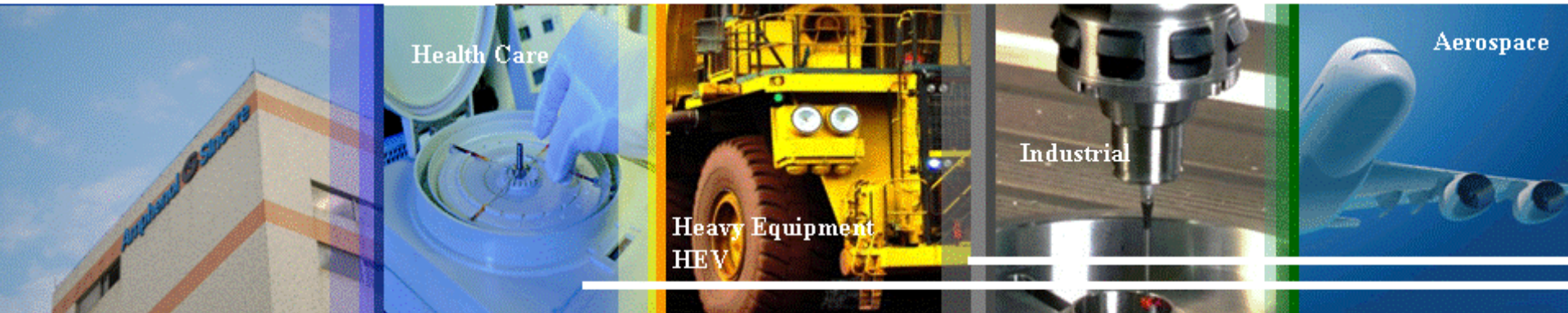


Amphenol Sincere



Health Care

Heavy Equipment
HEV

Industrial

Aerospace

Electronic Integration & Flex Printed Circuits

About Amphenol

- The second largest manufacturers of interconnect products.
- Founded 1932 and Amphenol listed on the NYSE 2009.
- Revenue is USD \$8.599 billion.
- 100 worldwide locations.



Industrial



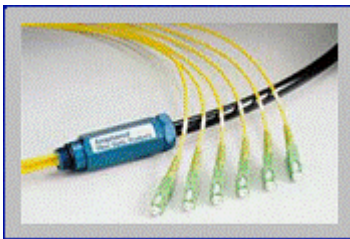
Automotive



IT & Data com



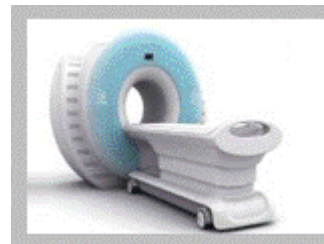
Mobile Network



Broadband



Military & Aerospace



Medical



Mobile Device

Amphenol in Fortune 500



Ongoing Development of Manufacturing Footprint



Chicago, IL



Bourguiba, Tunisia



Taunton, UK



Telford, UK



Frederikssund, Denmark



Huntsville, Alabama



St. Mary's, Pennsylvania



Leigh, UK



Tamworth, UK



Kuressaare, Estonia



Frankfurt, Germany



San Jose, California



Yulin, China



Pforzheim, Germany



Suzhou, China



Kocani, Macedonia



Nantong, China



Baicheng, China



Fremont, California



Changzhou, China



Morgantown, Kentucky



Pyeongtaek, South Korea



Anasco, Puerto Rico



Tijuana, Mexico



Amphenol Sincere Flex Circuit



Amphenol Organization





GASF History

1994 GuangZhou Panyu Printed circuits Limited

2005 Guanzhou Amphenol Sincere Flex (August)

20 years+ manufacturing experience

Facility Area: 15,000 Square meter

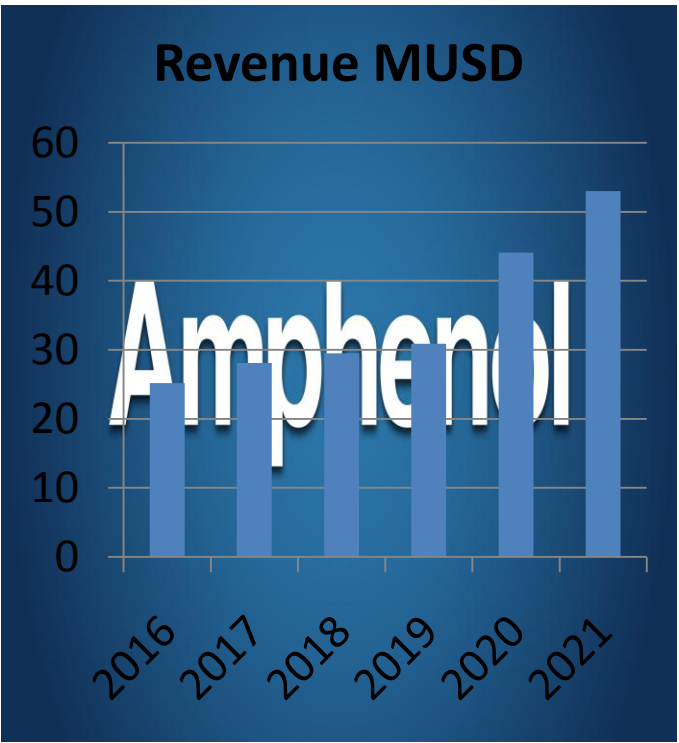
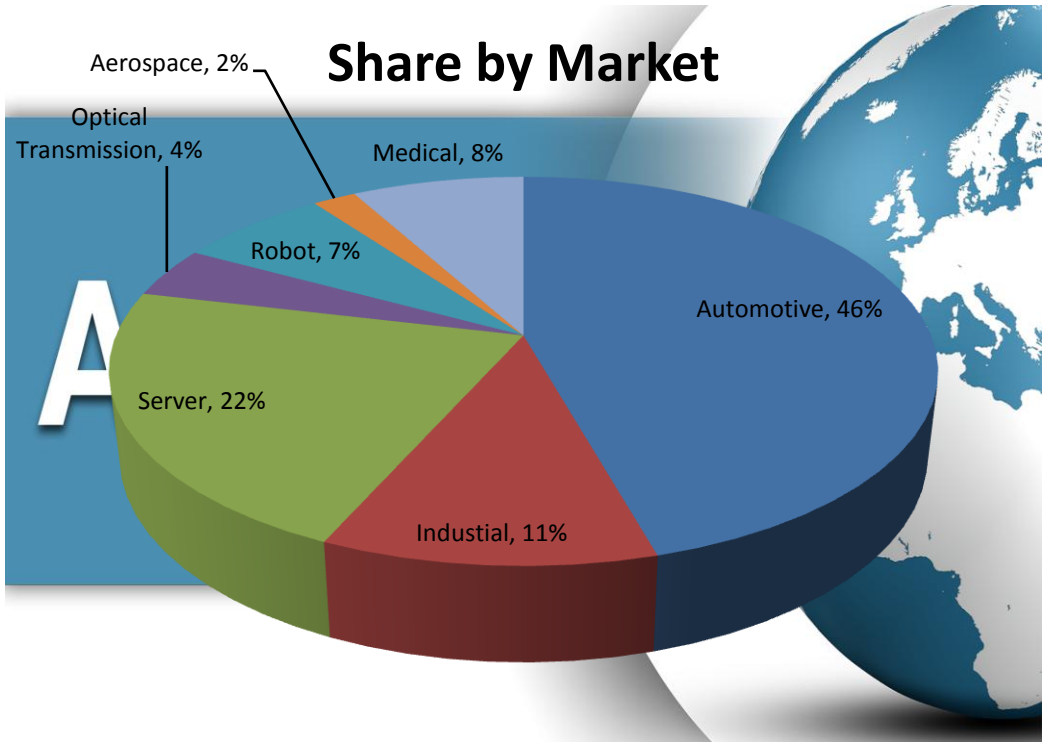
Revenue :USD 36 million

