

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Form 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended January 30, 1999

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Transition period from _____ to _____

Commission File No. 1-7819

Analog Devices, Inc.
(Exact name of registrant as specified in its charter)

Massachusetts
(State or other jurisdiction of
incorporation or organization)

04-2348234
(I.R.S. Employer
Identification No.)

One Technology Way, Norwood, MA
(Address of principal executive offices)

02062-9106
(Zip Code)

(781) 329-4700
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES NO

The number of shares outstanding of each of the issuer's classes of Common Stock as of February 26, 1999 was 161,344,938 shares of Common Stock.

PART I
FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

ANALOG DEVICES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)
(thousands except per share amounts)

	THREE MONTHS ENDED	
	-----	-----
	JANUARY 30, 1999	JANUARY 31, 1998*
	-----	-----
Net sales	\$300,500	\$317,791
Cost of sales	162,805	154,332
	-----	-----
Gross margin	137,695	163,459
Operating expenses:		
Research and development	52,584	54,975
Selling, marketing, general and administrative	46,181	55,646
	-----	-----
Operating income	38,930	52,838
Equity in loss of WaferTech	1,149	1,590
Interest and other expense, net	420	(767)
	-----	-----
Income before income taxes	37,361	52,015
Provision for income taxes	7,467	11,756
	-----	-----
Income before cumulative effect of change in accounting principle	29,894	40,259
Cumulative effect of change in accounting principle	--	(37,080)
	-----	-----
Net income	\$ 29,894	\$ 3,179
	=====	=====

* Restated to reflect change in accounting principle.

ANALOG DEVICES, INC.
 CONDENSED CONSOLIDATED STATEMENTS OF INCOME (Continued)
 (Unaudited)
 (thousands except per share amounts)

THREE MONTHS ENDED

JANUARY 30, 1999 JANUARY 31, 1998*

Shares used to compute earnings per share - basic	159,572	161,023
	=====	=====
Shares used to compute earnings per share - diluted	176,857	178,146
	=====	=====
Earnings per share before cumulative effect of change in accounting principle		
Earnings per share - basic	\$ 0.19	\$ 0.26
	=====	=====
Earnings per share - diluted	\$ 0.18	\$ 0.24
	=====	=====
Earnings per share after cumulative effect of change in accounting principle		
Earnings per share - basic	\$ 0.19	\$ 0.03
	=====	=====
Earnings per share - diluted	\$ 0.18	\$ 0.03
	=====	=====

* Restated to reflect change in accounting principle.

See accompanying notes.

ANALOG DEVICES, INC.
 CONDENSED CONSOLIDATED BALANCE SHEETS
 (Unaudited)
 (thousands)

Assets	JANUARY 30, 1999	OCTOBER 31, 1998	JANUARY 31, 1998*
	-----	-----	-----
Cash and cash equivalents	\$ 332,403	\$ 263,331	\$ 217,198
Short-term investments	129,670	41,575	76,546
Accounts receivable, net	213,727	207,361	261,272
Inventories:			
Finished goods	96,475	107,313	83,776
Work in process	148,897	142,139	128,587
Raw materials	24,964	25,624	29,145
	-----	-----	-----
Deferred tax assets	270,336	275,076	241,508
Prepaid expenses	98,000	98,148	82,133
	14,638	18,038	19,585
	-----	-----	-----
Total current assets	1,058,774	903,529	898,242
	-----	-----	-----
Property, plant and equipment, at cost:			
Land and buildings	159,617	158,792	158,346
Machinery and equipment	1,043,087	1,034,619	979,570
Office equipment	71,033	70,576	59,910
Leasehold improvements	103,989	103,482	92,617
	-----	-----	-----
	1,377,726	1,367,469	1,290,443
Less accumulated depreciation and amortization	696,475	664,038	595,922
	-----	-----	-----
Net property, plant and equipment	681,251	703,431	694,521
	-----	-----	-----
Investments	88,511	187,224	188,690
Intangible assets, net	15,115	15,815	17,925
Other assets	50,902	51,731	58,415
	-----	-----	-----
Total other assets	154,528	254,770	265,030
	-----	-----	-----
	\$1,894,553	\$1,861,730	\$1,857,793
	=====	=====	=====

* Restated to reflect change in accounting principle.

See accompanying notes.

ANALOG DEVICES, INC.
 CONDENSED CONSOLIDATED BALANCE SHEETS
 (Unaudited)
 (thousands except share amounts)

Liabilities and Stockholders' Equity	JANUARY 30, 1999	OCTOBER 31, 1998	JANUARY 31, 1998*
	-----	-----	-----
Short-term borrowings and current portion of long-term debt	\$ 2,333	\$ 193	\$ 1,489
Obligations under capital leases	14,386	14,266	11,844
Accounts payable	58,000	59,115	95,447
Deferred income on shipments to domestic distributors	101,797	113,784	122,996
Income taxes payable	57,373	53,595	60,525
Accrued liabilities	79,369	79,906	70,648
	-----	-----	-----
Total current liabilities	313,258	320,859	362,949
	-----	-----	-----
Long-term debt	309,871	309,985	310,000
Noncurrent obligations under capital leases	27,150	30,773	35,871
Deferred income taxes	33,000	31,789	24,000
Other noncurrent liabilities	45,119	39,935	32,327
	-----	-----	-----
Total noncurrent liabilities	415,140	412,482	402,198
	-----	-----	-----
Commitments and Contingencies			
Stockholders' equity:			
Preferred stock, \$1.00 par value, 500,000 shares authorized, none outstanding	--	--	--
Common stock, \$.16 2/3 par value, 600,000,000 shares authorized, 164,684,927 shares issued (164,092,719 in October 1998, 162,317,316 in January 1998)	27,448	27,349	27,053
Capital in excess of par value	254,788	248,970	224,800
Retained earnings	944,265	913,992	834,763
Cumulative translation adjustment	7,397	6,025	6,185
	-----	-----	-----
Less 3,763,903 shares in treasury, at cost (3,782,763 in October 1998 and 19,934 in January 1998)	1,233,898	1,196,336	1,092,801
	-----	-----	-----
Total stockholders' equity	67,743	67,947	155
	-----	-----	-----
	1,166,155	1,128,389	1,092,646
	-----	-----	-----
	\$1,894,553	\$1,861,730	\$1,857,793
	=====	=====	=====

* Restated to reflect change in accounting principle.

See accompanying notes.

ANALOG DEVICES, INC.
 CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
 (Unaudited)
 (thousands)

THREE MONTHS ENDED

	JANUARY 30, 1999	JANUARY 31, 1998*
	-----	-----
OPERATIONS Cash flows from operations:		
Net income	\$ 29,894	\$ 3,179
Adjustments to reconcile net income to net cash provided by operations:		
Cumulative effect of change in accounting principle, net of \$20 million of income taxes	--	37,080
Depreciation and amortization	35,156	29,744
Equity in loss of WaferTech, net of dividends	1,149	1,590
Deferred income taxes	1,214	3,274
Other noncash expense	1,165	586
Changes in operating assets and liabilities	(10,221)	(1,282)
	-----	-----
Total adjustments	28,463	70,992
	-----	-----
Net cash provided by operations	58,357	74,171
	-----	-----
INVESTMENTS Cash flows from investments:		
Purchase of short-term investments available for sale	(110,659)	(43,364)
Long-term investments	105,601	(58,110)
Maturities of short-term investments available for sale	22,564	17,824
Additions to property, plant and equipment, net	(12,293)	(62,200)
(Increase) decrease in other assets	2,403	(2,532)
	-----	-----
Net cash provided by (used for) investments	7,616	(148,382)
	-----	-----
FINANCING ACTIVITIES Cash flows from financing activities:		
Proceeds from employee stock plans	4,820	1,283
Payments on capital lease obligations	(3,503)	(2,870)
Net increase in variable rate borrowings	2,030	1,489
	-----	-----
Net cash provided by (used for) financing activities	3,347	(98)
	-----	-----
Effect of exchange rate changes on cash	(248)	1,906
	-----	-----
Net increase (decrease) in cash and cash equivalents	69,072	(72,403)
Cash and cash equivalents at beginning of period	263,331	289,601
	-----	-----
Cash and cash equivalents at end of period	\$ 332,403	\$ 217,198
	=====	=====
SUPPLEMENTAL INFORMATION Cash paid during the period for:		
Income taxes	\$ 2,061	\$ 2,232
	=====	=====
Interest	\$ 4,469	\$ 4,559
	=====	=====

* Restated to reflect change in accounting principle.

See accompanying notes.

Analog Devices, Inc.
Notes to Condensed Consolidated Financial Statements
January 30, 1999

Note 1 - In the opinion of management, the information furnished in the accompanying financial statements reflects all adjustments which are necessary to fairly state the results for this interim period and should be read in conjunction with the Company's Annual Report to Stockholders on Form 10-K for the fiscal year ended October 31, 1998, (1998 Annual Report).

Note 2 - Certain amounts reported in the previous year have been reclassified to conform to the 1999 presentation.

Note 3 - Investments

During the first quarter of fiscal 1999 Analog Devices Inc., (the Company), completed the sale of 14% of its 18% equity ownership in WaferTech, its joint venture with Taiwan Semiconductor Manufacturing Company and other investors. The Company sold 14% of its investment to other WaferTech partners and received \$105 million in cash, which was equal to the carrying value of the 14% equity ownership at October 31, 1998.

Note 4 - Comprehensive Income

In the first quarter of fiscal 1999 the Company adopted Statement of Financial Accounting Standards No. 130, "Reporting Comprehensive Income", (FAS 130). FAS 130 establishes new rules for the reporting and display of comprehensive income and its components. Components of comprehensive income include net income and certain transactions that have generally been reported in the consolidated statement of shareholders' equity. FAS 130 requires that these transactions be included with net income and presented separately as comprehensive income in the financial statements. The adoption of this Statement had no impact on the Company's net income or shareholders' equity and, during the periods presented, the Company had no material transactions other than net income that should be reported as comprehensive income.

