



CHILISIN ELECTRONICS CORP.
Total Solution Provider for EMI, Power and RF.

CHILISIN ELECTRONICS CORP.

Total solution partner for EMI, Power and RF



Date: 2015/3/24

CEC Confidential



Mar 24 – Meeting Schedule

Presentation

Chilisin Company Introduction	14:30 ~ 15:00	Manger/ Angus Chiu
Blume Company Introduction	15:00 ~ 15:30	MD/ Wilhelm Haßenpflug

Line Tour

Production Line Tour	15:30 ~ 16:30	Dr. Joseph Chiu
Close Meeting (Q & A)	16:40 ~ 17:00	Sales Manager / Angus Chiu



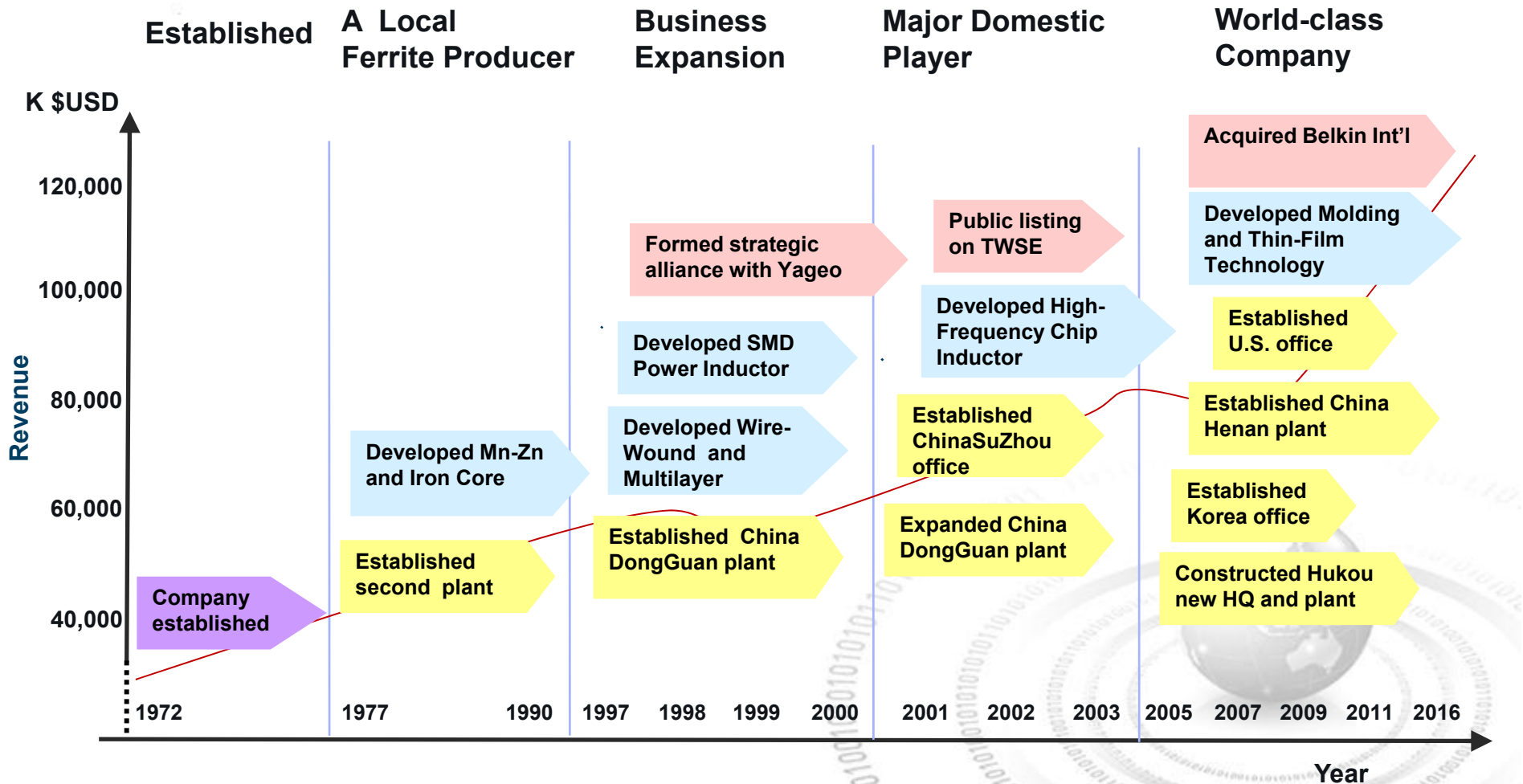
Outline

- Corporate Overview**
- Product Introduction**
- Quality & Service**
- Corporate Strength**



