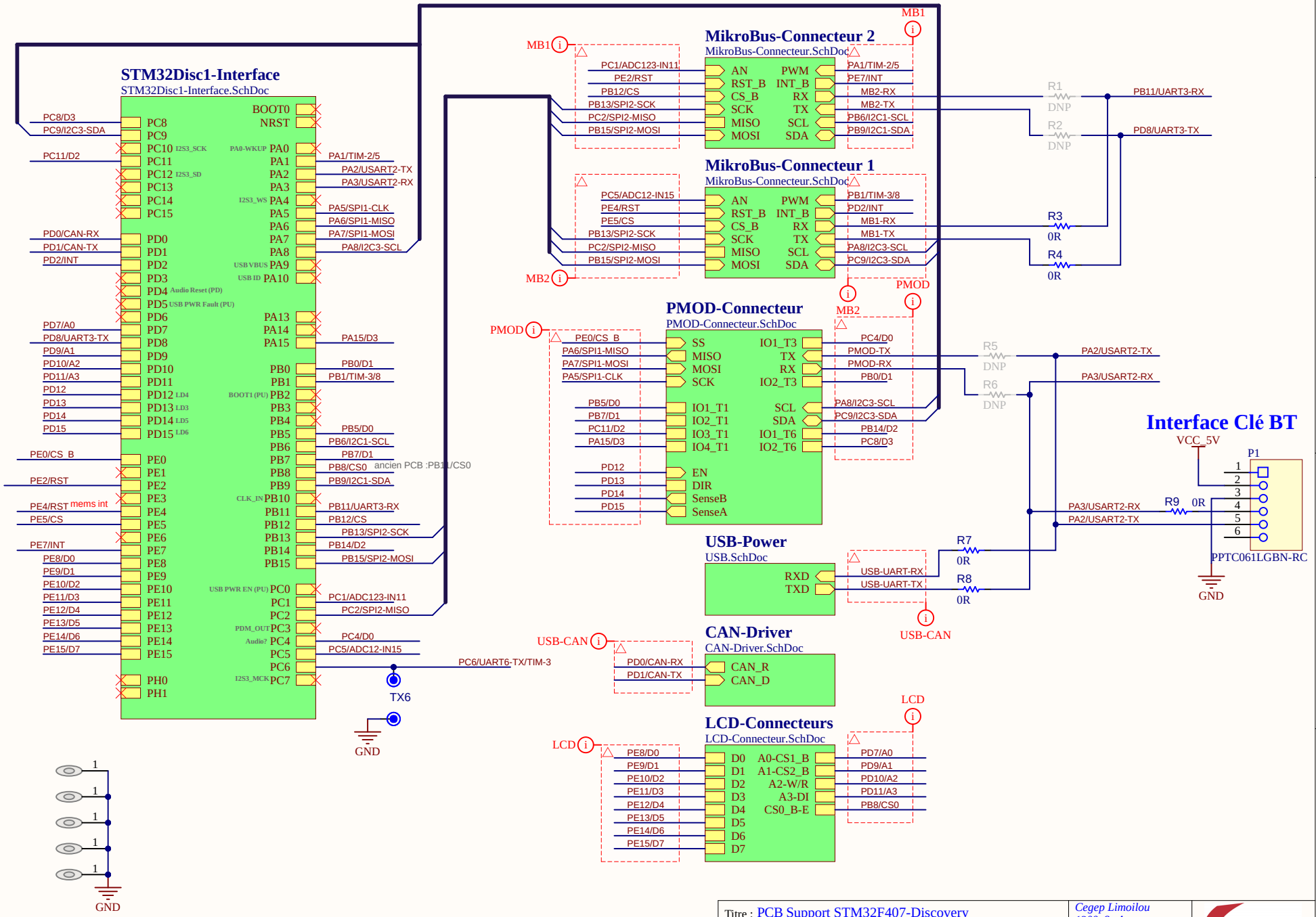
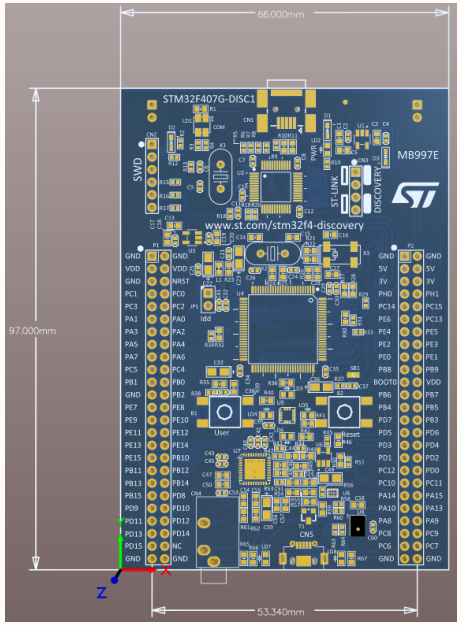
PCB Support STM32F407-Discovery



