

29 July 2022

Review of Operations

As has been reported, achievements throughout the reporting period were technical in nature, focused on advancing the Company’s technologies into a mass-produced product. The primary activities of the period were technical in nature; concentrated on transitioning from development wafers, chips and systems to demonstration and production products. After being severely hampered by China’s strict pandemic lockdowns in place since February the company has experienced a dramatic improvement to the pace of progress occurring since early June. Highlights of a number of technical matters that have been addressed during the period include:

MEMS Fabrication and Packaging

- Over the months of June and July 2022 our fabrication partner EarthMountain (“EM”) completed 2 batches of Gen-1 MEMS wafers; half of which were characterized and extensively tested by the company, while the other half were forwarded directly for chip packaging. By any measurable standard wafer yield has proven to be excellent. An additional batch of Gen-1 MEMS wafers is scheduled to complete fabrication by the end of the first week of August.
- After over 10 weeks of delay due to closure of the mask shop, EM has been able to resume activities related to advancing MEMS Gen-II, having just shipped the initial process validation wafer (expected to arrive Aug 2).
- During the period EM was able to complete the chip assembly qualification program, enabling them to begin delivery of functional packaged chips immediately upon the easing of the lockdown. Notably the packaged chip they began to produce and deliver in mid-June included our proprietary High Voltage Driver (ASIC) integrated into the chip package. As detailed later in this report the

delivery of these chips is a major milestone that enabled the company to accelerate development of its demonstration systems.

- While the quantities of chips delivered to date have been limited, aided by a formidable investment, EM is making considerable progress automating their chip packaging process improving the repeatability while accelerating chip production time. Despite the partially manual assembly process, and blind assembly (the packaging of untested silicon), yields have been very high.
- The companies launched and led a cooperative effort that included EM and the supplier of the chip cover film, to improve the chip package cover, in order to ease assembly and chip handling, improve the quality and reliability, while reducing costs. During the period prototypes of the new cover design were created and proven to meet our product objectives. In fact, some of the prototype covers have already been used on production chips.
- The recent easing of international travel restrictions for Chinese nationals has permitted a delegation from EM (senior technical and business) to schedule a visit to the company in Israel for early September.

Product and Demonstration Development

- During the period all aspects of our product development environments have been redesigned / upgraded to best conform with the technical requirements of the MEMS Gen-1 (simplified structure). The enhanced development environments have permitted a number of algorithmic improvements that improve sound quality and expand the bandwidth, now measured to produce the full audible spectrum down to 20Hz; performance that is normally restricted to speakers that are orders of magnitude larger. This pioneering achievement for the first time in the history of sound reproduction, delivers a small form factor speaker that is capable of reproducing hi-quality sound throughout the full audible spectrum (and beyond).

- Receipt of chips packaged with our integrated ASIC driver was a major milestone achievement. As has been reported the proprietary ASIC driver among the other things, converts the available device voltage (from 2.3V to 24V) into the higher voltages required to operate and control the MEMS transducer. This achievement for the first time enables the company to “detach” from large bench power supplies as well as the PC controlling the chip (and the substantial wiring of both), to be used in its natural environment, run by the system in which the speaker will reside, such as the soon to be released headphone demo.
- Simultaneously various other technical aspects of the platform have been implemented and validated using the 80-chip demo board. While not fully populated yet (due to chip shortage) this demo board has proven all the fundamental theories involving the use of multiplications of chips (whereby each doubling of the number of chips provides an uncompromised addition of 6 decibels of sound pressure).
- Both of the aforementioned demo systems are functioning and rapidly approaching release date, with the key tasks remaining (beyond the receipt of additional chips) involving the full debugging of the transported code (from development to native code), the completion and incorporation of our latest algorithms that are being specifically optimized for the Gen-I simplified structure, as well as the accurate measurement of the performance of the completed demo chips / systems.

Overall, the past couple of months has seen a clear shift as the company “returns” from its decade long journey innovating MEMS fabrication, to our primary directive focus on acoustics. The magnitude of accomplishments achieved during the reporting period have been considerable presenting a very positive outlook on the company’s upcoming milestones.

During the quarter, the Company has received further unsecured loans from 4F Investments Pty Limited, a company associated with the Chairman, Mr Fred Bart of \$1.185m. The total unsecured loans outstanding at 30 June 2022 were \$3.785m,

including \$1m from another party. These unsecured loans attract an interest rate of 6% per annum and are repayable by 30 September 2022 or on the completion of the capital raising.

