Coherent Optical Port Trends

Report Excerpts

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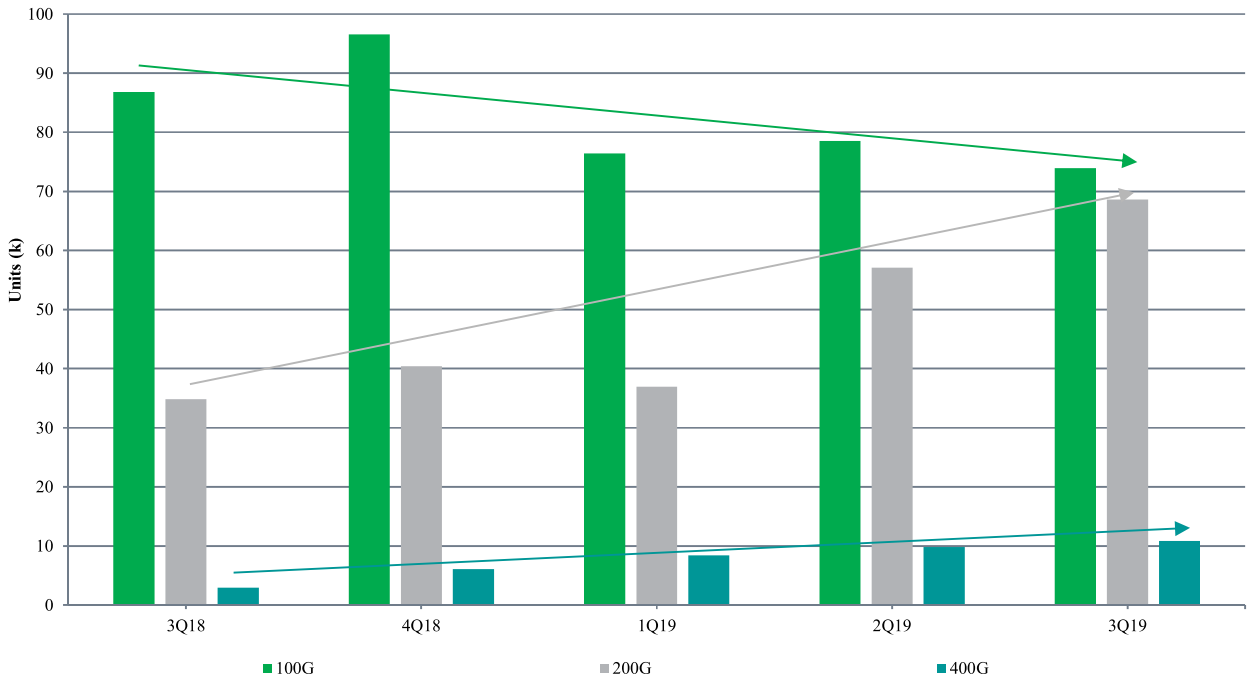
100G+ coherent optical port trends

200G emerges as the fastest growing segment

200G is the fastest growing coherent transmission segment, increasing 20% QoQ in 3Q19 in unit volume despite a seasonally slower quarter. The availability of higher performance and more cost-effective solutions is driving 200G's growing popularity. NEMs using embedded 200G ports in their transmission equipment have been the dominant implementation model in 2017 and 2018. In 2019, this is shifting in favor of pluggable CFP2-ACO and CFP2-DCO. solutions. Much of this is being driven by the China market, where there is a push from service providers to use pluggable transponders for ease of use and pay as you grow, as well as at some web-scale ICPs. These 200G solutions leverage multi-rate capability that can operate at data rates of 100G or 200G. Both rates still operate inside a 50 GHz grid and do not require wider WDM grids. These solutions are beginning to see use in national backbone networks as well as metro and regional networks.

