

NXP® NFC and Contactless Reader Solutions

NFC TAG IC SOLUTIONS					
NFC Forum compliance	Type 2 Tag	Type 2 Tag	Type 2 Tag	Type 4 Tag	Type 5 Tag
ISO/IEC standard compliance	ISO/IEC 14443-3A	ISO/IEC 14443-3A	ISO/IEC 14443-3A	ISO/IEC14443-4A	ISO/IEC15693
Input capacitance [pF]	50	50	50	70	23.5
NFC tag type baudrate [kbit/s]	106	106	106	106	26.5 (up to 53)
PRODUCT	NTAG®	NTAG F	NTAG I ² C plus	NTAG 413 DNA	ICODE
Product description	Passive NFC tag for smart inlays, labels and tags	Passive NFC tag with field-detection output signal	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
Product name	NTAG 213/215/216	NTAG 213F/216F	NTAG I ² C plus 1k/2k	NTAG 413 DNA	ICODE SLIX 2
User memory [Bytes]	144/504/888	144/888	888/1912	160	316
SRAM [Bytes]	-	-	64	-	-
Operating distance up to [mm] ⁽¹⁾	100	100	100	100	1500
Package	Wafer, MOA8	Wafer, HXSON4	Wafer, XQFN8, TSSOP8, SO8	Wafer	Wafer, SOT1122, MOA8
Temperature range [°C]	-25 to +70	-25 to +70	-40 to +105	-25 to +70	-40 to +85
Energy harvesting [mW]	-	-	up to 15	-	-
RF Silence	-	via FD pin	via config bit	-	-
Field-detection signal output	-	Yes	Yes	-	-
Pass-through mode using SRAM	-	-	Yes	-	-
Host interface	-	-	I ² C	-	-
Clock frequency [kHz]	-	-	100/400	-	-
Supply voltage host interface [V]	-	-	1.67 to 3.6	-	-
Security features					
UID ASCII mirror & NFC counter ASCII mirror	Yes	Yes	-	Yes, plus CMAC	-
Authentication via ECC	Yes	Yes	Yes	Yes	Yes
Access keys	32 bit	32 bit	32 bit	3 x AES 128 bit	32 bit
Read/Write protection	NFC	NFC	I ² C/NFC	NFC	NFC
Password authentication counter	Yes	Yes	Yes	Yes	-
Product support & ordering information					
Product type	213: NT2H1311G 215: NT2H1511G 216: NT2H1611G	213F: NT2H1311F 216F: NT2H1611F	1k: NT3H2111 2k: NT3H2211	NT4H1321G	SL2S2602
12NC	MOA8: 213: 9353 046 24118 215: 9353 046 25118 216: 9353 046 26118	HXSON4: 213F: 9353 015 88125 216F: 9353 000 51125	XQFN8: 1k: 9353 069 39125 2k: 9353 069 43125	Wafer 75µm: 9353 515 45005	MOA8: 9353 083 52118
	Wafer 120µm: 213: 9352 999 12005 215: 9352 999 27005 216: 9352 999 29005	Wafer 120µm: 213F: 9353 015 87005 216F: 9353 009 52005	TSSOP8: 1k: 9353 069 32118 2k: 9353 069 33118	Wafer 120µm: 9353 473 47005	SOT1122: 9353 080 29115
	-	-	SO8: 1k: 9353 070 09115 2k: 9353 070 16115	-	Wafer 120µm: 9353 073 26003
	-	-	Wafer 150µm: 1k: 9353 069 56005 2k: 9353 069 57005	-	-
Product longevity program	-	-	15 years (NTAG I ² C plus 2k)	-	-
Development boards	-	NTAGFCL6 9353 045 64699	OM5569/NT322E 9353 078 49699	-	-
	-	NTAGFCL5LED 9353 045 68699	OM5569/NT322ER 9353 078 48699	-	-
	-	-	OM23221ARD 9353 393 71598	-	-
Software	Android™: NFC TagInfo, TapLinX iOS: NFC TagInfo by NXP PC: TagXplorer		Binaries and source code for Windows® and Android™ applications, Peek & Poke GUI, LPCXpresso controller FW example, Bluetooth pairing example based on NXP KW41Z, TapLinX, Android™ app.	Android™: NFC TagInfo, TapLinX iOS: NFC TagInfo by NXP PC: TagXplorer	

