
January 6, 2020
Las Vegas
@qualcomm
Qualcomm
Cristiano Amon
President, Qualcomm Incorporated
@CristianoAmon

Another incredible Snapdragon Tech Summit

Newly announced Snapdragon platforms to power next-generation mobile experiences

Mobile

Qualcomm® Snapdragon™
865
mobile platform

Qualcomm® Snapdragon™
765 / 765G
mobile platform

Mobile PC

Qualcomm® Snapdragon™
8c
compute platform

Qualcomm® Snapdragon™
7c
compute platform

Extended reality

Qualcomm® Snapdragon™
XR2
5G platform

5G momentum accelerating globally

45+
Operators with 5G commercial deployed

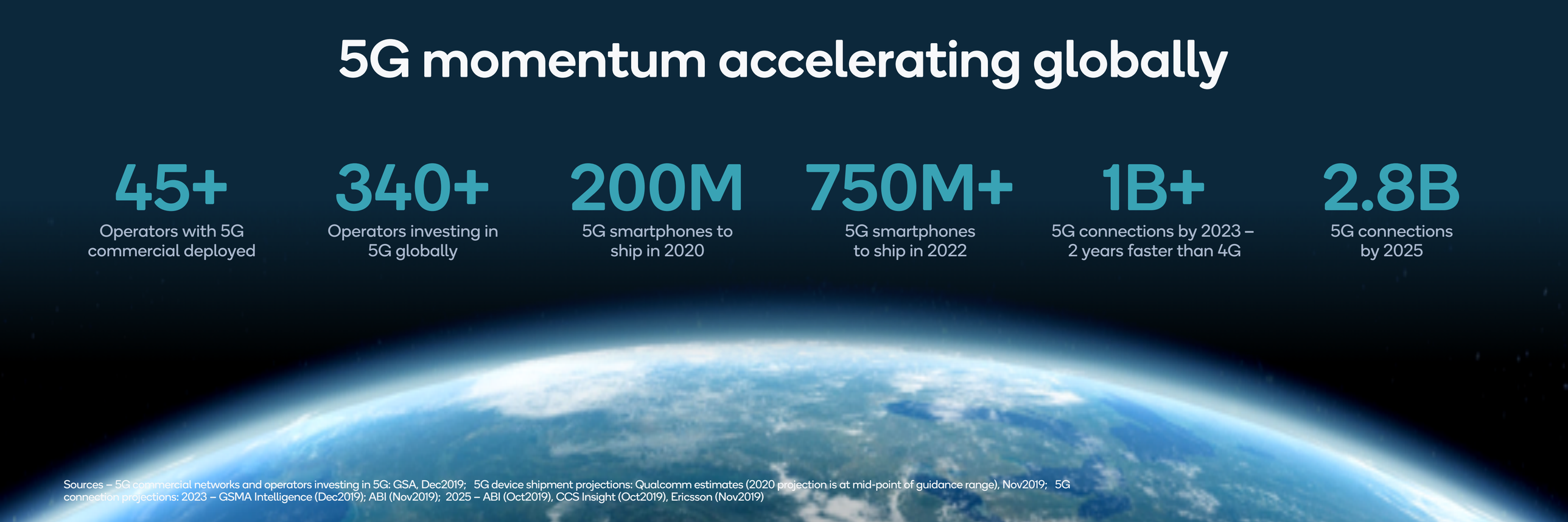
340+
Operators investing in 5G globally

200M
5G smartphones to ship in 2020

750M+
5G smartphones to ship in 2022

1B+
5G connections by 2023 – 2 years faster than 4G

2.8B
5G connections by 2025



Sources – 5G commercial networks and operators investing in 5G: GSA, Dec2019; 5G device shipment projections: Qualcomm estimates (2020 projection is at mid-point of guidance range), Nov2019; 5G connection projections: 2023 – GSMA Intelligence (Dec2019); ABI (Nov2019); 2025 – ABI (Oct2019), CCS Insight (Oct2019), Ericsson (Nov2019)

Strong traction for our latest

Snapdragon 5G mobile platforms

2x increase in device design wins at launch[1]

Snapdragon 865 mobile platform

2.5x increase in device design wins at launch[2]

Snapdragon 765/765G mobile platform

OPPO

"In 2020 Q1, OPPO will launch its flagship product using the Qualcomm Snapdragon 865 Mobile Platform, together bringing a faster and superior 5G experience to users."

