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ALPHAWAVE SEMI

ALPHAWAVE IP GROUP PLC
INTERIM RESULTS FOR THE SIX MONTHS ENDED 30 JUNE 2023

- Technology leadership and product portfolio underpin broader customer base of 85 (H1 2022: 28)
- 16 design wins; 91% of Licence and NRE bookings from North American, EMEA and APAC (exc. China) customers
- Bookings up 251% year-on-year to US$187m. Backlog excluding royalties of US$365m (FY 2022: US$365m)
- Revenue up 228% year-on-year to US$187m including contribution from the acquisition of OpenFive
- Adjusted EBITDA[1] of US$32m and adjusted EBITDA margin of 17% (H1 2022: US$23m and 41%) reflect R&D investment and change in business mix including silicon
- H1 2023 operating loss of US$3m compared to H1 2022 operating profit of US$30m
- Cash outflow from operating activities of US$31m (H1 2022: US$32m cash inflow)
- Net debt[1] of US$100m (H1 2022: net cash US$452m)
- FY 2023 outlook unchanged with increased profitability expected in H2 2023. Medium-term outlook unchanged and continued confidence in growth prospects

LONDON, United Kingdom and TORONTO, Ontario, Canada, 25 September 2023 - Alphawave IP Group plc (LSE: AWE, "Alphawave Semi", the "Company"), a global leader in high-speed connectivity for the world's technology infrastructure, has published its interim results for the six months ended 30 June 2023.

Financial Summary and APMs[1] – US$m	H1 2023	H1 2022	Change
Licence and NRE	73.6	57.1	29%
Royalties and silicon	113.6	-	nm
Revenue	187.2	57.1	228%
Operating (loss)/profit	(2.6)	29.9	(109%)
Operating margin	*(1%)*	*52%*	
EBITDA[1]	10.7	32.7	(67%)
EBITDA margin	*6%*	*57%*	
Adjusted EBITDA[1]	32.4	23.2	40%
Adjusted EBITDA margin	*17%*	*41%*	
(Loss)/profit after tax	(13.4)	16.3	(182%)
(Loss)/profit after tax margin	*(7%)*	*28%*	
Adjusted Profit after tax[1]	15.4	6.7	130%
Adjusted PAT margin	8%	12%	
Pre-tax operating cash flow	(31.3)	32.2	(197%)
Cash and cash equivalents	122.8	451.8	(73%)
Net (debt)[1]/cash	(100.0)	451.8	(122%)

Bookings[2] and Design Win Activity – US$m	H1 2023	H1 2022	Change
Licence and NRE	114.9	38.5	199%
Royalties and silicon[3]	72.2	14.9	384%
New Bookings	187.2	53.4	251%

[1] See note 4 Alternative Performance Measures (APMs). Adjusted EBITDA and Adjusted Profit after Tax exclude foreign exchange adjustments, share-based payments, deferred compensation payments, and M&A transaction costs.

[2] Bookings are a non-IFRS measure representing legally binding and largely non-cancellable commitments by customers to license our technology. Bookings comprise licence fees, non-recurring engineering, support, silicon orders, and, in some instances, our estimates of potential future royalties.

[3] In H1 2022 there were no silicon bookings. The amount reflects only those instances where potential future royalties could be estimated based on committed prepayments or customer volume estimates.

Additional design win activity – FSA drawdowns and China re-sale licences[4]	3.4	14.7	(77%)
Number of revenue generating end-customers (end of period)	85	28	204%

Due to rounding, numbers presented in the table may not add up to the totals provided and percentages may not precisely reflect the absolutely figures. 'nm', where referenced, means 'not meaningful'.

Tony Pialis, President and Chief Executive Officer of Alphawave Semi said: "We are successfully executing on our strategy, with the business offering a growing range of advanced connectivity solutions that enable the next generation of AI and cloud infrastructure. In H1 2023 we delivered a good set of results, scaling our business and investing organically to support our pipeline and future revenue growth. Our leading connectivity technology and strong execution give us confidence in the prospects for our business."

John Lofton Holt, Executive Chairman of Alphawave Semi, added: "Through an uncertain economic environment we remain focused on delivering on our vision for the business. We are serving and increasing number of customers with our next-generation connectivity technology. This fuels our optimism for the long-term potential of the business."

Interim Results Highlights

- H1 2023 revenues of US$187.2m, representing 228% growth year-on-year including the contribution from the acquisition of OpenFive and organic growth.
- WiseWave revenues of US$26.4m (excluding re-seller revenue[5]), relate to the multi-year subscription licence
- Adjusted EBITDA of US$32.4m and margin of 17% (H1 2022 US$23.2m and 41%), reflecting change in business mix including revenue from IP licences and silicon, as well as R&D investment in our new connectivity products going into production in 2024
- Share-based payment of US$18.5m and deferred compensation payments[6] related to acquisitions of US$4.1m
- Cash outflow from operating activities before tax in H1 2023 was US$31.3m (H1 2022 cash inflow: US$32.2m) including US$42.7m decrease in deferred revenue and flexible spending accounts
- During the second quarter of 2023, the Group's fixed charges coverage ratio (FCCR) was below the minimum allowed ratio of 1.25x, which represented a breach of the covenant. Long-term waiver obtained from lenders covering the period to 30 June 2024
- Cash and cash equivalents of US$122.8m. Net debt of US$100.0m

Business and Technology Highlights

- IP & NRE bookings in H1 2023 up 199% year-on-year. 77% of these bookings in advanced nodes, i.e. 7nm and below
- Alphawave Semi maintained its technology leadership with new design wins in 3nm, 224G ser-des IP and PCI-Express Gen6 interface IP
- The Company expanded its technology collaboration with the leading foundries on 3nm process
- During H1 2023, the Company broadened its customer base to 85 (FY 2022: 80 customers; H1 2022: 28 customers), including more than half of the top 20 semiconductor device companies
- Continued to reinforce sales and R&D capabilities with new premises in Ottawa, Canada and Pune, India
- In H1 2023, the Company headcount increased by 49 people globally, from 695 (as of 31 December 2022) to 744 (251 as of 30 June 2022)

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[4] Both FSA (Flexible Spending Account) drawdowns and China re-sale licences convert previously announced contractual commitments included within bookings reported in prior periods to new product design wins which will be recognised as revenue over time.

[5] For further details see note 21.

[6] Deferred compensation payments related to acquisitions which are expected to be settled over time until August 2026.

Outlook

- Alphawave Semi reiterates its FY 2023, mid-term and long-term outlook communicated at the Capital Markets Day on 13 January 2023
- The outlook for 2023 remains unchanged. Alphawave Semi expects 2023 revenue of US$340m to US$360m and adjusted EBITDA of approximately US$87m (or approximately 25% of revenue), which is at the mid-point of the revenue guidance range

Results Presentation and webcast

A presentation for investors and analysts will be held at 8.30am BST, on 25 September 2023. To register for the webcast:

https://awavesemi.zoom.us/webinar/register/WN_F9JqILaXQVG_3Gzb1F02Nw

After registering, you will receive a confirmation email with information about joining the webcast.

Or by phone:

US: +1 669 900 9128 / +1 719 359 4580 / +1 253 215 8782
United Kingdom: +44 203 901 7895 / +44 208 080 6591 / +44 330 088 5830

Webinar ID: 894 8611 9992
Full list of dial-in numbers available https://awavesemi.zoom.us/u/kxW5Y5UU

The Company's H1 2023 Report is also available to view in the Investor Relations section of the Company's website (Results, Reports & Presentations (awaveip.com)).

About Alphawave Semi

Alphawave Semi is a global leader in high-speed connectivity for the world's technology infrastructure. Faced with the exponential growth of data, Alphawave Semi's technology services a critical need: enabling data to travel faster, more reliably and with higher performance at lower power. We are a vertically integrated semiconductor company, and our IP, custom silicon, and connectivity products are deployed by global tier-one customers in data centers, compute, networking, AI, 5G, autonomous vehicles, and storage. Founded in 2017 by an expert technical team with a proven track record in licensing semiconductor IP, our mission is to accelerate the critical data infrastructure at the heart of our digital world. To find out more about Alphawave Semi, visit: awavesemi.com

Trademarks

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Cautionary statement regarding forward-looking statements

This document may contain forward-looking statements which are made in good faith and are based on current expectations or beliefs, as well as assumptions about future events. You can sometimes, but not always, identify these statements by the use of a date in the future or such words as "will", "anticipate", "estimate", "expect", "project", "intend", "plan", "should", "may", "assume" and other similar words. By their nature, forward-looking statements are inherently predictive and speculative and involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future. You should not place undue reliance on these forward-looking statements, which are not a guarantee of future performance and are subject to factors that could cause our actual results to differ materially from those expressed or implied by these statements. The Company undertakes no obligation to update any forward-looking statements contained in this document, whether as a result of new information, future events or otherwise.

A. Operational and Strategic Highlights

Summary

Total bookings in H1 2023 of US$187.2m were up 251% over the prior year (H1 2022: US$53.4m) due to increased design win momentum and the contribution from the acquisition of OpenFive. During H1 2023 we achieved 16 design wins.

Licence and Non-recurring Engineering ("NRE") bookings in H1 2023 were US$114.9m, up 199% year-on-year. North American customers represented approximately 44% of these bookings, followed by EMEA 25% and APAC customers (excluding China) 22%. China represented 9%. Royalties and Silicon orders were US$72.2m, up 384% over H1 2022 (H1 2022: US$14.9m). The level of silicon orders was driven by pre-existing custom silicon designs for North American and Chinese customers from the acquisition of OpenFive in H2 2022.

During H1 2023 there were no Flexible Spending Accounts[4] ("FSA") drawdowns (H1 2022: US$5.6m) and China (VeriSilicon) reseller deals totalled US$3.4m (H1 2022: US$9.1m). Both FSA and reseller deals are not new bookings but represent the conversion of prior customer commitments to design wins.

