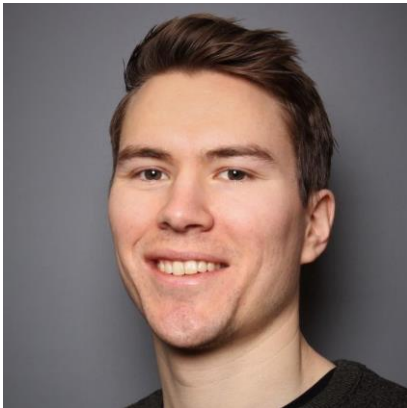




How to power your cellular IoT product with solar energy harvesting

Today's hosts

Martin Lesund



Technical Marketing
Manager, cellular IoT



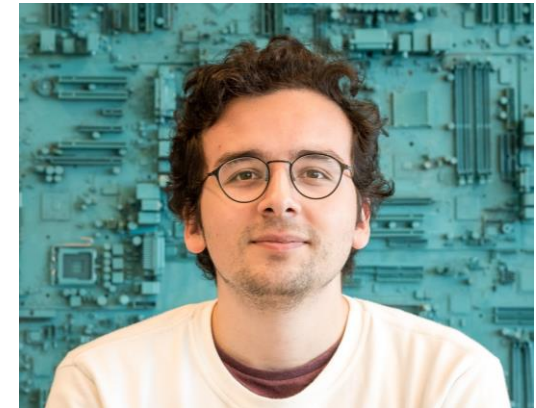
Chris Juliano



CCO & VP Strategic
Partnerships



Kerim Kiliç

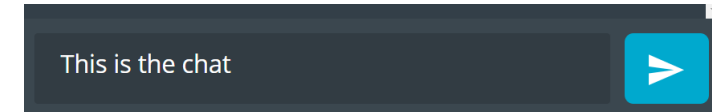
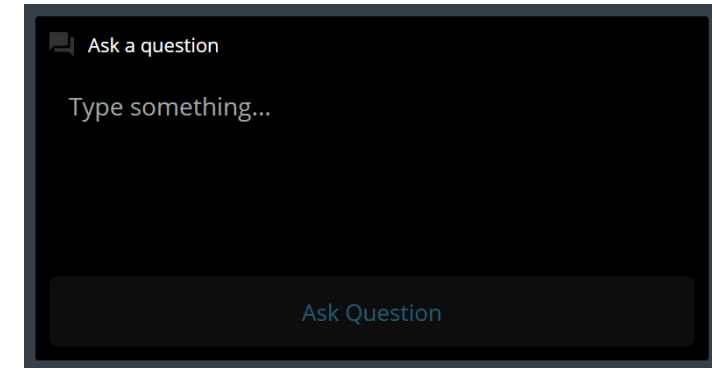


Application Engineer



Practicalities

- Duration: ~60 mins
- Questions are encouraged!
- Please type questions in the top of the right sidebar
 - All questions are anonymous
 - Try to keep them relevant to the topic
- We will answer questions towards the end
- The chat is not anonymous, and should **not** be used for questions
- If you have more questions:
 - Go to DevZone for Nordic related questions
 - Go to nowi-energy.com/contact/ for questions to NOWI
- A recording of the webinar will be available together with the presentation at webinars.nordicsemi.com



{ DevZone

AGENDA

- Introduction
 - About Nowi
 - Energy harvesting
 - NH2
- All about the Nowi Blue Coral, Energy Autonomous Sensor Fusion Platform
- Power and performance
- How to get started
- Q&A



INTRODUCTION

ABOUT NOWI

- **Semiconductor** company
- Based in the **Netherlands**
- Specialized in the development of **energy harvesting power management technology** (NH2 PMIC)
- Simplifies the design process and lowers the threshold for any company to develop '**Plug & Forget**' products



