Amphenol ABSI VME64x Datasheet
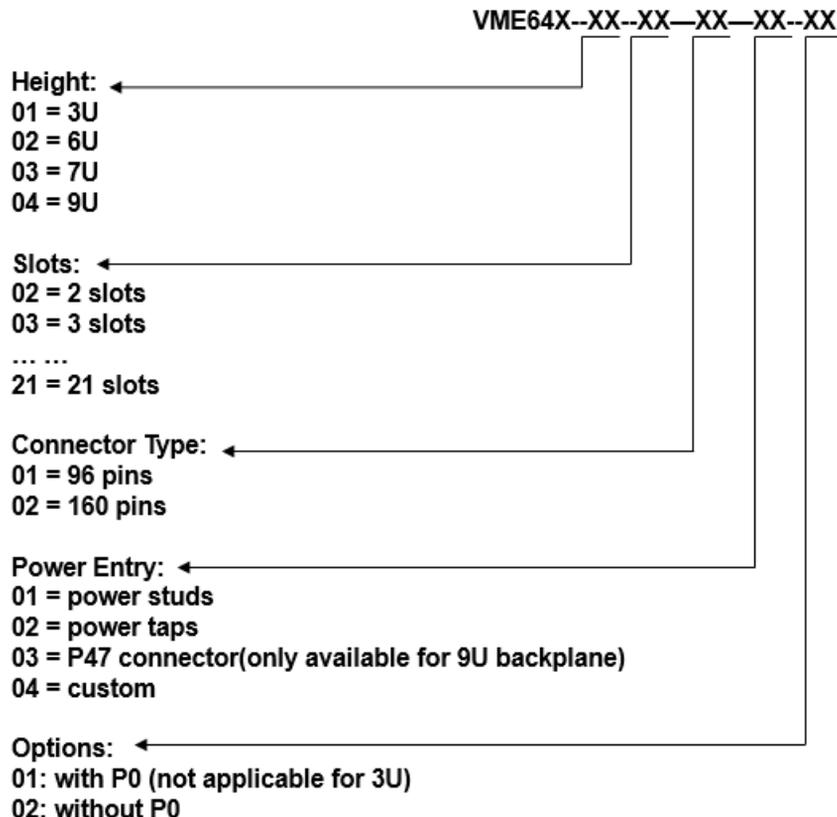
VITA
Open Standards, Open Markets

Amphenol ABSI VME64x Backplanes

Amphenol ABSI's VME64x high performance backplanes are available in both 3U & 6U form factors. All VME backplanes are compliant to VITA VME64x specifications. ABSI can customize the VME64x backplane against our customer's specific requirements.

Amphenol ABSI VME64x backplane order configuration part number table.

The following configuration table provides the part numbering structure applicable to the full range of VME64x backplanes on offer from Amphenol ABSI. We can engage with you on any VME backplane requirement that you may have. Please contact us for further details.

VME64X--XX--XX—XX—XX--XX

Height:
01 = 3U
02 = 6U
03 = 7U
04 = 9U

Slots:
02 = 2 slots
03 = 3 slots
… …
21 = 21 slots

Connector Type:
01 = 96 pins
02 = 160 pins

Power Entry:
01 = power studs
02 = power taps
03 = P47 connector(only available for 9U backplane)
04 = custom

Options:
01: with P0 (not applicable for 3U)
02: without P0

Configuration part number example

VME64x-02-20-02-02-01 specifies a 6U x 20 slot VME64x backplane, configured with 160 pin J1&J2 connectors and 95 pin P0 connectors with power taps for power entry requirements.

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Description

VME64x is an extension of VITA 1-1994 (S2011) and provides a 64 bit data transfer bus. VME64x defines a new 160 pin J1 &J2 connector and an optional 95 pin hard metric 2.0mm P0 connector. It also offers more user defined I/Os. 3.3V and auxiliary power entry are available under the VME64x specification. It also includes additional 5V pins in the connector pin out. The VME64x backplane supports 19" rack applications. The maximum form factor expands to a 21 slot backplane. The VME64x system is backward compatible with the VME64 system. A DIN41612 connector can be used in VME64x system.

Backplane Height:

Amphenol ABSI VME64x backplane offer 4 different height options covering **3U, 6U,7U and 9U.**

3U backplane

The 3U backplane is the minimum size of the VME64x backplane. The 3U backplane incorporates the following functional features:

- IEC 61076-4-113 160 pin connector for the J1 connector, with properly defined pin tail lengths
- Connects all assigned connector ground pins in all rows to the backplane's ground plane
- Connects the geographical address pins as defined in the VITA standard
- Routes and terminates all defined VME64 and VME64x bused signal lines
-   Provides power connection and distribution for +5V, +3.3V, +12V, -12V, +V1, +V2,-V1, -V2, VPC and +5V STDBY.

