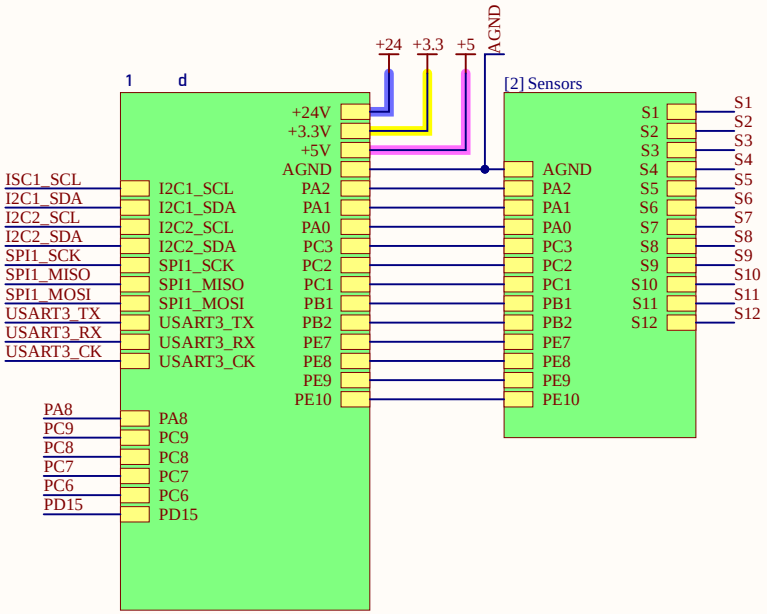
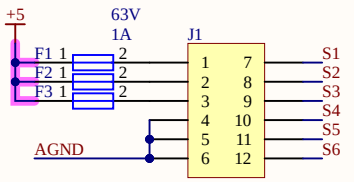
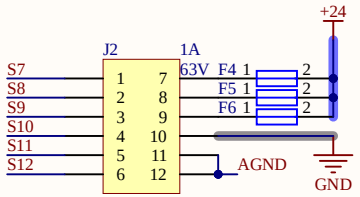


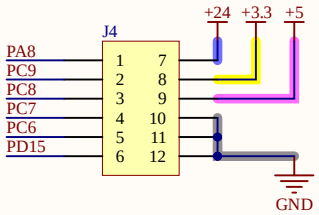
Sensors 1 Connector



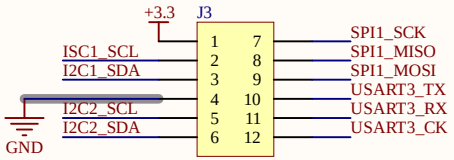
Sensors 2 connector



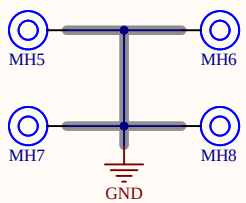
Expansion Connector



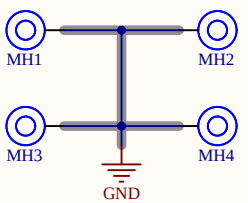
COMs Connector



PCB mounting holes

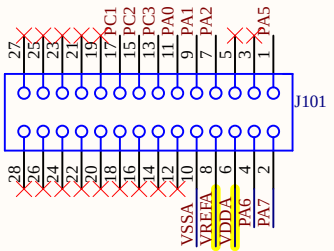


Shield mounting holes

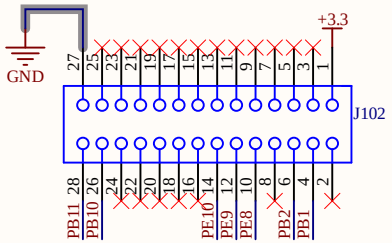


Company: e-Tech Racing	e-techracing.es	
Project: Front ECU	Variant: [No Variations]	
Size: -	Page Contents: ETRX_FECU.SchDoc	Version: 1.0
		Department: Hardware
Author: Bernat Costa Cesari	bernat.costa.cesari@estudiantat.upc.edu	Sheet 1 of 5
Checked by: Andreu Senis		Date: 18/12/2023

