

miro

EdgeCard mioty®

High-performance 868 MHz
mioty® base station or software
defined radio on Mini PCIe card
with power amplifier



Description

miro EdgeCard mioty® is a high-performance, fully compliant mini PCI Express 868 MHz mioty® base station and provides a plug-and-play solution for long-range and low-power wireless communication networks in the ISM 868 MHz frequency band available in Europe. The Mini PCIe card exposes a network interface over USB 2.0 communication device class (CDC) to interface the mioty® Base Station Service Center Interface (BSSCI) data with a host processor.

miro EdgeCard mioty® is based on a high-performance quad-core A53 processor implementing software-defined radio (SDR). It enables to build cost optimized and certified mioty® base station solutions.

Features

- ▶ Full mioty® base station on Mini PCIe card
- ▶ ISM 868 MHz frequency band
- ▶ Direct mioty® BSSCI interface
- ▶ Up to 3.5M telegrams per day
- ▶ Sub-GHz RF I/Q frontend
- ▶ TX power up to 24 dBm
- ▶ High sensitivity down to -136 dBm
- ▶ Fully Mini PCIe compliant card using USB CDC

Applications

- ▶ High performance mioty® base station
- ▶ Large scale wireless IoT
- ▶ Smart Metering / Smart Buildings
- ▶ Industry 4.0
- ▶ Home Automation
- ▶ Smart Agriculture
- ▶ Healthcare
- ▶ Supply Chain & Logistics
- ▶ Facility Management

Document Information

About

File name	Document type	Date	Revision
DS miro Edge mioty®	Datasheet	2026/04/08	1.3

Revision history

Date	Release	Changes
2023/10/23	1.0	Initial draft
2024/03/28	1.1	Minor changes to texts
2024/10/25	1.2	Updated picture
2026/02/18	1.3	Added pin table Updated mechanics with shield and picture Updated product variants Updated TX output power

Table of Content

Document Information	2
Functional Description	3
Technical Specifications	4
Mechanical Dimensions	5
Additional Documentation	6
Device Options	6
Keep in touch	7

Functional Description

miro EdgeCard mioty® is a full System-on-Module (SOM) providing full EU868 mioty® base station functionality over USB 2.0 interface. It thus provides a plug-and-play solution for long-range and low-power wireless communication networks and is well-suited for large scale IoT deployments through its high processing capabilities.

The device is based on a high-performance Sitara processor running the mioty® base station core library and implementing software-defined radio (SDR). It exposes a network interface over USB 2.0 communication device class (CDC) to interface the mioty® Base Station Service Center Interface (BSSCI) data with a host processor, and thus facilitates the development of high-performance and certified mioty® gateway solutions. Since the decoding of the mioty® telegrams is implemented on the card itself, the host CPU no longer requires high computational performance.

The integrated RF power amplifier provides a maximum transmission power output of up to 24 dBm and high receiver sensitivity of up to -136 dBm.

A base station based on the miro EdgeCard mioty® is capable of processing up to 3.5M telegrams per day. This allows for the card to be placed in high-density urban or long-range rural environments and connect a large variety of sensors to the mioty® network.