As of 30 June 2023, Alphawave Semi had more than half of the top twenty semiconductor device companies as customers[7], a reflection of its continued strength in the data infrastructure markets that require the world's most advanced connectivity technology.

Revenue in H1 2023 was US$187.2m up 228% year-on-year (H1 2022: US$57.1m), driven by the contribution of the acquisition of OpenFive and organic growth. During H1 2023 we recognised revenue from 85 customers compared to 28 in H1 2022. Our H1 2023 revenue continued to be heavily weighted to our core markets of data networking and cloud compute. 66% of revenue in the period was generated from Chinese customers, including the custom silicon business from the acquisition of OpenFive. Revenue excluding China was US$63.1m up 79% year-on-year (H1 2022: US$35.3m).

Gross margin in H1 2023 was 44% compared to 97% in H1 2022. The decrease reflects the diversification of our business into custom silicon development and silicon products. Through the acquisition of OpenFive, we inherited a number of contracts with gross margins below our Group targets.

The year-on-year increase in R&D, S&M and G&A expenses was primarily due to the increase in our closing headcount from 251 employees in H1 2022 to 744 in H1 2023, together with associated software tool costs which scale with our R&D/engineering headcount. The increase of 493 full time employees includes approximately 350 employees who joined as part of the acquisitions of OpenFive and Banias Labs. In addition, we invested in support functions and scaled our finance, HR, legal and corporate marketing teams, reflecting the increased complexity and the extended geographical footprint of the Group. In H1 2023 we capitalised US$24.7m of R&D expenses related to the development of our opto-electronics products (H1 2022: US$nil). G&A expenses in H1 2023 included US$4.1m of deferred compensation payments[8] related to acquisitions.

Other operating expenses in H1 2023 totalled US$17.6m (H1 2022: credit of US$9.5m), mainly driven by share-based payment costs of US$18.5m. In H1 2022, other operating income totalled US$9.5m and included a US$19.3m exchange gain due to the weakening of GBP against USD on USD cash balances held at Alphawave IP Group plc level denominated in GBP.

Over the period we generated an operating loss of US$2.6m, significantly below US$29.9m operating profit in H1 2022.This was predominantly due to the diversification of our business into custom silicon development and silicon products combined with lower gross margin contracts inherited through the acquisition of OpenFive, and a significantly lower exchange gain in H1 2023.

Adjusted EBITDA in H1 2023 was US$32.4m (17% margin) compared to US$23.2m (41% margin) in H1 2022. The decrease in adjusted EBITDA margin was expected and reflects the early stage of our migration to a combined IP

[7] Semiconductor device companies ranked on market capitalisation as of 11.07.23.

[8] Deferred compensation payments related to acquisitions which are expected to be settled over time until August 2026.

licensing and silicon business model through acquisitions and the scaling of our engineering capabilities to support our pipeline of opportunities.

We closed the period with a cash and cash equivalents balance of US$122.8m compared to US$451.8m and US$186.2m at the end of June 2022 and December 2022, respectively. At the end of H1 2023 we had a net debt position of US$100.0m (FY 2022: Net debt position of US$24.0m; H1 2022: Net cash position of US$451.8m).

During the second quarter of 2023, the Group's fixed charges coverage ratio (FCCR) was below the minimum allowed ratio of 1.25x, principally due to a higher working capital requirement as a result of a significant reduction in deferred revenue, a higher proportion of lower margin silicon revenue at the beginning of the year and increased investment in research and development activities, as anticipated, as the Company invests in its own products business. On 22 September 2023, we established an amendment to the credit agreement with the lenders which suspends the FCCR ratio for the period from the quarter ended 30 June 2023 to the quarter ending 30 June 2024, after which it is set at 1.1x until the quarter ending 30 September 2025 when it reverts to 1.25x. As we continue to invest in growth and scale, we continue to closely monitor our cash flow to ensure we bring our business into full compliance with the covenant as planned.

End Market Drivers Remain Strong

Our core markets of servers, storage and network switches continue to provide compelling opportunities for growth. In Q1 2023, data centre capital expenditure decelerated to 8% year-on-year driven by a decline in servers and storage systems while network and digital infrastructure maintained double-digit revenue growth[9]. In parallel, the recent server platform refresh and the growing demand on AI/ML applications is expected to motivate customers to upgrade their infrastructure. Global, spending on artificial intelligence (AI), including software, hardware, and services for AI-centric systems, will reach US$154 billion in 2023, an increase of 26.9% over the amount spent in 2022. The ongoing incorporation of AI into a wide range of products will result in a compound annual growth rate (CAGR) of 27.0% over the 2022-2026 forecast with spending on AI-centric systems expected to surpass US$300 billion in 2026.[10]

Our pipeline of customer opportunities reflects these trends. Our customers continue to seek differentiation and enhanced performance by transitioning faster to lower design nodes, with the majority of our H1 2023 license and NRE bookings in 7nm and below. As we have noted in previous announcements, we continue to see hyperscale data centre providers reducing reliance on networking ASIC vendors.

The ongoing constraints on the semiconductor supply chain and the ubiquitous presence of semiconductors in our lives continue to reinforce the importance of semiconductor technology on a global scale. As the digital infrastructure continues to grow and transitions to leading and more efficient technologies, we remain confident in the long-term outlook of the business.

Expanding Technology Leadership and Customer Traction

During H1 2023, we recognised revenue from 85 customers, compared to 28 customers in H1 2022 and 80 customers at FY 2022. Our H1 2023 revenue continued to be heavily weighted to our core markets of data networking and cloud compute.

In H1 2023, customers' demand for our high-performance IP and products remained robust and our pipeline is as strong as it has ever been. Since 2017, the Company has demonstrated connectivity technology leadership in leading-edge technologies, including 3nm process. In H1 2023, we achieved three 3nm design wins two of which were IP licence design wins, with a top North American hyperscaler and a leading industrial business. In addition, we achieved our first 3nm custom silicon design win using our 224G Serialiser-Deserialiser (SerDes) IP as well as multiple chiplet-based design wins.

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[9] Dell'Oro Group, June 15 2023 https://www.delloro.com/news/global-data-center-capex-decelerates-to-8-percent-growth-in-1q-2023/

[10] IDC, March 7 2023, https://www.idc.com/getdoc.jsp?containerId=prUS50454123#:~:text=The%20ongoing%20incorporation%20of%20AI,left%20behind%20%E2%80%93%20large%20and%20small

During the first half of 2023, Alphawave Semi expanded its ongoing collaboration with the leading foundries in the industry. The Company announced the launch of its first connectivity silicon platform on TSMC's most advanced 3nm process with its ZeusCORE Extra-Long-Reach (XLR) 1-112Gbps NRZ/PAM4 SerDes IP. The 3nm process platform is crucial for the development of a new generation of advanced chips needed to cope with the exponential growth in AI-generated data, and enables higher performance, enhanced memory and I/O bandwidth, and reduced power consumption. This flexible and customizable connectivity IP solution together with Alphawave Semi's chiplet-enabled custom silicon platform which includes IO, memory and compute chiplets, allows end-users to produce high-performance silicon specifically tailored to their applications.

Alphawave Semi also announced the expansion of its ongoing collaboration with Samsung to include the 3nm process node. Samsung Foundry platform customers now benefit from Alphawave Semi's most advanced high-performance connectivity IP and chiplet technologies, including 112 Gigabits-per-second (Gbps) Ethernet and PCI Express Gen6/CXL 3.0 interfaces, to build the complex systems-on-a-chip (SoCs) needed to keep pace with the rapidly growing demands of data-intensive applications such as generative AI and the associated infrastructure required by global data centres.

Investing in People

During the first six months of 2023, we continued to invest in talent, albeit at a lower rate than in H2 2022. As of 30 June 2023, total closing headcount increased to 744, comprising 662 in R&D/engineering, 22 in sales and marketing and 60 in general and administrative roles (from 621, 17 and 57, respectively as at 31 December 2022). Turnover rate[11] remained broadly stable at approximately 11% and the percentage of female employees as of 30 June 2023 was 19%, broadly in line with the ratio as at the end of 2022.

In support of its market expansion, during March 2023 the Company announced the opening of its new premises in Ottawa, Canada and in Pune, India. The new premises enhance our capabilities to cater to the growing demands of our global customers and provide state-of-the-art test and laboratory space for our teams to design, test and launch leading-edge IP and silicon.

Significant Post-Interim Events

In July 2023, the Group invested a further US$9.0m in WiseWave.

[11] Last twelve months turnover rate

B. Financial Highlights

Contracted Order Book and Backlog

Total bookings in H1 2023 of US$187.2m were up 251% over the prior year (H1 2022: US$53.4m) due to increased design win momentum and the contribution from the acquisition of OpenFive in September 2022. North American customers represented 41% of total bookings.

Licence and NRE bookings in H1 2023 were US$114.9m, up 199% year-on-year. North American customers represented approximately 44% of these bookings, followed by 25% from EMEA and 22% from APAC customers (excluding China). China represented 9% of total bookings. Royalties and Silicon orders were US$72.2m, up 384% over H1 2022 (H1 2022: US$14.9m). The level of silicon orders was driven by pre-existing custom silicon designs for North American and Chinese customers from the acquisition of OpenFive.

During H1 2023 there were no Flexible Spending Accounts drawdowns (H1 2022: US$5.6m) and China (VeriSilicon) reseller deals of US$3.4m (H1 2022: US$9.1m). Both FSA and reseller deals are not new bookings but represent the conversion of prior customer commitments to design wins.

At the end of H1 2023, backlog (contracted bookings not yet recognised as revenue) excluding royalties was US$364.5m.

Revenues

Revenue in H1 2023 was US$187.2m up 228% year-on-year (H1 2022: US$57.1m), driven by the contribution of the acquisition of OpenFive and organic growth. Our H1 2023 revenue continued to be heavily weighted to our core markets of data networking and cloud compute.

