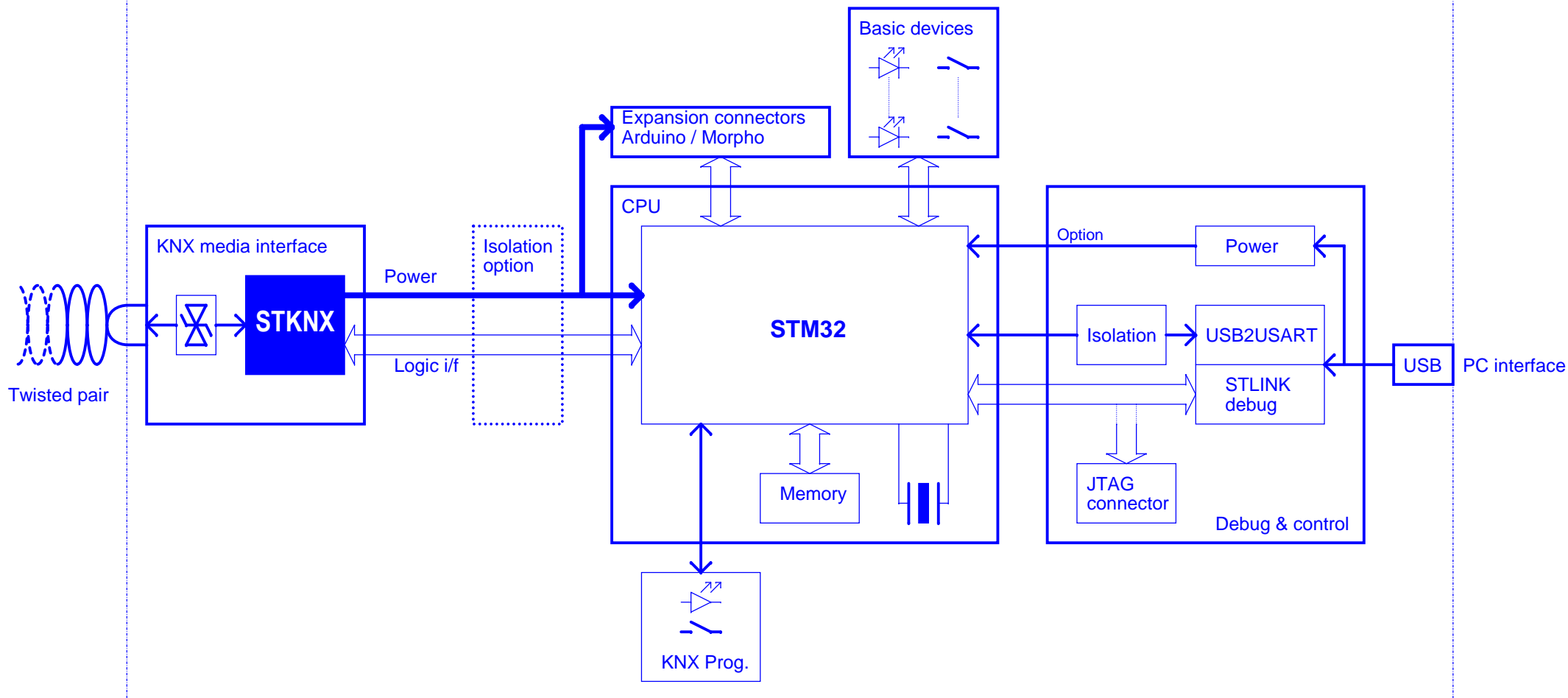


# STKNX Evaluation and Development kit



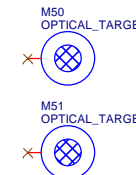
Revision	Date	Comments
1 1 1	2017/11/16	Initial delivery
1 2 1	2018/01/31	Minor BOM updates
1 3 1	2018/03/16	BOM updates

PCB revision =>  
BOM revision =>  
VARIANT revision =>

Silkscreen (green):  
FOR EVALUATION ONLY  
NOT FCC APPROVED  
FOR RESALE

STM Logo  
KNX logo  
EVALKIT STKNX

PCBKA-REV1  
RoHS EU  
RoHS Chinese



STMicroelectronics  
10 rue de Jouanet  
35700 Rennes, FR

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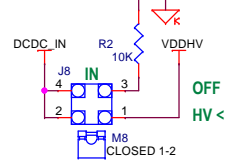
Size: A3 Document Number: **Block diagram** Rev: 131

