

Industry

Business

Opportunities

in Malaysia's Electronics Industry

Electronics



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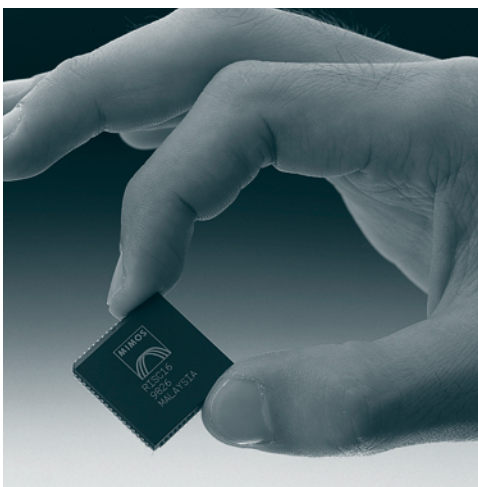
April 2004



An Introduction to Malaysia

A market-oriented economy combined with a young, educated workforce, an excellent infrastructure, and a government committed to maintaining a business-friendly environment, has been Malaysia's formula for success in attracting investments into the country's electronics sector. Malaysia is now home to MNCs from the USA, Japan, Europe, Taiwan and Korea, manufacturing products ranging from semiconductor devices to consumer and industrial electronics. The list of projects reads like a Who's Who of the world's major electronics companies.

Malaysia's electronics industry has certainly come a long way over the last 30 years. From a handful of companies with less than 600 workers in 1970, the industry has today attained world-class capabilities and is the largest contributor to the country's manufacturing output, employment and exports. There are currently more than 900 companies employing 360,048 workers. The value of exports in 2003 was RM183.2 billion (US\$48.2 billion).



Malaysia is now among the world's largest exporters of semiconductor devices and audio-visual equipment.

Today, Malaysia aims to develop full-fledged electronics and information and communications technology (ICT) clusters built around the semiconductor sector with core activities in wafer fabrication, IC design and the manufacture of end-equipment such as digital audio-visual and ICT products.

The ICT products are classified into two broad sub-sectors:

- Computers and computer peripherals and data storage devices; and
- Telecommunications equipment/devices.

Malaysia also offers the world her Multimedia Super Corridor (MSC) which brings together a legislative framework, a high capacity global telecommunications and logistics framework, and eco-friendly surroundings to create the ideal environment for the growth of multimedia industries. The types of companies encouraged in the MSC are computer hardware and software vendors, system integrators, R&D organisations and relevant high-tech service providers.

Malaysia's Electronics Industry in 2003

Number of companies	>900
*Output	RM147.1 billion (US\$38.7 billion)
*Electronic Components	68.1%
*Consumer Electronics	19.5%
*Industrial Electronics	12.4%
Average Annual Growth, 1997 - 2003	9.6%
*Employment	360,048
**Exports	RM183.2 billion (US\$48.2 billion)
**Electronic Components	RM88.5 billion (US\$23.3 billion)
**Consumer Electronics	RM19.8 billion (US\$5.2 billion)
**Industrial Electronics	RM74.9 billion (US\$19.7 billion)
**Imports	RM138.3 billion (US\$36.4 billion)

Malaysia's Electronics Industry, 1997-2003

Year	Output*		Employment*		Exports**		Imports**	
	RM billion (US\$ billion)	% growth	No.	% growth	RM billion (US\$ billion)	% growth	RM billion (US\$ billion)	%growth
1997	85.6 (22.5)	12.6	343,300	4.3	107.3 (28.2)	17.0	75.2 (19.8)	11.3
1998	106.7 (28.1)	24.6	341,700	(0.5)	146.7 (38.6)	36.7	92.5 (24.3)	28.8
1999	129.8 (34.2)	21.6	382,000	11.8	179.7 (47.3)	22.5	109.8 (28.9)	12.6
2000	167.1 (44.8)	31.0	423,600	10.9	212.7 (56.0)	18.4	143.4 (37.7)	30.6
2001	144.4 (38.0)	(15.1)	355,800	(16.0)	182.6 (48.0)	(14.2)	122.1 (32.1)	(14.9)
2002	136.6 (35.9)	(5.4)	345,500	(3.0)	188.4 (49.4)	3.2	138.6 (36.5)	13.5
2003	147.1 (38.7)	7.7	360,048	4.2	183.2 (48.2)	(2.8)	138.3 (36.4)	(0.2)

