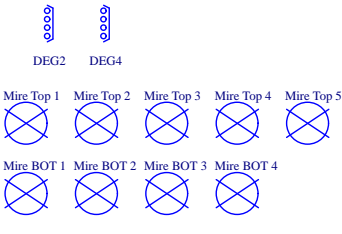# STRUCTURE

KEY CARD PRO

STATUS K PRO

2282

ELECTRONIC SCHEMATICS

FOLIO - 01 | 01 POWER.SchDoc

FOLIO - 02 | 02 MCU.SchDoc

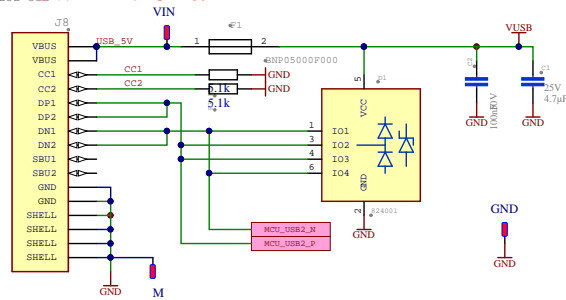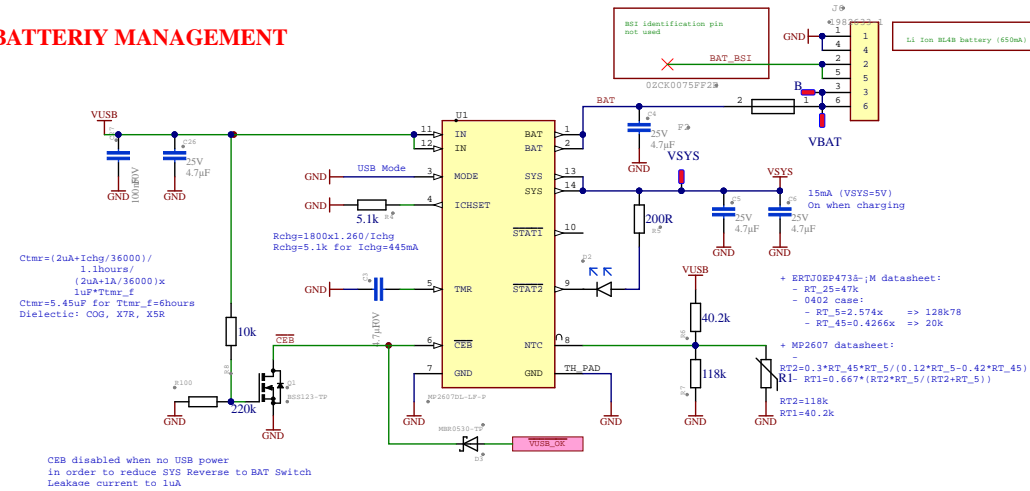FOLIO - 03 | 03 PERIPHERALS.SchDoc

REVISION TABLE

Revision	Date	Who	Modification description and purpose
V3.0.0	30/09/2024	DL	Creation
V3.0.1	31/10/2024	DL	Courant de charge - 445mA au lieu de 500mA
V3.1.1	4/11/2024	DL	Pochoir pour dome
V3.2.2	9/12/2024	DL	Chagement Switch (TS à la place des dômes)
V3.3.2	2/01/2025	DL	DFM
V3.3.3	16/01/2025	DL	Cost Killing
V3.4.4	29/01/2025	DL	Pb Exinction du produit à l'insertion de l'USB -> D6 + R100
V3.5.5	03/04/2025	DL/MCH	Modification VBUS_OK et STAT1 & STAT2
V3.6.6	11/04/2025	MCH	Demande M.CLOSIER - Switch 100gr + Deamnde Client R100
V3.6.7	09/05/2025	DL	Modification Transistor T1 => On semi
V3.7.8	19/05/2025	DL	Demande M.CLOSIER - Switch 160gr
V3.7.9	21/10/2025	DL/MCH	Modification référence D6 (30V -> 3V)
V3.8.9	18/11/2025	DL	pad USB alongés

