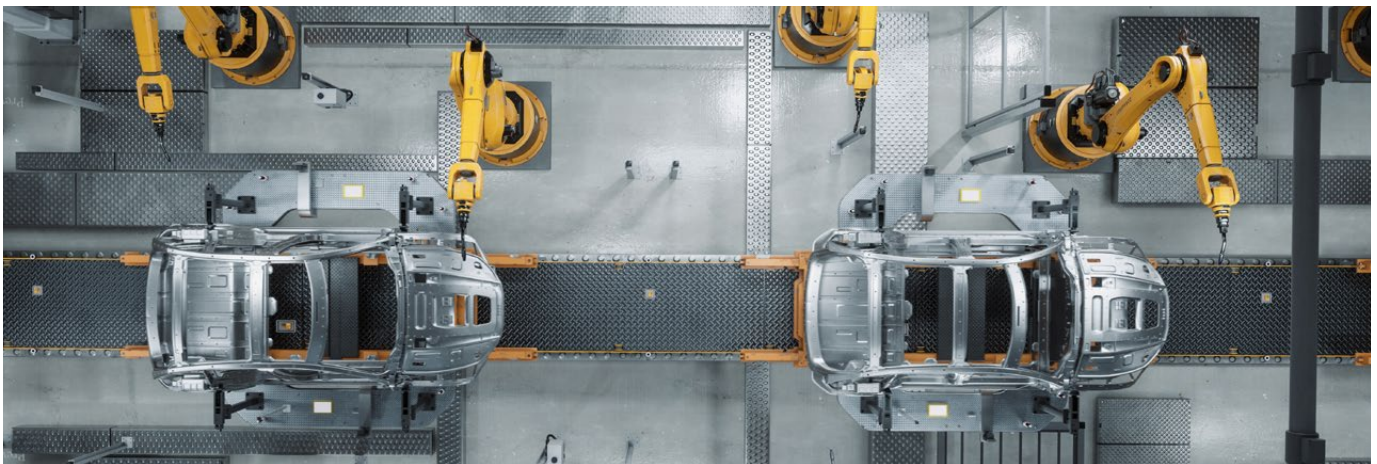


IoT ACCELERATION WITH UCODE 9xm: LARGE, CUSTOMER CONFIGURABLE MEMORY AND HIGH PERFORMANCE



Designed to take on today's biggest IoT challenges, this UCODE 9 variant offers industry-leading performance with customer configurable high-capacity Electronic Product Code (EPC) and user memory configurations.

TARGET APPLICATIONS

- Industry 4.0, for complex process flows and advanced automation
- Smart manufacturing, for tracking work-in-progress and production status
- Airline baggage tracking, with data stored locally on the tag
- Automotive manufacturing, with standard-compliant memory configurations
- Supply chain management and extended product lifecycles, with memory space to record origins and current ownership
- Perishable goods tracking requiring expiry date or extended attribute data utilizing GS1 TDS 2.0 encoding standards.

Building on the same foundation as the high-performing UCODE 9, UCODE 9xm offers industry-leading performance and an enhanced feature set with three customer configurable memory configurations that offer up to 496 bits of EPC memory and up to 752 bits of user memory.

KEY FEATURES

- Read sensitivity -24 dBm
- Write sensitivity -22 dBm
- Up to 496 bits EPC memory
- Up to 752 bits user memory
- Self-adjust
- Memory safeguard

KEY BENEFITS

- Three times better sensitivity than previous UCODE memory products, UCODE 9xm allows longer read ranges and smaller tags in RAIN RFID applications
- Customer configurable memory for broad range of use cases
- Supports sustainability, with potential for smaller antennas reducing necessary raw materials

To support high-performance solutions in industrial and manufacturing environments, UCODE 9xm enables robust system performance throughout the value chain, supports multiple use cases and industries with a single IC product, and helps reduce waste and increase sustainability.

ACCELERATED IoT

Developed for advanced Industry 4.0 use cases, UCODE 9xm delivers superior performance in a wide range of applications compared to previous UCODE memory products.

In manufacturing solutions, it can monitor the progress of complex products from start to finish and can record component IDs during assembly. On the factory floor, UCODE 9xm supports automated tool management and automatic checkout, thereby increasing tool availability, personnel accountability, and accuracy of tool-maintenance schedules.

