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Rev. 1
New schematic, copied from verbier rev 5

Plan:
+1 stepper motor controller to total 2
+1 position sensor to total 3
Wifi removed
UI LED/Touch removed from MB
Remote control removed

Touch alternatives:
1. ITO connector from overlay
2. Local touch controllers on UI with separate com
3. Local MCU on UI with UART com

LED alternatives:
1. Multiplexing like Aspen

UI-IC for touch controller chip with I2C, same pinout as RFID connector to be able to put RFID on separate I2C channel if touch controller is not used, signal selectable between light sense in and 5V power out

Same motor settings as verbier in first prototype

Sensor board connector has selectable 5V/12V power to use verbier sensor board in first prototype.

Rev. 2
MCU changed from MKE15Z256 (100pin) to MKE17Z256 (64pin)

MKE17 has only one I2C channel, Sensor and RFID share it

Wifi changed from external on connector to internal stamp module

UVC LED control added, high side drive current regulator

Pump output combined with water level and new UV + two signals for future use in a common connector

All touch and LED circuitry deleted, UI will be on a separate board with a MCU. Communication via UART.

Water level board circuits incorporated on main board
A few components have incorrect article number

Sensor board connector signals mirrored (Also done on sensor board)
5V and 12V alternatives removed from sensor board power

POS inputs removed

Pump changed to high side drive

Power board connector FG level shift changed to same as Verbier


Water level MCU and Buzzer VC set to dummy component

RF connector changed VC from Horizontal dummy to vertical

Wifi module changed VC from dummy to correct

Rev. 3
STEP1 moved from MCU pin 60 to PWM capable pin 61
STEP2 moved from MCU pin 56 to PWM capable pin 49
Missing testpoints added to signals WL_in and WL_out
Holes added for bosses in battery holder
SST areas added for QR and label
Temp & Humidity sensor board connector JSB302 added.
Change R425/R426 from 750K to 100R. Change C412/C413 from 100nF to 1nF.
Add L201/L202/L203/L204/L205/L206/L207/L208 before the input to stepper motor.
Remove R411, change R410 to wire connection.
JWL301, component change to VC1014492 (PH-6A).
JUI401, component change to VC1014491 (PH-4A).

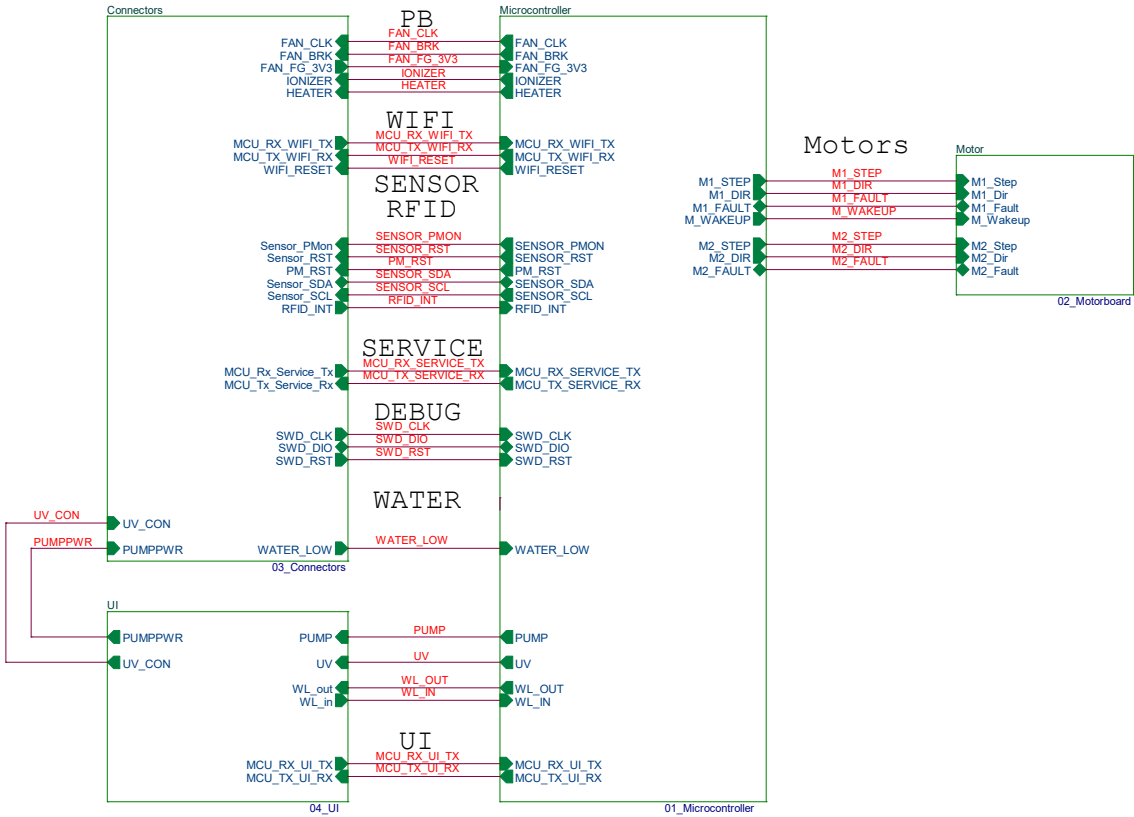
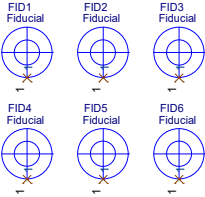
Rev. 4
Page UI- Change battery holder BAT402 to VC1014622
Page UI- Add polarity protection schottcky diode D403
Page Connectors- Add TVS TRSB1 from 3.3V to GND


