Global Equity Research

Company Bulletin

North America United States
TMT Semiconductors

Deutsche Bank

9 March 2005

DSP Group

Reuters: **DSPG.OQ** Bloomberg: **DSPG US** Exchange: **O** Ticker: **DSPG**

Europe to drive 2005 growth

Dan Harverd
(+972) 3 7102000
dan.harverd@db.com

Maintain Buy with price target raised to US$29

We expect DSP Group's growth in 2005 to be driven by penetration of the European market, with new product releases including a VoIP phone and video phone to impact the 2006 outlook. Longer term the company is well positioned in our view to benefit from the convergence of voice, video and data in residential communications.

Current quarter and 2005 outlook on track

The key takeaway from a recent meeting with management was that growth over the next two years appears to be virtually assured due to penetration of Europe. We believe that the near-term outlook in the US has improved following weak Q4 numbers, and our comfortable with our Q1 estimates of US$39.5m revenues and $0.16 EPS.

Shipments of DECT chipsets commenced

During the current quarter, the company has commenced shipments of its DECT chipset to two Asian ODM customers who sell through to multiple retail brands in Europe. We expect revenues from this market to reach US$20m in 2005, doubling to US$40m in 2006 implying 16% market share. We expect 2005 revenues to increase 16.2% to US$183.1m (though believe there is an upward bias to this number) and EPS to reach US$0.87.

High growth visibility supports higher valuation

DSP Group trades at 16x 2006e cash adjusted EPS, a discount of 24% to its peer group. We are raising our price target to US$29 from US$23 based on 20x 2006e cash adjusted EPS, placing the valuation more in line with the peer group. Our valuation is backed up by a DCF model. The main risks include potential weakness in US consumer demand and potential pricing pressure.

Forecasts and ratios

Year end December 31	2004A	2005E	2006E
1Q EPS (USD)	**0.24**	0.16	
2Q EPS (USD)	**0.29**	0.24	
3Q EPS (USD)	**0.33**	0.30	
4Q EPS (USD)	**0.10**	0.17	
FY EPS (USD)	**0.97**	0.87	1.05
CY P/E	**26.4x**	29.5x	24.4x
Rev (USD)	**157.5**	183.1	212.4

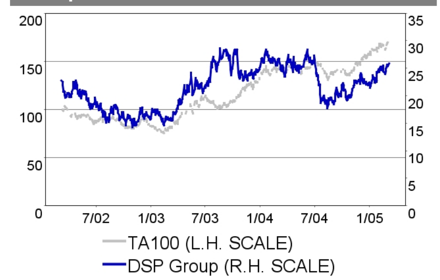
Source: Deutsche Bank, company data

Company Visit

Buy

Price at 8 March 2005 (USD)	25.65
Price target (USD)	29.0
52-week range (USD)	28-18

Price/price relative



Performance(%)	1m	3m	12m
Absolute	*3.2%*	*11.7%*	*-1.4%*
Nasdaq	*-0.6%*	*-2.5%*	*3.2%*

Stock data

Market cap (USD)	717.1
Shares outstanding (m)	28.0
Free float	100%
Avg. daily volume ('000)	235.5
Nasdaq	2074
Index membership	Nasdaq

Meeting with the new management

We met recently with DSP Group's management to discuss the near term business outlook and the company's long term strategic direction. We also had the opportunity to meet Inon Beracha who will succeed Eli Ayalon as CEO next month. Mr Ayalon will remain as active President and Chairman of the Board, retaining a prime focus on formulating the company's strategy. Mr. Beracha joined DSP Group in mid-2004 as a Senior VP with responsibility for the DECT division. Prior to joining DSP he was COO of Ceragon, a company that he co-founded. Mr. Beracha has an impressive operational track-record and has steered the DECT division to become the key growth driver for the company in his short tenure at DSP to date.

High confidence on the two year outlook

The key takeaway from the meeting was that DSP Group is uniquely positioned amongst semiconductor companies in that growth over the next two to three years appears to be virtually assured. During the current quarter the company has commenced shipments of chipsets based on the DECT standard to the European residential digital cordless market. This is a new market for DSP Group and we expect it to represent the main growth driver in both 2005 and 2006. In penetrating the European market, the company has more than doubled its total addressable market.

