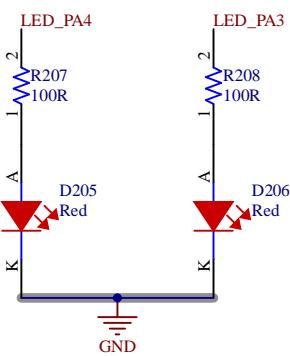


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Project:	SHIELD	
Variant:	[No Variations]	
Size:	Page Contents: [1]Supply.SchDoc	Version: 1.0
Department:	Hardware	
Author:	Bernat Costa Cesari bernat.costa.cesari@estudiantat.upc.edu	Sheet 2 of 4
Checked by:	Andreu Senis	Date: 28/11/2023

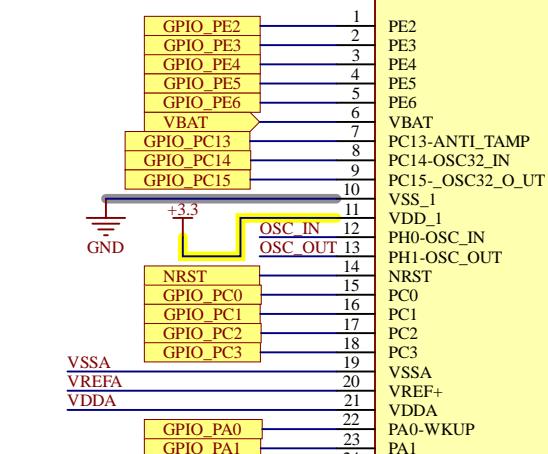
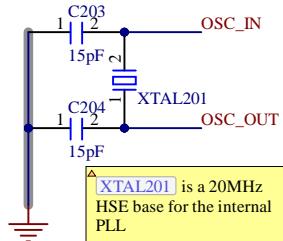
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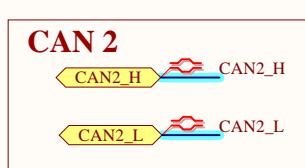
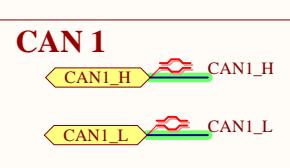
## User LEDs



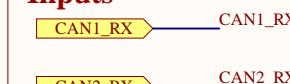
Typ current for D205 and D206 is 20 mA and forward voltage 2 V.  
R=(3,3-2)/20m

## XTAL Oscillator





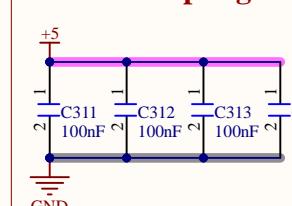
## Inputs



## Outputs



## CAN decoupling



CAN LEDs



4

The diagram illustrates the CAN interface circuitry for two channels, CAN1 and CAN2, using MCP2551 chips (U301 and U302). Each channel consists of an MCP2551 chip, a Murata choke, and associated passive components.

**Channel CAN1:**

- MCP2551 I/SN U301:** The chip is configured with VDD = +5V, GND, TXD (pin 1), RXD (pin 4), CANH (pin 3), CANL (pin 6), RS (pin 8), and VREF (pin 5).
- Termination:** The CANH line is terminated with a 60R resistor (R301) and a 100pF capacitor (C303) connected to GND. The CANL line is terminated with a 60R resistor (R302) and a 100pF capacitor (C304) connected to GND.
- Murata Choke:** A DLW32SH510XF2 Murata Choke is placed between the MCP2551 and the termination network.
- Test Points:** Test points TP301, TP302, TP303, and TP304 are located at various points in the CAN1 termination and choke connection.

**Channel CAN2:**

- MCP2551 I/SN U302:** The chip is configured with VDD = +5V, GND, TXD (pin 1), RXD (pin 4), CANH (pin 3), CANL (pin 6), RS (pin 8), and VREF (pin 5).
- Termination:** The CANH line is terminated with a 60R resistor (R303) and a 100pF capacitor (C308) connected to GND. The CANL line is terminated with a 60R resistor (R304) and a 100pF capacitor (C309) connected to GND.
- Murata Choke:** A DLW32SH510XF2 Murata Choke is placed between the MCP2551 and the termination network.
- Test Points:** Test points TP305, TP306, TP307, and TP308 are located at various points in the CAN2 termination and choke connection.

Circuit diagram showing CAN1\_TX and CAN1\_RX paths.

**CAN1\_TX Path:**

- CAN1\_TX → R306 (47k) (Pin 1) → Node B
- Node B → R307 (22kR) (Pin 1) → GND
- Diode Q301 (Yellow) connected between Node B and GND

**CAN1\_RX Path:**

- CAN1\_RX → R309 (47k) (Pin 1) → Node B
- Node B → R310 (22kR) (Pin 1) → GND
- Diode Q301 (Yellow) connected between Node B and GND

4

Company:		e-Tech Racing	e-techracing.es	
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Size:	Page Contents: - [3] CAN.SchDoc		Version:	1.0
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Checked by:	Andreu Senis	Date: 28/11/2023		