Titre : PCB Support STM32F407-Discovery			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A	
Date : 2026-01-05	Heure : 20:29:17	Feuille 1 de 7	
Fichier : PCB-Support-STM32F407.SchDoc			

STM32 DISCOVERY 407

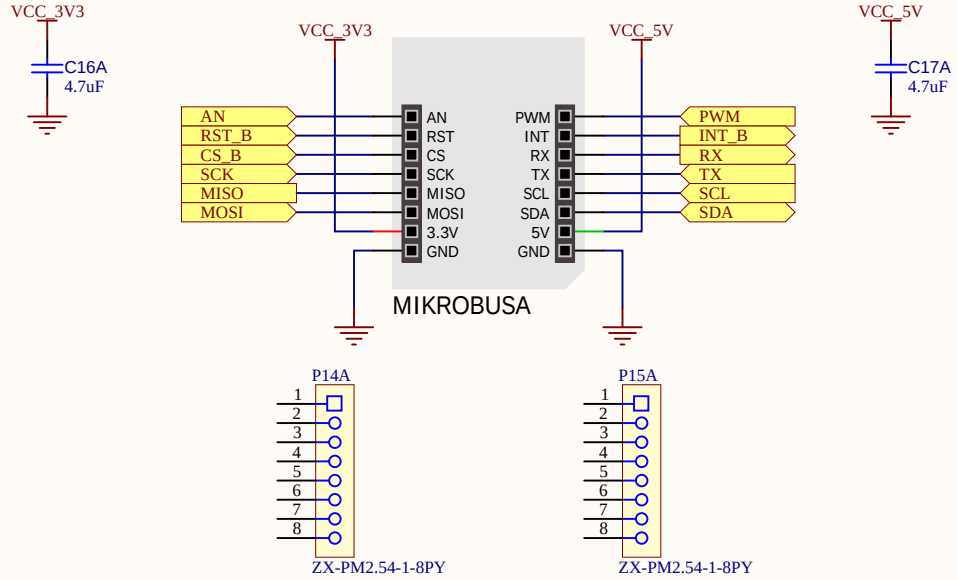


Position	Name	Type	Signal	Label
23	PA0-WKUP	I/O	GPIO_EXTI0	B1 [Blue PushButton]
69	PA10	I/O	USB_OTG_FS_ID	OTG_FS_ID
70	PA11	I/O	USB_OTG_FS_DM	OTG_FS_DM
71	PA12	I/O	USB_OTG_FS_DP	OTG_FS_DP
72	PA13	I/O	SYS_JTMS-SWDIO	SWDIO
76	PA14	I/O	SYS_JTCK-SWCLK	SWCLK
29	PA4	I/O	I2S3_WS	I2S3_WS[CS43L22_LRCK]
30	PA5	I/O	SPI1_SCK	SPI1_SCK[LIS302DL_SCL/SPC]
31	PA6	I/O	SPI1_MISO	SPI1_MISO[LIS302DL_SDO]
32	PA7	I/O	SPI1_MOSI	SPI1_MOSI [LIS302DL_SDA/SDI/SDO]
68	PA9	I/O	USB_OTG_FS_VBUS	VBUS_FS
47	PB10	I/O	I2S2_CK	CLK_IN [MP45DT02_CLK]
37	PB2	Input	GPIO_Input	BOOT1
89	PB3	I/O	SYS_JTDO-SWO	SWO
92	PB6	I/O	I2C1_SCL	Audio_SCL [CS43L22_SCL]
96	PB9	I/O	I2C1_SDA	Audio_SDA [CS43L22_SDA]
15	PC0	Output	GPIO_Output	OTG_FS_PowerSwitchOn
78	PC10	I/O	I2S3_CK	I2S3_SCK[CS43L22_SCLK]
