

ULTIMATION Service Manual

Section 5

Connector Information

5. Connector Information

S13E-A and -B: VCA Fader Bus Links

-A Pin	-B Pin		-A Pin	-B Pin	
1	10	Group DC Bus 1	6	5	Group DC Bus 7
2	9	Group DC Bus 5	7	4	Group DC Bus 4
3	8	Group DC Bus 2	8	3	Group DC Bus 8
4	7	Group DC Bus 6	9	2	Group DC Bus 9 †
5	6	Group DC Bus 3	10	1	+5V reference ‡

†: Not used with Moving Faders ‡: Used with Moving Faders only

S14E: Moving Fader Bus Cards to Computer Rack

1	Not Used	26	Not Used
2	Enable +	27	Not Used
3	Enable -	28	Not Used
4	CA 0V	29	Not Used
5	CA 0V	30	Not Used
6	CA 0V	31	Fader 1 Computer Return
7	Channel Address Bit 2	32	Fader 2 Computer Return
8	CA 0V	33	Fader 3 Computer Return
9	Channel Address Bit 1	34	Fader 4 Computer Return
10	CA 0V	35	Fader 5 Computer Return
11	Channel Address Bit 0	36	Fader 6 Computer Return
12	CA 0V	37	Fader 7 Computer Return
13	Write	38	Fader 8 Computer Return
14	CA 0V	39	Not Used
15	Read	40	CA Return -
16	CA 0V	41	Fader 1 Computer Send
17	DB 7 (<i>see table below</i>)	42	Fader 2 Computer Send
18	DB 6 (<i>see table below</i>)	43	Fader 3 Computer Send
19	DB 5 (<i>see table below</i>)	44	Fader 4 Computer Send
20	DB 4 (<i>see table below</i>)	45	Fader 5 Computer Send
21	DB 3 (<i>see table below</i>)	46	Fader 6 Computer Send
22	DB 2 (<i>see table below</i>)	47	Fader 7 Computer Send
23	DB 1 (<i>see table below</i>)	48	Fader 8 Computer Send
24	DB 0 (<i>see table below</i>)	49	Not Used
25	VCA Bus 0 ‡	50	CA 0V

‡: Group Bus Card only

Data Bit 0-7 (DB0-7) Read and Write Functions

Data Bit	Read	Write	Data Bit	Read	Write
DB1	Group Bit 0	TR Select	DB5	status Switch	Group Isolate
DB2	Group Bit 1	trim LED	DB6	cut Switch	Cut from CA
DB3	Group Bit 2	alt LED	DB7	Servo Fail	Motor Off
DB4	Group Bit 3	abs LED	DB8	Touch Sense	VCA Select

S15E: VCA Buses to SL651: Master Fader LED and Switch

1	VCA Bus 1 †	11	VCA Bus 0 (Groups) †
2	VCA Bus 5 †	12	NC
3	VCA Bus 2 †	13	NC
4	VCA Bus 6 †	14	NC
5	VCA Bus 3 †	15	NC
6	VCA Bus 7 †	16	NC
7	VCA Bus 4 †	17	NC
8	VCA Bus 8 †	18	NC
9	VCA Bus 0 (Channels)	19	NC
10	NC	20	NC

†: Not used for Moving Faders

S16E: 8 x Computer Sends and Returns to Lower Bus Card and SL651

1	Fader 1 Cut/DC Return	11	Channel 1 Cut Switch
2	Fader 2 Cut/DC Return	12	Channel 2 Cut Switch
3	Fader 3 Cut/DC Return	13	Channel 3 Cut Switch
4	Fader 4 Cut/DC Return	14	Channel 4 Cut Switch
5	Fader 5 Cut/DC Return	15	Channel 5 Cut Switch
6	Fader 6 Cut/DC Return	16	Channel 6 Cut Switch
7	Fader 7 Cut/DC Return	17	Channel 7 Cut Switch
8	Fader 8 Cut/DC Return	18	Channel 8 Cut Switch
9	Master Fader Return (82E358)	19	Master Fader Send (82E358)
10	0V	20	0V

S19E: 8 x VCA Wipers and Thumbwheels to Master Module

1	+5V	11	VCA Fader 4 Thumbwheel †
2	+5V	12	VCA Fader 4 Wiper ‡
3	0V	13	VCA Fader 5 Thumbwheel †
4	0V	14	VCA Fader 5 Wiper ‡
5	VCA Fader 1 Thumbwheel †	15	VCA Fader 6 Thumbwheel †
6	VCA Fader 1 Wiper ‡	16	VCA Fader 6 Wiper ‡
7	VCA Fader 2 Thumbwheel †	17	VCA Fader 7 Thumbwheel †
8	VCA Fader 2 Wiper ‡	18	VCA Fader 7 Wiper ‡
9	VCA Fader 3 Thumbwheel †	19	VCA Fader 8 Thumbwheel †
10	VCA Fader 3 Wiper ‡	20	VCA Fader 8 Wiper ‡

