ASTRIAL

The following schematic of Astrial is the reduced version.
The full version will be released only to customers upon explicit request to EBV Elektronik or System Electronics.

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41042 Fiorano Modenese (MO)

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A3	PCB03	3.0

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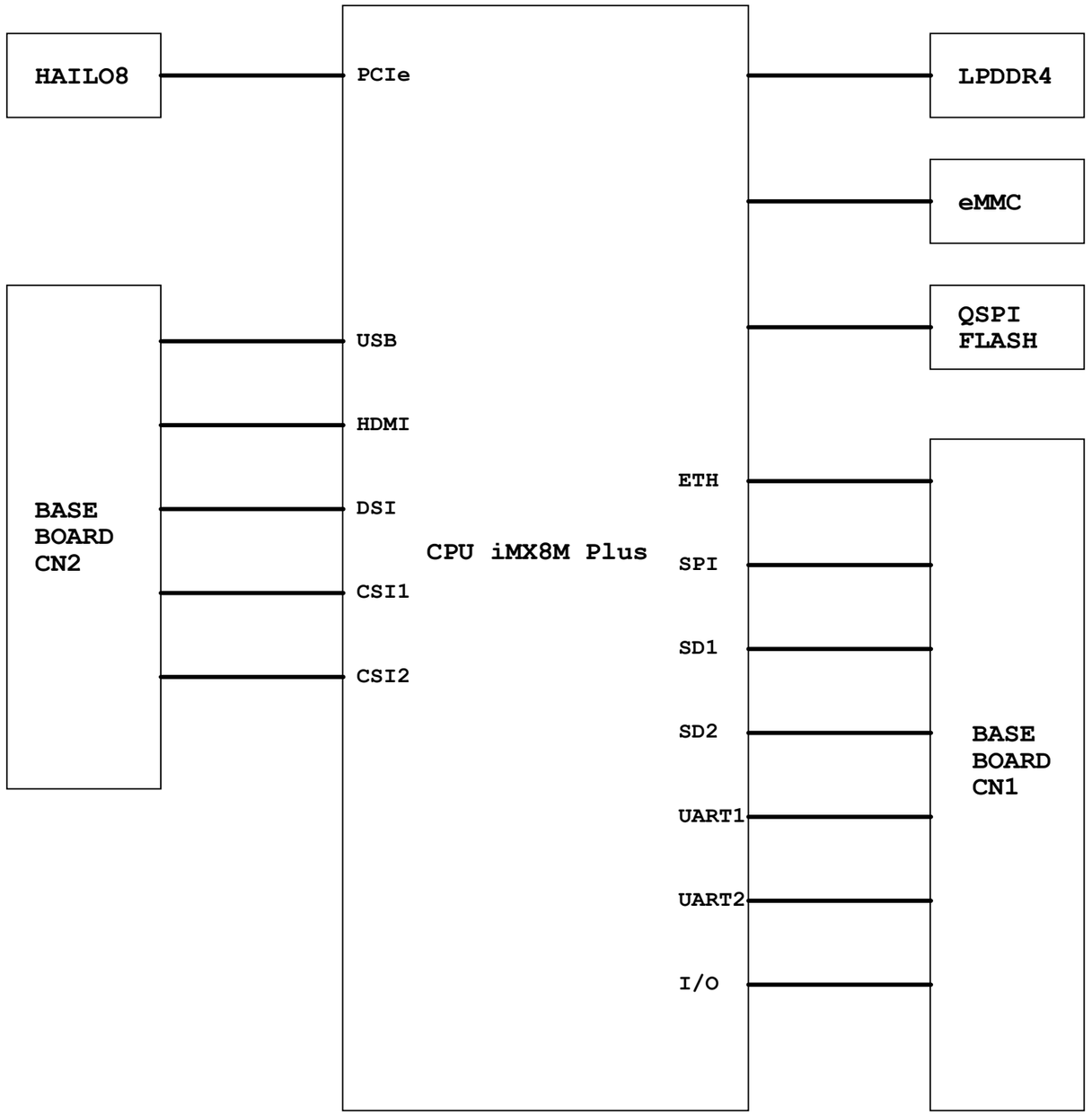
POWER SUPPLY:
- 5Vcc from Base Board
- 5Vcc..16Vcc from VEXT