Year
Founded

2015

Patents
Received

8

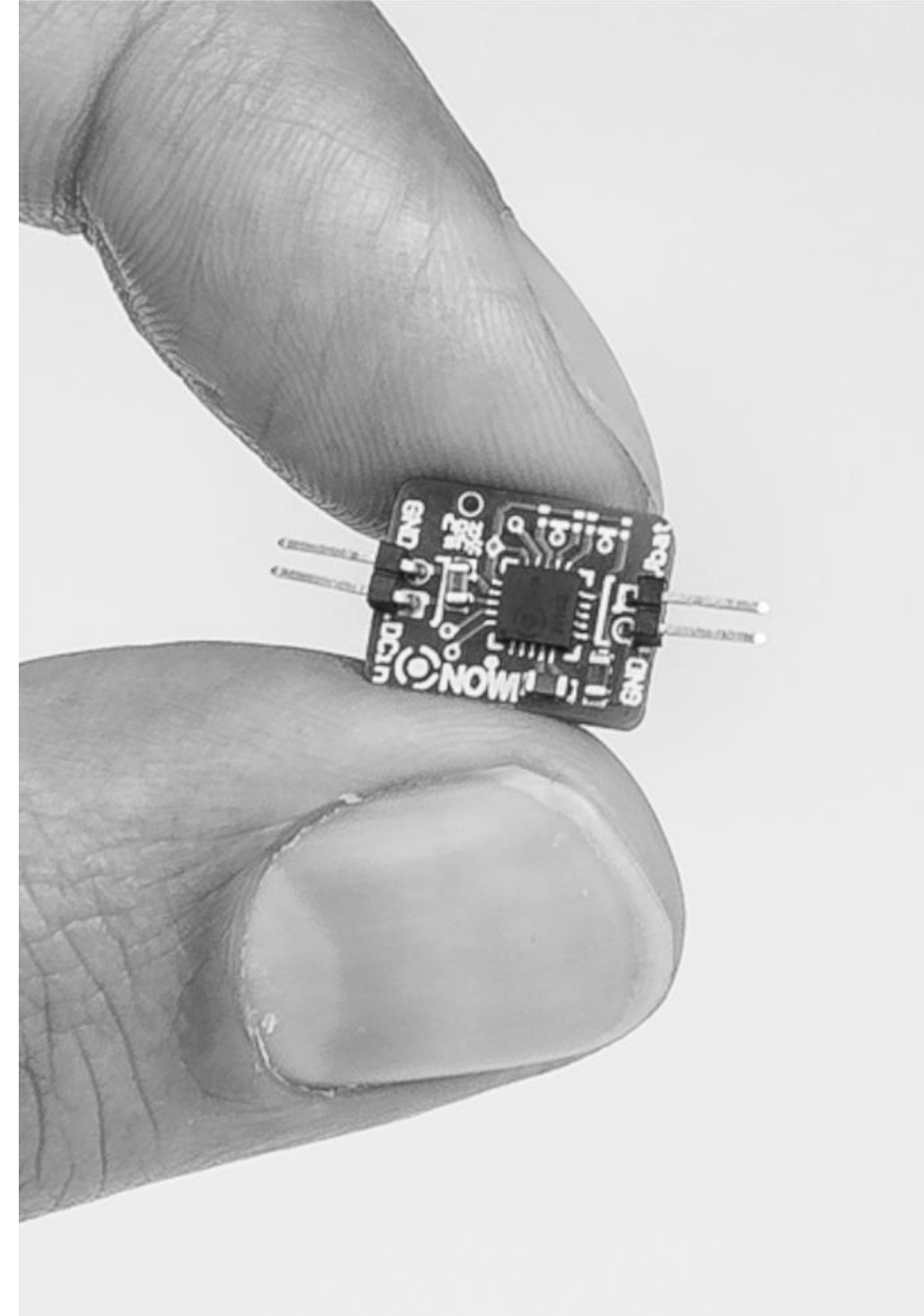
