

New Product Proposal

SpaceWire Backplane PCB Connector Solution



smiths

Date 6-Jun-08

Prop. No. 0541

Revision A

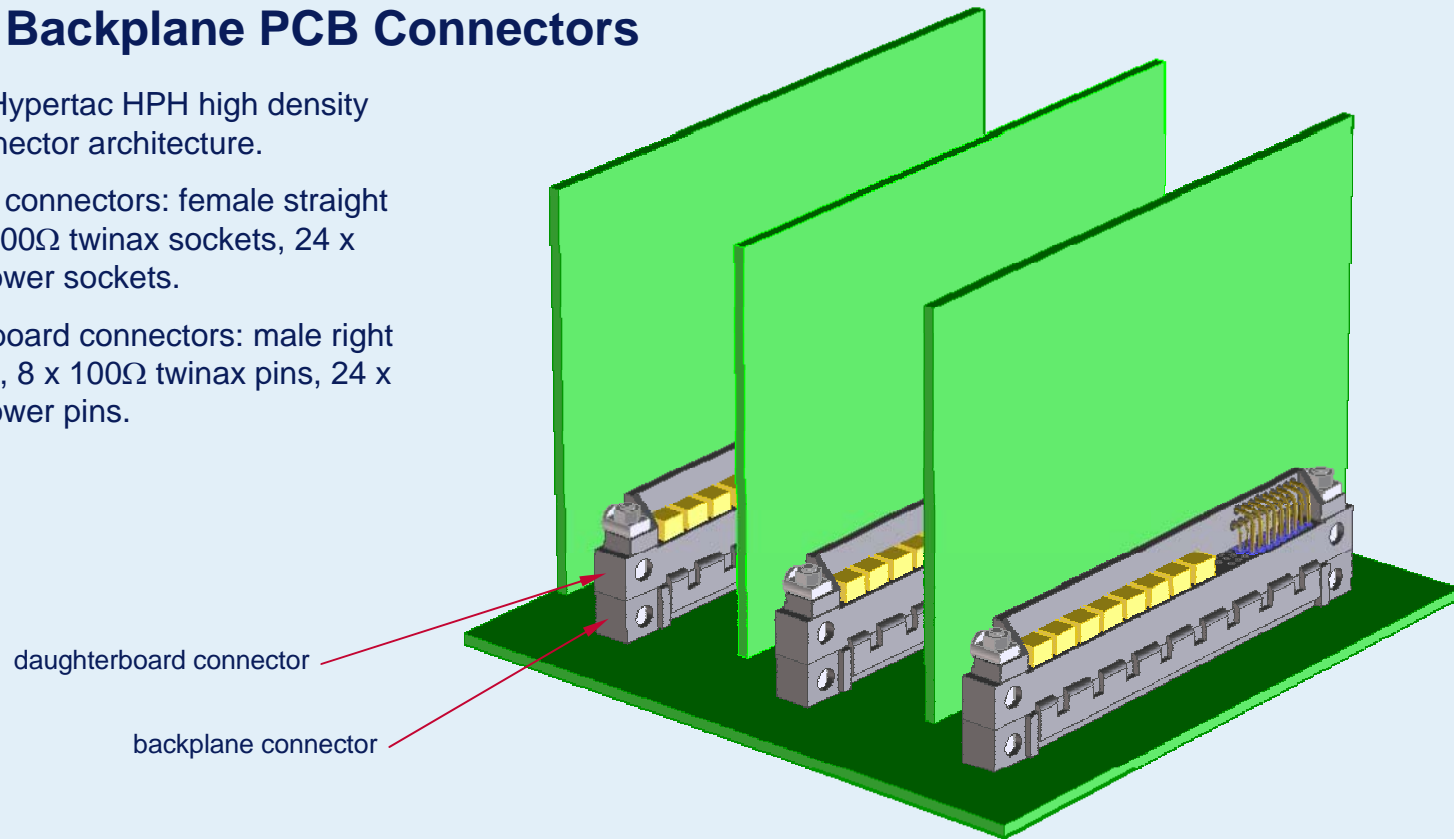
By AQ

General Arrangement



SpaceWire Backplane PCB Connectors

- Standard Hypertac HPH high density signal connector architecture.
- Backplane connectors: female straight PCB, 8 x 100Ω twinax sockets, 24 x discrete power sockets.
- Daughter-board connectors: male right angle PCB, 8 x 100Ω twinax pins, 24 x discrete power pins.



