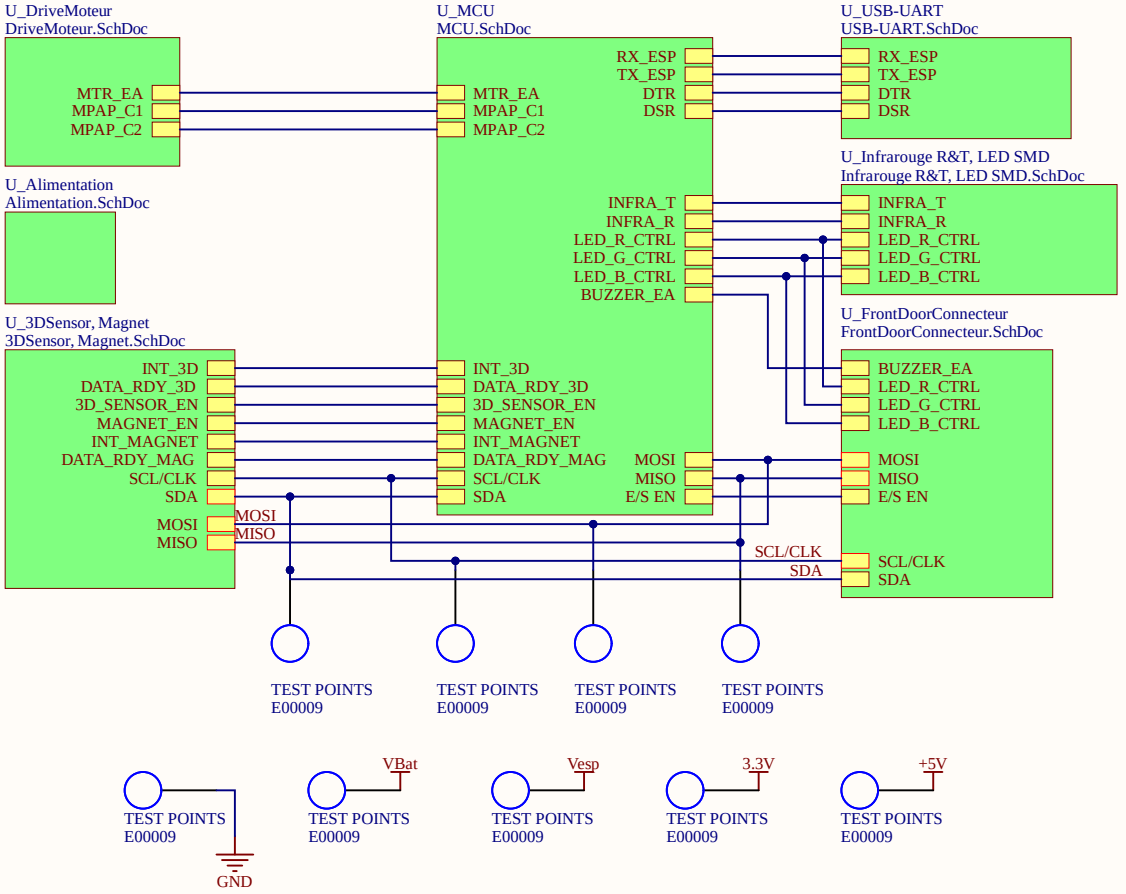
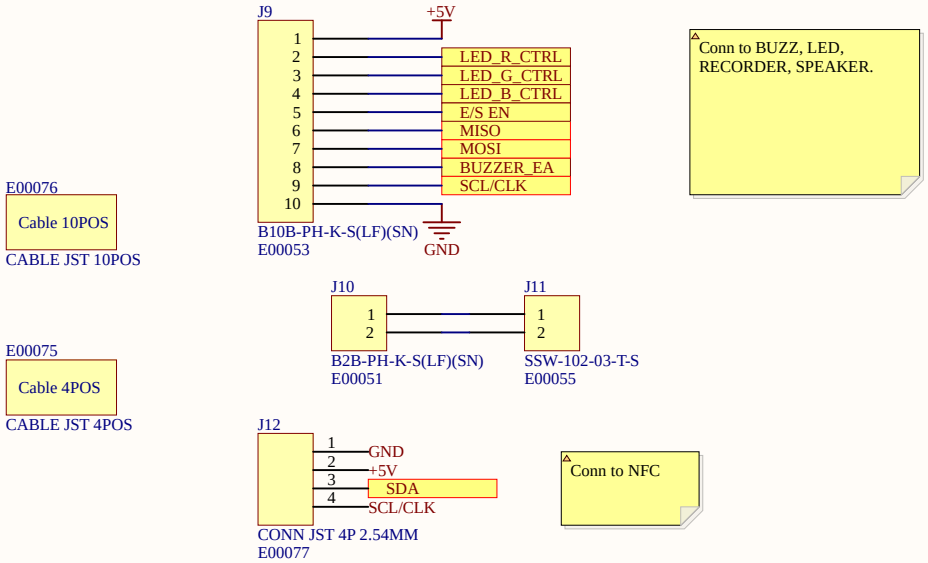


