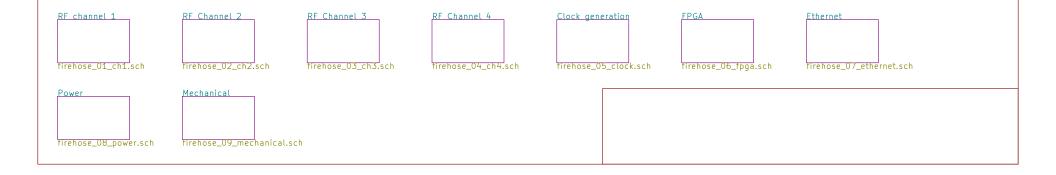
## **GNSS Firehose**

Wideband front end for GPS, GLONASS, Galileo, BeiDou

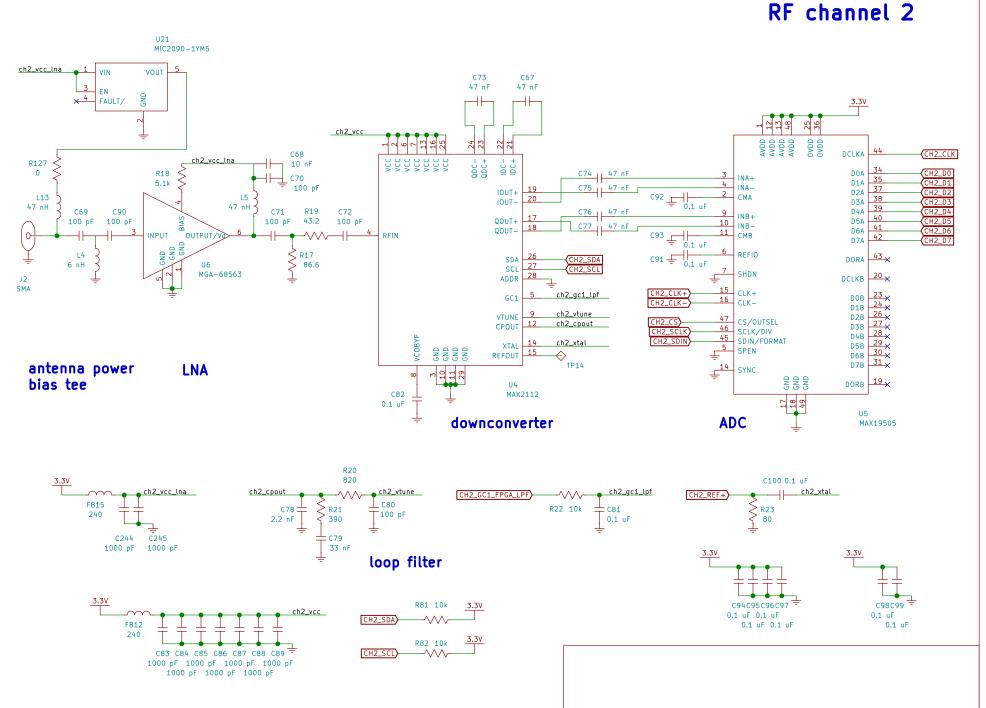
placeholder for block-diagram graphics



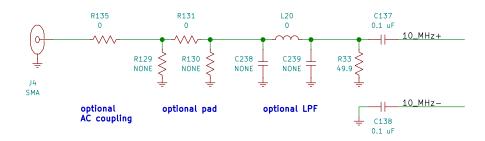
## RF channel 1 U20 MIC2090-1YM5 <u>ch1\_vcc\_lna</u> VOUT C10 C1 47 nF 47 nF × 4 FAULT/ 3.30 ch1\_vcc DCLKA C5 CH1\_CLK ch1\_vcc\_lna R126 10 nF C11 47 nF DOA R2 С7 INA+ 5.1k D1A CH1\_D1 100 pF INA-IOUT+ D2A C29 \_\_\_\_ CMA L12 L3 D3A 38 IOUT-47 nH C6 C8 R3 С9 C13 47 nF D4A CH1\_D4 C27 INB+ CH1\_D5 CH1\_D6 100 pF 100 pF 100 pF 43.2 100 pF QOUT+ 10 INB-D5A C14 47 nF 11 CMB QOUT-D6A INPUT OUTPUT/ RFIN D7A R1 REFIO L2 DORA 43 × C28 🖵 SDA 6 nH 86.6 U3 SCL ADDR 28 DCLKB 20 × MGA-68563 SHDN J1 SMA 15 CLK+ D08 24 × 26 × 