

Connect Anything - Intro to Nordic's Bluetooth LE offering

Nordic Tech Webinar

Robin M Saltnes - Product Marketing Engineer

7. oktober 2021

Today's hosts

Robin M Saltnes



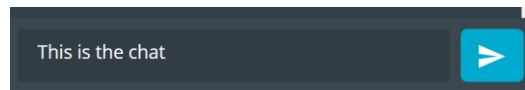
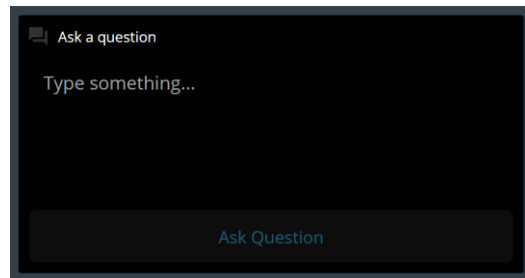
Product Marketing Engineer

Product Marketing



Practicalities

- Duration: about 60 minutes
- 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 towards the end
- The chat is not anonymous, and do not use for questions
- Go to DevZone if you have more questions
- A recording of the webinar will be available together with the presentation at webinars.nordicsemi.com



Content

- About us
- Products overview
- Hardware tools
- nRF Connect SDK
- Software tools
- DevZone
- Q&A

Nordic is enabling IoT

Through innovative low power wireless connectivity solutions



Founded
1983

Employees
1,029 (~75% R&D)

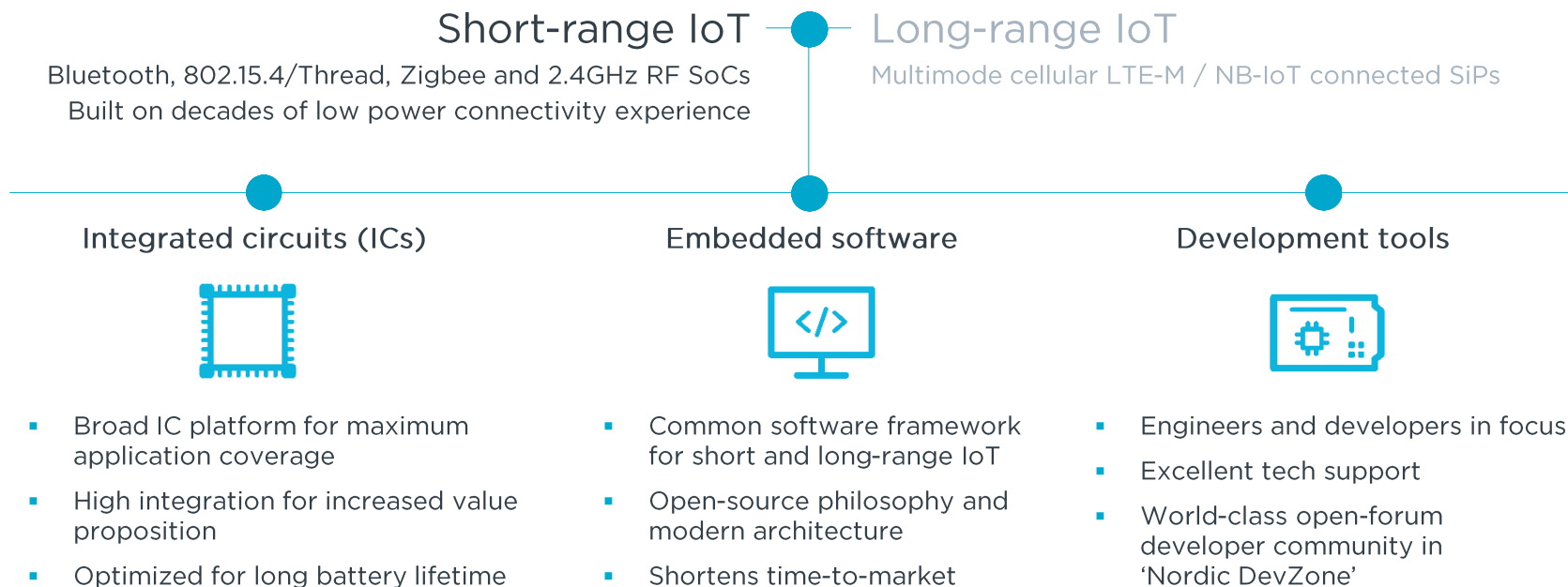
Oslo listing
OSEBX:NOD

Market Cap
~\$5bn

- Fabless semiconductor company with world-class production and distribution partners
- Specialist in low power wireless connectivity and embedded processing
- Market leader in short-range IoT with Bluetooth Low Energy and multiprotocol solutions
- Early mover in cellular IoT with low power LTE-M and NB-IoT technologies
- Expanding into Wi-Fi connectivity