80	PC12	I/O	I2S3_SD	I2S3_SD [CS43L22_SDIN]
8	PC14-OSC32_IN	I/O	RCC_OSC32_IN	PC14-OSC32_IN
9	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	PC15-OSC32_OUT
18	PC3	I/O	I2S2_SD	PDM_OUT [MP45DT02_DOUT]
64	PC7	I/O	I2S3_MCK	I2S3_MCK[CS43L22_MCLK]
59	PD12	Output	GPIO_Output	LD4 [Green Led]
60	PD13	Output	GPIO_Output	LD3 [Orange Led]
61	PD14	Output	GPIO_Output	LD5 [Red Led]
62	PD15	Output	GPIO_Output	LD6 [Blue Led]
85	PD4	Output	GPIO_Output	Audio_RST [CS43L22_RESET]
86	PD5	Input	GPIO_Input	OTG_FS_OverCurrent
98	PE1	I/O	GPIO_EXTI1	MEMS_INT2 [LIS302DL_INT2]
2	PE3	Output	GPIO_Output	CS_I2C/SPI [LIS302DL_CS_I2C/SPI]
12	PH0-OSC_IN	I/O	RCC_OSC_IN	PH0-OSC_IN
13	PH1-OSC_OUT	I/O	RCC_OSC_OUT	PH1-OSC_OUT

The JTAG pins are in input PU/PD after reset:
- PA15: JTDI in PU
- PA14: JTCK in PD
- PA13: JTMS in PU
- PB4: NJTRST in PU

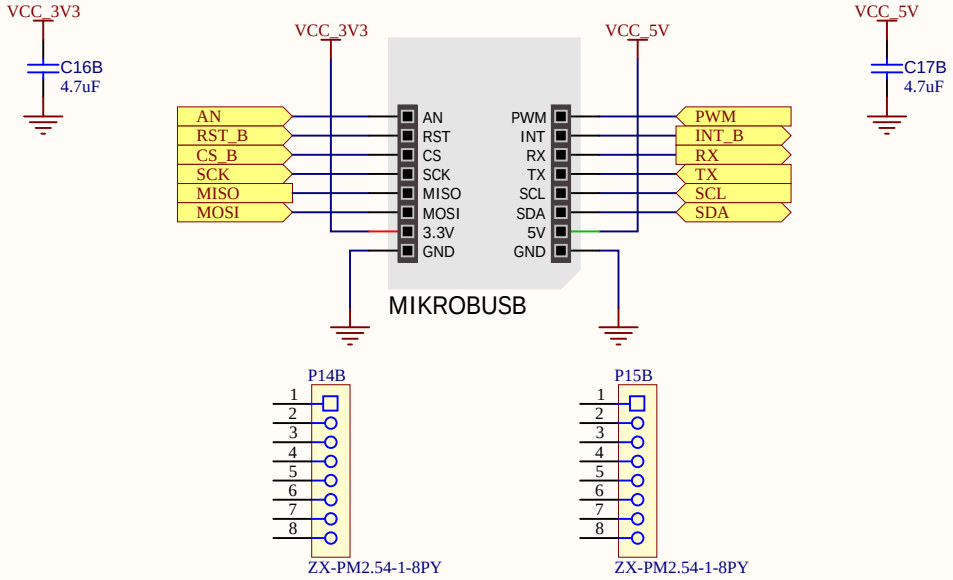
Titre : STM32 DISCOVERY 407			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A	
Date : 2026-01-05	Heure : 20:29:17	Feuille 2 de 7	
Fichier : STM32Disc1-Interface.SchDoc			