US\$1= RM 3.80

* Department of Statistics (Monthly Manufacturing Statistics)

** Department of Statistics (External Trade Statistics)

Semiconductors

Malaysia is currently among the world's leading sites for semiconductor assembly, testing and packaging, with industry names such as Intel, Motorola, Agilent, AMD, National Semiconductor, Fairchild, Hitachi, NEC, Fujitsu, Toshiba, Infineon and STMicroelectronics among the MNCs based in the country. The main activities are the assembly and testing of semiconductor devices, which include microprocessors, memory chips, power ICs, linear ICs, opto devices and other logic and discrete devices.

Many of these companies initially came to Malaysia in the early 1970s because of the country's inexpensive labour that was good at working on small electronic devices. Since then, the industry has grown by leaps and bounds, progressing from labour-intensive operations to state-of-the-art robotics manufacturing sites that produce the latest generation of integrated circuits. The semiconductor sector today has a major part in Malaysia's electronics industry, accounting for RM78.5 billion (US\$20.7billion) or 42.8% of the country's total electronics exports in 2003.

The semiconductor industry in Malaysia is now moving towards backward integration into silicon ingot growing, cutting and polishing of silicon wafers, chip design and wafer fabrication. Currently, three companies are producing silicon wafers, one of which also has the intention to manufacture silicon ingots.

Currently, four wafer fabrication plants are in operation. SCG Industries' wafer fab plant, the first in the country, was established as early as 1988, while MIMOS, a government-funded corporation, operates the second plant. Silterra, a joint venture between the Government of Malaysia and LSI USA, has invested RM4.5 billion (US\$1.2 billion) in a wafer fab facility in the Kulim Hi-Tech Park in the northern State of Kedah, while 1st Silicon will operate from Kuching, Sarawak with Sharp Corporation of Japan as its technology partner.

In chip design, Altera Corporation of the USA has set up base in Penang since 1996, its engineers working with cutting edge, sub-micron fabrication technology and CAD tools to design Altera's programmable logic chips.

The Malaysian workforce has also grown in sophistication over the years thereby encouraging additional investments in R&D, particularly in materials and process technology upgrading, engineering, marketing and supply chain management. Agilent Technologies' Penang plant undertakes in-house R&D activities which include state-of-the-art product development for optoelectronics, LED and display products, and RF integrated circuits, while

The Semiconductor Industry in Malaysia

Number of Companies	46
*Exports in 2003	RM78.5 billion (US\$20.7 billion)

MAJOR COMPANIES

ASSEMBLY AND TESTING

Intel, AMD, Motorola
Agilent, Texas Instruments
National Semiconductor
Fairchild, NEC
Toshiba, Infineon Technologies
STMicroelectronics, FASL, Renesas
ASE Electronics, ChipPAC

SILICON WAFER PROCESSING

MEMC Electronics Material
S.E.H.
Hamadatec

WAFER FABRICATION

SCG Industries
MIMOS
Silterra
1st Silicon

CHIP DESIGN

Altera Corporation
MIMOS

MAJOR SUPPORTING INDUSTRIES

LEADFRAMES

Dynacraft
M-SMM Electronics
Shinko
Kyushu Matsushita Electric
Mitsui High-Tec
Possehl Besi Electronic
AKN Technology