Exhibit 1 Coherent port trend by speed

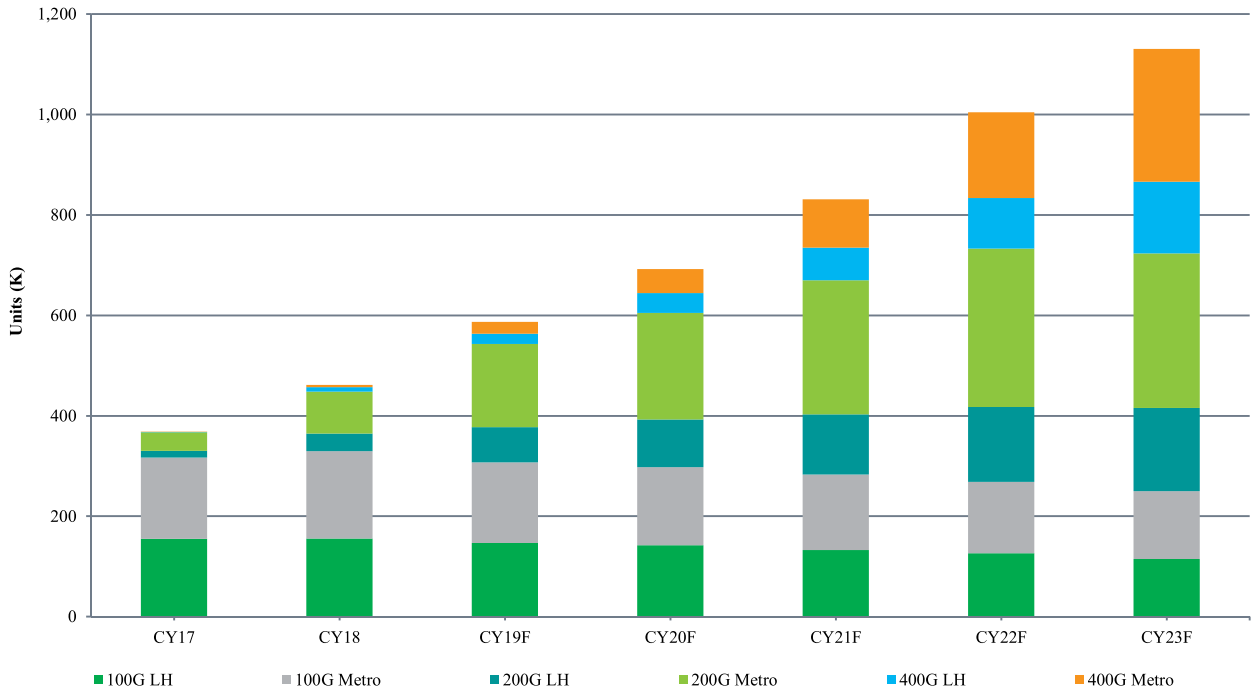


Source: IHSM Markit

200G and 400G ports support bandwidth growth

Over the next five years, we expect multi-rate 200G and 400G ports to continue to grow, playing an important role in meeting bandwidth demand. Fixed 100G port deployments will continue to slowly decline. Overall for the 2019–23 forecast period, the five-year CAGR for 200G and 400G will be 19% and 75%, respectively.

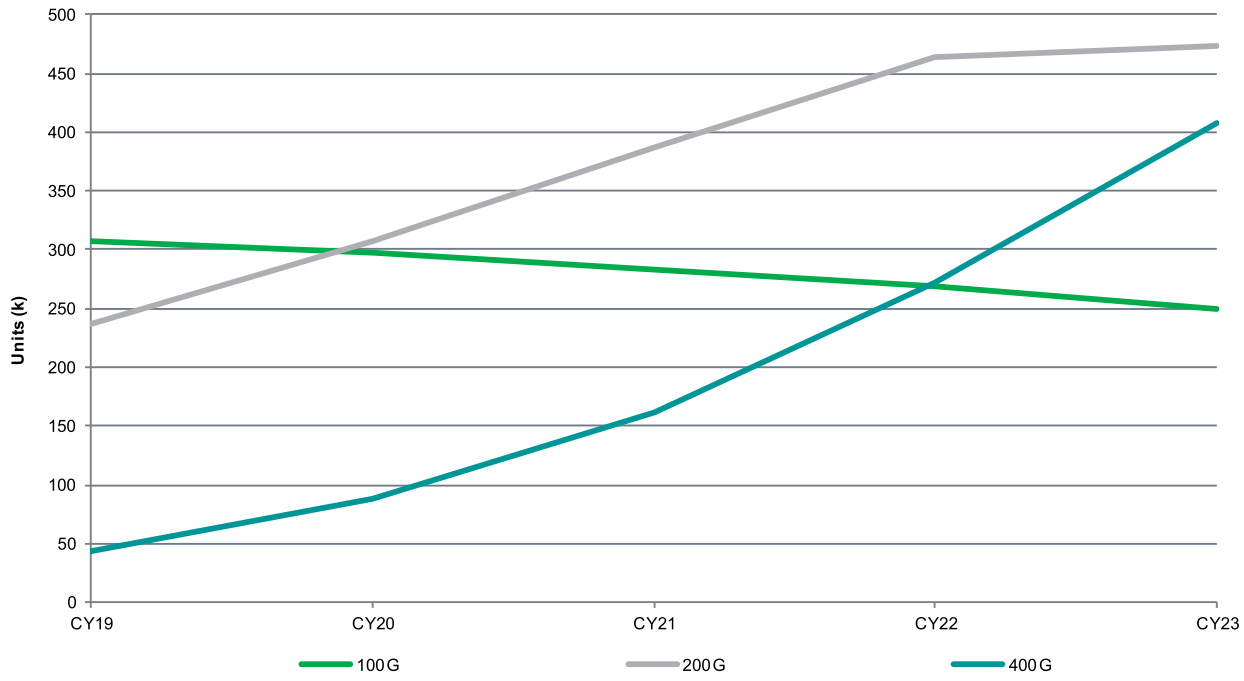
Exhibit 2 Coherent port shipment forecast by maximum line rate and application



Source: IHSM Markit

200G upgrades are easier and less expensive than upgrading to 400G wavelengths. 200G is compatible with fixed 50 GHz ITU grids, used in most WDM networks deployed worldwide today. Because of this and the move to 200G in China, we expect 200G will remain strong through 2023. With new technology coming to market and more vendors with 400G+ solutions, we expect the growth of 400G+ ports to accelerate starting mid-year 2020.