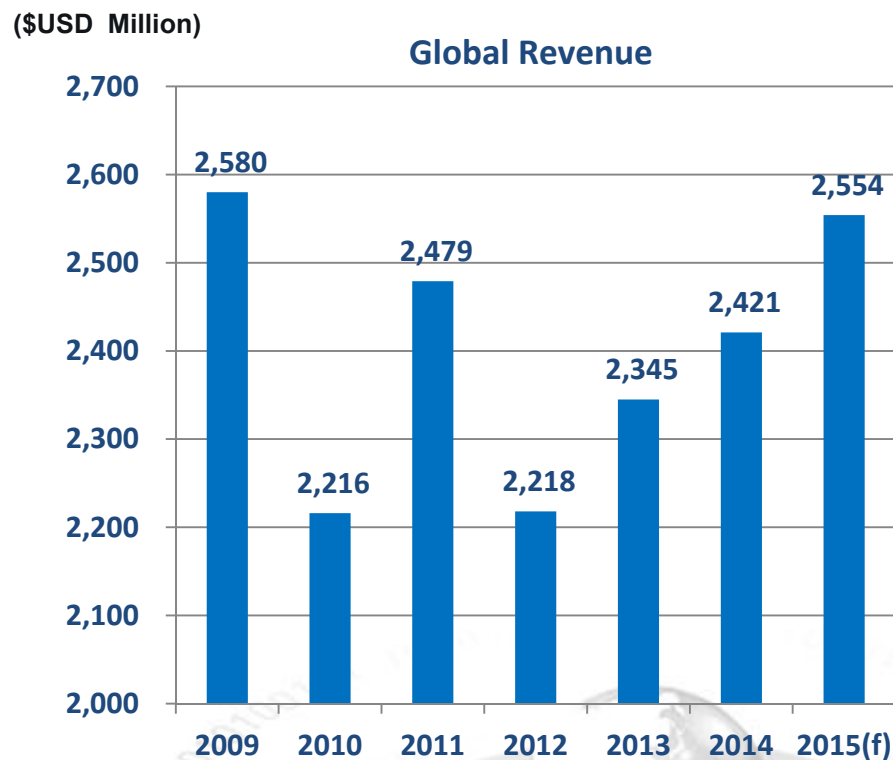
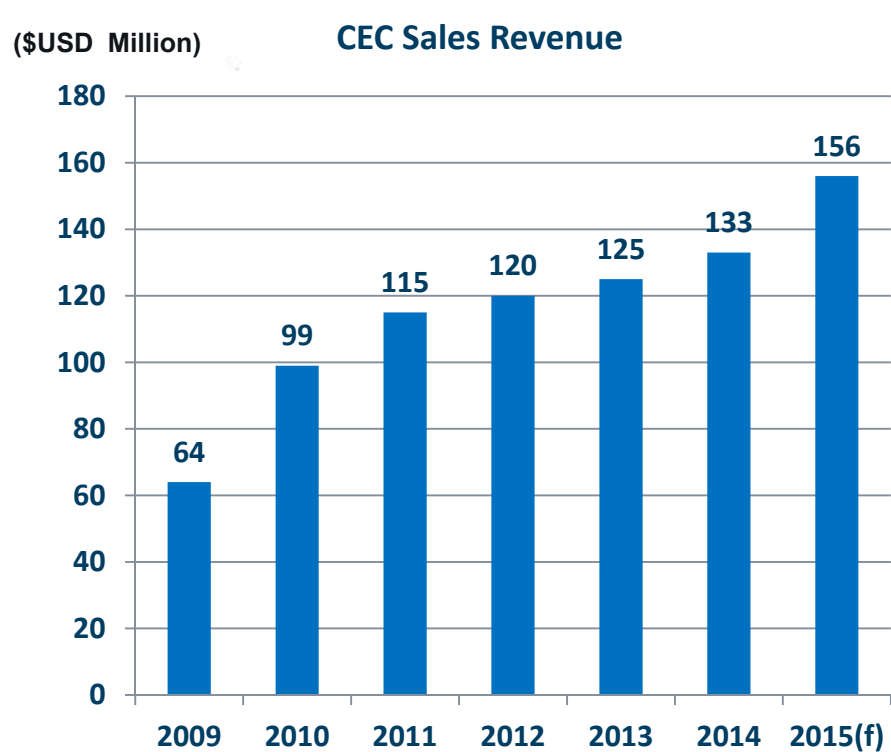