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## DCDC

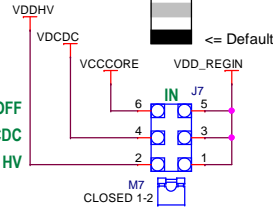
### DCDC regulator input selection

Default =>

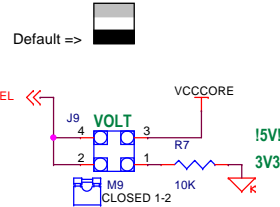


## LINEAR

### Linear regulator input selection



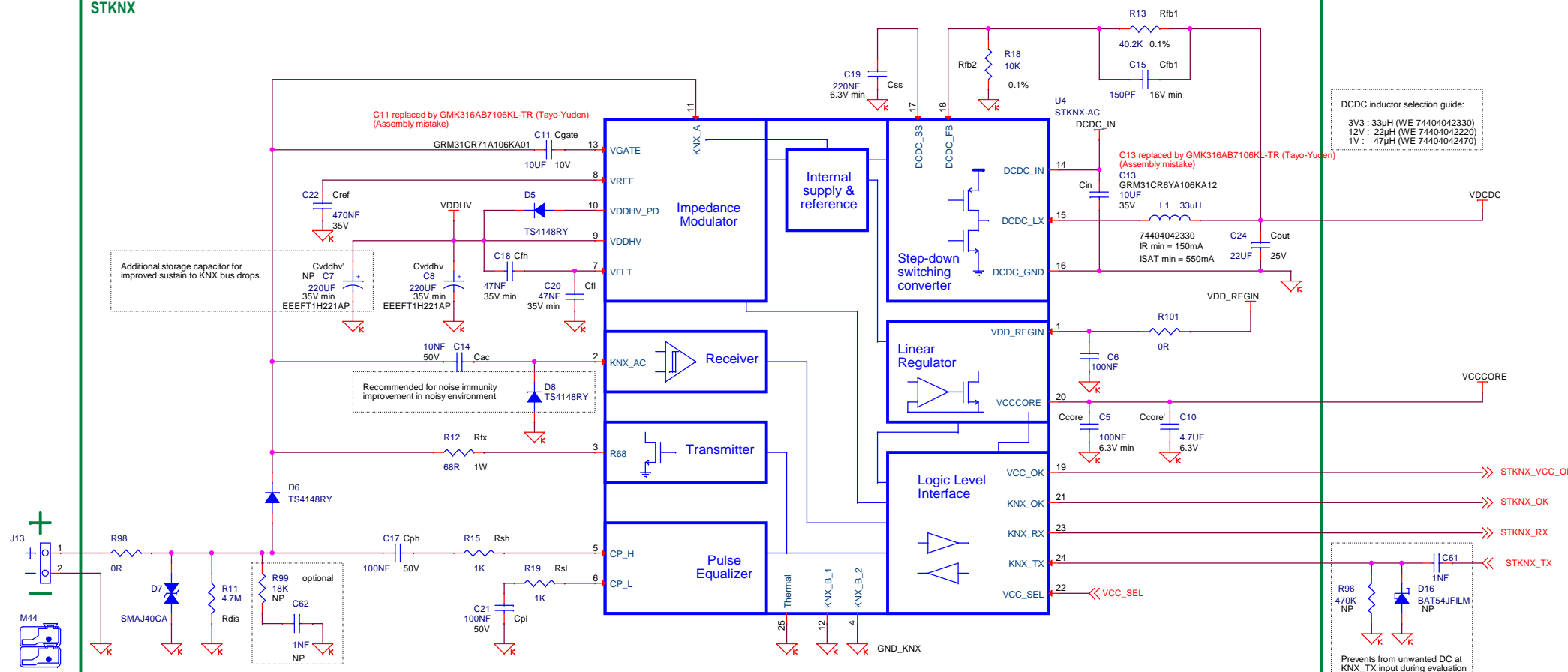
