

# WHAT IS SATA EXPRESS?

## SATA EXPRESS SPECIFICATION

Defines connectors for host and for HDD-type form factor drives (e.g. 2.5-inch, 3.5-inch)

- Connectors support PCIe or SATA

## SATA EXPRESS HOST

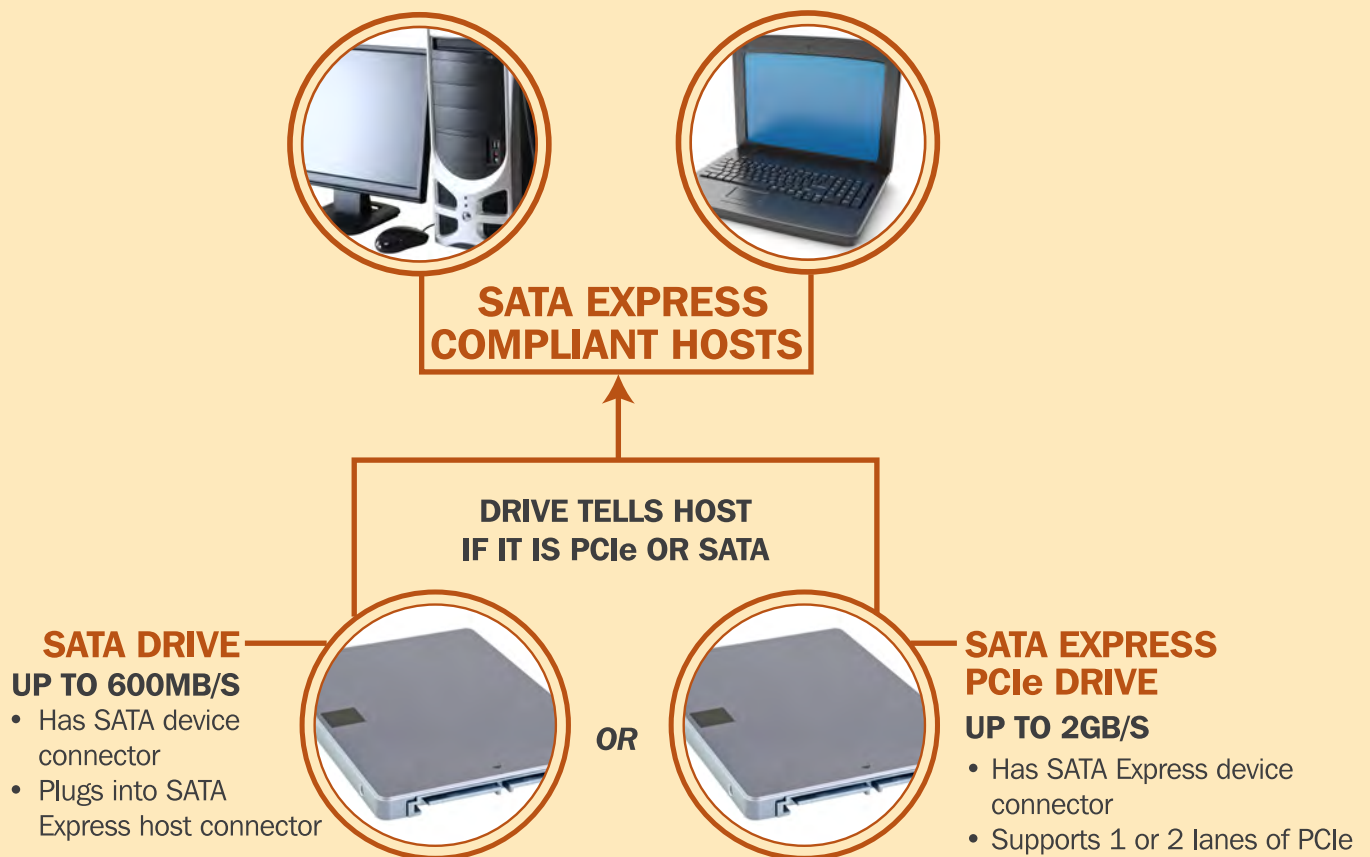
Has SATA Express host connector and accepts either:

- 1 or 2 SATA drives
- 1 PCIe drive with up to 2 PCIe lanes

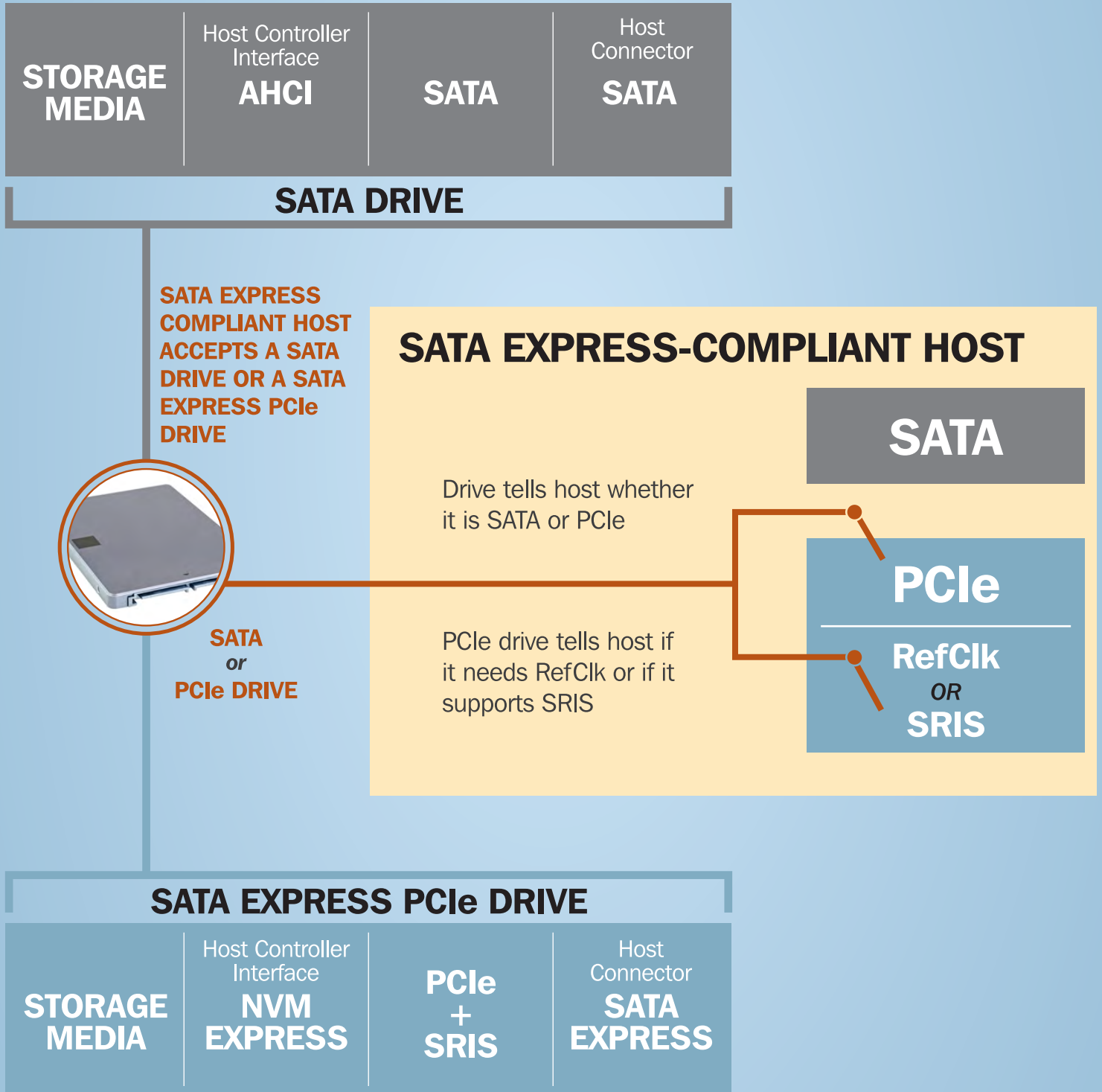
## HOST CONTROLLER INTERFACE

Can be AHCI or NVM Express

- Not part of SATA Express specification



# SATA EXPRESS ENABLES SATA & PCIe TO COEXIST



# SRIS DEFINES SATA EXPRESS CONNECTIVITY

## GOALS OF SATA EXPRESS INCLUDE USE OF INEXPENSIVE CABLES AND SEAMLESS BACKPLANE FUNCTIONALITY.

- Until recently, PCIe required a 100MHz Reference Clock to be carried across the interface.
  - A PCIe storage device using a cable would need an expensive shielded cable to minimize clock noise.
- To address this issue, **Separate RefClock with Independent SSC (SRIS)** was added to the PCIe specification.
  - If the PCIe device and host support SRIS, it is not necessary to carry Reference Clock on the cable, enabling an inexpensive cable to be used.
- If the PCIe device is connected without a cable, such as with a backplane connector, shielding is not an issue, and so Reference Clock may or may not be provided by the host at the connector. To accommodate all platform options, the SATA Express specification defines the **ClkDet** signal.
  - The PCIe device drives ClkDet low if it requires the host to supply Reference Clock.
  - If ClkDet from the PCIe device is high, the PCIe device supports SRIS and doesn't need Reference Clock from host.