<Variant Name>						
All	See revision history page			-	-	-
REV.	MODIFICATIONS			DRAWN BY	ECN	DATE
DRAWN BY DONGYANG LIU	APPROVED BY	DATE 2023-03-27	NAME FUJI			
DESIGN OWNER Global Small Appliance CX Wellbeing	CCA NUMBER AM-A252901		LOCAL NAME MAIN BOARD / CONTROLLER BOARD			
 Electrolux			DESCRIPTION Revision History			
			SCHEMATIC NUMBER SC0006720			REV. 003
						SHEET 1 / 8

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Fiducials

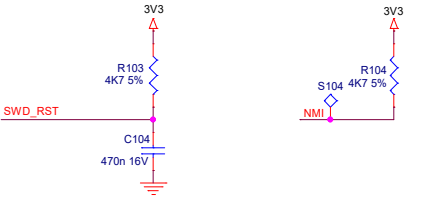


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DRAWN BY Dongyang Liu		APPROVED BY	DATE 2023-03-27	NAME FUJI		
DESIGN OWNER Global Small Appliance CX Wellbeing		CCA NUMBER AM-A252901		LOCAL NAME MAIN BOARD / CONTROLLER BOARD		
 Electrolux				DESCRIPTION Overview		
				SCHEMATIC NUMBER SC0006720		REV. 003
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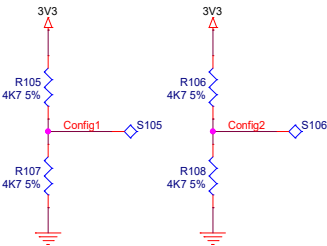
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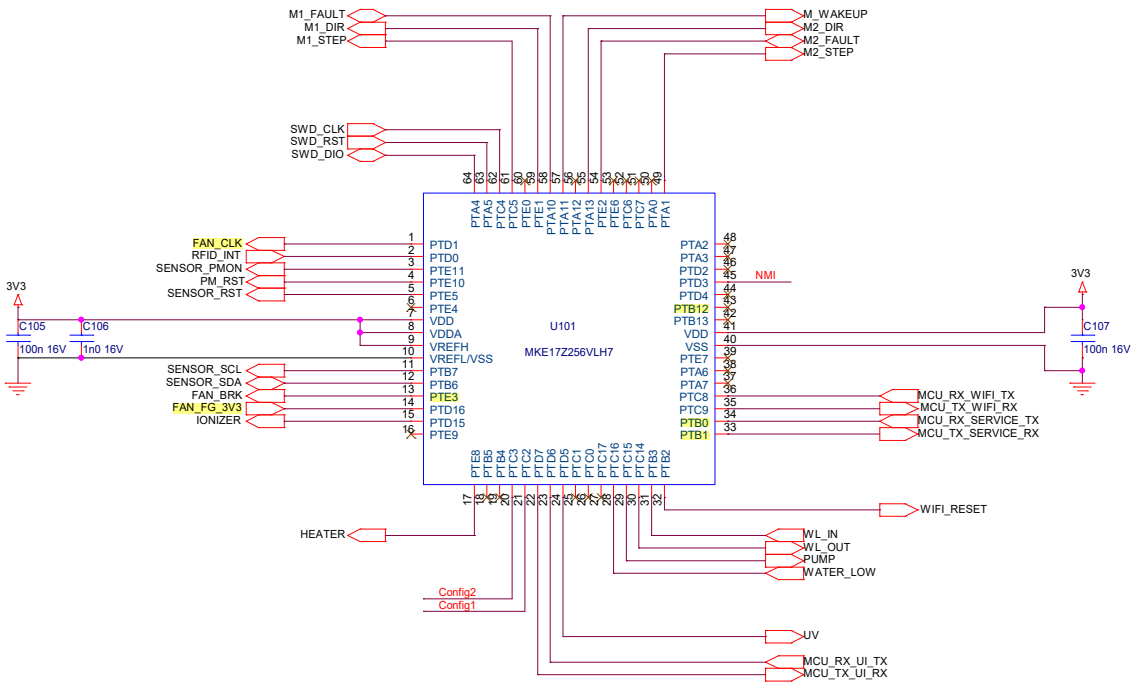
Pullup




