

30 January 2023

## **Review of Operations / Quarterly Activity Statement**

Achievements during the reporting period were technical in nature, focused on advancing the Company's proven Digital Sound Reconstruction technologies into a mass-production product. As has been extensively reported, the company has achieved all known and emerging technical challenges involving the design, fabrication and function – delivering on the promise of Digital Sound Reconstruction (DSR) in the world's smallest full range loudspeaker chip. We have proven the technologies' ability to reproduce the full audible range of frequencies from 20Hz to 20KHz (and beyond) with a near flat frequency response; all in a surface mount industry compliant silicon chip.

As has been stated, the company's primary objectives for CY-22 were to complete the transition of its the technology from its prototyping / development platforms into a reliable mass-produced product that meets or exceeds market driven specifications. The principal activities associated with this objective:

1. Production of MEMS-GEN-II (the commercial version of our MEMS chip).
2. Advancing our engineering and demonstration electronics and software from development environments to independently operated electronics and software.

As had been extensively reported the complexity of MEMS demands an iterative development approach that models, evaluates, improves and aligns designs to fabrication capabilities based on actual test and measurement results. Some past reported examples of this iterative process included issues pertaining to charge dissipation, stiction, misalignment, sacrificial material release, process residues, wafer handling, and others. The objective of this massive undertaking was to establish a reliable, repeatable and stable fabrication process that will not only produce devices to spec, but to establish clear and precisely defined boundaries of realistic manufacturing capabilities ("process window") that dictate the device design ("design rules").

In the world of micro-electro-mechanical-systems (MEMS), especially in our case where we have pushed the physical and electromechanical boundaries, even the smallest of variances measured in nanometers can influence the devices' performance. Therefore, the engineering axiom dictates the necessity to solidify the devices' manufacturing process in order to obtain accurate assessment, simulation, and alignment of the design to the attainable process capabilities.

Throughout development of the manufacturing process, we purposefully withheld from the chip design, certain structural features that provide a significant boost to the sound pressure levels (SPL

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or “loudness”) of the chip. There are a number of reasons for concealing this “secret sauce” that extend beyond IP preservation and the maturing of our multiphysics simulation models to explore nuanced variations. The most significant reason that these features were withheld from prior designs is they have a direct dependency on the manufacturing capabilities and tolerances and therefore these modifications strictly adhere to, and remain within, the tightly defined process window. (Other design elements that provide an even greater increase to the SPL but that require more radical changes to the fabrication process are being reserved for future generations of products).

During EarthMountain’s visit in September 2022 we mutually concluded that the not only were the defined objectives for MEMS GEN-I achieved, but that sufficient knowledge, experience and investment were made to ensure success producing and packaging MEMS GEN-II to spec. Consequently, as reflected in our Appendix 4C, the company has paid a prepayment of A\$586K and issued a purchase order for 10’s of thousands of fully packaged MEMS GEN-II pre-production chips that will be fully tested for compliance to spec prior to shipment.

Also included in the production version of the chip is a refinement to the electromechanical characteristics of the structure that permit us to apply a software-only solution able to contend with adverse acoustic effects resulting from inconsistencies in the manufacturing process.

During our extensive work with GEN-I chips we discovered that during music play an audible high frequency component (for lack of better word “noise”) was produced when reconstructing certain frequencies. The root cause of this phenomena was traced to inconsistencies / lack of uniformity in fabrication. Specifically, the theories of digital sound reconstruction dictate that when superimposing the time-delayed sound pulses generated by our “pixels“, variances in the anticipated pulse magnitude caused by inconsistencies in manufacturing, can manifest into the improper reconstruction of sound and in certain cases produce an unwanted sound that is audible.

While industry methodologies involved in mass producing semiconductors is anticipated to reduce if not eliminate such variances overtime, nonetheless the company was compelled to explore other possible means of negating the problem. The innovation ultimately conceived involves expanding the electromechanical characteristics of the devices, that when combined with a proprietary software-only approach provide the capability of rendering any such noise inaudible. This solution which has been tried and tested on our prototyping platforms has proven to offer meaningful improvement to the clarity of sound even though it cannot be fully utilized without the electromechanical changes incorporated in the mass-production version of the chip.

It is of critical importance to note that all modifications introduced in the mass-production version of the chip (MEMS-GEN-II) are not even visible to the naked eye, or more significantly GEN-II is fully compatible with all packaging, testing procedures, functional software, algorithms, hardware and electronics that were developed, tried and tested on the prototyping platform (MEMS-GEN-I).