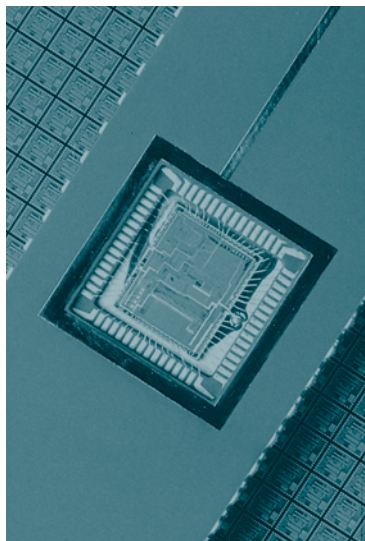
BONDING WIRES

Tanaka Electronics
Malaysian Electronics Materials

BURN-IN AND TESTING SERVICES

TS Matrix
KESM Industries
KESP

**Source: Department of Statistics
(External Trade Statistics)*



Motorola has a R&D centre and a software development centre in Malaysia's Multimedia Super Corridor. Altera Corporation which operates as a VLSI layout design R&D centre has designed more than 50 products to-date.

Malaysia's semiconductor industry has also spawned several supporting industries such as the production of leadframes and bonding wires. Three major bonding wire manufacturers have set up base in Malaysia: Tanaka Electronics producing gold and aluminium bonding wires. Elektrisola copper bonding wires and Malaysian Electronics Materials gold bonding wires.

Passive Components and Display Devices

PASSIVE COMPONENTS

More than 170 companies are involved in the manufacture of a wide range of passive components* which includes capacitors, inductors, resistors, inductors, coils, transformers, magnets, quartz crystals and oscillators. In the year 2003, the export value of capacitors alone was RM1.4 billion (US\$0.38 billion). Major companies in the industry include Matsushita, TDK, Alps, Chemi-con, Taiyo Yuden, Murata, PWB Ruhlatec, Shin-Etsu, Nichicon, Nidec Copal, Koa Denko, Coilcraft, Rohm-Wako, Epson and NDK.

This sector plays a significant part in creating linkages with end-equipment manufacturers and offers tremendous growth potential in tandem with the fast expanding manufacture of end-equipment, in particular, digital wireless communication equipment. Taiyo Yuden recently announced a multi-million ringgit investment to upgrade and expand its facility, while several other companies are also planning substantial re-investments which incorporate R&D in materials and process technology.

**Passive components are components which do not require any input other than a signal to perform their function and contribute no power gain (amplification) to a circuit system.*



The Passive Components Industry in Malaysia

Number of Companies 170

MAJOR COMPANIES

CAPACITORS

Matsushita Electronic Devices
TDK
Taiyo Yuden
Nichicon
Chemi-con
MMC Electronics
Murata Electronics

RESISTORS

Alps Electric
Koa Denko
Matsushita Electronic Devices
Kamaya Electric
Rohm-Wako

INDUCTORS/COILS

Koa Denko
Coilcraft
Fastron

QUARTZ & OSCILLATORS

Epson Precision
HCJ Quartz
NDK Quartz

MAGNETS

Shin-Etsu
Epson Precision
Vacuumschmelze

DISPLAY DEVICES

The presence of Matsushita, Samsung and Chunghwa Picture Tubes in Malaysia in the production of cathode ray tubes has enabled the country to become an integrated manufacturing centre for televisions and computer monitors. Apart from catering to domestic demand, the cathode ray tube industry in Malaysia has also become a significant export earner.

LCD and LED modules for various applications, including displays for calculators, organisers and watches, are currently being produced by eight companies in Malaysia. Besides international names like Flextronics, Varitronix and Vikay Technology, Malaysian companies such as Display Technology and Industronics have also developed their own products. Industronics, in particular, has established itself as the leading producer of large LED information display boards/scoreboards.

The display devices industry in Malaysia is heading towards the production of larger colour LCD and plasma display units for testing instruments, mobile phones, notebook computers and large screen television. The presence of leading mobile computer companies like Dell and NEC as well as several television manufacturers has made Malaysia an ideal base for the production of thin-film transistor LCD panels.

