GLOSSARY OF FREQUENTLY USED INDUSTRY ACRONYMS AND TERMINOLOGY

Acceptance Test	A procedure defined in a hardware or software contract for testing whether the hardware or software meets its specification
Algorithm	Originally a rule of procedure for solving mathematical problems. Now generally a set of rules for solving non-mathematical problems with the aid of a computer
ANSI	The American National Standards Institute. It produces standards for programming languages, data communications etc. ANSI standards can provide a useful external reference when drawing up contract specifications
Application Software	Software which performs a particular function for a user e.g. word processing, database management
ASCII	American Standard Code for Information Interchange. Standard ASCII assigns the numbers 0-127 to different alphabetic and control characters. Extended ASCII, used in the IBM PC and its clones, extends this character set to 256 to include non-English and graphic characters
ASIC	Acronym for Application Specific Integrated Circuit. An integrated circuit designed or adapted for a specific application. Traditionally called a custom circuit
ASP	Acronym for Average Selling Price
Assembler	A type of programming language, essentially a set of mnemonics for low-level concepts
ASSP	Acronym for Application Specific Standard Product. An integrated circuit dedicated to one specific application (like a custom IC) but with several possible customers (unlike a custom IC)
Baud	A measure of speed in digital communications
BiCMOS	BiCMOS combines CMOS and (ECL) Bipolar transistors to form both logic devices and memory devices on the same chip
Bit	Short for “Binary Digit”, the bit is the basic data element of digital computers and digital communications. A bit may have a value of zero or one
Bus	A path over which digital information is transferred from any of several sources to any of several destinations. The sources and destinations may be inside or outside the computer
Byte	A group of eight bits. A byte is usually used to represent single character or digit
C	A powerful and versatile programming language, used inter alia for microcomputers software development and for programming UNIX systems
Cache	A very fast memory made from SRAM chips, used to “feed” microprocessors data at their maximum rate (DRAM memory is too slow)
CAD	Acronym for Computer Aided Design. Enables a circuit designer to simulate the performance of sections of the circuit which he designs, so that he can optimise the design without building a hardware prototype first. It can also refer to computer aided layout design
Cell	A tiny area within an integrated circuit that stores a bit in the form of an electrical charge
Cellular	Radio phone system in which a network of transmitters links the user to the public telephone system, with each transmitter operating in a “cell”

Chip	A chip is a single flat rectangular piece of silicon on which a specific semiconductor element or circuit has been fabricated. Most chips are placed into larger packages that provide protection and facilitate connection of the chip to the system. Also known as die and often colloquially used to describe an integrated circuit
CISC	Acronym for Complex Instruction Set Computing Device. A highly flexible but not very efficient device containing a number of instructions for specific applications in a microprocessor
Clock	Sends of signals that are processed by the microprocessor. Clock speed cycles are measured in megahertz
CMOS	A variety of MOS technology. CMOS (Complementary MOS) combines both n- and p-channel transistors on one chip. CMOS devices generally exhibit very low power consumption and medium to high switching speeds
Code	See *source code, object code*
Compiler	A program which translates source code into object code. Other code from libraries is normally linked in by the compiler so that the code will run as a stand-alone program; this produces executable object code
Compression	A method of digitally encoding audio and/or video through a variety of computer algorithms and other techniques to reduce the amount of data required to accurately represent the content, and thus the space required to store the content
Coprocessor	A logic device that operates in association with a microprocessor to enhance system performance. Coprocessors are not capable of independent operation
CPU	Acronym for Central Processing Unit. Central unit of a computer with arithmetic and control units. The CPU of a microcomputer is usually a microprocessor
DECT	Acronym for Digital European Cordless Telecommunications. Another cordless phone standard currently under development
Design Centre	A company that specialises in the design of integrated circuits but has no in house manufacturing and does not sell its design on the open market under its own brand name or trade mark
Design Rules	Rules constraining IC topology to assure fab process compatibility
Die Size	The most dominant cost of a chip. As die size increases, the number of chips per wafer decreases and yields decrease rapidly. Usually measured in square mils or millimetres
Digital	Indicates the representation of data by a series of bits or discrete values, such as “1”s and “0”s
DRAM	Dynamic Random Access Memory, a storage device which requires data to be continually regenerated. DRAMs are traditionally at the leading edge of semiconductor device technology and are sold in very large quantities. Because of this, they are often used as the vehicle to debug and ramp up into large scale production successive generations of semiconductor process technology
DSP	Acronym for Digital Signal Processor – a high speed, general purpose arithmetic unit used for performing complex mathematical operations such as Fourier transforms
ECAD	Acronym for Electronic CAD. CAD tools specialising in the design of ICs and electronic systems
EDA	Acronym for Electronic Design Automation. The use of software tools to design, simulate, and verify a single chip or an entire electronic system. Using these tools,

