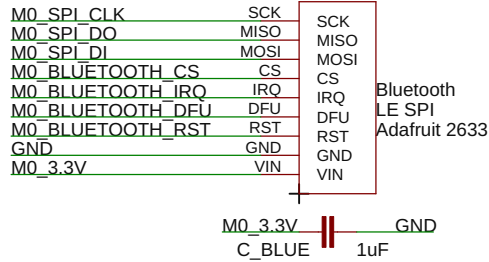


## RadioFeather M0 for LoRa

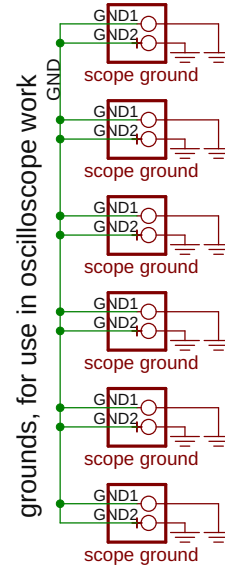
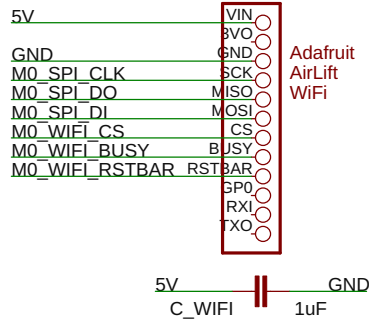
We connect  
 M0 pin RX/#0 to GCM4 pin D1 <- TX  
 and  
 M0 pin TX/#1 to GCM4 pin D0 -> RX  
 and  
 M0 pin #12 to GCM4 pin D26

### Bluetooth communication module

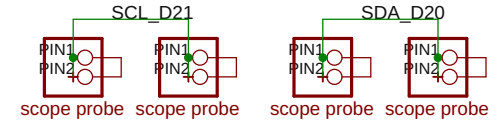


### WiFi coprocessor

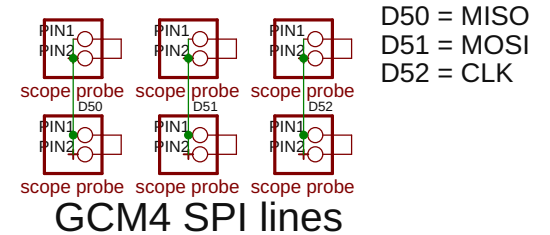
Note the use of GCM4 5V.



grounds, for use in oscilloscope work



## GCM4 I2C clock and data lines



GCM4\_RadioFeather\_data\_logger5

George Gollin  
 Fille de Lear Designs  
 July 2023




GCM4\_RadioFeather\_data\_logger5

7/20/23 10:15 PM

Sheet: 4/6

Sorted by device

GCM4\_RadioFeather\_data\_logger5  
 George Gollin  
 Fille de Lear Designs  
 July 2023



