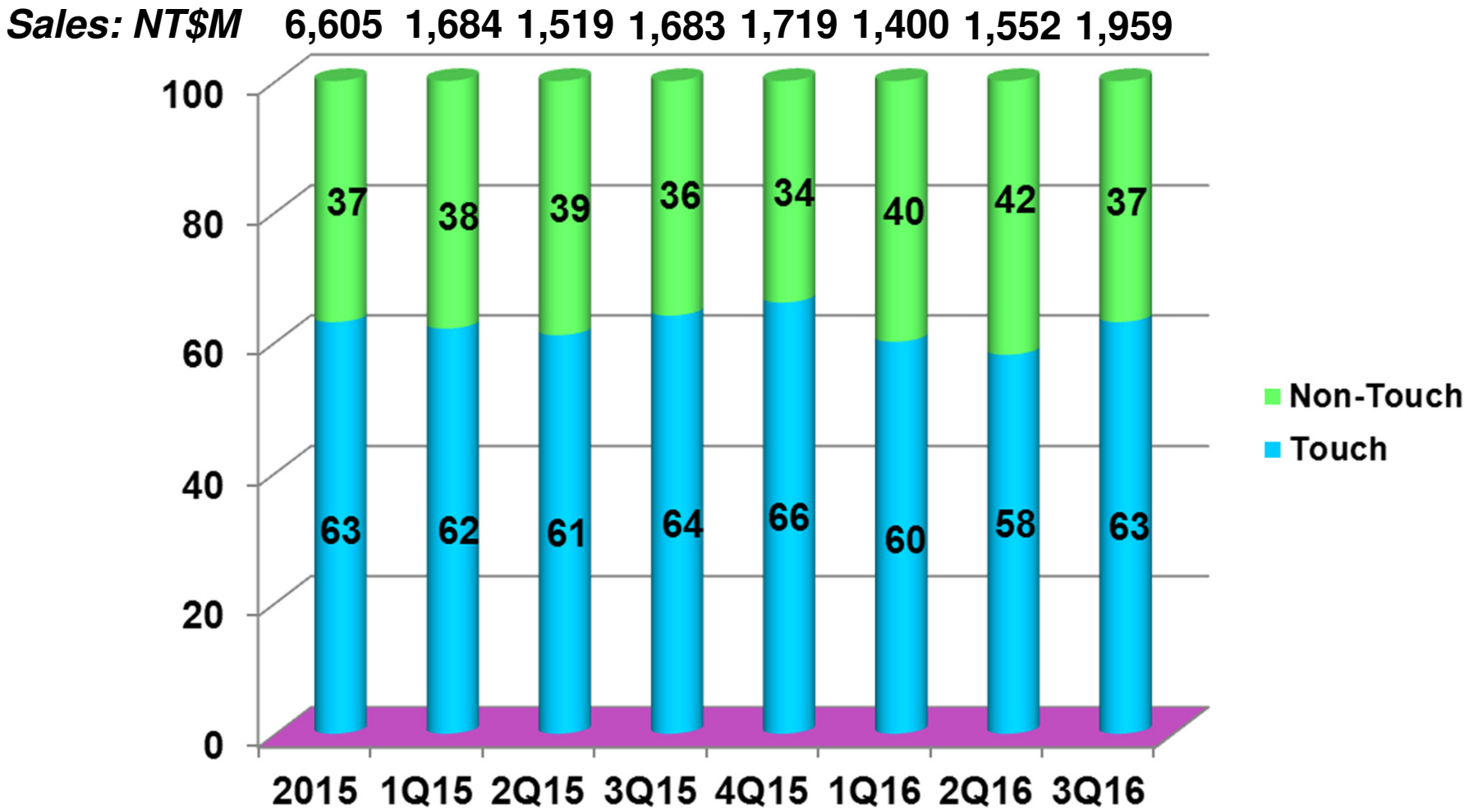
ELAN Microelectronics Corp.