Titre : ADAM BACK-DOOR SYST			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants		
Date : 2023-06-06	Heure : 17:30:08	Feuille 1 de 8		
Fichier : Top-Sheet.SchDoc				



Titre : Connecteur FrontDoor			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants		
Date : 2023-06-06	Heure : 17:30:09	Feuille 2 de 8		
Fichier : FrontDoorConnecteur.SchDoc				

MOTEUR DE 0.13 A
0.1V - 10V

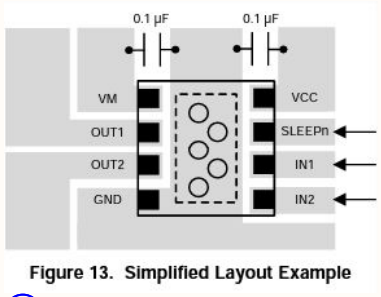
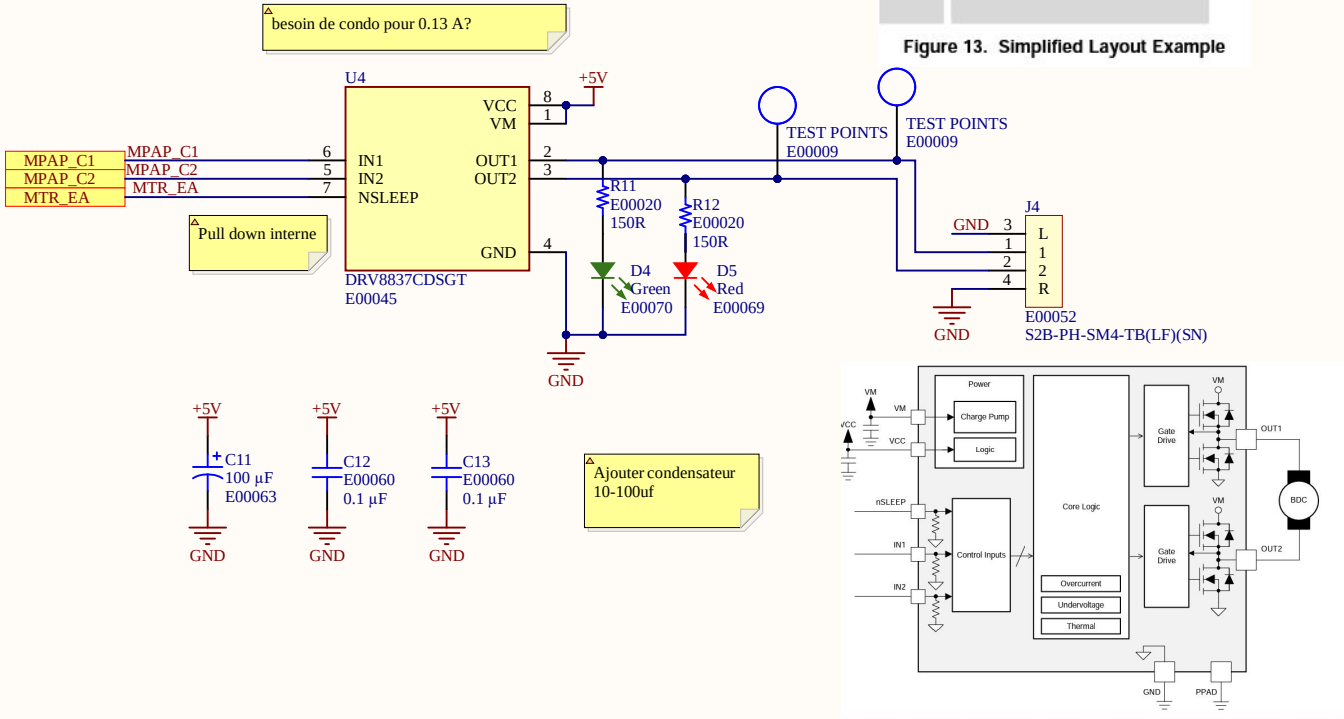


