NXP reader module
PRH601

Highly integrated RFID reader module

Delivering unprecedented integration, this module combines the functionality of multiple discrete ICs in a single package and enable the development of compact, cost-effective contactless reader systems for access and industrial applications. It includes microcontroller functionality and support multiple contactless reader protocols based on 13.56 MHz and 125 kHz.

Key features

▸ Fully compliant with ISO/IEC 14443 A&B, ISO/IEC 15693, and FeliCa
▸ NFC-IP1 peer-to-peer support (Passive Initiator Mode)
▸ Multi-frequency support: 13.56 MHz and 125 kHz
▸ Integrated LPC1227 ARM Cortex-M0 microcontroller
▸ Support for MIFARE™ and HITAG™ technology
▸ Support for SAM AV2.6 interface
▸ Compact, single-package: LQFP100
▸ PRH601 combines functionality of LPC1227, CRLC663, and HTRC110

Key benefits

▸ Fast design-in of highly integrated contactless reader systems
▸ Integrating multiple functions in a single package
▸ Reduced PCB size for development of systems with small physical dimensions
▸ Compatibility with all established smartcard ICs, smart tags, and label technologies
▸ Small footprint with LQFP100

▸ Fast design-in with supplied firmware
▸ Dedicated support for multi-frequency readers available worldwide

Applications

▸ Highly integrated access systems
▸ Industrial devices requiring high-performance RF
▸ Multi-frequency applications that support 125 kHz and 13.56 MHz (e.g. migration of access management systems)

NXP's industry-leading portfolio for RFID reader modules reaches new levels of integration with the PRH601. This module implements a 32-bit LPC1227 ARM Cortex-M0 and a CLRC663 contactless reader IC for communication at 13.56 MHz. With the included HTRC110 HITAG reader IC, the PRH601 supports communication at 125 kHz. The module is a single-package solutions housed in a compact LQFP100 package.

Key technical data

Product features	PRH601
HTRC110	Yes
CLRC663	Yes
LPC1227	Yes
Operating distance [mm] [1]	120 / 160 [2]
FIFO depth (byte)	512
Host interface	SPI, I²C, RS-232
RF interface	
Analog interface	Fully integrated
Carrier frequency [MHz]	13.56 and 0.125
Modulation	10% and 100% ASK
Baudrate ISO 14443 [kbit/s]	106 / 212 / 424 / 848
Baudrate ISO 15693 [kbit/s]	26.5 / 53
Baudrate FeliCa [kbit/s]	212 / 424
Standards and protocols	
NFC Tag Type Reader	Tag 1, 2, 3, and 4
ISO 14443 A	Yes
ISO 14443 B	Yes
ISO 15693	Yes
MIFARE Classic support	Yes
FeliCa	Yes
EPC Class-1 HF/ ISO 18000-3M3	Yes
ISO 18092 (NFC)	Yes [3]
EMVCo	Yes
Security features	
SAM support in X-Mode	MIFARE SAM AV2.6
Additional product information	
Supply voltage digital [V]	3.3 to 5.0 and 5.0 [4]
Supply voltage analog [V]	3.3 to 5.0
Temperature range [°C]	-25 to +70
Package	LQFP100
Software support	NXP Reader Library

(1) Depends on antenna, coil size, tuning, andenvironment (2) For ISO15693 (3) Passive Initiator Mode (4) For 125kHz operation

Ordering information

Type number		PRH601HL/C1	
Orderable part number	Package	LQFP100	
	Status	Available	
Sales description	12 NC	9352 985 83557	MOQ=450 (single tray)

Support and design-in material

To order samples or design kits, please contact your local NXP distributor or access the NXP distributor portal (https://extranet.nxp.com).

HITAG pedigree

HITAG is a well-established brand in the low-frequency (LF) RFID segment. It is optimized for applications that operate in harsh environments and require data transmissions that are highly reliable, robust, and safe.

MIFARE pedigree

NXP MIFARE is the leading technology platform for contactless ticket, card, and reader solutions. With more than 50 million core reader components, over five billion cards and ticket ICs sold, MIFARE is a proven and reliable technology that represents the largest installed base worldwide.

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