6U backplane

The 6U backplane is the standard height of the VME64x backplane family. The 6U backplane incorporates the following functional features:

- Monolithic PCB
- IEC 61076-4-113 160 pin connectors for both the J1 and J2 connectors with properly defined pin tail lengths
- Connects all assigned connector ground pins in all rows to the backplane's ground plane
- Connects the geographical address pins as defined in VITA standard
- Routes and terminates all defined VME64 and VME64x bused signal lines
- Provides power connection and distribution for +5V, +3.3V, +12V, -12V, +V1, +V2,-V1, -V2, VPC and +5V STDBY.
- If rear I/O is required, rear connector(s) are designed per IEEE 1101.11 for support of rear I/O transition boards.

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Backplane Height (cont)

7U backplane
The 7U backplane is 1U higher than the 6U backplane. The 7U backplane provides additional footprint areas to position power entry connectors to increase current capacity. Apart from power entry, the 7U backplane has the same functional features as the 6U backplane.

9U backplane
The 9U backplane is compliant to ANSI/VITA 1.3-1997, and VME64x 9U Standard which defines 9U x 400 mm plug-in boards, backplanes and subracks for use in applications requiring large format printed circuit boards.

The following new features on backplane are defined for optional use in VME64 based applications:
- Addition of P5/J5 and P6/J6 connections centered on the lower 3U area using IEC 61076-4-101 connectors.
- Optional P3/J3 connections centered on the lower 3U area using the same IEC 61076-4-113 connectors as the upper 6U.
- A user defined P4/J4 connector between P2/J2 and P5/J5 similar to P0/J0 in VME64x with: - 95 user defined pins or - 4.8 mm (nominal) cavity option for P0/J0 and P4/J4 connectors per IEC 61076-4-101
- P5/J5 and P6/J6 connectors using the cPCI family of connectors

Amphenol ABSI VME Features:
- Compliant to VITA 1.1-1997 (S2011) Specification
- 2 to 21 slots configuration
- Daisy chain routing
- 4 HP slot pitch
- IEC 61076-4-113 & IEC 603-2 Style C connectors
- Support Rear IOs
- Screws/studs for power entry
- PCB material FR-4, UL recognized 94-VO
- RoHS compliant

PCB information:
- 8 layers board
- Slot pitch 0.8"
- Independent power and ground layers for power distribution
- Signal impedance Z0 55 Ohms +/-10%
- FR4 material

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Connector Type:

In J1&J2 area, two connector types are used on the VME backplane, one for 96 pin configurations and one for 160 pin configurations. The 160 pin connector as defined in the IEC 61076-4-113 connector specification is an expanded 96 pin connector that is complementary to the IEC 603-2 Style C connector. The 160 pin connector contains 5 rows of contacts. The 96 pin connector has 3 rows of contacts, representative of the center 3 rows of contacts in the 160 pin connector.

Within the 160 pin connector, Row A; Row B and Row C are identical in form, fit and function to the 96 pin IEC 603-2 Style C connectors, used in original VME and VME64 applications. Row Z and Row D adds 64 pins to the outer shell of the connector providing a total of 160 pins.

The 160 pin connector is compatible with the 96 pin connector. Boards with 160 pin connectors can plug into backplanes using 96 pin connectors and boards with 96 pin connectors can plug into backplanes using 160 pin connectors.

In the VME64x standard, an optional 2 mm hard metric 95 signal pin plus 19 or 38 ground pins P0/J0 connector is available for more user defined I/O through the backplane. This connector is called the P0 connector. It is located in central to the J1 and J2 backplane.

The 96 pin connector is available across numerous manufacturers from Amphenol AICC, Harting, Ept, Erni, etc.

The 160 pin connector is only available from Harting 02021602201

95 pins hard metric P0 connector example: EPT 243-23352-15F

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Power entry solution

Amphenol ABSI VME64x backplanes have a few power entry solutions to meet our customer's configuration requirements. Choose between power tags, screws or studs as the power input. We also offer industry standard power entry options on VME64x backplanes to meet your power entry requirement.

Power tags example ERNI 214787:
Press-fit power tags is an option on the VME64x backplane. Each power tap can carry 40A current.

Power Studs example PEM KFH-632-8-ET
Use of press-fit studs is also an option on VME64x backplane. Each power tap can carry 30A current.

Custom
Our customers can also specify a custom power entry solution that they will use.

