Wireless LAN

Vendor performance index Q3 2021

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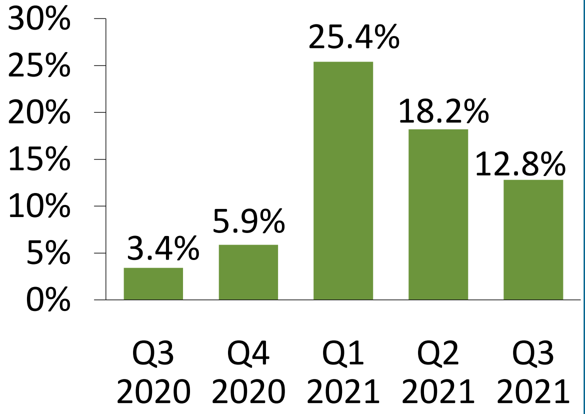
Shipments up 13% in Q3, up 18% year to date

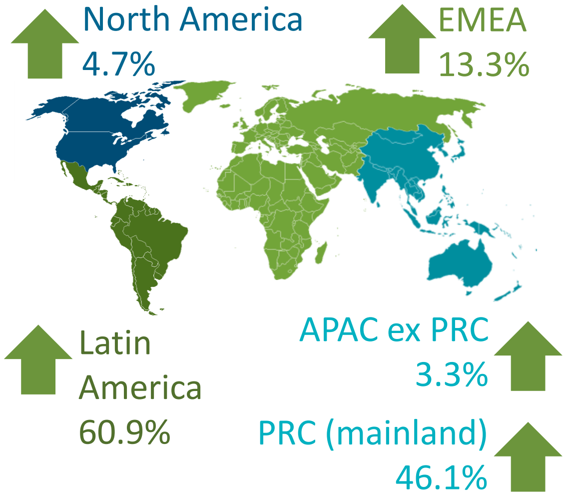
Worldwide wireless LAN shipments

Q3 2021 | **US$1,954 million** | **12.8%**

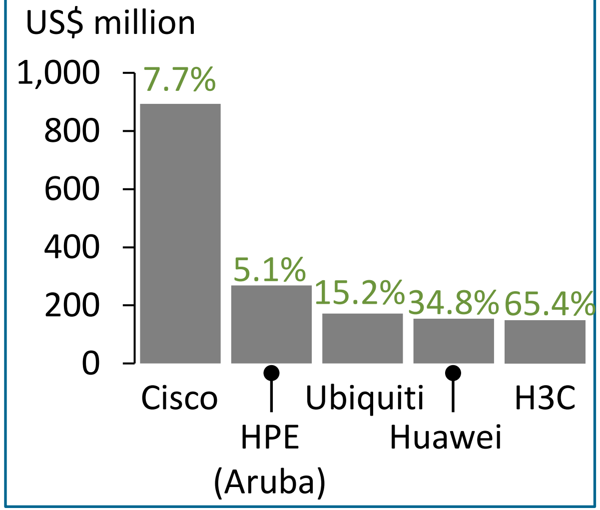
Growth trend



Growth by region



Leading vendors



Source: Canalys estimates, Infrastructure Analysis, December 2021

Worsening supply constraints moderate Q3 growth

Worldwide wireless LAN shipments

Q3 2021 | US$1,954 million | 12.8%

Growth trend

- Wireless LAN shipments had a record quarter, exceeding US$1.9 billion, despite supply constraints worsening.
- Investment in Q3 was up 12.8% annually and 12.3% sequentially. This exceeded Canalys' best-case forecast of 10.5%.
- Recovery in sectors affected the most by lockdowns, combined with Wi-Fi 6 refresh as workplaces reopened, and the advancement of orders to offset long lead times, maintained strong demand.
- Supply chain distribution and inventory constraints continued to limit fulfilment of large orders, which has increased vendor backlogs.

Growth by region

- Growth in North America (+4.7%) moderated. E-Rate and government stimuli funding remained key drivers.
- Demand in EMEA (+13.3%) remained strong, particularly in Western Europe (+15.9%). Germany (+16.3%), the UK (+20.4%) and France (+24.3%) all grew.
- Latin America (+60.9%) was boosted by the deployment of a large countrywide free Wi-Fi network in Mexico.
- Wi-Fi 6 rollout accelerated in China (+46.1%). Growth in the Rest of Asia Pacific (+3.3%) slowed, due to tough comparisons in Japan (-14.9%) after strong government spending in 2020.

Leading vendors

- Cisco's (+7.7%) growth remained below the market average in Q3, as supply issues continued to offset strong orders.
- HPE (Aruba) was the second largest vendor. Its growth (+5.1%) moderated as its supply issues worsened in Q3.
- Ubiquiti (+15.2%) was boosted by strong demand for its low-priced Wi-Fi 6 access points and return to spending in SMBs.
- The leading Chinese vendors, Huawei (+34.8%) and H3C (+65.4%) capitalized on strong domestic demand for Wi-Fi 6.
- CommScope (-4.8%) was down in Q3. However, orders in its key sectors were strong, which expanded its backlog.

Source: Canalys estimates, Infrastructure Analysis, December 2021

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Wireless LAN market trends summary

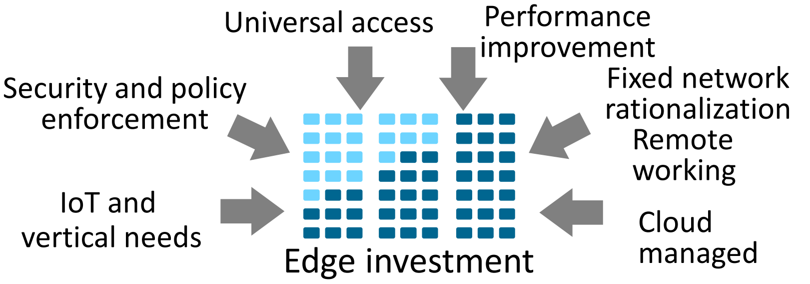
Shift to controller-less

- Access points grew 12.6% in Q3 2021, driven by demand for Wi-Fi 6 and as part of cloud-managed controller-less deployments.
- Overall, access points accounted for 91.9% of total wireless LAN shipment value.
- Controller shipments returned to growth (+16.1%) in Q3, as vendors benefitted from installed base refresh initiatives.