3Q16 Investor Conference

2016/11/16

Sales Breakdown by Product Line
(Consolidated)



- *Touch: Touchscreen Chip, Touchpad, Fingerprint ID*
- *Non-touch: MCU, PC Peripheral , Consumer, Pointing Stick, Affiliated Co. Products*

3Q16 Income Statement
YoY Comparison (Consolidated)

NT$M

	3Q16	%	3Q15	%	YoY(%)
Sales	1,959	100	1,683	100	16
Gross profit	814	42	684	41	19
Sales expense	91	5	79	5	
G&A expense	71	4	77	5	
R&D expense	339	17	331	20	
Operating profit	313	16	197	11	59
Non-operating income & exp.	(31)	(2)	67	4	
Profit before tax	282	14	264	15	7
Net profit	228	12	215	13	6
Belong					
Parent company	243		236		
Non-Controlling Interests	(15)		(20)		
* EPS (NT$)	0.58		0.57		2

* Based on the current 434 million shares (Reviewed)
* Based on the weighted average number of shares outstanding

3Q16 Income Statement
QoQ Comparison (Consolidated)

NT$M

	3Q16	%	2Q16	%	QoQ(%)
Sales	1,959	100	1,552	100	26
Gross profit	814	42	632	41	29
Sales expense	91	5	73	5	
G&A expense	71	4	75	5	
R&D expense	339	17	332	21	
Operating profit	313	16	152	10	106
Non-operating income & exp.	(31)	(2)	(2)	(0)	
Profit before tax	282	14	150	10	88
Net profit	228	12	120	8	90
Belong					
Parent company	243		138		
Non-Controlling Interests	(15)		(18)		
* EPS (NT$)	0.58		0.33		76

* Based on the current 434 million shares (Reviewed)
* Based on the weighted average number of shares outstanding

Balance Sheets

September. 30, 2016 (Consolidated)

NT$M

Current assets	**7,732**
Cash and cash equivalents	**1,713**
Current financial assets	**1,135**
A/R&A/N	**1,609**
Inventory	**922**
Other current assets	**34**
Other current financial assets	**2,319**
Non-current financial assets	**1,270**
Fixed assets	**574**
Other non-current assets	**306**
Total Assets	**9,882**
Current liabilities	**2,679**
Non- current liabilities	**489**
Total Liabilities	**3,168**
Capital stock	**4,341**
Capital surplus	**707**
Retained earnings	**1,540**
Other equity interest	**221**
Treasury stock	**(109)**
Non-controlling interests	**14**
Total Stockholders' Equity	**6,714**

(Reviewed)

Cash Flow Statement

September. 30, 2016 (Consolidated)

	NT$M
Income before tax	544
Dep & Amort.	114
Dec.(Inc.) of A/R & N/R	(315)
Dec.(Inc.) of inventory	136
Dec.(Inc.) of investments-trading	(403)
Inc.(Dec.) of A/P & N/P	9
Others	123
Operating cashflow	**208**
Inc.F/A	(11)
Dec.(Inc.) of investments	30
Dec.(Inc.)Time deposit with maturity over three-month	433
Acquisition of intangible assets	(45)
Others	5
Investment cashflow	**412**
Inc.(Dec.) in short-term loans payable	(17)
Others	22
Financing cashflow	**5**
Change in cash	625
Beg. Cash	1,088
End Cash	1,713

(Reviewed)

4Q16 Revenue Forecast

Based on current assumptions of future prospects, ELAN expects:

- ***Consolidate revenue to be approximately between NT$1.6 billion and NT$1.65 billion***
- ***Gross margin to be about 41% to 42%***
- ***Operating income rate to be about 10% to 12%***

ELAN's Smart-Touchscreen™ Essential Patents

(12) **United States Patent**
Ho et al.

(10) **Patent No.: US 9,207,719 B2**
(45) **Date of Patent: Dec. 8, 2015**

(54) **SCREEN CONTROL MODULE OF A MOBILE ELECTRONIC DEVICE AND CONTROLLER THEREOF WITH MULTIPLE DIELECTRIC LAYERS**

(71) Applicant: **ELAN MICROELECTRONICS CORPORATION**, Hsin Chu (TW)

(72) Inventors: **Ming-Lung Ho**, Yangmei (TW); **Chien-Wen Tsai**, Zhubei (TW)

(73) Assignee: **ELAN MICROELECTRONICS CORPORATION**, Hsinchu (TW)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 392 days.

