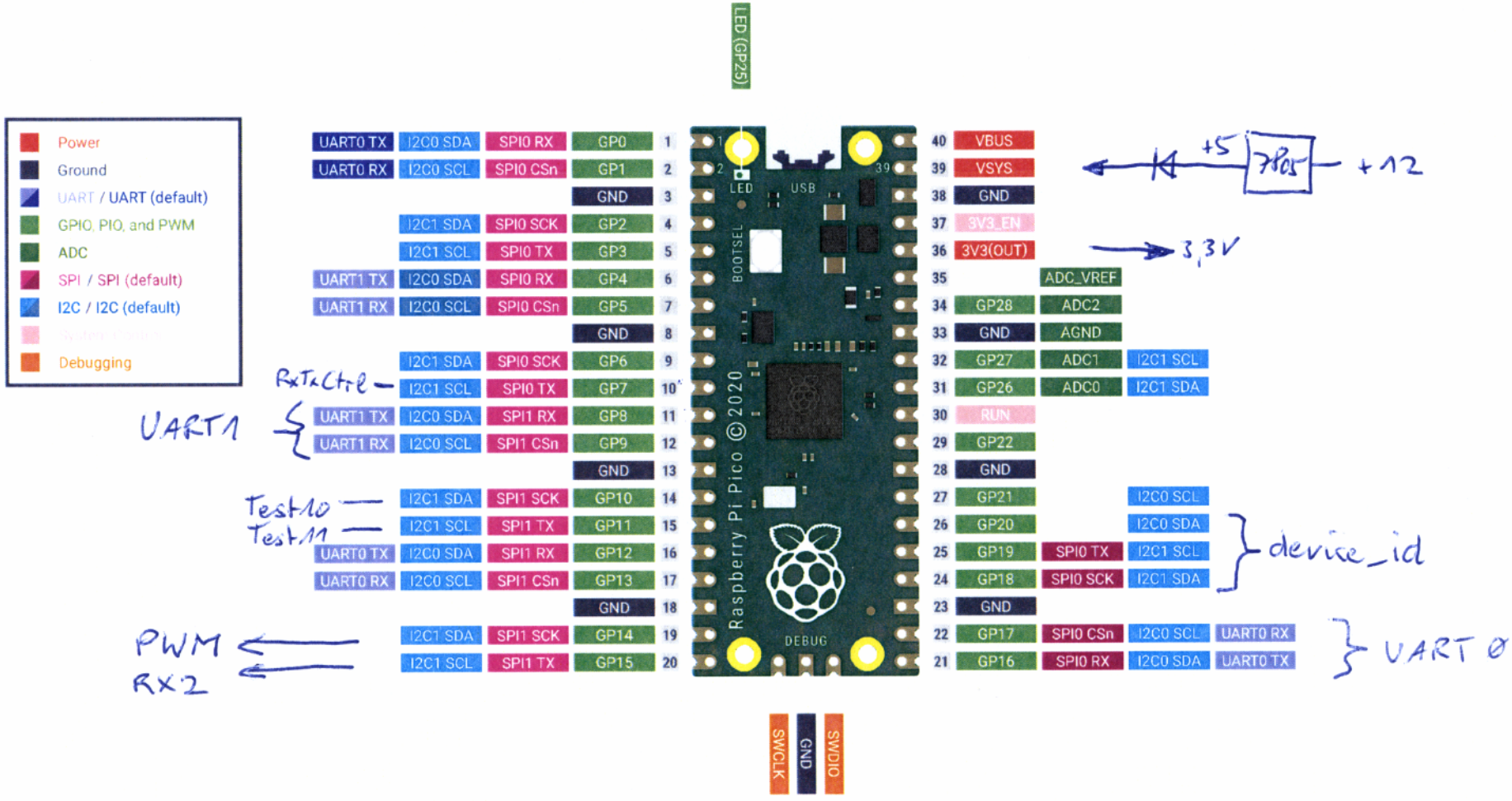
Raspberry Pi Pico Pinout

UART 0 → WR intern
UART 1 → WR ⇔ CTRL

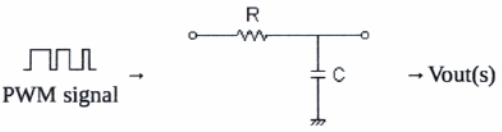


Raspberry Pi

RC Low-pass Filter Design for PWM - Result -

Calculated peak-to-peak ripple voltage and settling time at a given PWM frequency and cut-off frequency or values of R and C.

