

Chapter 1 : IBM PCjr computer

The IBM PCjr (read "PC junior") is a home computer that was marketed by IBM from March to May. The PCjr was positioned as a complement to the very successful IBM Personal Computer (PC), competing with other home computers such as the Apple II series and the Commodore

What they may not know is that all sounds in the MS-DOS, Tandy and Macintosh versions are composed of four parts, one which is the melody, two which are accompaniment, and the final one being noise. The Apple IIs version has much more sophisticated sound: According to Donald B. IBM supplied the company with a prototype Junior, and Roberta set to work designing a new type of adventure game. The sound data was stored to make it easy to send to the Juniors sound generators. This format appears to have remained right through the AGI games up until when SCI took over even though the PCjr had long since been surpassed by the , and This source has four separate sound voices. Three of these are tone generators and the fourth is a noise source. All four voices have an independent volume control, providing an evenly graduated set of 15 volume levels, plus a zero volume off. Each of the three pure voices has an independently selected frequency. The noise voice has three preselected frequencies and a fourth option, which borrows the frequency of the third pure voice. The data stored in the AGI games is designed to be sent to these four voices. The tone generation A tone is produced on a voice by passing the sound chip a 3-bit register address and then a bit frequency divisor. The register address specifies which voice the tone will be produced on. Identifies first byte command byte. Register number in T1 chip 0, 2, 4. F6 F7 F8 F9 4 of bits in frequency count. Identifies second byte completing byte. R0 R1 R2 0 0 0 Holds voice 1 frequency number. Keeping all this in mind, the following is the formula for calculating the frequency: The order of the bytes are reversed for AGI sound data. Attenuation Each voice in the T1 sound chip has an independent sound-level control, which is calculated in terms of decibels of attenuation, or softening. There are four bits uses to control the volume. These bits, labeled A0 through A3, can be set independently or added together to produce sixteen volume levels as shown below. When all four bits are set on, the sound is turned completely off. When all four bits are off, the sound is at its fullest volume. The attenuation is set by sending a byte of the following format to the T1 sound chip: Register number in T1 chip 1, 3, 5, or 7. R0 R1 R2 0 0 1 Holds voice 1 attenuation. The noise generator There are two modes for the noise operation, besides the four frequency selections. One, called periodic noise, produces a steady sound; the other, called white noise, produces a hissing sound. These two modes are controlled by a bit known as the FB bit. When FB is 0, the periodic noise is generated; when FB is 1, the white noise is produced. Two bits, known as NF0 and NF1, control the frequency at which the noise generator works. Three of the four possible combinations of NF0 and NF1 set an independent noise frequency based on the timer. The fourth combination borrows the frequency from the third of the three pure voices made by the tone generators. Register number in T1 chip 6. Unused, ignored; can be set to 0 or 1. NF0 NF1 2 noise frequency control bits 9. The has 32 oscillators and is capable of playing wavetable based music using digital sound samples stored in its own dedicated RAM much like the Gravis Ultrasound card for the IBM PC. The generator arrangement is used by most programs, for it allows more flexibility and a thicker, lusher sound. The DOC plays 8-bit waveforms, with the centerline at 0x80 decimal. If a sample value of 0 is encountered by a DOC oscillator, the oscillator will immediately halt and not produce any more sound. The DOC additionally has an 8-bit volume register for each oscillator, with a linear slope. In a normal DOC configuration, each step of the frequency register increases the play rate by 51 Hz, and computing the maximum theoretical play rate is left as an exercise for the student. When oscillators are paired to create generators, there are 4 possible modes: Only one oscillator of the pair is active at a time. When one stops, the other immediately starts. The oscillator simply plays the waveform and if it hits the end without encounter. This actually has 2 possible effects: Oscillators play waves stored in up to k of DRAM. Conversely, no synthesizer Ensoniq made using the DOC had anything less than the full k. The output of an oscillator can be directed to any one of 16 possible channels. Apple only makes 8 channels available via the 3 bits on the sound expansion connector, and all current stereo cards limit this to 1 bit, or two channels. The sound is stored as four separate units of data, one for each voice.