For inventory management, tags that use UCODE 9xm can make data available when cloud connectivity is unavailable, to ensure the correct part is available at the correct lineside location. In the supply chain, the UCODE 9xm makes logistics more efficient, by supporting just-in-time processes and by tagging parts and containers for automatic proof of dispatch and automated receipts.

In the airline industry, the UCODE 9xm enhances baggage tracking, by enabling systems that require higher performance and larger tag memory to store destination information.

HIGH SENSITIVITY

UCODE 9xm is a significant upgrade in performance, making it easier to read tags in RF-unfriendly environments. The read sensitivity of -24 dBm (which is three times better than UCODE 7xm), can facilitate a smaller tag antenna design, and with a write sensitivity of -22 dBm, reduces the read/write gap to just 2 dBm, so tag encoding is both faster and easier.

CUSTOMER CONFIGURABLE MEMORY

UCODE 9xm contains a total of 880 bits of memory space shared between the EPC and user memory banks. Three configurations of memory segmentation make it possible to balance the requirements for EPC and user memory based on the individual use case. With industrial and manufacturing applications, for example, UCODE 9xm offers up to 752 bits of user memory, while using a different configuration allows automotive and airline applications to take advantage of up to 456 bits of EPC memory. There are three set memory configurations with the desired structure being selected during the standard tag-encoding process, which means a single IC can be used to fulfill a number of use cases.

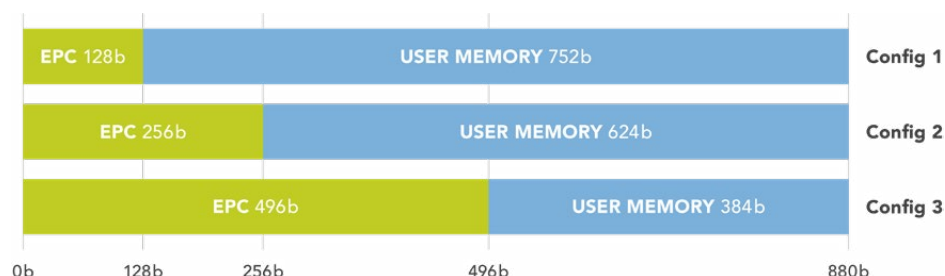
MEMORY SAFEGUARD

Two features in UCODE 9xm's Memory Safeguard functionality serve to protect data and help ensure accuracy. The Error Correction Code (ECC) algorithm safeguards the entire UCODE 9xm memory including the EPC number by automatically detecting and correcting potential single-bit errors and also detecting and flagging multi-bit errors. Possible changes to any manufacturer-programmed Tag Identifier (TID) code used in the application is detected with a parity check.

THE CHOICE FOR SUSTAINABILITY

UCODE helps reduce waste in production and the supply chain, by making it easier to match production with demand. The high performance of the UCODE 9 family makes it possible to use a smaller RFID tag antenna, so designs can use less aluminum and PET resin. For instance, reducing a typical antenna size from 50x30 mm to 42x20 mm can reduce the aluminum and plastic by as much as 40%.

What's more, the extended EPC/user memory of the UCODE 9xm makes it possible to store the kinds of data points that make it easier to recycle, re-sell, and re-use products. It also increases visibility, by promoting efficiencies within manufacturing and supply chains, helps reduce waste, by making it easier to match production with demand, and improves efficiency by transporting only what's ordered.



Flexible UCODE 9xm Customer Configurable Memory

UCODE 9xm PRODUCT DETAILS

PERFORMANCE	Read sensitivity	-24 dBm
	Write sensitivity	-22 dBm
	Self-adjust	Yes
MEMORY	Flexible EPC/user memory (customer configurable)	880 bits
	TID memory	96-bit
	Access password	32-bit
	Kill password	32-bit
	Endurance/data retention	100 k/20 y
	Memory safeguard	Yes
	Block write (32-bit)	Yes
	BlockPermalock	Yes
AMBIENT CONDITIONS	Temperature range	-40 to +85 °C
DELIVERY TYPE	Wafer diameter	12"
	Large gold (Au) pads	Yes

ORDERING INFORMATION

PRODUCT	DELIVERY FORM	TYPE	12NC
UCODE 9xm	Die on sawn 12" wafer; large pads	SL3S1005FUD2/HAP	9354 339 96035

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