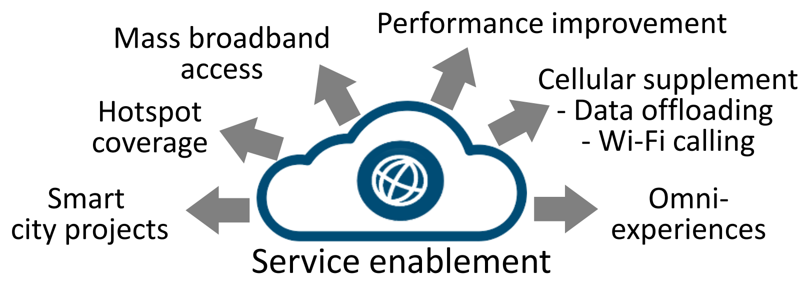
Wi-Fi 6 and Wi-Fi 6E

- Wi-Fi 6 accounted for 68.7% of shipments in Q3 2021, up from 54.8% in Q2 2021 and 41.4% in Q3 2020.
- Enterprise-grade Wi-Fi 6E access points are now commercially available. More than 40 countries have approved the unlicensed use of 6GHz spectrum, with another 15 considering it.

Edge investment drivers



Service enablement drivers



Supply remains key limiting factor for forecasts

Worldwide wireless LAN market forecasts*

FY 2020 actual
US$6,479 million

FY 2021 forecast*
Worst-case: US$7.4 million (+14.3%)
Best-case: US$7.5 million (+15.6%)

Growth rates

Total wireless LAN (access points and controllers)	2021 forecast* Best-case	2021 forecast* Worst-case	YTD 2021 Actual
Asia Pacific excluding PRC	15.5%	14.1%	20.2%
People’s Republic of China (mainland)	18.1%	16.7%	36.2%
EMEA	13.5%	12.2%	15.2%
Latin America	18.2%	16.9%	33.5%
North America	16.1%	14.8%	14.6%
Worldwide	**15.6%**	**14.3%**	**18.4%**

*Canalys forecasts, October 2021
Source: Canalys estimates, Infrastructure Analysis, December 2021

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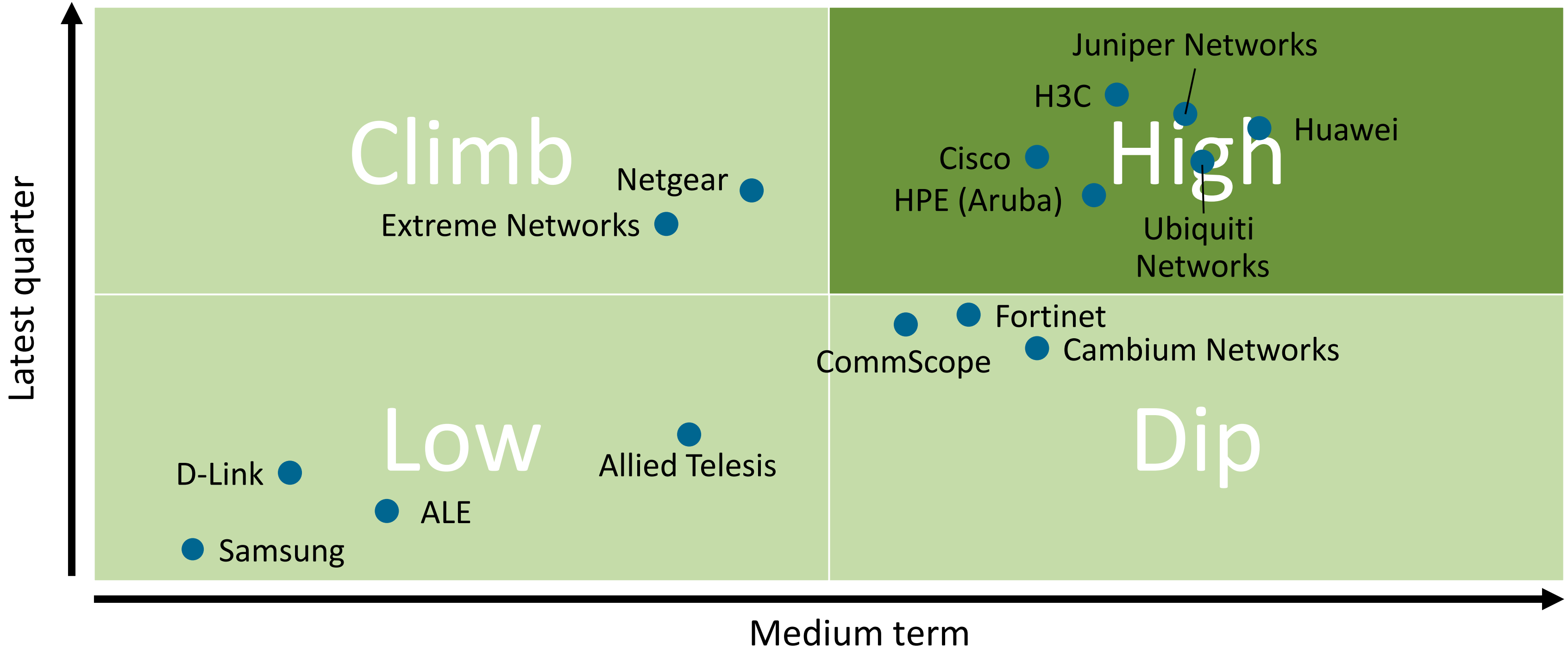
Juniper continues to gain with Mist traction