Mikro Bus - Connecteur



Titre : Mikro Bus - Connecteur				Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A		
Date : 2026-01-05	Heure : 20:29:18	Feuille 3 de 7		
Fichier : MikroBus-Connecteur.SchDoc				

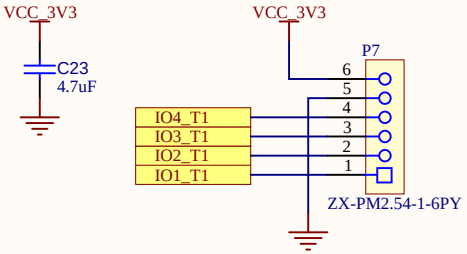
Mikro Bus - Connecteur



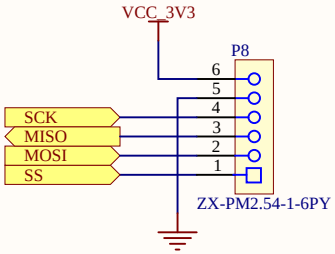
Titre : Mikro Bus - Connecteur				Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A		
Date : 2026-01-05	Heure : 20:29:18	Feuille 3 de 7		
Fichier : MikroBus-Connecteur.SchDoc				

Connecteurs - PMOD Interface

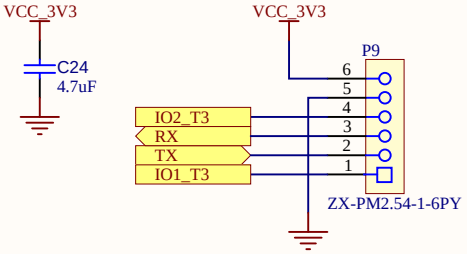
GPIO Type 1



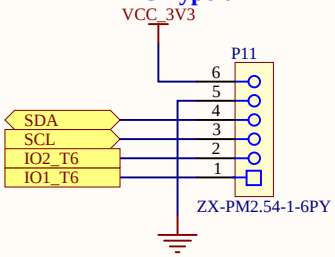
SPI Type 2



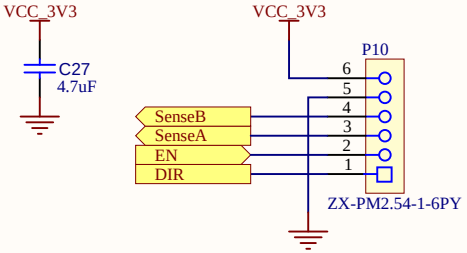
UART Type 3



I2C Type 6



H-Bridge Type 4



Pmod type pinouts

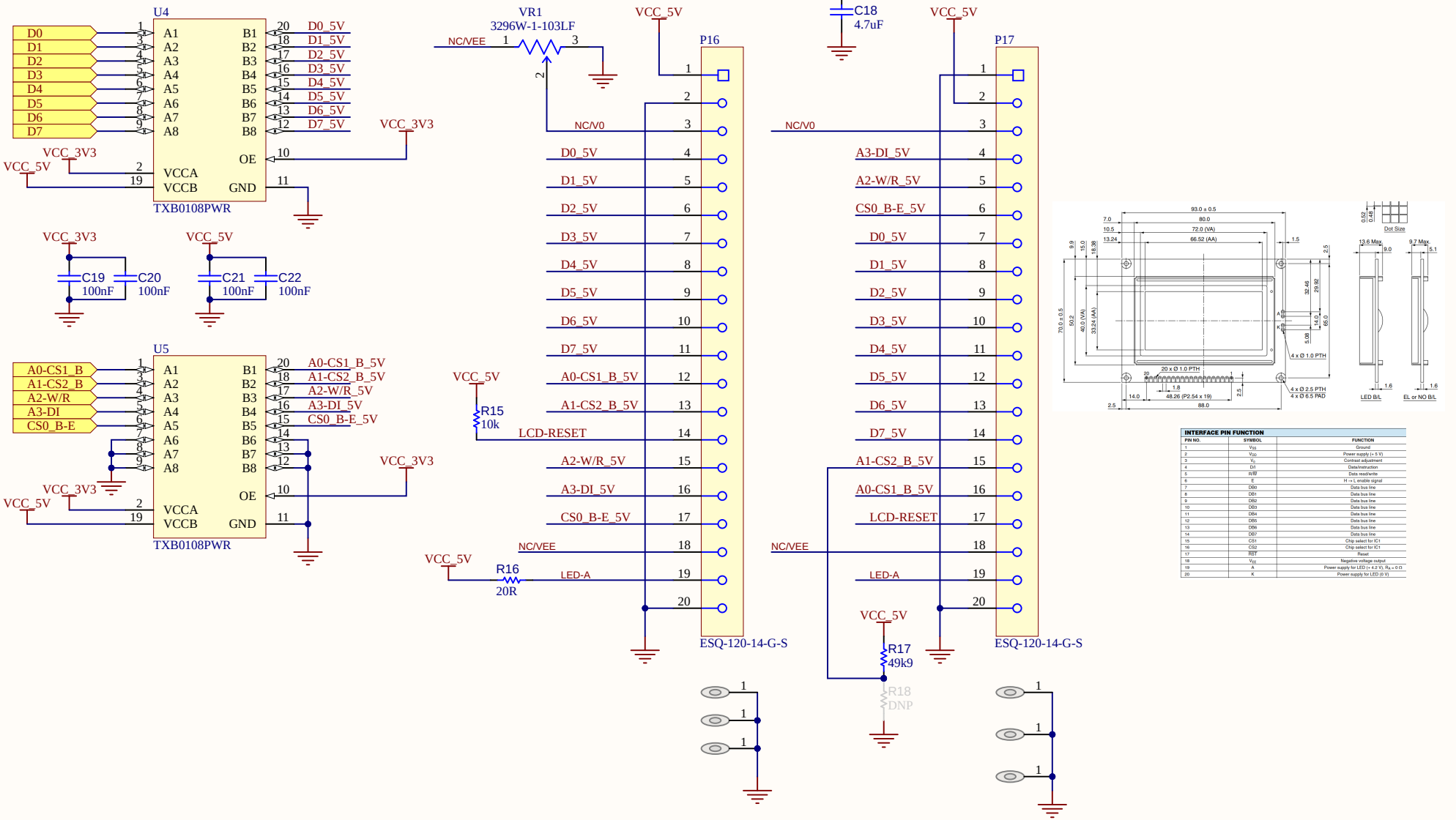
type	1 (7)	2 (8)	3 (9)	4 (10)	5 (11)	6 (12)