(21) Appl. No.: **13/802,845**

(22) Filed: **Mar. 14, 2013**

(65) **Prior Publication Data**

US 2014/0170869 A1 Jun. 19, 2014

(30) **Foreign Application Priority Data**

Dec. 14, 2012 (TW) ..... 101147414 A

(51) **Int. Cl.**

G06F 1/16	(2006.01)
H05K 1/02	(2006.01)
H05K 1/11	(2006.01)
H01L 23/373	(2006.01)
H01L 23/433	(2006.01)
H01L 23/00	(2006.01)
H01L 23/31	(2006.01)

(52) **U.S. Cl.**

CPC ***G06F 1/1658*** (2013.01); ***H01L 23/3738*** (2013.01); ***H01L 23/4334*** (2013.01); ***H01L 24/19*** (2013.01); ***H05K 1/02*** (2013.01); ***H05K 1/111*** (2013.01); *H01L 23/3128* (2013.01); *H01L 2224/16225* (2013.01); *H01L 2224/45147* (2013.01); *H01L 2224/48091* (2013.01); *H01L 2224/48227* (2013.01); *H01L 2924/15311* (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

(56) **References Cited**

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2013/0128474	A1 *	5/2013	Kang	H05K 1/0271 361/749

FOREIGN PATENT DOCUMENTS

TW	200643846	12/2006

* cited by examiner

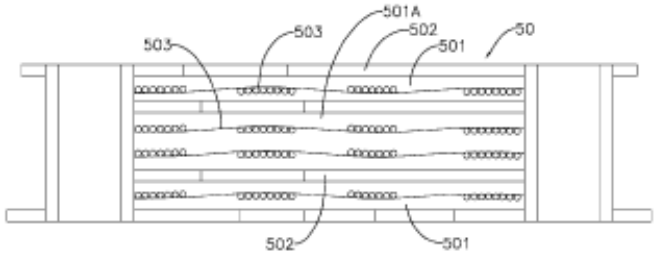
Primary Examiner — Ryan A Lubit

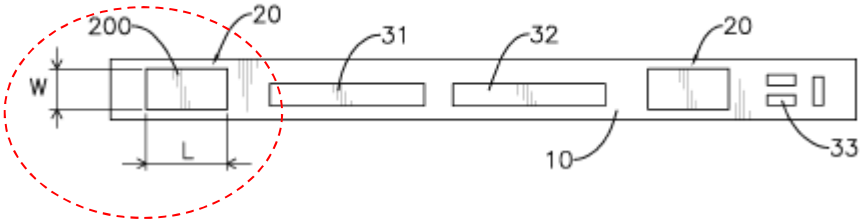
(74) *Attorney, Agent, or Firm* — Birch, Stewart, Kolasch & Birch, LLP

(57) **ABSTRACT**

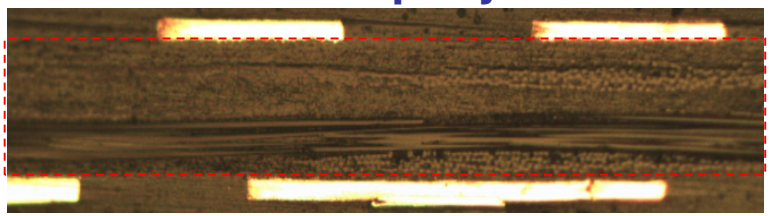
A screen control module of a mobile electronic device has at least one controller formed on a circuit board. The circuit board has multiple solder pads formed on the circuit board and respectively aligning along a first direction and a second direction. A count of the solder pads along the first direction is greater than that along the second direction. The controller is formed by an integrated circuit with a package, and the aspect ratio of the package is not less than 2. The package has multiple electrical contacts respectively aligning along a length direction and a width direction. Each electrical contact aligns with and is electrically connected to a corresponding solder pad. Accordingly, the screen control module mounted within a side frame of a display of the mobile electronic device can increase the aspect ratio to meet the demand for narrowing the side frame of the display.

