

22 July 2021

Technology | Semiconductors

Aemulus Holdings (AMLS MK)

Not Rated

A Proxy For China's Semiconductor Boom

Fair Value (Upside): MYR1.48 (+51%)
Price: MYR0.98
Market Cap: USD140m
Avg Daily Turnover (MYR/USD) 5.97m/1.44m

- **Fair value of MYR1.48, derived from 40x FY22F (Sep) P/E, with a 51% estimated return.** Aemulus is one of the fastest growing automated test equipment (ATE) designers that is bound to make a quantum-leap in profit and valuation re-rating given its distinctive value proposition to benefit from China's semiconductor boom. Trading at 26x FY22F P/E, we expect its valuation gap with local peers to narrow given above-industry 2-year earnings CAGR of 87% and supported by an all-time high orderbook – intellectual property (IP) monetisation as a likely further upside.
- **Gaining prominence in the ATE field.** Aemulus is involved in the design and development of test & measurement instruments, provision of design consultancy and test-related services. Its tester is primarily used in the signal testing for smart devices, tablets, Internet of Things (IoT) and automotive related products, from analog to discrete, digital/mixed signals and radio frequency (RF), which saw its 1HFY21 revenue grow by almost fourfold YoY or 73% from FY19.
- **5G technology, a paradigm shift.** The proliferation of 5G technology creates exponential demand growth for 5G-related components, from filters, power amplifiers, transceivers, and switches, to devices as well as chipsets – all of which require some form of signal testing to ensure a consistent performance and operational excellence. According to SEMI, the semiconductor test equipment is expected to grow 26% in 2021 to USD7.6bn, and 6% in 2022, buoyed by demand from 5G and high performance computing (HPC) applications. As such, its RF testers should remain the main growth driver alongside the ever-growing CMOS Image Sensor Tester.
- **Prime beneficiary of China's semiconductor boom.** The policy of "Made in China 2025" to localise 70% of the USD300bn worth of semiconductor goods should be a boon to Aemulus. Its new facility (three times its current facility) in Jiashan, China is expected be ready by end-2021. Having penetrated into the supply chain for the high growth RF component leading players in China and leveraging on its 40%-owned TMSS Technology – a JV with Tangren Microintelligence Technology Co Ltd – high demand for non-American made testers will be favoured amid the emphasis of technology localisation.
- **Earnings turnaround followed by a quantum leap in earnings,** underpinned by its all-time high orderbook of >MYR40m and margin expansion thanks to the higher operating leverage, aided by growing revenue base relative to its stable SG&A. We understand that order flow is robust not only in Taiwan and China, but also the rest of the world amid healthy capex spending within the semiconductor supply chain.
- **A potential multi-bagger trading at a discount.** The current 26x FY22F P/E is lagging peers in the ATE (30x-50x) space and Bursa Malaysia Technology Index (KLTEC). With an earnings turnaround, Aemulus' valuation should catch up or even surpass bigger cap peers given its above industry growth prospects and unique exposure to China's semiconductor supply chain. Further upside could stem from monetisation of IP rights (c.MYR200m).
- **Risks:** Obsolescence of technologies, discontinuance of JV with the China company, heightened competition, and unfavourable FX.

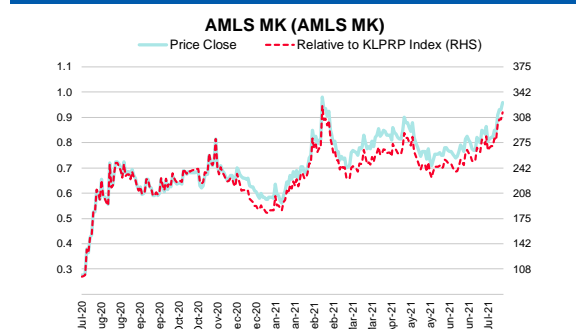
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Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	62.0	16.0	16.7	43.1	232.2
Relative	65.9	20.1	22.9	42.3	220.9
52-wk Price low/high (MYR)				0.30 – 1.00	