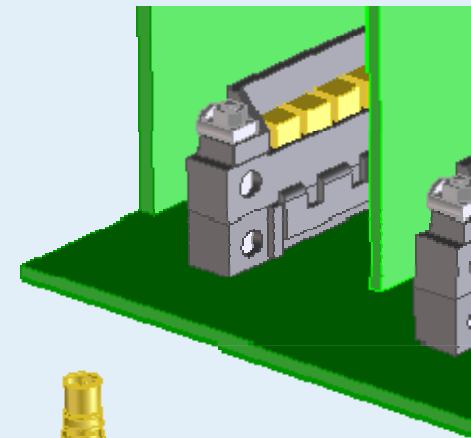
Mixed layout... high speed data transmission and power in a single connector...

Twinax Contact Technology



Sabritec twinax contacts for SpaceWire data transmission

- Sabritec twinax contacts have been used successfully for data transmission bandwidths in excess of 2Gbit/s.
- Transmission line differential pair is fully enclosed within metal contact body providing excellent EMI shielding, very low impedance connections and totally eliminates cross-talk issues through the whole interconnection.
- Standard materials and processes exceed requirements for space applications. Contact designs have previously been used successfully for space applications.
- If required, Sabritec standard range includes straight and right angle cable version of the same contacts.



Sabritec size 10 twinax socket contact fitted with 100Ω differential twinax cable

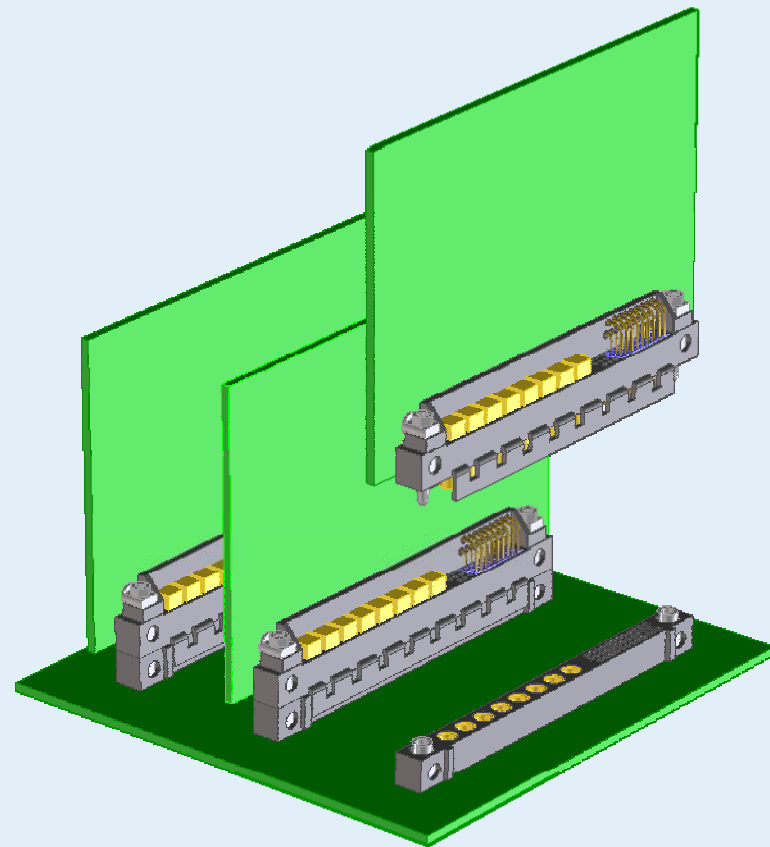
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Connector Hardware



