MSPM0 EVENT module introduction

—— MSPM0 peripheral training series

TEXAS INSTRUMENTS
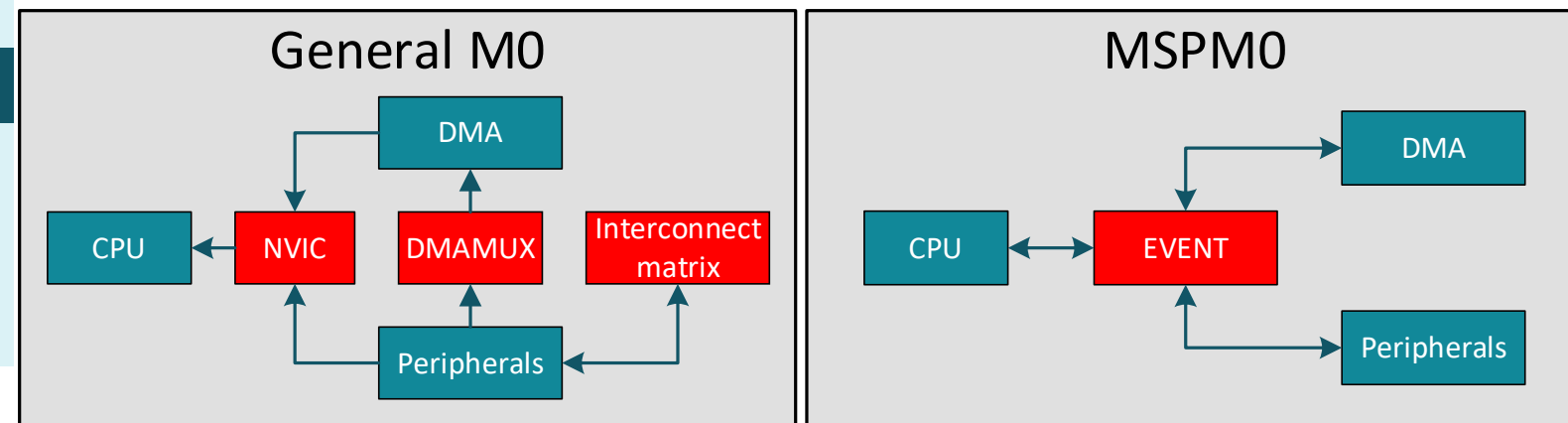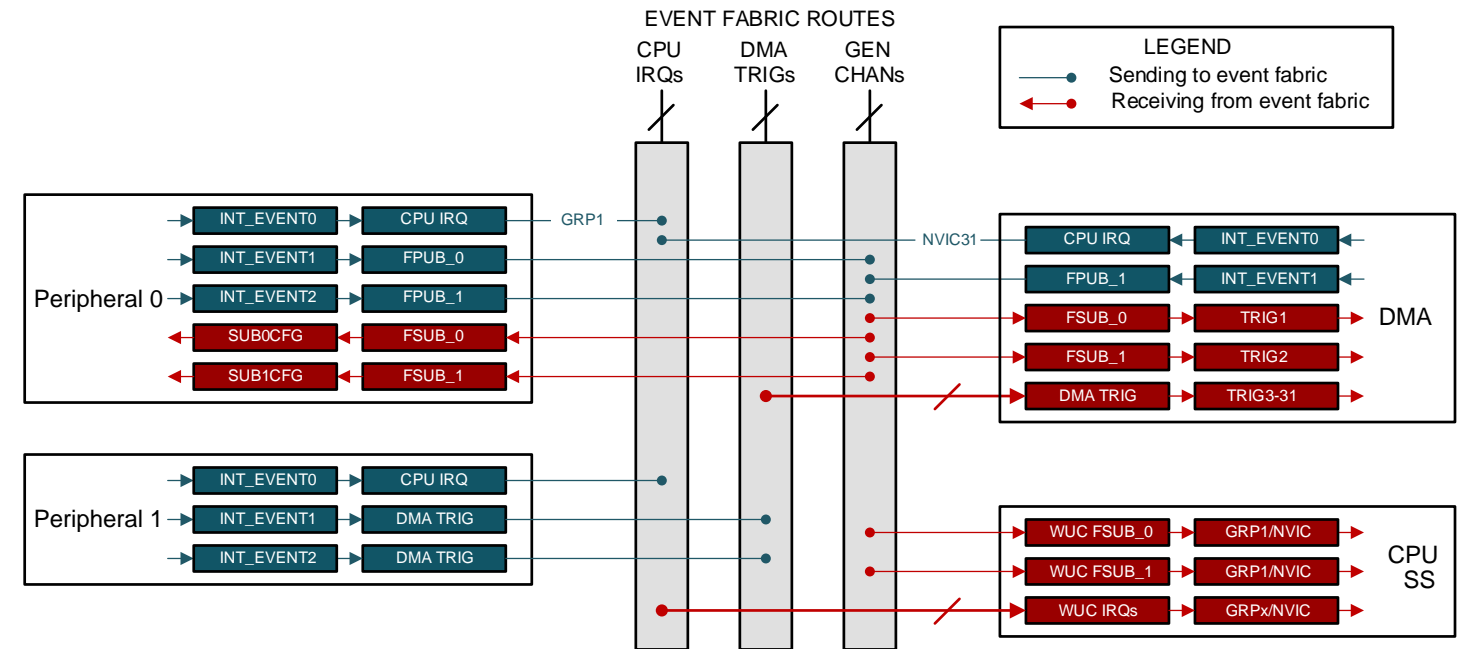
MSPM0 EVENT module introduction

