G2iM series. 640 bit user memory and advanced features

These advanced UCODE ICs offer a variety of unique features, including a large, segmentable user memory that can be used to store data about the manufacturer, the product, its quality and assembly, maintenance history, and more.

Key features

▸ EPC number range: 128 to 448 bits
▸ Unalterable TID: 96 bits including a 48-bit serial number
▸ Segmentable user memory range up to 640 bits
▸ Up to three user memory segments available
▸ Tag tamper alarm
▸ Privacy modes (read protect, conditional real read range reduction)
▸ Digital switch, data transfer
▸ Product status flag (PSF)
▸ Battery assist mode (read and write sensitivity is -27 dBm)
▸ Delivery options: wafer, JEDEC flip-chip strap, SOT886 package
▸ Wide frequency range: 840 to 960 MHz
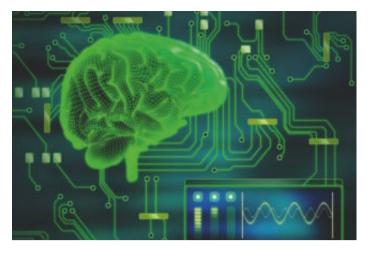▸ Worldwide usage: EPCglobal 1.2.0 compliant

Key benefits

▸ Flexible data storage with segmentable user memory
▸ Longer read ranges and smaller inlays due to high chip sensitivity
▸ Better theft deterrence via tamper alarm and digital switch feature

▸ Greater consumer privacy through read protection and advanced real read range reduction
▸ Easier electronic device configuration via the data transfer mode and digital switch
▸ Indication of product status supported by the product status flag (PSF)
▸ Read range boost to >35 m through BatteryAssist mode

Applications

▸ Fast-moving consumer goods (FMCG)
▸ Industrial production, assembly, and quality control
▸ Asset tagging (containers, crates, boxes)
▸ Electronic vehicle tagging (license plate tagging, windshield tagging)
▸ Electronic device configuration
▸ Automotive production and spare part tagging
▸ Aviation production and spare part tagging

For added design flexibility, the user memory can be segmented into varying sizes, configurable in 64-bit steps. This lets users configure the chip to their specific application requirements.

In electronics applications, the G2iM series enables fast device configuration and simplifies production control. In the area of fast-moving consumer goods and spare part tagging, it protects brands and combats counterfeiting by verifying proof of origin.

Design support

NXP's design support works at every level - from the label to the end application. It includes reference antenna designs and customization, as well as optimization of the RFID system. The experts in NXP's Application and System Center (ASC) can also evaluate and optimize an existing design or assist with new development projects. In addition, our Customer Application Support (CAS) group offers dedicated customer training, front-line design support, and consultancy services.

Data in the user memory can be segmented and protected via different passwords, to create selected and restricted access to the user memory. This extra level of protection increases security in applications where several different parties need to access the memory.

In a production environment, for example, the quality and assembly departments can use different areas of the memory to store data.

In vehicle and asset tagging applications, the local authority and the state government can use different areas, each protected by a different password.

For applications that don't require this high level of security, the G2iM series devices also have open memory, which doesn't use password protection.

Feature set: G2iM vs. G2iM+

Feature	G2iM	G2iM+
96-bit TID with 48-bit serial number	Yes	Yes
Product Status Flag	Yes	Yes
Read Protect	Yes	Yes
Extended EPC number up to 448 bits	-	Yes
Segmentable User Memory	-	Yes
Real Read Range Reduction (4R)	-	Yes
Tag Tamper Alarm	-	Yes
Conditional Read Range Reduction	-	Yes
Digital Switch	-	Yes
Data Transfer	-	Yes
Battery Mode	-	Yes

UCODE

www.nxp.com/products/identification/label_and_tag_ics/ucode/index.html