Employee: 442

Location :Nansha District Guangzhou City ,China



**Amphenol Sincere
Guangzhou**



*Revenue is Including both GASF & ASIP



Quality Certificates

- ✦ ISO 9001:2015
- ✦ ISO 14001:2015
- ✦ IATF16949:2016
- ✦ AS9100 2016



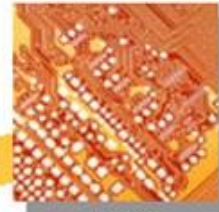
- ✦ UL
- ✦ ROHS
- ✦ REACH
- ✦ WEEE



Amphenol Sincere Product Family



Rigid-Flex

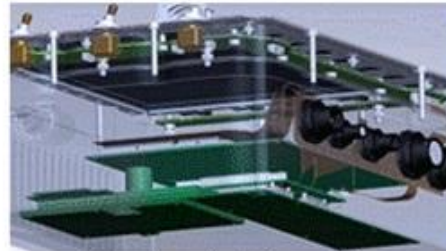


FPC



FFC

SMT & Other
Value Added
Assembly



Electronic Integration



Power Flex
Laminated Busbar



Busbar



Custom
Harness



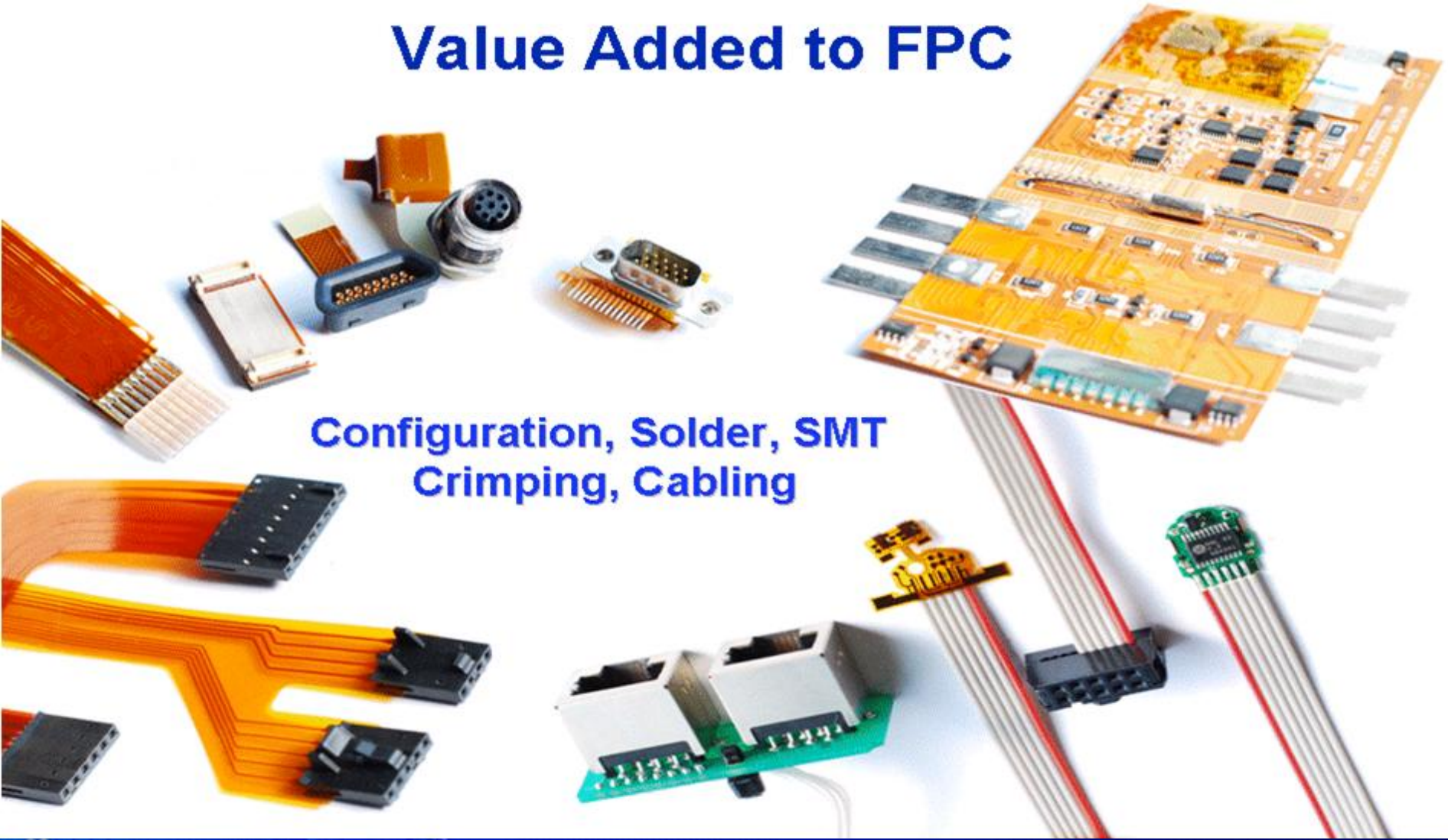
Cable
Assemblies



Molding

Value Added to FPC

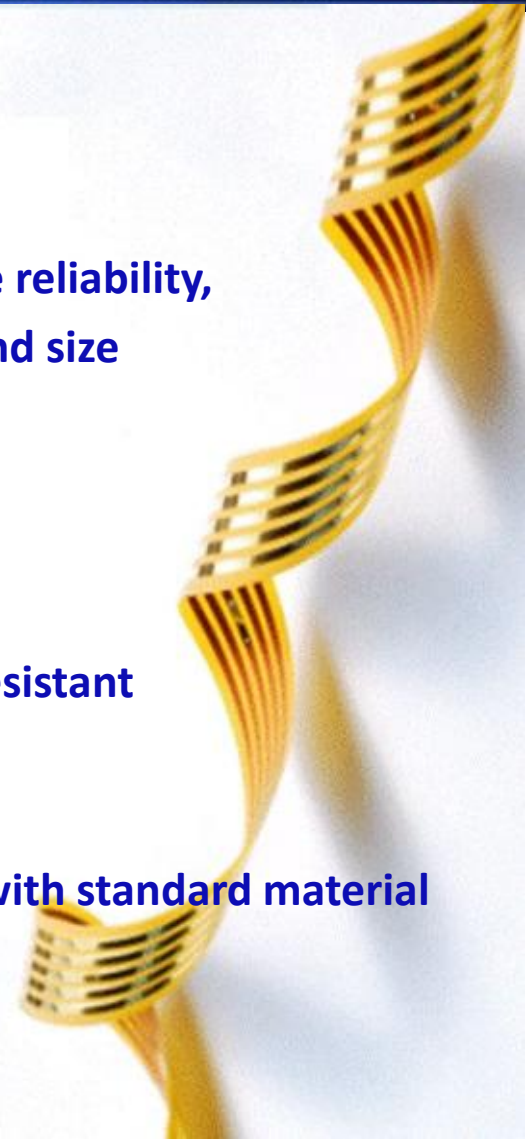
**Configuration, Solder, SMT
Crimping, Cabling**



