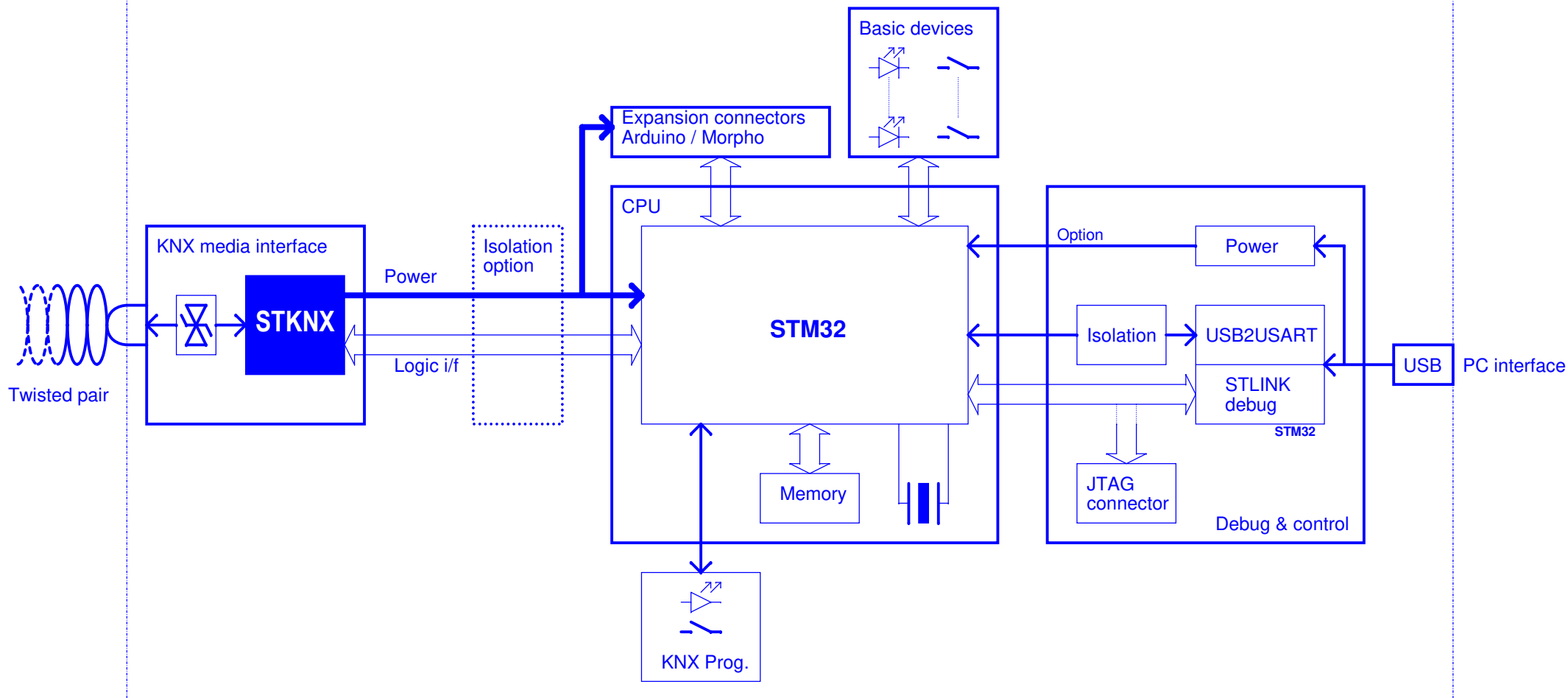


STKNX Evaluation and Development kit



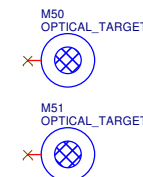
Revision	Date	Comments
1 1 1	2017/11/16	Initial delivery
1 2 1	2018/01/31	Minor BOM updates
1 3 1	2018/03/16	BOM updates
1 4 1	2018/11/07	BOM and comments updates


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

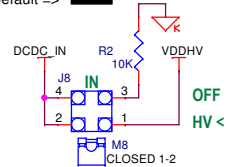


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DCDC

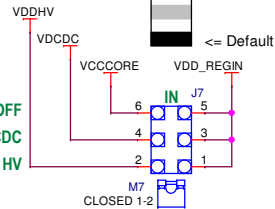
DCDC regulator input selection

Default =>



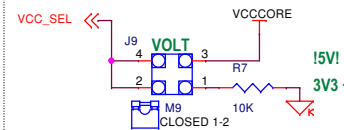
LINEAR

Linear regulator input selection



Linear regulator voltage selection

Default =>



DCDC feedback selection guide :