Config



Microcontroller

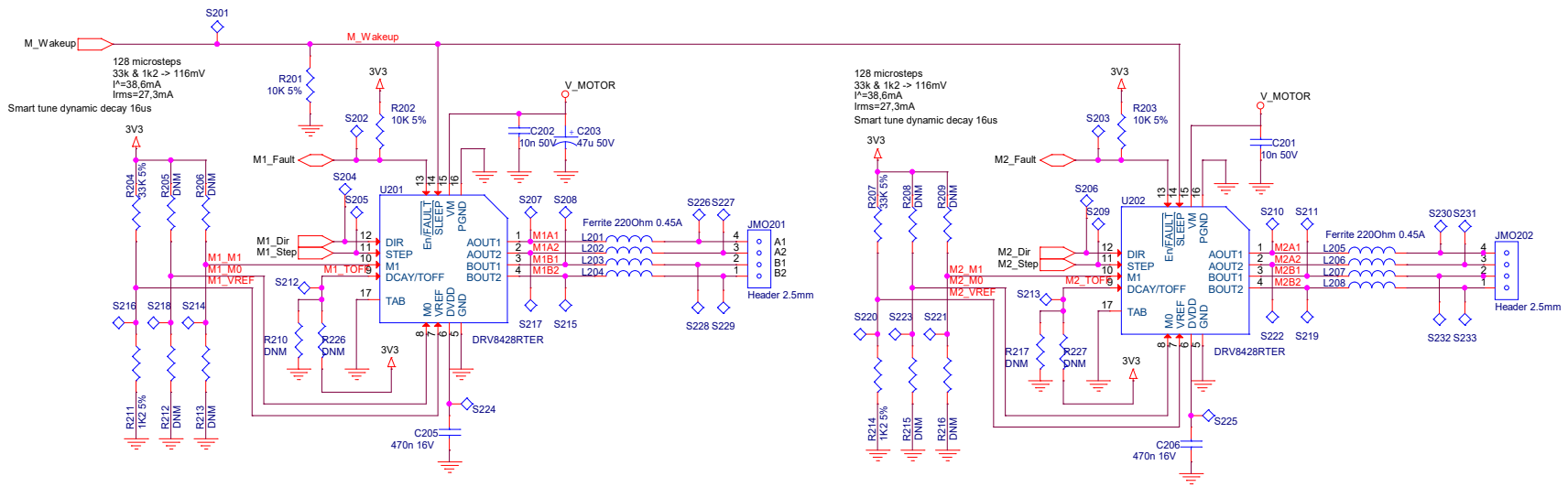


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Dongyang Liu			2023-03-27	FUJI				
DESIGN OWNER	CCA NUMBER		LOCAL NAME					
Global Small Appliance	AM-A252901		MAIN BOARD / CONTROLLER BOARD					
CX Wellbeing								
 Electrolux				DESCRIPTION				
				MCU				
				SCHEMATIC NUMBER				
				SC0006720			REV. 003	
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Stepper motor



Decay mode setting

TOFF	DECAY MODE	OFF TIME
0	Smart tune ripple control (mounted)	
14.7k to GND	Mixed 30% decay	7us
44.2k to GND	Mixed 30% decay	16us
100k to GND	Mixed 30% decay	32us
249k to GND	Smart tune dynamic decay	7us
Z	Smart tune dynamic decay	16us
DVDD	Smart tune dynamic decay	32us

