

NXP® NFC Portfolio: Contactless Reader and Tag Solutions

NFC TAG IC SOLUTIONS									
NFC Forum compliance	Type 2 Tag	Type 2 Tag	Type 4 Tag	Type 5 Tag	Type 5 Tag	Type 5 Tag	Type 5 Tag	Type 5 Tag	
ISO/IEC standard compliance	ISO/IEC 14443-3A	ISO/IEC 14443-3A	ISO/IEC14443-4A	ISO/IEC15693	ISO/IEC15693	ISO/IEC15693	ISO/IEC15693	ISO/IEC15693	
Carrier frequency [MHz]	13.56								
Input capacitance [pF]	50	50	50	23.5	15	15	15	15	
NFC tag type baudrate [kbit/s]	106	106	106/212/424/848	26.5 (up to 53)	26.5 (up to 53)	26.5 (up to 53)	26.5 (up to 53)	26.5 (up to 53)	
PRODUCT	NTAG®	NTAG I²C plus	NTAG® DNA	ICODE	NTAG 5 switch	NTAG 5 link		NTAG 5 boost	
Product description	Passive NFC tag for smart inlays, labels and tags	Passive NFC tag with I ² C interface, energy harvesting, password protection, originality check and high pass-through mode	Passive NFC tag with AES authentication and SUN feature	Passive NFC tag for smart inlays, labels and tags	NFC Forum compliant PWM and GPIO bridge	NFC Forum compliant I ² C bridge	NFC Forum compliant I ² C bridge with AES and master functionality	NFC Forum compliant I ² C bridge with ALM for tiny devices	
Commercial name	NTAG 213/215/216 NTAG 213 TagTamper	NTAG I ² C plus 1k/2k	NTAG 424 DNA (Available with TagTamper)	ICODE SLIX 2	NTP5210	NTP5312	NTP5332	NTA5332	
User memory [Bytes]	144/504/888	888/1912 in up to 2 areas	416	316	512 in up to 3 areas	2048 in up to 3 areas	2048 in up to 3 areas	2048 in up to 3 areas	
SRAM [Bytes]	-	64	-	-	-	256	256	256	
Operating distance up to [mm] ⁽¹⁾	100	100	100	1500	600 ⁽²⁾	600 ⁽²⁾	600 ⁽²⁾	600 ⁽²⁾	
Package	Wafer, MOA8	Wafer, XQFN8, TSSOP8, SO8	Wafer, MOA8	Wafer, SOT1122, MOA8	Wafer, XQFN16, TSSOP16, SO8	Wafer, XQFN16, TSSOP16, SO8	Wafer, XQFN16, TSSOP16, SO8	Wafer, TSSOP16, XQFN16	
Temperature range [°C]	-25 to +70	-40 to +105	-25 to +70	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	
Energy harvesting [mW]	-	Up to 15	-	-	Regulated output [1.8, 2.4, 3V] up to 30	Regulated output [1.8, 2.4, 3V] up to 30	Regulated output [1.8, 2.4, 3V] up to 30	Regulated output [1.8, 2.4, 3V] up to 30	
NFC disable/I ² C disable	-	Via config bit/-	-	-	-/-	✓/✓	✓/✓	✓/✓	
Event Detection	-	RF detection	-	-	RF detection plus multiple events	RF detection plus multiple events	RF detection plus multiple events	RF detection plus multiple events	
Pass-through mode using SRAM	-	✓	-	-	-	Yes, standardized	Yes, standardized	Yes, standardized	
Host interface	-	I ² C	-	-	GPIO, PWM, ED	GPIO, PWM, ED, I ² C slave	GPIO, PWM, ED, I ² C master/slave	GPIO, PWM, ED, I ² C master/slave	
I ² C Clock frequency [kHz]	-	100/400	-	-	100/400	100/400	100/400	100/400	
Supply voltage host interface [V]	-	1.67 to 3.6	-	-	1.62 to 5.5	1.62 to 5.5	1.62 to 5.5	1.62 to 5.5	
Standby mode current, typ. [µA]	-	-	-	-	6	6	6	10	
Hard Power down mode current, typ. [µA]	-	-	-	-	0.25	0.25	0.25	0.25	
Security features									
UID ASCII mirror & NFC counter ASCII mirror	✓	-	✓	-	-	-	-	-	
