Zacks Small-Cap Research

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Akoustis Tech (AKTS-OTCQB)

AKTS: Zacks Company Report – Akoustis Signs Its First Customer

We believe the stock could be worth $10.02 per share based on an industry average of 3.9X EV to sales by FY 2019 if sales targets are met and given its current production schedule and cash needs.

Current Price (08/15/16)	$3.93
Valuation	**$10.02**

OUTLOOK

Akoustis is a pre-revenue start-up. It has started to penetrate the high growth market for RF filters with its technical advantages against the competition. Its seasoned management, IP protection, and progress to date, should allow it is able to bring its product to market and capture market share. It has just announced its first customer, with product delivery expected next year. Investors may benefit either through stock appreciation as the business takes shape and generates sales, or via an acquisition of the company by strategic investors seeking a leading edge IP-protected BAW solution to fill in their product lines or provide a competitive advantage.

SUMMARY DATA

52-Week High	**$5.25**
52-Week Low	**$1.51**
One-Year Return (%)	**-25.1**
Beta	**-0.5**
Average Daily Volume (sh)	**10,726**
Shares Outstanding (mil)	**15.5**
Market Capitalization ($mil)	**$61**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**19.7**
Insider Ownership (%)	**30.7**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/M**
P/E using 2017 Estimate	**N/M**
P/E using 2018 Estimate	**N/M**

Risk Level	**Above Average**
Type of Stock	**N/A**
Industry	**Semi-Radio Freq**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Jun)	Q2 (Sep)	Q3 (Dec)	Q4 (Mar)	Year (Mar)
2015	NA	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2016	$0.0 A	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2017	$0.0 E	$0.0 E	$0.0 E	$0.2 E	$0.2 E
2018					$3.8 E

Earnings per Share
(EPS is non-GAAP earnings before non-recurring items)

	Q1 (Jun)	Q2 (Sep)	Q3 (Dec)	Q4 (Mar)	Year (Mar)
2015	NA	-$0.01 A	-$0.03 A	NA	NA
2016	-$0.08 A	-$0.08 A	-$0.08 A	-$0.05 A	-$0.32 A
2017	-$0.07 E	-$0.09 E	-$0.09 E	-$0.09 E	-$0.30 E
2018					-$0.47 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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WHAT'S NEW

Yesterday Akoustis announced its first customer, a Chinese tier one RF front end (RFFE) module manufacturer. This customer has signed multiple non-exclusive agreements with Akoustis including to buy its RF filter products. These agreements were: a joint development agreement, a statement of work, and a strategic product supply agreement. The two companies will work together to develop high-band BAW RF filters for use in RFFE modules for 4G, emerging 4.5G and 5G mobile, and Wi-Fi applications to be used in next-generation high-band RFFE module products and Akoustis will supply the filters. Initial prototype RF filters should be out by the end of 2016 with volume shipments in 2017. The company said that this customer is a well-known established Chinese tier-one RFFE module manufacturer selling into the China and India mobile phone OEM and ODM markets. It is an approved supplier of RFFE modules to multiple smartphone OEMs, including one of the largest OEMs in the world. These **non-exclusive** agreements will allow Akoustis to sell BAW RF Filters to any other RF module manufacturers. The company has already seen interest from other Chinese companies particularly those who do not have access to BAW filters and seek to market higher end phones at speeds 4G and above. According to Qualcomm, the RFFE space is projected to be an $18 billion market by 2020.

In addition to mobile phones, Akoustis' BAW filters can be sold into the wireless infrastructure and military markets. We know it has been working with the military, and sales to that sector may be booked even sooner than sales to the mobile phone space. Should it strike a deal for product, Akoustis' unique frequency capabilities may make it a sole source supplier. Wireless infrastructure equipment suppliers are also being pursued. In particular, the company sees an opportunity in small cells, such as those made by Ericsson, Nokia, and Huawei. Currently these small cells are using cavity filters that are not only large and heavy, but are low wattage. Akoustis' solution is far more lightweight, smaller and could work with the higher wattage needed in more complex systems.

Events Since the End of FY 2016

Fiscal Year Changed to June

The company changed the fiscal year from March to June and as a result, financials will be restated and the company has 90 days to report the June quarter from the time of the change on August 11, 2016. That means it has until November to file. We believe that the company plans to report sooner than that and look for numbers in September. At that time we will revise our models.

