



Nordic 4th generation wireless SoCs

nRF54L15, the first SoC in nRF54L Series

nRF54H20, the first SoC in nRF54H Series

Nordic Semiconductor

Raising the bar once again

nRF
51
SERIES

nRF
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SERIES

nRF SERIES
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nRF
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SERIES

Cornerstones of the nRF54 Series



Efficiency with higher performance
and lower power consumption

22nm

Modern process nodes for IoT

nRF54 SERIES



Advanced security services
Physical attack protection
Designed for PSA Certified Level 3



4th generation Nordic radio



5.4 LE Audio Mesh



matter

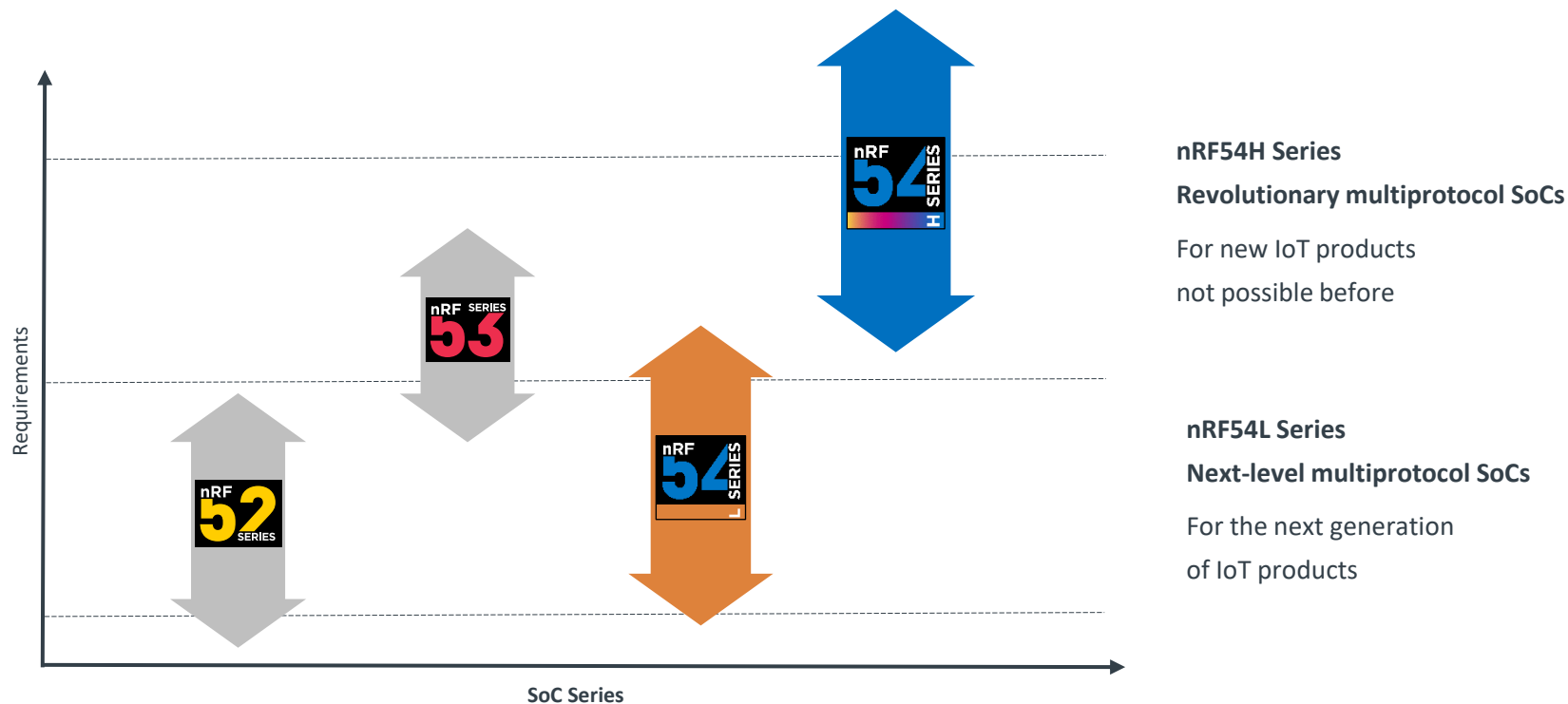


THREAD



2.4 GHz
4 Mbps throughput

Broad product portfolio



nRF54L and nRF54H – at a glance

	 nRF54L15	 nRF54H20
Processing	1x Arm Cortex-M33 128 MHz	2x Arm Cortex-M33 up to 320 MHz
NVM	1.5 MB	2 MB
RAM	256 KB	1 MB
Maximum GPIO	35 GPIO	64 GPIO
General purpose peripherals SPI, TWI, UART, ADC, WDT...	✓	✓
Advanced peripherals HS-USB, I3C, CAN-FD...		✓
Coprocessors	1x RISC-V 128 MHz	2x RISC-V 16 MHz & 320 MHz
Security Designed for PSA Certified Level 3	✓	✓
2.4 GHz Radio	8 dBm TX power -98 dBm RX sensitivity (1 Mbps Bluetooth LE)	10 dBm TX power -100 dBm RX sensitivity (1 Mbps Bluetooth LE)