Source: Bloomberg

Forecasts and Valuation	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
Total turnover (MYRm)	29	19	56	75	98
Recurring net profit (MYRm)	(3)	(4)	10	22	33
Recurring net profit growth (%)	(160.7)	12.3	-	136.0	45.2
Recurring P/E (x)	na	na	62.35	26.42	18.20
P/B (x)	8.0	5.8	5.3	4.6	3.8
P/CF (x)	99.39	na	na	56.79	33.06
Dividend Yield (%)	na	na	na	na	na
EV/EBITDA (x)	na	na	56.35	27.13	18.82
Return on average equity (%)	(4.2)	(4.1)	8.9	18.7	22.9
Net debt to equity (%)	net cash	net cash	net cash	net cash	net cash

Source: Company data, RHB

Note:

Small cap stocks are defined as companies with a market capitalisation of less than USD1bn.

Financial Exhibits

Asia	Financial summary (MYR)	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
Malaysia	Recurring EPS	(0.01)	(0.01)	0.02	0.04	0.05
Technology	BVPS	0.12	0.17	0.18	0.21	0.26
Aemulus	Return on average equity (%)	(4.2)	(4.1)	8.9	18.7	22.9
AMLS MK						
Not Rated						
Valuation basis	Valuation metrics	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
40x FY22F P/E	Recurring P/E (x)	na	na	62.35	26.42	18.20
	P/B (x)	8.0	5.8	5.3	4.6	3.8
	FCF Yield (%)	(0.8)	(2.8)	(0.9)	1.3	2.6
	EV/EBITDA (x)	na	na	56.35	27.13	18.82
	EV/EBIT (x)	na	na	75.97	31.28	20.90
Key drivers	Income statement (MYRm)	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
i. Realignment of focus to customised products with better profitability;	Total turnover	28.8	19.3	55.6	75.3	97.8
ii. New market opportunities via the joint venture with China company;	Gross profit	17.7	12.3	31.7	44.4	56.7
iii. Huge potential in RF market through continuous R&D for development of new testers.	EBITDA	(1.6)	(0.9)	10.3	21.1	29.7
	Depreciation and amortisation	(1.5)	(2.2)	(2.7)	(2.8)	(3.0)
	Operating profit	(3.1)	(3.1)	7.6	18.3	26.8
	Net interest	(0.1)	(0.2)	1.9	2.3	2.6
	Pre-tax profit	(3.1)	(3.3)	10.0	23.7	34.3
	Taxation	(0.1)	(0.3)	(0.5)	(1.2)	(1.7)
	Reported net profit	(3.2)	(3.6)	9.5	22.5	32.6
	Recurring net profit	(3.2)	(3.6)	9.5	22.5	32.6
Key risks	Cash flow (MYRm)	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
i. Obsolescence of technologies	Change in working capital	7.7	(0.7)	(14.6)	(11.8)	(12.6)
ii. Discontinuance of JV with China company	Cash flow from operations	6.0	(2.1)	(2.9)	10.5	18.0
iii. Heightened competition	Capex	(10.8)	(14.5)	(2.5)	(2.5)	(2.5)
iv. Unfavourable FX	Cash flow from investing activities	(12.4)	(39.1)	(2.5)	(2.5)	(2.5)
v. Talent retention	Dividends paid	(1.1)	0.0	0.0	(4.5)	(6.5)
	Cash flow from financing activities	2.8	42.0	(8.9)	(6.9)	(5.9)
	Cash at beginning of period	7.1	3.4	32.5	16.9	18.6
	Net change in cash	(3.7)	0.7	(14.3)	1.0	9.5
	Ending balance cash	(2.0)	25.4	18.2	17.9	28.1
Company Profile	Balance sheet (MYRm)	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
Aemulus is one of the fastest growing automated test equipment (ATE) designers that is involved in the design and development of test & measurement instruments, provision of design consultancy and test-related services. It exports to various countries such as Singapore, China, USA, Korea and Taiwan.	Total cash and equivalents	12.2	35.3	19.6	21.3	33.3
	Tangible fixed assets	24.2	35.1	34.9	34.6	34.2
	Total investments	0.0	1.2	1.2	1.2	1.2
	Total assets	89.6	128.8	133.6	149.0	176.5
	Short-term debt	2.7	4.6	2.4	0.5	0.0
	Total long-term debt	4.4	12.9	4.3	1.4	0.0
	Total liabilities	15.6	27.1	22.4	19.8	21.2
	Total equity	74.0	101.7	111.2	129.2	155.3
	Total liabilities & equity	89.6	128.8	133.6	149.0	176.5
	Key metrics	Sep-19	Sep-20	Sep-21F	Sep-22F	Sep-23F
	Revenue growth (%)	(22.0)	(33.0)	187.9	35.4	29.8
	Recurrent EPS growth (%)	(160.7)	12.3	0.0	136.0	45.2
	Gross margin (%)	61.2	63.4	57.0	59.0	58.0
	Operating EBITDA margin (%)	(5.5)	(4.6)	18.5	28.1	30.4
	Net profit margin (%)	(11.1)	(18.7)	17.1	29.8	33.4
	Capex/sales (%)	37.3	75.0	4.5	3.3	2.6
	Interest cover (x)	(27.2)	(6.9)	12.6	84.4	543.7

