

Note:

- 1. Review FILT voltage node and adjust current if needed per ap note AND9315-D.PDF
- 2. Seletec best resitor values after assembly and use one percent resistors to put frequeny at 16 MHz.

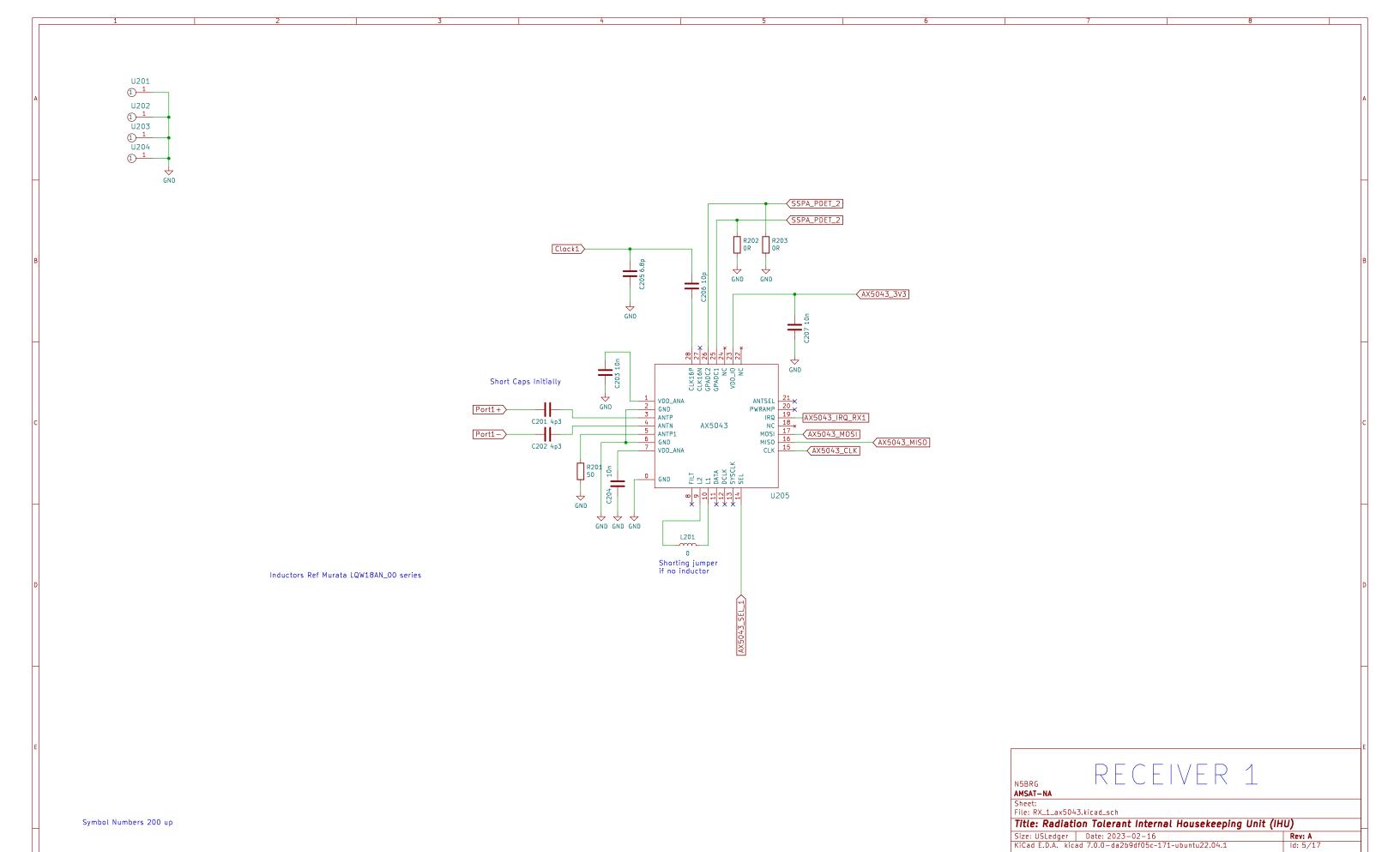
Symbol Numbers 650 up

N5BRG AMSAT-NA

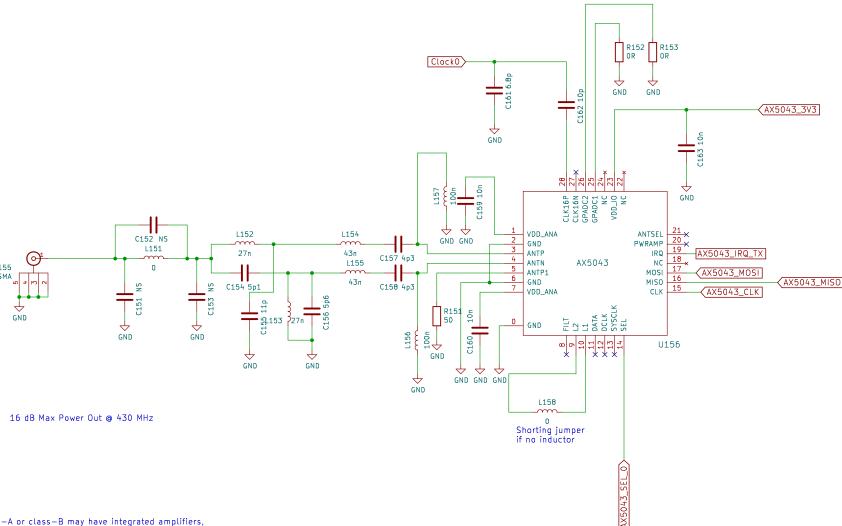
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Title: Radiation Tolerant Internal Housekeeping Unit (IHU)

Size: USLedger | Date: 2023-02-16 KiCad E.D.A. kicad 7.0.0-da2b9df05c-171-ubuntu22.04.1 **Rev: A** Id: 4/17







While radio transceivers using power amplifiers with topologies such as class—A or class—B may have integrated amplifiers, AX5043 utilizes a class—E amplifier. Because of this, high efficiency power output can be achieved, though external components are

AX5043 pins ANTP, ANTN, and ANTP1 are not the PA outputj; rather, they are the transition between the internal switching transistor and the external resonant components. In the various AX5043 reference designs, LC, CC, CT, LT, and CM actually form the amplifier. For this reason, the output impedance of the ANT pins is not relevant to antenna matching. When the class—E power amplifier has been properly designed, the output impedance will be found at the balun (LB, CB) components, and will be 100 ohms differential, and 50 ohms after the balun. Between the balun and the antenna (or SMA port), filtering and Antenna matching networks can be inserted in series with the RF path.

Another important point is that the output impedance of the internal PA transistor also depends on the output power setting.