As noted in the accompanying Appendix 4C, the Company has engaged an Australian broker to facilitate a placement of ordinary shares to sophisticated investors which is expected to be completed once the demonstration has been completed. The minimum capital raising will be \$10m and part of the placement proceeds will be used to repay the unsecured loans.

The amounts included in Item 6.1 of \$44,900 include directors' fees and superannuation paid to entities associated with non-executive directors of \$37,400 and consulting fees paid to entities associated with a non-executive director of \$7,500.

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



About Audio Pixels Holdings Limited

Audio Pixels Limited, founded in 2006, is a wholly owned subsidiary of Audio Pixels Holdings Limited, listed in Australia under the stock code of AKP (Level 1 ADR's on OTC: ADPXY). Backed by exceptional multidisciplinary scientific research, design, and production capabilities, Audio Pixels has become a world leader in digital loudspeaker technologies. Audio Pixels' patented technologies employ entirely new techniques to generate sound waves directly from a digital audio stream using micro-electromechanical structures (MEMS). Its revolutionary technological platform for reproducing sound enables the production of an entirely new generation of speakers that will exceed the performance specifications and design demands of the world's top consumer electronics manufacturers. For more information, visit www.audiopixels.com.au/.

Forward-looking statements

This release may contain certain forward-looking statements with respect to the financial condition, results of operations and business of AKP and certain of the plans and objectives of AKP with respect to these items. By their nature, forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future and there are many factors that could cause actual results and developments to differ materially from those expressed or implied by these forward-looking statements.

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")

30 JUNE 2022

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6.months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	26	79
1.2 Payments for		
(a) research and development	(805)	(1,875)
(b) product manufacturing and operating costs	-	-
(c) advertising and marketing	-	-
(d) leased assets	-	-
(e) staff costs	(183)	(320)
(f) administration and corporate costs	(187)	(300)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	-
1.5 Interest and other costs of finance paid	(4)	(46)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	-	-
1.9 Net cash from / (used in) operating activities	(1,153)	(2,462)
2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	(8)	(21)
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 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)	-	-
2.6	Net cash from / (used in) investing activities	(8)	(21)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
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	-	-
3.5	Proceeds from borrowings	1,185	2,385
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Repayment of lease liabilities	(107)	(152)
3.10	Net cash from / (used in) financing activities	1,078	2,233

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	565	750
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,153)	(2,462)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(8)	(21)

Appendix 4C
Quarterly cash flow report for entities subject to Listing Rule 4.7B

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6.months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	1,078	2,233
4.5	Effect of movement in exchange rates on cash held	50	32
4.6	Cash and cash equivalents at end of period	532	532

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	532	565
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	532	565

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	45
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 \$37,400 and consulting fees paid to entities associated with non-executive directors of \$7,500. No interest was paid in cash during the quarter to 4F Investments Pty Limited (a company associated with Fred Bart- Chairman). Interest of \$30,439 was accrued to 4F Investments Pty Limited during the current quarter.

7.	Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
	<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	4,285	3,785
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	Total financing facilities	4,285	3,785
7.5	Unused financing facilities available at quarter end		500
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 unsecured loan facility agreements with 4F Investments Pty Limited (a company associated with Fred Bart - Chairman) of \$2.785m and Link Enterprises Group for A\$1m. The interest rate on the unsecured loan facilities is 6% and they both expire on 30 September 2022. The original \$2m facility which expired on 31 December 2021 was extended for a further period to 30 September 2022.</p> <p>On 31 December 2021 4F Investments Pty Limited (a company associated with Fred Bart - Chairman) agreed to provide an additional loan facility of \$1.785m on the same terms and conditions as the initial \$2m facility.</p> <p>On 30 June 2022 4F Investments Pty Limited (a company associated with Fred Bart - Chairman) agreed to provide an additional loan facility of \$500,000 on the same terms and conditions as the previous loans which expire on 30 September 2022.</p>		

8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(1,153)
8.2	Cash and cash equivalents at quarter end (item 4.6)	532
8.3	Unused finance facilities available at quarter end (item 7.5)	500
8.4	Total available funding (item 8.2 + item 8.3)	1,032
8.5	Estimated quarters of funding available (item 8.4 divided by item 8.1)	0.9
	<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: The Company has engaged an Australia broker to complete a capital raising of a minimum of A\$10m once the technology can be demonstrated to potential investors. During the quarter 4F Investments Pty Limited, a company associated with the Chairman, Mr Fred Bart, advanced a further \$1,185,000 as additional unsecured loans, making the total unsecured loans at 30 June 2022, \$3,785,000. These loans will be repaid on successful completion of the capital raising.

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 has received \$500,000 from 4F Investments since 30 June 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: 29 July 2022

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 – eg 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.