

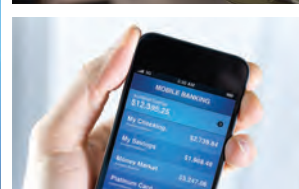
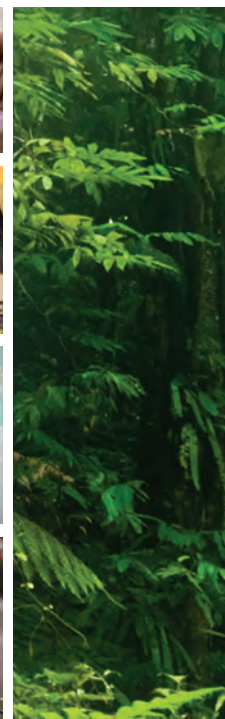


Global Leader in Electronic Solutions



## Comprehensive ODM & EMS Solutions

Japanese Quality Products with  
Chinese Sourcing & Labor Efficiencies



# DBG's ODM & EMS Solutions Come To North America



**Tong Kin Hing**

CEO, DBG Holdings Limited  
 Founder & Chairman, IPC China EMS Steering Committee  
 Executive Director of Guangdong Overseas  
 Chinese Enterprises Association

Choose the *right* EMS strategic partner to:

- Reduce your costs
- Shorten your time to market, and
- React faster to changing markets

## Welcome to DBG!

We work with some of the world's most quality-obsessed OEMs: companies who value our flexible, transparent, and proficient approach to EMS design, sourcing, and manufacturing.

We're looking for long-term partnerships with ambitious North American OEMs who can leverage our EMS depth — and culture of excellence — to speed their products to market.

You can also bring your product concepts and designers to our ODM center. There, we'll co-innovate extraordinarily reliable products, tailor-engineered for streamlined in-house manufacturing, assurance testing, and end-user functionality.

Whether you need a PCBA or a complete turnkey box-build, our quick-response and aggressive value will exceed your expectations. From ODM to EMS to aftermarket services and value engineering, *we guarantee you a fast and incredibly satisfying product launch.*

*Danny*

## DBG EMS Capabilities

Capability	Assets	Capacity/Month
SMT	68 Lines	3 Billion pts
Solder Wave Through Hole	11 Lines	
PCBA	50 Lines	5 Million pcs
Mobile Integrated Test Instruments	450 Sets	5 Million pcs
Product Assembly	80 Lines	5 Million pcs

### Including:

- 10,979 skilled workers
- 3,000,000 sq. ft. capacity
- 25 acres at main manufacturing campus
- US\$20+ million/year upgrades to equipment and facilities
- 5-year depreciation cycle on manufacturing equipment
- 37 patents for our pioneering manufacturing processes

### Serving these Industries:

- Telecommunications
- IT Equipment
- Automotive Electronics
- Medical Electronics
- LED Lighting
- Consumer Electronics

**We're Motivated By Our Customers' Confidence In Us**



**1996:** Moved to Xiangshui River Industrial Park



**1998:** Certified by TÜV to ISO 9002:1994; expands into larger facility



**2003:** Lead-free and 0201 ultra-fine pitch SMT established



**2006:** Built Phase I of 1,130,000 sq. ft. facility



**2006:** Certified by TÜV for ISO/TS 16949:2001, ISO 9001:2000, and ISO 14001:2004



# Quality Is Our Competitive Sport

Mr. Tong founded DBG to bring the world-class Japanese manufacturing systems he learned at Sanyo to the heart of China's electronics region: the Pearl River Delta.

As a result, DBG has methodically achieved internationally-recognized QCC certifications:

- **Six Sigma quality disciplines are fully in place and perpetual**
- **All processes are monitored, measured, and continuously improved**
- **Our company culture emphasizes defect detection, defect reduction, and defect elimination**



Among our numerous client achievements are LG Electronics' Six Sigma Competition Awards.



DBG employees take quality assessments twice a year, with the highest achievers annually competing at MITT's QCC Competition. Our quality goals this year include credentialing two Six Sigma Certified Black Belts and 50 additional Green Belts.