Output voltage	Rfb1	Cfb1	Rfb2
1V	0Ohm	NP	NP
3V3	30 kOhm	180 pF	13kOhm
5V	40.2kOhm	150pF	10kOhm
7.5V (*)	130kOhm	47pF	20kOhm
12V	110kOhm	51pF	10kOhm

(*) Minimum voltage for connection to VDD_REGIN

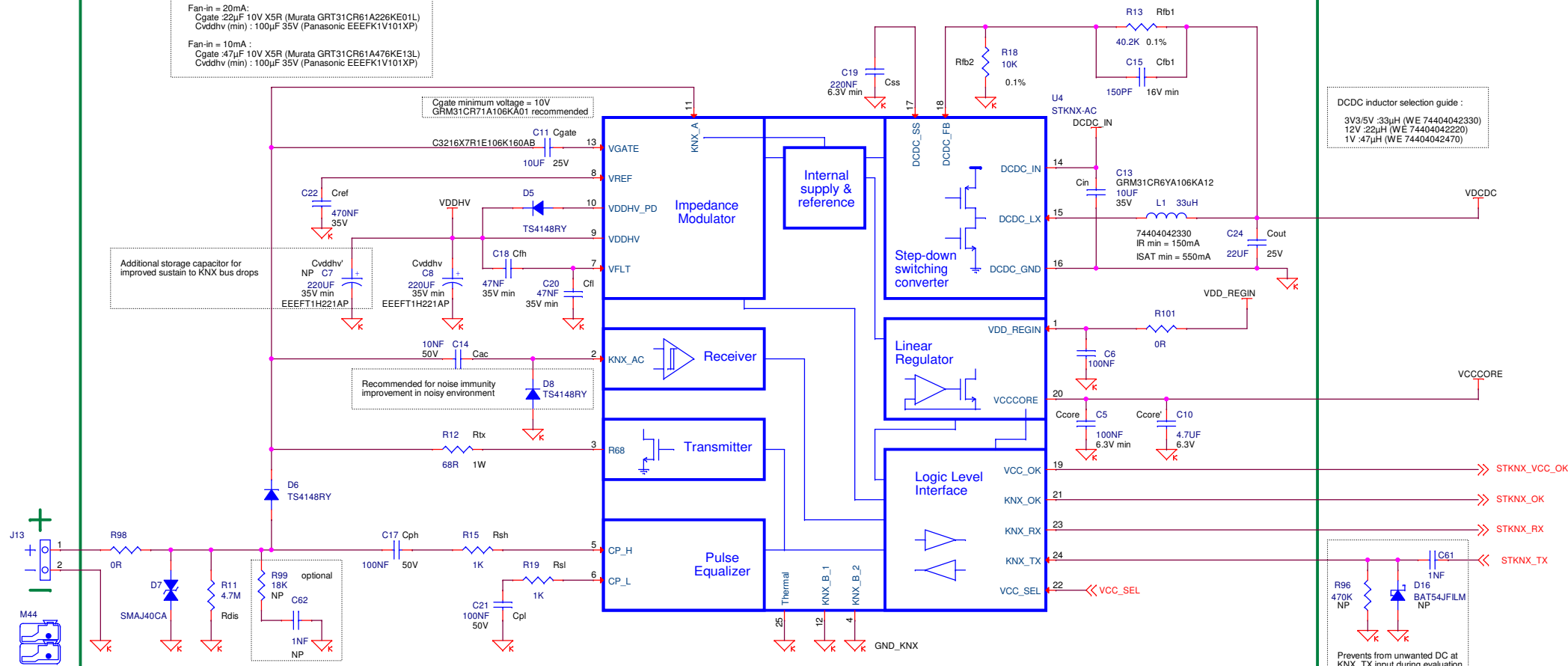
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Capacitors selection guide :

Fan-in = 30mA : see schematic

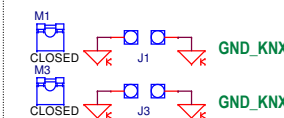
Fan-in = 20mA :
Cgate : 22uF 10V X5R (Murata GRT31CR61A226KE01L)
Cvddhv (min) : 100uF 35V (Panasonic EEEFK1V101XP)

