

附錄

# 82年 世界電子市場 動向分析 統計

(Electronics誌 調査)

## I. 美国市場 篇

### 1. 家電 및 自動車 電子機器

單位: 百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
家電 및 自動車用 電子機器 總計	16,370.1	19,748.8	23,247.2	32,664	Projectors	80.4	191.3	400.0	800
家電機器 計	14,831.2	17,018.8	20,182.5	27,643	Satellite receiving stations	65.0	145.0	280.0	900
Television receivers, total	4,699.0	4,870.0	5,012.5	5,440	Electronic musical instruments	479.0	496.1	513.7	580
Black and white	544.0	555.0	562.5	580	Intrusion alarms	252.5	297.5	368.6	550
Color	4,155.0	4,315.0	4,450.0	4,860	Microwave ovens	741.4	921.3	1,015.1	1,200
Consumer audio equipment, total	5,301.0	5,849.1	6,923.8	9,844	Smoke detectors	99.6	104.2	112.2	130
Car audio	1,239.0	1,289.0	1,700.0	2,105	Telephone-answering devices	115.0	149.3	190.1	290
Phonographs and radio-phonographs	700.0	720.0	750.0	847	Electronic games, total	768.7	1,046.8	1,286.2	1,996
Radios (incl. table, clock, and portable)	439.0	495.0	550.0	730	Video games	142.0	248.4	352.0	640
Radio-recorder combination boxes	98.7	119.2	139.8	220	Nonvideo games	325.0	400.3	482.5	756
Tape recorders and players, total	950.0	1,261.5	1,716.9	3,520	Electronic toys	301.7	398.1	451.7	600
Standard cassette	700.0	750.0	800.0	970	Calculators	716.3	717.3	730.2	825
Personal portable (Walkman)	150.7	401.2	795.8	2,400	Teaching aids	9.7	19.6	29.5	60
Reel-to-reel	99.3	110.3	121.1	150	Home intercom systems	20.4	30.1	40.0	70
Hi-fi audio systems, total	1,874.3	1,964.4	2,067.1	2,422	Watches (digital and analog display)	570.0	600.0	640.0	760
Components (turntables, tuners, etc.)	1,152.0	1,172.0	11,205.5	1,317	Clocks	85.3	95.5	105.6	135
Consoles	122.3	132.4	141.6	170	Home lighting and appliance controls	2.5	5.5	15.0	35
Compact systems	600.0	660.0	720.0	935	自動車 電子機器 計	1,538.9	2,729.3	3,064.7	5,021
Other consumer products, total	4,831.2	6,299.7	8,246.2	12,359	Convenience (incl. trip computers)	670.8	747.1	1,030.0	1,585
Antennas (TV, CB, and radio)	110.0	117.5	125.0	143	Emission control	268.4	1,567.9	1,551.1	2,910
Home video equipment, total	860.8	1,699.0	3,075.0	5,585	Electronic ignition systems	431.6	272.0	330.6	365
Cassette players and recorders	619.7	1,102.0	1,780.0	2,200	Voltage regulators	168.1	142.3	153.0	161
Cameras	85.5	180.0	360.0	810					
Video-disk players	10.2	80.7	255.0	875					

(註: 國產機器, 美国商標가 붙은 外國商品, 國內商標와 外國商標가 붙은 輸入品을 포함.)

### 2. 一般産業用機器

單位: 百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
一般産業用機器 計	3,344.8	4,113.3	5,273.6	9,768	Analog	233.3	240.0	253.5	308
Motor controls (speed, torque)	280.1	313.7	363.6	758	Digital	166.0	221.5	270.5	515
Numerical-control systems	101.7	122.1	145.7	201	Sequence controllers, total	288.4	364.5	438.7	902
Inspection systems, total	67.9	75.3	87.3	135	Hardwired	14.8	12.6	12.0	13
Ultrasonic	20.5	22.0	23.5	29	Programmable	273.6	351.9	426.7	889
X-ray	15.0	16.8	20.6	31	Data-acquisition systems, total	105.2	130.7	155.5	276
Infrared	10.0	11.8	14.9	26	Continuous-process	74.9	80.1	88.2	96
Ultraviolet	2.3	2.5	2.9	4	Discrete-process	30.3	50.6	67.3	180
Laser	20.1	22.2	25.4	45	Process instrumentation (recorders, etc.)	620.7	703.1	788.9	1,108
Thickness gages and controls, total	45.2	47.0	48.9	56	Ultrasonic cleaning equipment	21.1	23.5	25.0	30
Photoelectric	28.9	30.0	31.1	35	Pollution-monitoring equipment	170.0	171.1	193.0	272
Radiation-based	16.3	17.0	17.8	21	Induction and dielectric heating, sealing	71.1	73.9	76.6	86
Process-control equipment, total	1,413.6	1,659.8	1,907.1	3,109	Welding controls	32.6	34.8	37.2	41
Control systems, total	687.7	826.0	962.7	1,725	Energy-management equipment, total	286.1	569.5	1,184.6	2,686
Computer-based, total	399.3	461.5	524.0	823	Microcomputer-based (\$10K)	61.1	69.5	84.6	186

Minicomputer-based(\$10K to \$100K)	100.0	200.0	500.0	1,000	Switching, total	151.0	217.3	289.8	504
Centralized systems (> 2\$100K)	125.0	300.0	600.0	1,500	Pc-board-mountable(encapsulated)	4.0	6.0	9.1	138
Robots(mechanical manipulators)	180.1	243.0	288.0	477	Open frame and card	82.3	120.4	167.7	228
레이저 및 閤聯機器 計	119.7	148.2	164.2	221	Rack-mountable and other system	64.7	90.9	113.0	138
Gas lasers	92.4	116.4	128.6	173	Conventional(linear), total	221.7	234.1	260.8	313
Other	27.3	31.8	35.6	48	Pc-board-mountable(encapsulated)	33.1	33.4	36.1	61
電源供給機 計	372.7	451.4	550.6	817	Open frame and card	75.6	84.8	88.9	108
					Rack-mountable and other system	98.9	99.9	117.6	121
					Benchtop	14.1	16.0	18.2	23

### 3. 通信用機器

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
通信用機器 總計	5,700.2	6,426.1	7,234.0	10,007	Tone plus	10.0	13.0	17.0	25
Radio, total	1,747.3	1,930.9	2,132.3	2,772	Data-communications equipment, total	1,393.3	1,620.9	1,837.9	2,624
Aviation mobile(incl. ground support)	65.1	71.2	77.9	98	Acoustic(modems), total	405.0	483.5	532.0	710
Marine mobile(incl. recreational)	35.1	37.0	39.0	49	Low-speed(less than 2,400 b/s)	122.5	146.0	160.0	210
Land mobile(mobile and base stations)	1,100.0	1,213.1	1,336.6	1,691	High-speed(2,400 b/s and over)	282.5	337.5	372.0	500
Amateur(mobile and base stations)	25.5	27.8	30.4	36	Multiplexers	147.5	192.1	231.5	377
Citizens' band(mobile and base stations)	60.8	61.4	62.0	64	Programmable concentrators	131.5	151.2	191.1	297
Microwave(incl. antennas), total	228.5	256.1	286.9	408	Front-end communications processors	522.3	590.0	660.8	925
Analog	195.7	213.8	232.6	299	Message-switching systems	187.0	204.1	222.5	315
Digital	32.8	42.3	54.3	109	Facsimile terminals	148.3	166.3	191.2	290
Broadcast(a-m and fm, incl. antennas)	55.5	59.4	63.6	76	Television equipment, total	370.9	410.2	453.9	605
Satellite earth stations	176.8	204.9	235.9	350	Broadcast equipment, total	123.3	131.4	140.3	170
Rader(incl. weather and navigation), total	170.1	178.8	187.6	246	Transmitters	18.1	19.5	20.9	25
Telemetry(industrial only)	70.0	76.5	81.0	105	Antennas	18.7	21.2	24.0	34
Telecommunications, total	1,627.0	1801.5	2,008.6	2,735	Cameras	36.0	38.1	40.2	47
Voice-switching systems, total	1,583.0	1,736.5	1,912.1	2,459	Auxiliary equipment	50.5	52.6	55.2	64
Control office	562.0	613.5	688.1	875	CATV, total	197.0	220.9	246.8	343
PABX	1,021.0	1,123.0	1,224.0	1,584	Studio and head-end	46.5	55.0	63.2	95
Data-switching systems	44.0	65.0	96.5	276	Distribution(amps, supplies, etc.)	88.0	98.0	109.1	145
Fiber-optic communications systems, total	92.3	144.0	227.5	466	Transmission(except for fiber-optic)	33.0	36.4	40.0	53
Modules and subsystems	23.5	59.3	59.5	130	Converters	29.5	31.5	34.5	50
Complete systems	68.8	104.7	168.0	336	CCTV, total	50.6	57.9	66.8	92
Pocket pagers, total	81.0	97.0	114.0	164	Cameras	33.6	37.9	42.8	58
Tone only	71.0	84.0	97.0	139	Monitors	17.0	20.0	24.0	34