R E w

CE

DEG2 DEG4

Mire Top 1 Mire Top 2 Mire Top 3 Mire Top 4 Mire Top 5

Mire BOT 1 Mire BOT 2 Mire BOT 3 Mire BOT 4

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Project Title: STATUS K PRO

STATUS KPRO

KPRO Reader

Folio Title: 00 Structure.SchDoc

Project Number: 2282 - 600

Board: KCP

Revision: V3.9

Date: 11/04/2025

Drawn by: D.LEBRUN

Folio: 0 / 3

BATTERIY MANAGEMENT

BS2 identification pin not used

BAT_BSI

Li Ion BL4B battery (650mA)

USB Mode

Rchg=1800x1.260/Ichg
Rchg=5.1k for Ichg=445mA

15mA (VSYS=5V)
On when charging

Ctmr=(2uA+Ichg/36000)/
1.1hours/
(2uA+1A/36000)x
1uF*Ttmr_f
Ctmr=5.45uF for Ttmr_f=6hours
Dielectic: COG, X7R, X5R

+ RRTJOEP473x—¡M datasheet:
 - RT_25=47k
 - 0402 case:
  - RT_5=2.574x   => 128k78
  - RT_45=0.4266x => 20k
+ MP2607 datasheet:
 - RT2=0.3*RT_45*RT_5/(0.12*RT_5-0.42*RT_45)
 - RT1=0.667*(RT2*RT_5/(RT2+RT_5))
 RT2=118k
 RT1=40.2k

CEB disabled when no USB power
in order to reduce SYS Reverse to BAT Switch
Leakage current to 1uA

VUSB_OK

USB POWER INPUT & DATA

VIN
USB_5V
VUSB
CC1
CC2
5.1k
DP1
DP2
DN1
DN2
SBU1
SBU2
GND
SHELL
MCU_USB2_N
MCU_USB2_P
M

POWER SWITCH

When SC Switch actived => the VSYS_SWITCHED goes to ON after a time defined by R20,C8, R21 and R22

VSYS
VSW
VSYS_SWITCHED

1V8..6V@1A

SYS_PG
PWR_KILL
PWR_HALT_REQ

SC_PRES_SW
From Card Reader Switch
SC_SW
SW

Power on pulse on
SmartCard insertion
Dielectic: COG, X7R, X5R

When SC Switch disabled => the VSYS_SWITCHED goes to ON when S3 is actived
When SC Switch actived => S3 is disable
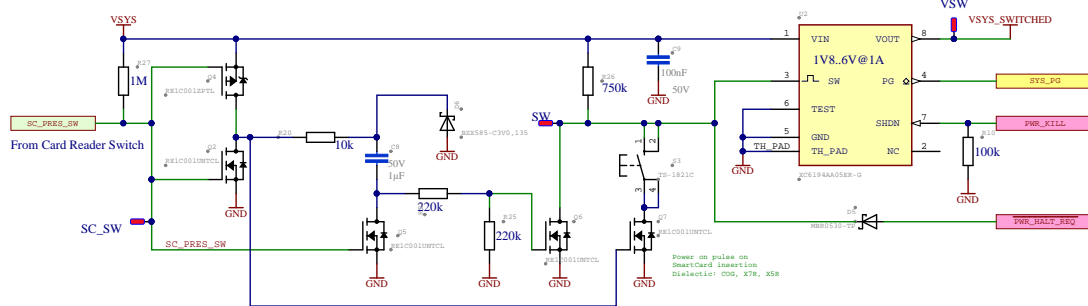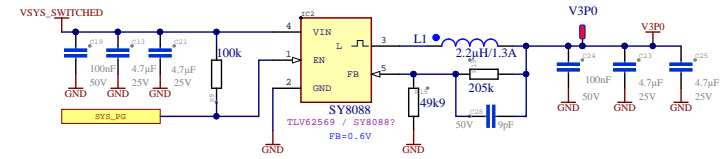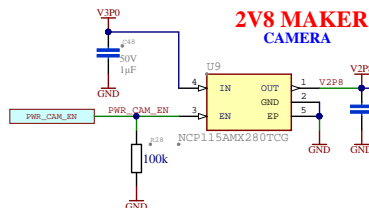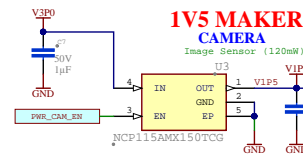
C8 -> 0603 => Rationalisation des refs