Fan-in = 10mA :
Cgate : 47uF 10V X5R (Murata GRT31CR61A476KE13L)
Cvddhv (min) : 100uF 35V (Panasonic EEEFK1V101XP)



Place TVS as close as possible to KNX connector for optimized surges protection

Board support and GND test point



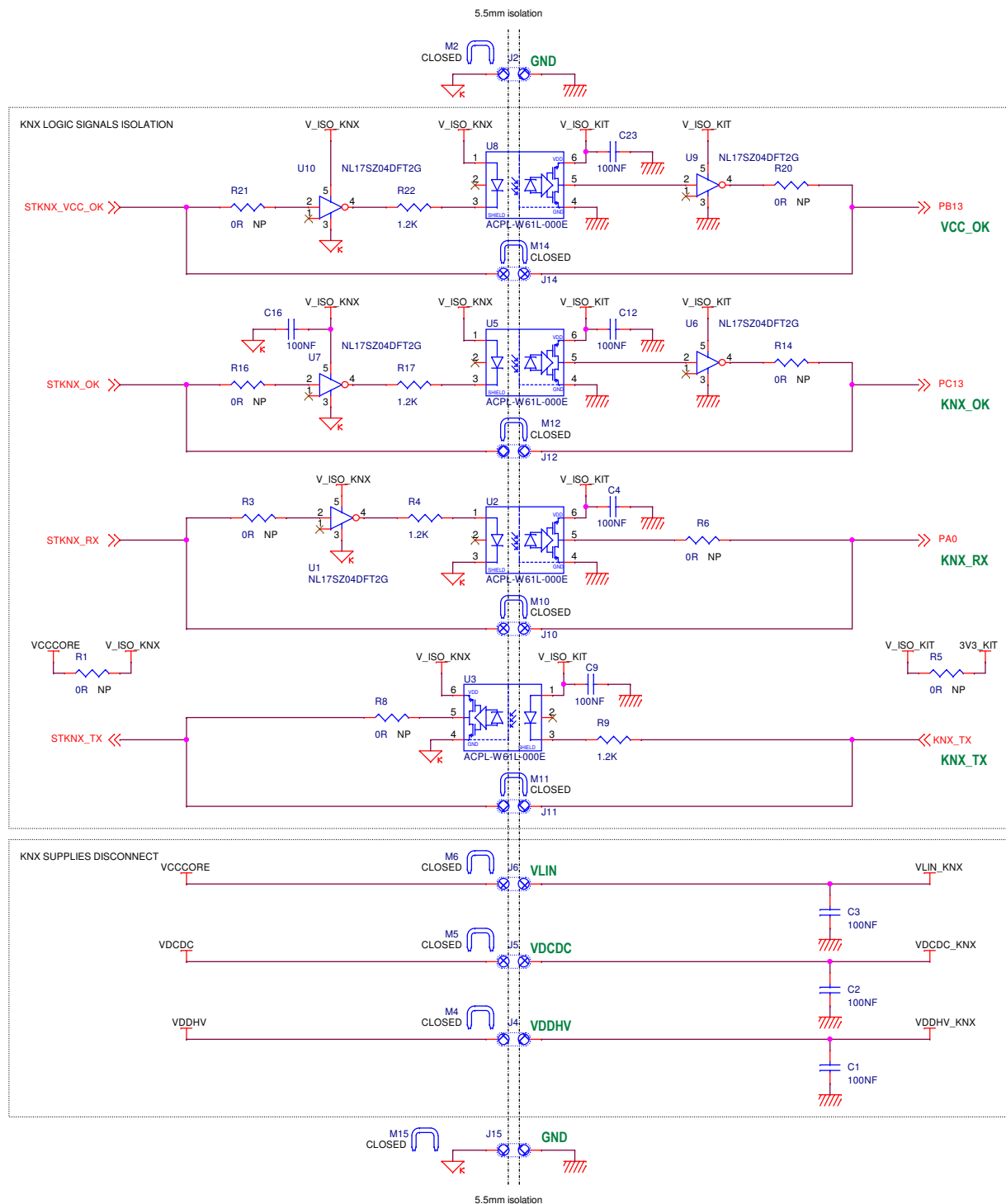
