

Product Summary

Full product details at:
www.nordicsemi.com/Products



		nRF9160	nRF5340	nRF52840	nRF52833	nRF52832	nRF52820	nRF52811	nRF52810	nRF52805	nRF51822	nRF51422	nRF51824	
WIRELESS PROTOCOL	LTE-M	●												
	NB-IOT	●												
	GPS	●												
	BLUETOOTH LOW ENERGY		●	●	●	●	●	●	●	●	●	●	●	
	BLUETOOTH 5.2		●	●	●	●	●	●	●	●				
	LE AUDIO		●	●	●	●	●	●	●	●				
	DIRECTION FINDING		●	●	●	●	●	●	●	●				
	2 MBPS		●	●	●	●	●	●	●	●				
	LONG RANGE		●	●	●	●	●	●	●	●				
	BLUETOOTH MESH		●	●	●	●	●	●	●	●				
	THREAD		●	●	●	●	●	●	●	●				
	MATTER		●	●	●	●	●	●	●	●				
	ZIGBEE		●	●	●	●	●	●	●	●				
	ANT		●	●	●	●	●	●	●	●				
2.4 GHZ PROPRIETARY		●	●	●	●	●	●	●	●	●	●	●	●	
NFC		●	●	●	●	●	●	●	●					
TYPE	SYSTEM-ON-CHIP		●	●	●	●	●	●	●	●	●	●	●	
	SYSTEM-IN-PACKAGE	●												
CORE SYSTEM	CPU	64 MHz Arm Cortex-M33	128 MHz Arm Cortex-M33 +64 MHz Arm Cortex-M33	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	64 MHz Arm Cortex-M4	16 MHz Arm Cortex-M0	16 MHz Arm Cortex-M0	16 MHz Arm Cortex-M0	
	FPU	●	●	●	●	●	●	●	●	●				
	DSP INSTRUCTION SET	●	●	●	●	●	●	●	●	●				
	CACHE	●	●	●	●	●	●	●	●	●				
	MEMORY	1MB Flash, 256 kB RAM	1MB Flash, 512 kB RAM +256 kB Flash, 64 kB RAM	1MB Flash, 256 kB RAM	512 kB Flash, 128 kB RAM	512 kB or 256 kB Flash, 64 kB or 32 kB RAM	256 kB Flash, 32 kB RAM	192 kB Flash, 24 kB RAM	192 kB Flash, 24 kB RAM	192 kB Flash, 24 kB RAM	128 kB or 256 kB Flash, 32 kB or 16 kB RAM	128 kB or 256 kB Flash, 32 kB or 16 kB RAM	256 kB Flash, 16 kB RAM	
	CLOCKS	64 MHz / 32 kHz	128 MHz / 64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	64 MHz / 32 kHz	16 MHz / 32 kHz	16 MHz / 32 kHz	16 MHz / 32 kHz
SECURITY	ARM TRUSTZONE	●	●	●	●	●	●	●	●	●	●	●	●	
	ARM CRYPTOCELL	310	312	310										
	ROOT-OF-TRUST	●	●	●										
	SECURE KEY STORAGE	●	●	●										
	AES ENCRYPTION	●	●	●	●	●	●	●	●	●	●	●	●	
RADIO	LTE-M/NB-IOT/GPS MODEM	●	●	●	●	●	●	●	●	●	●	●	●	
	CERTIFIED LTE BANDS	1-5, 8, 12-14, 17-20, 25-26, 28, 66												
	FREQUENCY	700-2200 MHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	
	MAXIMUM TX POWER	23 dBm	3 dBm	8 dBm	8 dBm	4 dBm	8 dBm	4 dBm	4 dBm	4 dBm	4 dBm	4 dBm	4 dBm	
	RX SENSITIVITY	-108 dBm (LTE-M), -114 dBm (NB-IoT), -155 dBm (GPS)	-98 dBm (1Mbps)	-95 dBm (1Mbps)	-96 dBm (1Mbps)	-96 dBm (1Mbps)	-95 dBm (1Mbps)	-97 dBm (1Mbps)	-96 dBm (1Mbps)	-97 dBm (1Mbps)	-93 dBm (1Mbps)	-93 dBm (1Mbps)	-93 dBm (1Mbps)	-93 dBm (1Mbps)
	ANTENNA INTERFACE	50 Ω single-ended	Single-ended	Single-ended	Single-ended	Single-ended	Single-ended	Single-ended	Single-ended	Single-ended	Differential	Differential	Differential	
PERIPHERALS	HIGH SPEED SPI	●	●	●	●	●	●	●	●	●	●	●	●	