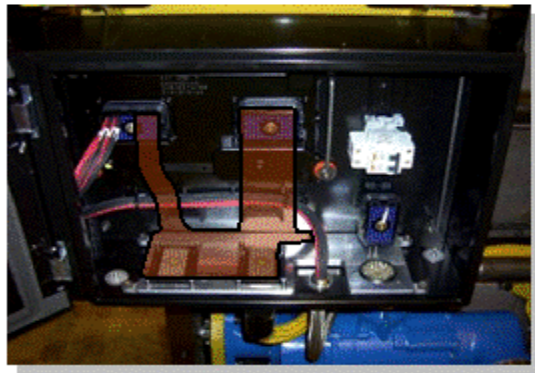
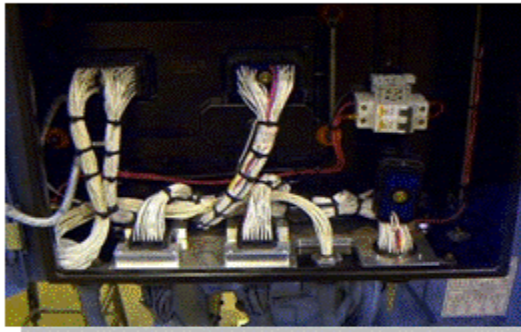
FPC /Rigid flex application

Flex circuits and rigid flex can be used to improve the reliability, design flexibility with 3d configuration ,the weight and size to the total electronic package.

- Operation temperature : -45 to 200
- Layer count :1 to 15
- Harsh environment :anti vibration and chemistry resistant
- Signal shielding is available
- Various surface treatment is available
- Flexibility for bending : up to 500K bending cycles with standard material



FPC/Rigid Flex Advantages



Eliminate Wiring Labor, reduce manual cable assembly errors, save cost for rework and re-inspection

