

To: T10 Technical Committee  
 From: Dal Allan (endlcom@acm.org)  
 Date: April 8, 2005  
 Subject: SAS 1-1 Rev 9 Compact Connector Tables

The compact connector pinouts described Tables 28 and 29 in SAS 1-1 Rev 9 contain transcription errors from 05-084r2 Tables 25CW and 26CW.

Figures 76 and 77 are correct.

Implementors should ignore the tables and use only the figures.

It is the practice of T10 to include no redundant information in standards, and as the signal pin numbering in Tables 26-29 is redundant, it should be removed.

In fact, the entire content of Section 5.2.3.4 contains significant redundancy which should either be removed or reduced, as proposed below.

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**5.2.3.4 SAS internal wide connectors**

**5.2.3.4.1 SAS internal wide connectors overview**

SAS internal wide cables shall use either the SAS internal wide cable receptacle connector (see 5.2.3.4.2) or the SAS internal compact wide cable plug connector (see 5.2.3.4.5).

SAS devices and expander devices with external ports shall use either the SAS internal wide plug connector (see 5.2.3.4.3) or the SAS internal compact wide receptacle connector (see 5.2.3.4.6).

The internal wide connectors are capable of supporting up to four physical links:

- Tx0/Rx0 shall be connected for a 1X physical link
- Tx0/Rx0 and Tx1/Rx1 shall be connected for a 2X physical link
- Tx0/Rx0, Tx1/Rx1 and Tx2/Rx2 shall be connected for a 3X physical link
- Tx0/Rx0, Tx1/Rx1, Tx2/Rx2 and Tx3/Rx3 shall be connected for a 4X physical link

Alternative: The internal wide connectors are capable of supporting up to four physical links, as illustrated in Table 26Z.

**Table 26Z -- Controller SAS internal pin assignments and physical link usage**

Signal	Signals to use based on number of physical links supported by the cable			
	One	Two	Three	Four
Tx0+	Y	Y	Y	Y
Rx0+	Y	Y	Y	Y
Tx0-	Y	Y	Y	Y
Rx0-	Y	Y	Y	Y
Tx1+	N/C	Y	Y	Y
Rx1+	N/C	Y	Y	Y
Tx1-	N/C	Y	Y	Y
Rx1-	N/C	Y	Y	Y
TX2+	N/C	N/C	Y	Y
RX2+	N/C	N/C	Y	Y
TX2-	N/C	N/C	Y	Y
RX2-	N/C	N/C	Y	Y
TX3+	N/C	N/C	N/C	Y
RX3+	N/C	N/C	N/C	Y
TX3-	N/C	N/C	N/C	Y
RX3-	N/C	N/C	N/C	Y

Key: Y = connected N/C = not connected

Internal wide cables should be labeled to indicate how many physical links are included (e.g., 1X, 2X, 3X, and 4X on each connector's housing).

The use of the sideband signals by a backplane is vendor-specific. One implementation of the sideband signals by a backplane is an SGPIO target interface (see SFF-8485). Other implementations shall be compatible with the signal levels defined in SFF-8485.

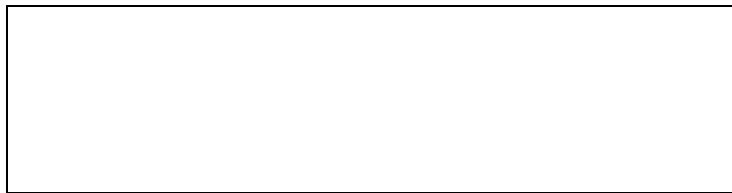
#### 5.2.3.4.2 SAS internal wide cable receptacle connector

The SAS internal wide cable receptacle connector is defined in SFF-8484.

The SAS internal wide cable receptacle connector attaches to a SAS internal wide plug connector, providing contact for up to four physical links and six sideband signals.

~~Table 26 and table 27 (see 5.2.3.4.4) define the pin assignments.~~

Figure 68 shows the SAS internal wide cable receptacle connector.



**Figure 68 - SAS internal wide cable receptacle connector**

#### 5.2.3.4.3 SAS internal wide plug connector

The SAS internal wide plug connector is defined in SFF-8484.

The SAS internal wide plug connector attaches to a SAS internal wide cable receptacle connector, providing contact for up to four physical links and six sideband signals.

~~Table 26 and table 27 (see 5.2.3.4.4) define the pin assignments.~~

Figure 69 shows the SAS internal wide plug connector.