Source: Company data, RHB

Investment Thesis

Gaining prominence in the ATE field

Aemulus Holdings is one of the fastest growing ATE designers that is principally involved in the design and development of test & measurement instruments, as well as provision of design consultancy and test-related services. Since 2005, their ATE is designed to target the semiconductor industry. It focuses on RF and mixed-signal semiconductor test markets, followed by automotive and lighting markets. The MYR25m newly-built Aemulus Base – the new corporate office since 2020 – possesses laboratories to carry out research and development (R&D) activities, product testing and software development under one roof. The production capacity has also expanded by >2 times.

Its in-house developed test solution is primarily used in the signal testing for smart devices, tablets, IoT and automotive related products, from analog to discrete, digital/mixed signals and RF. Among the signature products are RF (Amoeba® 7600-S), RF surface acoustic wave (Amoeba® 7300) filters testers and CMOS Image Sensor Tester Amoeba® 5600.

AMB5600, which was launched in 2019 and aimed for the IoT and baseband market, is gaining momentum – it achieved higher sales orders in 2020. This is the latest in the Amoeba series with a complete range of direct current (DC), analog, digital and RF testing all-in-one model. On the other hand, AMB7600-S is the third generation of RF front end module (FEM) tester with multi-test-site configurations, multi-instrument support, flexible RF accessories integration, embedded with Smart Manufacturing software framework and RealSmart Test Environment that strive to provide robust predictive algorithms, while preserving the best operating equipment efficiency.

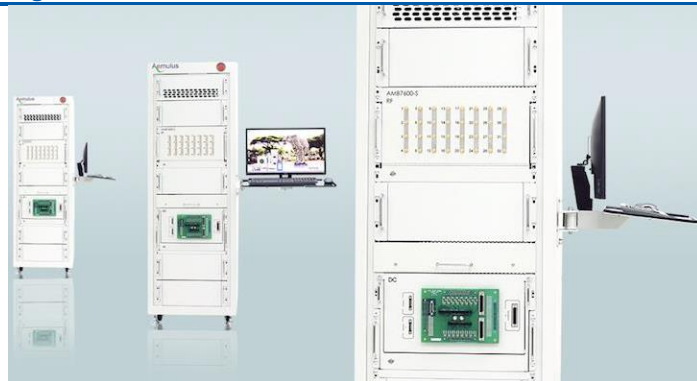
Notably, with the change of marketing strategy, increasing demand for RF-related tester amid the semiconductor upcycle, its 1HFY21 revenue grew by almost fourfold YoY or 73% from FY19, with AMB7600 contributing c.42% of total revenue, followed by AMB7300 and AMB 5600 at around 10% each.

