

 University of Tübingen IAAT Astronomy	INTEGRAL HEPI	Doc: IN-IM-TUB-TN/EL-017
	Harness and Connector description	Issue: 4.0 Date: January 2000 Page: 1 of: 20
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1 Pin description of HEPI connectors

Subsystem	to/from	Connector type	Connector Name
HEPI LBR I/F DPE, burst alert	DPE LBR I/F, mRTU	DAMA 26 S (high density)	HEPI_J19
HEPI HBR I/F DPE, clock, sync.	DPE	DAMA 26 S (high density)	HEPI_J18
HEPI HBR I/F CdTe detector	CdTe detector	DAMA 26 S (high density)	HEPI_J16
HEPI HBR I/F CsI detector	CsI detector	DAMA 26 S (high density)	HEPI_J17
HEPI power supply	DPE (backplane)	HE 801-17 P	HEPI_J1
HEPI board interconnection Main board	HEPI Memory board	HE 801-53 S	HEPI_J2
HEPI board interconnection Memory board	HEPI Main board	HE 801-53 P	HEPI_J3

Cable shieldings are connected to the connector back shells and NOT to dedicated pins on the connectors. (ALENIA: Minutes of electrical ICD IBIS Meeting 12/2/98 Milan).



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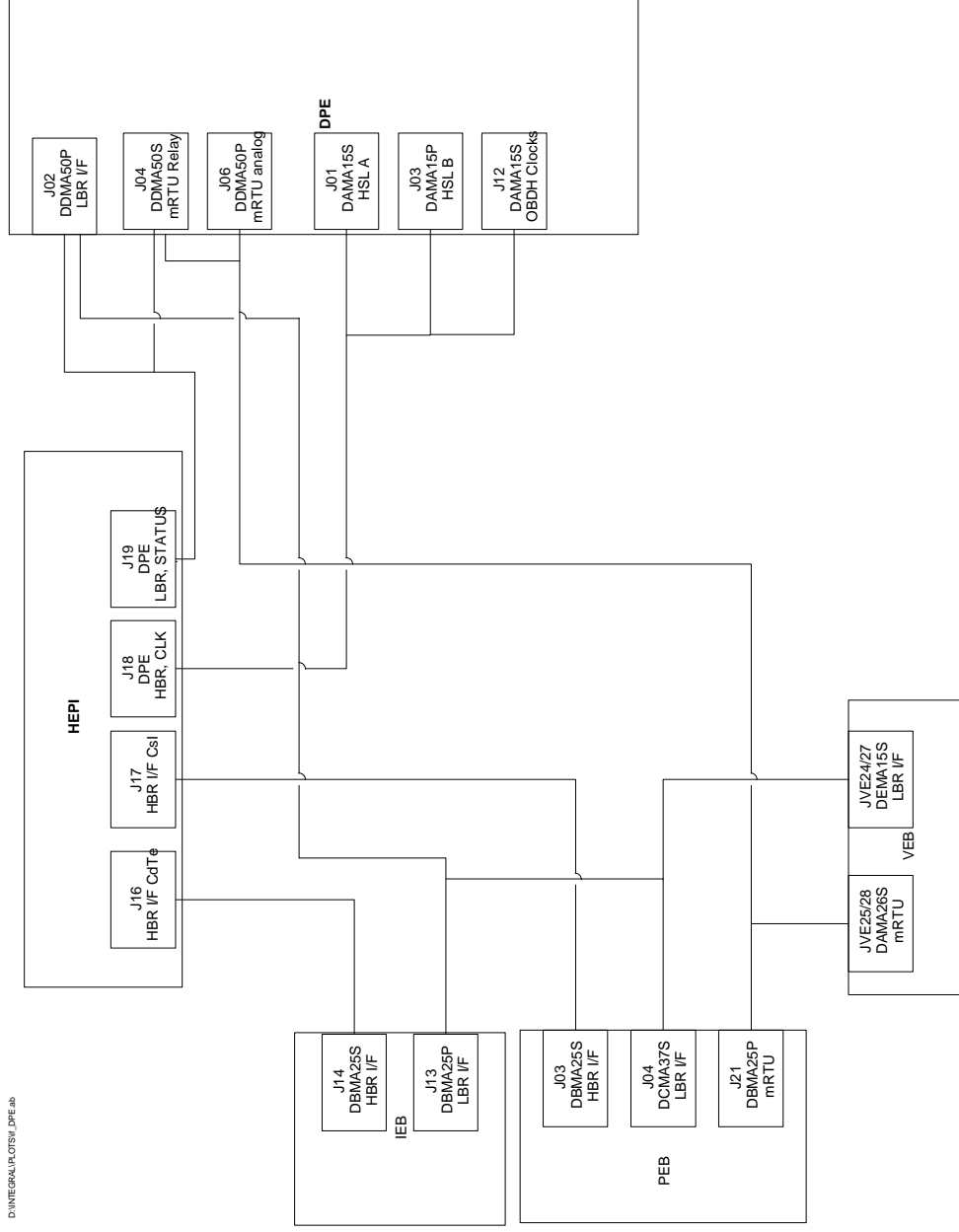
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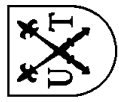
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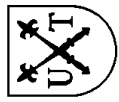
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Figure Name:	HEPI CoTe detector 1: HEPI and DPE harness connector	HEPI_116 (DPEXXXXXX116)	Line description	Line name	Note	Wire	Type	Towards:	Equipment	Connector	Pin No
22			NC						-	-	-
23			NC						-	-	-
24			NC						-	-	-
25			NC						-	-	-
26			NC						-	-	-