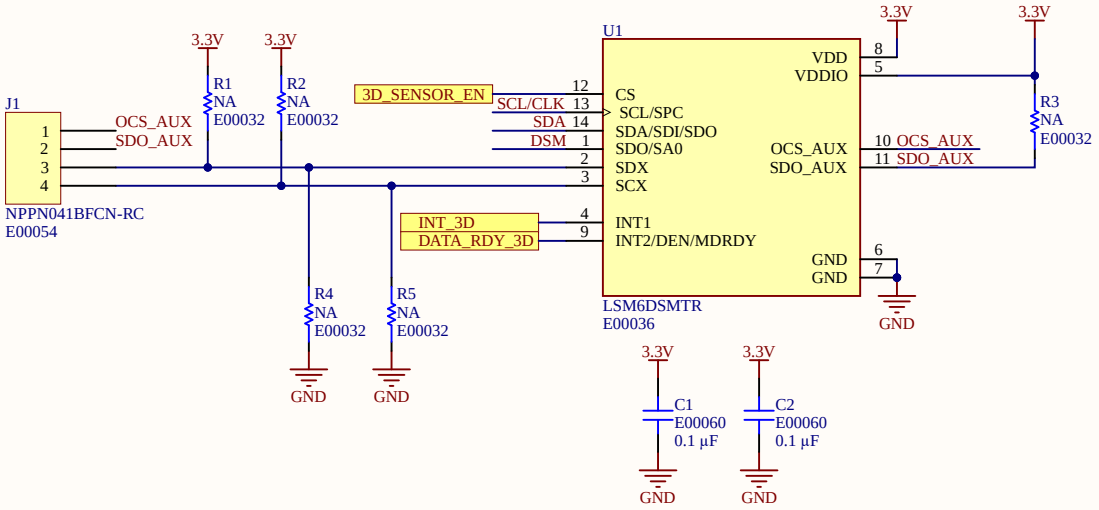
Figure 13. Simplified Layout Example

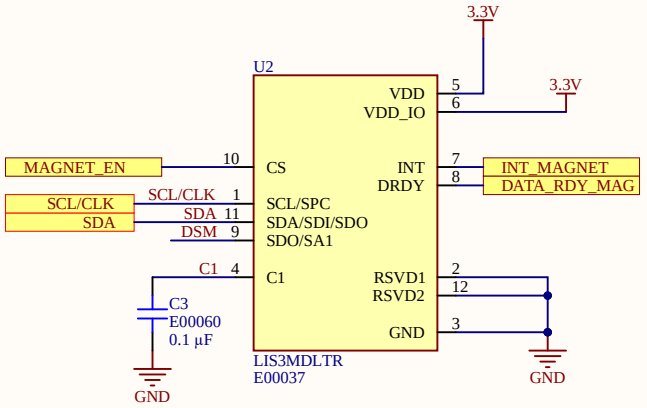


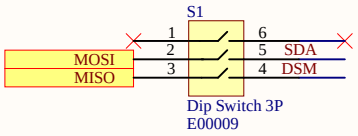
Titre : Drive Moteur			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants		
Date : 2023-06-06	Heure : 17:30:09	Feuille 3 de 8		
Fichier : DriveMoteur.SchDoc				