### 4. 데이터處理機器

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
데이터處理機器 總計	34,775.5	41,120.6	48,912.5	82,377	Reel-type magnetic-tape	395.0	481.9	578.3	1,000
데이터處理시스템, 固定裝置, 事務機器 計	33,061.2	38,836.7	45,851.4	74,822	Cassette and cartridge magnetic-tape	77.8	88.2	99.7	171
System end-user & dealer sales, total	12,634.0	14,479.0	16,909.8	26,809	Input/output peripherals, total	3,060.7	3,661.2	4,423.8	7,381
Desktop computers	945.0	1,500.0	2,500.0	6,428	Card-read/punch	80.0	62.0	50.0	30
Small-business, personal(<\$20K)	200.0	400.0	700.0	1,210	High-speed line printers(>1,000 lpm)	226.3	271.6	330.0	680
Small(\$20K to \$100K)	400.0	512.0	716.8	1,148	Medium-speed(100 to 1,000 lpm)	781.0	898.0	1,041.7	1,503
Medium-sized(\$0.1 to \$1 million)	3,746.0	4,100.0	4,428.0	5,990	Slow serial printers(<100 lpm), total	855.2	1,090.6	1,397.4	2,485
Large computers(>\$1 million)	7,343.0	7,967.0	8,565.0	12,033	Impact	643.7	836.8	1,087.8	1,880
OEM micros and minis, total	4,684.4	5,591.4	6,618.2	10,945	Nonimpact(thermal, electrostatic)	211.5	253.8	309.6	605
Microcomputers	634.4	1,031.4	1,390.2	2,640	Large nonimpact printers(laser, etc.)	140.0	165.0	190.0	312
Minicomputers, total	4,050.0	4,560.0	5,228.0	8,305	Computer output microfilm	208.0	238.0	266.5	355
16-bit and below	3,550.0	3,910.0	4,240.0	5,415	Optical character and mark readers	400.0	468.0	538.0	818
32-bit	500.0	650.0	988.0	2,890	Magnetic character and mark readers	18.0	17.1	16.5	13
Memory systems, total	759.0	826.6	880.0	1,299	Electromechanical plotters	289.0	380.0	510.0	1,040
Mainframe add-on systems	431.6	458.6	470.0	609	Digitizers, graphics tablets, light pens	33.2	42.9	59.7	125
Minicomputer add-in/on systems	94.4	113.5	134.5	210	Paper-tape readers and punches	30.0	28.0	24.0	20
OEM systems, total	233.0	254.5	275.5	480	Key-entry systems	256.6	241.9	230.0	197
Core	84.0	71.0	60.0	40	Data terminals, total	3,109.2	3,961.2	5,155.3	9,625
Semiconductor	149.0	183.5	215.5	440	Teletypewriter terminals	687.6	859.5	1,020.0	1,395
Data-storage subsystems, total	2,797.8	3,391.7	4,016.8	7,153	CRT terminals, total	1,960.0	2,530.0	3,415.5	6,830
Disk pack	869.0	898.5	926.5	1,000	Intelligent	780.0	1,100.0	1,485.0	3,330
Fixed-disk	650.0	819.7	1,024.0	1,995	Other	1,180.0	1,430.0	1,930.5	3,500
Combination fixed disk and cartridge	500.0	675.0	810.0	1,400	Graphics terminals, total	417.6	531.6	683.8	1,370
Flexible-disk	306.0	428.4	578.3	1,587	Storage-tube	135.6	155.9	151.1	121

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
Vector refresh	50.0	65.0	85.0	130	Dictation	302.5	310.0	326.7	467
Raster-scan, total	232.0	310.8	447.7	1,119	Copying	2,257.0	2,250.0	2,789.0	3,800
Black and white	95.0	125.0	169.0	190	Facsimile transmission	59.0	71.0	85.5	149
Color	137.0	185.8	278.7	929	Software 計	1,714.3	2,283.9	3,061.1	7,555
Remote batch and job-entry terminals	44.0	40.0	36.0	30	Operating systems	404.6	506.2	648.2	1,392
Source data-collection equipment, total	1,533.0	1,733.3	1,923.2	2,920	High-level languages(incl. compilers and interpreters)	388.9	492.7	687.9	1,563
Point-of-sale-system	465.0	514.5	562.4	815	Diagnostic and debugging tools(incl. software)	240.4	392.1	512.6	1,112
Banking systems	268.0	295.8	322.5	455	Computer-aided design software	196.3	320.7	480.3	1,440
Industrial data-collection systems	110.0	129.0	145.0	250	Application programs	484.1	572.2	732.1	2,048
Other specialized terminals	690.0	794.0	893.3	1,400					
Office equipment, total	4,226.5	4,950.4	5,694.3	8,493					
Nonconsumer calculators	358.0	394.4	445.6	809					
Word-processing	1,250.0	1,625.0	2,047.5	3,268					

## 5. 試驗計測機器

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
試驗計測機器 總計	3,773.1	4,277.0	4,901.3	7,174	Temperature-measuring instruments	22.7	26.6	29.7	41
一般試驗機器 計	2,184.1	2,452.4	2,770.6	3,802	Phase and impedance measurers	3.1	3.9	4.9	7
Analog voltmeters, ammeters, multimeters	21.7	22.5	22.5	23	Amplifiers(laboratory)	45.5	49.1	56.0	72
Digital multimeters, total	141.1	159.3	178.2	258	Recorders and plotters, total	208.3	232.3	254.4	323
3½-digit and below	46.2	50.4	56.8	71	Strip-and circular-chart	75.9	83.5	91.9	101
4½-digit and above	94.9	108.9	121.4	187	X-Y	47.7	51.9	55.8	73
Multimeter probes and accessories	9.5	10.4	11.5	14	Magnetic-tape	76.2	87.6	96.4	135
Panel meters, total	122.0	126.1	130.1	143	Digital, solid-state	8.5	9.3	10.3	14
Analog	87.5	90.1	91.9	98	Dedicated IEEE-488-bus controllers	66.5	76.8	87.1	115
Digital	34.5	36.0	38.2	45	Microwave signal generators	21.8	23.0	26.0	38
Counters, time and frequency	75.3	84.5	93.8	120	Microwave phase-and impedance-measuring equipment	33.0	35.5	38.0	50
Microprocessor development systems	370.0	409.1	478.5	665	Microwave power-measuring equipment	8.5	9.5	10.5	15
Dedicated	290.0	300.0	330.0	440	Microwave wavemeters	0.7	0.5	0.5	0
Universal	80.0	109.1	148.5	225	自動試驗機器 計	820.0	989.5	1,201.4	2,021
Stand-alone in-circuit emulators	41.2	49.7	67.2	101	Integrated-circuit testers, total	324.2	379.8	442.8	620
Logic analyzers	60.9	76.0	88.8	139	General-purpose systems	200.2	235.4	275.3	360
Logic probes	4.8	5.2	5.4	6	Specialized test systems	100.1	115.3	132.3	200
Signature analyzers	2.9	5.8	8.9	17	Benchtop testers	23.9	29.1	35.2	60
Word generators	6.6	7.5	8.5	14	Active component testers	104.3	121.1	135.4	203
Oscilloscopes	428.8	487.5	556.4	771	Loaded pc-board testers, total	295.1	354.7	452.3	883
100 MHz and below	237.3	259.1	299.4	407	In-circuit	126.0	150.3	203.1	370
Above 100 MHz	191.5	228.4	257.0	364	Functional	143.0	160.0	180.7	321
Spectrum analyzers total	77.6	86.2	98.9	153	Combined	26.1	44.4	68.5	192
1 MHz and below	41.9	46.8	53.6	81	Interconnect and bare-pc-board testers	42.9	62.8	78.1	141
Above 1 MHz	35.7	39.4	45.3	72	Automated field-service testers	53.5	71.1	92.8	174
Frequency synthesizers	61.0	71.5	83.5	128	特殊試驗機器 計	769.0	835.1	929.3	1,351
Function generators	49.0	59.6	67.5	98	Automotive diagnostic	300.0	318.2	348.1	470
Rf signal generators	98.0	108.3	118.3	153	Communications test(incl. data communications)	399.7	440.0	497.0	758
Sweep generators	62.7	67.7	74.3	103	TV receiver service	20.1	21.3	22.1	25
Pluse generators	16.3	18.3	20.1	25	Broadcast studio test	19.8	22.7	25.3	40
Oscillators	18.7	20.2	21.0	26	Radiation-detection and-monitoring	29.4	32.9	36.8	58
Audio waveform analyzers and distortion meters	44.3	49.7	53.7	67					
Power meters(below microwave)	4.3	5.0	5.6	8					
Calibrators and standards	30.2	33.1	36.1	64					
Noise-measuring units(except sound-level meters)	8.4	9.5	10.7	15					
Modulation analyzers and meters	18.7	22.5	24.0	30					