Connector Name:	HEPI CoTe detector 1: HEPI and DPE harness connector	HEPI_117 (DPEXXXXXX117)	Line description	Line name	Note	Type	Towards:	Equipment	Connector	Pin No
1	Fast serial line		Data from CsI detector	CSI_DT+	TP 1,10	IAT		PEB	J03	
10			Data (compl.)	CSI_DT-		IAT		PEB	J03	
3			Sample CsI	SAM_CSI+	TP 3,12	IAT		PEB	J03	
12			Sample (compl.)	SAM_CSI-		IAT		PEB	J03	
2			RIFO not empty	CSI_RIFO_NE+	TP 2,11	IAT		PEB	J03	
11			RIFO not empty (compl.)	CSI_RIFO_NE-		IAT		PEB	J03	
4			Clock CsI	CLK_CSI+	TP 4,13	IAT		PEB	J03	
13			Clock (compl.)	CLK_CSI-		IAT		PEB	J03	
5			CsI sync.	SYNC_CSI+	TP 5,14	IAT		PEB	J03	
14			CsI sync. (compl.)	SYNC_CSI-		IAT		PEB	J03	
6			CsI Clear RIFO	CLR_RIFO_CSI+	TP 6,15	IAT		PEB	J03	
15			CsI Clear RIFO (compl.)	CLR_RIFO_CSI-		IAT		PEB	J03	
9			Chassis Ground		common					



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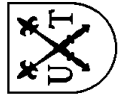
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Connector Name:		HEPI_Csl detector	HEPI_J17 (DPEXXXXYVJ17)	Note	Type	Towards:	Pin No
Pin. No	Interface name	Line description	Line name			Equipment	Connector
19		Chassis Ground		shield			
20		Chassis Ground		common shield			
21		Chassis Ground					
22		Chassis Ground					
23		Chassis Ground					
24		Chassis Ground					
7		NC					
8		NC					
16		NC					
17		NC					
18		NC					
25		NC					
26		NC					

Connector Name:		HEPI_HIGH SPEED LINES	HEPI_J18 (DPEXXXXYVJ18)	Note	Type	Towards:	Pin No
Pin. No	Interface name	Line description	Line name			Equipment	connector
1	Fast serial line A	Data Line A	DTHA+	TP 1,10	HBR	DPE	J01 4
10		Data A (compl.)	DTHA-		HBR	DPE	J01 5
2		Clock A	CLKHA+	TP 2,11	HBR	DPE	J01 2
11		Clock A (compl.)	CLKHA-		HBR	DPE	J01 3
3		Enable A	ENHA+	TP 3,12	HBR	DPE	J01 6
12		Enable A (compl.)	ENHA-		HBR	DPE	J01 7
4	Fast serial line B	Data Line B	DTHB+	TP 4,13	HBR	DPE	J03 4
13		Data Line B (compl.)	DTHB-		HBR	DPE	J03 5