Canalys Vendor Performance Index: **Wireless LAN** Q3 2021

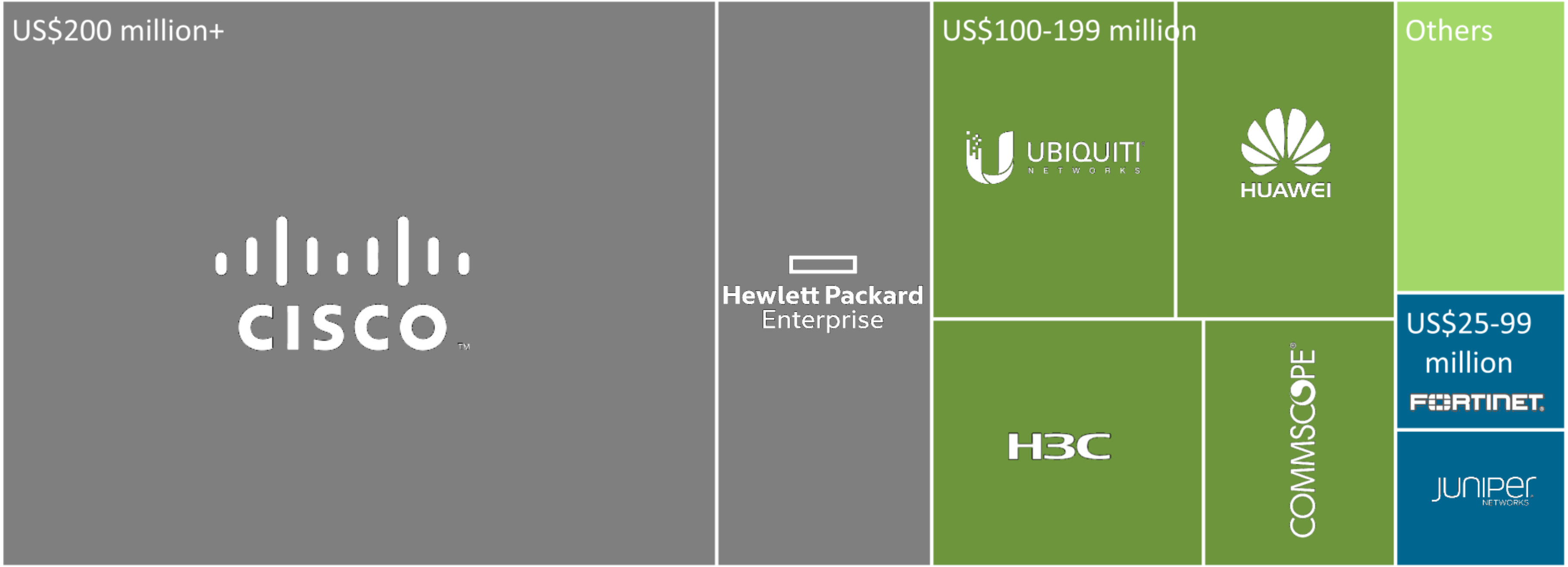


Source: Canalys estimates, Infrastructure Analysis, December 2021

Top five vendors account for 84% of shipments

Total US$2.0 billion

Worldwide wireless LAN leading vendors Q3 2021



Source: Canalys estimates, Infrastructure Analysis, December 2021

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Securing supply is now a key competitive advantage

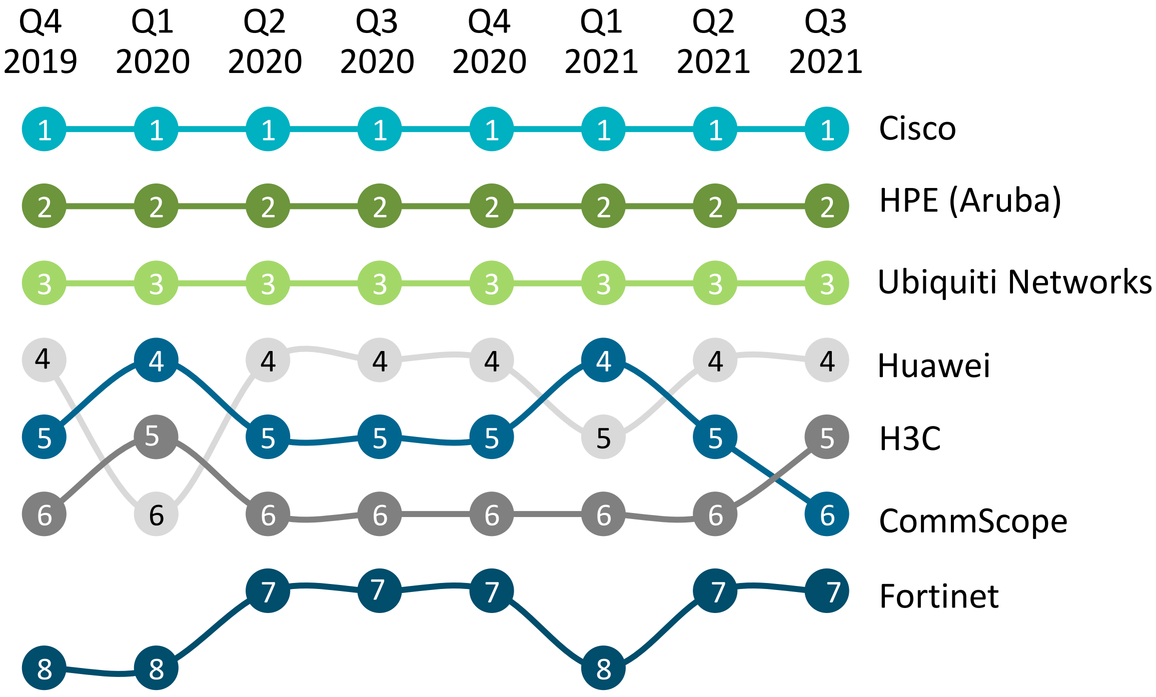
Worldwide wireless LAN leading vendors

Vendor	Market share Q3 2020	Market share Q3 2021	Year-on-year revenue growth
Cisco	47.9%	45.7%	7.7%
Hewlett Packard Enterprise (Aruba)	14.7%	13.7%	5.1%
Ubiquiti Networks	8.6%	8.8%	15.2%
Huawei	6.6%	7.9%	34.8%
H3C	5.2%	7.6%	65.4%
CommScope	6.4%	5.4%	-4.8%
Fortinet	2.9%	2.6%	1.9%
Juniper Networks	1.6%	2.6%	86.7%
Extreme Networks	2.1%	2.2%	17.0%
Netgear	0.4%	0.5%	59.0%
Others	3.6%	2.9%	-9.3%
All vendors	**100%**	**100%**	**12.8%**