RC Filter



Transfer Function:

$$G(s)=\frac{1}{s+1}$$

f_{PWM}= 120 Hz

Duty Step 0%→ 90 [%]

PWM signal voltage:

V_L = 0 [V] V_H = 3 [V]

R and C values of filter | Cut-off frequency

- ○ Cut-off frequency fc = 1k [Hz]
- ◉ R and C values

R= 10k Ω C= 100u F

p:pico, n:nano, u:micro, k:kilo, M:mega

Calculate

Cut-off frequency

fc = 0.1591549430919[Hz]

Final Vout value of the step response (without a ripple)

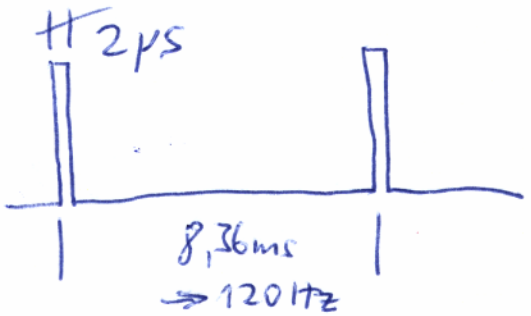
$g(\infty)$ = 2.7[V]

Peak-to-peak ripple voltage

$\Delta V_{pk\text{-}pk}$ = 0.0062499909577703[V](Duty=50%)

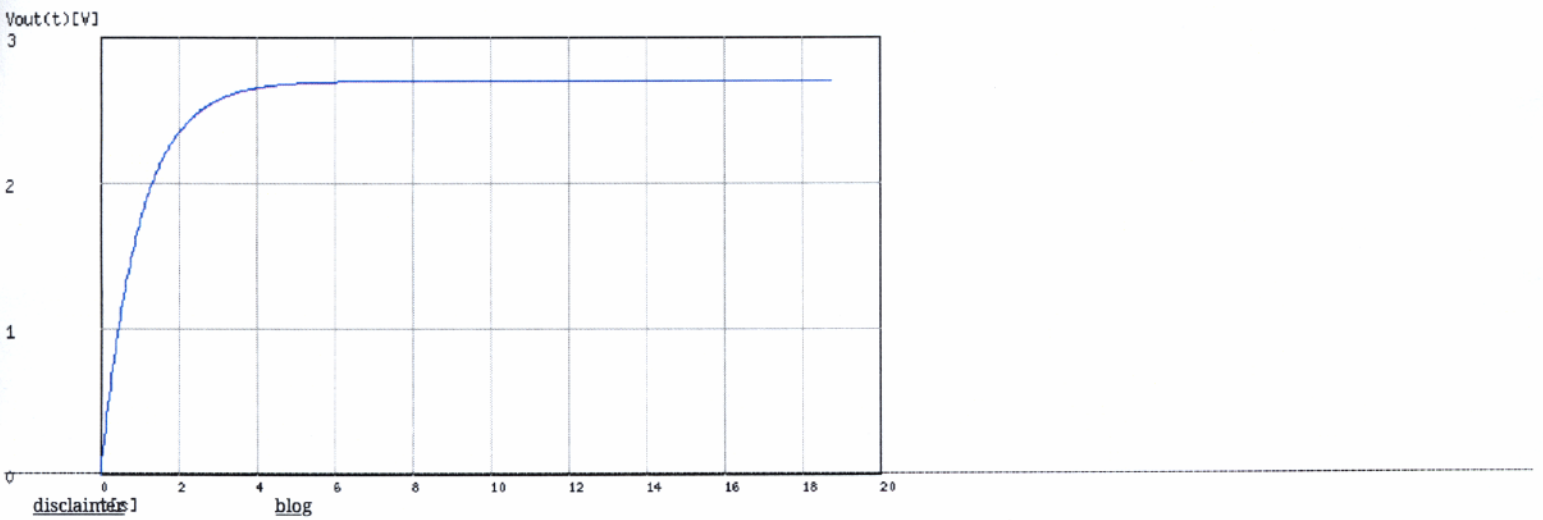
Settling time 0%→90% (0V→2.43V) (without a ripple)

