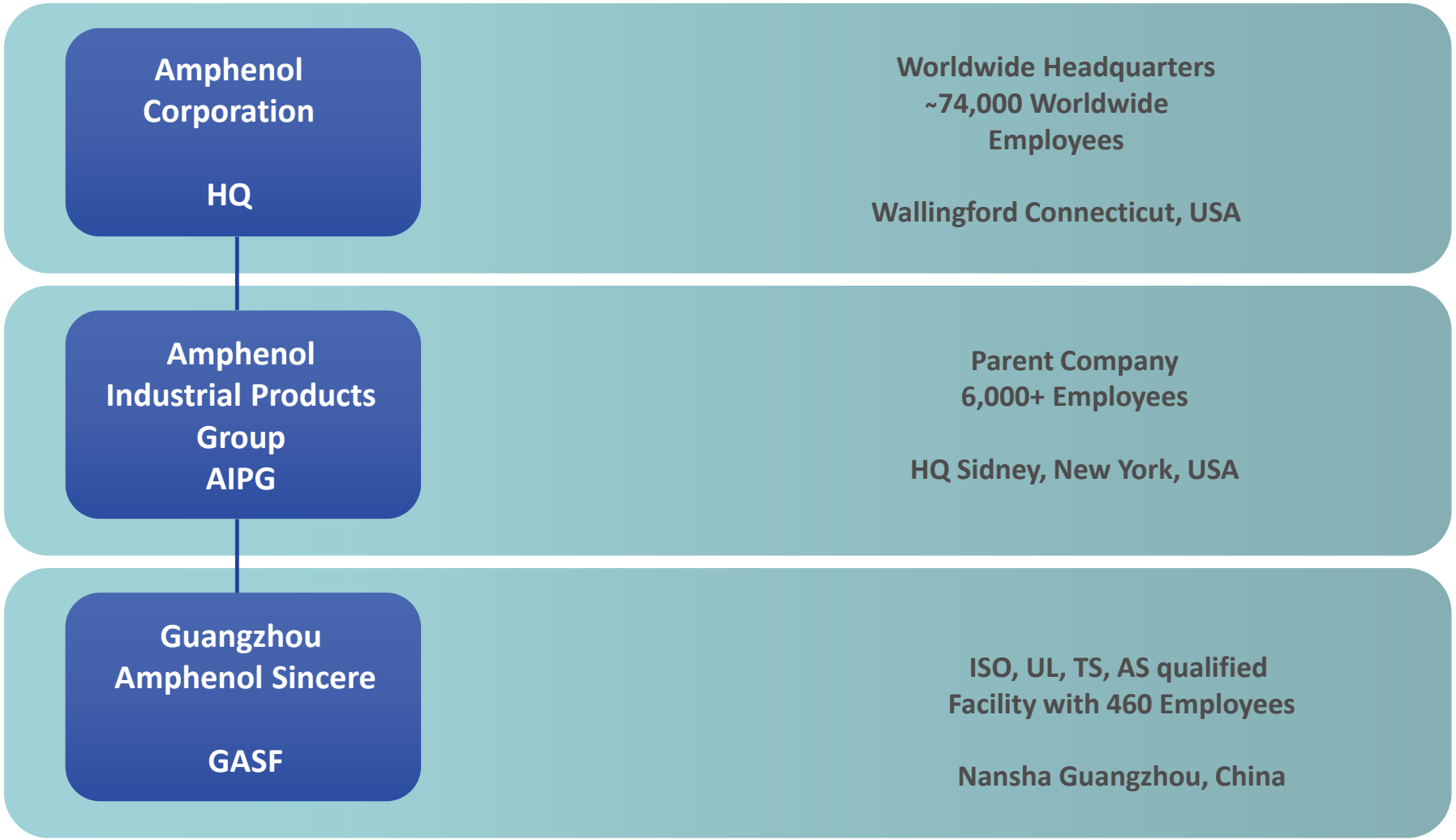
Amphenol Sincere

Electronic Integration & Flexible Printed Circuits

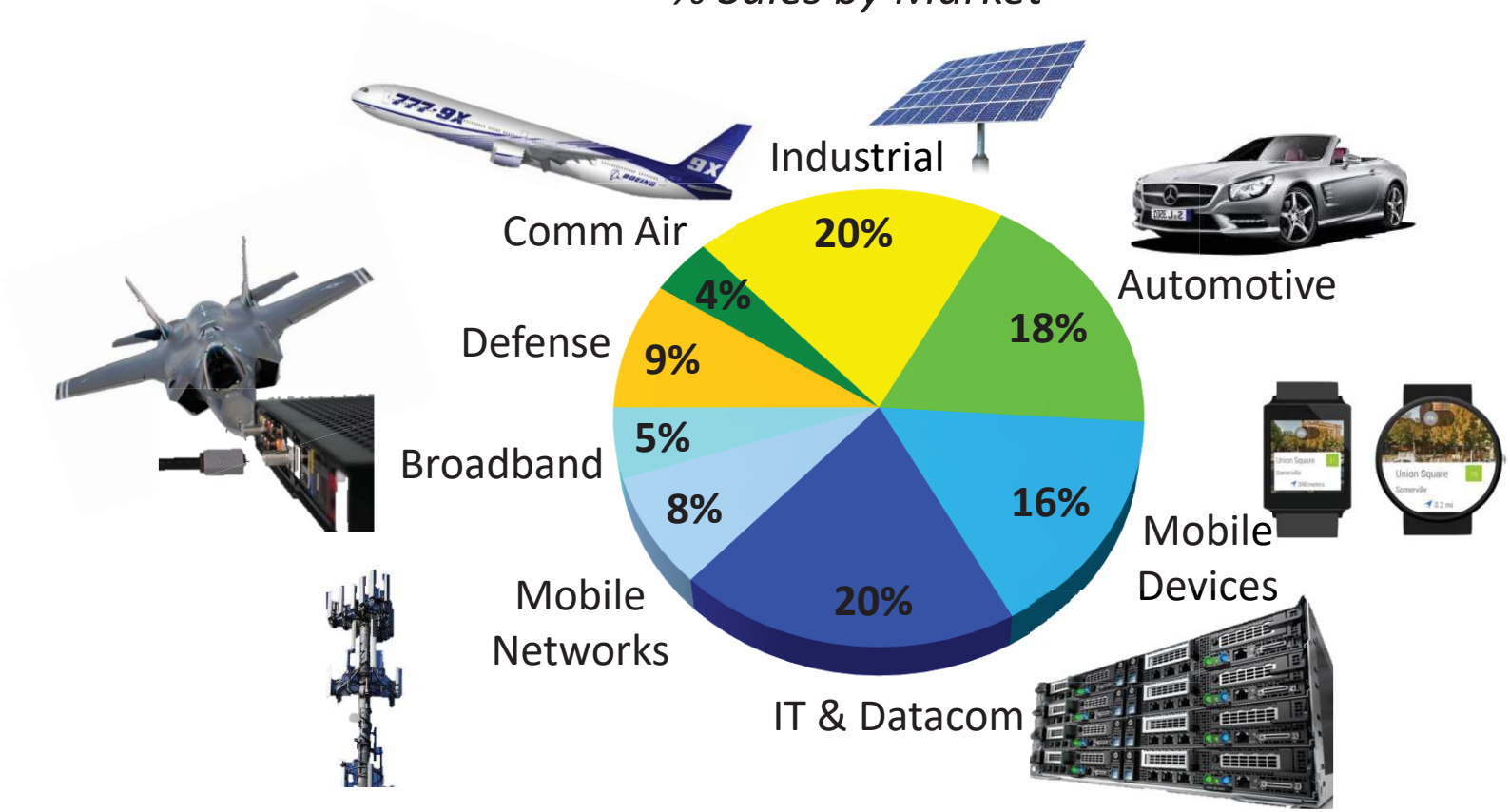
Connecting
People and Technology



Amphenol

A Global Leader in Interconnect Technology

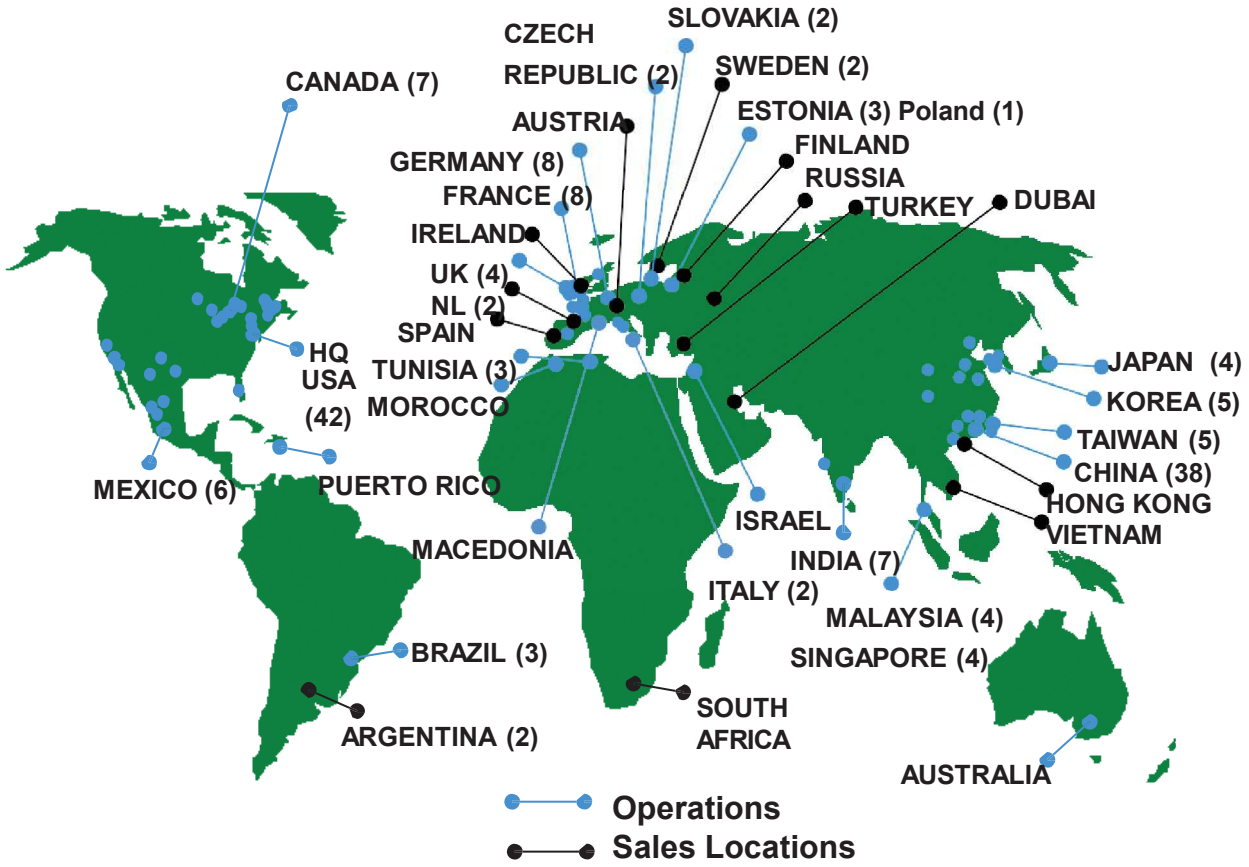
% Sales by Market

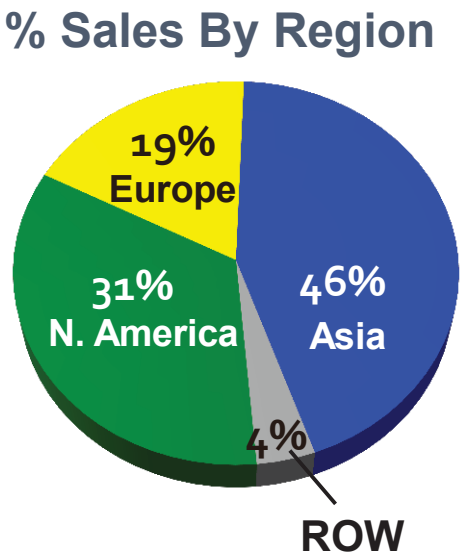


- **The second largest manufacturer of interconnect products in the world**
- **Over 120 worldwide locations**
- **Revenue USD $8.2 billion**
- **Founded 1932 and Amphenol listed on the NYSE**