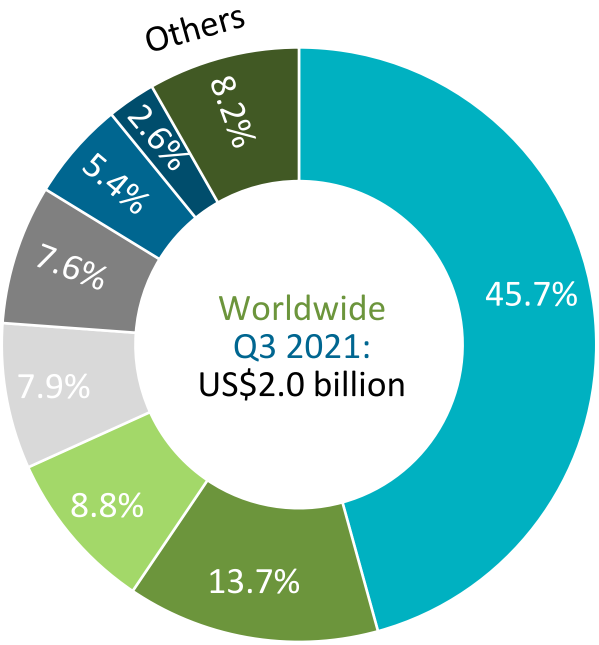
Source: Canalys estimates, Infrastructure Analysis, December 2021

Domestic demand boosts Huawei and H3C in Q3

Quarterly share ranking



Market share



Source: Canalys estimates, Infrastructure Analysis, December 2021

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Asia Pacific excluding PRC wireless LAN overview

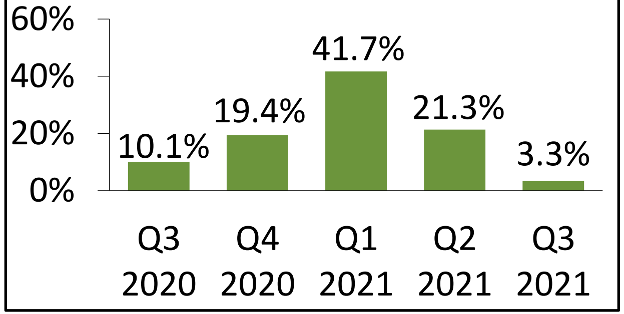
Asia Pacific excluding PRC summary

Q3 2021
US$257 million

Growth:
3.3%

13.2%
of WW total

Growth trend



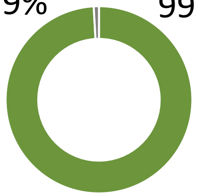
Vendor	Q3 2020	Q3 2021
Cisco	49.7%	59.6%
HPE (Aruba)	19.1%	11.3%
Ubiquiti Networks	6.3%	8.1%
CommScope	7.5%	6.4%
Fortinet	4.4%	3.2%
Others	13.0%	11.5%
All vendors	100%	100%

Key countries Q3 2021	% of region shipments	Y-o-Y growth
Japan	27.5%	-14.9%
India	25.0%	35.8%
South Korea	10.1%	-0.7%
Australia	8.6%	-8.2%

Channel splits

Direct
0.9%

Indirect
99.1%



Channel growth:
3.1%

End-user splits

SMB 3.1%

Enterprise 3.4%

15.6% 25.2% 38.7% 20.4%

Sub-100 100-499 500-2,499 2,500+

Number of employees

Source: Canalys estimates, Infrastructure Analysis, December 2021

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PRC (mainland) wireless LAN overview

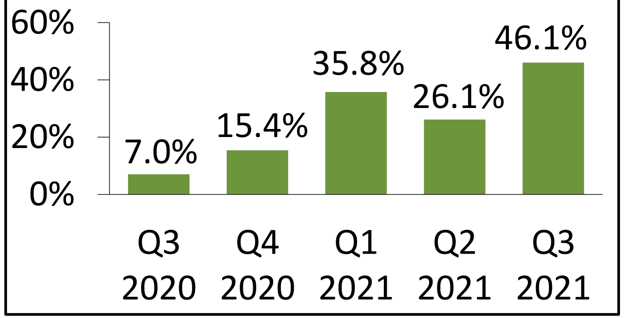
PRC (mainland) summary

Q3 2021
US$271 million

Growth:
46.1%

13.9%
of WW total

Growth trend



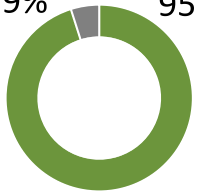
Vendor	Q3 2020	Q3 2021
H3C	47.8%	54.3%
Huawei	36.5%	34.7%
Cisco	5.6%	4.6%
HPE (Aruba)	3.5%	1.9%
Ubiquiti Networks	1.8%	1.5%
Others	4.7%	2.9%
All vendors	100%	100%

