Title:

LIS701

V24 LINESELECTOR

Reference Manual

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Keywords:

RC700, LINESELECTOR, RC791

Abstract:

This paper describes the operation of RC791.

(12 printed pages)

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The LIS701 Lineselctor is a device for connection of up to eight
RC700 microcomputers to two common resources, so as a printer, a
master computer with associated flexible discs or a modem.

The interface used is CCITT V24/ISO2110; The inputs 1 to 8 are of
the type DCE while the outputs A and B are of the type DTE.

With each output A and B is associated a scanner scanning the in-
puts 1 to 8 for a possible request for connection, see figure 1.

A microcomputer requests a connection to one of the outputs spe-
cified by the start up sequence. The request is acknowledged by
the corresponding scanner when the output and scanner are not
engaged in servicing another input.

LED displays on the front at LIS701 indicate the current confi-
guration. Each of the outputs A and B has a seven segment digit
indicating to which input number it is currently connected; when
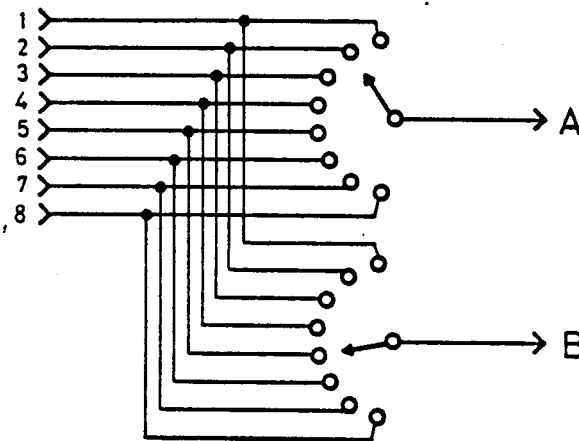it is idle, the display is dark.

Figure 1.

2.   LOGIC SPECIFICATION   2.

2.1   Signals   2.1

The LIS701 supports the following CCITT V24 signals:

V24 circuit	name	pin	abbrev.	direction *
101	protective ground	1	GND	
102	signal ground	7		
103	transmitted data	2	TXD	out
104	received data	3	RXD	in
105	request to send	4	RTS	out
106	clear to send	5	CTS	in
107	data set ready	6	DSR	in
108	data terminal ready	20	DTR	out
109	carrier detected	8	CD	in

* relative to outputport.

The input signals on ports 1 to 8 are found as output signals on ports A and B, and vice verca. All the signals except DTR are relayed directly through between the interconnected ports (via receiver and transmitter), but the four signals RTS, CTS, DTR and CD are used for establishing connection through the LIS.
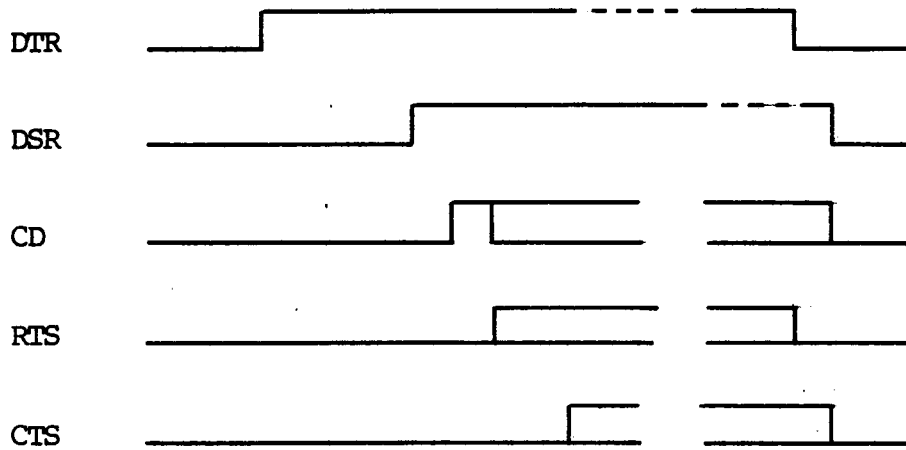
2.2   Selection   2.2

A microcomputer connected to an inputport 1 to 8 requests for connection to one of the ports A or B by rising DTR. The selection of A or B is accomplished by means of RTS (figure 2). The state of RTS must be stable at least 100 nanoseconds before the rising of DTR. The selection sequence is terminated by the reception of DSR plus one (or both) of the signals CD and CTS. The state of RTS must not be changed before this time. In the case the wanted port is busy, no responce will arrive, and DTR may be dropped anytime.

In the case, the wanted port is ready, the LIS701 will add at most 10 msec to the duration of the selection phase.

