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

## CONSUMER ELECTRONICS

INON	100		
1972	1973	1974	1977
5,163.8	5,733.5	5,982.7	7,089
3,156.0	3,263.0	3,212.0	3,462
			429
2,593.0	2,768.0	2,737.0	3,033
			2,154
451.0	457.0	465.0	479
120 0	140.0	145.0	153
			326
010.0	317.0	320.0	320
345.0	350.0	370.0	385
357.5	463.0	555.7	810
445.0	200.0	005.0	075
145.0	200.0	235.0	375
1125	131.0	1467	200
50.0	47.0	44.0	35
50.0	85.0	130.0	200
250.0	200.0	420.0	400
			480
			1,473
2.0	3.0	5.0	45
100.0	110 5	120 0	150
100.0		120.0	100
132.0	140.0	142.0	160
		80.0	98
			600
105.0			300 120
	70.0	30.0	120
	1972 5,163.8 3,156.0 563.0 2,593.0 1,503.5 451.0 138.0 345.0 357.5 145.0 112.5 50.0 50.0 504.3 2.0 100.0	5,163.8 5,733.5 3,156.0 3,263.0 563.0 495.0 2,768.0 1,503.5 1,650.0 457.0 313.0 317.0 345.0 357.5 463.0 145.0 200.0 112.5 132.0 3.0 100.0 110.5 132.0 140.0 65.3 72.0 100.0 165.0	1972         1973         1974           5,163.8         5,733.5         5,982.7           3,156.0         3,263.0         3,212.0           563.0         495.0         475.0           2,593.0         2,768.0         2,737.0           1,503.5         1,650.0         1,810.7           451.0         457.0         465.0           138.0         140.0         145.0           313.0         317.0         320.0           357.5         463.0         555.7           145.0         200.0         235.0           112.5         131.0         146.7           50.0         47.0         44.0           50.0         38.0         420.0           504.3         820.5         960.0           2.0         3.0         5.0           100.0         110.5         120.0           132.0         140.0         142.0           65.3         72.0         80.0           100.0         165.0         253.0           100.0         165.0         253.0           100.0         260.0         270.0

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

### COMPONENTS

	(million of day)	1972	1973	1974	1977
	(millions of dollars)				
			4,705.4		
Ca	pacitors, total Paper	<b>483.0</b> 54.1	<b>593.7</b> 65.2	<b>627.5</b> 69.0	<b>679</b> 68
	Film	90.0	97.0	102.8	114
	Electrolytic, total	178.5	229.0	238.9	237
	Aluminum Tantalum	87.5 91.0	109.0 120.0	113.9 125.0	110 127
	Mica	21.7	26.5	26.8	25
	Glass and vitreous enamel Ceramic	7.0 98.9	6.9	6.6	5 177
	Variable	11.8	12.2	12.6	14
	Chip	10.0	13.8	15.5	22 17
	Other	11.0	13.9	14.8	17
Co	nnectors, total Coaxial, standard size	<b>403.6</b> 30.8	<b>463.3</b> 34.9	<b>488.5</b> 43.3	<b>592</b> 55
	Coaxial, miniature	13.0	15.0	15.6	21
	Cylindrical	119.2	133.8	136.2	153
	Rack and panel Fused	90.0	103.8	107.0 9.5	129 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) Plate-module	18.5 17.1	21.0 19.5	21.1	28 28
	Special-purpose	46.3	51.8	53.0	60
	Device sockets	9.0	16.5	21.8	33
Ele	ectron 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 High-vacuum	293.4	289.8	289.5 63.5	278 48
	Gas and vapor	19.0	16.9	15.6	13
	Klystrons	34.9	34.0	31.7	30
	Magnetrons TWTs, (including backward-wave)	34.3 74.3	34.0 72.0	30.0 73.0	32 73
	Light-sensing	9.5	10.0	10.5	12
	Image-sensing (including TV	20.0	20.7	22.0	24
