



**Introduction to  
TRULY SEMICONDUCTORS  
LIMITED**

# Truly Overview

- Founded in 1991
- Headquarters: Hong Kong, Listed on HK Stock Exchange
- Factories all on one campus in Shanwei, China on 250 acres
- Display Products = 92% of total sales
- Factory Size: > 1,000,000 square feet
- Employees: > 11,000
- Young Team: Average age of Engineers & Mgrs < 30
- Engineering Technology: TN, HTN, STN, FSTN, DSTN, CSTN, OLED, TFT, CCM (Camera Module), Touch Panel, Backlight
- Manufacturing Technology: COB, COG, COF, SMT, & TAB
- Certifications: ISO 9001, ISO 14001, TL 9000 & ISO/TS 16949

# Forbes "Top 100" in Asia

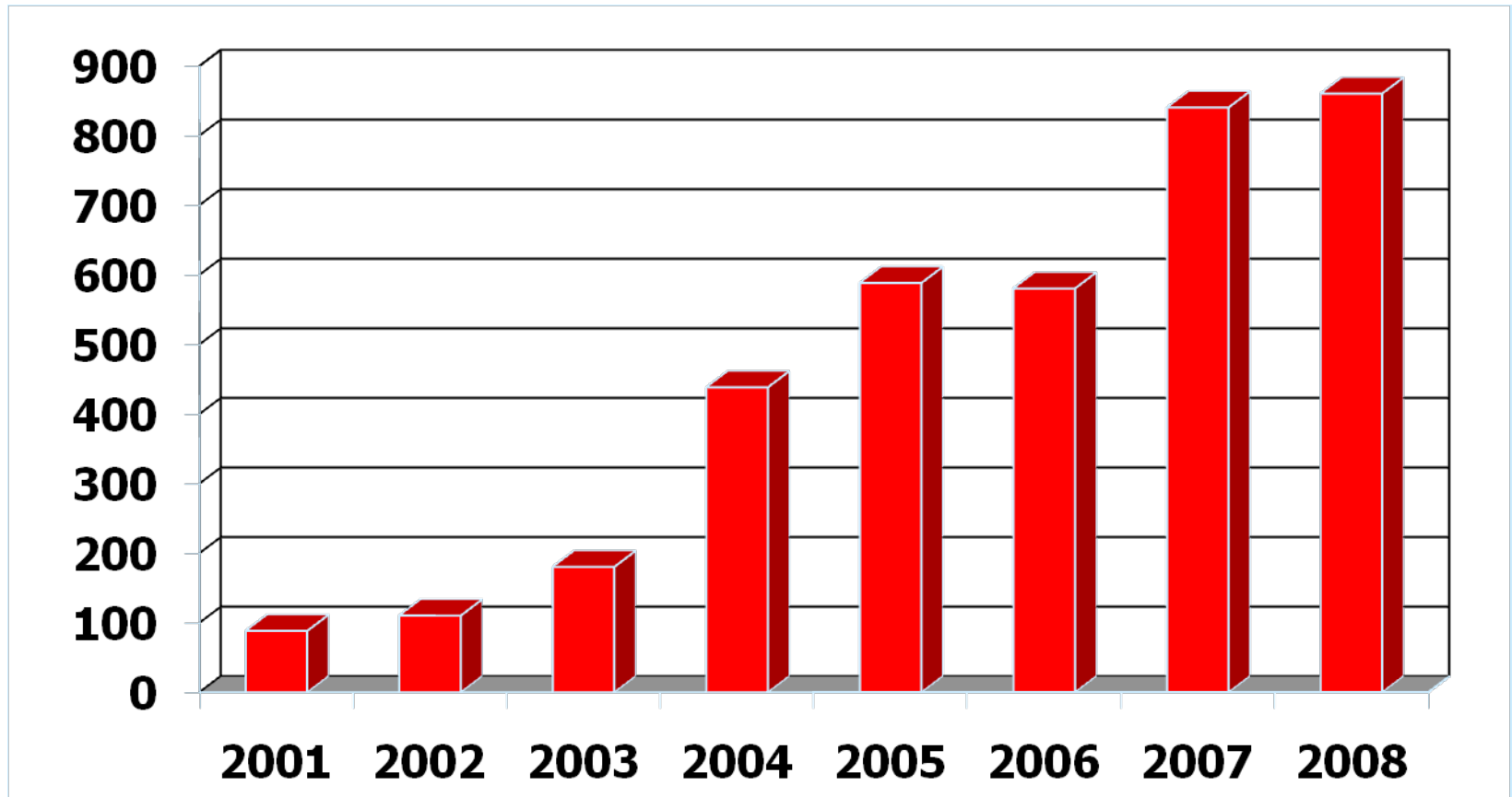
Truly is the only LCD manufacturer listed by Forbes magazine in their ranking of "Top 100" companies in Asia (Nov 1, 2004):

