Lista de abrevieri[1]

A

1. AC97 Audio Codec
2. ACL Asynchronous ConnectionLess
3. ACPI Advanced Configuration Power Interface
4. ADPCM Adaptive Differential Pulse Code Modulation
5. ADS Application Development System
6. ADSL Asymmetric Digital Subscriber Line
7. AFC Automatic Frequency Control
8. AFE Analog Front End
9. AGC Automatic Gain Control
10. AGP Accelerated Graphics Port
11. AGTL Assisted Gunning Transceiver Logic
12. AGU Address Generator Unit
13. AIP Advanced Integrated Peripheral
14. ALE Address Latch Enable
15. AM_ADDR Active Member Address
16. AMR Audio Modem Riser
17. ANSI American National Standards Institute
18. APIC Advanced Programmable Interrupt Controller
19. APM Advanced Power Management
20. ASK Amplitude Shift Keying
21. AUI Attachement Unit Interface

B

22. BAR Base Address Register
23. BB Base Band
24. BFU Bit Field Unit
25. BIAs Burned-in Adresse
26. BIOS Basic Input Output System
27. BROM Boot Read Only Memory
28. BT Bluetooth
29. BTASP Bluetooth Audio Signal Processor
30. BTSC-MTS Broadcast Television Systems Committee- Multichannel Sound

C

31. CAD (ADC) Convertor Analog Digital
32. CAS Column Adress Strobe
33. CD Compact Disk
34. CDA (DAC) Convertor Digital Analog
35. CISC Complex Instruction Set Computer
36. CMOS Complementary Metal Oxid Semiconductor
37. CNR Communication and Networking Riser
38. CPE Customer Premise Equipment
39. CPM Communications Processor Module
40. CRC Cyclic Redundancy Code (Check)
41. CrCb Color Components Video Signal

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[1]Abrevierile sunt ordonate alfabetic

42. CSE Configuration Space Enable

D

43. DAA Data Access Arrangement
44. DALU Data Arithmetic and Logic Unit
45. DCE Data Circuit Terminating Equipment
46. DDRAM Double Data Rate SDRAM
47. DIMM Dual Inline Memory Modules
48. DIP Dual Inline Package
49. DMA Direct Memory Access
50. DPSK Diferential Phase Shift Keying
51. DRAM Dynamic Random Access Memory
52. DRVPCI Drive PCI Bus
53. DSL Digital Subscriber Line
54. DSP Digital Signal Processing
55. DSSS Direct Sequence Spread Spectrum
56. DTE Data Terminal Equipment

E

57. EC Echo Cancellation
58. ECC Error Checking and Correcting
59. ECN Electronic Component News
60. ECP Extended Capability Port
61. EDN Electronic Design News
62. EEPROM Electrically Erasable Programmable ROM
63. EFCOP Enhanced Filter Coprocessor
64. EIA Electronic Industries Association
65. EMC Electromagnetic Compatibility
66. EMI Electromagnetic Interference
67. EPP Enhanced Parallel Port
68. ETSI European Telecommunications Standards Institute

F

69. FAA Filtru Anti Aliere
70. FADR Function Address Register (USB)
71. FCS Frame Check Sequence
72. FD Frequency Division
73. FDD Floppy Disk Drive
74. FDMA Frequency Division Multiple Access
75. FDX Full Duplex
76. FFC Fast Communication Controller
77. FFT Fast Fourier Transform
78. FHSS Frequency Hopping Spread Spectrum
79. FIFO First In First Out
80. FIR Finite Impulse Response
81. FORW Forward Register
82. FPGA Field Programmable Gate Array
83. FSB Front Side Bus
84. FSK Frequency Shift Keying
85. FTJ Filtru Trece Jos
86. FTS Filtru Trece Sus

G

87. GCI General Interface Circuit
88. GFSK Gaussian Frequency Shift Keying
89. GPIO General Parallel Input Output
90. GPRS Global Packet for Radio Services
91. GSM General System for Mobile communications (Groupe Speciale Mobile)

H

92. HaM Host Accelerated Modem
93. HCF Host Controlled (modem)
94. HCI Host Controll Interface
95. HCLK Host Clock
96. HDD Hard Disk Drive
97. HDSL High bit rate Digital Subscriber Line
98. HDX Half Duplex
99. HIG Host Interface Group
100. HP Host Data Parity
101. HSCSD High Speed Circuit Switched Data
102. HSF Host Processed (soft modem)
103. HSP Host Signal Processing
104. HSTL High Speed Transceiver Logic
105. HSUART High Speed UART

