

AEM Holdings Ltd

(AEM SP/AWX.SI)

Testing new waters

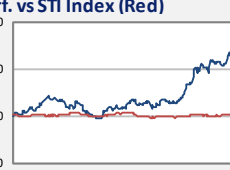
Tan Jiunn Chyuan (Kenny) / 65 6202 1196 / kenny.tan@kgi.com

- **AEM's FY2020 revenue outlook is 5 – 11% higher than FY2019**, and easily 12 – 19% higher than our forecast.
- **We fine-tune our revenue and earnings forecast** to account for new information from 6 November's 3Q19 presentation till today. Our new FY2020/2021F revenue forecasts are +19/+17%, and new profit forecasts are +22/+20% from prior forecast.
- **Major pointers in this report include** a re-appraisal of the key customer's business strategy, AEM's new acquisition, and an inclusion of a bull case scenario.
- **Maintain OUTPERFORM with increased 12M TP of S\$2.57**

AEM's 3Q19 presentation: On 6 November 2019, management explained how their key customer's new business strategy and push into AI solutions will continue to drive demand for their high density test handlers (HDMT). A host of events have taken place since, which communicates the key customer's strategy. While we remain cautious over the key customer's current business strategy, we acknowledge that AEM stands to benefit from this business pivot, which will support steady sales of test handlers and its peripherals.

AEM's new acquisition, Mu-TEST, extends AEM's solution offerings by enabling the production and sales of test equipment based on Field Programmable Gate Array (FPGA) technology. This allows AEM to enter the world of niche mixed signal semiconductors with a different set of market players, whom have different testing needs than large semiconductor players.

As investors continue to understand more about AEM's market positioning within the test equipment space, we think a substantial valuation re-rating could be in the cards. We provide benchmarks against test equipment competitors and create a bull case scenario for a 16x Price/Earnings peg.

OUTPERFORM - Maintain			
Price as of 15 Jan 20 (SGD)	2.16	Performance (Absolute)	
12M TP (S\$)	2.57	1 Month (%)	13.0
Previous TP (S\$)	1.80	3 Month (%)	81.5
Upside (%)	18.8	12 Month (%)	151.5
Trading data		Perf. vs STI Index (Red)	
Mkt Cap (S\$m)	583		
Issued Shares (mn)	270		
Vol - 3M Daily avg (mn)	8.0		
Val - 3M Daily avg (\$mn)	13.7		
Free Float (%)	87.3%		
Major Shareholders		Previous Recommendations	
James Toh Ban Leng	7.8%	4-Nov-19	OP S\$1.80
Standard Life Aberdeen	7.7%	11-Oct-19	OP S\$1.34
Morgan Stanley	7.0%		

Financials & Key Operating Statistics					
YE Dec (S\$m)	2017A	2018A	2019A	2020F	2021F
Revenue	221.8	262.7	312.7	349.9	373.5
PATMI	32.2	33.5	44.7	50.2	54.2
Core PATMI	32.0	33.2	44.4	49.8	53.8
Core EPS	0.123	0.122	0.163	0.183	0.198
Core EPS grth (%)	0.0	-0.9	33.7	12.3	7.9
Core P/E (x)	17.5	17.5	13.1	11.7	10.8
DPS (SGCents)	1.2	3.4	4.1	4.6	5.0
Div Yield (%)	0.6	1.6	1.9	2.1	2.3
Net Margin (%)	14.5	12.7	14.3	14.4	14.5
Gearing (%)	-79.7	-65.5	-70.9	-76.2	-80.1
Price / Book (x)	9.7	6.6	4.8	3.7	2.9
ROE (%)	73.1	45.5	42.1	35.4	29.9

Source: Company Data, KGI Research

Forecasts: We fine tune our revenue estimates to account for the increase in manufacturing capacity.

Valuation & Action: Maintain **OUTPERFORM**, with a **12M Target Price of S\$2.57**, based on 2020F diluted EPS. This TP is based off a 14x PE. Our bull case scenario with 16x PE gives us S\$2.93 TP.

Risks: Key customer concentration risk, order cancellations, competitors' R&D weakening AEM's market position

Expansion

At AEM's 3Q19 presentation, a couple of key statements drew our attention. Mainly, 1) expansion of manufacturing capacity by leasing new factory space, which was a precursor to FY2020's revenue outlook exceeding FY2019's, and 2) the mention of wafer and panel level packaging solutions as part of their R&D direction.