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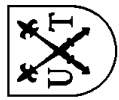
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Connector Name:	HEPI HIGH SPEED LINES	HEPI_J18 (DPEXXYYV.118)	Line description	Line name	Note	Type	Towards:	Pin No
5	Interface name	Clock HBR B	Clock HBR B	CLKHB+	TP 5,14	HBR	DPE	2
14		Clock B (compl.)	Clock B (compl.)	CLKHB-		HBR	DPE	3
6		Enable B	Enable B	ENHB+	TP 6,15	HBR	DPE	6
15		Enable B (compl.)	Enable B (compl.)	ENHB-		HBR	DPE	7
7	On Board Clock BUS	General sync.	General sync.	BCP2+	TP 7,16	HBR	DPE	5
16		General sync. (compl.)	General sync. (compl.)	BCP2-		HBR	DPE	13
8		General Clock	General Clock	GEN_CLK+	TP 8,17	HBR	DPE	9
17		General Clock (compl.)	General Clock (compl.)	GEN_CLK-		HBR	DPE	2
9		NC	NC					
19		NC	NC					
18		NC	NC					
20		NC	NC					
21		NC	NC					
22		NC	NC					
23		NC	NC					
24		NC	NC					
25		NC	NC					
26		NC	NC					

Connector Name:	HEPI LOW SPEED LINE	HEPI_J19 (DPEXXYYV.119)	Line description	Line name	Note	Type	Towards:	Pin No
1	Interface name	Clock	Clock	CLK+	TP 1,10	LBR	DPE	5
10	Slow serial line	Clock (compl.)	Clock (compl.)	CLK-		LBR	DPE	3,8
2		Data Forward	Data Forward	DTF+	TP 2,11	LBR	DPE	1
11		Data Forw. (compl.)	Data Forw. (compl.)	DTF-		LBR	DPE	1,8



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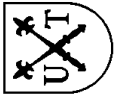
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Connector Name:	HEPI LOW SPEED LINE	HEPI_J19 (DPEXXYYVJ19)	Line description	Line name	Note	Type	Towards:	Pin No
Pin No	Interface name	Line description	Line name				Equipment	connector
3		Data return	DTR+	TP 3,12	LBR	DPE	J02	2
12		Data return (compl)	DTR-		LBR	DPE	J02	19
18		Init HEPI (DPE Relay pulse 7)	INIT+	TP 18,26	On/off	DPE	J04	9
26		Init HEPI (compl.)	INIT-		On/off	DPE	J04	25
19		Chassis		Common shield				
20	(mRTU)	Request line A+ (Relay Status 0)	ROHA+	TP 20,21	Opto	DPE	J04	11
21		Request line A (compl.)	ROHA-		Opto	DPE	J04	27
22	(mRTU)	Request line B+ (Relay Status 1)	ROHB+	TP 22,23	Opto	DPE	J04	12
23		Request line B (compl.)	ROHB-		Opto	DPE	J04	28
24		HEPI Status+ (Relay Status 2)	BA+	TP 24,25	Opto	DPE	J04	13
25		HEPI Status-	BA-		Opto	DPE	J04	29
4		NC						
5		NC						
6		NC						
7		NC						
8		NC						
9		NC						
13		NC						
14		NC						
15		NC						
16		NC						
17		NC						
20		NC						



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Connector Name:	HEPI LOW SPEED LINE	HEPI_119 (DPEXXXYY119)	Note	Type	Towards:	
Pin No	Interface name	Line description	Line name		Equipment	Pin No
21		NC				
22		NC				
23		NC				
24		NC				
25		NC				



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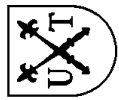
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Con- nector Name:	HEPI Backplane	HEPI_J1				Towards:	Equipment connector	Pin No	Driver Receiver
	Interface name	Line description	Line name						
2	Power	Power 5V	VCC			DPE backplane	2		
11	Power	Power 5V	VCC				11		
5	Ground	Ground	DGND				5		
17	Ground	Ground	DGND				17		
1		NC							
3		NC							
4		NC							
6		NC							
7		NC							
8		NC							
9		NC							
10		NC							
12		NC							
13		NC							
14		NC							
15		NC							
16		NC							