Note 5 - Earnings Per Share

The Company adopted Statement of Financial Accounting Standards No. 128, "Earnings per Share," in the first quarter of fiscal 1998. Basic earnings per share is computed based only on the weighted average number of common shares outstanding during the period. Diluted earnings per share is computed using the weighted average number of common shares outstanding during the period, plus the dilutive effect of future issues of common stock relating to stock option programs and convertible debt financing. In calculating diluted earnings per share, the dilutive effect of stock options is computed using the average market price for the period. The following table sets forth the computation of basic and diluted earnings per share:

Note 5 - Earnings Per Share (continued)

	THREE MONTHS ENDED	

	JANUARY 30, 1999	JANUARY 31, 1998*
	-----	-----
Basic:		
Income before cumulative effect of change in accounting principle	\$ 29,894	\$ 40,259
Cumulative effect of change in accounting principle	--	(37,080)
	-----	-----
Net income	\$ 29,894	\$ 3,179
	=====	=====
Weighted shares outstanding	159,572	161,023
	=====	=====
Earnings per share:		
Income before cumulative effect of change in accounting principle	\$ 0.19	\$ 0.26
Cumulative effect of change in accounting principle	--	(0.23)
	-----	-----
Net income	\$ 0.19	\$ 0.03
	=====	=====
Diluted:		
Income before cumulative effect of change in accounting principle	\$ 29,894	\$ 40,259
Interest related to convertible subordinated notes, net of tax	1,425	1,411
	-----	-----
Income before cumulative effect of change in accounting principle including the effect of dilutive securities	31,319	41,670
Cumulative effect of change in accounting principle	--	(37,080)
	-----	-----
Net income	\$ 31,319	\$ 4,590
	=====	=====
Weighted shares outstanding	159,572	161,023
Assumed exercise of common stock equivalents	6,307	6,138
Assumed conversion of subordinated notes	10,978	10,985
	-----	-----
Weighted average common and common equivalent shares	176,857	178,146
	=====	=====
Earnings per share:		
Income before cumulative effect of change in accounting principle	\$ 0.18	\$ 0.24
Cumulative effect of change in accounting principle	--	(0.21)
	-----	-----
Net income	\$ 0.18	\$ 0.03
	=====	=====

* Restated to reflect change in accounting principle.

Note 6 - Convertible Debt

On February 9, 1999 the Company announced that on March 11, 1999 it will redeem in full its 3 1/2% Convertible Subordinated Notes due 2000 (Notes) in the outstanding aggregate principal amount of \$230 million. Prior to redemption, holders may convert their Notes into shares of Analog Devices Inc. (ADI) common stock, at a price of \$20.938 per share. Cash will be paid in lieu of fractional shares. Alternatively, holders may have their Notes redeemed at a total redemption price of \$1,023.72 per \$1000 principal amount of Notes. As of March 11, 1999, \$229,967,000 of the Notes were converted into an aggregate of 10,983,163 shares of the Company's common stock.

Note 7 - Acquisitions

Subsequent to the quarter ended January 30, 1999, the Company acquired two DSP tools companies, White Mountain DSP, Inc. of New Hampshire and Edinburgh Portable Compilers Limited, of Scotland. The total cost of these acquisitions was approximately \$21 million in cash and \$2 million in common stock of the Company, with additional contingent cash consideration to be paid if the acquired companies achieve certain revenue and operational objectives. In connection with these acquisitions, the Company expects to record a charge of less than \$5 million, in the second quarter of fiscal 1999, for the write-off of in-process Research & Development.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This information should be read in conjunction with the unaudited consolidated condensed financial statements and the notes thereto included in Item 1 of this Quarterly Report and the audited consolidated financial statements and notes thereto and Management's Analysis for the fiscal year ended October 31, 1998, contained in the Company's 1998 Annual Report.

The following discussion and analysis may contain forward-looking statements. Such statements are subject to certain risks and uncertainties, including those discussed below or in the Company's 1998 Annual Report, that could cause actual results to differ materially from the Company's expectations. Readers are cautioned not to place undue reliance on any forward-looking statements, as they reflect management's analysis only as of the date hereof. The Company undertakes no obligation to release the results of any revision to these forward-looking statements which may be made to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Results of Operations

The Company experienced strong demand in the first half of fiscal 1998, which declined in the second half of the year primarily due to a cyclical downturn in the semiconductor industry. Demand during the first quarter of fiscal 1999 recovered somewhat from sales levels that were very depressed in the second half of fiscal 1998. As a result, net sales for the first quarter of fiscal 1999 were \$301 million, 1% above the fourth quarter of fiscal 1998 but \$17 million or 5% below the first quarter of fiscal 1998. This decline from the prior year was mainly due to a decrease in analog IC sales, primarily caused by a decline in sales to automatic test equipment (ATE) customers. These decreases were partially offset by increased sales of communications and computer products.

The decline in ATE sales primarily impacted the North American OEM channel, causing sales to North American customers to decrease to 46.9% of total sales for the first quarter of fiscal 1999, compared to 50.7% for the year earlier period. Sales in Europe and Japan declined in comparison to the first quarter of fiscal 1998 and Southeast Asian sales rose as a result of increased sales of analog IC and communications products.

Gross margin for the first quarter of fiscal 1999 was 45.8% compared to 51.4% for the first quarter of fiscal 1998. The decrease in gross margin from the prior year period was primarily due to a reduction in production rates resulting from lower demand. The Company expects that gross margin will continue to be adversely impacted by lower production rates until sales growth resumes.

Research and development (R&D) expenses were \$53 million for the three months ended January 30, 1999, compared to \$55 million for the three months ended January 31, 1998. This decline was attributable to the Company's decision to curtail the growth in R&D spending until sales growth resumes. However, the Company believes that a continued commitment to research and development is essential in order to maintain product leadership in its existing products and to provide innovative new product offerings, and therefore expects to continue to make significant investments in research and development in the future.

Selling, marketing, general & administrative (SMG&A) expenses were \$46 million in the first quarter of fiscal 1999, compared to \$56 million for the first quarter of fiscal 1998. Of the \$10 million decrease, \$8 million was attributable to a charge that was recorded in the first quarter of fiscal 1998 related to collection difficulties the Company experienced with customers whose business and financing had been adversely affected by the Southeast Asia economic situation. The remainder of the decrease resulted from the Company's continued effort to constrain spending.

The effective income tax rate decreased from 22.6% for the first three-month period of fiscal 1998 to 20% for the first three-month period of fiscal 1999 primarily due to a shift in the mix of worldwide profits.

In the fourth quarter of fiscal 1998, the Company changed its accounting method for recognizing revenue on all shipments to international distributors and certain shipments to domestic distributors. The change was made with an effective date of November 2, 1997 (the beginning of fiscal 1998). While the Company has historically deferred revenue on most shipments made to domestic distributors until the products were resold by the distributors to end users, it recognized revenue on shipments to international distributors and certain shipments to domestic distributors upon shipment to the distributors, net of appropriate reserves for returns and allowances. As a result of this accounting change, revenue recognition on shipments to distributors worldwide is deferred until the products are resold to the end users. The Company believes that deferral of revenue on shipments to distributors and related gross margin until the product is shipped by the distributors is a more meaningful measurement of results of operations because it better conforms to the substance of the transaction considering the changing business environment in the international marketplace; is consistent with industry practice; and will, accordingly, better focus the entire organization on sales to end users and, therefore, is a preferable method of accounting. The cumulative effect in prior years of the change in accounting principle was a charge of approximately \$37 million (net of \$20 million of income taxes) or \$0.21 per diluted share. The results of operations and cash flows for the period ended January 31, 1998 have been restated to reflect the accounting change.

Liquidity and Capital Resources

At January 30, 1999, cash, cash equivalents and short-term investments totaled \$462 million, an increase of \$157 million from the fourth quarter of fiscal 1998 and an increase of \$168 million from the first quarter of fiscal 1998. The increase in cash, cash equivalents and short-term investments was primarily due to operating cash inflows, \$105 million received in January 1999 related to the sale of the Company's investment in WaferTech and lower capital spending. Cash provided by operating activities was \$58 million or 19% of sales in the first quarter of fiscal 1999 compared to \$74 million or 23% of sales in the first quarter of fiscal 1998.

Accounts receivable totaled \$214 million at the end of the first quarter of fiscal 1999, an increase of \$6 million from the fourth quarter of fiscal 1998 and a decrease of \$48 million from the first quarter of fiscal 1998. The Company's days sales outstanding has improved from 75 at January 31, 1998 to 65 at January 30, 1999.

Inventories of \$270 million at January 30, 1999 declined \$5 million compared to the fourth quarter of fiscal 1998 and were \$29 million higher than the end of the first quarter of fiscal 1998. The increase in inventory levels from the prior year period was a result of production rates in the first half of fiscal 1998 that did not anticipate the downturn in the second half of fiscal 1998. The Company has since adjusted production rates to conform to current levels of demand.

During the first quarter of fiscal 1999 the Company completed the sale of 14% of its 18% equity ownership in WaferTech, its joint venture with Taiwan Semiconductor Manufacturing Company and other investors. The Company sold 14% of its investment to other WaferTech partners and received \$105 million in cash, which was equal to the carrying value of the 14% equity ownership at October 31, 1998.

Net additions to property, plant and equipment of \$12 million for the first quarter of fiscal 1999 were funded with a combination of cash on hand and cash generated from operations. The first quarter's level of spending was down substantially from the \$62 million spent in the first quarter of fiscal 1998. The decrease in capital expenditures was attributable to the Company's efforts to constrain all spending, including capital expenditures, until sales growth resumes. The Company currently plans to make capital expenditures of approximately \$100 million during fiscal 1999.

At January 30, 1999, the Company's principal sources of liquidity were \$462 million of cash and cash equivalents and short-term investments. In addition, the Company has various lines of credit both in the U.S. and overseas, including a \$60 million credit facility in the U.S., which expires in 2000, all of which were substantially unused at January 30, 1999. At January 30, 1999, the Company's debt-to-equity ratio was 30%.

The Company believes that its existing sources of liquidity and cash expected to be generated from future operations, together with current and anticipated available long-term financing, will be sufficient to fund operations, capital expenditures and research and development efforts for the foreseeable future.

Factors Which May Affect Future Results

The Company's future operating results are difficult to predict and may be affected by a number of factors including the timing of new product announcements or introductions by the Company and its competitors, competitive pricing pressures, fluctuations in manufacturing yields, adequate availability of wafers and manufacturing capacity, changes in product mix and economic conditions in the United States and international markets, and the outcome and impact of the Year 2000. In addition, the semiconductor market has historically been cyclical and subject to significant economic downturns at various times. The Company's business is subject to rapid technological changes and there can be no assurance, depending on the mix of future business, that products stocked in inventory will not be rendered obsolete before they are shipped by the Company. As a result of these and other factors, there can be no assurance that the Company will not experience material fluctuations in future operating results on a quarterly or annual basis.

The Company's success depends in part on its continued ability to develop and market new products. There can be no assurance that the Company will be able to develop and introduce new products in a timely manner or that such products, if developed, will achieve market acceptance. In addition, the Company's growth is dependent on its continued ability to penetrate new markets such as the communications, computer and automotive segments of the electronics market, where the Company has limited experience and competition is intense. There can be no assurance that the markets being served by the Company will grow in the future; that the Company's existing and new products will meet the requirements of such markets; that the Company's products will achieve customer acceptance in such markets; that competitors will not force prices to an unacceptably low level or take market share from the Company; or that the Company can achieve or maintain profits in these markets. Also, some of the customers in these markets are less well established which could subject the Company to increased credit risk.