### Linear regulator voltage selection

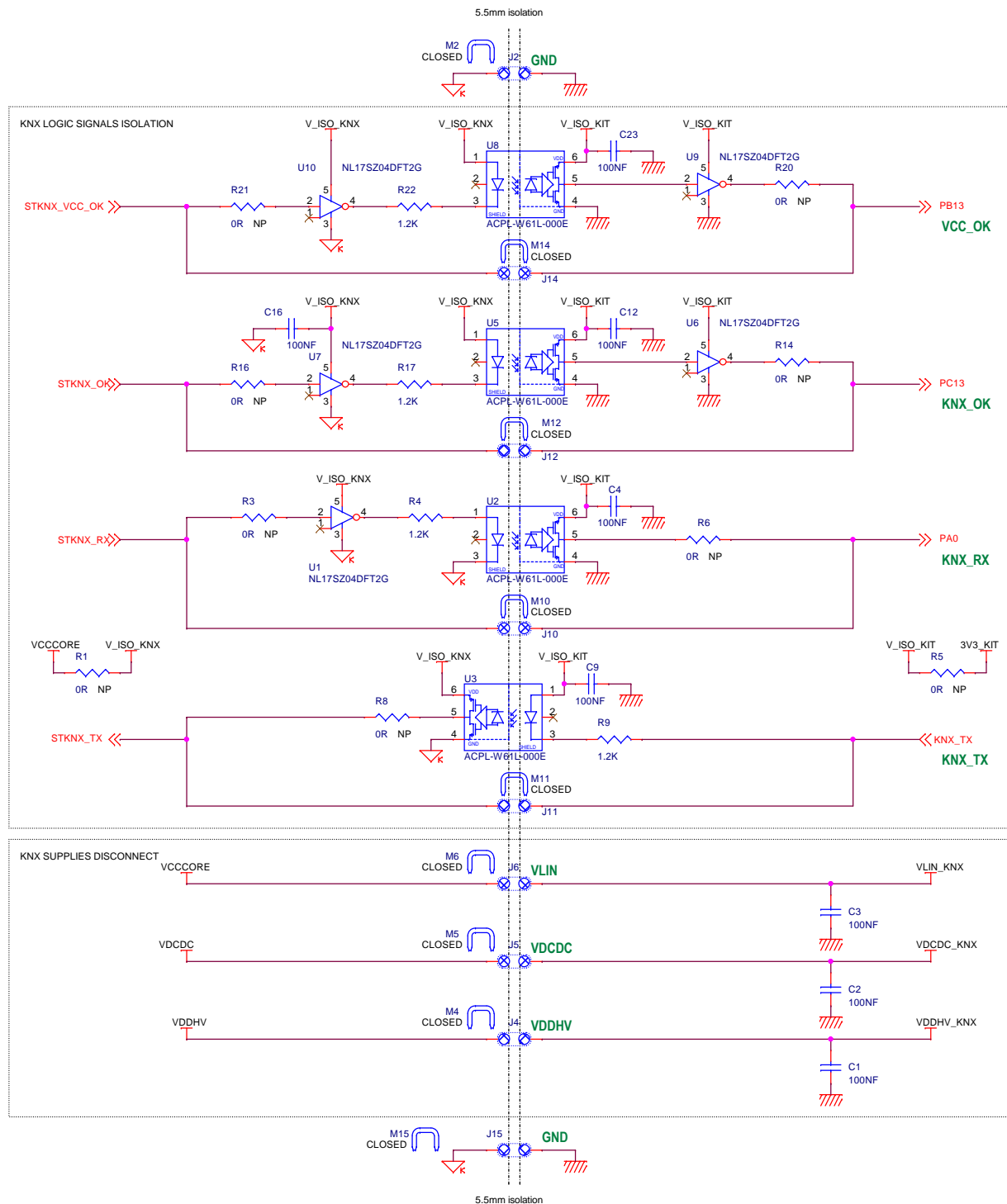


### DCDC feedback setting:

3V3 : 13 kohm to GND; 30 kohm // 180pF to VDDCORE  
5V : 10 kohm to GND; 40.2 kohm // 150pF to VDDCORE  
7.5V (min value for connection to VDD\_REGIN) : 20 kohm to GND; 130 kohm // 47pF to VDDCORE