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Connector Name:	HEPI Boards Interconnection (Main board and Memory Board)	HEPI_U2 and HEPI_U3		Towards:			Driver Receiver
		Interface name	Line description	Line name	Equipment	connector	
1	MEM ADDRESS	MEM_ADR_B_MEM19					
2	MEM Data	MEM_DAT_B_MEM7					
3	MEM ADDRESS	MEM_ADR_B_MEM18					
4	MEM Data	MEM_DAT_B_MEM6					
5	MEM ADDRESS	MEM_ADR_B_MEM17					
6	MEM Data	MEM_DAT_B_MEM5					
7	MEM ADDRESS	MEM_ADR_B_MEM16					
8	MEM Data	MEM_DAT_B_MEM4					
9	MEM ADDRESS	MEM_ADR_B_MEM15					
10	MEM Data	MEM_DAT_B_MEM3					
11	MEM ADDRESS	MEM_ADR_B_MEM14					
12	MEM Data	MEM_DAT_B_MEM2					
13	MEM ADDRESS	MEM_ADR_B_MEM13					
14	MEM Data	MEM_DAT_B_MEM1					
15	MEM ADDRESS	MEM_ADR_B_MEM12					
16	MEM Data	MEM_DAT_B_MEM0					
17	MEM ADDRESS	MEM_ADR_B_MEM11					
18		NC					
19	MEM ADDRESS	MEM_ADR_B_MEM10					
20	Decoder Select	MEM_DS_B_MEM					
21	MEM ADDRESS	MEM_ADR_B_MEM9					
22	Decoder Select	MEM_DS_B_MEM4					
23	MEM ADDRESS	MEM_ADR_B_MEM8					
24	Decoder Select	MEM_DS_B_MEM3					
25	MEM ADDRESS	MEM_ADR_B_MEM7					
26	Decoder Select	MEM_DS_B_MEM2					

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2 Interfaces of Test Environment

This chapter describes the connection between HEPI and Detector I/F simulator and between HEPI and DPE Simulator.

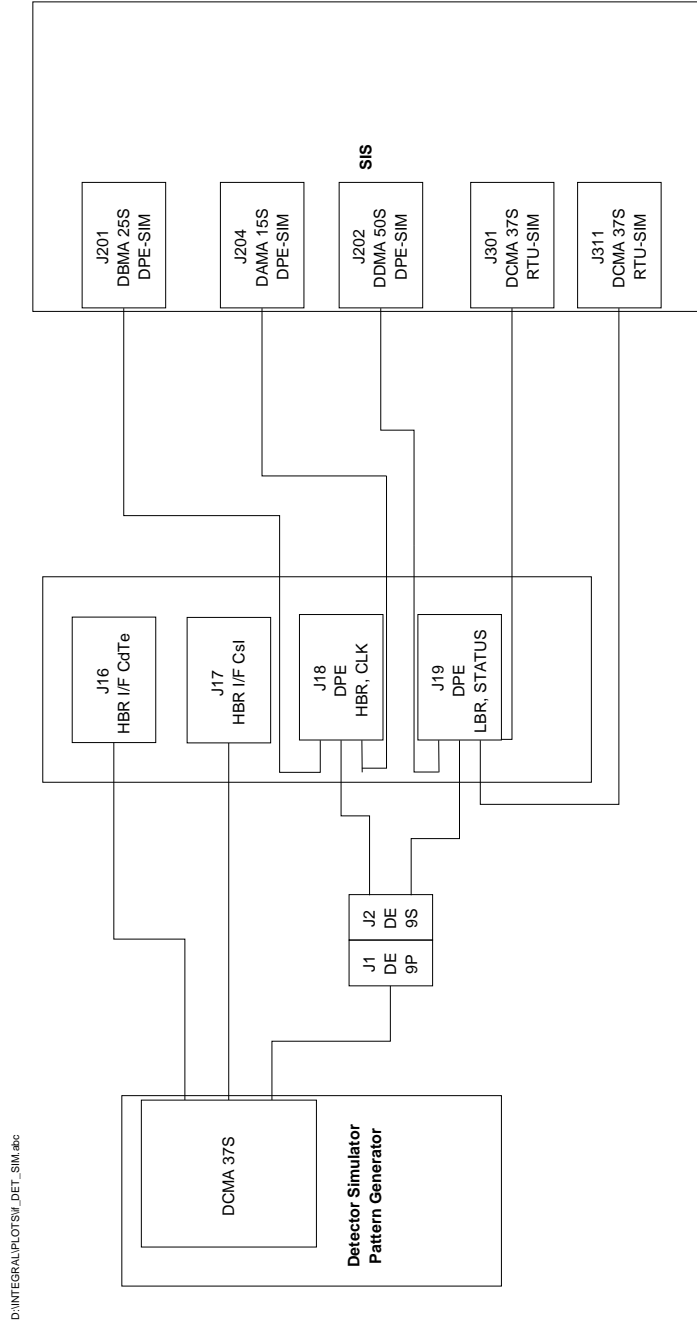


Figure 2: Test harness configuration (Detector I/F Simulator - HEPI - DPE Simulator)