Authentication via ECC	✓								
Access protection	32 bit plain password authentication	32 bit plain password authentication	128-bit AES, LRP	32 bit or 64 bit plain password authentication	32 bit or 64 bit plain password authentication	32 bit or 64 bit plain password authentication	128 bit mutual AES or 32 bit/64 bit plain password authentication	128 bit mutual AES or 32 bit/64 bit plain password authentication	
Read/write protection	NFC	NFC/I ² C	Read, write, read & write with AES keys	NFC	NFC	NFC/I ² C	NFC/I ² C	NFC/I ² C	
Password authentication counter	✓	✓	-	-	✓	✓	✓	✓	
Certification	NFC Forum Compliance	NFC Forum Compliance	NFC Forum, CC EAL 4	-	-	-	-	-	
Product support & ordering information									
Product type	213: NT2H1311G 215: NT2H1511G 216: NT2H1611G 213 TT: NT2H1311TTDUD	1k: NT3H2111 2k: NT3H2211	NT4H2421G0DUD NT4H2421G0DUF NT4H2421G0DA8 TT: NT4H2421TTDUD TT: NT4H2421TTDUF	SL2S2602	NTP52101G0JHK NTP52101G0JTT NTP52101G0JT NTP52101G0JUA	NTP53121G0JHK NTP53121G0JTT NTP53121G0JT NTP53121G0JUA	NTP53321G0JHK NTP53321G0JTT NTP53321G0JT NTP53321G0JUA	NTA53321G0FHK NTA53321G0FTT NTA53321G0FUA	
12NC	MOA8: 213: 9353 046 24118 215: 9353 046 25118 216: 9353 046 26118	XQFN8: 1k: 9353 069 39125 2k: 9353 069 43125	Wafer 120µm: 9353 776 93003 TT: 9353 777 71003	MOA8: 9353 083 52118	XQFN16: 9353 547 31471	XQFN16: 9353 549 03471	XQFN16: 9353 549 09471	XQFN16: 9353 549 13471	
		TSSOP8: 1k: 9353 069 32118 2k: 9353 069 33118		SOT1122: 9353 080 29115	TSSOP16: 9353 624 09431	TSSOP16: 9353 624 11431	TSSOP16: 9353 624 96431	TSSOP16: 9353 625 04431	
		Wafer 120µm: 213: 9352 999 12005 215: 9352 999 27005 216: 9352 999 29005 213 TT: 935330035003	SO8: 1k: 9353 070 09115 2k: 9353 070 16115	Wafer 75µm: 9353 777 69003 TT: 9353 777 72003	Wafer 120µm: 9353 073 26003	SO8: 9353 549 01431	SO8: 9353 549 05431	SO8: 9353 549 11431	-
		Wafer 150µm: 1k: 9353 069 56005 2k: 9353 069 57005	MOA8: 9353 776 94118	Wafer 150µm: 9353 859 92005	Wafer 150µm: 9353 582 08005	Wafer 150µm: 9353 582 09005	Wafer 150µm: 9353 582 84005	Wafer 150µm: 9353 582 84005	Wafer 150µm: 9353 582 84005
Development boards		OM5569/NT322E 9353 078 49699 OM5569/NT322ER 9353 078 48699 OM23221ARD 9353 393 71598			OM2NTP5332		OM2NTA5332		
Software	Android™: TapLinX, TagInfo, TagWriter iOS: NXP TagInfo, TagWriter PC: TapLinX Java, TagXplorer, RFID Discover	Binaries and source code for Windows®, iOS and Android™ applications, Peek & Poke GUI, LPCXpresso controller FW example, Bluetooth pairing example based on NXP KW41Z, TapLinX, Android™ app.	Android™: TapLinX, TagInfo, TagWriter iOS: NXP TagInfo, TagWriter PC: TapLinX Java, TagXplorer, RFID Discover	Android™: TapLinX, TagInfo, TagWriter iOS: NXP TagInfo, TagWriter PC: TapLinX Java, TagXplorer, RFID Discover	Binaries and source code for Windows®, iOS and Android™ applications, Peek & Poke GUI, LPCXpresso controller FW example, Bluetooth pairing example based on NXP KW41Z, TapLinX, Android™ app.				