Company Industry	Sales	Net Income	Market value	Return on equity	EPS Growth	P/E Latest 12-mo
Truly	180	25	454	12	27	18

Note: Sales are for FY03 = \$180M

92% from LCD!

# Truly Sales Growth: Forbes "Top 100" in Asia!



**Over 90% of Truly Sales come from Displays**

# Truly is a Pioneer in Technology

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- Truly was first to introduce OLED into a cell phone application
- Truly was first to introduce a camera sensor embedded in a display module
- Truly has integrated Capacitive Touch Screens with our TFT catalog modules

# Truly Patents (Chinese Patent #)

- Masking layer in resistive touch panel (#03126620.7)
- CSTN panel reflectance measurement (#03146861.6)
- TF CSTN new production process (#200310117402.1)
- Chameleon interchangeable CSTN & monochrome (#200410026543.7)
- Dual STN production process (#200410027886.5)
- CMOS image sensor module (#200410028047.5)
- CSTN new process (#200410077254.X)
- Semi-automatic cutter for metal circuits (#200320117590.3)
- OLED panel encapsulation (#200410026837.X)
- New White OLED panel (#200410052463.9)
- OLED substrate & pattern aging (#200410051482.X)
- OLED production process (#200410077537.4)
- New mirror type OLED (#200420045879.3)

# Truly Customers Include...



- **Automotive: Bosch, Clarion, Snap-On, Stoneridge**
- **Medical: Covidien, LifeScan, MiniMed**
- **Optical: Canon, Hasselblad, Minolta, Nikon, Olympus, Pantex, Ricoh**
- **Consumer Electronics: Casio, Grundig, Matsushita, Philips, Sony**
- **Industrial Electronics: Elektromed, Mettler-Toledo, Rockwell Automation, Zebra**

# Truly LCD Factories: 2 Hour Drive from Shenzhen

## LCD GLASS PANELS:

- 6 Factories Located within Truly Industrial Park
- 700,000 Sq Ft for Glass Panel manufacturing
- Production Capacity: 30,000,000 LCD glass panels per month

## LCD MODULES:

- 3 Factories located within Truly Industrial Park
- Production Capacity: 20,000,000 modules per month



**Truly Industrial Park**  
**250 Acre Campus**  
**Shanwei, China**  
**(2 hr drive from Shenzhen)**

# Truly LCD Glass Panel Factories

Factory	Sq Ft	Capacity	Products
Glass 1	109K	7M / mo	TN, HTN
Glass 2	129K	5M / mo	CSTN
Glass 3	109K	6M / mo	TP*, STN, FSTN
Glass 4	88K	.1M / mo	OLED
Glass 5	109K	6M / mo	FSTN, CSTN
Glass 6	156K	6M / mo	TFT
Total	700K	30M / mo	

\*TP = Touch Panels for LCD Modules;  
Resistive and Capacitive

# Truly LCD Module Factories

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Factory	Sq Ft	Capacity	Products
Module 1	160K	5M / mo	COB, SMT
Module 2	162K	11M / mo	COG, COF, TAB, FPC
Module 3	160K	4M / mo	TFT
Total	482K	20M / mo	