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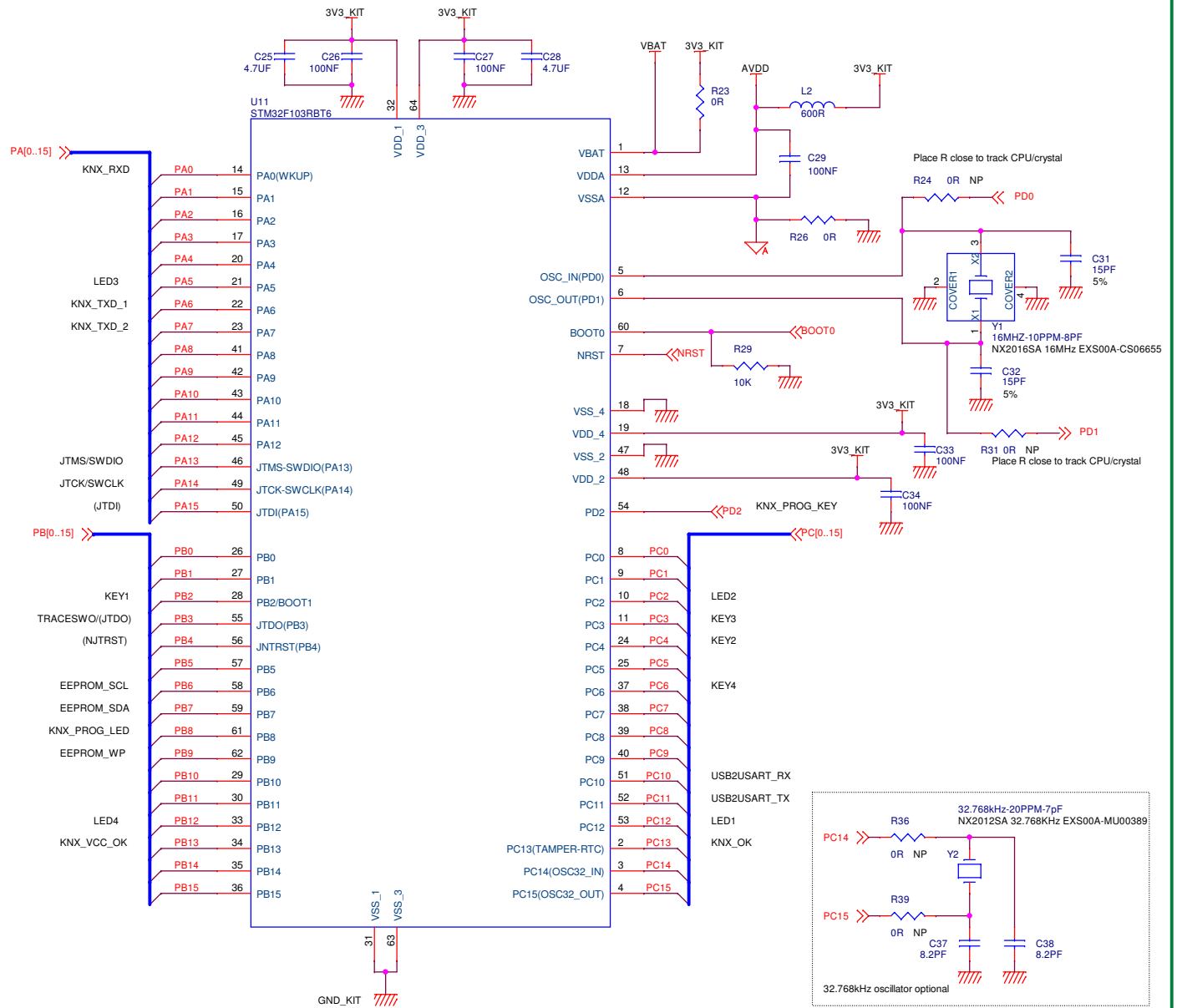
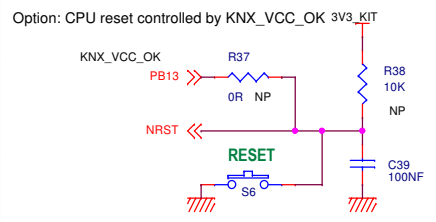
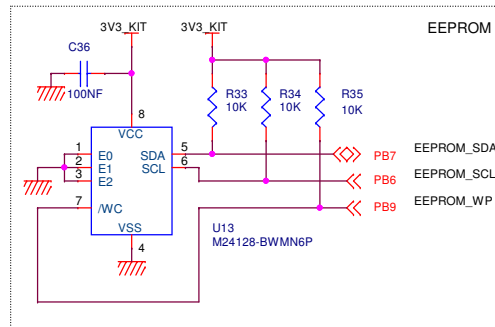
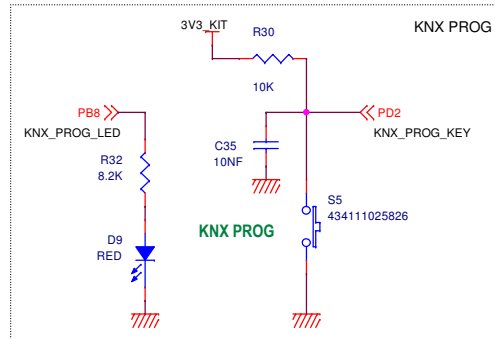
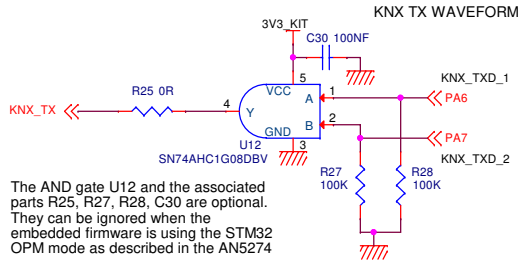