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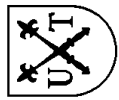
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Subsystem	Line	to/from	Connector type	Connector Name
DET-SIM		HEPI	DCMA 37 S	J32
Adapter		DET-SIM	DEMA 9	J1
Adapter		HEPI	DEMA 9	J2
DPE-SIM	High speed Line	HEPI (J18)	DBMA 25 S	J201
DPE-SIM	Clock	HEPI (J18)	DAMA 15 S	J204
DPE-SIM	LSL Address	HEPI (J19)	DDMA 50 S	J202
RTU-SIM	ON/OFF	HEPI (J19)	DCMA 37 S	J311
RTU-SIM	Relay Status	HEPI(J19)	DCMA 37 S	J301

DCMA 37 S	Connector Name: mini Centr.	Detector Simulator	DET_SIM_032	Note	Type	Towards:	Pin No
1	1	Det. HBR VF Csl Interface name	Line description Csl Sample	Line name SAM_CSI+	TP 1,2	Equipment HEPI	J17 3
2	2	Det. HBR VF Csl	Csl Sample Return	SAM_CSI+		HEPI	J17 12
3	3	Det. HBR UF CdtE	CdtE synch.	SYNC_CDTE+	TP 23,24	HEPI	J16 5
4	4	Det. HBR UF CdtE	CdtE synch. Return	SYNC_CDTE-		HEPI	J16 14
5	5						
6	6						
7	7	Det. HBR VF Csl	CLOCK_CSI	CLK_CSI+	TP 7,8	HEPI	J17 4
8	8	Det. HBR VF Csl	CLOCK_CSI Return	CLK_CSI-		HEPI	J17 13
9	9	Det. HBR UF CdtE	CLOCK_CDTE	CLK_CDTE+	TP 9,10	HEPI	J16 4
8	10	Det. HBR UF CdtE	CLOCK_CDTE Return	CLK_CDTE-		HEPI	J16 13
	11						
	12						



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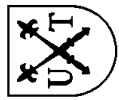
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DCMA 37 S	Pin. No.	Connector Name: mini Centr.	Detector Simulator Interface name	DET_SIM_032 Line description	Line name	Note	Type	Towards:	Equipment	connector	Pin No
	13										
	14										
9	15	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Sample	SAM_CDTE+	TP 15,16			HEPI	J16	3
10	16	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Sample Return	SAM_CDTE-				HEPI	J16	12
11	17	DPE HBR IF A	DPE HBR IF A	Request HBR IF A	RQHA+	TP 17,18			Adapter	J1	1
12	18	DPE HBR IF A	DPE HBR IF A	Request HBR IF A Return	RQHA-				Adapter	J1	2
13	19	DPE HBR IF B	DPE HBR IF B	Request HBR IF B	RQHB+	TP 19,20			Adapter	J1	3
14	20	DPE HBR IF B	DPE HBR IF B	Request HBR IF B Return	RQHB-				Adapter	J1	4
	21										
	22										
	23										
	24										
15	25	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Clear RFO	CLR_FFO_CDTE+	TP 25,26			HEPI	J16	6
16	26	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Clear RFO Return	CLR_FFO_CDTE-				HEPI	J16	15
17	27	Del. HBR IF CsI	Del. HBR IF CsI	CsI Clear RFO	CLR_RFO_CSI+	TP 27,28			HEPI	J17	6
18	28	Del. HBR IF CsI	Del. HBR IF CsI	CsI Clear RFO Return	CLR_RFO_CSI-				HEPI	J17	15
	29										
	30										
	31										
	32										
	33			Common shield					Adapter	J1	9
	34										
	35										
	36										
19	37	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Data out	CDTE_DT+	TP 37,38			HEPI	J16	1
20	38	Del. HBR IF CdTe	Del. HBR IF CdTe	CdTe Data out Return	CDTE_DT-				HEPI	J16	10
21	39	Del. HBR IF CsI	Del. HBR IF CsI	CsI RFO Not empty	CSI_RFO_NE+	TP 39,40			HEPI	J17	2



