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6.1 Electrical characteristics overview

6.2 ADP compliance points

An ADP compliance point is a defined point in the ADP physical interconnection. At an ADP compliance point a compliant device shall meet the ADP interoperability specifications. ADP compliance points always occur at separable connectors. Table n lists the ADP compliance points.

Table n. ADP Compliance points

Compliance point	Type	Description
T_t	intra-enclosure	Target port connector; transmit serial port
T_r	intra-enclosure	Target port connector; receive serial port
C_t	inter-enclosure	External cabinet connector; transmit serial port
C_r	inter-enclosure	External cabinet connector; receive serial port

6.3 ADP reference points

An ADP reference point is a defined point in the ADP physical interconnection. Every ADP compliance point is an ADP reference point. Table n lists the ADP reference points in addition to the ADP compliance points listed in Table n.

Table n. Additional ADP reference points

Reference point	Description
I_t	Initiator port connector; transmit serial port
I_r	Initiator port connector; receive serial port

6.4 Signal states

6.4.1 Differential signals

6.4.2 Persistent active signals

6.4.3 Single ended signals

Single ended signals always exist in one of two states: true (i.e., asserted) or false (i.e., negated). The device that asserts a signal shall actively drive the signal to the true state. A device that negates a signal may either actively drive the signal to the false state or refrain from driving the signal to either state. A non-driven signal goes to the false state because the bias of the terminator pulls the signal false.

NOTE n - Actively negated signals have the advantage of a higher noise margin over signals negated via terminator bias.

6.5 Sense connection

A Sense connection is a complete uni-directional signal path from the output reference point of one ADI device to the input reference point of a second ADI device. A sense connection shall use persistent active signalling.

6.6 Signal connection

A Signal connection is a complete uni-directional signal path from the output reference point of one ADI device to the input reference point of a second ADI device. A signal connection shall use single ended signalling.

6.7 Transmit-receive connection

A Transmit-receive (Tx-Rx) connection is a complete simplex signal path from the output reference point of one ADI device to the input reference point of a second ADI device. A Tx-Rx connection shall use differential signaling.

This section specifies characteristics of the electrical signal and the signaling media at the compliance points T_t, T_r, C_t, and C_r in a Tx-Rx connection.

All Tx-Rx connections shall operate with a Bit Error Rate (BER) < 10^{-12}. The parameters specified in this section support meeting the BER requirement under all conditions including the minimum input and output amplitude levels.

These specifications are based on ensuring interoperability across multiple vendors supplying the technologies (transceivers and cable plants) under the tolerance limits specified in the document. Tx-Rx connections operating at the maximum specified distance may require some form of equalization (e.g., transmitter pre-emphasis, receiver adaptive equalization, or passive cable equalization) to enable the connection to meet the signal requirements. A specific installation may obtain a longer distance by engineering a Tx-Rx connection based on knowledge of the technology characteristics and the conditions of installation and operation (e.g., a closed engineering environment); however, such distance extensions are outside the scope of this standard.

Table n defines the general interface characteristics.

Table n. Tx-Rx interface characteristics

Characteristic Units	**2,4 kbps**	**4,8 kbps**	**9,6 kbps**	**19,2 kbps**	**38,4 kbps**	**57,6 kbps**	**76,8 kbps**	**115,2 kbps**	**153,6 kbps**
Data rate (bps)	2400	4800	9600	19200	38400	57600	76800	115200	153600

Characteristic Units	2,4 kbps	4,8 kbps	9,6 kbps	19,2 kbps	38,4 kbps	57,6 kbps	76,8 kbps	115,2 kbps	153,6 kbps
Nominal bit rate (baud)	2400	4800	9600	19200	38400	57600	76800	115200	153600
Unit interval	416667 (ns)	208333 (ns)	104167 (ns)	52083 (ns)	26041667 (ps)	17361111 (ps)	13020833 (ps)	8680556 (ps)	6510417 (ps)
Data rate tolerance at T_r, C_r (ppm)	±100	±100	±100	±100	±100	±100	±100	±100	±100
Data rate tolerance at T_t, C_t (ppm)	±100	±100	±100	±100	±100	±100	±100	±100	±100
Media Impedance[a] (ohm)	100	100	100	100	100	100	100	100	100

Notes: a The media impedances are the differential, or odd mode, impedances.

6.8 Eye Masks

6.9 Transmitted signal characteristics

6.10 Termination

6.11 Bus timing values

6.12 Timing description

6.13 Measurement points

6.14 Timing parameters

6.15 Setup and hold timings

7 Bus composition

7.1 Bus composition overview

7.2 Connection definition

Table n defines the connections that make up the ADP bus.

Table n – ADP bus connections

Connection name	Type	Connection definition
$Attention_i$	O	$Attention_i$ is a signal connection. A target port may use this connection to signal an attention request to the initiator port.

Connection name	Type	Connection definition
$Reset_t$	O	$Reset_t$ is a signal connection. An initiator port may use this connection to signal a reset request to the target port.
$Sense_a$	O	$Sense_a$ is an auxiliary sense connection. This standard does not define the use of this connection.
$Sense_i$	O	$Sense_i$ is a sense connection. A target port uses this connection to sense the presence or absence of an initiator port on the ADP bus. When present, the initiator port will source a persistent active signal on this connection.
$Sense_t$	O	$Sense_t$ is a sense connection. An initiator port uses this connection to sense the presence or absence of a target port on the ADP bus. When present, the target port will source a persistent active signal on this connection.
Tx_i-Rx_t	M	Tx_i-Rx_t is a Tx-Rx connection. An initiator ports uses this connection to send serialized data. Target ports receive serialized data on this connection.
Tx_t-Rx_i	M	Tx_t-Rx_i is a Tx-Rx connection. Target ports use this connection to send serialized data. Initiator ports receive serialized data on this connection.

7.3 Connection states