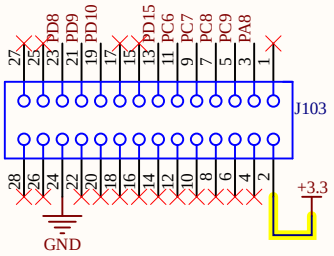
Pin header 1



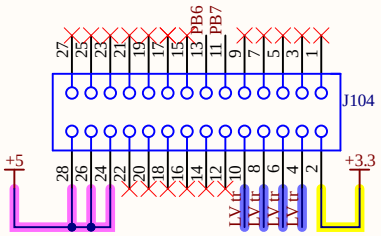
Pin header 2



Pin header 3

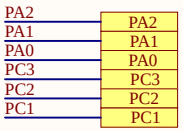


Pin header 4

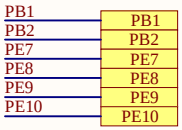


GPIOs

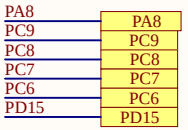
GPIO CON 1



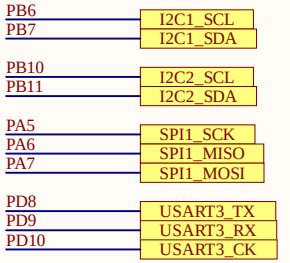
GPIO CON 2



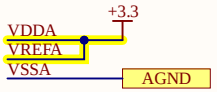
Expansion CON



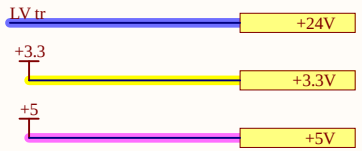
COMs



Analog

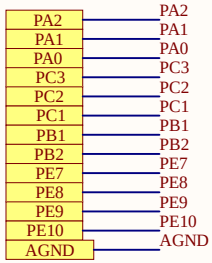


Supply

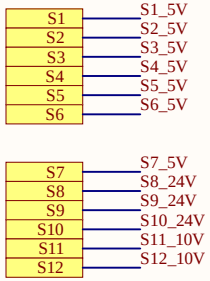


Company: e-Tech Racing e-techracing.es		
Project: Front ECU	Variant: [No Variations]	
Size: -	Page Contents: [1] Shield.SchDoc	Version: 1.0
		Department: Hardware
Author: Bernat Costa Cesari bernat.costa.cesari@estudiantat.upc.edu		Sheet 2 of 5
Checked by: Andreu Senis		Date: 18/12/2023