	camera and image-intensifier) Storage	28.0 15.1	30.7 15.2	32.0 16.0	34 17
	Cathode-ray, except TV	16.8	17.0	17.2	19
	TV picture, black-and-white TV picture, color	49.0 575.0	40.0 626.0	33.0 627.0	21 678
		3.3		,_,,,	100
Fil	ters, 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) RC networks	32.5	36.0 8.6	37.4 8.9	38 11
	Crystal filters	22.7	29.0	33.5	39
	Rfi and emi filters	36.8	38.0	40.0	46
	Active filters	9.5	10.2	11.6	17
	anatia annuari e tatat	200.5	200.4	240.7	257
Ma	Computer memory cores	<b>269.5</b> 32.0	<b>302.1</b> 30.0	318.7 31.5	<b>357</b> 23
	Transformers and chokes				
	(except TV), total	170.3 110.0	200.5	214.5	258
	Laminated Toroidal	37.0	128.0 43.5	136.9 46.0	163 55
	Pulse transformers	23.3	29.0	31.6	40
	TV magnetic components (including	52.0	56.0	57.0	59
	yokes and flybacks) Rf coils	15.2	15.6	15.7	17
Mi	crowave components and hardware				
(	except tubes, antennas and				
S	emiconductors), total Mixers	76.6 10.1	82.0 10.2	86.5 11.0	97 13
	Detectors	3.3	3.4	3.6	4
	Passive components (filters, couplers,			20.0	20
	terminations, attenuators, etc.), tota Waveguide	30.0 8.0	33.7 8.5	36.2 9.0	39 10
	Coaxial and stripline	22.0	25.2	27.2	29
	Switches, total	8.7	8.9	9.5	12
	Waveguide Coaxial and stripline	2.7 6.0	2.7 6.2	2.7 6.8	3 9
	Ferrite devices, total	20.3	21.4	21.4	23
	Isolators	4.8	4.9	4.9	5
	Circulators YIG devices	11.1	11.5 5.0	11.5 5.0	12 6
	Power limiters	4.4	4.4	4.8	6

				BEE
	(	millions o	f dollars)	
	1972	1973	1974	1977
Printed-circuit boards, total	155.5	199.5	214.5	254
Single-layer	16.5 95.0	16.0 122.5	14.0 130.0	10 136
Two-layer 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
Readout devices, total	<b>75.3</b> 30.3	133.2 39.2	<b>159.8</b> 45.3	<b>316</b> 68
Discrete, total Gas-discharge	-	2.0	2.0	1
Incandescent	9.0	10.0	11.0	16
Fluorescent Light-emitting diodes	1.0 20.3	1.2 26.0	1.3 31.0	2 49
Multidigit, total	45.0	94.0	114.5	248
Gas-discharge	45.0	25.0 65.0	32.0 75.0	55 165
Light-emitting-diode Liquid-crystal	45.0	1.0	2.5	17
Plasma panel	-	3.0	5.0	11
Delaus Astal	220.0	440.0	447.0	457
Relays, total General-purpose	328.2 120.0	<b>418.3</b> 180.0	<b>417.9</b> 150.0	<b>457</b> 130
Telephone-type	29.2	34.0	38.0	40
Crystal-can High-sensitivity	24.5 13.0	26.0 15.0	31.0 18.0	32 22
Reed	25.5	28.1	30.9	38
Stepping and impulse	12.0	12.2	10.0	10
Time-delay Solid-state	10.0 9.0	15.0 13.0	20.0 18.0	30 35
Other	85.0	95.0	102.0	120
Desistant total	202.0	404.7	A10.0	425
Resistors, total Fixed, total	382.0 191.1	<b>404.7</b> 198.6	418.6 203.0	<b>435</b> 204
Composition	70.0	74.7	73.0	62
Deposited-carbon Metal-film	13.8 54.8	12.0 55.9	12.0 58.0	12 67
Wirewound	52.5	56.0	60.0	63
Variable resistors, total	139.5 18.6	147.9 18.1	152.6 17.5	159 16
Wirewound, precision Wirewound, nonprecision	10.0	11.5	11.5	12
Wirewound, trimmers	22.0	21.8	21.8	22
Non-wirewound, precision Non-wirewound, nonprecision	9.0 52.9	10.5 58.0	10.5 60.3	11 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 Toggle	17.0 28.0	25.0 30.0	27.5 33.0	33 35
Slide	10.0	14.5	15.1	18
Rotary Coaxial	32.7 10.0	33.2	33.2	33
Thumbwheel	11.5	10.2 12.5	10.8 13.5	13 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 Strain	9.5 17.9	10.7 18.3	11.8 19.0	16 20