27 × 28 × 29 × 29 × 30 × 31 × ch1\_gc1\_lpf GC1 16 CLK-CH1\_CLKch1\_vtune VTUNE 47 CS/OUTSEL CH1\_CS) ch1\_cpout CPOUT 46 SCLK/DIV CH1\_SCLK) 45 SDIN/FORMAT CH1\_SDIN 5 SPEN GND GND GND GND REFOUT 14 SYNC antenna power LNA bias tee DORB 19 X U1 MAX2112 C19 0.1 uF U2 downconverter **ADC** MAX19505 R4 820 C37 0.1 uF ch1\_vcc\_lna ch1\_xtal ch1\_cpout ch1\_vtune ch1\_gc1\_lpf CH1\_GC1\_FPGA\_LPF) CH1\_REF+ ₹ R7 80 FB14 ₹ R5 C17 C15 🛨 R6 10k C18 〒100 pF 240 2.2 nF 0.1 uF C242 C243 C16 1000 pF 1000 pF 33 nF 3.3٧ 3.3٧ loop filter R79 10k C35C36 C31C32C33C34 0.1 uF 0.1 uF 0.1 uF CH1\_SDA) FB11 0.1 uF 0.1 uF 0.1 uF 240 R80 10k C20 C21 C22 C23 C24 C25 C26 **-**^//

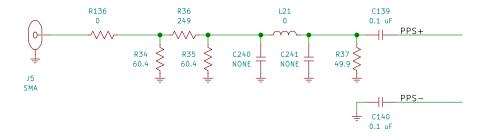
1000 pF 1000 pF 1000 pF 1000 pF 1000 pF 1000 pF 1000 pF