## 6. 医療 吳 分析機器

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
医療 吳 分析機器 總計	3,022.9	3,442.9	3,940.0	5,701	Electrocardiographs	120.0	131.0	151.0	212
医療機器 計	2,342.0	2,676.1	3,074.7	4,470	Ultrasonic scanners	98.0	115.4	134.0	193
Diagnostic, total	1,168.0	1,343.9	1,558.5	2,247	Automated blood analyzers	263.0	305.0	353.0	540
Tomographic X-ray scanners	605.0	697.0	805.0	1,130	Nuclear imaging	33.0	39.5	44.5	62
Electroencephalographs	49.0	56.0	71.0	110	Patient-monitoring systems	215.0	254.0	289.0	440

Prosthetic equipment, total	451.0	516.0	580.0	842	Gas	115.0	133.0	152.5	201
Hearing aids	242.0	270.0	298.0	410	Liquid	90.0	110.0	124.5	200
Pacemakers	209.0	246.0	282.0	432	Ion	19.6	24.7	29.6	49
Therapeutic equipment, total	465.7	511.9	589.9	857	Spectrophotometers, total	191.0	212.8	237.5	334
X-ray	88.0	95.0	108.0	150	Infrared	35.1	38.5	42.1	55
Diathermy, short-wave and microwave	13.0	16.0	19.0	27	Ultraviolet-visible	45.1	49.0	53.3	68
Ultrasonic generators	126.0	132.6	151.0	230	Atomic absorption	42.8	51.0	63.0	116
Defibrillators and stimulators	47.0	54.7	71.5	110	Other	68.0	74.3	79.1	95
Dialysis systems	187.0	208.0	234.0	330	Mass spectrometers	48.0	53.0	59.3	84
Biofeedback units	4.7	5.6	6.4	10	Nuclear magnetic-resonance spectro-				
Surgical support equipment, total	42.3	50.3	57.3	84	meters	26.5	29.0	31.8	41
Blood-flow meters	9.2	10.4	12.1	18	Electron microscopes	13.0	13.0	13.2	14
Blood-pressure monitors	28.3	34.1	38.6	56	ph meters and ion-selective electrodes	33.0	36.0	40.5	56
Electrosurgical units	4.8	5.8	6.6	10	Thermal analyzers	19.0	23.5	29.4	56
医療分析機器 計	680.9	766.8	865.3	1,231	Nuclear and X-ray analyzers(nonmedical)	52.0	55.0	59.1	74
Chromatographs, total	224.6	267.7	306.6	450	Other	73.8	76.8	87.9	122

## 7. 一般電子部品

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
一般電子部品 総計	10,320.1	11,220.2	12,545.8	16,715	Coaxial	25.1	28.4	32.4	47
Resistors 計	783.9	827.3	891.0	1,109	Thumbwheel	27.5	32.8	36.5	43
Fixed, total	237.3	239.3	246.3	283	Dual in-line	32.1	36.9	42.2	58
Composition	62.5	62.0	62.3	64	Keypads, keyboards, and matrixes, total	118.5	133.8	164.9	275
Deposited carbon film	20.2	20.3	21.0	23	Keypads	14.9	16.8	19.0	28
Metal-film	80.5	81.0	83.0	105	Keyboard assemblies(incl. capacitive)	93.5	105.7	132.6	229
Wirewound	74.1	76.0	80.0	91	Matrix programming boards	10.1	11.3	13.3	18
Variable, total	276.7	287.7	300.2	343	Solid-state(incl. Hall-effect)	29.1	35.3	42.6	73
Potentiometers, wirewound	44.5	45.2	47.7	52	Magnetic 計	548.9	564.4	600.2	716
Potentiometers, nonwirewound	111.5	116.7	122.1	141	Ferrite components(coil forms, etc.)	50.4	48.0	50.0	54
Trimmers, wirewound	25.9	26.1	26.8	32	Power transformers, total	308.8	319.0	338.0	406
Trimmers, nonwirewound	94.8	99.7	103.6	118	Laminated	202.7	208.1	217.5	252
Thermistors	53.3	59.2	68.1	89	Toroidal	62.7	64.9	70.7	87
Resistive networks, total	195.6	218.0	247.0	336	Pulse	43.4	46.0	49.8	67
Thin-film	88.1	96.0	106.3	137	At and rf transformers, coils, and chokes	12.7	13.0	14.9	16
Thick-film	107.5	122.0	140.7	199	TV magnetic components(incl. yokes)	177.0	184.4	197.3	240
Chip	21.0	23.1	29.4	58	Electron tubes 計	1,393.7	1,458.5	1,536.0	1,819
Capacitors 計	1,182.1	1,251.4	1,371.6	1,750	Receiving	94.5	78.3	69.5	41
Paper	97.3	100.0	104.7	118	Power and special-purpose, total	416.5	454.0	480.1	584
Film	121.4	125.6	129.4	137	Vacuum	86.1	89.0	93.0	100
Electrolytic, total	451.5	466.4	505.5	627	Gas and vapor	24.4	25.0	26.0	29
Aluminum	210.7	212.6	230.1	290	Klystrons	59.2	68.0	74.3	94
Tantalum	240.8	253.8	275.4	337	Magnetrons	57.4	61.4	65.6	80
Mica	33.1	34.0	35.7	39	TWTs(incl. backward-wave)	130.9	148.2	153.6	197
Glass and vitreous enamel	12.1	13.6	14.7	18	Light-sensing(incl. photomultipliers)	17.3	18.2	19.1	22
Ceramic(except chips)	377.0	407.2	460.1	629	Image-sensing(vidicon, orthicon, etc.)	41.2	44.2	48.5	62
Variable	31.0	33.3	35.5	42	Cathode-ray(except TV), total	49.3	52.1	56.8	72
Chip	58.7	71.3	86.0	140	Storage tubes	8.5	7.7	7.0	4
Relays 計	494.8	526.0	555.6	618	Other	40.8	44.4	49.8	68
General-purpose	150.0	160.3	167.9	175	TV picture, total	833.4	874.1	929.6	1,122
Telephone-type	36.7	40.1	44.0	51	Black and white	29.1	24.0	20.0	11
Crystal-can	81.1	85.6	92.8	102	Color	804.3	850.1	909.6	1,111
Rf	98.6	101.0	101.7	108	Microwave components 計	179.8	194.0	211.8	283
Reed	47.2	50.3	52.8	59	Mixers	12.5	14.1	16.0	24
Stepping	8.7	8.9	9.0	10	Detectors	8.3	9.4	10.8	16
Time-delay	30.5	32.7	34.6	40	Amplifiers	35.0	39.2	44.7	68
Solid-state	42.0	47.1	52.8	73	Passive components, total	46.0	49.0	52.7	67
Switches and keyboards 計	713.8	792.5	907.9	1,278	Waveguide	10.0	10.8	11.9	16
Small-movement snap-action	88.5	93.7	106.0	149	Coaxial and strip-line	36.0	38.2	40.8	51
Lighted	94.1	105.1	118.8	167	Switches, total	38.0	40.7	43.9	56
Push-button	109.4	119.8	140.3	189	Waveguide	13.0	13.9	15.0	19
Toggle	32.4	36.0	39.7	52	Coaxial and strip-line	25.0	26.8	28.9	37
Slide	56.6	62.7	70.3	89	Ferrite devices	32.3	33.6	35.3	42
Rotary	100.5	108.0	114.2	136	Power limiters	7.7	8.0	8.4	10