Acceleration	8.5	8.9	9.7	13
Other	11.3	12.8	13.8	16
Wire and eable total	401.4	444.0	A67 F	E22
Wire and cable, total Coaxial cable	<b>401.4</b> 99.5	<b>444.0</b> 113.0	<b>467.5</b> 119.8	<b>523</b> 124
Flat and flexible cable	14.9	18.5	19.6	29
Hook-up wire Magnet wire	99.0 85.0	103.5	107.6 94.0	118 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	415.2	428.7	437
Silicon bipolar, total Small-signal (< 1-W dissipation)	293.8 167.4	353.2 191.8	364.2 186.9	372 127
Power (≥ 1-W dissipation)	126.4	161.4	177.3	245
Germanium bipolar, total Small-signal (< 1-W dissipation)	34.5 12.5	30.0 10.0	28.0 9.0	16 5
Power (≥1-W dissipation)	22.0	20.0	19.0	11
Field-effect Diodes and rectifiers, total	25.5 204.1	32.0	36.5	49
Signal, total	53.1	200.8 48.3	197.7 43.8	188 31
Germanium	5.1	4.3	3.8	1
Silicon Zener, total	48.0 44.5	44.0 45.5	40.0 46.5	30 51
Voltage regulator	36.0	36.5	37.0	39
Reference Rectifiers, total	8.5 106.5	9.0	9.5	12 106
Silicon	79.6	82.0	84.4	90
Selenium, copper-oxide	10.9	11.0	10.0	7
Rectifier assemblies	16.0	14.0	13.0	9
Discrete, special devices, total	121.0	136.3	146.1	168
Thyristors (SCRs, 4-layer diodes, etc.) Tunnel diodes	58.6	70.0	75.6	83
Microwave diodes, total	4.0 16.3	4.0 17.4	3.6 19.1	27
Avalanche	0.5	0.5	0.6	3
P-i-n Gunn	4.5 0.8	5.0 0.8	5.5 1.3	7 3
Varactor	6.8	7.3	7.7	9
Mixer and detector Microwave transistors	3.7	3.8	4.0	5
Tuner varactors (< 1 GHz)	9.5 8.0	11.9	14.8	22 8
Multiple devices				
(duals, diode arrays, Darlingtons, etc.) Other special devices	19.6	20.0	20.0	21
(temperature-sensing, strain-gage, etc.	5.0	5.0	5.0	5
Integrated circuits, total	699.6	1,080.6	1,332.0	1,969
Digital logic, total	460.8	675.4	818.9	1,148
RTL DTL	5.0	4.0	3.5	2
TTL	64.0 204.2	55.0 308.4	47.5 380.8	31 397
ECL MOS I - II - MOS	33.0	38.0	39.6	80
C-MOS and other MOS Semiconductor memory, total	154.6 92.1	270.0 179.0	347.5 240.1	638 468
Read-only (incl. programable), total	36.1	46.4	56.3	102
Bipolar MOS	18.0	21.9	28.7	65
Random-access, total	18.1 35.9	24.5 106.8	27.6 152.8	37 327
Bipolar	11.7	37.8	57.0	126
MOS Shift registers, total	24.2 20.1	69.0 25.8	95.8 31.0	201 39
Bipolar	0.1	0.8	1.0	3
MOS Other digital functions (calculator,	20.0	25.0	30.0	36
decoder, etc.)	19.6	60.0	80.0	100
Analog ICs, total	127.1	166.2	193.0	253
Op amps All other, total	40.0 87.1	47.6 118.6	51.3 141.7	68 185
Industrial types	27.5	35.6	37.0	48
Communication types Consumer types	15.0 21.0	25.0 29.0	31.0	40
Interface types	23.6	29.0	38.0 35.7	42 55
Overland in the				
Optoelectronic devices, total Photovoltaic (solar) cells	<b>39.8</b> 7.0	<b>59.8</b> 7.2	72.0	112
Photoconductive cells	5.0	4.5	7.4 4.4	9
Light-emitting diodes Photodiodes (including arrays)	8.0	18.0	25.0	37
Phototransistors (including arrays)	3.5 7.5	4.5 10.0	5.5 10.8	10 14
Couplers and isolators	5.3	11.6	13.5	25
Silicon targets	3.5	4.0	5.4	13
Multicomponent or hybrid circuits, total	105.8	125.0	148.0	254

# INDUSTRIAL AND COMMERCIAL MARKETS

			(millions	of dollars	;)	-
		1972	1973	1974	1977	
NDUSTRIAL AND COMMERCIA	AL, TOTAL	14,928.8	17,747.0	20,254.4	23,849	
Test and measuring instruments,		1.178.9	1,315.6	1,456.0	1,876	1