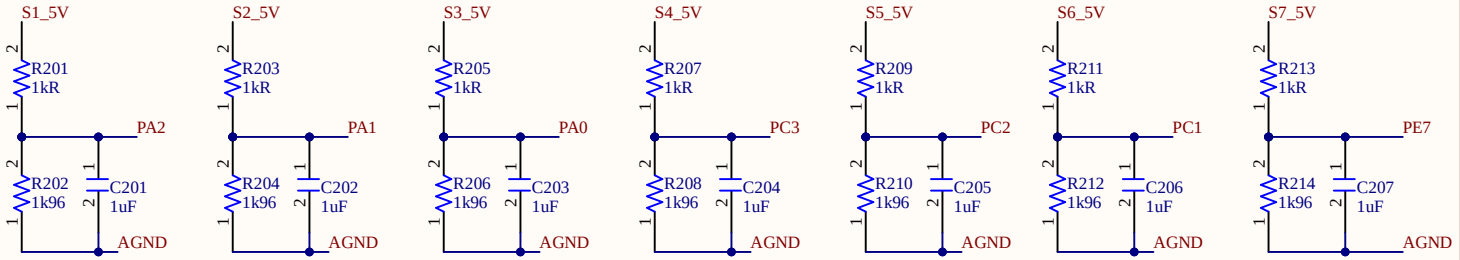
Outputs



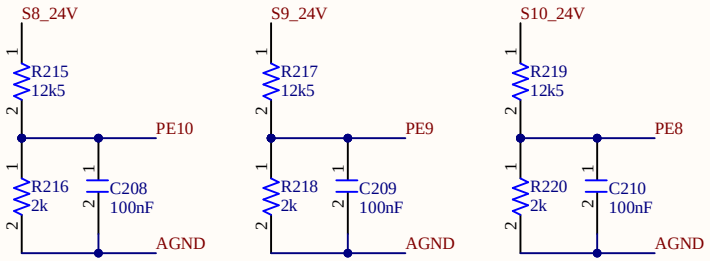
Inputs



5V output sensors



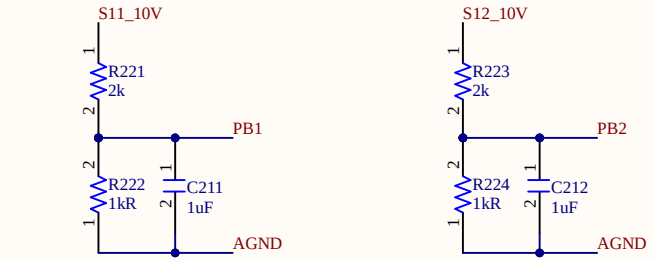
24V output sensors



Can be used for digital inputs of 24V SDC

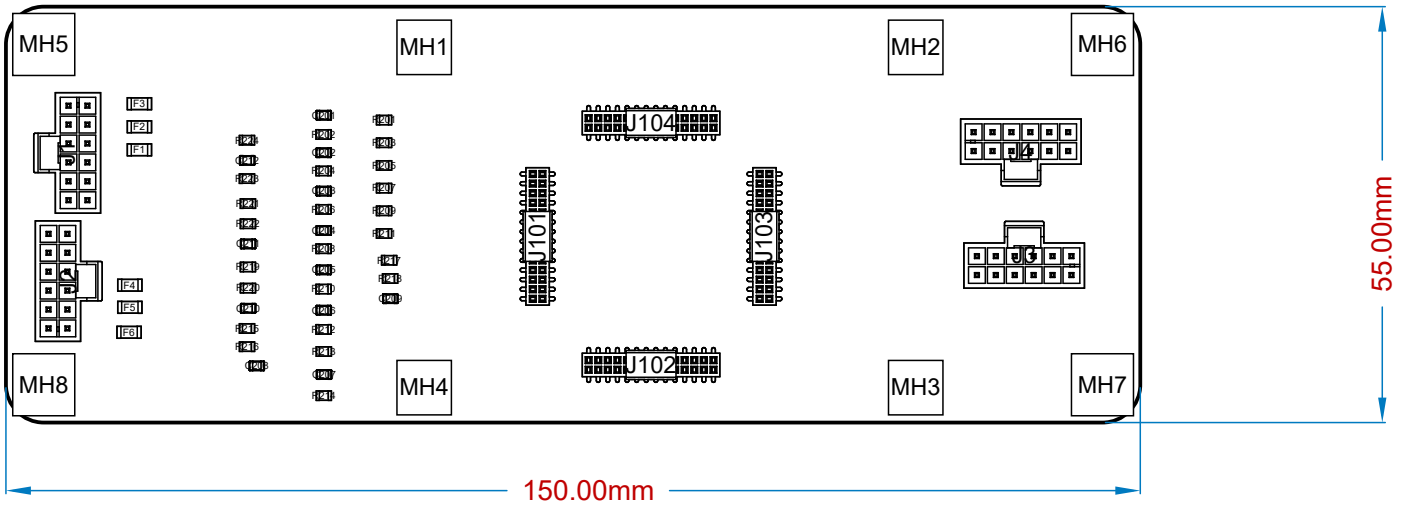
Most of sensors are ratiometric outputs (0.5V to 4.5V). No offset applied for sensor alive detection