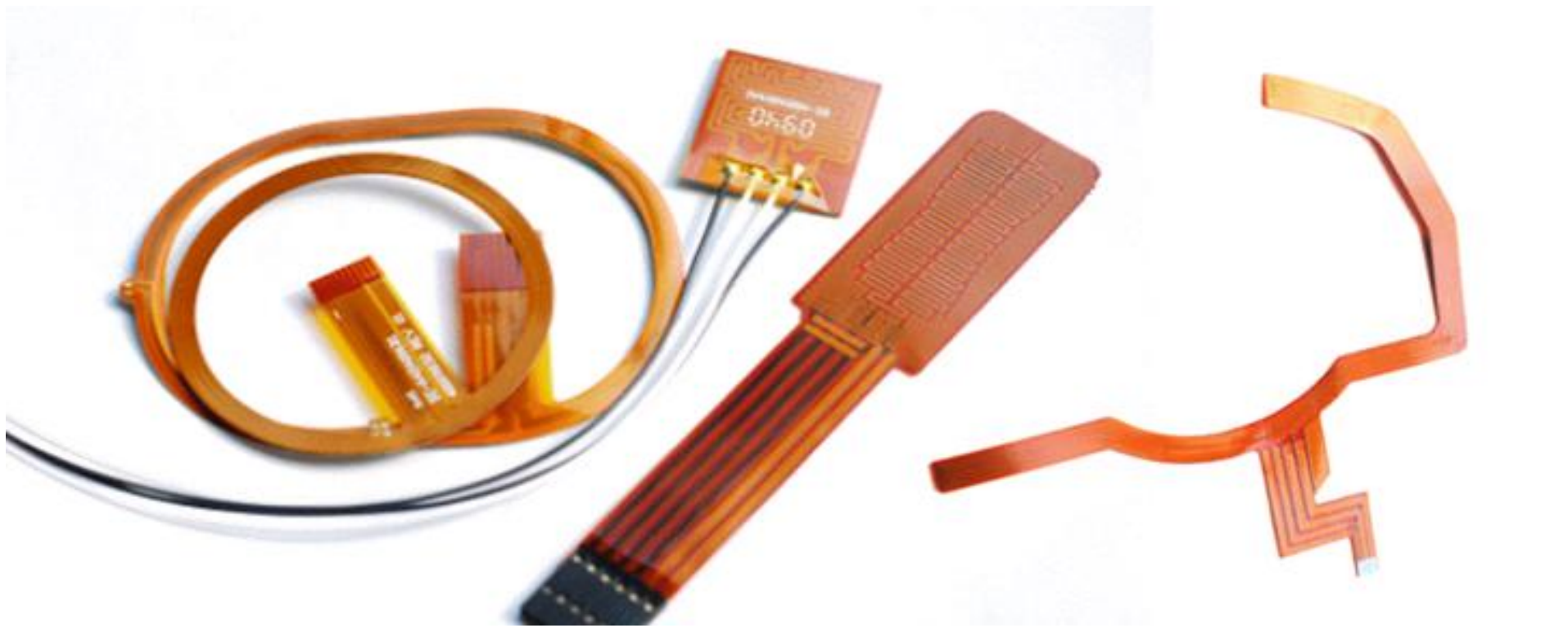
Minimize Weight & Maximize Component Areas to reduce the size of the total package

**Streamline Mechanical & Electrical Design
Increase Flexibility in Performance & Packaging**

Reduce Packaging Size & Increase Reliability

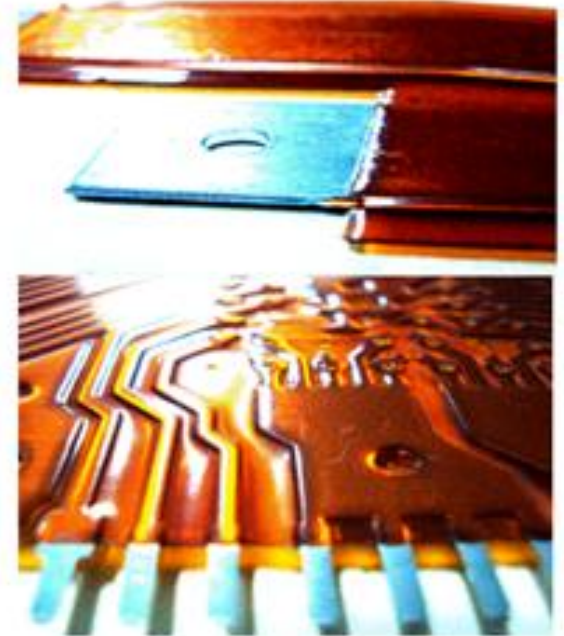
Heater flex

With special material and technique ,we offer flex heater solution for medical , instrumental and fiber device application ,which provides flexibility ,consistent temperature and resistance .

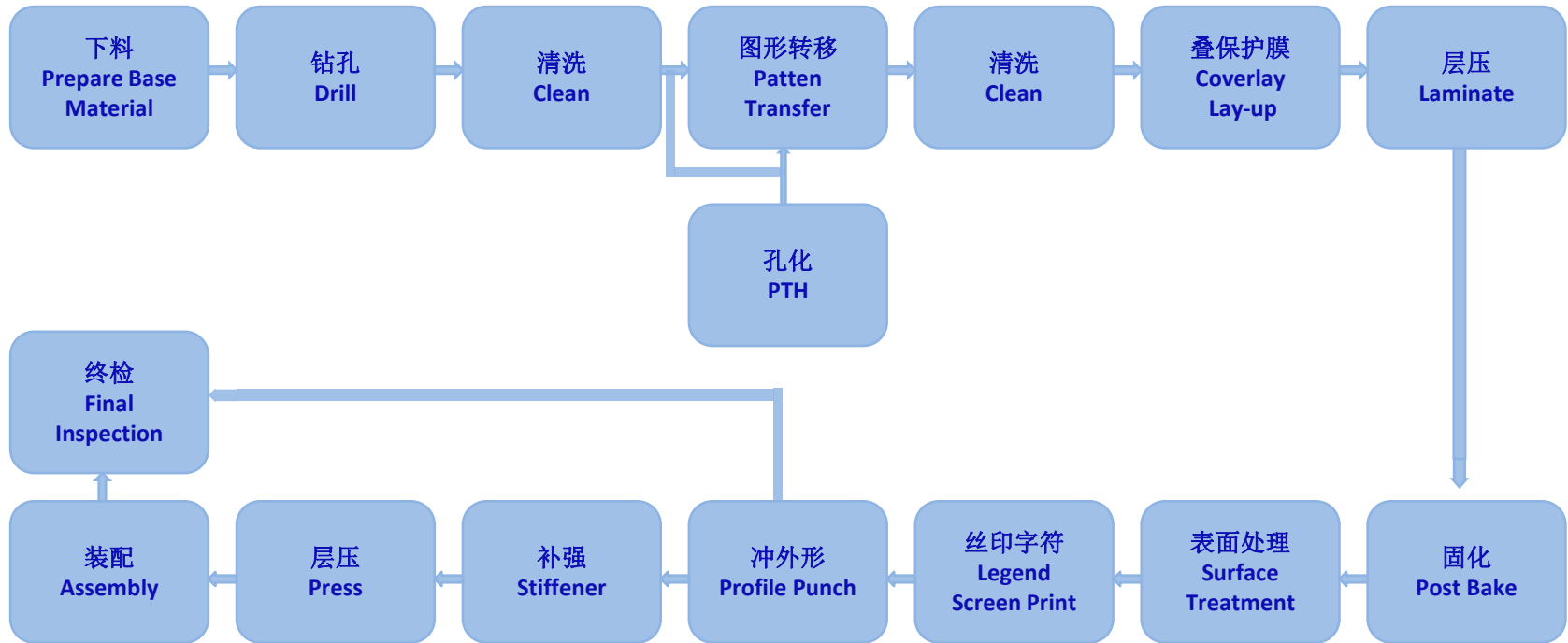


Power flex

With special process to achieve thick FPC (6mil -40mil) that can taking 200amp+ current or reinforced fingers for pass through and replace the edge connectors.