## STKNX

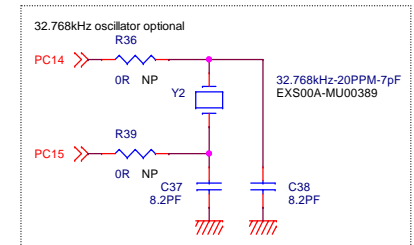
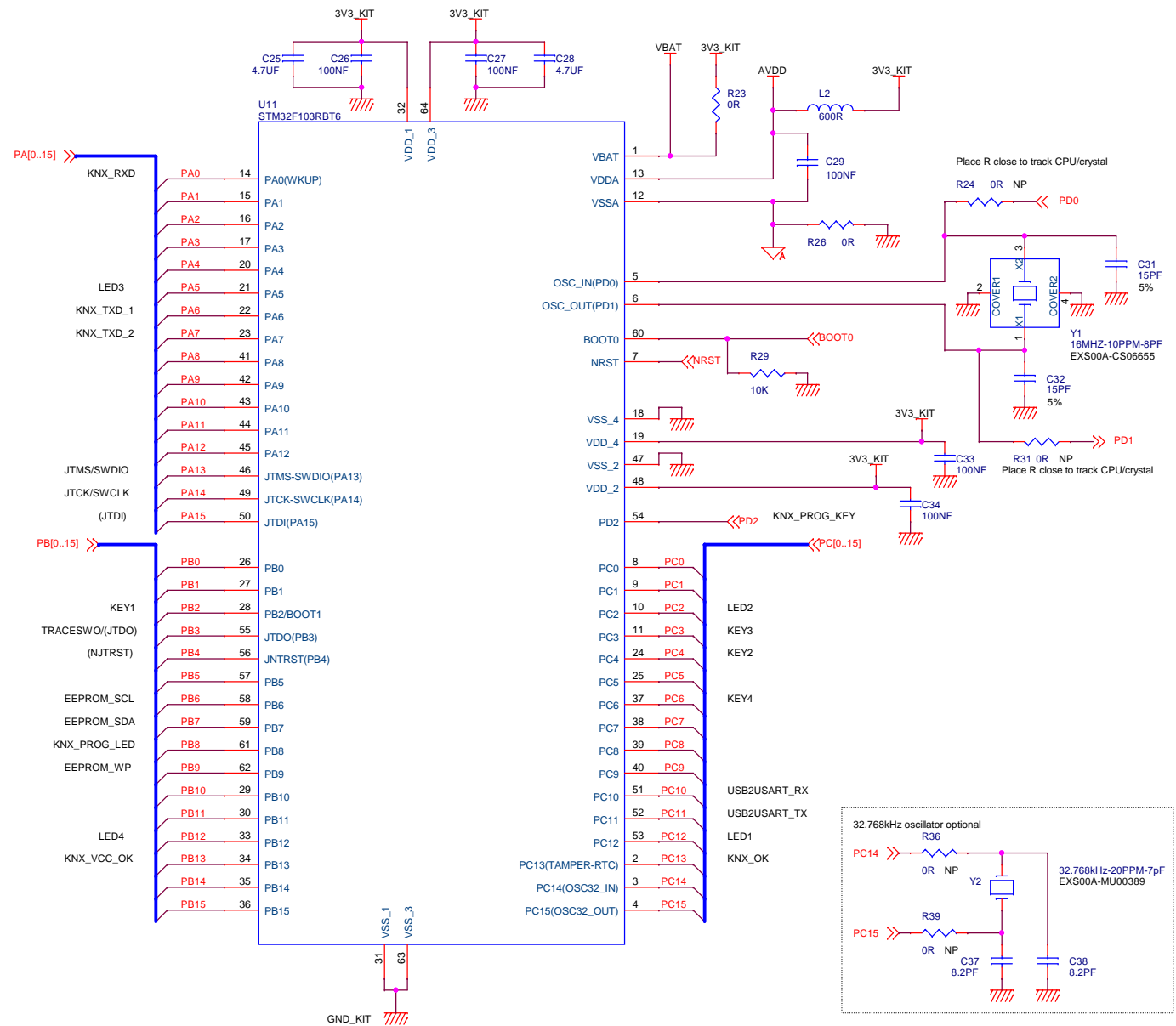
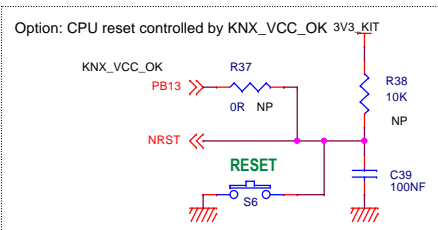
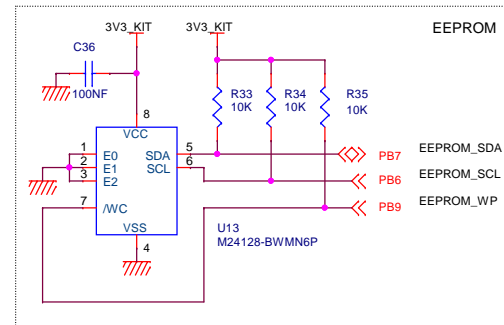
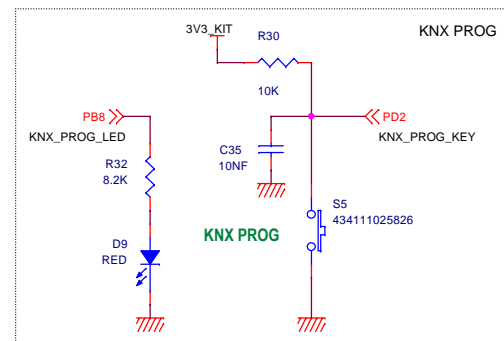
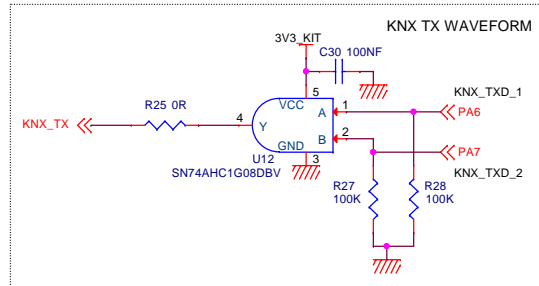




