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Culture

Not your kid brother's toy gun

This Airsoft gun could really hurt you.



Caroline McCarthy 

Nov. 27, 2006 12:27 p.m. PT





ThinkGeek

Toy guns have come a long way from the days of Nerf. This one, the Airsoft Submachine Gun featured on ThinkGeek, is about as far from those neon-green pistols as they get. It has freaking LASER SIGHT. And an illuminator flashlight built in. And it's so awesome, it comes with protective goggles. Not to mention the fact that it actually looks like a legitimate weapon, rather than something out of "The Jetsons."

If you're one of those types who's so hardcore that you play paintball in tanks, then yeah, maybe you'll like this. Just don't take it on a plane with you, unless you're psyched to get on the no-fly list.



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SpaceX Delays Launch of Enormous Satellite for Faster Rural Broadband

The rocket company hopes for just a one-day launch delay for the Jupiter 3, a bus-sized spacecraft designed to quadruple Hughes' satellite broadband speeds.



Stephen Shankland

July 27, 2023 5:30 a.m. PT

3 min read



Hughes' Jupiter 3 satellite is the size of a school bus, and when its solar panels unfold it will be well over 100 feet across.

Hughes Network Systems

SpaceX delayed by a day the launch of [Hughes Network Systems' Jupiter 3](#), a satellite designed to modernize an old-school approach to space-based internet access. The Falcon Heavy rocket carrying the satellite is now [set to take off at 8:04 p.m. PT Thursday](#), SpaceX said after a ["violation of abort criteria"](#) scrubbed the earlier Wednesday launch plan.

The "vehicle and payload are in good health," SpaceX said.

When it goes into service in the fourth quarter of 2023, Jupiter 3 should quadruple Hughes' download speeds to 100 megabits per second, making the technology more useful in a data-hungry world. Hughes hasn't yet revealed prices for the faster new service.

Launching a single massive communications satellite contrasts sharply with much of the [satellite broadband](#) innovation today from [SpaceX's Starlink](#) and rivals like [OneWeb](#) and [Amazon's Kuiper](#). They employ "constellations" of hundreds of smaller, cheaper satellites orbiting relatively close in low Earth orbit.

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Hughes' Jupiter 3 couldn't be more different. It's a single nine-ton satellite the size of a bus -- 27 feet long and 127 feet wide once its solar panels are deployed. It's designed to circle the Earth in sync with the planet's rotation in a much higher geostationary orbit 22,236 miles above the equator. That choice parking place is fixed in the sky, meaning antennas can be pointed at it without having to reconnect with a constant parade of low Earth orbit satellites whizzing by closer to the planet.

Most of us are better served by cable or fiber-optic broadband that offers higher speeds and shorter communication delays, called latency. But for rural customers and others who are beyond the reach of more conventional network technology, satellite communications can play a key role connecting people who are hard to bring online.

"These folks that haven't experienced these types of service levels ever before," said Mark Wymer, Hughes' senior vice president of business development and strategy.

People living off the beaten track often rely on satellite-based communication services. This house in the village of Kasaan, Alaska, has a satellite dish antenna in its front yard.

Stephen Shankland/CNET

Space has become more accessible to startups and established companies with SpaceX driving launch costs down. But it still poses formidable engineering challenges. In July, Hughes competitor Viasat disclosed a disastrous malfunction with its ViaSat-3 satellite, a problem deploying the satellite's unusually large reflector that beams radio waves to ground stations.

Hughes' launch, from Cape Canaveral in Florida, uses the same rocket as ViaSat-3, SpaceX's Falcon Heavy. It can propel up to 64 metric tons of payload to low Earth orbit and 27 metric tons to geostationary transfer orbit, the precursor orbit satellites use before being nudged into geostationary orbit.

Broadband from space

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- Hughes' Bus-Sized Satellite Promises Better Broadband in the Boonies

- [Best Satellite Internet Providers for 2023](#)
- [SpaceX Launches Startup's First 'Cell Tower in Space'](#)

Jupiter 3 has a total communication capacity of 500 gigabits per second. That includes communication to and from the terminals that customers have and with the Hughes ground stations that link the satellite to the broader internet.

"We've colocated those in data centers where a lot of major content players house their data to eliminate delays and latency," Wymer said.

The new low Earth orbit constellations of broadband satellites are "forcing us to innovate," he said. One example is Hughes' Fusion service, which combines communications with OneWeb's low Earth orbit satellites either with 4G mobile phone network technology or with Hughes' Jupiter geosynchronous satellites. (Hughes parent EchoStar invested in OneWeb.)

Instant broadband during disasters or war

Satellite broadband also can play an important role in areas disrupted by war or natural disasters. SpaceX's Starlink terminals have been important for Ukrainian forces fighting the Russian invasion, and satellite links could be important if attacks disrupt the [massive network of subsea internet cables](#) crucial to international commerce and communications.

Hughes' Jupiter 3 satellite, packaged in a large white container, is loaded onto a bulging Antonov cargo jet in Silicon Valley for shipment to Florida for its launch.

Hughes

Hughes works with the US Federal Emergency Management Agency, or [FEMA](#), to help [emergency crews set up temporary cellphone networks](#) after disasters. "We can go in within a moment's notice and establish or reestablish those communication lines," Wymer said.

Along with individual customers, Hughes' Jupiter satellites also supply "backhaul" connections to remote cell towers that lack terrestrial connections and to communities, particularly in South America, that set up community internet access points.

[Maxar Technologies](#) designed and built Jupiter 3 at its offices in Palo Alto, California. [Hughes shipped the spacecraft to Cape Canaveral](#) using an enormous Ukrainian Antonov aircraft.

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