Each sound file stored in the VOL files has an 8-bit header which contains offsets into file. The format is as follows: Byte Meaning Offset of first voice data Offset of second voice data Offset of third voice data Offset of noise voice data The data starting at each voice offset is stored as 5-byte notes which give the frequency and duration of a note played on that voice. The 5 bytes have the following meanings: Byte Meaning Duration bit word Frequency divisor of the format described in the PCjr section above except the two bytes are around the other way 4 Attenuation of the note in the format described above in the PCjr section Note that the last three bytes were around the other way in version 1 of the AGI interpreter. The above order is opposite from the order that would be output to the T1 sound chip. Another way of checking for the end is to see if it has reached the start of the next voice section, or in the case of the noise voice, the end of the SOUND data. Summary The header consists of four two-byte offsets, one for each voice. The format is little-endian. Each offset points to the note data for the relevant voice. The note data for a voice consists entirely of five-byte note entries of the following format: First and second byte: Note duration Third byte In the case of a tone voice, 7 6 5 4 3 2 1 0 0. In the case of the noise voice, this byte is equal to zero. Fourth byte In the case of a tone voice, 7 6 5 4 3 2 1 0 1. F6 F7 F8 F9 4 of 10 bits in frequency count. R0 R1 R2 Parameter 0 0 0 Voice 1 frequency control number 10 bits 0 0 1 Voice 1 attenuation 4 bits 0 1 0 Voice 2 frequency control number 10 bits 0 1 1 Voice 2 attenuation 4 bits 1 0 0 Voice 3 frequency control number 10 bits 1 0 1 Voice 3 attenuation 4 bits 1 1 0 Noise voice control 4 bits; 3 used 1 1 1 Noise voice attenuation 4 bits The note data for one voice is terminated by two consecutive 0xFF values. It still uses the PCjr format for the note data but it does not store the duration as a separate field. The best way to describe it is by an example: Secondly, all four parts are included together rather than in separate sections. Taking the above example, lets look at the first note and show the equivalent AGIv2 notation. The followint three bytes give the first note for the second part, the third part, and the noise part at least as far as this example is concerned. Every 0x00 byte that is encountered is the end of one set of note changes. Each set of note changes is the equivalent of a duration of 3 in the AGIv2 format. In fact, from the AGIv2 equivalent note above, you will see that the noise note will not change until 49 or 0x33 sets of note changes have been processed. On some occassion a sets of changes will contain only one byte which corresponds to one of the bytes which makes up one of the voices note value, but how it knows which one is a mystery to me. On other occassions, there could be a whole chain of 0x00 bytes which means that during that whole time, none of the voices are changing their notes value. The first two bytes can tell what type of resource we have: Byte Meaning Resource type 01 00 ??? MIDI sequence 00 c0 28 Set patch 0x28 in channel 0 00 c1 28 Set patch 0x28 in channel 1 00 c2 29 Set patch 0x29 in channel 2 00 c3 16 Set patch 0x16 in channel 3 00 c4 01 Set patch 0x01 in channel 4 00 b0 07 7f Set channel volumes MIDI controller 07 00 b2 07 7f BP 7f Inc f00 [seg 1]: BP 78 Inc a [seg 2]: BP 78 Inc 0 [seg 3]: BP 0 Inc [seg 4]: BP 0 Inc 0 [seg 5]: BP 0 Inc 0 [seg 6]: BP 0 Inc 0 [seg 7]: BP 0 Inc 0 rel seg: The envelope is first: The rel seg tells which segment of the envelope is the final one. Bend range is the number of semitones the instrument will be bent by if a pitch wheel message at maximum deflection in either direction is encountered. A wave count and B wave count tell how many wavelists there are for each voice. In this case the wave starts 0x bytes into the image. For size you mask off all but the lowest 3 bits and it gives you the basic wave size as follows:

Chapter 2 : King's Quest I - Wikipedia

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

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Apple only makes 8 channels available via the 3 bits on the sound expansion connector, and all current stereo cards limit this to 1 bit, or two channels. Sound in other platforms According to Paul Lunga, sound in the Macintosh and Tandy versions of the AGI games are pretty much the same as the PCjr version three sound channels plus noise. The sound is stored as four separate units of data, one for each voice. Each sound file stored in the VOL files has an 8-bit header which contains offsets into file. The format is as follows: Byte Meaning Offset of first voice data Offset of second voice data Offset of third voice data Offset of noise voice data The data starting at each voice offset is stored as 5-byte notes which give the frequency and duration of a note played on that voice. The 5 bytes have the following meanings: Byte Meaning Duration bit word Frequency divisor of the format described in the PCjr section above except the two bytes are around the other way 4 Attenuation of the note in the format described above in the PCjr section Note that the last three bytes were around the other way in version 1 of the AGI interpreter. The above order is opposite from the order that would be output to the TI sound chip. Another way of checking for the end is to see if it has reached the start of the next voice section, or in the case of the noise voice, the end of the SOUND data. Summary The header consists of four two-byte offsets, one for each voice. The format is little-endian. Each offset points to the note data for the relevant voice. The note data for a voice consists entirely of five-byte note entries of the following format: F6 F7 F8 F9 4 of 10 bits in frequency count. R0 R1 R2 Parameter 0 0 0 Voice 1 frequency control number 10 bits 0 0 1 Voice 1 attenuation 4 bits 0 1 0 Voice 2 frequency control number 10 bits 0 1 1 Voice 2 attenuation 4 bits 1 0 0 Voice 3 frequency control number 10 bits 1 0 1 Voice 3 attenuation 4 bits 1 1 0 Noise voice control 4 bits; 3 used 1 1 1 Noise voice attenuation 4 bits The note data for one voice is terminated by two consecutive 0xFF values. In this format the note data is separated to "rows" of fixed duration of 2. Each row contains the data for all the four generators and ends with the byte 0. The data consists simply of register values that the player dumps to the sound chip. Because of this, they can be in arbitrary order. An exception is the frequency updates that need two bytes and the chip expects them to come in the correct order. Often a row contains only one 0 which means the chip state is not updated on this row. The first two bytes can tell what type of resource we have: Byte Meaning Resource type 01 00 ??? MIDI sequence 00 c0 28 Set patch 0x28 in channel 0 00 c1 28 Set patch 0x28 in channel 1 00 c2 29 Set patch 0x29 in channel 2 00 c3 16 Set patch 0x16 in channel 3 00 c4 01 Set patch 0x01 in channel 4 00 b0 07 7f Set channel volumes MIDI controller 07 00 b2 07 7f The IIGS interpreter uses the patch number as a lookup into a list of instrument definitions, which are stored in a format used by an API called the "Note Synthesizer". BP 7f Inc f00 [seg 1]: BP 78 Inc a [seg 2]: BP 78 Inc 0 [seg 3]: BP 0 Inc [seg 4]: BP 0 Inc 0 [seg 5]: BP 0 Inc 0 [seg 6]: BP 0 Inc 0 [seg 7]: BP 0 Inc 0 rel seg: The envelope is first: The rel seg tells which segment of the envelope is the final one. Bend range is the number of semitones the instrument will be bent by if a pitch wheel message at maximum deflection in either direction is encountered. A wave count and B wave count tell how many wavelists there are for each voice. Wave address is the offset in byte pages into the 64k sierrastandard image i. In this case the wave starts 0x bytes into the image. For size, you mask off all but the lowest 3 bits and it gives you the basic wave size as follows: Mode is the oscillator mode for the voice in the bits 1 and 2. The lowest bit bit 0 is a "halt" flag. If oscillator 1 is also in swap mode, it will play once, generate an IRQ, and auto-start oscillator 0 again.

Chapter 3 : Mike's IBM PCjr Page

Introduction The IBM PCjr is a personal computer introduced in and sold through It had some nice features that other computers did not have at the time, but it was not compatible enough with the rest of the IBM PC family to be successful as a pure PC clone, and initially it was too expensive to compete against "home" machines such as.

Sunday, February 16, Influences of the PCjr. Of course, it was thick, had a small screen, and expansions made it longer. While it took ideas from the PCjr. The introduction of the 3. The fewer keys make handling these keyboards with low-level routines quite different from the IBM PC keyboard. While obviously derived from the PCjr. Memory expansions for both machines came in KB. IBM only physically supported four memory modules in the PC Convertible, each with KB, and the system always came with two installed from the factory. Feature Expansion - Both machines were expanded by hardware attachments, the PCjr. IBM released five PCjr. If customers did not particularly care for adding onto the length of the PCjr. It sold a modem based on the Novation Smart modem for the PCjr, which could run at or baud. It did not sell well because it was not Hayes compatible. This time the modem could also support baud. The COM ports were similarly assigned on both systems. Color text-mode attributes were not supported on the monochromeLCD, it was either normal video, reverse video or no display. The built in LCD does not distinguish between x and x in this instance. The MC was only emulated enough for the basic modes, the color select register is not present and the mode control register has missing bits compared to real CGA. The built-in display adapter can also be configured to emulate a MDA card. The adapter can connect directly to the PCjr. It also has a composite video output like the PCjr. Both are unidirectional thermal serial printers operating at a maximum of baud and have a 2K buffer. Both use a transmission format of 1 start bit, 8 data bits and 2 stop bits. The PC Compact Printer can print in standard, condensed, double-wide and underline styles and bit graphics, while the Portable Printer adds emphasized, superscript and subscript styles and and bit graphic modes. The Portable Printer supports virtually all the control codes of the Compact Printer plus some more for its enhanced features.