Overall annotations:

- (1) Depending on antenna, coil size, tuning, and environment
- (2) No software available for NFC tag type 2 and 3 emulation
- (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: <https://www.nxp.com/support/developer-resources/reference-designs/point-of-sale-pos-reader-solution:SLN-POS-RDR>

For the complete portfolio of NFC Tag ICs please visit www.nxp.com/nfc
Samples and development boards and kits are available by request, please contact a local NXP distributor.

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.



NFC FRONTEND SOLUTIONS

PRODUCT	SLRC610	MFRC630	SLRC610 plus	MFRC630 plus	MFRC631 plus	CLRC663 plus	PN512	PN5180			
Product description	NFC frontend for ICODE products family	NFC frontend for NTAG and MIFARE products families	High-performance NFC frontend for ICODE products family	High-performance NFC frontend for NTAG and MIFARE products families	High-performance ISO/IEC 14443 A/B frontend	High-performance multi-protocol NFC frontend	HVQFN32	High-performance multi-protocol full NFC Forum-compliant frontend			
Contactless/NFC functionality	NFC reader/writer	NFC reader/writer	NFC reader/writer	NFC reader/writer	NFC reader/writer	NFC reader/writer, P2P	NFC reader/writer, P2P, card emulation	NFC reader/writer, P2P, card emulation			
Standards & Protocols											
NFC Forum certification	-	-	-	-	-	-	-	Yes			
Reader/writer	ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A	ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 14443 A	ISO/IEC 14443 A/B	ISO/IEC 18092, ISO/IEC 14443 A/B, ISO/IEC 18000-3M3, ISO/IEC 15693, FeliCa	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa	ISO/IEC 18092, ISO/IEC 14443 A/B, ISO/IEC 18000-3M3, ISO/IEC 15693, FeliCa			
Carrier frequency [MHz]	13.56	13.56	13.56	13.56	13.56	13.56	13.56	13.56			
NFC Forum tag type support	5	1, 2, 4A	5	1, 2, 4A	1, 2, 4	1, 2, 3, 4, 5	1, 2, 3, 4	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	106/212/424/848			
FeliCa baudrate [kbit/s]	-	-	-	-	-	212/424	212/424	212/424			
MIFARE Classic® support (license included)	-	Yes	-	Yes	Yes	Yes	Yes	Yes			
ISO/IEC 15693 baudrate [kbit/s]	26.5/53	-	26.5/53	26.5/53	26.5/53	26.5/53	-	26.5/53			
EPC class-1 HF / ISO/IEC 18000-3M3	Yes	-	Yes	Yes	-	Yes	-	Yes			
EMVCo compliance	-	-	-	-	Yes	Yes	Yes (external booster required)		Yes		
Card emulation	-	-	-	-	-	-	Yes	Yes			
NFC tag type emulation	-	-	-	-	-	-	2, 3, 4 ⁽²⁾	4A			
NFC tag type baudrate [kbit/s]	-	-	-	-	-	-	up to 424	Up to 848			
Peer-to-peer (ISO/IEC 18092)	-	-	-	-	-	Yes	Yes	Yes			
Passive communication	-	-	-	-	-	Initiator	Initiator/target	Initiator/target			
Active communication	-	-	-	-	-	-	Initiator/target	Initiator/target			
Product features											