FPC Main flow Chart



Product Application Catalog

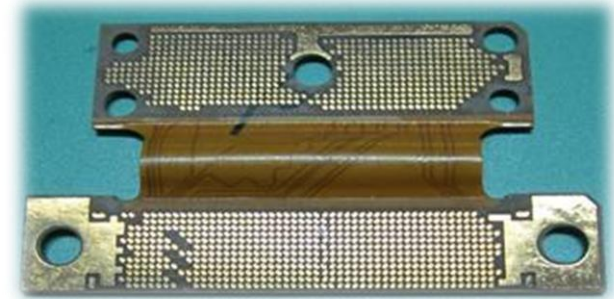
- 1、 Storage & Server
- 2、 Medical
- 3、 Robot Arm
- 4、 Auto
- 5、 HEV & Battery
- 6、 Optical Communications
- 7、 GPS & handheld & Consumer
- 8、 Aviation



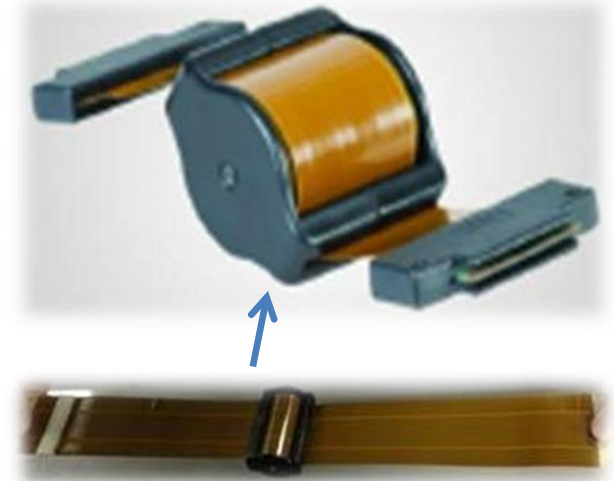
Product Application – Storage & Server



Server



Storage



Product Application – Medical



Application: MRI

Configuration :

Double Sided with Amphenol connector

Application:

MRI



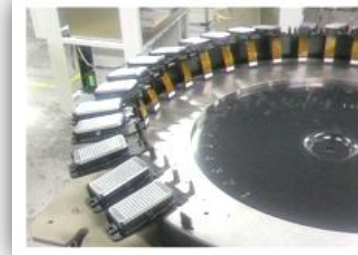
Product Application – Medical



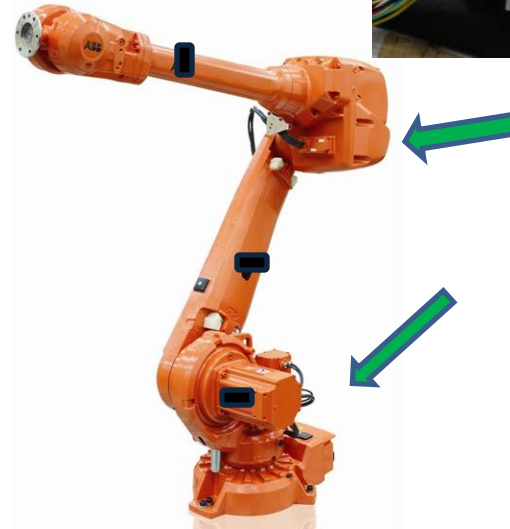
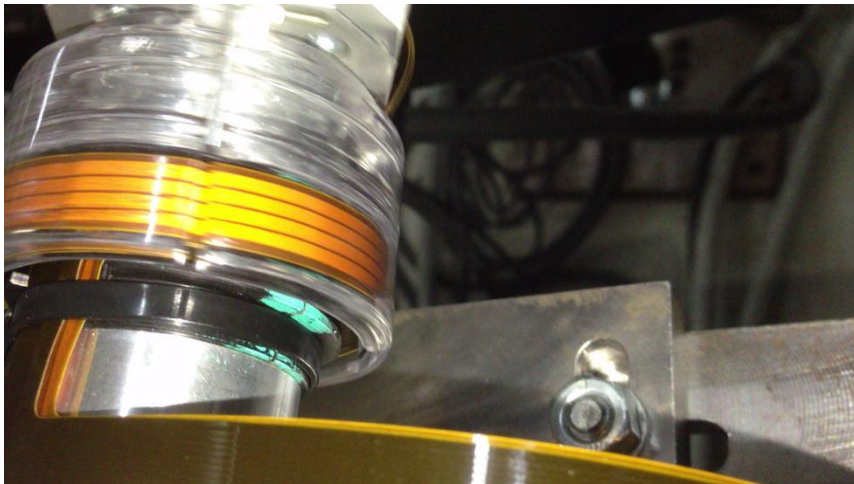
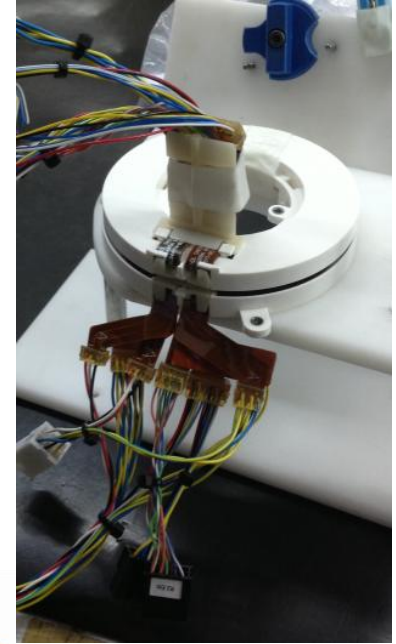
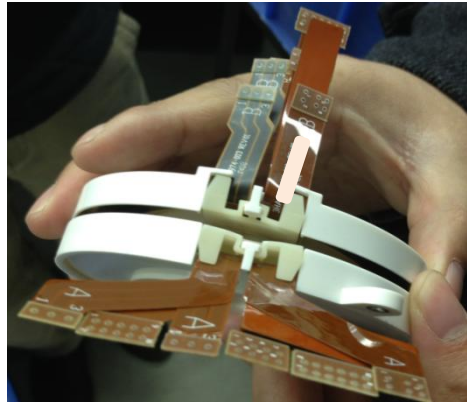
Application:
Anesthesia machine
Configuration :
Heater Flex
Two type surface finish



