

Pin Grid

Package:	TQFP48		Pin No:		8	9	10	11	12	21	22	25	26	27	33	34	35	36	37	45	46	47	48	1	2	7	15	16	20	38	39	17	24	28	29	40	41	3	4	44	30	23	6
Module	Function	Direction	PORTA				PORTB																PORTC												PORTD								
All			0	1	2	3	4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	0	1	2	3	4	5	6	7	8	9	10	11	12	13	1	8	10	13		
ICD	REFO	output																																									
	PGCx	input																																									
	PGDx	input																																									
Pins	GPIO	input																																									
	GPIO	output																																									

Log User Output Notifications Pin Grid View x

ADC Basic

▼ Basic Settings

Custom Name

ADC1

Resolution

12

Conversion Time (us)

Refer PLIB for the Calculations.  
0.37

Data Output Format

☒ Integer ☐ Fractional

Common Interrupt

☐

Pin Help

Pin Selection should only be done using the table. Channel Enable checkbox selects the corresponding analog channel and auto locks the analog pin in the Pins Grid View.

▼ Shared Core Settings

Requested Sampling Time (us)

0.04 ≤ 1 ≤ 20.5

Calculated Sampling Time (us)

1

ADC Shared Core Settings

Shared Core Configuration						
Add Comp	Channel	Pins	Enable	Custom Name	Trigger Source	Interrupts
	AN0	RA0	<input checked="" type="checkbox"/>	_J1	PWM Generator1 ADC Trigger1	<input type="checkbox"/>
	AN1	RB2	<input checked="" type="checkbox"/>	_TEMPERATURE	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
	AN2	RB7	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN3	RA3	<input checked="" type="checkbox"/>	_J3	PWM Generator1 ADC Trigger1	<input type="checkbox"/>
	AN4	RA4	<input checked="" type="checkbox"/>	_J2	PWM Generator1 ADC Trigger1	<input checked="" type="checkbox"/>
	AN5	RB0	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN6	RB1	<input checked="" type="checkbox"/>	_MOMENTUM	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
	AN7	RB2	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN8	RB3	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN9	RA2	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN10	RB8	<input type="checkbox"/>		None	<input type="checkbox"/>
	AN11	RB9	<input checked="" type="checkbox"/>	_J2_PowerLab	PWM Generator1 ADC Trigger1	<input checked="" type="checkbox"/>
	AN12	RC0	<input checked="" type="checkbox"/>	_VLINK	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
	AN13	RC1	<input type="checkbox"/>	_UM3	None	<input type="checkbox"/>
	AN14	RC2	<input type="checkbox"/>	_UM2	None	<input type="checkbox"/>
	AN15	RC3	<input type="checkbox"/>	_UM1	None	<input type="checkbox"/>
	AN16	Internal-Tem	<input type="checkbox"/>	Channel_AN16	None	<input type="checkbox"/>
	AN17	Internal-Ban	<input type="checkbox"/>	Channel_AN17	None	<input type="checkbox"/>

```
21
22 // #define FLETUINO_APPLICATION_DEMO
23 // #define FLETUINO_PI_CONTROLLER_SETTINGS
24 #define FLETUINO_MANUAL_CONTROL
25
26
```

Refresh

COM18

## Drive Manual control

Duty Cycle 738



FLOATING

CLAMPED

Vector selection

1

3

2

2

3

6

4

4

5

5

6

1

Actual position sector

1

```
21
22 // #define FLETUINO_APPLICATION_DEMO
23 #define FLETUINO_PI_CONTROLLER_SETTINGS
24 // #define FLETUINO_MANUAL_CONTROL
25
26
```

## BLDC Motor Drive Dashboard

OFF

17.2 V

360 rpm

0.345 A

Iref - Momentum

Reset momentum

KP Current 0.68430000

KI Current 0.02090000

☐ Speed Controller (cruiser) ON/OFF

Speed RPM

Reset speed

KP Speed 0.43800000

KI Speed

```
21
22  #define FLETUINO_APPLICATION_DEMO
23  //#define FLETUINO_PI_CONTROLLER_SETTINGS
24  // #define FLETUINO_MANUAL_CONTROL
25
```