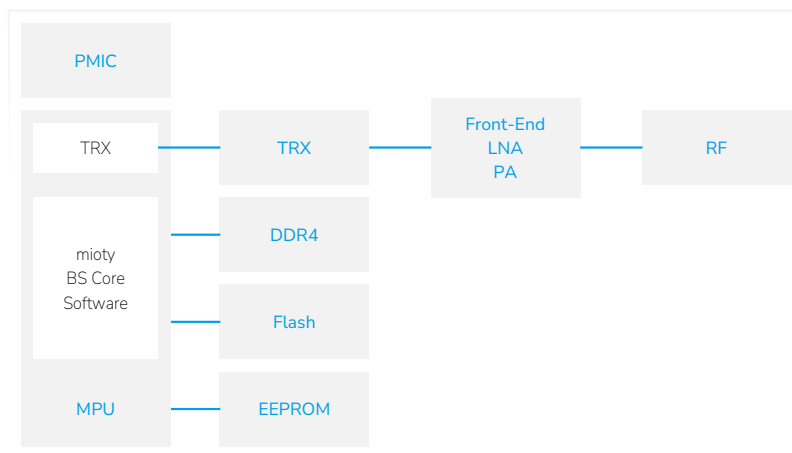


Figure 1: Block diagram miro EdgeCard mioty®

Technical Specifications

Mechanical specifications

Weight	10 g
Dimensions	50.95 × 30 × 3.9 mm, see , Page 5

Operating conditions

Temperature	-20 – 65 °C
Humidity	0 – 95% RH, non-condensing

Device power supply

Power supply	According to PCI Express specifications (3.3VDC)
Power consumption	1.65 W max.

Radio / wireless

Supported ISM bands	868 MHz
Rx sensitivity	-136 dBm
RF transmission power	Up to 24 dBm
mioty® frame RX capability	Up to 3.5M telegrams per day (PER ≤ 1%)
Antenna diversity	2× U.FL connector (software selectable)

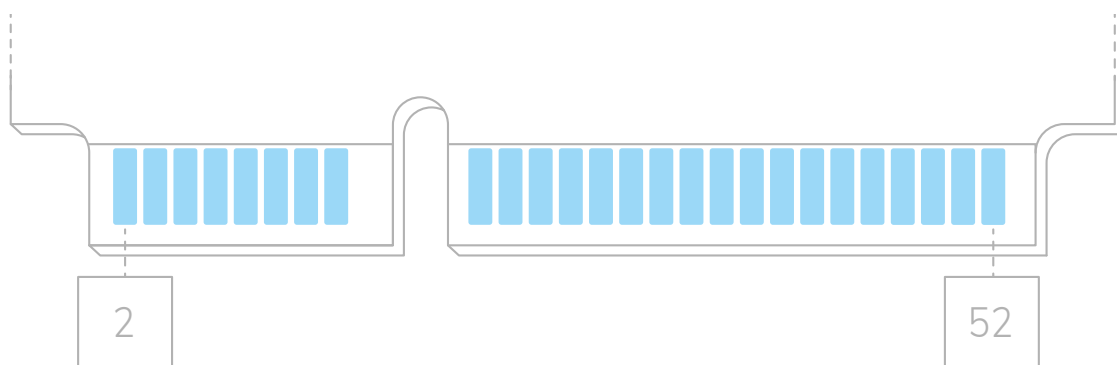
Certifications

CE

RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.
3. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Module Pinout



Pin	Name	Function
1	NC	Do not connect
2	3V3	System supply
3	NC	Do not connect
4	GND	Ground connection
5	NC	Do not connect
6	NC	Do not connect
7	NC	Do not connect
8	NC	Do not connect
9	GND	Ground connection
10	NC	Do not connect
11	NC	Do not connect
12	NC	Do not connect
13	NC	Do not connect
14	NC	Do not connect
15	GND	Ground connection
16	NC	Do not connect
17	NC	Do not connect
18	GND	Ground connection
19	IO_#RESET	Bootpin IO expander reset
20	NC	Do not connect
21	GND	Ground connection
22	#RESET	Card reset
23	NC	Do not connect
24	3V3	System supply
25	NC	Do not connect
26	GND	Ground connection

Pin	Name	Function
27	GND	Ground connection
28	NC	Do not connect
29	GND	Ground connection
30	I2C_SCL ¹	I2C clock
31	NC	Do not connect
32	I2C_SDA ¹	I2C data
33	NC	Do not connect
34	GND	Ground connection
35	GND	Ground connection
36	USB_D_N	USB D-
37	GND	Ground connection
38	USB_D_P	USB D+
39	3V3	System supply
40	GND	Ground connection
41	3V3	System supply
42	LED_OUT1	LED / status out 1
43	GND	Ground connection
44	NC	Do not connect
45	NC	Do not connect
46	LED_OUT2	LED / status out 1
47	NC	Do not connect
48	NC	Do not connect
49	NC	Do not connect
50	GND	Ground connection
51	NC	Do not connect
52	3V3	System supply

¹ The module features an I2C slave with address 0x20. Be aware of duplicate use.

