
APPLIED SATELLITE ENGINEERING-MACHINE-TO-MACHINE



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West Coast Utility Company

Hughes 9201-M2M provides most reliable coverage for smart meter backhaul networks

When a West Coast utility company started linking “meshed” smart meters directly with their IT systems, they discovered one weakness with these short-range wireless networks—wired networks.

Mesh networks, which link smart meters typically within 0 to 4 miles of each other, need reliable, IP-based backhaul links to aggregate metered data and transport it to the utility’s IT Advanced Meter Systems (AMS) data center (also commonly referred to as AMI for Advanced Metering Infrastructure). The utility company employs a mix of wired and terrestrial wireless networks for backhaul in populated areas. However, their service areas also include hundreds of homes and businesses separated by distances where coverage is unreliable. Collecting meter data from these distant points has historically meant rolling a truck for a walk-up meter read or a drive-by reading from a radio-equipped meter (AMR). Just getting the truck into range often costs as much as \$100+ an hour. Even in populated areas, wired and terrestrial wireless networks are subject to service interruptions from weather and countless other unforeseen incidents.

The utility company needed a primary backhaul solution that could link outlying customers into its single, uniform, mesh network. The company identified the Hughes 9201-M2M BGAN as their solution. Hughes provides an IP-based, reliable DSL-like service experience via a simple satellite network. It cost-effectively links remote AMI/AMS collection points to the utility company’s smart meter data centers.



The rugged, proven, and widely deployed Hughes 9201-M2M BGAN terminal, about the size of a laptop computer, is a hardened, pole-mounted device. It has a wide pointing tolerance to compensate for seasonal pole-shift and inclement weather pole-sway. The Hughes 9201-M2M delivers the aggregated Ethernet traffic of the mesh network to the utility company’s multiprotocol label switching (MPLS) network via TCP/IP over a virtual private network (VPN). Inmarsat’s Broadband Global Area Network (BGAN) global coverage ensures connectivity over the utility company’s entire service area. A single Hughes 9201-M2M BGAN terminal can support mesh collection points servicing anywhere from a community of 3 to 3,000 smart meters.

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The U.S. Department of Energy is encouraging mesh network development through the American Recovery and Reinvestment Act matching funds and reimbursements. AMS or AMI is a priority for utilities trying to improve energy conservation and institute tiered pricing. Combining mesh networking with the Hughes 9201-M2M enables this utility to realize the full benefit of smart metering. The Hughes 9201-M2M BGAN solution gives them an always-on primary access or backup for their wired and terrestrial wireless backhaul networks and an endlessly expandable uniform mesh network platform.

About the Hughes 9201-M2M

Ideal for the utilities industry, the Hughes 9201-M2M is readily packaged for utility SmartMeter backhaul networks. Easy to set up, the robust Hughes 9201-M2M installs quickly in about 60 minutes and is built to operate in extreme weather conditions. Compact and versatile, the single-box Hughes 9201-M2M is a secure, cost-effective and “always on” solution for a wide range of traffic sites handling kilobytes, megabytes or even gigabytes of data.

The Hughes 9201-M2M is designed and developed by Hughes, the world leader in broadband satellite networks and services, with more than 2.5 million terminals shipped to customers in over 100 countries.



About Hughes

Hughes Network Systems, LLC (Hughes) is the world's leading provider of satellite broadband for home and office, delivering innovative network technologies, managed services, and solutions for enterprises and governments globally. HughesNet® is the #1 high-speed satellite Internet service in the marketplace, with offerings to suit every budget. To date, Hughes has shipped more than 2.5 million systems to customers in over 100 countries, representing over 50 percent market share. Its products employ global standards approved by the TIA, ETSI and ITU organizations, including IPoS/DVB-S2, RSM-A, and GMR-1. Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes operates sales and support offices worldwide, and is a wholly owned subsidiary of EchoStar Corporation (NASDAQ: SATS), a premier global provider of satellite operations and digital TV solutions. For additional information about Hughes, please visit www.hughes.com.

Technical Specifications

All items are without NEMA 4X enclosure

Physical and Environmental

Satellite Tx Frequency:	1626.5–1660.5 MHz
Satellite Rx Frequency:	1525.0–1559.0 MHz
GPS Frequency:	1574.42–1576.42 MHz
Weight:	2.8 kg (6.17 lbs)
Dimensions:	27.5 cm D x 34.5 cm W x 5.0 cm H (10.8 in D x 13.6 in W x 2 in H)
Humidity:	95% RH at 40° C
Operating Temperature:	-25° C to +60° C
Water and Dust:	IP-55 standard
Wind Survival:	160 km/h (100 mph)
Input Voltage:	9 Vdc–28 Vdc

Power Consumption

Full Transmit:	24-30W
Narrow beam without Tx:	4 W
Regional beam (idle):	4 W

Solar Compatible

Requires 55–60 W solar panel plus DC/DC power adapter to input 20 V to 9201-M2M terminal

For additional information, please contact Hughes at 1-866-569-5153 or email BGANsales@hughes.com.

bgan.hughes.com

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