

## 4-Bit Microcontrollers--Analysis

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# 4-Bit Microcontrollers--Analysis

Table 1

Estimated Market Share by Product Type  
for 4-Bit Microcontrollers  
1980-1984

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
uPD75XX	0	2.4%	5.1%	8.8%	16.3%
COPS	12.0%	8.6	10.4	12.7	15.2
HMCS-40	1.5	14.2	13.0	12.0	11.6
MN1400	10.7	8.4	9.2	10.7	10.5
uCOM-4	15.4	14.8	16.2	12.2	8.8
SM-5	5.0	8.0	5.9	6.0	6.3
MN1500	0	0.9	1.0	3.7	4.4
TMS1000	45.8	29.6	16.4	6.9	4.3
TLCS-43	0	0	2.1	5.4	4.1
SERIES-40	0.1	0.4	1.5	3.2	3.3
TLCS-47	0	0	0.4	1.8	3.3
MB884X	0	6.9	6.3	4.4	3.2
T SERIES	0	0	5.2	5.7	3.1
TLCS-46	0	0	1.8	2.1	1.7
MB885X	0.2	1.5	2.0	1.8	1.4
PPS-4	6.0	1.9	1.1	1.0	1.1
SM-4	1.2	1.2	1.2	1.0	1.0
SM-3	0.6	0.7	0.6	0.5	0.4
141000	0.2	0.1	0.1	0.1	0
S2000	<u>1.2</u>	<u>0.3</u>	<u>0.4</u>	<u>0.1</u>	<u>0</u>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Dataquest  
September 1988

## 4-Bit Microcontrollers--Analysis

Table 2

Estimated Market Share by Product Type  
for 4-Bit Microcontrollers  
1985-1987

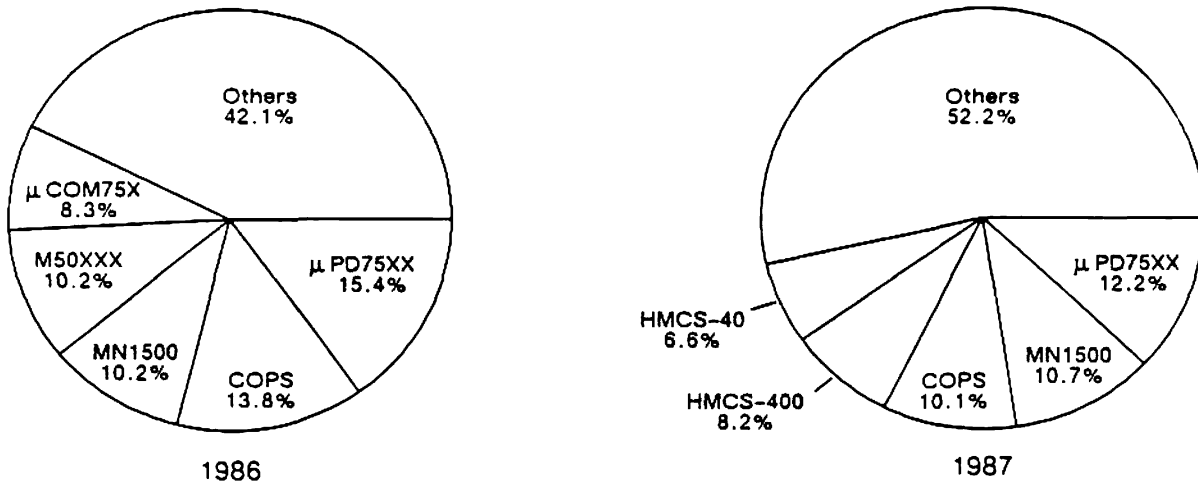
	<u>1985</u>	<u>1986</u>	<u>1987</u>
uPD75XX	17.8%	15.4%	12.2%
MN1500	6.4	10.2	10.7
COPS	16.2	13.8	10.1
HMCS-400	0	0	8.2
HMCS-40	12.6	8.1	6.6
TLCS-47	4.4	8.3	6.0
uCOM75X	0	1.4	4.3
M5072/76	0	0	3.8
M5043X/44X	0	0	3.6
TMS1000	2.2	5.9	3.4
M5046X/56X	0	0	3.3
MN1400	11.6	6.4	3.0
SM (4-Bit)	5.9	3.4	2.4
MB884X	3.2	2.4	1.8
SERIES-40	3.7	2.7	1.7
T SERIES	3.2	1.7	1.6
TLCS-42	0.7	1.4	1.0
MB885X	1.2	1.3	1.0
uCOM-4	5.6	2.1	0.9
TLCS-43	3.2	1.0	0.6
MN1700	0	0	0.5
M509X	0	0	0.5
MB8840X	0	0	0.5
TLCS-470	0	0.1	0.3
PPS-4	0.8	0.4	0.2
MB882XX	0	0	0.2
MB8850X	0	0	0.1
TLCS-46	1.2	0.1	0.1
M50XXX	0	10.2	0
141000	0	0	0
Unspecified	<u>0</u>	<u>3.7</u>	<u>11.3</u>
	100.0%	100.0%	100.0%