Established in 1972, IPO since 2001



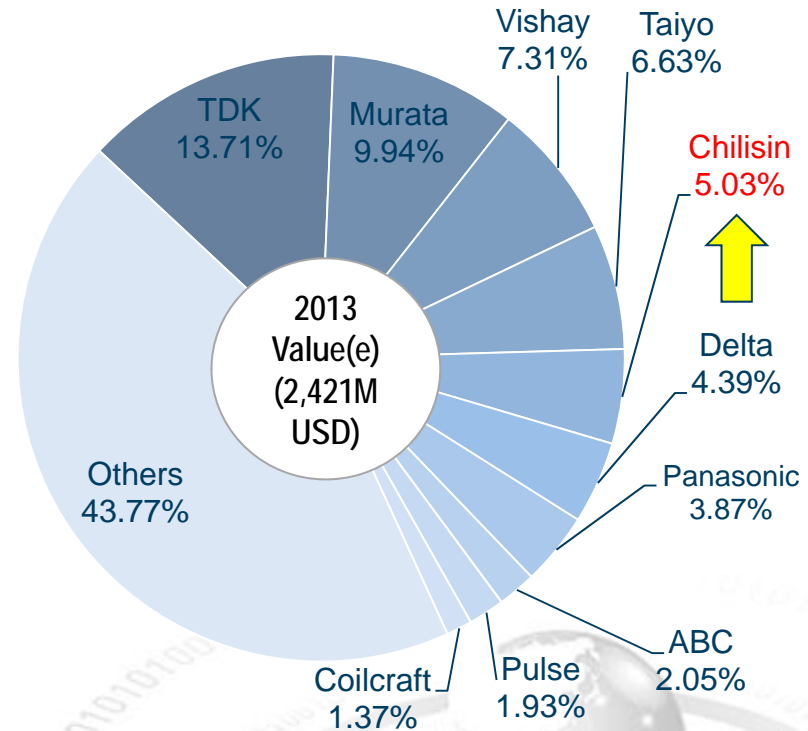
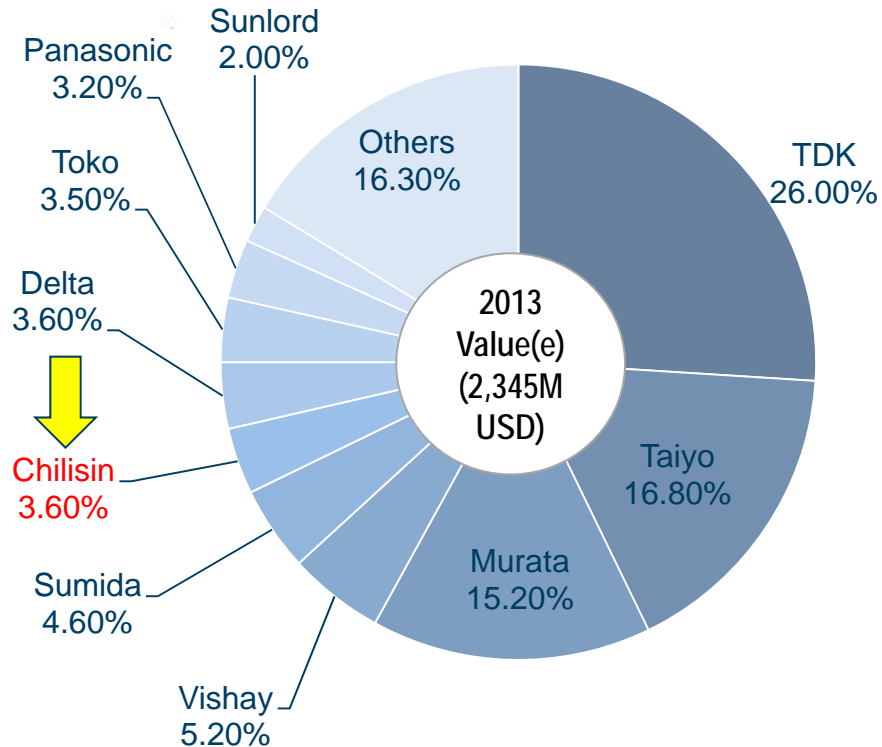


Chilisin stable Growth while Global Market recession



2009~2014		Global
Revenue Growth	108%	-6.16%
CAGR	17.57%	-1.26%

Chilisin Global Ranking **No. 5** in 2013



Product Coverage: wire-wound, multilayer, and thin-film inductors for power and signal applications

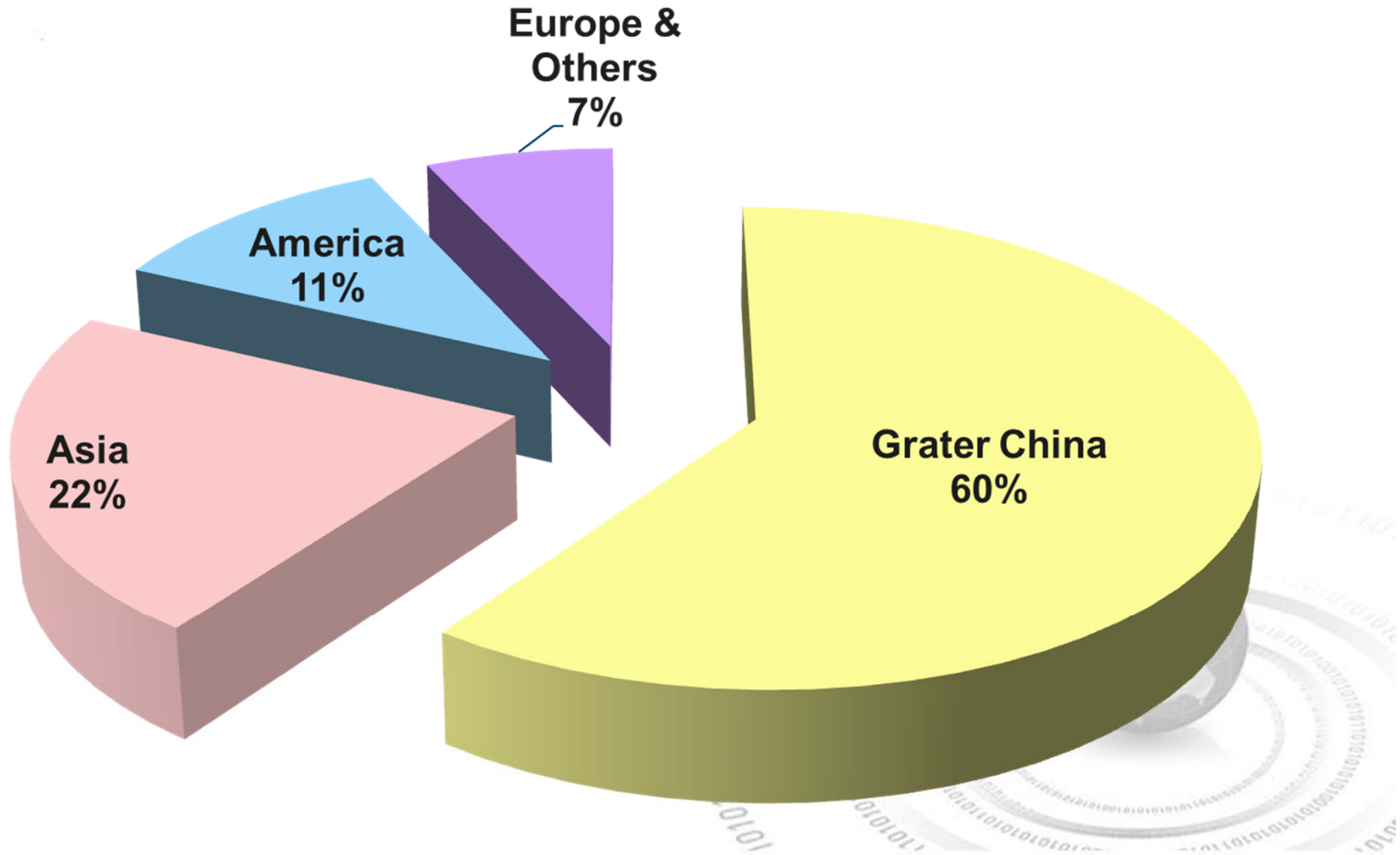
- Chilisin: No. 6 global position as 2013 global total estimated value is USD2,345M
- Chilisin: No. 5 global position as 2014 global total estimated value is USD2,421M