	1980	1981	1982	1985		1980	1981	1982	1985
Readout devices 計	247.2	286.6	335.8	467	Analog-I/O(data-acquisition) boards	15.0	19.0	23.0	35
Single-character, total	56.4	55.9	58.8	63	Signal sources(incl. oscillators)	3.0	3.4	4.0	6
Incandescent	5.0	5.3	5.6	7	Active filters	10.1	11.6	13.3	16
Fluorescent	5.2	5.6	6.2	8	Other functional circuits	18.7	19.9	21.0	23
Light-emitting-diode	46.2	45.0	47.0	48	Miscellaneous customs functions	225.0	265.6	309.9	450
Multiple-character, total	190.8	230.7	277.0	404					
Gas-discharge, total	82.2	102.8	121.5	179	Connectors 計	1,316.9	1,376.8	1,559.2	2,181
Segmented	42.0	52.5	59.5	86	Coaxial, total	108.8	109.4	118.1	154
Dot-matrix	40.2	50.3	62.0	93	Standard	58.8	59.3	60.1	68
Vacuum fluorescent	7.1	8.0	8.5	11	Miniature	50.0	50.1	58.0	86
Light-emitting diode	60.6	65.4	74.9	90	Cylindrical, total	333.7	374.9	425.1	622
Liquid-crystal	40.9	54.5	72.1	124	Standard	81.0	92.0	105.1	140
					Miniature	186.2	209.9	240.0	360
Transducers(electronic) 計	251.8	282.2	311.7	435	Subminiature	66.5	73.0	80.0	122
Pressure(incl. air, liquid, mechanical)	87.4	97.1	108.1	134	Rack-and-panel	246.0	251.0	270.1	347
Temperature(excluding thermocouples and thermistors)	44.3	53.4	59.4	104	Printed-circuit edge connectors, totals	346.5	338.7	391.7	550
Motion, linear and angular	39.4	43.2	47.4	58	Card-insertion	222.2	207.1	238.0	315
Fluid-level	36.3	40.1	43.9	67	Two-piece, metal-to-metal	124.3	131.6	153.7	235
Vibration	44.4	48.4	52.9	72	Flat-cable	120.4	136.1	165.4	245
					Fiber-optic	4.0	6.5	9.0	25
					Special-purpose	157.5	160.2	179.8	238
Crystals 計	110.1	114.5	118.5	131					
Discrete, total	46.1	48.4	50.6	59	Printed circuits and interconnection systems 計	1,771.6	1,979.8	2,223.3	3,401
Communications	33.0	34.9	35.8	41	Printed circuits, total	1,395.2	1,581.8	1,758.6	2,676
Color TV	2.7	2.7	2.8	3	Rigid boards, total	1,314.4	1,490.8	1,647.4	2,509
Watches	6.0	6.0	7.0	8	Single-sided	149.4	139.6	130.7	106
Other	4.4	4.8	5.0	7	Double-sided	795.3	920.1	1,005.0	1,525
Assemblies(incl. mounts and ovens)	64.0	66.1	67.9	72	Multilayer	369.7	431.1	511.7	878
					Flexible circuits	80.8	91.0	111.2	167
Passive filters and networks 計	137.2	146.6	158.9	225	Interconnections, total	376.4	398.0	464.7	725
Electromechanical filters, total	51.5	54.2	57.1	68	Sockets and socket panels for DIPs	215.4	235.7	273.8	417
Crystal	39.0	40.6	42.2	48	Backplanes	161.0	162.3	190.9	308
Ceramic	8.7	9.1	10.0	13					
Other	3.8	4.5	4.9	7	Wire and cable 計	724.2	860.5	1,089.6	1,385
Rfi and emi filters	53.2	56.4	61.2	82	Coaxial cable	270.5	327.8	435.6	502
RC networks	14.5	15.9	16.5	22	Flat cable	77.6	93.4	120.6	168
Delay lines	18.0	20.1	24.1	53	Hook-up wire	160.0	180.3	192.2	212
					Multiconductor, shielded	131.0	158.4	194.7	248
Hybrid and modular components 計	464.1	559.1	674.7	917	Multiconductor, unshielded	75.1	80.1	95.4	135
Operational amplifiers	38.1	42.6	46.4	70	Fiber-optic cable	10.0	20.5	51.1	120
Instrumentation and isolation amplifiers	15.7	19.7	25.0	38					
Data conversion, total	138.5	177.3	232.1	279					
D-a converters	72.1	90.4	125.0	145					
A-d converters	46.9	61.2	75.3	90					
Multiplexers	6.8	8.9	11.6	13					
Sample-and-holds	6.8	9.0	11.7	14					
Converter subsystems	5.9	7.8	8.5	17					

## 8. 半 導 体

単位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
半導体 総計	6,633.7	6,902.8	8,233.8	14,949	Duals and arrays	9.5	11.0	12.0	13
Discrete semiconductors 計	1,254.8	1,338.8	1,416.4	1,770	Rf, total	97.5	109.6	113.1	135
Diodes, total	488.8	509.3	534.6	614	Small-signal	35.0	40.0	43.0	50
Signal	51.1	54.2	54.0	60	Power(more than 1 W)	62.5	69.6	70.1	85
Rectifier	245.5	250.7	262.5	295	Field-effect, total	70.5	90.4	111.1	223
Arrays	20.1	20.5	23.7	28	Junction, total	20.5	24.4	29.1	39
Zener, total	116.1	120.1	122.0	145	Small-signal(less than 1 W)	19.7	23.6	28.1	38
Voltage regulator	89.2	91.7	92.9	109	Power(1 W or more)	0.8	0.8	1.0	1
Reference	26.9	28.4	29.1	36	MOS, total	37.5	49.0	62.0	157
Special-purpose, total	56.0	63.8	72.4	86	Small-signal(less than 1 W)	28.0	29.0	30.0	32
Microwave	46.2	53.6	61.8	73	Power(1 W or more)	9.5	20.0	32.0	125
Varactor(less than 1 GHz)	8.6	9.0	9.5	12	Gallium arsenide	12.5	17.0	20.0	27
Tunnel	1.2	1.2	1.1	1	Thyristors	129.3	130.8	132.0	155
Transistors, total	617.9	678.0	727.1	971	Protection devices(incl. varistors)	18.8	20.7	22.7	30
Bipolar, total	547.4	587.6	616.0	748	Integrated circuits 計	5,189.9	5,351.4	6,558.2	12,715
Small-signal(less than 1 W)	198.1	207.7	216.9	237	Standard logic families, total	1,313.4	1,215.8	1,377.3	2,328
Power(1 W or more)	242.3	259.3	274.0	363	TTL, total	919.4	817.8	897.3	1,526