Penetration of the European market on track

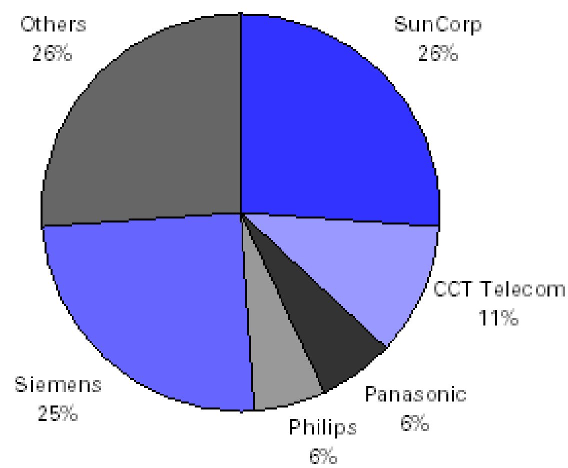
DSP's growth in the last few years has been generated from penetration of the US residential digital cordless market, where it has achieved an impressive share exceeding 70%. Annual sales of cordless phones in the US reached 60 million units in 2005, but only a third of the units (20 million) were digital, representing an addressable chipset market of US$150m-US$200m. We shall discuss the US market later in this report. In total 35 million DECT handsets were sold in 2004 of which 85% were to the European market, representing an addressable chipset market of US$250m. The discrepancy between the US and European markets is explained by the fact that the European Telecommunications Standards Institute developed DECT as a standard as long ago as 1988 enabling rapid cost reduction, whereas the US market has operated with multiple digital standards at significantly higher price-points to analogue phones.

According to the DECT Forum, the European DECT market is expected to grow by 5m units per annum over the next three years, though we would not expect DSP's addressable market to increase at the same rate given expectations of ongoing price erosion. Management has set a target of achieving 30% share of the European market on a three-four year time horizon, implying an increment of US$75m in annual revenues over 2004 revenues of US$158m (without taking into account potential growth in the US).

We are confident that the company will achieve its targets in the European market for two main reasons:

Penetration strategy - while multiple retail brands are present in Europe, a limited number of OEM/ODM companies represent a large share of the market, as shown in the chart below. The company's initial DECT shipments are to two Asian ODMs who sell through to multiple retail brands.

DECT market share by manufacturer



Source: Deutsche Bank, Infosource

Competitive landscape - the competitive landscape in Europe is extremely similar to the US. The major competitors that DSP faces in Europe are National Semiconductor, Philips and Infineon, companies that it has virtually displaced from the US market to become the dominant chipset provider. Since DSP's prime focus is on residential communications, whereas its competitors are more broadly spread, we believe that it has developed a technology advantage. This manifests itself through a more user friendly man-machine interface, greater 'system on chip' integration of diverse technologies onto a single die, and a wide array of customised applications.

We expect DSP to generate US$20m in revenues from the DECT opportunity in 2005, with this figure doubling to US$40m in 2006. This implies that the company's market share reaches 16% in 2006, which we believe to be a relatively conservative estimate.

Expanding beyond Europe and the US

While DECT is recognised as a standard in over 100 countries, only 15% of 2004 DECT handset shipments were outside of Europe. We expect DSP Group to expand into new territories as the DECT standard gains traction globally. Specifically we believe that there are significant opportunities in Eastern Europe and China, where DECT penetration is low. Interestingly in September 2004, the FCC changed its rules to permit the use of DECT products in the US residential market. This may bolster DSP's growth opportunities in its main market, though also opens the door to competition.

Developments in the US market The issue of excess inventory in the retail channel that led to Q4 revenues declining 25% y-o-y to US$28.6m has cleared up. We believe that the company has experienced good near term order flow, as demonstrated by the high level of backlog that reached US$40m going into Q1 2005. One consequence of the inventory problem experienced last year is that we believe the company has provided very cautious guidance of 4%-5% growth in the US market in 2005. While this market has matured in the last two years, the key growth drivers remain intact. There is an ongoing migration from analogue to digital cordless handsets that reached 33% of total unit shipments in 2004 from 27% in 2003. Demand for multi-handset solutions is the main driver behind this shift. The ratio of handsets to base stations is still only 1.2-1.5, so there clearly remains room for growth.