Chapter 4 : IBM Personal Computer - Wikipedia

IBM called the replacement keyboard the "Freeboard", presumably because it offered some freedom from the frustration of the chicklet and was a free replacement for PCjr. owners who hated the chicklet keyboard.

This is a fast-paced, arcade-type cartridge game for the IBM PCjr system in which the player is cast in the role of a farmer whose nine-room farmhouse has been overrun by mice. The object of the game is to trap, within the allotted time, all of the mice in the rooms by building traps with movable walls. To clear all of the rooms requires skill, strategy, and dexterity. Some of the rooms are not lit, and the player must locate a flashlight that can be used to illuminate a portion of the room. On the higher levels, the mice reproduce themselves as the player is attempting to trap them. The farmer loses by running out of time or by touching a mouse. Points are awarded for each mouse trapped. The total score depends on how fast the player traps the mice. Here, each player is in control of a three-diver expedition team that is searching the dangerous recesses of an undersea cavern for sunken treasure. Each expedition sends one diver at a time to brave the treacherous waters to collect rare fish, to avoid poisonous fish and electric eels, and to find keys to open the treasure chests. Unlike many other arcade games, two players may play simultaneously, competing for the same rare fish and for survival. Played in one-player mode, a ghostly white diver with a strange knack for being in the wrong place at the right time accompanies you. Points are awarded for each chest opened and for each rare fish collected. Fortunately, the player has a fleet of three ships containing insecticide missiles to clear the streets. A bonus ship is awarded every points. The object is, of course, to clear the town of these enemies, but, with a limited supply of ammunition and invaders coming at you from all directions, this is not an easy task. Points are awarded for each invader hit and for bonus targets that occasionally appear in the streets. In addition to the twisty, treacherous shafts, there are a number of runaway robot miners that seem bent on destruction of the mining car. Disabling the robots and collecting diamonds earn the player points. Clearing either all the diamonds or all the robots out of one mine shaft will allow the player to explore the next level. Each of the four game cartridges comes with an instruction booklet explaining the game operation and installation. The student teaches himself, learns by doing, and sets his or her own pace. In the first lesson, the student learns to write a short program. The book is written in a friendly, conversational tone with heavy emphasis on the use of color, sound, and examples. Schedule Cartridges will be available first quarter

Technical Information Hardware Requirements:

Chapter 5 : IBM PCJR CARTRIDGES

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Introduction to the PCjr. Its just arrived, you open the box, unwrap all the pieces, now what do you do with it? To use a PCjr. If you are missing any one of these three, the PCjr. I am going to go through each in terms of simple to complex: The External Power Adapter: This is a large black power converter. It has wires on either end. One the end of one wire is a three-pronged plug. On the other end is a rectangular three pin connector that connects to the back of the system unit. The port is in between the A and the C ports. On early bricks, the cable with the three-pronged plug is detachable from the large brick. A standard three-pronged computer power cable should fit into the brick. The power cable can fit into the system either way polarity is irrelevant for AC. Cordless Keyboards, especially after IBM offered a free trade in to the non-chicklet keyboard. IBM called the replacement keyboard the "Freeboard", presumably because it offered some freedom from the frustration of the chicklet and was a free replacement for PCjr. Internally, they function identically. The keyboard communicates with the system via an infrared sensor or via an optional keyboard cable. It takes 4 x AA batteries, and you should check the battery compartment to see if there are old corroded batteries. If there are, you should clean the contacts with cotton swabs or Q-tips with apple cider vinegar or lemon juice and follow it up with baking soda. You may need to unscrew the board to inspect for leakage on the PCB. The infrared can work up to twenty feet away according to IBM, but line of sight must be maintained and the sensor on the keyboard should be as perpendicular as possible to the sensor on the computer. Rechargeable batteries may or may not provide reliable power for the keyboard. The computer is inside on a large system board. The Basic Model did not come with a diskette drive or the 64KB memory expansion. If you are getting a boxed unit, it should come with all the above and two books, the first being the PCjr. The expansion ports on the rear of the PCjr. These are more prone to damage than connectors set in a D-shell, but it was cheaper for IBM to implement them in this way. Check for any bent, broken or pushed in pins. Most of the connectors have a missing "key pin", so check below to discover pins that are supposed to be missing. Gently straighten or pull out any pins with a small pair of pliers or tweezers. Expansion cables are held in the port by friction alone, so do not try yanking cables out. Similarly, the sidecar expansion port also uses pins, but at least these are cased in a plastic connector like an IDE port. The case top is held down by friction and tabs, there are no screws to deal with. Using a small screwdriver, insert it into each of the three indentations at top rear edge and gently pop that portion of the case off. There are up to four internal expansion boards. Fortunately each can only fit one way. There are no jumpers or dipswitches inside or on the internal expansion board. IBM did not use jumpers officially on its sidecar expansion board either. Everything is configured in software, which was rather progressive for the time and technology. If you want a true definition of plug and play, here it is! On the left side of the unit with the cartridge ports facing you , is the power board, which is always present. The power board comes in either a 33W short card or a 45W long card. If it extends nearly to the front of the case, it is the long card. There is a 2-pin staking connector which the power board must be inserted into when it is put back in its slot. There are grooves in the case to stabilize the card, make sure the card fits into them. Early memory boards are covered in a metal shield, later boards are just a bare PCB. If this board is not present, you will only have 64KB of RAM in the system and a big hole if any sidecar memory expansions exist. The third board is the PCjr. Third party Hayes-compatible modems were also made to fit in this slot. Like the power board, this card connects to a 2-pin staking connector and grooves in addition to its slot. This is the only internal upgrade not to come automatically bundled with the PCjr. The fourth board is the PCjr. This connects to the Diskette Drive via a pin ribbon cable with a pin header on one end and a card edge connector on the other. It only supports the one internal drive. Note the side of the cable with the colored wire, that side must correspond to pin 1 on the board if the diskette drive is going to work properly. Pin 5 is missing on the adapter pin header as a key pin to prevent wrongful insertion. The diskette drive is mounted on a unique plastic drive support. It is connected to the board by two standoffs that push through the bottom of the case. Next,

disconnect the drive data cable. Next, with a pair of pliers, squeeze the tabs in and push upwards on the standoffs until they constrict and pop up from the bottom of the case. These are not screws, so do not twist a screwdriver in them. Check for any signs of damage and be prepared to dust. Make sure it is firmly seated on its slot. The System Unit can be removed from the case by unscrewing four screws at the rear of the system, at least one screw holding down the cartridge ports and removing whatever sidecars are attached. Except for the RCA ports for video and audio and the modem port if one is installed, there is nothing standard about the PCjr. However, the hardware that the PCjr. Looking at the rear of the machine, the ports are lettered as follows: The inner port is sometimes called the left joystick. These connect to the PCjr. Joystick, which functions just like a standard PC joystick. River Raid, Demon Attack and Microsurgeon will not work without a joystick connected. The keyboard connector has a phone jack on one end and a large RFI ferrite choke. It plugs into the PCjr. Third party keyboard replacements also plug into this port, but must be specifically designed for the PCjr. If there is anything plugged into this port, then the system unit will not receive the input from the IR receiver, even if it's just an unconnected wire. You may need a 75 Ohm balun connector. External Audio can be heard from this connector. IBM released one because its PCjr. Color Display was not available at launch. Color Display Model has a connector that plugs directly into this port. Color Display has a built-in speaker with a volume control wheel for the external audio output. Color display, but may or may not have a speaker for the external audio. An adapter exists to allow the PCjr. An adapter exists to allow the Compact Printer to be used with a standard serial port. It has two mini-jacks and one micro-jack. On the front of the machine, there are two cartridge slots. These slots are functionally identical. Game cartridges are generally rare, especially the good ones from Activision and Imagic. Lotus is a rare example of a cartridge program with a cartridge for both slots. On the side of the PCjr. If there are no sidecars installed, there may be a plastic faceplate, which snaps into two holes and can be easily pried off with a screw driver or fingers. Sidecars are pushed onto the pins, then screwed into system unit or the next sidecar with a flat head screwdriver. You can extend the length of your system quite considerably with expansion sidecars. The Printer sidecar provides one unidirectional parallel port using the standard DB connector. Power Attachment sidecar, which provides more power for sidecars. This sidecar must be inserted before any sidecars it needs to power closer to the system unit and has a separate power supply identical to the PCjr. They use the same connector. With a 45W power board, you can use three sidecars comfortably.