I

106. I/O Input / Output
107. I^{2}C Inter Integrated Circuit Bus
108. ICH I/O Controller Hub
109. IDE Integrated Disk Environment
110. IEEE Institute of Electrical and Electronics Engineers, Inc.
111. IF Intermediate Frequency
112. IIR Infinite Impulse Response
113. IMPR Integrated Multiple Port Repeater
114. IRM Image Reject Mixer
115. IRQ Interrupt Request
116. ISA Industry Standard Architecture
117. ISDN Integrated Services Digital Network
118. ISM Industrial, Scientific, Medical
119. ISO International Standards Organization
120. ITU-T International Telecommunications Union-Telecommunications Standardization Sector

L

121. L2CAP Logical Link Control and Adaption Protocol
122. LAN Local Area Network
123. LBX Local Bus Accelerator
124. LC Link Controller
125. LM Link Manager
126. LMP Link Manager Protocol
127. LNA Low Noise Amplifier
128. LPC Low Pin Count
129. LSB Least Significant Bit (Byte)

M

130. MAC Media Access Control
131. MAC Multiply and Accumulate
132. MC97 Modem Codec
133. MCC Multi Channel Controller
134. MCH Memory Controller Hub
135. MIG Memory Interface Group
136. MIPS Milion Instructions Per Second
137. MNP Mirom Networking Protocol
138. MP Memory Parity
139. MP1, MP2, MP3 MPEG Layer 1, 2, 3
140. MPEG Motion Picture Expert Group
141. MSB Most Significant Bit (Byte)
142. MSP Mixed Signal Processing

N

143. NMI Non Mask Interrupt
144. NRZI Non Return to Zero Inverting
145. NT Network Termination
146. NTSC National Television System Committee

O

147. OEM Original Equipment Manufacturer
148. OSI Open System Interconnection
149. OTP One Time Programmable
150. OUI Organizational Unique Identifier

P

151. PA Power Amplifier
152. PAL Phase Alternate Line Video Format
153. PCB Printed Circuit Board
154. PCI Peripheral Component Interconnect
155. PCLK PCI Clock
156. PCM Pulse Code Modulation
157. PCMC Cache and Memory Controller
158. PCMCIA Personal Computer Memory Card International Association
159. PDU Protocol Data Unit
160. PDWN Power Down
161. PGA Programmable Gain Amplifier
162. PHY Phisical Layer Interface
163. PIG PCI Interface Group
164. PLL Phase Locked Loop

165. PnP Plug and Play
166. POST Power On Self Test
167. PPM Pulse Position Modulation
168. PPP Point to Point Protocol
169. PSEQ Program SEQuencer
170. PSK Phase Shift Keying

Q, R

171. QAM Quadrature Amplitude Modulation
172. QoS Quality of Services
173. RAS Row Address Strobe
174. RD Read
175. RDRAM Rambus Dynamic RAM
176. RGB Red Green Blue Video Signal
177. RIMM Rambus Inline Memory Modules
178. RISC Reduced Instruction Set Computer
179. RTC Real Time Clock

S

180. SAW Surface Acustic Wave
181. SCC Serial Communication Controller
182. SCI Serial Communication Interface
183. SCO Synchronous Connection Oriented Link
184. SDI Serial Data Interface
185. SDMI Secure Digital Music Initiative
186. SDP Service Discovery Protocol
187. SDRAM Synchronus Dynamic RAM
188. SECAM Sequentiel Couleur Avec Memoire
189. SIE Serial Input output Engine
190. SIM Subscriber Identification Module
191. SIO System Input Output
192. SMBus System Management Bus
193. SMD Surface Mounted Device
194. SOC System On Chip

195. SPI Serial Peripheral Interface
196. SPP Standard Parallel Port
197. SRAM Static Random Access Memory
198. SSI Synchronous Serial Interface

T

199. TCM Trellis Code Modulation
200. TCO Total Cost of Ownership
201. TCP-IP Transmission Control Protocol- Internet Protocol
202. TDD Time Division Duplex
203. TDMA Time Division Multiple Access
204. TRC Turbo Reset Control
205. TRDY Target Ready
206. TSCON Tri State Control

U

207. UAL Unitate Aritmetică şi Logică
208. UART Universal Asynchronous Receiver Transmitter
209. UCP Unitate Centrală de Prelucrare
210. UDP User Datagram Protocol
211. USB Universal Serial Bus
212. UTP Unshielded Twisted Pair
213. VBI Vertical Blanking Interval
214. VBR Variable Bit Rate

