

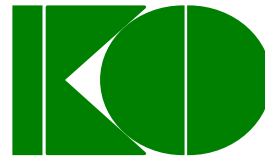


香港
晶体

Hong Kong X'tals Ltd.
Hong Kong Automotive X'tals Ltd.



A Kolinker Group Company



Kolinker Group Business

Dedicated to the Frequency Products Industry

**Crystal Measurement
Production Equipment**

**Kolinker Industrial
Equipments Ltd.**

**Frequency Products
Manufacturing**

**Hong Kong X'tals Ltd.
Hong Kong Automotive
X'tals Ltd.**

**Crystal Raw Material
Equipment Distribution**

**Kolinker Industrial
Equipments Ltd.**

Kolinker Group Company Profile

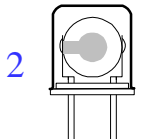
Chairman : Mr. Lee Kam Hung

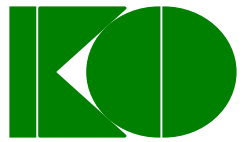
Capital : HK\$12.40 Million

Kolinker Group Turnover 2007: USD32M

Employee : 800

6 factories in China : 100% self-owned





Equipment & Raw Material Business

since 1983

- Leading Quartz Crystal equipment house
- Measurement standard - Pi Network Measurement
- Papers presented in USA Frequency Symposium & Europe EFTF Conference

Kolinker
Crystal Test & Measurement & Production Equipment

High Through Put

High Efficiency

High Flexibility

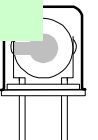
Reference Customers:

Crystal manufacturers

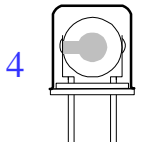
NDK, Tokyo Dempa, M-Tron, Raltron, KVG, TEMEX, CEPE, Micro Crystal, Frequency Management

Crystal Users

Lucent, Alcatel, Beru, TRW, Swissphone Samtagern, Samsung Electronics, Amoisonic, Logitech, CCT Telecom, NPG Monitor, V-Tech, IDT/Tekcom, Picotronics, Orion, Pemstar ...



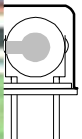
Production and Sales location



HKC/HKAX Factory

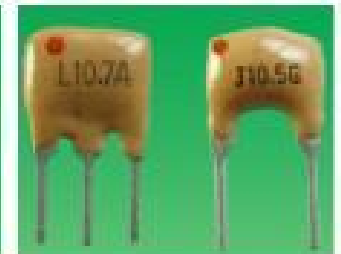
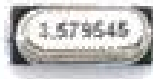


