

**Claims**

1) Rack mountable equipment of a type which can be cooled by installation into a cooling rack enclosure, the equipment comprising:

a) a heat generating component;

b) a heat transmitter;

c) a rail adapted to be received by a channel in an enclosure when the equipment is installed in the enclosure;

d) a thermally conductive surface located on the rail, the thermally conductive surface thermally connected via the heat transmitter to the heat generating component; and

e) a mean for urging a portion of the thermally conductive surface against a coolable surface of the channel, the thermally conductive surface being sufficient for the purpose of cooling the rack mountable equipment.

2) The rack mountable equipment of claim 1, wherein the channel is U-shaped.

3) The rack mountable equipment of claim 1 or 2, wherein the mean for urging a portion of the thermally conductive surface against the coolable surface of the channel is a mechanical mean.

4) The rack mountable equipment of claim 3, wherein the mechanical mean is a handle or a lever adapted to push the thermally conductive surface against the coolable surface of the channel.

5) The rack mountable equipment of claim 3, wherein the mechanical mean is a spring insert inserted between the rail and an opposing surface of the channel.

6) The rack mountable equipment of claim 1, wherein the mean for urging a portion of the thermally conductive surface against the coolable surface of the channel comprises

magnetic fasteners, wherein the thermally conductive surface is located on the rail or on a side wall of the enclosure.

7) The rack mountable equipment of claim 1, wherein gravity acts as the mean for urging a portion of the thermally conductive surface against the coolable surface of the channel.

8) The rack mountable equipment of any one of claims 1 to 7, wherein the rail projects from a side of the enclosure.

9) The rack mountable equipment of any one of claims 1 to 8, further comprising a second rail adapted to be received by a second channel in the enclosure when the equipment is installed, the second rail being located on an opposite side of the equipment that the first rail is located on.

10) The rack mountable equipment of claim 9, wherein a second thermally conductive surface is located on the second rail.

11) The rack mountable equipment of any one of claims 1 to 10, wherein the coolable surface is cooled by flowing a coolant liquid within the cooling rack enclosure.

12) A cooling rack enclosure into which rack mounted equipment can be installed, the rack mounted equipment being of a type which can be cooled by installation into a cooling rack enclosure and which comprises a rail comprising a thermally conductive surface, the rack enclosure comprising:

- a) a channel adapted to receive the rail of the rack mounted equipment when the equipment is installed into the enclosure; and
- b) a coolable surface disposed on a surface of the channel in such a way that the coolable surface is adjacently located to the thermally conductive surface when the equipment is installed into the enclosure,

the channel being adapted to receive an urging mean for urging a portion of the thermally conductive surface against the coolable surface of the channel, the thermally conductive surface being sufficient for the purpose of cooling the equipment.

5 13) The rack enclosure of claim 12, wherein the channel is U-shaped.

14) The rack enclosure of claim 12 or 13, wherein the mean for urging a portion of the thermally conductive surface against the coolable surface of the channel is a mechanical mean.

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15) The rack enclosure of claim 14, wherein the mechanical mean is a handle or a lever that pushes the thermally conductive surface against the coolable surface of the channel.

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16) The rack enclosure of claim 14, wherein the mechanical mean is a spring insert inserted between the rail and an opposing surface of the channel.

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17) The rack enclosure of claim 12, wherein the mean for urging a portion of the thermally conductive surface against the coolable surface of the channel is magnetic fasteners, and wherein the thermally conductive surface is located on the rail or on a side wall of the enclosure.

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18) The rack enclosure of any one of claims 12 to 17, wherein the coolable surface is disposed such that when the rack mounted equipment is installed gravity urges a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment against the coolable surface.

19) The rack enclosure of any one of claims 12 to 18, wherein the coolable surface can be cooled by engendering a flow of a liquid coolant within the rack enclosure.

20) The rack enclosure of any one of claims 12 to 19, wherein installed equipment is sufficiently supported by the rail interacting with the channel.

21) A method of cooling rack mounted equipment, the method comprising:

- a) enabling the transmission of heat from a heat-generating component of the rack mounted equipment to a thermally conductive surface; and
- b) configuring the thermally conductive surface such that it can be urged against a cooled surface of a cooling apparatus by using an urging mean.

22) The method of claim 21, wherein the method further comprises the step of inserting the rack mounted equipment inside the cooling apparatus.

23) The method of claim 21, wherein the urging mean is a handle or a lever adapted to push the thermally conductive surface against the cooled surface of the cooling apparatus, the method further comprising activating the handle or lever for urging the thermally conductive surface against the cooled surface after the step of inserting the rack mounted equipment inside the cooling apparatus.

24) The method of claim 21, wherein the urging mean is a spring insert adapted to push the thermally conductive surface against the cooled surface of the cooling apparatus, the method further comprising inserting the spring insert for urging the thermally conductive surface against the cooled surface after the step of inserting the rack mounted equipment inside the cooling apparatus.

25) The method of claim 21, wherein the mean is magnetic fasteners adapted to urge the thermally conductive surface against the cooled surface of the cooling apparatus, the method further comprising fastening the thermally conductive surface to the cooled surface using the magnetic fasteners after inserting the rack mounted equipment inside the cooling apparatus, and wherein the thermally conductive surface is located on the rail or on a side wall of the enclosure.