ISOLATED mode:

- \* remove every x9 jumpers shortcutting supplies, GND and opto-couplers
- place x2 resistors connecting resp. VCCCORE-V\_ISO\_KNX and V\_ISO\_KIT-3V3\_KIT
- \* KNX\_RX, KNX\_OK, VCC\_OK:
  - place serial resistors at inverters input and output
- \* KNX\_TX:
  - place the serial resistor at opto-coupler output

## KNX CPU



## JUMPERS USE

Arduino supply selection line =>  
EVALKIT supply selection line =>



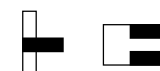
## Jumpers positions examples :

Default:  
\* CPU 3.3V is supplied by STKNX linear regulator  
\* STKNX DCDC converter (5V) is available for expansion i/f

FW mode (USB power):  
\* the full kit (excepted STKNX area) and expansion board are supplied by USB connector  
\* this allows FW development / debug with simple setup

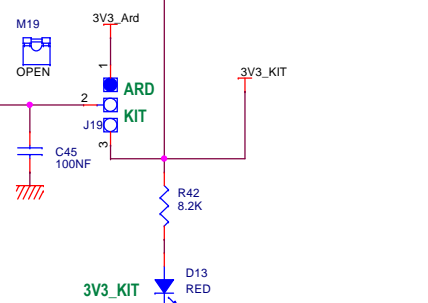
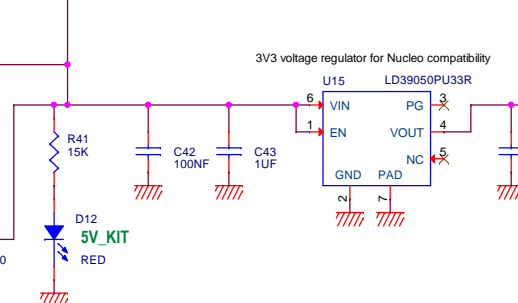
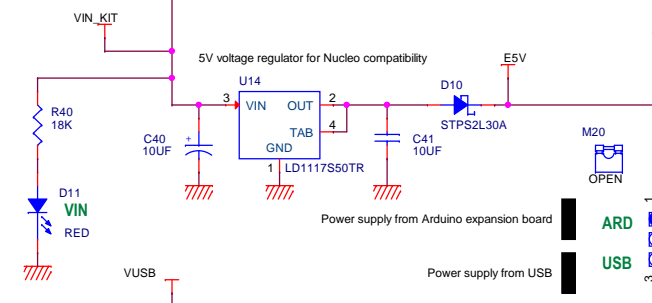
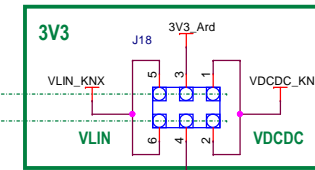
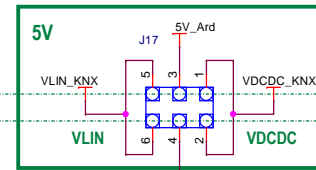
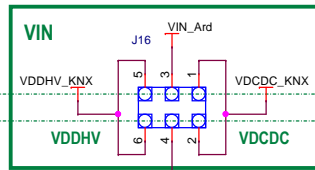
Dimming demo with LED16A1 board:  
\* STKNX switching converter (5V) is supplying the Arduino expansion board and the "on kit" linear regulator U15  
\* CPU and STKNX digital IOs are supplied from 3.3V generated from U15