## Our Quality Assurance Programs:

TPS, Six Sigma, QCC, and 7S

DPMOs consistently below 100  
(World Class metric)

ANSI/ESD S20.20 Standards

**We're Certified by TÜV for:**  
ISO 9001, ISO/TS 16949, and  
ISO 14001, and OHSAS 18001



## Your Socially Responsible EMS:

- Meeting OHSAS 18001
- We use a third-party certification firm to further refine our management of our QEHS
- We welcome your scheduled and random site visits and audits!



## Your Environmentally Responsible Partner:

- Compliance with RoHS and CE REACH Environmental Standards (including our material sourcing), with all suppliers audited regularly, including random audits
- We're eager to participate in your Green Product Management Systems & GP Certification processes



**2007:** Establishes large scale mobile phone manufacturing



**2009:** Delivers 100 millionth mobile product



**2011:** Top 100 recognized by MIIT (Ministry of Industry and Information Technology) as a "Top 100 Electronic Enterprise" in China



**2012:** Capacity expands to 1,500,000 sq. ft.



**2014:** Establishes DBG North America to better serve USA and Canada



**2015:** 2.25M sq. ft. capacity + 750K sq. ft. expansion at main campus

## We Design & Manufacture:



### World-Class PCBs & Assemblies...



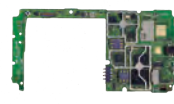
High Precision Video Boards  
for Tablet Computers, etc.



Color Printer Motherboards



GPS PCBAs



Smart Phone Motherboards



Intelligent Optical  
Distribution Network



LED Lighting Modules



USB (pocket)  
Modem PCBAs



Video Conferencing Systems



Fine Pitch (0201)  
Flexible Printed Circuits (FPCs)



Network Terminal

### ...as well as Complete, Turnkey Products...



Tablet Computers



Smart Phones



USB Modem



Network Gateways



3G/4G Fixed Wireless  
Terminals/Stations



Automotive Smart  
Rear-View Mirror



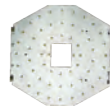
3G/4G Digital Photo Frames



Optical Fiber  
Network Terminals



Pocket Wi-Fi



LED Lighting Modules



Automotive On-Board  
Diagnostics (OBD)



Bluetooth-Enabled Devices,  
including Wireless Speakers

### ...for Customers such as:

DEC

docomo

T

EPSON

france telecom

HO

HUAWEI

KDDI

lenovo

LG

LONGCHEER

NEC

OSRAM

PHILIPS

SANYO

Skyworth

SoftBank

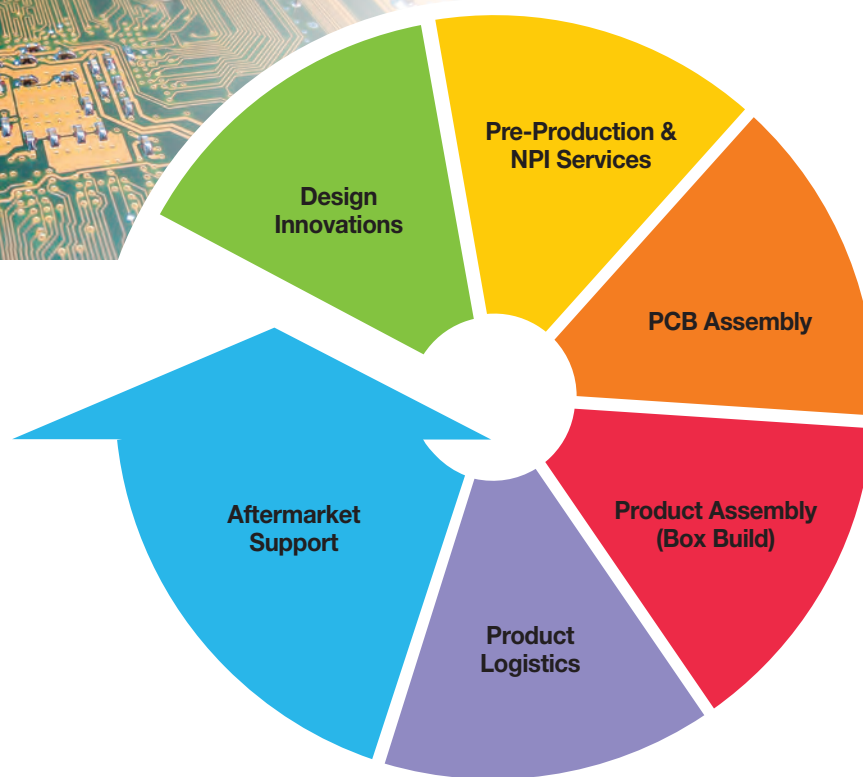
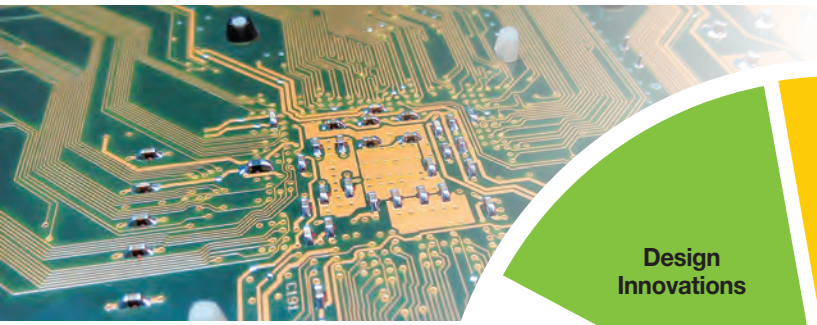
SONY