Key Features

- The event manager can transfer digital events from one entity (IRQ / DMA_TRIG / FPUB) to another (WUC IRQ / DMA TRIG / FSUB).

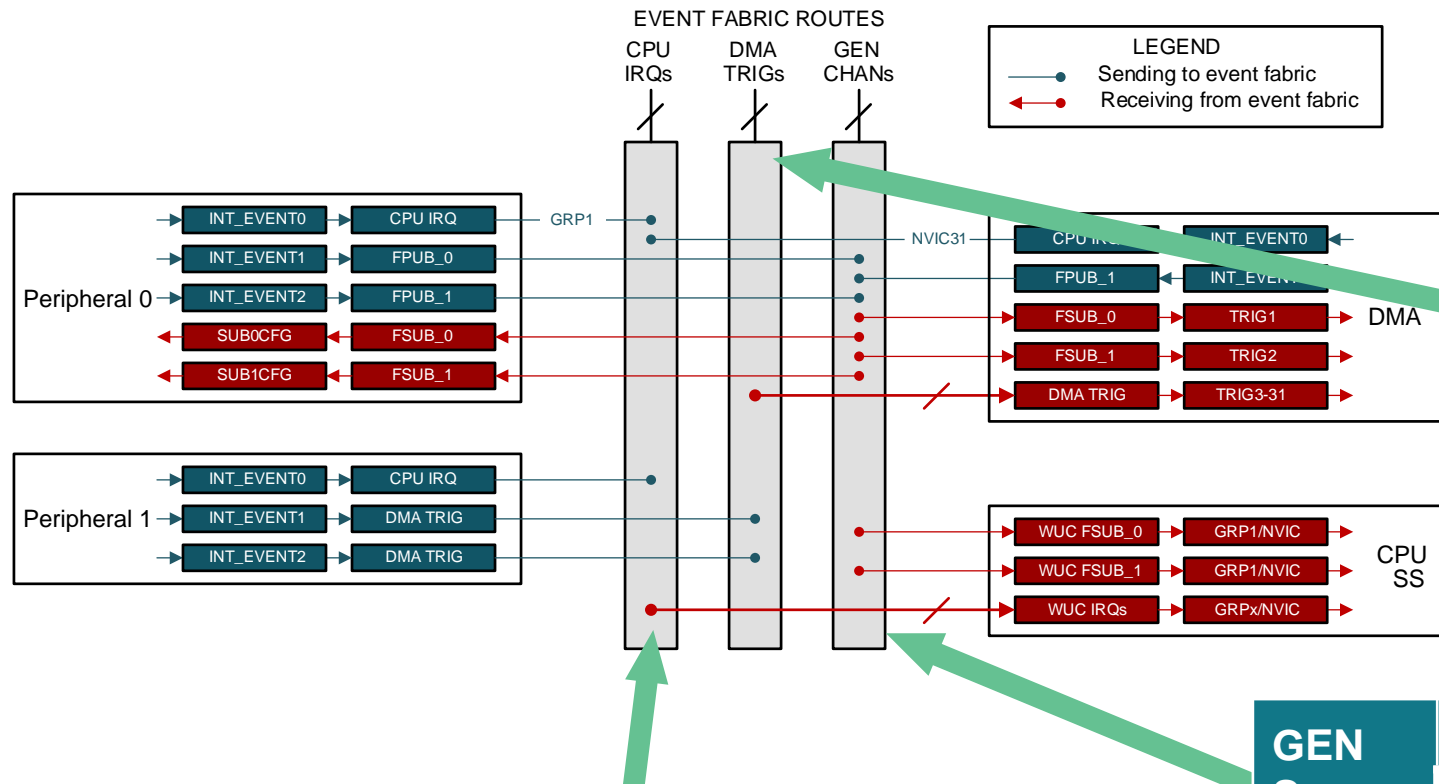| Event Type	Publisher	Subscriber
1	Peripheral	CPU
2	Peripheral	DMA
3	Peripheral	Peripheral