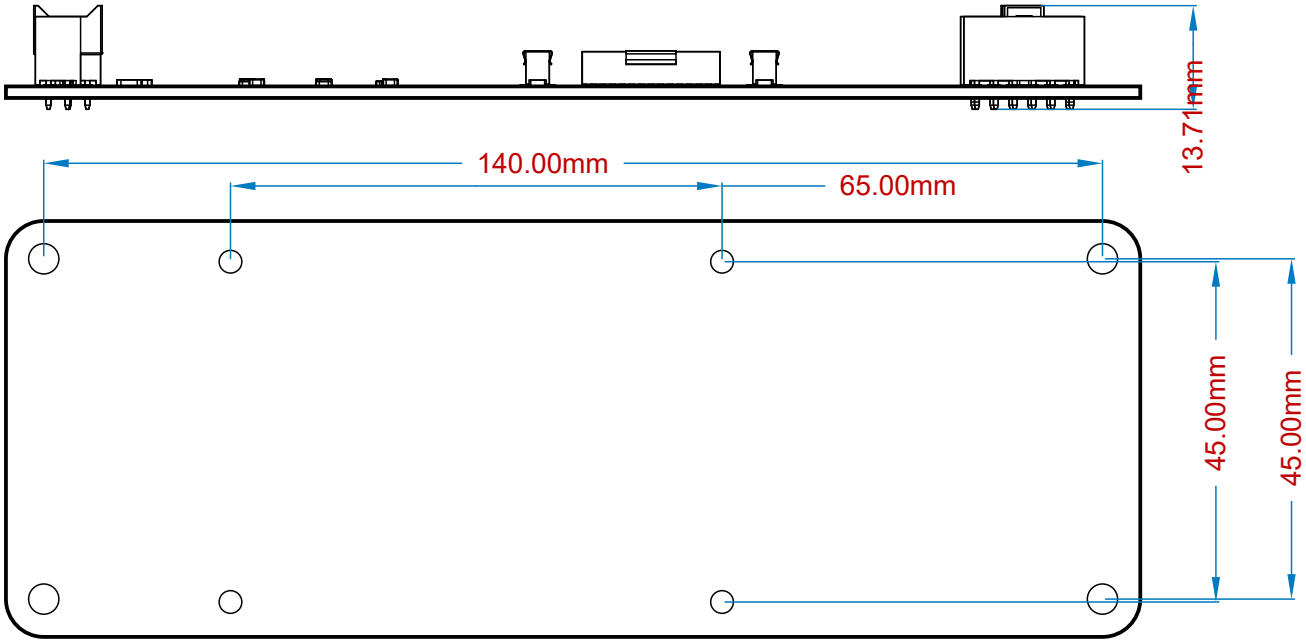
10V output sensors



Company: e-Tech Racing e-techracing.es		
Project: Front ECU	Variant: [No Variations]	
Size: -	Page Contents: [2] Sensors.SchDoc	Version: 1.0
		Department: Hardware
Author: Bernat Costa Cesari bernat.costa.cesari@estudiantat.upc.edu		Sheet 3 of 5
Checked by: Andreu Senis		Date: 18/12/2023

