

WAVESTREAM PRESS RELEASE

AvL Technologies, Datum Systems and Wavestream Over-the-Air Demonstration of Digital Interface

San Dimas, California, August 19, 2022, -- AvL Technologies (AvL), Datum Systems and Wavestream collaborated on an over-the-air digital interface demonstration in July. The purpose of the successful demonstration was to engage a digital interface modem/BUC pair interconnected by only a CAT5 cable to transmit user data over satellite.

The demonstration used two 1.2m AvL terminals – one for transmit and one for receive. The transmit terminal used a Wavestream digital input BUC, with a Datum Systems digital modulator, capable of 20W linear output power (per MIL-188-164) over the 27.5 - 31GHz band, and a MIL-band (20.2 - 21.2GHz) LNB for antenna pointing and peaking. The BUC was fed an input signal (digital data stream) provided by a Datum Systems M7 modem configured to emit data as a UDP-wrapped, VITA 49-packetized stream.

The receive terminal was outfitted with a standard Norsat L-band output LNB, which fed a standard Datum Systems M7 analog input DVB-S2X modem to demodulate to incoming signal.

The successful demonstration established a link over satellite using a modem/BUC pair having an exclusively digital interface (Ethernet over CAT5 cable). Symbol rates of up to 10Msym/sec were tested, considered representative of typical transmission from a small tactical terminal. The performance results included a maximum transmission rate of 27.5 Mbps of user data with 0% packet loss at 10MSym/second. Clean, high-resolution video was transmitted at this data rate. A maximum overall bandwidth efficiency of 4.3bps/Hz of user data was achieved using a 64APSK-modulated signal at 2Msym/second.

“This is a much needed and anticipated technology that will be of major importance to service providers and users alike. This will make capable the elegant integration of a total terminal solution for the future,” said Todd Brown, AvL’s Director of Business Development.

”Our goal was to demonstrate interoperability – between digitally-interfaced equipment from multiple suppliers and between an all-digital transmit chain and a legacy analog receive chain. Using a system with only an Ethernet connection between the digital output modem on the ground and the digital input BUC on the feed arm, we were able to show excellent transmission rates and bandwidth efficiency between a small digital terminal and a small traditional analog terminal. We are looking forward to a future where an all-digital interface between RF equipment and modems – hardware or virtualized – replaces the analog L-band interface.”

AvL, Datum Systems, and Wavestream have additional demonstrations now being planned.

The photo below shows the transmit and receive terminals.



About AvL Technologies

AvL Technologies, Inc. (AvL) specializes in the design, development and production of mobile satellite communication antenna systems and terminals. AvL's visionary approach to mobile satellite antennas and positioners has established the company as a global leader in innovation and reliability. The industry leading AvL product line features a full range of rugged, rapidly deployable, mobile antenna systems and terminals, including multi-band and multi-orbit configurations. A new line of communication-on-the-move (COTM) terminals are also in AvL's near term plans. AvL antenna systems enable efficient and cost-effective voice, video, and data connectivity to be established quickly, without the need for specialized training. With corporate headquarters based in Asheville, North Carolina, AvL offers superior service and support to customers around the world.

About Datum Systems

Datum Systems is a privately-held company, located in Mesa, Arizona. For over 20 years Datum has specialized in designing and delivering the most spectral and bandwidth efficient FDMA modems in the industry and is the global leader in low cost, compact modem products. Datum provides IP and alternative transport solutions for Mobile Backhaul, Trunking, Enterprise VSAT, Energy, Government and Maritime markets. Solution architectures include Point-to-Point, Point-to-Multipoint, Mesh, On-the-Move, SCADA and our latest Troposcatter. For further details, email sales@datumsystems.com

About Wavestream

Wavestream is the industry leader in the design and manufacture of next generation satellite communications high power transceivers for In Flight Connectivity, Ground Mobility and Gateway markets. Since 2001, we provide system integrators with field-proven, high performance Ka, Ku and X band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs), Block Down Converters and Transceivers. We design, manufacture and repair our



products in-house and have delivered over 40,000 systems in the past 15 years. Wavestream products provide high quality and reliability under the harshest environmental conditions and we are currently certified to ISO 9001:2008 and AS9100D standards. For further details, please visit www.wavestream.com

For more information contact:

sales@wavestream.com