Type 1 (GPIO)	GPIO1	GPIO2/PWM	GPIO3	GPIO4	GND	Vcc
Type 1A (extended GPIO)	GPIO1 GPIO5	GPIO2/PWM GPIO6/PWM	GPIO3 GPIO7	GPIO4 GPIO8	GND GND	Vcc Vcc
Type 2 (SPI)	CS	MOSI	MISO	SCK	GND	Vcc
Type 2A (extended SPI)	CS1 GPIO/INT	MOSI GPIO/RESET	MISO GPIO/CS2	SCK GPIO/CS3	GND GND	Vcc Vcc
Type 3 (UART)	CTS/GPIO	TxD	RxD	RTS/GPIO	GND	Vcc
Type 3A (extended UART)	CTS/GPIO GPIO/INT	TxD GPIO/RESET	RxD GPIO	RTS/GPIO GPIO	GND GND	Vcc Vcc
Type 4 (H-bridge)	DIR	EN	SenseA	SenseB	GND	Vcc
Type 5 (dual H-bridge)	DIR1	EN1	DIR2	EN2	GND	Vcc
Type 5A (extended dual H-bridge)	DIR1 DIR2	EN1 EN2	Sense1A Sense2A	Sense1B Sense2B	GND GND	Vcc Vcc
Type 6 (I2C)	nc/INT	nc/RESET	SCL	SDA	GND	Vcc
Type 6A (extended I2C)	nc/INT GPIO	nc/RESET GPIO	SCL GPIO	SDA GPIO	GND GND	Vcc Vcc
Type 7 (I2S)	LRCLK GPIO	DACdata GPIO	ADCdata MCLK	BCLK GPIO	GND GND	Vcc Vcc

