

U.S. MARKETS FORECAST 1974

Market estimates represent total value (at the factory level) of goods shipped by U.S.-based manufacturers. Some product categories have been added, deleted or redefined; therefore, these totals are not directly comparable to those of previous years.

FEDERAL ELECTRONICS

(millions of dollars)	1972	1973	1974	1977
FEDERAL ELECTRONICS, TOTAL	11,503	11,929	12,504	14,311
Defense Department, total	10,058	10,390	10,955	12,418
Procurement, total	5,126	5,181	5,472	6,676
Communications and intelligence	962	997	981	1,550
Aircraft and related ground equipment	1,091	1,200	1,550	1,740
Missiles and space systems	2,205	2,101	2,083	2,361
Mobile and ordnance	265	238	233	290
Ships and conversions	603	645	625	735
Research and development, test and engineering	2,692	2,848	3,020	3,085
Operations and maintenance	2,240	2,361	2,463	2,657
NASA, total	948	825	800	920
Transportation Department, total	188	399	419	600
FAA procurement	—	159	162	185
FAA research and development	—	123	130	153
Highway and transit systems	41	80	95	172
Health, Education, and Welfare Department, total	309	315	330	393
Education systems	135	133	130	163
Health-care electronics	174	182	200	230

CONSUMER ELECTRONICS

(millions of dollars)	1972	1973	1974	1977
CONSUMER ELECTRONICS, TOTAL*	5,163.8	5,733.5	5,982.7	7,089
Television receivers, total	3,156.0	3,263.0	3,212.0	3,462
Black-and-white	563.0	495.0	475.0	429
Color	2,593.0	2,768.0	2,737.0	3,033
Audio equipment, total	1,503.5	1,650.0	1,810.7	2,154
Radios, total	451.0	457.0	465.0	479
Table, clock, and portable radios, a-m and fm	138.0	140.0	145.0	153
Automobile radios, a-m and fm	313.0	317.0	320.0	326
Phonographs and radio-phonograph combinations	345.0	350.0	370.0	385
Tape recorders and players, total	357.5	463.0	555.7	810
Automobile cassette and cartridge players	145.0	200.0	235.0	375
Cassette and cartridge player/recorders (including four-channel)	112.5	131.0	146.7	200
Reel-to-reel players/recorders	50.0	47.0	44.0	35
Tape player-radio combination	50.0	85.0	130.0	200
Hi-fi audio components (amplifiers, receivers, speakers, tuners, pickups, compacts, and headphones)	350.0	380.0	420.0	480
Other consumer products, total	504.3	820.5	960.0	1,473
Video players/recorders	2.0	3.0	5.0	45
Electronic organs and other electronic musical instruments	100.0	110.5	120.0	150
Intrusion alarms and fire-monitoring devices	132.0	140.0	142.0	160
Electronic assembly kits, all kinds	65.3	72.0	80.0	98
Microwave ovens	100.0	165.0	253.0	600
Calculators, personal and four-function	105.0	260.0	270.0	300
Electronic watches	—	70.0	90.0	120

*Includes domestic manufactured and domestic-label imports, but does not include foreign-label imports.

COMPONENTS

(millions of dollars)	1972	1973	1974	1977
COMPONENTS, TOTAL	4,172.4	4,705.4	4,879.0	5,473
Capacitors, total	483.0	593.7	627.5	679
Paper	54.1	65.2	69.0	68
Film	90.0	97.0	102.8	114
Electrolytic, total	178.5	229.0	238.9	237
Aluminum	87.5	109.0	113.9	110
Tantalum	91.0	120.0	125.0	127
Mica	21.7	26.5	26.8	25
Glass and vitreous enamel	7.0	6.9	6.6	5
Ceramic	98.9	129.2	140.5	177
Variable	11.8	12.2	12.6	14
Chip	10.0	13.8	15.5	22
Other	11.0	13.9	14.8	17