Shenzhen / 深圳

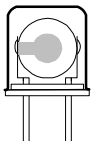
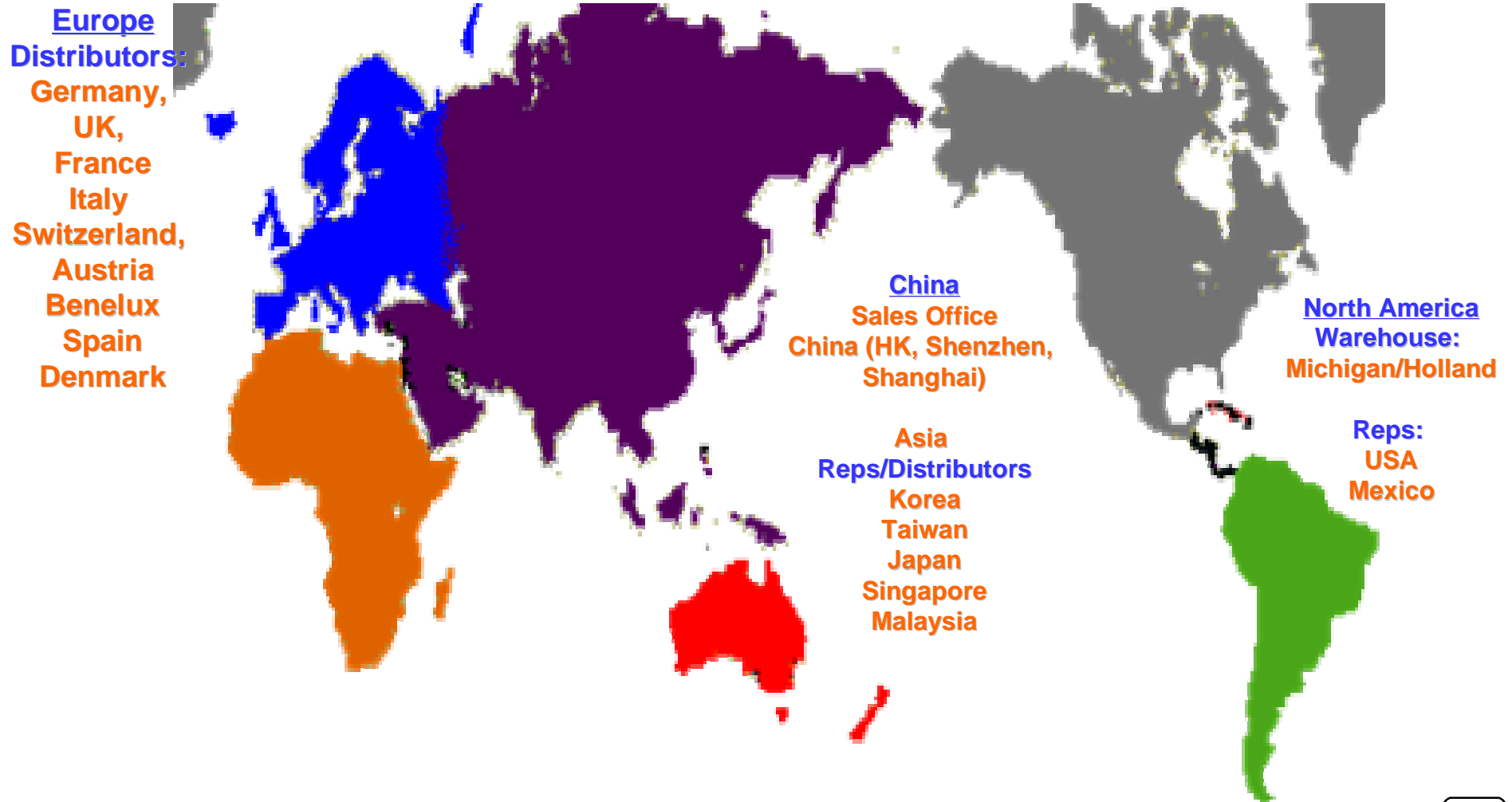


Products / Monthly capacity

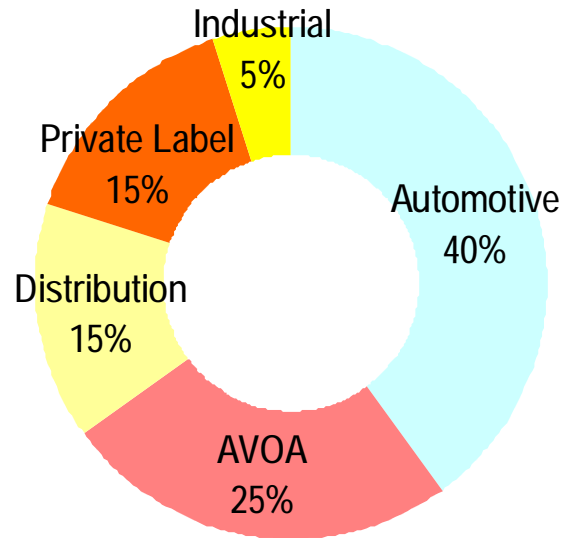
Factory	TS 16949	ISO 14000	49U/49US Family	Ceramic SMD	Cylinder Type (MHz)	Ceramic Resonator / Filter	Watch X'tals (KHz)	Total
1 - Shenzhen (89)	Yes	Plan	2M	3M			5M	10M
2 - Zibo (92)	Yes	Yes	4M					4M
3 - Qingdao (01)	Yes	Plan	3M	2M				5M
4 - Fujian (02)		Yes	5M		1M			6M
5 - Fujian Ceramic (04)						5M		5M
6 - HK AEC (06)	Plan			1M				1M
Total			14M	6M	1M	5M	5M	31M