3V05 MAKER

VSYS_SWITCHED
V3P0
V3P0
SYS_PG
SY8088
TLV62569 / SY8088?
FB=0.6V
L1
2.2µH/1.3A
49k9
205k

2V8 MAKER
CAMERA

V3P0
2V8
U9
IN OUT
EN GND EP
V2P8
PWR_CAM_EN
NCP115AMX280TCG

1V5 MAKER
CAMERA
Image Sensor (120mW)

V3P0
1V5
U3
IN OUT
EN GND EP
V1P5
PWR_CAM_EN
NCP115AMX150TCG

1V8 MAKER

V3P0
1V8
U8
IN OUT
EN GND EP
V1P8
NCP115AMX180TCG
System (600mW max.)
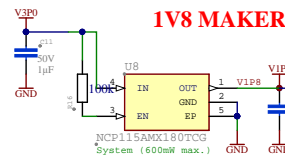
01 POWER
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Project Title: STATUS K PRO

STATUS KPRO

KPRO Reader

Folio Title: 01 POWER.SchDoc

Project Number: 2282 - 600

Board: KCP

Revision: V3.9

Date: 11/04/2025

Drawn by: D.LEBRUN

Folio: 1 / 3

MCU PIN OUT - PA PB PC PC

U4A STM32H573VIT6
1 of 3

Net	Pin		
SCR_D/C	SCR_D/C 23	PA0	
SCR_RST	SCR_RST 24	PA1	
CAM_RST	CAM_RST 25	PA2	
CAM_PD	CAM_PWR_DOWN 26	PA3	
CAM_HS	CAM_HSYNC 29	PA4	
SCR_BL_PWM	SCR_BL_PWM 30	PA5	
CAM_PCLK	CAM_PCLK 31	PA6	
SCR_SPI_MOSI	SCR_SPI_MOSI 32	PA7	
CAM_XCLK	CAM_XCLK 67	PA8	
CAM_D0	CAM_D0 68	PA9	
SC_RST	SC_RST 69	PA10	
MCU_USB2_N	MCU_USB2_N 70	PA11	
MCU_USB2_P	MCU_USB2_P 71	PA12	
JTMS_SWDIO	JTMS_SWDIO 72	PA13	
JTCK_SWCLK	JTCK_SWCLK 76	PA14	
JTDI	JTDI 77	PA15	

KBD_C2 15	PC0	KBD_C2
KBD_C1 16	PC1	KBD_C1
KBD_C0 17	PC2	KBD_C0
33	PC3	
PWR_HALT_REQ 34	PC4	PWR_HALT_REQ
KBD_R3 63	PC5	KBD_R3
SC_USART_TX 64	PC6	SC_USART_TX
CAM_D1 65	PC7	CAM_D1
SC_USART_CLK 66	PC8	SC_USART_CLK
CAM_D3 78	PC9	CAM_D3
79	PC10	
80	PC11	
CAM_D4 81	PC12	CAM_D4
SCR_SPI_SCK	PC13	SCR_SPI_SCK
VUSB_OK	PC14-OSC32_IN	VUSB_OK
	PC15-OSC32_OUT	

PB0 / KBD_R2
PB1 / KBD_R1
PB2 / KBD_R0
PB3 / JTDO_SWO
PB4 / CAM_D7
PB5 / CAM_D5
PB6 / CAM_VS
PB7 / CAM_VSYNC
PB8 / CAM_D6
PB9
PB10 / CAM_SCL / CAM_I2C_SCL
PB11 / CAM_SDA / CAM_I2C_SDA
PB12
PB13
PB14 / PWR_KILL
PB15 / CAM_D2

PD0 - PD15

Input (interrupt with internal pull-up)
Falling edge: Push button have been
pressed to stop the system