Hypertac High Density Connectors

- Long established Hypertac Ltd HPH high density PCB connectors.
- Connector series has good track record for space applications (ESA).
- High performance glass filled polymer insulators provide high durability and mechanical stability at elevated temperatures.
- Discrete contacts use high performance hyperboloid socket contact technology.
- 0.6mm pins provide 4A maximum continuous current rating.
- Stainless steel hardware provide robust securing of plastic insulators to PCB.
- Standard hardware also provides polarising blind-mate guide pins (36 customer configurable polarisation options).
- PCB terminations can be provided pre-tinned to facilitate solderability.



Standard HPH Connector Dims

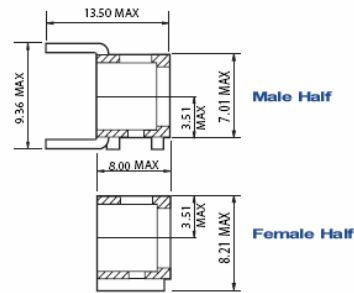
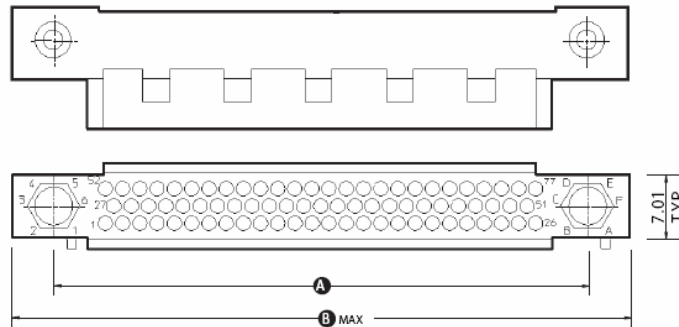


HPH Series

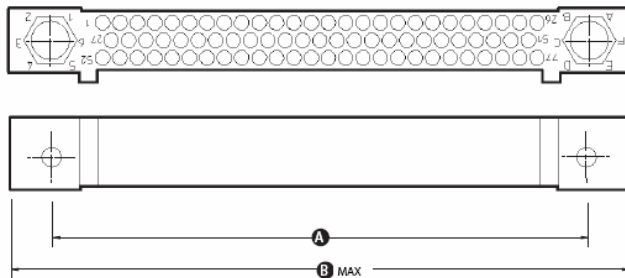


HPH insulators

3 ROW Male Half



3 ROW Female Half



expected dimensions
(to be confirmed)

No. OF POSITIONS	20†	50*	77*	119*	152*
Dimension A	22.86 0.901"	41.91 1.65"	59.06 2.325"	85.73 3.375"	106.68 4.200"
Dimension B	32.18 1.267"	51.23 2.017"	68.38 2.692"	95.05 3.742"	116.50 4.586"

