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iXpro®
Your Gateway solution

Give your IoT the right direction
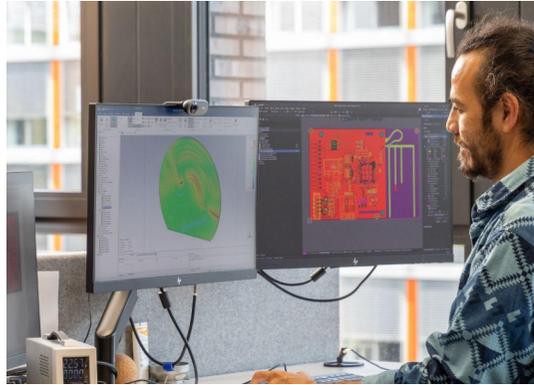
REGISTERED PARTNER
NXP
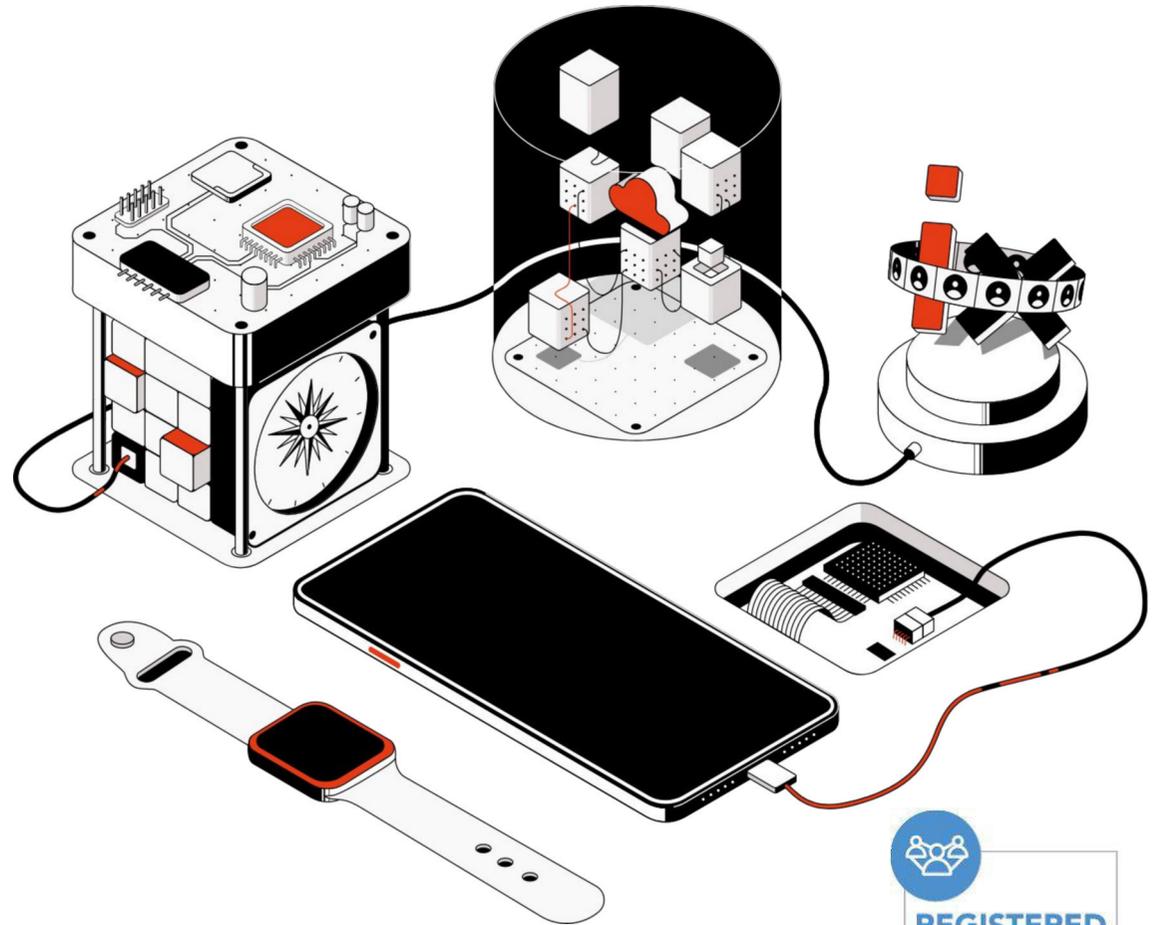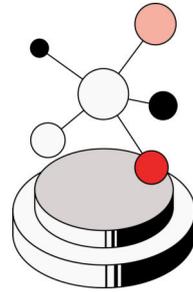
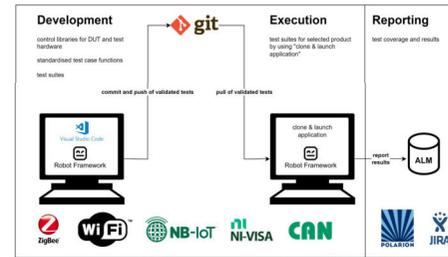Your innovative IoT technology partner
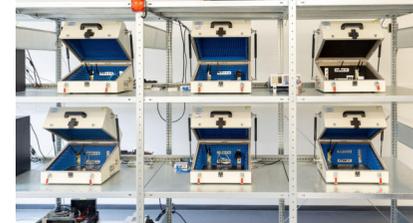# About ithinx