Chapter 6 : Full text of "IBM PCjr Technical Reference"

Title: Introducing the IBM PCjr: ISBN: Author: Douglas Ford Cobb and Chris DeVoney: Publisher: QUE Corporation.

Other large technology companies such as Hewlett-Packard HP , Texas Instruments TI , and Data General had entered it, and some large IBM customers were buying Apples, [5] [6] [7] so the company saw introducing its own personal computer as both an experiment in a new market and a defense against rivals, large and small. Rumors abound about personal computers to come from giants such as Digital Equipment Corporation and the General Electric Company. But there is no contest. When the number eight company in the Fortune enters the field, that is news The influence of a personal computer made by a company whose name has literally come to mean "computer" to most of the world is hard to contemplate. In 1981 a team led by Dr. A non-working industrial design model was also created in by industrial designer Tom Hardy illustrating how the SCAMP engineering prototype could be transformed into a usable product design for the marketplace. This design model was requested by IBM executive Bill Lowe to complement the engineering prototype in his early efforts to demonstrate the viability of creating a single-user computer. In the late 1970s such a machine would have been nearly as large as two desks and would have weighed about half a ton. Later models followed in the trend: A Design History of Computer Vapourware. One such concept in 1981, code-named Aquarius, was a working prototype utilizing advanced bubble memory cartridges. While this design was more powerful and smaller than Apple II launched the same year, the advanced bubble technology was deemed unstable and not ready for mass production. It has nothing at all to do with office automation. Rhines of TI, for example, in met with a Boca Raton group considering the TMS for a secret bit microprocessor-based project [39] but had determined from studying the market for years, and building the prototypes during the 1970s, that IBM was unable to internally build a personal computer profitably. Computer dealers were very interested in selling an IBM product, but told Lowe that the company could not design, sell, or service it as IBM had previously done. An IBM microcomputer, they said, must be composed of standard parts that store employees could repair. Aware that the company needed to enter the market quickly [40] even the schools in Broward County , near Boca Raton, purchased Apples [41] in July Lowe met with Opel, Cary, and others on the important Corporate Management Committee. The crude prototype barely worked when he demonstrated it in August, but Lowe presented a detailed business plan that proposed that the new computer have an open architecture, use non-proprietary components and software, and be sold through retail stores, all contrary to IBM practice. How are you going to argue with that? The processor was more than an order of magnitude more powerful than the Intel 8088, and the operating system more advanced than the PC DOS 1. IBM had recently developed the Datamaster business microcomputer, which used a processor and other chips from Intel; familiarity with them and the immediate availability of the was a reason for choosing it for the PC. The pin expansion bus slots were designed to be similar to the Datamaster slots. Delays due to in-house development of the Datamaster software was a reason why IBM chose Microsoft BASIC already available for the PC and published available technical information to encourage third-party developers. To save time and money, the IBU built the machine with commercial off-the-shelf parts from original equipment manufacturers whenever possible, with assembly occurring in Boca Raton at a plant Estridge designed. Because of the off-the-shelf parts only the system unit and keyboard has unique IBM industrial design elements. They stayed after selection, monitoring and helping to improve the manufacturing process. When an individual mentioned in public on a Saturday that his company was working on software for a new IBM computer, IBM security appeared at the company on Monday to investigate the leak. Management Science America did not know until after agreeing to buy Peachtree Software in that the latter was working on software for the PC. One writer compared the "silence" after asking one about his role at the company to " hit[ting] the wall at the Boston Marathon: It can make a surprising difference in the way you work, learn or otherwise approach the complexities and some of the simple pleasures of living. The company intentionally set prices for it and other configurations that were comparable to those of Apple and other rivals; [60] [23] [19] [37] [16] what Dan Bricklin described as "pretty competitive" pricing surprised him and other Software Arts employees. The company was aware of its strong