Ultimately these factors as well as delays receiving chips and other critical components, led management to conclude that the company would be far better served delaying public demonstration of the technology a bit longer, in order to allow demonstrations of the production version of the chip; as undeniably the impact of a full range and flat frequency response when demonstrated at optimal sound pressure levels, will far better represent the game changing technology we have been laboring to bring to market.

It is important to note that at the time this decision was made and announced, it was anticipated that initial receipt of MEMS-GEN-II chips would be in mid to late Q4-22. What was unknown at that time was the impact of the Chinese Government's attempts to curtail the spread and adverse effects of the COVID pandemic. Policies were changed and extended from week to week, effectively leaving a wide range of industries worldwide without insight or ability to plan and inform. The consequence for the company was that not only had advancement of GEN-II stalled for over 4 months, but EM's ability supply GEN-I chips had dramatically diminished.

During the extend lockdown period in China the company remained focused on advancing all aspects of technology it could. As indicated, considerable effort and progress was achieved developing advanced measurement and characterization capabilities which in turn fueled significant advancements of our multiphysics simulation capabilities. Additionally major effort and progress was concentrated on the development and migration of our functional software and algorithms as well as the design, fabrication and testing of our electronics demonstration and reference design systems.

In early January 2023, EarthMountain was able to partially resume operations and on that basis as well as the best information available at the time this report is written, it is anticipated that upon the conclusion of the Chinese New Year's holiday on 2 February 2023, that full operations will commence.

Given this as well as the rather massive investment made by EarthMountain in their facilities, tools, fabrication and test capabilities, equipment and personnel, management is increasingly convinced that the stated objectives of achieving mass production, and commencing sales and marketing phases can begin sometime in Q3 of this year. Management is waiting for EarthMountain's to confirm resumption of operations and update its production schedules, at which time Management will update the market with a revised schedule for shareholder demonstrations.

### **Placement to EarthMountain**

Earth Mountain (Suzhou) Microelectronics Ltd. (EM) committed to take 308,325 ordinary shares (\$4,316,550) at \$14.00 per share in the placement announced on 24 August 2022 subject to receiving approvals from Ministry of Commerce and the State Administration of Foreign Exchange

to settle their commitment. The Company announced on 30 December 2022 that EarthMountain had yet to receive the necessary approvals from the Ministry of Commerce and the State Administration of Foreign Exchange in China to settle their commitment. While the approval is not believed to be in jeopardy, given that there is little informative visibility into this bureaucratic process, it is impossible to predict an accurate settlement date. The Company will update the market as soon as new information is available and in any case by 28 February 2023.

### **Unsecured Loan**

The total unsecured loan outstanding at 31 December 2022 from 4F Investments Pty Limited (a company associated with the Chairman Fred Bart) was \$3.285m. The outstanding unsecured loan attracts an interest rate of 6% per annum and is repayable on receipt of the Earth Mountain placement proceeds.

As part of the placement announced to the market on 24 August 2022 of \$10m at \$14.00 per share, 4F Investments Pty Limited agreed to subscribe for 165,358 ordinary shares at \$14.00 per share as part of this placement at a cost of \$2,315,012, subject to shareholder approval. 4F Investments Pty Limited has agreed that that it would offset \$2,315,012 against its unsecured loan of \$3,285,000, subject to shareholder approval, and the balance of \$969,988 would be repaid in cash once the placement funds from Earth Mountain are received.

4F Investments Pty Limited will continue to receive 6.00% interest on the unsecured loan until shareholder approval is received. In respect of the balance of the unsecured loan of \$969,988, after shareholder approval, 4F Investments Pty Limited will continue to receive interest at 6.00 % per annum until repayment.

No date has been set to seek shareholder approval for the conversion of part of the unsecured loans of \$2 315,012 into ordinary shares and it is likely that shareholder approval will be sought at the Annual General Meeting to be held on Monday 22 May 2023 at 1.30 pm at the Fullerton Hotel in Sydney.

### **Payments to related entities**

The amounts included in Item 6.1 of \$45,437 include directors' fees and superannuation paid to entities associated with non-executive directors of \$37,937 and consulting fees paid to entities associated with a non-executive director of \$7,500. Interest of \$32,940 was paid in cash during the quarter to 4F Investments Pty Limited (a company associated with Fred Bart, Chairman).