# Extra Manufacturing Operations

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*To stay price competitive, Truly uses internal factories to provide the raw materials required for LCD modules:*

## **TOUCH SCREEN FACTORY:**

- **Factory Size: 110,000 Sq. Ft.**
- **Employees: 550**
- **Products: 4 wire Resistive Touch Screens & Capacitive Touch Screens**

# Extra Manufacturing Operations

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*To stay price competitive, Truly uses internal factories to provide the raw materials required for LCD modules:*

## **PCB FACTORY:**

- **Factory Size: 75,000 Sq. Ft.**
- **Employees: 450**
- **Products: SMT & COB printed circuit boards**

# Extra Manufacturing Operations

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*To stay price competitive, Truly uses internal factories to provide the raw materials required for LCD modules:*

## **PLASTIC INJECTION MOLDING & BEZELS & KEYPADS:**

- **Factory Size: 100,000 Sq. Ft.**
- **Employees: 400**
- **Products: Backlights for LCD Modules, Housings, Metal Bezels, Rubber Keypads, Custom Assemblies**

# Truly Competitive Advantage

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- Extensive design engineering resources
- Short production development lead-times
- Full in-house production of glass panels & modules
- In-house touch screens, LED backlights, PCBs, plastics, & bezels

# Truly Competitive Advantage

- Highly qualified R&D engineering staff
- Strict quality assurance procedures
- Aggressive pricing

*Short production lead times,  
consistent manufacturing quality,  
and aggressive pricing come from  
Truly's policy of manufacturing the  
raw material components !*

# Truly Specializes in Displays

- Technologies: TN, HTN, STN, FSTN, CSTN, OLED, TFT
- Touch Screens: Resistive & Capacitive in production
- Backlighting: EL, LED, White LED, CCFL
- Assembly Technologies:
  - COB = Chip on Board
  - SMT = Surface Mount Technology
  - TAB = Tape Automated Bonding
  - COG = Chip on Glass

# Full Range of Display & Accessory Technologies



## Display:

1. TN/STN: ①STN, CSTN, FSTN, Special Shape, etc  
②DSTN,ASTN,TBN, Automotive  
③Display under 7-20 times magnification
2. TFT: AM-TFT, Mono, AFFS, Transflective
3. OLED: PM-OLED: mono or multi color, full color.



## Touch Panel:

1. Resistive type: 4-wire (F/F,F/G,G/G), Touch Window, 5-wire (F/G), Digital & Analog Type.
2. Capacitance Type: Single & Dual Layer Structure



## CCM:

CSP & COB: 0.1~5.0 M Pixel  
Fixed Focus, Macro, Auto Macro,  
Auto Focus & Auto Zoom

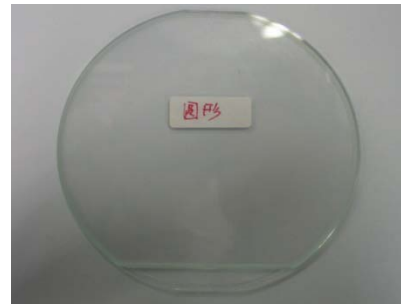
## Patent:

8 of 32 patent applications have been granted in 2007 alone

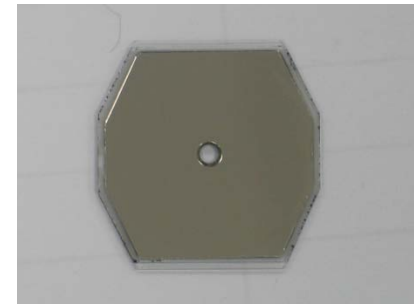
# Truly Can Do Irregular Shape LCDs



**Fan**



**Circular**



**Drill Hole**



**Custom 1**



**Custom 2**

# Truly Specializes in Displays

- **Dot Matrix Graphic Modules: A full complement of FSTN, CSTN, and TFT LCD modules**
- **Complete OLED factory and dedicated R&D team**
- **Compact Camera Modules up to 5M pixels**
- **Resistive and Capacitive Touch Panels Integrated into LCD Modules**
- **Production Capacity: > 20,000,000 LCD modules / mo**