Figure 1: Highlights of products

Product	Function	RF	Analog	Digital	Discrete	
Amoeba® 4200	Analog/Linear Tester		√	√		
Amoeba® 4100-D	Small-Signal Discrete Tester					
Amoeba® 4600	Digital/Mixed Signal (with RF Option)	√	√	√		
Amoeba® 7600-S	RF Front End Devices Tester	√	√	√		
Amoeba® 5600	Mixed Signal RF - MCU - Digital - IC Test System	√	√	√	√	
		Power supply	Source	Measure	Measure only	Digital I/O
Amoeba®1340c	Source and Measure Unit	√	√	√	√	√

Source: Company data

Figure 2: Amoeba® 7600-S



Source: Company data

Figure 3: Amoeba® 7300

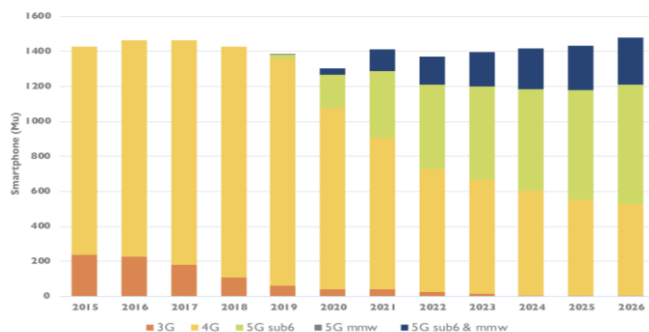


Source: Company data

5G technology, a paradigm shift

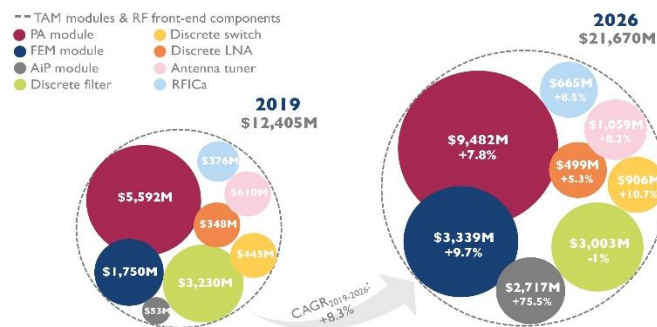
5G technology is expected to proliferate over the next few years, creating exponential demand for 5G-related components, from filters, power amplifiers, transceivers, and switches to devices and chipsets – all of which require some form of signal testing to ensure consistent performance and operational excellence. According to SEMI, global sales of semiconductor manufacturing equipment by OEMs are expected to exceed USD100bn next year, hitting a new high after jumping 34% to USD95.3bn in 2021, from USD 71.1bn in 2020, in which semiconductor test equipment is expected to grow 26% in 2021 to USD7.6bn and another 6% in 2022, on demand from 5G and HPC applications. As such, we expect Aemulus' RF testers to continue to be the main growth driver alongside the ever-growing CMOS Image Sensor Tester, which is widely used in surveillance, 3D sensing and cameras.

Figure 4: 5G smartphone forecast



Source: Yole Developpement

Figure 5: RF front-end market (by type of component)



Source: Yole Developpement

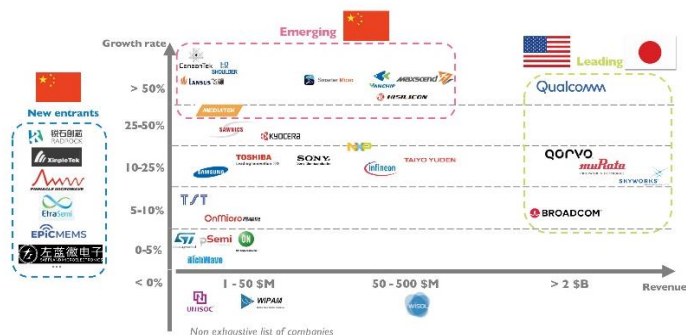
Prime beneficiary of China's semiconductor boom

