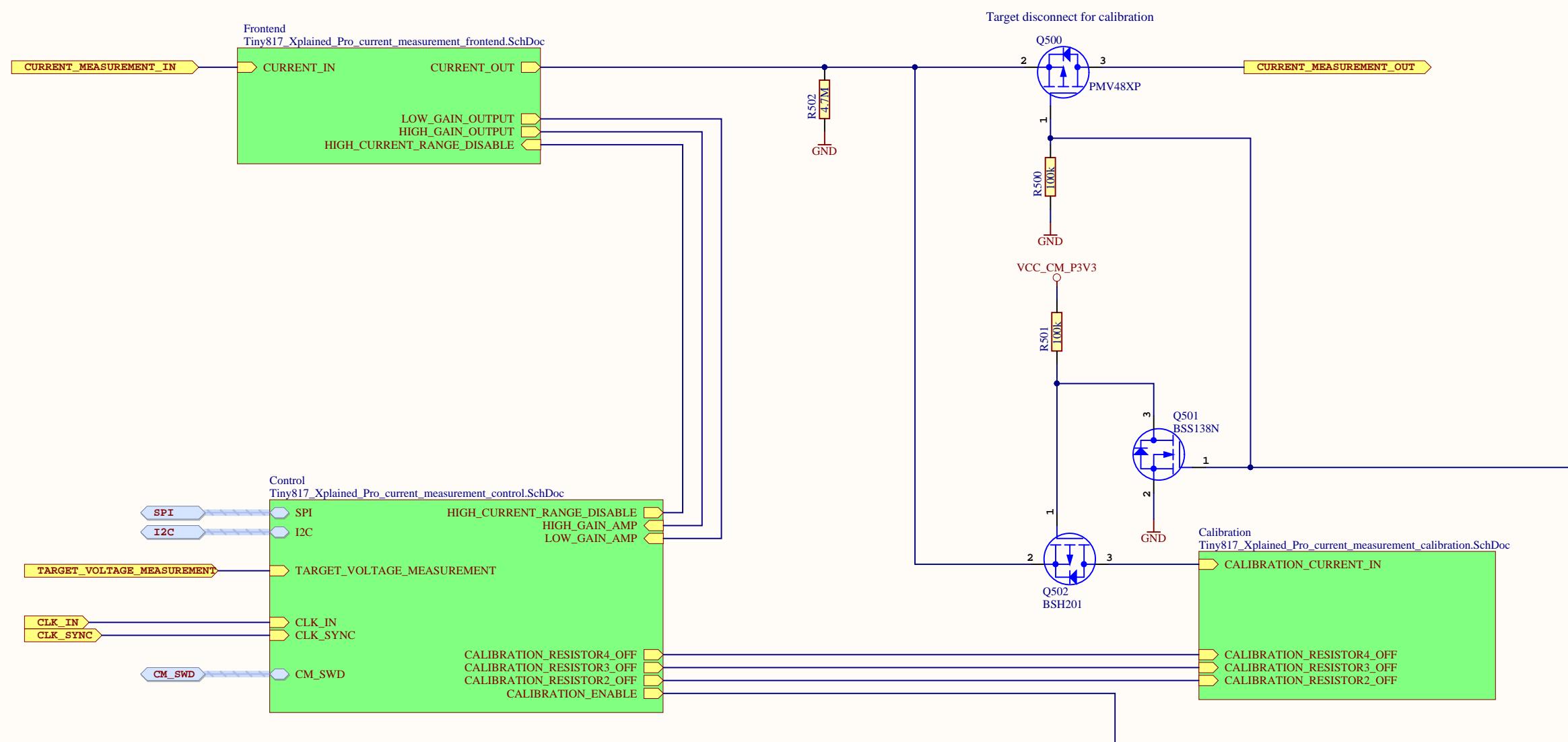
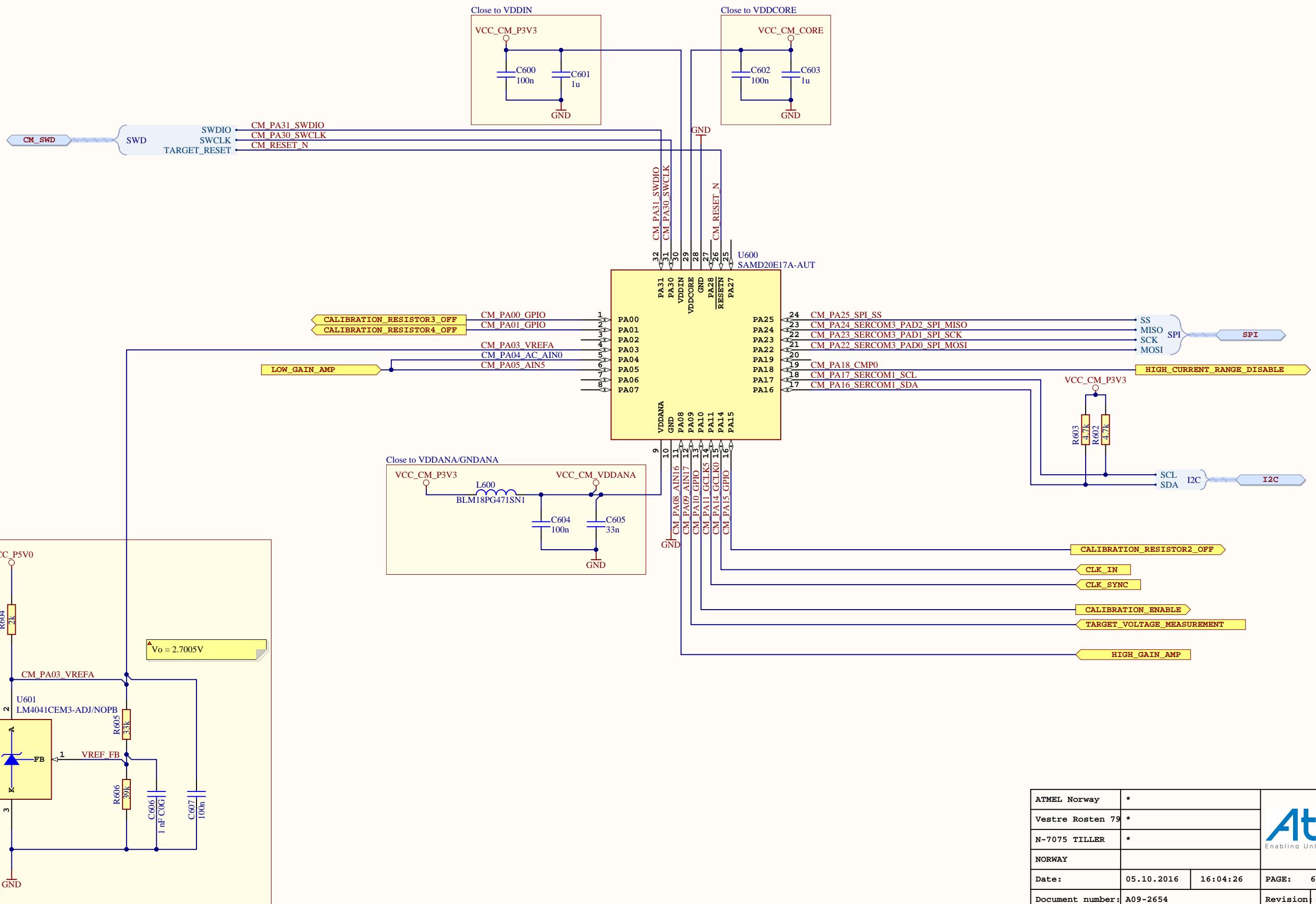