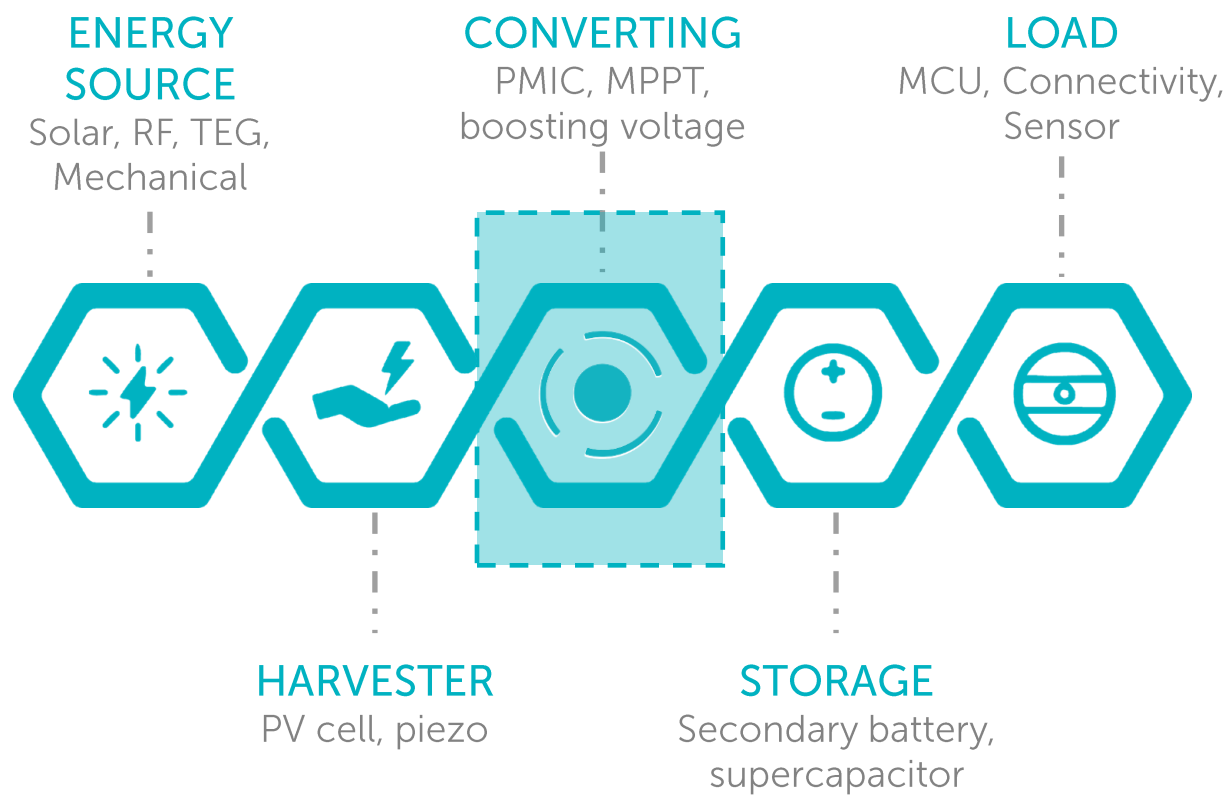
Innovation
Awards

