NXP low-frequency HITAG-µ ICs

4ᵗʰ generation HITAG for advanced, low-cost RFID

Representing the next level of cost and performance leadership for RFID applications, these low-frequency ICs support the upcoming ISO14223-2 standard and its anti-collision protocol.

Features

▸ Fourth-generation HITAG technology
▸ Integrated resonance capacitor
▸ Meets industry standards
  - Complies with ISO 11784/85
  - Supports upcoming ISO/IEC 14223 and ISO/IEC 18000-2
▸ Flexible memory options
▸ Up to 10,000 erase/write cycles
▸ 10 years non-volatile data retention
▸ Frequency range of 100 to 150 kHz
▸ Data rates (tag to reader): 2, 4, or 8 kB/s
▸ Data rate (reader to tag): 5.2 kB/s
▸ Memory Lock functionality
▸ 32-bit password feature
▸ 48-bit Unique Identification Number (UID)

Applications

▸ Livestock tracking and food safety
▸ Import/export control
▸ Automated laundry services
▸ Logistics for re-usable packaging (beer kegs, gas cylinders)
▸ Waste management in accordance with German BDE standard
▸ Marathon timing
▸ Casino gaming

The HITAG-µ family is the latest addition to NXP's well-established HITAG portfolio for RFID. The fourth generation architecture provides advanced yet low-cost performance in a wide range of large-scale RFID applications.

For animal ID applications, the HITAG-µ architecture is fully compliant with the ISO 11784/85 standards and provides the anti-collision and read-write functionality of the upcoming ISO/IEC 14223 standard. For item management, the architecture also supports the new ISO/IEC 18000-2 standard, including its AIDC techniques.

Each HITAG-µ IC has an integrated resonance capacitor of 210 pF with ± 3% tolerance or 280 pF with ± 5% tolerance over full production.

The read/write device uses 100% ASK modulation and binary pulse length coding to communicate with the IC. The ICs support fast anti-collision protocol and data integrity check (CRC). They support Transponder Talks First (TTF) mode and can temporarily switch to Reader Talk First (RTF) mode.

HITAG µ ICs are fully compatible with the following reader ICs

	Ordering Info	Description
HTRC110	HTRC11001T/02EE (tube)	HITAG Reader IC
	HTRC11001T/03EE (reel)	

HITAG µ ICs are fully compatible with the following readers

	Ordering Info	Description
HTRM301	HTRM301/AKDB	HITAG Proximity Reader Kit 125 kHz
HTRM902	HTRM902/AEDB	HITAG Long Range Reader Kit 134.2 kHz
HTEV110	HTEV110/AKDB	HITAG Reader Evaluation and Development Kit

Selection guide

Feature	HITAG-µ advanced HITAG-µ advanced +	HITAG-µ ISO 18000
100 to 150 kHz	Yes	Yes
Anti-collision	60 tags/sec	-
Unique ID Number	48 bit	48 bit
R/W and Lock capability	Yes	Yes
Total memory size (bits)	512 1760	1760
Integrated security	Yes, 32 bit password	Yes, 32 bit password
Integrated resonance capacitor	210 pF ±3% 280 pF ±5%	210 pF ±3% 280 pF ±5%
ISO 11784/85	Yes	Yes
Command set	HITAG-µ	ISO 18000
Fast Write command	Yes	Yes

Ordering information

HITAG-µ ICs, Cres: 210pF (±3%)

Product	Type	Description
HITAG-µ advanced 512-bit	HTMS1101FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS1101FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)
HITAG-µ advanced+ 1760 bit	HTMS1201FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS1201FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)
HITAG-µ ISO 18000 1760 bit	HTMS1301FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS1301FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)

HITAG-µ ICs, Cres: 280pF (±5%)

Product	Type	Description
HITAG-µ advanced 512 bit	HTMS8101FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS8101FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)
HITAG-µ advanced+ 1760 bit	HTMS8201FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS8201FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)
HITAG-µ ISO 18000 1760 bit	HTMS8301FUG/AM	Sawn, megabumped wafer, 150 µ, 8 inch, UV
	HTMS8301FTB/AF	Plastic, extremely thin, small outline package; 3 terminals; body 1 x 1.45 x 0.5 mm (SOT1122)

Also available in HVSON and FCP packaging