TCL

WINGTEC

ZTE

# From ODM to Aftermarket Services



## Design Innovations

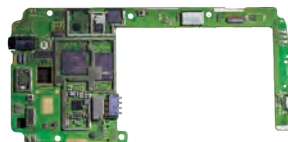
- Electronic Design Engineering, including Circuits, PCBs, and Electro-Mechanical
- Complete Product Design: Our Ming Hong Technology subsidiary can take your raw product concepts to reality; please see page 10.

## Pre-Production & NPI Services

- DfX Engineering
- Test Designs: Functional & ICT
- Rapid Prototype Development
- Pilot Production Builds

## PCB Assembly & Testing

- Medium to High Mix PCBA
- Highly Complex PCBA
- SMT & Through-Hole
- ICT & Functional Testing
- Accelerated Stress Testing (HALT and HASS)
- Environmental Stress Screening (ESS)
- Class 10K Clean Rooms



## Product Assembly (Box Build) & Testing

- System Assembly
- Complex Systems Integration
- Systems Testing
- Inventory Management



## Product Logistics

- Product Configuration
- Standard and Custom Packaging
- Distribution and Order Fulfillment

## Aftermarket Support

- Value Engineering
- Life Cycle Management
- Repairs
- Refurbishments
- Warranty Exchanges
- EOL Support



## Unsurpassed SMT Technologies



Fuji Line



Siemens Line

As of 2015, DBG has 68 SMT and 11 Solder Wave Through Hole lines with a monthly capacity of three billion placements.

Every year, DBG invests at least US\$20 million in equipment and facility upgrades. We have an aggressive 5-year equipment depreciation cycle, allowing us to continue to acquire the finest SMT manufacturing equipment available anywhere.

Juki Line



Selective Wave Soldering Line



## Fully Scalable PCBA & Product Assembly Lines



One of our 80 assembly lines, being used here for the turnkey assembly of network gateways.

### PCB Assembly & Testing

We have 50 PCBA lines capable of 5,000,000 pieces per month, including:

- High Mix PCBA
- Highly Complex PCBA

### Product Assembly (Box Build) & Testing

Our 80 product assembly lines can handle up to 5,000,000 pieces per month, offering:

- System Assembly
- Complex Systems Integration
- Systems Testing
- Packaging & Inventory Management



System testing, done to your specifications.

LED module assembly line.





## Systems We Use To Verify Your PCBAs & Turnkey Production



Some of our 450 sophisticated mobile integrated test instruments used to test radio frequencies on telecom products.



Functional Testing



Fixed/mobile telecom shielding verification



3D X-Ray



On-Line AOI  
(Automated Optical  
Inspection) for  
PCBs



In-Circuit Testing (ICT)



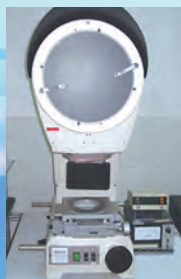
Solder Paste Height Tester



SPI (Serial Peripheral Interface) Tester



RoHS Compliance Tester



Projector Measurement



# Achieve Tier 1 Reliability Testing, Quickly & In-House



Tumbling Test Machine



Thermal Cycling Chamber



Constant Temperature & Humidity Chamber



Drop Test Machine

We can rapidly take your prototypes, pilot runs, or production samples and perform any of the ESS, HASS, and HALT tests shown here, per your project's unique requirements.