Alen Wu, VP & President of Global Sales, OPPO

Xiaomi

"In 2020 Q1, Xiaomi is proud to announce that we will be introducing our flagship Mi 10, one of the world's first smartphones to feature the flagship Qualcomm Snapdragon 865 Mobile Platform."

Bin Lin, Co-Founder, Vice Chairman, Xiaomi

Motorola

"Motorola will continue leading the 5G era with our expanded lineup of 5G solutions in 2020,driven by the high-performing Qualcomm Snapdragon 765 and 865 Mobile Platforms..."

Sergio Buniac, President, Motorola

8848 TITANIUM · ASUS · BLACK SHARK · coolpad · FCNT FUJITSU CONNECTED TECHNOLOGIES · iQOO · KYOCERA · Lenovo 联想 · LG · MEIZU · motorola · nubia 努比亚手机 · ONEPLUS

oppo · realme · Redmi · SAMSUNG · SHARP · TCL · vivo · WINGTECH PROFESSIONAL SOLUTIONS · 小米 · ZTE

[1]Versus previous-generation 5G platform;
[2] Versus previous-generation 7 series platform

Fueling fixed wireless broadband

with 5G and Wi-Fi 6

Strong customer interest in our
5G and Wi-Fi 6 solutions for FWA CPE devices

34 CPE OEMs using Qualcomm® Snapdragon™ X55 5G Modem-RF system

11 CPE OEMs using X55 5G Modem-RF System + Qualcomm® Networking Pro 1200 platform

arcadyan ASKEY 中国移动 China Mobile Gemtek inseego MEIG 美格 NOKIA oppo SERCOMM WEWINS WNC Wistron NeWeb Corp.

Redefining mainstream and entry-level mobile PCs

Snapdragon
8c
compute platform

Snapdragon
7c
compute platform

ASUS

Lenovo

COMPAL

HQ HUAQIN

LAC

Quanta

WINGTECH PROFESSIONAL SOLUTIONS

More to come...


The
5G PC
is here

Qualcomm

The 5G PC is here

Lenovo

Lenovo

Johnson Jia

Senior Vice President & General Manager
Consumer Business, Intelligent Devices Group
Lenovo


2020 is the
Year of 5G
Lenovo

Yoga 5G

World's 1st 5G PC

Lenovo

Yoga 5G

World's 1st 5G PC

Lenovo

Yoga 5G

World's 1st 5G PC

- Snapdragon 8cx 5G Compute Platform
- mmWave & Sub-6 GHz
- Up to 24 hours of battery life
- 14-inch Full HD IPS touchscreen
- eSIM support
- Fan-less, quiet design
- Qualcomm® Adreno™ 680 GPU
- Dolby Atmos
- Integrated fingerprint reader & IR camera with Windows Hello

Qualcomm Adreno is a product of Qualcomm Technologies, Inc. and/or its subsidiaries.

Lenovo

Yoga 5G

World's 1st 5G PC

Lenovo Engineering Innovations

- Patented 5G Antenna System
- Innovative Power Design
- New Adaptive USB Charging Port on Arm Platform

Yoga 5G

World's 1st 5G PC

Lenovo Engineering Innovations

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- Innovative Power Design
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Lenovo

Yoga 5G

World's 1st 5G PC

Lenovo Engineering Innovations

- Patented 5G Antenna System
- Innovative Power Design
- New Adaptive USB Charging Port on Arm Platform

Lenovo Yoga 5G

Starts at US $1,499 in Spring 2020

More 5G Devices from Lenovo and Qualcomm to come

Lenovo

Johnson Jia

Senior Vice President & General Manager
Consumer Business, Intelligent Devices Group
Lenovo