Frequency Products - Global Sales & Logistic Support

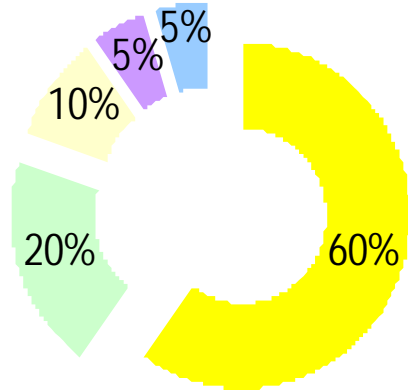


Frequency Products Business HKC/HKAX 2007

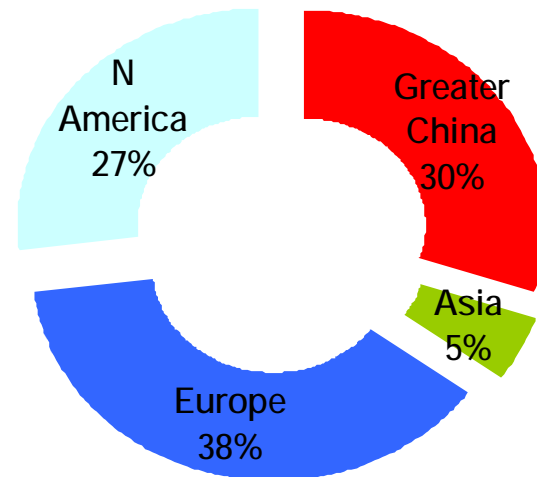


Segment

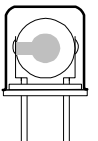
- Metal Can
- SMD
- TF
- Osc
- CR



Product Type & Qty

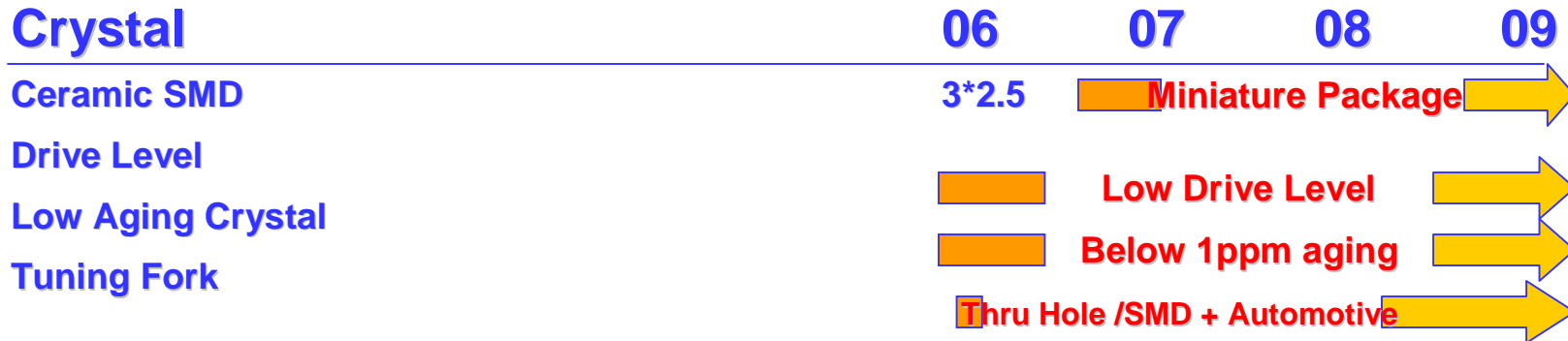


Territory



Technology Road Map

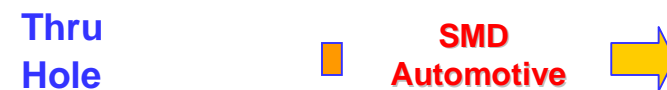
Crystal



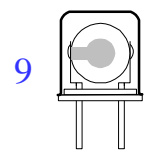
Oscillators



Ceramic Resonator

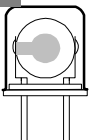


SAW



Hong Kong X'tals Quality Policy

- Quality of a product should include its **RELIABILITY**
- Quality of service should include prompt & accurate **DELIVERY**, and **PROMPT RESPONSE** to CUSTOMERS
- COST **CUTTING** is achieved by continual improving process yield and work efficiency