Input (with internal pull-down)
Falling edge: SmatCard have
been extracted

Input (with internal pull-up)
High: no USB power
Low: USB power present

Output
Set to high to power
PWR_CAM_EN

V1P8 V1P8
R2 10k R1 10k

Output
Set to high to power off

Rx4 GND4 GND
Tx4

MCU PIN OUT - PE PF

U4B STM32H573VIT6
1 of 3

PE0 ... PE15

PH0-OSC_IN MCU_OSC_IN
PH1-OSC_OUT MCU_OSC_OUT
RST MCU_RST
BOOT0 MCU_BOOT0

V1P8
MCU_RST 10k
10k C40 100nF 50V
GND GND

Tie the two pins together
to reset the MCU

MCU POWER SUPPLAY

V1P8
100nF 50V / 4.7µF 25V / 4.7µF 25V / 100nF 50V / 100nF 50V / 4.7µF 25V / 100nF 50V / 4.7µF 25V / 100nF 50V / 4.7µF 25V
GND

Capacitors to be distributed closed to the VDD supply pins

U4C STM32H573VIT6
1 of 3

11	VDD_2	VSS_2	10
28	VDD_3	VSS_3	27
50	VDD_4	VSS_4	49
75	VDD_5	VSS_5	74
100	VDD	VSS	99
22	VDDA	VSSA	19
73	VDDUSB	VBAT	6
21	VREF+	VCAP_2	48
20	VREF-	VCAP	98

V3P0
C42 100nF 50V / C41 1µF 50V
GND GND GND

Capacitors to be placed
closed to VDDA supply pins

VSYS_SWITCHED
R23 75k
TLV8431AQDBZR
VRef = 2V5
R22 220k
VBAT
R17 10k
C33 1µF 50V
C29 2.2µF 50V / C30 2.2µF 50V
GND

MCU PROGRAMMING PORT (JTAG)