ISOLATED mode:

- * 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

OPTIONAL AND GATE (Firmware dependant) :



JUMPERS USE

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

<=> VLIN / VDDHV connect
<=> VDCDC connect

Jumpers positions examples :

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

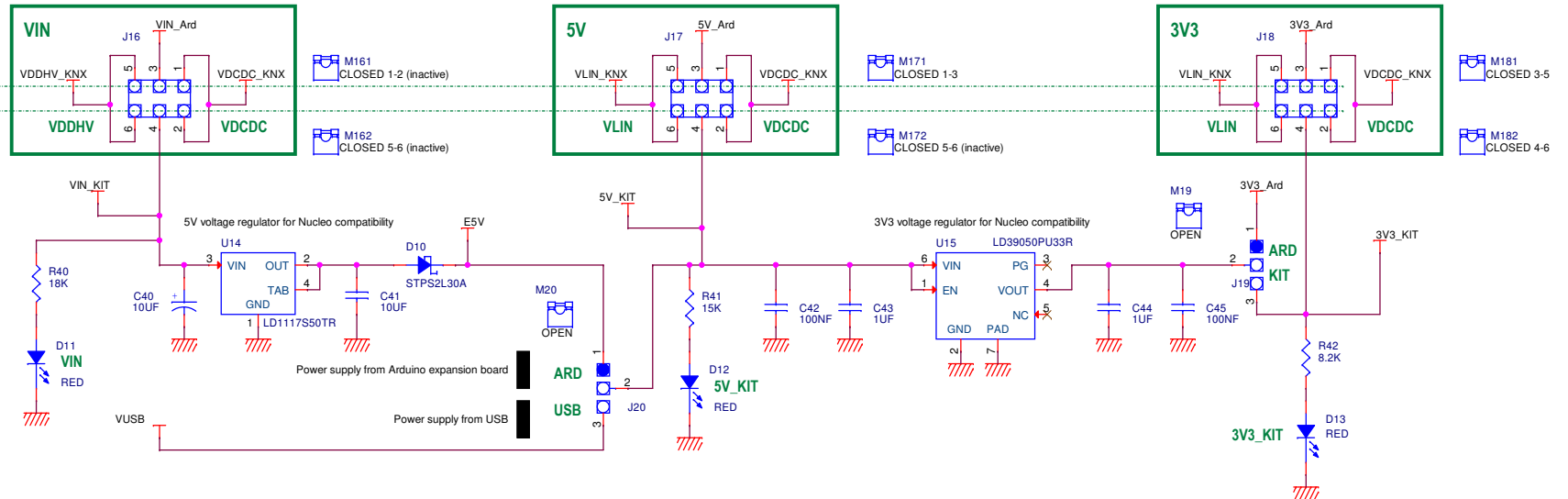
FW mode (USB power):
* the full kit (excepted STKNX area) and expansion board are supplied by USB connector
* this allows FW development / debug with simple setup