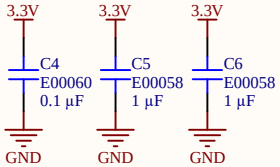
Dependant des modes, certains Pin sont branchés au VDD_IO ou unconnect. Commentaire sur datasheet: (Leave pin electrically unconnected and soldered to PCB.)

Pin#	Name	Mode 1 function	Mode 2 function	Mode 3 / Mode 4 function
1	SDO/SA0	SPI 4-wire interface serial data output (SDO) I²C least significant bit of the device address (SA0)	SPI 4-wire interface serial data output (SDO) I²C least significant bit of the device address (SA0)	SPI 4-wire interface serial data output (SDO) I²C least significant bit of the device address (SA0)
2	SDx	Connect to VDDIO or GND	I²C serial data master (MSDA)	Auxiliary SPI 3/4-wire interface serial data input (SDI) and SPI 3-wire serial data output (SDO)
3	SCx	Connect to VDDIO or GND	I²C serial clock master (MSCL)	Auxiliary SPI 3-wire interface serial port clock (SPC_Aux)
4	INT1	Programmable interrupt 1		
5	VDDIO(1)	Power supply for I/O pins		
6	GND	0 V supply		
7	GND	0 V supply		
8	VDD(1)	Power supply		
9	INT2	Programmable interrupt 2 (INT2) / Data enable (DEN)	Programmable interrupt 2 (INT2)/ Data enable (DEN)/ I²C master external synchronization signal (MDRDY)	Programmable interrupt 2 (INT2)/ Data enable (DEN)
10	OCS_Aux	Leave unconnected(2)	Leave unconnected(2)	Auxiliary SPI 3/4-wire interface enable
11	SDO_Aux	Connect to VDD_IO or leave unconnected(2)	Connect to VDD_IO or leave unconnected(2)	Auxiliary SPI 3-wire interface: leave unconnected(2) Auxiliary SPI 4-wire interface: serial data output (SDO_Aux)
12	CS	I²C/SPI mode selection (1: SPI idle mode / I²C communication enabled; 0: SPI communication mode / I²C disabled)	I²C/SPI mode selection (1: SPI idle mode / I²C communication enabled; 0: SPI communication mode / I²C disabled)	I²C/SPI mode selection (1: SPI idle mode / I²C communication enabled; 0: SPI communication mode / I²C disabled)
13	SCL	I²C serial clock (SCL) SPI serial port clock (SPC)	I²C serial clock (SCL) SPI serial port clock (SPC)	I²C serial clock (SCL) SPI serial port clock (SPC)
14	SDA	I²C serial data (SDA) SPI serial data input (SDI) 3-wire interface serial data output (SDO)	I²C serial data (SDA) SPI serial data input (SDI) 3-wire interface serial data output (SDO)	I²C serial data (SDA) SPI serial data input (SDI) 3-wire interface serial data output (SDO)