Exhibit 3 Coherent ports forecast (2019–23)



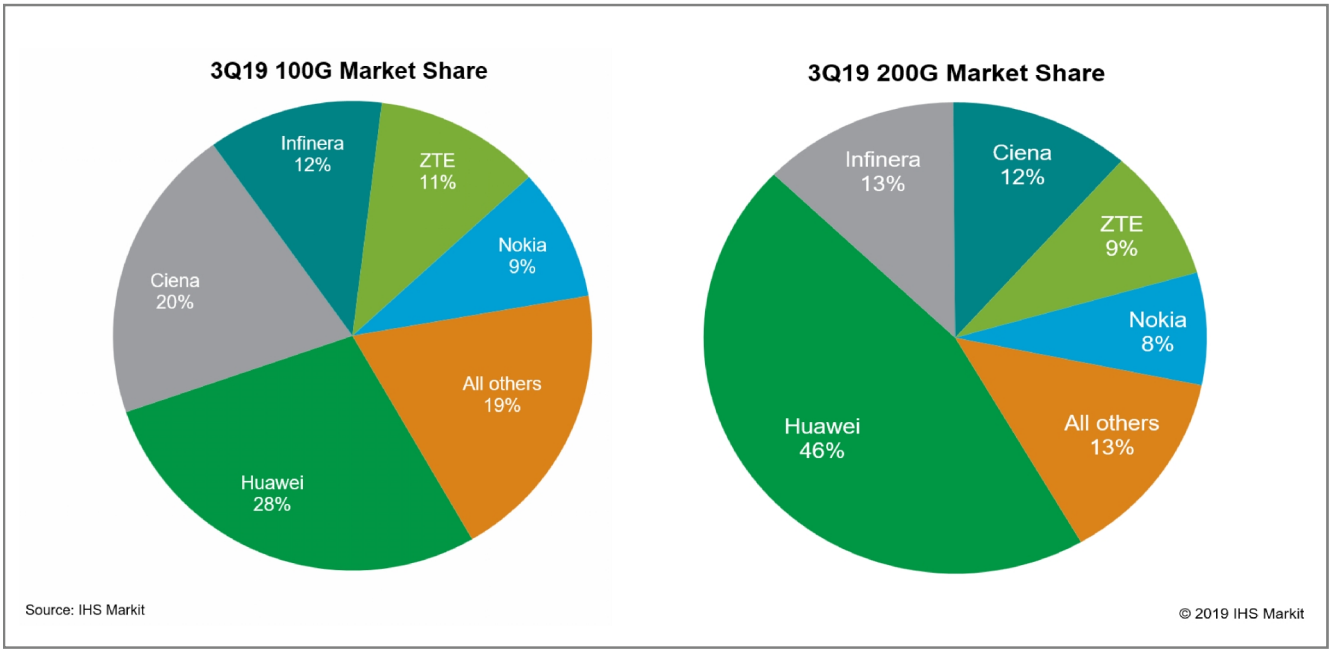
Source: IHSM Markit

100G and 200G coherent port market share

Huawei leads the worldwide market for both 100G and 200G coherent ports, with 28% market share at 100G and 46% market share at 200G. Ciena was second in market share for 100G ports at 20% and third for 200G at 12%. Infinera was the second largest share of 200G ports with 13% and third position for 100G ports 12%. ZTE was in fourth position worldwide for 100G and 200G ports.

Comparing 3Q19 results for Chinese NEM vendors of optical transport gear, Huawei is the clear market leader commanding 2.5 times the volume of 100G coherent ports and 6 times the volume of the growing 200G market over ZTE. Fiberhome is a distant 3rd place for coherent port market share at both 100G and 200G.

Exhibit 4 100G and 200G coherent ports market share



Bottom line

The move from 100G fixed rate to multi-rate 200G and 400G+ ports will continue over the forecast period, but the use of 100G line rates will continue to be an import part of the mix, especially for long haul applications. Optical line systems are being upgraded to support 200G and 400G+ line rates, and solutions are now available from many vendors. We expect 400G-capable ports to have the highest growth rate starting in 2020. Multi-rate 600G coherent products from vendors are starting to be deployed in 2H19, and we expect these to continue growing in 2020.

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