STKNX DCDC 3.3V:  
\* This mode produces the lowest consumption on KNX bus  
\* The STKNX DCDC regulator must be adjusted to 3.3V (Rfb1, Rfb2)  
\* The STKNX linear regulator is disabled

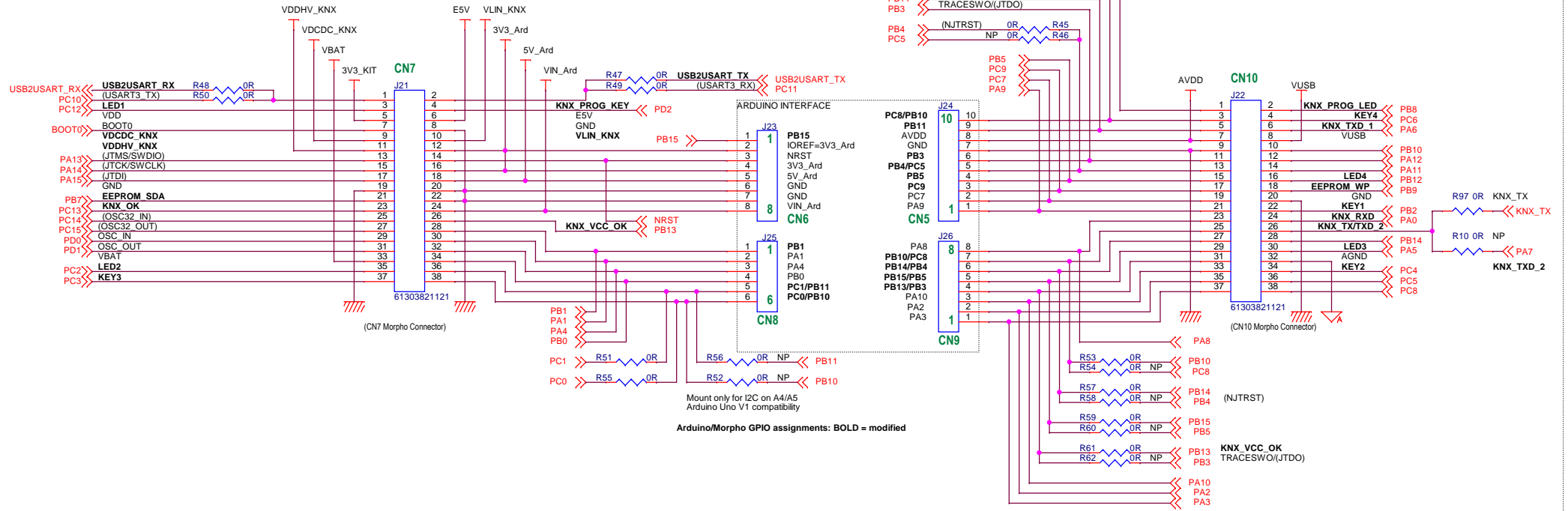


## POWER MANAGEMENT

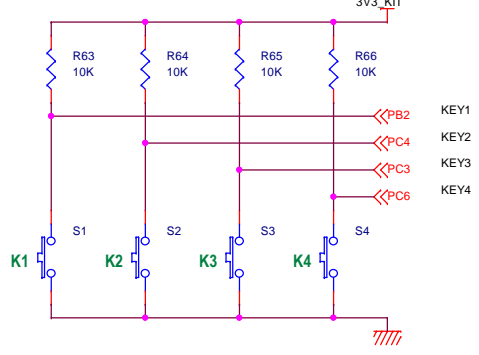
Arduino expansion board supply selection =>  
EVALKITSTKNX supply selection =>