New product rollout to impact 2006 outlook
In H2 2005, one of DSP's key OEM customers is expected to launch a video-enabled Bluetooth handset. Final samples of the chipsets have already been delivered to the OEM, so the key decision now is timing of the marketing launch. The product will open up interesting new applications such as video telephony and residential security. In addition, the bluetooth connectivity means that this handset can also be used to connect to incoming cellular traffic. When users place their cellular handset in proximity to the cordless base station and select the appropriate option, cellular calls can be routed to the cordless handset - a more comfortable option all round. We prefer to assess customer acceptance of these new technologies before modelling them into our revenue forecasts, but expect them to provide incremental revenue opportunities in 2006 and beyond.

An additional niche market that the company has identified is for VoIP cordless telephony devices. Last month the company announced that its chipsets have been designed into a telephony device from Westell that can work with both traditional fixed line telephony and VoIP. The advantage of a VoIP solution is that different IP addresses can be assigned to each handset such that a single external connection can be used for multi-line operation.

The long term strategic direction Since the company has a high degree of confidence that its existing product suite will enable the company to grow in the next two-three years, the main focus of its significant investment in R&D (that we expect to increase 22% in 2005 to $39m) is to identify sources of growth for 2007 and beyond. It is interesting to note that management has decided to reinvest heavily in the future this year, when it could easily have decided to satisfy investor appetite for near-term profitability by maintaining a lower level of R&D expenditure without harming the revenue outlook.

While the majority of DSP's revenues are from the cordless telephony market, it is positioning itself as a provider of chipsets for residential wireless communications incorporating voice, data and video. It already has in-house expertise in a broad array of wireless communications protocols including 900MHz, 2.4GHz, 5.8GHz, DECT, Wi Fi, and Bluetooth. Management envisions a future where a single unit (base station or gateway) will represent the hub of wireless communications in the residence, networking between a large number of consumer electronics devices including cordless handsets, PCs, LCD TVs, MP3 players, cell phones, games consoles, digital cameras, and the list goes on. While no specific product roadmap has been announced, from our discussions with management we believe the general direction is a transport-medium independent convergence device that will unify all internal residential communications. This will enable wireless distribution of digital film, music files, pictures, data, gaming and voice around the house. From a business perspective, if this venture is a success DSP Group may incorporate its chipsets into host devices such as set top boxes and LCD TVs, expanding the size of its total addressable market several-fold.

Estimates and valuation
We expect 2005 revenues to increase 16.2% to US$183.1m, though believe there is an upward bias to this number since we have assumed just 4% growth in the core US market. We are raising 2005 EPS estimate to US$0.87 from US$0.76 previously due to an improved margin outlook. We have modelled 2006 revenues to increase 16% to US$212.4m and EPS to increase 21% to US$1.05. DSP Group trades at 16x 2006e cash adjusted EPS, a discount of 24% to its peer group. We are raising our price target to US$29 based on 20x 2006e cash adjusted EPS, placing the valuation more in line with the peer group. Our valuation is backed up by a DCF model that assumes FCF to reach US$32m in 2007, a growth rate of 7.5% through

a semi-explicit period of 8 years, trailing to terminal growth of 2.5%. We have used a WACC of 10.4%

Peer valuation

		EV/Sales		P/E		Cash adjusted P/E	
	Ticker	**2005**	**2006**	**2005**	**2006**	**2005**	**2006**
ESS Technology	ESST	0.5	0.4	nm	nm	nm	nm
Genesis Microchip	GNSS	1.7	1.4	61.6	34.7	50.6	24.1
Zoran	ZRAN	1.2	0.9	nm	24.2	nm	29.7
Semtech	SMTC	5.0	4.5	29.2	24.3	28.5	20.7
Nvidia	NVDA	1.6	1.4	22.4	17.7	19.0	16.6
Broadcom	BRCM	3.9	3.3	29.9	23.3	25.7	19.3
National Semiconductor	NSM	3.3	3.2	23.4	22.6	20.2	18.8
Conexant	CNXT	1.8	1.5	nm	nm	nm	nm
Analog Devices	ADI	4.5	3.9	28.9	22.4	25.1	20.0
Average (excl. outlies)		**2.6**	**2.3**	**26.8**	**24.2**	**28.2**	**21.3**
DSP Group	DSPG	2.1	1.8	29.5	24.4	22.1	16.2