21 Claims, 11 Drawing Sheets

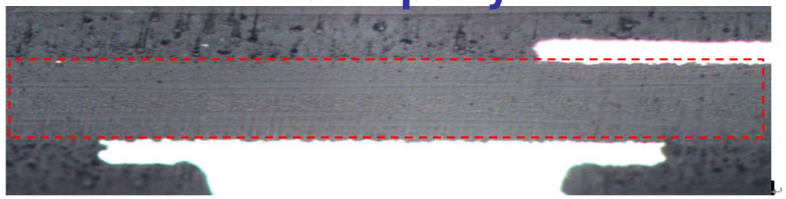




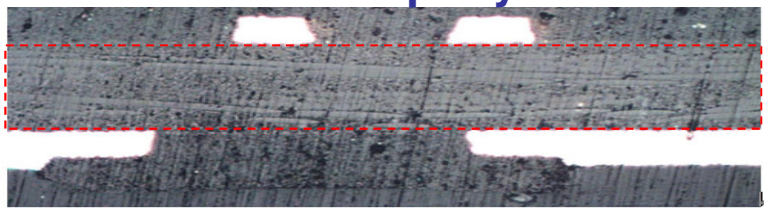
A Company



B Company



C Company



ELAN's Smart-Touchscreen™ Essential Patents

中華民國專利證書

發明第 I 489176 號

發明名稱：行動電子裝置的螢幕控制模組及其控制器

專利權人：義隆電子股份有限公司

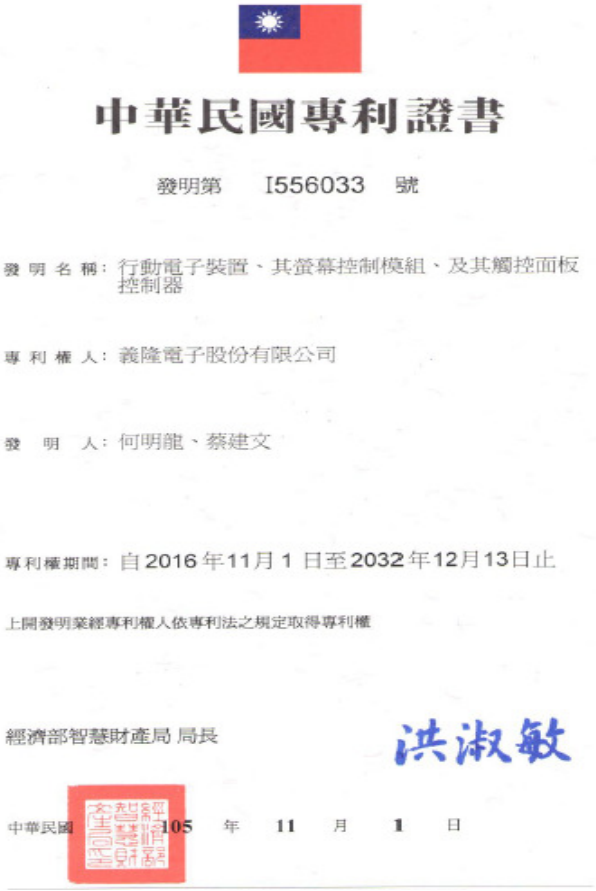
發明人：何明龍、蔡建文

專利權期間：自 2015年 6 月 21 日至 2032年 12 月 13 日止

上開發明業經專利權人依專利法之規定取得專利權

經濟部智慧財產局
局長 王美花

中華民國 104 年 6 月 21 日



中華民國專利證書

發明第 I556033 號

發明名稱：行動電子裝置、其螢幕控制模組、及其觸控面板控制器

專利權人：義隆電子股份有限公司

發明人：何明龍、蔡建文

專利權期間：自 2016 年 11 月 1 日至 2032 年 12 月 13 日止

上開發明業經專利權人依專利法之規定取得專利權

經濟部智慧財產局 局長 洪淑敏

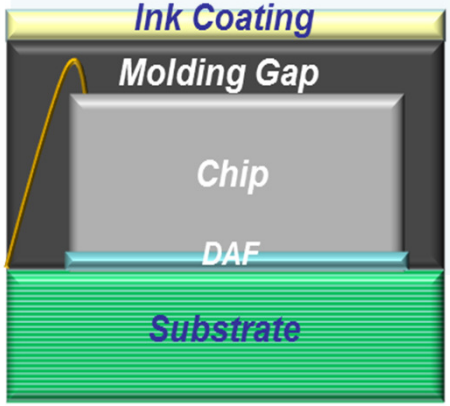
中華民國 105 年 11 月 1 日

ELAN Takes IP Protection Extremely Serious!