- Overall annotations:**
- (1) Depending on antenna, coil size, tuning, and environment
 - (2) Using long ranger reader
 - (3) 160 for ISO/IEC 15693
 - (4) Please search for the product on www.nxp.com to find the latest ordering part numbers. Ordering part numbers can change due to regular firmware updates.
 - (5) Can reach up to 500 mA depending on design
 - (6) The integrated limiter can be disabled by a FW configuration. The maximum current is then 250mA
 - (7) Low power card detection current consumption strongly depends on polling cycle and detection distance
 - (8) POS reference design: www.nxp.com/support/developer-resources/reference-designs/point-of-sale-pos-reader-solution:SLN-POS-RDR
 - (9) PN7360AU is available with 80KB Flash



Product Longevity

The Product Longevity program ensures a stable supply of products for embedded designs.

Participating products are available for a minimum of 10 years from the product launch and are supported by standard end-of-life notification policies.

To know more visit:
www.nxp.com/products/product-information/product-longevity



CLRC663 plus



NTAG I²C plus

Samples and demo boards are available on request, please contact a local NXP distributor. Please also note, this linecard provides an overview of NFC focus products.

The complete NFC portfolio can be found on www.nxp.com/nfc.



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For the complete portfolio of NFC TAG ICs please visit www.nxp.com/nfc

NTAG 5 boost with Active Load Modulation (ALM)
provides a smartphone read-range of several cm even with tiny antennas of 1x1cm.

NFC FRONTEND SOLUTIONS

PRODUCT	SLRC610 plus	MFRC630 plus	MFRC631 plus	CLRC661 plus	CLRC663 plus		PN5180		PN5190		
Product description	High-performance ICODE frontend	High-performance NTAG, DESFire, MIFARE frontend	High-performance ISO/IEC 14443 A/B frontend	High-performance NTAG, ICODE, DESFire, MIFARE frontend	High-performance multi-protocol NFC frontend		High-performance multi-protocol full NFC Forum-compliant frontend		Outstanding performance smart NFC front end		
Standards & Protocols											
NFC Forum Certification	-	-	-	-	-		✓		✓		
Reader/writer	ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A	ISO/IEC 14443 A/B	ISO/IEC 14443 A, ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3		ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3		ISO14443-A/B, ISO/IEC15693, ISO18000-3 MODE3, Felica		
Carrier frequency [MHz]	13.56										
NFC Forum tag type support	5	1, 2, 4A	1, 2, 4	1, 2, 4A, 5	1, 2, 3, 4, 5		1, 2, 3, 4, 5		1, 2, 3, 4, 5		
ISO/IEC 14443 baudrate [kbit/s]	-	106/212/424/848	106/212/424/848	106/212/424/848	106/212/424/848		106/212/424/848		106/212/424/848		
FeliCa baudrate [kbit/s]	-	-	-	-	212/424		212/424		212/424		
MIFARE Classic® support (license included)	-	✓	✓	✓	✓		✓		✓		
ISO/IEC 15693 baudrate [kbit/s]	26.5/53	-	26.5/53	26.5/53	26.5/53		26.5/53		26.5/53/106		
EPC class-1 HF / ISO/IEC 18000-3M3	✓	-	-	✓	✓		✓		✓		
EMVCo compliance	-	-	✓	-	✓		✓		✓		
Card emulation											
NFC tag type emulation	-	-	-	-	-		4A		4A		
NFC tag type baudrate [kbit/s]	-	-	-	-	-		Up to 848		Up to 848		
Peer-to-peer (ISO/IEC 18092)	-	-	-	-	✓		✓		✓		
Passive communication	-	-	-	-	Initiator		Initiator/target		Initiator/target		
Active communication	-	-	-	-	-		Initiator/target		Initiator/target		
Product features											
Operating distance up to [mm] ⁽¹⁾	160 ⁽²⁾	120	120	120/160 ⁽³⁾	120/160 ⁽³⁾		120/160 ⁽³⁾		120/160 ⁽³⁾		
RF transmitter supply voltage [V]	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5		2.7 to 5.5		2.4 to 5.7		
Transmitter supply current, max [mA]	350 ⁽⁵⁾	350 ⁽⁵⁾	350 ⁽⁵⁾	350 ⁽⁵⁾	350 ⁽⁵⁾		250		350		
Dynamic power control (DPC), Adaptive waveform control (AWC), Adaptive Receiver Control (ARC)	-	-	-	-	-		✓		✓		
Host interface	SPI, I ² C, UART	SPI, I ² C, UART	SPI, I ² C, UART	SPI, I ² C, UART	SPI, I ² C, UART		SPI		SPI		
Supply voltage host interface [V]	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5		1.8 and 3.3		1.8 and 3.3		
Standby mode current, typ [µA]	3	3	3	3	3		15		40		
Power-down mode current, typ [µA]	0.008	0.008	0.008	0.008	0.008		10		5		
Power-down mode with RF level detector on [µA]	-	-	-	-	-		-		18		
Low-power card detection mode	✓										
Available packages	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32	VFBGA36	HVQFN40, TFBGA64		HVQFN40, TFBGA64		
Temperature range [°C]	-40 to +105	-40 to +105	-40 to +105	-40 to +105	-40 to +105	-40 to +85	-30 to +85		-40 to +85		
Field-detection signal output	-	-	-	-	-		IRQ		-		
Security features											
MIFARE SAM support	✓	✓	✓	✓	✓		-		-		
MIFARE Classic security (CRYPTO1 HW)	-	✓	✓	✓	✓		✓		✓		
Product support and ordering information	-	-	-	-	HVQFN32	VFBGA36	HVQFN40	TFBGA64	HVQFN40	VFBGA64	
Product type	SLRC61003HN	MFRC63003HN	MFRC63103HN	CLRC66103HN	CLRC66303HN	CLRC66303EV	PN5180A0HN	PN5180A0ET	PN5190A0HN	PN5190A0ET	
12NC single tray	9353 062 19551	9353 062 17551	9353 062 14551	9353 639 69551	9353 062 08551	-	⁽⁴⁾	⁽⁴⁾	⁽⁴⁾	⁽⁴⁾	
12NC reel	9353 062 19518	9353 062 17518	9353 062 14518	9353 639 69518	9353 062 08518	9353 804 29118	⁽⁴⁾	⁽⁴⁾	⁽⁴⁾	⁽⁴⁾	
Development boards					OM26630FDK (12NC 9353 391 51699) CLEV6630B (12NC 9353 391 49669)		OM25180FDK 9353 073 19699		OM25190FDK ⁽⁴⁾		
					OM29263ADK (12NC 9353 615 98598)		OM25180TWR 9353 083 06699		-		
					CLEV6630ARD (12NC 9353 894 12598)		SLN-POS-RDR ⁽⁸⁾ 9353 266 15598		-		
Software	NFC Reader Library with prepared support for RTOS & Linux®, NFC Cockpit, EMVCo L1 2.6 compliant; EMVCo Loopback application						NFC Cockpit; NFC Reader Library with prepared support for RTOS & Linux®, EMVCo L1 3.0 compliant; EMVCo Loopback application, card emulation example		NFC Cockpit, EMVCo L1 3.0 compliant, NFC Reader Library, EMVCo Loopback application		