HAILO8 needs an external
5V to be properly supplied



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ASTRIAL POWER TREE

Base Board → **VSYS** *5V*

PMIC: PCA9450C

SEQ	REG	TYP	Max Capability(mA)
1	LDO1	1.8	10
2	RTC_CLK	--	--
3	BUCK1/3	0.85/0.95	6000
4	BUCK2	0.85/0.95/1.0	3000
5	LDO3	1.8	300
6	BUCK5	1.8	2000
7	BUCK6	1.1	2000
8	BUCK4	3.3	3000
8	MUXSW	3.3	400
9	LDO5	3.3/1.8	150
10	POR_B	--	--

CPU: i.MX8M Plus

SEQ	PWR/Signal	TYP	Required(mA)
1	NVCC_SNVS_1V8	1.8	10
2	32K_INTERNAL	--	--
3	VDD_SOC	0.85/0.95	5000
4	VDD_ARM	0.85/0.95/1.0	2200
5	VDDA_1V8	1.8	300
6	VDD_1V8/NVCC_xxx	1.8	NxCxVx(0.5xF)
7	NVCC_DRAM_1V1	1.1	NxCxVx(0.5xF)
8	VDD_3V3/NVCC_xxx	3.3	NxCxVx(0.5xF)
8	VSD_3V3	3.3	300
9	NVCC_SD2	3.3/1.8	10
10	POR_B	--	--

LPDDR4
VDD1
VDD2/VDDQ

QSPI
VCC

eMMC
VCCQ
VCC

Transceiver ETH
VCC

Base Board Peripherals

J3 CONNECTOR

VEXT 5V

MP8869S OUT -> 0.8V

MPM3610A OUT -> 1.8V

HAILO8

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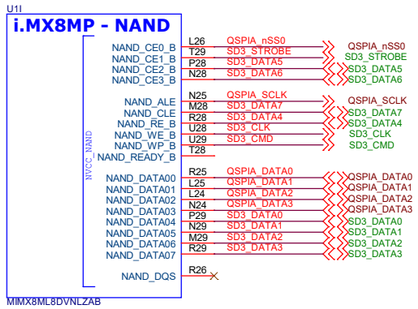
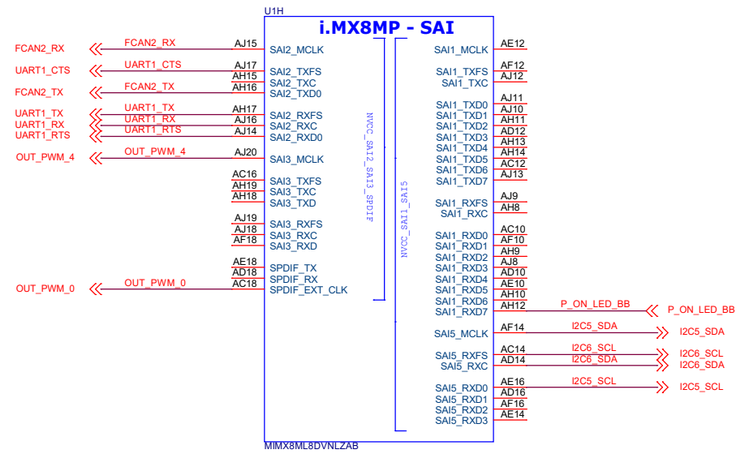
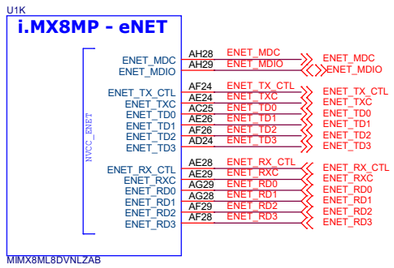
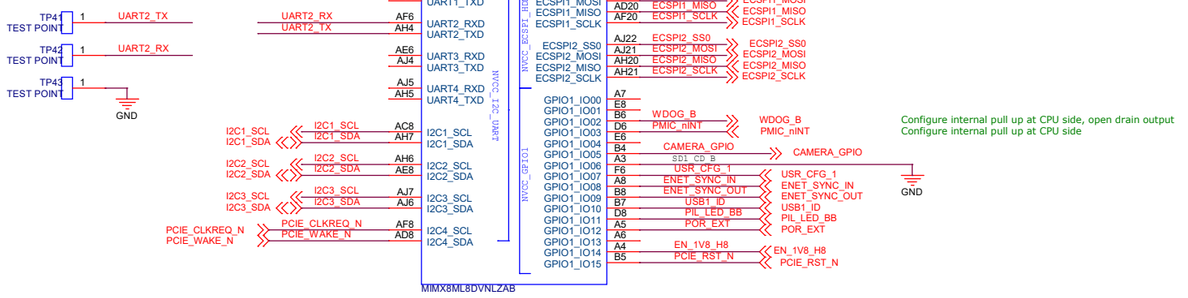
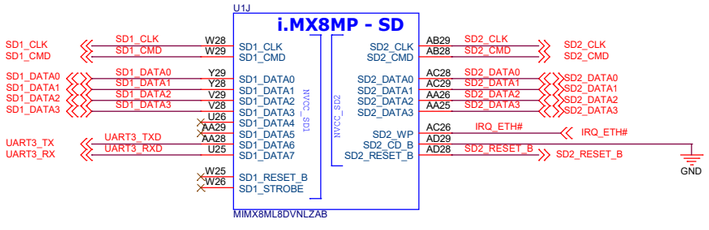
i.MX8M Plus IO Interface

