Dual Bus Expander (DBX) LED Diagnostics
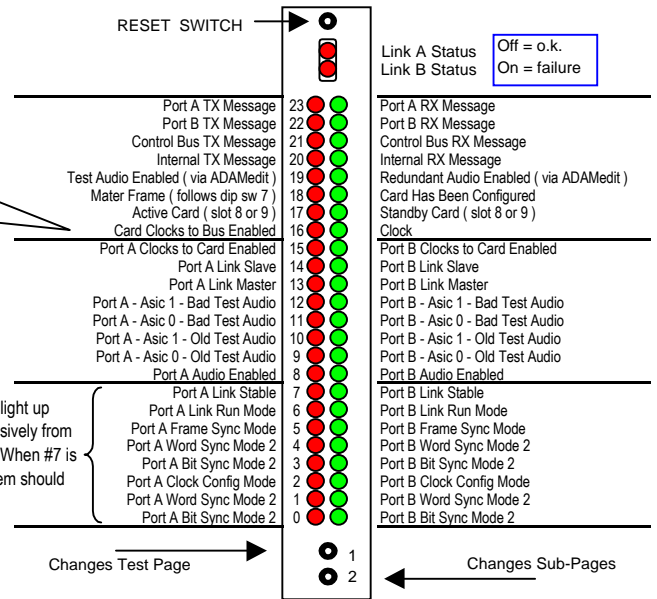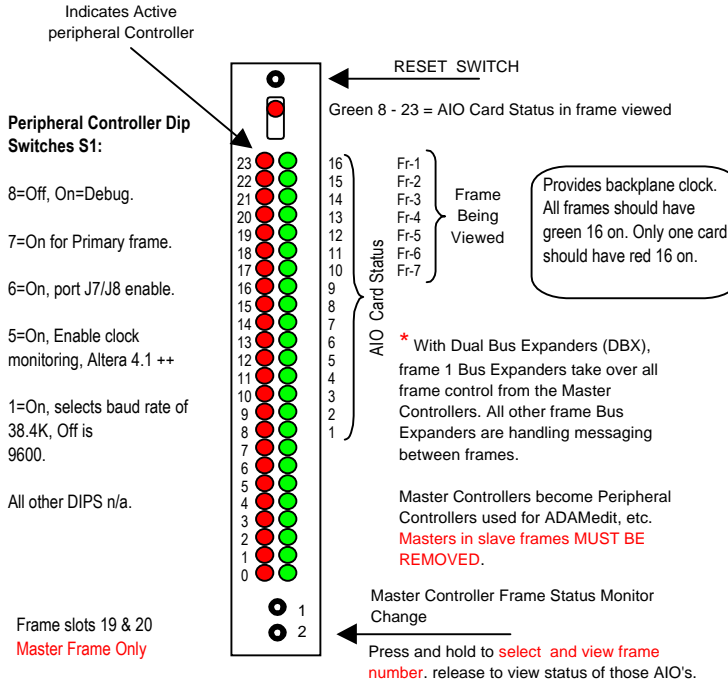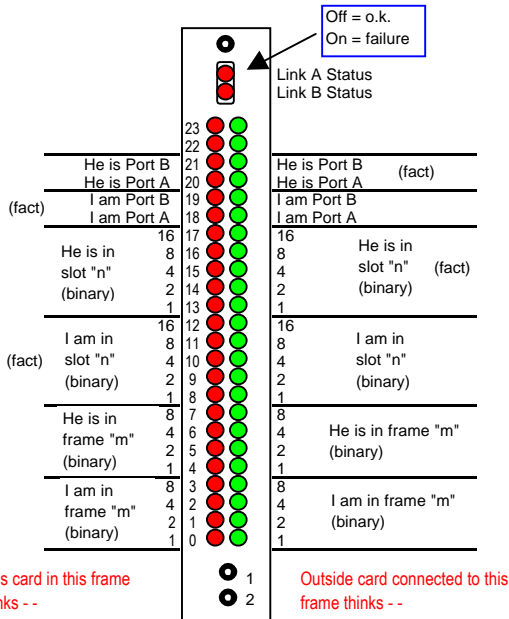
Page 1 (power up default) will always have LEDs 13 or14 on as well as one #17 from either card (active or standby) in slot 9
There should never be both 13 & 14 in either green or red.