**Figure 69 - SAS internal wide plug connector**

#### 5.2.3.4.4 SAS internal wide connector pin assignments

Figure 74 and figure 75 define the signal assignments for pins in SAS internal wide cable receptacle connectors (see 5.2.3.4.2) and SAS internal wide plug connectors (see 5.2.3.4.3).

~~Table 26 defines the signal assignments for pins in SAS internal wide cable receptacle connectors (see 5.2.3.4.2) and SAS internal wide plug connectors (see 5.2.3.4.3) for controller applications using one, two, three, or four of the physical links. SAS internal wide cables should be labeled to indicate how many physical links are included (e.g., 1X, 2X, 3X, and 4X on each connector's housing).~~

#### **Table 26 \_ Controller SAS internal wide connector pin assignments and physical link usage**



~~The use of the sideband signals by a controller is vendor specific. One implementation of the sideband signals by a controller is an SGPIO initiator interface (see SFF-8485). Other implementations shall be compatible with the signal levels defined in SFF-8485.~~

~~Table 27 defines how the signal assignments for pins in SAS internal wide plug connectors (see 5.2.3.4.2) and SAS internal wide cable receptacle connectors (see 5.2.3.4.2) for backplane applications using one, two, three, or four of the physical links. SAS internal wide cables should be labeled to indicate how many physical links are included (e.g., 1X, 2X, 3X, and 4X on each connector's housing).~~

~~**Table 27 – Backplane SAS internal wide connector pin assignments and physical link usage**~~



~~The use of the sideband signals by a backplane is vendor specific. One implementation of the sideband signals by a backplane is an SGPIO target interface (see SFF-8485). Other implementations shall be compatible with the signal levels defined in SFF-8485.~~

**5.2.3.4.5 SAS internal compact wide cable plug connector**

The SAS internal compact wide cable plug connector assembly is defined in SFF-8087 as the fixed (receptacle) right angle connector. SFF-8086 defines the circuit board, which is common to both internal and external connectors.

The SAS internal compact wide cable plug connector attaches to a SAS internal compact wide receptacle connector, providing contact for up to four physical links and eight sideband signals.

~~Table 28 and table 29 (see 5.2.3.4.7) define the pin assignments.~~

Figure 70 shows the SAS internal compact wide cable plug connector.



**Figure 70 - SAS internal compact wide cable plug connector**

**5.2.3.4.6 SAS internal compact wide receptacle connector**

The SAS internal compact wide receptacle connector is defined in SFF-8087 as the fixed (receptacle) right angle connector. SFF-8086 defines the receptacle mating interface, which is common to both internal and external connectors.

The SAS internal compact wide cable plug connector attaches to a SAS internal compact wide receptacle connector, providing contact for up to four physical links and eight sideband signals.

~~Table 28 and table 29 (see 5.2.3.4.7) define the pin assignments.~~

Figure 71 shows the SAS internal compact wide receptacle connector.



**Figure 71 - SAS internal compact wide receptacle connector**

**5.2.3.4.7 SAS internal compact wide connector pin assignments**

Figure 76 and figure 77 define the signal assignments for pins in SAS internal compact wide cable receptacle connectors (see 5.2.3.4.5) and SAS internal compact wide plug connectors (see 5.2.3.4.6) .

Table 28 defines the signal assignments for pins in SAS internal compact wide plug connectors (see 5.2.3.4.5) and SAS internal compact wide cable receptacle connectors (see 5.2.3.4.6) for controller applications using one, two, three, or four of the physical links. SAS internal wide cables should be labeled to indicate how many physical links are included (e.g., 1X, 2X, 3X, and 4X on each connector's housing).

~~Table 28 – Controller SAS internal compact wide connector pin assignments and physical link usage~~

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~~The use of the sideband signals by a controller is vendor specific. One implementation of the sideband signals by a controller is an SGPIO initiator interface (see SFF-8485). Other implementations shall be compatible with the signal levels defined in SFF-8485.~~

~~Table 29 defines how the signal assignments for pins in SAS internal compact wide plug connectors (see 5.2.3.4.5) and SAS internal compact wide cable receptacle connectors (see 5.2.3.4.6) for backplane applications using one, two, three, or four of the physical links. Internal compact wide cables should be labeled to indicate how many physical links are included (e.g., 1X, 2X, 3X, and 4X on each connector's housing).~~

~~Table 29 – Backplane SAS internal compact wide connector pin assignments and physical link usage~~

A large rectangular box with a black border, completely empty, representing redacted content for Table 29.

~~The use of the sideband signals by a backplane is vendor specific. One implementation of the sideband signals by a backplane is an SGPIO target interface (see SFF-8485). Other implementations shall be compatible with the signal levels defined in SFF-8485.~~