Titre : Connecteurs - PMOD Interface			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A	
Date : 2026-01-05	Heure : 20:29:18	Feuille 4 de 7	
Fichier : PMOD-Connecteur.SchDoc			

LCD - Connecteurs

Option LCD KS0108 50x75mm

Option LCD 12864 70x93mm



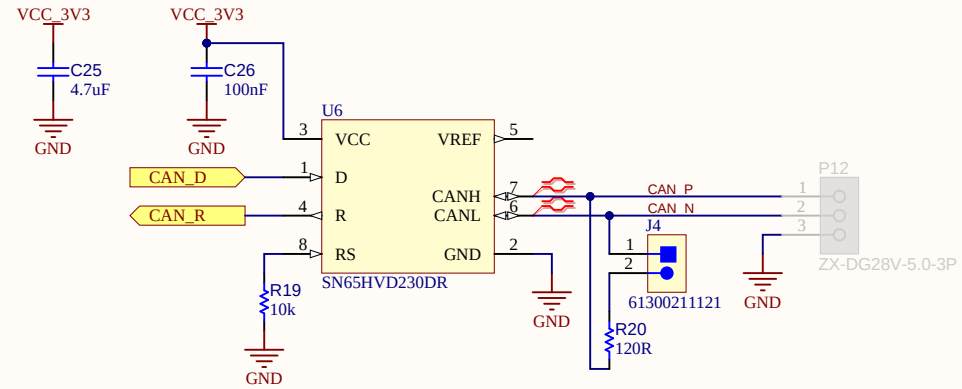
INTERFACE PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1	V_{SS}	Ground
2	V_{DD}	Power supply (+ 5 V)
3	V_0	Contrast adjustment
4	D/I	Data/Instruction
5	R/W	Data read/write
6	E	H → L enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC1
17	RST	Reset
18	V_{EE}	Negative voltage output
19	A	Power supply for LED (+ 4.2 V), R_A = 0 Ω
20	K	Power supply for LED (0 V)

Titre : LCD - Connecteurs			*Cegep Limoilou* *1300, 8e Avenue* *Québec, QC* *Canada* *G1J 5L5*
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A	
Date : 2026-01-05	Heure : 20:29:18	Feuille 5 de 7	
Fichier : LCD-Connecteur.SchDoc			

Cégep Limoilou

Driver CAN

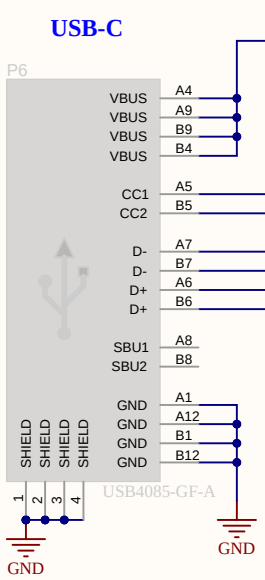


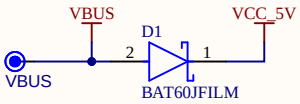
Titre : Driver CAN				Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A		
Date : 2026-01-05	Heure : 20:29:18	Feuille 6 de 7		
Fichier : CAN-Driver.SchDoc				