Resonator Reaches a Q of 2090

On August 8th, the company announced it had achieved resonator Q of 2090 through design and fabrication improvements for its single-crystal BAW. This high Q resonator is suitable for high band BAW RF Filters for 4G/LTE, Wi-Fi, and emerging 5G and 5G Wi-Fi mobile wireless applications. High Q performance is a critical parameter in the development of low insertion loss, high-selectivity filters that improve end user experience with latest mobile devices.

Patents Awarded

In June, Akoustis was awarded multiple foundational patents related to its single crystal piezoelectric materials, novel BAW resonators, wide bandwidth RF filters, and their application in mobile devices. The USPTO issued U.S. Patent No. 9,362,887 and the China Patent Office (SIPO) has issued China Patent Nos. ZL 201520549840.3, ZL 201520566852.7, and ZL 201520652061.6.

They are summarized as follows:

- **US Patent No. 9,362,887** – Integrated circuit configured with two or more single crystal acoustic resonators resulting in BAW RF filter for a communication, mobile or computing device.
- **China Patent No**. **ZL 201520549840.3** – Wafer scale packaging for single crystal acoustic resonators and BAW RF filters.
- **China Patent No**. **ZL 201520566852.7** – Communication, mobile or computing device configured with single crystal acoustic resonators and BAW RF filters.
- **China Patent No**. **ZL 201520652061.6** – Membrane structure technique for fabrication of single crystal acoustic resonators and BAW RF filters.

Company Proves High Performance at Industry Conference

In May, at an industry conference, Akoustis reported that **its 3.4GHz BAW resonators**, constructed from single crystal undoped aluminum nitride (AlN) piezoelectric material, **showed a record high K-squared of 12.5%.** In comparison, resonators currently on the market show K-squared performance from undoped polycrystalline AlN resonators is limited to approximately **6.5%.**

Capital Raised

On April 14, 2016 the company announced it closed a private offering of 1,922,185 shares of stock at $1.60 per share for $3,075,496. The total gross proceeds of the offering before expenses were **$3,576,496** for 2,235,310 shares of common stock. Management and directors led the financing. While this is a low price compared to its current stock price we are hopeful that future offerings will be at much higher prices leading to much lower dilution for current investors.

KEY POINTS

- Akoustis is a pre-revenue start-up created to penetrate the rapidly growing Bulk Acoustic Wave (BAW) RF Filter market with innovate IP-protected technology that should improve performance at lower cost.
- It is specifically targeting the market for BAW RF filters used in smartphones.
- Its seasoned management and directors come from the companies it seeks to displace. Members of the team have already successfully created, and then sold, other start-ups.
- The BAW market is projected to grow at ~20% per year for the next five years, as more and more RF filters per phone will be needed to support faster and faster networks.
- The BAW market, dominated by Broadcom (AVGO), is ripe for disruption due to limited innovation and high prices derived from an IP-protected near-monopoly.
- Akoustis stock is a way for public company investors to participate in a technology start-up venture that could grow into a major player, or be an attractive acquisition for a large RF filter or semiconductor manufacturer selling to the smartphone market that would like a proprietary BAW solution. **The company's current enterprise value is $58 million** and we believe it should be able to capture significant market share in the multi-billion dollar high growth BAW filter market it is entering.

OVERVIEW

Industry executives, and scientists from University of California at Santa Barbara (UCSB) and Cornell University founded Akoustis as a start-up in 2014. It is located in Huntersville, North Carolina and currently employs 15 direct people and 12 contractors. It was created to commercialize and manufacture its patent-pending Bulk ONE™ acoustic wave technology. Bulk Acoustic Wave (BAW) resonators are used in RF filters found in the high-band transmit-receive section of LTE smartphones (4G and above). Akoustis' technology improves the functionality of BAW filters by using **single crystal** piezoelectric materials rather than the thin film **polycrystalline** technology that is used by the rest of the industry. This single crystal method results in filters that provide **wider bandwidth and lower insertion loss than currently available products resulting in next generation smartphones with less dropped calls and longer battery life**. Additionally, Akoustis' single crystal approach is unique; it is differentiated from the polycrystalline technology currently in use that is patent protected and results in limited competition. The company is designing its products but relies on an outside foundry to produce them. The market for RF filters in mobile phones using BAW resonators was a $1.6B market in 2015 and is expected to grow to $3.7 billion by 2020, a 18.3% CAGR, according to Mobile Experts 2015 Report.

