

ISO/IEC 18092

ISO/IEC 14443

NFC devices

Product features	NFC Transceivers		NFC Controllers		
	PN511	PN512	PN531	PN532	PN533
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...
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
I ² C interface [bits/s]	400k /3.4 M	400k /3.4 M	400k	400k	-
SPI interface [Mbits/s]	up to 5	up to 5	up to 5	up to 5	-
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
Serial/SPI FIFO [bytes]	-	-	180	180	180
S ² C interface	yes	yes	yes	yes	yes
CPU	no	no	80C51	80C51	80C51
RAM/ROM [bytes]	-	-	1k / 32k	1k / 40 k	1.2k / 44 k
RF interface					
Carrier Frequency [MHz]	13.56	13.56	13.56	13.56	13.56
Analog Interface	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
ISO 14443-A Reader/Writer	yes	yes	yes	yes	yes
ISO 14443-B Reader/Writer	no	yes	no	yes	yes
Felica Reader/Writer	yes	yes	yes	yes	yes
Card emulation	FeliCa RF, ISO 14443-A, MIFARE	FeliCa RF, ISO 14443-A, MIFARE	FeliCa RF, ISO 14443-A, MIFARE	FeliCa RF, ISO 14443-A, MIFARE	FeliCa RF, ISO 14443-A, MIFARE
Baudrate [kbits/s]	106 / 212 / 424	106 / 212 / 424	106 / 212 / 424	106 / 212 / 424	106 / 212 / 424
Security features					
MIFARE classic	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
Additional Product information					
Embedded firmware	no	no	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
Integrated LDO voltage regulator	no	no	no	yes	no
Low battery mode	no	no	no	yes	no
Supply voltage [V]	2.5 - 3.6	2.5 - 3.6	2.5 - 4.0	2.7 - 5.5	2.5 - 3.6
Min. Host interface voltage[V]	1.6	1.6	1.6	1.6	1.6
USB bus power supply [V]	-	-	4.2 - 5.5	-	4.2 - 5.5
Supply voltage for secure device integrated	no	no	yes	yes	yes
Power down mode typ. [uA]	5	5	10	12	12
Power down mode with RF level detector on [uA]	10	10	30	15	30
Transmitter supply current typ. [mA]	60	60	60	60	60
Temperature range [C]	-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
Package size	5x5 or 6x6 mm ²	5x5 or 6x6 mm ²	6x6 mm ²	6x6 mm ²	6x6 mm ²
Package type	HVQFN32 or HVQFN40	HVQFN32 or HVQFN40	HVQFN40	HVQFN40	HVQFN40
Design In kit	OM5561	OM5571	OM5555	OM5581	planned

Product features	NFC secure modules
Embedded NFC IC	PN65L
Available host interfaces	serial, SPI, I ² C
Embedded Secure IC	P5CN072
OS for secure device	JCOP or 3rd party
Stacked passive component IC	yes
Package thickness	1.2 mm
Package size	7x7 mm ²
Package type	HLOFN48

Transceiver: RF front-end

Controller: RF front-end + microcontroller on single die

NFC secure module: NFC IC + Smart card IC in 1 package