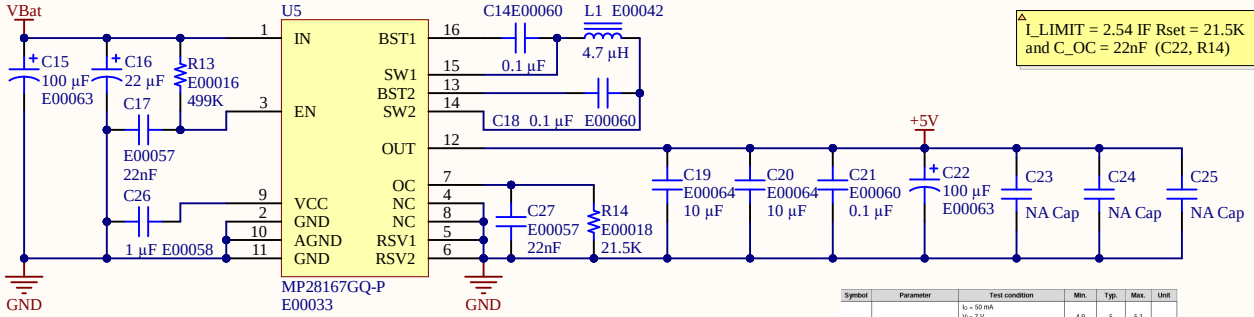
Titre : 3D sensor and Magnet sensor			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Date : 2023-06-06	Heure : 17:30:09	Feuille 4 de 8	
Fichier : 3DSensor, Magnet.SchDoc			

Verifie le courant l'inductance, le "Selecting the inductor page 16"

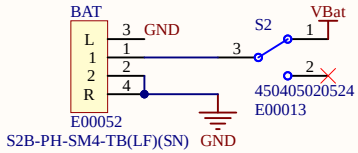
Rset(Kohm) = 76.24 = I_LIMIT(A)

75.24 / 3A = 28 Kohm

I_LIMIT = 2.54 IF Rset = 21.5K and C_OC = 22nF (C22, R14)

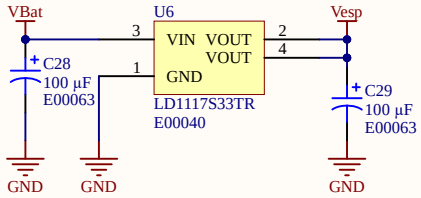


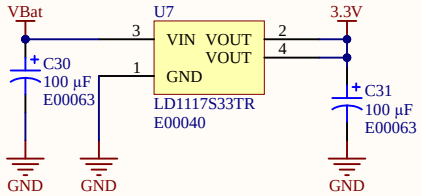
Symbol	Parameter	Test condition		Min.	Typ.	Max.	Unit
V_O	Output voltage	I_O = 50 mA V_I = 7 V T_A = 25 °C		4.9	5	5.1	V
		I_O = 50 mA V_I = 7 V		4.785		5.215	
V_I	Operating input voltage	I_O = 500 mA				16	V
I_O	Output current limit	T_A = 25 °C			1		A
ΔV_O	Line regulation	V_I = 6 to 16 V I_O = 5 mA			5	28	mV
ΔV_O	Load regulation	V_I = 6.3 V I_O = 5 to 500 mA			5	28	mV
I_q	Quiescent current	V_I = 6 to 16 V I_O = 0 mA	ON mode		0.5	2	mA
		V_I = 6.3 to 16 V I_O = 500 mA				12	
		V_I = 6 V	OFF mode		50	120	µA
SVR	Supply voltage rejection	I_O = 5 mA V_I = 7 ± 1 V T_A = 25 °C	f = 120 Hz		76		dB
			f = 1 kHz		71		
			f = 10 kHz		60		
eN	Output noise voltage	B = 10 Hz to 100 kHz T_A = 25 °C			50		µV
V_d	Dropout voltage	I_O = 200 mA			0.2	1.3	V
		I_O = 500 mA			0.4	1.3	
V_{IL}	Control input logic low					0.8	V
V_{IH}	Control input logic high			2			V
I_i	Control input current	V_I = 6 V V_O = 6 V T_A = 25 °C			10		µA
C_O	Output bypass capacitance	ESR = 0.1 to 10 Ω I_O = 0 to 500 mA		2	10		µF



6.2 - 3.3 = 2.9V
2.9V x 500mA = 1.45W

2.9V x 300mA = 0.87W





Symbol	Parameter		Value	Unit
V_{IN}	DC Input Voltage		15	V
P_{tot}	Power Dissipation		12	W
T_{stg}	Storage Temperature Range		-40 to +150	°C
T_{op}	Operating Junction Temperature Range	for C Version	-40 to +150	°C
		for standard Version	0 to +150	°C