Connectors, total	403.6	463.3	488.5	592
Coaxial, standard size	30.8	34.9	43.3	55
Coaxial, miniature	13.0	15.0	15.6	21
Cylindrical	119.2	133.8	136.2	153
Rack and panel	90.0	103.8	107.0	129
Fused	8.5	9.0	9.5	11
Printed-circuit, total	86.8	88.5	102.1	130
Card-insertion	51.2	58.0	62.0	74
Two-piece (metal-to-metal)	18.5	21.0	21.1	28
Plate-module	17.1	19.5	19.0	28
Special-purpose	46.3	51.8	53.0	60
Device sockets	9.0	16.5	21.8	33

Electron tubes, total	872.1	1,147.3	1,115.9	1,097
Receiving	226.5	191.5	166.4	120
Power and special-purpose, total	293.4	289.8	289.5	278
High-vacuum	61.5	60.0	63.5	48
Gas and vapor	19.0	16.9	15.6	13
Klystrons	34.9	34.0	31.7	30
Magnetrons	34.3	34.0	30.0	32
TWTs, (including backward-wave)	74.3	72.0	73.0	73
Light-sensing	9.5	10.0	10.5	12
Image-sensing (including TV camera and image-intensifier)	28.0	30.7	32.0	34
Storage	15.1	15.2	16.0	17
Cathode-ray, except TV	16.8	17.0	17.2	19
TV picture, black-and-white	49.0	40.0	33.0	21
TV picture, color	575.0	626.0	627.0	678

Filters, networks and delay lines, total	124.4	136.8	146.2	164
Delay lines	14.9	15.0	14.8	13
Passive electric-wave filters (LC)	32.5	36.0	37.4	38
RC networks	8.0	8.6	8.9	11
Crystal filters	22.7	29.0	33.5	39
Rf and emi filters	36.8	38.0	40.0	46
Active filters	9.5	10.2	11.6	17

Magnetic components, total	269.5	302.1	318.7	357
Computer memory cores	32.0	30.0	31.5	23
Transformers and chokes (except TV), total	170.3	200.5	214.5	258
Laminated	110.0	128.0	136.9	163
Toroidal	37.0	43.5	46.0	55
Pulse transformers	23.3	29.0	31.6	40
TV magnetic components (including yokes and flybacks)	52.0	56.0	57.0	59
Rf coils	15.2	15.6	15.7	17

Microwave components and hardware (except tubes, antennas and semiconductor), total	76.6	82.0	86.5	97
Mixers	10.1	10.2	11.0	13
Detectors	3.3	3.4	3.6	4
Passive components (filters, couplers, terminations, attenuators, etc.), total	30.0	33.7	36.2	39
Waveguide	8.0	8.5	9.0	10
Coaxial and stripline	22.0	25.2	27.2	29
Switches, total	8.7	8.9	9.5	12
Waveguide	2.7	2.7	2.7	3
Coaxial and stripline	6.0	6.2	6.8	9
Ferrite devices, total	20.3	21.4	21.4	23
Isolators	4.8	4.9	4.9	5
Circulators	11.1	11.5	11.5	12
YIG devices	4.4	5.0	5.0	6
Power limiters	4.2	4.4	4.8	6

(millions of dollars)

	1972	1973	1974	1977
Printed-circuit boards, total	155.5	199.5	214.5	254
Single-layer	16.5	16.0	14.0	10
Two-layer	95.0	122.5	130.0	136
Multilayer	35.0	50.0	58.5	87
Flexible	9.0	11.0	12.0	21

Quartz crystals (including mounts and ovens), total	42.6	48.6	52.3	62
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Readout devices, total	75.3	133.2	159.8	316
Discrete, total	30.3	39.2	45.3	68
Gas-discharge	—	2.0	2.0	1
Incandescent	9.0	10.0	11.0	16
Fluorescent	1.0	1.2	1.3	2
Light-emitting diodes	20.3	26.0	31.0	49
Multidigit, total	45.0	94.0	114.5	248
Gas-discharge	—	25.0	32.0	55
Light-emitting-diode	45.0	65.0	75.0	165
Liquid-crystal	—	1.0	2.5	17
Plasma panel	—	3.0	5.0	11