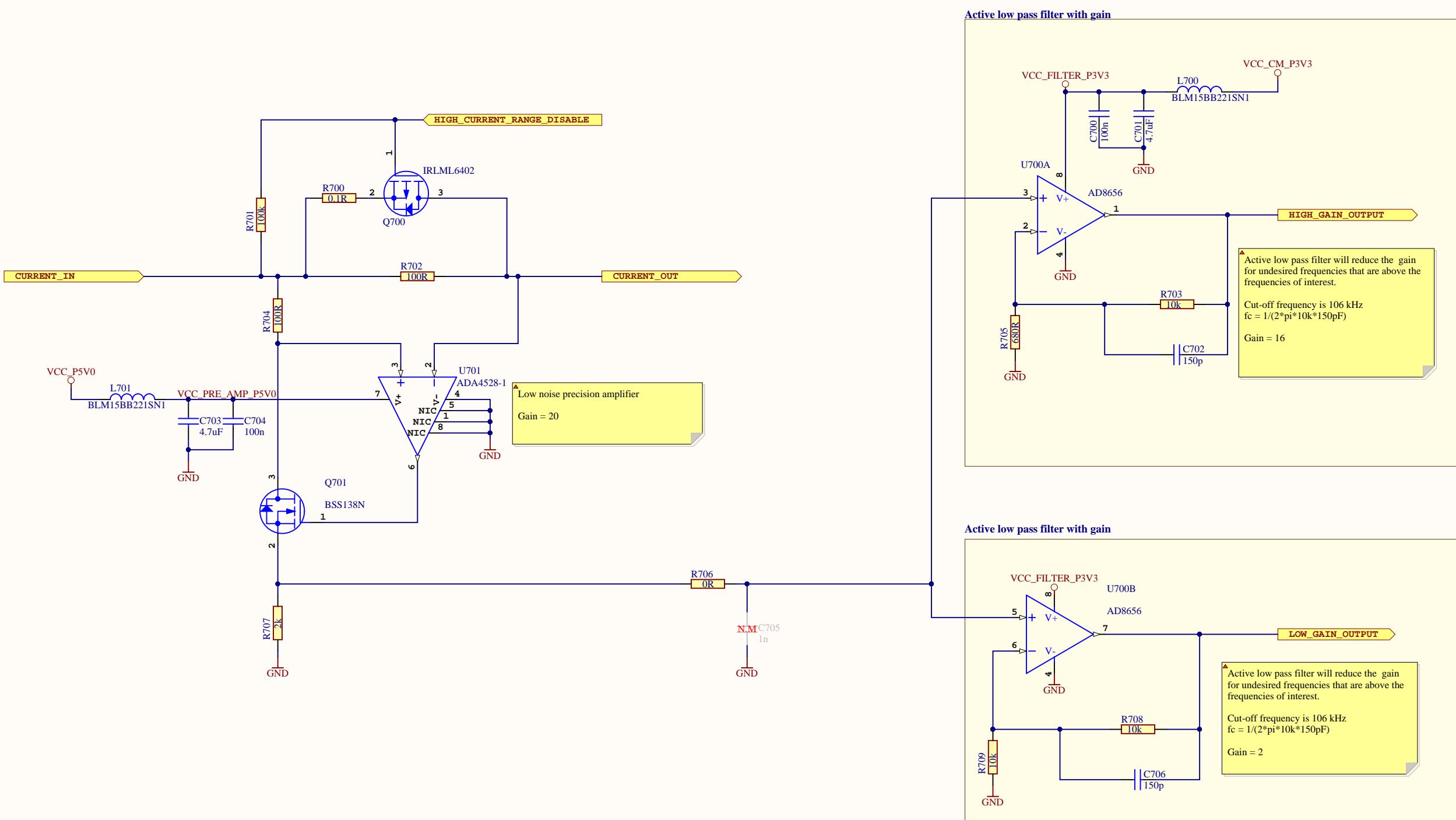
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| ATMEL Norway | * | |  | |
| Vestre Rosten 79 | * | | | |
| N-7075 TILLER | * | | | |
| NORWAY | | | | |
| Date: | 05.10.2016 | 16:04:26 | PAGE: | 4 of 9 |
| Document number: | A09-2654 | | Revision: | 4 |
| TITLE: Power supply | | | | |
| Tiny817_Xplained_Pro_dual_input_power_supply.SchDoc | | | | |



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| ATMEL Norway | * | Atmel Enabling Unlimited Possibilities |
| Vestre Rosten 79 | * | |
| N-7075 TILLER | * | |
| NORWAY | | |
| Date: | 05.10.2016 | 16:04:26 |
| Document number: | A09-2654 | Revision 4 |
| TITLE: Current measurement | | |
| Tiny817_Xplained_Pro_current_measurement.SchDoc | | |



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| Vestre Rosten 79 | * | | |
| N-7075 TILLER | * | | |
| NORWAY | | | |
| Date: | 05.10.2016 | 16:04:26 | PAGE: 6 of 9 |
| Document number: | A09-2654 | Revision: | 4 |
| TITLE: Current measurement control | | | |
| Tiny817_Xplained_Pro_current_measurement_control.SchDoc | | | |



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| ATMEL Norway | * | |
| Vestre Rosten 79 | * | |
| N-7075 TILLER | * | |
| NORWAY | | |
| Date: | 05.10.2016 | 16:04:27 |
| Document number: | A09-2654 | Revision 4 |
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A