FUTURE MILESTONES

September 30, 2016 FY Q2 2017

- RF Filter LTE band-specific samples should be available for evaluation by quarter end.
- Phase IIb of the NFS grant should be received.

December 31, 2016 FY Q3 2017

- Uplisting to NASDAQ
- Possible additional PIPE transaction to raise cash

Early 2017

- Production release of the first BAW filter products
- Off the shelf product available

VALUATION

Akoustis is currently trading at an enterprise value of $58 million, the same as our last report, despite significant progress. As a start-up we believe that Akoustis should be valued first on revenues to enterprise value focusing on later years. Its competitors are much larger companies and are trading in a range of 2.7x to 4.8x enterprise value to sales with an average of 3.9 times estimated 2016 calendar year sales. We believe that Akoustis could reach $60 million in sales by FY 2020 and have raised upwards of another $5 million resulting in issuing at least another 1.3 million shares. Therefore by the end of FY 2019, we believe the stock could be worth $10.00 per share given the cash and debt levels on the

balance sheet at that point are similar to today. This is an increase in our price target solely due to the multiple increases in the comparable companies.

Company	Ticker	Calendar Revenue 2016E	LTM	EBIDTA Margin	Enterprise Value / Sales 2016E	LTM	Included in Average?	Enterprise Value
Broadcom	AVGO	15,500	8,890	39%	5.3	9.3	y	82,400
MediaTek	2454.TW	NA	24,711	12%	NA	11.2	n	277,830
Murata Manufacturing	MRAAY	NA	11,770	31%	NA	2.1	n	24,270
Qorvo	QRVO	2,986	2,640	27%	2.6	2.9	y	7,670
Resonant	RESN	0	0	NM	NM	538.4	n	48
Skyworks Solutions	SWKS	3,249	3,330	41%	3.7	3.6	y	12,050
Average				36%	3.9	5.3		34,040

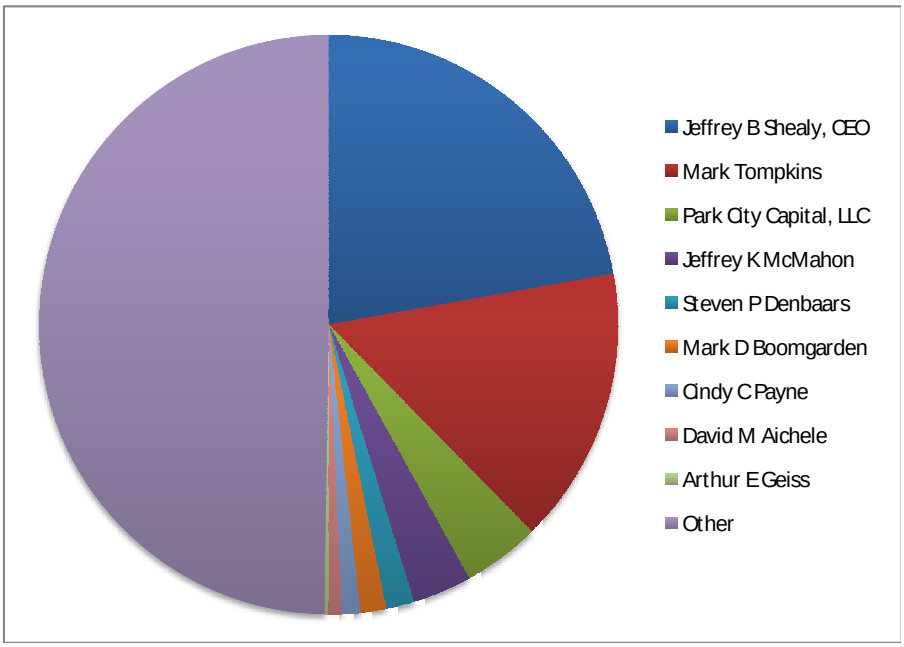
	Projected Revenue 2020E	2019E	EBITDA Margin	Enterprise Value / Sales 2020E	2019E	Valuation Range Low	High
Akoustis	60	25	NM	3.9	5.3	132	232
YoY growth							

Conclusion of Enterprise Value	**$181,739,342**
Market Value	**$186,739,342**
Shares All In	18,635,000
Price per Share	**$10.02**

RISKS

- The company is a start-up and is pre-revenue. Investors should not expect any revenues, from RF filters or resonators, to be generated until 2017 at the earliest.
- The company will need to raise more cash in addition to receiving government grants to sustain its business until it can reach breakeven which will dilute current investors.
- There is no assurance the company can successfully scale up production of its products to achieve commercial volumes.
- Most of the company's intellectual property is in filed patents that have not yet been granted and there can be no assurance they will be granted.
- Its competitors are multi-billion companies with much greater resources and proven products.
- The company has signed only one customer and that customer may not generate revenues until 2017.