Microstepping indexer settings


M0	M1	Step mode
0	0	1/1 100% current
0	330k	1/1 71% current
1	0	1/2 non-circular
Z	0	1/2
0	1	1/4
1	1	1/8
Z	1	1/16
0	Z	1/32
Z	330k	1/64 (mounted)
Z	Z	1/128
1	Z	1/256

0 = connected to GND (10k)
1 = connected to 3V3 (10k)
330k = 330k to GND
Z = floating (no resistor)

Current output setting

Device	I^A	I_rms
8424/25	Vref / 1.32 V	I^A / sqrt(2)
8426	Vref / 2.2 V	
8428	Vref / 3 V	

Recommended: Ra || Rb < 50k
DRV8424: Vrefmax=3.3V = Ifs 2.5A / I_rms 1.8A
DRV8425: Vrefmax=2.64V = Ifs 2A / I_rms 1.4A
DRV8426: Vrefmax=3.3V = Ifs 1.5A / I_rms 1.1A
DRV8428: Vrefmax=3V = Ifs 1A / I_rms 0.7A

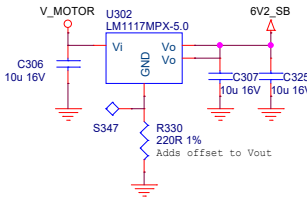
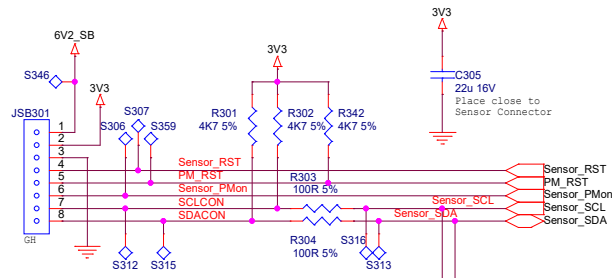
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DESIGN OWNER	CCA NUMBER	LOCAL NAME				
Global Small Appliance	AM-A252901	MAIN BOARD / CONTROLLER BOARD				
CX Wellbeing						
 Electrolux			DESCRIPTION			
			Motor driver & Position Feedback			
			SCHEMATIC NUMBER			
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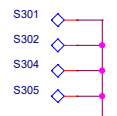
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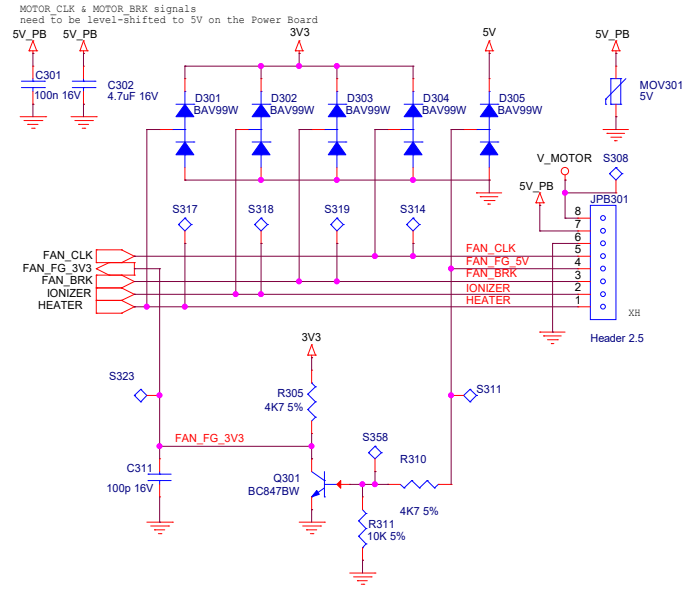
Interface to Sensor Board