Non-microwave instruments,		725.2	806.1	890.5	1,137	
Spectrum analyzers	to tur	19.0	21.0	22.0	30	
Frequency synthesizers		20.3	22.7	24.6	32 14	
Function generators		8.3 26.0	9.2 27.7	10.4 28.0	30	1
Signal generators Sweep generators		7.9	9.0	10.0	13	Н
Pulse generators		10.1	11.5	12.9	17	
Oscillators	listantian maters	2.8 9.0	3.1	3.5 12.0	4 15	1
Waveform analyzers and c Counters, time and freque	istortion meters	27.8	32.1	32.6	39	н
Panel meters, total	incy	29.5	31.0	35.0	42	1
Analog		20.0	19.0	19.5	17	
Digital		9.5 2.7	12.0 3.0	15.5 3.1	25 4	П
Noise-measuring equipme Analog voltmeters, amme	ters and multimeters	16.8	17.0	17.5	17	
Digital multimeters, total	tors and martimeters	37.0	40.8	46.2	56	1
≤3 ½ digit		11.9	14.4	17.1	22	
≥4 ½ digit	tidivo	25.1 8.0	26.4 10.1	29.1 10.6	34 14	3
Calibrators and standards Oscilloscopes, total	, active and passive	158.0	174.7	188.7	238	
Oscilloscopes, non-plu	g-in	80.3	92.5	99.9	126	
Oscilloscopes, plug-in,	main frame only	59.5	62.3	66.7	82	
Oscilloscope accessori	es and plug-ins	18.2 115.0	19.9 122.6	22.1 128.5	30 146	
Recording instruments, to	otai	51.8	55.3	57.0	63	
Magnetic-tape Strip-chart		47.2	49.8	52.0	58	Н
X-Y		16.0	17.5	19.5	25	1
Automatic test equipmen	t, total	108.5 59.5	133.3 76.3	167.3 97.0	265 138	П
IC testers		4.0	4.5	5.3	7	4
Component testers Pc-board testers		45.0	52.5	65.0	120	
Manual component-test e	quipment	3.9	4.0	4.2	5	1
Power supplies, lab and in	idustrial type	75.5 31.1	80.5 33.8	86.0 37.4	95 45	
Amplifiers, total		7.0	9.0	10.1	12	
Lab type Signal conditioners		24.1	24.8	27.3	33	
Phase-measuring equipme	ent	8.0	9.0	10.0	16	П
Microwave instruments, total		108.5	118.7	129.3 18.0	164 23	
Phase-measuring		14.8 9.5	16.0 10.5	11.5	15	
Impedance-measuring Power-measuring		4.3	4.7	5.2	7	
Computerized automatic	microwave-measuring	5.5	7.0	8.5	15	1
Spectrum analyzers		17.1	18.7 1.0	20.4	26 1	П
Wavemeters		7.0	7.9	8.9	12	Н
Frequency counters 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		П
Field intensity maters on	test receivers	1.0	1.0	1.0	1	
Field intensity meters an		1.0 6.0 5.5		1.0 6.8 5.9	1 8 6	
Field intensity meters and Antenna-pattern-measuri Oscillators		6.0	1.0 6.3	6.8	1 8	
Antenna-pattern-measuri		6.0 5.5	1.0 6.3 5.7	6.8 5.9	1 8 6	
Antenna-pattern-measuri		6.0 5.5	1.0 6.3 5.7	6.8 5.9	1 8 6	
Antenna-pattern-measuri Oscillators		6.0 5.5 6.2	1.0 6.3 5.7 6.3	6.8 5.9 6.5	1 8 6 7	
Antenna-pattern-measuri Oscillators  Analytical instruments, total		6.0 5.5	1.0 6.3 5.7 6.3 390.8 55.1	6.8 5.9 6.5 <b>436.2</b> 63.1	1 8 6 7 <b>575</b> 87	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas		6.0 5.5 6.2 345.2 48.2 38.8	1.0 6.3 5.7 6.3 390.8 55.1 42.0	6.8 5.9 6.5 <b>436.2</b> 63.1 45.5	1 8 6 7 <b>575</b> 87 55	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid		6.0 5.5 6.2 345.2 48.2 38.8 9.4	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1	6.8 5.9 6.5 <b>436.2</b> 63.1 45.5 17.6	1 8 6 7 575 87 55 32	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total		6.0 5.5 6.2 345.2 48.2 38.8	1.0 6.3 5.7 6.3 390.8 55.1 42.0	6.8 5.9 6.5 <b>436.2</b> 63.1 45.5	1 8 6 7 575 87 55 32 201 46	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid		6.0 5.5 6.2 345.2 48.2 38.8 9.4 121.5 37.0 54.5	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 40.6 62.0	575 87 555 32 201 46 73	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption		345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 40.6 62.0 26.0	575 87 555 32 201 46 73 54	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others		345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 40.6 62.0 26.0 20.0	575 87 555 87 55 32 201 46 73 54 28	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers	ng	345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 40.6 62.0 26.0	575 87 555 32 201 46 73 54	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance stelectron microscopes	spectrometers	345.2 48.2 38.9 9.4 121.5 37.0 54.5 20.0 10.0 19.5 24.0 14.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 21.8 27.0 21.8 27.0 15.5	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 40.6 62.0 26.0 20.0 26.0 30.0 17.0	575 87 555 32 201 46 73 54 28 32 38 32	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance selectron microscopes pH meters and ion-selective e	spectrometers	6.0 5.5 6.2 345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0 19.5 24.0 14.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0 21.8 27.0 15.5	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 26.0 26.0 30.0 17.0 16.5	575 87 555 32 201 46 73 54 28 32 38 32 22 20	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective e Spectrofluometers	spectrometers	345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0 19.5 24.0 14.0 14.0 9.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0 21.8 27.0 15.5 15.2	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 26.0 30.0 17.0 16.5 14.0	575 87 555 32 201 46 73 54 28 32 38 22 20 17	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective espectrofluometers Spectropolarimeters	spectrometers	6.0 5.5 6.2 345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0 19.5 24.0 14.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0 21.8 27.0 15.5	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 26.0 26.0 30.0 17.0 16.5	575 87 555 32 201 46 73 54 28 32 38 32 22 20	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective e Spectrofluometers	spectrometers electrodes	345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0 19.5 24.0 14.0 9.0 4.0 6.0 2.0	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 58.3 24.0 15.0 21.8 27.0 15.5 15.2 12.0 5.0 8.4 4.0	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 20.0 26.0 30.0 17.0 16.5 14.0 5.9 10.1 5.9	575 87 555 32 201 46 73 54 28 32 38 22 20 17 8 15 8	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective e Spectrofluometers Spectropolarimeters Thermal analyzers, total Differential thermal analy Thermogravimetric analy.	