Indicates Active peripheral Controller

RESET SWITCH

RESET SWITCH

Link A Status
Link B Status

Off = o.k.
On = failure

Green 8 - 23 = AIO Card Status in frame viewed

Peripheral Controller Dip Switches S1:

8=Off, On=Debug.

7=On for Primary frame.

6=On, port J7/J8 enable.

5=On, Enable clock monitoring, Altera 4.1 ++

1=On, selects baud rate of 38.4K, Off is 9600.

All other DIPS n/a.

Frame slots 19 & 20
Master Frame Only

AIO Card Status

23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 — 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 — Fr-1 Fr-2 Fr-3 Fr-4 Fr-5 Fr-6 Fr-7 — Frame Being Viewed

Provides backplane clock. All frames should have green 16 on. Only one card should have red 16 on.

* With Dual Bus Expanders (DBX), frame 1 Bus Expanders take over all frame control from the Master Controllers. All other frame Bus Expanders are handling messaging between frames.

Master Controllers become Peripheral Controllers used for ADAMedit, etc. **Masters in slave frames MUST BE REMOVED.**

7 6 5 4 3 2 1 0

1
2

Master Controller Frame Status Monitor Change
Press and hold to select and view frame number. release to view status of those AIO's.

Peripheral Controller Status Display
ver 10.x Master Controller Firmware was old Master Controller Card

Port A TX Message	23 — Port A RX Message
Port B TX Message	22 — Port B RX Message
Control Bus TX Message	21 — Control Bus RX Message
Internal TX Message	20 — Internal RX Message
Test Audio Enabled (via ADAMedit)	19 — Redundant Audio Enabled (via ADAMedit)
Mater Frame (follows dip sw 7)	18 — Card Has Been Configured
Active Card (slot 8 or 9)	17 — Standby Card (slot 8 or 9)
Card Clocks to Bus Enabled	16 — Clock
Port A Clocks to Card Enabled	15 — Port B Clocks to Card Enabled
Port A Link Slave	14 — Port B Link Slave
Port A Link Master	13 — Port B Link Master
Port A - Asic 1 - Bad Test Audio	12 — Port B - Asic 1 - Bad Test Audio
Port A - Asic 0 - Bad Test Audio	11 — Port B - Asic 0 - Bad Test Audio
Port A - Asic 1 - Old Test Audio	10 — Port B - Asic 1 - Old Test Audio
Port A - Asic 0 - Old Test Audio	9 — Port B - Asic 0 - Old Test Audio
Port A Audio Enabled	8 — Port B Audio Enabled
Port A Link Stable	7 — Port B Link Stable
Port A Link Run Mode	6 — Port B Link Run Mode
Port A Frame Sync Mode	5 — Port B Frame Sync Mode
Port A Word Sync Mode 2	4 — Port B Word Sync Mode 2
Port A Bit Sync Mode 2	3 — Port B Bit Sync Mode 2
Port A Clock Config Mode	2 — Port B Clock Config Mode
Port A Word Sync Mode 2	1 — Port B Word Sync Mode 2
Port A Bit Sync Mode 2	0 — Port B Bit Sync Mode 2

Should light up progressively from 0 to 7. When #7 is lit, system should be o.k.