Samples and development boards and kits are available on request, please contact a local NXP distributor.

Overall annotations:

- (1) Depending on antenna, coil size, tuning, and environment
- (2) Using long ranger reader
- (3) 160 for ISO/IEC 15693
- (4) Please search for the product on www.nxp.com to find the latest ordering part numbers. Ordering part numbers can change due to regular firmware updates.
- (5) Can reach up to 500 mA depending on design
- (6) The integrated limiter can be disabled by a FW configuration. The maximum current is then 250mA
- (7) Low power card detection current consumption strongly depends on polling cycle and detection distance
- (8) POS reference design: www.nxp.com/support/developer-resources/reference-designs/point-of-sale-pos-reader-solution:SLN-POS-RDR
- (9) PN7360AU is available with 80KB Flash

Easy software development

For many MCUs, a ported package for the NFC frontends can be downloaded.

Find a full overview at www.nxp.surl.ms/nfcmcu



NFC CONTROLLER SOLUTIONS

PRODUCT	PN7120	PN7150	PN7362AU		PN7462AU	
Product description	NFC controller, supporting all NFC Forum modes, with integrated firmware and NCI interface	High performance NFC controller, supporting all NFC Forum modes, with integrated firmware and NCI interface	Full NFC open microcontroller - 20MHz Cortex-M0 core - with 160K ⁽⁹⁾ Flash for user's application		Full NFC open microcontroller - 20MHz Cortex-M0 core - with contact smartcard interface and 160K Flash for user's application	
Microcontroller features						
Integrated microcontroller	Integrated FW	Integrated FW	ARM Cortex-M0		ARM Cortex-M0	
Master interface	-	-	SPI, I ² C		SPI, I ² C	
Contact interface	-	-	-		Class A, B, C, EMVCo (only in HVQFN64)	
Available memory (kB)	-	-	160		160	
Standards & protocols						
NFC Forum Certification	-	-	✓		✓	
Reader/writer	ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3		ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	
Carrier frequency [MHz]	13.56					
NFC tag type support	1, 2, 3, 4, 5					
ISO/IEC 14443 baudrate [kbit/s]	106/212/424/848					
FeliCa baudrate [kbit/s]	212/424					
MIFARE Classic [®] support (license incl.)	✓					
ISO/IEC 15693 baudrate [kbit/s]	26.5	26.5	26.5/53		26.5/53	
EPC class-1 HF / ISO/IEC 18000-3M3	-	-	✓		✓	
EMVCo compliance	-	-	✓		✓	
Card emulation	✓					
NFC tag type emulation	4	3, 4	4A		4A	
NFC tag type baudrate [kbit/s]	Up to 424	Up to 424	Up to 848		Up to 848	
Peer-to-peer (ISO/IEC 18092)	✓					
Passive communication	Initiator/target					
Active communication	Initiator/target					
Product features						
Operating distance up to [mm] ⁽¹⁾	70	120/160 ⁽³⁾	120/160 ⁽³⁾		120/160 ⁽³⁾	
RF transmitter supply voltage [V]	3.1	2.7 to 4.75	3 to 5.5		3 to 5.5	
Transmitter supply current, max [mA]	150	180/250 ⁽⁶⁾	250		250	
Dynamic Power Control (DPC), Adaptive Waveform Control (AWC)	-	-	✓		✓	
Host interface	I ² C	I ² C	USB, HSUART, SPI, I ² C		USB, HSUART, SPI, I ² C	
Supply voltage host interface [V]	1.8 or 3.3					
Standby mode current, typ [μA]	20	20	18		18	
Power-down mode current, typ [μA]	10.5	10.5	12		12	
Low-power card detection mode [μA]	150 ⁽⁷⁾	150 ⁽⁷⁾	95 ⁽⁷⁾		95 ⁽⁷⁾	
Available packages	VFBGA49	HVQFN40	HVQFN64	VFBGA64	HVQFN64	VFBGA64
Temperature range [°C]	-30 to +85	-30 to +85	-40 to +85		-40 to +85	
Field-detection signal output	IRQ	IRQ	Internal interrupt		Internal interrupt	
Security features						
MIFARE [®] SAM support	-	-	-		✓	
MIFARE Classic [®] security (CRYPTO1 HW)	✓					
Product support & ordering information						
Product type	PN7120A0EV/C10801	PN7150B0HN/C11004	PN7362AUHN/C300	PN7362AUEV/C300	PN7462AUHN/C300	PN7462AUEV/C300
12NC single tray	9353 056 17551	9353 879 15551	9353 084 36551	9353 613 41551	9353 077 96551	9353 613 43551
12NC Reel	9353 056 17518	9353 879 15518	9353 084 36518	9353 613 41518	9353 077 96518	9353 613 43518
Development boards	OM5577/PN7120ARD 9353 089 04699	OM5578/PN7150ARD 9353 090 78699	OM27462CDKP 9353 639 45598			
	OM5577/PN7120S 9353 063 52699	OM5578/PN7150BBB 9353 090 77699	PNEV7462C 9353 635 25598			
		OM5578/PN7150RPI 9353 090 76699				
Software	Android™, Linux®, Windows®, RTOS, Bare metal (MCU without OS) - see an overview at www.nxp.com/ncmcu		NFC Reader Library, NFC Cockpit, examples for all interfaces and protocols, EMVCo L1 compliant; EMVCo Loopback application, SAM management example, CCID example			

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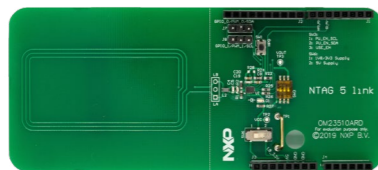
NXP NFC Portfolio: Contactless Reader and Tag Solutions