TRANSMITTER

N5BRG

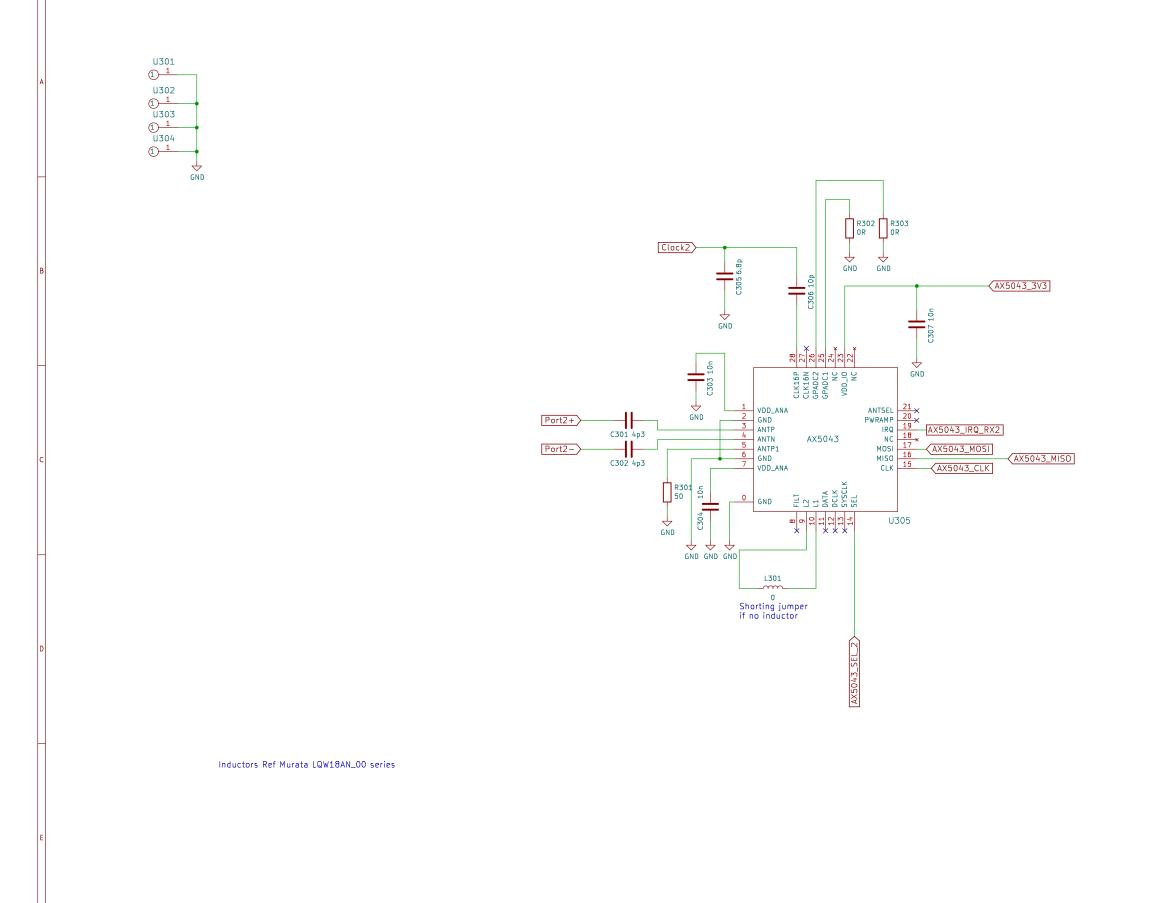
AMSAT-NA

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Title: Radiation Tolerant Internal Housekeeping Unit (IHU)

Size: USLedger | Date: 2023-02-16 KiCad E.D.A. kicad 7.0.0-da2b9df05c-171-ubuntu22.04.1 Rev: A ld: 6/17