The semiconductor industry is intensely competitive. Certain of the Company's competitors have greater technical, marketing, manufacturing and financial resources than the Company. The Company's competitors also include emerging companies attempting to sell products to specialized markets such as those served by the Company. Competitors of the Company have, in some cases, developed and marketed products having similar design and functionality as the Company's products. There can be no assurance that the Company will be able to compete successfully in the future against existing or new competitors or that the Company's operating results will not be adversely affected by increased price competition.

The Company has substantially increased its manufacturing capacity through both expansion of its production facilities and increased access to third-party foundries. However, the Company cannot be sure that it will not encounter unanticipated production problems at either its own facilities or at third-party foundries, or that the increased capacity will be sufficient to satisfy demand for its products. The Company relies, and plans to continue to rely, on assembly and test subcontractors and on third-party wafer fabricators to supply most of its wafers that can be manufactured using industry-standard digital processes, and such reliance involves several risks, including reduced control over delivery schedules, manufacturing yields and costs. In addition, the Company's

capacity additions resulted in a significant increase in operating expenses, and if revenue levels do not increase to offset these additional expense levels, the Company's future operating results could be adversely affected. In addition, asset values could be impaired if the additional capacity is underutilized for an extended period of time. Also, non-compliance with "take or pay" covenants in certain of its supply agreements, could adversely impact operating results. The Company also believes that other semiconductor manufacturers have expanded their production capacity over the past several years, and there can be no assurance that the expansion by the Company and its competitors will not lead to overcapacity in the Company's target markets, which could lead to price erosion that would adversely affect the Company's operating results.

For the first three months of fiscal 1999, 53% of the Company's revenues was derived from customers in international markets. The Company has manufacturing facilities outside the U.S. in Ireland, the Philippines and Taiwan. The Company also has supply agreements that include "take or pay" covenants with suppliers located in Southeast Asia (SEA) and as part of these arrangements, the Company has \$23 million on deposit with two of these suppliers. The Company also has a \$21 million investment in one of these suppliers. In addition, the Company's major partner in its joint venture, WaferTech, is TSMC, which is located in SEA. In addition to being exposed to the ongoing economic cycles in the semiconductor industry, the Company is also subject to the economic and political risks inherent in international operations, including the risks associated with the ongoing uncertainties in the economies in SEA. These risks include air transportation disruptions, expropriation, currency controls and changes in currency exchange rates, tax and tariff rates and freight rates. Although the Company engages in certain hedging transactions to reduce its exposure to currency exchange rate fluctuations, there can be no assurance that the Company's competitive position will not be adversely affected by changes in the exchange rate of the U.S. dollar against other currencies.

The semiconductor industry is characterized by frequent claims and litigation involving patent and other intellectual property rights. The Company has from time to time received, and may in the future receive, claims from third parties asserting that the Company's products or processes infringe their patents or other intellectual property rights. In the event a third party makes a valid intellectual property claim and a license is not available on commercially reasonable terms, the Company's operating results could be materially and adversely affected. Litigation may be necessary to enforce patents or other intellectual property rights of the Company or to defend the Company against claims of infringement, and such litigation can be costly and divert the attention of key personnel. See the Company's 1998 Annual Report for information concerning certain pending litigation involving the Company. An adverse outcome in such litigation, may, in certain cases, have a material adverse effect on the Company's consolidated financial position or on its consolidated results of operations or cash flows in the period in which the litigation is resolved.

The Company's software applications have been updated to accommodate the new Euro currency. System testing was completed during the fourth quarter of calendar 1998 and the Euro functionality was implemented as planned on January 1, 1999. No major system-related issues were encountered and none are anticipated. The impact, either positive or negative, of the Euro on the European economy generally and on the Company's operations in Europe in the future is unknown at this time.

Because of these and other factors, past financial performance should not be considered an indicator of future performance. Investors should not use historical trends to anticipate future results and should be aware that the trading price of the Company's common stock may be subject to wide fluctuations in response to quarter-to-quarter variations in operating results, general conditions in the semiconductor industry, changes in earnings estimates and recommendations by analysts or other events.

Year 2000

Over the past five years the Company has made significant investments in new manufacturing, financial and operating hardware and software. These investments were made to support the growth of its operations; however, the by-product of this effort is that the Company now has year 2000, (Y2K), compliant hardware and software running on many of its major platforms.

The Company has made the year 2000 issue a significant priority and a task force is engaged in the ongoing effort to reduce the year 2000 related risk in the balance of the Company's systems and equipment. It is estimated that the aggregate cost of this project, which commenced at the beginning of fiscal 1998, is approximately \$10 million in total, for fiscal 1998 and fiscal 1999. The task force's efforts are concentrated in six separate areas. The status of each area as of January 30, 1999 is summarized below.

Centrally Managed Global Systems

Centrally managed global systems are the enterprisewide, centrally managed operating systems, which include customer service, customer order entry, work-in-progress (WIP) tracking, warehousing, production planning, and financial systems. These systems have been split into "mission critical" and "non-mission critical." Mission critical is defined as systems that can seriously impair the Company's ability to conduct its business. Of the 15 mission critical applications identified as of August 1, 1998, three systems were not Y2K compliant: Promis (WIP tracking), the order entry system in Japan and the Electronic Data Interchange (EDI) translator. Since that time Promis system upgrades have been completed in three of the five manufacturing sites, and the remaining two are scheduled to be upgraded in early 1999. The migration to SAP for order entry in Japan and the upgrade of the EDI translator were successfully completed in the first quarter of fiscal 1999. Once the remaining two Promis systems are upgraded, all mission critical systems will be 100% compliant. In addition, several mission critical systems, such as SAP, Forecasting, Data Warehouse and Distributor Management systems have been specifically tested and certified to be year 2000 compliant. The Company is on schedule towards retiring its non-compliant mainframe in early 1999. Non-mission critical is defined as systems which would not cause serious impairment to the organization. The task force is continually reviewing and re-prioritizing the non-mission critical systems to ensure that the appropriate items are receiving the proper attention.

Design and Engineering Systems

The Company's Computer Aided Design (CAD) Council is leading a worldwide year 2000 compliance review of hardware and software related to the Company's design and engineering systems. The team has completed its analysis and the required updates to CAD operating systems are 75% complete. All operating systems are expected to be fully Y2K compliant by the end of the third quarter of fiscal 1999. Critical CAD application software upgrade packages have been vendor certified Y2K compliant and migration to, and testing of, these new packages will proceed over the next 6 to 8 months. The Company routinely completes full archives of all designs that are currently shipping, or in development, to enable the recovery of any design database needed for future derivative products. This archive system is currently undergoing compliancy testing and will be verified Y2K compliant by the third quarter of fiscal 1999. The Company believes that if all design engineering systems are not compliant in time, this will result in inconvenience and inefficiencies rather than any significant risk to operations.

Site Based Manufacturing Systems

Manufacturing site managers are committed to ensuring a successful transition of operations in the year 2000. All critical manufacturing equipment has been identified and analyzed. The analysis process included ensuring that date compliance is necessary. The Company is considering "rolling back" the internal date mechanism as a contingency plan for certain equipment and the task force is

in the process of testing the effectiveness of this contingency plan. All manufacturing sites are performing Y2K compliance testing and this effort is expected to be complete by the end of March 1999. All testing is being done to the latest vendor specifications and the Company is using the suite of test programs provided by Sematech, a semiconductor research organization. Thus far, no crucial piece of equipment has been identified where there is a Y2K compliance problem for which no solution exists. In all instances where a Y2K compliance issue has arisen, the Company has been able to develop a solution, without having to replace the equipment. While the review is not yet complete, the Company does not foresee any manufacturing equipment-related obstacles which would prevent the continuation of operations in Year 2000.

Personal Computers (PCs)

The Company has a PC Standards Committee, comprised of participants from various Company locations. This committee has selected a tool and developed a hardware and software certification plan. This plan requires certification of PC Basic Input/Output System (BIOS), software applications and user files. The Company has certified the BIOS on its 3,500 networked PCs first quarter of 1999 and less than 2% were found to be non-Y2K compliant. The Company will also issue a tool to assist users in analyzing their data files for potential year 2000 issues. In addition, a year 2000 "patch" is available for the Microsoft Office Suite (Excel, Word and Access) and this is scheduled to be implemented in April 1999. The Company does not foresee any year 2000 issues in this area.

Facility Related Systems

Systems such as heating, sprinklers, elevators and card-key access are also being reviewed by site teams. Each team has a designated facilitator and there are representatives from each department participating. All of the teams have taken a thorough inventory of their site's systems and the Company expects to be 100% compliant, with 80% of the facility systems to be compliant by the second quarter of 1999.

Third Party

The corporate year 2000 task force is also reviewing third-party connectivity issues. The Company's EDI translator supplier, Harbinger, has been successfully tested for Y2K compliance. The EDI carrier, GEIS, has notified the Company that it is compliant as well. Other external service providers, primarily financial and human resource services, as well as outside vendors, have also been surveyed as to their state of readiness and most expect to be Y2K compliant. The Company has identified 200 crucial, sole-source suppliers that could put Analog at risk and is currently conducting on site audits to verify their state of readiness for Y2K. As a contingency plan the Company is going to ensure that adequate supplies of critical raw materials and spare parts are in stock at December 31, 1999. In addition, the Company tested its financial interface with its major financial services provider for Y2K compliance, and the results were successful.

The Company currently believes that its most reasonably likely worst case year 2000 scenario would relate to problems with systems of third parties which would create the greatest risks with infrastructure, including water and sewer services, electricity, transportation, telecommunications and critical supplies of raw materials and spare parts. The Company is assessing various scenarios and contingency planning will continue during 1999 as the Company completes the remedial work on its internal systems and assesses the state of readiness of its third-party suppliers.

Summary

The Company believes that the year 2000 issue will not pose significant operational problems. However, year 2000 issues could have a significant impact on the Company's operations and its financial results if modifications to internal systems and equipment cannot be completed on a timely basis; unforeseen needs or problems arise; or if the systems operated by third parties are not year 2000 compliant.

PART II - OTHER INFORMATION
ANALOG DEVICES, INC.

Item 6. Exhibits and reports on Form 8-K

- (a) See Exhibit Index.
- (b) There were no reports on Form 8-K filed for the three months ended January 30, 1999.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Analog Devices, Inc.