Salt Spray Tester



Stress Tester



Electric Vibrator

## Safety Certificates Available

We are eager to help you acquire the necessary national or international safety certifications your application demands.



## Seriously Accelerated DFx — Only Possible from a Combined ODM & EMS



Ming Hong Technology is DBG's Original Design Manufacturer (ODM), offering complete, turnkey design and engineering for electronic products.

With no debt or external financing and the full managerial support of DBG, Ming Hong is fully positioned and capitalized to engage in your long-term product developments.

Our senior R&D engineers are experts in software, electrical, industrial, mechanical, and telecommunications engineering.

In addition, we further leverage our design capacities and cost-effectiveness by partnering with trusted third-party design facilities and selected suppliers with advanced engineering capabilities.



### Fast-Track Your Product's Launch with:

- Instantaneous two-way communication between our design and manufacturing engineers, accelerating your product's design evolution
- Fully informed, intelligent prioritization of your manufacturing and procurement queues
- Highly experienced procurement and logistics management with a thoroughly developed network of vetted and audited RoHS-compliant suppliers
- Expedited procurement of your high-demand components via DBG's leverage: our established supplier rapport, buying clout, and cash flow
- Extremely precise reporting of your project's progress, bottlenecks, and timetables for deliverables



## ODM Examples



Tablet Computers



Android Smart Phones



Android TV Set-Top Boxes



PCBA for Pocket Wi-Fi



Notebook Computers



Telecom:  
Optical Network Terminals



USB TV Dongle



IP Camera



All-In-One Computers



Network Gateways



GPS Tracker



Remote Trainers for Dogs

## 6 Steps to Your Turnkey Product Success

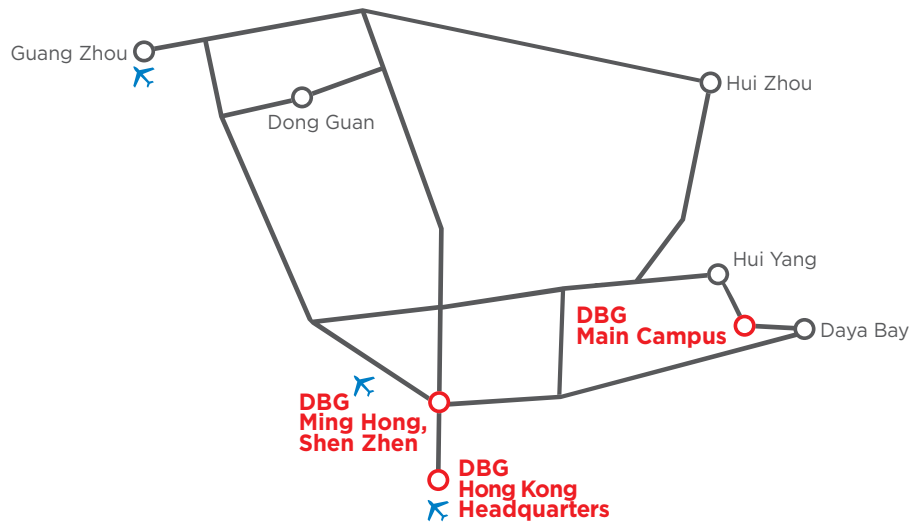
- 1) **Specify:** Deliverables — product functions, performance, timing, costs, aesthetics, etc.
- 2) **Assess:** Ming Hong analyzes project parameters for viability of deliverables
- 3) **Design:** Prototypes and their manufacturing processes
- 4) **Test:** Verify prototypes, listing any desired modifications
- 5) **Produce:** A pilot run with immediate feedback to manufacturing & design engineers for additional optimization
- 6) **Manage:** Inventories, shipments, warranty repairs, and end-of-life services

## In-House Prototype Testing

In addition to DBG's production testing and ESS, HASS, and HALT tests, our Ming Hong facility can submit prototypes to a range of assessments, including (but not limited to):

- PXI 3030 Wi-Fi
- OLTs: FiberHome AN5516, Huawei MA5680T, ZTE C220
- Aligent 86100C Optical Eye Mask Oscilloscope
- GPON Protocol Analyzer

# Ready Access To World Markets



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