Amphenol Worldwide

Globally positioned to be where our customers need us





2018 Sales
$8.2 Billion

~74,000 Employees
37 New Companies Since 2008

Global AIPG Sales Team

Martin Booker

Jon Wetsig

Arthur Heijmerikx

Boris Lu

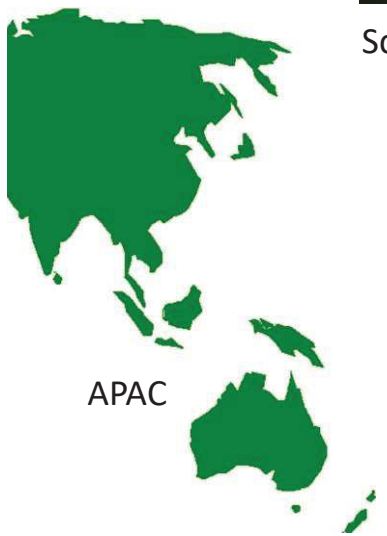
GASF

Winnie Chen

Scott Sangillo

AMERICA'S

EMEA



APAC

About Amphenol Sincere

1994 GuangZhou PanYu Printed Circuits Limited
2005 GuangZhou Amphenol Sincere (August)

Certifications:

ISO 9001:2015
ISO 14001:2015
IATF16949
AS9100D

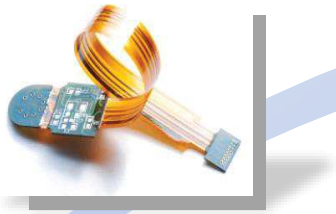
Facility Area: 150,000 square feet

Revenue: USD $31 million

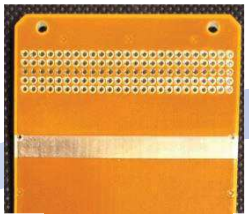
Employee: 460

Location: Nansha District Guangzhou City, China

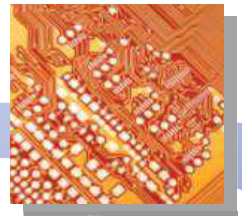
Amphenol Sincere Capabilities



Rigid-Flex

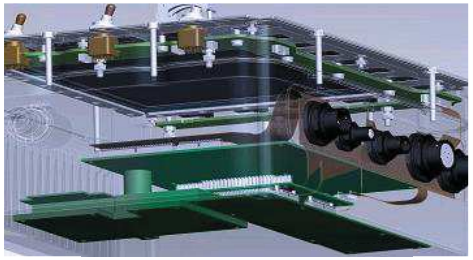


Multilayer FPC

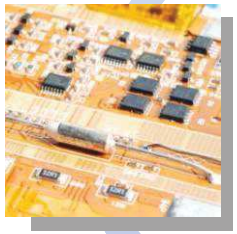


Single-Double FPC

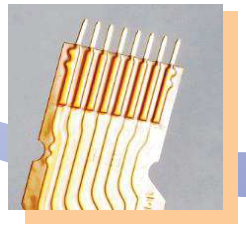
High Temp Flex



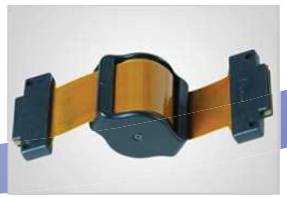
Electronic Integration



SMT & Other Value Added Assembly



Power Flex
Sculptured Flex
Laminated Busbar

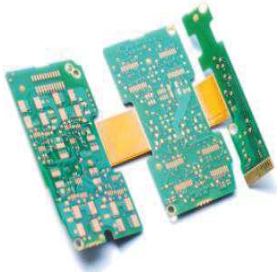


High Speed Flex

Heater Flex

Single, Double, Multilayer, and Rigid Flex Circuits

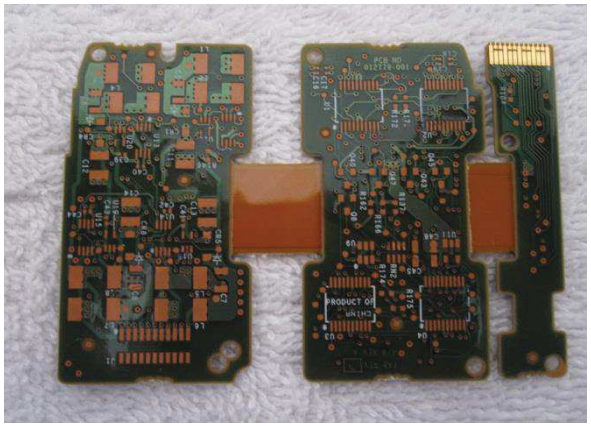
Flex and/or Rigid-Flex circuits are used to improve reliability, provide design flexibility through 3D packaging, reduce weight, lower overall cost of valuable assembly & labor time, enable package size reduction, among others.



- Operating temperature: 105 ºC to 225 ºC
- Layer count: 1 to 15
- Harsh Environment: Reliable in High Vibration, Great Chemical resistance
- Excellent signal integrity: EMI Shielding, Impedance Controlled, Twisted Pair, etc
- Dynamic flexure: Over 200K bending cycles with standard material
- Multiple surface treatments available