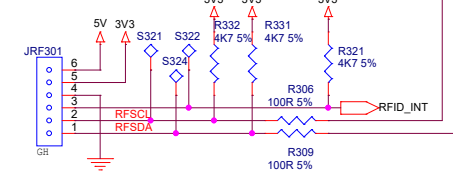
GND



Interface to Power Board



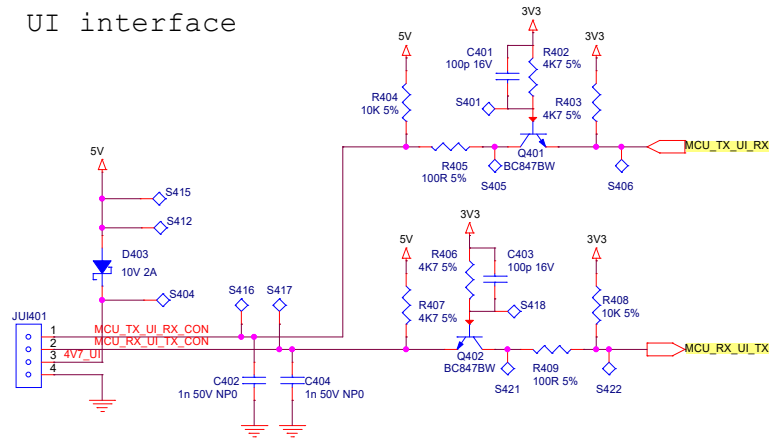
RFID interface



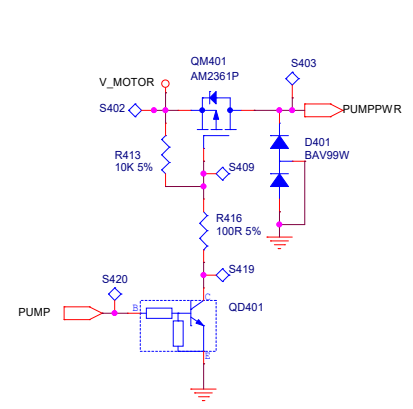
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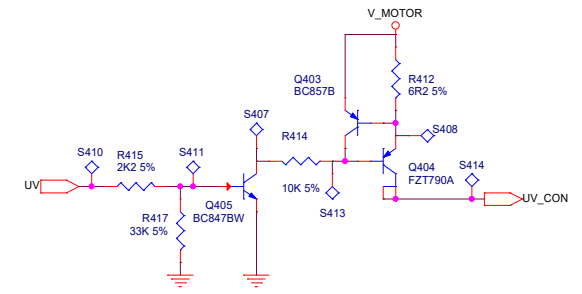
UI interface



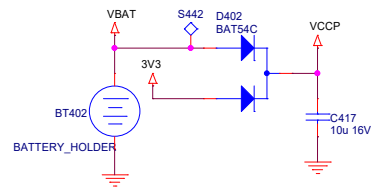
WATER PUMP



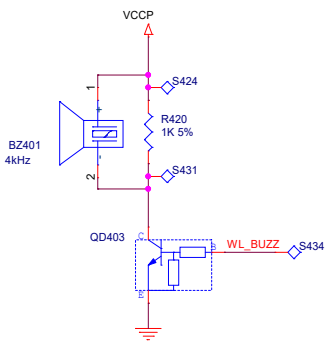
UV LED



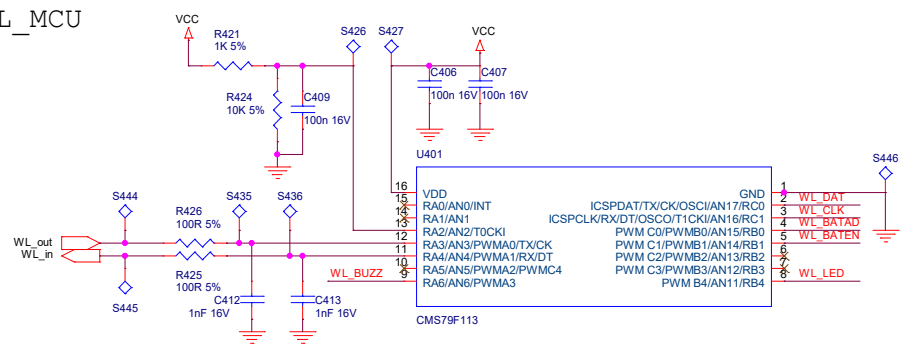
WL_BATTERY



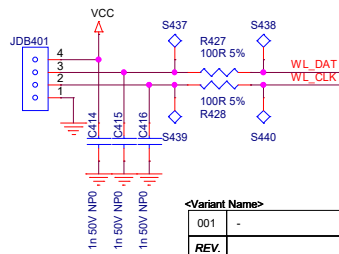
WL_BUZZER



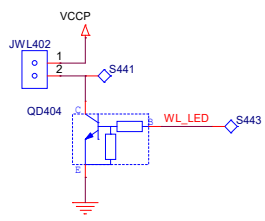
WL_MCU




WL_DEBUG



WL_LED



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Global Small Appliance CX Wellbeing		AM-A252901		MAIN BOARD / CONTROLLER BOARD				
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				UI & WATER				
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