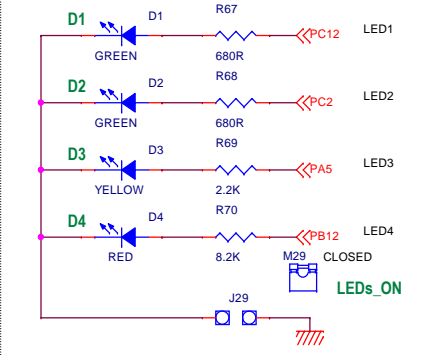
# ARDUINO / MORPHO INTERFACE



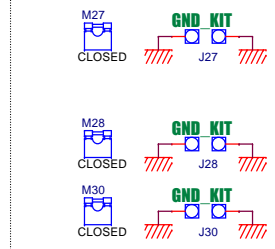
## BASIC SENSORS



## BASIC ACTUATORS



## Board support and GND test point



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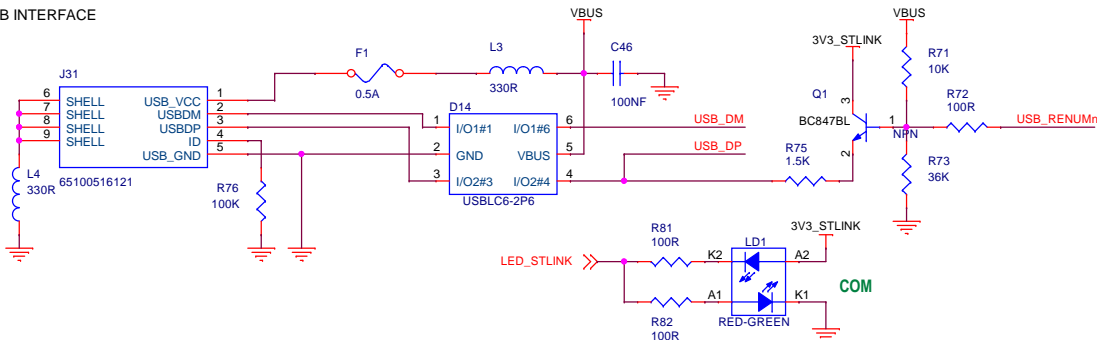
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Title **STKNX Evaluation and Development kit**

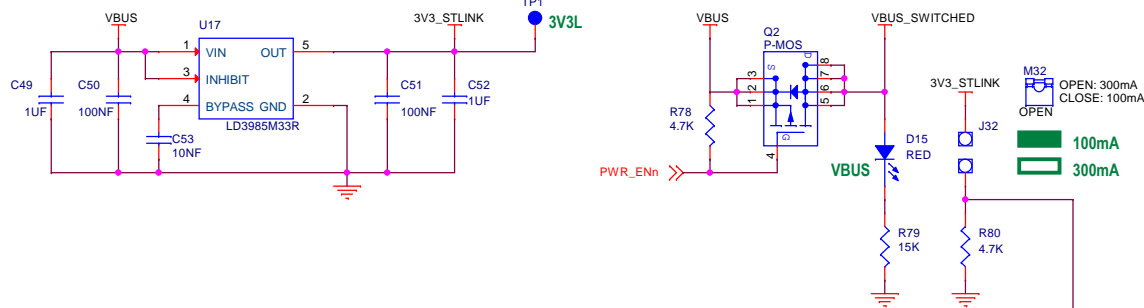
Size A3 Document Number **Expansion** Rev 131

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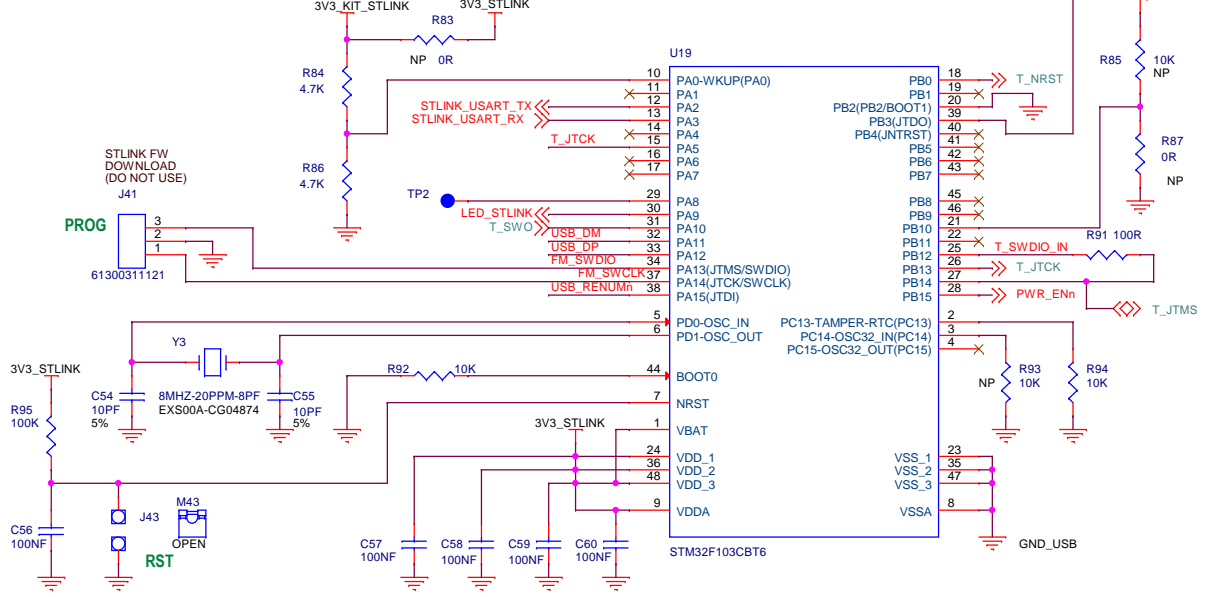
# USB INTERFACE