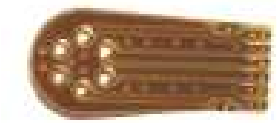
Rigid Flex

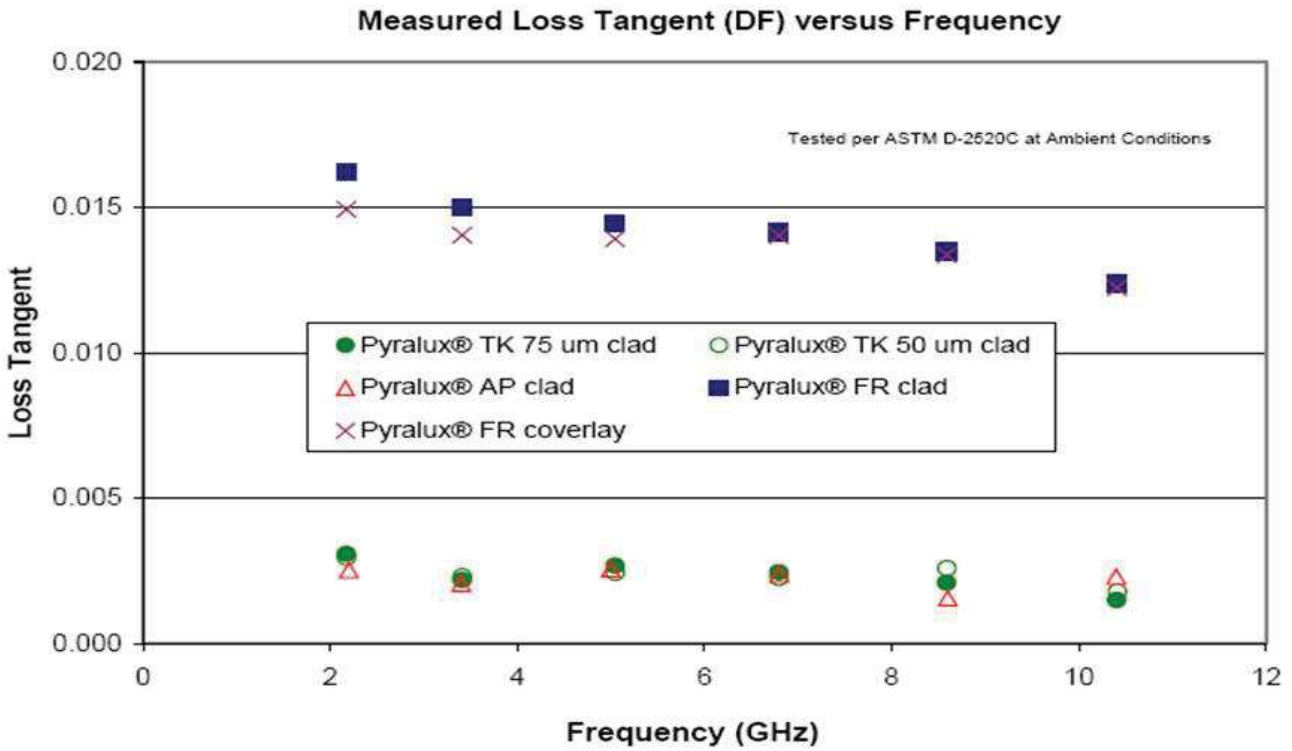
Combining the technology of Flexible and Rigid printed circuits we produce Rigidflex up to 16 Layers. This has the benefits of faster connectivity, no connectors, less space, less assembly process, higher reliability, potentially lower cost systems. The same technologies of rigid boards can be employed in rigid flex technology, so PTH, HDI, Micro-via, BGA etc can all be considered in the design, along with shielding/EMC considerations for the flex areas and bookbinder technique.



High Speed Flex

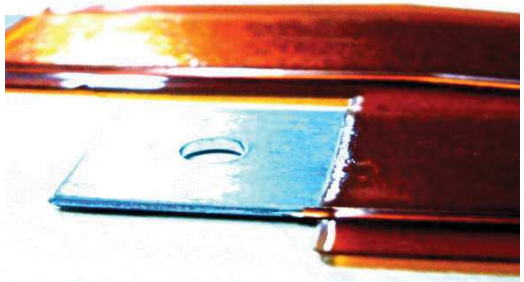
The technology revolution and explosive growth of cloud based solutions is driving the need for increased speeds in printed circuits. High speed flex is an excellent interconnect solution enabling speeds up to 25Gbps in these often space restricted applications.

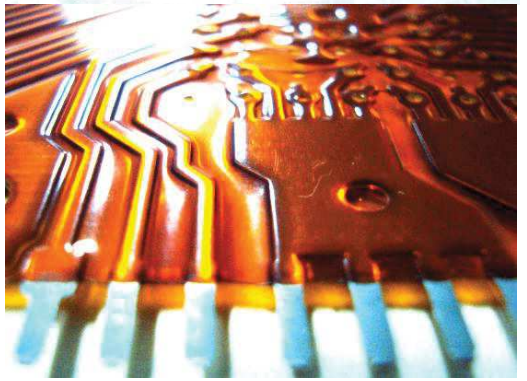




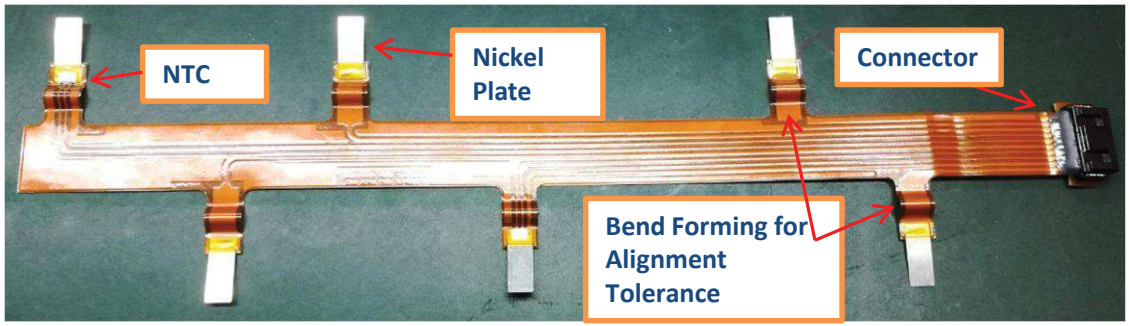
Power Flex

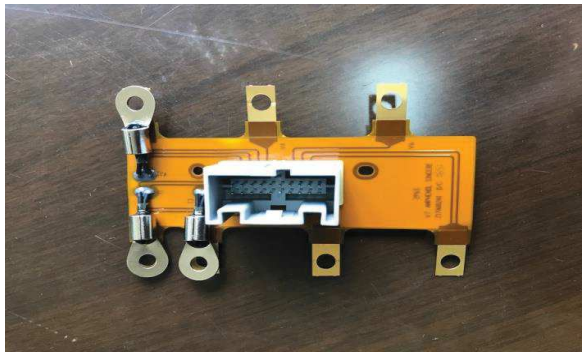
Heavy copper FPC (5.4 to 40 mil Cu) can carry up to 100 amps of current with termination options including solderable fingers (Sculptured Flex), fork terminals, lugs, and/or power connectors.





Battery Flex / Modules





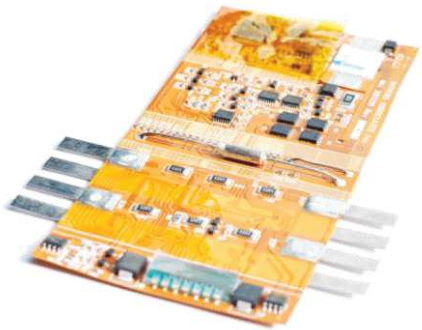
Flex PCB enable Battery manufactures to reduce wiring and system costs by integrating many elements into a simple flex design which replaces wiring. These include fuses, NTC, Voltage sensors, plus other components. Then there is the possibility to mate with the buss bars in a simple plastic moulding to further accelerate the assembly process and cost reduction, by additional process step reduction.

