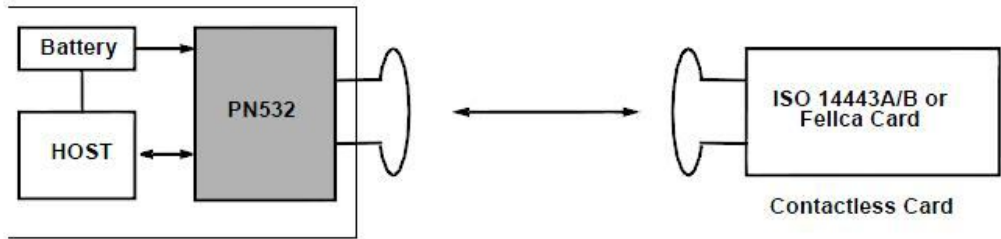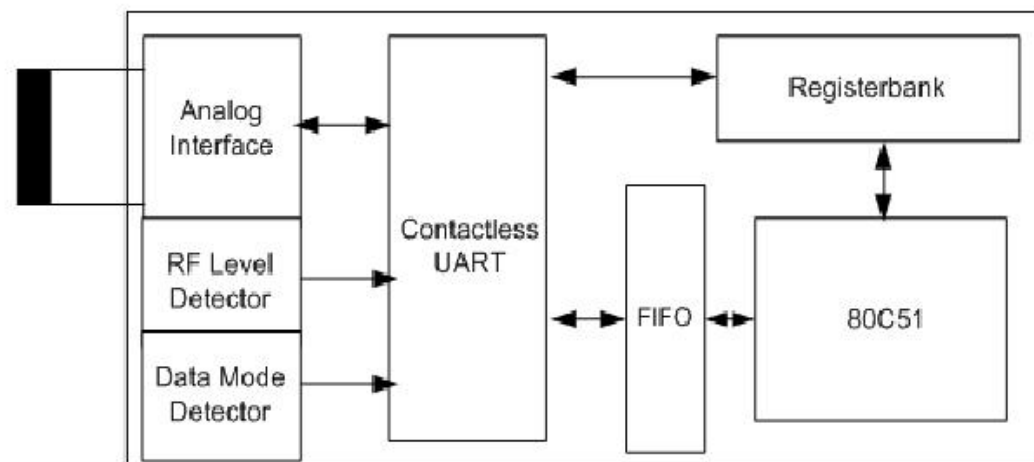Applicant: UNION COMMUNITY Co.,Ltd.

Model Name: VS-R20D SC

1. Operation Description

1) General Description

The Analog interface handles the modulation and demodulation of the analog signals according to the card receiving mode, reader / writer mode and NFCIP-1 mode communication scheme.

The RF level detector detects the presence of an external RF-field delivered by the antenna to the RX pin.

The data mode detector detects a MIFARE®, FeliCa™ or NFCIP-1 mode in order to prepare the internal receiver to demodulate signals, which are sent to the PN512.

The communication (S2C) interface provides digital signals to support communication for transfer speeds above 424 kbit/s and digital signals to communicate to a secure core IC.

The contactless UART handles the protocol requirements for the communication schemes in co-operation with the host. The comfortable FIFO buffer allows a fast and convenient data transfer from the host to the contactless UART and vice versa.

2) Transmitter & Receiver Architecture

The PN532 is a highly integrated transmission module for contactless communication at 13.56 MHZ including micro-controller functionality based on an 80C51 core. The transmission module utilises an outstanding modulation and demodulation concept completely integrated for different kinds of passive contactless communication methods and protocols at 13.56 MHZ.

The PN532 support 4 different operating modes:

- Reader/writer mode supporting ISO 14443A / MIFARE® and FeliCa™ scheme
- ISO 14443B in reader/writer mode only.
- Card interface mode supporting ISO 14443A / MIFARE® and FeliCa™ scheme
- NFCIP-1 mode

Enabled in reader/ writer mode for ISO reader 14443A / MIFARE® and reader/writer mode for ISO 14443B, the PN532's internal transmitter part is able to drive a reader/writer antenna designed to communicate with ISO14443A /MIFARE® and ISO14443B cards and transponders without additional active circuitry.

The receiver part provides a robust and efficient implementation of a demodulation and decoding circuitry for signals from ISO 14443A / MIFARE® and ISO 14443B compatible cards and transponders. The digital part handles the complete ISO14443A framing and error detection (Parity & CRC).