V_d	Dropout Voltage	I_O = 100 mA	1	1.1	V
		I_O = 500 mA	1.05	1.15	
		I_O = 800 mA	1.10	1.2	

Titre : Alimentation			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants	
Date : 2023-06-06	Heure : 17:30:10	Feuille 5 de 8	
Fichier : Alimentation.SchDoc			

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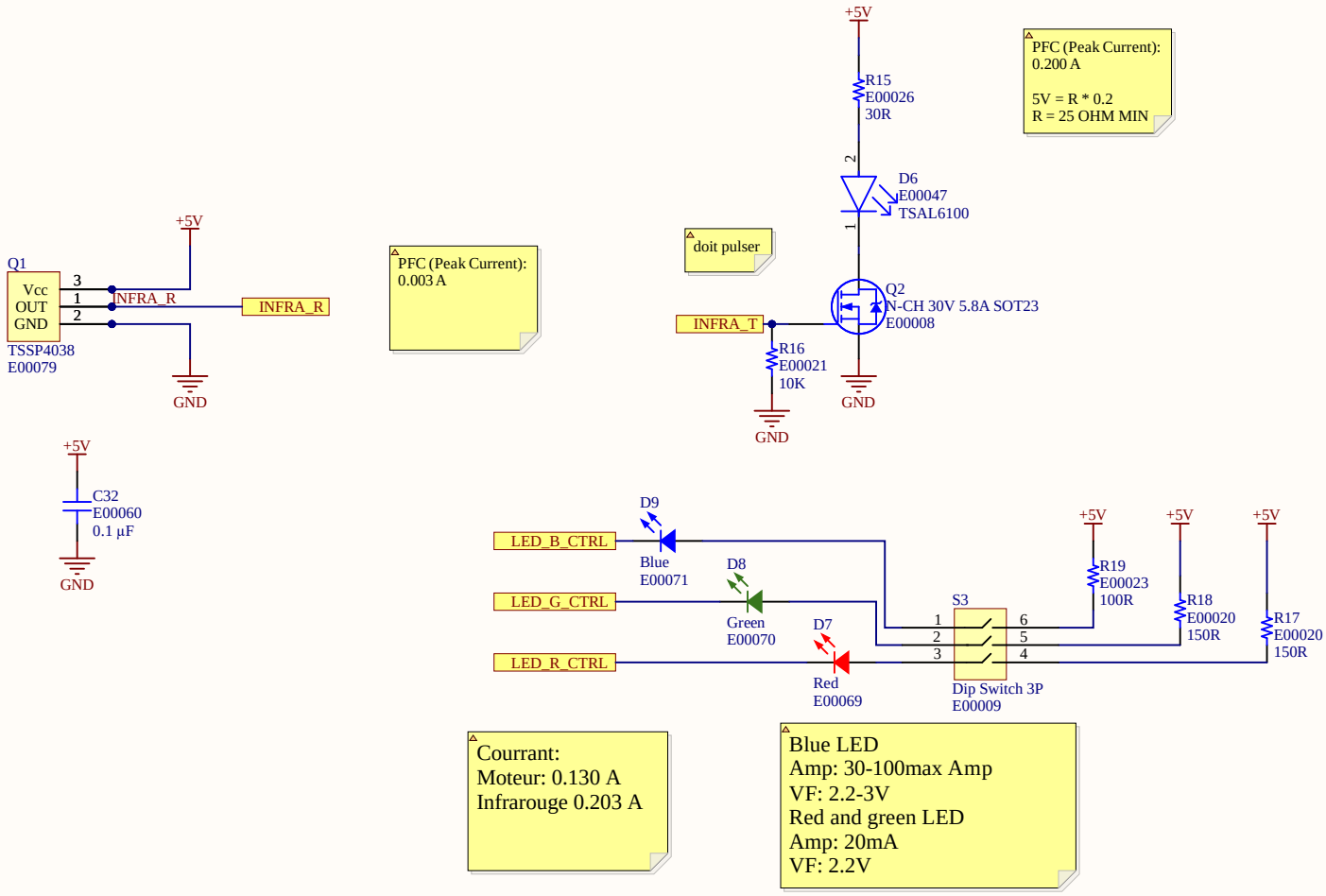