Some Use Cases

RTC interrupt is sent to the CPU (CPU IRQs)
UART triggers DMA transfer (DMA TRIGs)
TIM triggers ADC sampling(GEN CHANs)

EVENT FABRIC ROUTES

LEGEND
Sending to event fabric
Receiving from event fabric

General M0

MSPM0

MSPM0 EVENT module introduction

A Combination of Flexible Matrix

EVENT FABRIC ROUTES
CPU IRQs
DMA TRIGs
GEN CHANs

LEGEND
Sending to event fabric
Receiving from event fabric

Peripheral 0
- INT_EVENT0 → CPU IRQ → GRP1
- INT_EVENT1 → FPUB_0
- INT_EVENT2 → FPUB_1
- SUB0CFG ← FSUB_0
- SUB1CFG ← FSUB_1

Peripheral 1
- INT_EVENT0 → CPU IRQ
- INT_EVENT1 → DMA TRIG
- INT_EVENT2 → DMA TRIG

NVIC31
- CPU IRQ → INT_EVENT0
- FPUB_1 → INT_EVENT
- FSUB_0 → TRIG1
- FSUB_1 → TRIG2
- DMA TRIG → TRIG3-31
DMA

- WUC FSUB_0 → GRP1/NVIC
- WUC FSUB_1 → GRP1/NVIC
- WUC IRQs → GRPx/NVIC
CPU SS

Some Use Cases
- RTC interrupt is sent to the CPU (CPU IRQs)
- UART triggers DMA transfer (DMA TRIGs)
- TIM triggers ADC sampling(GEN CHANs)

DMA Source	DMA input Channel			
	1	2	3	4
ADC	Selectable	Selectable	Selectable	Selectable
I2C	Selectable	Selectable	Selectable	Selectable
SPI	Selectable	Selectable	Selectable	Selectable
Timer	Selectable	Selectable	Selectable	Selectable

GEN Source	GEN Destination (1:1 or 1:2)				
	Timer	ADC	GPIO	DMA	CPU
Timer	Selectable	Selectable	Selectable	Selectable	Selectable
RTC					
ADC					
GPIO					
WTD					
DMA					
CPU					

Interrupt Source	NVIC Number	Interrupt Priority Group (Selectable)		
ADC0	4	0		
I2C0	24		0	
TIMG1	2			2
RTC	30		2	
GPIO	1			1
DMA	31			1

Note: The tables only list partial of EVENT module, and full information please refer to TRM.