(Registrant)

Date: March 15, 1999

By: /s/ Jerald G. Fishman

Jerald G. Fishman
President and
Chief Executive Officer
(Principal Executive Officer)

Date: March 15, 1999

By: /s/ Joseph E. McDonough

Joseph E. McDonough
Vice President-Finance
and Chief Financial Officer
(Principal Financial and
Accounting Officer)

EXHIBIT INDEX
Analog Devices, Inc.

Item

- 3.1 Restated Articles of Organization of Analog Devices, Inc., filed herewith.
- 10.1 Assignment and Assumption Agreement between Analog Devices Inc. and Taiwan Semiconductor Manufacturing Co., Ltd., dated as of January 28, 1999, filed herewith.
- 10.2 Assignment and Assumption Agreement between Analog Devices Inc. and Altera Corporation dated as of January 29, 1999, filed herewith.
- 10.3 Amendment to Second Amended and Restated Limited Liability Company Agreement of WaferTech LLC, dated as of November 30, 1998, filed herewith.
- 10.4 Second Amendment to Second Amended and Restated Limited Liability Company Agreement of WaferTech LLC, dated as of January 21, 1999, filed herewith.
- 27.1 Financial Data Schedule for the three months ended January 30, 1999.
- 27.2 Restated Financial Data Schedule for the three months ended January 31, 1998.
- 27.3 Restated Financial Data Schedule for the six months ended May 2, 1998.
- 27.4 Restated Financial Data Schedule for the nine months ended August 1, 1998.

Examiner

Name
Approved

C []
P []
M [X]
R.A. []

22

P.C.

FEDERAL IDENTIFICATION
No. 04-2348234

THE COMMONWEALTH OF MASSACHUSETTS

WILLIAM FRANCIS GALVIN
Secretary of the Commonwealth
One Ashburton Place, Boston, Massachusetts 02108-1512

RESTATED ARTICLES OF ORGANIZATION
(General Laws, Chapter 156B, Section 74)

We, Jerald G. Fishman, *President,
and Paul P. Broutas, *Clerk,
of Analog Devices, Inc.,
(Exact name of corporation)

located at One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
(Street address of corporation Massachusetts)

do hereby certify that the following Restatement of the Articles of Organization
was duly adopted at a meeting held on June 10, 19 98 by a vote of the
directors

_____ shares of _____ of _____ shares outstanding,
(type, class & series, if any)

_____ shares of _____ of _____ shares outstanding, and
(type, class & series, if any)

_____ shares of _____ of _____ shares outstanding,
(type, class & series, if any)

**being at least a majority of each type, class or series outstanding and
entitled to vote thereon; / **being at least two-thirds of each type, class or
series outstanding and entitled to vote thereon and of each type, class or
series of stock whose rights are adversely affected thereby:

ARTICLE I
The name of the corporation is:
Analog Devices, Inc.

ARTICLE II
The purpose of the corporation is to engage in the following business
activities:
See Attachment 2

*Delete the Inapplicable words. **Delete the inapplicable clause.
Note: If the space provided under any article or item on this form is
insufficient, additions shall be set forth on separate 8 1/2 x 11 sheets of
paper, with a left margin of at least 1 inch. Additions to more than one article
may be made on a single sheet so long as each article requiring each addition is
clearly indicated.

ARTICLE III

State the total number of shares and par value, if any, of each class of stock which the corporation is authorized to issue:

WITHOUT PAR VALUE		WITH PAR VALUE		
TYPE	NUMBER OF SHARES	TYPE	NUMBER OF SHARES	PAR VALUE
Common:		Common:	600,000,000	\$.16 2/3
Preferred:		Preferred:	*471,934	\$1.00
		(Series A Junior Participating Preferred	300,000	\$1.00)

*The number of Preferred Shares has been adjusted to reflect the cancellation of 28,066 shares of Preferred Stock that were issued and retired.

ARTICLE IV

If more than one class of stock is authorized, state a distinguishing designation for each class. Prior to the issuance of any shares of a class, if shares of another class are outstanding, the corporation must provide a description of the preferences, voting powers, qualifications, and special or relative rights or privileges of that class and of each other class of which shares are outstanding and of each series then established within any class.

See Attachment 4

ARTICLE V

The restrictions, if any, imposed by the Articles of Organization upon the transfer of shares of stock of any class are:

None

ARTICLE VI

**Other lawful provisions, if any, for the conduct and regulation of the business and affairs of the corporation, for its voluntary dissolution, or for limiting, defining, or regulating the powers of the corporation, or of its directors or stockholders, or of any class of stockholders:

See Attachment 6

**If there are no provisions state "None".

Note: The preceding six (6) articles are considered to be permanent and may ONLY be changed by filing appropriate Articles of Amendment.

ARTICLE VII

The effective date of the restated Articles of Organization of the corporation shall be the date approved and filed by the Secretary of the Commonwealth. If a later effective date is desired, specify such date which shall not be more than thirty days after the date of filing.

ARTICLE VIII

The information contained in Article VIII is not a permanent part of the Articles of Organization.

a. The street address (post office boxes are not acceptable) of the principal office of the corporation in Massachusetts is:

One Technology Way, Norwood, MA 02062-9106

b. The name, residential address and post office address of each director and officer of the corporation is as follows:

NAME	RESIDENTIAL ADDRESS	POST OFFICE ADDRESS
------	---------------------	---------------------

President:

Treasurer:

Clerk: See Attachment 8

Directors:

c. The fiscal year (i.e., tax year) of the corporation shall end on the last day of the month of: October

d. The name and business address of the resident agent, if any, of the corporation is:

**We further certify that the foregoing Restated Articles of Organization affect no amendments to the Articles of Organization of the corporation as heretofore amended, except amendments to the following articles. Briefly describe amendments below:

SIGNED UNDER THE PENALTIES OF PERJURY, this 29 day of June, 1998

/s/ Jerald G. Fishman *President

/s/ Paul P. Brontas *Clerk

*Delete the inapplicable words. **If there are no amendments, state 'None'.

THE COMMONWEALTH OF MASSACHUSETTS
RESTATED ARTICLES OF ORGANIZATION
(General Laws, Chapter 156B, Section 74)

=====

I hereby approve the within Restated Articles of Organization and, the filing fee in the amount of \$200 having been paid, said articles are deemed to have been filed with me this 1st day of July, 1998.

Effective Date: _____

/s/ WILLIAM FRANCIS GALVIN

WILLIAM FRANCIS GALVIN
Secretary of the Commonwealth

TO BE FILLED IN BY CORPORATION
Photocopy of document to be sent to:

Donna A. Pace

Corporate Paralegal
Hale and Dorr LLP

60 State Street
Boston, MA 02109

Telephone: (617) 526-5179

ATTACHMENT 4

4. If more than one class is authorized, a description of each of the different classes of stock with, if any, the preferences, voting powers, qualifications, special or relative rights or privileges as to each class thereof and any series now established:

RIGHTS, PREFERENCES, LIMITATIONS AND RESTRICTIONS ON CAPITAL STOCK.

The following is a statement of the designations and the powers, preferences and rights and the qualifications, limitations or restrictions thereof, in respect of the authorized capital stock of the corporation.

A. ISSUANCE IN SERIES.

The Preferred Stock may be issued in one or more series at such time or times and for such consideration or considerations as the Board of Directors may determine. Each series shall be so designated as to distinguish the shares thereof from the shares of all other series and classes. Except as to the relative rights and preferences referred to in paragraph B below, in respect of any or all of which there may be variations between different series, all shares of Preferred Stock shall be identical. Different series of Preferred Stock shall not be construed to constitute different classes of shares for the purpose of voting by classes.

B. I. AUTHORITY TO ESTABLISH VARIATIONS BETWEEN SERIES.

The Board of Directors is expressly authorized, subject to the limitations prescribed by law and the provisions of these Articles of Organization, to provide by adopting a vote or votes, a certificate of which shall be filed in accordance with the Business Corporation Law of the Commonwealth of Massachusetts, for the issue of the Preferred Stock in one or more series, each with such designations, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions thereof as shall be stated in the vote or votes creating such series. The authority of the Board of Directors with respect to each such series shall include without limitation of the foregoing the right to determine and fix:

(1) The distinctive designation of such series and the number of shares to constitute such series;

(2) The rate at which dividends on the shares of such series shall be declared and paid, or set aside for payment, whether dividends at the rate so determined shall be cumulative, and whether the shares of such series shall be entitled to any participating or other dividends in addition to dividends at the rate so determined, and if so on what terms;

(3) The right, if any, of the corporation to redeem shares of the particular series and, if redeemable, the price, terms and manner of such redemption;

(4) The special and relative rights and preferences, if any, and the amount or amounts per share, which the shares of such series shall be entitled to receive upon any voluntary or involuntary liquidation, dissolution or winding up of the corporation;

(5) The terms and conditions, if any, upon which shares of such series shall be convertible into, or exchangeable for, shares of stock of any other class or classes, including the price or prices or the rate or rates of conversion or exchange and the terms of adjustment, if any;

(6) The obligation, if any, of the corporation to retire or purchase shares of such series pursuant to a sinking fund or fund of a similar nature or otherwise, and the terms and conditions of such obligation;

(7) Voting rights, if any, provided that the shares of all series with voting rights shall not have more than one vote per share;

(8) Limitations, if any, on the issuance of additional shares of such series or any shares of any other series of Preferred Stock; and

(9) Such other preferences or restrictions or qualifications thereof as the Board of Directors may deem advisable and are not inconsistent with law and the provisions of these Articles.

II. SERIES A JUNIOR PARTICIPATING PREFERRED STOCK.

Pursuant to the authority vested in the Board of Directors of the Corporation by Article 4 of these Articles, the Board of Directors has designated a series of Preferred Stock, \$1.00 par value per shares (the "Preferred Stock"), of the Corporation and hereby states the designation, and number of shares, and fixes the relative rights, preferences and limitations thereof as follows:

SERIES A JUNIOR PARTICIPATING PREFERRED STOCK:

Section 1. DESIGNATION AND AMOUNT. The shares of such series shall be designated as "Series A Junior Participating Preferred Stock" (the "Series A Preferred Stock") and the number of shares constituting the Series A Preferred Stock shall be three hundred thousand (300,000). Such number of shares may be increased or decreased by resolution of the Board of Directors prior to issuance; PROVIDED, that no decrease shall reduce the number of shares of Series A Preferred Stock to a number less than the number of shares then outstanding plus the number of shares reserved for issuance upon the exercise of outstanding options, rights or warrants or upon the conversion of any outstanding securities issued by the Corporation convertible into Series A Preferred Stock.

Section 2. DIVIDENDS AND DISTRIBUTIONS.

