means for adding a second input port and a second output port to the SAS expander device;

means for defining the second input port and the second output port to be paired with each other as a secondary subtractive port;

means for sending an OPEN command out the output port upon receiving the OPEN command into the input port if a DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device;

means for sending the OPEN command out the input port upon receiving the OPEN command into the output port if the DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device;

means for sending the OPEN command out the second output port upon receiving the OPEN command into the second input port if the DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device;

means for sending the OPEN command out the second input port upon receiving the OPEN command into the second output port if the DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device; and

means for specifying the subtractive ports of the SAS expander via a modified routing attribute of a vendor unique SAS Management Protocol (SMP) function, wherein when the modified routing attribute exists for a port, a SAS initiator ignoring the SMP DISCOVER response attribute for the port and instead using the modified routing attribute for the port, the secondary subtractive port operates for communication with the direct attached device of the SAS expander device.

7. The system of claim **6**, wherein the OPEN command defaults to the primary subtractive port.

8. The system of claim **6**, wherein the means for programming the SAS initiator address in the route table of the SAS expander device further includes: means for programming the route table for a self-configuration specified port, wherein the programming the route table for the port is performed by the SAS expander device.

9. A system, comprising:

means for assigning an input port to a SAS expander device;

means for assigning an output port to the SAS expander device;

means for defining the output port and the input port to be paired with each other as a primary subtractive port;

means for programming only a SAS initiator address in the route table of the SAS expander device, wherein the means for programming the SAS initiator address in the route table of the SAS expander device includes means for programming the SAS initiator address in the route table of the SAS expander device using a SAS initiator in the SAS routing topology, and wherein each SAS initiator programs only the SAS initiator address for that SAS initiator in the route table of the SAS expander device;

means for adding a second input port and a second output port to the SAS expander device;

means for defining the second input port and the second output port to be paired with each other as a secondary subtractive port;

means for sending an OPEN command out the output port upon receiving the OPEN command into the input port if a DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device;

means for sending the OPEN command out the input port upon receiving the OPEN command into the output port if the DEST of the OPEN command is not a direct attached device of the SAS expander device and the DEST is not in the route table of the SAS expander device;

means for specifying the subtractive ports of the SAS expander via a modified routing attribute of a vendor unique SAS Management Protocol (SMP) function, wherein when the modified routing attribute exists for a port, a SAS initiator ignoring the SMP DISCOVER response attribute for the port and instead using the modified routing attribute for the port, wherein each SAS initiator only programs the SAS initiator address for that SAS initiator in the route table of one type of modified routing attribute port of the SAS expander device, depending on the position of the SAS initiator in the SAS routing topology.

10. The system of claim **9**, wherein a SAS initiator is located at a top or a bottom of the SAS routing topology.

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