- Customers - In H1 2023 we recognised revenues from 85 end-customers, compared to 28 end-customers in H1 2022 and 80 in FY 2022. Our top 3 customers represented 42% of H1 2023 revenues versus 52% in H1 2022. Excluding revenues from WiseWave, which were US$26.4m in the period (excluding re-seller revenue), our top 3 customers in H1 2023 represented 36% of revenues (H1 2022: 40%).
- Regions **-** In H1 2023, our revenues were 30% from customers in North America, 66% from China, 3% from APAC excluding China and 1% EMEA. The increase in contribution from China over H1 2022 (38% of revenue) was due to the custom silicon business from the acquisition of OpenFive and the multi-year SLA agreement with WiseWave. Revenue excluding China was US$63.1m up 79% year-on-year (H1 2022: US$35.3m).

Operating Expenses and Profitability

In H1 2023, gross margin was 44% compared to 97% in H1 2022. The decrease reflects the diversification of our business into custom silicon development and silicon products. Through the acquisition of OpenFive, we inherited a number of contracts with gross margins below our Group targets.

Operating expenses in H1 2023 totalled US$85.1m compared with US$25.5m in H1 2022. Reported operating expenses were materially impacted by non-recurring or other items, including FX gains in H1 2022, which management believes do not reflect the underlying operational performance of the business. Operating expenses in H1 2023 included US$21.7m of other operating items (H1 2022: other operating income US$9.5m) including FX gains and losses, share-based payments, deferred compensation payments related to acquisitions and a small credit to one-time M&A-related expenses. In H1 2023, other expenses included a US$0.6m exchange gain which resulted from the strengthening of USD against GBP, compared to a gain of US$19.3m in H1 2022.

The increase in share-based payments, from US$7.2m in H1 2022 to US$18.5m in H1 2023, was primarily due to the significant increase in headcount and US$2.3m additional charge from prior periods (see note 20).

Reflecting the continued scaling of the business, R&D, S&M and G&A expenses in H1 2023 totalled US$67.5m, compared to US$35.0m in H1 2022. This increase was primarily due to the significantly higher headcount together with software tool costs which scale with our R&D / engineering headcount. Our closing headcount grew from 251 at the end H1 2022 to 744 at the end of H1 2023 as a result of the acquisitions of OpenFive and Banias Labs, as well as organic growth. In the first six months of 2023 the closing headcount increased by 49 employees. We expect to slow the pace of hiring in H2 2023. Of the US$67.5m of operating expenses excluding M&A costs/professional costs, share-based payment charges and exchange gains in H1 2023, US$35.5m (18.9% of revenue) relate to R&D / engineering, US$26.8m (14.3% of revenue) to general and administrative expenses and US$5.2m (2.8% of revenue) to sales and marketing expenditure. General and administrative expenses include an expected credit loss of US$2.7m (H1 2022: US$1.8m) based on our assessment of our potential credit loss on overdue invoices. Excluding this, our general and administrative expenses for H1 2023 were US$24.1m (12.8% of revenue) which included US$4.1m of deferred compensation payments related to acquisitions (H1 2022: US$nil). Of the US$35.0m expenditure in H1 2022, which excludes US$9.5m other operating income, US$25.2m (44.0% of revenue) related to R&D / engineering, US$8.4m (14.7% of revenue) related to general and administrative expenses and US$1.4m (2.5% of revenue) related to sales and marketing expenditure.

In H1 2023, the business generated an operating loss of US$2.6m compared to a US$29.9m operating profit in H1 2022.

Depreciation and amortisation expenses in H1 2023 were US$13.3m (H1 2022: US$2.8m), of which US$2.0m related to right-of-use assets (H1 2022: US$1.5m), namely our premises and leased test equipment. The increase was mainly driven by US$6.3m of amortisation expenses related to intangibles acquired through the acquisitions of OpenFive (US$5.3m) and Precise ITC (US$1.0m). The remaining increase in depreciation and amortisation is due to depreciation on property and equipment, and leases acquired as part of the OpenFive and Banias Labs acquisitions.

EBITDA was US$10.7m (6% margin) compared to US$32.7m (57% margin) in H1 2022. In H1 2023, EBITDA included US$0.6m of exchange gains in other expenses compared to US$19.7m in H1 2022.

Adjusted EBITDA[12] in H1 2023 was US$32.4m (17% margin) compared to US$23.2m (41% margin) in H1 2022. The decrease in adjusted EBITDA margin was expected and reflects the early stage of our migration to a combined IP licensing and silicon business model through our acquisitions and the scaling of our engineering capabilities to support our pipeline of opportunities.

On an adjusted basis[12], our profit after tax for the period was US$15.4m, compared to a profit after tax of US$6.7m in H1 2022.

Balance Sheet, Liquidity and Cashflow

We closed the period with a cash and cash equivalents balance of US$122.8m compared to US$186.2m at the end of December 2022. Our net debt position at the end of H1 2023 was US$100.0m.

During the second quarter of 2023, the Group's fixed charges coverage ratio (FCCR) was below the minimum allowed ratio of 1.25x which represented a breach of the covenant as at 30 June 2023. This was principally due to a higher working capital requirement as a result of a significant reduction in deferred revenue, a higher proportion of lower margin silicon revenue at the beginning of the year and increased investment in research and development activities, as anticipated, as the Company invests in its own products business. On 22 September 2023, we established an amendment to the credit agreement with the lenders which suspends the FCCR ratio for the period from the quarter ended 30 September 2023 to the quarter ending 30 June 2024, after which it is set at 1.10x until the quarter ending 30 September 2025 when it reverts to 1.25x. As we continue to invest in growth and scale, we continue to closely monitor our cash flow to ensure we bring our business into full compliance with the covenant as planned.

In H1 2023, current trade and other receivables decreased from US$104.6m to US$99.8m, largely due to a decrease in prepayments, offset by an increase in trade receivables. This balance is reduced as payments are made to the employees on a quarterly basis and is expected to be settled over the period to August 2026. In addition, we provisioned for an expected credit loss of US$2.7m, based on our assessment of our credit risk on overdue invoices.

Our accrued revenue, where we have recognised revenue but not yet billed the customer, increased from US$58.5m to US$67.0m at the end of the period. This was mostly related to the WiseWave SLA agreement.

[12] See note 4 Alternative Performance Measures on page 20 for reconciliation of profit after tax to adjusted profit after tax

In the first six months of 2023, intangible assets increased from US$161.4m to US$179.6m, largely as a result of capitalised research and development costs.

Investments in equity-accounted associate, namely the value of the investment in WiseWave was US$nil in H1 2023 (FY 2022: US$nil), as a result of equity accounting for losses at WiseWave during the period. The value of the cumulative losses incurred by WiseWave exceeds the cumulative value of our investment into the business.

In H1 2023 current trade and other payables decreased from US$83.1m to US$67.5m. Deferred revenue liability, where we have invoiced or received money for products or services where revenue recognition conditions are not met, decreased from US$91.7m at the end of 2022 to US$41.8m at the end of H1 2023. This decrease was the result of a large volume of prepaid silicon orders placed in the second half of 2022 being fulfilled in early 2023.

FSAs, which represent current liabilities, are contracts with customers who have committed to regular periodic payments to us over the term of the contract. These payments are not in respect of specific licences or other deliverables, but can be used as credit against future deliverables. We have FSAs with some customers with whom we work on multiple projects and who prefer regular periodic billing rather than milestone-based billing. The revenue recognition conditions which enable us to recognise these billings as revenue have not yet been met. In H1 2023, the balance sheet liability against FSAs increased from US$5.2m to US$12.5m. The increase was mostly driven by the VeriSilicon reseller agreement.

In H1 2023 the Group generated a pre-tax operating cash outflow of US$31.3m, compared to an inflow of US$32.2m in H1 2022. The outflow in H1 2023 was largely due to a working capital increase of US$60.0m. The working capital increase was primarily the result of a decrease of deferred revenue and FSA of US$42.7m combined with a decrease in trade payables of US$7.9m.

Capital expenditure on intangibles and property and equipment during H1 2023 totalled US$39.3m (H1 2022: US$2.4m) as a result of capitalising eligible engineering costs relating to projects that generate intangible assets, as well as property and equipment for significant upgrades and expansions to our IT infrastructure, purchases of test equipment and leasehold improvements to our new office in Toronto. During the first six months of 2023 we capitalised US$24.7m of engineering costs (H1 2022: US$nil).

During H1 2023, we made a further equity investment in WiseWave of US$2.7m and an investment of US$1.0m in an Israeli semiconductor company.

Principal Risks and Uncertainties

The Group faces a number of risks and uncertainties that may have an impact on our operations and performance. These risks and uncertainties are regularly assessed by the Directors. The principal risks and uncertainties affecting the Group in respect of the first half of the year have not changed materially from those set out on pages 67 to 69 of the 2022 Annual Report. In summary, the principal risks and uncertainties are as follows:

Risk	Description
Managing our growth	We have a limited operating history and are growing rapidly, with increased pressure on cash flows. If we do not manage our growth successfully, fail to execute on our strategy, fail to meet future debt covenants or maintain sufficient liquidity, or fail to implement or maintain governance and control measures, our business may be adversely impacted. We have rapidly expanded our headcount and the complexity of our business and operations, both organically and through acquisitions.
Competition and failure to maintain our technology leadership	We seek to maintain our competitive advantage by being first to market with new IP as data speeds increase and manufacturing sizes decrease. If these industry transitions do not materialise, or are slower than anticipated, our competitors may be able to introduce competing IP which may diminish our competitive advantage and selling prices. Our ability to maintain our technology leadership is further dependent on our ability to attract R&D and engineering talent.
Customer Dependence	Our products and technology target the data centre and network infrastructure markets, where there are a limited number of customers. Further, the cost and complexity of developing semiconductors targeted by our IP limits the number of our potential addressable customers. In any reporting period, a substantial part of our revenues may be attributable to a small number of customers.
Customer Demand	Demand for our technology is dependent on the continued global growth in generation, storage and consumption of data across our target markets, as well as the increasing cost and complexity of designing and manufacturing semiconductors. We may be impacted by our customers' demand sensitivity to broader economic and social conditions. Our potential customers may seek to develop competitive IP or semiconductors internally or acquire IP or semiconductors from our competitors.
Risks associated with WiseWave	WiseWave is today an important element of our strategy to monetise our IP in China and we are a significant minority shareholder. We may be limited in our ability to influence strategy, operational, legal, commercial or financial matters. The Group and WiseWave may also face regulatory risk in terms of transfer of technology into China. There is a risk that the bookings from WiseWave do not translate into revenues and we are unable to realise the full value of our investment on exiting the joint venture.
Dependence on Licensing revenue	Our financial performance is highly dependent on licensing revenues and we do not anticipate a material contribution from royalty revenues for some years. If our customers delay or cancel their development projects, fail to take their products to production or those products are not successful, our royalty revenues may be delayed, diminished or not materialise.
Reliance on Key Personnel and ability to attract talent	We rely on the senior management team and our business may be negatively impacted if we cannot retain and motivate our key employees. Our ability to grow the business is also dependent on attracting talent, particularly in R&D and engineering, and if we are unable to do so, our business may be negatively impacted.
External Environment and Events	Semiconductors are becoming increasingly important as countries and regions seek to guarantee supply and build domestic supply chains, as well as restrict outside access to their domestic technologies. Our business could be impacted by the actions of governments, political events or instability, or changes in public policy in the countries in which we operate. The current conflict in Ukraine potentially has wide-ranging impacts, including global economic instability, increased geopolitical tensions and disruption to supply chains.
IP Protection and Infringement	We protect our technology through trade secrets, contractual provisions, confidentiality agreements, licences and other methods. A failure to maintain and enforce our IP could impair our competitiveness and adversely impact our business. If other companies assert their IP rights against us, we may incur significant costs and divert management and technical resources in defending those claims. If we are unsuccessful in defending those claims, or we are obliged to indemnify our customers or partners in any such claims, it could adversely impact our business.

Reliance on third-party manufacturing foundries	We rely on third-party semiconductor foundries, both as customers and as manufacturing partners to our customers. If foundries delay the introduction of new process nodes or customers choose not to develop silicon on those process nodes, our ability to license new IP and our selling prices may be adversely impacted. By pursuing a vertically integrated model and supplying silicon products, we are reliant on the foundries' capacity for a portion of our revenues and this reliance may increase as royalty revenues become more material to us.
Reliance on complex IT systems	We rely heavily on IT systems to support our business operations. The vast majority of our design tools, software and IT system components are off-the-shelf solutions and our business would be disrupted if these components became unavailable. If our IT systems were subject to disruption, for example, through malfunction or security breaches, we may be prevented from developing our IP and fulfilling our contracts with our customers.

Directors' Responsibility Statement

The Directors confirm that, to the best of their knowledge:

- This condensed set of financial statements has been prepared in accordance with IAS 34 Interim Financial Reporting, as adopted for the use in the UK, and gives a true and fair view of the assets, liabilities, financial position and profit of the Company; and

- This Half-Year Report includes a fair review of the information required by:

    - DTR 4.2.7R of the Disclosure Guidance and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed set of financial statements and a description of the principal risks and uncertainties for the remaining six months of the financial year; and

    - DTR 4.2.8R of the Disclosure Guidance and Transparency Rules, being related party transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or performance of the Company during that period.

Details of all current Directors of Alphawave IP Group plc are maintained on www.awavesemi.com.

By order of the Board

Tony Pialis
President and Chief Executive Officer
23 September 2023

Condensed consolidated statement of comprehensive income

	Note	Unaudited six months ended 30 June 2023	Unaudited Six months ended 30 June 2022
		US$'000	US$'000
Revenue	5	**187,179**	**57,107**
Cost of sales		(104,659)	(1,750)
Gross profit		**82,520**	**55,357**
Research and development/engineering	16	(35,464)	(25,152)
Sales and marketing		(5,225)	(1,442)
General and administration		(26,764)	(8,407)
of which expected credit loss		*(2,713)*	*(1,803)*
M&A costs/professional costs		263	(2,537)
Share-based payment		(18,502)	(7,192)
Exchange gain	10	592	19,271
Operating (loss)/profit		**(2,580)**	**29,898**
Finance income	8	1,719	362
Finance expense	8	(7,565)	(160)
Share of post-tax loss of equity-accounted joint ventures	11	(2,730)	(7,868)
(Loss)/profit before tax		**(11,156)**	**22,232**
Income tax expense	12	(2,275)	(5,980)
(Loss)/profit after tax		**(13,431)**	**16,252**
Other comprehensive income			
Items that may be reclassified subsequently to profit or loss:			
Exchange gains/(losses) arising on translation of foreign operations		13,457	(50,518)
Other comprehensive income for the period, net of tax		**13,457**	**(50,518)**
Total comprehensive income/(expense) for the period		**26**	**(34,266)**

(Loss)/profit per ordinary share attributable to the shareholders (expressed in cents per ordinary share):

	Note		
Basic earnings per share	13	(1.92)	2.43
Diluted earnings per share	13	(1.92)	2.32

The notes on this document form part of these financial statements.

Condensed consolidated statement of financial position

As at 30 June 2023

	Note	Unaudited as at 30 June 2023 US$'000	Audited year ended 31 December 2022 US$'000
Assets			
Current assets			
Trade and other receivables		99,779	104,634
Accrued revenue	5	66,965	58,534
Taxes receivable		3,081	2,922
Inventory		15,271	18,061
Cash and cash equivalents	17	122,764	186,231
Total current assets		**307,860**	**370,382**
Non-current assets			
Goodwill	14	331,886	331,886
Property and equipment	15	23,284	13,421
Intangible assets	16	179,551	161,406
Right-of-use assets		16,902	14,553
Trade and other receivables		18,792	19,272
Deferred income taxes		10,957	2,680
Other Investments	11	1,011	-
Total non-current assets		**582,383**	**543,218**
Total assets		**890,243**	**913,600**
Liabilities			
Current liabilities			
Lease liabilities		3,392	3,756
Trade and other payables		67,536	83,055
Income tax payable		4,826	-
Deferred revenue	5	41,771	91,733
Flexible spending account	5	12,466	5,200
Loans and borrowings	18	221,251	5,000
Total current liabilities		**351,242**	**188,744**
Non-current liabilities			
Lease liabilities		14,214	11,177
Deferred income taxes		31,055	29,650
Trade and other payables		4,780	10,555
Loans and borrowings	18	1,534	205,201
Total non-current liabilities		**51,583**	**256,583**
Total liabilities		**402,825**	**445,327**
Net assets		**487,418**	**468,273**
Share capital and reserves			
Share capital	19	9,883	9,751
Share premium account		1,350	775
Share-based payment reserve	20	36,601	18,189
Merger reserve		(793,216)	(793,216)
Currency translation reserve		(83,250)	(96,707)
Retained earnings		1,316,050	1,329,481
Total equity		**487,418**	**468,273**

Condensed consolidated statement of changes in equity

Six months ended 30 June 2023

US$'000	Note	Ordinary share capital	Share premium account	Share-based payment reserve	Merger reserve	Currency translation reserve	Retained earnings	Total equity
Balance at 1 January 2023		**9,751**	**775**	**18,189**	**(793,216)**	**(96,707)**	**1,329,481**	**468,273**
(Loss) for the period		-	-	-	-	-	(13,431)	(13,431)
Other comprehensive income		-	-	-	-	13,457	-	13,457
Transactions relating to share issuance								
Issue of shares		45	575	-	-	-	-	620
Reorganisation accounting		-	-	-	-	-	-	-
exchange differences		-	-	-	-	-	-	-
Recognition of share-based payments	**20**	-	-	18,502	-	-	-	18,502
Exercise of share options		87	-	(90)	-	-	-	(3)
Balance at 30 June 2023 (Unaudited)		**9,883**	**1,350**	**36,601**	**(793,216)**	**(83,250)**	**1,316,050**	**487,418**

Six months ended 30 June 2022

US$'000	Note	Ordinary share capital	Share premium account	Share-based payment reserve	Merger reserve	Currency translation reserve	Retained earnings	Total equity
Balance at 1 January 2022		**9,399**	**-**	**4,777**	**(793,216)**	**(21,718)**	**1,328,530**	**527,772**
Profit for the period		-	-	-	-	-	16,252	16,252
Other comprehensive income		-	-	-	-	(50,518)	-	(50,518)
Transactions relating to share issuance								
Issue of shares		-	-	-	-	-	-	-
Reorganisation accounting		-	-	-	-	-	-	-
exchange differences		-	-	-	-	-	-	-
Recognition of share-based payments	**20**	-	-	7,192	-	-	-	7,192
Exercise of share options		197	452	-	-	-	-	649
Balance at 30 June 2022 (Unaudited)		**9,596**	**452**	**11,969**	**(793,216)**	**(72,236)**	**1,344,782**	**501,347**

Condensed consolidated statement of cash flows

For the period ended 30 June 2023

	Note	Unaudited six months ended 30 June 2023 US$'000	Unaudited six months ended 30 June 2022 US$'000
Cash flows from operating activities			
(Loss)/profit for the year		(13,431)	16,252
Items not affecting cash:			
Tax expense		2,275	5,980
R&D tax credit		(1,500)	-
Amortisation of intangibles		6,778	777
Depreciation of property and equipment		4,532	602
Depreciation of right-of-use asset		1,997	1,459
Share of loss in joint venture		2,730	7,868
Share-based payment		18,502	7,192
Finance income		(1,719)	-
Finance cost		7,013	-
Lease interest		552	108
Foreign exchange loss/(gain) on Intercompany balances		967	(1,999)
		28,696	38,239
Changes in working capital:			
(Increase) in trade and other receivables		(3,707)	(7,879)
Decrease in Inventories		2,790	-
(Increase) in accrued revenue	5	(8,431)	(9,886)
(Decrease)/increase in trade and other payables		(7,919)	3,936
(Decrease)/Increase in deferred revenue & flexible spending account	5	(42,696)	7,806
		(59,963)	(6,023)
Cash (used in)/generated from operating activities before tax		**(31,267)**	**32,216**
Income tax paid		(5,420)	(13,440)
Net cash (used in)/generated from operating activities		**(36,687)**	**18,776**
Cash flows from investing activities			
Purchase of property and equipment		(13,233)	(2,448)
Purchase of intangible asset		(1,425)	(904)
Interest received		1,518	362
Capitalised development expenditure		(24,660)	-
Investments in joint venture and other investments		(3,730)	(14,136)
Net cash used in investing activities		**(41,530)**	**(17,126)**
Cash flows from financing activities			
Exercise of options		617	727
Proceeds from loans and borrowings		15,000	-

Repayment of loans and borrowings		(2,500)	-
Interest paid		(9,727)	(52)
Repayment of principal under lease liabilities		(2,324)	(1,336)
Net cash generated from/(used in) financing activities		**1,066**	**(661)**
Net (decrease)/increase in cash and cash equivalents		**(77,151)**	**989**
Cash and cash equivalents at start of year		186,231	500,964
Effects of foreign exchange on cash and cash equivalents		13,684	(50,120)
Cash and cash equivalents at end of period	17	**122,764**	**451,833**

Notes to the unaudited interim statements

Six months ended 30 June 2023

1. General information

These condensed consolidated interim financial statements represent the consolidated interim financial statements of Alphawave IP Group plc ('the Company' or 'Alphawave Semi') and its subsidiaries (together 'the Group').

