L3HARRIS™
FAST. FORWARD.

TRUTRAK™ M-CODE PRODUCT FAMILY

The M-code product family delivers enhanced acquisition, jamming and spoofing immunity, and security features to improve accuracy, authenticity and integrity in contested environments.

PRODUCT IMAGE	PRODUCT	KEY CHARACTERISTICS AND TYPICAL USE	STATUS (AS OF SEPT. 2019)	
			CERTIFICATION	TRL AND PRODUCTION
	TruTrak-M Type I P/N 7847700	L3Harris' Type I is the MGUE Ground-Based GPS Receiver Applications Module (GB-GRAM-M) program deliverable, designed and tested to the Ground Embedded Technical Requirements Document (TRD) applicable to ground and low-dynamic airborne platforms. The Type I has achieved Technical Requirements Verification(TRV) that assessed the receiver, including the M2GRAM and embedded software as low-risk for platform integration, operational test and fielding.	Certified Approved	TRL 8 Q3FY20 Rate Production
	TruTrak-M Type II P/N 7853300	L3Harris' Type II is designed to meet or exceed compliance to the MGUE TRD and provide additional capabilities in a smaller, cost-optimized form factor. The Type II standard offer hosts the same M2GRAM and MGUE software as the Type I. Additional capability and flexibility is provided by an off-M2GRAM co-processor.	Certified Approval Q2FY20	TRL 5 Q3FY20 Rate Production
	TruTrak-M TTM-SS P/N 7847400	L3Harris' TTM-SS is a form/fit/function replacement to a legacy receiver in operational use. This solution demonstrates L3HARRIS ability to tailor form factor and capabilities to the most demanding applications and successfully mitigate program risk when transitioning to M-code.	Pre-Certification	TRL 6-7 FY21 Rate Production
	TruNav-M P/N 7850200	L3Harris' TruNav-M is an integrated anti-jam GPS receiver (AJ/GPS) offering digital anti-jam electronics and M2GRAM in a single circuit card assembly. The TruNav generates a navigation solution and provides the solution using a client interface based on the MGUE TRD. L3Harris' standard offering hosts blended navigation software able to receive and apply inputs from external navigation aids to improve GPS performance and gracefully degrade after loss of GPS. The TruNav provides post-nuller RF output to protect additional GPS receivers and can be configured as AJ/GPS (with M2GRAM) or AJ-only (without M2GRAM).	Pre-Certification	TRL 7+ FY21 Rate Production
	LR PGK P/N 7849600	Derivatives of the TruNav-M are being developed to provide AJ/GPS capabilities in smaller form factors in order to ease integration and accelerate advanced capabilities in volume-constrained applications.	Pre-Certification	TRL 4 FY24 Rate Production
	Mounted APNT System P/N 7854000 P/N 7861900	L3Harris' Mounted APNT System (MAPS) generates APNT in extreme navigation warfare (NAVWAR) environments. MAPS is able to host either TruNav-M or GB-GRAM-M navigators, and includes internal and provision for external navigation aids. MAPS distributes APNT and NAVWAR information to multiple platform clients using independent serial and Ethernet ports.	Pre-Certification	TRL 6-7 FY21 Rate Production
	Dismounted APNT System P/N 7859900 P/N 7859100	L3Harris' Dismounted APNT System (DAPS) generates APNT in NAVWAR environments faced by dismounted users and mounted users operating in moderate-threat environments. DAPS hosts the GB-GRAM-M and internal navigation aids able to navigate in periods of GPS-denial. DAPS distributes APNT and NAVWAR information to an End User Device or legacy serial clients.	Pre-Certification	TRL 5-6 FY21 Rate Production

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L3Harris capabilities support M-Code solutions

All L3Harris Technologies receivers and Assured Positioning, Navigation and Timing (APNT) systems shown are based on the modernized M2GRAM common GPS module capable of tracking C/A, P(Y) and M-code signals.

Navigation and interface characteristics are largely software-defined and the M2GRAM is capable of hosting modernized Military GPS User Equipment (MGUE), sensor-aided blended navigator, and platform-tailored software as required. This flexibility enables L3Harris to deliver standard or mission-tailored capabilities in all receiver form factors. The M2GRAM has achieved GPS security certification and is approved for operational use without restriction, including export to partner nations in accordance with United States GPS Security Policy.

L3HARRIS TECHNOLOGIES M-CODE FAMILY OF PRODUCTS

Engineered in Anaheim, CA and manufactured in Cincinnati, OH, the facilities provide precision electronics components, subsystems, and systems for both U.S. and International military defense systems, offering best-of-breed capabilities for both current and future weapons systems. L3Harris has a proven track record as a quality, on-time producer of superior products and systems. L3Harris' Anaheim and Cincinnati facilities directly contracts to the United States Army, Air Force and Navy, as well as supply and contract to major weapon system primes.

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