8

Years of Product
Development

6

ENERGY HARVESTING SYSTEMS



KEY FEATURES

NH2 ENERGY HARVESTING PMIC

01

ONE EXTERNAL CAPACITOR

02

SMALL FOOTPRINT

03

FAST MPPT

04

LOW COST IMPLEMENTATION



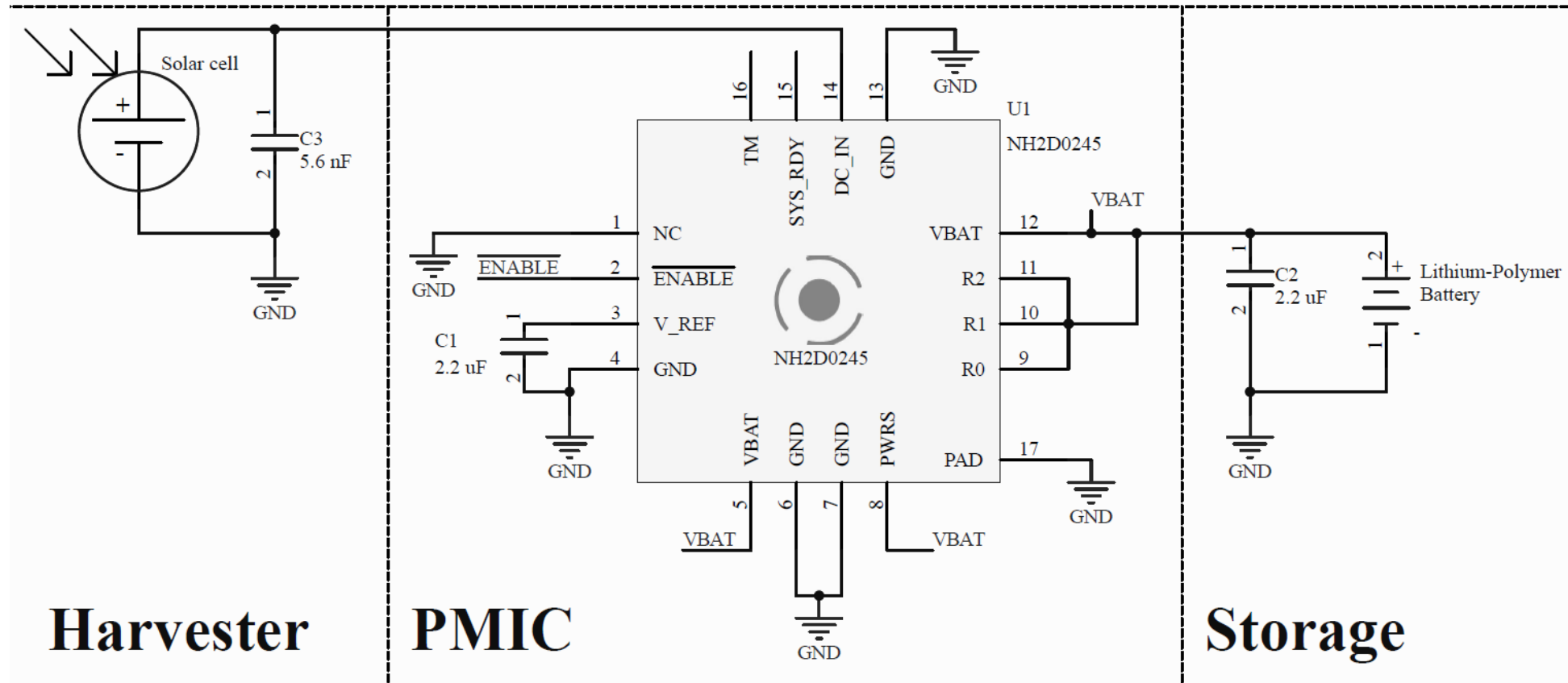
SIMPLE IMPLEMENTATION

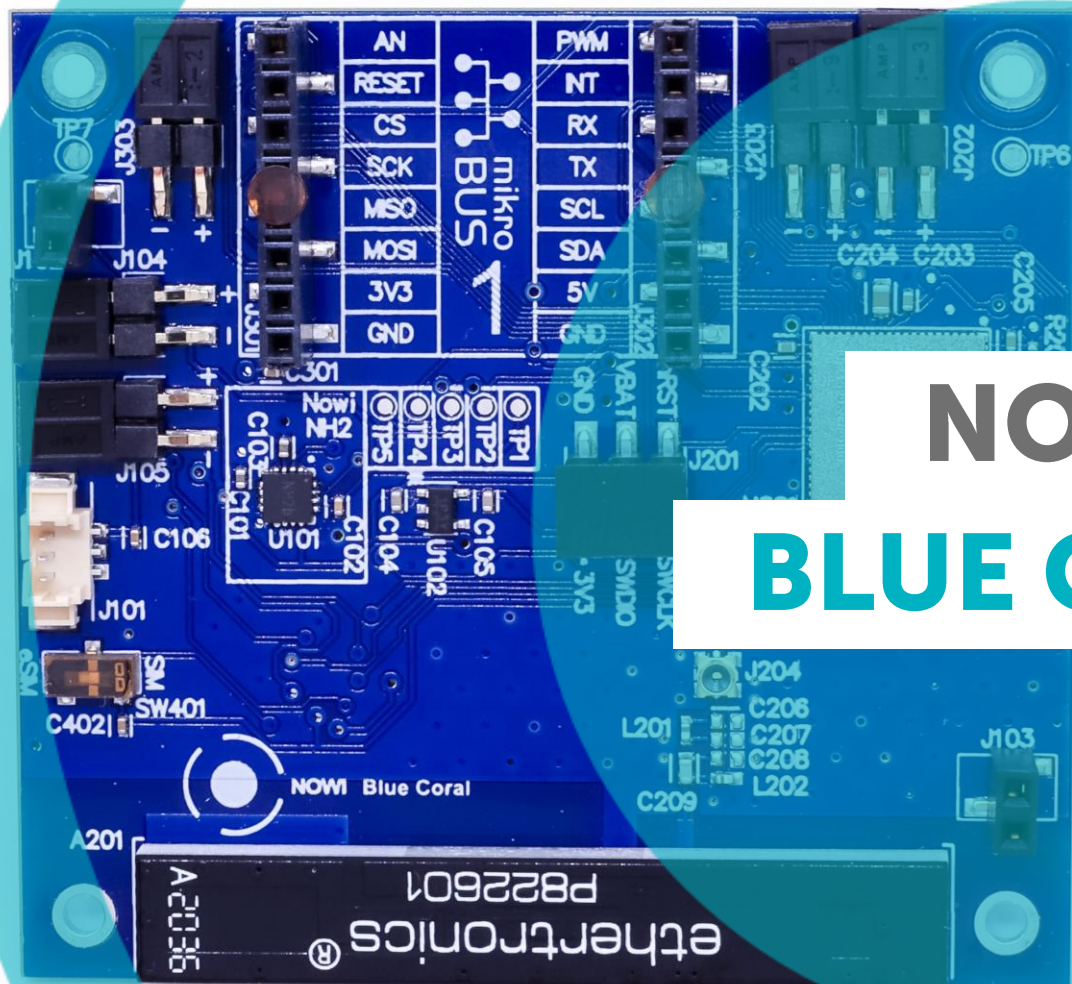


↓
Typical PCB layout for