About ithinx

PCB and Antenna development

- Development of antennas: Compact, integrated, multiband, tunable apertures
- PCB design for wired and wireless communication systems
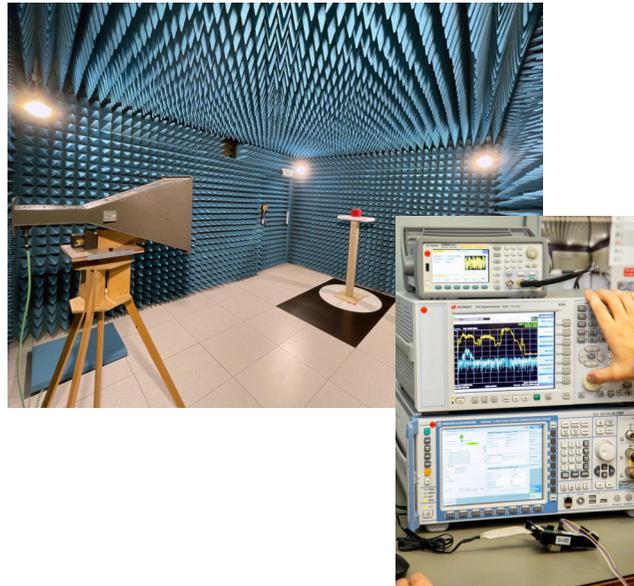- Approval and market launch according to CE, RED, FCC, ISED, RTA, UL, CCC, EMC, Safety

System testing

- ISTQB certified test engineers
- Fully automated test environment using Robot Framework
- Testexecutions and reports highly integrated in Jira and Polarion workflows

EMC and RF Performance Measurements
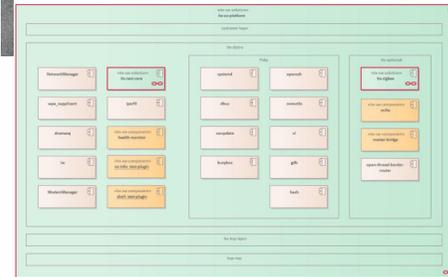
- Fully Anechoic Room (FAR)
- Vector network and spectrum analysers
- Radio communication & protocol testers
- 3D EM simulation solutions (antenna design, signal integrity, thermal)

Software development

- Low level driver and BSP development for Linux and RTOS systems
- IoT frameworks and high level customer application design
- Agile way of working with fully integrated CI/CD process

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Product references

Smart Lighting Outdoor

Development of a multi-radio IoT hardware to control outdoor lighting systems in compliance with all relevant regulations for outdoor applications.