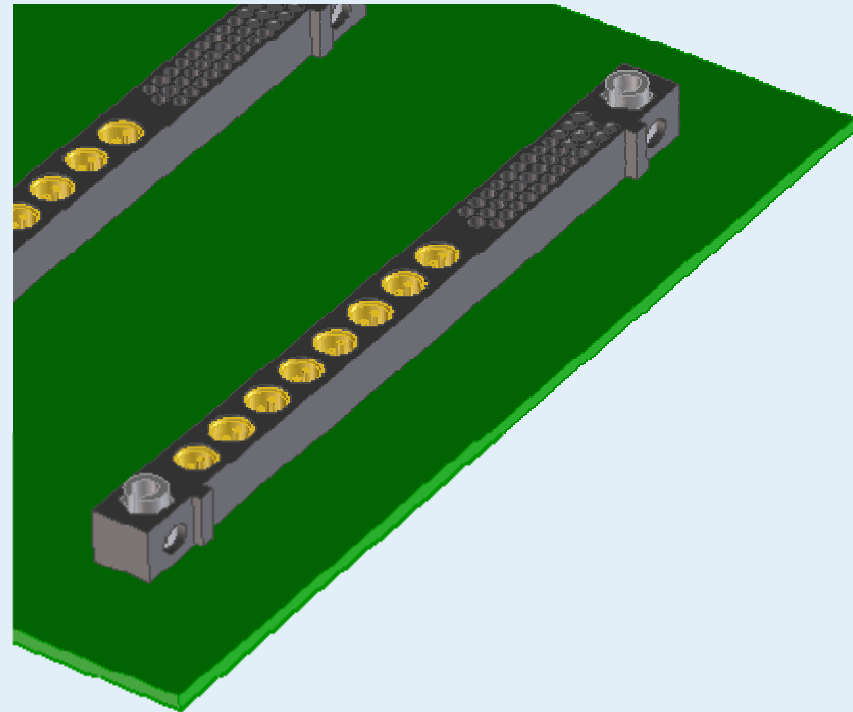
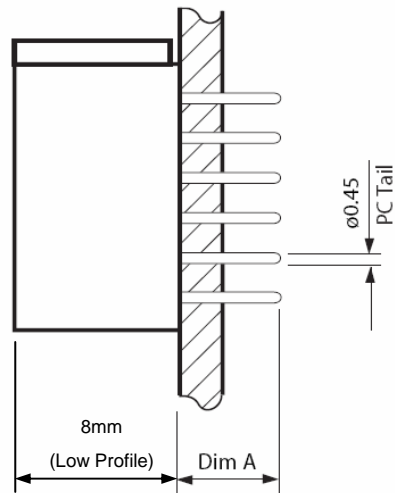
* Off the shelf

† Subject to availability

Female Connector (Backplane)



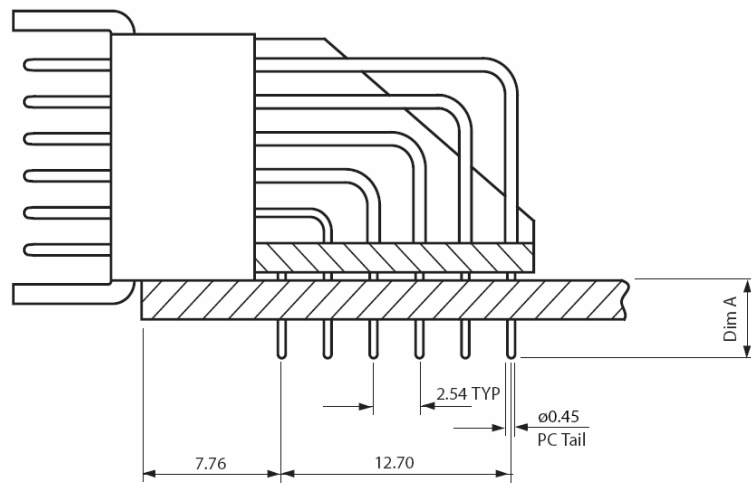
FEMALE VERTICAL PCB



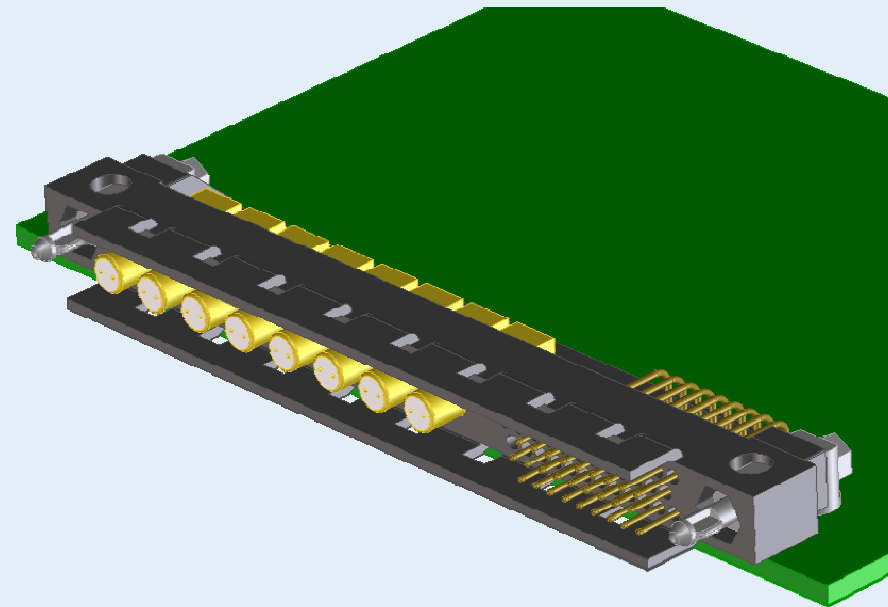
Male Connector (Daughterboard)