Relays, total	328.2	418.3	417.9	457
General-purpose	120.0	180.0	150.0	130
Telephone-type	29.2	34.0	38.0	40
Crystal-can	24.5	26.0	31.0	32
High-sensitivity	13.0	15.0	18.0	22
Reed	25.5	28.1	30.9	38
Stepping and impulse	12.0	12.2	10.0	10
Time-delay	10.0	15.0	20.0	30
Solid-state	9.0	13.0	18.0	35
Other	85.0	95.0	102.0	120

Resistors, total	382.0	404.7	418.6	435
Fixed, total	191.1	198.6	203.0	204
Composition	70.0	74.7	73.0	62
Deposited-carbon	13.8	12.0	12.0	12
Metal-film	54.8	55.9	58.0	67
Wirewound	52.5	56.0	60.0	63
Variable resistors, total	139.5	147.9	152.6	159
Wirewound, precision	18.6	18.1	17.5	16
Wirewound, nonprecision	10.0	11.5	11.5	12
Wirewound, trimmers	22.0	21.8	21.8	22
Non-wirewound, precision	9.0	10.5	10.5	11
Non-wirewound, nonprecision	52.9	58.0	60.3	63
Non-wirewound, trimmers	27.0	28.0	31.0	35
Other resistors (including varistors and thermistors)	18.9	19.2	20.0	22
Resistive networks, thin- and thick-film	32.5	39.0	43.0	50

Switches, total	216.2	254.7	281.6	339
Small-movement snap-action	38.0	42.0	44.0	50
Lighted	30.0	33.8	37.0	46
Push-button	17.0	25.0	27.5	33
Toggle	28.0	30.0	33.0	35
Slide	10.0	14.5	15.1	18
Rotary	32.7	33.2	33.2	33
Coaxial	10.0	10.2	10.8	13
Thumbwheel	11.5	12.5	13.5	16
Keyboard, single-key	10.0	12.5	14.8	17
Keyboard, assemblies	29.0	41.0	52.7	78

Transducers, total	70.2	77.2	83.3	101
Pressure	23.0	26.5	29.2	36
Position	9.5	10.7	11.8	16
Strain	17.9	18.3	19.0	20
Acceleration	8.5	8.9	9.7	13
Other	11.3	12.8	13.8	16

Wire and cable, total	401.4	444.0	467.5	523
Coaxial cable	99.5	113.0	119.8	124
Flat and flexible cable	14.9	18.5	19.6	29
Hook-up wire	99.0	103.5	107.6	118
Magnet wire	85.0	90.0	94.0	99
Multiconductor, shielded	49.0	59.0	60.5	68
Multiconductor, unshielded	54.0	60.0	66.0	85

(millions of dollars)

	1972	1973	1974	1977
SEMICONDUCTORS, TOTAL	1,524.1	2,017.7	2,324.5	3,128
Discrete, conventional devices, total	557.9	616.0	626.4	625
Transistors, total	353.8			