A

B

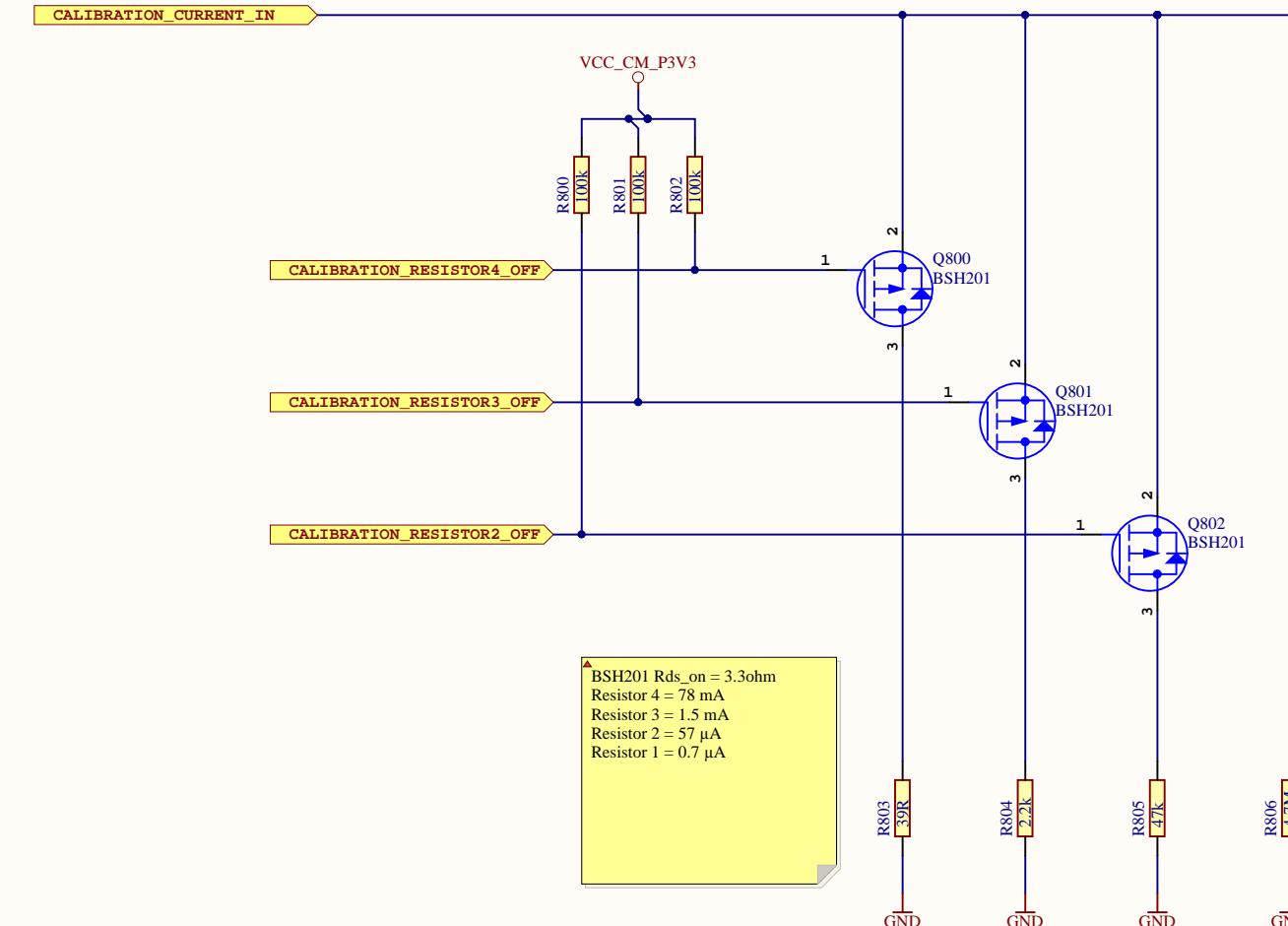
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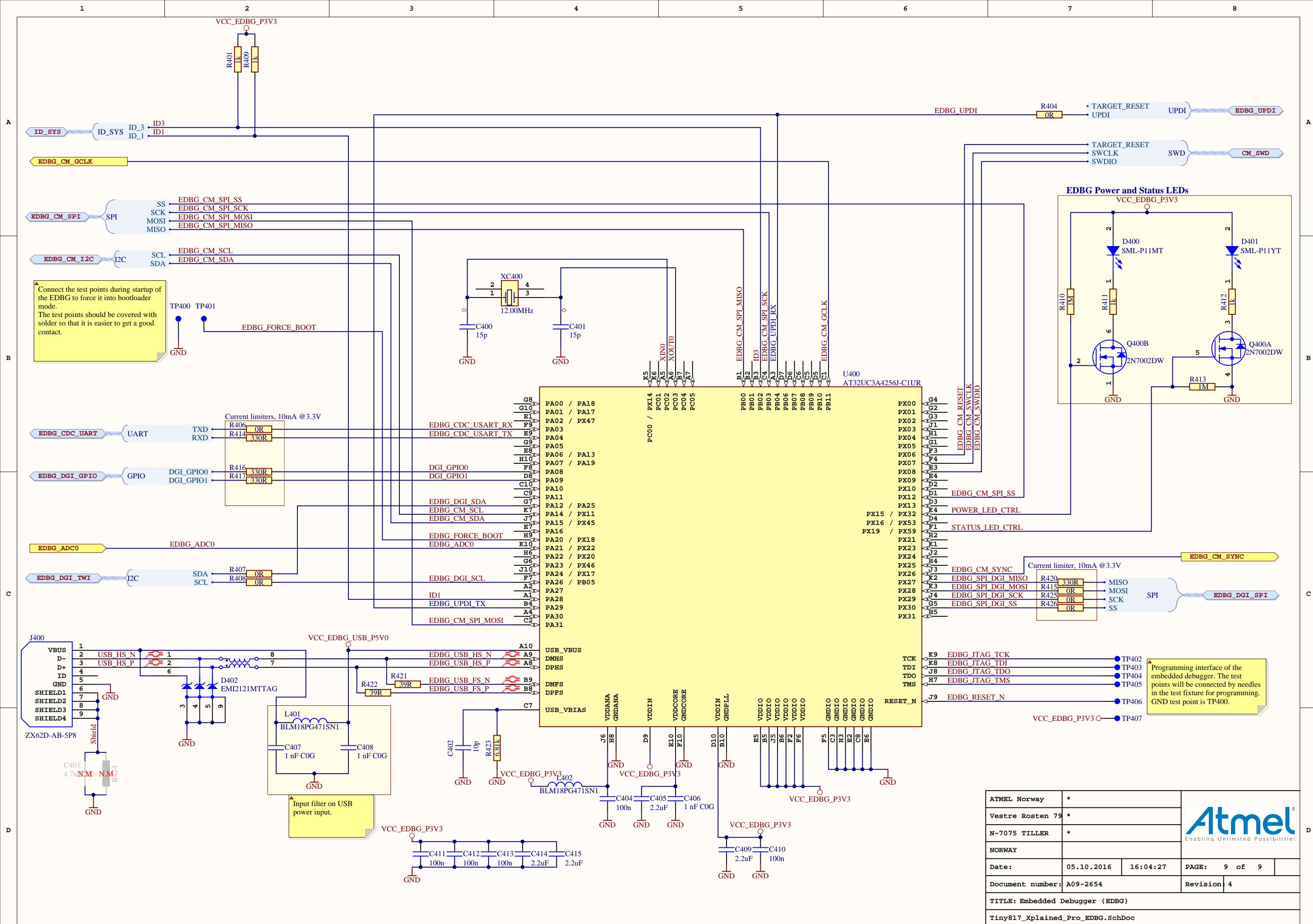
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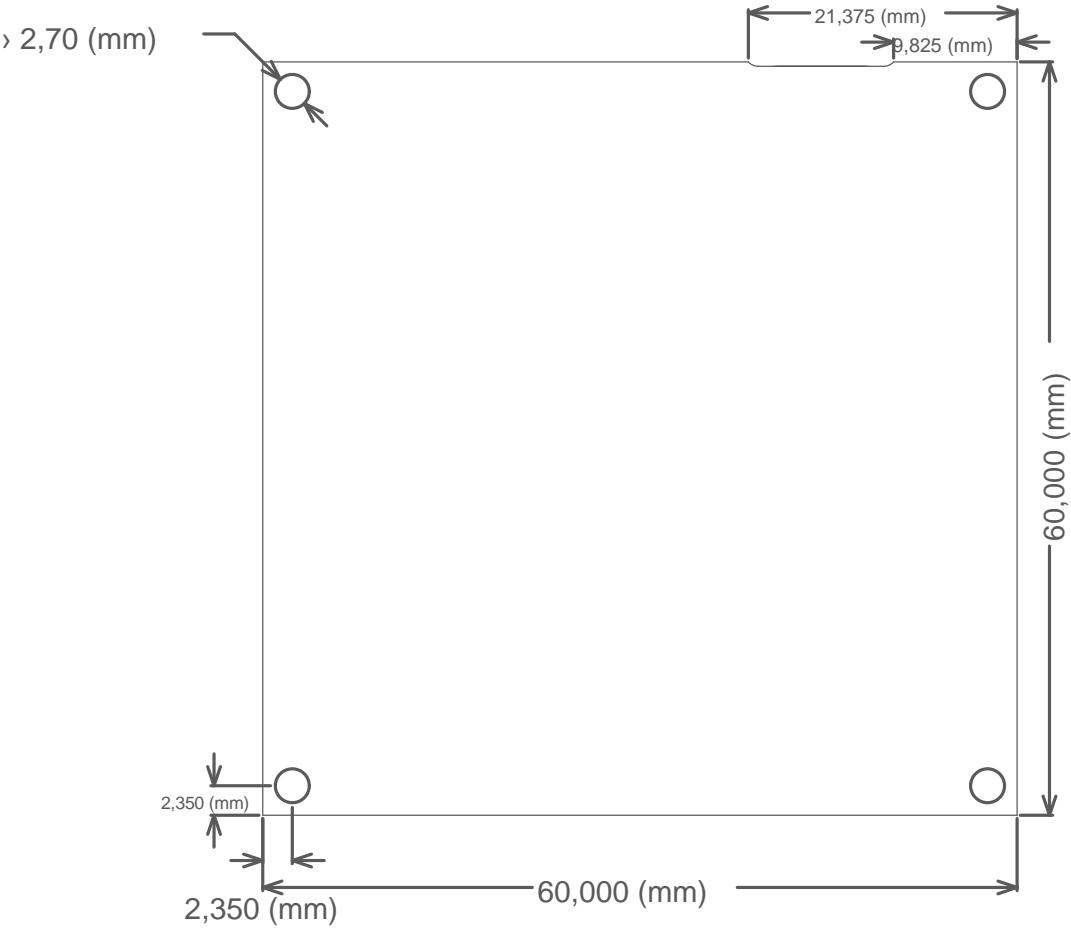