Symbol Numbers 150 up



RECEIVER 2

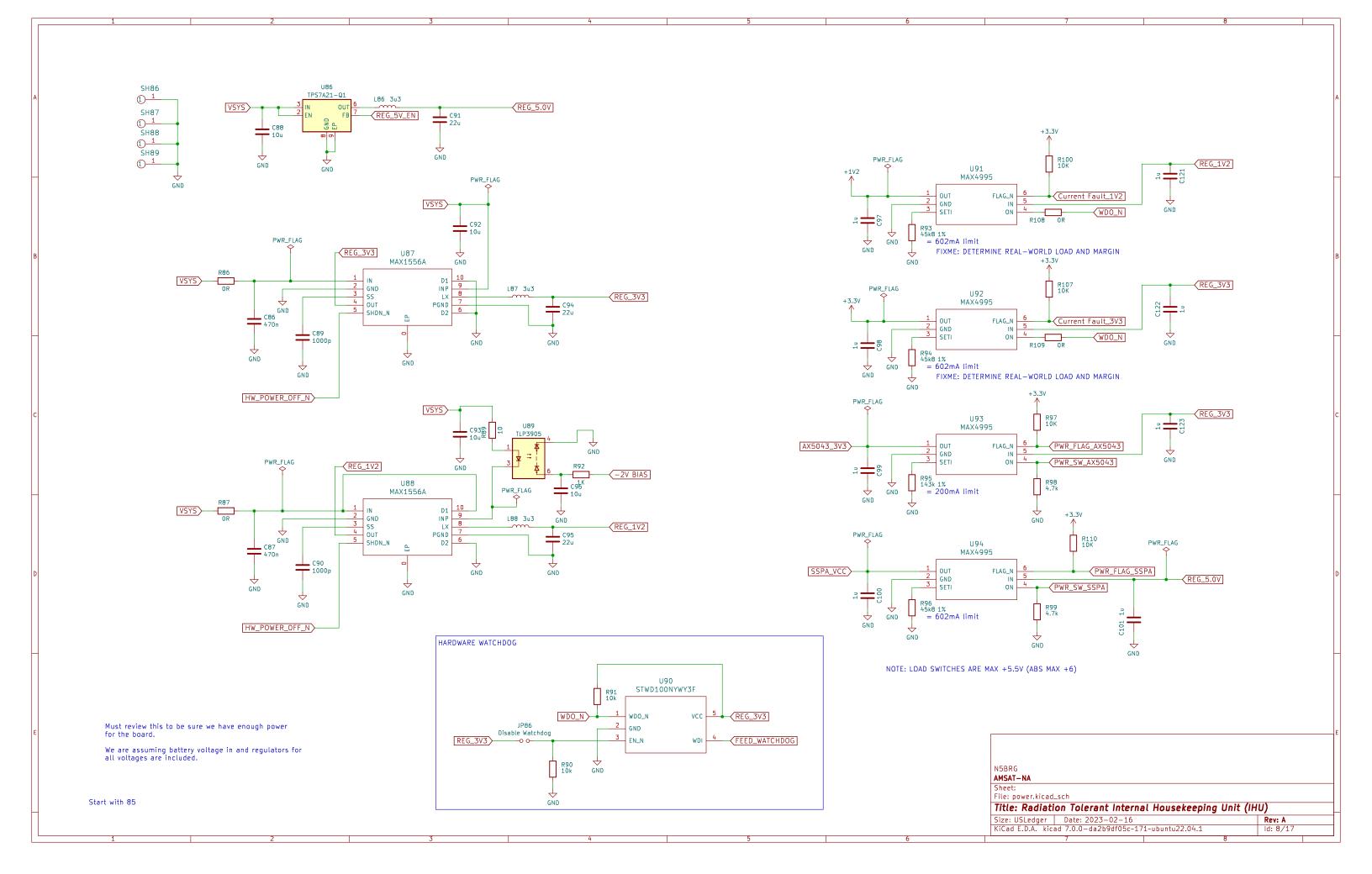
N5BRG AMSAT-NA

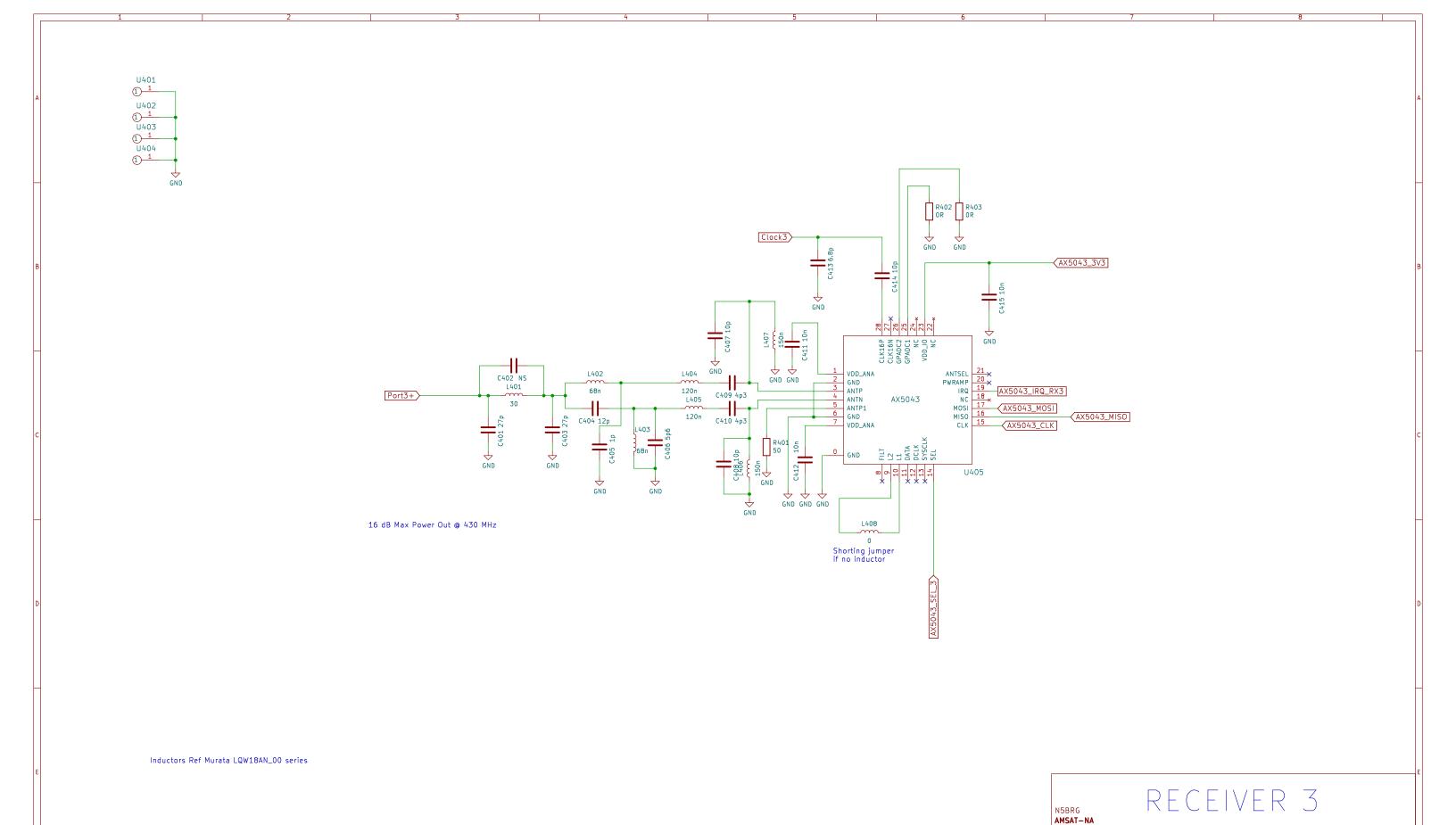
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Title: Radiation Tolerant Internal Housekeeping Unit (IHU)

Size: USLedger | Date: 2023-02-16 KiCad E.D.A. kicad 7.0.0-da2b9df05c-171-ubuntu22.04.1 **Rev: A** Id: 7/17