DEVELOPMENT BOARDS												
Name	CONNECTED NFC TAGS				NFC FRONTENDS				NFC CONTROLLERS			
	NTAG® I2C plus Explorer Kit	NTAG I2C plus Kit for Arduino® pinout	NTAG 5 link Development Kit	NTAG 5 boost Development Kit	CLRC663 plus NFC Frontend Development Kit	CLRC663 plus NFC Frontend Arduino® Interface Board	NFC Antenna Development Kit	PN5180 NFC Frontend Development Kit	PN7150 NFC Controller SBC ⁽¹⁾ Kit for Arduino®	PN7150 NFC Controller SBC ⁽¹⁾ Kit for BeagleBone® Black	PN7150 NFC Controller SBC ⁽¹⁾ Kit for Raspberry Pi®	PN7462 Controller Development Kit plus PNEV7462C
Ordering number	OM5569/NT322E, OM5569/NT322ER (with external reader)	OM23221ARD	OM2NTP5332	OM2NTA5332	OM26630FDK CLEV6630B	CLEV6630ARD	OM29263ADK	OM25180FDK PNEV5180B	OM5578/PN7150ARD	OM5578/PN7150BBB	OM5578/PN7150RPI	OM27462CDKP PNEV7462C
12NC	9353 078 49699 9353 078 48699	9353 393 71598	9353 949 37598	9353 949 76598	9353 391 51699 9353 391 49699	9353 894 12598	9353 615 98598	9353 073 19699 9353 073 21699	9353 090 78699	9353 090 77699	9353 090 76699	9353 639 45598 9353 635 25598
Supported products	NTAG I2C plus	NTAG I2C plus	NTAG 5 switch, NTAG 5 link	NTAG 5 boost	CLRC663 plus series	CLRC663 plus series	CLRC663 family	PN5180	PN7150	PN7150	PN7150	PN7462, PN7362, PN7360
Contents	<ul style="list-style-type: none"> Explorer board PCB antenna board Flex antenna board Field detector board 10 NTAG I2C plus SO8 samples USB reader (OM5569/NT322ER only) 	<ul style="list-style-type: none"> NTAG I2C plus antenna board Arduino®-compatible header 	<ul style="list-style-type: none"> NTAG 5 switch/link Arduino®-compatible customer development PCB board 	<ul style="list-style-type: none"> NTAG 5 boost Arduino®-compatible customer development PCB board 	<ul style="list-style-type: none"> CLEV6630B development board with 65x65mm antenna 30x50mm antenna with matching components 3 PCBs for individual antenna matching NTAG216 and MIFARE DESFire EV2 NFC sample cards 10 CLRC663 plus samples in HVQFN package 	<ul style="list-style-type: none"> Arduino® interface board 	<ul style="list-style-type: none"> 2 Antennas (20x20mm and 77x113mm), matched to work with the CLRC663 family Matching boards, not assembled for own antenna matching development 	<ul style="list-style-type: none"> PNEV5180B development board with 65x65mm antenna 30x50mm antenna with matching component 3 PCBs for individual antenna matching NTAG216 NFC sample card 10 PN5180 samples in HVQFN package 	<ul style="list-style-type: none"> PN7150 NFC controller board Arduino® interface board NTAG216 NFC sample card 	<ul style="list-style-type: none"> PN7150 NFC controller board BeagleBone® interface board NTAG216 NFC sample card 	<ul style="list-style-type: none"> PN7150 NFC controller board Raspberry Pi® interface board NTAG216 NFC sample card 	<ul style="list-style-type: none"> PNEV7462C development board including 65x65mm antenna 30x50mm antenna with matching components 3 PCBs for individual antenna matching Sample cards and tags 2 USB cables 5 PN7462AU samples OM13054 LPC-Link2 debug adapter
Key features	<ul style="list-style-type: none"> Demo, evaluation and development board NFC Forum type 2 tag compliant Energy harvesting – up to 15 mW Pass-through mode – up to 40 kbit/s 32-Bit password authentication ECC-based originality check 	<ul style="list-style-type: none"> Suitable for any boards featuring an Arduino®-compatible header, including LPCXpresso, Kinetis and i.MX boards 	<ul style="list-style-type: none"> Suitable for any boards featuring an Arduino®-compatible header, including LPCXpresso, Kinetis and i.MX boards 	<ul style="list-style-type: none"> Suitable for any boards featuring an Arduino®-compatible header, including LPCXpresso, Kinetis and i.MX boards 	<ul style="list-style-type: none"> Highest RF performance Full EMVCo compliance Low-power card detection Artificial damping of the RF field in the middle of the antenna simulating real conditions LPC1769 MCU on board SPI interface accessible for connection of other MCU 	<ul style="list-style-type: none"> Enables NFC frontend CLRC663 plus integration with any boards compatible with Arduino® header, including most LPCXpresso, Kinetis and i.MX boards Full NFC Reader Library support 	<ul style="list-style-type: none"> Plug and play matched antennas for the CLRC663 family 	<ul style="list-style-type: none"> Full compliance with all standards relevant to NFC, contactless operation and EMVCo Onboard dynamic power control (DPC) Active load modulation Low-power card detection Artificial damping of the RF field in the middle of the antenna simulating real conditions LPC1769 MCU on board SPI interface accessible for connection of other MCU 	<ul style="list-style-type: none"> Full NFC-compliant expansion board with Arduino®-compatible Interface platforms Compliance with reader mode, P2P mode and card emulation mode standards NFC integration with LPCXpresso, Kinetis and i.MX boards 	<ul style="list-style-type: none"> Full NFC-compliant expansion board for BeagleBone® Black Compliance with reader mode, P2P mode and card emulation mode standards Integrated high-performance RF antenna 	<ul style="list-style-type: none"> Full NFC-compliant board for Raspberry Pi® Compliance with reader mode, P2P mode and card emulation mode standards Integrated high-performance RF antenna 	<ul style="list-style-type: none"> Easy antenna design with NFC Cockpit SW PCBs adaptors for antenna matching Easy application development with full NFC Forum complaint and contact software libraries Smartcard reader
Certification	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾ , MIC	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾
Software and tools	<ul style="list-style-type: none"> Binaries and source code for Windows® and Android™ applications Peek & poke GUI LPCXpresso controller FW example TapLinX Schematics and BoM of all boards 	<ul style="list-style-type: none"> I2C Access Software – Peek and Poke Android application based on TapLinX User Manual for a step by step start-up guide 	<ul style="list-style-type: none"> I2C Access Software – Peek and Poke Android application based on TapLinX User Manual for a step by step start-up guide 	<ul style="list-style-type: none"> I2C Access Software – Peek and Poke Android application based on TapLinX User Manual for a step by step start-up guide 	<ul style="list-style-type: none"> NFC Reader Library NFC Cockpit 	<ul style="list-style-type: none"> NFC Reader Library 	<ul style="list-style-type: none"> NFC Reader Library NFC Cockpit 	<ul style="list-style-type: none"> Bluetooth pairing example based on NXP KW41Z Projects available on Explorer Kit moved to MCUXpresso IDE Library for NTAG I2C Plus available through MCUXpresso SDK for FRDM-KW41Z and LPCXpresso55569 	<ul style="list-style-type: none"> Linux® Software Stack Android driver support Windows® IoT driver RTOS and Null OS support 	<ul style="list-style-type: none"> Linux® Software Stack Android driver support 	<ul style="list-style-type: none"> Linux® Software Stack Windows® IoT driver 	<ul style="list-style-type: none"> NFC Reader Library NFC Cockpit PN7462AU FW and software example
Target applications	NFC pairing, industrial calibration, smart meter, logistics, IoT, healthcare, consumer electronics, smart media	NTAG 5 enabled applications, IoT devices, lighting, gaming, NFC enabled audio devices	NTAG 5 enabled applications, IoT devices, lighting, gaming, NFC enabled audio devices	NTAG 5 enabled applications, IoT devices, lighting, gaming, NFC enabled audio devices	Payment, POS & mPOS terminals, access control, industrial and e-Gov	Access control, gaming, payment terminals	Access control, gaming, payment terminals	NFC pairing, industrial calibration, smart meter, logistics, IoT, healthcare, consumer electronics, smart media	Set-top boxes, gateways, routers, wireless access points, TV, Blu-ray decoders, remote, audio devices, home appliances, printers, IP phones, healthcare and fitness, gaming consoles	Set-top boxes, gateways, routers, wireless access points, TV, Blu-ray decoders, remote, audio devices, home appliances, printers, IP phones, healthcare and fitness, gaming consoles	Set-top boxes, gateways, routers, wireless access points, TV, Blu-ray decoders, remote, audio devices, home appliances, printers, IP phones, healthcare and fitness, gaming consoles	Multi-market USB reader solutions, access control, e-Gov, EMVCo, simple POS terminals, USB readers, home banking, home eID, gaming console accessories