Source: Deutsche Bank

Income statement in US$'000s

	FY04	1Q05e	2Q05e	3Q05e	4Q05e	FY05e	FY06e
Revenues	157,511	39,500	47,000	53,100	43,500	183,100	212,396
Cost of revenues	80,368	21,725	25,850	29,205	23,925	100,705	116,818
Gross Profit	77,143	17,775	21,150	23,895	19,575	82,395	95,578
R&D Expenses	32,147	9,610	9,400	10,089	10,223	39,322	43,541
Sales & Marketing	11,292	2,790	3,290	3,452	3,480	13,012	13,806
General & Administrative	7,112	1,800	1,800	1,850	1,850	7,300	7,859
Operating Expenses (ongoing)	50,551	14,200	14,490	15,391	15,553	59,633	65,206
Reported Operating Income	48,543	3,575	6,660	8,505	4,023	22,762	30,373
Pro-forma Operating Income	26,592	3,575	6,660	8,505	4,023	22,762	30,373
Financial income, net	8,522	2,100	2,100	2,100	2,100	8,400	8,500
Pre-tax income	35,114	5,675	8,760	10,605	6,123	31,162	38,873
Income taxes	5,971	965	1,489	1,803	1,041	5,298	6,608
Non-operating benefits (charges)	21,951	0	0	0	0	0	0
Reported net income	51,094	4,710	7,271	8,802	5,082	25,864	32,264
Pro-forma net income	29,143	4,710	7,271	8,802	5,082	25,864	32,264
Reported EPS (diluted)	1.70	0.16	0.24	0.30	0.17	0.87	1.05
Pro-forma EPS (basic)	1.02	0.17	0.26	0.31	0.18	0.93	1.12
Pro-forma EPS (diluted)	0.97	0.16	0.24	0.30	0.17	0.87	1.05
Shares outstanding (m) - diluted	30,026	29,500	29,795	29,795	29,795	29,721	30,613
Shares outstanding (000s) - basic	28,574	27,959	27,959	27,959	27,959	27,959	28,798
Margin Analysis							
Gross Margin	49.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%
Operating Margin	16.9%	9.1%	14.2%	16.0%	9.2%	12.4%	14.3%
Net Margin	18.5%	11.9%	15.5%	16.6%	11.7%	14.1%	15.2%
R&D % of revenue	20.4%	24.3%	20.0%	19.0%	23.5%	21.5%	20.5%
S&M % of revenue	7.2%	7.1%	7.0%	6.5%	8.0%	7.1%	6.5%
G&A % of revenue	4.5%	4.6%	3.8%	3.5%	4.3%	4.0%	3.7%
Effective Tax Rate	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%
Growth Rates							
Year over Year							
Revenue	3.0%	2.0%	6.8%	14.9%	52.3%	16.2%	16.0%
Operating income (Pro-forma)	5.2%	-46.5%	-24.1%	-12.5%	184.9%	-14.4%	33.4%
Net income	5.7%	-35.6%	-19.9%	-10.0%	71.0%	-11.2%	24.7%
EPS (Pro-forma)	4.3%	-33.3%	-17.2%	-9.1%	70.0%	-10.3%	20.7%

Source: Deutsche Bank, company data

Appendix 1

Important disclosures

Additional information available upon request

Disclosure checklist			
Company	**Ticker**	**Recent price**	**Disclosure**
DSP Group	DSPG.OQ	25.81 (USD)	2, 13

2. Deutsche Bank and/or its affiliate(s) makes a market in securities issued by this company.
13. Deutsche Bank and/or its affiliate(s) holds a trading position, as that term is defined by German law, in shares of the company whose securities are subject of the research.