The triple whammy of shrinkage in global investment, trade war and imposition of sanctions on China's largest telephone-network equipment maker led to a reduction in global chipmaking equipment sales, which in turn, also contributed to lower revenue for Aemulus in 2019. However, in 2020, the group entered into a JV with China's Tangren Microintelligence Technology Co Ltd. (Tangren), making inroads in the Chinese market. China's Made in 2025 policy to localise 70% of the USD300bn worth of semiconductor goods should be a boon to the group.

Its new facility (under the JV, currently under construction in Jiashan, China that will expand Aemulus' capacity by three times) is expected to commence operations by end-2021. Leverage on its 40%-owned TMSS Technology (TMSS), a JV with Tangren – in which China's fab leader, Semiconductor Manufacturing International Corporation (SMIC), makes up part of the substantial shareholders – is expected to grow exponentially given the 5G tester space is predominantly dominated by US firms currently.

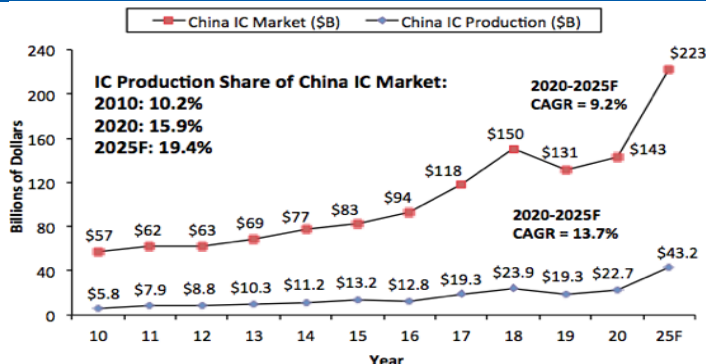
We also understand that Aemulus is already part of the supply chain for the high growth RF component leading players in China such as Maxscend Microelectronics (300782 CH, NR), Unisoc, Lansus Technologies, while it is also in talks with players like Will Semiconductor (603501 CH, NR) and Shenzhen Microgate Technology (300319 CH, NR). We believe that with the right domestic partner, sales channels and network, Aemulus will stand to benefit greatly from the enormous market size in China for many years to come.

Figure 6: RF front-end modules market shares (2020)



Source: Yole Developpement

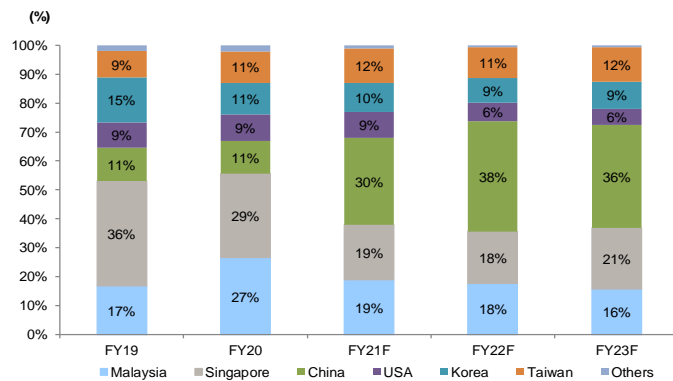
Figure 7: China IC market vs China IC production trends



