

**MCU Memory Trends:
How Much and What Kind
4Q 2009 Update**

December 2009

ML105-09

© Copyright Semico Research Corp., 2010. All rights reserved.

Reproduction in whole or part is prohibited without the express written permission of Semico.

The contents of this report represent the interpretation and analysis of statistics and information that is generally available to the public or released by responsible agencies or individuals, but is not guaranteed as to its accuracy or completeness.

Table of Contents

Table of Contents	i
List of Tables	ii
List of Figures	iii
Executive Summary	1
Methodology	3
Overview	4
Microcontrollers Sub-Categories	6
8-bit MCU	7
16-bit MCU	8
32-bit MCU	10
Appendix	A-1

List of Tables

Table 1: MCU Memory Density Ranges	7
<u>Table A 1: Total MCU Market</u>	<u>A-2</u>
<u>Table A 2: 8-Bit MCU Market by Memory Density Ranges</u>	<u>A-5</u>
<u>Table A 3: 8-Bit MCU Market by Memory Type</u>	<u>A-7</u>
<u>Table A 4: 8-Bit MCU IC Cards by Memory Type</u>	<u>A-9</u>
<u>Table A 5: 8-Bit MCU Flash-based by Memory Type</u>	<u>A-11</u>
<u>Table A 6: 16-Bit MCU Market by Memory Density Ranges</u>	<u>A-19</u>
<u>Table A 7: 16-Bit MCU Market by Memory Type</u>	<u>A-21</u>
<u>Table A 8: 16-Bit MCU IC Cards by Memory Type</u>	<u>A-23</u>
<u>Table A 9: 16-Bit MCU Flash-based by Memory Type</u>	<u>A-25</u>
<u>Table A 10: 32-Bit MCU Market by Memory Density Ranges</u>	<u>A-33</u>
<u>Table A 11: 32-Bit MCU Market by Memory Type</u>	<u>A-35</u>
<u>Table A 12: 32-Bit MCU IC Cards by Memory Type</u>	<u>A-37</u>
<u>Table A 13: 32-Bit MCU Flash-based by Memory Type</u>	<u>A-39</u>
<u>Table A 14: Total 8-Bit, 16-Bit and 32-Bit MCU Market by Memory Type</u>	<u>A-47</u>

List of Figures

Figure 1: MCU Sales by End Use Markets, 2006	5
Figure 2: MCU Shipments by End Use Markets, 2006	5
Figure A 1: Total MCU Sales	A-3
Figure A 2: Total MCU Shipments	A-4
Figure A 3: 8-bit MCU Sales by Memory Density	A-13
Figure A 4: 8-bit MCU Shipments by Memory Density	A-14
Figure A 5: 8-bit MCU Sales by Memory Technology	A-15
Figure A 6: 8-bit MCU Shipments by Memory Technology	A-16
Figure A 7: 8-bit IC Card Shipments by Memory Density	A-17
Figure A 8: 8-bit Flash MCU Shipments by Memory Density	A-18
Figure A 9: 16-bit MCU Sales by Memory Density	A-27
Figure A 10: 16-bit MCU Shipments by Memory Density	A-28
Figure A 11: 16-bit MCU Sales by Memory Technology	A-29
Figure A 12: 16-bit MCU Shipments by Memory Technology	A-30
Figure A 13: 16-bit IC Card Shipments by Memory Density	A-31
Figure A 14: 16-bit Flash MCU Shipments by Memory Density	A-32
Figure A 15: 32-bit+ MCU Sales by Memory Density	A-41
Figure A 16: 32-bit+ MCU Shipments by Memory Density	A-42
Figure A 17: 32-bit+ MCU Sales by Memory Technology	A-43
Figure A 18: 32-bit+ MCU Shipments by Memory Technology	A-44
Figure A 19: 32-bit+ IC Card Shipments by Memory Density	A-45

Figure A 20: 32-bit+ Flash MCU Shipments by Memory Density A-46
Figure A 21: Total MCU Sales by Memory Type (excl. 4-bit) A-49
Figure A 22: Total MCU Shipments by Memory Type (excl. 4-bit)..... A-50
Figure A 23: MCU Sales (excl. IC cards) by Memory Type (excl. 4-bit) A-51
Figure A 24: MCU Shipments (excl. IC cards) by Memory Type (excl. 4-bit)..... A-52