Smart Audio System

Development of IoT hardware and software to control and operate a digital audio system in compliance with all relevant regulations for use by children.
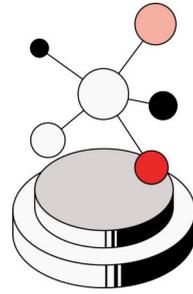
Smart Lock

Development of all radio and wired connectivity solutions of a scalable locking system.

Smart Climate

Development of smart products for intelligent air conditioning and heating/cooling controls.

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Your gateway to the market
iXpro® Gateway

iXpro – the core of your IoT product

HF expertise and world wide support
- Developed in collaboration between ithinx and NXP

Compact design
- Smallest Design for Wireless incl. antenna and uP integration 120mmx110mmx21,5mm

Multiprotocol
- Supporting Wifi6*, Bluetooth*, Thread, Zigbee and Cellular (LTE Cat1 to GNSS)

Built for Matter
- Extendable with our Matter Bridge application or usable as Matter Controller
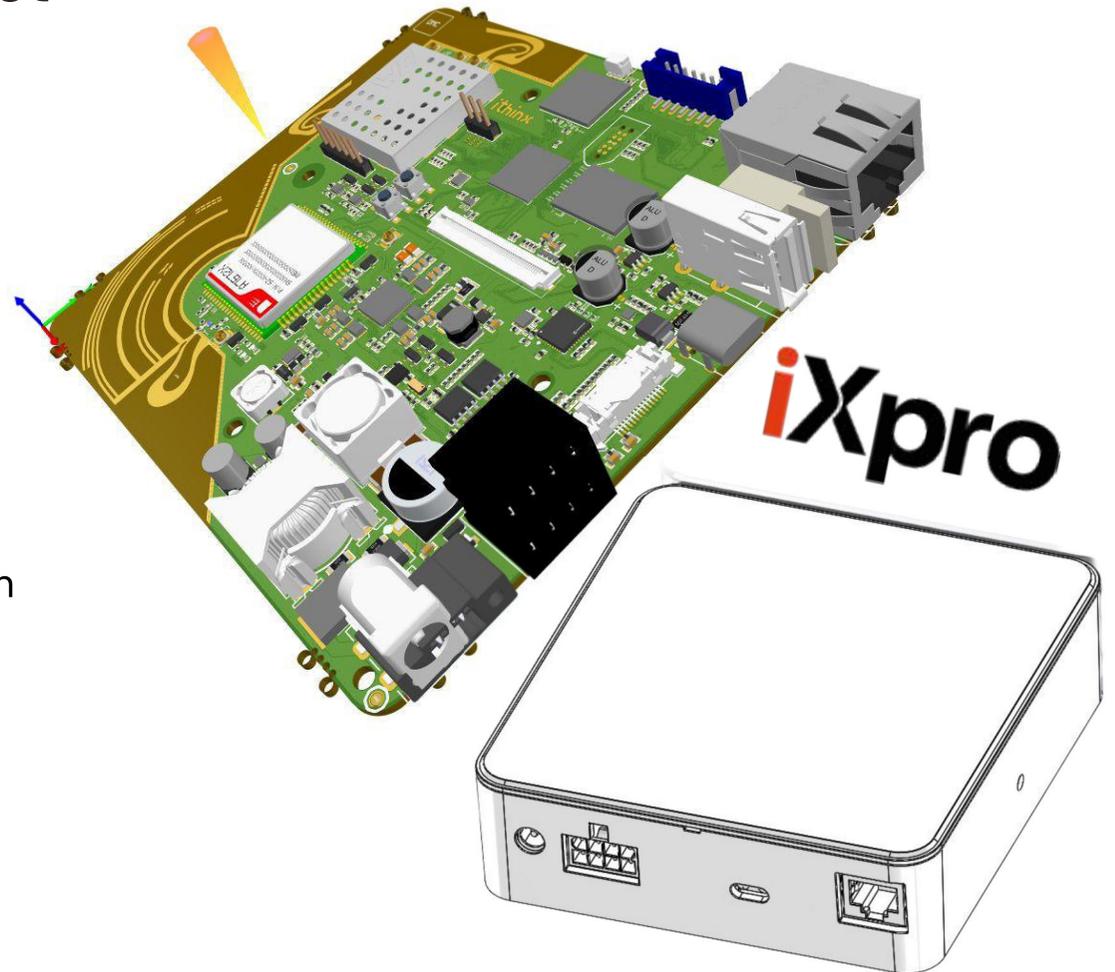
Easily integrated
- USB, CAN, RS485, Ethernet, GPIO, UART, I2C, SPI, ADC