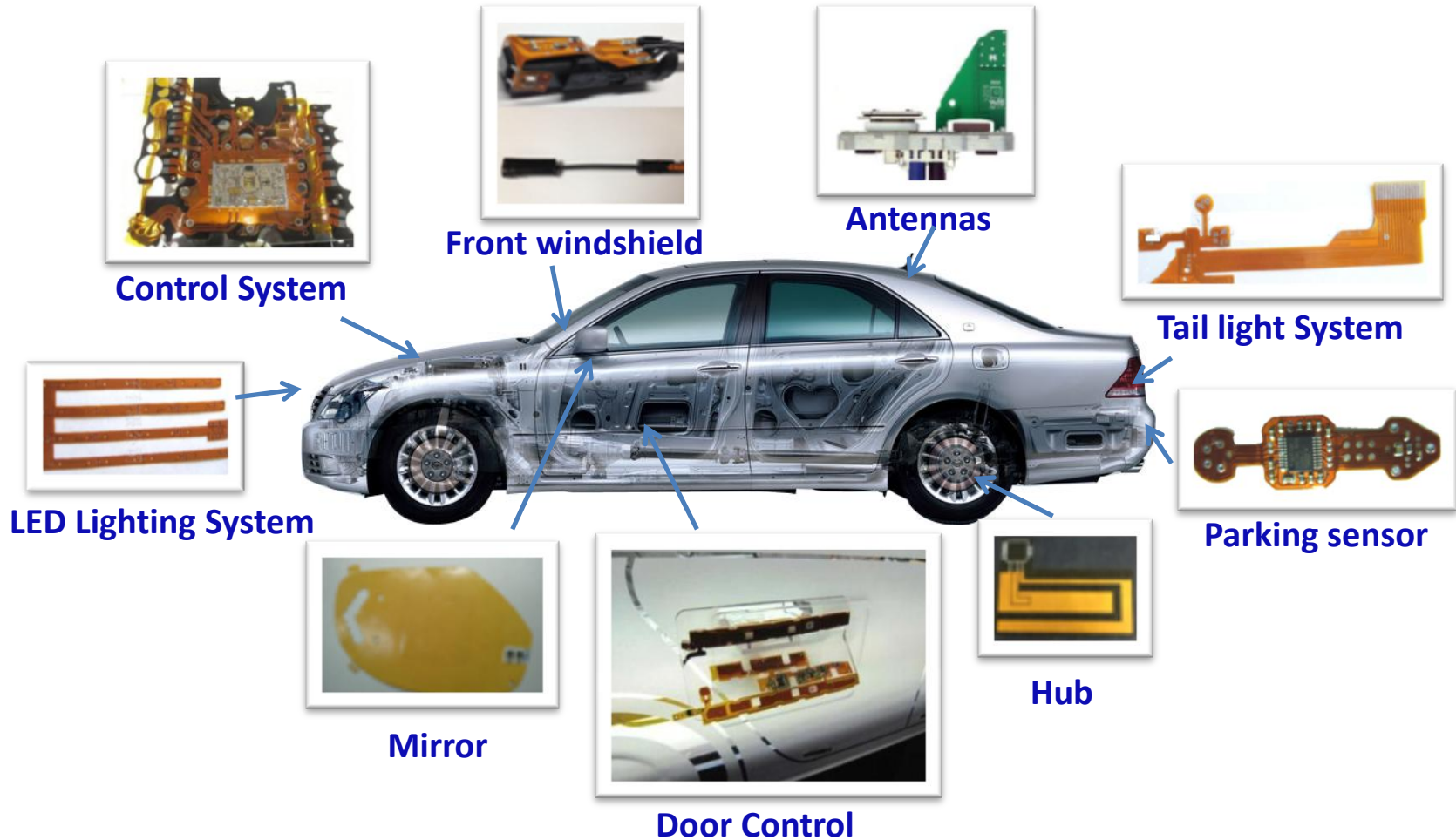
Application:
Medicament analysis system
Configuration :
Heater Flex ,Resistance control



Robotic



Product Application – Auto



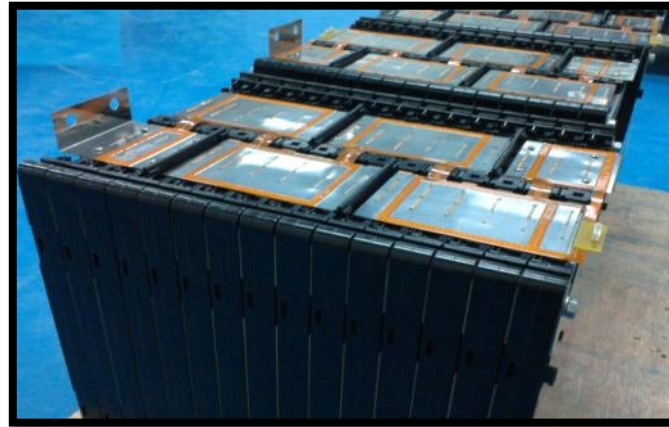
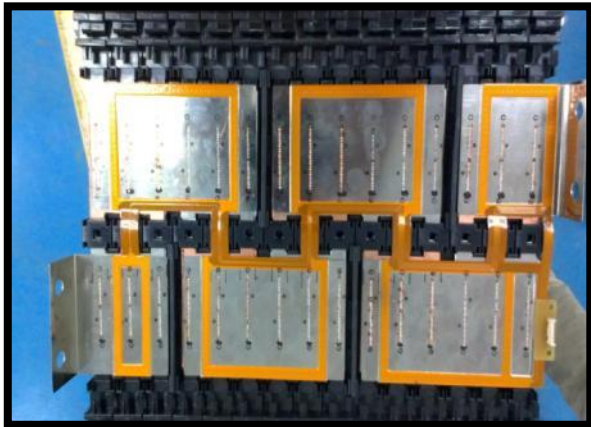
Product Application – HEV & Battery