ETRX Front ECU 2023 v1.0

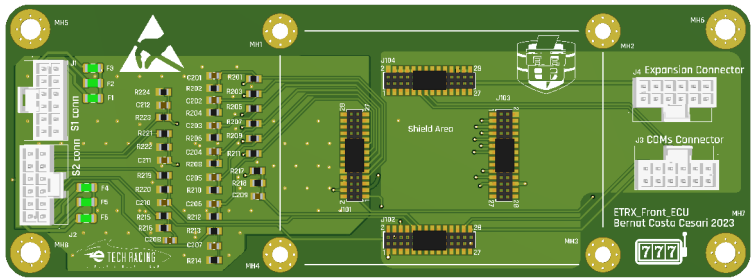


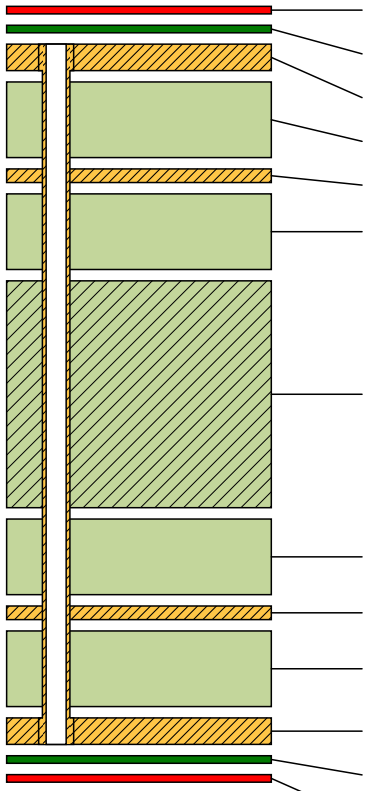


Bernat Costa Cesari

TECH RACING
FORMULA STUDENT TEAM

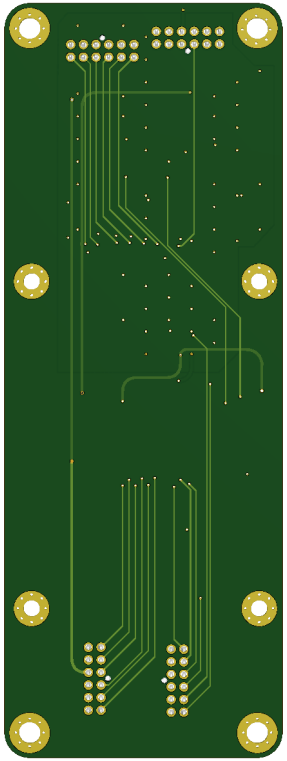
Line #	Designator	Comment	Quantity
1	C201, C202, C203, C204, C205, C206, C207, C211, C212	885012207103	9
2	C208, C209, C210	885012207098	3
3	F1, F2, F3, F4, F5, F6	0437001.WRA	6
4	J1, J2, J3, J4	1053101112	4
5	J101, J102, J103, J104	62332821021	4
6	MH1, MH2, MH3, MH4	Mounting_Hole_M3	4
7	MH5, MH6, MH7, MH8	Mounting_Hole_M4	4
8	R201, R203, R205, R207, R209, R211, R213, R222, R224	CR0805-JW-102ELF	9
9	R202, R204, R206, R208, R210, R212, R214	1k96	7
10	R215, R217, R219	12k5	3
11	R216, R218, R220, R221, R223	2k	5

