

COMPONENT SPECIFICATION
PC/104 AND PC/104 Plus CONNECTORS

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COMPONENT SPECIFICATION

PC/104 AND PC/104 Plus CONNECTORS

1. DESCRIPTION OF COMPONENT AND INTENDED APPLICATION.

PC/104 and PC/104 Plus connectors are an industry-standard connector system used in PC/104 Embedded PC module stack applications. The PC/104 module stack is designed to use less space and at a lower cost than an equivalent backplane system, by utilising stackthrough connectors to interconnect PC boards within a stack. Standard height between module boards is 0.6" (15.24mm).

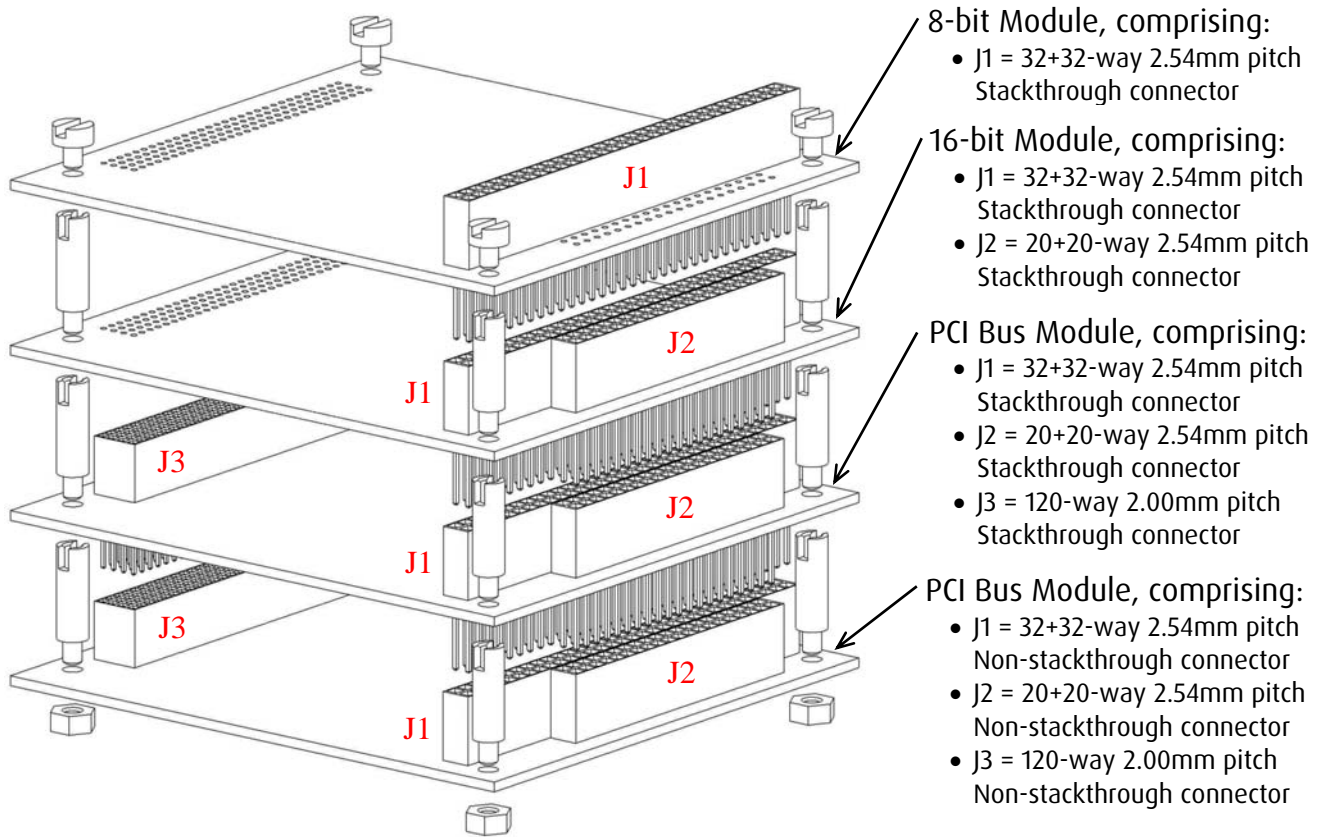


Figure 1 - PC/104 Stack

PC/104 connectors are 2.54mm pitch, either 32+32 or 20+20 ways. PC/104 Plus connectors are 2.00mm pitch, 4 x 30 (120) ways. The sockets have a tuning-fork style of contact. Solder or press-fit tail options are available, as are accessories for the range (see Appendix 1).

2. MARKING OF COMPONENT AND/OR PACKAGE (ORDER CODE).

The marking (order code) shall appear on the package and varies according to individual items - for a complete list, see Appendix 1. See the appropriate drawing for complete details.