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| Vestre Rosten 79 | * | | |
| N-7075 TILLER | * | | |
| NORWAY | | | |
| Date: | 05.10.2016 | 16:04:27 | PAGE: 8 of 9 |
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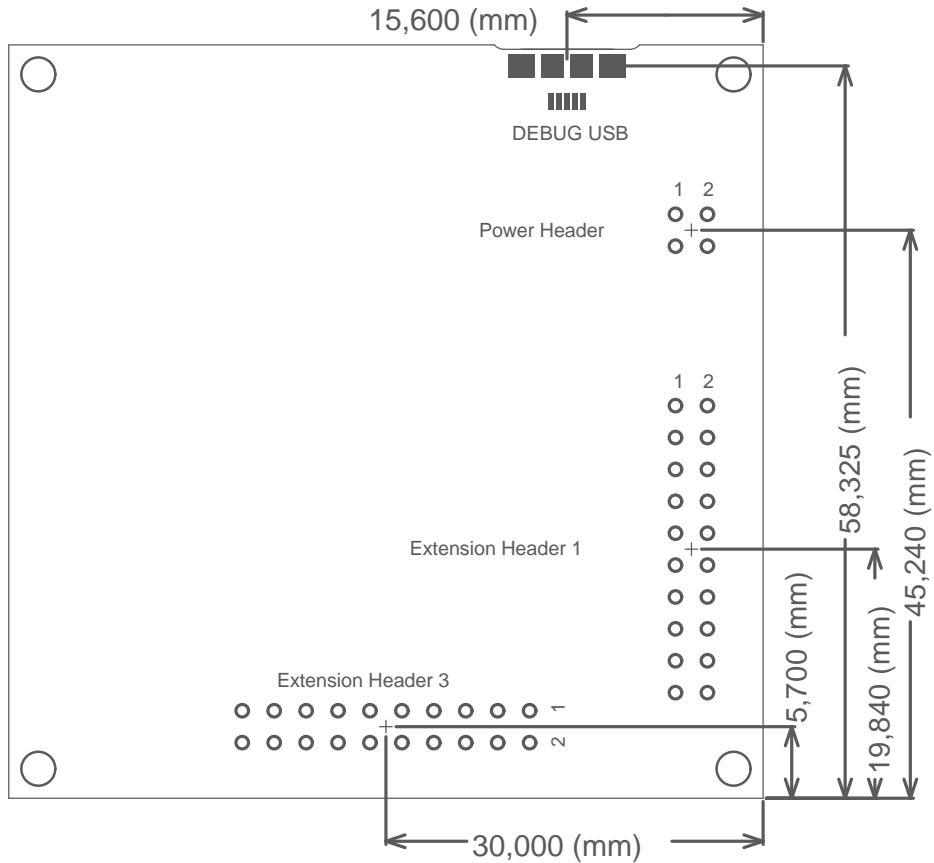
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Mechanical Dimensions



