

## Signals + Pins

<u>Description</u>	<u>Pin</u>
Left Yellow 1	PB3
Left Yellow 2	PB2
Left Green	PB1
Left Red	PB0
Right Yellow 1	PE4
Right Yellow 2	PE3
Right Green	PE2
Right Red	PE1
Left Button	PA3
Right Button	PA2
Reset Button	PF0

## Outputs Mapped to GPIO Ports + Pins

Output	Port Name	Pin
<b>Left Yellow 1</b>	LEFTSIGNAL.3	PB3
<b>Left Yellow 2</b>	LEFTSIGNAL.2	PB2
<b>Left Green</b>	LEFTSIGNAL.1	PB1
<b>Left Red</b>	LEFTSIGNAL.0	PB0
<b>Right Yellow 1</b>	RIGHTSIGNAL.4	PE4
<b>Right Yellow 2</b>	RIGHTSIGNAL.3	PE3
<b>Right Green</b>	RIGHTSIGNAL.2	PE2
<b>Right Red</b>	RIGHTSIGNAL.1	PE1

## Inputs Mapped to GPIO Ports + Pins

Input	Port Name	Pin
<b>Left Button</b>	SENSOR.3	PA3
<b>Right Button</b>	SENSOR.2	PA2
<b>Reset Button</b>	GPIO_PORTF_DATA_R.0	PF0

## State Table

**Output:** { Left Y1, Left Y2, Left Green, Left Red, Right Y1, Right Y2, Right Green, Right Red } **Input:** { Left Button, Right Button }

State	Delay(10ms)	Output	00	01	10	11
<b>Initial State</b>	100 (1 Second)	0xFF	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>Wait For Setup</b>	100 (1 Second)	0x00	Wait For Setup	Wait For Setup	Wait For Setup	Countdown 1
<b>Countdown 1</b>	100 (1 Second)	0x88	False Start Both	False Start Left	False Start Right	Countdown 2
<b>Countdown 2</b>	100 (1 Second)	0x44	False Start Both	False Start Left	False Start Right	Go
<b>Go</b>	1 (.01 Second)	0x22	Win Both	Win Left	Win Right	Go
<b>Win Left</b>	100 (1 Second)	0x20	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>Win Right</b>	100 (1 Second)	0x02	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>Win Both</b>	100 (1 Second)	0x22	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>False Start Left</b>	100 (1 Second)	0x10	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>False Start Right</b>	100 (1 Second)	0x01	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup
<b>False Start Both</b>	100 (1 Second)	0x11	Wait For Setup	Wait For Setup	Wait For Setup	Wait For Setup

# State Transition Diagram