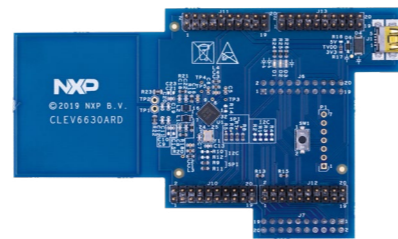
Samples and demo boards are available on request, please contact a local NXP distributor.

Overall annotations:

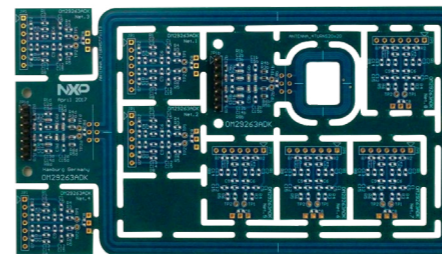
- (1) SBC stands for Single Board Computer Kit
- (2) On slot 1
- (3) FCC tested and compliant



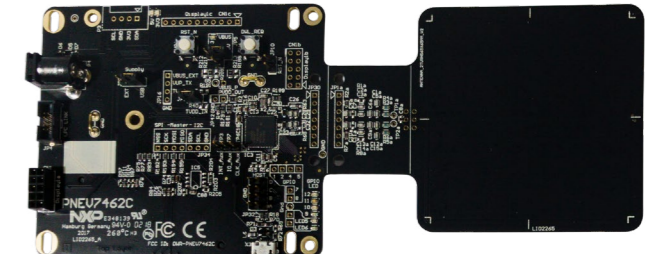
NTAG 5 link/switch Development Kit



NFC Frontend Arduino Interface Board



NFC Antenna Development Kit



NFC Controller Development Kit

All development kits come with quick start guides and user manuals.

Please go to www.nxp.com, type the part number into the search bar and find community discussions, videos, and a rich set of documentation on the dedicated development kit page.