Connector Placement



GND

AVR

MEASURE

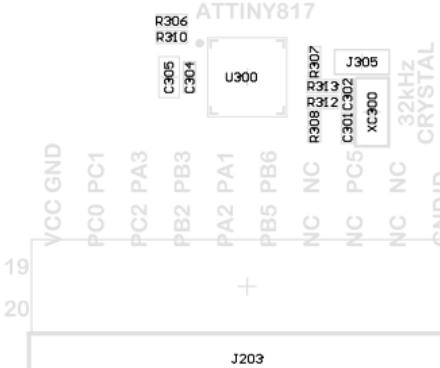
BYPASS

CURRENT
MEASUREMENT

QT BTN 1

QT BTN 2

ATTINY817 X PLAINED PRO



GND

GND

AVR

MEASURE

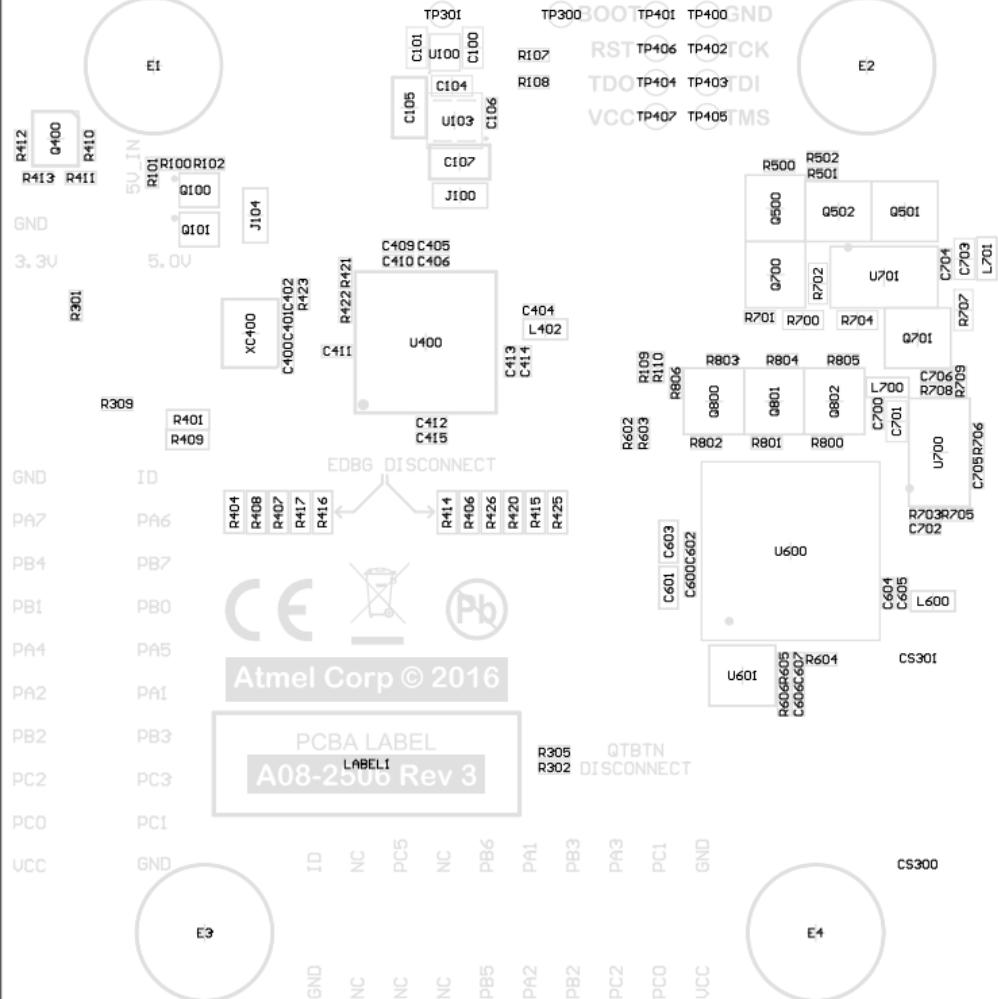
BYPASS

CURRENT
MEASUREMENT

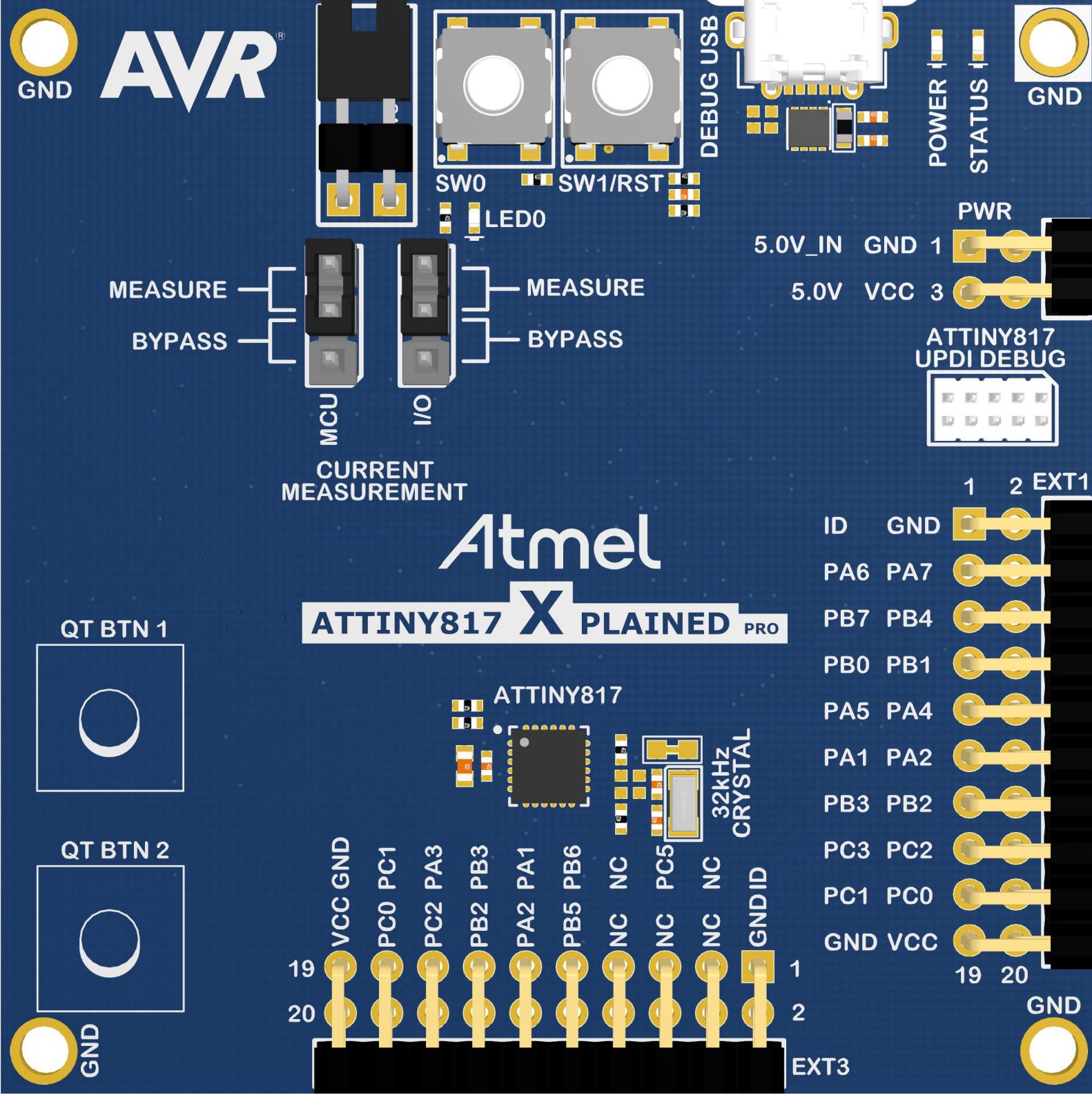
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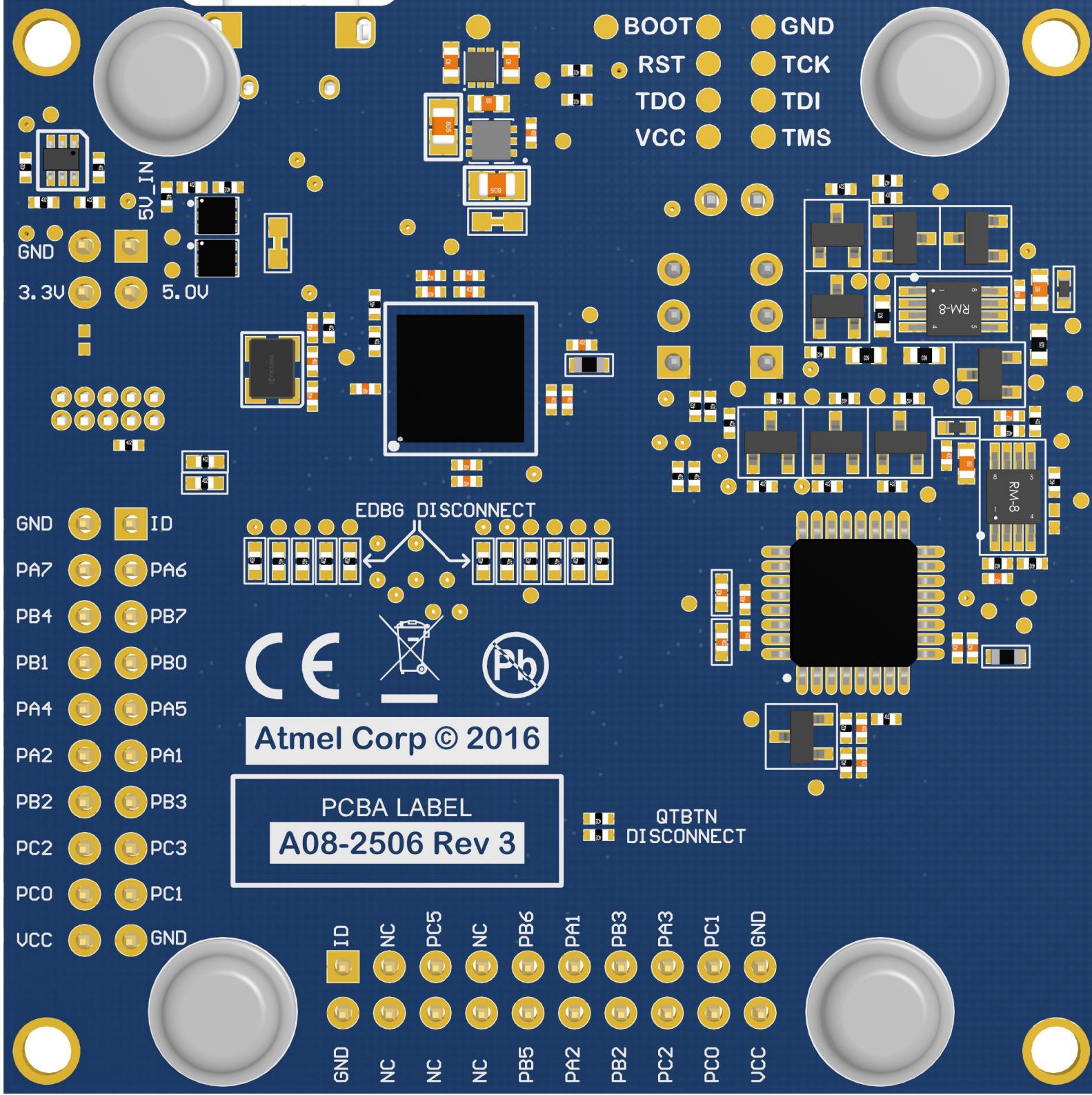
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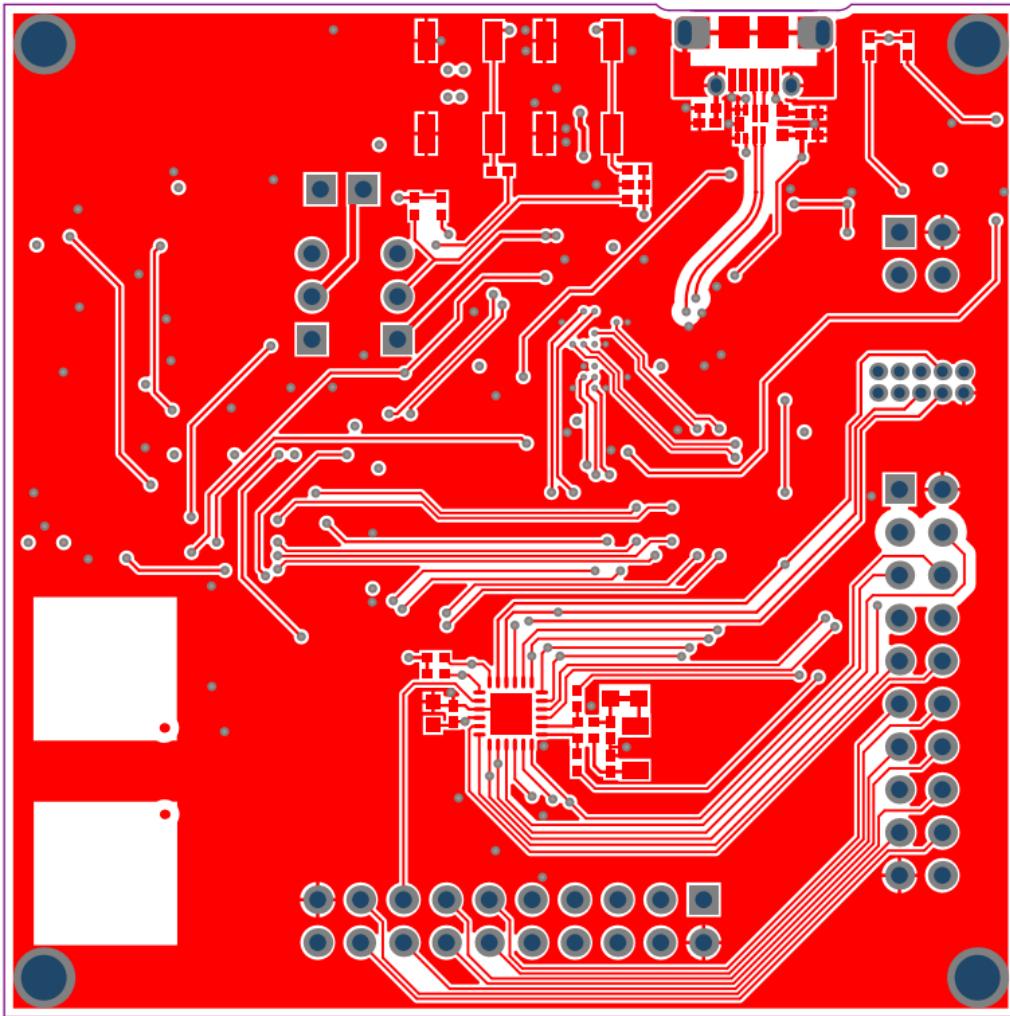
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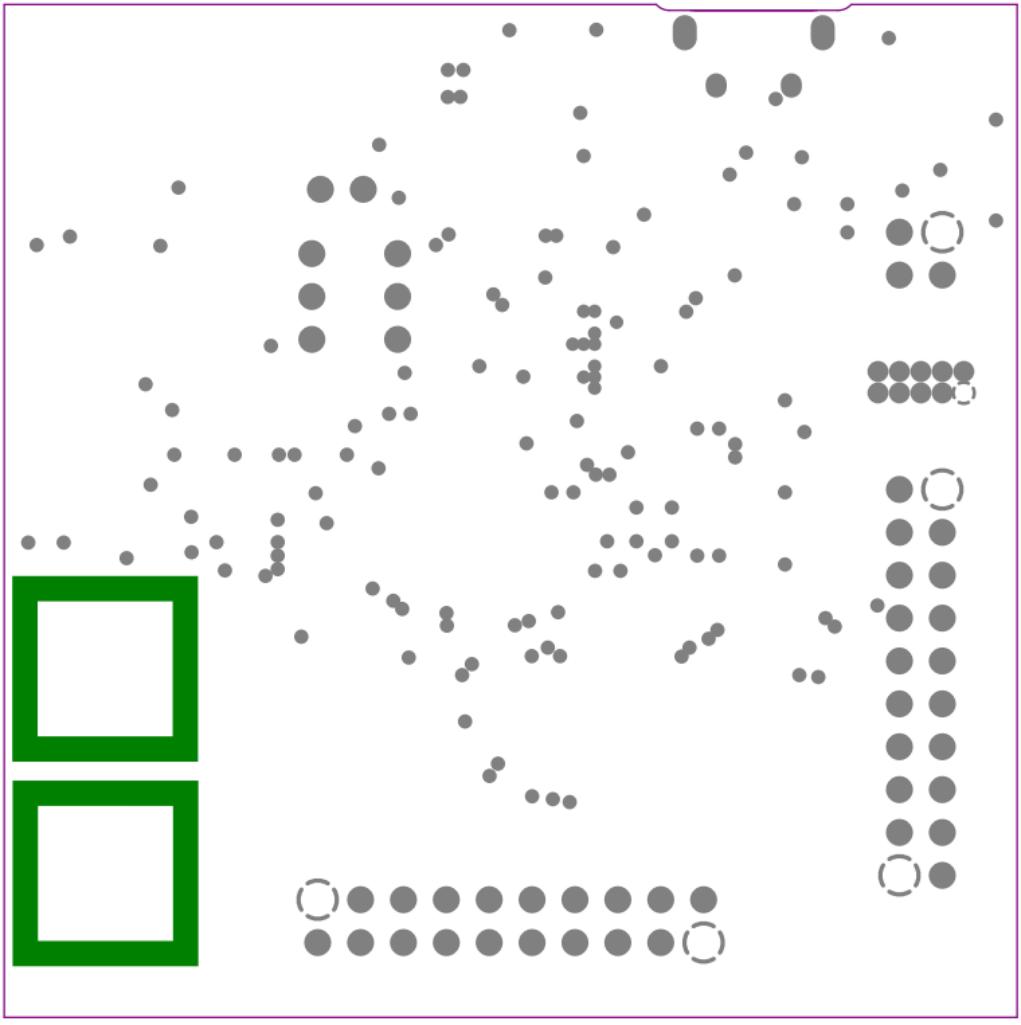