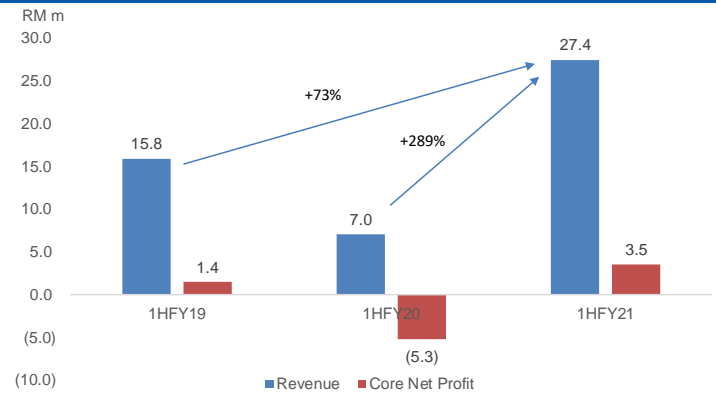
Source: IC Insight

Earnings turnaround followed by a 2-year earnings CAGR of 87%...

...underpinned by all-time high orderbook of over MYR40m and higher operating leverage. FY21F will be a full turnaround year for Aemulus where earnings are expected to be back in the black. The momentum seen from 1H FY21 earnings of MYR3.5m vs a MYR5.3m loss in 1H FY20 should carry on in the subsequent quarters. Besides, GPM is expected to be rather stable at 50-60% but we expect margin expansion from the EBITDA level and below to be aided by growing revenue base relative to its lean and stable SG&A. Orders are picking up as the main tester products are gaining traction not only in Taiwan and China, but also the rest of the world that have begun picked up in recent months mainly due to healthy capex spending within the semiconductor supply chain amid chip shortages situation and growing underlying demand.

Figure 8: Revenue breakdown by region

Source: Company data, RHB

Figure 9: Revenue and profit growth (1H FY21)

Source: Company data, RHB

Valuation & Recommendation

A potential multi-bagger trading at a discount

Fair value of MYR1.48, pegged to 40x FY22F (Sep) P/E, offering a 51% potential upside. The current 26x FY22F P/E still lags peers in the ATE (30-50x) space and KLTEC (above 30x), which is bound to narrow on the back of upward trending earnings base coupled with its unique exposure in the tester market domestically. Our choice of multiple is at +1SD from its 3-year mean – we believe it is more than justified during a sector upcycle and strong earnings growth trajectory (2-year CAGR of 87%).

Besides, we like the stock for its unique exposure to the test instruments market, which is predominantly dominated by US manufacturers. Tapping into the Chinese supply chain is also another great investment theme, which provides investors a perfect proxy to ride on the growing RF-related components and massive capex spending to be self-sufficient in the semiconductor ecosystem, thanks to the Made in China 2025 policy. Further upside could stem from the estimated intellectual property rights of c.MYR200m (or MYR0.33 per share) that Aemulus could potentially monetise via an IP sale.

In fact, we expect valuation for Aemulus to catch up or even exceed the bigger cap peers given its above industry growth prospects and riding on the growing demand for RF-related components and distinctive China exposure. Some precedent can be drawn from the market valuation of JF Technology (JFTECH MK, NR) and QES Group (QES MK, NR) in the smaller cap space, in which they offer specific exposure to the China supply chain (for the former) and as a new growth prospect (for the latter).