GCM4\_RadioFeather\_data\_logger5  
 7/20/23 10:15 PM  
 Sheet: 5/6

device	processor:lines	device:pin	I2C address	processor
2XAA battery + terminal	A11	A-	0x39	GCM4
AS7341 spectrometer	SGI_D21	SGI	0x39	GCM4
AS7341 spectrometer	SDA_D20	SDA	0x39	GCM4
BME680 T/PH/VO	SCL_D21	SCK	0x76 (grounded SDO)	GCM4
BME680 T/PH/VO	SDA_D20	SDI	0x76 (grounded SDO)	GCM4
DPS310_0 barometric pressure	TCA9548_SC0	SCK	0x77	GCM4
DPS310_0 barometric pressure	TCA9548_SD0	SCK	0x77	GCM4
DPS310_1 barometric pressure	TCA9548_SC1	SCK	0x77	GCM4
DPS310_1 barometric pressure	TCA9548_SD1	SCK	0x77	GCM4
DPS310_2 barometric pressure	D38	CS (DPS310_2_CS)	0x77	GCM4
DPS310_2 barometric pressure	D51	SCK (SPI_CLOCK)	0x77	GCM4
DPS310_2 barometric pressure	D52	SCK (SPI_MOSI)	0x77	GCM4
DPS310_2 barometric pressure	D50	SDO (SPI_MISO)	0x77	GCM4
DPS310_2 barometric pressure	SCL_D21	SCL	0x68	GCM4
DPS310_2 barometric pressure	SDA_D20	SDA	0x68	GCM4
D3231 RTC	D43	PPS	0x68	GCM4
D3231 RTC	D16	RX	0x68	GCM4
D3231 RTC	D17	TX	0x68	GCM4
GUVA UV sensor	A04	AOUT	0x40	GCM4
INA219 current sensor	SCL_D21	SCL	0x40	GCM4
INA219 current sensor	SDA_D20	SDA	0x40	GCM4
keypad	D02	COL1	0x40	GCM4
keypad	D03	COL2	0x40	GCM4
keypad	D18	COL3	0x40	GCM4
keypad	D31	ROW1	0x40	GCM4
keypad	D33	ROW2	0x40	GCM4
keypad	D35	ROW3	0x40	GCM4
keypad	D37	ROW4	0x40	GCM4
LCD (GCM4)	D36	DB4	0x40	GCM4
LCD (GCM4)	D34	DB5	0x40	GCM4
LCD (GCM4)	D32	DB6	0x40	GCM4
LCD (GCM4)	D30	DB7	0x40	GCM4
LCD (GCM4)	D09	E	0x40	GCM4
LCD (GCM4)	D10	RS	0x40	GCM4
LSM9DS1 9 axis accelerometer	SCL_D21	SCL	0x6A	GCM4
LSM9DS1 9 axis accelerometer	SDA_D20	SDA	0x6A	GCM4
M0 to/from GCM4 comm line	D26	M0_D12	0x6A	GCM4
MAX31855 thermocouple amplifier	D08	CLK	0x60	GCM4
MAX31855 thermocouple amplifier	D07	CS	0x60	GCM4
MAX31855 thermocouple amplifier	D06	DO	0x60	GCM4
MCP4728 quad DAC	SCL_D21	SCL	0x60	GCM4
MCP4728 quad DAC	SDA_D20	SDA	0x60	GCM4
MCP4728 quad DAC	A01	VA	0x60	GCM4
MCP4728 quad DAC	A05	VB	0x60	GCM4
MCP4728 quad DAC	A06	VC	0x60	GCM4
MCP4728 quad DAC	A02	VD	0x60	GCM4
METHANE detector	A00	A0/Methane_AX	0x60	GCM4
microphone	A07	OUT	0x60	GCM4
MLX90614 IR thermometer	SDA_D20	PWM/SDA	0x5A	GCM4
MLX90614 IR thermometer	SCL_D21	SCLVZ	0x5A	GCM4