Information & Communications Technology (ICT) Products

COMPUTERS AND COMPUTER PERIPHERALS

The computers and computer peripherals industry has become one of the fastest growing sectors in Malaysia with the establishment of manufacturing facilities by global players like Dell, NEC, Samsung, BenQ Technologies, Fujitsu and Mitsumi. Besides these MNCs, six Malaysian companies - Nascom, FTEC System, Gerak Mobile, Perbadanan Komputer Nasional Berhad, MIMOS and I-Berhad - are currently producing Malaysian brands for the domestic and export markets. Computer giants Dell and NEC are operating as integrated manufacturing centres incorporating R&D, logistic supply chain capabilities, treasury and fund management activities, technical services and support facility, and sales and marketing centre.

The Display Devices Industry in Malaysia

Number of Companies 15

MAJOR COMPANIES

CATHODE RAY TUBES

Matsushita Electronics Corporation
Samsung Electron Devices
Chunghwa Picture Tubes

LCD

Varitronix
Flextronics
Vikay Technology
Display Technology
Crystal Clear

LED DISPLAY BOARDS

Industronics
Ledtronics



The Computers, Computer Peripherals and Data Storage Devices Industry in Malaysia

Number of Companies 75
Exports in 2003 RM32.03 billion
(US\$8.4 billion)

COMPUTERS & COMPUTER PERIPHERALS

MAJOR COMPANIES

COMPUTERS

Dell
NEC

MONITORS

Mitsubishi
BenQ Technologies
Samsung
Jean
Motto
Great TV & Computer

KEYBOARDS

Fujitsu
Mitsumi

Another major sector is the production of computer monitors, represented by leading companies from Japan, Taiwan and Korea which include Mitsubishi, BenQ Technologies, Samsung, Jean, Motto and Great TV & Computer. Other computer peripherals such as keyboards, printers and scanners are also being manufactured in Malaysia.

End-equipment manufacturers can also take advantage of Malaysia's well-established supplier industries which produce components and parts such as motherboards, disk drives, power supply units, connectors, printed circuit board assemblies, casings, plastic moulded parts and precision metal stamped/machined parts.



DATA STORAGE DEVICES

Malaysia is also emerging as a major disk drive manufacturer in the Asian region. Western Digital and Ventures manufacture hard disk drives while TEAC and Mitsumi are involved in floppy disk drive production.

The disk drive industry has benefited from the presence of a strong supplier base in Malaysia. Several important components required for disk drive manufacturing are produced in the country. Among the components manufactured are disk media, disk substrates, magnetic heads, head gimbal assemblies, voice coil motors, actuators, bearings and flexible circuit assemblies.

Certance produces state-of-the-art MR magnetic heads. Komag has two major factories in Penang and Kuching dedicated to disk media. Toyo Memory Technology and Showa Aluminium manufacture disk substrates, a major component for disk media. MMI and a Malaysian company, Eng Teknologi, are key suppliers of actuators. Other important parts manufacturers are Shin-Etsu (voice coil motors), Sankyo (spindle motors) and ISC Micron (bearings).

PRINTERS

Soletron
Tektronix
Instruments Technology
Hewlett Packard

MAJOR SUPPORTING INDUSTRIES

MOTHERBOARDS

Intel
Soletron
Sanmina-SCI
Jabil
Flextronics

CASINGS

CPI Technology
Likom

DATA STORAGE DEVICES

MAJOR COMPANIES

DISK DRIVES

Western Digital, Ventures
TEAC, Mitsumi

MAJOR SUPPORTING INDUSTRIES

DISK MEDIA

Komag, Fuji Electric

DISK SUBSTRATES

Toyo Memory Technology
Showa Aluminium
Fuji Electric
Komag
Kobe Precision

MR HEADS

Seagate

ACTUATORS

MMI, Eng Teknologi

HEAD GIMBAL ASSEMBLIES

Seagate

VOICE COIL MOTORS

Shin-Etsu
Min Aik

SPINDLE MOTORS

Sankyo

BEARINGS

ISC

TAPE DRIVES

Seagate

OPTICAL DISK DRIVES

Sanshin
Hitachi
Sony
BenQ Technologies

TELECOMMUNICATIONS EQUIPMENT

The modernisation of the telecommunications infrastructure in Malaysia and the Asian Region is providing further impetus for the fast expanding telecommunications equipment sector. This has encouraged companies like Ericsson, Alcatel, Marconi, Fujitsu and Motorola to adopt Malaysia as a staging post for new markets development in the region.