corporate reputation among potential customers; an early advertisement began "Presenting the IBM of Personal Computers". For your business, your project, your department, your class, your family and, indeed, for yourself. Its rapid development amazed observers, [23] as did the willingness of the Colossus of Armonk to sell as a launch title Microsoft Adventure a video game that, its press release stated, brought "players into a fantasy world of caves and treasures" ; [54] [84] [20] the company even offered an optional joystick port. All they wanted to talk about was the IBM Personal Computerâ€”what it was, its potential and limitations, and most of all, the impact IBM would have on the business of personal computing. Within seven weeks Bunnell helped found PC Magazine, [86] the first periodical for the new computer. Adam Osborne said "when you buy a computer from IBM, you buy a la carte. By the time you have a computer that does anything, it will cost more than an Apple. That was the best news we could have had; we actually had done what we had set out to do. Apple had five times as many dealers in the US as IBM, an established international distribution network, and an installed base of more than , customers. After finding it unimpressiveâ€” Chris Espinosa called the computer "a half-assed, hackneyed attempt"â€”the company confidently purchased a full-page advertisement in The Wall Street Journal with the headline "Welcome, IBM. It took them a full year to realize what had happened". The PC was small, light weight, and easy to use. Often, these products needed the capacity and speed of a hard-disk. Although IBM did not offer a hard-disk option for almost two years following introduction of its PC, business sales were nonetheless catalyzed by the simultaneous availability of hard-disk subsystems, like those of Tallgrass Technologies which sold in Computerland stores alongside the IBM at the introduction in . Because its prices were based on forecasts of much lower volumeâ€”, over five years, which would have made the PC a very successful IBM productâ€”the PC became very profitable; at times the company sold almost that many computers per month. He stated that the company had increased production three times in one year, and warned of a component shortage if demand continued to increase. Suppliers often found, however, that the prestige of having IBM as a customer led to additional sales elsewhere. He warned in a speech before previewing the forthcoming " " Super Bowl commercial: Will Big Blue dominate the entire computer industry? The entire information age? Was George Orwell right about ? IBM was the only major company with significant minicomputer and microcomputer businesses, [] in part because rivals like DEC and Wang did not adjust to the retail market. The first models were shipped in January Third-party distribution[edit] Because IBM had no retail experience, the retail chains ComputerLand and Sears Roebuck provided important knowledge of the marketplace. More than Computerland stores already existed, while Sears was in the process of creating a handful of in-store computer centers for sale of the new product. This guaranteed IBM widespread distribution across the U. Targeting the new PC at the home market, Sears Roebuck sales failed to live up to expectations. This unfavorable outcome revealed that the strategy of targeting the office market was the key to higher sales.

Chapter 7 : Sierra Adventure Game Interpreter specifications: SOUND resources

IBM introduces the PCjr This commercial shows IBM's debut of the ill-fated PCjr. Coming soon to a Dinosaur Sighting and Cracking Open photo gallery series near you.

Includes full keyboard overlay template. Not compatible with Tandy machines with more than K of memory. The keyboard overlay template is replaced with a small strip for use with the non-chiclet replacement keyboard. Manual expands the backstory. August 16, [11] Published by Sierra in gray cardboard box. Bug-fixed version, adds RGBI color mode. States "Licensed to Tandy Corp. September 4, [11] Published by Sierra. Background pictures are now drawn into an off-screen buffer to avoid the painting effect of the original game. This was not done merely for the sake of tidiness, but because the booter versions inadvertently gave away some puzzle solutions by drawing hidden objects first, followed by scenery. All versions published by Sierra. November 13, , [12] Version 1. Updated version, says "New version" on the title screen. Displays text in windows. Supports EGA graphics and runs from hard disks as well, although a key disk is required upon startup. Unique in showing a discolored leaf at the title screen. Sold in the same gray flip-lid box as the K self-booting versions, with a gray triangular sticker denoting the K version, and a gold sticker stating "Now supports EGA". May 5, , [12] Version 2. Supports Hercules graphics and modifies the EGA graphics code to run on machines with a processor. Sold both in the original gray flip-lid box as well as a gold slipcover box. The gold slipcover box adds the sub-title Quest for the Crown for the first time, even as it is not mentioned in the game itself. First version of the game that was also available on 3. December 1, , [11] Version 2. Adds support for MCGA graphics. Ports for based machines based on the K PC version 1. She said that she would always wanted to make an adventure game with animation, but it was not possible up to that point. It has original tile and sprite-based graphics and was published by Parker Brothers. Some of the puzzles and rooms have been modified a bit for example, the boulder covering the dagger rolls a different direction than in PC. An extra item exists " it is now possible to pick up the three-leaf clovers. It is non-linear, and the three treasures can be collected in any order, like in the original PC version. Game saves were done through passwords. There are two different box variations for this release: The game is not a 1: The story was expanded upon mainly in the cutscenes and conversations and made more linear. There is a set order to finding the three treasures. The first two can be done in any order, but the last treasure is always the shield. Many of the character roles were expanded slightly to include more dialogue, and more characters were added. Some of the puzzle solutions were altered and some removed. The changes lead to the distribution of points being different in both games though both add up to a total of Some item locations were changed; the pebbles for example are found near the river in the original, but near a lake in their remake. Some locations were completely revamped the stairs in the mountain were replaced with catwalks. The soundtrack was also expanded and included better musical cues when different characters appeared or action ensued. Quest for the Crown was announced for the Atari ST line of computers and later canceled. This version was released on Steam in