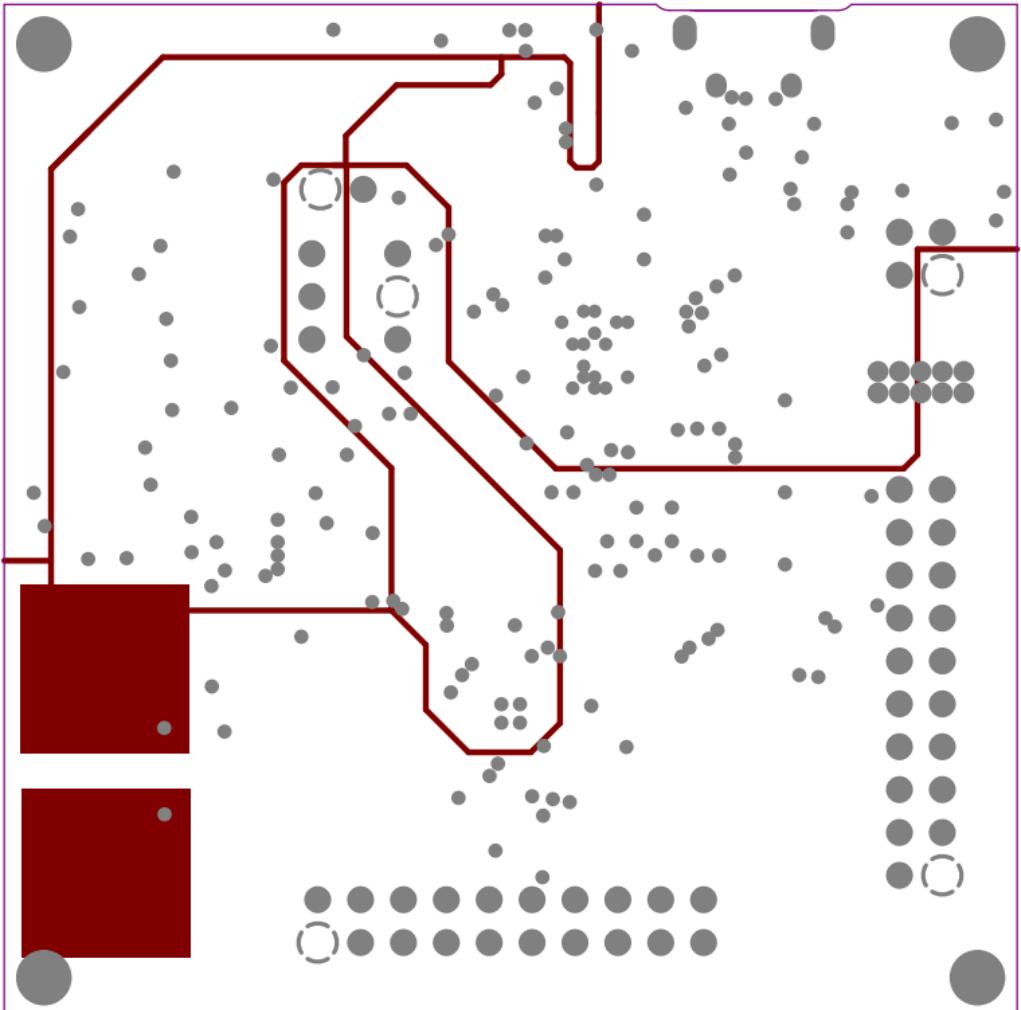
 AVR[®]