V1P8 J1V8

JTDI — JTDI
JTDO_SWO — JTDO
JTMS_SWDIO — JSWD
JTCK_SWCLK — JSWC
MCU_RST — JRST
— JGND
GND

P210 V1P8
VCC	1	JTMS_SWDIO
SWDIO	2	MCU_RST
NC/RST	3	JTCK_SWCLK
SWCLK	4	
NC/GND	5	
GND	6	GND
DNI

01 POWER
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Project Title: STATUS K PRO

STATUS KPRO
KPRO Reader

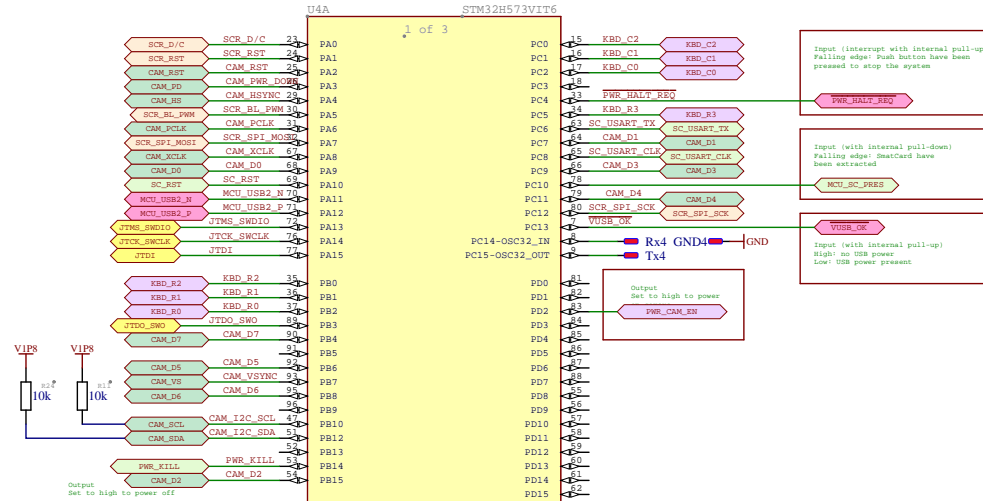Folio Title: 02 MCU.SchDoc
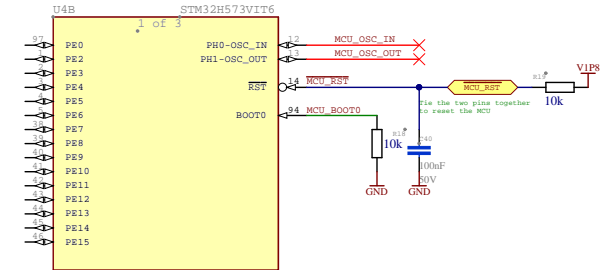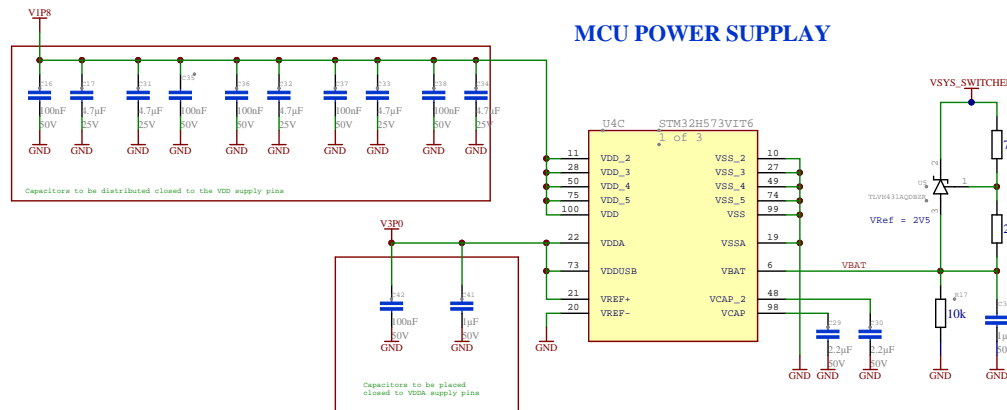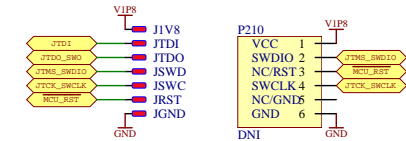Project Number: 2282 - 600   Board: KCP
Revision: V3.9   Date: 11/04/2025
Drawn by: D.LEBRUN   Folio: 2 / 3

KEYBOARD MATRIX

KBD_C2   KBD_C1   KBD_C0

KBD_R3

KBD_R2

KBD_R1

KBD_R0

SCREEN CONNECTION

CS: Active low

SCR_RST
SCR_SPI_MOSI
SCR_SPI_SCK
SCR_D/C

TE: Not Used

SCR_TE

V1P8
V3P0

BL_A
BL_K
10R

100nF 4.7µF 100nF 4.7µF
50V 25V 50V 25V
GND GND GND GND

SCR_BL_PWM

100k

GND   GND

GND
GND

GND

GND

FPC2B35-12-G

CAMERA CONNECTION
HREF have to be validated

GND

V2P8

CAM_SDA
CAM_SCL
CAM_RST
CAM_VS
CAM_PD
CAM_HS

V1P5
V1P8

CAM_D7
CAM_XCLK
CAM_D6

GND

CAM_D5
CAM_PCLK
CAM_D4
CAM_D0
CAM_D3
CAM_D1
CAM_D2

1 NC
2 DGND
3 SIO_D
4 AVDD
5 SIO_C
6 RESET
7 VSYNC
8 PWDN
9 HREF
10 DVDD
11 DOVDD
12 Y9
13 MCLK
14 Y8
15 DGND
16 Y7
17 PCLK
18 Y6
19 Y2
20 Y5
21 Y3
22 Y4
23 NC
24 NC

V2P8
100nF 50V
GND

V1P5
100nF 50V
GND

V1P8
100nF 4.7µF
50V 25V
GND GND

GND

HC-FPC-05-09-24HLTAG

SMART CARD READER

V1P8

ESDM002P02T2L

100nF 4.7µF
25V 50V
GND GND

220k

MBR0530-T1

MCU_SC_PRES

100nF
50V
GND

SC_USART_CLK
SC_RST

SC_USART_TX

SC_PRES_SW

Prevents current from flowing
from SC_PRES_SW to V3P0 (off)