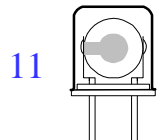
RoHS / Lead Free Strategies

- **July 1, 2005: All products are Lead Free or RoHS compliant.**
- **For customers who are not ready for change to lead free profile, leaded products are still available but while stock last.**

Crystals/Oscillator

HC-49U/US - SMD	: Lead Free and ROHS Compliance
Ceramic SMD	: Lead Free
Tuning Fork	: RoHS Compliance (exemption)
Glass Frit	: RoHS Compliance (exemption)
Ceramic Resonator	: RoHS Compliance (exemption)
SAW	: Lead Free

Reflow Profile: per type available upon request



Reference Customers - Automotive



In China



Applications

Electronic Control Systems

Braking Electronics

Steering Electronics

Powertrain Electronics

Safety and Security

Airbag ECU

Occupant Sensing

Car Alarms

Immobilizer

RF TPMS

RKE

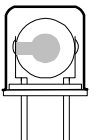
Infotainment

Car Audio

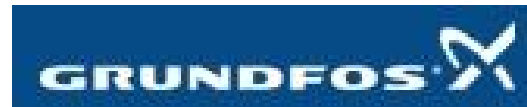
DVD

Bluetooth

Reference Customers – AV OA Communication



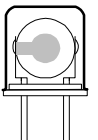
Reference Customers – Industrial / Power / Whitegoods



BOSCH



Reference Customers – Personal Care/Medical



Technical Support



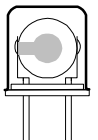
What is a Quartz Crystal ???



- **Production Engineers :**
 - It is the first component you replace when you have a failure board !
- **Purchasing Officers :**
 - It is a component that you could never get a “reliable” vendor !
- **R&D Engineers :**
 - It is a mysterious little black box !