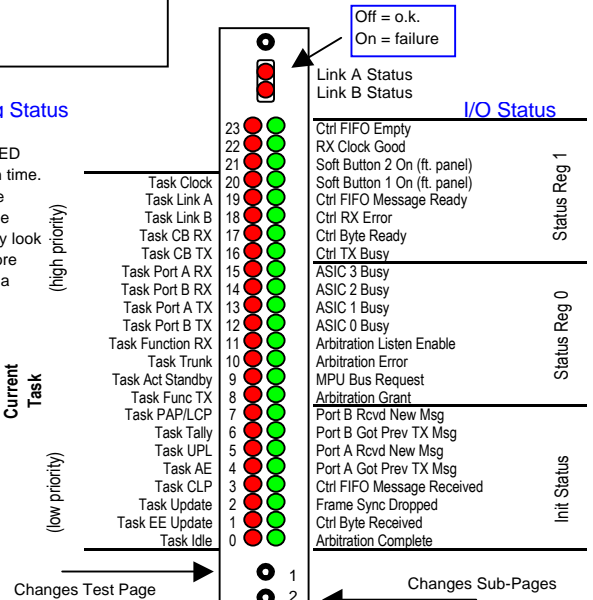Changes Test Page   1   2   Changes Sub-Pages

DBX Port Status Display (page 1)

DBX DIP Switch Settings (each card)
Set DIP # 7 on all DBXs as respective Master or Slave Frames.
7 ON = Master Frame, OFF = Slave Frame
8 ON = Debug Mode
1-6 = N/A

Off = o.k.
On = failure

Link A Status
Link B Status

DBX Frame Wiring Problem Diagnostic Display

	23		
	22		
He is Port B	21	He is Port B	
He is Port A	20	He is Port A	(fact)
I am Port B	19	I am Port A	
I am Port A	18	I am Port A	
(fact) 16 8 4 2 1	17 16 15 14 13	He is in slot "n" (binary) 16 8 4 2 1	(fact)
I am in slot "n" (binary) 16 8 4 2 1	12 11 10 9 8	I am in slot "n" (binary) 16 8 4 2 1	(fact)
He is in frame "m" (binary) 8 4 2 1	7 6 5 4	He is in frame "m" (binary) 8 4 2 1	
I am in frame "m" (binary) 8 4 2 1	3 2 1 0	I am in frame "m" (binary) 8 4 2 1	

This card in this frame thinks - -

Outside card connected to this frame thinks - -

1
2

"I" refers to the card that is showing this display and "He" refers to the card connected to the port indicated by red LED 18 or 19.

Note: If there is a wiring problem, the DBX cards should indicate it, as they know which cards they should be connected to. If a problem is detected, the DBX card will halt and alternately flash the fail LEDs. The chart above will show where the miswire has occurred. **However**, the DBX cards can't detect TX to TX or RX to RX miswiring.

Press and hold the reset button to note the error LED's otherwise they will clear.

Tasking Status

Only one red LED on at any given time. However, these displays change rapidly and may look like there is more than one on at a time.
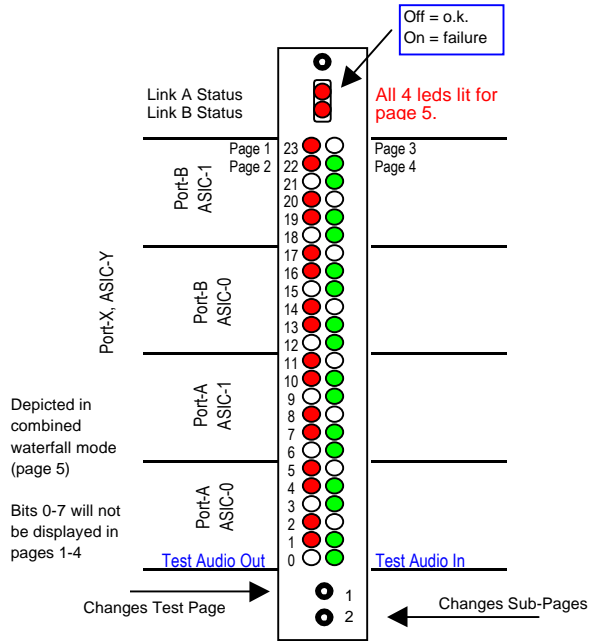
Current Task

(high priority)

(low priority)