The principal activities of the Company and its subsidiaries are described on pages 1 to 6.

The Company is a public limited company whose shares are listed on the London Stock Exchange and is incorporated and domiciled in the United Kingdom. The address of its registered office is 6th Floor, 65 Gresham Street, London, United Kingdom, EC2V 7NQ.

2. Basis of preparation

The consolidated interim financial statements of the Group have been prepared in accordance with UK-adopted international accounting standard (IAS) 34 Interim Financial Reporting and should be read in conjunction with the Group's consolidated financial statements as of and for the year ended 31 December 2022. They do not include all the information required for a complete set of IFRS financial statements. However, selected explanatory notes are included to explain events and transactions that are significant to give an understanding of the changes in the Group's financial position and performance since the last annual consolidated financial information as of 31 December 2022 and for the six months ended 30 June 2022.

These consolidated interim financial statements do not comprise of statutory accounts within the meaning of Section 435 of the Companies Act 2006. The comparative figures for the six months ended 30 June 2022 are not the Group's statutory accounts for that financial period. The preparation of these consolidated interim financial statements requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group's accounting policies. The areas involving a higher degree of judgement and complexity, or areas where assumptions and estimates are significant to the consolidated interim financial statements are disclosed in note 3.

The Company was incorporated on 9 December 2020 and admitted to listing on the London Stock Exchange on 18 May 2021.

These consolidated interim financial statements were authorised for issue by the Company's Board of Directors on 23 September 2023.

Going concern

In preparing the condensed consolidated financial statements for the six months ended 30 June 2023, the Directors have updated their assessment of the Group's ability to continue as a going concern. The Directors based their going concern assessment on 'base case' forecasts covering the period of at least twelve months from the date on which they approved the financial statements. The Directors also considered a sever, but plausible, downside scenario over the forecast period as follows:

- Revenue, excluding joint venture revenue, is 25% lower and the interest rate on the Group's debt is 200 basis points higher than forecast, but taking into account mitigating reductions of 10% in operating expenditure and 50% in laboratory and prototyping expenditure.

As at 30 June 2023, the Group held cash and cash equivalents of US$122.8m and had bank borrowings totalling US$221.3m, comprised of a term loan of US$96.3m and US$125.0m drawn against a US$125.0m revolving credit facility. Both the term loan and the revolving credit facility are not scheduled to mature until the fourth quarter of 2027 but were subject to the following financial covenants as at 30 June 2023 that are defined in the related Credit Agreement:

- a maximum permissible net leverage ratio (ratio of consolidated total debt to consolidated adjusted EBITDA) of 3.75x up to 30 June 2023, 3.5x up 31 March 2024 and 3.0x thereafter; and

- a minimum fixed charges coverage ratio (ratio of total consolidated cash flows to total fixed charges for the preceding twelve months) of 1.25x.

Compliance with the financial covenants is tested quarterly. During the second quarter of 2023, the Group's fixed charges coverage ratio was below 1.25x which represented a breach of the bank covenant as at 30 June 2023. This was principally due to a significant cash outflow for the delivery of goods in 2023 which had unusually high deferred revenue levels at the end of 2022, in addition to further investment in research and development activities.

On 22 September 2023, we signed an amendment to the credit agreement with the lenders to waive the fixed charges coverage ratio. Under the terms of the amended agreement, the fixed charge coverage ratio covenant is suspended for the period from the quarter ending 30 September 2023 to the quarter ending 30 June 2024 and for the period from the quarter ending 30 September 2024 to the quarter ending 30 June 2025, the minimum fixed charge coverage ratio is set at 1.10x. From the quarter ending 30 September 2025, the minimum fixed charge coverage ratio is set at 1.25x. Additionally, there is a minimum liquidity requirement that the Group must maintain for the period to 30 September 2025. The net leverage ratio covenant is unchanged.

Under the 'base case' forecasts and the downside scenario described above, the analysis demonstrates the Group can continue to maintain sufficient liquidity headroom with no default on debt covenants.

Having considered the 'base case' forecasts and the downside scenario, and following the covenant relief being agreed with the lenders, the Directors are confident that the Group will have sufficient funds to continue to meet its liabilities as they fall due for at least twelve months from the date of approval of the condensed financial statements for the six months ended 30 June 2023 and therefore have prepared the financial statements on a going concern basis.

Basis of organisation

The Group's management has performed its evaluation for reporting its reportable segments, if any, and concluded that the Group's business constitutes only one operating segment as all its products and services are of similar nature and focus on customers from the same industry. Its entire revenues, expenses, assets and liabilities pertain to the one business as a whole. This has been ratified by the chief operating decision maker (CODM), Tony Pialis (CEO) who is deemed best placed to evaluate the entity's operating results to assess performance and to allocate resources.

Functional currency

For presentational purposes these consolidated interim financial statements are presented in US dollars. This is consistent with the last annual consolidated financial statements as of 31 December 2022 and for the six months ended 30 June 2022. The ten trading entities in the Group have different functional currencies. Alphawave IP Inc. and Precise-ITC are now accounted for in US$, as the primary economic environment has changed due to the proportion and value of US$ transactions increasing. The functional currency change commenced from 1 January 2022. Alphawave Semi US Corp. (formerly Alphawave IP Corp.), Alphawave Semi International Corp., Alphawave IP Limited and Alphawave IP (BVI) Ltd are also in US$ and the Company in GBP. Open-Silicon Japan is in JPY, Open-Silicon Research Private Ltd is in INR, Alphawave Semi (Nanjing) Co. Ltd (formerly Yuanfang Silicon Technology (Nanjing) Co. Ltd) is in RMB and Solanium Labs Ltd. is in ILS. The currencies used by each entity reflect the functional currency of that entity. However, it was decided to use US$ as the Group's presentational currency as substantially all of the Group's revenues and a significant part of the costs are denominated in US$ and it is typically the presentational currency used across the semiconductor industry.

Accounting policies

The accounting policies that have been used in the preparation of these consolidated interim financial statements are the same as those applied in the last annual consolidated financial statements as of 31 December 2022. New standards effective on or after 1 January 2023 have been reviewed and do not have a material effect on the Group's financial statements.

3. Significant accounting estimates and judgements

In the application of the Group's and Company's accounting policies, the Directors are required to make judgements (other than those involving estimations) that have a significant impact on the amounts recognised and to make estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

4. Alternative Performance Measures (APMs)

The Group uses certain financial measures that are not defined or recognised under IFRS. The Directors believe that these non-GAAP measures supplement GAAP measures to help in providing a further understanding of the results of the Group and are used as key performance indicators within the business to aid in evaluating its current business performance. The measures can also aid in comparability with other companies who use similar metrics. However, as the measures are not defined by IFRS, other companies may calculate them differently or may use such measures for different purposes to the Group.

Bookings

The Group monitors and discloses bookings and backlog as key performance indicators of future revenues. Bookings are a non-IFRS measure and represent legally binding and largely non-cancellable commitments by customers. Our bookings comprise licence fees, non-recurring engineering (NRE), support, orders for silicon products and, in some instances, our estimate of potential future royalties.

Our royalties are estimated based on contractually committed royalty prepayments or, in limited instances, on sensitised volume estimates provided by customers. Our bookings for the six months to 30 June 2023, including royalties, totalled US$187.2m (FY 2022: US$228.1m), and excluding royalties, US$187.2m (FY 2022: US$213.0m).

Backlog represents bookings, excluding royalties, over the life of the Group that have not yet been recognised as revenues and which we expect to be recognised in future periods. Backlog as at the end of the six months to 30 June 2023 is calculated based on our backlog as at the end of 2022, plus new bookings, less revenues recognised during the period.

	Six months ended 30 June 2023 US$m	Year ended 31 December 2022 US$m
Backlog (end of the prior year)	364.5	168.6
Add: New bookings excluding IP royalties	187.2	213.0
Add: Backlog acquired with OpenFive and Precise-ITC	-	168.3
Less: Revenues recognised in the period[1]	(187.2)	(185.4)
Backlog (end of the period)	**364.5**	**364.5**

Earnings before interest, taxation, depreciation and amortisation (EBITDA)

EBITDA provides a supplemental measure of earnings that facilitates review of operating performance on a period-to-period basis by excluding items that are not indicative of the Group's underlying operating performance and is a key profit measure used by the Board to assess the underlying financial performance of the Group. EBITDA is stated before the following items and for the following reasons:

- interest is excluded from the calculation of EBITDA because the expense and income bears no relation to the Group's underlying operational performance;
- charges for the depreciation and amortisation of property and equipment, acquired intangibles, capital development expenditure and right-of-use assets are excluded from the calculation of EBITDA, as removing these non-monetary items allows management to better project the Group's long-term profitability; and
- tax is excluded from the calculation of EBITDA because the expense bears no relation to the Group's underlying operational performance.

