



HARMAN and Samsung Unveil the Future of Connectivity and Autonomous Driving at CES 2018

HARMAN and Samsung alliance integrates technologies in software, hardware and the cloud to become architects of experience, delivering future mobility and connected lifestyles

CES 2018 - LAS VEGAS, NV – January 8, 2018 – It hasn't been a year since [HARMAN International](#) became a wholly-owned subsidiary of Samsung Electronics Co., Ltd. focused on connected technologies for automotive, consumer and enterprise markets, and the two companies have already leveraged their combined teams and resources to drive future mobility forward. Unveiled today at CES 2018 are a host of unique connected car solutions that support HARMAN and Samsung's joint mission to become the leader in connectivity and autonomous driving: connecting the lives of people, whether at home, on the go, or together in the car.

These key innovations showcase an integrated approach to a rich digital car experience, including:

- A reinvented digital cockpit platform for all vehicle segments that has given the interior of the car a makeover;
- A new telematics solution along with the industry first automotive-grade 5G-ready connectivity solution; and
- An ecosystem of partners and solutions to further build out the Samsung open autonomous platform, along with a showcase of our first implementation of this together with TTTech.

Each new solution was made possible through the HARMAN-Samsung alliance that leverages Samsung's global scale, R&D capabilities, dominance in mobile/TV/semiconductors and distribution channels and HARMAN's leading connected car heritage, relationships, market knowledge and growing community of innovation partners. Both companies are also making global investments in start-ups to help OEMs meet growing consumer demand for in-vehicle technology through scalable solutions that enhance the user experience for every vehicle segment.

"Together with Samsung, we have increased innovation speed through scale, resources and competencies to help automakers focus on the car's evolution from device-centric to experience centric," said Dinesh Paliwal, HARMAN President and CEO. "HARMAN has the heritage and expertise in automotive, and collectively HARMAN and Samsung harness our best technologies and global scale to accelerate how we better serve the needs of automakers in this rapidly evolving automotive market."

New HARMAN Digital Cockpit Platform

The new Digital Cockpit platform includes a suite of flexible and scalable premium experiences that support today's connected lifestyles without compromising safety or performance. It's available in standard and advanced system configurations and can seamlessly integrate the instrument cluster with center console via voice, haptic feedback, and physical knobs and steering wheel controls in a single, center screen for all vital vehicle information and features. This also supports a multi-modal approach for interactions with different human-machine interfaces to allow customization in terms of HVAC, media and user settings.

The Digital Cockpit platform brings an entirely new generation of communication and ergonomics inside vehicles, allowing drivers to focus on the road ahead while intuitively and safely interacting with their in-car technology. This is made possible through a projection mode for services and apps via a user's smartphone, allowing for increased personalization. A greater IoT ecosystem via cloud technology in the entry-level segment, as well as mid/high-level configurations, not only improves connectivity, but helps lower costs and

overall vehicle weight.

In a premium configuration, the Digital Cockpit weaves together a driver's entire connected lifestyle across the Internet of Things. Through a multi-display layout that leverages HARMAN's Ignite Platform, the in-car user experience can be personalized for the driver and passenger via services such as virtual personal assistants, portable profiles, augmented reality and more. This also allows for the Android OS to be integrated on four displays – a first for the industry.

Focused on a future generation of shared mobility, the premium Digital Cockpit personalizes occupant experiences, so drivers and passengers feel like the car is theirs even if they don't own it. By leveraging the phone as a key service, the system can automatically access subscription services associated with user profiles while Bixby offers intelligent personal assistance to help occupants complete tasks by voice, touch, gesture and context-based triggers.

The Digital Cockpit is scalable and made available for every automotive segment, offering future proof and safety focused features within a developer-friendly open ecosystem.

First 5G Automotive Telematics Solution and Customer

HARMAN and Samsung are jointly developing modular approaches for advanced telematics, capable of 1 Gb/s bandwidth. HARMAN and Samsung will deliver the industry's first 5G-ready automotive solution and multi-band conformal antenna to enable secure, fast and reliable data communications. The solution consists of a telematics control unit with a modular design accommodating a network access device (NAD) supporting LTE CAT 16 connectivity today and 5G in the future leveraging the same hardware design. 5G represents a paradigm shift in the future of mobility. In the automotive sector, 5G delivers safety-enhancing C-V2X capability that is an essential enabler for autonomous transportation. 5G boosts speeds up to 100X faster than current 4G LTE standards to provide incredibly fast high-resolution streaming, immersive virtual and augmented reality features and seamless cloud-based applications in fast-moving cars. Ultra-reliable and with low-latency response times of just 1ms, 5G enables C-V2X and cloud-based compute and storage for the next generation autonomous vehicles. HARMAN today announced that a leading European automaker will be the first customer for this solution. At CES 2018, HARMAN and Samsung will demonstrate high speed connectivity in a future mobility concept vehicle powered by the Samsung Networks 5G infrastructure.

Advanced Driving Solutions Today for an Autonomous Tomorrow

Developed in close collaboration with HARMAN, Samsung announced its new DRVLIN platform, an open and modular platform for autonomous driving designed to scale from Level 3 automation up to Levels 4 and 5. The two companies will continue to focus on engineering, high-performance computing, sensor technologies, algorithms, artificial intelligence, and cloud and connectivity solutions that are scalable and capable of lower-level autonomy through to Level 5. The first HARMAN/Samsung-developed ADAS product will be a forward-facing camera featuring lane-departure warning, adaptive cruise control, collision warning and pedestrian warning algorithms. The new system combines Samsung's heritage in camera technology with HARMAN's ADAS 360 solution that blends machine learning and data science with augmented reality to create a self-learning virtual co-passenger to ensure the connected driving experience is personalized and safe. The new system will begin shipping in 2018.

Visit [HARMAN's newsroom](#) for additional information about these new solutions and check back for updates now through CES 2018.

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ABOUT HARMAN

HARMAN (harman.com) designs and engineers connected products and solutions for automakers, consumers, and enterprises worldwide, including connected car systems, audio and visual products, enterprise automation solutions; and services supporting the Internet of Things. With leading brands including AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, Mark Levinson® and Revel®, HARMAN is admired by audiophiles, musicians and the entertainment venues where they perform around the world. More than 50 million automobiles on the road today are equipped with HARMAN audio and connected car systems. Our software services power billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile. HARMAN has a workforce of approximately 30,000 people across the Americas, Europe, and Asia. In March 2017, HARMAN became a wholly-owned subsidiary of Samsung Electronics Co., Ltd.

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