Operating distance up to [mm] ⁽¹⁾	160 ⁽³⁾	120	160 ⁽³⁾	120	120	120/160 ⁽³⁾	70	120/160 ⁽³⁾			
RF transmitter supply voltage [V]	3.0 to 5.5	3.0 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 3.6	2.7 to 5.5			
Transmitter supply current, max [mA]	250	250	350 ⁽⁵⁾	350 ⁽⁵⁾	350 ⁽⁵⁾	350 ⁽⁵⁾	100	250			
Dynamic power control (DPC), Adaptive waveform control (AWC), Adaptive Receiver Control (ARC)	-	-	-	-	-	-	-	Yes			
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, I ² C, UART	SPI, I ² C, UART	SPI			
Supply voltage host interface [V]	3.0 to 5.5	3.0 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 5.5	2.5 to 3.6	1.8 and 3.3			
Standby mode current, typ [µA]	3	3	3	3	3	3	-	15			
Power-down mode current, typ [µA]	0.008	0.008	0.008	0.008	0.008	0.008	5	10			
Power-down mode with RF level detector on [µA]	-	-	-	-	-	-	10	-			
Low-power card detection mode	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes			
Available packages	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32, TFBGA64	HVQFN40, TFBGA64			
Temperature range [°C]	-25 to +85	-25 to +85	-40 to +105	-40 to +105	-40 to +105	-40 to +105	-30 to +85	-30 to +85			
Field-detection signal output	-	-	-	-	-	-	IRQ	IRQ			
Security features											
MIFARE SAM support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-			
MIFARE Classic security (CRYPTO1 HW)	-	Yes	-	Yes	Yes	Yes	Yes	Yes			
Product support and ordering information	-	-	-	-	-	-	HVQFN32, TFBGA64	HVQFN40, TFBGA64			
Product type	SLRC61002HN	MFRC63002HN	SLRC61003HN	MFRC63003HN	MFRC63103HN	CLRC66303HN	PN5120A0HN1, PN5120A0ET	PN5180A0HN, PN5180A0ET			
12NC single tray	9352 973 35151	9352 973 34151	9353 062 19551	9353 062 17551	9353 062 14551	9353 062 08551	9352 921 15151, 9352 998 52151	⁽⁴⁾	⁽⁴⁾		
12NC multiple tray	9352 973 35157	9352 973 34157	-	-	-	-	9352 921 15157, 9352 998 52157	-	-		
12NC reel	9352 973 35118	9352 973 34118	9353 062 19518	9353 062 17518	9353 062 14518	9353 062 08518	9352 921 15118, 9352 998 52118	⁽⁴⁾	⁽⁴⁾		
Development boards	CLEV6630A 9353 391 48699		OM26630FDK 9353 391 51699			PNEV512B 9352 981 99699		OM25180FDK 9353 073 19699			
			CLEV6630B 9353 391 49699					OM25180TWR 9353 083 06699			
			OM29263ADK 9353 615 98598			OM5597 9352 949 09699 RD2612,699		SLN-POS-RDR ⁽⁸⁾ 9353 266 15598			
Software	NFC Reader Library with prepared support for RTOS & Linux®, NFC Cockpit				NFC Reader Library with prepared support for RTOS & Linux®, NFC Cockpit, EMVCo L1 compliant; EMVCo Loopback application		NFC Reader Library with prepared support for RTOS & Linux®, EMVCo L1 compliant; EMVCo Loopback application, card emulation example		NFC Cockpit; NFC Reader Library with prepared support for RTOS & Linux®, EMVCo L1 compliant; EMVCo Loopback application, card emulation example		