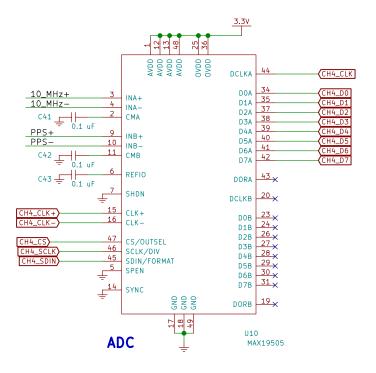
## RF channel 2

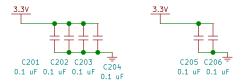


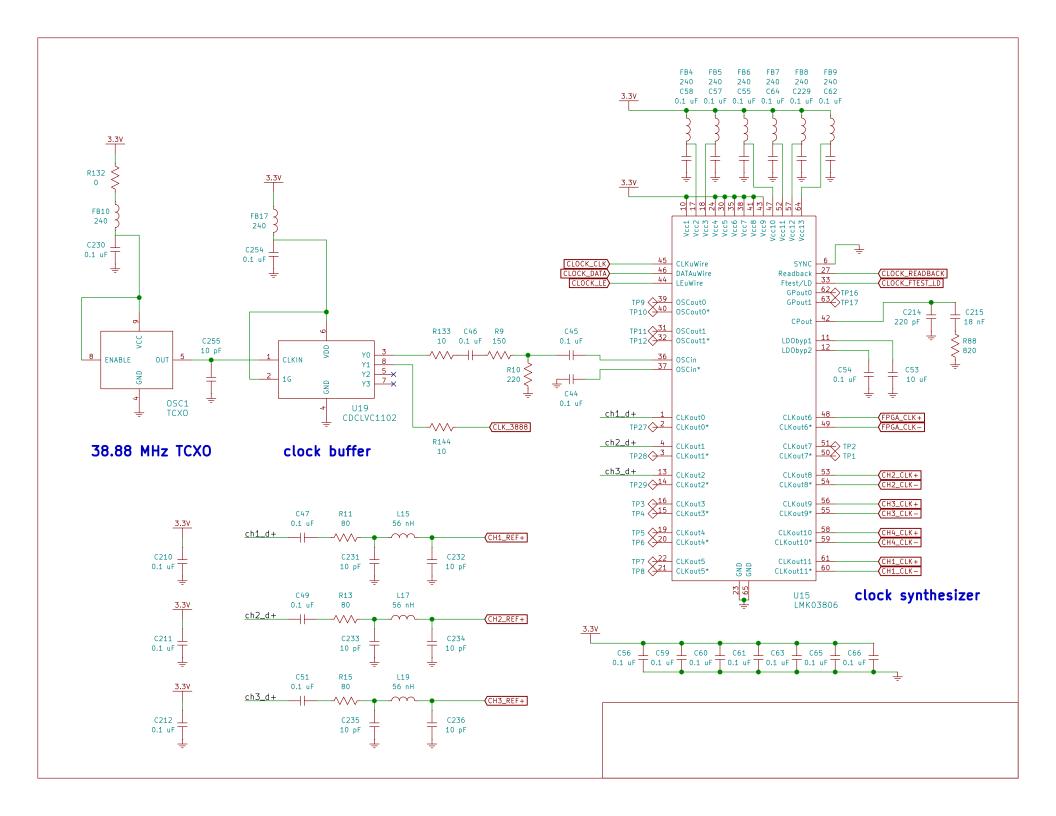
## RF channel 3 U22 MIC2090-1YM5 ch3\_vcc\_lna VOUT C108 C102 47 nF 47 nF ΕN × 4 FAULT/ 3.3٧ \_ch3\_vcc C103 DCLKA CH3\_CLK ch3\_vcc\_lna R128 10 nF C109 47 nF DOA R26 C105 INA+ 5.1k D1A CH3\_D1 C110 100 pF 47 nF INA-C127\_\_\_ IOUT+ D2A CMA L14 L7 D3A 38 IOUT-47 nH C104 C106 R27 C107 C111 47 nF D4A CH3\_D4 C125 INB+ CH3\_D5 CH3\_D6 100 pF 100 pF 100 pF 43.2 100 pF QOUT+ 10 INB-D5A C112 47 nF QOUT-11 CMB D6A INPUT OUTPUT/ RFIN D7A REFIO L6 R25 DORA 43 × C126-SDA 6 nH 86.6 U9 SCL ADDR 28 DCLKB 20 × MGA-68563 SHDN J3 SMA 15 CLK+ D08 24 × 26 × 27 × 28 × 29 × 29 × 30 × 31 × ch3\_gc1\_lpf GC1 16 CLK-CH3\_CLKch3\_vtune VTUNE 47 CS/OUTSEL ch3\_cpout CPOUT 46 SCLK/DIV CH3\_SCLK 45 SDIN/FORMAT VCOBYP CH3\_SDIN SDIN/ SPEN GND GND GND GND REFOUT 14 SYNC antenna power LNA GND bias tee DORB 19 X U7 C117 MAX2112 0.1 uF U8 downconverter **ADC** MAX19505 R28 820 C135 0.1 uF ch3\_vcc\_lna ch3\_gc1\_lpf ch3\_xtal ch3\_cpout CH3\_GC1\_FPGA\_LPF CH3\_REF+ FB16 C115 ₹ R29 ₹ R31 80 R30 10k C116 C113 240 100 pF 2.2 nF 0.1 uF C246 C247 C114 1000 pF 1000 pF 33 nF 3.3٧ 3.3٧ loop filter R83 10k C129 C130 C131 C133 C134 C132 0.1 uF 0.1 uF 0.1 uF 0.1 uF 0.1 uF FB13 240 R84 10k C118C119C120C121C122C123C124 1000 pF 1000 pF 1000 pF 1000 pF 1000 pF 1000 pF 1000 pF

