

MIFARE NFC Reader portfolio

	NFC frontend solutions						NFC controller solutions			
Product	MFRC522	MFRC523	MFRC630	MFRC631	CLRC663	PN512	PN532	PN533	PR601 (incl. LPC1227)	
Product description	Standard 3 V MIFARE frontend, v2.0	Standard 3 V ISO/IEC 14443 A/B frontend, v2.0	High-performance MIFARE frontend	High-performance ISO/IEC 14443 A/B frontend	High-performance multi-protocol NFC frontend	Full NFC Forum-compliant frontend	NFC controller with integrated FW	USB NFC controller with integrated FW	High-performance multi-protocol NFC controller with customizable FW	
Integrated microcontroller	-	-	-	-	-	-	Integrated FW	integrated FW	LPC1227 for customer code	
Carrier frequency [MHz]	13.56	13.56	13.56	13.56	13.56	13.56	13.56	13.56	13.56 ⁽¹⁾	
Standards & protocols										
Reader/writer	ISO/IEC 14443 A	ISO/IEC 14443 A/B	ISO/IEC 14443 A	ISO/IEC 14443 A/B	ISO/IEC 18092 ISO/IEC 14443 A/B FeliCa ISO/IEC 15693	ISO/IEC 18092 ISO/IEC 14443 A/B FeliCa	ISO/IEC 18092 ISO/IEC 14443 A/B FeliCa	ISO/IEC 18092 ISO/IEC 14443 A/B FeliCa	ISO/IEC 18092 ISO/IEC 14443 A/B FeliCa ISO/IEC 15693	
NFC tag type support	1, 2, 4	1, 2, 4	1, 2, 4	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	
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	106/212/424	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 included)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
ISO/IEC 15693 baudrate [kbit/s]	-	-	-	-	26.5/53	-	-	-	26.5/53	
EPC class-1 HF / ISO/IEC 18000-3M3	-	Yes	-	-	-	-	-	-	Yes	
EMVCo compliance	-	Yes	-	Yes	Yes	Yes	Yes	-	Yes	
Card emulation	-	-	-	-	-	Yes	Yes	Yes	-	
NFC tag type emulation	-	-	-	-	-	2, 3, 4	2, 3, 4	2, 3, 4	-	
NFC tag type baudrate [kbit/s]	-	-	-	-	-	106/212/424	106/212/424	106/212/424	-	
Peer-to-peer (ISO/IEC 18092)	-	-	-	-	Yes	Yes	Yes	Yes	Yes	
Passive communication	-	-	-	-	Initiator	Initiator/target	Initiator/target	Initiator/target	Initiator	
Active communication	-	-	-	-	-	Initiator/target	Initiator/target	Initiator/target	-	
Product features										
Operating distance up to [mm]	70	70	120	120	120/160	70	70	70	120/160	
RF transmitter supply voltage [V]	3.6	3.6	3.3 to 5	3.3 to 5	3.3 to 5	3.6	3.6	2.5 to 3.6	3.3 to 5	
Transmitter supply current, typ [mA]	100	100	200	200	200	100	60	60	200	
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	USB, UART	SPI, I ² C, UART	
Supply voltage host interface [V]	2.5 to 3.6	2.5 to 3.6	3.3 to 5.0	3.3 to 5.0	3.3 to 5.0	2.5 to 3.6	2.5 to 3.6	UART: 1.8 or 3.3 USB: 5	3.3 to 5.0	
Idle mode current, typ [µA]	-	-	6	6	6	-	-	-	6	
Power-down mode current, typ [µA]	5	5	0.008	0.008	0.008	5	2	10	0.008	
Power-down mode with RF level detector on [µA]	-	-	-	-	-	10	25	30	-	
Low-power card detection mode [µA]	-	-	0.5	0.5	0.5	-	-	-	0.5	
Package	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32	HVQFN32, HVQFN40, TFBGA64	HVQFN40	HVQFN40	LQFP100	
Temperature range [°C]	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-25 to +85	-30 to +85	-25 to +85	-25 to +85	-25 to +70	
Security features										
SAM support in X-mode	MIFARE SAM AV1 MIFARE SAM AV2	MIFARE SAM AV1 MIFARE SAM AV2	MIFARE SAM AV2.6	MIFARE SAM AV2.6	MIFARE SAM AV2.6	MIFARE SAM AV1 MIFARE SAM AV2	-	-	MIFARE SAM AV2.6	
MIFARE Classic security (CRYPTO1 HW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Product support & ordering information										
Product type	MFRC52202HN1	MFRC52302HN1	MFRC63002HN	MFRC63102HN	CLRC66302HN	PN5120A0HN1/C2	PN5321A3HN/106	PN5331B3HN/270	PR601HL/C1	
Software	NFC Reader Library	NFC Reader Library	NFC Reader Library	NFC Reader Library	NFC Reader Library	NFC Reader Library, card-emulation example	HAL, NFC Forum reference implementation	HAL, NFC Forum reference implementation USB PCSC driver	NFC Reader Library	