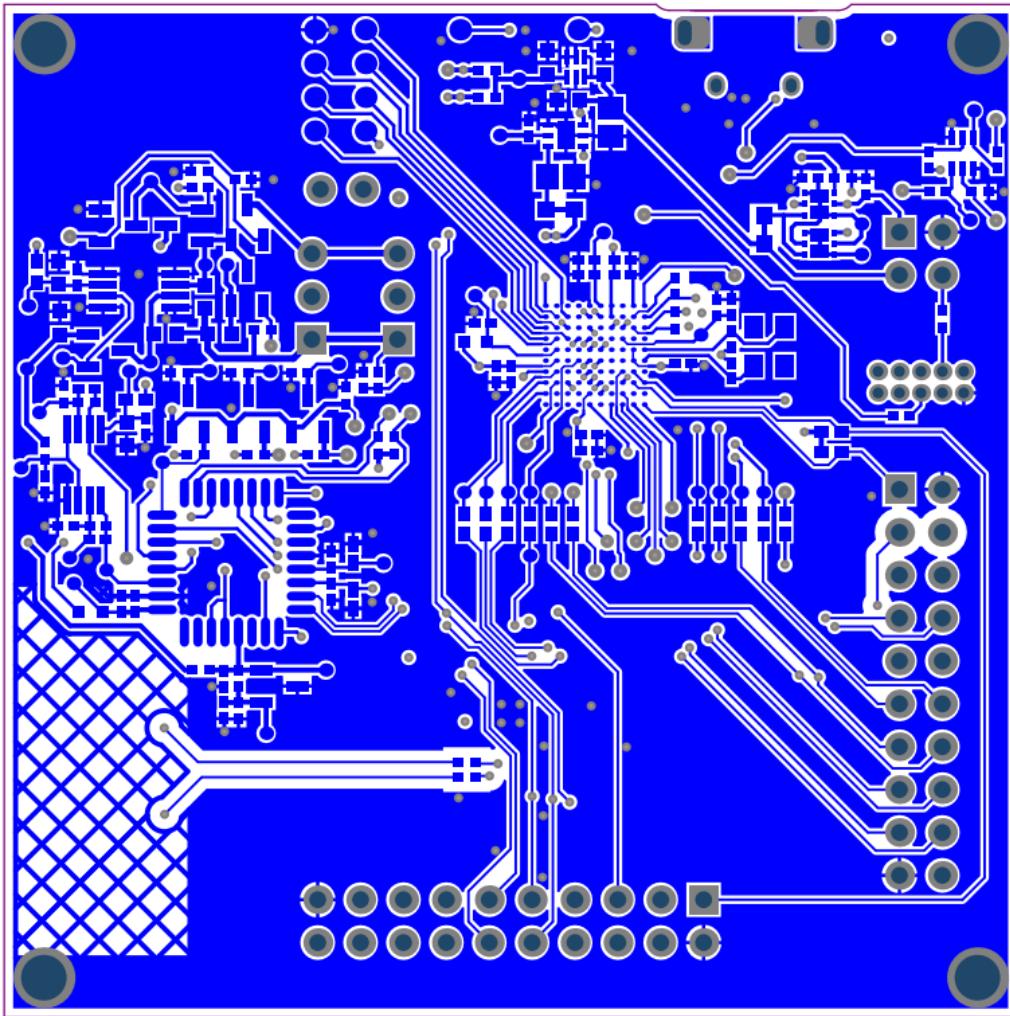












Component list

Top Level Schematics

| Source Data From: | Tiny817_Xplained_Pro.PPrjPCB |
|-------------------|------------------------------|
| Project: | Tiny817_Xplained_Pro.PPrjPCB |
| Variant: | Default_assembly |

| Report Date: | 05.10.2016 | 16:04:53 |
|--------------|------------|----------|
| Print Date: | 05.10.2016 | 16:04:22 |