Key countries Q3 2021	% of region shipments	Y-o-Y growth
China	100%	46.1%

Channel splits

Direct
4.9%

Indirect
95.1%

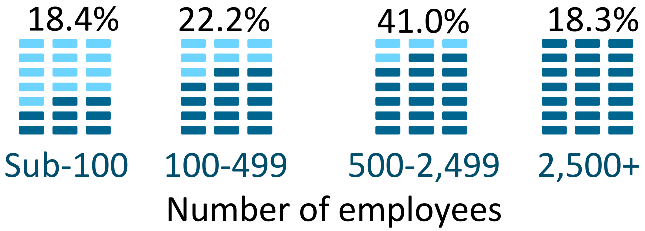


Channel growth:
46.0%

End-user splits

SMB 47.5%

Enterprise 45.1%



EMEA wireless LAN overview

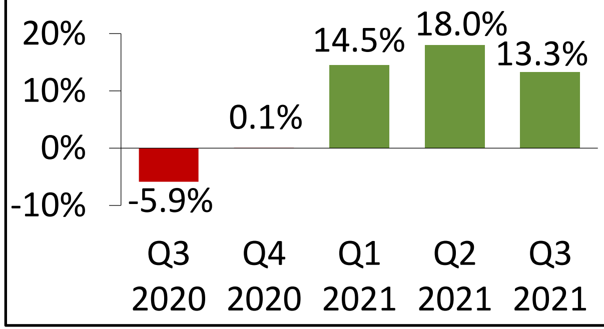
EMEA summary

Q3 2021
US$492 million

Growth:
13.3%

25.2%
of WW total

Growth trend



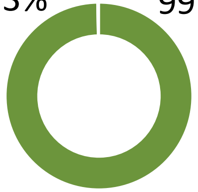
Vendor	Q3 2020	Q3 2021
Cisco	51.6%	49.3%
HPE (Aruba)	15.0%	17.5%
Ubiquiti Networks	8.3%	8.5%
Huawei	7.8%	7.1%
CommScope	6.9%	5.5%
Others	10.5%	12.2%
All vendors	100%	100%

Key countries Q3 2021	% of region shipments	Y-o-Y growth
Germany	15.9%	16.3%
UK	14.9%	20.4%
France	8.7%	24.3%
Sweden	4.8%	15.4%
Netherlands	4.6%	-7.7%

Channel splits

Direct
0.3%

Indirect
99.7%



Channel growth:
13.1%

End-user splits

SMB ↑ 13.6%

Enterprise ↑ 13.1%

16.0% Sub-100

25.2% 100-499

39.1% 500-2,499

19.7% 2,500+

Number of employees

Source: Canalys estimates, Infrastructure Analysis, December 2021

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Latin America wireless LAN overview

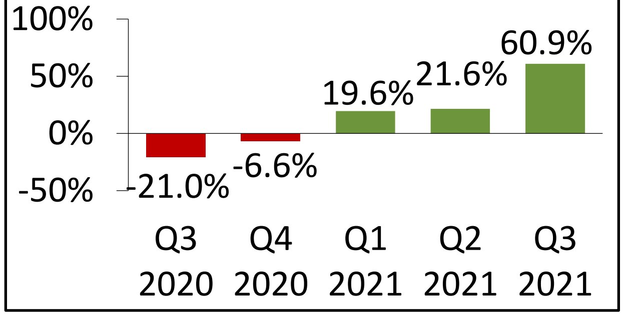
Latin America summary

Q3 2021
US$86 million

Growth:
60.9%

4.4%
of WW total

Growth trend



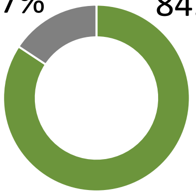
Vendor	Q3 2020	Q3 2021
Cisco	41.1%	38.2%
Huawei	13.6%	25.7%
Ubiquiti Networks	19.8%	16.7%
HPE (Aruba)	11.7%	9.6%
Fortinet	5.8%	3.6%
Others	8.0%	6.2%
All vendors	100%	100%

Key countries Q3 2021	% of region shipments	Y-o-Y growth
Brazil	25.6%	43.5%
Mexico	37.5%	228.2%

Channel splits

Direct
15.7%

Indirect
84.3%



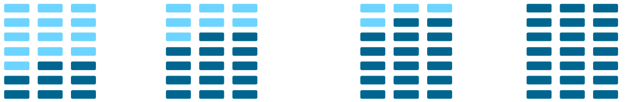
Channel growth:
35.6%

End-user splits

SMB ↑ 47.4%

Enterprise ↑ 72.7%

19.1%
23.5%
38.8%
18.6%



Sub-100
100-499
500-2,499
2,500+

Number of employees

Source: Canalys estimates, Infrastructure Analysis, December 2021

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North America wireless LAN overview

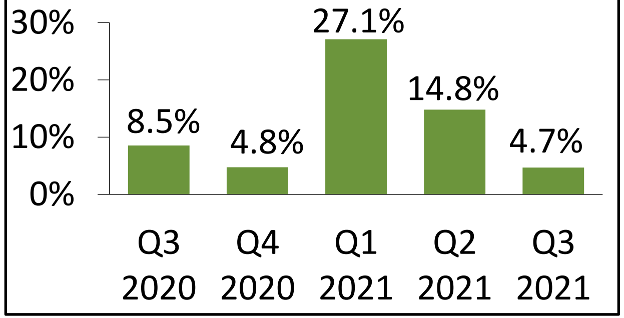
North America summary

Q3 2021
US$848 million

Growth:
4.7%

43.4%
of WW total

Growth trend



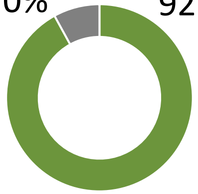
Vendor	Q3 2020	Q3 2021
Cisco	55.5%	53.4%
HPE	16.0%	16.5%
Ubiquiti Networks	10.3%	10.7%
CommScope	7.0%	6.7%
Juniper Networks	2.8%	4.6%
Others	8.3%	8.1%
All vendors	100%	100%

Key countries Q3 2021	% of region shipments	Y-o-Y growth
Canada	6.6%	4.9%
United States	93.4%	2.1%

Channel splits

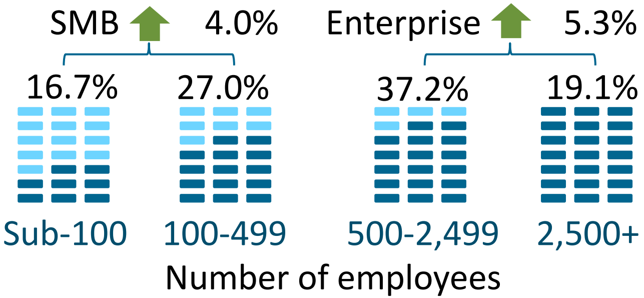
Direct
8.0%

Indirect
92.0%



Channel growth:
4.5%

End-user splits



Source: Canalys estimates, Infrastructure Analysis, December 2021

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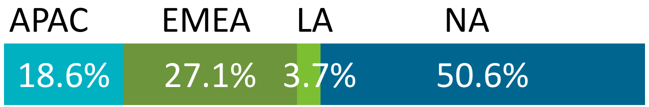
Cisco announces EOL for Aironet Wi-Fi 5 portfolio

