

Mega65Modular Cellular modem v0.1
gardeners
License: CERN-OHL-S v2
Year: 2025

VFB = 0.5V
R2 <= 100K. 91K recommended

$$R1 = R2 \times (V_{OUT} / V_{FB} - 1)$$

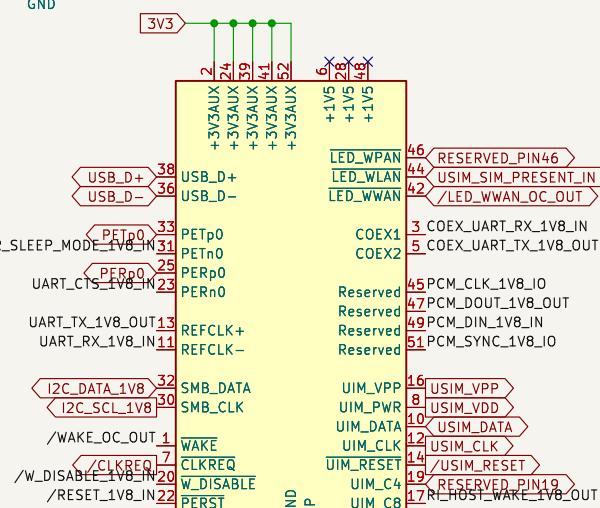
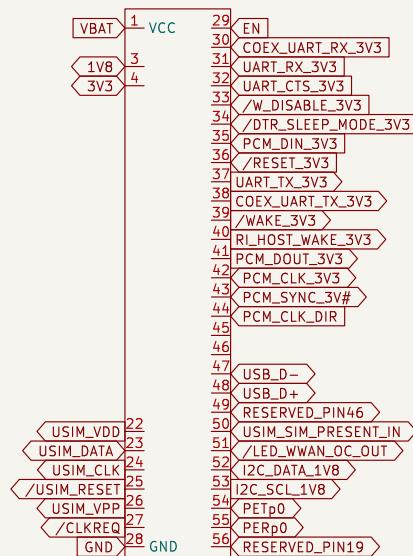
1.8V : $R1 = R2 \times (1.8 / 0.5 - 1) = R2 \times 2.6 = 234$
 3.3V : $R1 = R2 \times (3.3 / 0.5 - 1) = R2 \times 5.6 = 511$

So SELV8 should tie FB to VOUT with a resistor that in parallel to 511K yields 234K.

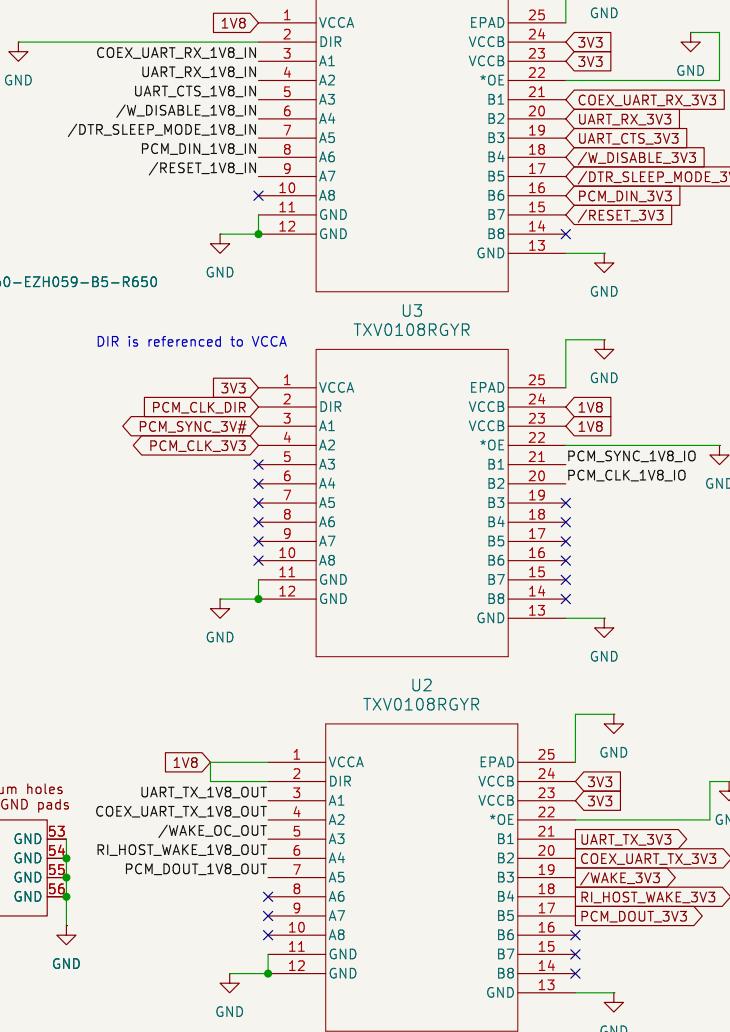
$$\begin{aligned}1/\text{RP} &= 1/R + 1/R \\1/260\text{K} &= 1/R + 1/511\text{K} \\1/R &= 1/234\text{K} - 1/511\text{K} \\1/R &= -1/436\text{K} \\R &= -436\text{K}\end{aligned}$$

Actual values = 90.9K, 510K, so VFB = 0.5V at junction means
 $V_{OUT} = (1 + 510K/90.9K) * 0.5V = 3.305V$
 And with SEL1V8 tied to VOUT:
 $1/R = 1/510K + 1/(432K) = 233.8K$
 $V_{OUT} = (1 + 233.8K/90.9K) * 0.5V = 1.79V$
 Close enough

7 R7 Tie to VOUT to select 1.8V output



High on DIR allows data transmission from A to B while a Low on DIR allows data transmission from B to A when OE is set to Low. When OE is set to High, both Ax and Bx pins will be forced into a high-impedance state.



2020-2021

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Sheet: /

File: cellular-modem.kicad_sch

Title: Megab5Modular Cellula

Size: A4

Bava v0.1

REV. V6