



POSITIONING, NAVIGATION, AND TIMING

INGENUITY TO GUIDE THE JOURNEY

Harris is the leading provider of assured positioning, navigation, and timing (PNT) services. Our capabilities are evidenced in our rich experience with the U.S. Global Positioning System (GPS). GPS is an essential element of the global information infrastructure.

BENEFITS

Proven and vetted development and production process

Mature and qualified supply chain supporting production runs

Established testing infrastructure and security certifications

Significant investments in technologies to make GPS more accurate, reliable, and resilient

THE WORLD RELIES ON PNT

From asset tracking and fleet management applications to intelligence and law enforcement missions and everything in between, GPS has become a ubiquitous service that many industries and individuals have come to rely on. Over the past 40 years, Harris has provided satellite payloads and subsystems resulting in over 750 years of failure-free cumulative on-orbit operations. Simply put, Harris is the assured GPS provider.

The GPS navigation payload is no “plug-and-play” system; it is integrated into the spacecraft itself. Our signal waveform expertise is behind the system’s availability, accuracy, and integrity. Our unique know-how ties GPS’ space and ground segments

together—from transmitters to receivers—and our security expertise assures users that their time and position data is spot-on.

Harris’ ongoing investments in technology advancements will continue to make GPS more accurate, reliable, and resilient, to counter current and future threats. As part of the GPS modernization team, we will deliver key components to both the ground-based control segment and the satellite constellation. Harris’ GPS Mission Data Unit (MDU) is 70% digital and offers excellent performance, exceeding Air Force requirements.

FACTS

From banking to transportation and almost every other sector of the economy, the world relies on GPS—and GPS relies on Harris technologies.

GPS relies on accurate timing provided by the Harris-developed payload and today is accurate to 100 billionths of a second.

GPS began in 1973 as a U.S. government project with the first GPS satellite launching in 1978.

Harris has provided GPS satellite payloads and subsystems with over 750 years of cumulative failure-free, on-orbit operations.



About Harris Corporation

Harris Corporation is a leading technology innovator, solving customers' toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers in more than 100 countries and has approximately \$6 billion in annual revenue. The company is organized into three business segments: Communication Systems, Space and Intelligence Systems and Electronic Systems. Learn more at harris.com.

MORE THAN NAVIGATION

Though it is known primarily as a navigation system, GPS is used to disseminate precise time, time intervals, and frequency too. The GPS carrier signals originate from on-board atomic clocks monitored by ground control stations. They send global time 24 hours a day. No other system has provided this combination of accuracy and availability.

Harris has developed the timing integration and the ability to tie the space and ground segments together. This not only allows for the accuracy of GPS navigation, but also benefits all applications where precise timing is required.

GPS MODERNIZATION

Harris is developing and integrating the satellite navigation payloads for the next generation of GPS and is providing the key navigation processing elements and precision monitor station receivers for the GPS Operational Control Segment (OCX) program. GPS modernization will provide users with even greater accuracy, security, and reliability.

GPS SIGNAL PROTECTION

Harris' waveforms expertise has enabled the GPS accuracy that the world has come to trust. Our unique capability to combine direct digital synthesis, M-code, cryptography, adaptive signal integrity, and antenna technologies (including MBMS) assures the timely delivery of the next generation of GPS.

Because GPS is ubiquitous, it is imperative that the signal is reliable and secure. Many GPS applications require assured information for asset tracking, fleet management, and maritime commerce, to name a few.

ENCRYPTION

Harris is the leader in signal encryption and M-code, the name given to a signal designed to improve both the security and anti-jamming properties of military GPS navigation.

We provide key super-succession, key upload, and over-the-air-rekeying (OTAR). Superior security is evident in the flexible reprogrammable design of a crypto engine, which is certifiable and modular. It includes information security and information assurance boundaries. We also have the ability to produce a signal using modernized NAVSTAR Security Algorithm (MNSA) encryption.

Harris is building the ground station for a new generation of satellites that will bring increased safety and precision to GPS. Our ability to work effectively with partners, our signal monitoring expertise (including OCX Monitor Station Receiver Element and mission upload generators) and payload expertise will add new capabilities to the GPS control segment and enhance GPS for users worldwide. As the world becomes more dependent on GPS technology, protecting the satellite signal from jamming, hackers, errors, and inaccuracies has become a matter of global security.

MEETING BROADER MARKET NEEDS

Precise time is crucial to a variety of economic activities around the world. Harris is a leader in extremely accurate timing within 100 billionths of a second. We are leveraging our expertise in this area to provide improved services in business sectors that require extremely precise timing, such as financial networks, communication systems, and electrical power grids.

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HARRIS® TECHNOLOGY TO CONNECT,
INFORM AND PROTECT™