2013 Source: 株式会社マーケティング・アイ (MAKETINKUAI CORP) <http://www.m-eye.co.jp/>

2013 Source: MicroMarketMonitor <http://www.micromarketmonitor.com/>

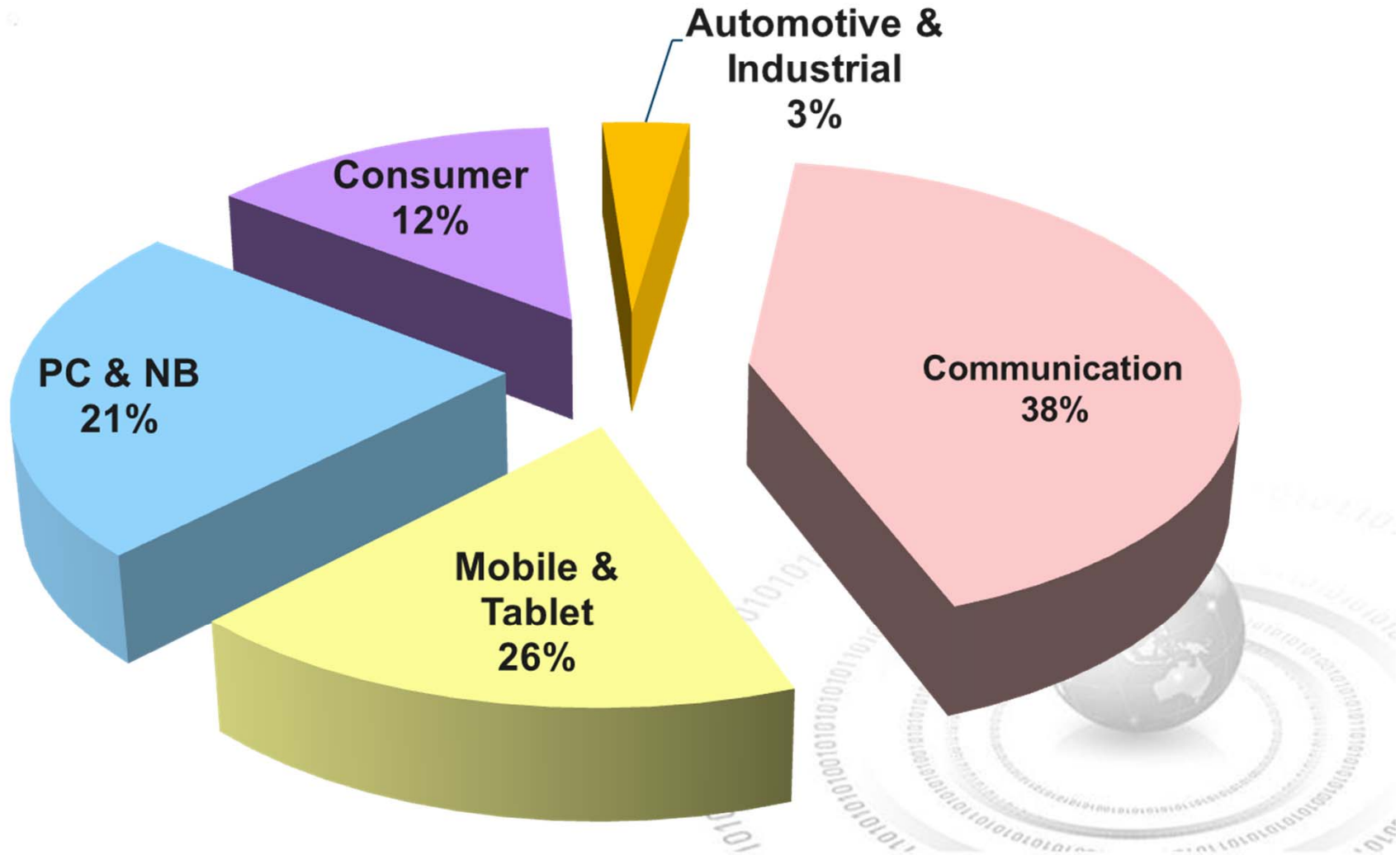


Sales Breakdown 2014 – By Region





Sales Breakdown 2014 – By Market Segment





Factory location & Production Matrix

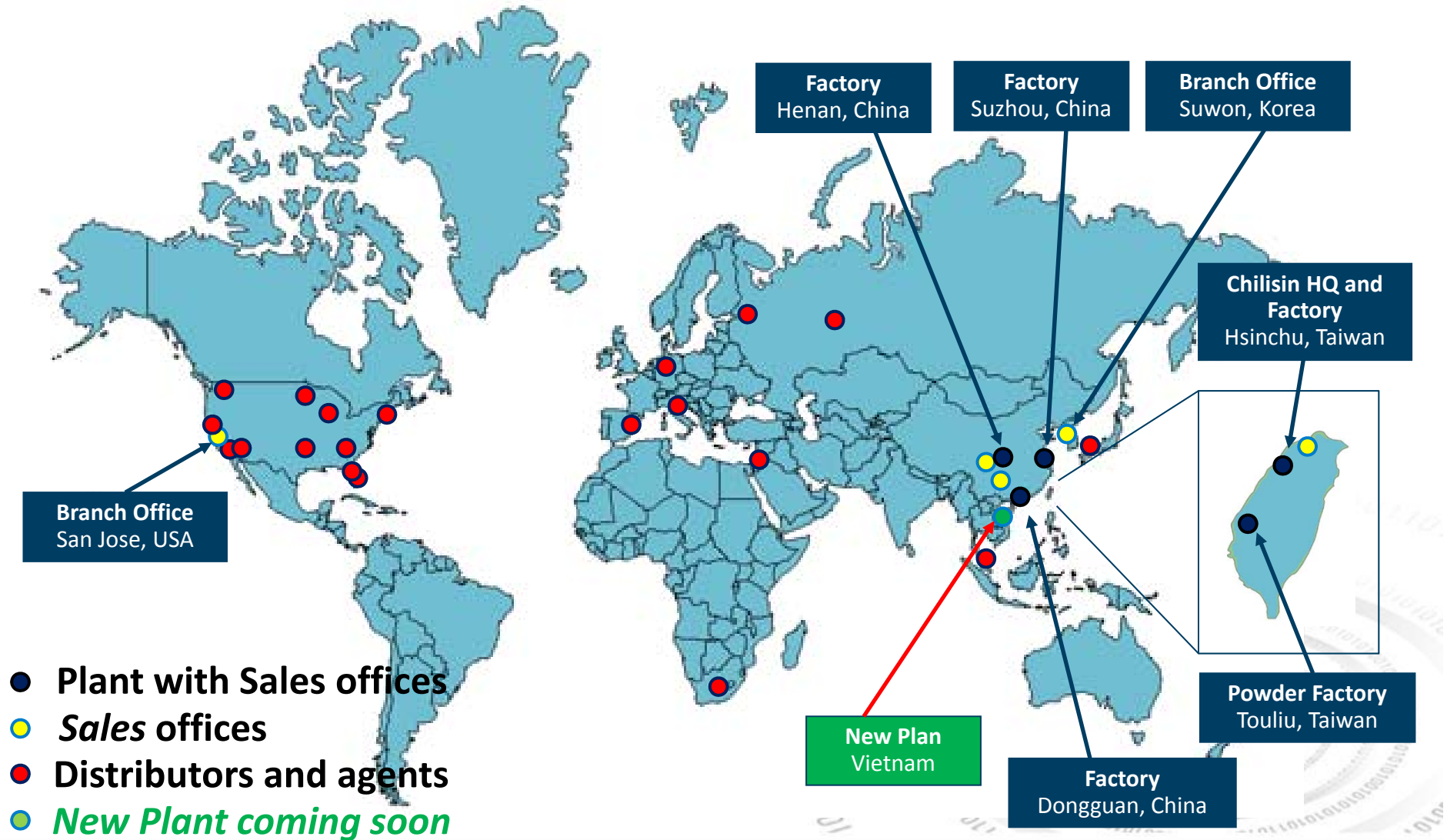
				New Plant
HQ Hsinchu, Taiwan	Factory Dongguan China	Factory Henan, China	Factory Suzhou China	Factory Vietnam
Est. 1972 Employee: 751	Est. 1997 Employee: 1,199	Est. 2010 Employee: 518	Est. 2001 Employee: 96	Est. 2015 Employee: TBA

-----All factories are ISO 9001 and TS 16949 certified -----

Wire-Winding		○	○	⊕	○
Molding	○	○		⊕	○
Multi-layering	○	⊕		⊕	○
Thin-film	○	⊕		⊕	⊕
Through-hole			○	⊕	⊕

○ Manufacture Site ⊕ Finished Products Inventory

Global Production & Sales offices location



Partners with each Market Leader

Mobile



Automotive



NB/Systems



Telecommunication



Consumer Electronics



Design House



OEMs / EMSs



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Total solution for EMI, Power and RF