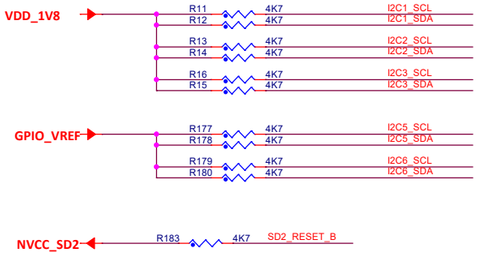


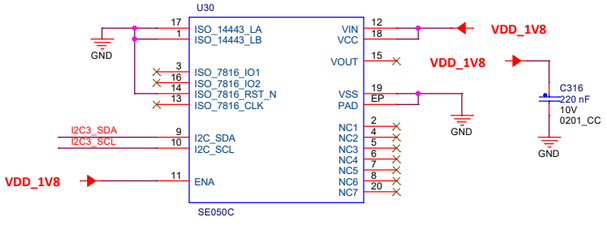












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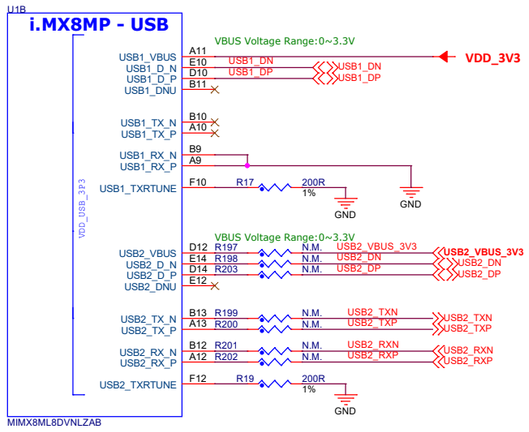
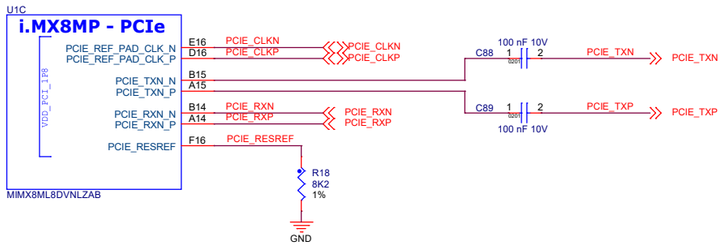
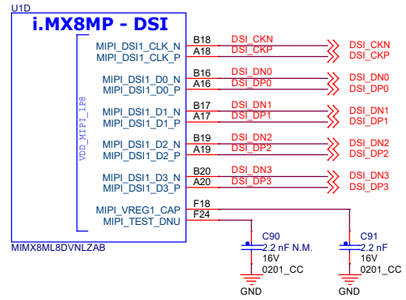
i.MX8M Plus PHYs