Source: Dataquest  
September 1988

# 4-Bit Microcontrollers--Analysis

Figure 1

Estimated Market Share by Product Type  
for 4-Bit Microcontrollers  
1986 and 1987



Source: Dataquest  
September 1988

# 4-Bit Microcontrollers—Analysis

Table 3

**Estimated Market Share by Manufacturer  
for 4-Bit Microcontrollers  
1980-1984**

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Eurotechnique	0	0	0.1%	0.5%	0
Fujitsu	0.2%	8.4	8.2	6.2	4.6%
Gould Semiconductor	1.2	0.3	0.4	0.1	0
Hitachi	1.5	14.2	13.0	12.0	11.6
Matsushita	10.7	9.4	10.2	14.4	15.0
Motorola	0.2	0.1	0.1	0.1	0
National	12.0	8.6	10.2	12.2	13.8
NEC	15.4	17.2	21.3	21.0	25.0
Oki	0.1	0.4	1.5	3.2	3.3
Rockwell	6.0	1.9	1.1	1.0	1.1
SGS-Thomson	0	0	0	0	1.4
Sharp	6.9	9.9	7.8	7.5	7.7
Texas Instruments	45.8	29.6	16.4	6.9	4.3
Toshiba	<u>0</u>	<u>0</u>	<u>9.5</u>	<u>14.9</u>	<u>12.2</u>
	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Dataquest  
September 1988

## 4-Bit Microcontrollers--Analysis

Table 4

Estimated Market Share by Manufacturer  
for 4-Bit Microcontrollers  
1985-1987

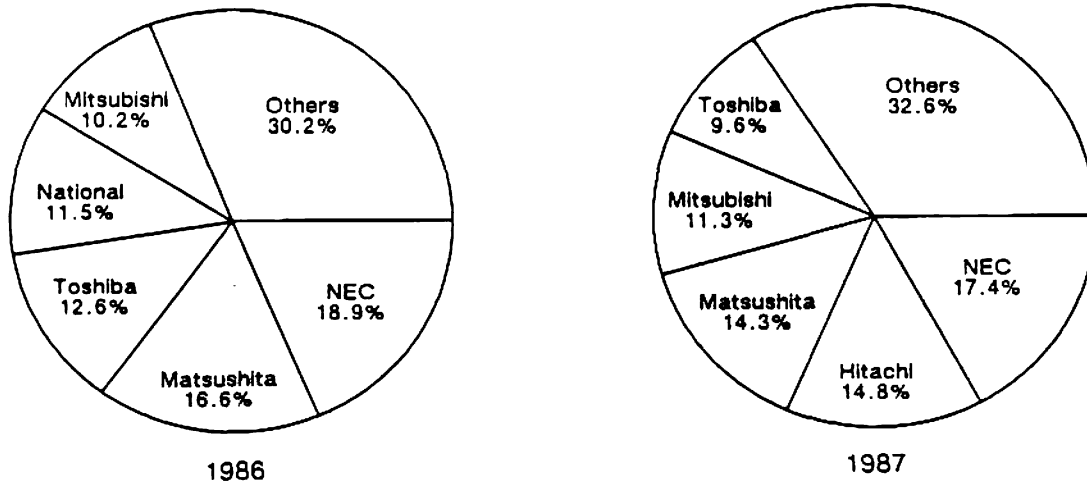
	<u>1985</u>	<u>1986</u>	<u>1987</u>
Fujitsu	4.4%	3.7%	3.6%
Hitachi	12.6	8.1	14.8
Matsushita	18.0	16.6	14.3
Mitsubishi	0	10.2	11.3
Motorola	0	0	0
National	13.3	11.5	8.1
NEC	23.4	18.9	17.4
Oki	3.7	2.7	1.7
Rockwell	0.8	0.4	0.2
SGS-Thomson	3.0	2.3	1.9
Sharp	5.9	3.4	2.4
Texas Instruments	2.2	5.9	3.4
Toshiba	12.7	12.6	9.6
Others	<u>0</u>	<u>3.7</u>	<u>11.3</u>
	100.0%	100.0%	100.0%

