

ISO/IEC 18092

ISO/IEC 14443

NFC devices

Product features	NFC Transceivers		NFC Controllers			
	PN511	PN512	PN531	PN532	PN533	PN544
Operating distance typ [mm]	Up to 100 depending on mode, coil...	Up to 100 depending on mode, coil...	Up to 100 depending on mode, coil...	Up to 100 depending on mode, coil...	Up to 100 depending on mode, coil...	Up to 100 depending on mode, coil...
Interfaces						
Serial interface [Mbits/s]	up to 1.228	up to 1.228	up to 1.228	up to 1.228	up to 1.228	460 800 bit/s
I ² C interface [bits/s]	400 K /3.4 M	400 K /3.4 M	400 K	400 K	-	400 K /3.4 M
SPI interface [Mbits/s]	up to 5	up to 5	up to 5	up to 5	-	8
8 bits parallel interface	yes (with HVQFN40)	yes (with HVQFN40)	-	-	-	-
USB 2.0 (full speed) interface	no	no	yes	-	yes	-
CL FIFO depth [bytes]	64	64	64	64	64	N/A
Serial/SPI FIFO [bytes]	-	-	180	180	180	N/A
SWP Interface	-	-	-	-	-	yes
S ² C interface	yes	yes	yes	yes	yes	yes
CPU	no	no	80C51	80C51	80C51	HT80C51MX
RAM/ROM/EEPROM [bytes]	-	-	1 K/32 K	1 K/40 K	1.2 K/44 K	5 K/128 K/52 K
RF interface						
Carrier Frequency [MHz]	13.56	13.56	13.56	13.56	13.56	13.56
Analog Interface	fully integrated	fully integrated	fully integrated	fully integrated	fully integrated	fully integrated
Standard and Protocols						
ISO 18092 Peer-to-peer (active/passive)	yes	yes	yes	yes	yes	yes
ISO 14443-A Reader/Writer	yes	yes	yes	yes	yes	yes
ISO 14443-B Reader/Writer	no	yes	no	yes	yes	yes
Felica Reader/Writer	yes	yes	yes	yes	yes	yes
ISO 15693 Reader/Writer	no	no	no	no	no	yes
Card emulation	FeliCa RF, ISO 14443-A, MIFARE 106/212/424	FeliCa RF, ISO 14443-A, MIFARE 106/212/424	FeliCa RF, ISO 14443-A, MIFARE 106/212/424	FeliCa RF, ISO 14443-A, MIFARE 106/212/424	FeliCa RF, ISO 14443-A, MIFARE 106/212/424	FeliCa RF, ISO 14443-A-B-B', MIFARE 106/212/424/B4B
Baudrate [kbits/s]						
Security features						
MIFARE classic	yes	yes	yes	yes	yes	yes
Interface to smart card controller	S ² C	S ² C	S ² C	S ² C	S ² C	S ² C/SWP
Additional Product information						
Embedded firmware	no	no	yes	yes	yes	yes
Middleware	HAL, NFC forum reference implementation	HAL, NFC forum reference implementation	HAL, NFC forum reference implementation	HAL, NFC forum reference implementation	HAL, NFC forum reference implementation	HAL, NFC forum reference implementation
Integrated LDO voltage regulator	no	no	no	yes	no	yes
Low battery mode	no	no	no	yes	no	yes
Battery off mode	no	no	no	no	no	yes
Supply voltage [V]	2.5 - 3.6	2.5 - 3.6	2.5 - 4.0	2.7 - 5.5	2.5 - 3.6	2.3 - 5.5
Min. Host interface voltage[V]	1.6	1.6	1.6	1.6	1.6	1.65 - 1.95
USB bus power supply [V]	-	-	4.2 - 5.5	-	4.2 - 5.5	-
Supply voltage for secure device integrated	no	no	yes	yes	yes	S ² C/SWP
Power down mode typ. [uA]	5	5	10	5	12	3
Power down mode with RF level detector on [uA]	10	10	30	25	30	50
Transmitter supply current typ. [mA]	60	60	60	60	60	60
Temperature range [C]	-25 / +85	-25 / +85	-25 / +85	-25 / +85	-25 / +85	-25/+85
Package thickness	0.85 mm	0.85 mm	0.85 mm	0.85 mm	0.85 mm	0.8 mm
Package size	5x5 or 6x6 mm ²	5x5 or 6x6 mm ²	6x6 mm ²	6x6 mm ²	6x6 mm ²	4.5x4.5 mm ²
Package type	HVQFN32 or HVQFN40	HVQFN32 or HVQFN40	HVQFN40	HVQFN40	HVQFN40	TFBGA64
Design In kit	OM5561	OM5571	OM5555	OM5581	OM5588	OM5596

Transceiver: RF front-end

Controller: RF front-end + microcontroller on single die