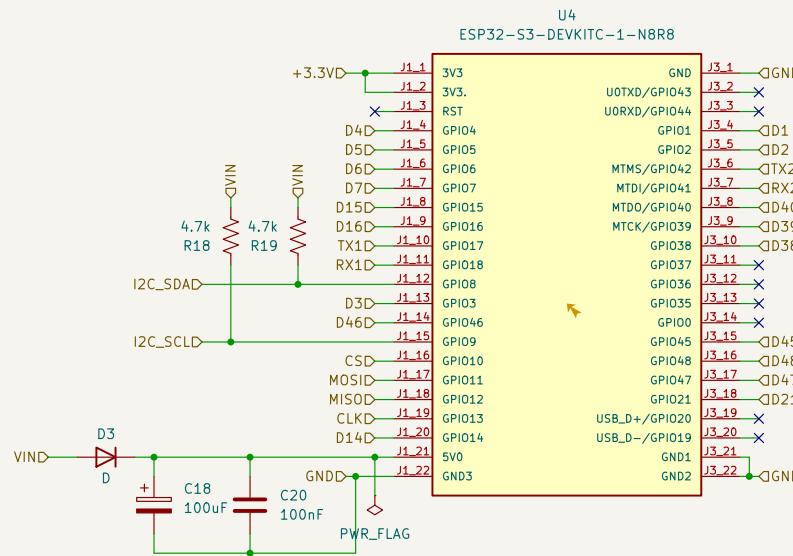


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```
#ifndef __CONFIG_H
#define __CONFIG_H

// --- SYSTÈME (LIAISON PC) ---
// Note : Pour libérer 43/44, utilisez l'USB natif sur GPIO 19/20
// Dans PlatformIO : build_flags = -DARDUINO_USB_CDC_ON_BOOT=1

// --- MODULE 4G LTE (UART1 ou UART0 réassigné) ---
#define MODEM_RX 43
#define MODEM_TX 44

// --- GPS EXTERNE (UART2) ---
#define GPS_RX_PIN 16
#define GPS_TX_PIN 17

// --- CARTE SD (SPI) ---
#define SD_SCK 14
#define SD_MISO 12
#define SD_MOSI 13
#define SD_CS 15

// --- CAMERA PINS (SÉCURISÉ POUR N16R8) ---
#define SIOD_GPIO_NUM 21
#define SIOC_GPIO_NUM 22
#define XCLK_GPIO -1
#define PCLK_GPIO 46
#define VSYNC_GPIO 3
#define HREF_GPIO 25
#define D0_GPIO 26
#define D1_GPIO 47
#define D2_GPIO 39
#define D3_GPIO 32
#define D4_GPIO 27
#define D5_GPIO 23
#define D6_GPIO 20 // Déplacé depuis 20 pour laisser le port USB Natif libre
#define D7_GPIO 18

// --- PINS LIBRES ---
#define FREE_GPIO_0 0
#define FREE_GPIO_6 6
#define FREE_GPIO_7 7
#define FREE_GPIO_8 8
#define FREE_GPIO_9 9
#define FREE_GPIO_10 10
#define FREE_GPIO_11 11
#define FREE_GPIO_20 20 // Réserve USB Natif (D+)
#define FREE_GPIO_48 48

