RC 4000 PERIPHERAL DEVICES

IXP 406 INTERRUPT EXPANDER

Preliminary Specifications

ABSTRACT: This report describes the logic structure of the Interrupt Expander IXP 406 when used in connection with the RC 4000 Computer.

1. 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-bit buffer for collection of 24 inter-
rupt signals. The first of these signals that changes to 1 will cause the
IXP 406 to generate a single common interrupt signal.

Changing to 1 for any other of these signals will not generate new inter-
rupt signals to the RC 4000, but will be registered as logical ones in the
buffer register. The contents of the buffer register can be transferred to
the RC 4000 by means of a sense command.

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

2. 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.

3. INTERRUPT

Between two sense commands, the first of the external interrupt signals
that goes to logical one will let the IXP 406 generate an interrupt signal
to the RC 4000.

The following external interrupt signals will not cause new interrupt sig-
nals to the RC 4000, but will be registered in the buffer register as logi-
cal ones.