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3U Dimension Table:

Slot Numbers	Height in Inch	Height in mm	Length in Inch	Length in mm
2	5.067	128.7	1.560	39.640
3	5.067	128.7	2.360	59.960
4	5.067	128.7	3.160	80.280
5	5.067	128.7	3.960	100.600
6	5.067	128.7	4.760	121.920
7	5.067	128.7	5.560	141.240
8	5.067	128.7	6.360	161.560
9	5.067	128.7	7.160	181.880
10	5.067	128.7	7.960	202.200
11	5.067	128.7	8.760	222.520
12	5.067	128.7	9.560	242.840
13	5.067	128.7	10.360	263.160
14	5.067	128.7	11.160	283.480
15	5.067	128.7	11.960	303.800
16	5.067	128.7	12.760	324.120
17	5.067	128.7	13.560	344.440
18	5.067	128.7	14.360	364.760
19	5.067	128.7	15.160	385.080
20	5.067	128.7	15.960	405.400
21	5.067	128.7	16.760	425.720

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6U Dimension Table:

Slot Numbers	Height in Inch	Height in mm	Length in Inch	Length in mm
2	10.317	262.05	1.560	39.640
3	10.317	262.05	2.360	59.960
4	10.317	262.05	3.160	80.280
5	10.317	262.05	3.960	100.600
6	10.317	262.05	4.760	121.920
7	10.317	262.05	5.560	141.240
8	10.317	262.05	6.360	161.560
9	10.317	262.05	7.160	181.880
10	10.317	262.05	7.960	202.200
11	10.317	262.05	8.760	222.520
12	10.317	262.05	9.560	242.840
13	10.317	262.05	10.360	263.160
14	10.317	262.05	11.160	283.480
15	10.317	262.05	11.960	303.800
16	10.317	262.05	12.760	324.120
17	10.317	262.05	13.560	344.440
18	10.317	262.05	14.360	364.760
19	10.317	262.05	15.160	385.080
20	10.317	262.05	15.960	405.400
21	10.317	262.05	16.760	425.720

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7U Dimension Table:

Slot Numbers	Height in Inch	Height in mm	Length in Inch	Length in mm
2	11.716	297.600	1.560	39.640
3	11.716	297.600	2.360	59.960
4	11.716	297.600	3.160	80.280
5	11.716	297.600	3.960	100.600
6	11.716	297.600	4.760	121.920
7	11.716	297.600	5.560	141.240
8	11.716	297.600	6.360	161.560
9	11.716	297.600	7.160	181.880
10	11.716	297.600	7.960	202.200
11	11.716	297.600	8.760	222.520
12	11.716	297.600	9.560	242.840
13	11.716	297.600	10.360	263.160
14	11.716	297.600	11.160	283.480
15	11.716	297.600	11.960	303.800
16	11.716	297.600	12.760	324.120
17	11.716	297.600	13.560	344.440
18	11.716	297.600	14.360	364.760
19	11.716	297.600	15.160	385.080
20	11.716	297.600	15.960	405.400
21	11.716	297.600	16.760	425.720

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9U Dimension Table:

Slot Numbers	Height in Inch	Height in mm	Length in Inch	Length in mm
2	15.567	395.40	1.560	39.640
3	15.567	395.40	2.360	59.960
4	15.567	395.40	3.160	80.280
5	15.567	395.40	3.960	100.600
6	15.567	395.40	4.760	121.920
7	15.567	395.40	5.560	141.240
8	15.567	395.40	6.360	161.560
9	15.567	395.40	7.160	181.880
10	15.567	395.40	7.960	202.200
11	15.567	395.40	8.760	222.520
12	15.567	395.40	9.560	242.840
13	15.567	395.40	10.360	263.160
14	15.567	395.40	11.160	283.480
15	15.567	395.40	11.960	303.800
16	15.567	395.40	12.760	324.120
17	15.567	395.40	13.560	344.440
18	15.567	395.40	14.360	364.760
19	15.567	395.40	15.160	385.080
20	15.567	395.40	15.960	405.400
21	15.567	395.40	16.760	425.720

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Amphenol ABSI

Amphenol ABSI is an industry leader of backplane and system solutions. Amphenol ABSI has been a leading designer and manufacture of backplanes for more than 30 years.

Amphenol ABSI deliver:
- Industry leading interconnect technology
- Advanced printed circuit capabilities and partnerships
- Innovative backplane system design and manufacturing
- Integrated design / applications engineering services
- Flexible, global support and supply chain management
- Most extensively tooled Backplane Supplier in the industry
- Industry leading Mechanical and SI test solutions
- Lowest cost solution on highest performance backplane

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