ELAN Smart-ID™ Solutions Update

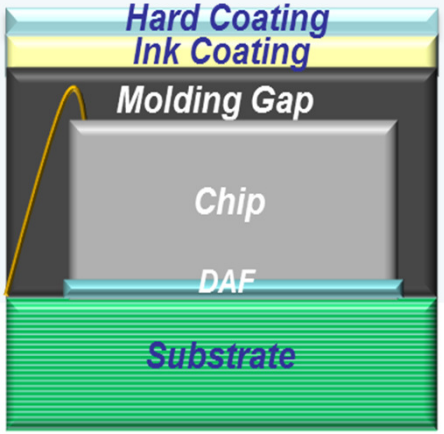
Coating Solutions

Matt



MP

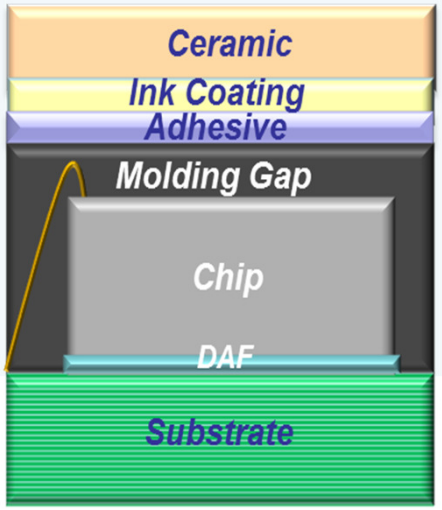
Glossy



MP

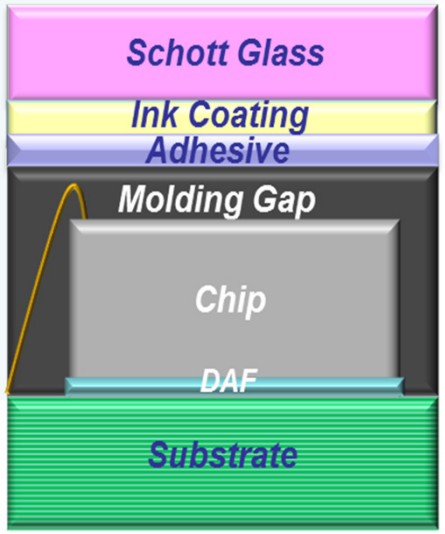
Cover Solutions

Ceramic



Complete Smartphone Samples under Verification by Tier 1 Brands

Schott Glass



Engineering Sample

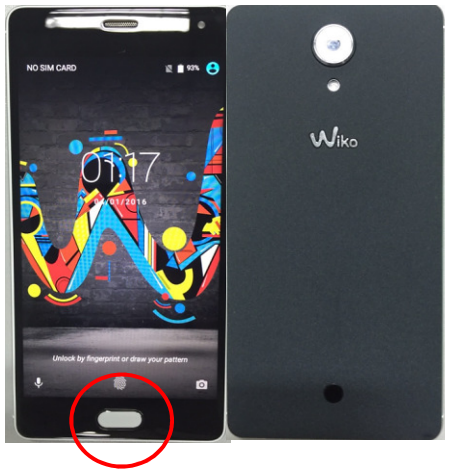
ELAN Smart-ID™ MP in Smartphone & NB

ASUS ZenBook 3

ASUS Transformer 3

ASUS Transformer Mini

Micromax
Canvas Unite 4



Wiko

Sharp Z2

8” Wafer Foundry Shortage Issue

兩岸8吋晶圓廠再掀搶產能大戰　指紋辨識晶片廠猛卡位　提前敲響產能緊缺警報

2016/11/04 - DIGITIMES 趙凱期 / 台北

大陸智慧型手機品牌業者紛將指紋辨識功能視為2017年手機標準配備，近期全球指紋辨識晶片供應商積極投片生產，業界甚至傳出指紋辨識晶片大廠FPC、匯頂等直接拿出高價訂金，預先搶購2017年8吋晶圓廠代工產能，使得包括台積電、聯電、世界先進及中芯等兩岸8吋晶圓廠掀起新一波搶產能熱潮。

近期不少台系類比IC及LCD驅動IC業者憂心2017年8吋晶圓產能供應不足，重蹈2016年上半處於競爭劣勢的覆轍，遂決定提前在2016年第4季拉貨，卻發現即使在傳統淡季，兩岸8吋晶圓廠產能利用率仍是居高不下，業界甚至傳出部分晶片業者投片量大增，業者透露8吋晶圓廠再度掀起搶產能風潮，主要係因2017年指紋辨識晶片訂單大增所致。