outdoor solar harvesting

CONFIGURING THE NH2

Outdoor solar harvesting

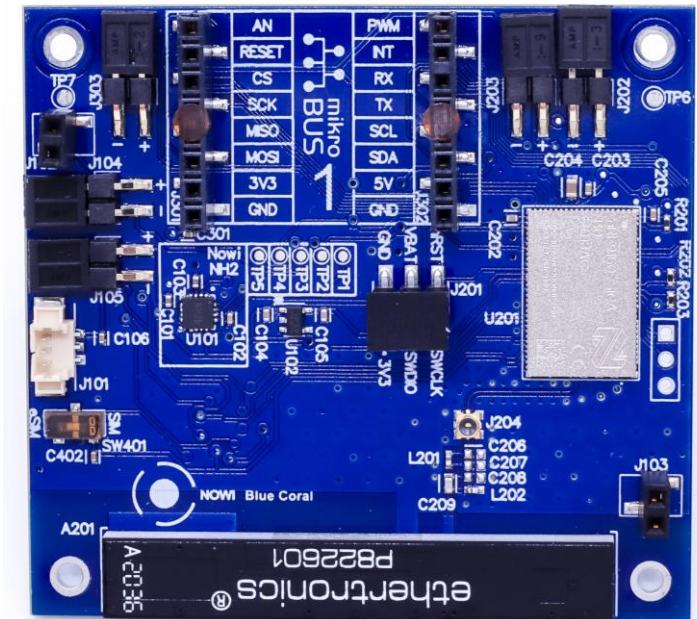




NOWI BLUE CORAL

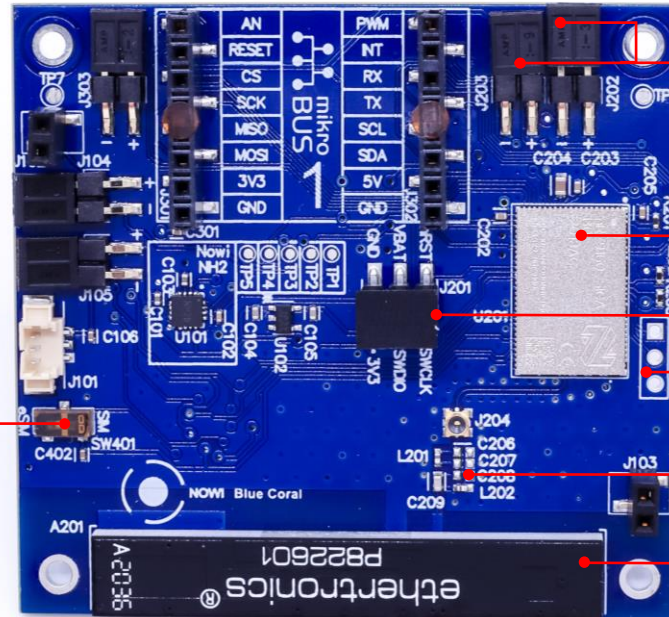
DEVELOPMENT BOARD NOWI BLUE CORAL

- Platform for energy-autonomous IoT sensors
- nRF9160 SiP
- NH2D0245
- MikroBUS™ socket
- Supports iBasis eSIM



