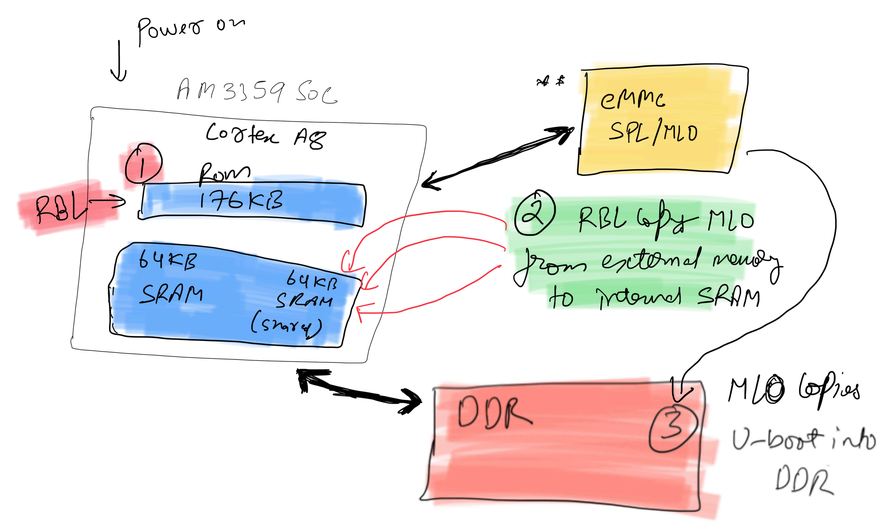


MLO / SPL

↳ init. the SOC to a Point that 3rd Stage Boot can be loaded on external RAM

- does UART console init
- Reconfig PLL (clock)
- init DDR reg. to use DDR memory
- init some Boot Peripherals → when it will be getting Booted.
- copy the u-Boot image in DDR





U Boot

↳
- init Peripheral like I²C, NAND Flash, Ethernet, UART, USB, MMC
  - Supporting load of Kernel
- load the linux Kernel image from various boot Sources to the DDR memory of the Board.
- Boot Sources : USB, eMMC, SD card etc
- Passing of Boot argument to Kernel.

UENV.txt → env Variable of U Boot.