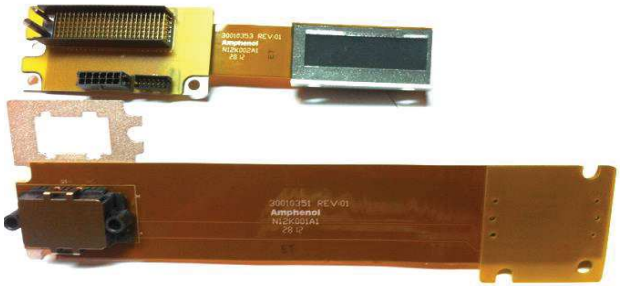
Heater Flex (AmpheSense)

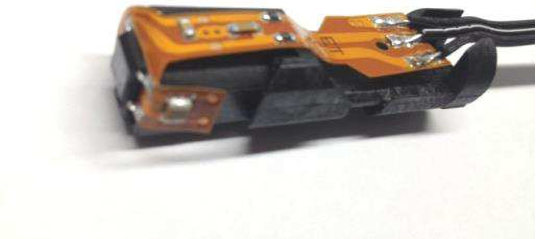
Polyimide flexible heaters provide excellent heat transfer to localized areas with a quick ramp and consistent hold of temperature. Applications include, but are not limited to; medical lab equipment, respiratory equipment, frost protection, fluid warming, instrumentation, and fiber optic devices.

Value-Added Assembly

- Over one-third of all Flex manufactured today is a Value-Added Assembly.
- RoHS SMT Lines, Wave Solder, and Hand Solder Component Assembly
- PSA Patches, Foam Patches, Mechanical Brackets, Heat-Sinks, Over-Molding, Etc.
- Sub-Assemblies and Higher Level Integration
- Conformal Coating, Epoxy, and RTV Coatings
- Potting (Both Manually Applied & By Use of Fixtures)







Amphenol Sincere Capabilities

Products

Type 1- 5	Mock Ups
Sculptured	Sequential Lam.
Assemblies	

Panel thickness

.003“ – .225” (.075mm – 5.70mm)

Layer count

1 - 15

Interconnect Formation Types

Buried	Blind
Dual Diameter	Thru Hole
SMT	

Finished Hole Size

Compliant Pinned	.0180“ (.460mm)
Via (A/R Dependant)	.008“ (.200mm)
Buried Vias	.008“ (.200mm)

Blind vias aspect ratio

1.25:1

Through vias

7:1 std 10:1 Adv

Internal features

Lines/Spacing	.003”/.003” (.075mm/.075mm)
Minimum Core Thickness	.001” (0.025mm)

External features

Lines/Spacing	.003”/.003” (.075mm/.075mm)

Production materials

Polyimide – Dupont, Rogers, Taiflex, Shengyi, Doosan, more

Adhesive Systems – Acrylic, Fire Retardant, Epoxy Resin

FR4/ - 24, 26 & 28	Soldermask
Silver Epoxy Shielding	Tatsuta Shielding Shielding

Copper processing

¼ oz. – .040” thick (1.0mm)

Impedance – single & differential

± 10%

Surface finishes

HASL	Immersion Tin	ENIG
Reflowed Tin/Lead	Immersion Silver	Ni/Au
OSP-Entek 106	Bright Tin	

Amphenol Sincere Capabilities

Assembly Capabilities

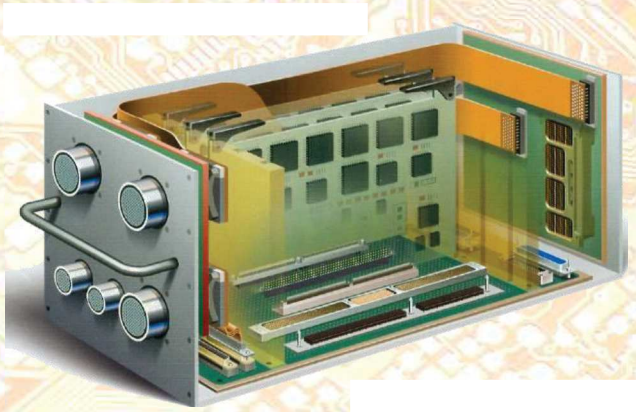
- Turn Key
- Through-Hole – Wave & Manual (Non RoHS)
- SMT - Manual, Pick & Place (RoHS)
- Cable Assembly
- Wire & Cable Cutting and Stripping
- Crimping and Splicing
- Ultrasonic Welding (Plastic and Metal)
- Over-Molding and Horizontal Injection Molding
- Hand Soldering

Assembly Finishing

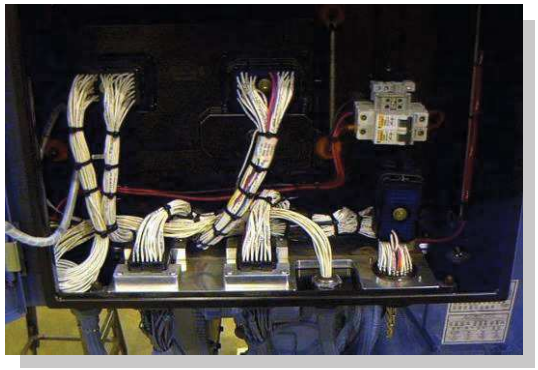
- Conformal Coat – Urethane and Acrylic
- Potting – Stycast, Eccobond, 3M, & Others
- Over-Molding
- Heat Forming
- Heat Sinks

Test Capabilities

- Impedance Testing
- Insulation Resistance up to 1,000 VDC
- Bed of Nails, Flying Probe, Panel & Layer Test
- Flexure Testing



Flex Circuit Advantages



Eliminate Wiring Labor, Reduce Manual Cable Assembly Errors, Save Cost For Rework And Re-Inspection

Minimize Weight & Maximize Component Areas To Reduce The Size Of The Total Package

Streamline Mechanical & Electrical Design
Increase Flexibility in Performance & Packaging

Reduce Packaging Size & Increase Reliability

Quality

- Build to IPC-6013 Class 2 and 3
- Assemble to J-STD-001

Certifications

- ISO 9001:2015
- ISO14001:2015
- IATF 16949
- AS9100D
- UL Certified Materials & Stack Ups

Quality Assurance

- DFM Reviews
- Impedance Modeling / Testing
- Employees Are IPC and J-STD Certified
- AOI
- X-Ray
- Cross-Section Evaluation
- IPQC Visual Inspection
- Full FAI Reporting
- Electrical Testing

BUREAU VERITAS
Certification

GUANGZHOU AMPHENOL SINCERE FLEX CIRCUITS CO., LTD.