PMS5003 particulates sensor	D15	TXD	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D40	CS	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D47	G0	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D50	MISO/CIOPI	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D51	MOSI/COPI	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D48	RST	0x5A	GCM4
RFM95W 915 MHz LoRa radio	D52	SCK	0x5A	GCM4
RFM95W 915 MHz LoRa radio	SCL_D21	SCL	0x70	GCM4
TCA9548 I2C MUX	SDA_D20	SDA	0x70	GCM4
TCA9548 I2C MUX	A03	CARD_CS	0x70	GCM4
TFT display	D11	D/C	0x70	GCM4
TFT display	D05	LITE	0x70	GCM4
TFT display	D50	MISO	0x70	GCM4
TFT display	D51	MOSI	0x70	GCM4
TFT display	D13	RESET	0x70	GCM4
TFT display	D52	SCK	0x70	GCM4
TFT display	D12	TFT_CS	0x70	GCM4
TMP36_0 analog temperature	A08	VOUT	0x70	GCM4
TMP36_1 analog temperature	A09	VOUT	0x70	GCM4
TMP36_2 analog temperature	A10	VOUT	0x70	GCM4
TSL2561 LUX sensor	TCA9548_SC4	SCL_5V	0x29, 0x39, 0x49	GCM4
TSL2561 LUX sensor	TCA9548_SD4	SDA_5V	0x29, 0x39, 0x49	GCM4
TROP38238 IR remote control sensor	D42	OUT	0x29, 0x39, 0x49	GCM4
UART RX from M0	D00	M0 TX/#1	0x29, 0x39, 0x49	GCM4
UART TX to M0	D01	M0 RX/#0	0x29, 0x39, 0x49	GCM4
VL53LOX 50 - 1200 mm proximity	TCA9548_SC2	SCL	0x29	GCM4
VL53LOX 50 - 1200 mm proximity	TCA9548_SD2	SDA	0x29	GCM4
VL6180X 5 - 100 mm proximity	SCL	SCL	0x29	GCM4
VL6180X 5 - 100 mm proximity	SDA	SDA	0x29	GCM4
Airift WiFi	M0_D21	BUSY	0x29	GCM4
Airift WiFi	M0_D10	CS	0x29	GCM4
Airift WiFi	M0_D22	MISO	0x29	GCM4
Airift WiFi	M0_D23	MOSI	0x29	GCM4
Airift WiFi	M0_D20	RSTBAR	0x29	GCM4
Airift WiFi	M0_D24	SCK	0x29	GCM4
Bluetooth LE	M0_D14	CS	0x29	GCM4
Bluetooth LE	M0_D16	DFU	0x29	GCM4
Bluetooth LE	M0_D15	IRQ	0x29	GCM4
Bluetooth LE	M0_D22	MISO	0x29	GCM4
Bluetooth LE	M0_D23	MOSI	0x29	GCM4
Bluetooth LE	M0_D17	RST	0x29	GCM4
Bluetooth LE	M0_D24	SCK	0x29	GCM4
LCD (M0)	M0_D05	DB4	0x29	GCM4
LCD (M0)	M0_D06	DB5	0x29	GCM4
LCD (M0)	M0_D09	DB6	0x29	GCM4
LCD (M0)	M0_D19	DB7	0x29	GCM4
LCD (M0)	M0_D11	E	0x29	GCM4
LCD (M0)	M0_D18	RS	0x29	GCM4
M0 to/from GCM4 comm line	M0_D12	D26	0x29	GCM4
UART RX from GCM4	M0_D00	D1<-TX	0x29	GCM4
UART TX to GCM4	M0_D01	D0->RX	0x29	GCM4