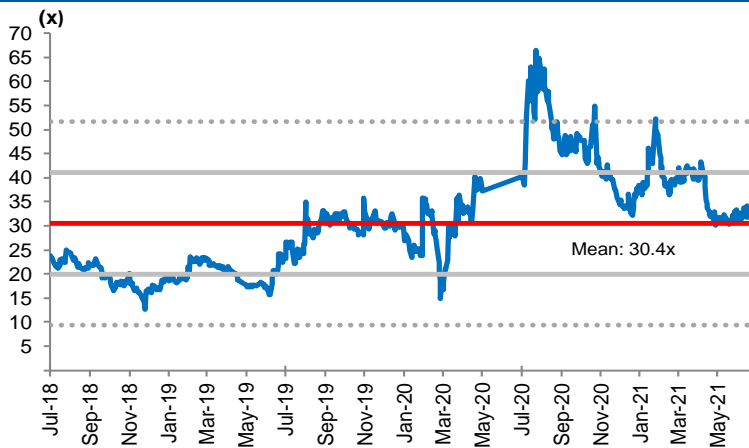
Figure 10: Peer comparison

Company	Mkt Cap (MYR m)	P/E		EV/EBITDA		P/BV (x)		ROE (%)	Div yield (%)
		FY21F	FY22F	FY21F	FY22F	FY21F	FY22F	FY21F	FY21F
<u>Malaysia</u>									
ViTrox Corp Bhd	1,918	55.8	46.7	50.4	41.4	12.0	10.0	23.3	0.5
Pentamaster Corp Bhd	883	42.7	35.0	23.9	19.6	6.4	5.5	17.1	0.3
Elsoft Research Bhd	121	63.3	23.0	52.4	19.4	NA	NA	18.6	0.8
Mi Technovation Bhd	695	37.4	29.2	34.3	25.9	4.9	4.4	16.4	0.5
Greatech Technology Bhd	1,797	45.7	38.0	40.3	33.4	17.7	11.9	35.4	0.0
Average		49.0	34.4	40.3	28.0	10.2	7.9	22.2	0.4
<u>Asia</u>									
Advantest Corp	16,804	25.3	22.4	16.0	14.5	5.8	5.0	24.5	1.4
Koh Young Technology Inc	1,455	43.0	33.1	28.4	21.8	6.0	5.9	18.3	0.5
Maxscend Microelectronics Co Ltd	1,301	71.4	53.5	60.8	45.4	27.3	18.9	38.1	0.2
Will Semiconductor Co Ltd Shanghai	2,509	60.3	46.9	46.4	36.8	17.4	13.1	29.2	0.2
Shenzhen Microgate Technology Co	114	44.7	30.1	NA	NA	5.1	4.3	14.4	NA
Average		48.9	37.2	37.9	29.6	12.3	9.5	24.9	0.6
<u>US</u>									
National Instruments Corp	5,476	29.5	24.3	19.9	16.2	4.4	4.3	18.5	2.6
Teradyne Inc	20,580	23.1	21.5	15.7	14.7	8.3	6.8	33.3	0.3
KLA Corp	46,409	21.4	17.8	16.1	14.0	13.5	10.6	62.1	1.2
Applied Materials Inc	120,618	20.0	17.7	16.1	14.5	9.3	7.8	46.5	0.7
Lam Research Corp	86,583	22.7	18.8	18.0	15.1	16.2	13.1	83.2	0.8
Brooks Automation Inc	6,551	35.8	32.3	21.9	18.4	5.2	4.4	13.0	0.8
Keysight Technologies Inc	28,848	26.6	24.2	20.3	18.5	7.4	6.1	27.4	0.0
Average		25.6	22.4	16.0	13.9	9.2	7.6	35.5	0.9
Average		39.3	30.3	30.1	23.1	10.8	8.5	30.5	0.7
Aemulus	134.5	60.1	26.0	43.8	21.0	5.2	4.5	9.0	0.0
Bursa Technology Index	-	37.6	31.3	22.8	19.7	6.7	5.9	23.7	1.0

Note: *as at 19 Jul 2021

Source: Bloomberg, RHB

Figure 11: Aemulus' 3-year historical P/E band



Source: Bloomberg, RHB Research

Key Risks

Key risks include:

- i. Obsolescence of technologies;
- ii. Slower market expansion in China;
- iii. Weaker-than-expected sales order;
- iv. Unfavourable FX;
- v. Retention of talent.

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Buy:	Share price may exceed 10% over the next 12 months
Trading Buy:	Share price may exceed 15% over the next 3 months, however longer-term outlook remains uncertain
Neutral:	Share price may fall within the range of +/- 10% over the next 12 months
Take Profit:	Target price has been attained. Look to accumulate at lower levels
Sell:	Share price may fall by more than 10% over the next 12 months
Not Rated:	Stock is not within regular research coverage

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