Wire-winding

Power Inductor

- Wide range
- for power solution



Magnetic-resin Power Inductor

- 2016~3030 size for mobile phone
- 4040~5050 size for tablet PC
- 6060~8080 size for TV/audio



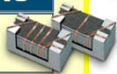
Chip Inductor

- Ferrite core for baseband application Size: 0402
- Ceramic core for RF application Downsize from 0402 to 0201



Common Mode Choke

- for USB2.0/3.0/HDMI



Molding

Power Inductor

- DIP type
- for motherboard



Power Inductor

- SMD type
- for notebook & tablet PC



New - Power Inductor

- SMD Miniature type: 3225~1608 size, t: 0.8mm
- for handset & ultrabook



Multi-layering

Ferrite Bead

- Up to GHz band
- Downsize from 0402 to 0201



Chip Inductor

- Baseband & RF application
- Downsize from 0402 to 0201



Power Inductor

- 2520~1608 size, t: 0.55mm
- for handset & ultrabook



Common-mode Choke

- 0805,0504 package
- for USB3.0, MIPI interface



Thin-film Process

Chip Inductor

- For RF application
- 0201 size +/-0.1nH



Common Mode Choke

- 0403, 0605 package
- For USB3.0/ HDMI



Core Formation

In-house Powder Mixing Technology

Powder Formula

Please visit us at <http://www.chilisin.com.tw/E/product.html>



Sufficient Capacity to meet Market Demand

(Million Pcs/month)

Multi-layering

Total: 2,000



Total: 800

0201



Wire-winding

Chip Inductor
Total: 150



Common Mode
Total: 30



Power Inductor
Total: 110



Molding

Total: 50



Total: 150

1210/1206
0805/0603



Thin-film

Total: 150

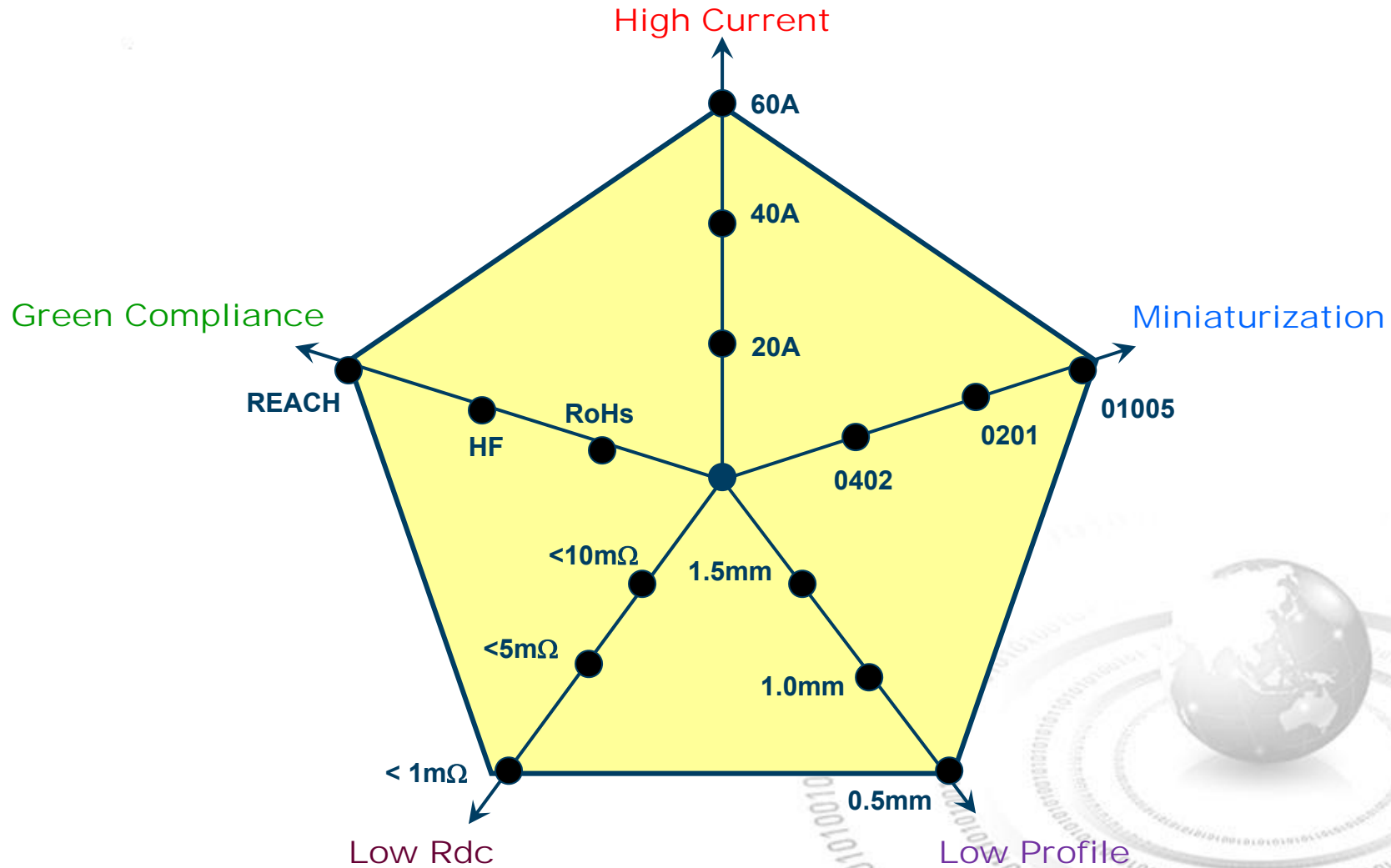


Through-hole

Total: 100



Product Development Trend





Strong R & D capabilities included Powder deployment, Component design simulation & Optimized process

Design & Simulation

- With 3D apparatus, Chilisin can evaluate customer's new requirement and provide preliminary simulation result in 3 days.
- Through prototype simulation, design could be done immediately and samples could be provided within 3~14 days.