Operating profit to EBITDA reconciliation

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Operating (loss)/profit	(2,580)	29,898
Add backs:		
Depreciation and amortisation	13,307	2,839
EBITDA	**10,727**	**32,737**

Two further measures are adjusted EBITDA and adjusted profit after tax, defined in the tables below. These further allow for a more accurate assessment of the underlying business performance by making exclusions of items which do not form part of the Group's normal underlying operations.

EBITDA to adjusted EBITDA reconciliation

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
EBITDA	10,727	32,737
Add backs:		
Non-recurring M&A-related (income)/costs	(263)	2,537
Share-based payment	18,502	7,192
Exchange gain	(592)	(19,271)
Retention payments	4,069	-
Adjusted EBITDA	**32,443**	**23,195**

M&A-related costs include one-off legal and professional costs incurred as a result of the Group's execution of agreements for the formation and commercial arrangements relating to the Group's joint venture, WiseWave, as well as professional fees.

We believe that excluding the effect of share-based payments from adjusted EBITDA assists management and investors in making period-to-period comparisons because the amount of such expenses in any specific period may not directly correlate to the underlying performance of our business operations.

Retention payments represent cash payments in lieu of share-based remuneration committed as part of the acquisition of Banias Labs. These expenses can vary significantly between periods as a result of the timing of grants of new share-based awards, including grants in connection with acquisitions.

The exchange gain has been removed from EBITDA as it relates to an unrealised gain relating to cash held and therefore does not form part of the Group's operating performance.

We exclude the impact of amortisation of acquired intangibles in connection with business combinations from our adjusted profit after tax, as we do not consider them to be representative of the underlying operational performance of the business.

Profit after tax to adjusted profit after tax reconciliation

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Profit after tax	(13,431)	16,252

Add backs:		
Non-recurring M&A-related (income)/costs	(263)	2,537
Share-based payment	18,502	7,192
Exchange gain	(592)	(19,271)
Retention payments	4,069	-
Amortisation of acquired intangibles	6,328	-
Tax effect of above adjustments	823	-
Adjusted profit after tax	**15,436**	**6,710**

Adjusted profit per ordinary share attributable to the shareholders (expressed in cents per ordinary share)

	Note	Six months ended 30 June 2023	Six months ended 30 June 2022
Adjusted basic earnings per share	13	2.20	1.00
Adjusted diluted earnings per share	13	2.20	0.96

Adjusted basic and diluted earnings per share have been calculated by taking the adjusted profit for the year and dividing it by the basic or diluted, as appropriate, weighted average number of common shares outstanding. Adjusted basic earnings per share and adjusted diluted earnings per share are the same for the six months ended 30 June 2023 because the share options and RSUs are anti-dilutive. Therefore, they have been excluded from the calculation of diluted weighted average number of ordinary shares.

Net (debt)/cash

Net (debt)/cash is defined as the difference between total borrowings and cash and cash equivalents. It is a measure that provides additional information on the Group's financial position. Restricted cash, which cannot be accessed by the Group, has been excluded from the net debt measure.

The net debt of US$100.0m as at 30 June 2023 is made up of the of the bank loan of US$221.3m, the IIA loan in Israel of US$1.5m less the cash and cash equivalents balance of US$122.8m.

5 Revenue

Revenue in the unaudited condensed consolidated statement of income and comprehensive income is analysed as follows:

(US$'000)	Six months ended 30 June 2023	Six months ended 30 June 2022
Revenue by type:		
IP and NRE	38,736	36,182
IP and NRE – Reseller	-	2,647
IP and NRE - JV	34,859	18,278
Silicon and Royalties	113,584	-
	187,179	**57,107**

'IP and NRE' represents revenues from IP products licensing, along with related support and NRE services, in addition to custom silicon NRE (which can include internal engineering services, our IP and related support, third party IP, tooling costs and prototypes). 'IP and NRE – Reseller' represents revenue from IP products licensing, related support and NRE services provided through VeriSilicon, prior to our arrangements with VeriSilicon being moved under WiseWave in late 2021. 'IP and NRE – JV' represents revenue from our joint venture, WiseWave, and includes revenues recognised under the 5-year subscription licence and revenues recognised under the VeriSilicon reseller arrangements which were moved under WiseWave in late 2021. 'Silicon and royalties' represents revenues recognised once our customers are in production and in the case of custom silicon are based on shipments of physical silicon products and, for standalone IP licensing, royalties payable on usage of our IP within silicon products.

Whilst this part of the note shows revenue by type, due to materiality, we have separately itemised the revenue from our reseller and joint venture, both based in China. The revenue from our joint venture in China, WiseWave, predominantly relates to a five-year subscription licence agreement where we have recognised US$26.4m (H1 2022: US$18.3m) based on our deliveries of IP to WiseWave. The remaining revenue from WiseWave relates to a separate agreement signed in Q4 2021 to deliver chiplet IP and revenue recognised through WiseWave acting as master reseller of IP to VeriSilicon.

All revenue from VeriSilicon and related balances are in respect of transactions signed with VeriSilicon as reseller prior to the VeriSilicon reseller agreement moving under WiseWave as master reseller effective from November 2021. All revenue and associated balances in respect of transactions signed with VeriSilicon since that date are now recognised through the WiseWave joint venture line.

(US$'0000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Revenue by region:		
North America	55,617	23,768
China	124,058	21,807
APAC (ex-China)	6,464	7,257
EMEA	1,040	4,275
	187,179	**57,107**

Where goods are delivered electronically, for example IP, the above revenue by region analysis is determined by classifying customers based on their main base of operations. Where goods are delivered physically, customers are classified based on the delivery location.

US$46.4m (25% of total revenues) (2022: US$90.7m, 49%) represent revenues recognised over time. These revenues require management judgements and estimates of project hours or costs that are used in percentage of completion calculations. These revenues relate to work done during the design phase of a customer project and include (with the exception of a limited amount of revenue relating to our Soft IP) IP product licensing fees, together with related support and NRE, as well as custom silicon NRE fees. We have applied a sensitivity to revenues recognised over time in 2023 which are subject to estimates. If our estimates of total hours or total costs had been 10% higher, these revenues would be US$42.9m. If our estimates of total hours or total costs had been 10% lower, these revenues would be US$49.9m.

US$140.8m (75% of total revenues) (2022: US$94.7m, 51%) are recognised at a point in time. These revenues are based on silicon shipments once our customers are in production. In the case of custom silicon, this represents revenues from shipments of physical silicon products, and for standalone IP licensing, royalties payable on usage of our IP within silicon products. Revenues from our 5 year subscription licence agreement with WiseWave are also recognised at a point in time, based on the number of IP uploads during the period. Revenues from the 3 year reseller agreement with VeriSilicon, which was moved under WiseWave in late 2021, are recognised at a point in time to the extent that they represent exclusivity fees paid during the period not credited against IP licences. In addition, a limited amount of revenue from our Soft IP products is recognised at a point in time.

WiseWave – subscription licence agreement

Revenue recognition for the WiseWave subscription licence agreement is determined with reference to the estimated total number of IP uploads to be delivered to WiseWave during the term of the agreement and the number of uploads made to WiseWave each period. The table below illustrates the sensitivity of revenue recognition and the associated balance sheet balances to a change in the estimated total number of IP products to be delivered and assumes a 10% increase and a 10% decrease in the total number of uploads, but the same number of uploads made during the six months to 30 June 2023.

Six months ended 30 June 2023	**As reported**	**+10%**	**-10%**
Revenue stream			
WiseWave SLA revenue	26,433	23,790	29,076
WiseWave SLA accrued revenue	31,227	28,104	34,350

Six months ended 30 June 2022	**As reported**	**+10%**	**-10%**
Revenue stream			
WiseWave SLA revenue	18,278	16,450	20,106
WiseWave SLA accrued revenue	11,081	9,973	12,189

Please see the ‘Financial Highlights’ section on page 8 for further information on revenue, including the significant increase in revenue in H1 2023 compared to H1 2022.

Below is a reconciliation of the movement in accrued revenue during the period:

(US$’000)	**Six months ended 30 June 2023**
At 1 January 2023	58,534
Revenue accrued in the period	41,592
Accrued revenue invoiced in the period	(33,107)
Foreign exchange difference	(54)
At 30 June 2023	**66,965**

Below is a reconciliation of the movement in deferred revenue during the period:

(US$’000)	**Six months ended 30 June 2023**
At 1 January 2023	91,733
Revenue recognised in the period	(88,026)
Revenue deferred in the period	38,087
Foreign exchange difference	(23)
At 30 June 2023	**41,771**

This deferred revenue balance is all expected to be satisfied within 12 months of the balance sheet date. There has been a significant reduction in the deferred revenue balance since the end of December 2022 due to a large volume of prepaid silicon orders at the back end of 2022 being fulfilled in early 2023 and fewer silicon orders in Q2 2023.

The flexible spending account has increased to US$12.5m at the end of June 2023 from US$5.2m at the end of December 2022. These are contracts with customers who have committed to regular periodic payments to us over the term of the contract. These payments are not in respect of specific licences or other deliverables, but they can be used as credit against future deliverables.

The balances related to costs to obtain contracts from customers are as follows:

(US$'000)	**As at 30 June 2023**	**As at 31 December 2022**
Capitalised contract costs	**4,522**	**874**

The costs to obtain contracts from customers include commissions. Amortisation of US$0.5m (H1 2022: US$1.2m) and impairment of US$nil (2022: US$nil) was charged to the consolidated statement of comprehensive income in the period.