The age of intelligent cloud connectivity
5G + AI + Edge cloud

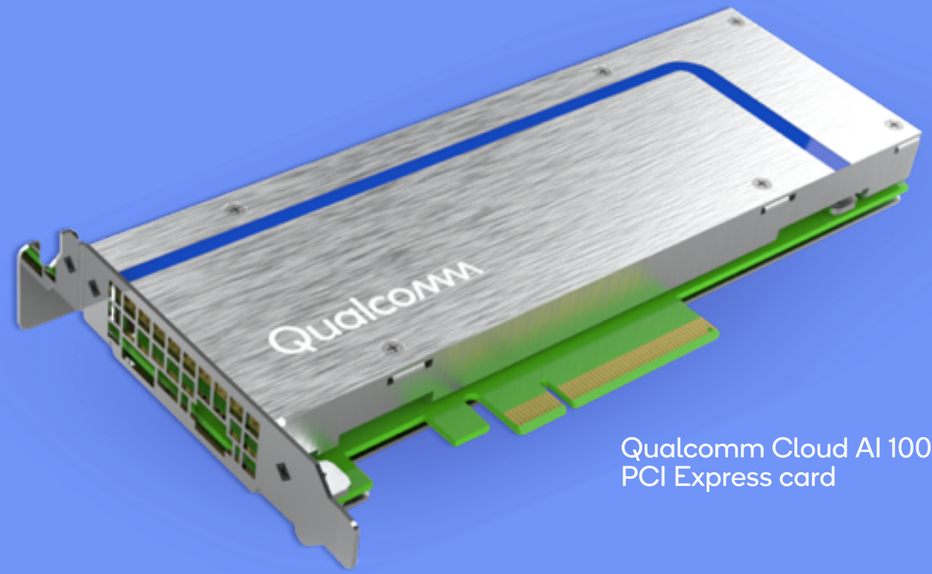
Qualcomm® Cloud AI 100

Bringing power efficient AI inference processing to the cloud

Built on 7nm process technology

>350 TOPS peak AI performance

>10x performance per watt increase over the most advanced AI inference solutions deployed today



Qualcomm Cloud AI 100
PCI Express card

- Data center
- 5G intelligent edge box
- 5G infrastructure
- Automotive

Qualcomm Cloud AI 100

Bringing power efficient AI inference processing to the cloud

5G intelligent edge box powered by Cloud AI 100

Accelerating the future of

automotive

Long history of automotive innovation

Over 100 million vehicles using Qualcomm® Automotive solutions

2002
GM OnStar CDMA 1x telematics solution

2007
First 3G telematics module

AI research begins

First commercial 1 GHz mobile processor

2009
First 3G/LTE multimode integrated chipset (100 Mbps)

Research in spiking neural networks

2010
3G connected car with Audi

2013
Researches artificial neural processing architectures

2014
Snapdragon 602A Infotainment platform

QNX infotainment platform on Snapdragon

Acquires EuVision

2015
2nd generation LTE telematics solution

Autonomy R&D program begins

2016
Qualcomm® Snapdragon™ 820A Infotainment platform with machine intelligence

First Android Auto embedded on Snapdragon

Co-founds 5GAA for C-V2X, 5G for auto

Neural Processing SDK

2017
Gigabit LTE for telematics

Qualcomm® 9150 C-V2X chipset

C-V2X field trials

Qualcomm® Snapdragon™ X50 5G modem

2018
C-V2X deployments begin in US

China Mobile RSUs with Qualcomm 9150 C-V2X chipset

2019
Qualcomm® Snapdragon™ Automotive Cockpit Platform, Gen 3

China C-V2X commercial readiness

5G commercialization

World's leading automakers build with our solutions

Trusted advisor to automakers

Source: Company data
Design win pipeline reflects anticipated revenues associated with programs that have been awarded by automakers using Qualcomm solutions
Qualcomm Snapdragon Automotive cockpit platform is a productS of Qualcomm Technologies, Inc. and/or its subsidiaries

#1

In telematics and Bluetooth for automotive

#1

In premium next-gen infotainment design wins for production vehicles starting 2020

19

Automakers have selected the Snapdragon Automotive Cockpit platform

$7B

Design win pipeline for telematics, infotainment and in-car connectivity

Focused

on 4 key areas

Telematics / C-V2X

Integrated precise positioning, Wi-Fi 6, BT5.1

Snapdragon telematics co-processor

Snapdragon Automotive 4G/5G Platforms

C-V2X Technology

Digital cockpit

Infotainment and instrument cluster SoC

Passenger and rear seat entertainment

Driver and occupant monitoring

Virtualized and containerized RTOS/OSes

Cloud device management

Cloud connectivity

OTA updates

Feature and SKU management

ADAS and autonomous driving

Family of high-performance safety SoCs

Safety Accelerator for L4/L5 autonomous driving

Open and programmable ADAS stack

Safety software platform, HIL/SIL Toolchain

Peter Virk

Director of Connected Car and Future Technology

DESTINATION ZERO

OUR RESPONSIBLE FUTURE

ZERO EMISSIONS. ZERO ACCIDENTS. ZERO CONGESTION.