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- (8) POS reference design: <https://www.nxp.com/support/developer-resources/reference-designs/point-of-sale-pos-reader-solution:SLN-POS-RDR>

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NFC CONTROLLER SOLUTIONS

PRODUCT	PN7120	PN7150	PN7360AU	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 - Cortex M0 - with 80KB Flash for user's application	Full NFC open microcontroller - Cortex M0 - with 160K Flash for user's application	Full NFC open microcontroller - Cortex M0 - with contact smartcard interface and 160K Flash for user's application	
Contactless/NFC functionality	NFC reader/writer, P2P, card emulation	NFC reader/writer, P2P, card emulation	NFC reader/writer, P2P, card emulation	NFC reader/writer, P2P, card emulation	NFC reader/writer, P2P, card emulation	
Microcontroller features						
Integrated microcontroller	Integrated FW	Integrated FW	Open microcontroller Cortex M0 core	Open microcontroller Cortex M0 core	Open microcontroller Cortex M0 core	
Master interface	I ² C	I ² C	SPI, I ² C	SPI, I ² C	SPI, I ² C	
Contact interface	-	-	-	-	Class A, B, C, EMVCo (only in HVQFN64)	
Available memory (kB)	-	-	80	160	160	
Standards & protocols						
NFC Forum certification	Compliant	Compliant	Yes	Yes	Yes	
Reader/writer	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	ISO/IEC 18092, ISO/IEC 14443 A/B, FeliCa, ISO/IEC 15693, ISO/IEC 18000-3M3	
Carrier frequency [MHz]	13.56	13.56	13.56	13.56	13.56	
NFC tag type support	1, 2, 3, 4, 5	1, 2, 3, 4, 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	
FeliCa baudrate [kbit/s]	212/424	212/424	212/424	212/424	212/424	
MIFARE Classic® support (license incl.)	Yes	Yes	Yes	Yes	Yes	
ISO/IEC 15693 baudrate [kbit/s]	26.5	26.5	26.5/53	26.5/53	26.5/53	
EPC class-1 HF / ISO/IEC 18000-3M3	-	-	Yes	Yes	Yes	
EMVCo compliance	No	No	Yes	Yes	Yes	
Card emulation	Yes	Yes	Yes	Yes	Yes	
NFC tag type emulation	4	3, 4	4A	4A	4A	
NFC tag type baudrate [kbit/s]	Up to 424	Up to 424	Up to 848	Up to 848	Up to 848	
Peer-to-peer (ISO/IEC 18092)	Yes	Yes	Yes	Yes	Yes	
Passive communication	Initiator/target	Initiator/target	Initiator/target	Initiator/target	Initiator/target	
Active communication	Initiator/target	Initiator/target	Initiator/target	Initiator/target	Initiator/target	
Product features						
Operating distance up to [mm] ⁽¹⁾	70	120/160 ⁽³⁾	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	3 to 5.5	
Transmitter supply current, max [mA]	150	180/250 ⁽⁶⁾	250	250	250	
Dynamic Power Control (DPC), Adaptive Waveform Control (AWC)	-	-	Yes	Yes	Yes	
Host interface	I ² C	I ² C	USB, HSUART, SPI, 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	1.8 or 3.3	1.8 or 3.3	1.8 or 3.3	1.8 or 3.3	
Standby mode current, typ [µA]	20	20	18	18	18	
Power-down mode current, typ [µA]	10.5	10.5	12	12	12	
Low-power card detection mode [µA]	150 ⁽⁷⁾	150 ⁽⁷⁾	95 ⁽⁷⁾	95 ⁽⁷⁾	95 ⁽⁷⁾	
Available packages	VFBGA49	HVQFN40, WLCSP42	HVQFN64, VFBGA64	HVQFN64, VFBGA64	HVQFN64, VFBGA64	
Temperature range [°C]	-30 to +85	-30 to +85	-40 to +85	-40 to +85	-40 to +85	
Field-detection signal output	IRQ	IRQ	Internal interrupt	Internal interrupt	Internal interrupt	
Security features						
MIFARE® SAM support	-	-	-	-	Yes	
MIFARE Classic® security (CRYPTO1 HW)	Yes	Yes	Yes	Yes	Yes	
Authentication via ECC	-	-	-	-	-	
32-bit password protection	-	-	-	-	-	
Product support & ordering information						
Product type	PN7120A0EV/C10801	PN7150B0HN/C11002, PN7150B0UK/C11002Z	PN7360AUHN/C300	PN7360AUEV/C300	PN7362AUHN/C300, PN7362AUEV/C300	PN7462AUHN/C300, PN7462AUEV/C300
12NC single tray	9353 056 17551	9353 090 65551	9353 076 92551	9353 613 42551	9353 084 36551, 9353 613 41551	9353 077 96551, 9353 613 43551
12NC Reel	9353 056 17518	9353 090 65518, 9353 608 07012, 9353 6080 7012	9353 076 92518	9353 613 42518	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, OM5578/PN7150RPI 9353 090 76699	PNEV7462C 9353 635 25598			
Software	Android™, Linux®, Windows®, RTOS, Bare metal (MCU without OS)		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 and Contactless Reader Solutions