	1980	1981	1982	1985		1980	1981	1982	1985
Standard TTL	341.0	242.8	247.0	440	Read-only, total	819.0	841.0	1,060.0	2,109
Schottky TTL, total	578.4	575.0	650.3	1,086	Mask type, total	230.0	309.0	401.5	807
Standard(S)	150.4	170.0	185.3	280	n-MOS	184.0	258.0	344.0	616
Low-power(LS)	424.0	393.0	432.0	668	p-MOS	25.0	24.0	22.5	29
High-speed(AS, ALS, FAST)	4.00	12.0	33.0	138	C-MOS	21.0	27.0	35.0	162
ECL	74.0	85.0	97.0	170	Fuse-link type	288.0	245.0	277.5	499
C-MOS	280.0	272.0	340.0	582	Erasable programmable type, total	301.0	287.0	381.0	803
Other(RTL, DTL)	40.0	41.0	43.0	50	Ultraviolet(E-PROM)	264.0	200.0	240.0	470
Microprocessor and microcomputer, total	641.4	825.7	1,115.1	2,566	Electrical(EE-PROM)	37.0	87.0	141.0	333
Microprocessors, total	154.2	198.5	295.0	897	CCDs(memory only)	14.5	14.5	16.0	20
MOS, total	128.1	164.8	251.0	807	Magnetic-bubble(incl. support circuits)	47.5	70.0	89.0	183
8-bit	100.6	124.7	152.3	335	Linear ICs, total	676.0	755.7	891.5	1,466
16-bit	27.5	40.1	93.7	330	Analog switches	39.5	41.6	46.0	55
32-bit	0.0	0.0	5.0	142	Operational amplifiers	153.0	167.7	193.3	298
Bipolar, total	26.1	33.7	44.0	90	Instrumentation and isolation amplifiers	8.0	9.0	10.7	17
Bit-slice(incl. adjuncts)	20.1	25.2	33.0	65	Comparators	25.5	27.0	31.0	45
Full CPU	6.0	8.5	11.0	25	Voltage regulators	65.0	73.0	90.0	120
One-chip microcomputers, total	345.0	428.4	550.3	1,057	Timers	52.0	60.0	62.0	71
4-bit(controller)	180.0	225.0	270.0	444	Other(incl. functional ICs)	13.5	17.0	22.0	40
8-bit	140.0	155.4	194.3	379	Data conversion, total	155.0	177.2	233.0	450
16-bit	25.0	48.0	86.0	234	D-a converters	77.5	87.7	114.5	230
LSI peripheral chips, total	142.2	198.8	269.8	612	A-d converters	51.3	59.5	83.5	160
Support devices(DMA, MMU, etc.)	52.2	63.8	79.8	195	Multiplexers	17.5	21.0	23.0	40
Peripheral equipment controllers	90.0	135.0	190.0	417	Sample-and-holds	8.7	9.0	12.0	20
Dedicated LSI circuits	257.0	298.0	351.0	690	Interface(incl. memory drivers)	92.4	102.0	117.5	240
Semcustom logic(incl. gate arrays)	47.1	61.0	81.3	230	Communications	72.1	81.2	86.0	130
Memories, total	1,862.0	1,753.2	2,238.0	4,628	Consumer product ICs, total	393.0	442.0	504.0	807
Random-access, total	981.0	827.7	1,073.0	2,316	Entertainment	121.0	128.0	138.0	181
Dynamic, total	602.0	405.2	535.0	1,227	Calculator chips	50.0	46.0	41.0	35
4-K	55.0	38.0	29.0	4	Watch chips	68.0	65.0	58.0	42
16-K	490.0	253.0	223.0	118	Game chips	75.0	100.0	130.0	260
32-K(partial or hybrid)	44.0	51.0	97.0	100	Other(incl. cameras, toys, and organs)	79.0	103.0	137.0	285
64-K	13.0	63.2	182.0	880					
256-K	0.0	0.0	4.0	125	Optoelectronic devices 計	189.0	212.6	259.2	464
Pseudostatic	0.0	4.0	4.0	30	Photovoltaic(solar) cells	17.5	24.0	32.1	63
Static, total	379.0	418.5	534.0	1,059	Photoconductive cells(resistive)	11.5	14.2	20.0	33
Bipolar	109.0	110.0	130.0	240	Light-emitting diodes(discrete), total	64.5	71.5	86.6	150
n-MOS, total	175.0	201.0	253.0	457	Visible	47.0	52.5	65.5	106
Fast(70 ns or less)	64.0	83.0	133.0	365	Infrared, near-infrared	17.5	19.0	21.1	44
Slow	111.0	118.0	120.0	92	Laser diodes	5.5	8.0	12.5	25
C-MOS, total	95.0	107.5	151.0	362	Photodiodes(incl. arrays)	12.6	15.1	18.6	34
Fast	37.0	53.5	101.0	321	Phototransistors(incl. arrays)	23.1	25.8	30.0	52
Slow	58.0	54.0	50.0	41	Optically coupled isolators	54.3	54.0	59.4	107

### 9. 官需用 機器

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
官需用 機器 總計	23,021	27,124	28,358	32,622	NASA 計	886	889	865	750
國防 計	21,064	25,110	26,333	30,587	運送 計	495	523	540	627
Procurement, total	10,464	13,580	14,448	16,572	FAA procurement	287	300	312	365
Communications and intelligence	1,827	2,812	3,130	3,400	FAA research and development	138	150	157	188
Aircraft, related ground equipment	2,894	3,878	4,075	4,258	Highway and transit systems	70	73	71	74
Missiles and space systems	3,271	4,022	4,145	4,974	保健 및 教育 計	459	475	483	508
Mobile and ordnance	680	972	1,070	1,445	Educatoin systems	115	117	118	125
Ship and conversions	1,792	1,896	2,028	2,495	Health-care electronics	344	358	365	383
RDT&E	6,922	7,125	7,485	7,850	에너지 開發 計	117	127	135	150
Operations and maintenance	3,678	4,405	4,400	6,165					

### 10. 美 半導體의 生産 推移

單位：百万弗

	1980	1981	1982	1985		1980	1981	1982	1985
半導體 生産 計	675.3	779.6	916.6	1,917	Contact (proximity)	4.0	5.0	5.5	7
Wafer preparation(crystal growers, etc.)	45.1	35.3	38.5	75	Projection	120.3	185.0	224.0	281
Mask generation(digitizers, etc.)	54.4	43.2	44.0	84	Direct wafer-stepping	75.4	133.4	200.6	700
Lithography, total	284.4	414.6	533.1	1,158	Electron-beam	55.1	55.2	60.6	100
In-line handing(scrubbers, etc.)	29.6	36.00	42.4	70	Wafer processing(furnaces, etc.)	150.1	120.8	121.0	200
Aligners, total	254.8	378.6	490.7	1,088	Assembly(wire bonders, etc.)	141.3	165.7	180.0	400