6 Employee costs excluding Directors and key management personnel

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Wages, salaries and benefits	39,508	14,275
Defined contribution pension costs	2,439	483
Social security costs	1,533	225
Share-based payments (all employees)	16,166	7,192
Investment tax credit	(1,500)	-
Total employee costs	**58,146**	**22,175**

The average number of employees during the period, analysed by category, was as follows:

	Six months ended 30 June 2023	**Six months ended 30 June 2022**
R&D/engineering	651	176
General & administration	59	19
Sales & marketing	20	7
Total employees (average)	**730**	**202**

The number of employees at the end of each period, analysed by category, was as follows:

	Six months ended 30 June 2023	**Six months ended 30 June 2022**
R&D/engineering	662	220
General & administration	60	22
Sales & marketing	22	9
Total employees (end of period)	**744**	**251**

7 Directors and key management personnel compensation

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Directors and key management emoluments	2,844	1,875
Pension costs	67	3
Total Directors and key management remuneration	**2,911**	**1,878**

8 Finance income and expense

(US$'000)	Six months ended 30 June 2023	Six months ended 30 June 2022
Finance income		
Interest income from contracts with customers containing significant financing components	149	-
Other Interest	52	-
Interest income from bank	1,518	362
	1,719	**362**
Finance expense		
Lease interest	552	160
Term loan interest	6,929	-
Israel innovation interest	84	-
	7,565	**160**
Net finance (expense)/income	**(5,846)**	**202**

9 Non-recurring M&A-related costs

In accordance with the Group's policy for non-recurring items, the following credits were included in this category for the current and prior period:

Accrual releases amounting to US$0.3m relating predominantly to the Group's acquisition of the OpenFive business, which closed on 31 August 2022. A small portion of the accrual release relates to the Group's acquisition of Banias Labs, which closed on 12 October 2022. These credits relate to legal and financial due diligence expenses for the acquisitions.

10 Exchange gain

The exchange gain recorded in the six months to 30 June 2023 consolidated statement of comprehensive income is US$0.6m (H1 2022: exchange gain of US$19.3m). The significant gain of US$19.3m in the six months to 30 June 2022 was due to the weakening of GBP against USD. The functional currency of the Company is GBP and it held significant cash and cash equivalents balances denominated in USD. In the six months of June 2023, GBP strengthened against USD resulting in a US$1.7m loss which was offset by an exchange gain in the OpenFive entity of US$2.3m.

11 Investments

WiseWave joint venture:

(US$'000)	Six months ended 30 June 2023	Six months ended 30 June 2022
Share of loss	8,169	1,566
Effect of elimination of gains from sales to the joint venture	(5,439)	6,302
	2,730	**7,868**

The value of the investment in WiseWave was reduced to US$nil in 2022, as a result of equity accounting for losses at WiseWave during the period. The value of the cumulative losses incurred by WiseWave exceeds the cumulative value of our investment into the business, hence there is no elimination of gains from the sales to

WiseWave in the six months to 30 June 2023 as the value of the investment is already reduced to US$nil by taking our share of their loss.

We have exercised our judgement in choosing not to eliminate the full gains from sales to WiseWave and not to recognise a deferred income balance for the excess of the elimination over the carrying value of the investment. In our opinion, this more appropriately reflects the current nature of the relationship with WiseWave and is consistent with our intention to exit the joint venture in the medium term. Had we elected to eliminate the share of the gain in full, we would have recognised a deferred income balance of US$15.1m in the consolidated statement of financial position.

Investment:

On 17 May 2023, the Group invested US$1.0m in an Israeli semiconductor company. Given the proximity of the investment to the half-year reporting date of 30 June 2023, the Group is satisfied that the investment's carrying value is representative of fair value.

12 Income tax expense

During the six months ended 30 June 2023, the Group recorded a consolidated tax expense of $US2.3m (H1 2022: US$6.0m expense), which represented effective tax rates of (20.4%) and 26.9%, respectively.

The group operates in different tax jurisdictions. Income tax expense has been recognised based on management’s estimate of the effective rates for the financial period multiplied by the reported profits before tax of the interim reporting period for each tax jurisdiction.

13 Earnings per share

Basic earnings per share is calculated by dividing net income from operations by the weighted average number of common shares outstanding during the period.

Diluted earnings per share is calculated by adjusting the weighted average number of common shares outstanding during the period to assume conversion of all potential dilutive share options and restricted share units to common shares.

(US$’000 except shares)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Numerator:		
Net (loss)/income from operations	(13,431)	16,252
Denominator:		
Weighted average number of common shares outstanding for basic EPS	700,766,190	668,415,191
Adjustment for share options	92,534,053	32,904,025
Weighted average number of common shares outstanding for diluted EPS	**793,300,243**	**701,319,217**
Basic EPS (US$ cents)	**(1.92)**	**2.43**
Diluted EPS (US$ cents)	**(1.92)**	**2.32**

Basic loss per share in the six months to 30 June 2023 and diluted loss per share in the six months to 30 June 2023 are the same because the share options and RSUs are anti-dilutive. Therefore, they have been excluded from the calculation of diluted weighted average number of ordinary shares.

14 Goodwill

Group	Total US$'000
Cost	
Balance at 30 June 2022	—
On acquisition of subsidiaries	**331,886**
Foreign exchange	**—**
Balance at 30 June 2023	**331,886**
Impairment	
Balance at 30 June 2022	—
Impairment charge for the year	**—**
Balance at 30 June 2023	**—**
Net book value	
At 30 June 2022	—
At 30 June 2023	**331,886**

The Group is required to test, on an annual basis, whether goodwill has suffered any impairment. The recoverable amount is determined based on value-in-use calculations. The use of this method requires the estimation of future cash flows and the determination of a discount rate in order to calculate the present value of the cash flows.

Movements in goodwill during the six months ending 30 June 2023 and the year ending 31 December 2022 were as follows:

	2023 US$'000	2022 US$'000
At the beginning of the year	**331,886**	—
Businesses acquired during 2022	**-**	331,886
At the end of the period	**331,886**	331,886

15 Property and Equipment

The value of property and equipment has increased by US$9.9m from US$13.4m at 31 December 2022 to US$23.3m at the end of June 2023. The increase is made up of new additions of US$13.2m, re-classification to property and equipment from intangibles of US$1.2m and depreciation of US$4.5m.

16 Intangible assets

(US$'000)	**Six months ended 30 June 2023**
At 1 January 2023	161,406
Additions	26,085
Re-classification to property and equipment	(1,162)
Amortisation	(6,778)
At 30 June 2023	**179,551**

The identifiable intangible asset from the acquisition of Precise-ITC in 2022 was valued at US$7.8m, against which amortisation of US$1.0m was recorded in H1 2023 (H1 2022: US$0.8m).

The identifiable intangible asset from the acquisition of OpenFive in 2022 was valued at US$61.0m, against which amortisation of US$5.3m was recorded in H1 2023 (H1 2022: US$nil).

The identifiable intangible asset from the acquisition of Banias Labs in 2022 was valued at US$83.9m. No amortisation is recorded as the intangible asset is not yet available for use.

The US$26.1m of additions includes US$1.4m paid to a third party. The remaining US$24.7m is capitalised development expenditure comprising primarily of staff costs where staff have worked on projects that are capitalizable under the Group's research and development capital expenditure policy. In the six months to 30 June 2023, an amortisation expense of US$0.1m was recorded for capitalised development expenditure .

The re-classification of US$1.2m from intangible assets to property and equipment relates to a physical test-chip purchased in 2022.

The Group incurred research and development costs that have been expensed in the consolidated statement of comprehensive income, due to not meeting the criteria for capitalisation. The amounts expensed through salaries, subscriptions, subcontracting, depreciation of right-of-use assets, equipment rentals, and prototypes which relate to research and development are as follows:

(US$'000)	**Six months ended 30 June 2023**	**Six months ended 30 June 2022**
Research and development	35,464	25,152

17 Cash and cash equivalents

(US$'000)	**As at 30 June 2023**	**As at 31 December 2022**
Cash at bank and in hand	122,764	186,231

Please see the 'Financial Highlights' section on page 9 for further information on cash, including the decrease in cash as at 30 June 2023 compared to 31 December 2022.

18 Loans and borrowings

The Group's sources of borrowing for liquidity purposes include the Credit Agreement dated 12 October 2022 and the Incremental Facility Amendment dated 3 November 2022. These comprise a US dollar-denominated Delayed Draw Term Loan B ('Term Loan') of US$100.0m and a multi-currency revolving credit facility (RCF) of up to US$125.0m, provided by a syndicate of banks.

Both the Term Loan and the RCF have a term of five years. The Term Loan and US$110.0m of the RCF were drawn in full in October 2022 in connection with the Group's acquisition of Banias Labs. US$15.0m of the RCF was drawn down on 15 May 2023. Both the Term Loan and RCF bear interest at a floating rate of interest linked to SOFR (secured overnight financing rate), with the overall rate dependent on our total net leverage ratio, defined as the ratio of our consolidated total debt outstanding to our consolidated adjusted EBITDA.

Our borrowings under the Credit Agreement and Incremental Facility Amendment are subject to a net leverage ratio and a fixed charges coverage ratio which are defined in the Credit Agreement and tested quarterly. The maximum permissible net leverage ratio was 3.75x up to the period ending 30 June 2023, is 3.5x up to the period ending 31 March 2024 and 3.0x thereafter and is calculated by dividing total consolidated debt outstanding by total consolidated adjusted EBITDA for the last twelve months. The minimum fixed charges coverage ratio is 1.25x over the term of the debt and is calculated by dividing total consolidated cash flow for the last twelve months by total fixed charges for the last twelve months.

The Group did not meet the minimum fixed charges coverage ratio of 1.25x in the second quarter of FY 2023, which represented a breach of the bank covenant as at 30 June 2023. As such, the Term Loan and the RCF are payable on demand at 30 June 2023 and have been classified as current liabilities in the consolidated statement of financial position. On 22 September 2023, the Group signed an amendment to the credit agreement with the lenders waiving the covenant for the period to 30 June 2024, with a revised lower fixed charge coverage ratio covenant in effect from 30 September 2024 to 30 September 2025. Additionally, there is a minimum liquidity requirement that the Group must maintain for the period to 30 September 2025.