// --- PINS INTERDITES (PSRAM/FLASH) ---
// GPIO 19, 28-31, 33-37
#endif
```

Brain Page
Architecture Collecteur de données
Polytech Nantes – ETN4

Sheet: /uc/
File: uc.kicad_sch

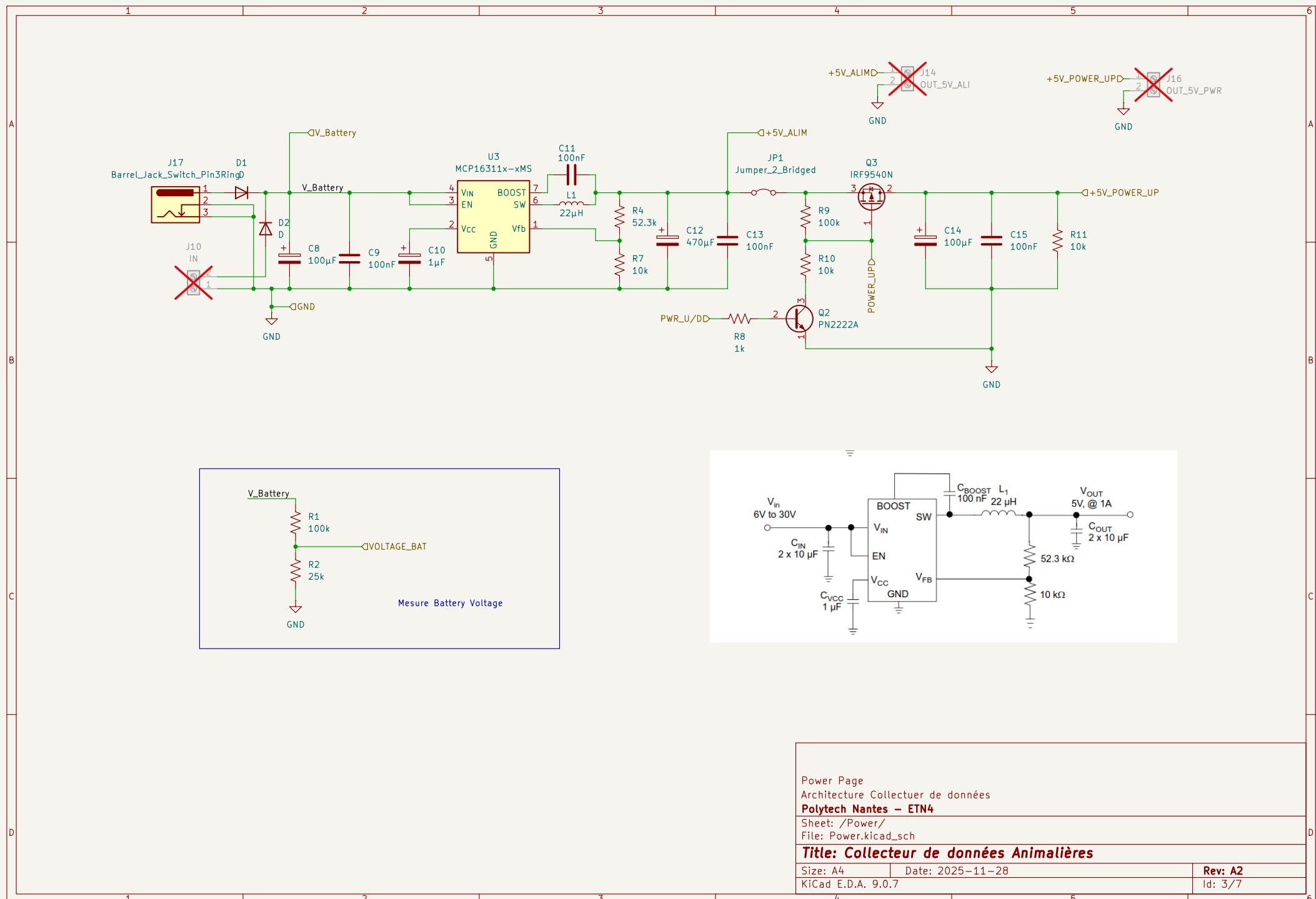
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Size: A4 Date: 2025-11-28

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Rev: A2

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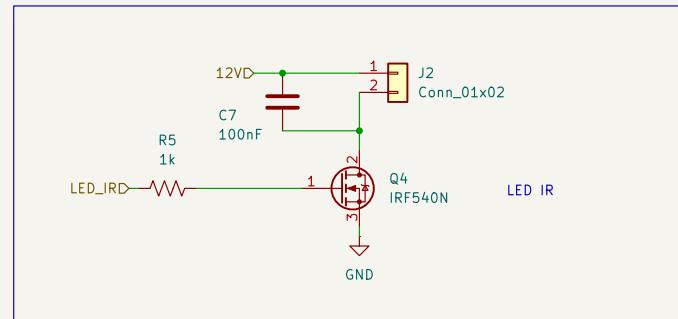
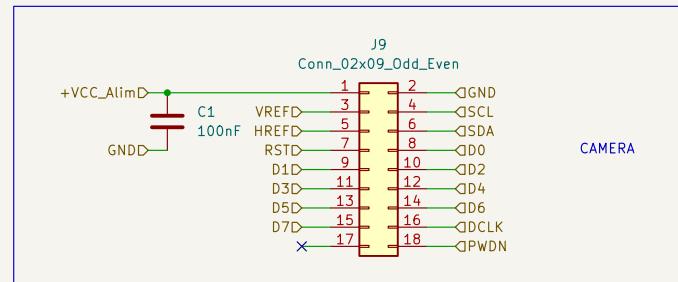
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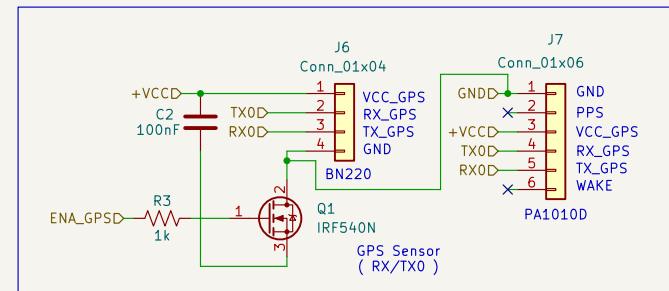
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Architecture Collecteur de données
Polytech Nantes – ETN4
Sheet: /Cam/
File: Cam.kicad_sch

Title: Collecteur de données Animalières

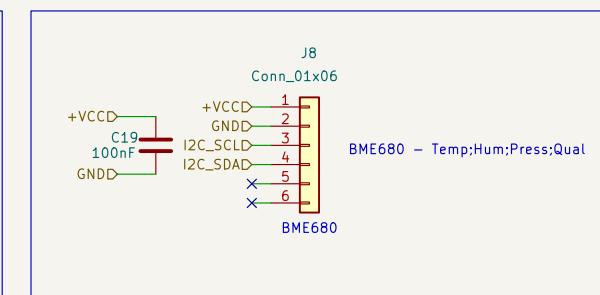
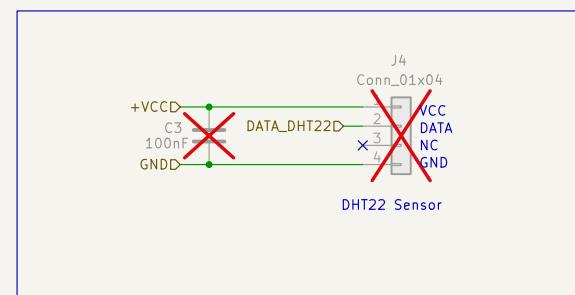
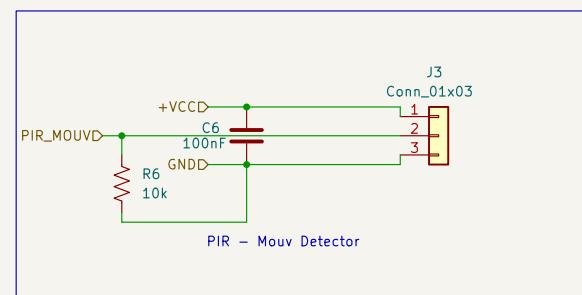
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Rev: A2
Id: 4/7

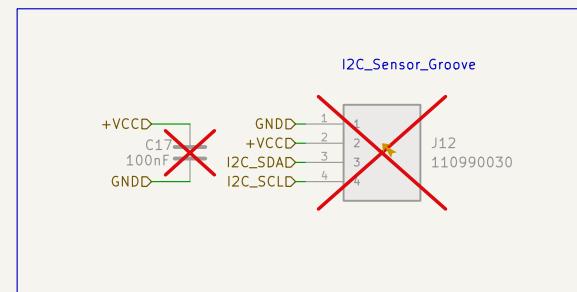