We are a driving force in connectivity

Low power connectivity is in our DNA

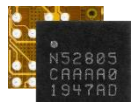


Our products

In the Bluetooth Low Energy segment

The nRF52[®] and nRF53[®] Series

nRF52805



Baseline

Minimal size

Bluetooth LE,

Network
processor
and simpler
apps

10 GPIOs

nRF52810



Baseline

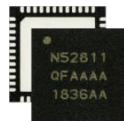
Small size

Bluetooth LE,

Network
processor
and simpler
apps

32 GPIOs

nRF52811



Baseline

Small size

Bluetooth LE,
Thread,Network
processor
and simpler
apps

32 GPIOs

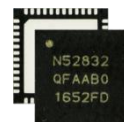
nRF52820

Baseline
MainstreamBluetooth LE,
mesh, Thread,
Zigbee

-40° to +105°

18 GPIOs

nRF52832



Mainstream

2 variants

Bluetooth
LE, mesh,
NFC

32 GPIOs

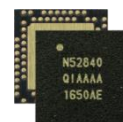
nRF52833

Mainstream
High-endBluetooth LE
mesh, Thread,
Zigbee, NFC

-40° to +105°

42 GPIOs

nRF52840



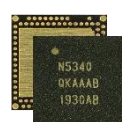
High-end

More memory

Bluetooth LE,
mesh, Thread
Zigbee, NFC

48 GPIOs

nRF5340



High-end

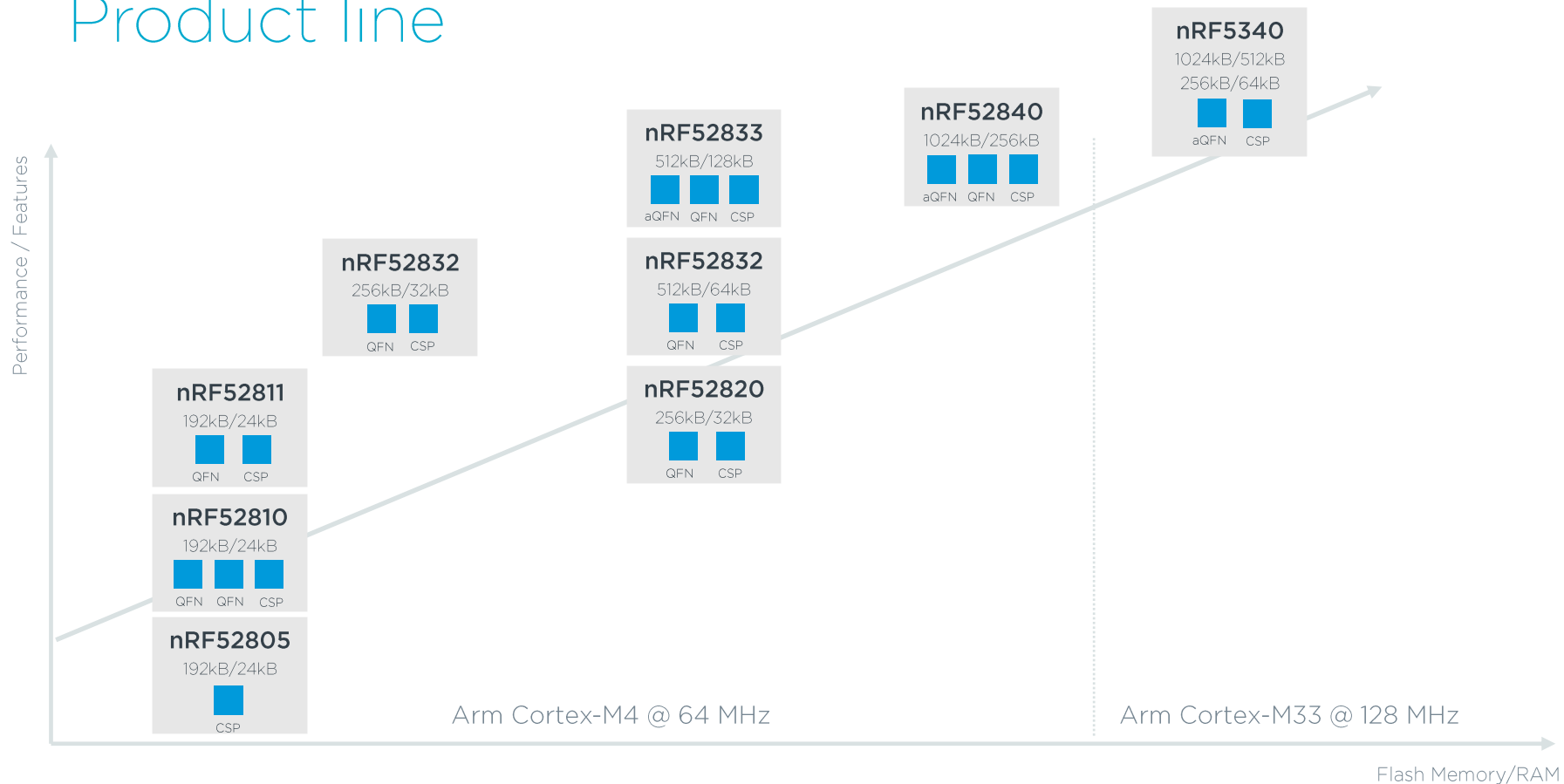
Dual core

Bluetooth LE,
mesh, Thread
Zigbee, NFC

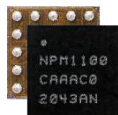
-40° to +105°

48 GPIOs

Product line



Complementary devices



nPM1100 PMIC

- Battery charger
- Voltage regulator
- USB compliant



nRF21540 RF FEM

- PA and LNA
- Increases range and link robustness

Protocol support

Protocol support in the nRF52 Series



Protocol support in the nRF5340 SoC

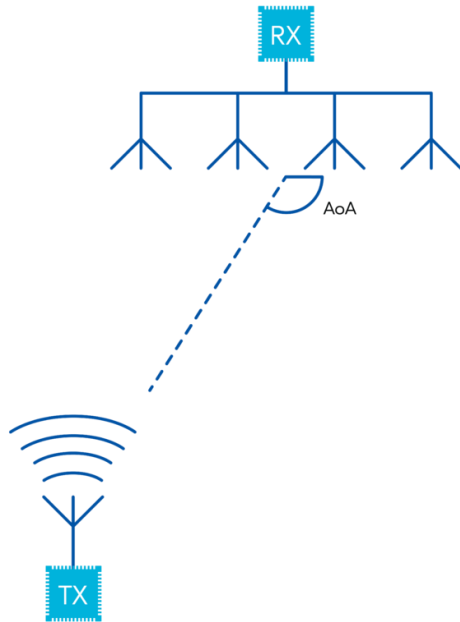
Bluetooth Low Energy | Bluetooth mesh | Proprietary 2.4 GHz |
Zigbee | Thread | Matter | 802.15.4 | NFC | ANT