Cable design Solution

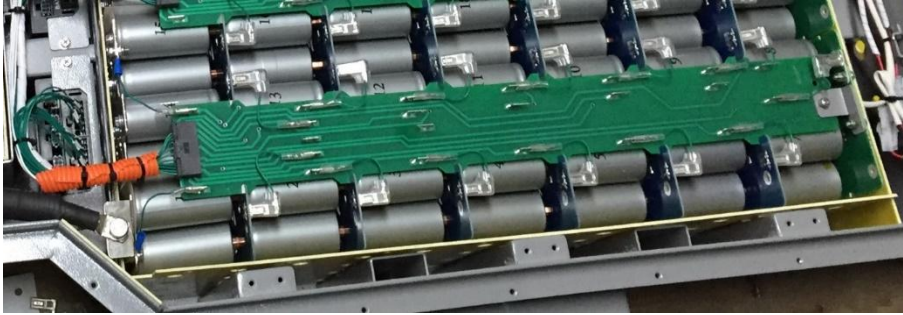


FPC Solution

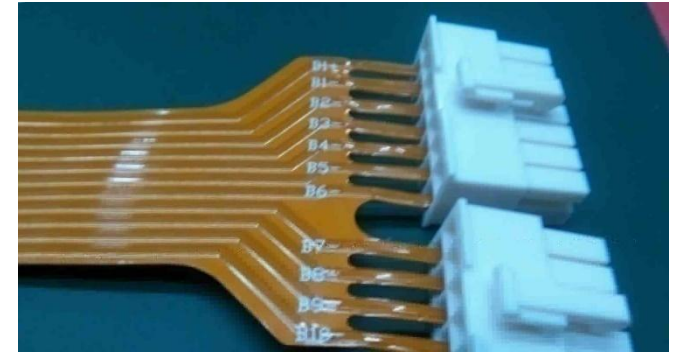


FPC Battery pack

Product Application – HEV & Battery



PCB+Cable design Solution



FPC Solution



Product Application – Optical Communications

Application:

Optical Transceiver/Receiver

Configuration :

Double Sided and Multi Layer

Minimize Size and High speed 10G 25G 40G +



Product Application – Optical Communications

Application:

EDFA-Erbium-doped Optical Fiber Amplifier

Configuration :

Heater Flex



Product Application – GPS & handheld

Application:

GPS

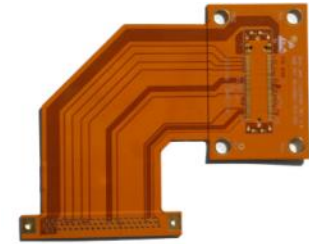
Configuration :

Double Sided and Multi Layer

SMT & IP67



Product Application – Aviation



Multimedia System FPC



Stow sensor FPC



Control Module

Amphenol Flex Circuits Technology Capabilities

Products

Type 1- 5
Sculptured
Assemblies

Mock Ups
Sequential Lam.

Panel thickness

.003" – .225" (.075mm – 5.70mm)

Layer count

1 - 15

Interconnect Formation Types

Buried
Dual diameter
SMT

Blind (laser & mechanical)
Thru hole
Filled Vias

Finished Hole Size

Compliant Pinned
Via (A/R dependant)
Buried vias
Microvia

.0180" (.460mm)
.008" (.200mm)
.008" (.200mm)
.004" - .006"
(.100-150mm)

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/spacings .003"/.003" (.075mm/.075mm)

Production materials

Polyimide – Dupont, Rogers and multiple Asian sources
Adhesive Systems – acrylic, fire retardant, epoxy resin
FR4/ - 24, 26 & 28
Silver Epoxy Shielding
Soldermask
Copper Paste Shielding

Copper processing

¼ oz. – .400" thick (10.20mm)

Impedance – single & differential

± 10% standard
± 7% advanced

Surface finishes

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

Amphenol Flex Circuits Technology Capabilities

Assembly Capabilities

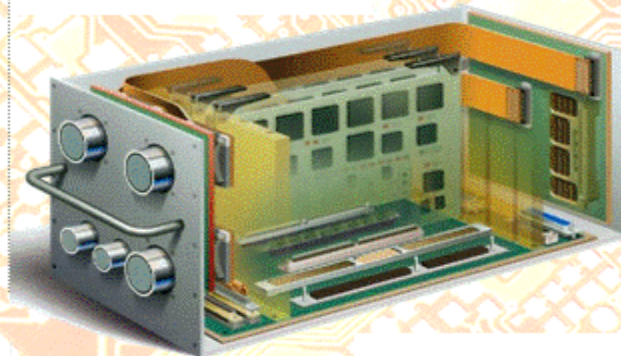
- Turn Key
- Through-Hole – Wave & Manual (Non RoHs)
- SMT - Manual, Pick & Place (RoHs)
- Cable Assembly
- Wire & Cable cutting and stripping
- Crimping and Splicing
- Ultrasonic Welding (plastic and metal)
- Over-molding and horizontal injection molding
- Hand Soldering/Auto Soldering
- Impregnating

Assembly Finishing

- Conformal Coat
- Potting – Stycast, Eccobond, 3M
- Injection Molding
- Over-molding
- Heat Forming
- Heat Sinks

Test Capabilities

- Impedance Testing
- Hi-Pot up to 5,000 VDC
- 2,000+ test points per circuit
- Insulation resistance up to 1,000 VDC
- Functional Testing
- Bed of Nails, Flying Probe, Panel & Layer Test
- Flexure Testing
- Environmental Testing – Thermal, HATS