The mainstay of the telecommunications equipment industry in Malaysia today is the manufacture of telephones, switching and transmission equipment and mobile communication equipment. There are 38 companies involved in the production of various types of telephones catering both to local and export markets.

Among the major telephone manufacturers are Malaysian companies Pernec and Alif Telecommunications, besides MNCs such as Iwatsu of Japan and Inventec of Taiwan. Telecommunications giants Alcatel, Pernec and Fujitsu are involved in joint venture projects with Malaysian partners for the production of switching equipment, catering mainly to the requirements of the country's largest telephone company, Telekom Malaysia, while Marconi, Fujitsu and Pernec are involved in the manufacture of transmission equipment including microwave radios, multiplexers, modems and transmission accessories.

Flextronics which took over Ericsson's mobile phone plant was the first mobile phone factory in Malaysia and in the Southeast Asian Region, earning itself 'pioneer status' in Malaysia.

Other telecommunication products manufactured in Malaysia include PABX systems, answering machines, radio communication equipment (walkie talkies, 2-way radios, pagers, transceivers, etc.) and modulators. Several companies have also ventured into the broadcasting equipment industry producing satellite receivers, satellite dishes and descrambler units. Multimedia terminals are slated for production in the near future.

The Telecommunications Equipment Industry in Malaysia

Number of Companies	54
Exports in 2003	RM19.8 billion (US\$5.2 billion)

MAJOR COMPANIES

TELEPHONES

(including key telephone systems)

Pernec
Alif Telecommunications
Bestec
Iwatsu
Inventec
Kyushu Matsushita Electric
Bellcorp Technology

MOBILE PHONES

Flextronics

SWITCHING EQUIPMENT

Alcatel
Pernec
KUB-Fujitsu

TRANSMISSION EQUIPMENT

Marconi
Pernec
KUB-Fujitsu

PABX SYSTEMS

Teledata

RADIO COMMUNICATION EQUIPMENT

Motorola
DMC Telecom
Ranger Communications

BROADCASTING EQUIPMENT

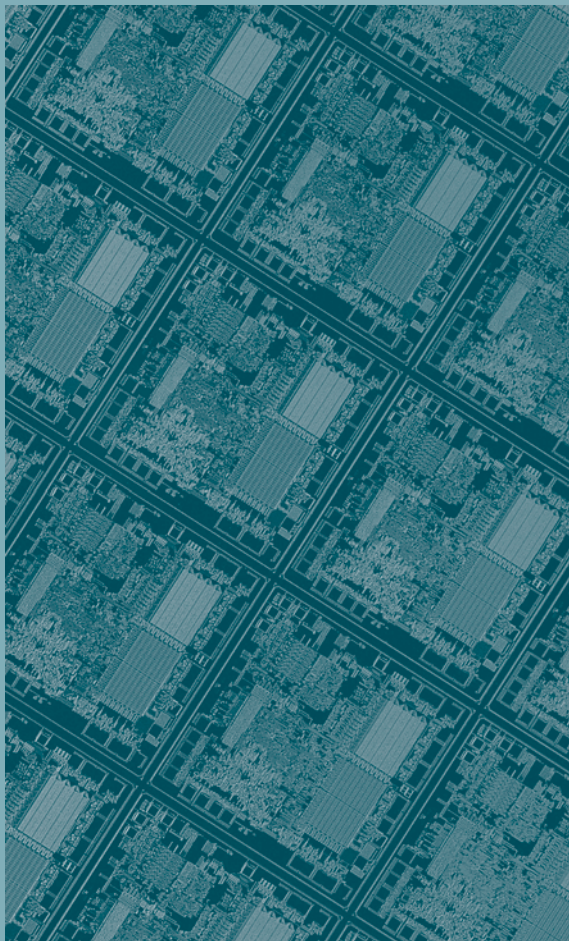
Atras Communication Electronics
Jalco Electronics
Shanshin
Cheng Hsi Electronics

Consumer Electronics

Consumer electronics is an important sub-sector of the electronics industry in Malaysia, contributing RM19.8 billion (US\$5.2 billion) or 10.8% of total electronics exports in 2003. Major products include audio products, colour televisions, video CD players and video cassette players/recorders, digital versatile disc (DVD) players and video cameras.