## Drive Demonstration

Emergency OFF

0

0

0

36.9 V

0 rpm

0.000 A

Momentum-GAS



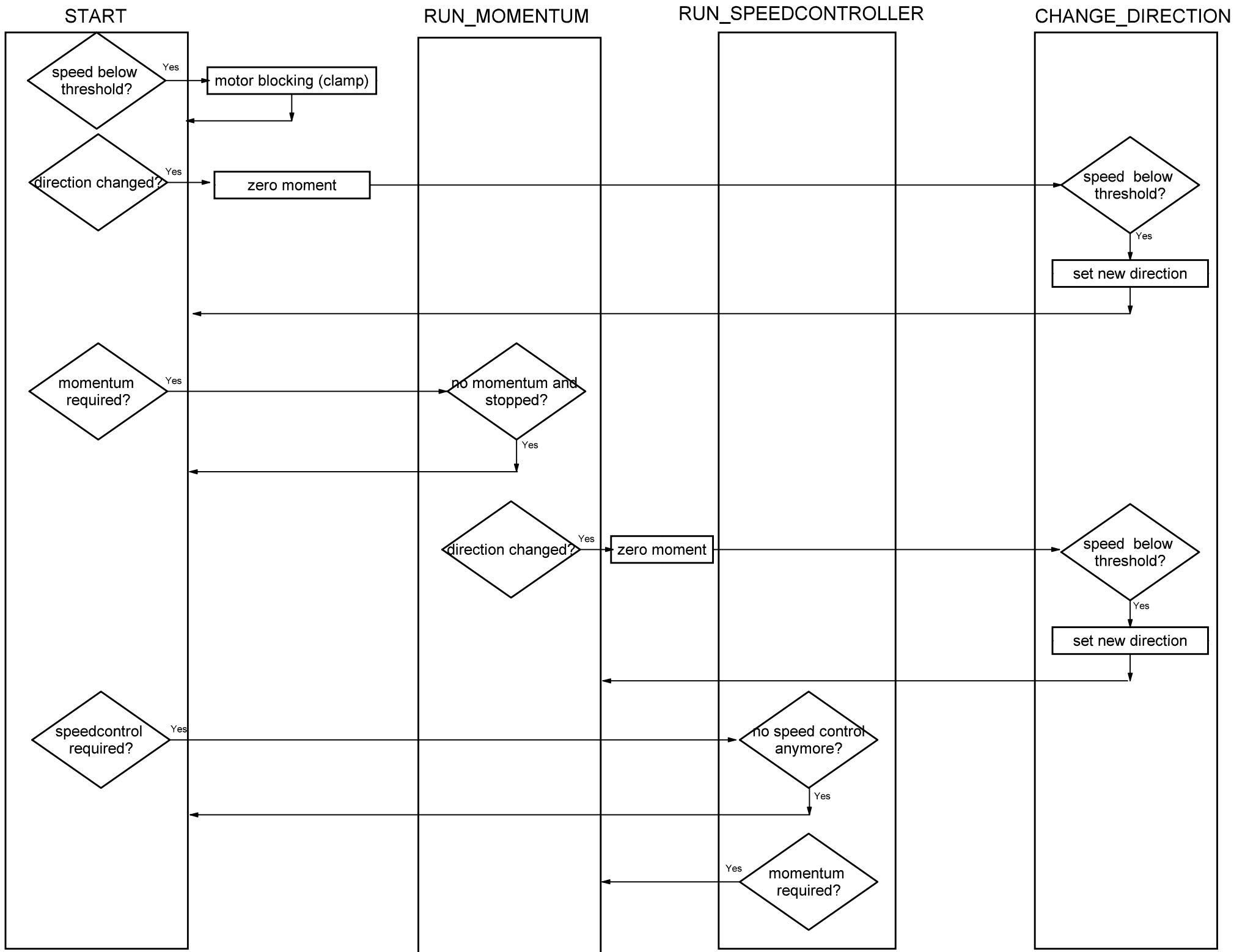
SpeedControl OFF/ON



Forward/Reverse (F/R)