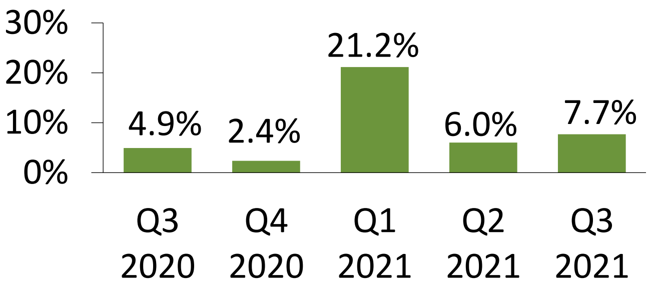
Worldwide summary

Q3 2021
US$893 million

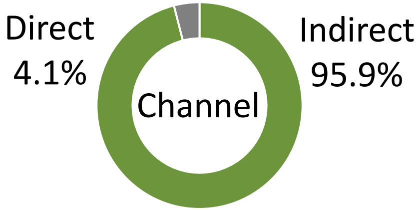
Growth:	Share:	Rank:
7.7%	45.7%	1



Worldwide growth trend



Key countries	% of total
United States	47.1%
Japan	5.6%
India	5.2%
UK	4.9%
Germany	4.6%
Canada	3.5%
France	2.1%
South Korea	1.8%
Sweden	1.7%
PRC (mainland)	1.4%



Initiatives and announcements

- **Cisco's** market share continued to trend downwards in Q3, accounting for 45.7%, compared to 47.9% a year ago.
- Overall, its growth (+7.7%) was below market average (+12.8%), primarily in EMEA and North America. However, product orders remained strong, highlighting its supply constraints.
- It announced the end of life of AireOS to focus on its IOS XE operating system across its Catalyst portfolio.
- It will also end of life the Aironet and Mobility Express Wi-Fi 5 access points by April 2022.
- Migrating customers to the Catalyst 9100 Wi-Fi 6 portfolio and DNA subscriptions is a key focus area.
- Cisco has yet to launch Wi-Fi 6E access points.

Source: Canalys estimates, Infrastructure Analysis, December 2021

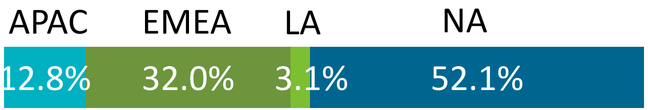
HPE (Aruba) growth moderated by supply

Worldwide summary

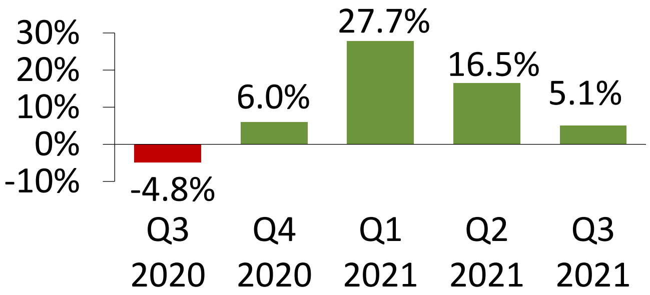
Q3 2021
US$268 million

Hewlett Packard Enterprise

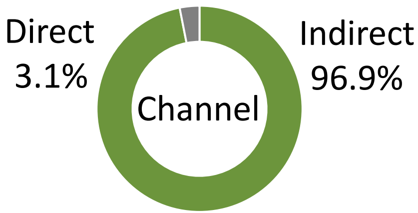
Growth:	Share:	Rank:
5.1%	13.7%	2



Worldwide growth trend



Key countries	% of total
United States	47.7%
Germany	5.5%
UK	4.7%
Canada	4.4%
France	4.0%
Spain	2.2%
PRC (mainland)	1.9%
Japan	1.7%
Australia	1.6%
Netherlands	1.6%



Initiatives and announcements

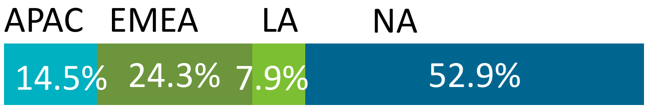
- **HPE (Aruba)** consolidated its position as the second largest wireless LAN vendor in Q3. Overall, shipment growth (+5.1%) moderated after strong results in H1 (+22.3%) due to supply issues.
- In Q3, growth was driven by EMEA (+31.8%), Latin America (+32.3%) and North America (+7.8%). Rest of APAC (-38.8%) fell after growing 45.2% in H1.
- Its Intelligence Edge portfolio is based on the Aruba Edge Services Platform (ESP). This combines AIOps with Aruba Central for cloud network management and Dynamic Segmentation to monitor, optimize and secure networks.
- Aruba announced the 630 Series of Wi-Fi 6E access points, which can be updated to support country-specific 6GHz spectrum requirements.

Ubiquiti expands its Wi-Fi 6 portfolio

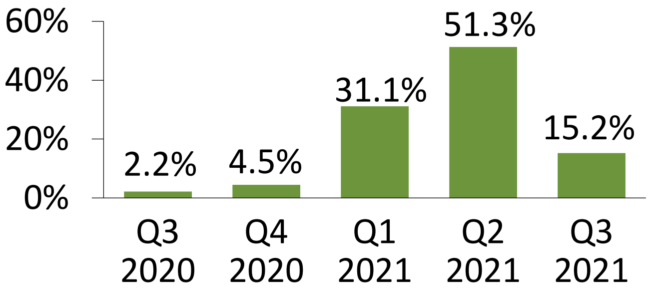
Worldwide summary

Q3 2021
US$172 million

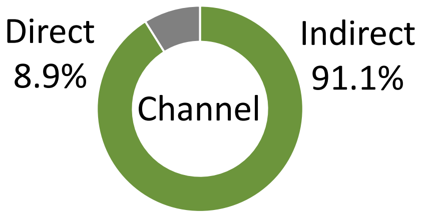
Growth:	Share:	Rank:
15.2%	8.8%	3



Worldwide growth trend



Key countries	% of total
United States	51.2%
India	3.4%
Brazil	2.7%
Russia	2.6%
PRC (mainland)	2.3%
Germany	2.0%
Canada	1.8%
Poland	1.6%
Mexico	1.6%
UK	1.4%