DEVELOPMENT BOARDS													
Name	CONNECTED NFC TAGS			NFC FRONTENDS				NFC CONTROLLERS					
	NTAG® I ² C plus Explorer Kit	NTAG I ² C plus Kit for Arduino® pinout	PN5180 NFC Frontend Development Kit	MFRC630/SLRC610 Frontend Development Board	CLRC663 plus Frontend Development Kit	NFC Antenna Development Kit	PN512 NFC Frontend Development Board	PN7120 NFC Controller SBC ⁽¹⁾ Kit	PN7120 NFC Controller SBC ⁽¹⁾ Kit for Arduino®	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
Ordering number	OM5569/NT322E, OM5569/NT322ER (with external reader)	OM23221ARD	OM25180FDK PNEV5180B	CLEV6630A	OM26630FDK CLEV6630B	OM29263ADK	PNEV512B	OM5577/PN7120S	OM5577/PN7120ARD	OM5578/PN7150ARD	OM5578/PN7150BBB	OM5578/PN7150RPI	OM27462CDKP PNEV7462C
12NC	9353 078 49699 9353 078 48699	9353 393 71598	9353 073 19699 9353 073 21699	9353 391 48699	9353 391 51699 9353 391 49699	9353 615 98598	9352 981 99699	9353 063 52699	9353 089 04699	9353 090 78699	9353 090 77699	9353 090 76699	9353 639 45598 9353 635 25598
Supported products	NTAG I ² C plus	NTAG I ² C plus	PN5180	CLRC663, MFRC630, MFRC631, SLRC610	CLRC663 plus, MFRC631 plus, MFRC630 plus, SLRC610 plus	CLRC663 family	PN512	PN7120	PN7120	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 S08 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"> PNEV5180B development board with 65x65mm antenna 30x50mm antenna with matching component 3 PCBs for individual antenna matching NTAG216F NFC sample card 10 PN5180 samples in HVQFN package 	<ul style="list-style-type: none"> CLRC663 development board 	<ul style="list-style-type: none"> CLEV6630B development board with 65x65mm antenna 30x50mm antenna with matching components 3 PCBs for individual antenna matching NTAG216F and MIFARE DESFire EV2 NFC sample cards 10 CLRC663 plus samples in HVQFN package 	<ul style="list-style-type: none"> 2 Antennas (20 x 20mm and 77 x 113mm), matched to work with the CLRC663 family Matching boards, not assembled for own antenna matching development 	<ul style="list-style-type: none"> PNEV512B development board 	<ul style="list-style-type: none"> PN7120 NFC controller board Raspberry Pi® interface board BeagleBone® interface board NTAG216 NFC sample card 	<ul style="list-style-type: none"> PN7120 NFC controller board Arduino® interface board NTAG216 NFC sample card 	<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"> 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"> Artificial damping of the RF field in the middle of the antenna simulating real conditions LPC1769 MCU on board Antenna can be separated from reader section SPI interface accessible for connection of other MCU 	<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"> Plug and play matched antennas for the CLRC663 family 	<ul style="list-style-type: none"> Supports full development environment of LPCXpresso Supported by NXP® Reader Library incl. examples for fast development supporting LPC1769 development board MIFARE® support Exemplary implementation of a tag 4 type emulation and peer-to-peer communication with a phone 	<ul style="list-style-type: none"> Optimized for BeagleBone® and Raspberry Pi® platforms PCB integrated NFC antenna Enabling the development of an NFC solution based on PN7120 in a Linux®, Android or Windows® IoT environment 	<ul style="list-style-type: none"> Optimized for Arduino® platforms PCB integrated NFC antenna NFC Integration including many LPCXpresso, Kinetis® and i.MX boards 	<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 compliant and contact software libraries Smartcard reader
Certification	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾	CE, FCC ⁽³⁾ , MIC	CE, FCC ⁽³⁾ , MIC	-	CE	CE, FCC ⁽³⁾	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"> 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 	<ul style="list-style-type: none"> NFC Reader Library NFC Cockpit 	<ul style="list-style-type: none"> NFC Reader Library NFC Cockpit 	<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"> Linux® driver support Android driver support Windows® IoT driver support 	<ul style="list-style-type: none"> Linux® driver support Android driver support RTOS and Null OS support 	<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	NFC pairing, industrial calibration, smart meter, logistics, IoT, healthcare, consumer electronics, smart media	Payment, POS & mPOS terminals, access control, industrial and e-Gov	Industrial, single protocol reader, public transport, gaming	Access control, payment, gaming	NFC pairing, industrial calibration, smart meter, logistics, IoT, healthcare, consumer electronics, smart media, gaming	NFC reader applications requiring full P2P functionality	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	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:

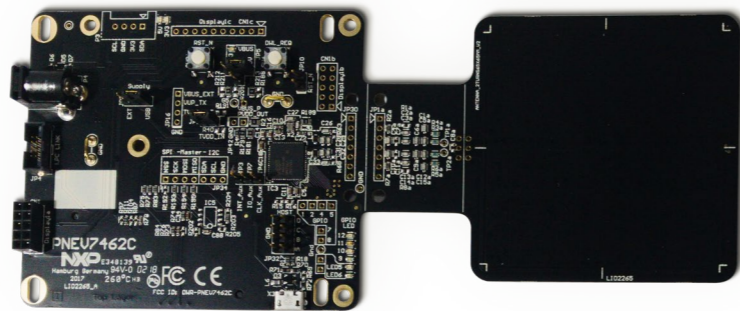
(1) SBC stands for Single Board Computer Kit

(2) On slot 1

(3) FCC tested and compliant

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.



OM27462CDKP



OM5569/NT322ER



OM5577/PN7120ARD

CONTACT SMARTCARD READER ICs

	Analog, UART, and CPU										
Product features	TDA8023TT	TDA8024	TDA8026ET	TDA8034HN	TDA8034T	TDA8035HN	TDA8037	TDA8029HL	PN7412		
Analog interfaces	1	1	5	1	1	1	1	1	1	1	
ISO/IEC 7816 UART	-	-	-	-	-	-	-	Yes	Yes	Yes	
ISO/IEC 7816 dedicated timers	-	-	-	-	-	-	-	Yes	Yes	Yes	
Microcontroller core	-	-	-	-	-	-	-	80C51RB+	Cortex M0		
ROM [kbyte] /RAM [byte]	-	-	-	-	-	-	-	16/768	Flash 160kB/RAM 12kB		
Host interface	I ² C	I/O lines	I ² C	I/O lines	I/O lines	I/O lines	I/O lines	Serial UART or I ² C	USB, HSUART, SPI, I ² C		
ESD protection on ISO/IEC 7816 pins [kV]	6	6	7	8	8	10	8	6	12		
Auxiliary protected lines for C4 and C8 contacts	2	2	2 ⁽²⁾	2	-	2	2	-	2		
VCC card power supply [V]	1.8, 3, and 5	3 and 5	1.8, 3, and 5	1.8, 3, and 5	3 and 5	1.8, 3, and 5	3	1.8, 3, and 5	1.8, 3, and 5		
Card supply current @ 5 V VCC [mA]	55	80	55	65	65	65	-	65	60		
Card supply current @ 3 V VCC [mA]	55	65	55	65	65	65	65	50	55		
Card supply current @ 1.8 V VCC [mA]	35	-	35	65	-	35	-	30	35		
Card supply voltage @ 1.2 V VCC [mA]	-	-	-	-	-	-	-	-	-		
Card clock frequency max. [MHz]	20	26	20	26	26	26	26	20	13.56		
Card activation time max. [μs]	135	225	135	3500	3500	3400	554	225	283		
Card deactivation time max. [μs]	110	100	100	250	250	250	250	100	83		
Protocol support											
Synchronous card management	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Asynchronous protocol T=0 and T=1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Security features											
Voltage supervisor and over-current detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Current protection on VCC, I/O, RST, CLK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Additional product information											
Power-supply interface VDDI (V)	1.5 to 6.5	-	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 6.5	2.7 to 6.5	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 6.0	2.7 to 5.5		
Power-down current max. (μA)	10	100	15	5	5	3	400	20	18		
Temperature range (°C)	-40 to +85	-40 to +85	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-40 to +85		
EMVCo 4.3 compliance	Yes	-	Yes	Yes	Yes	Yes	Yes (3 V only)	Yes	Yes		
CISCO compliance	-	Yes	-	Yes	-	Yes	Yes	Yes	No		
Product support & ordering information											
Product type	TDA8023TT	TDA8024T	TDA8024TT	TDA8026ET/C3	TDA8034HN/C2	TDA8034T	TDA8035HN/C2/S1	TDA8037T	TDA8037TT	TDA8029HL	PN7412UHN
Package	TSSOP28	SO28	TSSOP28	TFBGA64	HVQFN24	SO16	HVQFN32	SO28	TSSOP16	LQFP32	HVQFN64
12NC single tray	-	-	-	9353 086 35551	9353 086 34151	-	9353 086 13151	-	-	9352 747 33151	-
12NC multiple tray	-	-	-	9353 086 35557	9353 086 34157	-	9353 086 13157	-	-	-	-
12NC reel	9352 988 14118	9352 713 42118	9352 991 52118	-	9353 086 34118	9352 883 49118	9353 086 13118	9353 015 17118	9353 015 01118	9352 747 33118	-
12NC reel dry pack	-	9352 713 42518	-	9353 086 35518	-	-	-	-	-	-	-
12NC bulk pack	-	-	-	-	-	9352 883 49112	-	-	-	-	-
Development boards	-	OM9800/DCT8024T 9353 046 58699	OM9800/DCT8024TT 9353 046 59699	OM9800/DCT8026 9352 931 69599	OM9800/DCT8034 9352 931 71599	CAKE8034_01_D	OM9800/DCT8035 9352 931 72599	CAKE8037_T	CAKE8037_TT	OM9800/DCT8029-11D 9353 046 61699 OM9800/DCT8029-12D (I ² C) 9353 046 62699	-
Software support	-	-	-	-	-	-	-	-	-	ARMTDA8029 I ² C drivers, TDA8029 demo	-