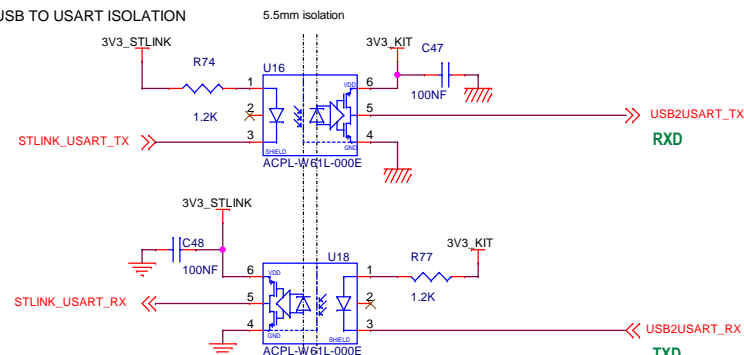
# USB POWER MANAGEMENT



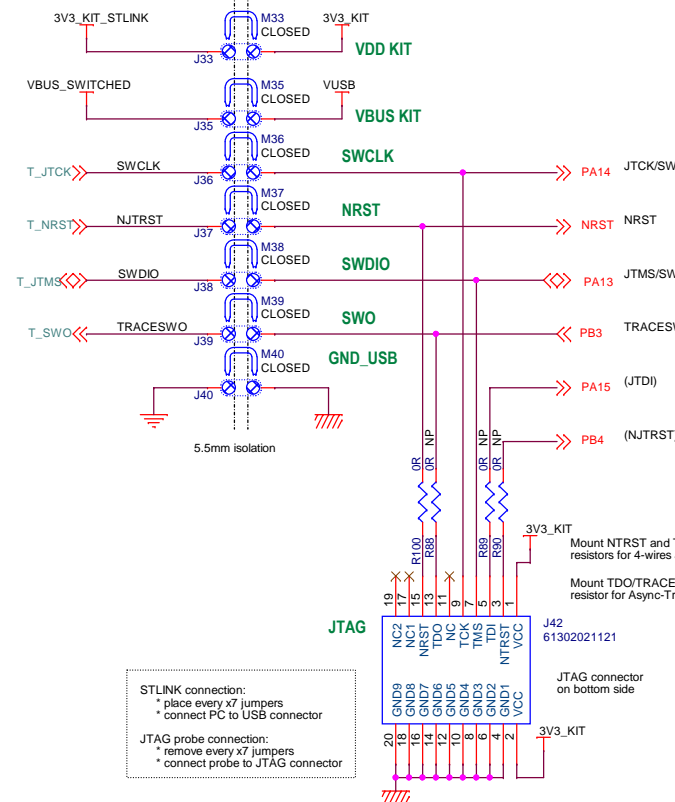
# STLINK & USB TO USART



# USB TO USART ISOLATION

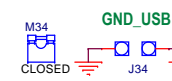


# DEBUG INTERFACE



STLINK connection:  
 \* place every x7 jumpers  
 \* connect PC to USB connector  
 JTAG probe connection:  
 \* remove every x7 jumpers  
 \* connect probe to JTAG connector

Board support and GND test point



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File  
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**Debug and control**

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