Symbol Numbers 300 up



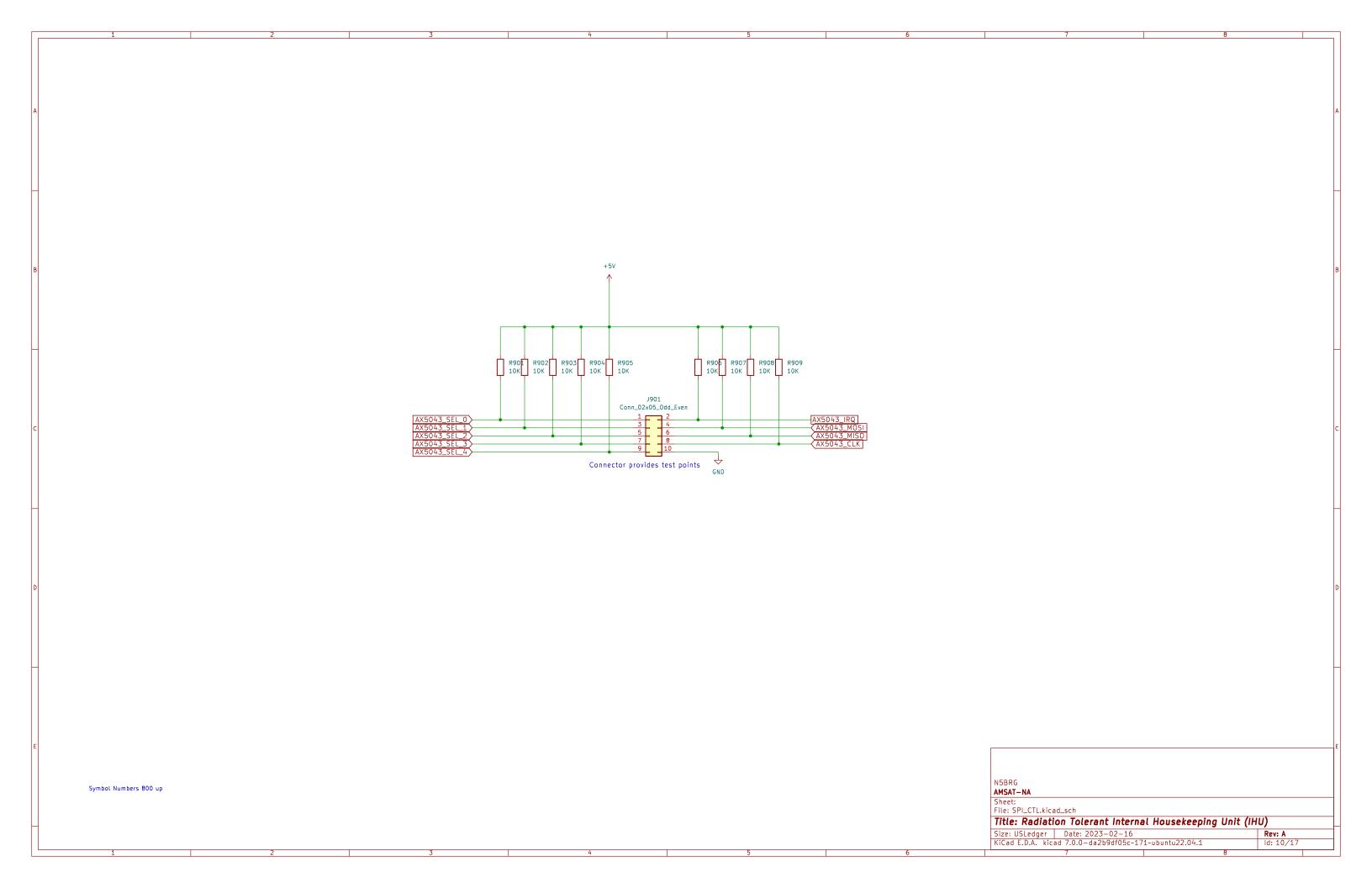


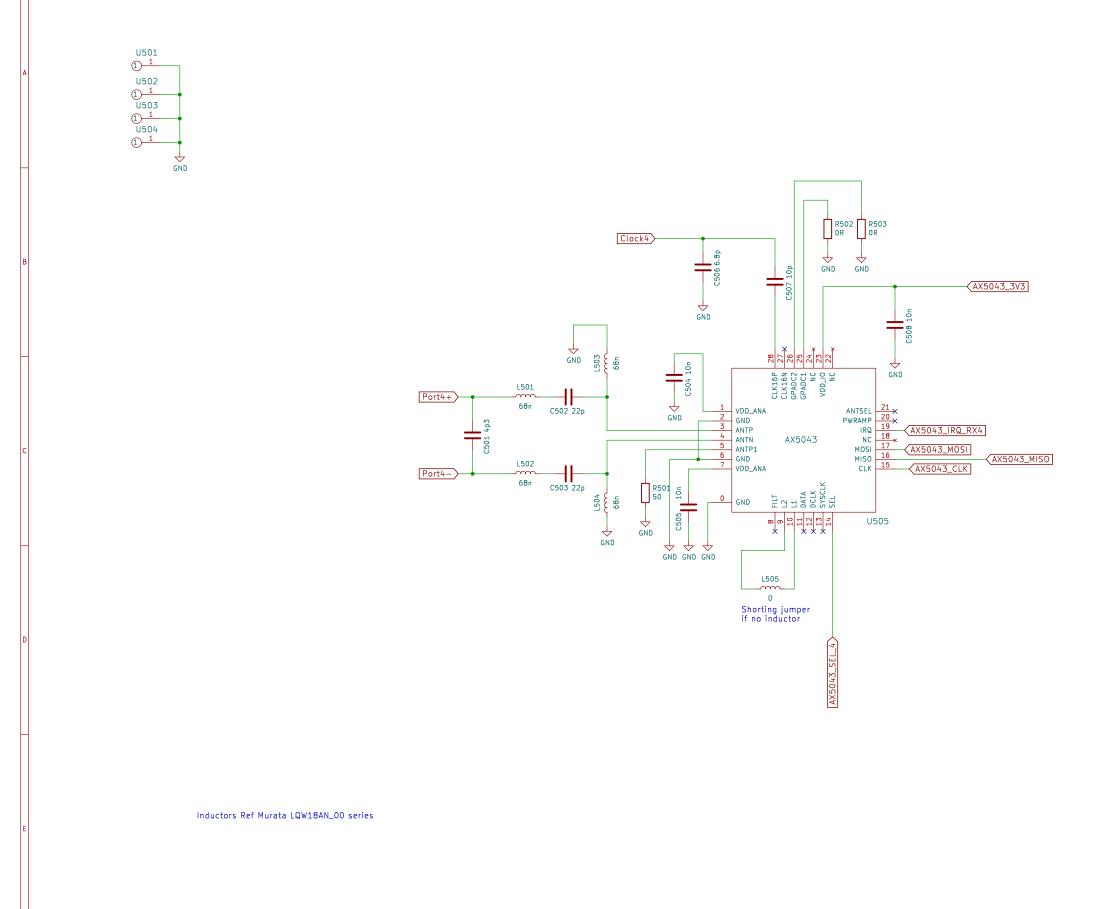
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Title: Radiation Tolerant Internal Housekeeping Unit (IHU)

