专业英语

1. 线性时不变系统 LTI system = Linear Time Invariant system

An LTI system, in a simplified sense, will exhibit two behaviors:

① Time Invariance - The system must behave the same in any two trails in time if the inputs and starting conditions are identical.

② Additive Superposition - if you excite a system with input a and get output A, then excite it with input b and get B, then when you excite it with input (a+b), then you should get output (A+B).

2. 调制器与解调器 Modulator & Demodulator

Modulation: In electronics and telecommunications, modulation is the process of varying one or more properties of a periodic waveform, called the carrier signal, with a modulating signal that typically contains information to be transmitted.

3. 离散时间信号和连续时间信号 Discrete-time & ~~Continuous~~ Continuous-time Signals

Discrete time and continous time are two alternative frameworks within which to model variables that evolve over time.

· Discrete time views values of variables as occurring at distinct, separate "points in time", or equivalently as being unchanged throughout each non-zero region of time.

· Continuous time views variable as having a particular value for potentially only an infinitesimally 无穷小的 short amount of time. Between any two points in time there are an infinite number of other points in time.

4. 无线局域网 WLAN = Wireless Local Area Network

Wireless Fidelity

× WLAN is a wireless computer network that links two or more devices using a wireless distribution method (often spread-spectrum 扩频 or OFDM 正交频分复用 radio) within a limited area such as a home, school, computer laboratory or office building.

5. 无限脉冲响应 Infinite ~~Pulse~~ Impulse Response = IIR

有限脉冲响应 Finite Impulse Response = FIR

In signal processing, a finite impulse response filter is a filter whose impulse response (or response to any finite length input) is of finite duration, because it settles to zero in finite time. This is in contrast to infinite impulse response filters, which may have internal feedback and may continue to respond indefinitely (usually decaying).

6. 脉冲响应和频率响应 impulse response & frequency response

In signal processing, the impulse response, or impulse response function, of a dynamic system is its output when presented with a brief input signal, called an impulse.

Frequency response is the quantitative measure (定量测量) of the output spectrum of a system or device in response to a stimulus, and is used to characterize the dynamics of the system.

7. 全球定位系统 GPS = Global Positioning System

8. 断点中断 Break Point.

X In software development, a breakpoint is an intentional stopping or pausing place in a program, put in place for debugging purposes. It is also sometimes simply referred to as a pause.

9. 通用串行总线 USB = Universal Serial Bus ✓

X USB is an industry standard ~~develop~~ that defines the cables, connectors and communications protocals used in a bus for connection, communication, and power supply between computers and electronic devices.

10. 面向对象编程 Object-oriented programming

11. 脉宽调制 PWM = Pulse-Width Modulation PDM = Pulse-Duration Modulation

12. 电磁干扰 electromagnetic interference EMI ✓

XEMI, also called radio-frequency interference when in the radio frequency spectrum, is a disturbance generated by an external source that affects an electrical circuit by electromagenetic induction (电磁感应), electrostatic coupling (静电耦合) or conduction

13. 闭环反馈系统 Closed-loop feedback system

14. FPGA Field-Programmable Gate Array ~~现场~~可编程逻辑门阵列 ☆

A FPGA is an integrated circuit designed to be configured by a customer or a designer after manufacturing — hence the term "field-programmable". It contains an array of programmable logic blocks, and a hierarchy of reconfigurable interconnects (可重置的配置互连的层次结构) that allow the blocks to be "wired together", like many logic gates that can be inter-wired in different configurations.

15. Medium Access Control Protocol 媒体访问控制协议

16. Arithmetic Logic Unit 算术逻辑单元

17. 运算放大器 operational amplifier ☆

An op-amp is a DC-coupled high-gain electronic voltage amplifier with a differential input and, usually, a sigle-ended output. It produces an output potential that is typically hundreds of or thousands of times larger than the potential difference between its input terminals.

output potential 输出电位.