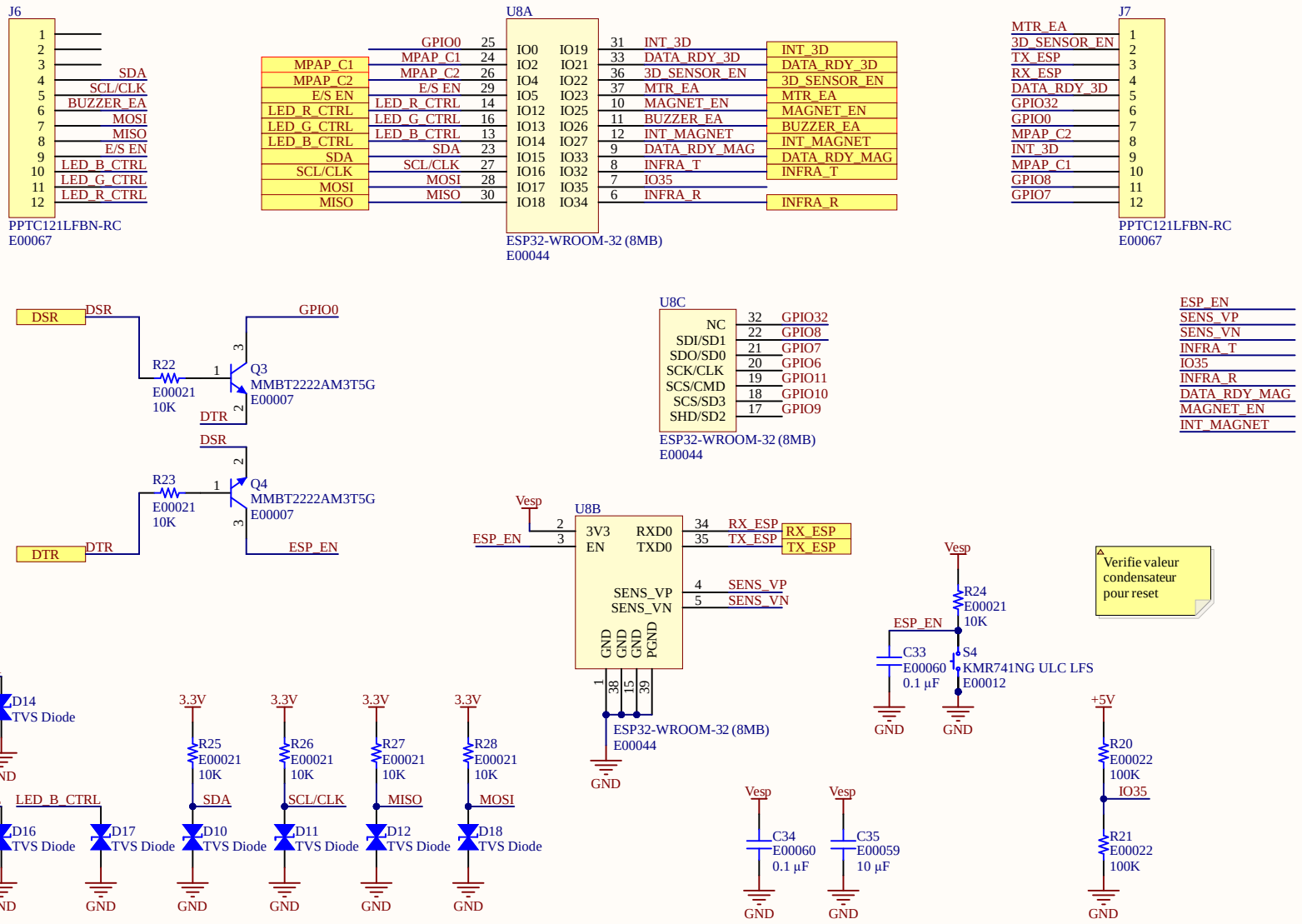
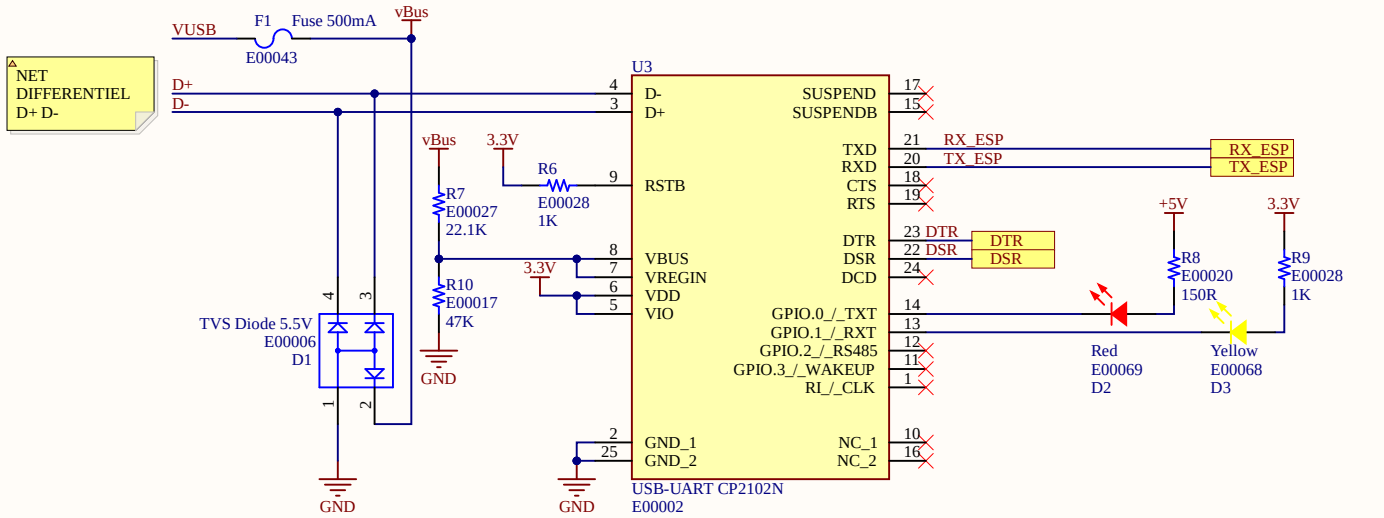
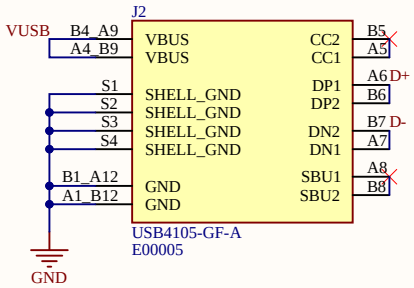


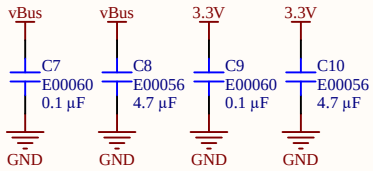
Titre : Infrarouge et LED SMD			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants		
Date : 2023-06-06	Heure : 17:30:10	Feuille 6 de 8		
Fichier : Infrarouge R&T, LED SMD.SchDoc				

Tire MAX 250mA (typ 50mA)









Titre : USB-UART			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*	Cannot open file C:\Users\Public\Documents\Altium\AD20\Templates\logo-li
Conception : Ilyes Gharmoul	Modification : Ilyes G	Révision : Enseignants		
Date : 2023-06-06	Heure : 17:30:11	Feuille 8 de 8		
Fichier : USB-UART.SchDoc				