HARDWARE DESCRIPTION

SIM Switch



Current Measurement Interface

nRF9160 SiP

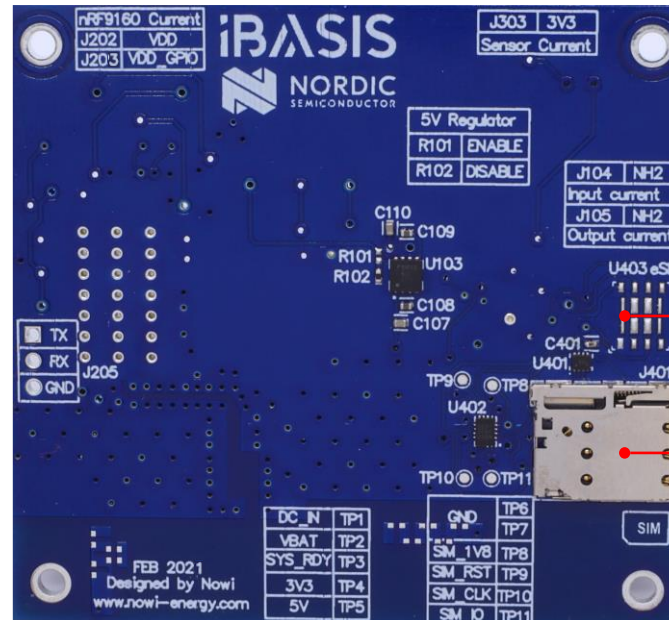
SWD Interface

UART Interface

Fixed matching network

Antenna

HARDWARE DESCRIPTION



MFF2 SIM - eSIM

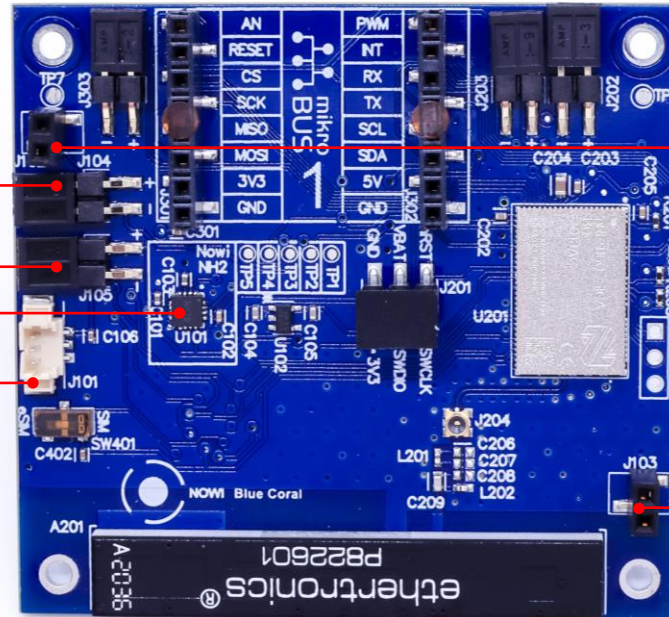
4FF SIM – Nano SIM

HARDWARE DESCRIPTION

NH2D0245 Current
Measurement Interface

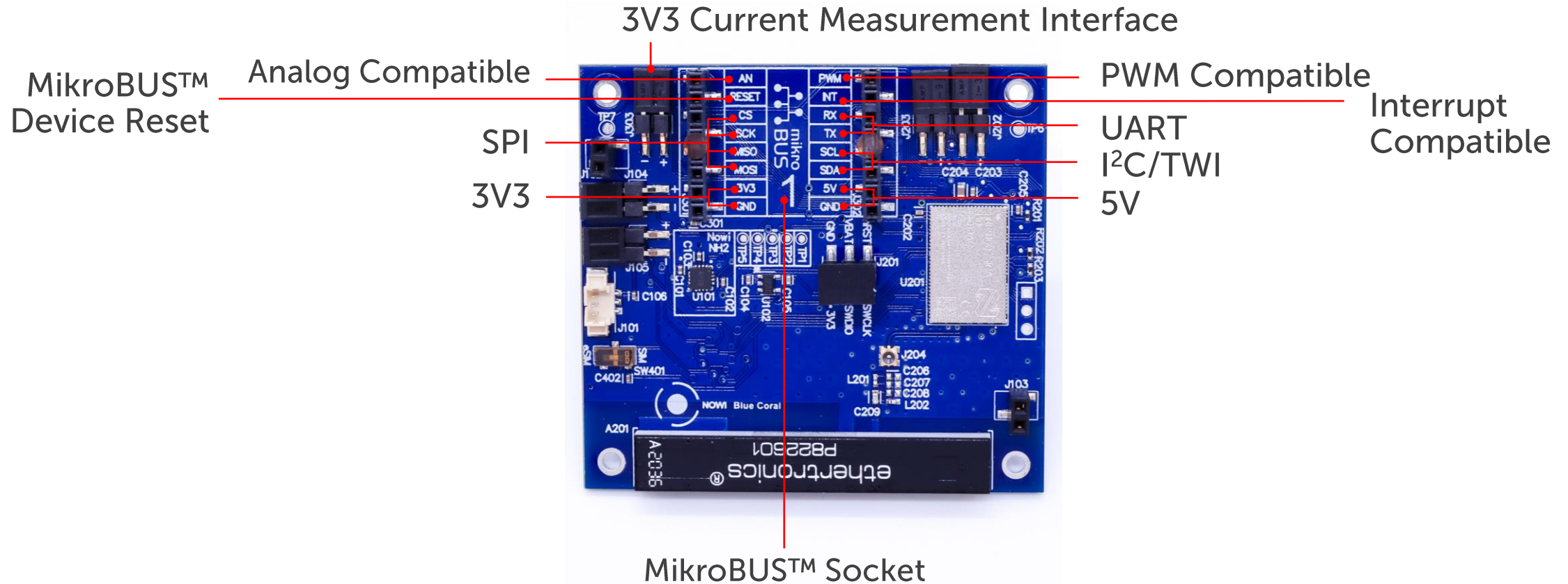
NH2D0245

Lithium-Polymer Battery
Connector

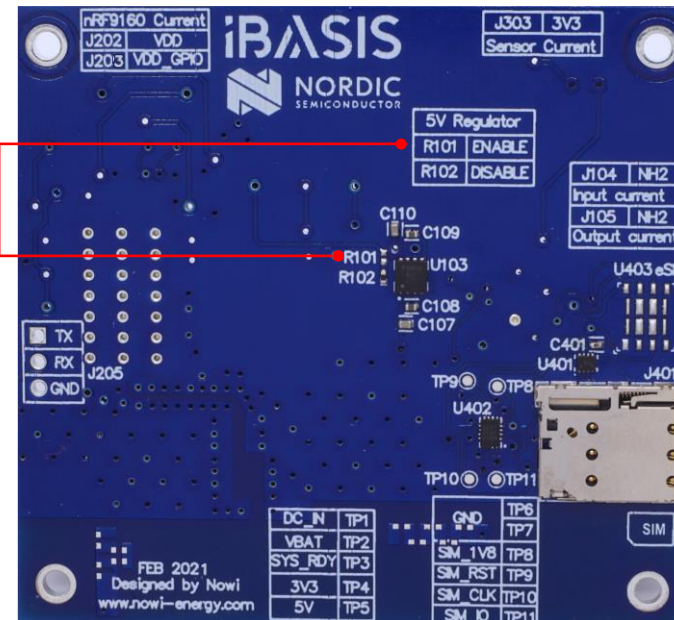


PV expansion board headers

HARDWARE DESCRIPTION



HARDWARE DESCRIPTION



The background features a dark gray grid with a faint white line graph. The graph has three distinct traces: a top trace with smooth, periodic waves; a middle trace with high-frequency, irregular oscillations; and a bottom trace with lower-frequency, irregular oscillations. Two large, solid teal circles are positioned on the left and right sides of the image, partially overlapping the grid and graph.