(A) Subject to the rights of the holders of any shares of any series of Preferred Stock (or any similar stock) ranking prior and superior to the Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock, in preference to the holders of Common Stock, par value \$16 2/3 per share (the "Common Stock"), of the Corporation, and of any other junior stock, shall be entitled to receive, when, as and if declared by the Board of Directors out of funds of the Corporation legally available for the payment of dividends, quarterly dividends payable in cash on the last day of each fiscal quarter of the Corporation in each year (each such date being referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series A Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) \$100 or (b) subject to the provision for adjustment hereinafter set forth, 1,000 times the aggregate per share amount of all cash dividends, and 1,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions, other than a dividend payable in shares of Common Stock or a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise), declared on the Common Stock since the immediately preceding Quarterly Dividend Payment Date or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (b) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series A Preferred Stock payable in shares of Series A Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series A Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series A Preferred Stock) into a greater or lesser number of shares of Series A Preferred Stock, then in each such case the amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (b) of the first sentence of this Section 2(A) shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series A Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series A Preferred Stock outstanding immediately after such event.

(B) The Corporation shall declare a dividend or distribution on the Series A Preferred Stock as provided in paragraph (A) of this Section immediately after it

declares a dividend or distribution on the Common Stock (other than a dividend payable in shares of Common Stock) and the Corporation shall pay such dividend or distribution on the Series A Preferred Stock before the dividend or distribution declared on the Common Stock is paid or set apart; provided that, in the event no dividend or distribution shall have been declared on the Common Stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$100 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.

(C) Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board of Directors may fix a record date for the determination of holders of shares of Series A Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than 60 days prior to the date fixed for the payment thereof.

Section 3. VOTING RIGHTS. The holders of shares of Series A Preferred Stock shall have the following voting rights:

(A) Subject to the provision for adjustment hereinafter set forth, each share of Series A Preferred Stock shall entitle the holder thereof to 1,000 votes on all matters submitted to a vote of the stockholders of the Corporation. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the number of votes per share to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event shall be adjusted by multiplying such number by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series A Preferred Stock payable in shares of Series A Preferred Stock, or effect a

subdivision, combination or consolidation of the outstanding shares of Series A Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series A Preferred Stock) into a greater or lesser number of shares of Series A Preferred Stock, then in each such case the number of votes per share to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series A Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series A Preferred Stock outstanding immediately after such event.

(B) Except as otherwise provided herein, in the Articles of Organization or by law, the holders of shares of Series A Preferred Stock and the holders of shares of Common Stock and any other capital stock of the Corporation having general voting rights shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(C) (i) If at any time dividends on any Series A Preferred Stock shall be in arrears in an amount equal to six quarterly dividends thereon, the holders of the Series A Preferred Stock, voting as a separate series from all other series of Preferred Stock and classes of capital stock, shall be entitled to elect two members of the Board of Directors in addition to any Directors elected by any other series, class or classes of securities and the authorized number of Directors will automatically be increased by two. Promptly thereafter, the Board of Directors of the Corporation shall, as soon as may be practicable, call a special meeting of holders of Series A Preferred Stock for the purpose of electing such members of the Board of Directors. Such special meeting shall in any event be held within 45 days of the occurrence of such arrearage.

(ii) During any period when the holders of Series A Preferred Stock, voting as a separate series, shall be entitled and shall have exercised their right to elect two Directors, then, and during such time as such right continues, (a) the then authorized number of Directors shall be increased by two, and the holders of Series A Preferred Stock, voting as a separate series, shall be entitled to elect the additional Directors so provided for, and (b) each such additional Director shall not be a member of any existing class of the Board of Directors, but shall serve until the next annual meeting of stockholders for the election of Directors, or until his successor shall be elected and shall qualify, or until his right to hold such office terminates pursuant to the provisions of this Section 3(C).

(iii) A Director elected pursuant to the terms hereof may be removed with or without cause by the holders of Series A Preferred Stock entitled to vote in an election of such Director.

(iv) If, during any interval between annual meetings of stockholders for the election of Directors and while the holders of Series A Preferred Stock shall be entitled to elect two Directors, there is no such Director in office by reason of resignation, death or removal, then, promptly thereafter, the Board of Directors shall

call a special meeting of the holders of Series A Preferred Stock for the purpose of filling such vacancy and such vacancy shall be filled at such special meeting. Such special meeting shall in any event be held within 45 days of the occurrence of such vacancy.

(v) At such time as the arrearage is fully cured, and all dividends accumulated and unpaid on any shares of Series A Preferred Stock outstanding are paid, and, in addition thereto, at least one regular dividend has been paid subsequent to curing such arrearage, the term of office of any Director elected pursuant to this Section 3(C), or his successor, shall automatically terminate, and the authorized number of Directors shall automatically decrease by two, the rights of the holders of the shares of the Series A Preferred Stock to vote as provided in this Section 3(C) shall cease, subject to renewal from time to time upon the same terms and conditions, and the holders of shares of the Series A Preferred Stock shall have only the limited voting rights elsewhere herein set forth.

(D) Except as set forth herein, or as otherwise provided by law, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of Common Stock as set forth herein) for taking any corporate action.

Section 4. CERTAIN RESTRICTIONS.

(A) Whenever quarterly dividends or other dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred Stock outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends, or make any other distributions, on any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

(ii) declare or pay dividends, or make any other distributions, on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) redeem or purchase or otherwise acquire for consideration shares of any stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such junior stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

(iv) redeem or purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of stock ranking on a parity with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(B) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under paragraph (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

Section 5. REACQUIRED SHARES. Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and cancelled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of Preferred Stock and may be reissued as part of a new series of Preferred Stock subject to the conditions and restrictions on issuance set forth herein, in the Articles of Organization, or in any other Certificate of Designations creating a series of Preferred Stock or any similar stock or as otherwise required by law.

Section 6. LIQUIDATION, DISSOLUTION OR WINDING UP.

(A) Upon any liquidation, dissolution or winding up of the Corporation, no distribution shall be made (1) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of shares of Series A Preferred Stock shall have received \$1000 per share, plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, provided that the holders of shares of Series A Preferred Stock shall be entitled to receive an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 1,000 times the aggregate amount to be distributed per share to holders of shares of Common Stock, or (2) to the holders of shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up.

(B) Neither the consolidation, merger or other business combination of the Corporation with or into any other corporation nor the sale, lease, exchange or conveyance of all or any part of the property, assets or business of the Corporation shall be deemed to be a liquidation, dissolution or winding up of the Corporation for purposes of this Section 6.

(C) In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the aggregate amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under the proviso in clause (1) of paragraph (A) of this Section 6 shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series A Preferred Stock payable in shares of Series A Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series A Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series A Preferred Stock) into a greater or lesser number of shares of Series A Preferred Stock, then in each such case the aggregate amount to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under the proviso in clause (1) of paragraph (A) of this Section 6 shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series A Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series A Preferred Stock outstanding immediately after such event.

Section 7. CONSOLIDATION, MERGER, ETC. Notwithstanding anything to the contrary contained herein, in case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of Common Stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case each share of Series A Preferred Stock shall at the same time be similarly exchanged or changed into an amount per share, subject to the provision for adjustment hereinafter set forth, equal to 1,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of Common Stock is changed or exchanged. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series A Preferred Stock payable in shares of Series A Preferred Stock, or effect a subdivision, combination or

consolidation of the outstanding shares of Series A Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series A Preferred Stock) into a greater or lesser number of shares of Series A Preferred Stock, then in each such case the amount set forth in the first sentence of this Section 7 with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series A Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series A Preferred Stock outstanding immediately after such event.

Section 8. NO REDEMPTION. The shares of Series A Preferred Stock shall not be redeemable.

Section 9. RANK. The Series A Preferred Stock shall rank, with respect to the payment of dividends and the distribution of assets, junior to all series of any other class of the Preferred Stock issued either before or after the issuance of the Series A Preferred Stock, unless the terms of any such series shall provide otherwise.

Section 10. AMENDMENT. At such time as any shares of Series A Preferred Stock are outstanding, the Articles of Organization, as amended, of the Corporation shall not be amended in any manner which would materially alter or change the powers, preferences or special rights of the Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of at least two-thirds of the outstanding shares of Series A Preferred Stock, voting together as a single class.

Section 11. FRACTIONAL SHARES. Series A Preferred Stock may be issued in fractions of a share which shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, receive dividends, participate in distributions and have the benefit of all other rights of holders of Series A Preferred Stock.

C. STATEMENT OF LIMITATIONS, RELATIVE RIGHTS AND POWERS IN RESPECT OF SHARES OF COMMON STOCK.

(1) After the requirements with respect to preferential dividends on the Preferred Stock (fixed in accordance with the provisions of paragraph B above) shall have been met and after the corporation shall have complied with all the requirements, if any, with respect to the setting aside of sums as sinking funds or redemption or purchase accounts (fixed in accordance with the provisions of said paragraph B), then and not otherwise the holders of Common Stock shall be entitled to receive such dividends as may be declared from time to time by the Board of Directors.

(2) After distribution in full of the preferential amount (fixed in accordance with the provisions of said paragraph B) to be distributed to the holders of Preferred Stock in the event of voluntary or involuntary liquidation, distribution or sale of assets, dissolution or winding up of this corporation, the holders of the

Common Stock shall be entitled to receive all the remaining assets of this corporation, tangible and intangible, of whatever kind available for distribution to the stockholders ratably in proportion to the number of shares of Common Stock held by them respectively.

(3) Except as may otherwise be required by law or the provisions of these Articles, or by the Board of Directors pursuant to authority granted in these Articles, each holder of Common Stock shall have one vote in respect of each share of stock held by him in all matters voted upon by the stockholders.

D. DENIAL OF PREEMPTIVE RIGHTS.

No holder of shares of the Common Stock or of the Preferred Stock shall be entitled as such, as a matter of right, to subscribe for or purchase any part of any new or additional issue of stock of any class whatsoever of the corporation, or of securities convertible into stock of any class, whether now or hereafter authorized, or whether issued for cash or other consideration or by way of dividend.

6A. INDEMNIFICATION

Section 1. ACTIONS, SUITS AND PROCEEDINGS. Except as otherwise provided below, the Corporation shall, to the fullest extent authorized by Chapter 156B of the Massachusetts General Laws, as the same exists or may hereafter be amended (in the case of any such amendment, only to the extent that such amendment either (i) permits the Corporation to provide broader indemnification rights than such laws permitted prior to such amendment or (ii) prohibits or limits any of the indemnification rights previously set forth in such laws), indemnify each person who is, or shall have been, a director or officer of the Corporation or who is or was a director or employee of the Corporation and is serving, or shall have served, at the request of the Corporation, as a director or officer of another organization or in any capacity with respect to any employee benefit plan of the Corporation, against all liabilities and expenses (including judgments, fines, penalties, amounts paid or to be paid in settlement, and reasonable attorneys' fees) imposed upon or incurred by any such person (the "Indemnitee") in connection with, or arising out of, the defense or disposition of any action, suit or other proceeding, whether civil or criminal, in which he may be a defendant or with which he may be threatened or otherwise involved, directly or indirectly, by reason of his being or having been such a director or officer or as a result of his serving or having served with respect to any such employee benefit plan; PROVIDED, HOWEVER, that the Corporation shall provide no indemnification with respect to any matter as to which any such Indemnitee shall be finally adjudicated in such action, suit or proceeding not to have acted in good faith in the reasonable belief that his action was (i) in the best interests of the Corporation or (ii) to the extent such matter relates to service with respect to an employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan.