This announcement has been authorised for release to ASX by Fred Bart, Chairman.

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

AUDIO PIXELS HOLDINGS LIMITED

**ABN**

98 094 384 273

**Quarter ended ("current quarter")**

31 DECEMBER 2022

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (12. months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	18	120
1.2 Payments for		
(a) research and development	(1,067)	(3,942)
(b) product manufacturing and operating costs	-	-
(c) advertising and marketing	-	(2)
(d) leased assets	-	-
(e) staff costs	(119)	(547)
(f) administration and corporate costs	(148)	(687)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	4	7
1.5 Interest and other costs of finance paid	(42)	(158)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	160
1.8 Other – prepayment for pre-production chips	(586)	(586)
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(1,940)</b>	<b>(5,635)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	(96)	(125)
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12. months) \$A'000
2.2 Proceeds from disposal of:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(96)</b>	<b>(125)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	1,477	4,845
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	-
3.4 Transaction costs related to issues of equity securities or convertible debt securities	-	(185)
3.5 Proceeds from borrowings	-	2,885
3.6 Repayment of borrowings	-	(1,000)
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Repayment of lease liabilities	(28)	(234)
<b>3.10 Net cash from / (used in) financing activities</b>	<b>1,449</b>	<b>6,311</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	1,972	750
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(1,940)	(5,635)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(96)	(125)

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12. months) \$A'000</b>
4.4	Net cash from / (used in) financing activities (item 3.10 above)	1,449	6,311
4.5	Effect of movement in exchange rates on cash held	(45)	39
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>1,340</b>	<b>1,340</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	709	846
5.2	Call deposits	631	1,126
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>1,340</b>	<b>1,972</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1	78
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

The amount included in Item 6.1. includes directors fees and superannuation paid to entities associated with the non-executive directors of \$37,937 and consulting fees paid to entities associated with non-executive directors of \$7,500. Interest of \$32,940 was paid in cash during the quarter to 4F Investments Pty Limited (a company associated with Fred Bart-Chairman).

7.	<b>Financing facilities</b>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
	<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1	Loan facilities	3,285	3,285
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	<b>Total financing facilities</b>	3,285	3,285
7.5	<b>Unused financing facilities available at quarter end</b>		-
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		
	<p>The Company has an unsecured loan facility agreement with 4F Investments Pty Limited (a company associated with Fred Bart - Chairman) of \$3.285m at 31 December 2022 and at the date of this report. The interest rate on the unsecured loan facility is 6% and it expires on completion of the capital raising/ receipt of A\$4,316,550 (US\$3m) from Earth Mountain.</p> <p>As part of the placement announced to the market on 24 August 2022 of \$10m at \$14.00 per share, 4F Investments Pty Limited agreed to subscribe for 165,358 ordinary shares at \$14.00 per share as part of this placement at a cost of \$2,315,012, subject to shareholder approval. 4F Investments Pty Limited has agreed that it would offset \$2,315,012 against its unsecured loan of \$3,285,000, subject to shareholder approval, and the balance of \$969,988 would be repaid in cash once the placement funds from Earth Mountain are received.</p> <p>4F Investments Pty Limited will continue to receive 6.00% interest on the unsecured loan until shareholder approval is received. In respect of the balance of the unsecured loan of \$969,988, after shareholder approval, 4F Investments Pty Limited will continue to receive interest at 6.00 % per annum until repayment.</p>		

8.	<b>Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1	Net cash from / (used in) operating activities (item 1.9)	(1,940)
8.2	Cash and cash equivalents at quarter end (item 4.6)	1,340
8.3	Unused finance facilities available at quarter end (item 7.5)	-
8.4	Total available funding (item 8.2 + item 8.3)	1,340
8.5	<b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	0.69
	<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	

8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:

8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Yes

8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Yes. The Company is expecting to receive the placement proceeds of A\$4,316,550 during the current quarter in respect of the placement to Earth Mountain of 308,325 ordinary shares at \$14.00 announced on 24 August 2022.

8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Yes. The Company is expecting to receive the placement proceeds of A\$4,316,550 during the current quarter in respect of the placement to Earth Mountain of 308,325 shares at \$14.00 announced on 24 August 2022.

*Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.*

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 30 January 2023

Authorised by: By the Board  
(Name of body or officer authorising release – see note 4)

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – e.g. Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.