spectrometers electrodes	345.2 48.2 38.8 9.4 121.5 37.0 10.0 19.5 24.0 14.0 9.0 4.0 6.0 2.0 0.8	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0 21.8 27.0 15.5 12.0 5.0 8.4 4.0 0.9	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 26.0 26.0 30.0 17.0 16.5 14.0 5.9 10.1 5.9	575 87 5575 87 532 2011 46 73 54 28 32 20 17 8 15 8	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective espectrofluometers Spectropolarimeters Thermal analyzers, total Differential thermal analy Thermogravimetric analy Differential scanning calo	spectrometers electrodes	6.0 5.5 6.2 345.2 48.2 38.8 9.4 121.5 37.0 54.5 20.0 19.5 24.0 14.0 9.0 4.0 6.0 2.0 0.3 3.2	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 21.8 27.0 5.5 15.2 12.0 6.3 4.0 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3	6.8 5.9 6.5 436.2 63.1 45.5 17.6 148.6 62.0 26.0 26.0 30.0 17.0 16.5 14.0 5.9 9 10.1 5.0 1.1	575 87 555 32 201 46 73 54 28 32 20 17 8 15 8	
Antenna-pattern-measuri Oscillators  Analytical instruments, total Chromatographs, total Gas Liquid Spectrophotometers, total Infrared Ultraviolet—visible Atomic absorption Others Mass spectrometers Nuclear magnetic resonance Electron microscopes pH meters and ion-selective e Spectrofluometers Spectropolarimeters Thermal analyzers, total Differential thermal analy Thermogravimetric analy.	spectrometers electrodes vzers zers zers rimeters	345.2 48.2 38.8 9.4 121.5 37.0 10.0 19.5 24.0 14.0 9.0 4.0 6.0 2.0 0.8	1.0 6.3 5.7 6.3 390.8 55.1 42.0 13.1 135.8 38.5 58.3 24.0 15.0 21.8 27.0 15.5 12.0 5.0 8.4 4.0 0.9	6.8 5.9 6.5 436.2 63.1 45.5 17.6 40.6 62.0 26.0 26.0 26.0 30.0 17.0 16.5 14.0 5.9 10.1 5.9	575 87 5575 87 532 2011 46 73 54 28 32 20 17 8 15 8	

	THE ST		10000		BANK TO THE
		(	millions o	of dollars)	
		1972	1973	1974	1977
Data-processing systems, peripherals,					
office equipment, total			12,445.0		
Data-processing systems, total		5,575.0 350.0	6,605.0 420.0	513.0	8,120 925
Mini (< \$50K) 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-\$1,680	OK)	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		275.0 190.0	325.0 175.0	415.0 165.0	800 125
Core systems Semiconductor systems		85.0	150.0	250.0	675
Data-storage devices, total			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 Magnetic tape and disk cassettes		800.0 52.0	985.0 61.0	1,400.0 73.0	1,900
Input/output peripherals, total		32.0	01.0	73.0	30
(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 50
Computer input/output microfilm Optical character readers		28.0 238.0	35.0 285.0	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 95.0	138 58
Key-to-tape Key-to-disk		110.0 59.0	108.0 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 35.0	255.0 42.0	375.0 68.0	650 175
Interactive graphic terminals 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		50.0	05.0	70.0	0.5
(badge readers, portable units) Other		50.0 10.0	65.0 35.0	70.0 85.0	85 225
Office equipment, total		551.2	680.0	828.1	1,175
Calculators, total		330.5	383.0	438.0	595
Programable		155.5	188.0	228.0	330
Non-programable		175.0	195.0	210.0	265
Dictation equipment Facsimile		82.0 53.7	90.0 64.0	98.0 74.1	130 125
Electronic typesetting		80.0	125.0	176.0	205
Other		5.0	18.0	42.0	60
A STATE OF THE PARTY OF THE PAR			MANUAL MAN	March 1	
Industrial electronic equipment, total		889.5	1,079.5	1,271.2	1 712
Motor controls (speed, torque)			100.5		
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 9.7	26.7 10.0	37 12
Ultrasonic test equipment X-ray test equipment		9.0 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		30.0	33.0	10.0	10