The sector is represented by many well-known Japanese companies such as Sony, Sharp, Matsushita, Pioneer, JVC, Yamaha, Kenwood, Onkyo, Hitachi and Mitsubishi which together contributed significantly to the rapid growth of this sector over the years.

The leading companies now undertake R&D activities in support of their operations in Malaysia as well as in other manufacturing sites. They include Matsushita, Sony, Sharp, JVC and Pioneer. Sharp set up an R&D company in 1995 to undertake design and development of audio-visual equipment for Sharp's manufacturing activities.



The Consumer Electronics Industry in Malaysia

Number of Companies	40
Exports in 2003	RM19.8 billion (US\$5.2 billion)

MAJOR COMPANIES

AUDIO PRODUCTS

Sony Electronics
Sharp-Roxy Corporation
Yamaha Electronics
Kenwood Electronics
JVC Electronics
Pioneer Technology
Matsushita Audio Video
Onkyo
Sanyo

COLOUR TELEVISIONS

Matsushita TV
Sony Technology
Sharp-Roxy Electronics
Hitachi Electronics
Funai Electric

VIDEOCASSETTE

PLAYERS/RECORDERS

JVC Video
Sony Technology
Sharp Manufacturing Corporation
Hitachi Electronics
Matsushita Audio Video
Mitsubishi Electric

VIDEO CD PLAYERS

Sony Technology
Sharp Manufacturing Corporation
Matsushita Audio Video
Yamaha Electronics
Inventec

DVD PLAYERS

Pioneer Technology
Sony Technology
Sharp Manufacturing Corporation
Onkyo

VIDEO CAMERAS

Sharp-Roxy Electronics
JVC Video

R&D ACTIVITIES

Matsushita
Sony
Sharp
JVC
Pioneer
Kenwood

Contract Manufacturing

Malaysia's contract manufacturing companies provide vital support to the semiconductor, consumer electronics, computers and peripherals, and data storage industries in volume turnkey manufacturing, printed circuit board design/layout and product testing.

The world's leading contract manufacturers like Celestica, Solectron, Sanmina-SCI, Jabil, Flextronics and Plexus have major operations in Malaysia. Others include Malaysian companies such as Carsem, Unisem, Globetronics and AIC in semiconductor assembly and testing and Capetronics, TKR and Pensanko in audio-visual products.

The trend towards increasing outsourcing by the OEMs such as Intel, Dell, Motorola, Hitachi, Sony, Phillips, SMI and Infineon provides tremendous growth potential for contract manufacturing in Malaysia.

Supporting Industries

PLASTIC MOULDED PARTS AND COMPONENTS

The plastic moulding industry in Malaysia, a major supporting industry for the electronics sector, has over 400 companies producing plastic parts/components and sub-assemblies. Many of these companies provide vital support to their client industries which undertake just-in-time production.

The industry comprises mostly Malaysian SMIs, many of which have foreign joint venture partners. The major companies include HIL Industries, Mah Sing Plastics Industries, Eully Plastics Industries, VS Industry, Lee Huat Plastic Industries, Keihin, Sanda Plastics Industries, Tylon and Precico. The main products supplied are casings and precision parts for consumer electronics, computers and peripherals, data storage devices, telecommunications equipment and office automation equipment.

There is still considerable growth potential for the plastic moulding industry to cater to the increasing demand for high quality precision parts. Foreign participation by way of joint ventures and technical partnership is being promoted.