HEAD OFFICE: NO. A, WAN'AN INDUSTRY PARK, LANHE TOWN, NANSHA DISTRICT, GUANGZHOU CITY, GUANGDONG PROVINCE, P.R. CHINA

Unified social credit code: 91440115778376332Y

This is a multi-site certificate, additional site(s) are listed on the next page(s).

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Design, Development and Manufacturing of Flexible Printed Circuit Boards, Rigid-Flex Boards and Assemblies

Original cycle start date:	14 May 2011
Expiry date of previous cycle:	N/A
Recertification audit date:	N/A
Recertification cycle start date:	26 September 2018

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **25 September 2021**

Certificate No. : **CNGZ301873-UK** Version: **No.01**. Revision date: **26 September 2018**

Signed on behalf of BVCH SAS UK Branch

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom.
Local office address: Rm. 1603, Hays Plaza, No. 466 Kangkeng Zhong Road, Liwan District, Guangzhou, China 510145.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: (+86 20 83073807)
Certified organisation has to accept and pass regular surveillance audits, then this certificate can be continuously valid. Information of this certificate may be obtained by visiting CNCA website (www.cnca.gov.cn).

Page 1 of 2

SGS

Certificate HK05/65936

The management system of

Guangzhou Amphenol Sincere Flex Circuit Co., Ltd.

No. A1, Wan'an Industrial Park, Lanhe Town, Nansha District, Guangzhou City, Guangdong Province, P.R. China

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities

Manufacture of flexible printed circuit boards

This certificate is valid from 10 August 2017 until 9 August 2020 and remains valid subject to satisfactory surveillance audits.
Recertification audit due a minimum of 60 days before the expiration date
Issue 6. Certified since 10 August 2005

Authorised by

SGS United Kingdom Ltd
Rossmore Business Park Ellesmere Port Cheshire CH65 3EN UK
t +44 (0)151 350 6666 f +44 (0)151 350 6999 www.sgs.com

SGS 14001 2015-0215

Page 1 of 1

UKAS MANAGEMENT SYSTEMS 0005

BUREAU VERITAS
Certification

Certificate of Approval

Awarded to

Guangzhou Amphenol Sincere Flex Circuits Co., Ltd.

No.A,WanAn Industrial Park,LanHe Town,Nansha District
511480 - Guangzhou City - Guangdong Province China

Extended Site(s): Page 2

Bureau Veritas Certification certify that the Quality Management System of the above organisation has been audited and found to be in accordance with the requirements of

IATF 16949

and the applicable customer specific requirements

SCOPE
Design and manufacturing

PERMITTED EXCLUSION(S)
None

PRODUCT(S) DELIVERED
Flexible printed circuit boards and assemblies

Date of certification: 27 July 2018
Date of expiration: 26 July 2021
IATF Certificate №: 319892

BUREAU VERITAS
Certification

Certificate of Approval

This is to certify that the Quality Management System of:

GUANGZHOU AMPHENOL SINCERE FLEX CIRCUITS CO.,LTD
NO A ,WANAN INDUSTRIAL PARK, LANHE TOWN, NANSHA DISTRICT, GUANGZHOU CITY, GUANGDONG PROVINCE, P.R. CHINA

has been audited in accordance with the requirements of EN 9104-001:2013 by Bureau Veritas Certification and conforms to the following Quality Management Systems Standards detailed below

Standards

BS EN ISO 9001:2015
pr EN 9100:2016
(Technically equivalent to AS9100D)

Scope of certification

DESIGN, DEVELOPMENT AND MANUFACTURING OF FLEXIBLE PRINTED CIRCUIT BOARDS, RIGID-FLEX BOARDS AND ASSEMBLIES FOR AEROSPACE INDUSTRY.

Certification Structure: **Campus**
Central Function: **NO A ,WANAN INDUSTRIAL PARK, LANHE TOWN, NANSHA DISTRICT, GUANGZHOU CITY, GUANGDONG PROVINCE CHINA**
Controlling Address: **NO A, WANAN INDUSTRIAL PARK, LANHE TOWN, NANSHA DISTRICT, GUANGZHOU CITY, GUANGDONG PROVINCE CHINA**

This certificate forms part of the approval identified by certificate number: **AS-15 17-GZ R1-1**

Original ISO Approval: **21 MARCH 2013**

Original ASCS Approval: **21 MARCH 2013**

Certificate Issue Date: **20 MARCH 2016**

Certification Expiry Date: **19 MARCH 2019**

Certificate Reissue Date: **13 JULY 2018**

Trevor W Douce
Authorised Signatory

ADS aerospace sector certification scheme

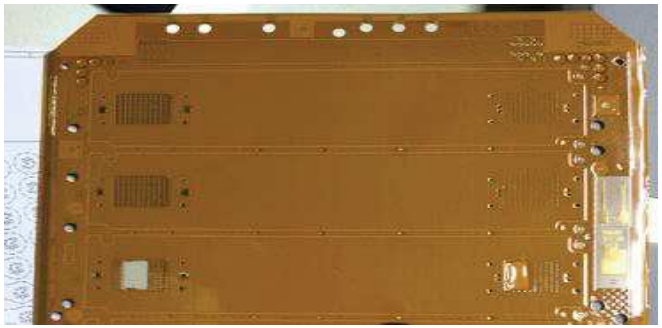
UKAS MANAGEMENT SYSTEMS
0008

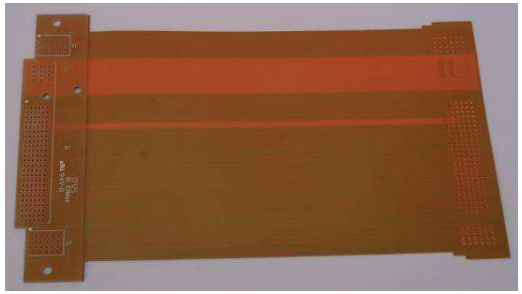
Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

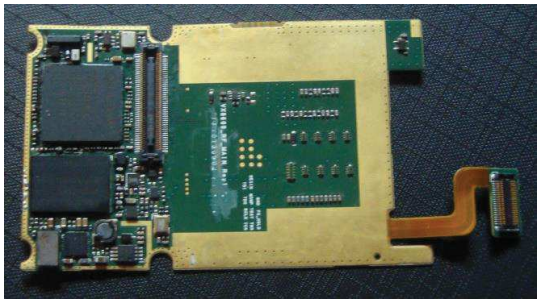
Certification Body: Bureau Veritas Certification Holding SAS-UK Branch
5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.