Amphenol Sincere Industrial Product

About Amphenol Sincere

Amphenol GASF



Guangzhou Amphenol Sincere Flex Ltd:
Nansha, Guangzhou City, China

(Design, Manufacture, and Assembly)
Revenue: USD \$36 million

Employee: 450

Facility Area: 14,000 square meters

Certifications:
ISO 9001:2015
ISO 14001:2004
IATF16949
AS9100

Amphenol ASIP

Amphenol Sincere Industrial Products: District of Pecs, Hungary

Facility Area: 7,000 square meters

Employee: 119

Revenue: \$14 million (start up year)

Certifications:
ISO 9001:2015
IATF16949 LOC

**Products: Battery cover CCS busbar, plastics
and voltage measurement
Value Added on Flexible Printed Circuits**



Amphenol Sincere Industrial Product Ltd. – ASIP Hungary



- Office Area : 400 m²
- Production area : 600 m²
- Warehouse area : 2800 m²
- Future area : ~3400 m²

ASIP Cserkút plant

Building exterior



Development of ASIP Cserkút plant

Building interior



- Location:
 - Address: H-7673 Cserkút, Batvölgyi út 3.
 - GPS: N46.063629, E18.1335403
 - Located 7 km from the center of Pécs city
- Technical info:
 - ESD floor
 - Separate production and warehouse areas

Development of ASIP Cserkút plant

- Total land area: 27.570 m²
- Building area: 7.186 m²
 - Can be extended up to 16.000m²

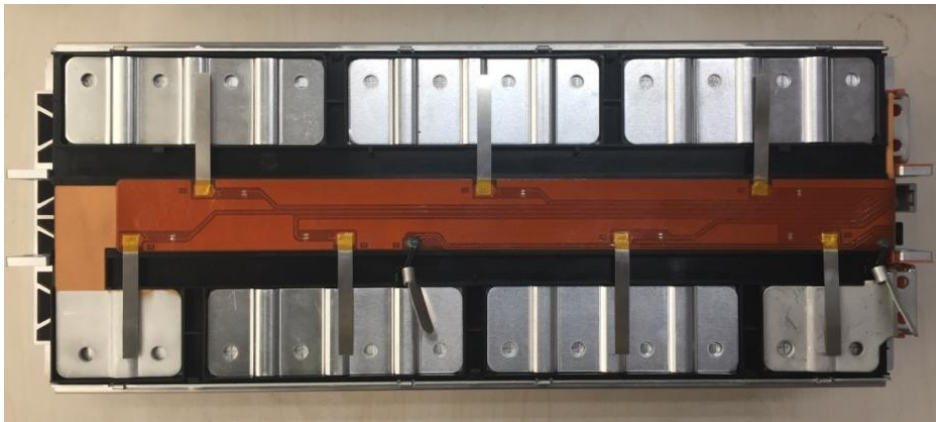


Development of ASIP Cserkút plant



Products for ASIP

- Fully assembled and tested Battery covers
 - Including:
 - Flex Circuits
 - Busbar Aluminium or Copper or Combined
 - Welded Bars
 - Plastics by moulding as required
 - Connectors and fixings




ASIP Quality Management System

➤ IATF 16949 LOC

- After relocation to new Factory IATF 16949 LOC renewed on 07-11. December 2020

TÜV Rheinland (China) Ltd. • Unit 707, AVIC Building, No. 108, Central Road, East 3rd Ring Road, Chaoyang District, Beijing 100022, China



TÜVRheinland®
Precisely Right.

Amphenol Sincere Industrial Product Gyártó Kft.
Hungary, 7630 Pécs, Bajor utca 1.

Release date:
2019-12-23

Letter of Conformance - (01 111 1933185)

Dear Sirs:

We performed the certification audit to the Quality Management System of your organization, assessed the corrective actions proposed, and verified the closure of the non-conformities of the certification audit. We are pleased to inform you that the Quality Management System of your company complies with the requirements of the Standard: IATF 16949:2016, with the following scope:

Manufacturing and Design of Flexible Printed Circuit Board Assemblies

Unfortunately, we cannot issue a certificate now, due to the fact that there is less than 12 months of production. TÜV Rheinland will continue with the certification process – according to the rules for achieving IATF recognition – when your organization reaches twelve months of production operation, or when you are able to demonstrate that after 12 months you are still in an for a customer requiring IATF 16949:2016 certification.

This Letter of Conformance is valid for twelve months:
Issue date: 23 December 2019
Expiry date: 22 December 2020

This Letter of Conformance includes the following remote locations:
01 111 1933185/901: Guangzhou Amphenol Sincere Flex Circuits Co., Ltd.
No. A, WanAn Industrial Park, LanHe Town, Nansha District, Guangzhou City, Guangdong Province 511480, P. R. China
Rem Loc function: Product Design, Process Design

The next audit to your company should be completed before expiry of this letter.

Best regards

TÜV Rheinland (China) Ltd.
Certification Office Beijing

TÜV Rheinland (China) Ltd.
Unit 707, AVIC Building,
No. 108, Central Road,
East 3rd Ring Road,
Chaoyang District, Beijing,
100022, China
Tel: 86 10 8524 2222
Fax: 86 10 8524 2000
GC Service mailbox: service-gc@tuv.com 网站: www.chn.tuv.com
Web:www.chn.tuv.com

莱茵检测认证服务 (中国) 有限公司
北京市朝阳区东三环中路
Z: 10号艾姆克大厦 707室
邮编: 100022
电话: 86 10 8524 2222
传真: 86 10 8524 2000
大中华区销售邮箱: service-gc@tuv.com

➤ ISO 9001 certificate

Certificate HU20/8696

The management system of



Amphenol Sincere Industrial Product Gyártó Kft.

H - 7673 Cserkút, Batvölgyi út 3.

has been assessed and certified as meeting the requirements of


ISO 9001:2015

For the following activities

Production of EV Battery CCU Solutions.

This certificate is valid from 27 October 2020 until 26 October 2023 and remains valid subject to satisfactory surveillance audits. Recertification audit due a minimum of 60 days before the expiration date. Issue 1. Certified since 27 October 2020




Authorized by





Rosemore Business Park, Elesmere Port, Cheshire CH65 3EN, UK
t+44 (0)151 350-6666 f+44 (0)151 350-6600 www.sgs.com

HC: SGS 9001 2015 0818

Page 1 of 1





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Thanks!



Amphenol Sincere