	TWI, SPI, UART	4xTWI/SPI/UART	4xTWI/SPI/UART +TWI/SPI/UART	2xTWI/SPI, SPI, 2xUART	2xTWI/SPI, SPI, 2xUART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	2xTWI/SPI, SPI, UART	
	QSPI		●	●	●	●	●	●	●	●				
	USB		●	●	●	●	●	●	●					
	PWM	4	4	4	4	3		1	1					
	PDM	●	●	●	●	●	●	●	●	●				
	I2S	●	●	●	●	●	●	●	●	●				
	ADC, COMPARATOR	ADC		●	●	●	COMP	ADC, COMP	ADC, COMP	ADC	ADC, LPCOMP	ADC, LPCOMP	ADC, LPCOMP	
	TIMER, RTC	3, 2	3, 2 + 3, 2	5, 3	5, 3	5, 3	4, 2	3, 2	3, 2	3, 2	3, 2	3, 2	3, 2	
	TEMPERATURE SENSOR	●	●	●	●	●	●	●	●	●	●	●	●	
APPLICATIONS	AGRICULTURE	●	●	●	●	●	●	●	●	●	●	●	●	
	ASSET TRACKING	●	●	●	●	●	●	●	●	●	●	●	●	
	AUTOMATION		●	●	●	●	●	●	●	●	●	●	●	
	BEACON		●	●	●	●	●	●	●	●	●	●	●	
	CONSUMER ELECTRONICS		●	●	●	●	●	●	●	●	●	●	●	
	DIRECTION FINDING		●	●	●	●	●	●	●	●	●	●	●	
	GAMING / VR + AR		●	●	●	●	●	●	●	●	●	●	●	
	HEALTHCARE & MEDICAL		●	●	●	●	●	●	●	●	●	●	●	
	INDUSTRIAL SYSTEMS	●	●	●	●	●	●	●	●	●	●	●	●	
	MESH NETWORKS		●	●	●	●	●	●	●	●	●	●	●	
	PC PERIPHERALS		●	●	●	●	●	●	●	●	●	●	●	
	PROFESSIONAL LIGHTING		●	●	●	●	●	●	●	●	●	●	●	
	SMART BUILDINGS	●	●	●	●	●	●	●	●	●	●	●	●	
	SMART CITY	●	●	●	●	●	●	●	●	●	●	●	●	
	SMART HOME	●	●	●	●	●	●	●	●	●	●	●	●	
	SMART METERING	●	●	●	●	●	●	●	●	●	●	●	●	
	SPORTS & FITNESS	●	●	●	●	●	●	●	●	●	●	●	●	
TOYS	●	●	●	●	●	●	●	●	●	●	●	●		
WEARABLES	●	●	●	●	●	●	●	●	●	●	●	●		
CERTIFICATIONS	nordicsemi.com/9160cert	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC		
OPERATING TEMPERATURE	-40 to 85 °C	-40 to 105 °C	-40 to 85 °C	-40 to 105 °C	-40 to 85 °C	-40 to 105 °C	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C		
SUPPLY VOLTAGE RANGE	3.0 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 3.6 V	1.7 to 5.5 V	1.7 to 3.6 V	1.7 to 3.6 V	1.7 to 3.6 V	1.8 to 3.6 V	1.8 to 3.6 V		
DEVELOPMENT KITS	nRF9160 DK, Nordic Thingy:91	nRF5340 DK	nRF52840 DK, nRF52840 Dongle	nRF52833 DK	nRF52DK, Nordic Thingy:52	nRF52833 DK	nRF52840 DK	nRF52DK	nRF52DK	nRF52DK	nRF51DK, nRF51 Dongle	nRF51DK, nRF51 Dongle	nRF51DK, nRF51 Dongle	
PACKAGES	10x16x1.04 mm LGA	7x7 mm aQFN94 (48 GPIOs), 4.4x4.0 mm WLCSP95 (48 GPIOs)	7x7 mm aQFN73 (48 GPIOs), 6x6 mm QFN48 (48 GPIOs), 3.5x3.6 mm WLCSP94 (48 GPIOs)	7x7 mm aQFN73 (42 GPIOs), 5x5 mm QFN40 (18 GPIOs), 3.2x3.2 mm WLCSP (42 GPIOs)	6x6 mm QFN48 (32 GPIOs), 3.0x3.2 mm WLCSP50 (32 GPIOs)	5x5 mm QFN40 (18 GPIOs), 2.53x2.53 mm WLCSP44 (18 GPIOs)	6x6 mm QFN48 (32 GPIOs), 5x5 mm QFN32 (17 GPIOs), 2.48x2.46 mm WLCSP33 (15 GPIOs)	6x6 mm QFN48 (32 GPIOs), 5x5 mm QFN32 (17 GPIOs), 2.48x2.46 mm WLCSP33 (15 GPIOs)	2.48x2.46 mm WLCSP28 (10 GPIOs)	6x6 mm QFN48, WLCSP48, Thin CSP	6x6 mm QFN48, WLCSP48	6x6 mm QFN48, WLCSP48		