	designers can verify that circuits work before production begins
Ethernet	A cable-based communications network designed to link office equipment originated by Xerox Corporation
Executable Object Code	See object *code, compiler*
Fabless	A semiconductor manufacturer who does not have an in-house wafer processing capability
Fabrication	Often abbreviated to fab, the IC production/manufacturing process that takes raw wafers through a series of diffusion, etching, photolithography, and other steps to become finished wafers
FLOPS	Floating Point Operations Per Second. A slightly more meaningful measure of processor speed than MIPS. Computers essentially work with integer numbers. Decimal values are harder to process, particularly if the figures after the decimal point are not fixed. The variable position of the point makes memory management more difficult. FLOPS thus represent to some extent useful work.
Foundry	A semiconductor manufacturer that uses a customer's masks to produce custom or standard ICs for the customer
FPGA	Acronym for Field Programmable Gate Array. An IC incorporating an array of programmable logic gates that are not pre-connected but where the connections are programmed electrically by the user
FPU	Acronym for Floating Point Unit. A high-speed mathematics coprocessor for a microprocessor
Frequency	The number of times per second an alternating current goes through a complete cycle. Formerly expressed in cycles per second, now expressed in Hertz (Hz)
Gate	A basic circuit which produces an output only when certain input conditions are satisfied
Gate Array	An IC consisting of a regular arrangement of gates that are interconnected to provide custom functions. Sometimes called an Uncommitted Logic Array (ULA) or Sea of Gates
GSM	Acronym for Global System for Mobile Communications, the world's first standard in digital mobile communications
Hardware	ICs and other electronic and their associated boards, connectors, and mechanical packaging
I/O	Acronym for Input/Output. A term used to describe the external connections to a chip or electronic system
IC	Acronym for Integrated Circuit. Many transistors and other circuit elements "integrated" on a single silicon chip
ISDN	Acronym for Integrated Services Digital Network. A set of world-wide communications network standards aimed at providing standardised interconnections for all types of voice and data communications
IP	Acronym for Intellectual Property. IP is the rights in ideas (e.g. in an invention which will be protected by patent law) or expression of ideas (e.g. a book or drawing which will be protected by copyright law) which allow the owner of those rights to control the exploitation of those ideas and expressions of ideas by others

IT	Acronym for Information Technology. The science of the representation, transmission and processing of information, specifically processing with computers
JPEG	Acronym for Joint Photographic Experts Group. A universal standard for the digital compression and decompression of still images for use in computer systems
Kilobit	A thousand bits
LAN	Acronym for Local Area Network. A communications network designed in which the filtered air has a streamline flow, as opposed to turbulent flow
LCD	Acronym for Liquid Crystal Display device. A type of display
LED	Acronym for Light Emitting Diode. A diode that emits light when current flows through it
Logic	The part of the computer that does the arithmetic or makes decisions
Mask	In the processing of semiconductors, especially ICs, masks (or photomasks) are used in much the same manner as photographic negatives. The surface of a wafer which has been coated with a photoresist is exposed through a mask which determines the size, shape, and interconnection of the various elements such as transistors of the integrated circuits
MCM	Acronym for Multi-Chip Module, an integrated circuit comprising of several chips all packaged within the same package
Memory	Stores needed facts, along with instructions on what to do with them and when. Each memory component stores a number of bits of binary data normally denoted in multiples of kilobits, where one kilobit equals 1,024 bits and one megabit equals 1,048,576 bits
Memory Management Unit	The part of a computer that controls data storage so that the computer primarily accesses its high-performance cache memory rather than its slower main memory. Often abbreviated to MMU
Microcode	Microcode is a low-level set of instructions which performs basic, simple tasks (e.g. fetch [from memory], put [in memory], add etc). On one level it can be seen as a programming language, whilst at another level it is merely dynamic equivalent to a set of hard-wired circuits
Microncontroller	A single chip on which logic and memory circuits are combined that can be programmed to perform specific functions in such products as automobile engines, laser printers, disk drives, home appliances, and VCRs. Often referred to as “embedded controllers”. Often abbreviated to MCU
Microelectronics	Microelectronics, or microelectronics components, is the generic name covering all miniature components used to construct electronic systems including semiconductor (diodes, transistors and integrated circuits) and passive (for example resistors, capacitors, inductors, relays and sensors) devices
Micron	One-millionth of a meter, or about forty-millionths of an inch (0.000040 inches)
Microprocessor	The central control unit that directs the processing of data (arithmetic and logic functions) in PCs and other computer systems by directing the flow of electrical impulses, thereby co-ordinating the efforts of other parts of the machine. When the microprocessor receives an instruction, it interprets the instruction and tells the other parts of the computer (disk drives, video display etc) what they should do
Mixed Signal	The combination of analogue an digital technology on one IC
Modem	Modulator/Demodulator. A device that converts audio signals to digital signals