Section 2. SETTLEMENTS. The right to indemnification conferred in this Article shall include the right to be paid by the Corporation for liabilities and expenses incurred in connection with the settlement or compromise of any such action, suit or proceeding, pursuant to a consent decree or otherwise, unless a determination is made, within 45 days after receipt by the Corporation of a written request by the Indemnitee for indemnification, that such settlement or compromise is not in the best interests of the Corporation or, to the extent such matter relates to service with respect to an employee benefit plan, that such settlement or compromise is not in the best interests of the participants or beneficiaries of such plan. Any such determination shall be made (i) by the Board of Directors of the Corporation by a majority vote of a quorum consisting of disinterested directors, or (ii) if such quorum is not obtainable, by a majority of the disinterested directors of the Corporation then in office. Notwithstanding the foregoing, if there are less than two disinterested directors then in office, the Board of Directors shall promptly direct that independent legal counsel (who may be regular legal counsel to the Corporation) determine, based

on facts known to such counsel at such time, whether such Indemnitee acted in good faith in the reasonable belief that his action was in the best interests of the Corporation or the participants or beneficiaries of any such employee benefit plan, as the case may be; and, in such event, indemnification shall be made to such Indemnitee unless, within 45 days after receipt by the Corporation of the request by such Indemnitee for indemnification, such independent legal counsel in a written opinion to the Corporation determines that such Indemnitee did not act in good faith in the reasonable belief that his action was in the best interests of the Corporation or the participants or beneficiaries of any such employee benefit plan, as the case may be.

Section 3. NOTIFICATION AND DEFENSE OF CLAIM. As a condition precedent to his right to be indemnified, the Indemnitee must give to the Corporation notice in writing as soon as practicable of any action, suit or proceeding involving him for which indemnity will or could be sought. With respect to any action, suit or proceeding of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to such Indemnitee. After notice from the Corporation to the Indemnitee of its election so to assume such defense, the Corporation shall not be liable to such Indemnitee for any legal or other expenses subsequently incurred by such Indemnitee in connection with such claim, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of the Indemnitee unless (i) the employment of counsel by the Indemnitee has been authorized by the Corporation, (ii) counsel to the Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and the Indemnitee in the conduct of the defense of such action or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, in each of which cases, the fees and expenses of counsel for the Indemnitee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article. The Corporation shall not be entitled to assume the defense of any claim brought by or on behalf of the Corporation or as to which counsel for the Indemnitee shall have reasonably made the conclusion provided for in (ii) above.

Section 4. ADVANCE OF EXPENSES. Subject to Section 3 above, the right to indemnification conferred in this Article shall include the right to be paid by the Corporation for expenses (including reasonable attorneys' fees) incurred in defending a civil or criminal action, suit or proceeding in advance of its final disposition, subject to receipt of an undertaking by the Indemnitee to repay such payment if it is ultimately determined that the Indemnitee is not entitled to indemnification under this Article. Such undertaking may be accepted without reference to the financial ability of such Indemnitee to make such repayment. Notwithstanding the foregoing, no advance shall be made by the Corporation under this Section 4 if a determination is reasonably and promptly made by the Board of Directors by a majority vote of a

quorum consisting of disinterested directors or, if such quorum is not obtainable, by a majority of the disinterested directors of the Corporation then in office or, if there are not at least two disinterested directors then in office, by independent legal counsel (who may be regular legal counsel to the Corporation) in a written opinion that, based on facts known to the Board or counsel at such time, such Indemnitee did not act in good faith in the reasonable belief that his action was in the best interests of the Corporation or the participants or beneficiaries of an employee benefit plan of the Corporation, as the case may be.

Section 5. PARTIAL INDEMNITY. If an Indemnitee is entitled under any provision of this Article to indemnification by the Corporation for some or a portion of the liabilities or expenses imposed upon or incurred by such Indemnitee in the investigation, defense, appeal or settlement of any action, suit or proceeding but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify the Indemnitee for the portion of such liabilities or expenses to which such Indemnitee is entitled.

Section 6. RIGHTS NOT EXCLUSIVE. The right to indemnification and the payment of expenses incurred in defending any action, suit or proceeding in advance of its final disposition conferred in this Article shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, provision of the Articles of Organization, By-Laws, agreement, vote of stockholders or directors or otherwise. Without limiting the generality of the foregoing, the Corporation, acting through its Board of Directors, may enter into agreements with any director, officer, employee or agent of the Corporation providing for indemnification rights equivalent to or greater than the indemnification rights set forth in this Article.

Section 7. INSURANCE. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another organization or employee benefit plan against any expense or liability incurred by him in any such capacity, or arising out of the status as such, whether or not the Corporation would have the power to indemnify such person against such expense or liability under Chapter 156B of the Massachusetts General laws.

Section 8. INSURANCE OFFSET. The Corporation's obligation to provide indemnification under this Article shall be offset to the extent of any other source of indemnification or any otherwise applicable insurance coverage under a policy maintained by the Corporation or any other person.

Section 9. AMENDMENT. Without the consent of a person entitled to the indemnification and other rights provided in this Article (unless otherwise required by Chapter 156B of the Massachusetts General Laws), no amendment modifying or

terminating such rights shall adversely affect such person's rights under this Article with respect to the period prior to such Amendment.

Section 10. MERGERS, ETC. If the Corporation is merged into or consolidated with another corporation and the Corporation is not the surviving corporation, or if substantially all of the assets of the Corporation are acquired by any other corporation, or in the event of any other similar reorganization involving the Corporation, the Board of Directors of the Corporation or the board of directors of any corporation assuming the obligations of the Corporation shall assume the obligations of the Corporation under this Article, through the date of such merger, consolidation, sale or reorganization, with respect to each person who is entitled to indemnification rights under this Article as of such date.

Section 11. SAVINGS CLAUSE. If this Article or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any liabilities and expenses with respect to any action, suit or proceeding to the full extent permitted by any applicable portion of this Article that shall not have been invalidated and to the full extent permitted by applicable law.

Section 12. DEFINITIONS. As used in this Article, the term "director", "officer" and "person" include their respective heirs, executors, administrators, and legal representatives, and an "interested" director is one against whom in such capacity the proceedings in question or another proceeding on the same or similar grounds is then pending.

6B. STOCKHOLDERS' MEETINGS

Meetings of Stockholders of the Corporation may be held anywhere in the United States.

6C. AMENDMENT OF BY-LAWS

The power to make, amend or repeal by-laws shall be in the Stockholders, provided, however, that the by-laws may provide that the directors may make, amend or repeal the by-laws in whole or in part, except with respect to any provisions thereof which according to law, the Articles of Organization or by-laws requires action by the Stockholders.

6D. LIMITATION OF DIRECTOR LIABILITY

To the fullest extent permitted by Chapter 156B of the Massachusetts General Laws, as it may be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages

for breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability.

ANALOG DEVICES, INC.

OFFICERS

TITLE	NAME	RESIDENTIAL ADDRESS	POST OFFICE ADDRESS
Chief Executive Officer and President	Jerald G. Fishman	169 Hickory Road Weston, MA 02193	One Technology Way Norwood, MA 02062-9106
Clerk	Paul P. Brountas	22 Conant Road Weston, MA 02193	Hale and Dorr LLP 60 State Street Boston, MA 02109
Treasurer	William A. Martin	3 Harden Road Foxboro, MA 02035	One Technology Way Norwood, MA 02062-9106

DIRECTORS

Name	Residential Address	Post Office Address
Ray Stata	6 Miller Hill Road Dover, MA 02030	One Technology Way Norwood, MA 02062-9106
John L. Doyle	177 Ramoso Road Portola Valley, CA 94025	177 Ramoso Road Portola Valley, CA 94025
F. Grant Saviers	3050 Three Spring Court San Jose, CA 95190-9714	President & CEO Adaptec, Inc. 691 South Milpitas Boulevard Milpitas, CA 95035
Joel Moses	70 Fairview Road Weston, MA 02193	MIT 77 Massachusetts Avenue - 3-208 Cambridge, MA 02139
Lester C. Thurow	4 Longfellow Place (#3306) Boston, MA 02114	MIT 50 Memorial Drive, E-52-454 Cambridge, MA 02142
Jerald G. Fishman	169 Hickory Road Weston, MA 02193	One Technology Way Norwood, MA 02062-9106

Charles O. Holliday, Jr. Dupont Asia Pacific Ltd. Dupont
 Arco Tower 8-1 1007 Market Street, D-9000
 Shimomeguro 1-CHOME Wilmington, DE 19898
 Meguro-KU
 Tokyo 153
 Japan

WAFERTECH, LLC

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made as of January 21, 1999 by and between Analog Devices, Inc., a Massachusetts corporation ("ADI"), and TSMC Development, Inc., a Delaware corporation ("TSMC").

WHEREAS, ADI and TSMC are members of WaferTech, LLC, a Delaware limited liability company (the "Company"), and parties to the Second Amended and Restated Limited Liability Company Agreement of WaferTech, LLC dated as of October 28, 1997 (the "LLC Agreement");

WHEREAS, ADI proposes to transfer to TSMC a Nine Percent (9%) Membership Interest in the Company, corresponding to Twenty Million Two Hundred Fifty Thousand (20,250,000) Preferred Shares (the "Interest");

WHEREAS, the Preferred Members have unanimously consented to the transfer of the Interest by ADI to TSMC pursuant to a Unanimous Written Consent dated November 30, 1998;

NOW, THEREFORE, for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. CAPITALIZED TERMS

Capitalized terms not otherwise defined in this Agreement have the meanings assigned to them in the LLC Agreement.

2. ASSIGNMENT AND ASSUMPTION

In consideration of (i) the payment of the purchase price in the amount of Sixty-Seven Million Five Hundred One Thousand One Hundred Fifty-Three United States Dollars (U.S.\$67,501,153) (the "Purchase Price") by TSMC to ADI as provided herein and (ii) the assumption by TSMC of the obligations associated with the Interest as set forth in the LLC Agreement and Purchase Agreement, ADI hereby irrevocably assigns, transfers and conveys to TSMC all right, title and interest in and to, and all benefits and burdens of the ownership of, the Interest. TSMC hereby assumes the obligations associated with the Interest as set forth in the LLC Agreement and Purchase Agreement.