Size: USLedger | Date: 2023-02-16 | Rev: A

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RECEIVER 4

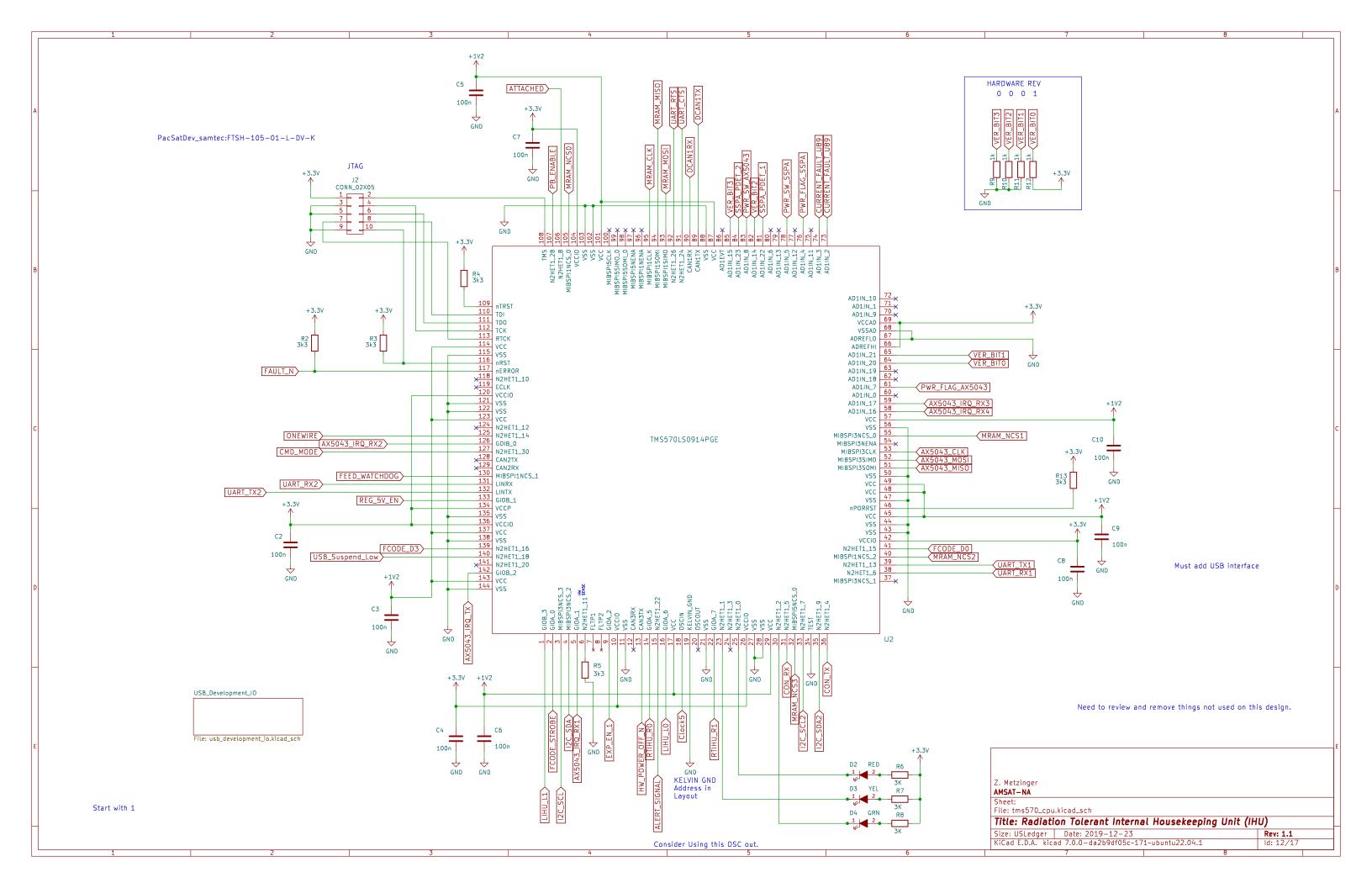
N5BRG AMSAT-NA

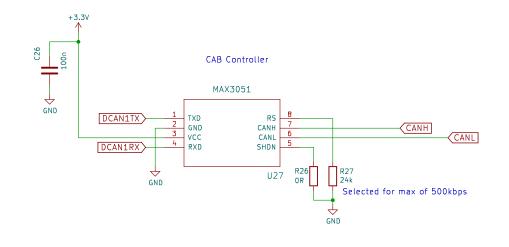
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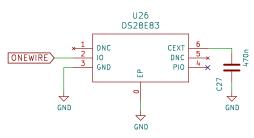
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Symbol Numbers 500 up

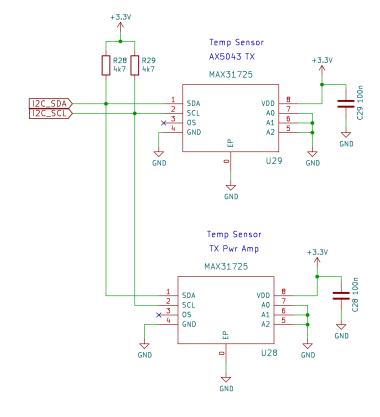




Secure Authenticator



ldd 2.5 uA/600 uA



N5BRG AMSAT-NA

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Title: Radiation Tolerant Internal Housekeeping Unit (IHU)

Size: USLedger | Date: 2023-02-20 KiCad E.D.A. kicad 7.0.0-da2b9df05c-171-ubuntu22.04.1 **Rev: 1.1** Id: 13/17