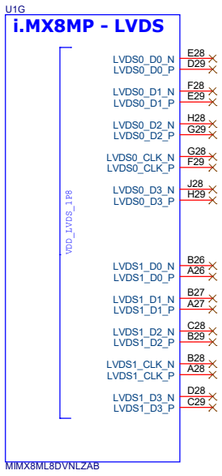


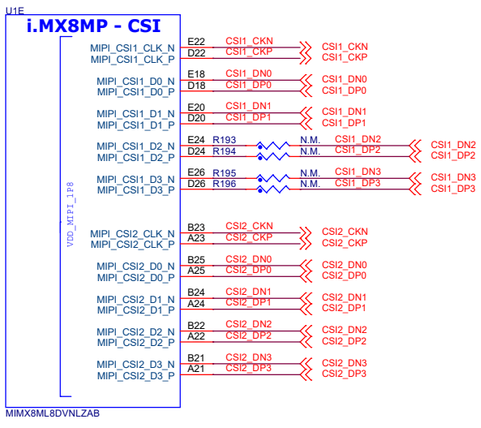


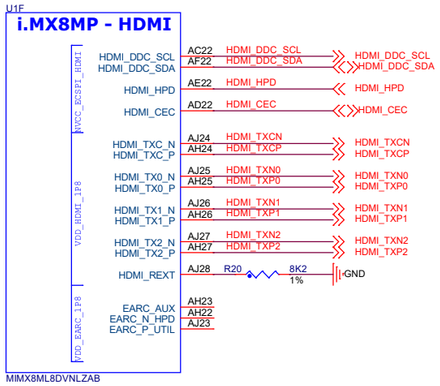


Note:

MIPI_TEST_DNU is for internal test, can be floating for normal use.







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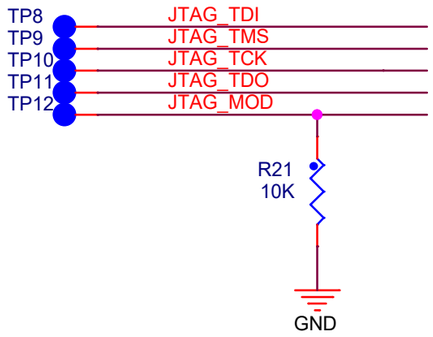
Boot Mode, CFG Switch and JTAG debug

JTAG Debug



Note

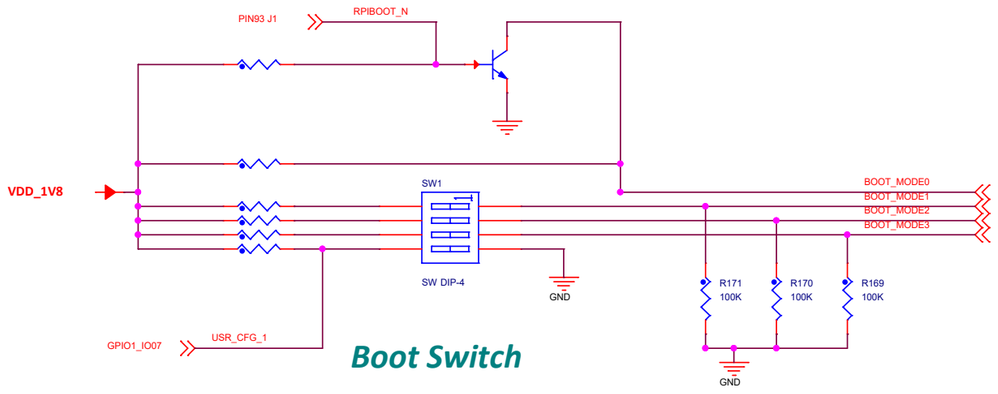
The only allowed configurations are the following:

i.MX8M Plus Boot Mode

BOOT_MODE3	BOOT_MODE2	BOOT_MODE1	RPIBOOT_N (PIN93) DEFAULT=1	Boot Modes
0	0	0	0	Boot From Internal i.MX8M Fuses
0	0	0	1	USB Serial Download
0	***0***	***1***	***0***	***USDHC3 (eMMC boot only, SD3 8-bit) Default***
0	0	1	1	USDHC2 (SD boot only, SD2)
0	1	1	0	QSPI 3B Read
0	1	1	1	QSPI Hyperflash 3.3V
1	0	0	0	ecSPI Boot

Caution:

BOOT_MODE0, BOOT_MODE1, BOOT_MODE2, BOOT_MODE3, JTAG_MOD and POR_B must be pulled to "111111" for i.MX8M Plus to enter Boundary Scan mode.