Speed RPM





# Shared Core Configuration

Channel	Pins	Enable	Custom Name	Trigger Source	Interrupts
AN0	RA0	<input checked="" type="checkbox"/>	_I1	PWM Generator1 ADC Trigger1	<input type="checkbox"/>
AN1	RB2	<input checked="" type="checkbox"/>	_TEMPERATU	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
AN2	RB7	<input type="checkbox"/>		None	<input type="checkbox"/>
AN3	RA3	<input checked="" type="checkbox"/>	_I3	PWM Generator1 ADC Trigger1	<input type="checkbox"/>
AN4	RA4	<input checked="" type="checkbox"/>	_I2	PWM Generator1 ADC Trigger1	<input checked="" type="checkbox"/>
AN5	RB0	<input type="checkbox"/>		None	<input type="checkbox"/>
AN6	RB1	<input checked="" type="checkbox"/>	_MOMENTUI	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
AN7	RB2	<input type="checkbox"/>		None	<input type="checkbox"/>
AN8	RB3	<input type="checkbox"/>		None	<input type="checkbox"/>
AN9	RA2	<input type="checkbox"/>		None	<input type="checkbox"/>
AN10	RB8	<input type="checkbox"/>		None	<input type="checkbox"/>
AN11	RB9	<input checked="" type="checkbox"/>	_I2 PowerLa	PWM Generator1 ADC Trigger1	<input checked="" type="checkbox"/>
AN12	RC0	<input checked="" type="checkbox"/>	_VLINK	PWM Generator1 ADC Trigger2	<input type="checkbox"/>
AN13	RC1	<input type="checkbox"/>	_UM3	None	<input type="checkbox"/>
AN14	RC2	<input type="checkbox"/>	_UM2	None	<input type="checkbox"/>
AN15	RC3	<input type="checkbox"/>	_UM1	None	<input type="checkbox"/>

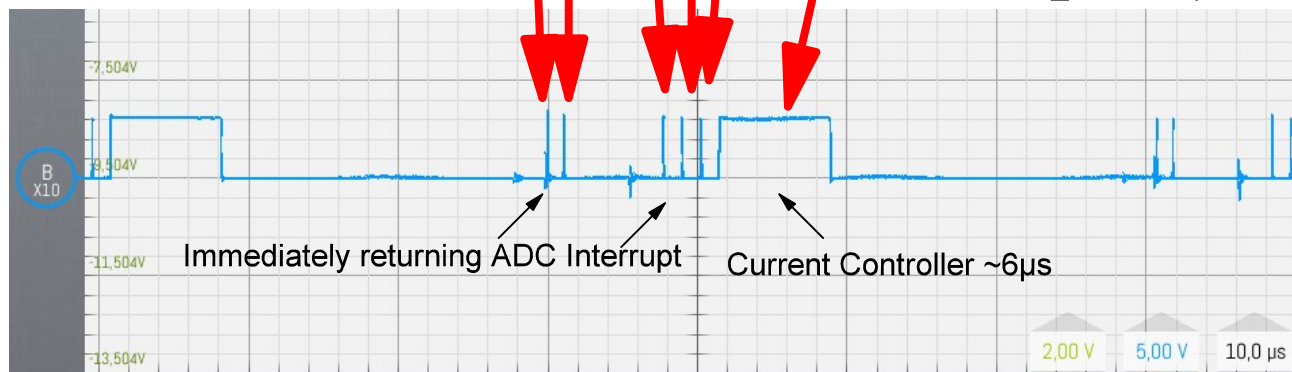
Interrupt ausgelöst, obwohl nicht aktiviert !

Interrupt ausgelöst, obwohl nicht aktiviert !

Interrupt wird nicht ausgelöst! Wie erwartet!!

adc-current-measurement-and-control.c

void ADC\_Callback(enum ADC\_CHANNEL channel, uint16\_t adcVal)



# PWM1H signal

PWM EOC Interrupt

void commutation\_and\_sector\_counting(void)  
duration ~2 $\mu$ s

2,00 V

5,00 V

10,0  $\mu$ s