nRF5340

Advanced features

Some of the advanced features of our products

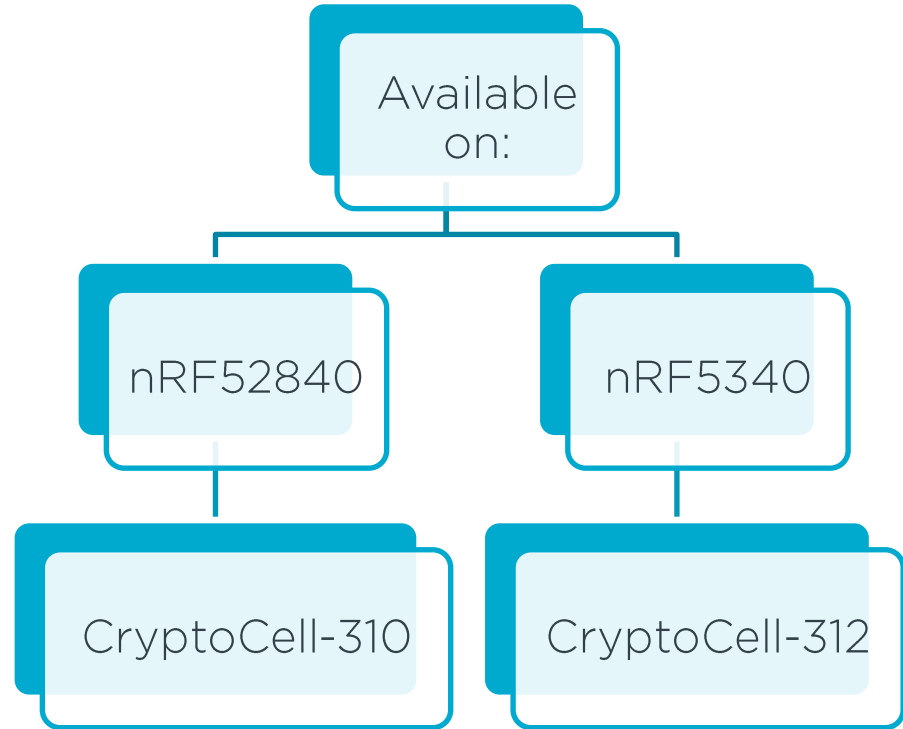
Direction finding



Available on:

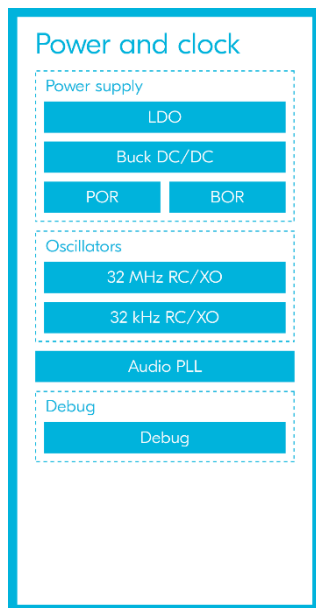
- nRF52811
- nRF52820
- nRF52833
- nRF5340

Arm CryptoCell



LE Audio

nRF5340 SoC



Public adress



Audio broadcasting

Headsets



Superior quality

Hearing aids

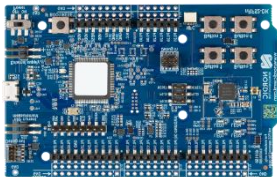


Low power

Development hardware

Development kits

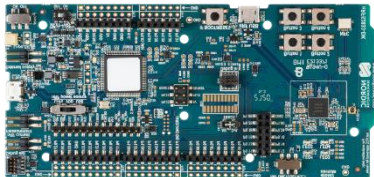
nRF52 DK



nRF52832 SoC

Also suitable
for developing
for the
nRF52805
nRF52810

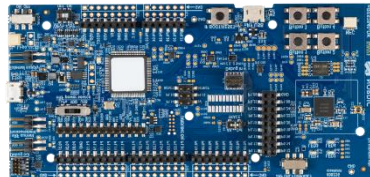
nRF52833 DK



nRF52833 SoC

Also suitable
for developing
for the
nRF52811
nRF52820

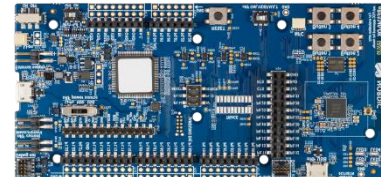
nRF52840 DK



nRF52840 SoC

On-board
external flash
memory

nRF5340 DK



nRF5340 SoC

On-board
external flash
memory

Other development hardware



Power Profiler Kit II



Thingy:52



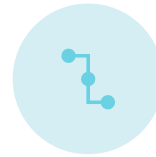
nRF52840 Dongle

Development software

nRF Connect SDK



SAMPLES AND
APPLICATIONS



MIDDLEWARE



RTOS



LIBRARIES



HARDWARE
DRIVERS

nRF Connect SDK



- Scalable and unified SDK for nRF52 and nRF53 Series
- One single codebase for all devices
- Includes Zephyr RTOS
- Supported for production
- Installs via toolchain manager in nRF Connect Desktop app