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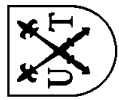
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Connector Name:		Adapter	ADAPT _J1 (DEMASS)	Note	Type	Towards:	Pin No	
Pin. No	Interface name	Line description	Line name			Equipment	connector	
1	DPE HBR I/F A	Request HBR I/F A	RQHA+	TP 1,2		Det. S/n	J32	17
2	DPE HBR I/F A	Request HBR I/F A Return	RQHA-			Det. S/n	J32	18
3	DPE HBR I/F B	Request HBR I/F B	RQHB+	TP 3,4		Det. S/n	J32	19
4	DPE HBR I/F B	Request HBR I/F B Return	RQHB-			Det. S/n	J32	20
5	DPE Relay Pulse	Relay Pulse (init HEPI)	INIT+	TP 5,6		Det. S/n	J32	51
6	DPE Relay Pulse	Relay Pulse (init HEPI) Return	INIT-			Det. S/n	J32	52
7	GND	GND	GND			Det. S/n	J32	67
8	VCC	VCC	VCC			Det. S/n	J32	68
9	Chassis Ground	CHASSIS	CHASSIS			Det. S/n	J32	33

Connector Name:		Adapter	ADAPT _J2 (DEMA9P)	Note	Type	Towards:	Pin No	
Pin. No	Interface name	Line description	Line name			Equipment	connector	
1	DPE HBR I/F A	Request HBR I/F A	RQHA+	TP 1,2		HEPI	J19	20
2	DPE HBR I/F A	Request HBR I/F A Return	RQHA-			HEPI	J19	21
3	DPE HBR I/F B	Request HBR I/F B	RQHB+	TP 3,4		HEPI	J19	22
4	DPE HBR I/F B	Request HBR I/F B Return	RQHB-			HEPI	J19	23
5								
6								
7								
8								
9	Chassis Ground	CHASSIS	CHASSIS			HEPI	J19	19



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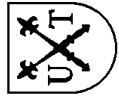
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Connector Name:	HEPI HIGH SPEED LINES	HEPI_118 (DPEXXXXYJ118)	Note	Type	Towards:	Pin No
Pin. No	Interface name	Line description	Line name		Equipment	connector
1	Slow serial line	Clock	CLK+	LBR	DPE-SM	J202 10
10		Clock (compl.)	CLK-	LBR	DPE-SM	J202 26
2		Data Forward	DIF+	LBR	DPE-SM	J202 2
11		Data Forw. (compl.)	DIF-	LBR	DPE-SM	J202 18
3		Data return	DTR+	LBR	DPE-SM	J202 21
12		Data return (compl.)	DTR-	LBR	DPE-SM	J202 37
18		Init HEPI	INIT+	On/off (Ch. 1)	RTU-SM	J311 15
26		Init HEPI (compl.)	INIT-	On/off	RTU-SM	J311 16
19		Chassis				
20	(mRTU)	Request line A+	ROHA+	Opto (RS 4)	RTU-SM	J301 7
21		Request line A (compl.)	ROHA-	Opto	RTU-SM	J301 8
22	(mRTU)	Request line B	ROHB+	Opto (RS 5)	RTU-SM	J301 9
23		Request line B (compl.)	ROHB-	Opto	RTU-SM	J301 10
24		Burst alert+	BA+	Opto (RS 6)	DPE-SM	J301 11
25		Burst alert-	BA-	Opto	RTU-SM	J301 12
4		NC	ADR_0		DPE-SM	J202 44
5		NC	ADR_1		DPE-SM	J202 12
6		NC	ADR_5		DPE-SM	J202 31
7		NC				
8		NC				



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Connector Name:	HEPI HIGH SPEED LINES	HEPI_118 (DPEXXXXV118)	Line name	Note	Type	Towards:		
	Interface name	Line description				Equipment	connector	Pin No
9		NC						
13		NC	GND			J202	connector	40
14		NC	GND			J202	connector	34
15		NC						
16		NC						
17		NC						
20		NC						
21		NC						
22		NC						
23		NC						
24		NC						
25		NC						