Panel level packaging is the next big thing in the semiconductor assembly and packaging space, as the semiconductor industry continues innovating to circumvent the downsides from the inevitable slowdown of Moore's Law. Various packaging options have spawned in order to meet IC designers' demands, such as 2.5D, 3D, fan-out wafer level packaging (FOWLP), and fan-out panel level packaging (FOPLP). Mordor Intelligence estimates that panel level packaging will grow at a 28% CAGR from 2019 to 2024. While the industry faces various challenges such as finding standardized panel sizes, we find it reassuring that AEM will continue to work on new package test configurations with its key customer, Intel.

Feeling blue

Intel's current business strategy is to diversify and enter various silicon markets such as AI, GPUs, and FPGA chips, repositioning their ~90% CPU market share in PC & servers into 30% market share across all silicon-based chips. Some recent updates include: 1) Intel's US\$2bn purchase of AI chipmaker Habana Labs in December 2019, signalling further commitment into the AI chip business, 2) The official debut of Intel's GPU, codenamed DG1, at Consumer Electronics Show (CES) 2020 during early January 2020, and 3) shipments of Intel's Agilix chips, the next generation of FPGA chips after Altera's Stratix generation.

Yet, Intel's shift came at an awkward timing as they have been receiving substantial flak for their recent underperformance. In their main markets, AMD continues to gain market share with their server and desktop CPU product line-up from the Ryzen 3000 family. OEMs begun to feature AMD's chips more prominently in their devices, and CES 2020 showcased Ryzen 4000 mobile from Team Red, which looks to beat both 10nm Ice Lake and 14nm Comet Lake laptop chips from Team Blue.

Additionally, analysts have mixed opinions over the purchase of Habana Labs, as Habana's Gaudi training processor and Goya inference processor could cannibalize sales from Intel's Nervana Neural Network Processor (NNP) line-up. While Facebook and Baidu were named as initial supporters of the NNP, rumours suggest that Facebook is testing Habana's chips and may port over to Habana's platform. Samsung's announcement to be the foundry for Baidu's own AI chip, KUNLUN, is another red flag for Intel's Nervana division. Should NNP be discontinued, we are not 100% confident that Habana's chips can be tested with AEM's HDMT, as we do not know their package type, nor whether if Intel will engage an alternative test solution provider. With the bulk of Big Tech (Amazon, Apple, Microsoft, Google/Alphabet, Baidu, Alibaba) designing their own AI chip, Intel's true addressable market may be much smaller than the US\$300bn estimate given for 2023. Early reviews of the DG1 graphics were also lukewarm, compounding onto Intel's blues.

Despite Intel's woes, we observe that AEM's FY2020 revenue outlook is at an all-time high of S\$330-350mn, easily 12-19% above our conservative FY2020F forecast. Intel's diversification is likely to lead to short-term steady demand for HDMT, and medium to long term increased demand, should their diversification strategy take off. Instead of a streamlined, mass production of a narrow line-up of chips, which leads to a narrow line-up of pans and kits, AEM will also have to design a variety of pans and kits for Intel's evolving test needs. This supports our earlier statement for Gen 1 legacy test handlers to be phased out, as these Gen 1 test handlers are unlikely to be used for the newer chips with different package requirements.

Diversification starts with D, but doesn't end with Mu

AEM's acquisition of Mu-TEST represents yet another step in AEM's goal of becoming a complete solutions provider in the testing space. Mu-TEST's hardware and software offerings are based off FPGA instead of the usual Application Specific Integrated Circuit (ASIC) technology. The key functional difference is the ability to re-program the integrated circuit for other purposes (i.e. a microprocessor into a GPU or vice versa, or to work as both), which an ASIC cannot accomplish. A secondary difference is the time-to-market: while an ASIC test handler such as HDMT can take at least 9 months to design to customer specifications, an FPGA tester would take around 3 months, thus reducing the design work, risk of delay, lowers the total cost of ownership and lowers the overall total cost of production.