Advanced health management
- 6-axis accelerometer, temperature sensor and voltage measurements

Quick to market
- Low Cost and integrated antenna (patented)

*precertified module

iXpro – the ingredients

Key facts	
Processor	i.MX9331 – 1x A55 @ 1.7GHz (opt. i.MX9352 – 2x A55 @ 1.7GHz + NPU)
DDR	512MB LPDDR4x (opt. up to 2GB)
eMMC	8GB (opt. up to 256GB)
Power supply	9..36V DC
Buffered RTC (optional)	72h+, high precision ±1 ppm (@ 25°)
Additional feature (optional)	6-axis accelerometer, NTC
Operating temp. range	–25..+85°C (opt. –40..+85°C)
Dimensions	110x120mm²
SIM	eSIM (MFF2) (opt. MicroSIM card holder)

Interfaces			
Wireless		**Wired**	
Wi-Fi	Wi-Fi 5 / 6	**Ethernet**	1x ETH (10/100 BASE-T)
LP RF	Bluetooth 5.3/LE, 802.15.4 (ZigBee or Thread)	**USB**	2x USB 2.0 (480 Mbit/s, 1x USB-C, 1x USB-A)
Cellular	CAT1bis (opt. incl GNSS)	**CAN**	1x CAN 2.0b
		RS485	1x
		HMI	4x LED
		5V out	1x
		LVDS	1x
		30-pin connector	1x including USB, UART, GPIO, ADC, I2C, SPI (for piggyback extension)