TEXAS INSTRUMENTS

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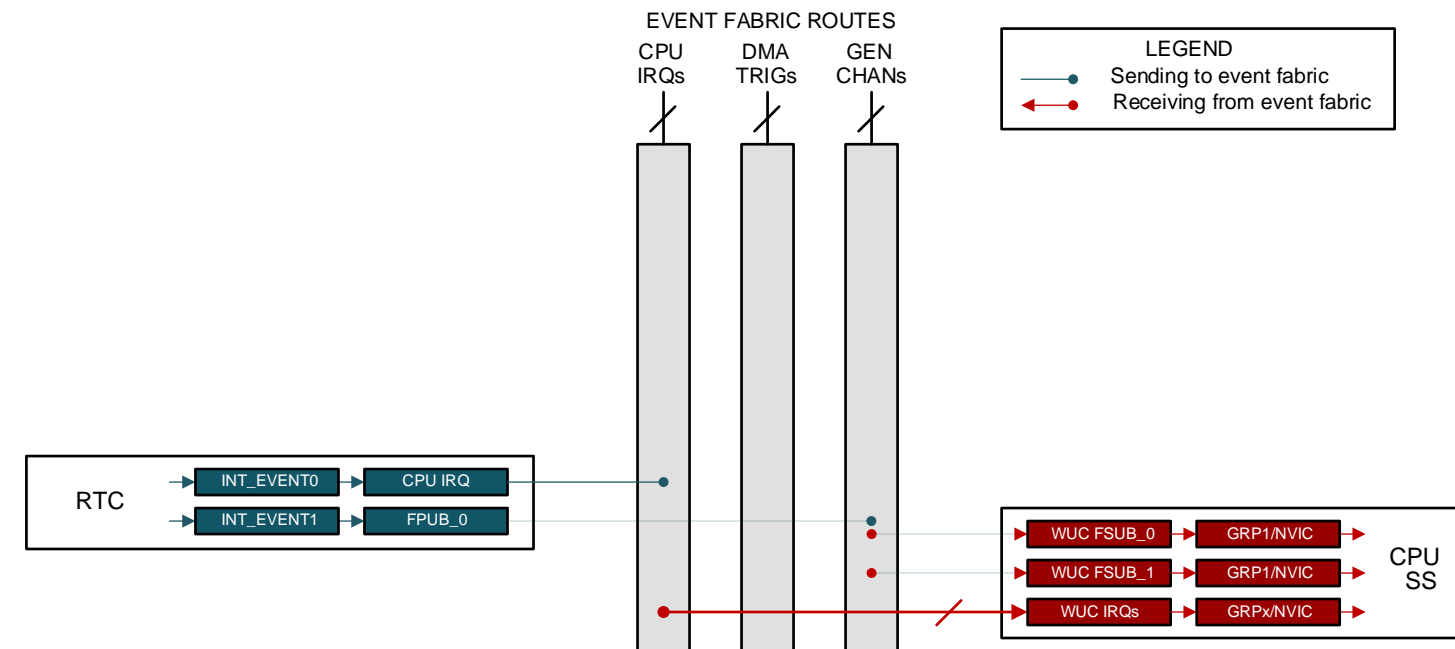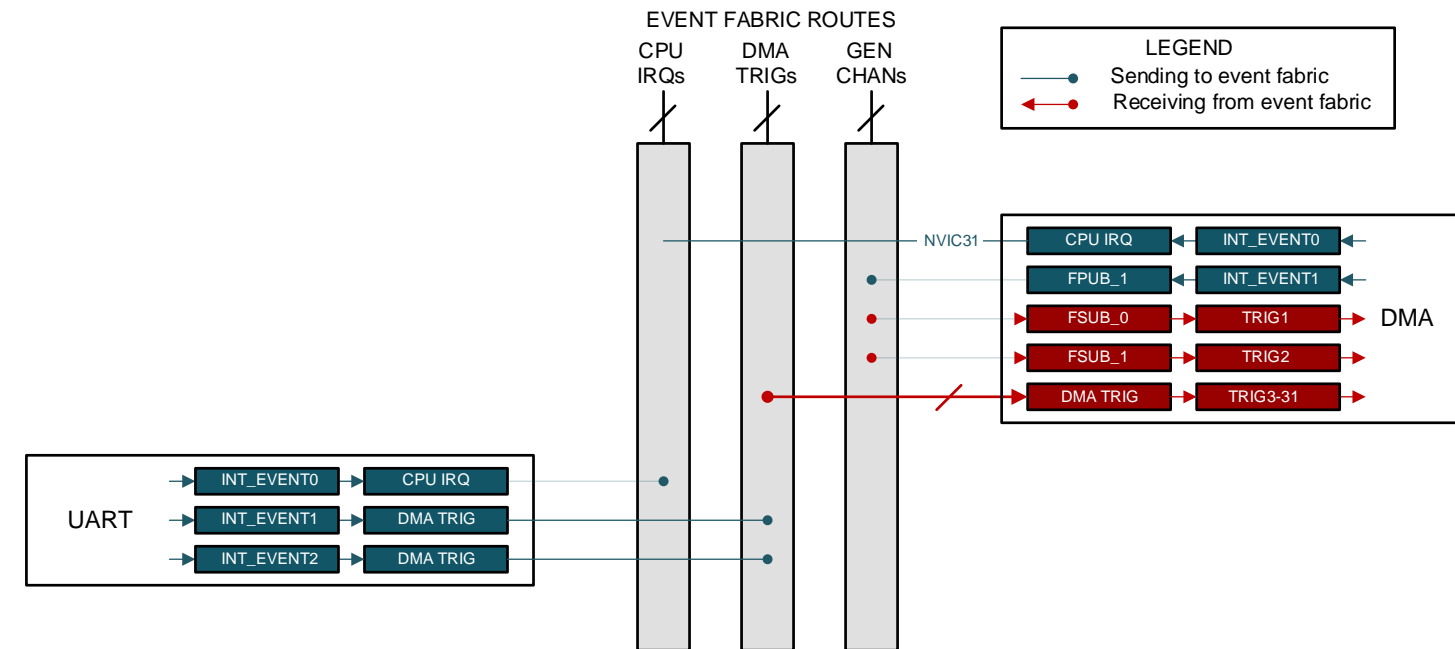| Event Type	Publisher	Subscriber