	23	Ctrl FIFO Empty
	22	RX Clock Good
	21	Soft Button 2 On (ft. panel)
Task Clock	20	Soft Button 1 On (ft. panel)
Task Link A	19	Ctrl FIFO Message Ready
Task Link B	18	Ctrl RX Error
Task CB RX	17	Ctrl Byte Ready
Task CB TX	16	Ctrl TX Busy
Task Port A RX	15	ASIC 3 Busy
Task Port B RX	14	ASIC 2 Busy
Task Port A TX	13	ASIC 1 Busy
Task Port B TX	12	ASIC 0 Busy
Task Function RX	11	Arbitration Listen Enable
Task Trunk	10	Arbitration Error
Task Act Standby	9	MPU Bus Request
Task Func TX	8	Arbitration Grant
Task PAP/LCP	7	Port B Rcvd New Msg
Task Tally	6	Port B Got Prev TX Msg
Task UPL	5	Port A Rcvd New Msg
Task AE	4	Port A Got Prev TX Msg
Task CLP	3	Ctrl FIFO Message Received
Task Update	2	Frame Sync Dropped
Task EE Update	1	Ctrl Byte Received
Task Idle	0	Arbitration Complete

Status Reg 1 / Status Reg 0 / Init Status — I/O Status

Changes Test Page   1   2   Changes Sub-Pages

DBX Executive Display (page 2)

* No RED LED should be on continuously (without any other RED LEDs flashing). If it is, the DBX may have crashed and the lit RED LED will indicate which task was running when the system crashed.

Dual Bus Expander (DBX) LED Diagnostics

DBX Test Audio Display (page 3)

Off = o.k.
On = failure

Link A Status
Link B Status

All 4 leds lit for page 5.

Port-B ASIC-1 — Page 1 / Page 2 — Page 3 / Page 4
Port-B ASIC-0
Port-A ASIC-1
Port-A ASIC-0

Port-X, ASIC-Y

23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

Test Audio Out   Test Audio In

Depicted in combined waterfall mode (page 5)

Bits 0-7 will not be displayed in pages 1-4

Changes Test Page   1 2   Changes Sub-Pages

RED	Sub-Pages	GREEN
Port-A. ASIC 0 Audio Out	page 1	(1) Port A. ASIC 0 Audio In
Port-A. ASIC 1 Audio Out	page 2	(2) Port A. ASIC 1 Audio In
Port-B. ASIC 0 Audio Out	page 3	(3) Port B. ASIC 0 Audio In
Port-B. ASIC 1 Audio Out	page 4	(4) Port B. ASIC 1 Audio In
Combined Audio Out (folded)	page 5	(5) Combined Audio In (folded)

Note: In the combined display, the 24 bit audio samples of each ASIC are "folded" twice, (i.e. upper 12 bits or'd with lower 12 bits, then upper 6 bits of the 12 or'd with the lower 6 bits), and displayed as 6 bits per ASIC as indicated by the legend of the right side of the above chart.
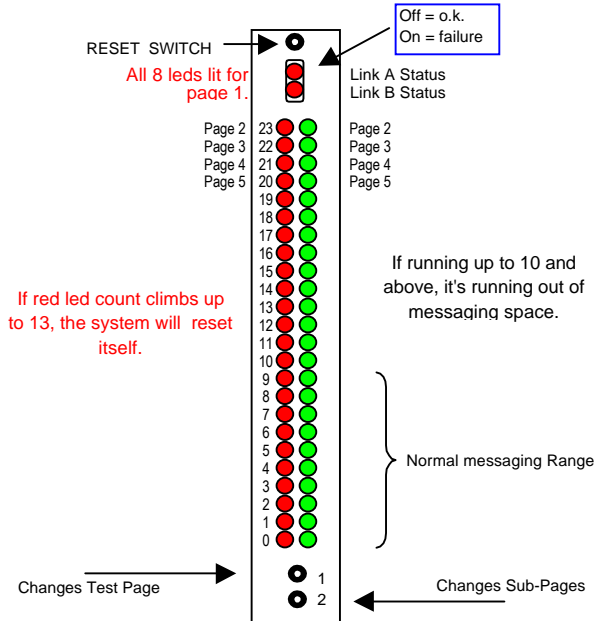
Use the bottom button to select sub-pages.
Sub-page number is displayed on bits 22-23 while bottom button is pressed and held in.