INDUSTRIAL AND COMMERCIAL MARKETS

	(millions of dollars)			
	1972	1973	1974	1977
INDUSTRIAL AND COMMERCIAL, TOTAL	14,928.8	17,747.0	20,254.4	23,849
Test and measuring instruments, total	1,178.9	1,315.6	1,456.0	1,876
Non-microwave instruments, total	725.2	806.1	890.5	1,137
Spectrum analyzers	19.0	21.0	22.0	30
Frequency synthesizers	20.3	22.7	24.6	32
Function generators	8.3	9.2	10.4	14
Signal generators	26.0	27.7	28.0	30
Sweep generators	7.9	9.0	10.0	13
Pulse generators	10.1	11.5	12.9	17
Oscillators	2.8	3.1	3.5	4
Waveform analyzers and distortion meters	9.0	10.0	12.0	15
Counters, time and frequency	27.8	32.1	32.6	39
Panel meters, total	29.5	31.0	35.0	42
Analog	20.0	19.0	19.5	17
Digital	9.5	12.0	15.5	25
Noise-measuring equipment	2.7	3.0	3.1	4
Analog voltmeters, ammeters and multimeters	16.8	17.0	17.5	17
Digital multimeters, total	37.0	40.8	46.2	56
≤ 3 1/2 digit	11.9	14.4	17.1	22
≥ 4 1/2 digit	25.1	26.4	29.1	34
Calibrators and standards, active and passive	8.0	10.1	10.6	14
Oscilloscopes, total	158.0	174.7	188.7	238
Oscilloscopes, non-plug-in	80.3	92.5	99.9	126
Oscilloscopes, plug-in, main frame only	59.5	62.3	66.7	82
Oscilloscope accessories and plug-ins	18.2	19.9	22.1	30
Recording instruments, total	115.0	122.6	128.5	146
Magnetic-tape	51.8	55.3	57.0	63
Strip-chart	47.2	49.8	52.0	58
X-Y	16.0	17.5	19.5	25
Automatic test equipment, total	108.5	133.3	167.3	265
IC testers	59.5	76.3	97.0	138
Component testers	4.0	4.5	5.3	7
Pc-board testers	45.0	52.5	65.0	120
Manual component-test equipment	3.9	4.0	4.2	5
Power supplies, lab and industrial type	75.5	80.5	86.0	95
Amplifiers, total	31.1	33.8	37.4	45
Lab type	7.0	9.0	10.1	12
Signal conditioners	24.1	24.8	27.3	33
Phase-measuring equipment	8.0	9.0	10.0	16
Microwave instruments, total	108.5	118.7	129.3	164
Phase-measuring	14.8	16.0	18.0	23
Impedance-measuring	9.5	10.5	11.5	15
Power-measuring	4.3	4.7	5.2	7
Computerized automatic microwave-measuring	5.5	7.0	8.5	15
Spectrum analyzers	17.1	18.7	20.4	26
Wavemeters	1.1	1.0	0.9	1
Frequency counters	7.0	7.9	8.9	12
Noise-measuring	1.6	1.8	1.8	2
Signal generators	12.4	12.8	13.1	15
Sweep generators	16.5	19.0	20.8	26
Microwave modulators	1.0	1.0	1.0	1
Field intensity meters and test receivers	6.0	6.3	6.8	8
Antenna-pattern-measuring	5.5	5.7	5.9	6
Oscillators	6.2	6.3	6.5	7

	1972	1973	1974	1977
Analytical instruments, total	345.2	390.8	436.2	575
Chromatographs, total	48.2	55.1	63.1	87
Gas	38.8	42.0	45.5	55
Liquid	9.4	13.1	17.6	32
Spectrophotometers, total	121.5	135.8	148.6	201
Infrared	37.0	38.5	40.6	46
Ultraviolet-visible	54.5	58.3	62.0	73
Atomic absorption	20.0	24.0	26.0	34
Others	10.0	15.0	20.0	28
Mass spectrometers	19.5	21.8	26.0	32
Nuclear magnetic resonance spectrometers	24.0	27.0	30.0	38
Electron microscopes	14.0	15.5	17.0	22
pH meters and ion-selective electrodes	14.0	15.2	16.5	20
Spectrofluorimeters	9.0	12.0	14.0	17
Spectropolarimeters	4.0	5.0	5.9	8
Thermal analyzers, total	6.0	8.4	10.1	15
Differential thermal analyzers	2.0	4.0	5.0	8
Thermogravimetric analyzers	0.8	0.9	1.1	1
Differential scanning calorimeters	3.2	3.5	4.0	6
X-ray analysis equipment	25.0	30.0	35.0	50
Other, analyzers, colorimeters, photometers	60.0	65.0	70.0	85