	back into audio
MOS	Acronym for Metal-Oxide-Silicon, one of two basic IC designs along with bipolar, is the fastest growing because it is cheaper, easier to use and consumes less power
MPEG	Acronym for Moving Picture Experts Group. A standard for the digital compression and decompression of motion video/audio for use in computer systems
Multimedia	The combination of text, graphics, audio and full-motion video
Multiprocessing	A computer architecture in which two or more processing units are coupled together to run different programs simultaneously while sharing the same computer frame and memory
Nanosecond (ns)	One billionth of a second. In this time, electrical pulses travel approximately 12 inches
Object Code	A series of numbers representing microcode instructions which can be performed by the particular processor chip for which the code has been compiled. The same source code will produce different object code when compiled for e.g. the Intel 80x86 or the Motorola 680x0 families of chips
OEM	Acronym for Original Equipment Manufacturer. A company that designs, develops and produces electronic hardware
Operating System	Computer software that enables a computer and its peripheral systems to work together as a unit
Package	The container used to encapsulate a semiconductor chip
PCB	Acronym for Printed Circuit Board. A substrate on which a pre-determined interconnect pattern has been formed, used to assemble and connect together ICs and other electronic components into a subassembly
PCMCIA	Acronym for Personal Computer Memory Card Industry Association. A standardised credit card size PCB for housing electronic systems for use mainly in portable computers, e.g. fax/modems, wireless LANs, memory expansion and solid-state hard disks
Peripheral	Equipment that is connected to a computer, such as printers, terminals, and disk drives
Picosecond (ps)	One trillionth of a second. Light or electrical pulses travel about 12 mils (0.012 inches) in one picosecond
PLD	Acronym for Programmable Logic Device. An IC incorporating an array of programmable logic devices that are not pre-connected but where the connections are programmed by the user via blowing fused linked or via other techniques. Once programmed these cannot be altered
PMOS	Acronym for P-Channel MOS. A device in which carriers of electrical current and the path (channel) in which they flow are positively charged
Process	The precise ingredients and recipe by which the integrated circuits are constructed for a given technology
Process Technology	The “recipe” used to convert blank silicon wafers into finished wafers containing anywhere from dozens to thousands of chips. These chips are tested and assembled into plastic or ceramic packages before final use
PROM	Acronym for Programmable ROM. A ROM which is programmable by the user

Protocol	A formal definition of the input and output conventions for communications between two computer systems. Thus the X400 protocol defines electronic mail communication standards
RAM	Acronym for Random Access Memory, which stores digital information temporarily and can be changed by the user. It constitutes the basic storage element in computer terminals and has replaced magnetic core memories in main frame computers
RISC	Acronym for Reduced Instruction Set Computing. Device where the number of instructions a microprocessor runs for a specific application are reduced from a general purpose Complex Instruction Set Computing (CISC) device to create a more efficient operating system
ROM	Acronym for Read Only Memory which stores information used repeatedly such as tables of data, characters for electronic displays, etc. Unlike RAM, ROM cannot be altered
Safety Critical	Applications where the presence of bugs or other logical flaws in software cannot be tolerated, e.g. air traffic control. Formal methods are often used in the design of such software
Sector	A portion of track on a disk which normally holds 512 bytes of data. Anything up to 63 sectors can make up a normal hard disk track
Semiconductor	A class of material which can assume the properties of either a conductor or an insulator. Common Semiconductor materials are silicon, germanium and gallium arsenide
Semiconductor Manufacturer	A firm that is active in the business of designing and producing semiconductor devices. Such firms traditionally had their own in-house wafer processing capability; increasingly, however, this is not necessarily the case
Silicon	A non-metallic element that is the most widely used semiconductor material today. Silicon is used in its crystalline form as the substrate of semiconductor devices
Silicon Foundry	An IC manufacturer specialising in processing semiconductors for other manufacturers on a sub-contractor basis
Smart Card	Plastic card that uses a silicon chip as its storage mechanism, instead of the conventional magnetic strip, for increased security and functionality
Source Code	The high-level language version of a program in e.g. C or Pascal, understandable without great difficulty by the human mind. Source code is the input to the compiler to produce object code
SRAM	Acronym for Static Random Access Memory. A RAM that maintains memory as long as power is applied and does not require refreshing. A RAM are typically categorised by access times
Standard Cells	Pre-defined logic elements that may be selected and arranged to create a custom IC more easily than through original (custom) design
Technology	This describes the type of process to be run, for example 0.5 micron, 22 mask, CMOS, two layer metal on 200mm diameter wafers
Transistor	A small chip of semiconductor material that amplifies or switches electrical current. Known as discrete (single function) semiconductors, transistors replaced vacuum tubes and started the solid state revolution
UNIX	A computer operating system **developed by AT&T. Unix works across a wide range of computers, from** mainframes and workstations to personal computers

VHDL	Acronym for VHSIC Hardware Level Description Language, an ECAD programming technique that allows designs to be carried out top down by system behavioural description
VHSIC	Acronym for Very High Speed Integrated Circuit Programme. **An advanced development programme that is intended to develop advanced semiconductors for US Government defence purposes**
Wafer	A round slice of silicon crystal from which, after processing is complete dice or chips are cut
Wafer Fab	The IC production process – from raw wafers through a series of diffusion, etching, photolithographic, and other steps to finished wafers
Wafer Foundry	A semiconductor manufacturer who provides wafer processing services for an external customer on a sub-contract basis