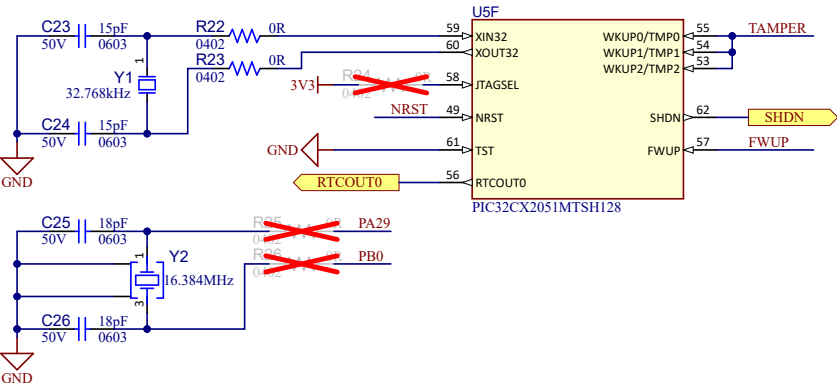




Y1, 32.768kHz Crystal datasheet:

- Accuracy: $\pm 20\text{ppm}$
- max ESR: $70\text{k}\Omega$
- CLcrystal: 9pF
- Cshunt: $0.6/-1.2\text{pF}$

PIC32CXMTSH datasheet:

- CLmpu: 1pF

Cpcb: 1pF (estimate)

$$C_{\text{ext}} = 2 \times (\text{CLcrystal} - \text{CLmpu} - \text{Cpcb}/2) = 2 \times (9 - 1 - 0.5) = 15\text{pF}$$

Y2, 16.384MHz Crystal datasheet:

- Accuracy: $\pm 20\text{ppm}$
- max ESR: 60Ω
- CLcrystal: 10pF
- Cshunt: $< 3\text{pF}$

PIC32CXMTSH datasheet:

- CLmpu: 1pF

Cpcb: 1pF (estimate)

$$C_{\text{ext}} = 2 \times (\text{CLcrystal} - \text{CLmpu} - \text{Cpcb}/2) = 2 \times (10 - 1 - 0.5) = 17\text{pF}$$