NEW
LAND ROVER
DEFENDER

NEW
LAND ROVER
DEFENDER

DEFENDER

SUPER- FAST CONNECTIVITY

Innovative dual eSIM, twin LTE modem design powered by two Qualcomm® Snapdragon™ 820Am Automotive Platforms means New Defender keeps customers connected, updated and entertained anywhere in the world. With one connection for the software-over-the-air downloads and another for the infotainment system, internet connectivity is never compromised.

THE VEHICLE WITH THE BRAIN OF A SUPERCOMPUTER

Qualcomm snapdragon

DOMAIN CONTROLLER MODEM

CONSUMER TECH
Qualcomm® Snapdragon™ 820Am Automotive PlatformSnapdragon provides processing power and connectivity with its own embedded modem.

STANDALONE eSIM
Vehicle Domain Controller contains its own eSIM for software-over-the-air downloads.

ALWAYS UP-TO-DATE
New Defender can download updates for 16 electronic modules, so it's always using the latest software.

REMOTE CONNECTIVITY
Remote App allows customers to pre-condition cabin temperature while telematics supports e-Call and vehicle tracking capability.

SAFE & SECURE
BlackBerry QNX operating system ensures data security using hypervisor technology.

CELLULAR INTERNET
Connectivity can roam across multiple network providers to maximise signal coverage.

PIVI PRO MODEM

CONSUMER TECH
Qualcomm® Snapdragon™ 820Am Automotive PlatformSnapdragon provides processing power, supports graphics and provides connectivity with its own embedded modem.

ADVANCED INFOTAINMENT
New Pivi Pro system has its own eSIM for in-car entertainment and app purposes.

ALWAYS CONNECTED
Delivers uninterrupted music streaming, app connectivity and supports Apple CarPlay and Android Auto.

IN THE CLOUD
Latest CloudCar service platform enhances customer convenience with seamless app connectivity even without a smartphone.

ALWAYS ON
Pivi Pro has its own back-up battery for instantaneous responses.

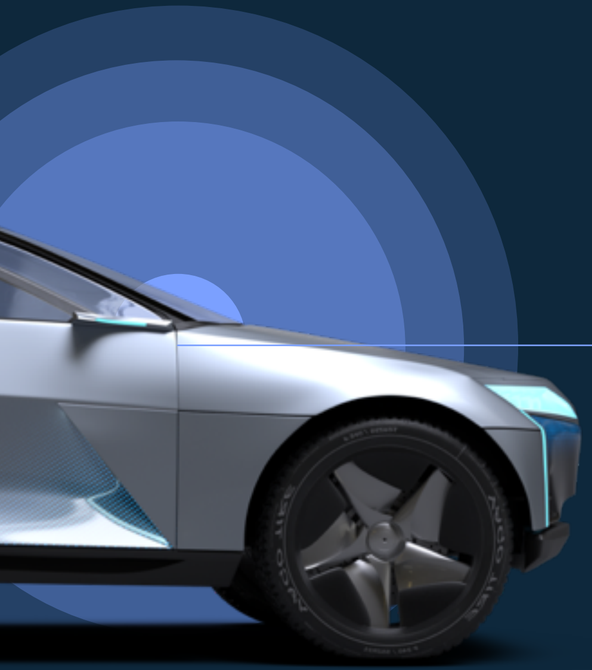
NEW
LAND ROVER
DEFENDER


JAGUAR
LAND ROVER
+ Qualcomm

Peter Virk

Director of Connected Car and Future Technology

Evolution to autonomous driving



Level 1/2

Active safety

Forward collision warning, automatic braking

Lane keep assist, departure warning

Blind-spot collision warning

Adaptive cruise control

Level 2+

Convenience

Adaptive cruise control with lane-keeping

Hands-off highway autopilot

Automated lane change

Autonomous parking

Level 4+

Self driving

Robotaxis, robo-logistics, long-haul trucking

Parking lot to parking lot

Unconstrained geographically

Key solution requirements

Safe, robust, and efficient

Power and thermal efficiency

Scalable across multiple car classes

Introducing

Qualcomm® Snapdragon Ride™ platform

Powerful, scalable, thermally efficient safety solutions for ADAS and autonomous driving