Powder Development & Production

- With 42 years experience in research and material production, Chilisin could adjust and develop new material for better product characteristics.
- 2014 Q4, Chilisin will establish a metal powder center with the academic group from U.S. and Japan.

Core Technology

- Chilisin owns Wire-winding, Molding, Multi-layering, and Thin film manufacturing techniques. By combining the advantage of each techniques, Chilisin can hold the edge in the new product developing area.
- Chilisin has the ability to cooperate with suppliers to develop new and better automatic facilities.

R&D Competence


- Chilisin R&D team consists of more than 50 members, with more than 4 Ph.D. from domestic or foreign academy.
- Chilisin has complete analysis instruments, i.e. SEM, TMA, Powder..etc.
- Chilisin can simulate the actual performance of products for customer.

2014 Products


2015

Red font: New product
Unit : mm(inch)

for RF, Multilayers High Q Inductor




CHQ 0603 (0201)
Ls: 0.6~22nH
SRF: ~10 GHz
Q: 14
DCR: 60mΩ min.
IDC: ~900mA

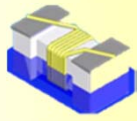


CHQ 0402 (01005)
Ls: 0.2~39nH
SRF: 20~1.6GHz
Q: ~4
DCR: 0.5~7Ω
IDC: 320~90mA

for RF, Wire-wound Inductor



CS 1005(0402)
1608(0603)
2012(0805)
2520(1008)
Ls: 1~15000nH
SRF: ~12.7GHz
Q: ~80
DCR: 30mΩ min.
IDC: ~1360mA

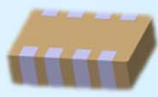


CS 0603 (0201)
Ls: 0.6~3.8nH
SRF: 24~10 GHz
Q: 13~20
DCR: 60~180mΩ
IDC: 1000~420mA

for Power, Molding Thin Film Array




MTFA2520 2 IN 1
T : 1.0mm
Ls: 1uH
Isat : 2.8A
DCR : 69mΩ



MTFA3216 4 IN 1
T : 1.0mm
Ls : 0.47uH
Isat : 2.8A
DCR : 75mΩ

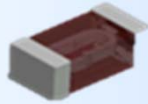
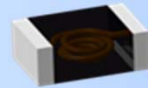
for Power, Molding High Efficiency Inductor



HEI 1608(0603)
HEIL 2012(0805)
UHEI 2520(1008)
3225(1210)
Ls: 0.24~10uH
Isat: ~12A
DCR: 12mΩ min.
xxxL: L terminal
Uxxx: Ultra Irms

UHEI Low Profile
2016 t: 0.5 (max)
2012 t: 0.5 (max)

Miniature
1210 t: 08 (max)
Ls: 0.47uH, Isat : 1.2A

for Power, Molding High Current Choke



MHCB/C/I 4*4 10*10
HPPC 5*5 12*12
6*6 17*17
8*8

UPPC Ultra Performance Power Choke
6*6~10*10
DCR: 30% better

UHCC Ultra High Current Choke
Ls: 22nH~100nH
DCR: 0.2~0.5mΩ




Mini Molding Choke design win

- 96 approval in 20 end customers for smartphone, Tablet, SSD, DSC, STB, 2 way radio, Femtocell, Server, Router, PAD, NB, Auto and home plug applications
- 35 approval in 8 IC Design House Reference Design
- Outstanding order 50KKpcs





Smart Phone



End-customer :

Samsung
HTC
Sharp
Amazon
MI
Lenovo
ZTE
TCL
Meizu
Wingtech
Bitland
Compal

Design House:

Qualcomm
Marvell
MediaTek
Broadcom
Spreadtrum
Nvidia
Intel

Series:

HEI160808

HEI201210

HEI201610

HEI252010

HEI252012

UHEI252012

MHCx201610

MHCx201612

MHCx252010

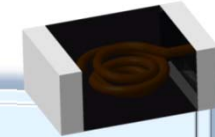
MHCx252012

Inductance (uH):

0.24 / 0.33 / 0.47 / 0.68 /

1.0 / 1.5 / 2.2 /

10





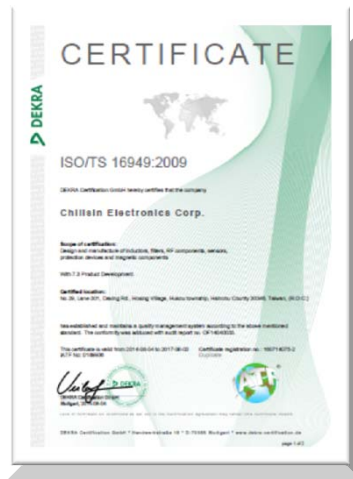
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Certificates and Awards