19 Share capital

	Number of shares	US$ '000
Balance as at 31 December 2021	**664,965,934**	**9,399**
Shares issued to option holders on exercise	29,442,453	344
Further issue of shares	659,813	8
Balance as at 31 December 2022	**695,068,200**	**9,751**
Shares issued to option holders on exercise	6,799,986	87
Further issue of shares	3,696,022	45
Balance as at 30 June 2023	**705,564,208**	**9,883**

20 Share-based payments

	As at 30 June 2023		As at 30 June 2022	
	Share options	**Weighted average exercise price (US$)**	**Shares options**	**Weighted average exercise price (US$)**
Outstanding at the beginning of the period	85,692,153	0.712	95,273,220	0.280
Exercised during the period	(10,496,008)	0.697	(16,456,177)	0.050
Forfeited during the period	(468,557)	1.658	(1,237,812)	1.217
Granted during the period	8,453,347	1.166	6,906,285	2.149
Outstanding at the end of the period	**83,180,935**	**0.724**	**84,485,516**	**0.507**
Exercisable at the end of the period	**42,554,503**	**0.266**	**44,088,144**	**0.537**

25% of options granted vest on the first anniversary of issuance and the remaining options vest equally each month over the following 36 months. Options expire within five years of their issue under the terms of the option agreements.

The following assumptions were used in the Black-Scholes-Merton model used to determine the fair value of the share-based compensation expense relating to share options issued in the period:

	6 months ended 30 June 2023	6 months ended 30 June 2022
Risk-free interest rate	3.10%	2.82%
Expected volatility	29.72%	29.72%
Expected dividend yield	-	-
Expected life of share option	4	4

The Group has determined the forfeiture rate to be nil and volatility was determined in reference to listed entities similar to the Group.

Share-based payment split by function

6 months to June 2023

(US$'000)	R&D/engineering	Sales & marketing	General & administration	**Total**
Share-based payment charge	14,862	1,799	1,841	**18,502**

6 months to June 2022

(US$'000)	R&D/engineering	Sales & marketing	General & administration	**Total**
Share-based payment charge	5,869	291	1,032	**7,192**

The share-based payment charge for the six months ended 30 June 2023 includes US$2.4m relating to prior periods. This is due to a change in methodology of the share-based payment calculation from annually graded vesting to monthly graded vesting.

21 Related party transactions

Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note. The Group entered into the following transactions and had the following outstanding balances with related parties who are not consolidated in these interim financial statements:

	As at and for the period ended		
(US$'000)	**30 June 2023**	**31 December 2022**	**30 June 2022**
Transactions:			
Revenue from a company on which a Director is the chairman of the board[1]	242	3,549	546
Revenue from VeriSilicon	-	3,270	1,653
Revenue from WiseWave, a joint venture, where there is common directorship	34,859	58,207	20,154
Costs capitalised as intangible assets from a company on which a Director is a director	(600)	(1,200)	(800)
	34,501	**63,826**	**21,553**
Balances:			
Accounts receivable from a company on which a Director is the chairman of the board	350	350	-
Accounts receivable from VeriSilicon	-	669	
Accounts receivable from WiseWave, a joint venture, where there is common directorship	15,060	3,360	-
Accrued revenue for a company on which a Director is the chairman of the board	5,217	6,750	4,710
Accrued revenue from VeriSilicon	812	-	2,323
Accrued revenue from WiseWave, a joint venture, where there is common directorship	36,579	20,217	11,249
Accrued liabilities with a company on which a Director is a director	-	-	(600)
	58,018	**31,346**	**17,682**
Deferred revenue from a company on which a Director is the chairman of the board[1]	88	686	49
Deferred revenue from VeriSilicon	-	-	392
Deferred revenue from WiseWave, a joint venture, where there is common directorship	342	-	479
	429	**686**	**920**

1. Companies on which a Director is the chairman of the board are FLC Technology Group and DreamBig Semiconductor Inc.

Sales to related parties are made at market prices and in the ordinary course of business. Outstanding balances are unsecured and settlement occurs in cash. Any estimated credit losses on amounts owed by related parties would not be material and are therefore not disclosed. This assessment is undertaken at each key reporting period through examining the financial position of the related party and the market in which the related party operates.

In the interests of transparency, we have opted to disclose VeriSilicon as a related party within this note. However, we have received advice that VeriSilicon is not a related party as defined by IAS 24 or Listing Rule 11. All revenue from VeriSilicon and related balances are in respect of transactions signed with VeriSilicon prior to the VeriSilicon reseller agreement moving under WiseWave as master reseller effective November 2021. All revenue and associated balances in respect of transactions signed with VeriSilicon since that date are now recognised through the WiseWave joint venture line.

22 Subsidiaries of the Group as at 30 June 2023

All subsidiaries have been included in the consolidated financial statements using the equity method. Details of the Group's subsidiaries as at 30 June 2023 are as follows:

Name of subsidiary	Principal activity	Country of incorporation and principal place of business	Class of share	Proportion of ownership interest and voting rights held by the Group
Alphawave IP Inc.	Developing and licensing high performance connectivity silicon IP for the semiconductor industry	Canada	Ordinary	100%
Alphawave Semi US Corp. *(formerly Alphawave IP Corp.)*	Sales and sales support for silicon IP licensing and custom silicon solutions.	United States (Delaware)	Ordinary	100%
Alphawave IP (BVI) Ltd.	To facilitate silicon IP licensing to WiseWave Technology Co., LTD	British Virgin Islands	Ordinary	100%
Alphawave Call. Inc.	Non-trading	Canada	Ordinary	100%
Alphawave Exchange Inc.	Non-trading	Canada	Ordinary	100%
Alphawave IP Limited	To facilitate the investment in WiseWave Technology Co., LTD	China	Ordinary	100%
Precise-ITC, Inc.	Developing and licensing high performance connectivity silicon IP for the semiconductor industry	Canada	Ordinary	100%
AWIPInsure Limited	Captive insurance company	Barbados	Ordinary	100%
Alphawave Semi International Corp. *(formerly Alphawave Holdings Corp.)*	Holding company provides operational support in Taiwan for Open-Silicon, Inc	United States (Delaware)	Ordinary	100%
Alphawave Semiconductor Corp.	Dormant	United States (Delaware)	Ordinary	100%
Alphawave Semi, Inc. *(formerly Open-Silicon, Inc)*	Provides custom silicon solutions and high-speed connectivity silicon IP	United States (Delaware)	Ordinary	100%
Alphawave Semi Holding Corp. *(formerly Open-Silicon Holding Corp.)*	Holding company	Mauritius	Ordinary	100%
Open-Silicon Development Corp.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon Engineering, Inc.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon International, Inc.	Dormant	United States (Delaware)	Ordinary	100%
Open-Silicon Japan	Dormant	Japan	Ordinary	100%
Open-Silicon Research Private Ltd .	Provides research and development contracting services to Alphawave Semi, Inc.	India	Ordinary	100%
Alphawave Semi (Nanjing) Co. Ltd *(formerly Yuanfang Silicon Technology (Nanjing) Co. Ltd)*	Provides sales and marketing contracting services to Alphawave Semi, Inc.	China	Ordinary	100%

Alphawave 102022 Limited	Dormant	United Kingdom (England & Wales)	Ordinary	100%
Solanium Labs Ltd	Developing optical Digital Signal Processing chips for data centres	Israel	Ordinary	100%
Alphawave Semi Asia Co. Ltd (Shanghai)	Dormant	China	Ordinary	100%

All of the subsidiaries, with the exception of Alphawave IP (BVI) Ltd, Alphawave Call. Inc., Alphawave IP Limited, AWIPInsure Limited, Alphawave Semi International Corp., Solanium Labs Ltd and Alphawave 102022 Limited are indirectly held subsidiaries.

The registered office of Alphawave Semi US Corp. and Alphawave Semi International Corp. is 1730 N 1st St, Suite 650, San Jose, CA, 95112.

The registered office of Alphawave IP (BVI) Ltd is Trinity Chambers, PO Box 4301, Road Town, Tortola, British Virgin Islands.

The registered office of Alphawave IP Limited is 21 Avenida da Praia Grande, No 409, Edificio China Law, 21 andar, em Macau.

The registered office of Precise-ITC, Inc. is 170 University Avenue, 10th Floor, Toronto, Ontario, M5H 3B3.

The registered office of AWIPInsure Limited is 1st Floor, Limegrove Centre, Holetown, St. James, Barbados.

The registered office of Alphawave Semi Inc, Open-Silicon Development Corp, Open-Silicon Engineering, Inc and Open-Silicon International, Inc is 490 N McCarthy Blvd #220, Milpitas, CA 95035.

The registered office of Alphawave Semi Holding Corp (Mauritius) is 3rd Floor, Les Cascades, Edith Cavell Street, Port Louis, Mauritius.

The registered office of Open-Silicon Japan is c/o Akia Tax Consultants, Shoei Kannai Building, 22, Sumiyoshicho 2-chrome, Naka-ku, Yokohama, Kanagawa.

The registered office of Open-Silicon Research Private Ltd is No. 11/1 & 12/1 Maruthi Infotech Centre, 2nd Floor, B-Block, Indiranagar, Koramangala Intermediate Ring Road, Bangalore – 560 071, India.

The registered office of Alphawave Semi (Nanjing) Co. Ltd is Room 101, Building B, No. 300, Zhihui Road, Qilin Science and Technology Innovation Park, Jiangning District, Nanjing.

The registered office of Alphawave 102022 Limited is 65 Gresham Street, 6th Floor, London, England, EC2V 7NQ.

The registered office of Solanium Labs Ltd. is 24 Hanagar, Hod HaSharon 4527713, Israel.

The registered office of all other subsidiaries is 70 University Ave, 10th Floor, Toronto, Ontario, Canada M5J 2M4.

23 Post balance sheet events

In July 2023, the Group invested a further US$9.0m in its joint venture WiseWave.