AN10486

Automatic RS-485 address detection

Application note

PHILIPS

Revision history

Rev	Date	Description
01	20060602	application note; initial version

Contact information

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1. Introduction

SC16IS740/750/760 and SC16IS652/762 support 'auto address detection' in RS-485 mode (see section entitled *Auto address detection* in the data sheet). In this mode, the user can program the device to automatically detect a programmable address character, then wakes up automatically and receives the rest of the data.

We recently discovered that if any of the data character in the data stream that matches the programmable address character in the XOFF2 register, the UART will not put this data character in the receive FIFO.

The issue described above affects the following devices: SC16IS740, SC16IS750, SC16IS760, SC16IS752, SC16IS762.

2. Impact to customer

In 'auto address detection' mode, the user cannot use the programmable address character in XOFF2 register as a data character; the data character can be any character except the character contained by the XOFF2 register.

3. Workaround

There are two workarounds that a user can implement to overcome this limitation:

1. In 'auto address detection' mode, do not use the character in XOFF2 as a data character.
2. Use the 'normal multidrop' mode (refer to *section 9.3.1* of the data sheet) instead of the 'Auto address detection' mode.

4. Conclusion

The use of 'normal multidrop' mode instead of the 'auto address detection' mode requires the host's controller to examine every address character that the device received. This will cause some unnecessary inconvenience, but it is a workable solution.

5. Abbreviations

Table 1.   Abbreviations

Acronym	Description
FIFO	First In, First Out
I^2C-bus	Inter-Integrated Circuit bus
SPI	Serial Peripheral Interface
UART	Universal Asynchronous Receiver/Transmitter

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