What is claimed is:

1. Rack mountable equipment of a type which can be cooled by installation into a cooling rack enclosure, the equipment comprising:
  - (a) a heat generating component;
  - (b) a heat transmitter;
  - (c) a rail adapted to be received by a channel in an enclosure when the equipment is installed in the enclosure, and;
  - (d) a thermally conductive surface located on the rail, the thermally conductive surface thermally connected via the heat transmitter to the heat generating component.
2. The rack mountable equipment of claim 1, wherein the channel is U-shaped.
3. The rack mountable equipment of claim 2, wherein the thermally conductive surface is located such that when the equipment is installed gravity urges a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment against a coolable surface of the channel.
4. The rack mountable equipment of claim 2, wherein the thermally conductive surface is located such that when installed a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment can be urged against a coolable surface of the channel by bracing the rail against an opposing surface of the channel.
5. The rack mountable equipment of claim 1, wherein the thermally conductive surface is located on the rail such that when the equipment is installed gravity urges a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment against a coolable surface of the channel.
6. The rack mountable equipment of claim 1, wherein the thermally conductive surface is located on the rail such that when installed the thermally conductive surface can be urged against a coolable surface of the channel by being braced against a feature of the enclosure.

7. The rack mountable equipment of claim 1, wherein the thermally conductive surface is located such that when installed the thermally conductive surface can be urged against a coolable surface of the channel by bracing the rail against an opposing surface of the channel.
8. The rack mountable equipment of claim 1, wherein the rail projects from a side of the enclosure.
9. The rack mountable equipment of claim 1, further comprising a second rail adapted to be received by a second channel in the enclosure when the equipment is installed, the second rail being located on an opposite side of the equipment that the first rail is located on.
10. The rack mountable equipment of claim 9, wherein a second thermally conductive surface is located on the second rail.
11. A cooling rack enclosure into which rack mounted equipment can be installed, the rack mounted equipment being of a type which can be cooled by installation into a cooling rack enclosure and which comprises a rail comprising a thermally conductive surface, the rack enclosure comprising:
  - (a) a channel adapted to receive the rail of the rack mounted equipment when the equipment is installed into the enclosure, and;
  - (b) a coolable surface disposed on a surface of the channel in such a way that the coolable surface is adjacently located to the thermally conductive surface when the equipment is installed into the enclosure.
12. The rack enclosure of claim 11, wherein the channel is U-shaped.
13. The rack enclosure of claim 12, wherein the coolable surface is disposed such that when the rack mounted equipment is installed gravity urges a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment against the coolable surface.

14. The rack enclosure of claim 12, wherein the coolable surface is disposed such that when the rack mounted equipment is installed a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment can be urged against the coolable surface by bracing the rail against an opposing surface of the channel.

15. The rack enclosure of claim 11, wherein the coolable surface is disposed such that when the rack mounted equipment is installed gravity urges a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment against the coolable surface.

16. The rack enclosure of claim 11, wherein the coolable surface is disposed such that when the rack mounted equipment is installed a portion of the thermally conductive surface sufficient for the purpose of cooling the equipment can be urged against the coolable surface by bracing the rail against a feature of the enclosure.

17. The rack enclosure of claim 11, wherein the coolable surface can be cooled by engendering a flow of a liquid coolant within the rack enclosure.

18. The rack enclosure of claim 11, wherein installed equipment is sufficiently supported by the rail interacting with the channel.

19. A method of cooling rack mounted equipment, the method comprising:

- (a) enabling the transmission of heat from a heat-generating component of the rack mounted equipment to a thermally conductive surface; and
- (b) configuring the thermally conductive surface such that it can be urged against a cooled surface of a cooling apparatus by using a magnetic fastener.

20. A method of cooling rack mounted equipment, the method comprising positioning a magnetically attractive feature such that a thermally conductive surface can be urged against a cooled surface by a magnetic fastener cooperating with the magnetically attractive feature.

21. A cooling apparatus for cooling a thermally conductive surface of rack mountable equipment comprising a heat-generating component thermally connected to a thermally conductive surface, the cooling apparatus comprising:
- (a) a coolable surface; and
  - (b) a magnetically attractive feature configured such that a magnetic fastener can be used to urge the thermally conductive surface against the cooled surface.
22. The cooling apparatus of claim 21, further comprising a channel beneath a surface of the coolable surface through which a liquid coolant can flow.
23. The cooling apparatus of claim 21, integrated with a rack enclosure.
24. The cooling apparatus of claim 21, integrated with a shelf-style rack enclosure.
25. The cooling apparatus of claim 21, designed to operate in cooperation with a rack enclosure.
26. An apparatus comprising:
- (a) a heat-generating component;
  - (b) a heat transmitter; and
  - (c) a thermal connector comprising a thermally conductive surface, the thermally conductive surface thermally connected to the heat-generating component by the heat transmitting means, the thermal connector configured to be urged against a surface by a magnetic fastener.
27. The apparatus of claim 26, wherein the thermal connector is configured to be urged against a surface by a magnetic fastener, the thermal connector further comprising an aperture comprising a shelf, the aperture configured to receive the magnetic fastener such that when the body of the magnetic fastener presses against the shelf the magnet can be brought into proximity with the surface.

28. The apparatus of claim 26, wherein the thermal connector is positioned such that the thermally conductive surface is brought into a position where it can be urged against the surface by the magnetic fastener when the apparatus is installed in a rack enclosure.
29. The apparatus of claim 26, wherein the heat transmitter is a heatpipe.
30. The apparatus of claim 26, wherein the heat transmitter is a flexible heatpipe.