- Best Supplier Award from New Kinpo (2010)(2013)
- Best “Cooperate To Win” Award from Lenovo (2011)
- Outstanding Supplier Award from SerNet (2011)
- Best Supplier Award from Asus (2005)(2007)
- Best Supplier Award from Solectron (2007)
- Best Supplier Award from Zyxel (2006)(2007)
- TS16949 Certification (Since 2005)
- Samsung Eco-Partner Certificate (Since 2005)
- ISO 14001 Certification (Since 2004)
- Sony Green Partner Certificate (Since 2003)



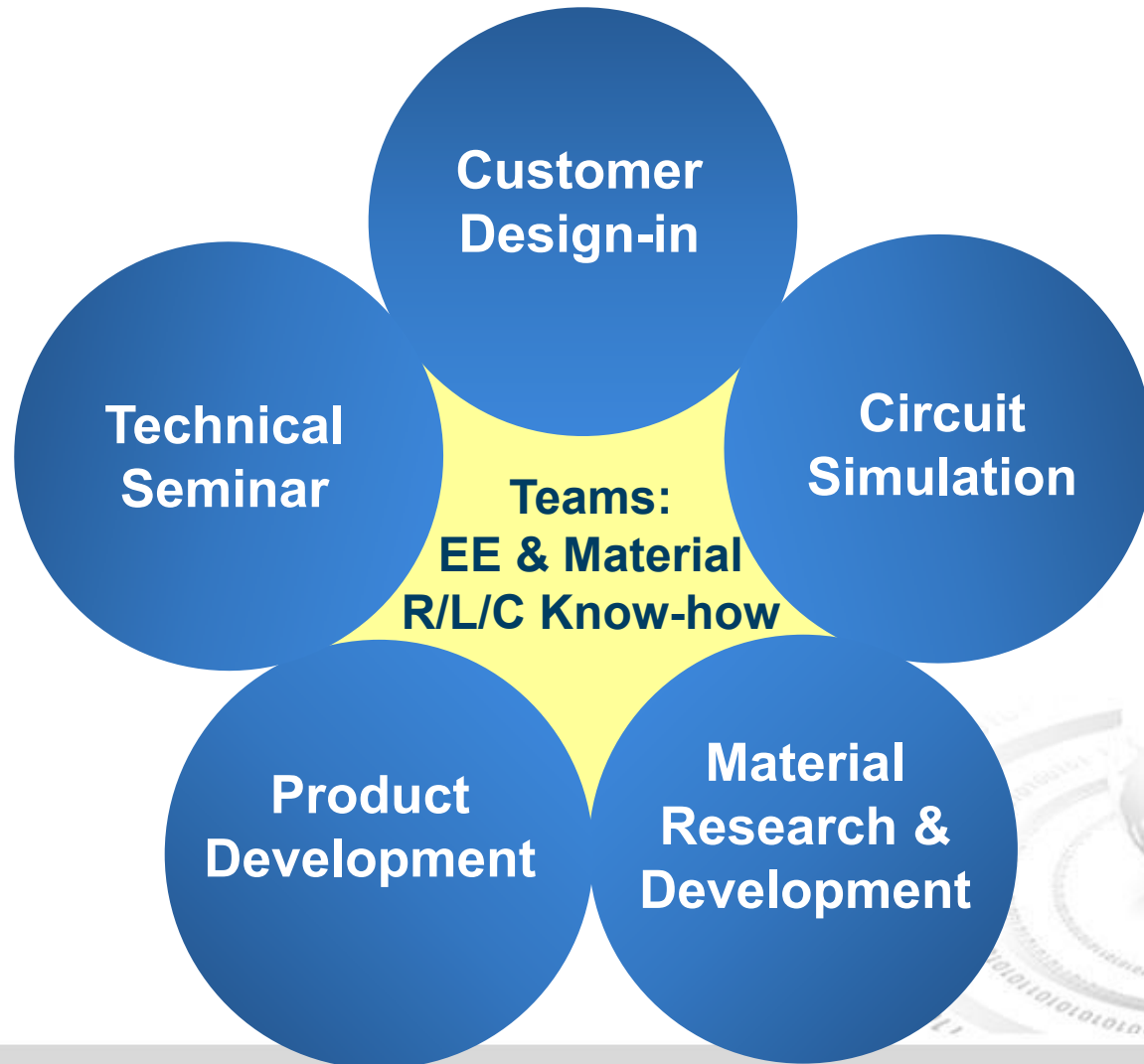


Value-added Service



Technical Service

Work Frame for Engineering Support





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Trustworthy Partner

Competitive Products

- Full Range of Magnetics Series
- Sufficient Capacity Support
- Vertical integration from powder mixing to inductor manufacturing
- World-class Quality
- Cost Competitiveness
- Quick Delivery & Flexible Logistic Support

Value-added Service

- Total Solution Provider for EMI, power and RF
- Design-in Capability
- Professional Engineering Support
- Material Research & Development
- Concurrent Product Innovation





CHILISIN ELECTRONICS CORP.
Total Solution Provider for EMI, Power and RF.



Total Solution Provider for EMI, Power and RF.

Thank you!