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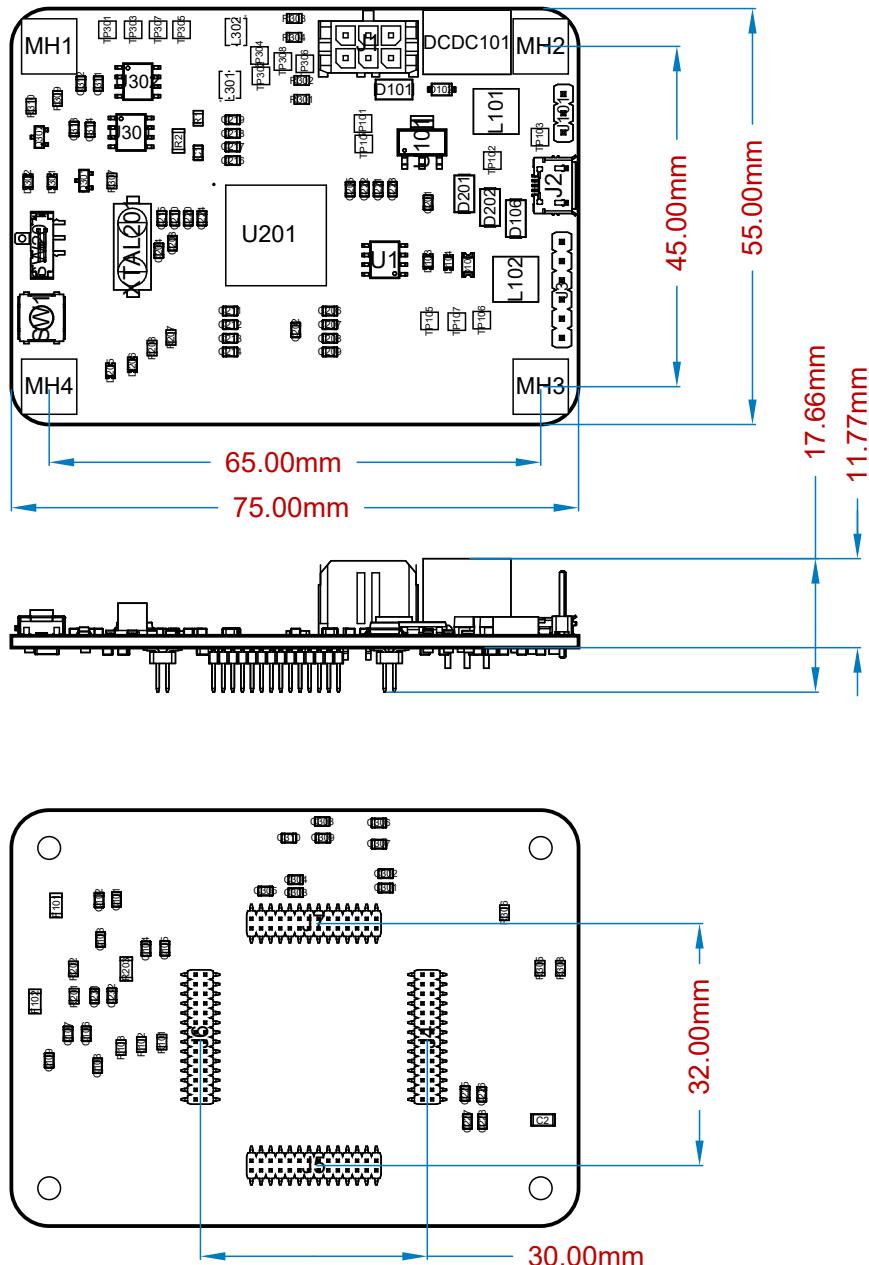
1

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# ETR SHIELD



Line #	Designator	Name	Quantity
	C1, C106, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C226, C228, C231, C311, C312, C313, C314	885012207098	29
	C2	885012208058	1
	C101, C102, C103, C108, C109	10uF	5
	C104, C105	885012107014	2
	C107, C225, C227, C232	885012207103	4
	C201, C202	2.2uF	2
	C203, C204	885012007052	2
	C301, C302, C303, C304, C305, C306, C307, C308, C309, C310	885012007057	10
	D101	824501261	1
	D102	MBR0530	1
	D103, D104	150080GS75000	2
	D105	150120BS75000	1
	D106	824501131	1
	D201, D202	824501600	2
	D205, D206	150080RS75000	2
	D301, D302	150080YS75000	2
	DCDC101	173010542	1
	F101, F102	0437001.WRA	2
	J1	Molex Micro Fit 2x3	1
	J2	629105136821	1
	J3	6 pin header	1
	J4, J5, J6, J7	62132821021	4
	J101	3 pin header	1
	L101, L102	47uH	2
	L301, L302	DLW32SH510XF2	2
	MH1, MH2, MH3, MH4	Mounting_Hole_M3	4
	Q301, Q302	BC817-25LT1G	2
	R1	549kR	1
	R2	CR1206AFX-6802EAS	1
	R101, R103, R305, R308	CR0805-FX-4700GLF	4
	R102, R207, R208	CR0805-FX-1000ELF	3
	R201	620kR	1
	R202	430kR	1
	R203	CRCW12061K60FKEA	1
	R301, R302, R303, R304	R60-0805FTN	4
	R306, R309	47k	2
	R307, R310	22kR	2
	SW1	430773034825	1
	SW201	450405020524	1
	U1	24AA024H-I/SN	1
	U101	LM1117IMP-3.3/NOPB	1
	U201	STM32F777VIT6	1
	U301, U302	MCP2551 I/SN	2
	XTAL201	830028710	1