# Quality Control & Assurance

ISO 9001 for LCD Panels and Module (2002)

ISO 14001 Environment Management System (2000)

TL 9000 Telecommunication Quality System (2002)

ISO / TS 16949 Automotive Quality System (2003)

100% Lead Free & RoHS compliance

# Truly MRP II System

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**Truly's new MRP II System is linked to the China Customs Authority Computer:**

- **This means faster customs clearance;**
- **Raw materials arrive on time;**
- **Logistics workflow improves;**
- **More accurate production planning;**
- **Better on-time delivery of your order.**



# Truly TFT Fab Introduction

# Truly TFT Fab Introduction

Truly's TFT fab starts with the front fab process and includes all steps through the back end panel. All equipment was purchased BRAND NEW:

Production capacity for glass = 6,000,000 / month of 2" size.

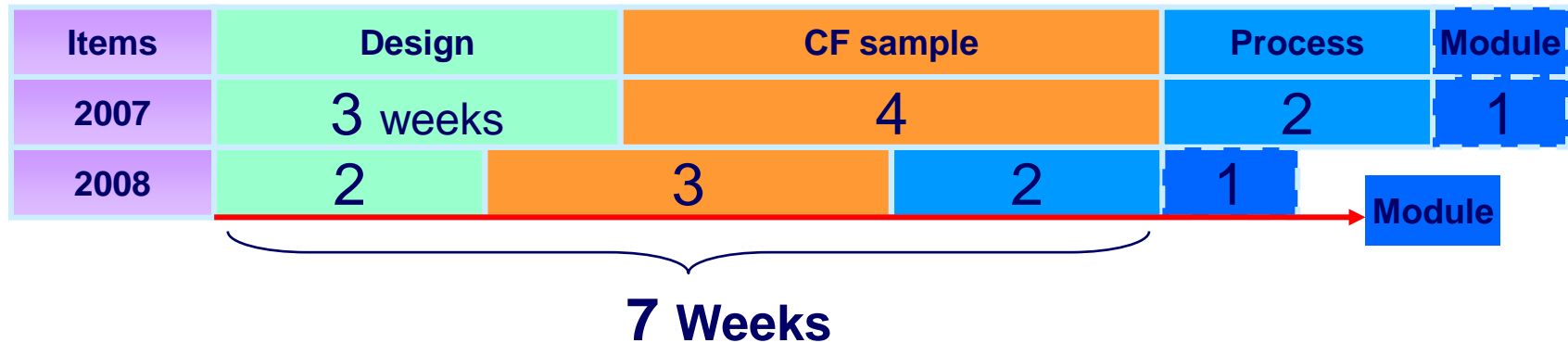
Production capacity for modules = 4,000,000 / month of 2" size.

TFT factory size = 540,000 square feet!

Now in production from July 2007!



# Lead Time for Custom TFT Designs



- 2007: Lead time to first module sample = 10 weeks;
- 2008: Lead time to first module sample = 8 weeks!

# OLEDs Licensed by Kodak

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Eastman Kodak Company has licensed Truly to make and sell the passive-matrix version of its award-winning organic-light-emitting-diode (OLED) technology.

# Commitment & Enthusiasm

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"Truly's commitment and enthusiasm make them a very strong addition to our family of licensees. Their drive to manufacture high-quality displays, especially their preparations to produce OLED displays, will advance not only their business but the OLED industry."

**Bernard Masson**

**President, Display Group  
Eastman Kodak Company**

# Commitment & Enthusiasm

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Let us apply this same commitment  
& enthusiasm to your projects!