



X.21

General

The X.21 interface was recommended by the CCITT in 1976. It is defined as a digital signalling interface between customers (DTE) equipment and carrier's equipment (DCE). It is primarily used for telecom equipment.

All signals are balanced. Meaning there is always a pair (+/-) for each signal, as used in RS422 for example. Electrically the X.21 signals are the same as used for RS422.

Pinning according to ISO 4903.

PIN	Signal	DTE	DCE
1	Shield		
2	Transmit (A)	Out	In
3	Control (A)	Out	In
4	Receive (A)	In	Out
5	Indication (A)	In	Out
6	Signal Timing (A)	In	Out
7	Unassigned		
8	Ground		
9	Transmit (B)	Out	In
10	Control (B)	Out	In
11	Receive (B)	In	Out
12	Indication (B)	In	Out
13	Signal Timing (B)	In	Out
14	Unassigned		
15	Unassigned		

Note:- Pins 7 & 14 can be assigned to Byte Timing. These signals are used when the DTE is supplying the clocking.

Functional Description.

As can be seen from the pinning specifications, the Signal Element Timing (clock) is (usually) provided by the DCE. This means that your provider is responsible for the correct clocking and that X.21 is a synchronous interface. The Control and Indication lines do hardware handshaking flow control. The DTE uses the Control line and the Indicate line is used by the DCE.

Cross Cable Pinning.

X.21 Cross Cable.														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	4	5	2	3	7	6	8	11	12	9	10	14	13	

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