DBX Message Queue Display (page 4)

RESET SWITCH

Off = o.k.
On = failure

Link A Status
Link B Status

All 8 leds lit for page 1.

Page 2 / Page 3 / Page 4 / Page 5   Page 2 / Page 3 / Page 4 / Page 5

23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

If red led count climbs up to 13, the system will reset itself.

If running up to 10 and above, it's running out of messaging space.

Normal messaging Range

Changes Test Page   1 2   Changes Sub-Pages

RED	Sub-Pages	GREEN
Max Message Allocated	page 1	Messages Currently in Use (real time)
Queue to Port A	page 2	Queue to Port B
Queue to Local MC	page 3	Queue to Local AIO Cards
Queue to ADAMedit	page 4	Queue to Command Line Protocol
Queue to PAP/LCP	page 5	Queue to This Card

Use the bottom button to select sub-pages.
Sub-page number is displayed on bits 20-23 while bottom button is pressed and held in.

DBX Card Status Display (page 5)

RESET SWITCH

Off = o.k.
On = failure

Link A Status
Link B Status

Control Bus TX Target is only shown when frame being viewed is your frame.

Slave frames only display its own frame. Frame 1 can display any frame in the system.

Pages 1,3,5 very useful in determining link status. Links can be displayed as up on page 1 but if a control bus problem exists, that will be displayed on page 5.
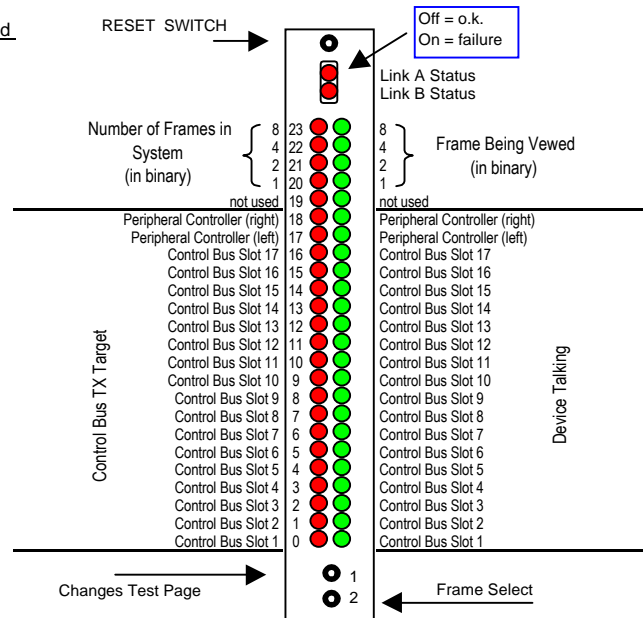
Number of Frames in System (in binary): 8 4 2 1 — 23 22 21 20   8 4 2 1 Frame Being Vewed (in binary)

not used 19 not used

Control Bus TX Target		Device Talking
Peripheral Controller (right)	18	Peripheral Controller (right)
Peripheral Controller (left)	17	Peripheral Controller (left)
Control Bus Slot 17	16	Control Bus Slot 17
Control Bus Slot 16	15	Control Bus Slot 16
Control Bus Slot 15	14	Control Bus Slot 15
Control Bus Slot 14	13	Control Bus Slot 14
Control Bus Slot 13	12	Control Bus Slot 13
Control Bus Slot 12	11	Control Bus Slot 12
Control Bus Slot 11	10	Control Bus Slot 11
Control Bus Slot 10	9	Control Bus Slot 10
Control Bus Slot 9	8	Control Bus Slot 9
Control Bus Slot 8	7	Control Bus Slot 8
Control Bus Slot 7	6	Control Bus Slot 7
Control Bus Slot 6	5	Control Bus Slot 6
Control Bus Slot 5	4	Control Bus Slot 5
Control Bus Slot 4	3	Control Bus Slot 4
Control Bus Slot 3	2	Control Bus Slot 3
Control Bus Slot 2	1	Control Bus Slot 2
Control Bus Slot 1	0	Control Bus Slot 1

Changes Test Page   1 2   Frame Select