The Contract Manufacturing Industry in Malaysia

MAJOR COMPANIES

PRINTED CIRCUIT BOARD ASSEMBLIES (PCBA)

Solectron
Sanmina-SCI
Jabil
Flextronics
Plexus
Celestica

SEMICONDUCTOR

ASSEMBLY AND TESTING

Carsem
Unisem
Globetronics
AIC
ChipPAC
ASE

BURN-IN AND TESTING SERVICES

TS Matrix
KESM
KESP

CONSUMER ELECTRONICS

Capetronics
TKR
Pensanko
Pensonic
Khind Industries

Plastic Moulded Parts and Components

Number of Companies >400

MAIN PRODUCTS

Casings
Front panels
Precision parts

FACILITIES

Injection moulding
Silk screen printing
Hotstamping
Spray painting

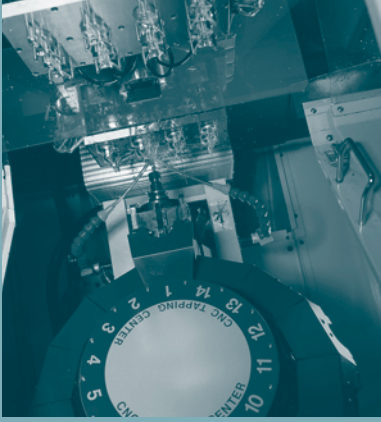
MAIN INDUSTRIES SERVED

CONSUMER ELECTRONICS

Audio products
Televisions
VCD/VCD players

COMPUTERS & PERIPHERALS

Personal computers
Monitors
Printers
Scanners
Computer peripherals



Metal Stamped and Precision Machined Parts

The metal stamping industry is well-established in Malaysia, catering to the parts and components needs of several major industries including electronics, automobile and machine building.

There are over 350 companies engaged in various types of metal stamping activities in Malaysia of which about 80% cater specifically to the electronics industry. Major companies in the sector include CS Metal Industries, Wong Engineering, Kein Hing Industries, NJ Metal Stamping and Kris Components.

As for the precision machined parts industry, there are over 50 specialised companies providing precision machining services for items such as jigs and fixtures, turned parts, shafts, pins, bushes, etc. The leading companies include UPECA Engineering, Eng Teknologi, Kenseisha, and Synturn. Besides these, there are over 100 smaller scale facilities which provide various machining services including repairs and maintenance.

Metal Stamped and Precision Machined Parts

Number of Companies >350

MAIN PRODUCTS

- Casings
- Precision parts
- Leadframes
- Connector parts
- Turned parts
- Jigs and fixtures
- Pins
- Shafts

MAIN INDUSTRIES SERVED

CONSUMER ELECTRONICS

- Audio products
- Televisions
- VCD/DVD players

COMPUTERS AND PERIPHERALS

- Personal computers
- Monitors
- Printers
- Scanners
- Computer peripherals

DATA STORAGE DEVICES

- Floppy disk drives
- Hard disk drives
- Tape drives

TELECOMMUNICATIONS EQUIPMENT

- Telephones
- PABX
- Modems
- Satellite receivers
- Facsimile machines
- Switching and transmission equipment

COMPONENTS

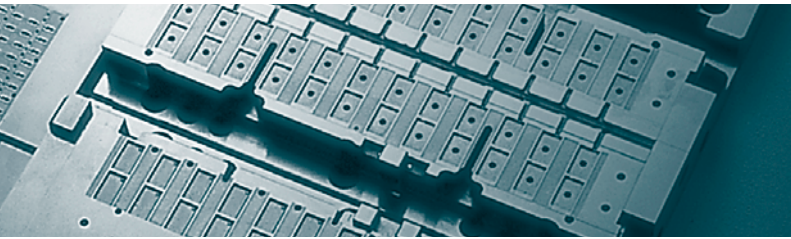
- Audio/video cassette mechanisms
- VCD mechanisms
- DVD mechanisms
- Disk drive parts



Moulds, Tools and Dies

There are currently more than 250 mould, tool and die producers in Malaysia, about 40% of which serve the electronics industry. Foreign companies from Japan, Germany, Taiwan and Singapore played a major part in introducing the state-of-the-art technology into the sector which is now capable of meeting the most sophisticated tooling needs for high-end electronic production.