iXpro – Block diagram full variant
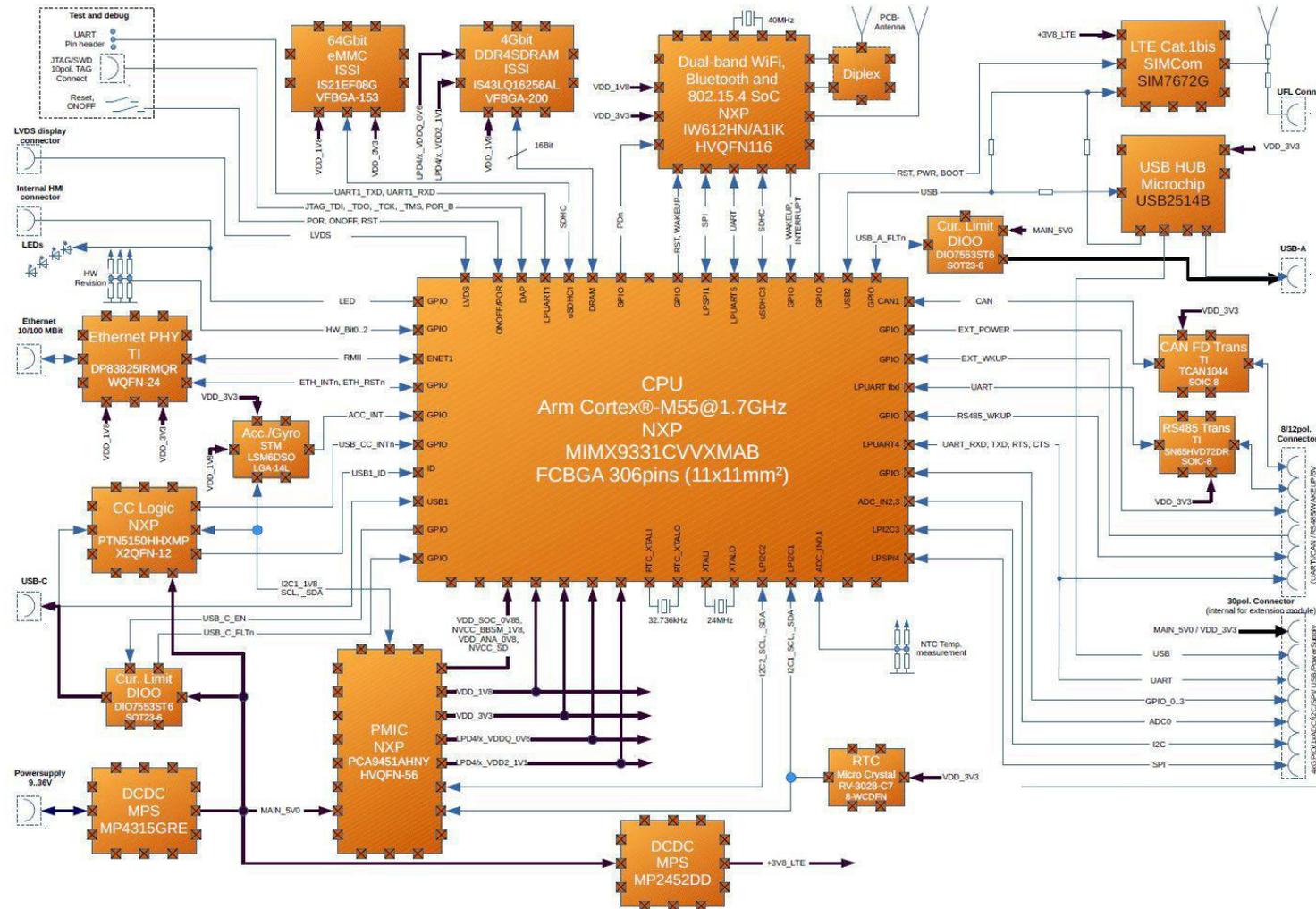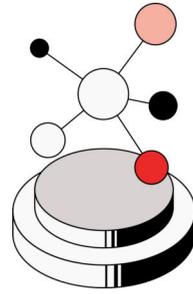
iXpro – new additional extension options
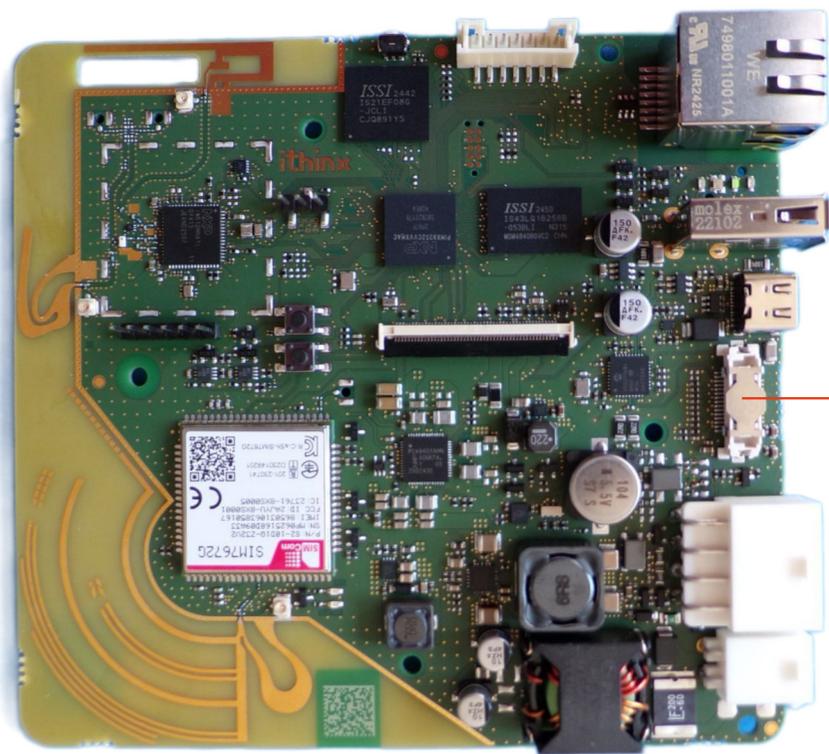
Further connectivity options available