Source: Dataquest  
September 1988

# 4-Bit Microcontrollers—Analysis

Figure 2

Estimated Market Share by Manufacturer  
for 4-Bit Microcontrollers  
1986 and 1987



Source: Dataquest  
September 1988

# 4-Bit Microcontrollers--Analysis

Table 5

Estimated Market Share by Region  
for 4-Bit Microcontrollers  
1980-1984  
(Thousands of Units)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
United States					
Shipments	62,660	54,039	44,553	34,945	37,215
Percent	65.2%	40.5%	28.2%	20.3%	19.2%
Japan					
Shipments	33,420	79,510	113,440	136,160	153,430
Percent	34.8%	59.5%	71.7%	79.2%	79.3%
Europe					
Shipments	0	0	190	840	2,790
Percent	<u>0</u>	<u>0</u>	<u>0.1%</u>	<u>0.5%</u>	<u>1.4%</u>
Total Shipments	96,080	133,549	158,183	171,945	193,435

Source: Dataquest  
September 1988



# 4-Bit Microcontrollers--Analysis

Table 6

Estimated Market Share by Region  
for 4-Bit Microcontrollers  
1985-1987  
(Thousands of Units)

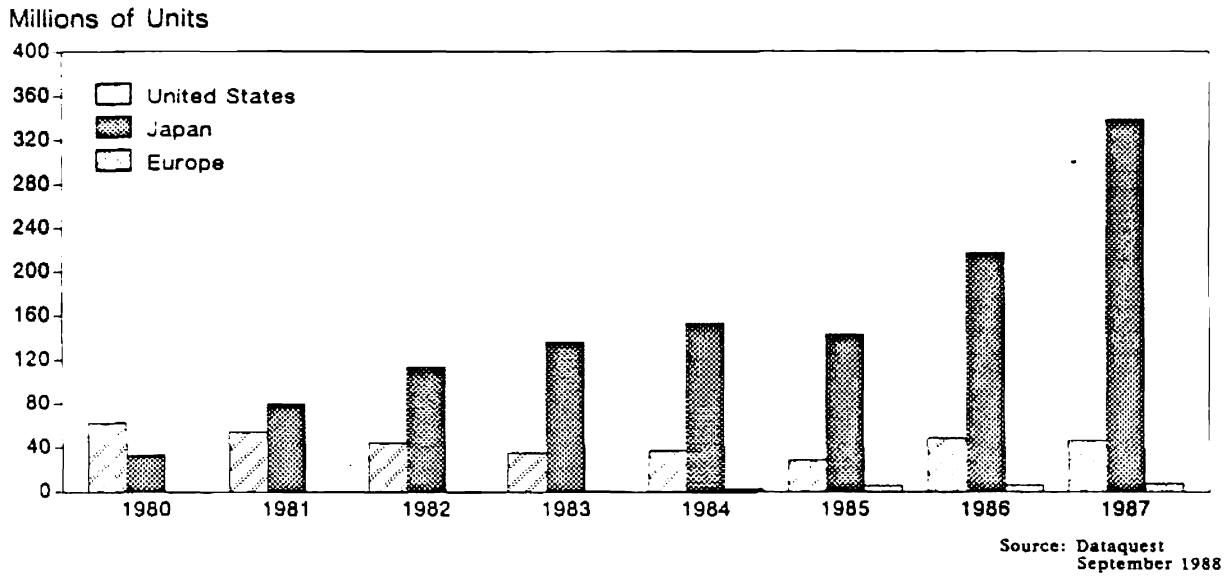
	<u>1985</u>	<u>1986</u>	<u>1987</u>
United States			
Shipments	28,804	48,458	46,160
Percent	16.3%	17.8%	11.8%
Japan			
Shipments	142,992	217,095	338,657
Percent	80.8%	79.8%	86.3%
Europe			
Shipments	5,242	6,330	7,515
Percent	<u>3.0%</u>	<u>2.3%</u>	<u>1.9%</u>
Total Shipments	177,038	271,883	392,332