Software tools

PPK2
F8EBA514BFC7

DATA LOGGER

REAL-TIME

ABOUT

MODE

Source meter Ampere meter

Set supply voltage to 3000 mV

Enable power output ☒

SAMPLING PARAMETERS

1,000 samples per second

Sample for 1 hours

Estimated RAM required 14.4 MB
1 ms period

Start

DISPLAY OPTIONS

Timestamps ☒Digital channels ☒

0 1 2 3 4 5 6 7

Save / Export

Screenshot

LOCK Y-AXIS

1s

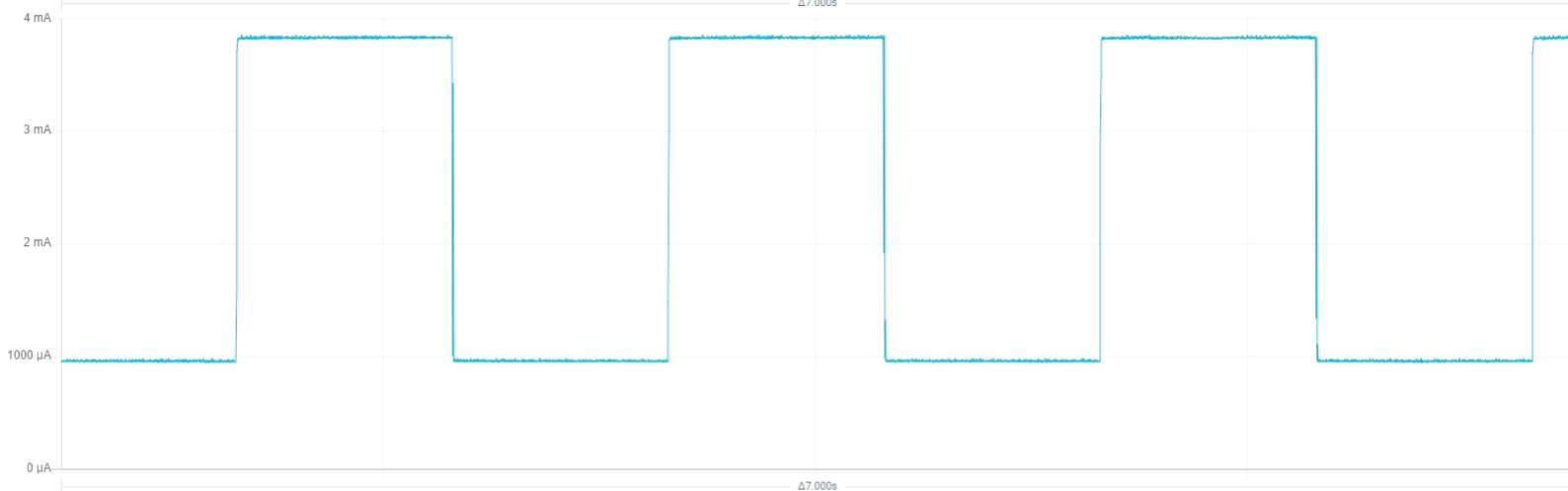
3s

10s

1min

10min

1h

LIVE VIEW ☒

WINDOW

2.26mA
average3.85mA
max7.000s
time15.83mC
charge

SELECTION

CLEAR

Hold SHIFT+LEFT CLICK and DRAG to make a selection

0

1

2

12:27:09.140 Mode: Ampere meter
12:27:09.167 DUT ON
12:27:16.029 Mode: Source meter
12:27:16.029 DUT OFF
12:27:22.429 Voltage regulator updated to 3000 mV
12:27:28.407 DUT ON
12:28:01.517 Sampling started
12:28:21.072 Sampling stopped

CLEAR LOG

OPEN LOG FILE

AUTOSCROLL LOG

SHOW LOG

Mobile Apps

- For Android & iOS
- Demonstrates Bluetooth SIG and proprietary services and profiles
- Plenty of apps available on Google Play and App Store:
 - nRF Connect for Mobile
 - nRF Toolbox
 - nRF Mesh
 - And more...
- Source code available on GitHub



DevZone

Engaging and exiting developers

Excite developers and drive engagement



- devzone.nordicsemi.com -> Leading community in the industry
- >80K developers, 2.4M annual site visits
- Strong tech support team
- Nordic Tech webinars
- Tutorials and builds blogs
- Blogs, guides, Wireless Quarter

Q&A

Register for upcoming Nordic Tech Webinars

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