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 =>



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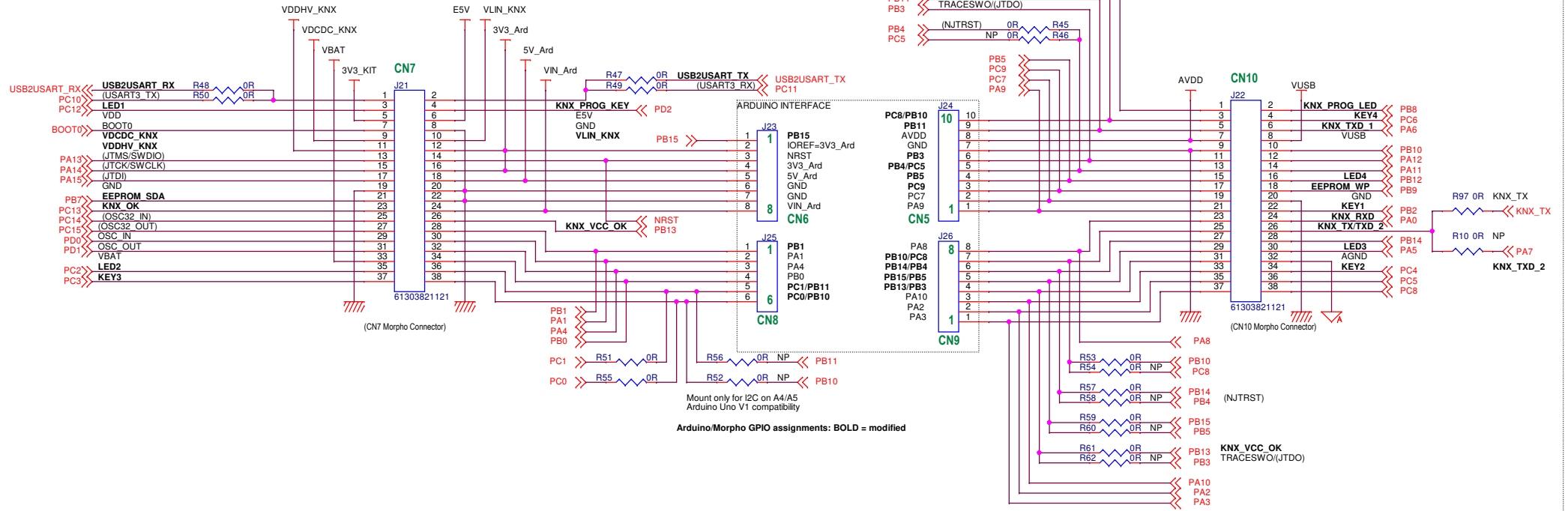
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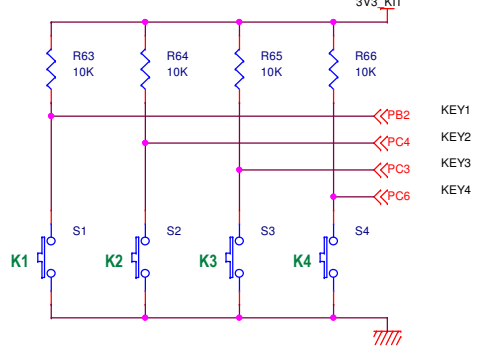
Size A3 Document Number
Power management Rev 151

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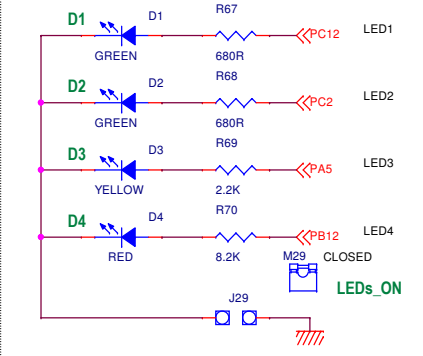
ARDUINO / MORPHO INTERFACE



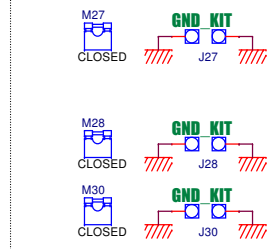
BASIC SENSORS



BASIC ACTUATORS



Board support and GND test point



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