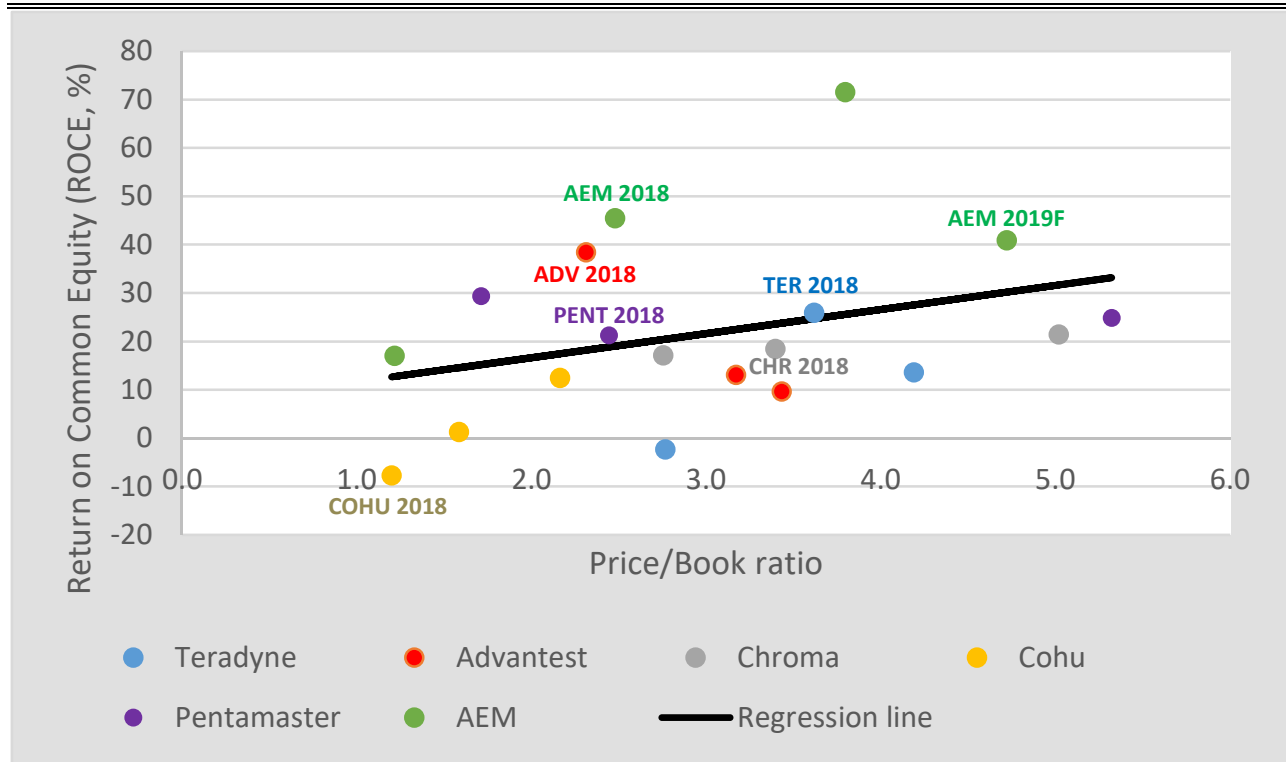
With this, AEM has identified two potential business strategies – to supply FPGA testers as a supplement to their ASIC tester design capabilities, or as a stand-alone solution. We understand that the first strategy is catered towards larger customers who have the ability to afford ASIC development, minimally a multi-million dollar pursuit, while the second strategy will target customers seeking a low-cost testing solution. Further, as the semiconductor industry transits from System-on-Chip (SoC) to System-in-Package (SiP) design, reconfigurations in chip design are to be expected, and Mu-TEST's technical knowledge in FPGA will help AEM with implementing Design-For-Test solutions for their existing and potential clients.

Valuation re-rating in the cards?

Despite AEM’s stellar ~146% share price gain in 2019, we think further upside is still in sight, as AEM remains undervalued relative to its peers. Beyond the 50+% PE discount that still exists, we provide a PB-ROE valuation analysis against its 5 peers (Teradyne, Advantest, Chroma, Cohu, Pentamaster) using data from the past 3 years* (2016, 2017, 2018), created a regression line with 19 data points (6 x 3 years = 18 points + AEM 2019F = 19 data points), and find that **AEM consistently charts above the regression line, indicating consistent undervaluation relative to its peers**. For example, AEM’s 2019F figure, which was a snapshot of the S\$2.02 close price, 4.72x PB and ~41% estimated Return to Common Equity (ROCE) on 31 December 2019, sits comfortably above the regression line towards the right. We think that, given AEM’s current trajectory of achieving 30 – 36% ROCE for FY2020, an FY2020 PB peg of 4.68 – 5.68x would put AEM on the regression line, which translates to an FY2020 PE peg of 15.1x - 18.3x.

*We did not use 2019 data due to lack of full availability, as 4Q19 figures are still unpublished for all companies. Additionally, we believe that the inclusion of 4Q19 data for the other 5 companies will further support our thesis that AEM remains undervalued, as most semiconductor capital equipment companies experienced a valuation multiple expansion in 2019.