= 2.302585092994[sec]



Transient analysis

StepResponse



RS485 Pin-Belegung

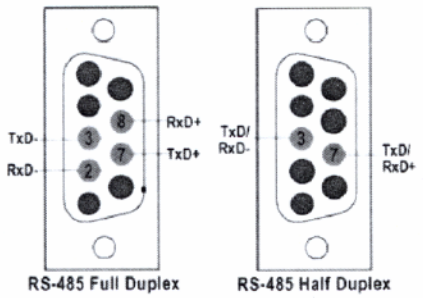
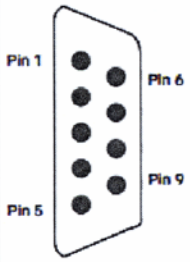
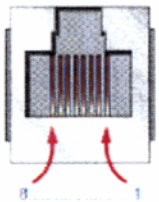


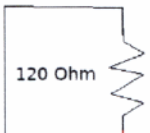
Table A-10 Pin Assignments for the S7-200 Communications Port

Connector	Pin Number	PROFIBUS Signal
	1	Shield
	2	24 V Return
	3	RS-485 Signal B
	4	Request-to-Send
	5	5 V Return
	6	+5 V
	7	+24 V
	8	RS-485 Signal A
	9	Not applicable
	Connector shell	Shield

404

View from underneath

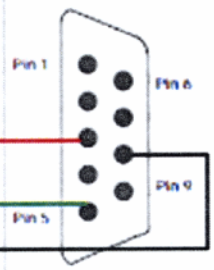




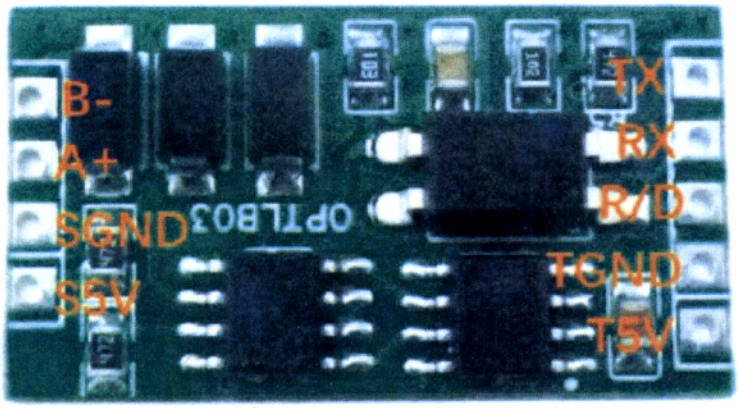
Pin	Signal
1	*CANopen signal reserved*
2	*CANopen signal reserved*
3	*CANopen signal reserved*
4	D1 Modbus signal
5	D0 Modbus signal
6	Not connected
7	VP (1)
8	Common Modbus signal

(1) Supply for RS232 / RS485 converter or a remote terminal

Table A-10 Pin Assignments for the S7-200 Communications Port

Connector	Pin Number	PROFIBUS Signal
	1	Shield
	2	24 V Return
	3	RS-485 Signal B
	4	Request-to-Send
	5	5 V Return
	6	+5 V
	7	+24 V
	8	RS-485 Signal A
	9	Not applicable
	Connector shell	Shield

404



Pin description

Isolated RX485 used on UART1

S5V : RS485 Power+

SGND: RS485 Power-

A+ : RS485 A+

B- : RS485 B-

T5V : TTL Power+

TGND: TTL Power-

R/D : Data flow control signal

(Usually set to low level, MCU send data is set to high level)

