

Quad to Small Form Factor Pluggable Adapter

QSFP+ to SFP+ Pluggable Adapter Module

This document explains the myth associated with QSFP+ to SFP+ pluggable adapter, normally used to enable the connectivity between quad lane port such as 40Gb adapter (using QSFP+ ports interface) and a 10Gb adapter (using SFP+ interface). This pluggable adapter is built in a QSFP+ form factor with a cage for SFP+ cable connector at the back.

Overall, this optics form factor converter, while interesting at first, seems like a solution for a problem that does not exist; with no real application in practical deployment situations. There might be few scenarios where such solution might address the specific requirements but for a better ROI and to avoid the vendor lock-in, we need to consider the following realities:

- An Octopus cable expands the 40Gb data pipe into 4x 10Gb lanes and hence provides 4 times more data transfer compared to a Quad to Small Form Factor Pluggable Adapter, which provides connectivity only for a single 10Gb connection and hence dissolves the purpose of a 40Gb adapter.
- Normally, a 40Gb adapter is more expensive than a 10Gb card. For cases where only 10Gb infrastructure is supported, paying for a 40Gb card and using QSA adapter module is an expensive solution.
- 40Gb switch ports and adapters have commoditized rapidly. It is hence more cost effective to make the additional investment in a switch port instead of a breakout cable or QSA form factor. This would be a more durable investment and will provide a higher performance immediately.
- If a 40Gb adapter is needed to be connected in a 10Gb only switch environment, a QSFP+ to 4xSFP+ octopus cable allows up to four 10Gb interfaces without the need for a Quad to Small Form Factor Pluggable Adapter. Such cables support both DAC (Twinax Passive) and Optical connectivity.
- The only vendor providing the QSA module has patented this module, thereby creating a sole source paradigm. This is not a standard MSA¹ (Multi-source Agreement). The only other vendor is reselling the same module from the first vendor, so this is in fact a sole sourced product.
- Finally, QSA has been unsuccessful in the market, which may explain why it exists only for the 40Gb to 10Gb speeds. Optical solutions tend to have a long reliability cycle requirement which require a minimum adoption volume.

¹ https://en.wikipedia.org/wiki/Multi-source_agreement