Figure 1: AEM remains consistently undervalued against test handler peers



Source: Bloomberg, KGI Research
Data produced using PB and ROCE of each company’s last captured trading day on Bloomberg

Forecast changes

Given the increase in leasing spaces, we think that our prior test handler forecast may have been too conservative. We fine-tune our forecasts for FY2020F and FY2021F, as we think HDMT sales will remain steady in the short term. We increase our PE peg from 12x to 14x to reflect our increased confidence in AEM’s business strategy.

From our PB-ROE analysis, we also create a bull case scenario with a 16.0x PE peg for FY2020F, with a target price of S\$2.93. We think the 36% upside can be catalysed by various events this year, such as:

- 1) Announcement of high volume production of the AMPS test handler for the memory customer. Management has guided for 12-18 months of pre-production testing, which means high volume manufacturing could be in the cards by 1H20
- 2) On-boarding of more clients onto AMPS platform, which serves as further validation of AEM’s disruptor status
- 3) Improved FY2020 revenue guidance from management

Figure 2: Global back-end test equipment peers

Company Name	BBG Ticker	Price (local curr.)	Market Cap (\$ Mn)	P/E (x)			P/B (x)	3y EPS CAGR (%)	EV/EBITDA (x)		Div Yield (%)	YTD Price Performance (%)	1y Price Performance (%)
				TTM	FY20F	FY21F			Current	TTM			
AEM HOLDINGS LTD	AEM SP	SGD 2.16	583	14.4	11.7	10.8	5.1	163%	9.9	7.1	1.90	6.9	142.7
Semiconductor Back-end Testing Equipment Manufacturers (Average)				30.4	24.1	19.0	5.2		20.0	15.0	0.51	5.7	107.5
TERADYNE INC	TER US	USD 69.27	15648	30.2	21.7	18.3	7.9	-	17.4	15.0	0.52	1.6	120.0
ADVANTEST CORP	6857 JP	JPY 6330	15469	23.2	31.3	24.8	5.9	63%	16.1	16.6	-	2.8	173.2
CHROMA ATE INC	2360 TT	TWD 169	3184	40.2	23.0	19.6	5.0	17%	32.3	19.7	-	16.2	42.8
COHU INC	COHU US	USD 24.06	1338	-	23.2	13.6	2.0	-	-	12.8	1.00	5.3	40.3
PENTAMASTER CORP BHD	PENT MK	MYR 4.67	734	27.9	21.2	18.7	5.3	44%	14.1	11.0	0.00	2.9	161.4
Updated on 14 January 2020													

Source: Bloomberg, KGI Research

Financial Forecasts
Figure 3: Forecasted financials (2017A – 2021F)