## II. 西歐市物 篇

### 1. 電 子 機 器

單位：百萬弗

	1980	1981	1982		1980	1981	1982
電子機器 總計	41,446.0	46,130.4	51,052.8	데이터처리, 事務機器 計	15,672.0	17,885.4	20,291.0
家電機器 計	12,358.0	13,560.4	14,780.3	Data-processing systems <sup>1</sup>	10,279.7	11,819.2	13,484.9
Audio equipment, total	4,668.7	4,893.4	5,057.6	Small-business and personal (<\$20K)	922.3	1,141.7	1,395.1
Car audio	617.0	618.5	656.4	Small(\$20K to \$100K)	2,184.5	2,671.8	3,166.8
Hi-fi equipment, total	1,918.1	2,052.0	2,163.8	Medium-sized(\$100K to \$1M)	3,281.1	3,725.4	4,212.6
Components (tuners, turntables, etc.)	1,420.4	1,541.6	1,645.1	Large (>\$1M)	3,891.8	4,280.3	4,710.4
Consoles and compact systems (incl. TV-audio)	497.7	510.4	518.7	Memory systems (add-in and add-on, all types)	83.1	90.4	107.2
Phonographs and radio-phonograph combinations	401.0	399.5	400.8	Data-input peripherals	123.3	137.8	154.3
Radios	642.3	676.5	679.4	Data-output peripherals	514.2	573.9	654.1
Radio-recorder portables	585.1	602.1	612.1	Data terminals	1,337.6	1,620.2	1,946.1
Tape recorders and players	505.2	534.8	545.1	Key-entry systems	154.9	166.9	181.2
Television receivers, total	5,481.4	5,548.1	5,687.8	Electronic office equipment, total	2,984.4	3,258.7	3,525.4
Color	4,914.6	5,059.1	5,238.2	Calculators (nonconsumer)	643.1	686.5	713.3
Black and white	566.8	489.0	449.6	Copying equipment	1,266.7	1,406.4	1,568.6
Other consumer electronic products, total	2,207.9	3,118.9	4,034.9	Dictation equipment	90.5	91.8	94.0
Home video equipment, total	980.5	1,752.4	2,555.2	Electronic typewriters	250.7	304.4	357.0
Cassette players and recorders	917.8	1,656.4	2,418.6	Billing and accounting equipment	733.4	769.6	792.5
Cameras	62.7	96.0	136.6	Source data-collection-equipment (POS, etc.)	194.8	218.3	237.8
Electronic musical instruments	224.8	233.4	246.3	試驗 및 計測機器 計	893.0	996.7	1,105.4
Microwave ovens	181.0	242.9	275.4	Amplifiers, lab	12.1	12.4	12.5
Electronic games and toys	128.9	149.0	190.8	Analog voltmeters, ammeters, and multimeters	45.6	48.5	50.9
Calculators (personal and professional)	227.6	234.1	232.2	Automatic test equipment, total	137.1	159.6	182.9
Electronic watches and clocks	465.1	507.1	535.0	Component testers	38.6	42.4	47.2
一般産業用機器 計	2,589.2	2,726.8	3,014.4	IC testers	40.3	44.7	51.3
Inspection systems, X-ray	47.9	51.2	54.7	Pc-board testers	58.2	72.5	84.4
Machine-tool controls (incl. all NC systems)	196.3	202.5	215.6	Calibrators and standards, active and passive	11.1	11.5	11.8
Motor controls	165.8	171.4	191.6	Counters, time and frequency	42.6	46.1	48.2
Photoelectric controls	49.5	71.3	81.4	Digital multimeters (incl. probes and accessories)	51.3	56.0	62.2
Pollution-monitoring equipment	17.4	17.9	18.0	Logic analyzers	32.3	38.3	45.5
Process-control equipment	1,915.3	1,986.0	2,192.7	Microprocessor development systems	95.5	120.0	141.8
Semiconductor production equipment	118.0	145.2	173.7	Microwave T&M (above 1 GHz)	66.5	73.6	83.5
Ultrasonic cleaning equipment	33.7	35.4	37.4	Oscillators	21.0	22.7	24.2
Welding controls	45.3	45.9	49.3	Oscilloscopes (incl. accessories)	150.4	160.0	168.4
Communication systems, total	8,288.1	9,256.4	10,032.0	Phase-measuring equipment	0.7	0.7	0.9
Data communications	228.3	265.7	309.6	Power meters (below 1 GHz)	7.8	8.0	8.9
Facsimile terminals	37.1	50.0	72.7	Recorders (incl. chart and X-Y types)	102.3	111.2	121.0
Fiber-optic communications systems	0.5	7.6	15.2	Signal generators (pulse, sweep, and function), total	73.0	80.4	90.0
Intercom systems	103.3	112.3	117.5	Analog	45.4	48.8	53.6
Paging systems, public and private	68.3	72.0	76.3	Synthesized	27.6	31.6	36.4
Radio, total	977.9	1,073.4	1,148.3	Spectrum analyzers	43.7	47.7	52.7
Broadcast equipment	289.6	320.4	335.4	医療用 電子機器 計	1,335.0	1,383.3	1,474.2
Microwave systems	171.2	177.3	164.2	Diagnostic equipment	266.5	281.3	300.8
Mobile, land	480.4	521.6	598.6	Patient-monitoring equipment	144.4	153.1	166.3
Satellite earth stations	36.7	54.1	50.1	Prosthetic devices	175.2	189.5	204.3
Telecommunications systems, total	4,763.6	5,359.8	5,825.3	Therapeutic equipment	78.8	83.1	87.4
Telephone and data switching, private (PABX) <sup>2</sup>	1,002.2	1,121.8	1,241.9	X-ray equipment	670.1	676.3	715.4
Telephone and data switching, public <sup>2</sup>	2,539.4	2,927.7	3,179.3	電源供給器 計	310.7	321.4	355.5
Telephone and telegraph carrier equipment	1,222.0	1,310.3	1,404.1	Bench and lab	32.5	34.0	36.1
Television equipment, total	175.0	187.5	197.1	Industrial (heavy-duty)	70.8	76.5	84.2
Broadcast (studio) equipment	65.4	67.5	70.4	OEM and modular, total	207.4	210.9	235.2
Closed-circuit television (CCTV)	109.6	120.0	126.7	Linear	112.9	109.2	114.9
Navigation aids (except radar)	705.0	745.3	748.9	Switching	94.5	101.7	120.3
Radar (airborne, ground, marine)	1,229.1	1,382.8	1,521.1				

(註：1) Process-Controll과 유사한 System의 구성요소가 되는 Stand-alone minicomputer 포함 (Computer는 불포함)

2) 「電子製品과 半電子製品」

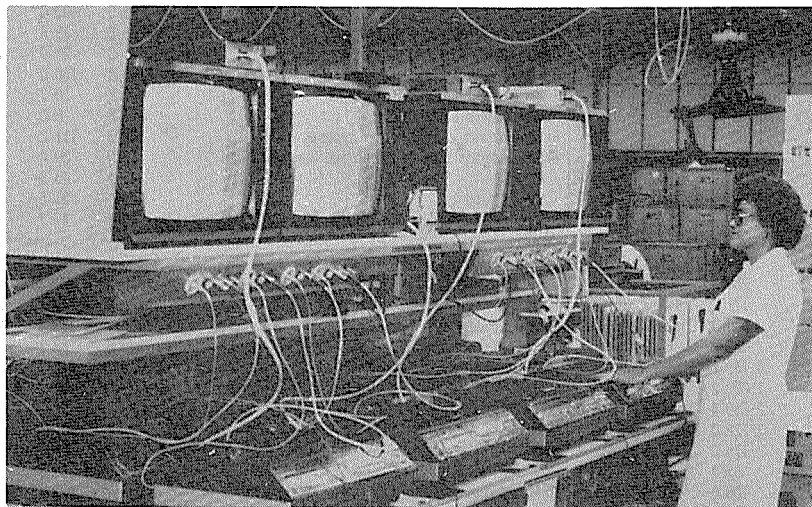
이 도표에 나타난 수치는 81年 10月, 11月에 Electronics誌가 作成한 11個国 調査에 근거를 둔. 여기의 추정치는 機器 소비량이며 国内産 hardware의 가격은 공장도 가격이고, 輸入hardware는 輸入가격임.