# Sorted by microcontroller pin

1

2


3

4

5

6

GCM4\_RadioFeather\_data\_logger5  
 George Gollin  
 Fille de Lear Designs  
 July 2023



GCM4\_RadioFeather\_data\_logger5  
 7/20/23 10:15 PM  
 Sheet: 6/6

device	processor lines	device pin	I2C address	processor
METHANE detector	A00	A0Methane_0x60		GCM4
MCP4728 quad DAC	A01	VA		GCM4
MCP4728 quad DAC	A02	VD	0x60	GCM4
TFT display	A03	CARD_CS	0x60	GCM4
GUVA UV sensor	A04	AOUT		GCM4
MCP4728 quad DAC	A05	VB		GCM4
MCP4728 quad DAC	A06	VC	0x60	GCM4
microphone	A07	OUT	0x60	GCM4
TMP36_0 analog temperature	A08	VOUT		GCM4
TMP36_1 analog temperature	A09	VOUT		GCM4
TMP36_2 analog temperature	A10	VOUT		GCM4
2XAA battery + terminal	A11	A-		GCM4
UART RX from M0	D00	M0_TX#1		GCM4
UART TX to M0	D01	M0_RX#0		GCM4
keypad	D02	COL1		GCM4
keypad	D03	COL2		GCM4
TFT display	D05	LITE		GCM4
MAX31855 thermocouple amplifier	D06	DO		GCM4
MAX31855 thermocouple amplifier	D07	CS		GCM4
MAX31855 thermocouple amplifier	D08	CLK		GCM4
LCD (GCM4)	D09	E		GCM4
LCD (GCM4)	D10	RS		GCM4
TFT display	D11	D/C		GCM4
TFT display	D12	TFT_CS		GCM4
TFT display	D13	RESET		GCM4
PMS5003 particulates sensor	D15	TXD		GCM4
GPS	D16	RX		GCM4
GPS	D17	TX		GCM4
keypad	D18	COL3		GCM4
M0 to/from GCM4 comm line	D26	M0_D12		GCM4
LCD (GCM4)	D30	DB7		GCM4
keypad	D31	ROW1		GCM4
LCD (GCM4)	D32	DB6		GCM4
keypad	D33	ROW2		GCM4
LCD (GCM4)	D34	DB5		GCM4
keypad	D35	ROW3		GCM4
LCD (GCM4)	D36	DB4		GCM4
keypad	D37	ROW4		GCM4
DPS310_2 barometric pressure	D38	CS (DPS310_2_CS)	0x77	GCM4
RFM95W 915 MHz LoRa radio	D40	CS		GCM4
TSOP38238 IR remote control sensor	D42	OUT		GCM4
GPS	D43	PPS		GCM4
RFM95W 915 MHz LoRa radio	D47	G0		GCM4
RFM95W 915 MHz LoRa radio	D48	RST		GCM4
DPS310_2 barometric pressure	D50	SDO (SPI_MISO)	0x77	GCM4
RFM95W 915 MHz LoRa radio	D50	MISO/CIPO		GCM4
TFT display	D51	MISO		GCM4
DPS310_2 barometric pressure	D51	SDI (SPI_MOSI)	0x77	GCM4
RFM95W 915 MHz LoRa radio	D51	MOSI/COP1		GCM4
TFT display	D51	MOSI		GCM4
DPS310_2 barometric pressure	D52	SCK (SPI_CLOCK)	0x77	GCM4
RFM95W 915 MHz LoRa radio	D52	SCK		GCM4
TFT display	D52	SCK		GCM4
AST341 spectrometer	SCL_D21	SCL	0x39	GCM4
BME680 T/PRH/VOC	SCL_D21	SCK	0x76 (grounded SDO)	GCM4
DS3231 RTC	SCL_D21	SCL	0x68	GCM4
INA219 current sensor	SCL_D21	SCL	0x40	GCM4
LSM9DS1 9 axis accelerometer	SCL_D21	SCL	0x40	GCM4
MCP4728 quad DAC	SCL_D21	SCL	0x6A	GCM4
MLX90614 IR thermometer	SCL_D21	SCL	0x60	GCM4
TCA9548 I2C MUX	SCL_D21	SCL/VZ	0x5A	GCM4
INA219 current sensor	SCL_D21	SCL	0x70	GCM4
AS7341 spectrometer	SDA_D20	SDA	0x39	GCM4
BME680 T/PRH/VOC	SDA_D20	SDI	0x76 (grounded SDO)	GCM4
DS3231 RTC	SDA_D20	SDA	0x68	GCM4
LSM9DS1 9 axis accelerometer	SDA_D20	SDA	0x40	GCM4
MCP4728 quad DAC	SDA_D20	SDA	0x6A	GCM4
MLX90614 IR thermometer	SDA_D20	SDA	0x6A	GCM4
TCA9548 I2C MUX	SDA_D20	SDA	0x5A	GCM4
DPS310_0 barometric pressure	TCA9548_SC1	SCK	0x77	GCM4
DPS310_1 barometric pressure	TCA9548_SC1	SCK	0x77	GCM4
VL53L0X 50 - 1200 mm proximity	TCA9548_SC2	SCL	0x29	GCM4
VL53L0X 50 - 1200 mm proximity	TCA9548_SC3	SCL	0x29	GCM4
TSL2561 LUX sensor	TCA9548_SC4	SCL	0x29	GCM4
DPS310_0 barometric pressure	TCA9548_SD0	SDI	0x77	GCM4
DPS310_1 barometric pressure	TCA9548_SD1	SDI	0x77	GCM4
VL53L0X 50 - 1200 mm proximity	TCA9548_SD2	SDA	0x29	GCM4
VL53L0X 50 - 1200 mm proximity	TCA9548_SD3	SDA	0x29	GCM4
TSL2561 LUX sensor	TCA9548_SD4	SDA_5V		GCM4
UART RX from GCM4	M0_D00	D1<-TX		GCM4
UART TX to GCM4	M0_D01	D0->RX		GCM4
LCD (M0)	M0_D05	DB4		M0
LCD (M0)	M0_D06	DB5		M0
LCD (M0)	M0_D09	DB6		M0
Airlift WiFi	M0_D10	CS		M0
LCD (M0)	M0_D11	E		M0
M0 to/from GCM4 comm line	M0_D12	D26		M0
Bluetooth LE	M0_D14	CS		M0
Bluetooth LE	M0_D15	IRQ		M0
Bluetooth LE	M0_D16	DFU		M0
Bluetooth LE	M0_D17	RST		M0
LCD (M0)	M0_D18	RS		M0
LCD (M0)	M0_D19	DB7		M0
LCD (M0)	M0_D20	RSTBAR		M0
Airlift WiFi	M0_D21	BUSY		M0
Airlift WiFi	M0_D22	MISO		M0
Airlift WiFi	M0_D22	MISO		M0
Bluetooth LE	M0_D23	MOSI		M0
Bluetooth LE	M0_D23	MOSI		M0
Airlift WiFi	M0_D24	SCK		M0
Bluetooth LE	M0_D24	SCK		M0

1

2

3

4

5

6

1

2

3

4

5

6