†: Not used for Moving Faders

‡: Used to terminate inputs to 82E20 Card only, for Moving Faders

S41E: 82E41 Analogue Input Card to SL668 PSU

1	Aux. Digital Input 0	11	Aux. Digital Input 10
2	Aux. Digital Input 1	12	Aux. Digital Input 11
3	Aux. Digital Input 2	13	Aux. Digital Input 12
4	Aux. Digital Input 3	14	Aux. Digital Input 13
5	Aux. Digital Input 4	15	Aux. Digital Input 14
6	Aux. Digital Input 5	16	Aux. Digital Input 15
7	Aux. Digital Input 6	17	'Computer Running' Strobe †
8	Aux. Digital Input 7	18	+5V
9	Aux. Digital Input 8	19	0V
10	Aux. Digital Input 9	20	0V

†: Rev 11 and later only

S144E: 82E359 Bus Card to 82E163 Card

1	Spare	11	Spare
2	+5V 'A' †	12	Thumbwheel Wiper 'B' †
3	0V 'A' †	13	Spare
4	Fader Wiper 'A'	14	+5V 'C' †
5	Spare	15	0V 'C' †
6	Thumbwheel Wiper 'A' †	16	Fader Wiper 'C'
7	Spare	17	Spare
8	+5V 'B' †	18	Thumbwheel Wiper 'C' †
9	0V 'B' †	19	Not Used
10	Fader Wiper 'B'	20	Not Used

Note: 'A', 'B', and 'C' refer to Group A, B, and C Faders

† Not used for Moving Faders

S160E: 82E355 Fader Bus Card to 82E354 Card

1	Fader Input -	6	0V Analogue
2	Fader Input +	7	0V Analogue
3	Fader Output -	8	5V Reference Output
4	Fader Output +	9	TR Select
5	VCA DC	10	VCA Select

82E356 Moving Fader CA Interface Card: Console Interface Connectors

Pin	PL1	PL2	PL3	PL4
1	NC	NC	NC	NC
2	Bay 8: Strobe +	Bay 6: Strobe +	Bay 4: Strobe +	Bay 2: Strobe +
3	Bay 8: Strobe -	Bay 6: Strobe -	Bay 4: Strobe -	Bay 2: Strobe -
4	0V Digital	0V Digital	0V Digital	0V Digital
5	0V Digital	0V Digital	0V Digital	0V Digital
6	0V Digital	0V Digital	0V Digital	0V Digital
7	Bay 8: Addr. Bit 2	Bay 6: Addr. Bit 2	Bay 4: Addr. Bit 2	Bay 2: Addr. Bit 2
8	0V Digital	0V Digital	0V Digital	0V Digital
9	Bay 8: Addr. Bit 1	Bay 6: Addr. Bit 1	Bay 4: Addr. Bit 1	Bay 2: Addr. Bit 1
10	0V Digital	0V Digital	0V Digital	0V Digital
11	Bay 8: Addr. Bit 0	Bay 6: Addr. Bit 0	Bay 4: Addr. Bit 0	Bay 2: Addr. Bit 0
12	0V Digital	0V Digital	0V Digital	0V Digital
13	Bay 8: WR	Bay 6: WR	Bay 4: WR	Bay 2: WR
14	0V Digital	0V Digital	0V Digital	0V Digital
15	Bay 8: RD	Bay 6: RD	Bay 4: RD	Bay 2: RD
16	0V Digital	0V Digital	0V Digital	0V Digital
17	Bay 8: Data Bit 7	Bay 6: Data Bit 7	Bay 4: Data Bit 7	Bay 2: Data Bit 7
18	Bay 8: Data Bit 6	Bay 6: Data Bit 6	Bay 4: Data Bit 6	Bay 2: Data Bit 6
19	Bay 8: Data Bit 5	Bay 6: Data Bit 5	Bay 4: Data Bit 5	Bay 2: Data Bit 5
20	Bay 8: Data Bit 4	Bay 6: Data Bit 4	Bay 4: Data Bit 4	Bay 2: Data Bit 4
21	Bay 8: Data Bit 3	Bay 6: Data Bit 3	Bay 4: Data Bit 3	Bay 2: Data Bit 3
22	Bay 8: Data Bit 2	Bay 6: Data Bit 2	Bay 4: Data Bit 2	Bay 2: Data Bit 2
23	Bay 8: Data Bit 1	Bay 6: Data Bit 1	Bay 4: Data Bit 1	Bay 2: Data Bit 1
24	Bay 8: Data Bit 0	Bay 6: Data Bit 0	Bay 4: Data Bit 0	Bay 2: Data Bit 0
25	Group Solo	Group Solo	Group Solo	Group Solo
26	Bay 7: Strobe +	Bay 5: Strobe +	Bay 3: Strobe +	Bay 1: Strobe +
27	Bay 7: Strobe -	Bay 5: Strobe -	Bay 3: Strobe -	Bay 1: Strobe -
28	0V Digital	0V Digital	0V Digital	0V Digital
29	0V Digital	0V Digital	0V Digital	0V Digital
30	0V Digital	0V Digital	0V Digital	0V Digital
31	Bay 7: Addr. Bit 2	Bay 5: Addr. Bit 2	Bay 3: Addr. Bit 2	Bay 1: Addr. Bit 2
32	0V Digital	0V Digital	0V Digital	0V Digital
33	Bay 7: Addr. Bit 1	Bay 5: Addr. Bit 1	Bay 3: Addr. Bit 1	Bay 1: Addr. Bit 1
34	0V Digital	0V Digital	0V Digital	0V Digital
35	Bay 7: Addr. Bit 0	Bay 5: Addr. Bit 0	Bay 3: Addr. Bit 0	Bay 1: Addr. Bit 0
36	0V Digital	0V Digital	0V Digital	0V Digital
37	Bay 7: WR	Bay 5: WR	Bay 3: WR	Bay 1: WR
38	0V Digital	0V Digital	0V Digital	0V Digital
39	Bay 7: RD	Bay 5: RD	Bay 3: RD	Bay 1: RD
40	0V Digital	0V Digital	0V Digital	0V Digital
41	Bay 7: Data Bit 7	Bay 5: Data Bit 7	Bay 3: Data Bit 7	Bay 1: Data Bit 7
42	Bay 7: Data Bit 6	Bay 5: Data Bit 6	Bay 3: Data Bit 6	Bay 1: Data Bit 6
43	Bay 7: Data Bit 5	Bay 5: Data Bit 5	Bay 3: Data Bit 5	Bay 1: Data Bit 5
44	Bay 7: Data Bit 4	Bay 5: Data Bit 4	Bay 3: Data Bit 4	Bay 1: Data Bit 4
45	Bay 7: Data Bit 3	Bay 5: Data Bit 3	Bay 3: Data Bit 3	Bay 1: Data Bit 3
46	Bay 7: Data Bit 2	Bay 5: Data Bit 2	Bay 3: Data Bit 2	Bay 1: Data Bit 2
47	Bay 7: Data Bit 1	Bay 5: Data Bit 1	Bay 3: Data Bit 1	Bay 1: Data Bit 1
48	Bay 7: Data Bit 0	Bay 5: Data Bit 0	Bay 3: Data Bit 0	Bay 1: Data Bit 0
49	0V Digital	0V Digital	0V Digital	0V Digital
50	Group Solo	Group Solo	Group Solo	Group Solo