半導體業者指出，大陸智慧型手機指紋辨識晶片市場規模快速上揚，2015年需求量約1億顆，滲透率約25%，2016年需求量倍增至逾2億顆，預期2017年將成長至3億~4億顆水準，隨著手機客戶對於指紋辨識功能需求不斷高漲，連帶讓指紋辨識晶片供應商不斷搶進市場，並爭食8吋晶圓廠產能。

由於指紋辨識晶片本身需要指紋觸碰的關係，面積無法有效微縮，兩岸晶圓代工廠雖不斷遊說指紋辨識晶片供應商採用12吋廠更先進製程，但效果明顯不彰，面對採用12吋晶圓成本下降空間有限，加上良率問題，使得多數指紋辨識晶片供應商仍堅持採用8吋廠產能。

目前指紋辨識晶片解決方案單價約2美元，晶片單價相對偏高，若以單月出貨300萬顆，每次備貨3個月的基礎來看，任何一家投入市場的指紋辨識晶片供應商必須先花費近1,000萬美元，FPC與匯頂為阻隔其他晶片供應商搶灘，不斷向晶圓代工及封測廠搶包產能，使得8吋廠產能炙手可熱。

半導體業者表示，全球指紋辨識晶片市場大戰已從先前的技術、專利戰，進一步擴大到晶圓代工與封測產能資源爭奪戰，全球指紋辨識晶片供應商紛針對兩岸8吋晶圓代工產能高價卡位，讓8吋晶圓產能恐在2017年初便提前出現缺貨壓力，這讓同樣仰賴8吋晶圓產能的MCU、類比IC及LCD驅動IC供應商相當緊張。

由於不少MCU、類比IC及LCD驅動IC客戶的晶圓代工報價，明顯不如指紋辨識晶片訂單，加上2017年全球指紋辨識晶片需求量可望增逾50%，以及指紋辨識晶片供應商投片多集中在8吋晶圓廠，台系IC設計業者選擇提前投片的舉動，將提前拉響2017年8吋晶圓廠產能緊缺警報。

面對全球指紋辨識晶片供應商對於8吋晶圓產能勢在必得，並喊出高價力搶產能，近期不少台系晶片業者決定採取彈性作法，提前在第4季對兩岸8吋晶圓代工廠預先投片，設法先拉高2017年第1季晶片庫存水位，以避免每逢旺季總是產能搶輸人的風險。

