JP2

STM_TXD — 1
STM_RXD — 2
3

GND   UART_STM

JP1

RPI_TXD — 1
RPI_RXD — 2
3

GND   UART_RPI

U$2
STM32F103C8T6_DEV

+5V	3	5V	
3V3	1*2	3V3	
	40	VB	
GND	2*3	GND	
	24	RST	
PWM_A2	36	PA0	
PWM	35	PA1	
	34	PA2	
	33	PA3	
	32	PA4	
SPI1_SCK	31	PA5/SPI1_SCK	
SPI1_MISO	30	PA6/SPI1_MISO	
SPI1_MOSI	29	PA7/SPI1_MOSI	
	16	PA8	
STM_TXD	15	PA9/USART1_TX	
STM_RXD	14	PA10/USART1_RX	
	13	PA11	
	12	PA12	
	11	PA15	

PC13   39
PC14   38 PWM_A0
PC15   37 PWM_A1

PB0   28
PB1   27
PB3   10
PB4   9
PB5   8
PB6   7
PB7   6
PB8   5
PB9   4 LED_ERR
PB10   26
PB11   25
PB12   20
PB13   19
PB14   18
PB15   17

Buy on eBay: STM32F103C8T6

PCB1
RASPBERRY_PI_B+

RPI_NRST   P$1   RST_RUN   GND   P$2
GND
+5V

1   3V3   5V0   2
3   GPIO02/SDA1   5V0   4
5   GPIO03/SCL1   GND   39
7   GPIO04/GCKL   TXD0/GPIO14 8   RPI_TXD
6   GND   RXD0/GPIO15 10 RPI_RXD
11 GPIO17/GEN0   GPIO18 12
13 GPIO27/GEN2   GND   20
15 GPIO22/GEN3   GEN4/GPIO23 16
17 3V3   GEN5/GPIO24 18
19 GPIO10/MOSI   GND   25   SPI1_MOSI
21 GPIO09/MISO   GEN6/GPIO25 22   SPI1_MISO
23 GPIO11/SCLK   CE0/GPIO08   24   SPI1_SCK
9   GND   CE/GPIO07   26
27 ID_SD   ID_SC   28
29 GPIO05   GND   30
31 GPIO06   GPIO12   32
33 GPIO13   GND   34
35 GPIO19   GPIO16   36
37 GPIO26   GPIO20   38
14 GND   GPIO21   40

GND   GND   GND   GND   GND

Connector
J8

Mounting holes
TR   BL   BR

GND

CPU / Main

mainBoard

14.06.2015 14:20:57

Sheet: 1/5

Power Supply

mainBoard

14.06.2015 14:20:57

Sheet: 2/5

Output not inverting.
Wrong symbol

IC2

SEN_A0	1	A	Y0	15 S1_3V
SEN_A1	2	B	Y1	14 S2_3V
SEN_A2	3	C	Y2	13 S3_3V
			Y3	12 S4_3V
			Y4	11 S5_3V
SEN_ENABLE	6	G1	Y5	10 S6_3V
	4	G2A	Y6	9 S7_3V
	5	G2B	Y7	7 S8_3V

R4
18k

GND   GND

74HC238

+3V3
16 VCC

IC2P

8 GND

GND

IC3

S1_DAT	4	D0	W	6
S2_DAT	3	D1		
S3_DAT	2	D2	Y	5 FREQ
S4_DAT	1	D3		
S5_DAT	15	D4		
S6_DAT	14	D5		
S7_DAT	13	D6		
S8_DAT	12	D7		
SEN_A0	11	A		
SEN_A1	10	B		
SEN_A2	9	C		
	7	G		

GND

74HC151D

+3V3
16 VCC

IC3P

8 GND

GND

PSK 254/3W   connectors:
PSK-KONTAKTE

	22-05-7038-03			22-05-7038-03
S1_3V	J1-1	S5_3V		J5-1
S1_DAT	J1-2	S5_DAT		J5-2
	J1-3			J5-3
GND		GND		
S2_3V	22-05-7038-03 J2-1	S6_3V		22-05-7038-03 J6-1
S2_DAT	J2-2	S6_DAT		J6-2
	J2-3			J6-3
GND		GND		
S3_3V	22-05-7038-03 J3-1	S7_3V		22-05-7038-03 J7-1
S3_DAT	J3-2	S7_DAT		J7-2
	J3-3			J7-3
GND		GND		
S4_3V	22-05-7038-03 J4-1	S8_3V		22-05-7038-03 J8-1
S4_DAT	J4-2	S8_DAT		J8-2
	J4-3			J8-3
GND		GND		

Sensors

mainBoard
14.06.2015 14:20:57
Sheet: 3/5

Output not inverting.
Wrong symbol

IC1 74HC238

PWM_A0	1	A	Y0	15
PWM_A1	2	B	Y1	14
PWM_A2	3	C	Y2	13
			Y3	12
			Y4	11
PWM	6	G1	Y5	10
	4	G2A	Y6	9
	5	G2B	Y7	7

IC1P
VCC 16
GND 8

Q3 — WP1 — C7 100n — R5 1k2 — R11 560 — D2 — GND
Q1 BC847ASMD — WP1C — R7 10k — R9 18k — GND
+15V

Q7 — WP2 — C9 100n — R13 1k2 — R19 560 — D4 — GND
Q5 BC847ASMD — WP2C — R15 10k — R17 18k — GND
+15V

Q11 — WP3 — C11 100n — R21 1k2 — R27 560 — D6 — GND
Q9 BC847ASMD — WP3C — R23 10k — R25 18k — GND
+15V

Q12 — WP6 — C12 100n — R22 1k2 — R28 560 — D7 — GND
Q10 BC847ASMD — WP6C — R24 10k — R26 18k — GND
+15V

Q4 — WP4 — C8 100n — R6 1k2 — R12 560 — D3 — GND
Q2 BC847ASMD — WP4C — R8 10k — R10 18k — GND
+15V

Q8 — WP5 — C10 100n — R14 1k2 — R20 560 — D5 — GND
Q6 BC847ASMD — WP5C — R16 10k — R18 18k — GND
+15V

X2-1 1 WP1
X2-2 2 GND MSTBA2
X3-1 1 WP2
X3-2 2 GND MSTBA2
X4-1 1 WP3
X4-2 2 GND MSTBA2
X5-1 1 WP4
X5-2 2 GND MSTBA2
X6-1 1 WP5
X6-2 2 GND MSTBA2
X7-1 1 WP6
X7-2 2 GND MSTBA2

AKL 249-02

connectors:

Motor Control

mainBoard
14.06.2015 14:20:57
Sheet: 4/5

14.06.2015 14:28:04 C:\Users\jan\Documents\WaterCtrl\MainBoard\mainBoard.sch (Sheet: 4/5)

H1 H2 H3 H4
3.2 3.2 3.2 3.2

LED_ERR

LED2

R29
100

GND

Other Things

mainBoard

14.06.2015 14:20:57

Sheet: 5/5

14.06.2015 14:28:04 C:\Users\jan\Documents\WaterCtrl\MainBoard\mainBoard.sch (Sheet: 5/5)