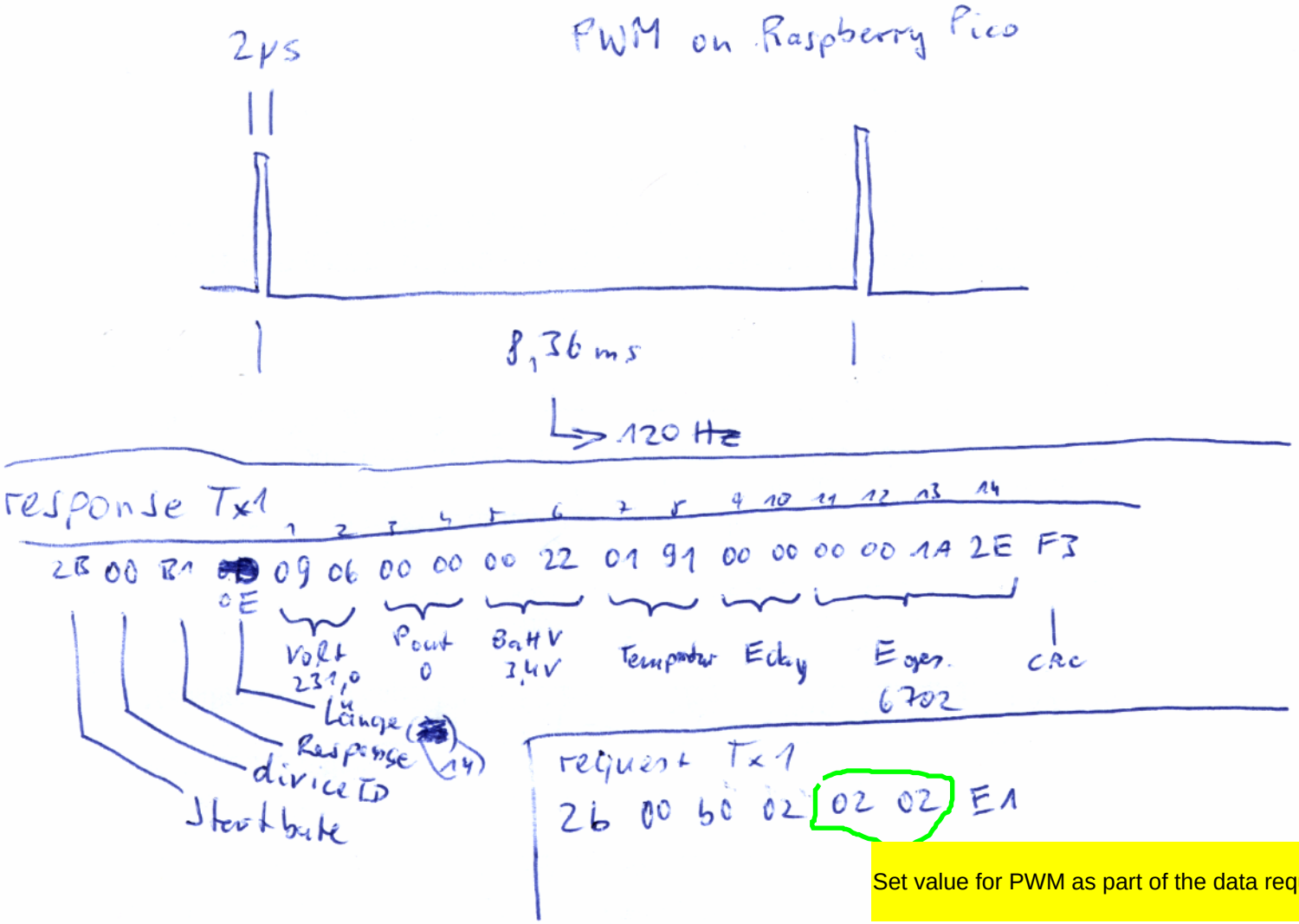
RX : TTL RXD(Connect MCU RXD pin)

TX : TTL TXD(Connect MCU TXD pin)

UART3 Rx Sample (from line

0x95

[278]	1	09	237,4 V_{UL}
279	2	46	
280	3	0	0 Pout
281	4	0	
282	5	0	4,375 V U_{B+}
283	6	23	
284	7	2	
285	8	5	
286	9	1	
287	10	2	
288	11	0	
289	12	4	
290	13	3	Temperatur
291	14	EC	



Sample on UART0

Req 01 03 00 3C 00 01 44 06 | 0D 0A

Energy/day

Resp 01 03 02 00 00 B8 44 00

2 Bytes data CRC

+40ms

Req 01 03 00 3F 00 02 F4 07 | 0D 0A

Energy/total

Resp. 01 03 04 1A 2E 00 00 9D 22 00

low | High

4 byte data

data

CRC

+40ms