18. 集成电路 Integrated Circuit ☆

IC, also called microelectronic circuit, microchip, or chip, an assembly of electronic components, fabricated as a single unit, in which miniaturized active devices (有源器件) (e.g. transistors and diodes) and passive devices (无源器件) (e.g. capacitors and resistors) and their interconnections are built up on a thin substrate of semiconductor material (typically silicon).

19. Digital Signal Processing 数字信号处理

Digital signal processing is the numerical manipulation of signals, usually with the intention to measure, filter, produce or compress continuous analog signals. It is characterized by the use of digital signals to represent these signals as discrete time, discrete frequency, or other discrete domain signals, in the form of a sequence of numbers or symbols to permit the digital processing of these signals.

20. Digital Image Processing 数字图像处理

Digital image processing is the use of computer algorithms to perform image processing on digital images. As a subcategory or field of digital signal processing, digital image processing has many advantages over analog image processing. It allows a much wider range of algorithms to be applied to the input data and can avoid problems such as the build-up of noise and signal distortion during processing. Since images are defined over two dimensions (perhaps more) digital image processing may be modeled in the form of multidimensional system.

21. ☆ SoC System on Chip 片上系统

System on Chip is an idea of integrating all components of a computer or other electronic system into a single integrated circuit. It may contain digital, analog, mixed-signal, and often radio frequency functions- all on one chip. A typical application is in the area of embedded systems.

22. ASIC ☆

An application-specific integrated circuit (ASIC) is an integrated circuit customized for a particular use, rather than intended for general-purpose use. For example, a chip designed solely to run a cell phone is an ASIC. In contrast, the 7400 series and 4000 series integrated circuits are logic building blocks that can be wired together for use in many different applications.

23. 编程语言：programming language

A programming ~~language~~ language is a formal constructed language designed to communicate instructions to a machine, particularly a computer. It includes a vocabulary and set of grammatical rules for instructing a computer to perform specific tasks.

24. 操作系统：operating system

An operating system is a set of computer programs that manage the hardware and software resources of a computer. An operating system processes raw system data and user input and responds by allocating and managing tasks and internal system resources as a service to users and program of the system.

25. 局域网 Local Area Network

A local area network is a computer network covering a small geographic area, like a home, office, or group of buildings. The defining characteristics of LANs, in contrast to wide area networks (WANs), include their much higher data transfer rates, smaller geographic range, and a lack of a need for leased telecommunication lines.

26. 硬件描述语言 HDL hardware description language

In electronics, a hardware description language is a specialized computer language used to describe the structure and behavior of electronic circuits, and most commonly, digital logic circuits. It enables a precise, formal description of an electronic circuit that allows for the automated analysis and simulation of an electronic circuit.

27. 反相器 inverter

In digital logic, an ~~inpuct~~ inverter or NOT gate is a logic gate which implements logical negation. It outputs a voltage representing the opposite logic-level to its input.

28. 锁存器 latch

A latch is a storage circuit that is sensitive to pulse levels and can change state under the action of a specific input ~~level~~ pulse level.

29. ☆ 触发器 flip-flop

In electronics, a flip-flop is a circuit that has two stable states and can be used to store state information. The circuit can be made to change state by signals applied to one or more control inputs and will have one or two outputs.

30. ☆ C语言的 CONST.

In computer programming, a constant is an identifier with an associated value which cannot be altered by the program during normal execution.

31. ☆ Please explain why the cell phone signal gets worse when you enter the building.

A building can be considered as a Farady ~~Cage~~ cage (法拉第笼) which is an enclosure formed by conductive material or by a mesh of such material. It can block electric fields so the cell phone signal gets worse when you enter a building.

31. ☆ 寄存器 register.

Register is a component of a logic circuits used for the temporary storage of data.

32. ☆ 计数器 counter.

In digital logic and computing, a counter is a device which stores the number of times a particular event or process has occurred, often in relationship to a clock signal and enables up-or-down counting.

33. 锁相环 PLL: Phase-locked loop.

Phase-locked loop is a synchronous technique of frequency and phase realized by using the principle of feedback control. Its function is to ~~keep the clock output of the circuit in sync with its external reference clock~~. generates an output signal whose phase is related to the phase of an input signal.