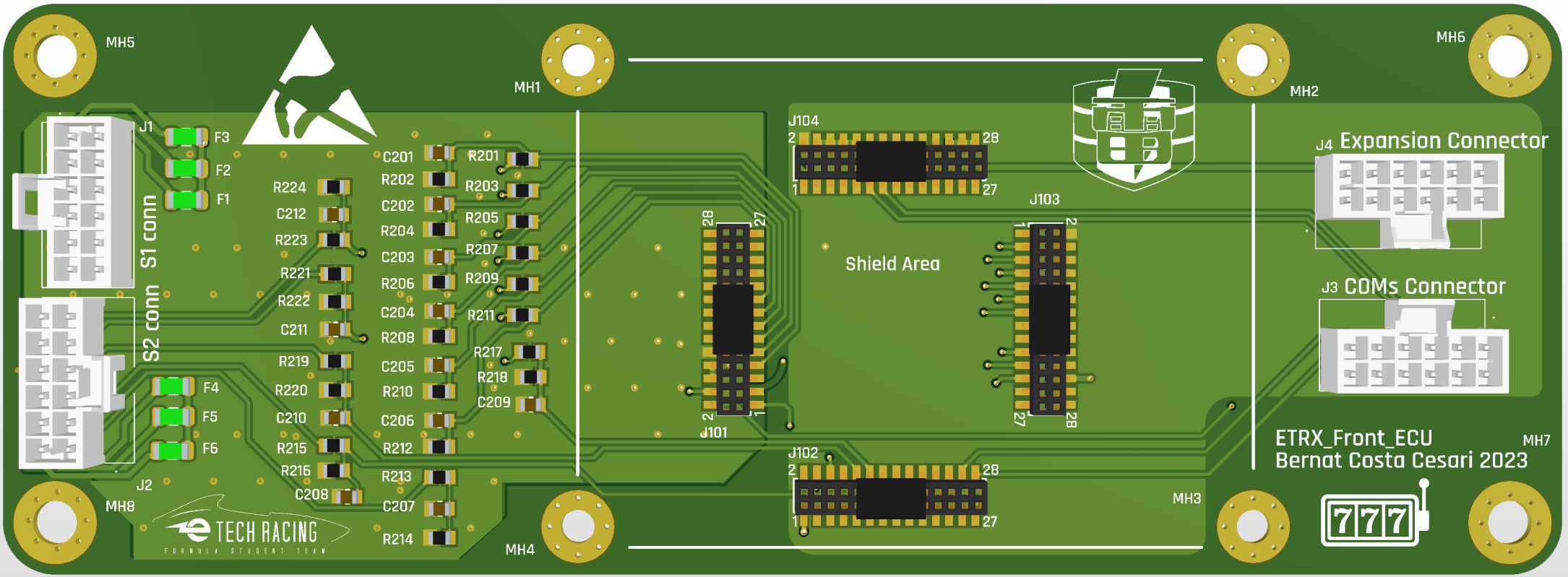


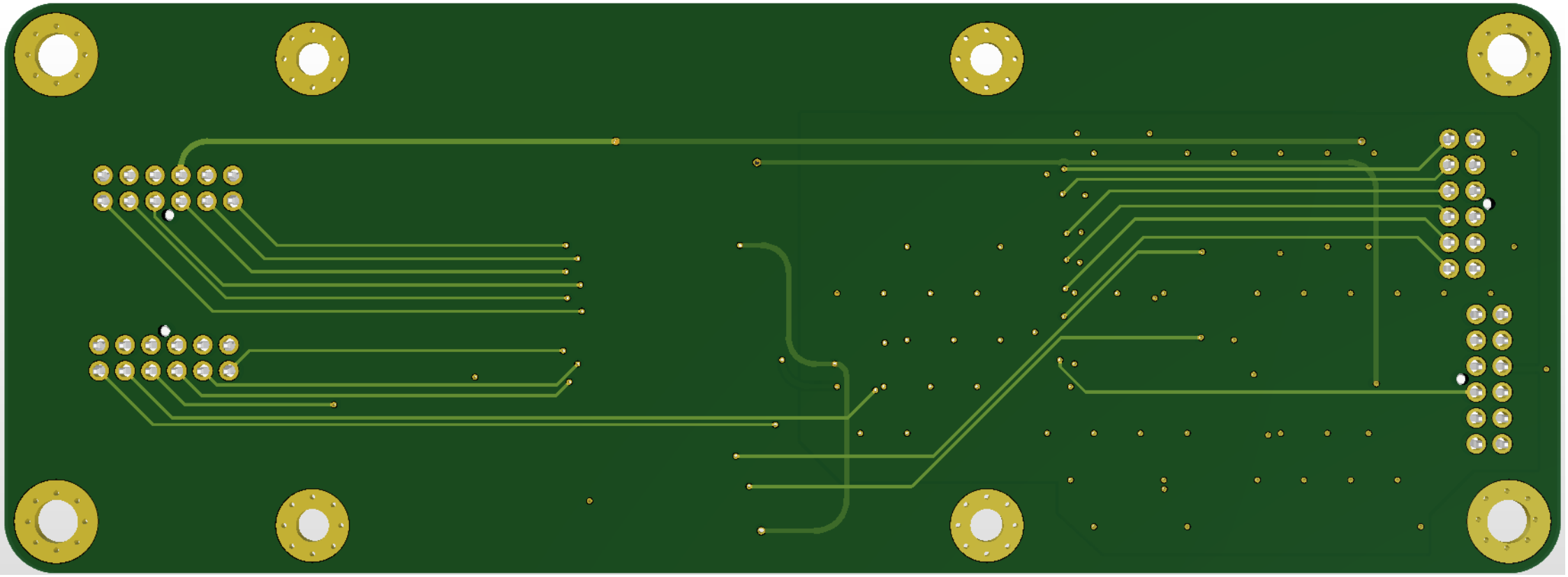


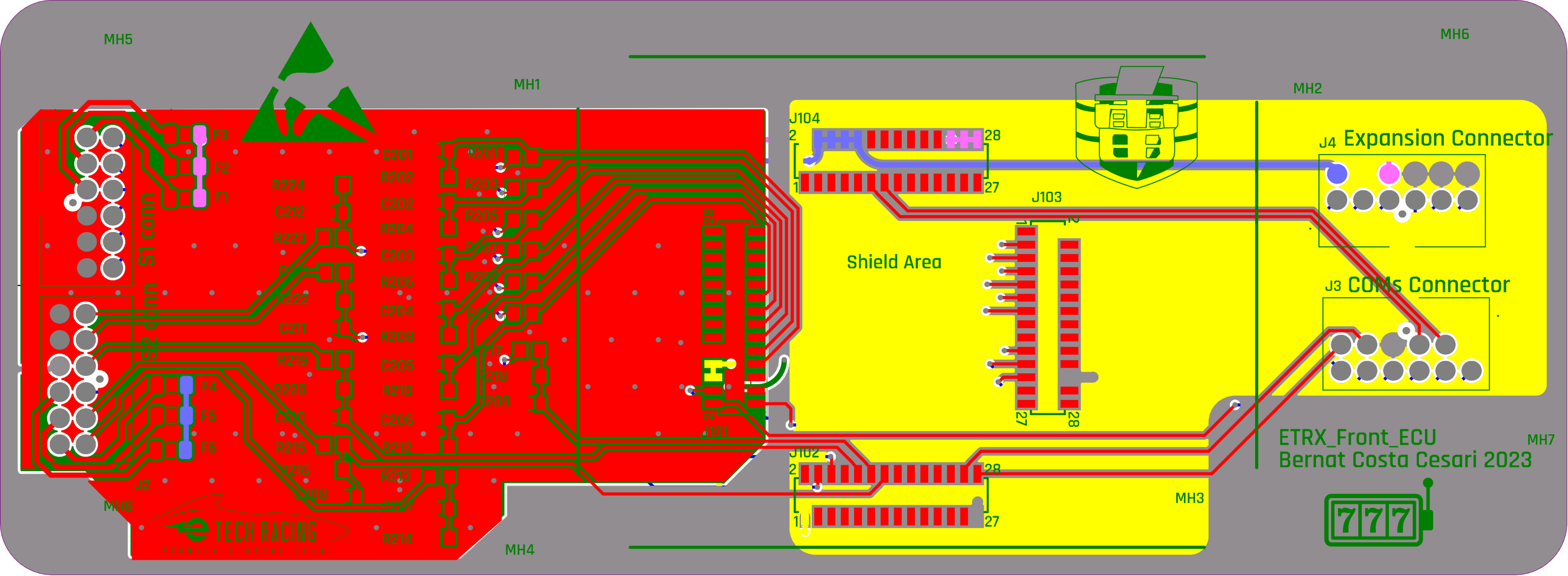
Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.01mm	Solder Resist	Solder Mask	GTS
Copper	Top Layer	0.04mm		Signal	GTL
Prepreg		0.10mm	PP-006	Dielectric	
CF-004	GND	0.02mm		Signal	G1
Prepreg		0.10mm	PP-006	Dielectric	
		1.00mm	FR-4	Dielectric	
Prepreg		0.10mm	PP-006	Dielectric	
CF-004	PWR	0.02mm		Signal	G2
Prepreg		0.10mm	PP-006	Dielectric	
Copper	Bottom Layer	0.04mm		Signal	GBL
Surface Material	Bottom Solder	0.01mm	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO

Total thickness: 1.53mm




MH5
MH1
MH2
MH6
J1
S1 conn
S2 conn
J2
F3
F2
F1
F4
F5
F6
R224
C212
R223
R221
R222
C211
R219
R220
C210
R215
R216
C208
C201
R202
C202
R204
C203
R206
C204
R208
C205
R210
C206
R212
R213
C207
R214
R201
R203
R205
R207
R209
R211
R217
R218
C209
J101
J104
J103
J102
Shield Area
J4 Expansion Connector
J3 COMs Connector
ETRX_Front_ECU
Bernat Costa Cesari 2023
MH7
MH3
MH4
MH8
TECH RACING
FORMULA STUDENT TEAM
777




MH5
MH6
MH1
MH2
J104
2
28
1
27
J103
J4 Expansion Connector
Shield Area
J3 COMs Connector
F3
F2
F1
S1 conn
S2 conn
F4
F5
F6
J2
MH8
TECH RACING
FORMULA STUDENT TEAM
J102
MH3
ETRX_Front_ECU
Bernat Costa Cesari 2023
MH7
MH4
777