

```

.program trigger

.side_set 1 opt

start:
    pull block            side 0
    mov x, osr
    jmp x-- trigger

; if the input is zero, just send an update without waiting
update:
    jmp start            side 1 [7]

trigger:
    wait 1 pin 0
    out pins, 4          side 1 [3]
    out pins, 4          side 0
    push

.program timer

.side_set 1

start:
    pull block          side 0      ; pull the instruction from FIFO
    mov x, osr           side 0      ; move from osr to scratch register
    jmp !x hwstart       side 0      ; if instucion is 0 that means hwstart

    nop                 side 1 [5]   ; if not hwstart, hit the trigger pin
loop:
    jmp x-- loop         side 0      ; count down to next trigger

.wrap

hwstart:
    wait 1 gpio 8        side 0      ; wait for the trigger pin
    jmp start            side 0

% c-sdk {

    static inline void trigger_program_init(PIO pio, uint sm, uint offset,
        uint trigger_pin,
        uint p_pin,
        uint update_pin
    ) {

        // profile pins
        pio_gpio_init(pio, p_pin + 0);
        pio_gpio_init(pio, p_pin + 1);
        pio_gpio_init(pio, p_pin + 2);
        pio_gpio_init(pio, p_pin + 3);
    }
}

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// IO_UPDATE to AD9959
pio_gpio_init(pio, update_pin);
// External Trigger Pin
pio_gpio_init(pio, trigger_pin);

pio_sm_set_pindirs_with_mask(pio, sm,
    (0xf << p_pin) | (1u << update_pin) | (0u << trigger_pin),
    (0xf << p_pin) | (1u << update_pin) | (1u << trigger_pin)
);

pio_sm_config c = trigger_program_get_default_config(offset);

sm_config_set_sideset_pins(&c, update_pin);
sm_config_set_out_pins(&c, p_pin, 4);
sm_config_set_in_pins(&c, trigger_pin);

sm_config_set_out_shift(&c, true, false, 1);
sm_config_set_in_shift(&c, true, true, 1);

sm_config_set_clkdiv(&c, 1.f);

pio_sm_init(pio, sm, offset, &c);

pio_sm_set_enabled(pio, sm, true);
}

static inline void timer_program_init(PIO pio, uint sm, uint offset,
    uint trigger_pin
) {
    pio_sm_config c = timer_program_get_default_config(offset);

    pio_gpio_init(pio, trigger_pin);
    pio_sm_set_pindirs_with_mask(pio, sm,
        (1u << trigger_pin),
        (1u << trigger_pin)
    );
    sm_config_set_sideset_pins(&c, trigger_pin);

    sm_config_set_out_shift(&c, true, false, 1);
    sm_config_set_in_shift(&c, true, true, 1);

    sm_config_set_clkdiv(&c, 1.f);

    pio_sm_init(pio, sm, offset, &c);
    pio_sm_set_enabled(pio, sm, true);
}

%}

```