| Fitted | Designator | Quantity | Value | Manufacturer | MPN | Description |
|------------|--|----------|--|------------------------------------|------------------------|---|
| Fitted | C100, C101, C104, C305, C701, C703 | 6 | 4.7uF | WALSIN Technology Corporation | 0603X475K100CT | Ceramic capacitor, SMD 0603, X5R, 10V, 10% (d31036) |
| Fitted | C105, C107 | 2 | 22u/10V | tdk | C2012X5R1A226M0.85 | Ceramic capacitor, SMD 0805, X5R, 10V, ±20% |
| Fitted | C106 | 1 | 10n | YAGEO CORP | CC0402KRX7R8BB103 | Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% |
| Fitted | C301, C302 | 2 | 13pF | Murata | GRM155S1C1H130UA01D | Ceramic capacitor, SMD 0402, NP0, 50V, +/-5% |
| Fitted | C303 | 1 | 4.7n | PHYCOMP | 2238 587 15632 | Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% (de35287) |
| Fitted | C304, C404, C410, C411, C412, C413, C600, C602, C604, C607, C700, C704 | 12 | 100n | Kemet | C0402C104K4RACTU | Ceramic capacitor, SMD 0402, X7R, 16V, +/-10% |
| Fitted | C400, C401 | 2 | 15p | AVX | 04025A150JAT2A | Ceramic capacitor, SMD 0402, NP0, 50V, +/-5% |
| Fitted | C402 | 1 | 10p | AVX | 04025A100JAT2A | Ceramic capacitor, SMD 0402, NP0, 50V, +/-5% |
| Fitted | C405, C409, C414, C415 | 4 | 2.2uF | Kemet | 0402C225M9PAC | Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20% |
| Fitted | C406, C407, C408, C606 | 4 | 1 nF COG | Murata | GRM155S1C1H102JA01D | Ceramic capacitor, SMD 0402, NP0, 50V, +/-5% |
| Fitted | C601, C603 | 2 | 1u | Kemet | 0402C105K9PAC | Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-10% (de26942) |
| Fitted | C605 | 1 | 33n | Murata | GRM155R71E33KA88D | Ceramic capacitor, SMD 0402, X7R, 25V, ±10% |
| Fitted | C702, C706 | 2 | 150p | YAGEO CORP | CC0402KRX7R9BB151 | Ceramic capacitor, SMD 0402, X7R, 50V, +/-10% |
| Fitted | D301, D401 | 2 | SML-P11YT | ROHM | SML-P11YT-T86 | LED, SMD 0402, Yellow, Wave length=586nm, Thrucl @ (1mA, 1.9V) |
| Fitted | D400 | 1 | SML-P11MT | ROHM | SML-P11MT-T86 | LED, SMD 0402, Green, Wave length=563nm, Thrucl @ (1mA, 1.9V) |
| Fitted | D402 | 1 | EM2121MTTAG | ON Semiconductor | EM2121MTTAG | EM2121, SZEM2121 Single Pair Common Mode Filter with ESD Protection |
| Fitted | E1, E2, E3, E4 | 4 | SJ-5076 | | SJ-5076 | 2.8mm adhesive feet, diam 8.0mm |
| Fitted | FIXTURE1 | 1 | Xplained PRO MCU board | Jupiter Test Fixture | ESCATEC | Xplained PRO MCU board Jupiter Test Fixture |
| Fitted | FW1 | 1 | EDBG secured firm ware | ATMEL | | EDBG secured firm are |
| Fitted | J101, J102 | 2 | HMTSW-103-23-F-S-237 | SAMTEC | HMTSW-103-23-F-S-237 | 1x3 pin header, 2.54mm pitch, Pin-in-Paste THM, 1mm hole |
| Fitted | J103 | 1 | Pin header 1x2 right angle | Pro-data International Corp | 2213R-2G | 1x2 pin header, right angle, 2.54 mm pitch, through-hole |
| Fitted | J200, J203 | 2 | P101-210RGF-139-ND | Pro-data International Corp | P101-210RGF-139-ND | Pin header, 2x10, Right Angle, 2.54mm, THT, Pin In Paste |
| Fitted | J202 | 1 | P101-2*02RGF-139-ND | Pro-data International Corp | P101-2*02RGF-139-ND | Pin header, 2x2, Right Angle, 2.54mm, THT, Pin In Paste |
| Fitted | J205 | 1 | PIN HEADER 2x5 | Garry | 176-2-010-0-T-X50-0730 | 2x5 pin header, 1.27mm pitch, THT |
| Fitted | J400 | 1 | ZX62D-AB-5P8 | HIROSE | ZX62D-AB-5P8(30) | Micro USB AB Connector, Standard SMT + DIP |
| Fitted | JS100, JS101, JS102 | 3 | SNT-100-BK-G | SAMTEC | SNT-100-BK-G | Jumper cap for 2.54mm pinheader |
| Fitted | L401, L402, L600 | 3 | BLM18PG471SN1 | Murata | BLM18PG471SN1 | SMD RF inductor 0603, Z=470Ohm (@ 100MHz), Max R(d)=0.650hm, Max current=1A |
| Fitted | L700, L701 | 2 | BLM15BB221SN1 | Murata | BLM15BB221SN1 | SMD RF inductor 0402, Z=220Ohm (@100MHz), Max R(d)=0.800hm, Max current=200mA |
| Fitted | LABEL1 | 1 | Label PCB | ACT Logmark AS | 505462 | PCBA identification label PP Top White Gloss |
| Fitted | PCB1 | 1 | ATtiny817 Xplained Pro PCB documentation | | | ATtiny807 Xplained Pro PCB documentation |
| Fitted | PCBADOC1 | 1 | A09-2654 PCB Files | | | ATtiny807 Xplained Pro PCB documentation |
| Fitted | Q100, Q101 | 2 | PMDPB55XP | NXP | PMDPB55XP | Dual P-Channel MOSFET, -20V, RDS(ON) < 55 mOhm @ -3.4A @ -4.5V |
| Fitted | Q400 | 1 | 2N7002DW | Fairchild | 2N7002DW | Dual N-CHANNEL MOSFET, 60V, 115m cont.RDS(ON) > 7.5 Ohm @ 50mA @ 5V, SOT-363 |
| Fitted | Q500 | 1 | PMV/48XP | NXP | PMV/48XP/215 | P-Channel Digital FET, -30V, -3.5A continuous, -14A Peak, RDS(ON)=48mOhm@VGS=-4.5V, RDS(ON)=7.1mOhm@VGS=2.5V, VGS(th)<1.25V |
| Fitted | Q501, Q701 | 2 | BSS138N | Infineon | BSS138N | Low leakage N-Channel MOSFET, 60V, 0.23A continuous, 0.92A Peak, RDS(ON) = 3.50ohm@VGS=4.5V, VGS(th)<1.4V |
| Fitted | Q502, Q800, Q801, Q802 | 4 | BSH201 | NXP | BSH201,215 | P-Channel Digital FET, -60V, -0.3A continuous, -1.2A Peak, RDS(ON)=2.5@VGS=-10V, RDS(ON)=<5 ohm @VGS=2.5V, VGS(th)<1.9V |
| Fitted | Q700 | 1 | IRLM640402 | International Rectifier | IRLM6402PBF | Pa-ch. MOSFET, -30V, -3.7A continuous,RDS(ON)=0.05Ohm@VGS=4.5V, RDS(ON)=0.08Ohm@VGS=2.5V |
| Fitted | R100, R410, R413 | 3 | 1M | ASJ | CR10-1004-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R101, R102, R304, R500, R501, R701, R800, R901, R802 | 9 | 100k | ASJ | CR10-1003-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R107, R108, R307, R308, R309, R706 | 6 | 0R | (n/a) | RMC0402ZT0R00 | RES 0.0 OHM 1/16W 0402 SMD |
| Fitted | R109, R110, R805 | 3 | 47k | KOA | RK73H1ETP4702F | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R300, R311, R421, R422, R803 | 5 | 39R | ASJ | CR10-39R-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R302, R305, R703, R708, R709 | 5 | 10k | vishay | CRCW040210K0FKED | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R303, R411, R412 | 3 | 1k | ASJ | CR10-1001-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R306, R310, R602, R603 | 4 | 4.7K | PHYCOMP | 2322 706 74702L | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R401, R409 | 2 | 1k | ASJ | CR10-1001-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R404, R406, R407, R408, R415, R425, R426 | 7 | 0R | (n/a) | RMC0402ZT0R00 | RES 0.0 OHM 1/16W 0402 SMD |
| Fitted | R414, R416, R417, R420 | 4 | 330R | ASJ | CR10-330R-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R423 | 1 | 6.81k | vishay | CRCW04026K81FKED | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R502, R806 | 2 | 4.7M | YAGEO CORP | RC0402FR-074M/L | Thick film SMD 0402 1/16W 1% |
| Fitted | R604 | 1 | 2k | | | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R605 | 1 | 33k | ASJ | CR10-3302-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R606 | 1 | 39k | ASJ | CR10-3902-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R700 | 1 | 0.1R | vishay | WSL0603R1000FEA | WSL0603R1000FEA, metal strip resistor, 0.1 Ohm ± 1%, 0603 SMD, 1/10W, TEMPOCO +75 ppm/°C |
| Fitted | R702, R704 | 2 | 100R | Panasonic | ERA3YEB101V | ERA-3YEB101V, metal film, 100R ±0.1%, resistor in 0603 at 100mW, TEMPOCO ±25ppm/°C, Max V=75V |
| Fitted | R705 | 1 | 680R | ASJ | CR10-6800-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R707 | 1 | 2k | YAGEO CORP | RC0603FR-072K/L | Thick film resistor, SMD 0603, 1/10W, 1% |
| Fitted | R804 | 1 | 2.2k | ASJ | CR10-2201-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | SW300, SW301 | 2 | SKRAAKE010 | ALPS | SKRAAKE010 | 6.2x6.2 mm SMD tact switch, same as A08-0091 but less force is needed |
| Fitted | TEST1 | 1 | ATtiny817 Xplained Pro test | | | Fixture test for ATtiny807 Xplained Pro |
| Fitted | TESTDOC1 | 1 | ATtiny817 Xplained Pro Test Instructions | | | ATtiny807 Xplained Pro Test Instructions |
| Fitted | U100 | 1 | TLV7003S3DSE | Texas Instruments | TLV7003S3DSE | LDO, 200 mA, Iq=31 uA, Vdo=250mV, Vout= 2V to 5.5V, SON-6 package |
| Fitted | U103 | 1 | TPS73533DRV | Texas Instruments | TPS73533DRV | Low noise LDO, 500 mA, Vout=3.3V, 2% accuracy, 0.46uA, noise=28uVRms, VIN= 2.7V to 6.5V, Vdo=280mV stable with low ESR capacitor |
| Fitted | U300 | 1 | ATtiny817-MFR | ATMEL | ATTINY817-MFR | Atmel 8-bit RISC MCU |
| Fitted | U400 | 1 | AT32UC3A4256J-C1UR | ATMEL | AT32UC3A4256J-C1UR | AVR 32-bit RISC MCU |
| Fitted | U600 | 1 | SAMD20E17A-AUT | ATMEL | ATSM20E17A-AUT | Atmel 32bit RISC MCU 32 pin |
| Fitted | U601 | 1 | LM4041CEM3-ADJ/NOPB | Texas Instruments | LM4041CEM3-ADJ/NOPB | Adjustable shunt voltage regulator, 1.24 to 10V out |
| Fitted | U700 | 1 | AD8656 | Analog Devices | AD8656ARMZ | AD8656, dual low noise precision OpAmp, rail-to-rail, low offset 250uV, GBP 28 MHz, 8MSOP |
| Fitted | U701 | 1 | ADA4528-1 | Analog Devices | ADA4528-1ARMZ | Precision OpAmp, Zero-Drift 0.015uV/K, ultra low noise 5.6nV/sqr(fz), Vo=2uV, GBW=4MHz, single supply 2.2V to 5.5V or dual supply +V to +2.75V, rail to rail, unity gain stable |
| Fitted | XC300 | 1 | 32.768kHz | Kyocera Crystal Device Corporation | ST3215SB32768E0HPWB | Kyocera ST3215SB32768E0HPWB, 32.768kHz, 9pF, SMD tuning fork crystal |
| Fitted | XC400 | 1 | 12.00MHz | Kyocera Crystal Device Corporation | CX3225GB12000HKPSC1 | Kyocera CX3225GB12000HKPSC1, 12MHz, 12pF, SMD crystal |
| Not Fitted | C403 | 0 | 4.7n | PHYCOMP | 2238 587 15632 | Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% |
| Not Fitted | C705 | 0 | 1n | YAGEO CORP | CC0402KRX7R9BB102 | Ceramic capacitor, SMD 0402, X7R, 50V, +/-10% |
| Not Fitted | R301 | 0 | 1k | ASJ | CR10-1001-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Not Fitted | R312, R313 | 0 | 0R | (n/a) | RMC0402ZT0R00 | RES 0.0 OHM 1/16W 0402 SMD |
| Not Fitted | R424 | 0 | 1M | ASJ | CR10-1004-FK | Thick film resistor, SMD 0402, 1/16W, 1% |