CHAPTER 7   Q10OF - OPTICAL FIBER INTERFACE -

7.1. General

The Q10OF is the interface card which is to be mounted
on the option slot of QX-10 and used for connection with
external devices via the optical fiber cable.
As a communication system, BYSYNC and SDLC are selectable.
The transmission speed is 500 kbps (fixed). The coding
system employs Manchester coding.

Manchester coding system


```
1    1    0    0    1    0    1    0
```
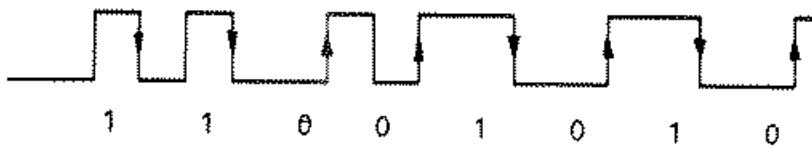
DMA is used for data transfer between µPD7201 and
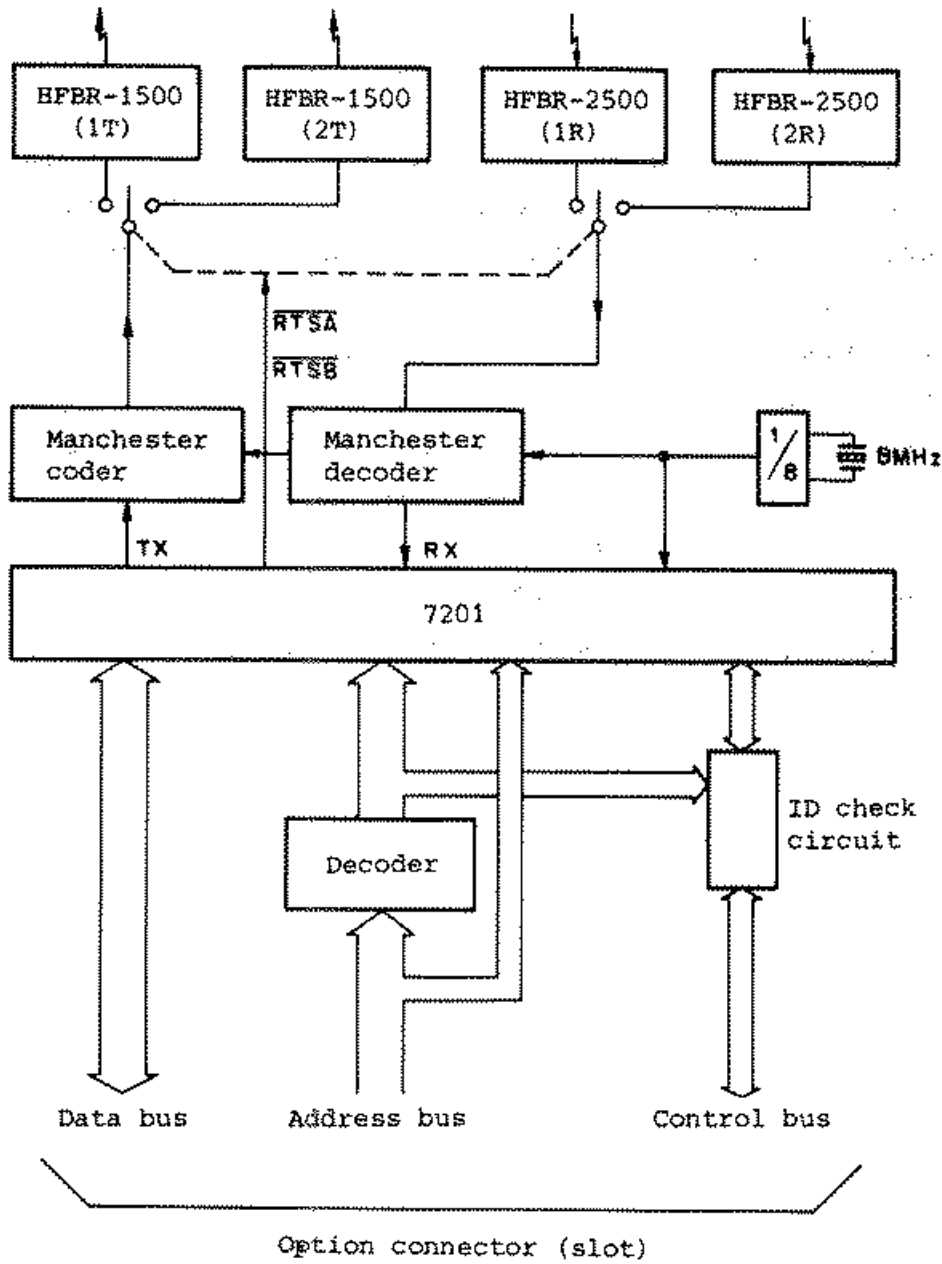QX-10 main unit.