Hong Kong & Taishan Limited

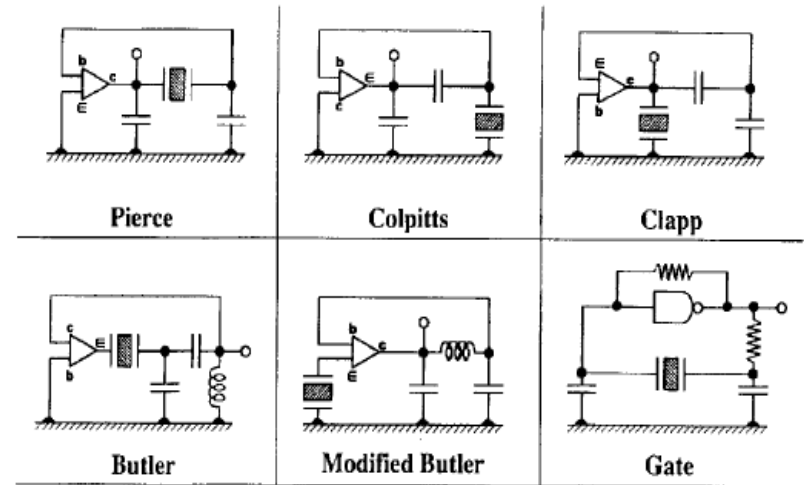


Technical Support

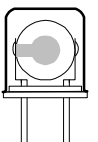
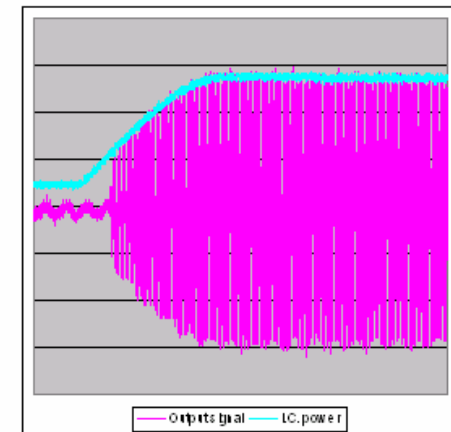
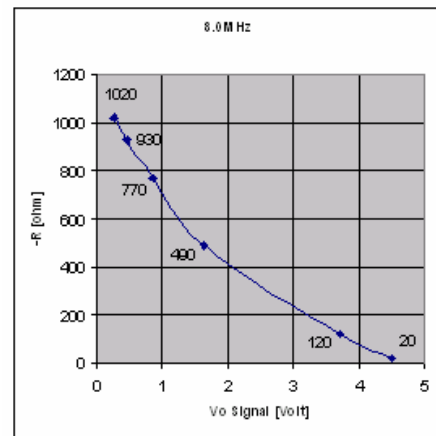
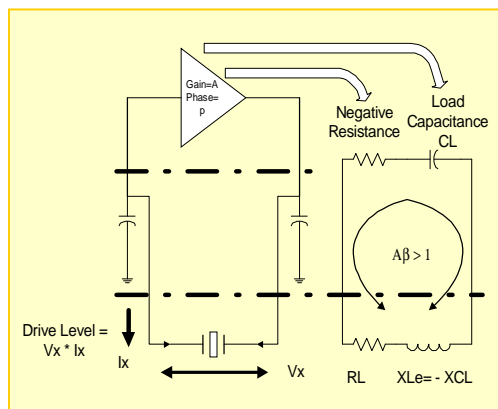
Crystal Characterisation

Crystal Homologation

Oscillation Margin Test



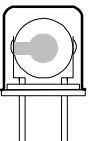
- Measurement of Circuit Characteristics
- Optimal Crystal specification
- Suggestions to Optimise oscillation margin



Technical Support

II. Crystal Measurement Service

- More than 10 years experience in Crystal Test Measurement
- Equipment complying with EIA 512 & IEC444 international standards
- Capable of measuring all crystal parameters including temperature characteristics, shock and vibration ...
- When necessary, indepth analysis can be provided
- Help identifying / root cause of problems



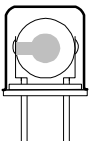
Technical Support

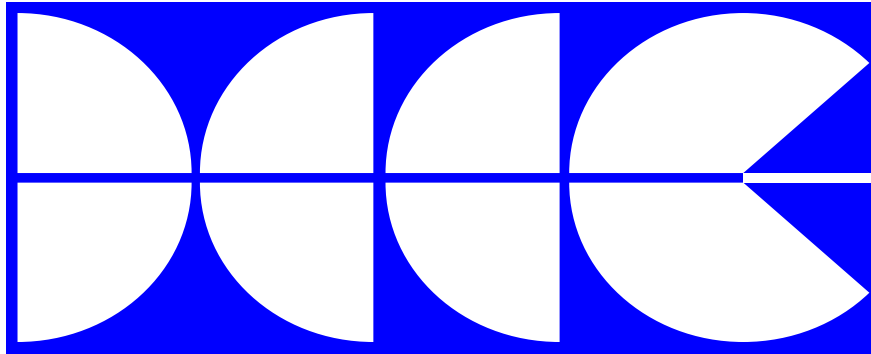
III. On site meetings and discussion with Engineering and Purchasing team

- Technical Presentations
 - Sleeping Crystals and DLD (Drive Level Dependency)
 - Direct Impedance Method For Load Resonant Measurement of Crystal
 - Quartz Crystal Reliability and Application
 - Quartz Crystal Industry and What is a Quartz Crystal
 - Temperature characteristics of Quartz Crystals

Why HKC ?

- HKC focus into your industry !!
- We have the expertise to produce the quality you need.
- We are considerable in company size and capability to offer the support and service that you need.
- We are NOT big enough to ignore any customer.
- We are responsible and open





Hong Kong X'tals Ltd
Hong Kong Automotive X'tals Ltd

Thank You