SC_PRES_SW
To cut off VSYS if card no present <Power>

11.5k

GND

SC_PRES_SW

P1
P2
P3
P4
P5
P6

GND

AFA07-S06FCA-00

ESD8312DWVR

GND

Project Title: STATUS K PRO

STATUS KPRO

KPRO Reader

16/02/2024 10:59:17

Folio Title: 03 PERIPHERALS.SchDoc

Project Number: 2282 - 600   Board: KCP
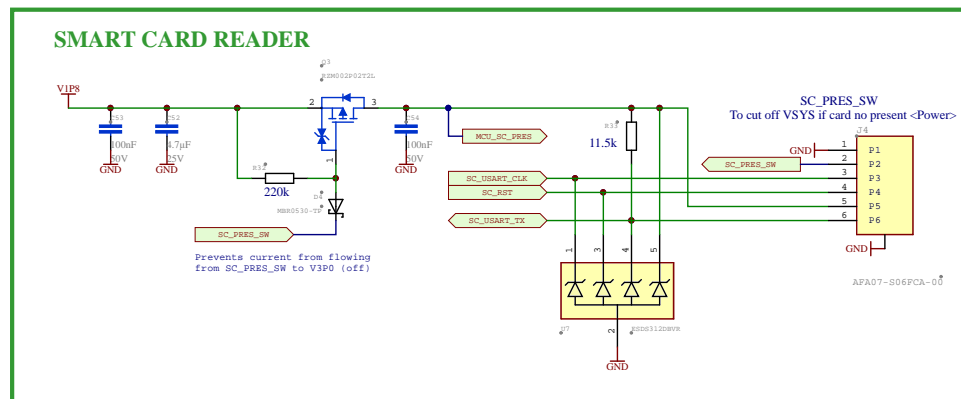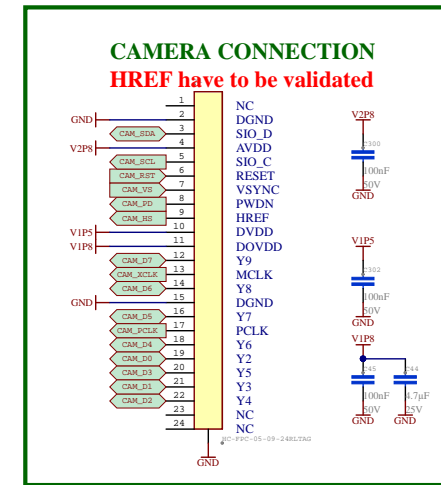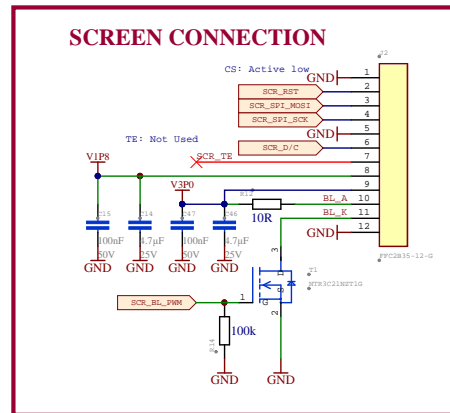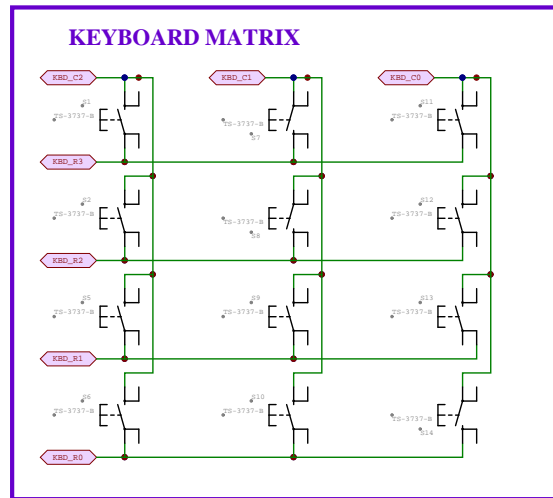
Revision: V3.9   Date: 11/04/2025

Drawn by: D.LEBRUN   Folio: 3 / 3