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Thread ID: 1179217

Account: TI SCINTL (ELIM)

Region: SHA

Company: Texas Instruments

Thread Status (Internal only)

Waiting for Customer ▼

Priority

Normal ▼

Responsible Organization

--[PROCESSORS] SITARA MCU ▼

Assign

e-friedel@ti.com

Email addresses entered above will receive a one-time email notifying them of assignment to this thread **and** will be automatically email subscribed to all subsequent replies.

Notify

frank-livingston@ti.com

Email addresses/lists entered above will receive a one-time email notifying them of this thread.

Notes:

[FL 12-12-22] Assigning ti Erik per expertise matrix (PRU-ICSS,HW)

Submit Click "Submit" button to save any changes above.

AM2432: PRU used for eCAP and eQEP



Offline [Linda Zhan...](#) *Expert 4280 points*
192.163.15.7 Texas Instruments

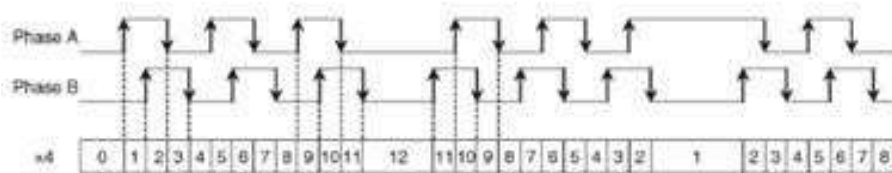
Part Number: [AM2432](#)

Other Parts Discussed in Thread: [AM2431](#)

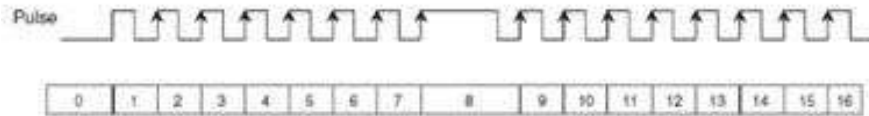
Hello Champs,

Customer is asking whether AM243x PRU can realize 1 eQEP and 3 eCAP at the same time or not.

For eQEP, it should support four-fold 50KHz:



For eCAP, it's 200KHz:



Would you please help? Thanks!

Best Regards,

Linda

[10 days ago](#)



Online [Erik Friedel](#) 192.91.75.12 9 days ago

Hello Linda,

There are two PRU_ICSSG's within the AM243x and each PRU_ICSSG has a single eCAP module.

There are three eCAP modules at the SoC level for the ALV package of the AM243x (two for ALX).

There is not a dedicated eQEP module as a part of the PRU_ICSSG.

[TI_Intellectual](#) 1235 points

Is there a specific need for the customer to emulate eQEP with PRU Firmware? If so, there would need to be a software effort to emulate eQEP. However, There is an SoC level eQEP module. And so, there is the ability to have three eCAP and one eQEP at the SoC level without using the PRU_ICSSG. Is there a specific reason that they would like to use the PRU?

Regards,

Erik



Offline [Linda Zhang84708](#) 192.163.15.7 8 days ago in reply to [Erik Friedel](#)

[TI_Expert](#) 4280 points

Hello Erik,

Thank you for your reply.

Let me update customer's requirement: they need to realize total 4 eQEP (four-fold 50KHz) and 10 eCAP (100KHz) at the same time on AM2431.

Would you please help how to do? Thanks!

Best Regards,

Linda



Online [Erik Friedel](#) 192.91.75.30 7 days ago in reply to [Linda Zhang84708](#)

[TI_Intellectual](#) 1235 points

Hello Linda,

The AM243x only has the 3x eCAP modules (SoC) + 2 eCAP (one per PRU-ICSSG) modules and 3x eQEP modules. The AM263x should be considered for this application as it has 10x eCAP (SoC) + 1 eCAP (PRU-ICSS) and 3x eQEP modules. Again, this is not enough eQEP modules but would satisfy the 10x eCAP requirement.

Regards,

Erik



Offline [Linda Zhang84708](#) 192.163.15.6 7 days ago in reply to [Erik Friedel](#)

[TI_Expert](#) 4280 points

Hello Erik,

Thank you for your suggestion.

For AM263x, is it possible to use PRU as one more eQEP? Would you please help again? Thanks!

Best Regards,

Linda



Online [Erik Friedel](#) 192.91.75.29 7 days ago in reply to [Linda Zhang84708](#)

[TI_Intellectual](#) 1235 points

Hello Linda,

It is possible to emulate an eQEP instance using the PRU-ICSS but, as I said earlier, it would require a significant software effort. We currently do not have any example code for emulating eQEP using the PRU-ICSS.

Regards,

Erik

[Previewing Staged Changes](#)