## 2. 電 子 部 品

單位：百万弗

	1980	1981	1982		1980	1981	1982
電子部品 總計	9,890.1	9,521.0	10,308.1	Small-signal (incl. duals and arrays)	213.8	185.1	191.3
受動 및 機械部品 計	5,351.3	5,242.5	5,679.1	Field-effect	25.1	24.0	26.4
Capacitors, total	945.7	836.1	895.3	Integrated circuits, total	1,644.5	1,497.5	1,689.5
Fixed	897.4	789.3	848.1	Linear ICs, total	402.0	382.6	411.7
Variable	48.3	46.8	47.2	Entertainment	165.9	154.4	165.6
Connectors, plugs, and sockets	994.6	1,032.4	1,135.9	Op amps (monolithic only)	73.3	72.0	75.8
Filters, networks, and delay lines	104.0	104.4	111.4	Other	162.8	156.2	170.3
Loudspeakers, OEM type	154.5	151.3	156.8	Digital ICs, total	1,205.3	1,075.9	1,235.2
Printed circuits and interconnection systems	1,094.0	1,121.6	1,251.3	Standard logic families, total	690.8	639.9	707.1
Quartz crystals	109.3	109.5	119.2	Bipolar	317.5	283.7	315.7
Readouts (optoelectronic and LCD)	71.2	74.7	81.8	C-MOS	373.3	356.2	391.4
Relays (for communications and electronics)	460.4	460.6	487.7	Memories, total	356.2	276.9	339.2
Resistors, total	539.8	505.0	536.6	Random-access	253.9	180.8	226.2
Fixed	308.7	295.1	311.4	Read-only	102.3	96.1	113.0
Potentiometers and trimmers, total	231.1	209.9	225.2	Microprocessor and microcomputer chips	158.3	159.1	188.9
Composition	171.9	155.8	165.9	Special-purpose consumer ICs	37.2	39.0	42.6
Wirewound	59.2	54.1	59.3	Optoelectronic devices, total	97.2	99.3	114.6
Servos, synchros, and resolvers	55.6	59.5	65.0	Discrete light-emitting diodes	33.3	31.3	35.5
Switches and keyboards (for electronics)	342.3	332.7	362.5	Optically coupled isolators & other circuit elements	56.4	56.9	65.1
Transformers, chokes, and coils	479.9	454.7	476.6	Solar (photovoltaic) cells	7.5	11.1	14.0
半導體 計	2,650.6	2,404.5	2,654.7	HYBRID 및 MODULAR 部品 計	276.1	306.7	370.7
Discrete, total	908.9	807.7	850.6	電子管 計	1,612.1	1,567.3	1,603.1
Diodes, total	377.4	337.7	355.4	Cathode-ray (except for TV)	66.8	71.0	76.1
Microwave (above 1 GHz)	32.4	29.5	32.2	Image-sensing (incl. camera tubes and intensifiers)	59.1	62.0	66.1
Rectifiers and rectifier assemblies	198.6	175.8	184.5	Light-sensing (incl. photomultipliers)	29.1	30.9	32.4
Signal (less than 100mA, incl. arrays)	78.2	68.7	70.9	Power (below 1GHz)	109.0	112.6	117.1
Tuner varactor	22.0	19.9	22.1	Microwave (incl. cooking)	142.5	153.0	166.2
Zener and reference	46.2	43.8	45.7	Receiving	34.0	28.7	23.7
Thyristors (incl. SCRs and triacs)	127.6	114.3	119.7	TV picture, total	1,171.6	1,109.1	1,121.7
Transistors, total	403.9	355.7	375.5	Black and white	52.7	48.2	46.4
Bipolar, total	378.8	331.7	349.1	Color	1,118.9	1,060.9	1,075.3
Power (more than 1-W dissipation)	165.0	146.6	157.8				

(註：이 도표에 나타난 수치는 1981. 10월과 11월에 Electronics誌가 作成한 11個國 調査에 근거를 둠. 여기의 추정치는 部品소비량이며, 部品の 가격은 공장도가격이며, 部品은 國內市場과 輸出市場을 위한 機器를 生産하는데 사용됨.



\* 밝은展望：유럽에서 가장 큰 電子製品業체인 Philips는 家庭用製品 판매를 높이기 위해 주로 Vido-cassette recorder에 依存하고 있으며 독일과 오스트리아에는 完全稼働을 하고 있는 VCR工場이 있다.



### Ⅲ. 日本市場 篇

#### 1. 電 子 機 器

(單位: 百万弗)

	1980	1981	1982		1980	1981	1982
電子機器 總計	23,556.0	26,679.2	30,219.7	Large (>\$1M)	2,136.4	2,318.2	2,454.6
家電機器 計	7,679.2	8,257.8	9,137.9	Memory systems(add-in and add-on, all types)	215.9	242.7	254.6
Audio equipment, total	3,319.6	3,553.2	3,691.4	Data-input peripherals	159.1	181.8	200.0
Car audio	604.6	640.9	650.0	Data-output peripherals	863.6	1,045.5	1,340.9
Hi-fi(incl. components and consoles)	1,022.7	1,095.5	1,204.6	Data-storage subsystems(disk, tape, etc.)	1,181.8	1,386.4	1,568.2
Phonographs and radio-phono combinations	150.0	154.6	160.9	Data terminals	1,200.0	1,400.0	1,613.6
Radios	92.3	98.6	103.2	Electronic office equipment, total	804.6	918.2	1,090.9
Radio-recorder portables	609.1	713.6	722.7	Copying equipment	468.2	531.8	613.6
Tape recorders and players	840.9	850.0	850.0	Facsimile transmission systems	336.4	386.4	477.3
Television receivers, total	2,409.1	2,406.6	2,572.3	Source data-collection equipment (POS, etc.)	145.9	165.9	177.3
Color	2,363.6	2,368.2	2,545.5	試驗 및 計測機器 計	503.9	556.4	633.7
Black and white	45.5	36.4	26.8	Amplifiers, lab	16.4	18.0	19.6
Other consumer electronic products, total	1,950.5	2,300.0	2,874.2	Analog voltmeters, ammeters, and multimeters	30.9	30.9	31.4
Home video equipment, total	797.7	1,101.3	1,545.5	Automatic test equipment, total	91.4	111.4	139.1
Cassette players and recorders	590.9	863.6	1,181.8	Component testers	6.4	6.8	7.3
Cameras	140.9	163.6	245.5	IC testers	85.0	104.6	131.8
Video-disk players	0.0	5.0	44.1	Calibrators and stands, active and passive	8.2	8.4	8.6
Projectors	65.9	69.1	74.1	Counters, time and frequency	19.6	20.0	20.5
Electronic musical instruments	250.0	268.2	363.6	Digital multimeters(incl. probes and accessories)	19.6	20.5	22.3
Microwave ovens	372.7	386.4	409.1	Logic analyzers	9.6	11.8	13.6
Telephone-answering devices	16.4	16.8	17.3	Microprocessor development systems	10.5	13.6	16.8
Electronic games and toys	318.2	336.4	345.5	Oscillators	24.6	26.4	28.6
Electronic watches and clocks	195.5	190.9	193.2	Oscilloscopes(incl. accessories)	61.4	68.2	75.0
一般産業用機器 計	2,335.9	2,704.2	3,287.9	Panel meters, total	40.9	43.7	52.2
Inspection systems	44.1	47.7	50.9	Analog	31.8	26.4	28.6
Machine-tool controls(incl. all NC systems)	250.0	254.6	270.5	Digital	9.1	17.3	23.6
Motor controls	200.0	209.1	209.1	Phase-measuring equipment	3.0	3.0	3.2
Pollution-monitoring equipment	31.8	31.8	34.1	Power meters (below 1 GHz)	3.3	3.6	5.0
Process-control equipment	863.6	954.6	1,181.8	Recorders(incl. and X-Y types)	47.7	52.3	58.2
Programmable controllers	86.4	118.2	159.1	Signal generators (pulse, sweep, and function), total	45.9	50.0	59.1
Robots (mechanical manipulators)	318.2	500.0	750.0	Spectrum analyzers	20.9	23.2	27.3
Sequence controllers	213.6	236.4	254.6	Temperature-measuring instruments (bench and service)	50.0	51.4	53.2
Typesetting equipment (computerized)	10.5	11.8	18.2	医療用 電子機器 計	766.0	827.3	916.0
Ultrasonic cleaning equipment	100.9	110.0	114.1	Diagnostic equipment	150.0	156.8	177.3
Welding controls	216.8	230.0	245.5	Patient-monitoring equipment	50.0	57.7	60.0
通信機器 計	1,645.6	1,895.1	2,108.3	Prosthetic devices	24.1	27.7	30.9
Data communications	136.4	163.6	190.9	Surgical support	21.4	24.6	26.4
Facsimile terminals	345.5	418.2	490.9	Therapeutic equipment	29.6	33.2	35.0
Intercom systems	56.8	62.3	68.2	X-ray equipment	490.9	527.3	586.4
Radio, total	305.0	317.3	330.1	電源供給器 計	155.5	176.0	195.9
Broadcast equipment	115.0	123.2	129.6	Bench and lab	31.8	38.2	41.8
Microwave systems	190.0	194.1	200.5	Industrial (heavy-duty)	29.1	34.1	37.3
Telemetry (industrial only)	72.7	84.1	90.9	OEM and modular, total	94.6	103.7	116.8
Telecommunications systems, total	472.3	559.1	609.1	Linear	27.7	29.6	32.7
Telephone and data switching, private (PABX) <sup>2</sup>	62.3	77.3	86.4	Switching	66.8	74.1	84.1
Telephone and data switching, public <sup>2</sup>	410.0	481.8	522.7	自動車 電子機器 計	1,171.5	1,776.4	2,053.6
Television equipment, total	256.9	290.5	328.2	Convenience (incl. trip computers)	477.3	740.9	822.7
Broadcast (studio) equipment	104.6	118.2	130.0	Exhaust-emission controls	209.1	277.3	350.0
Cable television (studio and distribution)	65.9	75.0	89.1	Electronic ignition systems	46.4	54.1	64.1
Closed-circuit television (CCTV)	86.4	97.3	109.1	Fuel-injection systems	45.5	80.9	121.4
데이터처리, 事務機器 計	8,802.9	9,967.8	11,354.6	Fuel-metering systems	19.1	39.6	40.9
Data-processing systems <sup>1</sup>	4,232.0	4,627.3	5,109.1	Safety systems (antiskid, air-bag, etc.)	9.1	10.9	13.6
Small-business and personal (<\$10K)	118.2	159.1	340.9	Voltage regulators	365.0	572.7	640.9
Small-business and scientific(\$10K to \$20K)	318.2	359.1	400.0	分析機器 計	495.5	518.2	531.8
Small(\$20K to \$100K)	704.6	768.2	822.7				
Medium-sized(\$100K to \$1M)	954.6	1,022.7	1,090.9				

