Start Condition

Interrupt

Status = 0xa0
Send data
byte 0x09

Interrupt

Addressed

Status = 0xa0
Status = 0xa0 (after clear)
Dummy read returns 0x09

Send Stop and
disable I2C
interrupts

Interrupt

Read data
Byte
Status = 0xa0
Read 0x09

Interrupt

Read data
Byte
Status = 0xa0
Read 0x55

I2C Task reads input buffer:
"I2C Slave reception: 0x09 0x55"
Master command: "rd 1 2"

- Master sends Address (0xd0)
- Slave ACK
- Master sends data (0x01)
- Master ACK
- Slave ACK

- Interrupt
  - State 0x00
  - Control 0x00
  - Further message to send so start repeated start – control 0xe0

- Interrupt
  - State 0x04
  - Control 0x00
  - Send Slave read address and disable further start/stop interrupts

- Interrupt
  - State 0x04
  - Control 0x00
  - (Next read)
  - Control changed to 0xe0

If the repeated start is commanded and the slave address written the double-buffered part will send the previous byte (0x01 in this example) instead of the slave read address (0xd1). Therefore it is necessary to wait until the repeated start has been sent (using start condition interrupt) before writing the slave address.