Interface USB et CAN

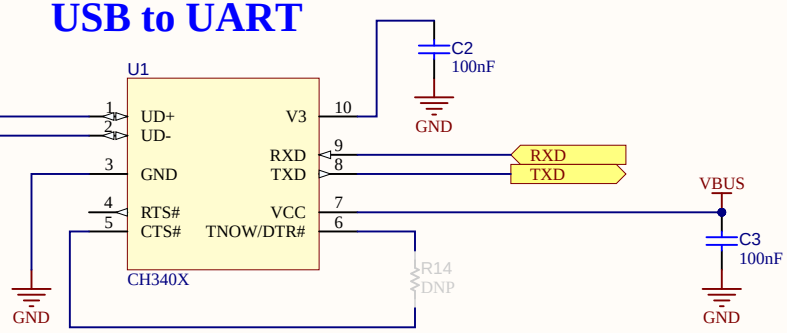
CC voltage (typ.)	Host advertises	Meaning
~0.2–0.4 V	**Default USB current**	500 mA (USB 2.0) / 900 mA (USB 3.x)
~0.9–1.2 V	**1.5 A@5 V**	High-current USB-C
~1.6–2.0 V	**3.0 A@5 V**	Maximum without USB-PD

USB-C

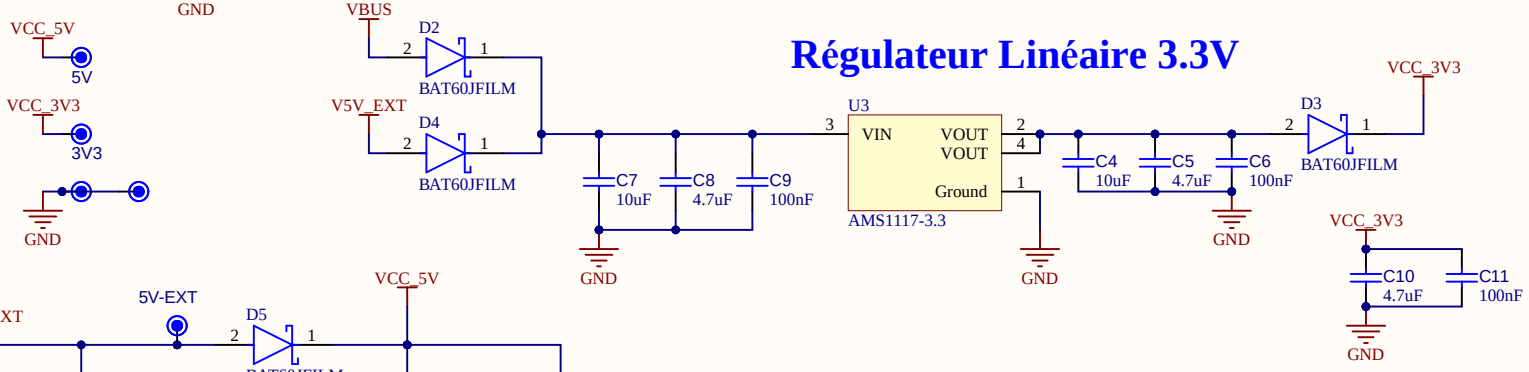




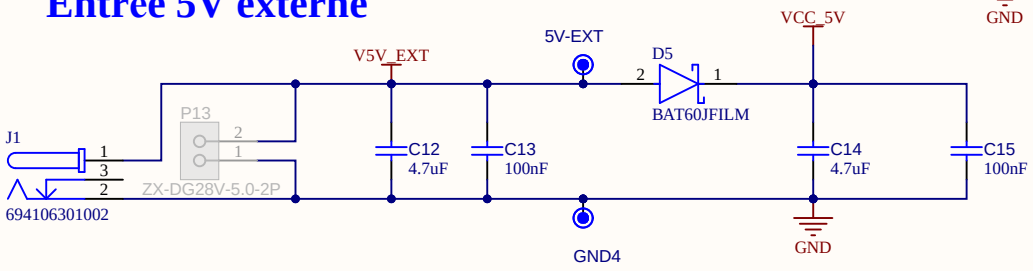
USB to UART



Régulateur Linéaire 3.3V



Entrée 5V externe



Titre : Interface USB et CAN			Cegep Limoilou 1300, 8e Avenue Québec, QC Canada G1J 5L5
Conception : CEGEP Limoilou	Approbation : APPROUVÉ PAR	Révision : Rev.A	
Date : 2026-01-05	Heure : 20:29:18	Feuille 7 de 7	
Fichier : USB.SchDoc			

Cégep Limoilou