

an edge connector supported by the physical support structure, the edge connector connected to the at least one network switching chip and configured to accept a transmission cable for transmitting a signal, wherein signal transmission is in accordance with a backplane Ethernet standard, wherein the network switch device is connected to a network transpose box via the transmission cable.

6. The network switch device of claim 5 wherein the backplane Ethernet standard is the 10GBASE-KR standard.

~~7. The network switch device of claim 5 wherein the network switch device is connected to a network transpose box via the transmission cable.~~

87. The network switch device of claim 5 wherein the edge connector is directly connected to a pin of the at least one network switching chip.

98. The network switch device of claim 5, wherein the network switch device further comprises circuitry, the circuitry being configured to transform the signal between an optical signal and an electrical signal.

109. A network transpose box, comprising:
a physical support structure;
a set of network connectors supported by the physical support structure, the set of network connectors separated into a first logical group and a second logical group each containing a plurality of the network connectors, each network connector configured to accept a transmission cable for transmitting a signal; and
a plurality of connection media:

wherein the plurality of connection media facilitate signal transmission based on a backplane Ethernet standard, and

wherein each instance of the connection media connecting one of the network connectors of the first logical group to one of the network connectors of the second logical group to enable a signal to be communicated between a transmission cable connected to the network connector of the first logical group and a transmission cable connected to the network connector of the second logical group, the connection media configured such that each network connector of the first group is connected to each

network connector of the second group and each network connector of the second group is connected to each member of the first group.

| 4410. The network transpose box of claim ~~40-9~~ wherein the backplane Ethernet standard is the 10GBASE-KR standard.

| 4211. The network transpose box of claim ~~40-9~~ wherein the backplane Ethernet standard is the 40GBASE-KR4 standard.

| 4312. The network transpose box of claim ~~40-9~~ wherein the plurality of connection media comprises a plurality of printed circuit board traces.

| 4413. The network transpose box of claim ~~40-9~~ wherein two or more network connectors are each connected to a network device, and wherein each network device connected to a network connector of the first group is capable of being connected to each network device connected to at least two of the network connectors of the second group.

| 4514. The network transpose box of claim ~~40-9~~ wherein each of the set of network switch devices is connected to the transpose box using a number of transmission cables that is less than the number of ports to be connected to the transpose box.