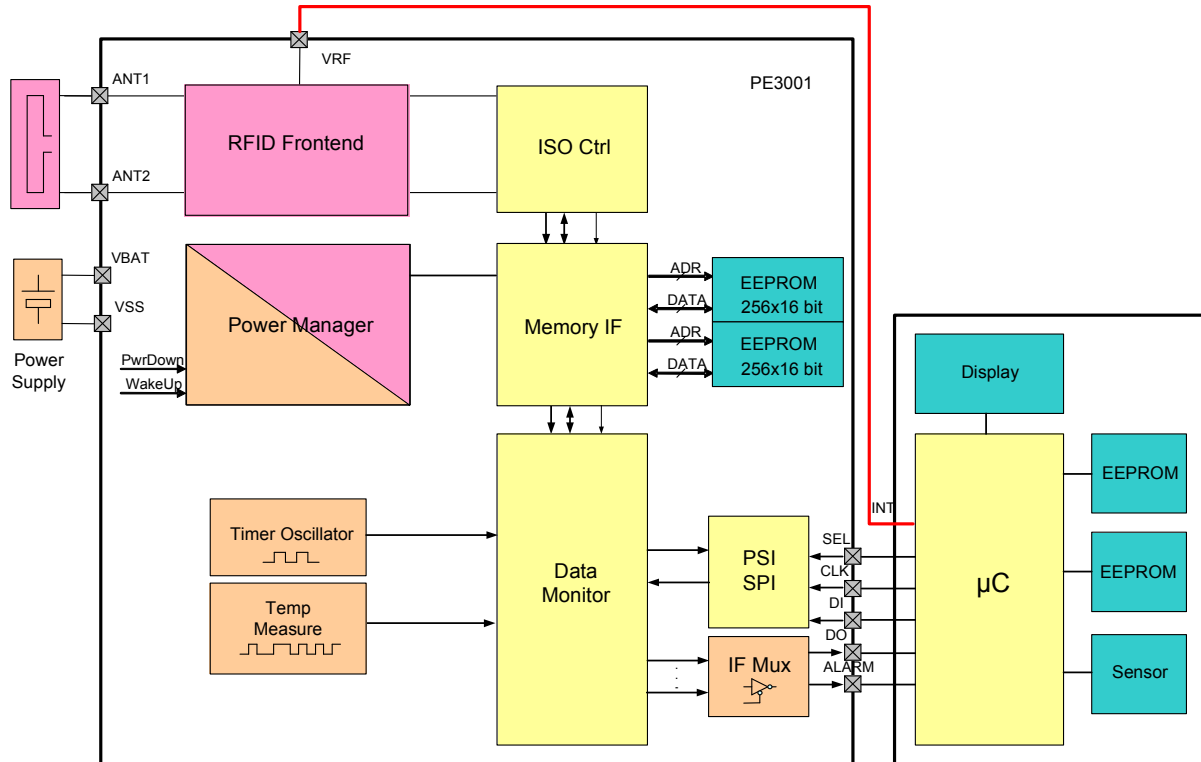


### General

This proposal presents a possible principal application to connect the PE3001 with any  $\mu$ C via SPI.



It is important to design a zero load connection between VRF and INT. VRF is load limited and must not be tight to a high voltage potential, e.g. on a pull-up port. Typically a source follower or Schmitt-trigger can be used between VRF and INT. The microcontroller usually has a CMOS input, which in this case can also be driven directly.

The following procedure is possible to communicate through the RFID interface to a  $\mu$ C:

1. Define a range of addresses in USER-Bank (e.g. TRANS0\_F) to read and write transferred data.
2. Define an address (e.g. COMM) in USER-Bank as communication process interface:
  - e.g.: 01h read data via RFID from USER-Bank (TRANS0\_F),
  - 02h write data via RFID to USER-Bank (TRANS0\_F),
  - 03h data via RFID transferred to USER-Bank (TRANS0\_F),
  - 04h data via RFID transferred from USER-Bank (TRANS0\_F),
  - 05h read data via SPI from USER-Bank (TRANS0\_F),
  - 06h write data via SPI to USER-Bank (TRANS0\_F),
  - 07h data via SPI transferred to USER-Bank (TRANS0\_F),
  - 08h data via SPI transferred from USER-Bank (TRANS0\_F),
  - 00h transfer ended or no transfer necessary,
  - ... what ever more is necessary for internal communication

#### 3. Procedure for Communication:

- Data to  $\mu$ C from RFID
  - RFID write data to TRANS0\_F
  - RFID write 03h on address COMM in USER-Bank
  - $\mu$ C if VRF=0 (red line on block diagram, Interrupt detected), read address COMM via SPI
  - $\mu$ C if data on COMM = 03h, read TRAN0\_F, write 08h on address COMM in USER-Bank
  - RFID procedure was repeated or RFID write 00h to COMM for transfer end
- Data to RFID from  $\mu$ C
  - $\mu$ C write data to TRANS0\_F via SPI
  - $\mu$ C write 07h on address COMM in USER-Bank
  - RFID polling read address COMM
  - RFID if data on COMM = 07h, read TRAN0\_F, write 04h on address COMM
  - $\mu$ C procedure was repeated or  $\mu$ C write 00h to COMM for transfer end
- there are more possible transfer procedures for a handshake communication between RFID and  $\mu$ C

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