3. PAYMENT

TSMC shall pay the Purchase Price to ADI by the transfer of immediately available funds denominated in U.S. dollars for value before 2:00 p.m. EST January 29, 1999 to the following account:

Analog Devices, Inc.
BankBoston
Boston, Massachusetts
Account No. 521-79901
SWIFT No. FNBBUS33

The assignment and assumption contemplated by Section 2 of this Agreement shall become effective immediately upon receipt by ADI of the full amount of the Purchase Price in the above mentioned account. Upon receipt of the Purchase Price, ADI shall deliver to TSMC a written receipt therefor in the form of Exhibit A attached hereto.

4. ADI'S REPRESENTATIONS AND WARRANTIES.

ADI hereby represents and warrants to TSMC that:

(i) ADI has the full right, power, and authority to execute this Agreement and to sell the Interest to TSMC.

(ii) The Interest is owned by ADI free and clear of any and all liens, encumbrances, charges, assessments and restrictions (other than restrictions on transfer imposed by the LLC Agreement and restrictions on transfer generally imposed on securities under Federal or state securities laws).

(iii) Upon transfer of the Interest to TSMC pursuant to this Agreement, TSMC will, as a result, receive good title to the Interest, free and clear of any and all liens, encumbrances, claims, charges, assessments, and restrictions (other than restrictions on transfer imposed by the LLC Agreement and restrictions on transfer generally imposed on securities under Federal or state securities laws).

(iv) All corporate action on the part of ADI, its directors and stockholders necessary for the authorization, execution, delivery and performance by ADI of this Agreement has been taken.

(v) The execution, delivery and performance of and compliance with this Agreement and the sale of the Interest hereunder will not result in any violation of, or conflict with, or constitute a default under, ADI's charter or bylaws or any of ADI's material agreements (including but not limited to the LLC Agreement), or

result in the creation of any mortgage, pledge, lien, encumbrance or charge upon the Interest being transferred.

(vi) No consent, approval or authorization of, or designation, declaration or filing with, any governmental authority on the part of ADI is required in connection with the valid execution and delivery of this Agreement, the sale of the Interest hereunder or the consummation of any other transaction contemplated hereby.

(vii) (a) ADI has consulted its own independent tax advisors with respect to the transactions contemplated by this Agreement to the extent it deemed necessary and advisable; (b) ADI is not relying in any respect on WaferTech or any Managing Member, employee or other agent or representative of WaferTech to provide any advice with respect to the Federal, state, local or foreign tax consequences of the transactions contemplated hereby; and (c) ADI shall bear its own tax consequences, if any, associated with the transactions contemplated hereby and shall not seek any reimbursement in connection with any such tax consequences from TSMC, WaferTech or any of their affiliates.

5. TSMC'S REPRESENTATIONS AND WARRANTIES.

TSMC hereby represents and warrants to ADI that:

(i) TSMC has the full right, power, and authority to execute this Agreement and to purchase the Interest from ADI.

(ii) TSMC understands and acknowledges that any further transfer of the Interest by TSMC is restricted under the LLC Agreement.

(iii) TSMC is acquiring the Interest for its own account for investment, and not with a view to distribution.

6. EFFECT ON ANCILLARY AGREEMENTS.

The parties acknowledge and agree that the transfer of the Interest pursuant to this Agreement will affect the Percentage Interests of ADI and TSMC and, consequently, their respective rights and obligations under the Purchase Agreement, as well as their respective rights and obligations under the LLC Agreement, including under Section 19.2 thereof with respect to Future Purchase Agreements.

7. MISCELLANEOUS.

(a) FURTHER ASSURANCES. Each of the parties agrees to promptly execute and deliver any and all further agreements, documents, or instruments necessary to effectuate this Agreement and the transaction referred to herein or reasonably requested by the other party to perfect or evidence its rights hereunder.

(b) SURVIVAL OF REPRESENTATIONS AND WARRANTIES. The representations and warranties contained in this Agreement shall survive the transfer of the Interest made pursuant to this Agreement.

(c) COUNTERPARTS. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute one and the same instrument, binding on the parties, and the signature of any party to any counterpart shall be deemed a signature to, and may be appended to, any other counterpart.

(d) GOVERNING LAW. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date set forth above.

ANALOG DEVICES, INC.

By: /s/ Joseph E. McDonough

Name Joseph E. McDonough
Its_____

TSMC DEVELOPMENT, INC.

By: /s/ Morris Chang

Name Morris Chang
Its_____

Exhibit A

RECEIPT

Analog Devices, Inc. ("ADI") hereby acknowledges receipt of the sum of Sixty-Seven Million Five Hundred One Thousand One Hundred Fifty-Three United States Dollars (U.S.\$67,501,153) from TSMC Development, Inc. ("TSMC") constituting full payment of the purchase price payable under the Assignment and Assumption Agreement between ADI and TSMC dated as of January 21, 1999. Accordingly the transfer of the Interest contemplated by the aforesaid Assignment and Assumption Agreement is effective as of the date hereof.

IN WITNESS WHEREOF, this Receipt has been executed as of the date set forth below.

Date: January 29, 1999

ANALOG DEVICES, INC.

By: /s/ Joseph E. McDonough

Name Joseph E. McDonough

Its _____

WAFERTECH, LLC

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made as of January 21, 1999 by and between Analog Devices, Inc., a Massachusetts corporation ("ADI"), and Altera Corporation, a Delaware corporation ("Altera").

WHEREAS, ADI and Altera are members of WaferTech, LLC, a Delaware limited liability company (the "Company"), and parties to the Second Amended and Restated Limited Liability Company Agreement of WaferTech, LLC dated as of October 28, 1997 (the "LLC Agreement");

WHEREAS, ADI proposes to transfer to Altera a Five Percent (5%) Membership Interest in the Company, corresponding to Eleven Million Two Hundred Fifty Thousand (11,250,000) Preferred Shares (the "Interest");

WHEREAS, the Preferred Members have unanimously consented to the transfer of the Interest by ADI to Altera pursuant to a Unanimous Written Consent dated November 30, 1998;

NOW, THEREFORE, for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. CAPITALIZED TERMS

Capitalized terms not otherwise defined in this Agreement have the meanings assigned to them in the LLC Agreement.

2. ASSIGNMENT AND ASSUMPTION

In consideration of (i) the payment of the purchase price in the amount of Thirty-Seven Million Five Hundred Thousand Six Hundred Forty United States Dollars (U.S.\$37,500,640) (the "Purchase Price") by Altera to ADI as provided herein and (ii) the assumption by Altera of the obligations associated with the Interest as set forth in the LLC Agreement and Purchase Agreement, ADI hereby irrevocably assigns, transfers and conveys to Altera all right, title and interest in and to, and all benefits and burdens of the ownership of, the Interest. Altera hereby assumes the obligations associated with the Interest as set forth in the LLC Agreement and Purchase Agreement.

3. PAYMENT

Altera shall pay the Purchase Price to ADI by the transfer of immediately available funds denominated in U.S. dollars for value before 2:00 p.m. EST January 29, 1999 to the following account:

Analog Devices, Inc.
BankBoston
Boston, Massachusetts
Account No. 521-79901
ABA No. 011-000-390

The assignment and assumption contemplated by Section 2 of this Agreement shall become effective immediately upon receipt by ADI of the full amount of the Purchase Price in the abovementioned account. Upon receipt of the Purchase Price, ADI shall deliver to Altera a written receipt therefor in the form of Exhibit A attached hereto.

4. ADI'S REPRESENTATIONS AND WARRANTIES.

ADI hereby represents and warrants to Altera that:

(i) ADI has the full right, power, and authority to execute this Agreement and to sell the Interest to Altera.

(ii) The Interest is owned by ADI free and clear of any and all liens, encumbrances, charges, assessments and restrictions (other than restrictions on transfer imposed by the LLC Agreement and restrictions on transfer generally imposed on securities under Federal or state securities laws).

(iii) Upon transfer of the Interest to Altera pursuant to this Agreement, Altera will, as a result, receive good title to the Interest, free and clear of any and all liens, encumbrances, claims, charges, assessments, and restrictions (other than restrictions on transfer imposed by the LLC Agreement and restrictions on transfer generally imposed on securities under Federal or state securities laws).

(iv) All corporate action on the part of ADI, its directors and stockholders necessary for the authorization, execution, delivery and performance by ADI of this Agreement has been taken.

(v) The execution, delivery and performance of and compliance with this Agreement and the sale of the Interest hereunder will not result in any violation of, or conflict with, or constitute a default under, ADI's charter or bylaws or any of ADI's material agreements (including but not limited to the LLC Agreement), or

result in the creation of any mortgage, pledge, lien, encumbrance or charge upon the Interest being transferred.

(vi) No consent, approval or authorization of, or designation, declaration or filing with, any governmental authority on the part of ADI is required in connection with the valid execution and delivery of this Agreement, the sale of the Interest hereunder or the consummation of any other transaction contemplated hereby.

(vii) (a) ADI has consulted its own independent tax advisors with respect to the transactions contemplated by this Agreement to the extent it deemed necessary and advisable; (b) ADI is not relying in any respect on WaferTech or any Managing Member, employee or other agent or representative of WaferTech to provide any advice with respect to the Federal, state, local or foreign tax consequences of the transactions contemplated hereby; and (c) ADI shall bear its own tax consequences, if any, associated with the transactions contemplated hereby and shall not seek any reimbursement in connection with any such tax consequences from Altera, WaferTech or any of their affiliates.

5. ALTERA'S REPRESENTATIONS AND WARRANTIES.

Altera hereby represents and warrants to ADI that:

(i) Altera has the full right, power, and authority to execute this Agreement and to purchase the Interest from ADI.

(ii) Altera understands and acknowledges that any further transfer of the Interest by Altera is restricted under the LLC Agreement.

(iii) Altera is acquiring the Interest for its own account for investment, and not with a view to distribution.

6. EFFECT ON ANCILLARY AGREEMENTS.

The parties acknowledge and agree that the transfer of the Interest pursuant to this Agreement will affect the Percentage Interests of ADI and Altera and, consequently, their respective rights and obligations under the Purchase Agreement, as well as their respective rights and obligations under the LLC Agreement, including under Section 19.2 thereof with respect to Future Purchase Agreements.

7. MISCELLANEOUS.

(a) FURTHER ASSURANCES. Each of the parties agrees to promptly execute and deliver any and all further agreements, documents, or instruments necessary to effectuate this Agreement and the transaction referred to herein or reasonably requested by the other party to perfect or evidence its rights hereunder.

