

---

**Explaining the Difference between Atmel ATA5577 Types**

---

**ATAN0020****Features**

---

- Atmel® ATA5577 types

**Description**

---

Many of our LF RFID devices are based of the same core IP and therefore start with the same base part number. We clarify distinctions in many ways but the first is a character designator. This character stand for the silicon version and starts for the RFID types with M. Following this is usually the chip type (1 number) plus the on-chip capacitance values and then packaging type. This document focuses on explaining what the different chip-type variants mean to the end customer.

## 1. Atmel ATA5577 Types

The Atmel® ATA5577 device is our current foundation device that is widely accepted by a broad customer base. This IC is the one that should be discussed first if the customer is unfamiliar with our products in general. It comes in three type configurations. The following table gives an overview of the basic differences.

**Table 1-1. Atmel ATA5577 Types**

Features	ATA5577			Datasheet Reference	
	M1	M2	M3	M1/M2	M3
Pad size	90 x 90µm	200 x 400µm	200 x 400µm	11	10
Pad bumps	none	25µm Au	25µm Au <sup>(5)</sup>		
Chip size [mm <sup>2</sup> ]	1.15	1.36	1.36	11	10
Input capacitance	trimmed ±3%	trimmed ±3%	±12% over production, ±3% on wafer basis <sup>(1)</sup>	9.11	7.11
Delivery configuration	Manchester, RF/32	Manchester, RF/32	Manchester, RF/64	10.2	9
Styles of configuration register	Basic, extended	Basic, extended	Basic, extended, Q5	5.1	3.2
Start-up time [FC <sup>(2)</sup> ]	192	192	128	5.5	3.3
Data content at delivery					
- Tracedata	Atmel Format <sup>(3)</sup>	Atmel Format <sup>(3)</sup>	Unique Format <sup>(4)</sup>	4.13	2.1
- Page 0, Block 1-2	0	0	fix tracedata in unique format (Lot: 35602#13, Die: 2334)	10.2	9
- Page 0, Block 6	0	0	Lot and wafer number, BCD coded	10.2	9
- AFE register (analog front end)	0 (standard)	0 (standard)	Softmod: 1 pulse weak, Clamp = Hi, Mod = Lo	10.2	9
Misc.			Page1 is always encoded in Manchester RF/64		2.1

- Notes:
1. Average cap value of each wafer is printed on the lot travel card
  2. FC = Field Clocks with a typical period of 8µs (125kHz systems)
  3. Atmel Format = Data structured according to Atmel format (description given in the datasheet)
  4. Unique Format = Data structured according to industry defacto standard Unique Format with Row/Column parity bits
  5. Gold Bumps on pads are optional, see ordering info in datasheet

## 2. Revision History

Please note that the following page numbers referred to in this section refer to the specific revision mentioned, not to this document.

Revision No.	History
9266B-RFID-03/15	• Put document in the latest template



**Atmel Corporation**      1600 Technology Drive, San Jose, CA 95110 USA      T: (+1)(408) 441.0311      F: (+1)(408) 436.4200      |      [www.atmel.com](http://www.atmel.com)

© 2015 Atmel Corporation. / Rev.: 9266B–RFID–03/15

Atmel®, Atmel logo and combinations thereof, Enabling Unlimited Possibilities®, and others are registered trademarks or trademarks of Atmel Corporation in U.S. and other countries. Other terms and product names may be trademarks of others.

DISCLAIMER: The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. EXCEPT AS SET FORTH IN THE ATMEL TERMS AND CONDITIONS OF SALES LOCATED ON THE ATMEL WEBSITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS AND PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and products descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not suitable for, and shall not be used in, automotive applications. Atmel products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

SAFETY-CRITICAL, MILITARY, AND AUTOMOTIVE APPLICATIONS DISCLAIMER: Atmel products are not designed for and will not be used in connection with any applications where the failure of such products would reasonably be expected to result in significant personal injury or death ("Safety-Critical Applications") without an Atmel officer's specific written consent. Safety-Critical Applications include, without limitation, life support devices and systems, equipment or systems for the operation of nuclear facilities and weapons systems. Atmel products are not designed nor intended for use in military or aerospace applications or environments unless specifically designated by Atmel as military-grade. Atmel products are not designed nor intended for use in automotive applications unless specifically designated by Atmel as automotive-grade.