(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 Power supplies, complete equipment		14.0 100.0	17.0 150.0	19.9 185.0	28 210
Power supplies, CEM 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 Analog		250.0 42.5	290.0 41.5	343.0 43.0	516 52
Allaloy		42.5	41.0	43.0	32

		1972	1973	1974	1977
Marine mobile (included Land mobile (included)	luding ground support systems) uding shore stations)	1,743.7 623.5 113.0 19.2 300.2	2,068.2 680.2 115.0 24.1 324.3	2,380.5 718.4 115.0 20.0 360.0	3,076 801 120 23 405
specialized and con Amateur Citizens' band Navigation systems A-m and fm station equ TV-station equipment ( Telemetry (industrial o Switching systems (incl Voice terminals (autodi Paging systems Intercoms Nonbroadcast TV equip CATV, total Studio and head Distribution Transmission lin Converters CCTV, total Cameras Monitors Auxiliary	pripment (except CATV) (except	170.0 11.2 9.9 131.0 19.2 150.3 47.1 180.0 2.0 20.4 120.0 144.2 108.2 21.3 55.2 22.2 9.5 36.0 20.2 6.8 9.0 15.2 290.8 40.0 45.3 60.0 115.0 30.5	194.8 11.5 10.5 136.2 19.6 155.6 50.0 225.0 4.0 22.0 130.0 184.3 144.4 26.0 69.8 31.3 39.9 22.6 7.3 10.0 45.0 45.0 45.0 45.0 45.0 46.0 46.0	200.0 11.9 11.5 140.4 19.0 160.0 55.5 260.0 25.0 138.0 225.6 181.5 31.3 89.0 38.8 22.4 44.1 25.3 7.8 11.0 49.0 110.0 135.0 270.0	225 13 158 22 167 64 350 20 30 150 368 310 57 151 60 42 58 36 9 13 21 925 57 240 220 328 80
Medical equipment, total Diagnostic equipment, X-ray equipment Electroencephalogy Electrocardiograph Ultrasonic scanners Automated blood a Scintillation camer Audiometers Prosthetic equipment, Hearing aids Pacemakers Motorized limbs Therapeutic equipment Z-ray equipment Diathermy, shortw Ultrasonic generato Defibrillators Surgical support equip	aphs s inalyzers as and counters total t, total ave and microwave irs	524.6 380.7 245.0 8.5 16.3 3.4 65.5 32.0 10.0 94.7 50.8 43.0 0.9 35.3 17.0 5.4 7.0 5.9	607.3 427.5 279.5 9.3 17.6 3.8 70.8 34.5 12.0 122.1 61.8 58.5 1.8 45.4 22.0 5.9 7.7 6.8 15.3	673.9 468.7 307.5 10.3 19.0 4.3 76.5 36.6 14.5 140.5 65.8 72.5 2.2 47.3 24.6 6.4 8.5 7.8	871 571 382 13 24 7 85 42 18 209 74 130 5 66 34 9 11 12 25
Nuclear instruments and e Nuclear spectrometers Reactor controls Radiation-detection an equipment, total Detectors (includin Monitors, portable Personal dosimeters	d-monitoring g ion equipment) and fixed	28.9 11.3 9.3 8.3 4.6 1.3 2.4	33.4 12.2 11.1 10.1 5.5 1.6 3.0	37.7 12.6 13.3 11.8 6.2 2.1 3.5	57 15 23 19 9 5
i eradilar dosinieters			0.0	0.0	
Lasers and equipment, tot Gas lasers Semiconductor lasers Other (including ruby, Laser power supplies Modulators	al neodymium-doped, etc.)	34.8 13.5 1.7 12.0 5.8 1.8	41.3 15.8 2.1 15.0 6.4 2.0	49.3 18.5 2.7 18.5 7.2 2.4	75 34 6 20 10 5
Automotive electronics, to Voltage regulators Anti-pollution systems Electronic ignition syst Fuel-injection systems Safety systems, total Anti-skid controls Air-bag sensors and Seat-belt interlocks Radar collision-avoi	tems controls	65.2 42.0 10.0 12.2 1.0 - -	154.2 44.1 20.0 28.0 1.5 60.6 5.0 0.6 55.0	204.7 44.8 35.0 48.0 3.0 73.9 25.0 5.9 42.0	617 45 98 90 80 304 148 100 16 40