OWNERSHIP



INCOME STATEMENT

	Q1 June 30, 2015	Q2 Sep. 30, 2015	Q3 Dec. 31, 2015	Q4 Mar 31, 2016	Q1 June 30, 2016E	Q2 Sep. 30, 2016E	Q3 Dec. 30, 2016E	Q4 Mar 31, 2017E	FY 2015	FY 2016	FY 2017E	FY 2018E
Revenue	$0	$0	$0	$0	$0	$0	$0	$150,000	$0	$0	$150,000	$3,800,000
Cost of goods	0	0	0	0	0	0	0	135,000		0	135,000	3,250,000
Gross margin	0	0	0	0	0	0	0	15,000		0	15,000	550,000
Percent of sales					100%	100%	100%	10%			10%	14%
Operating expenses												
R&D	193,915	321,720	351,892	354,667	400,000	400,000	420,000	450,000	244,635	1,222,194	1,670,000	3,450,000
G&A	660,127	761,323	724,481	501,869	740,000	750,000	800,000	1,250,000	339,214	2,647,800	3,540,000	5,450,000
Total operating expenses	854,042	1,083,043	1,076,373	856,536	1,140,000	1,150,000	1,220,000	1,700,000	583,849	3,869,994	5,210,000	8,900,000
Loss from operations	(854,042)	(1,083,043)	(1,076,373)	(856,536)	(1,140,000)	(1,150,000)	(1,220,000)	(1,685,000)	(583,849)	(3,869,994)	(5,195,000)	(8,350,000)
Operating margin								-1123%			-3463%	-220%
Other income												
Grant income	29,999	0	0	234,334	0	147,600	0	147,600	137,500	264,333	295,200	0
Other income	0	0	0	500					0	500		
Interest income	175	496	352	305	175	200	200	175	0	1,328	750	850
Change in fair value of der liab	1,571	14,015	5,414	(127,994)	0	0	0	0	0	(106,994)	0	0
Total other income	31,745	14,511	0	107,145	175	147,800	200	147,775	137,500	159,167	295,950	850
Net loss	(822,297)	(1,068,532)	(1,070,607)	(749,391)	(1,139,825)	(1,002,200)	(1,219,800)	(1,537,225)	(446,349)	(3,710,827)	(4,899,050)	(8,349,150)
Net loss per share	**$ (0.11)**	**$ (0.09)**	**$ (0.09)**	**$ (0.05)**	**$ (0.07)**	**$ (0.09)**	**$ (0.09)**	**$ (0.09)**	**$ (0.08)**	**$ (0.32)**	**$ (0.30)**	**$ (0.47)**
Shares outstanding	7,823,683	12,392,115	12,768,358	14,000,000	15,400,000	16,200,000	16,200,000	17,611,765	5,493,200	11,702,313	16,352,941	17,611,765
		126%	132%	155%								
All in shares		13,500,620	14,506,063	14,485,000	16,039,000	16,839,000	16,839,000	18,250,765	NA	14,163,894	16,991,941	18,250,765
Share based compensation	198,454	28,275	81,423	331,492	331,492	331,492	331,492	80,000	6,219	639,644	1,074,476	1,074,476
Non-GAAP Loss	(623,843)	(1,040,257)	(989,184)	(417,899)	(808,333)	(670,708)	(888,308)	(1,457,225)	(440,130)	(3,071,183)	(3,824,574)	(7,274,674)
Non-GAAP EPS	**$ (0.08)**	**$ (0.08)**	**$ (0.08)**	**$ (0.03)**	**$ (0.05)**	**$ (0.04)**	**$ (0.05)**	**$ (0.08)**	**$ (0.08)**	**$ (0.26)**	**$ (0.23)**	**$ (0.41)**
EBITDA	(620,530)	(1,034,197)	(979,998)	(406,381)	(796,158)	(658,508)	(876,108)	(1,445,050)	(433,411)	(3,041,106)	(3,775,824)	