〈註: 1) Process-control과 유사한 시스템의 구성요소가 되는 Stand-alone minicomputer 포함 (computer 불포함)

2) 「電子製品과 半電子製品」

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## 2. 電 子 部 品

單位：百万弗

	1980	1981	1982		1980	1981	1982
電子部品 總計	11,092.7	12,643.6	14,440.7	Small-signal (incl. duals and arrays)	23.6	27.3	33.6
受動 및 機械部品 計	4,763.8	5,381.6	5,975.9	Rf and microwave (bipolar and FET, incl. GaAs)	95.5	104.6	113.6
Capacitors, total	909.2	1,045.4	1,227.3	Protection devices (incl. metal-oxide varistors)	18.6	22.3	26.8
Fixed	854.6	981.8	1,168.2	Integrated circuits, total	3,067.0	3,797.2	4,603.3
Variable	54.6	63.6	59.1	Linear ICs, total	603.7	881.8	1,061.0
Connectors, plugs, and sockets	295.5	340.9	386.4	Communications	45.5	72.7	121.8
Filters, networks, and delay lines	195.5	213.6	240.9	Entertainment	434.1	654.6	768.2
Loudspeakers, OEM type	259.1	272.7	318.2	Interface (drivers, buffers, etc.)	75.0	96.8	109.6
Microwave components	163.6	172.7	186.4	Op amps (monolithic only)	49.1	57.7	61.4
Printed circuits and interconnection systems	477.3	563.6	636.4	Digital ICs, total	1,872.4	2,233.6	2,760.5
Quartz crystals	113.6	136.4	154.6	Standard logic families, total	463.7	550.0	666.9
Readouts (optoelectronic and LCD)	178.2	204.1	229.6	Bipolar	286.4	336.4	412.3
Relays (for communications and electronics)	200.0	213.6	231.8	C-MOS	177.3	213.6	254.6
Resistors, total	647.7	718.2	757.8	Memories, total	522.3	615.5	807.3
Fixed	288.6	325.0	336.4	Random-access	286.4	303.2	422.3
Potentiometers and trimmers, total	359.1	393.2	421.4	Read-only	181.8	232.7	311.8
Composition	345.5	377.3	404.6	CCD	27.3	34.1	28.2
Wirewound	13.6	15.9	16.8	Magnetic-bubble	26.8	45.5	45.0
Servos, synchros, and resolvers	60.0	63.6	70.0	Microprocessor and microcomputer chips	277.3	363.6	440.9
Switches and keyboards (for electronics)	522.8	545.4	581.9	Special-purpose circuits	590.9	681.8	781.8
Individual	254.6	263.6	286.4	Semiconductor logic	18.2	22.7	63.6
Keyboards	268.2	281.8	295.5	Optoelectronic devices, total	173.6	231.4	251.8
Transducers	27.7	41.4	54.6	Discrete light-emitting diodes	122.7	163.6	168.6
Transformers, chokes, and coils	713.6	850.0	900.0	Image-sensing arrays	15.0	26.4	33.6
				Laser diodes	11.8	14.1	16.8
				Photoconductive cells	11.4	12.7	14.6
				Solar (photovoltaic) cells	12.7	15.6	18.2
半導體 計	4,391.2	5,316.9	6,324.7	HYBRID 및 MODULAR 部品 計	300.0	370.9	446.4
Discrete, total	1,150.6	1,288.3	1,469.6	Standard	77.3	89.1	103.2
Diodes, total	413.8	465.5	520.1	Custom	222.7	281.8	343.2
Microwave (above 1 GHz)	9.6	12.3	13.2	電子管 計	1,474.7	1,574.2	1,693.7
Rectifiers and rectifier assemblies	231.9	259.1	281.9	Cathode-ray (except for TV)	46.4	56.8	60.9
Low-power (less than 10A)	154.6	177.3	195.5	Image-sensing (incl. camera tubes and intensifiers)	113.6	127.3	149.1
Power (10A or more)	77.3	81.8	86.4	Light-sensing (incl. photomultipliers)	7.3	8.6	10.9
Signal (less than 100mA, incl. arrays)	111.8	127.3	150.0	Power (below 1 GHz)	12.3	13.2	14.1
Tuner varactor	24.1	27.7	31.8	Microwave (incl. cooking)	250.0	252.3	250.0
Zener and reference	36.4	39.1	43.2	Receiving	6.4	8.2	8.2
Thyristors (incl. SCRs and triacs)	90.9	93.6	104.6	TV picture, total	1,038.7	1,107.8	1,200.5
Transistors, total	627.3	706.9	818.1	Black and white	61.4	62.3	64.1
Bipolar, total	495.5	559.1	650.0	Color	977.3	1,045.5	1,136.4
Power (more than 1-W dissipation)	240.9	268.2	327.3				
Small-signal (incl. duals and arrays)	254.6	290.9	322.7				
Field-effect	36.3	43.2	54.5				
Power (more than 1-W dissipation)	12.7	15.9	20.9				

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## 3. 日本이 展望하는 世界的 半導體市場

(單位：百万弗)

	1980	1981	1982	1983	1984	1985
北 美 洲	6,148	6,028	6,973	8,624	10,743	13,091
IC	4,871	4,634	5,468	6,999	8,959	11,165
Discrete	1,331	1,394	1,505	1,625	1,784	1,926
西 独	3,774	3,411	3,726	4,258	5,081	6,094
IC	2,408	2,071	2,337	2,758	3,448	4,310
Discrete	1,366	1,340	1,389	1,500	1,633	1,784
日 本	3,488	4,617	5,694	6,770	7,589	8,606
IC	2,308	2,965	3,795	4,754	5,493	6,427
Discrete	1,180	1,652	1,899	2,016	2,096	2,179
其 他	1,015	966	1,114	1,329	1,612	1,962
IC	502	402	474	593	759	956
Discrete	513	564	640	736	853	1,006
合 計	14,425	15,022	17,507	20,981	25,025	29,753
IC	10,035	10,072	12,074	15,104	18,659	22,858
Discrete	4,390	4,950	5,433	5,877	6,366	6,895

(자료：노무라 연구소)