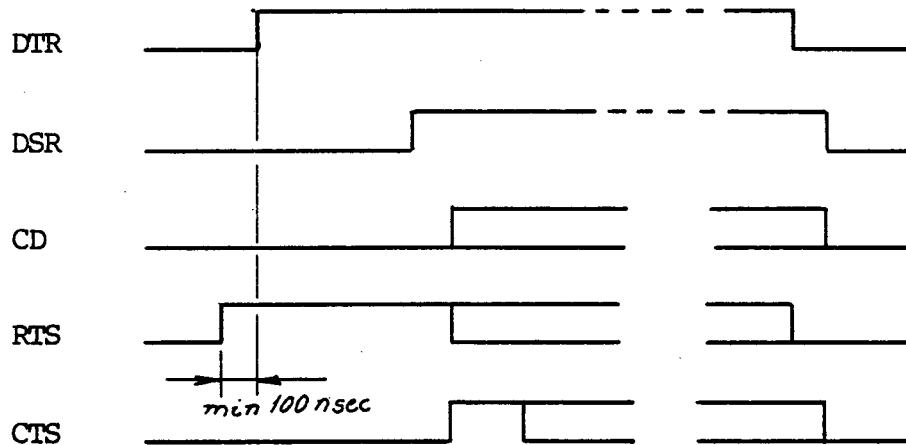Selection at Port A:

Selection of Port B:

Figure 2.

The connection will be maintained by the LIS701 as long as DTR is high.

The DSR indicates that selection is performed. In the cases where the microcomputer is not sensitive to DSR, the alternative criterion may be chosen:

selection of Port A is done, when CD goes high.
selection of Port B is done, when CTS goes high.

The signals out of Port A and B are in the off state (TXD circuit 103 is 1), when no connection is established.

When the A-scanner detects a request for connection, the A port will set DTR (circuit 108) on, and establish connection between all other circuits, so RTS will (because of the terminal connected to the input port) not go on until the common resource on port A responds with CD on.

If a second LIS701 is cascaded to port A, this will have its A-scanner activated as well.

When the B-scanner detects a request for connection, the B port will open connection between all circuits but DTR and after a delay of app. 10 micro second turn DTR on. This delay assures, that RTS on port B is on before DTR goes on, ensuring that a cascaded second LIS701 on port B also selects its port B.

Cascading is possible to any level, but because the same port selection (A or B) ripples through all levels cascading only increases the number of inputs, not the number of outputs.

2.3   Deselection   2.3

Deselection is done when DTR is dropped. The deselected scanner sets all outgoing control signals off and the outgoing data-signal to 1, and resumes scanning.

Reselection must not be requested (DTR must not be raised) on the same input, until the deselection is complete.

The deselection is compleete when DSR, CD and CTS are all off, or max. 1 millisecond after the fall of DTR.

3. CABLE CONNECTIONS 3.

The LIS701 is regarded as being put between a RC700 and a re-
source, which is to be shared among several RC700's.

The cable which before connected RC700 with the resource, is
disconnected from RC700 and connected to one of the outputs A or
B on LIS701, and RC701 is then connected to one of the inputs 1
to 8 of LIS701 via a MF003 cable (Long, Median or Short).
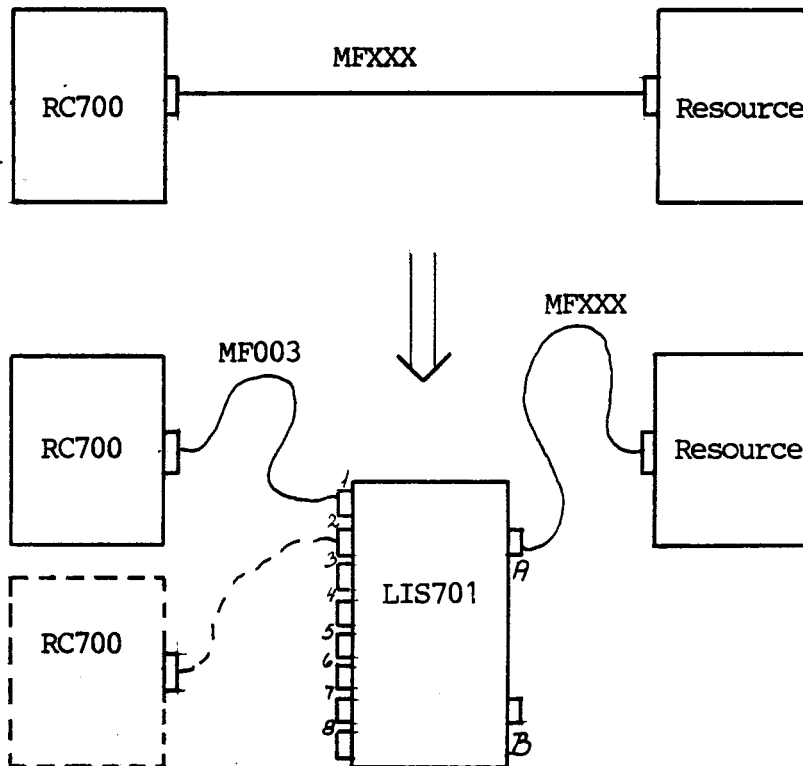

Figure 3.

The numbering of the line in plugs is arranged in a way, that
allows straight forward insertion of cables in ascending order.

4.   <u>PHYSICAL REQUIREMENTS</u>   4.

        Power requirement: 220V $\pm$ 10% 50 Hz 15 W

        Ambient temperature: 16-32°C (60-90°F).

        Relative humidity: 20-80% (no condensation).

        Physical size: 470 mm x 300 mm x 70 mm

RETURN LETTER

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Manual

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