Boot Switch

Note

For i.MX8M Plus ROM fuse, please refer to NXP technical manual: IMX8MPRM.

RPIBOOT_N is compliant to CM4 form factor carriers and is connected to BOOT_MODE0.

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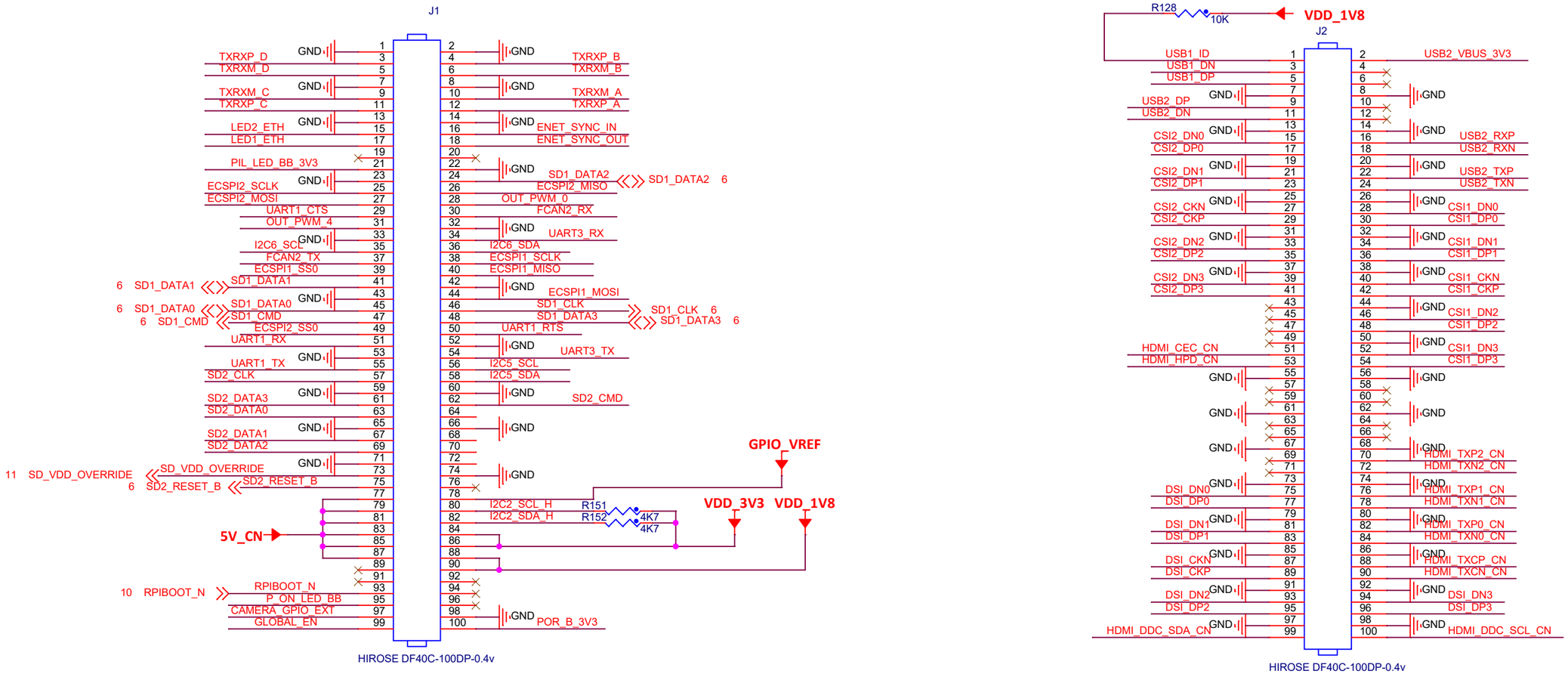

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