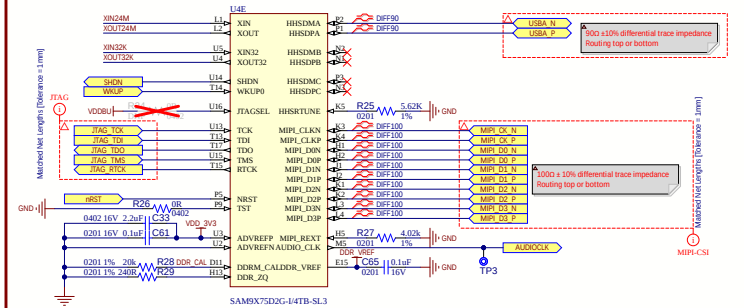
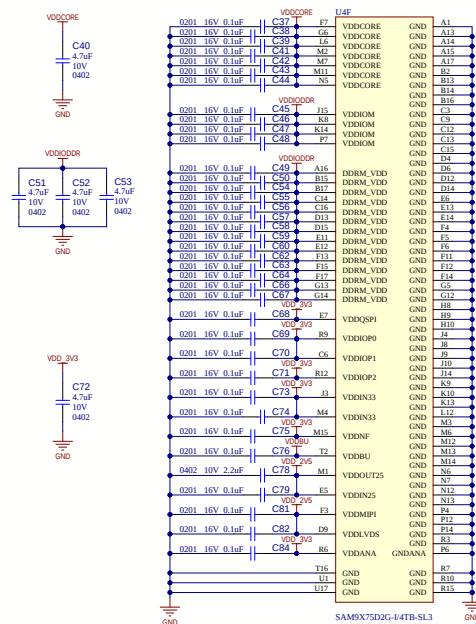


MPU System

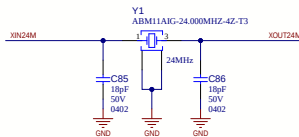
MPU SYSTEM



MPU SYSTEM DECOUPLING



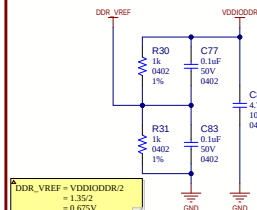
24MHZ CLOCK



Y1, 24MHz Crystal datasheet (ABM11AIG-24.000MHZ-4Z-T3):
 -Frequency: 24.000MHz
 -Accuracy: $\pm 30\text{ppm}$
 -max ESR: 80 Ω
 -CLcrystal: 10pF
 -Cshunt: $< 2\text{pF}$

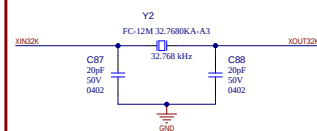
SAM9X75 datasheet:
 -Capac: 1pF
 -f0: 24MHz
 -CLcrystal: between 6-12.5pF
 -Rc: $< 100\Omega$
 -Cshunt: $< 3\text{pF}$
 Cpch: 1pF (estimate)
 CLext = $2 \times (\text{CLcrystal} - \text{Capac} - \text{Cpch}2) = 2 \times (10 - 1 - 0.5) = 17\text{pF} \approx 18\text{pF}$

DDR3 VREF



DDR_VREF = VDDIODR2
 $= 1.352$
 $= 0.675\text{V}$

32KHZ CLOCK



Y2, 32.768kHz Crystal datasheet (FC-12M 32.768K-A3):
 -Accuracy: $\pm 20\text{ppm}$
 -max ESR: 90 Ω
 -CLcrystal: 12.5pF
 -Cshunt: Typ 1.3pF
 -dL: $< 0.5\text{pF}$

SAM9X75 datasheet:
 -Capac: 3pF
 -f0: 32.768kHz
 -CLcrystal: between 6-12.5pF
 -Rc: $< 90\Omega$
 -Cshunt: between 0.6-2pF
 -Pin min 0.2uW
 Cpch: 1pF (estimate)
 CLext32K = $2 \times (\text{CLcrystal} - \text{Capac} - \text{Cpch}2) = 2 \times (12.5 - 2 - 0.5) = 20\text{pF}$

Project Owner:

178352

PCB Layout Contact:

178352

Part Number:

02-01799

Sheet Title

MPU System

Size

A3

SCH #

02-01799

File #

MPU-System-SubDoc

Project Title

SAM9X75 Curiosity Hybrid Evaluation Board

Version

PT4233H03

Rev

2

Date

6 Jul 2026

Rev

2

Sheet

4 of 14

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