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

MIFARE® SAMs FOR READER SYSTEMS

Product features	MIFARE® SAM AV2	MIFARE® SAM AV2.6
Memory		
Write endurance [cycles]	100,000	100,000
Data retention [yrs]	10	10
Secure key storage	Up to 128 key entries	Up to 128 key entries
SAM interface		
UART	ISO/IEC 7816, T=1	ISO/IEC 7816, T=1
Frequency [MHz]	1 to 10	1 to 10
Baudrate [kbit/s]	9.6 to 1500	9.6 to 1500
Reader IC support (X-mode)	MFRC52x family	CLRC663 family
Security		
Unique serial number [bytes]	7	7
Random number generator	Yes	Yes
Access keys	128 key entries	128 key entries
Access conditions	Per key entry	Per key entry
MIFARE support	MIFARE DESFire® / MIFARE Plus® / MIFARE Classic / MIFARE Ultralight C®	
DES & DES3 security	MACing/encipherment	MACing/encipherment
AES 128 security	MACing/encipherment	MACing/encipherment
PKI	Signature/encipherment	Signature/encipherment
RSA	Signature/encipherment	Signature/encipherment
Packaging		
PCM1.1 module	P5DF081X0/T1AD2060S	P5DF081X0/T1AR1070S
HVQFN32 package	P5DF081HN/T1AD2060	P5DF081HN/T1AR1070
Product support and ordering information		
Product type	MIFARE SAM AV2	MIFARE SAM AV2.6
12NC Wafer	9352 931 19005	9352 953 67005
12NC PCM1.1	9352 931 25118	9352 968 39118
12NC HVQFN32	9352 931 21118	9352 968 33151
Development boards	MFEV710 9352 941 66599 CLRD710 9352 941 65599	
Software support	17173x NXP Reader Library, 18663x MIFARE® Discover	

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



Specifications subject to change without notice.

Date of Release: November 2018

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