

## KREEMO and Sivers Semiconductors Successfully Developed and Demonstrated the World's First 5G mmWave Transparent Antenna-on-Display Module for the Metaverse

**Sivers Semiconductors AB today announced that its subsidiary Sivers Wireless with its partner KREEMO, based in Korea, which has world-class technology in the 5G mmWave antenna field, have jointly developed a Transparent Antenna-on-Display module which implements a mmWave antenna on high resolution display panels of any size and shape.**

At the IMS 2022 held in Denver, Colorado, U.S.A., KREEMO and Sivers Semiconductors jointly announced that it has successfully demonstrated data communication between Transparent Antenna-on-Display devices based on SUMMIT2629, a 28 GHz beamforming chip, and Stackable Patch Antenna devices, which was also announced in MWC 2022.

It is a significant achievement that the Stackable Patch Antenna's offering of a 360-degree beam coverage and Transparent Antenna-on-Display are commercially ready.

The SUMMIT 2629™ is the award-winning RFSOI eight-channel RF beamforming IC for 28 GHz. It was designed specifically to address the challenges constraining 5G mmWave performance. The Summit2629 extends link range and reduces power consumption while optimizing antenna array complexity and reducing overall RF front-end costs.

KREEMO has secured the world's first Transparent Antenna-on-Display technology that implements mmWave antennas on displays and Stackable Patch Antenna technology that provides 360-degree coverage.

The mmWave Transparent Antenna-on-Display module and Stackable Patch Antenna's 360-degree coverage, developed by applying the core technologies of both companies, are optimized solutions for metaverse services that require high-speed and ultra-low latency transmission of large-capacity data.

The products jointly developed and supplied by KREEMO and Sivers Semiconductors are the Transparent Antenna-on-Display module, the 1x4 Stackable Patch Antenna module with a 360-degree beam coverage, a 4x4 AiP (Antenna-in-Package) module (scheduled in '22.4Q), a 4x4 Stackable Patch Antenna module with a 360-degree coverage (scheduled in '23. 2Q), and the ADK360° (Antenna Development Kit 360°).



*"This is a very important step in our joint efforts with Kreemo to bring best in class mmWave Meta verse solutions to the market. Antennas on display will be a game changer for this type of applications."* said Anders Storm, Group CEO, Sivers Semiconductors.

*"We're spearheading the new market with the Transparent Antenna-on-Display module and the Stackable Patch Antenna offering a 360-degree coverage jointly developed with Sivers Semiconductors,"* said John Park, the CEO of KREEMO. *"We will continue with innovative products offering 360-degree antenna technology through cooperation with Sivers Semiconductors."*

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**KREEMO (<http://kreemo.io>)**, a global leader in 5G/SATCOM mmWave antenna solutions based in South Korea, has developed the world's first mmWave stackable patch antenna with a 360-degree coverage. This antenna has a structure in which two upper and lower antennas are stacked, providing a 360-degree beam coverage and dual-polarization. In addition, KREEMO is supplying various products, including AoD (Antenna-on-Display) for smartphones, wearable devices, AR/smart glasses, smart TVs, etc. For more information, visit <http://www.kreemo.io> or send an email to [sales@kreemo.io](mailto:sales@kreemo.io)

**Sivers Semiconductors AB** is a leading and internationally recognized technology company that supplies ICs and integrated modules through its two business areas Wireless and Photonics. Wireless develops mmWave products for advanced 5G systems for data and telecommunications networks and satellite communication. The portfolio includes RF transceivers, beamforming front end ICs, integrated mmwave antennas, repeaters, and software algorithms for optimum mmWave RF performance. Photonics develops and manufactures semiconductor based optical products for optical fiber networks, sensors and optical fiber communications (Li-Fi). The company is listed on Nasdaq Stockholm under SIVE. The head office is located in Kista, Sweden. For more information: <http://www.sivers-semiconductors.com>