2X more power efficient than latest competitive solutions in its class

Designed for ASIL-D Systems

On the road in 2023

Qualcomm Snapdragon Ride Autonomous driving accelerator, ADAS application processor, Qualcomm Kryo, Qualcomm Adreno, and Qualcomm Vision Enhanced Precise Positioning are products of Qualcomm Technologies, Inc. and/or its subsidiaries

Hardware

Qualcomm Autonomous driving accelerator

Autonomous driving accelerator

Massive neural processor array

High-speed interconnects

Seamless integration with SoC

Qualcomm ADAS application processor

Family of ADAS SoCs

Qualcomm® Kryo™ CPU

Qualcomm® Adreno™ GPU

High-efficiency neural processors

Embedded vision accelerators

Software stack

Ride planner	Behavior prediction Planning stack
Ride localization	Qualcomm® Vision Enhanced Precise Positioning Map fusion
Ride perception	Camera | Radar Lidar | Lidar Sensor fusion | C-V2X
Ride framework	Automotive frameworks Diagnostics and tools
Ride core	Snapdragon SDKs for CV, AI OpenCL | OpenGL
Ride OS	Operating system Safety drivers

Scalability

Self driving
(Level 4+)

700 TOPS
130 watts

Qualcomm ADAS application processor

Qualcomm Autonomous driving accelerator

Convenience
(Level 2+)

Qualcomm ADAS application processor

30 TOPS

Active safety
(Level 1/2)

Qualcomm ADAS application processor

Partner ecosystem

arm · Infineon · ON Semiconductor · QNX · SYNOPSYS · TOMTOM · Xylon

Qualcomm Snapdragon Ride platform

Fully scalable, customizable
High thermal efficiency
Robust tools, SDK for faster time-to-ramp
Comprehensive autonomous driving stack

GM

Qualcomm

Telematics

Digital Cockpit

ADAS

Qualcomm® Snapdragon™
Automotive 4G and 5G Platform

Qualcomm
snapdragon
automotive cockpit
platform

Qualcomm
snapdragon ride
platform

Driving C-V2X globally

From standards completion to independent field testing to early commercialization

Seeing tremendous traction
across regions and broad industry sectors

Key developments

US: FCC recommends 20 MHz for C-V2X in 5.9 GHz band

EU: EC calls for technology neutrality in 5.9 GHz band

China: 20 MHz assigned for C-V2X; pilot trials for soft launch in progress

Introducing

Qualcomm® Car-to-Cloud Services

Secure, connected-car services and lifecycle management for

Infotainment

Telematics

- Integrated connectivity
- Personalized user experience
- Content, services and application bundling
- New services and revenue opportunities
- Flexible configuration and faster TTM
- Cost-efficient operation
- Secure and attested communication
- Actionable insights

Qualcomm

Accelerating the intelligent, connected future

- Scaling 5G in 2020
- Strong traction across Snapdragon platforms
- Redefining mobile computing
- Driving performance of AI inferencing in the cloud
- Leading in automotive telematics and infotainment
- Introduced autonomous driving platform

Suunto 7

SPORTS AND LIFE, COMBINED

SUUNTO

Designed for Adventure

Powered by Qualcomm snapdragon wear

Announcements summary

Automotive

- Qualcomm Accelerates Autonomous Driving with New Platform – Qualcomm Snapdragon Ride
- Qualcomm Introduces Car-to-Cloud Service for Over-the-Air Vehicle Updates and On-Demand Services and Features
- Qualcomm Introduces Comprehensive Platform for Roadside and Onboard Units to Further Accelerate C-V2X Global Momentum
- Qualcomm Adds Dual-MAC Wi-Fi Chip to Automotive Portfolio
- Rugged New Land Rover Defender Showcases World-First Dual E-SIM Connectivity at CES 2020
- DENSO Works With Qualcomm to Develop Next-Generation Cockpit Systems (joint)
- Qualcomm Continues Partnership with General Motors to Shape the Future of Driving Experiences

Qualcomm Automotive Exhibit: LVCC, North Hall #5606

Snapdragon Ride autonomous driving demos from Delano - contact your Qualcomm PoC

Voice & Music

- Qualcomm Introduces aptX Voice Audio Technology for Higher Quality Voice Calls

Qualcomm

Thank you

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