- DALI
- LoRa
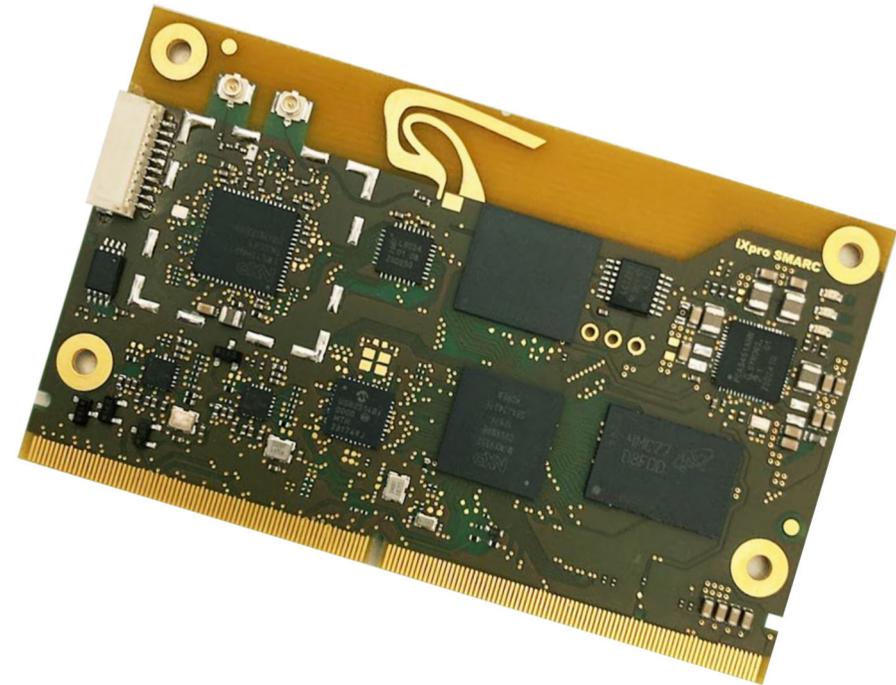- EnOcean
- Your own module of choice

iXpro® SMARC

Small and handy

iXpro SMARC - About

- SMARC? -> Short for 'Smart Mobility ARChitecture' is a popular global standard specification for Computer-on-Modules (CoM) and is often used as a design standard for modular embedded computing.
- The basis is our iXpro gateway architecture
- Standardised form factor of 82x50mm²
- Available soon

iXpro SMARC – Feature overview

Category	Facts	Optional
CPU	Dual Core ARM Cortex A55@1.7GHz, ARM Ethos U65 NPU (up to 0.5 TOPS) ARM Cortex M33 @ 250MHz, EdgeLock Secure Enclave subsystem	Single Core ARM Cortex A55,
Memory / Storage	LPDDR4x up to 3700MT/s, x16 data bus, up to 2GB (default), eMMC v5.1 8GB, (up to 256GB possible)	EEPROM (on I²C bus)
Display support	LVDS up to 1366x768p60 or 1280x800p60 MIPI DSI up to 1920x1200, 60Hz	
Camera support	MIPI-CSI, 2 lanes	
Connectivity	2x 10/100/BASE-T Ethernet Dual-Band Wi-Fi 6, 1x1, Dual Mode Bluetooth 5.3, External antenna (u.FL connector) and on-board (TBC) antenna options	
Interfaces	1x USB2.0 OTG + 1x USB2.0 host 4x UART (2x with HW handshake) 1x SD card interface 2x SPI 4x I2C, 400kHz 2x CAN FD MAC 14x GPIO SMARC 2.1.1 compliant, 314pin MXM edge connector	1x USB2.0 OTG + 4x USB2.0 host (via USB hub)
Temperature Range	–40…+85°C	
Power Supply	5V DC	

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ithinx GmbH – Am Kabellager 7, 51063 Köln • Philosophenweg 31-33, 47051 Duisburg