POWER & PERFORMANCE

VIDEO DEMONSTRATION

GLOBAL APPLICATIONS

- Nordic Online Power Profiler tool
- nRF9160 rev2
- LTE-M
- PSM
- A **1kB** data message every hour

LOCATION	OPERATOR	AVERAGE CONSUMPTION [μA] (@3.7 V)
Finland	DNA	31
Japan	Docomo	31
Norway	Telenor	43
US	Verizon	24

POSSIBLE APPLICATIONS



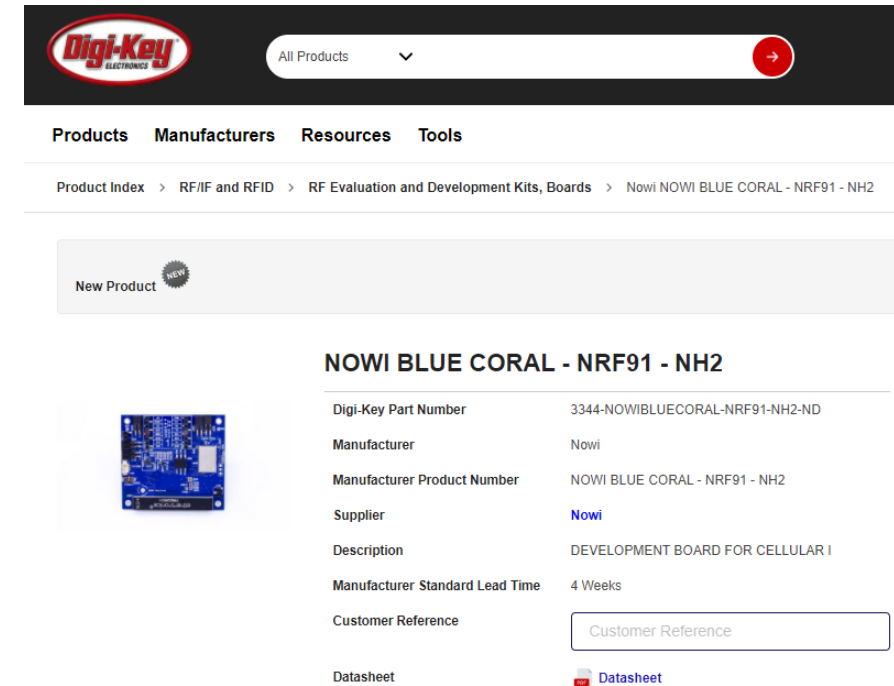
The image features three incandescent light bulbs hanging from thin black cords against a background of a bright, cloudy sky. The bulbs are arranged diagonally from the top left towards the bottom right. A large, semi-transparent teal circle is centered over the middle bulb. Two thick, curved teal lines, resembling arcs of a circle, frame the central composition on the left and right sides. A white rectangular box is superimposed on the central teal circle, containing the text 'GETTING STARTED' in a bold, sans-serif font. The word 'GETTING' is in dark grey, and 'STARTED' is in teal, matching the graphic elements.

**GETTING
STARTED**


HOW TO GET STARTED

NOWI BLUE CORAL

- Available for preorder on [Digikey US](#) (4-8 weeks)
- For other markets, please [contact](#) Nowi directly
- Reference designs available upon request



The screenshot shows the Digi-Key website interface. At the top is the Digi-Key logo and a search bar. Below the navigation bar, the breadcrumb trail reads: Product Index > RF/IF and RFID > RF Evaluation and Development Kits, Boards > Nowi NOWI BLUE CORAL - NRF91 - NH2. A 'New Product' badge is visible. The product title 'NOWI BLUE CORAL - NRF91 - NH2' is prominently displayed. To the left of the specifications is a small image of the blue development board. The specifications table lists the following details:

Digi-Key Part Number	3344-NOWIBLUECORAL-NRF91-NH2-ND
Manufacturer	Nowi
Manufacturer Product Number	NOWI BLUE CORAL - NRF91 - NH2
Supplier	Nowi
Description	DEVELOPMENT BOARD FOR CELLULAR I
Manufacturer Standard Lead Time	4 Weeks
Customer Reference	<input type="text" value="Customer Reference"/>
Datasheet	 Datasheet

Q&A



✉ info@nowi-energy.com

🌐 www.nowi-energy.com

in [/company/nowi](https://www.linkedin.com/company/nowi)

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