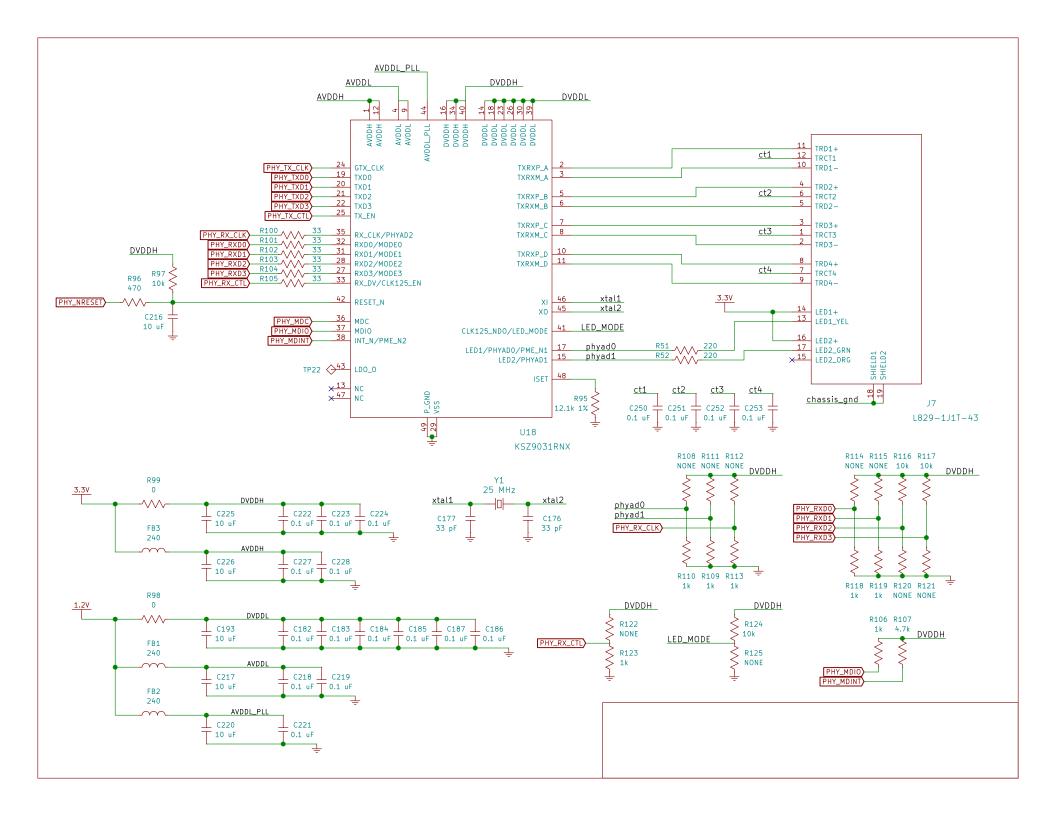


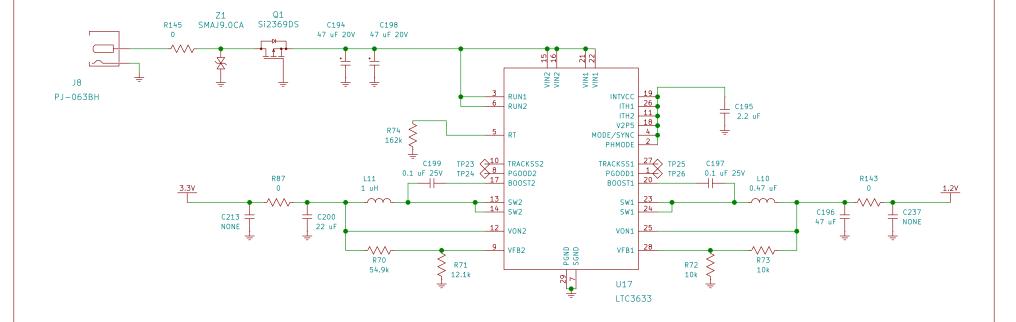




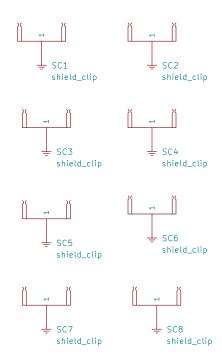












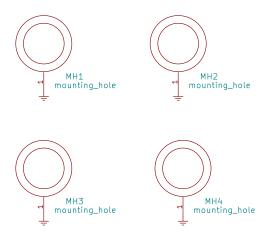
shield clips for RF channels







fiducials



mounting holes