BALANCE SHEET

	Mar. 31, 2016	Dec. 31, 2015	% Change
Assets:			
Cash and cash equivalents	$ 2,730,105	$ 2,483,489	10%
Inventory	43,544	0	NM
Prepaid expenses	59,461	67,887	-12%
Total current assets	2,833,110	2,551,376	11%
Property and equipment, net	182,910	192,062	-5%
Intangibles, net	60,649	46,566	30%
Other assets	10,715	60,970	-82%
Total Assets	3,087,384	2,850,974	8%
Current Liabilities:			
Accounts payable and accrued expenses	367,290	509,617	-28%
Total current liabilities	367,290	509,617	-28%
Long-term Liabilities:			
Derivative liabilities	313,709	185,715	69%
Total Liabilities	680,999	695,332	-2%
Stockholders' Equity			
Common Stock	13,615	13,021	5%
Additional paid in capital	6,549,946	5,550,406	18%
Accumulated deficit	(4,157,176)	(3,407,785)	22%
Total Stockholders' Equity	2,406,385	2,155,642	12%
Total Liabilities and Stockholders' Equity	3,087,384	2,850,974	8%
Net cash	$2,730,105	$2,483,489	10%
Current ratio	7.7	5.0	54%
Quick ratio	7.6	5.0	52%
Cash as % of assets	88%	87%	2%
Working Capital	2,465,820	2,041,759	21%
Market cap	61,218,887	22,484,398	172%
Enterprise value	58,488,782	20,000,909	192%

CASH FLOWS

	3 Months Ended 30-Jun-15	3 Months Ended 30-Sep-15	3 Months Ended 31-Dec-15	3 Months Ended 31-Mar-16	YEAR 2016
Net loss	$ (822,297)	$ (1,068,532)	$ (1,070,607)	$ (749,391)	$ (3,710,827)
Adjustments to reconcile net loss to net cash used in operating activities:					
Depreciation	2,632	4,530	8,456	10,417	26,035
Amortization of intangibles	506	1,034	378	796	2,714
Share-based compensation	198,454	28,275	81,423	331,492	639,644
Change in fair value of derivative liabilities	(1,571)	(14,015)	(5,414)	127,994	106,994
Changes in operating assets and liabilities:					
Inventory	30,521	0	0	(43,544)	(13,023)
Prepaid expenses	(40,812)	5,190	(13,265)	8,426	(40,461)
Other assets	(8,000)	(8,100)	(42,155)	50,255	(8,000)
Accounts payable and accrued expenses	64,075	255,373	131,730	(243,372)	207,806
Net Cash Used In Operating Activities	(576,492)	(796,245)	(909,454)	(506,927)	(2,789,118)
CASH FLOWS FROM INVESTING ACTIVITIES:					
Cash paid for machinery and equipment	(18,761)	(103,957)	(19,450)	(1,265)	(143,433)
Cash paid for intangibles	(4,617)	(14,873)	(2,028)	(14,879)	(36,397)
Net Cash Used In Investing Activities	(23,378)	(118,830)	(21,478)	(16,144)	(179,830)
CASH FLOWS FROM FINANCING ACTIVITIES:					
Proceeds from issuance of Common Stock	4,241,627	0	0	769,687	5,011,314
Net Cash Provided By Financing Activities	4,241,627	0	0	769,687	5,011,314
Net Increase in Cash	3,641,757	(915,075)	(930,932)	8,426	2,042,366
Cash - Beginning of Period	687,739	4,329,496	3,414,421	2,483,489	687,739
Cash - End of Period	4,329,496	3,414,421	2,483,489	2,730,105	2,730,105
Cash Paid During the Period for:					
Income taxes	0	0	0	0	0
Interest	0	0	0	0	0
SUPPLEMENTARY DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:					
Stock compensation payable	27,206	37,450	24,942	11,447	101,045
Warrants issued for stock issuance costs	206,715	0	0	0	206,715
Conversion of convertible notes into Common Stock	655,000	0	$ 0	0	$ 655,000
Cash flow	(622,276)	(1,048,708)	(985,764)	(278,692)	(2,935,440)
Free cash flow	(645,654)	(1,167,538)	(1,007,242)	(294,836)	(3,115,270)

HISTORICAL STOCK PRICE



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