CONTACT SMARTCARD READER ICs							
Product features	TDA8026ET	TDA8034HN	TDA8034T	TDA8035HN	TDA8037	PN7412AU	
Analog interfaces	5	1	1	1	1	1	
ISO/IEC 7816 UART	-	-	-	-	-	✓	
ISO/IEC 7816 dedicated timers	-	-	-	-	-	✓	
Microcontroller core	-	-	-	-	-	Cortex M0	
ROM [kbyte]/ RAM [byte]	-	-	-	-	-	Flash 160kB/ RAM 12kB	
Host interface	I ² C	I/O lines	I/O lines	I/O lines	I/O lines	Serial or I ² C	
ESD protection on ISO/IEC 7816 pins [kV]	7	8	8	10	8	12	
Auxiliary protected lines for C4 and C8 contacts	2 ⁽²⁾	2	-	2	2	2	
VCC card power supply [V]	1.8, 3, and 5	1.8, 3, and 5	3 and 5	1.8, 3, and 5	3	1.8, 3, and 5	
Card supply current @ 5 V VCC [mA]	55	65	65	65	-	60	
Card supply current @ 3 V VCC [mA]	55	65	65	65	65	55	
Card supply current @ 1.8 V VCC [mA]	35	65	-	35	-	35	
Card clock frequency max. [MHz]	20	26	26	26	20	16.56	
Card activation time max. [μs]	135	3500	3500	3400	554	283	
Card deactivation time max. [μs]	100	250	250	250	250	83	
Protocol support							
Synchronous card management				✓			
Asynchronous protocol T=0 and T=1				✓			
Security features							
Voltage supervisor and over-current detection				✓			
Current protection on VCC, I/O, RST, CLK				✓			
Additional product information							
Power-supply interface VDDI (V)	1.6 to 3.6	1.6 to 3.6	1.6 to 3.6	1.6 to 3.6	-	1.6 to 3.6	
Power-supply (VDD)	2.7 to 5.5	2.7 to 5.5	2.7 to 5.5	2.7 to 5.5	3.0 to 3.6	2.7 to 5.5	
Power-down current max. (μA)	15	5	5	3	400	18	
Temperature range (°C)	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-40 to +85	
EMVCo 4.3 compliance	✓	✓	✓	✓	✓ (3 V only)	✓	
CISCO compliance	-	✓	-	✓	✓	-	
Product support & ordering information							
Product type	TDA8026ET/C3	TDA8034HN/C2	TDA8034T	TDA8035HN/C2/S1	TDA8037T	TDA8037TT	PN7412AUHN
Package	TFBGA64	HVQFN24	SO16	HVQFN32	SO28	TSSOP16	HVQFN64
12NC single tray	9353 086 35551	9353 086 34151	-	9353 086 13151	-	-	9353 684 76551
12NC reel	-	9353 086 34118	9352 883 49118	9353 086 13118	9353 015 17118	9353 015 01118	9353 684 76518
12NC reel dry pack	9353 086 35518	-	-	-	-	-	-
12NC bulk pack	-	-	9352 883 49112	-	-	-	-
Development boards	OM9800/DCT8026 9352 931 69599	OM9800/DCT8034 9352 931 71599	CAKE8034_01_D	OM9800/DCT8035 9352 931 72599	CAKE8037_T	CAKE8037_TT	PNEV7462C
Software support	-						

Samples and demo boards are available on request, please contact a local NXP distributor.

MIFARE® SAM FOR READER SYSTEMS	
Product features	MIFARE® SAM AV3
Memory	
Write endurance [cycles]	500.000
Data retention [yrs]	25
Secure key storage	Up to 128 key entries
SAM interface	
UART	ISO/IEC 7816, T=1
Frequency [MHz]	Standard Mode, up to 350 MHz
Baudrate [kbit/s]	Up to 1,500
Reader IC support (X-mode)	CLRC663 <i>plus</i> family
Security	
Unique serial number [bytes]	7
Random number generator	✓
Access keys	128 key entries
Access conditions	Per key entry
MIFARE support	MIFARE Classic, MIFARE Ultralight, MIFARE Plus (up to EV1), MIFARE DESFire (up to EV2), NTAG DNA, ICODE DNA, UCODE DNA
DES & DES3 security	MACing/Encipherment
AES 128 security	MACing/Encipherment
PKI	Signature
RSA	MACing/Encipherment/Signature
Packaging	
PCM1.1 module	MF4SAM3X84/9BA6AU
HVQFN32 package	MF4SAM3HN/9BA6AU
Product support and ordering information	
Product type	MIFARE SAM AV3
12NC Wafer	9353 922 92005
12NC PCM1.5	9353 871 78118
12NC HVQFN32	9353 872 85431
Development boards	MFEV710 9352 941 66599 CLRD710 9352 941 65599
Software support	17173x NXP Reader Library, 18663x RFIDDiscover

Samples and demo boards are available on request, please contact a local NXP distributor.

Overall annotations:

- (1) SBC stands for Single Board Computer Kit
- (2) On slot 1
- (3) FCC tested and compliant



Specifications subject to change without notice.

Date of Release: November 2019

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