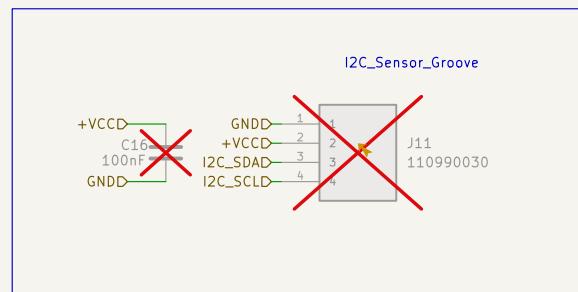
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Sensors Page
Architecture Collecteur de données
Polytech Nantes – ETN4

Sheet: /Sensors/
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Title: Collecteur de données Animalières

Size: A4 Date: 2025-11-28
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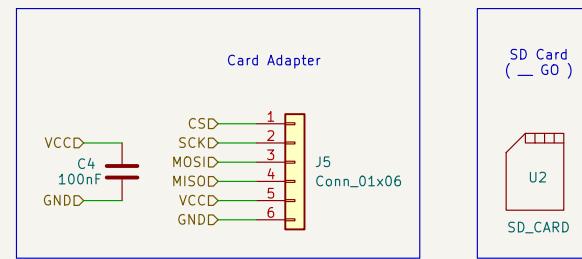
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Stockage Page
Architecture Collecteur de données
Polytech Nantes – ETN4

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File: Stockage.kicad_sch

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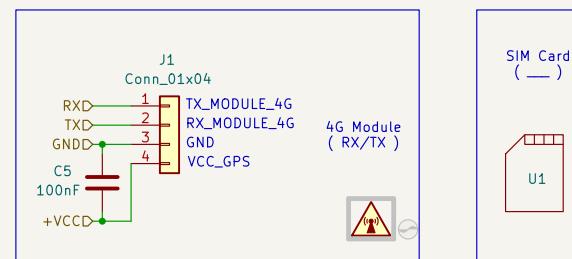
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Transmission Page
Architecture Collecteur de données
Polytech Nantes – ETN4

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File: Transmission.kicad_sch

Title: Collecteur de données Animalières

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Id: 7/7