DIN678: SL678G Bus Card Connector Cross-Reference

Function	DIN678	S13E -A	S13E -B	S14E	S16E	S160E	Power Audio	Moxes Motor
+12V Motor	1a							1, 2
+15V Analogue	2a						1	
5V Ref. Input	3a	10	1					
CA Return (1-8)	4a			31-38				
0V Digital	5a						5	
Read	6a			15				
Data Bit 0 †	7a			24				
Data Bit 3 †	8a			21				
Data Bit 6 †	9a			18				
VCA Link: Pin 1	10a							
Cut/DC Rtn (1-8)	11a				1-8			
Grp. DC Bus 3	12a	3	8					
Grp. DC Bus 6	13a	6	5					
5V Ref. Output	14a					8		
Fader Output +	15a					4		
Fader Input +	16a					2		
0V Motor	1b							3, 4
0V Analogue	2b				10, 20	6, 7	2, 3	
0V Digital	3b						5	
0V CA	4b			50				
0V Digital	5b						5	
Strobe	6b							
Data Bit 1 †	7b			23				
Data Bit 4 †	8b			20				
Data Bit 7 †	9b			17				
VCA Link: Pin 2	10b							
Grp. DC Bus 1	11b	1	10					
Grp. DC Bus 4	12b	4	7					
Grp. DC Bus 7	13b	7	4					
VCA Select	14b					10		
VCA DC	15b					5		
0V Analogue	16b				10, 20	6, 7	2, 3	
-12V Motor	1c							5, 6
-15V Analogue	2c						4	
CA Send (1-8)	3c			41-48				
CA Return -	4c			40				
0V Digital	5c						5	
Write	6c			13				
Data Bit 2 †	7c			22				
Data Bit 5 †	8c			19				
+5V Digital	9c						6	
Ch. Cut Sw. (1-8)	10c				11-18			
Grp. DC Bus 2	11c	2	9					
Grp. DC Bus 5	12c	5	6					
Grp. DC Bus 8	13c	8	3					
TR Select	14c					9		
Fader Output -	15c					3		
Fader Input -	16c					1		

†: For Data Bit functions, see table below S14E Connector Pin-out

Bus Card Audio Power Molex

1	+15V Analogue
2	0V Analogue
3	0V Analogue
4	-15V Analogue
5	0V Digital
6	+5V Digital

Bus Card Motor Power Molex

1	+12V Motor
2	+12V Motor
3	0V Motor
4	0V Motor
5	-12V Motor
6	-12V Motor

8-Pin BICC Motor Power Connectors

A	+12V Motor	E	-12V Motor
B	+12V Motor	F	-12V Motor
C	0V Motor	G	NC
D	0V Motor	H	NC

19-Pin BICC Power Connectors

A	Do not use	L	0V
B	+15V	M	Do not use
C	+15V	N	+5V
D	+15V	P	Not used
E	+5V Digital	R	-15V
F	Not used	S	-15V
G	0V Digital	T	-15V
H	Not used	U	Not used
J	0V	V	Chassis
K	0V		