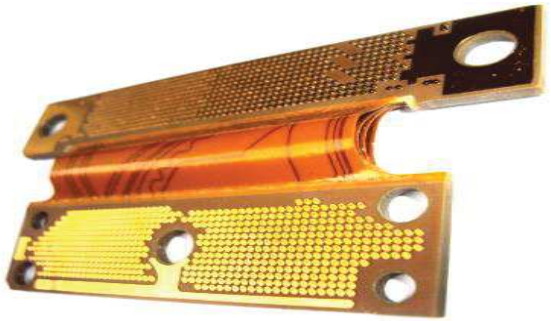
Page 1 of 2

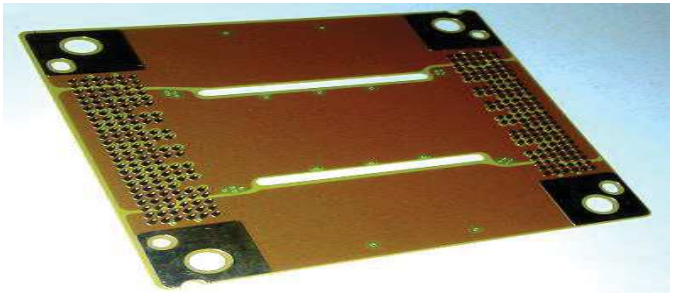
Data Com / Server Samples

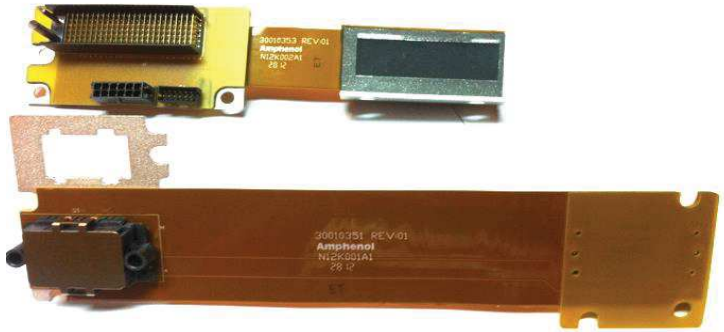




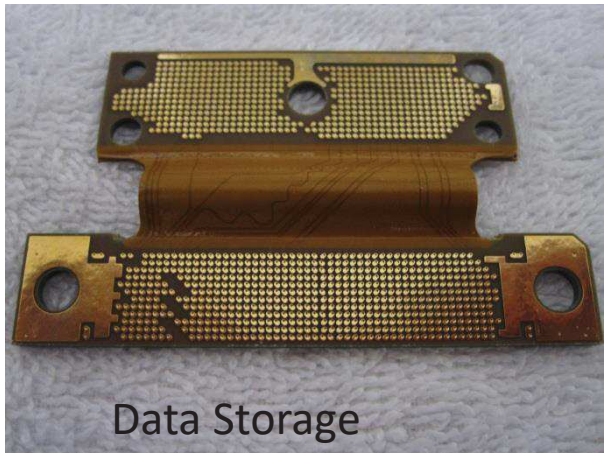


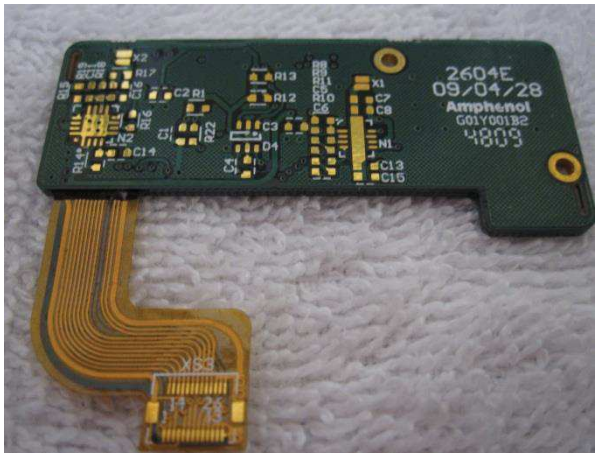


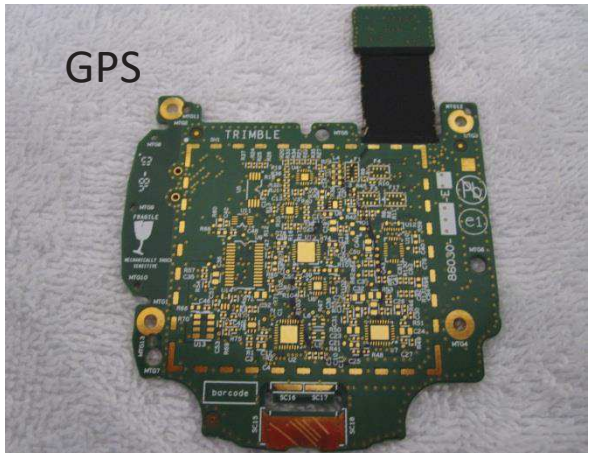


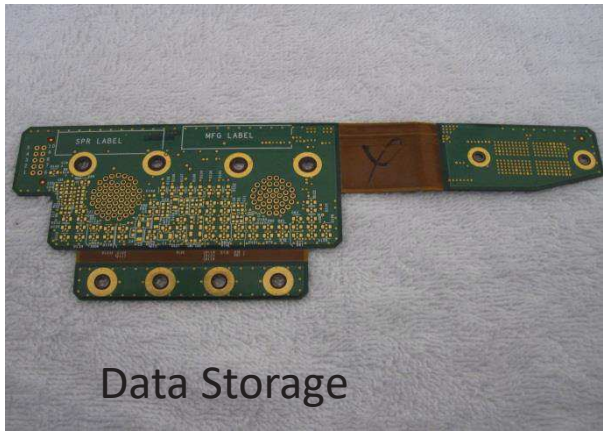


Rigid Flex Sample Pictures

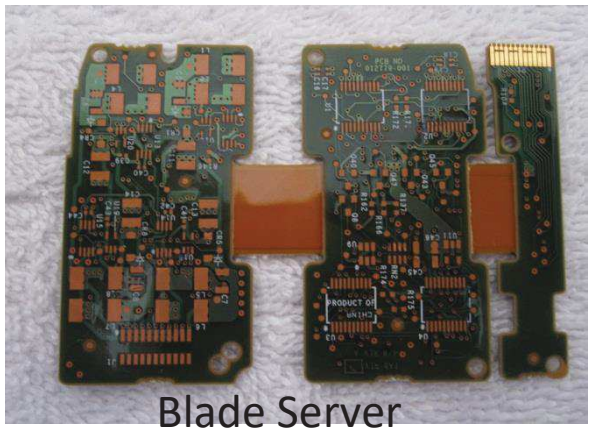

Data Storage



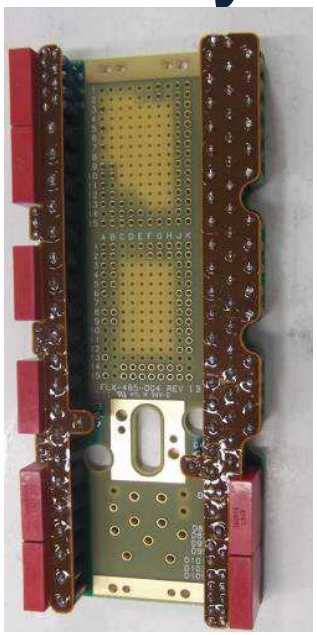


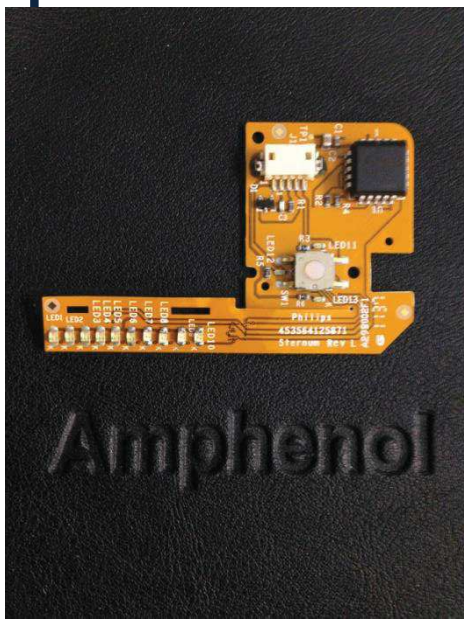


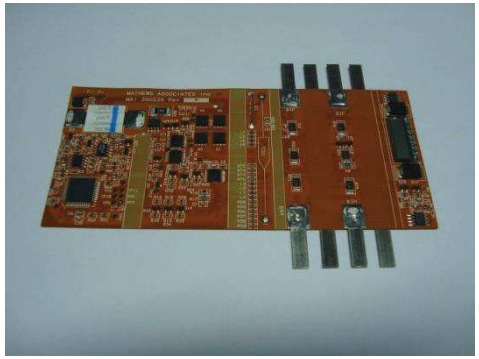
Data Storage

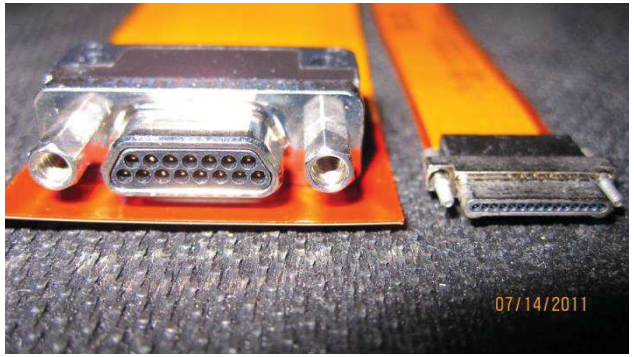

Blade Server

Assembly Product Sample









SMT

GHK Auto SMT Screen Machine

SONY AUTO Pick and Place Machine

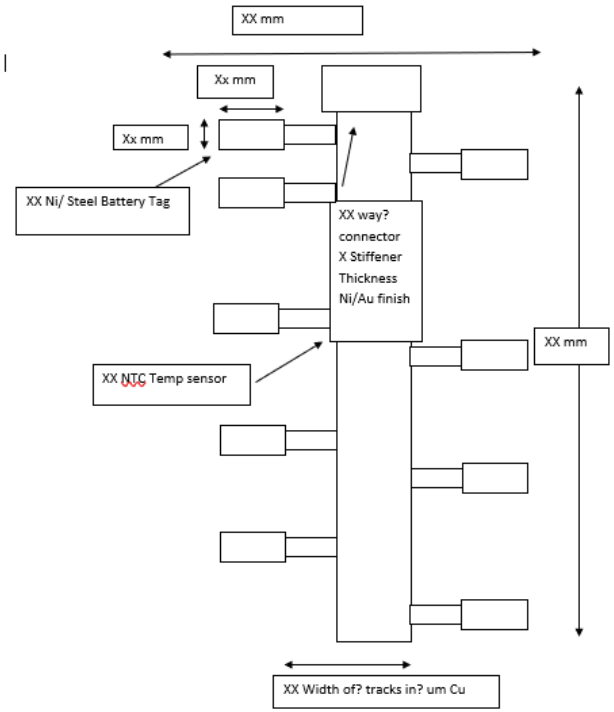
Auto AOI inspection Machine

Reflow Machine

Global Customers:

Your Company could be here!

Why not send us your sketch, for RFQ Now?



For pricing or discussions we'd like as much of the following as possible:
Sketch & Dimensions, Gerber, Step file, DXF, Wish list, BOM, or Descriptive Notes

Company Differentiators

- Asia Based Facility Providing High Mix, Low to Moderate Volume Products.

- High Technology, High Quality Product Focus
  - Rigid-Flex up to 16 Layers
  - Flex up to 12 Layers
  - High Speed up to 25 Gbps
  - Value Add Assembly
  - High Temperature Flex
  - Flex for Batteries with sensing

- Heavy Copper Processing (Sculptured, Power Flex).
- Technical Support in North America, Asia, and Europe.
- An Amphenol Company – One of the Largest Interconnect Company in the World, Global Footprint, Financial Security.

Amphenol Industrial

Q-FLEX

www.q-flex.fi info@q-flex.fi +358 2 4894 500