Mechanical Dimensions

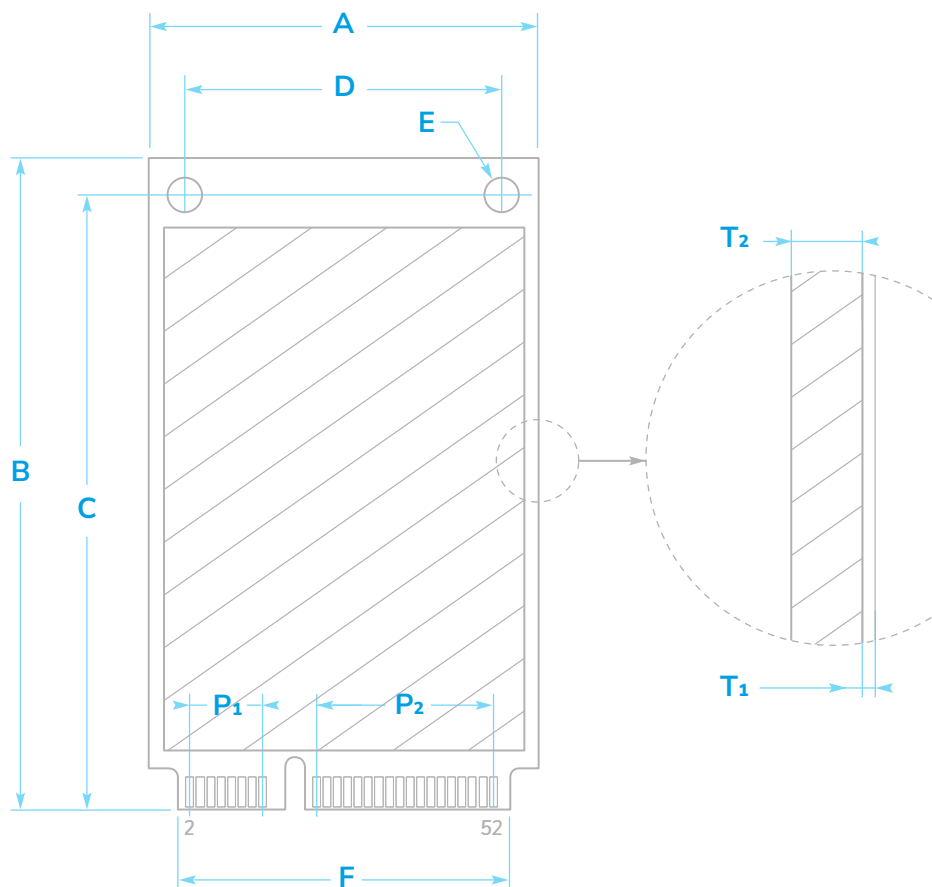


Figure 2: Top view, all values in mm

Ref	Length (in mm)
A	30.00 +0.00/-0.30
B	50.95 +0.00/-0.30
C	50.95 +0.00/-0.30
D	24.20
E	2x Ø2.60 ± 0.10

Ref	Length (in mm)
F	25.70
P ₁	5.60
P ₂	13.60
T ₁	1
T ₂	3.90

Additional Documentation

Additional Ressources

Product Information Page	miromico.ch/products/details/miro-EdgeCard-mioty
Technical Documentation	docs.miromico.ch/gateways-cards/miro-edgecard-mioty/

Device Options

Product ID	Product Description
GWC-62-MY-868	miro EdgeCard mioty, EU868 band, base station software
GWC-62-MY-868-NM	miro EdgeCard mioty, EU868 band, base station and service / app center software

Keep in touch

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