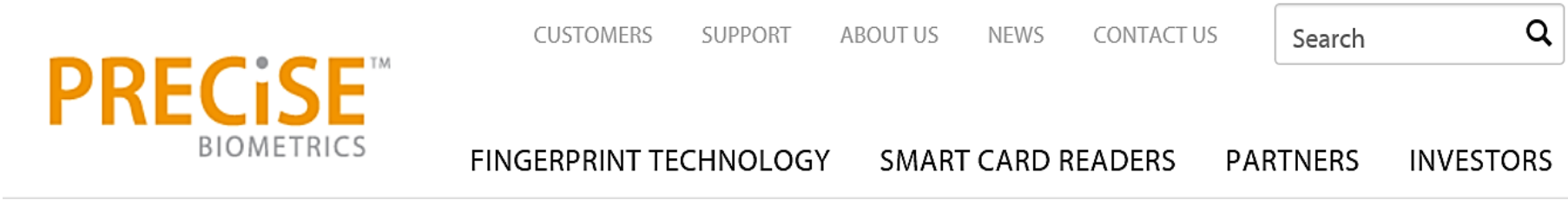
8” 0.18um Wafer Foundry Shortage Issue

ELAN 8” 0.35um Wafer Foundry in UMC & Magnachip

Company	Foundry	Inch	Node
Apple	**TSMC**	12"	65nm
FPC	**SMIC**	8"	0.18um
FPC	**SMIC**	12"	(?)
FPC	**TSMC**	8"	0.18um
Synaptic	**TSMC**	8"	0.18um
Goodix	X Fab	8"	0.35um
Goodix	**TSMC**	8"	0.18um/0.25um
Egis	**TSMC**	8"	0.18um
Silead	**SMIC**	8"	0.18um
SunWave	CSMC	8"	0.18um
ChipSailing	GF	8"	0.18um
MicroArray	**SMIC**	8"	0.35um
Chipone	**SMIC**	8"	0.35um

LCD Driver & Power IC Mainly Use 8” 0.18um Technology

Samsung Licenses Precise Biometrics Algorithm



Precise Biometrics enters into agreement with Samsung Electronics Co., Ltd. for the licensing of Precise BioMatch™ Mobile

Press release published on November 8, 2016

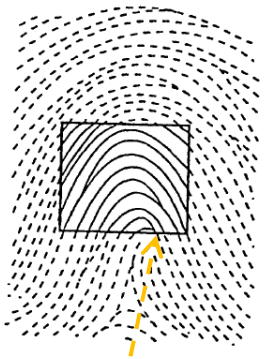
Precise Biometrics, a leader in fingerprint software, has entered into a commercial software license and distribution agreement with Samsung's System LSI Business, a division within Samsung Electronics Co., Ltd., for the licensing of Precise Biometrics' algorithm solution for fingerprint recognition in mobile devices, Precise BioMatch Mobile.

The agreement includes a per unit license fee and an annual fee for support and maintenance. While the per unit license fee is volume dependent and cannot be forecasted by Precise Biometrics at this point, the fee for support and maintenance will be recognized starting from the fourth quarter of 2016.

System Method for Checking Fingerprints Filing Date: 2000/02/11; Issued Date: 2004/12/29 Assignee: Precise Biometrics AB

Claim 7 of EP 1150608 Patent

- *A method of checking fingerprints, comprising the steps of*
  - *recording merely a partial test fingerprint which represents a first finger area;*
  - *comparing a digital representation of the partial test fingerprint with different parts of a digital representation of at least one prerecorded reference fingerprint representing a second finger area, which is larger than the first finger area, and*
  - *determining whether the partial test fingerprint originates from the same finger as the prerecorded reference fingerprint on the basis of said comparison.*



partial test fingerprint

prerecorded reference fingerprint

different parts

comparing & determining

ELAN Smart-ID™ Provides Most Cost-Effective Solutions for China Market

- The World Smallest Sensor Sizes
- Acceptable Performance

  (i) FRR=3% ; (ii) FRR=5% @ FAR=1/50000
- Low Cost Algorithm By Local Vendor
- Keep Best Cost Structure and Supply Chain Advantage with 0.35um Technology

Q & A

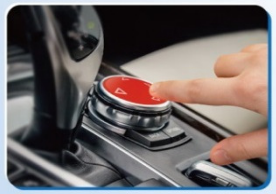
Smart-Touchscreen™

Active Pen
Passive Pen

Moisture Proof

Support Glove

Smart-ClickPad™



Fingerprint Smart-ID™

Smart-Touch™

360° Camera