Initiatives and announcements

- **Ubiquiti** maintained momentum despite supply constraints impacting its service provider business.
- UniFi access point shipments continued to increase, driven by uptake of its newer Wi-Fi 6 access points and improving spending among its core SMB customer base.
- Stock availability of its Wi-Fi 6 remain out of stock or limited to units per customer on its direct online stores.
- It added to its Wi-Fi 6 portfolio with the Qualcomm-based 4.8 Gbps U6 Pro for US$149, and the 4.8 Gbps U6 Mesh for US$179.
- The rest of its portfolio, including the low-end US$99 1.3 Gbps U6 Lite and the US$179 3.0 Gbps U6 LR are based on MediaTek chipsets.

Source: Canalys estimates, Infrastructure Analysis, December 2021

Huawei promises short lead times to win EU deals

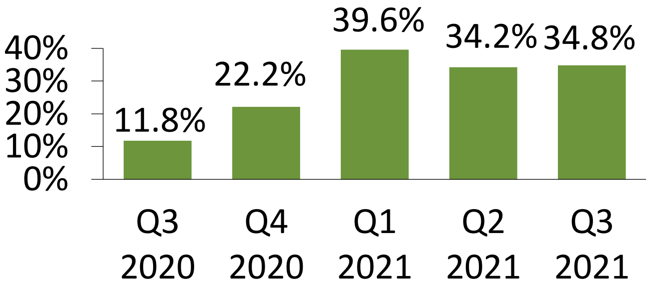
Worldwide summary

Q3 2021
US$155 million

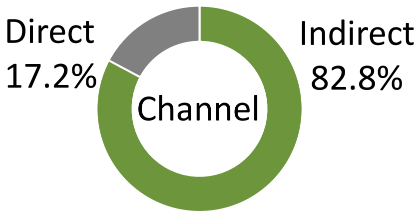
Growth:	Share:	Rank:
34.8%	7.9%	4

APAC	EMEA	LA
63.4%	22.4%	14.2%

Worldwide growth trend



Key countries	% of total
PRC (mainland)	60.8%
Mexico	11.3%
Russia	2.0%
UK	1.5%
South Africa	1.3%
Brazil	1.3%
Spain	1.3%
UAE	1.1%
Turkey	1.0%
Italy	1.0%



Initiatives and announcements

- **Huawei's** results were boosted by a large service provider deal in Mexico to build a countrywide Wi-Fi network. This helped grow its shipments in Latin America by 203.5% in Q3.
- Growth in China (+39.2%) remained strong, EMEA (+2.4%) slowed after a strong Q2, while the Rest of APAC (-35.0%) remained challenged.
- It added new capabilities to its CloudCampus 3.0 solution, including the AirEngine 6761-22T Wi-Fi 6E access point, as well as dynamic-zoom smart antenna, AI roaming and intelligent multimedia scheduling.
- Huawei is promoting a two-week lead time offer for selected AirEngine access points for EU customers. However, this is dependent on stock availability.

Source: Canalys estimates, Infrastructure Analysis, December 2021

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Supply constraints impact CommScope’s growth

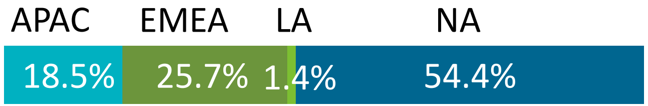
Worldwide summary

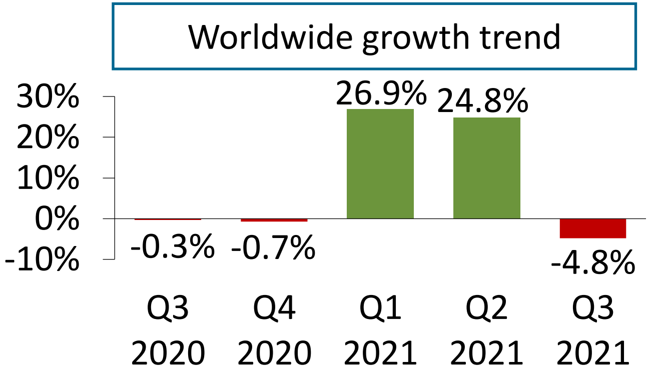
Q3 2021

US$105 million

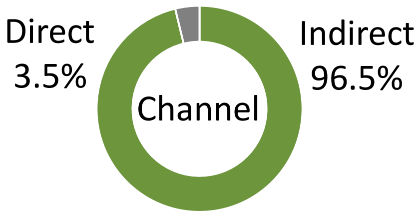
COMMSCOPE®

Growth:	Share:	Rank:
-4.8%	5.4%	6





Key countries	% of total
United States	51.4%
Germany	5.4%
UK	4.0%
India	3.4%
Japan	3.1%
Canada	3.0%
France	2.9%
PRC (mainland)	2.9%
Australia	2.6%
South Korea	1.9%



Initiatives and announcements

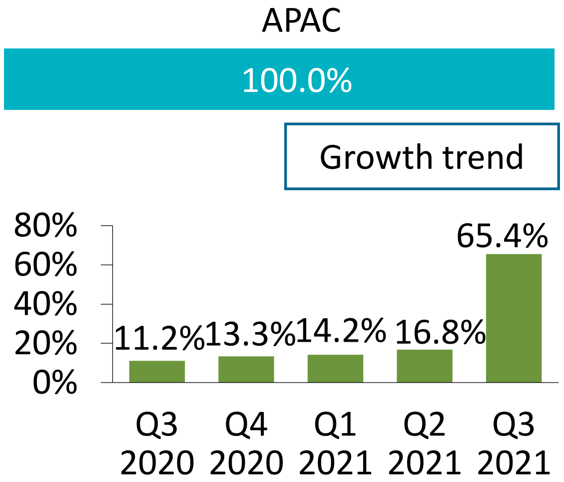
- **CommScope** (-4.8%) was down on an annual basis due to supply constraints. Orders remained strong, as it exited the quarter with growth in backlog. Year to date for 2021, CommScope was up 14.3% compared to 2020.
- Pent-up demand in the hospitality segment, continued strength in education and government accounts, as well as deployments in multi-dwelling units remained key factors.
- It created the RUCKUS Funding Support Program to help customers access US government stimuli. This is targeting state and local government, education, healthcare and transport sectors.
- Its Wi-Fi 6 portfolio includes the entry-level R550 and R650, and mid-to-higher-end R730, R750 and R850.