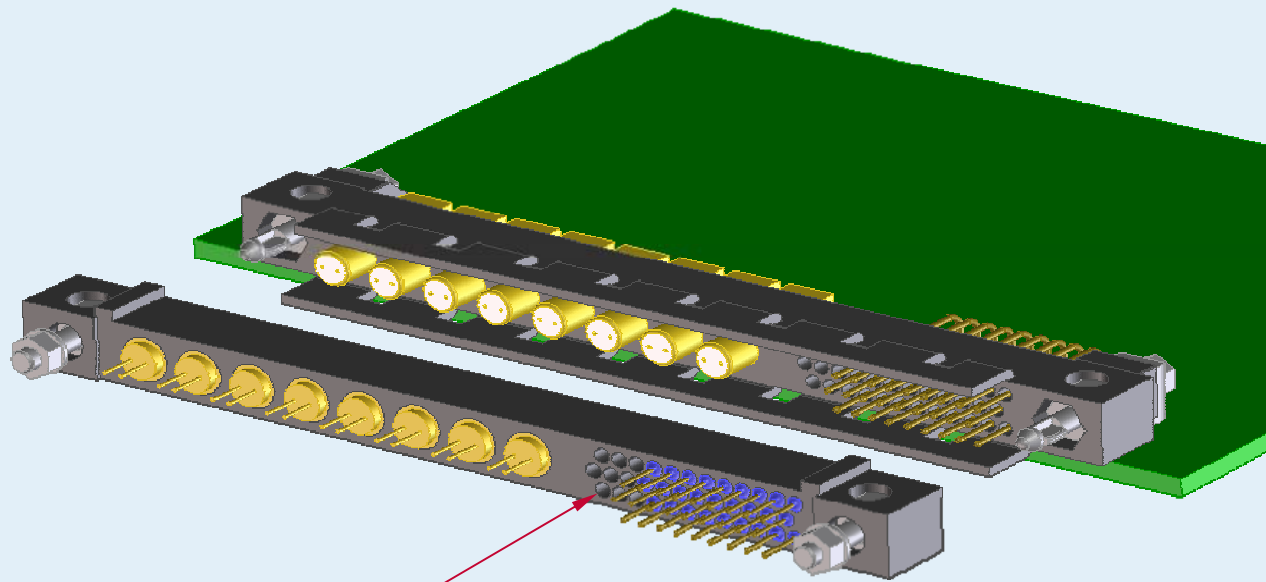
MALE 90° PCB



Dimensions applicable to 3, 4 and 5 row insulators also.



Termination Style



Spare contact cavities can easily be accommodated within the insulators for additional capacity (if desired). Hypertac can provide any special assembly configurations as required.

Hyperboloid Contact Specifications



Current rating	4 A
Voltage rating	170 V dc or AC peak
Contact resistance	7 milliohms max
Engagement force	0.42N per contact
Endurance	> 2000 cycles
Temperature range	-55 to +125 deg C

Hypertac Hyperboloid Socket Contact

- Low Mating Force
- Low Contact Resistance
- High Number of Mating Cycles
- Superior Performance under Vibration and Shock



Key message box (optional)...