	(millions of dollars)			
	1972	1973	1974	1977
Data-processing systems, peripherals, office equipment, total	10,463.2	12,445.0	14,181.1	18,447
Data-processing systems, total	5,575.0	6,605.0	6,938.0	8,120
Mini (< \$50K)	350.0	420.0	513.0	925
Small (\$50K-\$420K)	620.0	685.0	710.0	1,120
Medium (\$420K-\$840K)	675.0	1,600.0	1,400.0	1,200
Medium/communication (\$840K-\$1,680K)	1,980.0	1,390.0	1,410.0	1,000
Large (\$1,680K-\$3,360K)	1,000.0	1,500.0	1,700.0	2,200
Giant (> \$3,360K)	950.0	1,010.0	1,200.0	1,675
Add-on memory, total	275.0	325.0	415.0	800
Core systems	190.0	175.0	165.0	125
Semiconductor systems	85.0	150.0	250.0	675
Data-storage devices, total	1,817.0	2,149.0	2,752.0	3,880
Disk	875.0	1,000.0	1,160.0	1,810
Drum	90.0	103.0	119.0	80
Magnetic tape	800.0	985.0	1,400.0	1,900
Magnetic tape and disk cassettes	52.0	61.0	73.0	90
Input/output peripherals, total (shipped independently of systems)	945.0	1,133.0	1,312.0	1,902
Card read/punch	165.0	230.0	260.0	380
Line printers, impact	409.0	460.0	524.0	786
Line printers, non-impact	11.0	10.0	21.0	48
Computer input/output microfilm	28.0	35.0	40.0	50
Optical character readers	238.0	285.0	350.0	525
Magnetic-ink character readers	35.0	37.0	38.0	20
Electromechanical plotters	42.0	48.0	50.0	48
Paper-tape devices	17.0	22.0	29.0	45
Key entry, total	514.0	518.0	550.0	436
Key punch/verify	325.0	295.0	265.0	138
Key-to-tape	110.0	108.0	95.0	58
Key-to-disk	59.0	75.0	110.0	90
Keyboard-to-cassette/cartridge	20.0	40.0	80.0	150
Data terminals, total	626.0	805.0	966.0	1,374
Keyboard printers	220.0	275.0	268.0	275
Video terminals	165.0	225.0	245.0	260
Remote batch/intelligent terminals	200.0	255.0	375.0	650
Interactive graphic terminals	35.0	42.0	68.0	175
Audio-response	6.0	8.0	10.0	14
Source data collection equipment, total	160.0	230.0	420.0	820
Point-of-sale systems	100.0	130.0	265.0	510
Industrial data collection systems (badge readers, portable units)	50.0	65.0	70.0	85
Other	10.0	35.0	85.0	225
Office equipment, total	551.2	680.0	828.1	1,175
Calculators, total	330.5	383.0	438.0	595
Programmable	155.5	188.0	228.0	330
Non-programmable	175.0	195.0	210.0	265
Dictation equipment	82.0	90.0	98.0	130
Facsimile	53.7	64.0	74.1	125
Electronic typesetting	80.0	125.0	176.0	205
Other	5.0	18.0	42.0	60