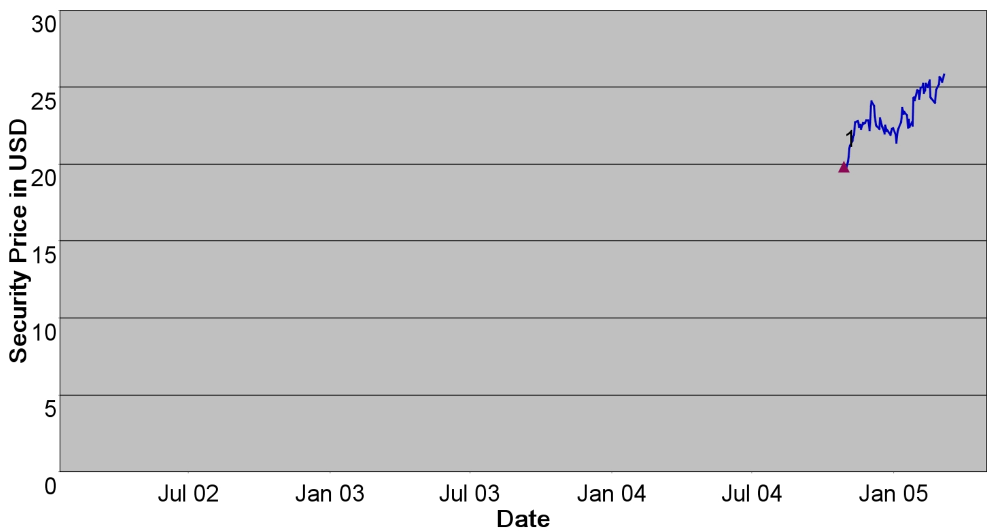
For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at http://equities.research.db.com.

Analyst certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Dan Harverd

Historical recommendations and target price: DSP Group (DSPG.OQ)

(as of 3/7/2005)



Previous Recommendations

Strong Buy
Buy
Market Perform
Underperform
Not Rated
Suspended Rating

Current Recommendations

Buy
Hold
Sell
Not Rated
Suspended Rating

* New Recommendation Structure as of September 9, 2002

1. 10/28/2004: Rating Initiated Buy

Rating key

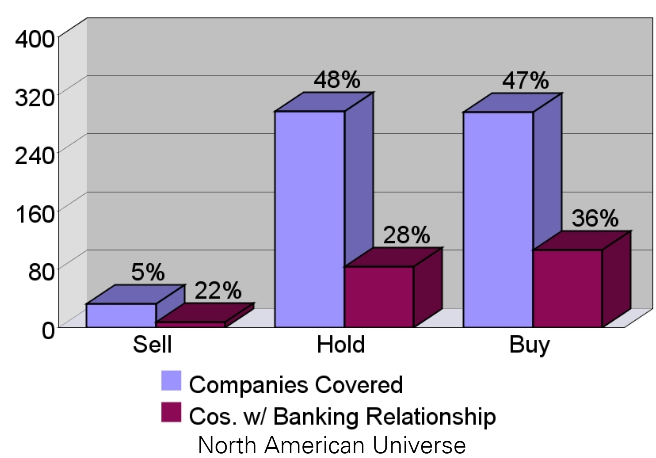
Buy: Total return expected to appreciate 10% or more over a 12-month period.

Hold: Total return expected to be between 10% to -10% over a 12-month period.

Sell: Total return expected to depreciate 10% or more over a 12-month period.

The target prices of shares mentioned in the accompanying text are based on the assumed investment horizon of 12 months. If company notes are published on these shares in the future, the target prices mentioned in the new notes will have priority.

Rating dispersion and banking relationships



Deutsche Bank Securities Inc.

North American locations

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
(1)212 250 2500

Deutsche Bank Securities Inc.
225 Franklin Street
25th Floor
Boston, MA 02110
(617) 988 8600

Deutsche Bank Securities Inc.
222 West Adams Street
Suite 1900
Chicago, IL 60606
(312) 424 6000

Deutsche Bank Securities Inc.
3033 East First Avenue
Suite 303, Third Floor
Denver, CO 80206
(303) 394 6800

Deutsche Bank Securities Inc.
1735 Market Street
24th Floor
Philadelphia, PA 19103
(215) 854 1546

Deutsche Bank Securities Inc.
101 California Street
46th Floor
San Francisco, CA 94111
(415) 617 2800

International locations

Deutsche Bank AG
Winchester House
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
(44) 207 545 4900

Deutsche Bank AG
Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 41339

Deutsche Bank AG
Level 19, Grosvenor Place
225 George Street
Sydney, NSW 2000
Australia
Tel: (61) 2 9258 1555
Fax: (61) 2 9258 1550

Deutsche Securities Limited
2-11-1 Nagatacho, 20th Floor
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171 Japan
Tel: (81)3 5156 6701
Fax: (81)3 5156 6700

Deutsche Bank AG
Level 55
Cheung Kong Centre
2 Queen's Road Central
Hong Kong
Tel: (852) 2203 8888
Fax: (852) 2203 6921