7.2. Hardware

7.2.1 General

The Q10OF is the interface circuit which uses µPD7201 as a serial controller and optical fiber as a transmission media.

µPD7201 has two serial channels (A and B). From these two channels, only the A-channel is used. Two fiber channels are connected for the A-channel, which are selected by the software.

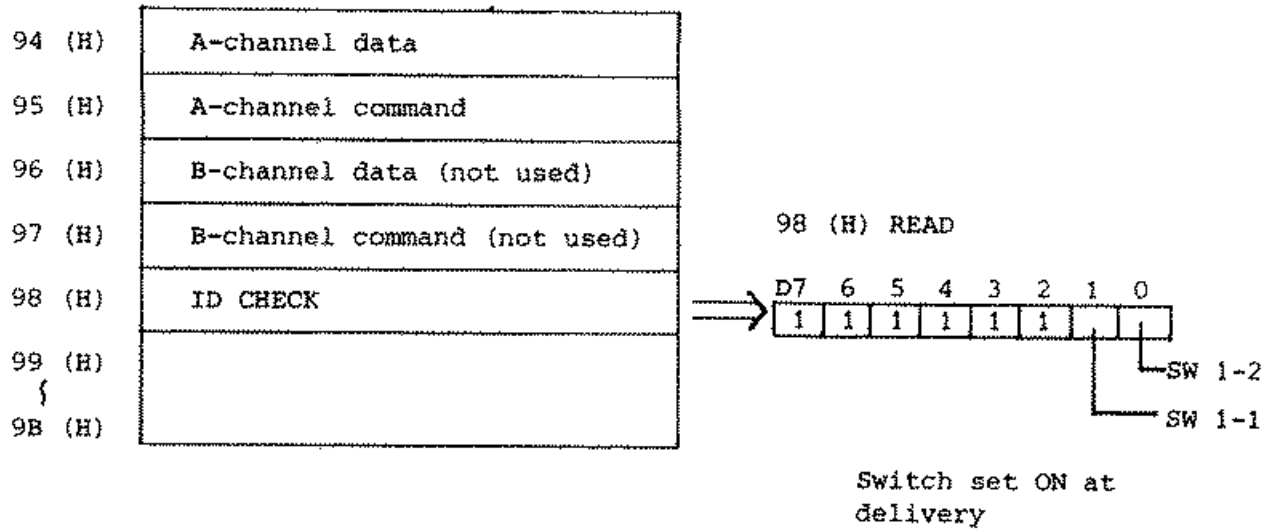The transfer rate is fixed to 500 kbps. Manchester coding system is used for signal coding.

DMA is used for data transfer between µPD7201 and QX-10. So, the Q10OF option card cannot be inserted into the option slot #5. The circuit (ID CHECK circuit) is also provided to inform the CPU whether or not the Q10OF option card is mounted on the option slot.

7.2.2 Block diagram

| HFBR~1500
(1T) | HFBR~1500
(2T) | HFBR~2500
(1R) | HFBR~2500
(2R) |

RTSA

RTSB

Manchester coder

Manchester decoder

1/8   8MHz

TX   RX

7201

Decoder

ID check circuit

Data bus   Address bus   Control bus

Option connector (slot)

Note #1 ~ 4

7.2.3 I/O map

94 (H)	A-channel data
95 (H)	A-channel command
96 (H)	B-channel data (not used)
97 (H)	B-channel command (not used)
98 (H)	ID CHECK
99 (H) ⎰ 9B (H)	

98 (H) READ

D7	6	5	4	3	2	1	0
1	1	1	1	1	1		

— SW 1-2
— SW 1-1

Switch set ON at
delivery

7.2.4 Interface with QX-10

Interrupt for ID CHECK: INT (L)

Interrupt for 7201   :   INT (H) 1

RX: DRQ (F) ←→ DMA: DACK (F)

TX: DRQ (S) ←→ DMA: DACK (S)

7.2.5 Optical fiber transmitter/receiver and cable

Transmitter	:	HP HFBR-1500 (x 2)
Receiver	:	HP HFBR-2500 (x 2)
Optical fiber cable set:		HP HFBR-3504 (x 2: Standard accessory)