Industry leaders currently present in Malaysia are Dainichi Mold, D-R Engineering, Keihin, FICO Asia, Meiki, A.F.O.S.S. Precision, Dynamic Mould, Topla Engineering, Janway Industry, Likon Precision Tooling and Dufu Industries. Malaysian-owned tooling companies such as Polytool Industries, Eng Teknologi and LKT Industrial, which began by serving the tooling needs of the multinational semiconductor assembly industries, have developed world-class capabilities to meet the diversified tooling needs of most electronic components and equipment manufacturers.



Plating

The Malaysian plating industry comprises more than 40 facilities which perform a wide range of plating operations including specialized electroplating for semiconductor devices and components such as integrated circuits and leadframes. About four-fifths of the plating companies in Malaysia operate as joint ventures with foreign partners. Major companies in the sector comprise Dipsol Chemicals, Ueda Plating, Metek Kitamura and AKN Technology.

Moulds, Tools and Dies

Number of Companies >250

MAIN PRODUCTS

- Precision moulds
- Plastic injection moulds
- Stamping moulds
- Metal forming moulds
- Extrusion dies

MAIN INDUSTRIES SERVED

CONSUMER ELECTRONICS

- Audio products
- Televisions
- VCD/DVD players

COMPUTERS AND PERIPHERALS

- Personal computers
- Monitors
- Printers
- Scanners
- Computer peripherals

DATA STORAGE DEVICES

- Floppy disk drives
- Hard disk drives
- Tape drives

TELECOMMUNICATIONS EQUIPMENT

- Telephones
- PABX
- Modems
- Satellite receivers
- Facsimile machines

Plating

Number of Companies >40

FACILITIES

- Batch and Continuous Electroplating
- Precision Electroplating
- Electroless Plating
- Functional Electroplating
- Cathodic Electrodeposit
- Dacrotised Treatment
- Sinter Plating
- Physical Vapor Deposition

MAIN INDUSTRIES SERVED

CONSUMER ELECTRONICS

- Audio products
- Televisions
- VCD/DVD players

COMPUTERS AND PERIPHERALS

- Personal computers
- Monitors
- Printers
- Scanners
- Computer peripherals

Future Directions

With three decades of development behind it, Malaysia is now a leading manufacturing center for many electronic components and equipment. The skills and technical capabilities of the Malaysian workforce, the pro-business environment and the commitment of the government to continuously invest in upgrading the physical and technology infrastructure have provided a strong base for the expansion of electronics production. This is attested to by many MNCs which have continuously brought into Malaysia new products and processes or have shifted key manufacturing related activities, such as R&D, product development and international procurement, from their home bases to Malaysia.

The future development of the electronics industry in Malaysia focuses on sustaining this high growth sector which is in the process of transforming into competitive, full-fledged skills-based electronics and ICT clusters, capable of supplying most kinds of electronic and ICT goods for the global market.

There are vast business opportunities for electronic companies seeking a competitive base for manufacturing and other skill-intensive activities such as R&D, product design and development. The Malaysian government is particularly keen to seek investment projects which will contribute substantially to technology advancement in areas of automation, miniaturisation, digitalisation and multimedia applications. Promoted projects in the components, consumer and industrial electronics sectors include:-

SEMICONDUCTORS

- Wafer fabrication
- Integrated circuit/PCB design
- Advanced semiconductor packages, e.g. CSPs, BGAs, Flip chips, SoCs, SiPs

COMPUTERS & DATA STORAGE

- Computers
- Computer peripherals
- Data storage equipment/devices

INDUSTRIAL ELECTRONICS EQUIPMENT

- Scientific and medical equipment
- Lithium ion/polymer batteries
- Flat panel displays
- Testing and measurement equipment

CONSUMER ELECTRONICS

- Digital audio-visual equipment
- Multimedia products
- Home theater systems

CONTRACT MANUFACTURING

- PCBA
- Systems integration

TELECOMMUNICATIONS EQUIPMENT

- Digital telecommunication equipment
- Optical telecommunication equipment
- Wireless telecommunication equipment/devices



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