	1972	1973	1974	1977
Industrial electronic equipment, total	889.5	1,079.5	1,271.2	1,712
Motor controls (speed, torque)	90.3	100.5	106.5	127
Numerical controls, total	39.2	49.0	59.8	90
Point-to-point systems	11.3	13.9	15.6	25
Contouring systems	27.9	35.1	44.2	65
Inspection systems, total	23.2	24.6	26.7	37
Ultrasonic test equipment	9.0	9.7	10.0	12
X-ray test equipment	14.2	14.9	16.7	25
Thickness gages and controls, total	45.4	58.0	62.3	102
Photoelectric gages and control	33.0	43.0	44.2	75
Radiation-based	12.4	15.0	18.1	27
Data-acquisition systems	56.0	92.3	140.0	172
Electronic process controllers (temperature, pressure, flow, etc.)	30.6	35.6	40.3	49
Electronic process recorders and indicators (temperature, pressure, flow, etc.)	58.2	60.0	62.0	64
Program sequence controllers	13.0	21.3	31.8	76
Ultrasonic cleaning equipment	11.6	13.1	14.6	20
Pollution-monitoring equipment	14.0	17.0	19.9	28
Power supplies, complete equipment	100.0	150.0	185.0	210
Power supplies, OEM type	90.0	98.5	108.0	135
Induction and dielectric heating and sealing equipment	25.5	27.6	28.3	34
Industrial process-control computer systems, total	292.5	331.5	386.0	568
Digital	250.0	290.0	343.0	516
Analog	42.5	41.5	43.0	52

	(millions of dollars)			
	1972	1973	1974	1977
Communications equipment, total	1,743.7	2,068.2	2,380.5	3,076
Radio, total	623.5	680.2	718.4	801
Aviation mobile (including ground support systems)	113.0	115.0	115.0	120
Marine mobile (including shore stations)	19.2	24.1	20.0	23
Land mobile (including base stations)	300.2	324.3	360.0	405
Microwave relay (including cable systems, both specialized and common carriers)	170.0	194.8	200.0	225
Amateur	11.2	11.5	11.9	13
Citizens' band	9.9	10.5	11.5	15
Navigation systems	131.0	136.2	140.4	158
A-m and fm station equipment	19.2	19.6	19.0	22
TV-station equipment (except CATV)	150.3	155.6	160.0	167
Telemetry (industrial only)	47.1	50.0	55.5	64
Switching systems (including PABX)	180.0	225.0	260.0	350
Voice terminals (autodialers, autorecorders, etc.)	2.0	4.0	6.0	20
Paging systems	20.4	22.0	25.0	30
Intercoms	120.0	130.0	138.0	150
Nonbroadcast TV equipment, total	144.2	184.3	225.6	368
CATV, total	108.2	144.4	181.5	310
Studio and head-end	21.3	26.0	31.3	57
Distribution	55.2	69.8	89.0	151
Transmission lines and fittings	22.2	31.3	38.8	60
Converters	9.5	17.3	22.4	42
CCTV, total	36.0	39.9	44.1	58
Cameras	20.2	22.6	25.3	36
Monitors	6.8	7.3	7.8	9
Auxiliary	9.0	10.0	11.0	13
Video recorders and playback units (non-consumer)	15.2	16.3	18.6	21
Data-communications equipment, total	290.8	445.0	614.0	925
Modems	40.0	45.0	49.0	57
Remote concentrators	45.3	65.0	110.0	240
Message-switching systems	60.0	85.0	135.0	220
Front-end communications processors	115.0	210.0	270.0	328
Multiplexers	30.5	40.0	50.0	80

	1972	1973	1974	1977
Medical equipment, total	524.6	607.3	673.9	871
Diagnostic equipment, total	380.7	427.5	468.7	571
X-ray equipment	245.0	279.5	307.5	382
Electroencephalographs	8.5	9.3	10.3	13
Electrocardiographs	16.3	17.6	19.0	24
Ultrasonic scanners	3.4	3.8	4.3	7
Automated blood analyzers	65.5	70.8	76.5	85
Scintillation cameras and counters	32.0	34.5	36.6	42
Audiometers	10.0	12.0	14.5	18
Prosthetic equipment, total	94.7	122.1	140.5	209
Hearing aids	50.8	61.8	65.8	74
Pacemakers	43.0	58.5	72.5	130
Motorized limbs	0.9	1.8	2.2	5
Therapeutic equipment, total	35.3	45.4	47.3	66
X-ray equipment				