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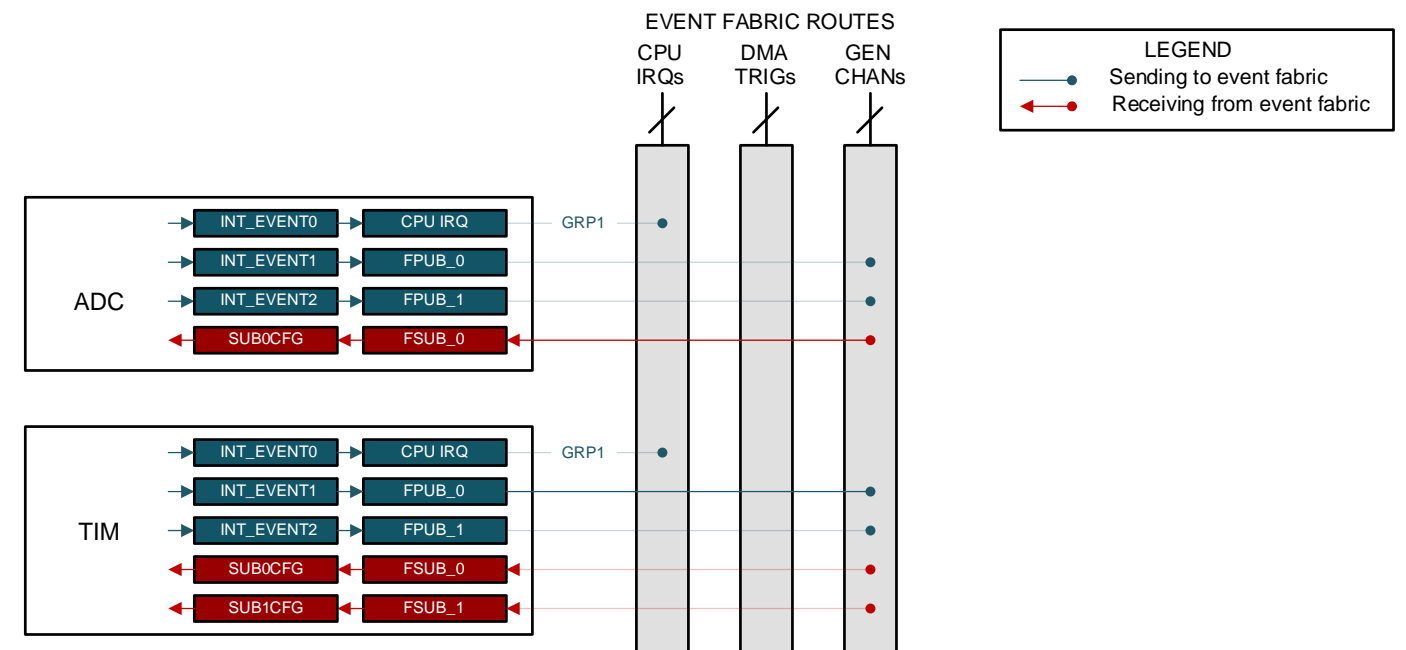
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Event Type	Publisher	Subscriber
2	Peripheral	DMA

