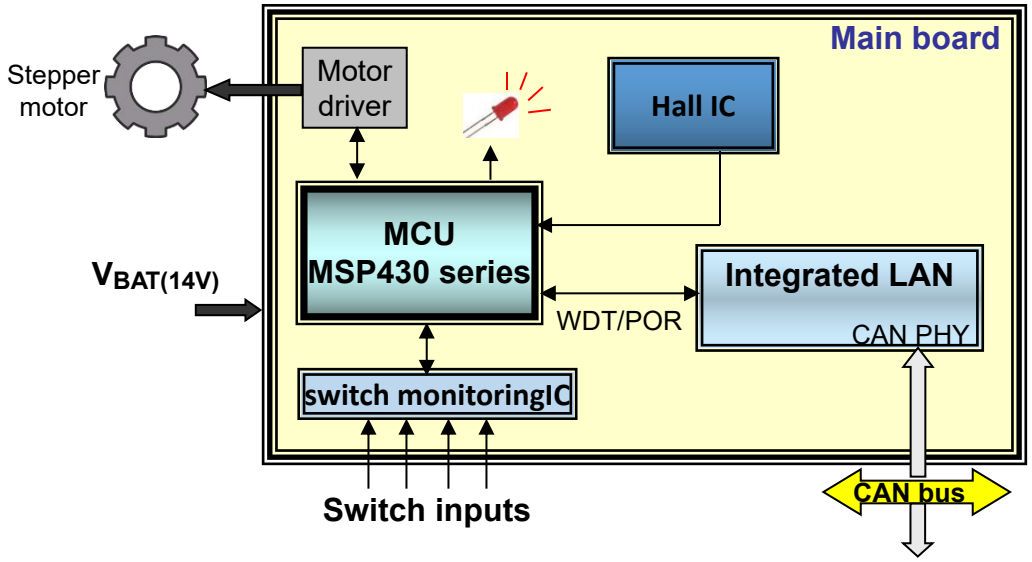
Car Body Control Module (Power windows) Motor Driver control

- High-level block diagram



- Config / Setting

SW1: Motor direction

H	Up/Forward
M	Standby
L	Down/Reverse

Vehicle network CAN interface connector

Pin number	Signal name
1	CANH
2	CANL
3	GND

Functionality	MCU function
Hall sensor	External interrupt
LED	Normal I/O
ADC	A/D input
Motor	Timer out & normal I/O
CAN bus	CAN bus control

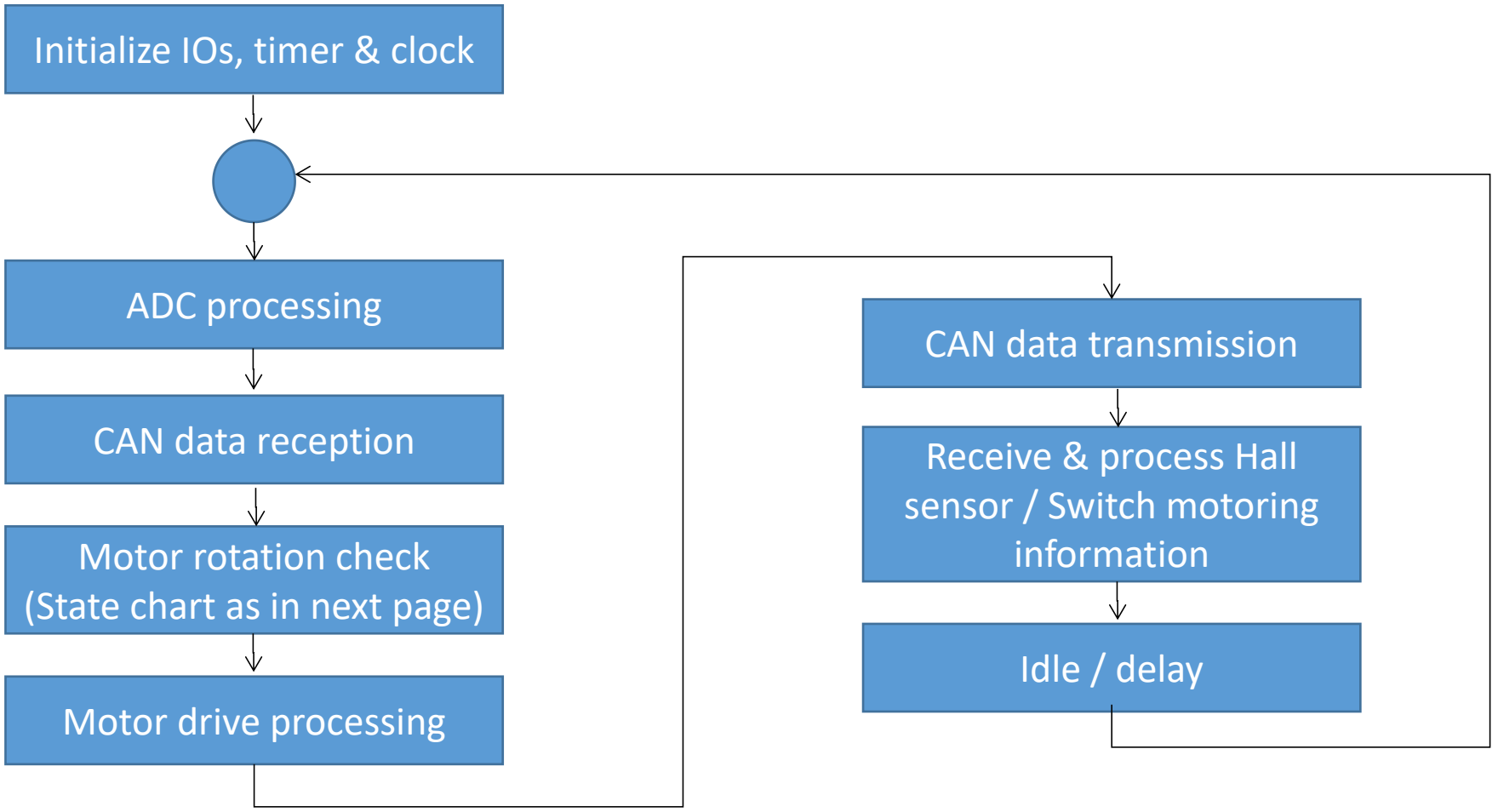
Software files structure

Files	Description
source	
MAIN_module.c	Main source file (while loop)
adc	
adc.c	ADC processing source file - converts switch input related information
adc.h	ADC source related definitions header
can	
CAN_driver.c	CAN driver control support source code file
CAN_drv_extern.h	CAN driver external declaration header file
int	
int.c	Interrupt handling - Interrupt service routine related to all the interfaces
int.h	Interrupt service routine header
motor	
motor.c	Motor driver control processing source code file
motor.h	Motor driver type/value definition, setting information, external declaration header file

Software tasks

Function	Tasks	Task Priority
Main		2
CAN driver	- Data frame contents processing - Master mode	1 1
PWM input capture	-Timer capture mode for 8bit timer registers - Algorithm for computing the input pulse (e.g. expected input frequency range, accumulating count and averaging) and converting to normalized value	4
Hall IC	ISR (int_irq2) & IV (_int_irq2)	4
...	...	...

Flowchart


Initialize IOs, timer & clock
ADC processing
CAN data reception
Motor rotation check
(State chart as in next page)
Motor drive processing
CAN data transmission
Receive & process Hall sensor / Switch motoring information
Idle / delay

State chart diagram - Motor