V, W

215. VCO Voltage Controlled Oscilator
216. VDSL Very high speed Digital Subscriber Line
217. VGA Variable Gain Amplifier
218. VLES Variable Length Execution Set
219. VLIW Very Long Instruction Word
220. WOR Wake Up On Ring
221. WR Write

ABSTRACT

The engineer who designs a certain application, benefits nowadays of a wide variety of specialized intelligent circuits. The engineer's job has become like a puzzle game. He must create a coherent system by arranging, and interconnecting specialized circuits (as less as possible, for the lowest overall price). This book comes as a support for this not so easy job, by presenting some of this intelligent circuits and interconnectivity methods.

The book is mainly intended for students in the computer domain and for the electronics and computers design engineers. The authors have tried to make the book as much as accessible, offering detailed explanations for the new terms, but, for a very good understanding of the solutions, contained in this book, the reader must have advanced knowledge of the computer organization and structure. The book is also intended for intelligent chip designers and for those engineers preoccupied by the software that runs on programmable circuits.

Obviously, the student reading this book is not supposed to know by heart all the specialized circuits. He just has to know about their existence. All the data sheets being available for download through Internet. The book presents just few of those specialized circuits, considered by the authors as the most representative.

For every circuit described in this book it is presented a simplified block diagram, a brief description of the functionality, the main features of the circuit and the way of programming. Where possible, some applications of those circuits were also presented. The authors have insisted on logical functionality and data flow. Where considered necessary, some theoretical parts were added using smaller font to indicate optional reading. The diversity of these theoretical parts (from Analog Integrated Circuits, Data Acquisition, Electrical Measurement, Electromagnetic Compatibility, Signal Processing, etc.) proves once again the necessity of strong knowledge from all these courses in order to understand the computer domain.

For transparency, the interfaces presentation was divided in several chapters: motherboards chipsets, networking chipsets, sound chipsets, modem chipsets, chipsets for Bluetooth devices, USB bus control and GSM/GPRS cellular phones. In the outside world, the device producers don't treat these chipsets separately. Thus, network devices that contain a modem can already be found on the market, like "Barricade" (SMC7004) from SMC Company which contains a 7 ports switch, an ADSL modem, a dial-up modem and a printer port. As mentioned in the first paragraph, several puzzle pieces have been combined to create multifunctional equipment. Such an original idea can be a source of significant financial benefits.

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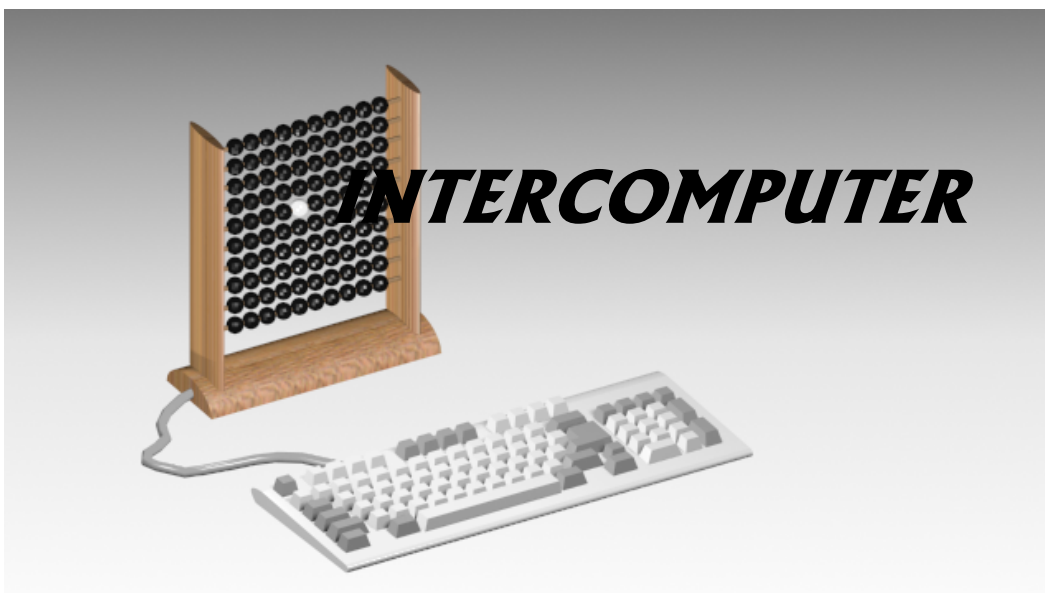
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