(b) SURVIVAL OF REPRESENTATIONS AND WARRANTIES. The representations and warranties contained in this Agreement shall survive the transfer of the Interest made pursuant to this Agreement.

(c) COUNTERPARTS. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute one and the same instrument, binding on the parties, and the signature of any party to any counterpart shall be deemed a signature to, and may be appended to, any other counterpart.

(d) GOVERNING LAW. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date set forth above.

ANALOG DEVICES, INC.

By: /s/ Joseph E. McDonough

Name Joseph E. McDonough
Its V.P. Finance, C.F.O.

ALTERA CORPORATION

By: /s/ Nathan M. Sarkisian

Name Nathan M. Sarkisian
Its Senior V.P. Finance, C.F.O.

Exhibit A

RECEIPT

Analog Devices, Inc. ("ADI") hereby acknowledges receipt of the sum of Thirty-Seven Million Five Hundred Thousand Six Hundred Forty United States Dollars (U.S. \$37,500,640) from Altera Corporation ("Altera") constituting full payment of the purchase price payable under the Assignment and Assumption Agreement between ADI and Altera dated as of January 21, 1999. Accordingly the transfer of the Interest contemplated by the aforesaid Assignment and Assumption Agreement is effective as of the date hereof.

IN WITNESS WHEREOF, this Receipt has been executed as of the date set forth below.

Date: January 29, 1999

ANALOG DEVICES, INC.

By: /s/ Joseph E. McDonough

Name Joseph E. McDonough
Its V.P. Finance, C.F.O.

AMENDMENT TO
SECOND AMENDED AND RESTATED
LIMITED LIABILITY COMPANY AGREEMENT

THIS AMENDMENT, dated as of November 30, 1998 modifies that certain Second Amended and Restated Limited Liability Company Agreement of WaferTech, LLC (the "LLC Agreement") dated as of October 28, 1997, by and among TSMC Development, Inc., a Delaware corporation ("TSMC"), Analog Devices, Inc., a Massachusetts corporation ("ADI"), Altera Corporation, a Delaware corporation ("Altera"), and Integrated Silicon Solutions Inc., a Delaware corporation ("ISSI").

WHEREAS, ADI proposes to transfer 9% and 5% interest in WaferTech, LLC (the "Company") to TSMC and Altera respectively.

WHEREAS, ISSI proposes to transfer around 1.33% interest in the Company (equivalent to US \$10 million worth of ISSI's interest in the Company) to TSMC.

WHEREAS, the parties hereto recognize that, upon consummation of the aforementioned transfers, resulting ownership in the Company may no longer reflect the original intent of the supermajority voting provisions set forth in Section 6.4.2 of the LLC Agreement.

WHEREAS, the parties desire to amend the LLC Agreement in order to properly reflect each remaining Member's interest as originally intended.

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follow:

1. Pursuant to Section 16.1 of the LLC Agreement, the undersigned Members, representing not less than 87% Percentage Interest, agree that the LLC Agreement shall be amended as follows:
 - a. Section 6.4.2 of the LLC Agreement is amended by deleting subsections 6.4.2.1, 6.4.2.2, 6.4.2.5, 6.4.2.10 and 6.4.2.11 in their entirety.
 - b. Section 6.4.3 of the LLC Agreement is amended by adding the following subsections.
 - 6.4.3.6 borrow, guarantee or incur long term debt in any way greater than the amount of US \$100 million in the aggregate;

- 6.4.3.7 determine that a Member or an Affiliate of a Member is a Prohibited Person;
- 6.4.3.8 authorize or call for any Additional Capital Contribution in an amount exceeding US \$200 million during any 12-month period and US \$400 million during any 36-month period;
- 6.4.3.9 make any material change or amendment to the most recent capacity ramp up schedule incorporated in the Business Plan, which change or amendment would result in the Company not being profitable for the year 2000;
- 6.4.3.10 admit any new Member other than a participant in an Incentive Plan.

- 2. This amendment shall become effective upon the consummation of the aforementioned transfers.
- 3. All terms not otherwise defined herein shall have the meanings ascribed to them in the LLC Agreement.
- 4. This Amendment may be signed in one or more counterparts, each of which shall be an original but all of which together shall constitute one instrument.

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first above written.

TSMC DEVELOPMENT, INC.

By: /s/ Morris Chang

 Morris Chang

ANALOG DEVICES, INC.

By: /s/ Joseph E. McDonough

 Joseph E. McDonough

ALTERA CORPORATION

By: /s/ Rodney Smith

 Rodney Smith

INTEGRATED SILICON SOLUTIONS, INC.

By: /s/ Jimmy S.M. Lee

 Jimmy S.M. Lee

SECOND AMENDMENT TO
SECOND AMENDED AND RESTATED
LIMITED LIABILITY COMPANY AGREEMENT

THIS SECOND AMENDMENT, dated as of January 21, 1999, modifies that certain Second Amended and Restated Limited Liability Company Agreement of WaferTech, LLC, dated as of October 28, 1997, by and among TSMC Development, Inc., a Delaware corporation ("TSMC"), Analog Devices, Inc., a Massachusetts corporation ("ADI"), Altera Corporation, a Delaware corporation ("Altera"), and Integrated Silicon Solutions, Inc., a Delaware corporation ("ISSI"), as previously amended by an Amendment dated as of November 30, 1998 (collectively, the "LLC Agreement").

WHEREAS, ADI proposes to transfer 9% and 5% interest in WaferTech, LLC (the "Company") to TSMC and Altera, respectively;

WHEREAS, ISSI proposes to transfer approximately 1.33% interest in the Company to TSMC; and

WHEREAS, the parties desire to attach a new Exhibit A1 to the LLC Agreement in order to properly reflect each Member's interest in the Company as a result of the proposed transfers;

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. The undersigned Members acknowledge and agree that consummation of the proposed transfers as discussed above will result in new Percentage Interests as set forth in the new Exhibit A1 to the LLC Agreement, a copy of which is attached hereto. Pursuant to Section 16.1 of the LLC Agreement, the undersigned Members, representing not less than 87% in Percentage Interest, agree that the LLC Agreement shall be amended by appending this new Exhibit A1.
2. In addition, the undersigned Members acknowledge and agree that their respective rights and obligations under the Purchase Agreement and the LLC Agreement, including under Section 19.2 of the latter with respect to Future Purchase Agreements, shall automatically be revised to reflect the new Percentage Interests set forth in this new Exhibit A1.
3. This Amendment shall become effective upon the consummation of the proposed transfers.
4. All terms not otherwise defined herein shall have the meanings ascribed to them in the LLC Agreement.

- 5. This Amendment may be signed in one or more counterparts, each of which shall be an original but all of which together shall constitute one instrument.

IN WITNESS WHEREOF, the parties have executed this Second Amendment as of the date first above written.

TSMC DEVELOPMENT, INC.

By /s/ Morris Chang

Morris Chang

ANALOG DEVICES, INC.

By /s/ Joseph E. McDonough

Joseph E. McDonough, V.P. Finance & C.F.O.

ALTERA CORPORATION

By /s/ Nathan Sarkisian

Nathan Sarkisian
INTEGRATED SILICON
SOLUTIONS, INC.

By /s/ Jimmy S.M. Lee

Jimmy S.M. Lee

REVISED WAFERTECH LLC EQUITY INTERESTS
 PER JANUARY 29, 1999, PARTIAL TRANSFER OF
 ADI AND ISSI EQUITY INTERESTS TO TSMC AND ALTERA

Name/Address/Fax Number	Agreed Total Value of Capital Contribution	Transfer Adjustment	Adj. Capital Contr.	Percentage Interest Following Transfer	Number of Preferred Shares
TSMC Development, Inc. 1740 Technology Drive Suite 660 San Jose, CA 95110 Phone: (408) 437-8762 Fax: (408) 441-7713	U.S.\$ 446,403,200	77,501,153	523,904,353	67.5645%	152,012,653
Analog Devices, Inc. 1 Technology Way P.O. Box 9106 Norwood, MA 02062 Phone: (781) 329-4700 Fax: (781) 461-2491	U.S.\$ 140,400,000	(105,001,793)	35,398,207	4%	9,000,000
Altera Corporation 101 Innovation Drive San Jose, CA 95134 Phone: (408) 544-7000 Fax: (408) 544-8000	U.S.\$ 140,400,000	37,500,640	177,900,640	23%	51,750,000
Integrated Silicon Solutions, Inc, 2231 Lawson Lane Santa Clara, CA 95054 Phone: (408) 588-0800 Fax: (408) 588-0805	U.S.\$ 31,200,000	(10,000,000)	21,200,000	2.6667%	6,007,500
THIRD PARTY INVESTORS:	U.S.\$ 21,596,800		21,596,800	2.7688%	6,229,847
TOTAL CAPITAL CONTRIBUTION	U.S.\$ 780,000,000		\$780,000,000	100%	225,000,000

3-MOS
OCT-30-1999
NOV-01-1998
JAN-30-1999
1
332,403
129,670
213,727
0
270,336
1,058,774
1,377,726
696,475
1,894,553
313,258
309,871
0
0
27,448
1,138,707
1,894,553
300,500
300,500
162,805
162,805
98,765
0
3,688
37,361
7,467
29,894
0
0
0
29,894
.19
.18

1,000
U.S. DOLLARS

	3-MOS	
	OCT-31-1998	
	NOV-02-1997	
	JAN-31-1998	
	1	217,198
		76,546
		261,272
		0
		241,508
	898,242	1,290,443
		595,922
		1,857,793
	362,949	310,000
	0	0
		27,053
		1,065,593
1,857,793		317,791
	317,791	154,332
		154,332
		110,621
		0
		2,429
		52,015
		11,756
	40,259	0
		0
		(37,080)
		3,179
		.03
		.03

1,000
U.S. DOLLARS

6-MOS		
	OCT-31-1998	
	NOV-02-1997	
	MAY-02-1998	
	1	286,105
		33,819
		255,872
		0
		266,979
	949,387	1,340,026
		619,059
		1,937,079
	387,778	309,989
	0	0
		27,264
		1,118,469
1,937,079		637,221
	637,221	315,325
		315,325
		210,725
		0
		5,532
		108,652
		24,608
	84,044	0
		0
		(37,080)
		46,964
		.30
		.28

1,000
U.S. DOLLARS

9-MOS
OCT-31-1998
NOV-02-1997
AUG-01-1998
1
261,705
38,792
224,434
0
272,370
906,915
1,358,875
644,907
1,879,179
352,127
309,985
0
0
27,322
1,096,904
1,879,179
932,921
932,921
477,140
477,140
331,015
0
8,198
119,481
26,329
93,152
0
0
(37,080)
56,072
.35
.34