Source: Dataquest  
September 1988

# 4-Bit Microcontrollers--Analysis

Figure 3

Estimated Market Share by Region  
for 4-Bit Microcontrollers  
1980-1987



# 4-Bit Microcontrollers--Analysis

Table 7

**Estimated Market Share by Process Technology  
for 4-Bit Microcontrollers  
1980-1984  
(Thousands of Units)**

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
<b>NMOS</b>					
Shipments	13,813	25,970	37,167	52,468	62,240
Percent	14.4%	19.4%	23.5%	30.5%	32.2%
<b>CMOS</b>					
Shipments	18,574	38,129	65,382	81,638	102,358
Percent	19.3%	28.6%	41.3%	47.5%	52.9%
<b>PMOS</b>					
Shipments	63,693	69,450	55,634	37,839	28,837
Percent	<u>66.3%</u>	<u>52.0%</u>	<u>35.2%</u>	<u>22.0%</u>	<u>14.9%</u>
<b>Total Shipments</b>	96,080	133,549	158,183	171,945	193,435

Source: Dataquest  
September 1988

## 4-Bit Microcontrollers--Analysis

Table 8

Estimated Market Share by Process Technology  
for 4-Bit Microcontrollers  
1985-1987  
(Thousands of Units)

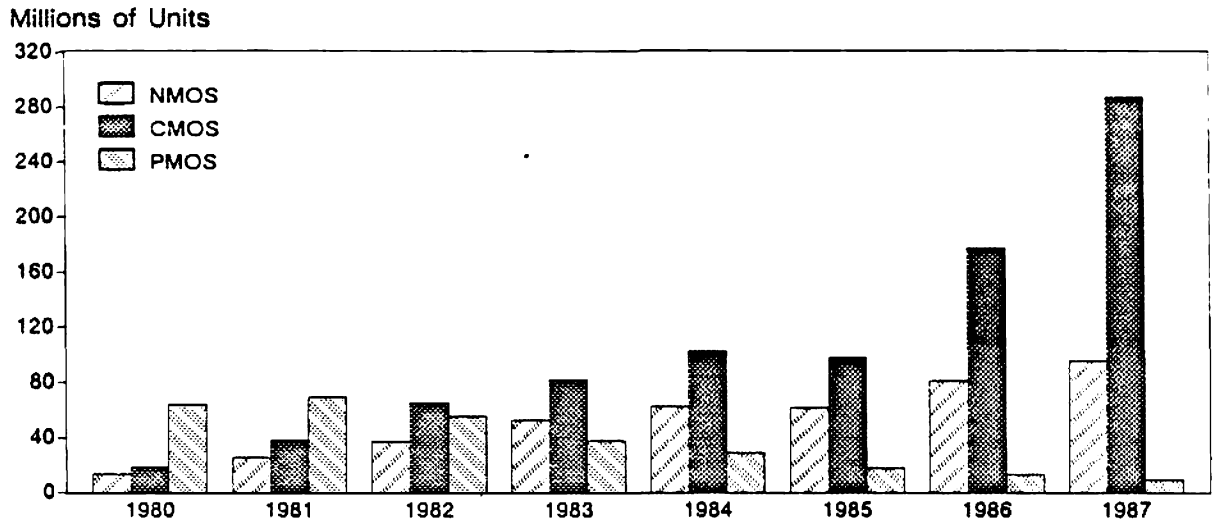
	<u>1985</u>	<u>1986</u>	<u>1987</u>
NMOS			
Shipments	61,576	81,153	95,288
Percent	34.8%	29.8%	24.3%
CMOS			
Shipments	97,694	177,357	287,360
Percent	55.2%	65.2%	73.2%
PMOS			
Shipments	17,768	13,373	9,684
Percent	<u>10.0%</u>	<u>4.9%</u>	<u>2.5%</u>
Total Shipments	177,038	271,883	392,332

Source: Dataquest  
September 1988

# 4-Bit Microcontrollers--Analysis

Figure 4

Estimated Market Share by Process Technology  
for 4-Bit Microcontrollers  
1980-1987



Source: Dataquest  
September 1988