Targeted applications



PC accessories

Gaming, VR, AR, and media controllers

Smart home and Matter

Medical devices

Industrial IoT



Advanced wearables

VR, AR, and advanced gaming controllers

Smart home and Matter

Medical and healthcare

LE Audio

Industrial IoT

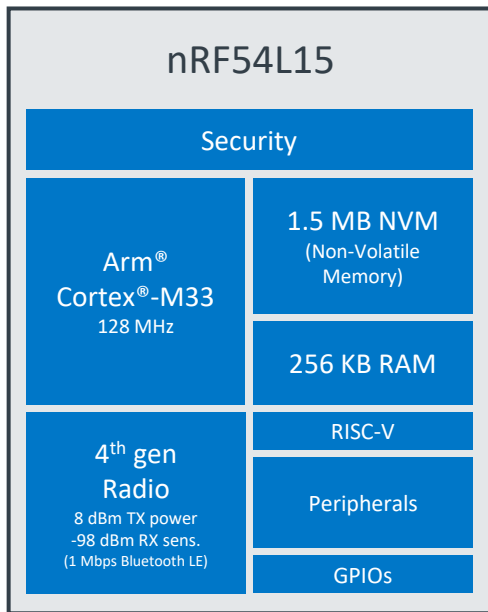
E-mobility

nRF54L15



nRF54L15

Ultra-low power Bluetooth 5.4 SoC



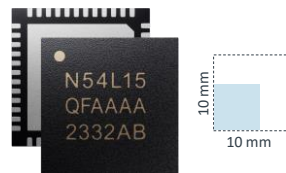
Takes the popular nRF52 Series to the next level with:

- New 2.4 GHz multiprotocol radio
- Advanced security
- 2x processing power with reduced power consumption
- Expanded memory
- Ultra-compact packages for size-constrained designs

Specification highlights – nRF54L15

General purpose peripherals

5 x SPI/TWI/UART	2x RTC
I ² S	Global RTC* (can run in System OFF)
7 x Timer	2x WDT
2 x QDEC	NFC A-Tag
TEMP	3 x 4ch PWM
14-bit ADC*	COMP
	LPCOMP



QFN 6x6 mm
31 GPIO

Available in the
sampling program



WLCSP 2.4x2.2 mm
14 GPIO (350 um pitch)
32 GPIO (300 um pitch)

*New peripherals

nRF54H20

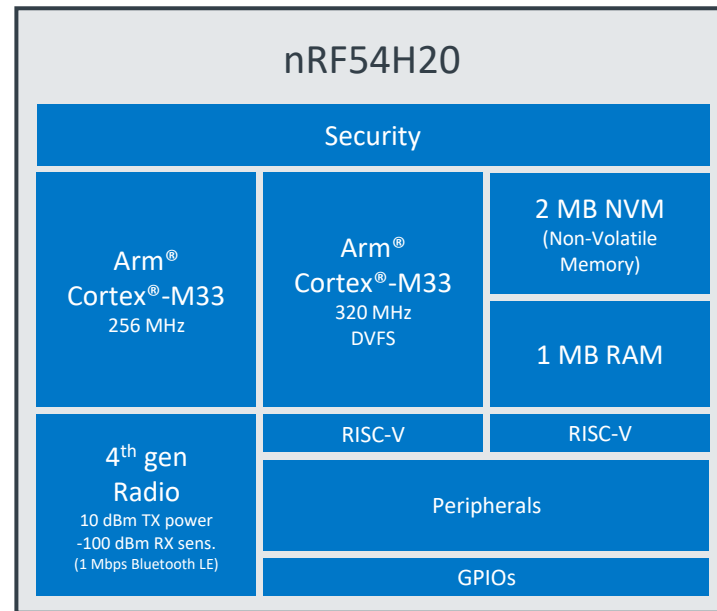


nRF54H20

Revolutionary Bluetooth 5.4 SoC

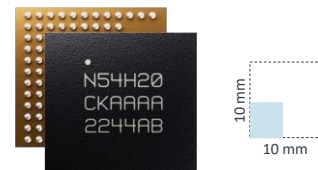
Enables new IoT products not possible before with:

- Multiple processors integrated into a wireless SoC
- World-leading processing efficiency and performance (EEMBC ULPMark®-CoreMark)
- State-of-the-art security
- Record-breaking 2.4 GHz multiprotocol radio
- Generous amount of memory
- Advanced peripherals
- Highly integrated SoC, which can replace multiple ICs (MCU, external memory, and wireless SoC)



Specification highlights – nRF54H20

General purpose peripherals	
8 x SPI/TWI/UART	8x Timer
2 x QDEC	Global RTC* (can run in System OFF)
NFC A-Tag	4 x 4ch PWM
14-bit ADC*	and more... **
Advanced peripherals	
High-speed USB* (480 Mbps)	I3C*
CAN-FD*	and more... **



WLCSP 4.7x4.3 mm
64 GPIO

Available in the
sampling program

*New Peripherals

**A complete list of peripherals can be shared under NDA

Complementary ICs

nPM1300 PMIC

Power Management IC

- 800 mA battery charger
- Algorithm-based, accurate fuel gauge
- System-level watchdog
- Built-in hardware reset
- Power-loss warning
- Five GPIOs
- Three LED drivers
- USB-C compatible



PMIC



nRF54H20



nRF54L15



FEM



nRF21540 FEM

Front End Module / Range Extender

- Longer range
- Maximum reliability
- Up to 20dBm TX power

nordicsemi.com/nRF54H20

nordicsemi.com/nRF54L15

Subscribe to nRF54 Series news
(separate newsletters for nRF54H20 and nRF54L15)

Sampling now

The logo for the nRF54 Series is displayed within a black square with a glowing blue border. The text 'nRF' is in white at the top left. The number '54' is large and features a vibrant rainbow-to-orange gradient. The word 'SERIES' is written vertically in white on the right side.

nRF
54
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