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PC/104 AND PC/104 Plus CONNECTORS (continued)

3. RATINGS.**3.1. MATERIALS.**

Moulding:

PC/104 Solder Tail connectors (M20)	Nylon 6T, UL94V-0, black
PC/104 Plus Solder Tail connectors (M22)	Nylon 6T, UL94V-0, black
Press-fit Tail connectors (M20/M22).....	PPS, UL94V-0, black
PC/104 Plus Shroud (M22-604).....	PBT, UL94V-0, black

Contact:

Female.....	Phosphor Bronze
Male.....	Brass

Finish:

Solder Tail connectors.....	0.08 μ Gold over Nickel
Solder Tail header/socket (M22-602/603).....	Gold flash over Nickel on contact area, tin on tails
Press-fit Tail connectors.....	0.25 μ Gold over Nickel

3.2. ELECTRICAL CHARACTERISTICS.

Current per contact through all contacts at an ambient temperature of 20°C:

PC/104 Solder Tail connectors (M20)	3A max
PC/104 Plus Solder Tail connectors (M22)	1A max
Press-fit Tail connectors (M20/M22).....	1A max
Voltage Rating.....	12V DC

Dielectric Strength:

PC/104 connectors (M20)	1,000V AC for 1 minute
PC/104 Plus connectors (M22).....	800V AC for 1 minute
Contact resistance (initial).....	30m Ω max
Contact resistance (after conditioning).....	50m Ω max

Insulation resistance:

Solder Tail connectors (1,000V AC for 1 minute).....	5,000Mmin
Press-fit Tail connectors (1000V AC for 1 minute).....	5,000Mmin

3.3. ENVIRONMENTAL CHARACTERISTICS.

Temperature Range:

PC/104 connectors (M20)	-55°C to +105°C
PC/104 Plus Solder Tail connectors (M22)	-55°C to +105°C
PC/104 Plus Press-Fit Tail connectors (M22-605/606).....	-40°C to +85°C

COMPONENT SPECIFICATION
PC/104 AND PC/104 Plus CONNECTORS (continued)

3. RATINGS (continued).

3.4. MECHANICAL CHARACTERISTICS.

Durability of mating contacts	10 operations
Durability of press-fit section	3 operations
Contact retention in moulding	5N min
Insertion force of individual contact:	
PC/104 connectors (M20) - with 0.64mm square gauge	2.0N max
PC/104 Plus Solder Tail connectors (M22) - with 0.50mm square gauge	2.0N max
PC/104 Plus Press-Fit Tail connectors (M22-605/606)	1.2N max
Withdrawal force of individual contact	
PC/104 connectors (M20) - with 0.64mm square gauge	0.25N min
PC/104 Plus Solder Tail connectors (M22) - with 0.50mm square gauge	0.3N min
PC/104 Plus Press-Fit Tail connectors (M22-605/606)	0.2N min
Press-fit insertion forces (to board):	
PC/104 - individual contact	80N max
PC/104 - 64-way connector	4,000N max
PC/104 - 40-way connector	3,000N max
PC/104 Plus - individual contact	59N max
PC/104 Plus - 120-way connector	7,840N max
Press-fit withdrawal forces (to board):	
PC/104 - individual contact	20N min
PC/104 - 64-way connector	1,280N min
PC/104 - 40-way connector	800N min
PC/104 Plus - individual contact	15N min
PC/104 Plus - 120-way connector	1,764N min

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PC/104 AND PC/104 Plus CONNECTORS (continued)

APPENDIX 1 – PART NUMBER SUMMARY.

For further details on any of these parts (including PC board layouts and numbering), please see the applicable engineering drawing.

A1.1 PC/104 CONNECTORS:

2.54mm Pitch, All connectors in this category are available in 32+32 or 20+20 ways – replace XX with 32 or 20 respectively.

M20-610XX45	PC Tail, Stackthrough PC/104 connector
M20-611XX45.....	PC Tail, Non-stackthrough PC/104 connector
M20-615XX05	Press-fit Tail, Stackthrough PC/104 connector
M20-616XX05	Press-fit Tail, Non-stackthrough PC/104 connector

A1.2 PC/104 Plus CONNECTORS:

2.00mm Pitch, All connectors in this category are available in 4 x 30 (120) ways, as denoted by "30" in the part number.

M22-6003005.....	PC Tail, Stackthrough PC/104 Plus connector
M22-6013005	PC Tail, Non-stackthrough PC/104 Plus connector
M22-6023042	PC Tail, Non-stackthrough pin header
M22-6033042	PC Tail, Non-stackthrough socket connector
M22-6043098.....	PC/104 Plus shroud
M22-6053005	Press-fit Tail, Stackthrough PC/104 Plus connector
M22-6063005.....	Press-fit Tail, Non-stackthrough PC/104 Plus connector

A1.3 ACCESSORIES:

R6104-02	M3 Hexagonal Male/Female spacer, 15.24mm long (for use on corners of stacked modules, for security and support)
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APPENDIX 2 – PRESS-FIT PLATED THROUGH HOLES.

A1.1 PC/104 CONNECTORS:

- Drill hole in epoxy board to $\varnothing 1.15 \pm 0.02\text{mm}$.
- Plate hole with 25-75 μ Copper (150 Knoop max hardness), 3 μ min Nickel/Gold.
- Final plated hole diameter must be $\varnothing 1.09\text{-}1.00\text{mm}$.

A1.2 PC/104 Plus CONNECTORS:

- Drill hole in epoxy board to $\varnothing 1.000 \pm 0.025\text{mm}$.
- Plate hole with 25 μ min Copper (150 Knoop max hardness), 2.5-5.0 μ Nickel, 0.05-0.2 μ Gold.
- Final plated hole diameter must be $\varnothing 0.94\text{-}0.85\text{mm}$.