MSPM0 EVENT module introduction

Event Type	Publisher	Subscriber
3	Peripheral	Peripheral

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RTC interrupt is sent to the CPU (CPU IRQs)
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EVENT module quick start

Academy

[Event introduction lab](#)

Driverlib Examples

MSPM0L13xx :
- 📁 comp_dac_to_timer_event
- 📁 adc12_triggered_by_timer_event
- 📁 event_input_triggers_output
- 📁 adc12_triggered_by_timer_event_stop

MSPM0G350x :
- 📁 adc12_simultaneous_trigger_event
- 📁 adc12_simultaneous_trigger_event_stop
- 📁 adc12_triggered_by_timer_event
- 📁 adc12_triggered_by_timer_event_stop
- 📁 comp_dac_to_timer_event
- 📁 dac12_fifo_timer_event
- 📁 event_input_triggers_output

Related Links

[MSPM0 online resource](#)
[MSPM0 Quick start guide](#)
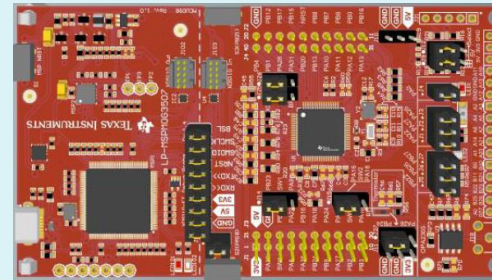[MSPM0 Sysconfig user's guide](#)

[MSPM0G350x datasheet](#)
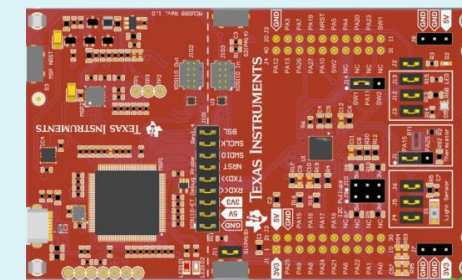[MSPM0L13xx datasheet](#)
[MSPM0Gxx technical reference manual](#)
[MSPM0Lxx technical reference manual](#)

Launchpad

LP-MSPM0G3507   LP-MSPM0L1306

Sysconfig Entrance for Event Setting

To learn more about MSPM0, please visit:

- [MSPM0 MCUs](#)
- [MSPM0 SDK](#)
- [MSPM0 Academies](#)

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