INCOME STATEMENT (\$\$mn)	2017A	2018A	2019F	2020F	2021F
Core Revenue	221.6	262.3	312.2	349.4	373.0
Change in inventory	13.5	(7.2)	0.0	0.0	0.0
Cost of sales	(162.1)	(166.1)	(197.3)	(220.8)	(235.7)
Gross Profit	73.0	89.1	114.9	128.6	137.3
D&A expense	(0.7)	(1.9)	(5.3)	(5.7)	(5.9)
Other operating income/(expenses)	0.2	0.4	0.4	0.5	0.5
Staff expenses	(25.3)	(32.5)	(40.0)	(45.4)	(48.5)
Selling, general, admin expenses	(9.6)	(15.3)	(16.5)	(18.0)	(18.9)
Profit from Operations	37.6	39.7	53.6	59.9	64.4
Finance income/(expenses)	0.0	0.3	0.3	0.6	0.8
Share of JV results	(0.1)	(0.0)	0.1	0.1	0.1
Exceptionals/Investment income	0.0	0.0	0.0	0.0	0.0
Profit before Tax	37.5	40.0	53.9	60.5	65.3
Income tax	(5.3)	(6.5)	(9.2)	(10.3)	(11.1)
Non-controlling interests	0.0	0.0	0.0	0.0	0.0
PATMI	32.2	33.5	44.7	50.2	54.2
BALANCE SHEET (\$\$mn)	2017A	2018A	2019F	2020F	2021F
Cash and cash equivalents	46.1	58.9	87.2	122.5	161.2
Trade and other receivables	23.6	22.5	32.2	36.0	38.5
Inventory	35.8	27.4	39.5	44.2	47.1
Other current assets	0.0	0.0	0.0	0.0	0.0
Current Assets	105.5	108.8	158.9	202.6	246.8
Property, plant and equipment	3.6	5.7	9.6	13.5	17.6
Intangibles	3.4	17.7	16.4	15.5	14.8
Other non-current assets	4.1	4.2	8.9	23.6	21.4
Non-current Assets	11.2	27.7	34.9	52.6	53.8
Total assets	116.7	136.4	193.8	255.2	300.7
Trade and other payables	52.2	33.1	50.6	56.6	60.5
Borrowings (current)	0.0	0.2	0.0	0.0	0.0
Other current liabilities	6.0	10.4	13.2	15.0	16.3
Current Liabilities	58.3	43.7	63.8	71.6	76.8
Borrowings (non-current)	0.0	0.0	0.0	0.0	0.0
Other non-current liabilities	0.6	3.2	7.0	22.9	22.5
Non-current liabilities	0.6	3.3	7.0	22.9	22.5
Shareholders equity	57.8	89.5	123.0	160.7	201.4
Non-controlling interests	0.0	0.0	0.0	0.0	0.0
Total Equity	57.8	89.5	123.0	160.7	201.4
Total Liabilities and Equity	116.7	136.4	193.8	255.2	300.7
CASH FLOW STATEMENT (\$\$mn)	2017A	2018A	2019F	2020F	2021F
Net income before tax	37.5	40.0	53.9	60.5	65.3
Depreciation & Amortisation	0.7	1.9	5.3	5.7	5.9
Other non-cash adjustments	29.0	(6.9)	(7.4)	(3.3)	(2.3)
Change in Working Capital	(16.4)	4.3	1.9	0.6	0.2
Income Tax Paid	(0.3)	(5.2)	(6.9)	(7.7)	(8.3)
Interest Paid	0.0	0.0	0.1	0.0	0.0
CF from operating activities	50.6	34.1	46.9	55.9	60.7
Purchase/Disposal of PPE	(2.0)	(2.9)	(5.0)	(5.6)	(6.0)
Other CFI	(0.4)	(10.4)	0.4	0.6	0.8
CF from investing activities	(2.4)	(13.2)	(4.6)	(5.0)	(5.2)
Dividends Paid	(4.5)	(8.4)	(11.2)	(12.6)	(13.5)
Debt Raised / (Repaid)	0.0	(0.3)	(0.2)	0.0	0.0
Equity Raised / (Bought Back)	(2.0)	(1.2)	0.0	0.0	0.0
Other Cash from Financing	0.0	0.6	(2.7)	(3.0)	(3.2)
CF from financing activities	(6.4)	(9.2)	(14.0)	(15.6)	(16.8)
Net increase in cash & cash equiv.	41.2	11.6	28.3	35.2	38.8
FX effects	6.3	46.1	58.9	87.2	122.5
Beginning Cash	(1.4)	1.2	0.0	0.0	0.0
Ending Cash	46.1	58.9	87.2	122.5	161.2

Source: KGI Research

Key Ratios
Figure 4: Key ratios (2017A – 2021F)

KEY RATIOS	2017A	2018A	2019F	2020F	2021F
Profitability					
Core EPS	0.1231	0.1220	0.1631	0.1832	0.1976
Core EPS Growth (%)	–	-0.9%	33.7%	12.3%	7.9%
DPS (SGD Cents)	1.2	3.4	4.1	4.6	5.0
Dividend Yield (%)	0.6	1.6	1.9	2.1	2.3
Profitability (%)					
Gross margin	33.0%	34.1%	36.9%	36.9%	36.9%
EBITDA margin	17.3%	15.8%	18.8%	18.8%	18.8%
Net margin	14.5%	12.7%	14.3%	14.4%	14.5%
ROE	73.1%	45.5%	42.1%	35.4%	29.9%
ROA	39.0%	26.5%	27.1%	22.4%	19.5%
Financial Structure					
Interest coverage (x)	1,016.2	993.7	474.0	8,559.3	nm
Total Debt/Equity (%)	0.0	0.3	0.0	0.0	0.0
Net Gearing (%)	-79.7	-65.5	-70.9	-76.2	-80.1
Market Valuation (x)					
Price / Earnings	17.5	17.5	13.1	11.7	10.8
Price / Book	9.7	6.6	4.8	3.7	2.9
Price / Sales	2.5	2.2	1.9	1.7	1.6
EV / EBITDA	13.5	12.7	8.5	7.1	6.1

Source: KGI Research

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