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RC 4000 PERIPHERAL DEVICES

IXP401, 402, 403 AND 404 INTERRUPT EXPANDER

PRELIMINARY SPECIFICATIONS

ABSTRACT:

This report describes the logic structure of the Interrupt Expander IXP401, 402, 403 and 404, when used in connection with the RC 4000 Computer.

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Main Characteristics:

The Interrupt Expander is designed to attach 24 external interrupt signals to a single interrupt level, i. e. a single bit of the interrupt register (IR), of the RC 4000.

The Interrupt Expander includes a 24 bits buffer for collection of 24 interrupt signals. If one or more of these signals change to 1 a single common interrupt signal will be generated to activate one of the interrupt levels of the RC 4000.

The Interrupt Expander is connected to the RC 4000 via the Low-Speed DATA Channel and is addressed as a normal device.

Commands:

The contents of the Interrupt Expander buffer register can be transferred to the selected working register by a Sense command. After this transfer the buffer register is cleared. Modifications of the Sense command will be ignored as well as the commands Read, Write and Control.

Interrupt:

The Interrupt Expander generates an interrupt signal when at least one bit of the buffer register contains of 1. Between 2 Sense commands only one interrupt signal is transferred to the interrupt register (IR) of the RC 4000, even if several external interrupt signals are collected in the buffer register.