Source: Canalys estimates, Infrastructure Analysis, December 2021

Worldwide summary of selected vendors

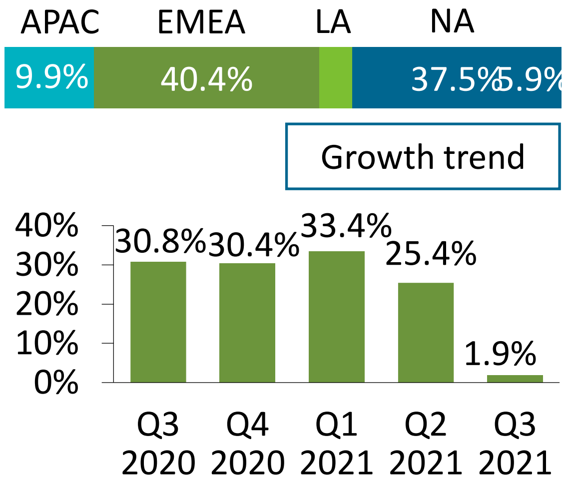
Q3 2021
US$148 million

Growth:	Share:	Rank:
65.4%	7.6%	5



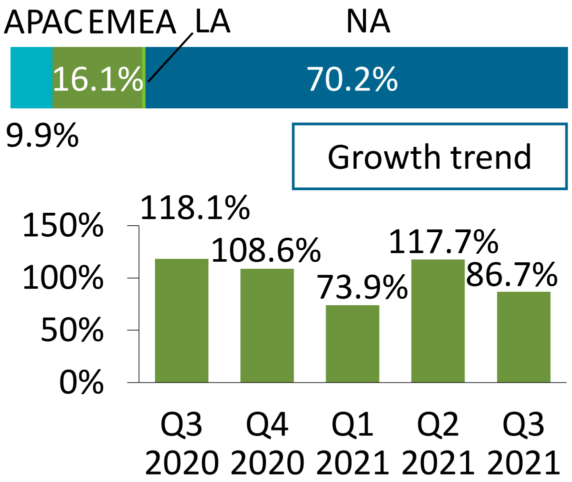
Q3 2021
US$51 million

Growth:	Share:	Rank:
1.9%	2.6%	7



Q3 2021
US$51 million

Growth:	Share:	Rank:
86.7%	2.6%	8



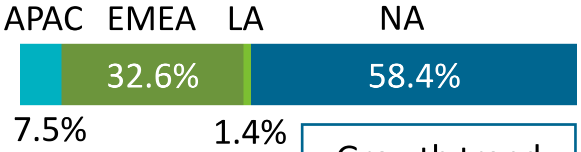
Source: Canalys estimates, Infrastructure Analysis, December 2021

Worldwide summary of selected vendors

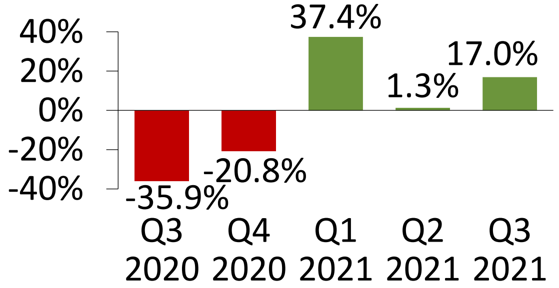
Extreme

Q3 2021
US$43 million

Growth:	Share:	Rank:
17.0%	2.2%	9



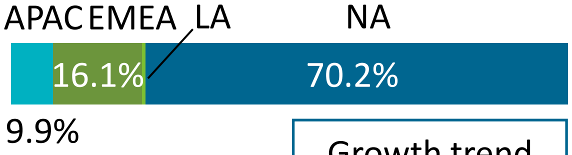
Growth trend



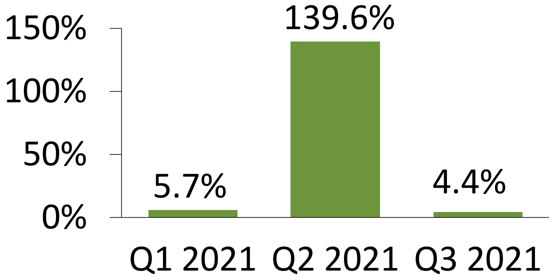
Cambium Networks

Q3 2021
US$11 million

Growth:	Share:	Rank:
4.4%	0.5%	11



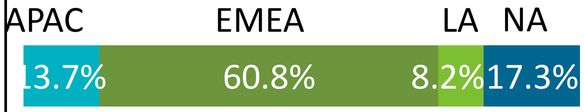
Growth trend



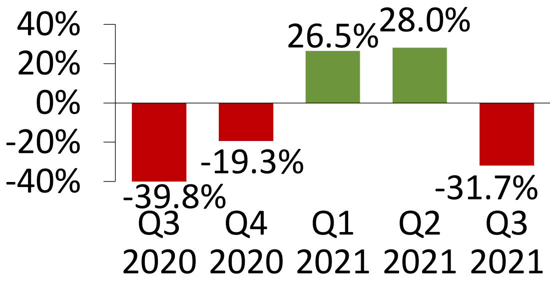
Alcatel·Lucent Enterprise

Q3 2021
US$6 million

Growth:	Share:	Rank:
-31.7%	0.3%	14



Growth trend



Source: Canalys estimates, Infrastructure Analysis, December 2021

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Wireless LAN

Vendor performance index Q3 2021

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