Chapter 8 : Nerdy Pleasures: Influences of the PCjr. - the IBM PC Convertible

The IBM PCjr was IBM's attempt to make a home computer. Like the name suggests, it was a cut down version of the PC. That was the best thing about it and the worst thing.

More appealing to home users since they were fast and durable, IBM put two cartridge ports on the PCjr. Games and educational titles could be loaded easily and quickly by children; they just push the cart in and turn it on. No commands to learn or floppy disks to bend. An extremely significant design enhancement made to the PCjr was increased graphics and sound capabilities. The sound enhancement came from the addition of a Texas Instruments SN chip, a three-voice tone generator. This increased the number of voices from one to three, with 16 volume levels for each channel, and noise-generation for sound effects. IBM was banking on these enhancements to propel the PCjr to the top of the heap, so to help it along they hired Sierra specifically to do a next-generation PCjr game that would use the extra colors and sound. In addition to the enhanced graphics and sound capabilities, IBM decided to create a new keyboard for the PCjr with two drastic design changes: It was wireless, and it used rubber "chiclet" keys. The use of chiclet keys was an interesting decision, apparently made mainly to ease home users into computing. That was the whole idea behind the keyboard, so that software people can give you a template to put over your keyboard that shows what all the functions do. While the keyboard was wireless, it could be connected to the PCjr directly for when you had no batteries. It even had an RJtype phone plug for hooking it to the keyboard. The keyboard, what IBM thought would be considered a great innovation, was ultimately its largest drawback--while it claimed you could be 6 feet or more away from the computer in wireless mode, most people found they had to be no further than about two or three feet from the computer. This distance limitation itself was only part of the problem: In an effort to make the keyboard fit onto your lap easier, the key layout was compressed into a smaller form factor, so the function keys shared space with the normal keys. To enter a function key, you had to hold down an " Fn " key as you pressed a number key. The numeric keypad was also dropped. There were other drawbacks as well that put the final nails in the coffin: Expansion was performed through the use of modules that attached to the side of the machine. You could continue to add modules, but this kept expanding the side of the machine. You simply remove the cover on the side of the main unit and screw one of these things onto it, then attach the cover onto the add-on unit and you can keep building it from there. Kind of like lego building blocks. If I recall, the parallel port was also in one of these side card things. Eventually 3rd party companies came around for replacing the memory in a k addon card so that you could upgrade to k with only 1 add-on piece. IBM attempted some disaster recovery a year later with the release of a new keyboard. Gone were the rubber chiclet keys, replaced by true keys albeit still with a reduced-size layout. IBM eventually discontinued the PCjr less than two years after its release, a dismal failure. So it was natural for Tandy to choose the PCjr as the machine to clone. The only problem was that the PCjr was selling very badly before the Tandy was released. Tandy quickly changed all the advertising and marketing to take the focus away from the PCjr. Because of this and other design changes such as the length of the case, which was about two inches too short to accept full-length expansion cards , Tandy was criticized for creating a seemingly proprietary machine. The only problem was that the PCjr was not a successful product and was discontinued just weeks before the came out. The keyboard, while still slightly awkward, was not the horrific "chiclet" keyboard that the PCjr had used. The best thing about the Tandy becoming successful was that it still retained the enhanced graphics and sound capabilities of the PCjr--and game companies noticed. Because of these game titles, some of which directly drove the sales of the Tandy , Tandy decided to keep the enhanced graphics and sound in future models. Many times over the next few years, design decisions were made to be PC AT compatible or be compatible within the line. Once VGA and sound boards became mainstream, there was little reason to own a Tandy that specifically catered to the old standards. Most of these appeared in the catalog printed Fall Where will the progression go from there? My new game is a big change! IBM came to me a long time ago and asked me to write an adventure-type game for the forthcoming PCjr. Ultima or Wizardry you can replay because you have a character generator and you can make different things happen. In effect, IBM was asking me to go against

my style. I thought a long time about this. Then I found out what the PCjr was capable of. I was really happy when I found out that this computer could do things other computers could not do. I could finally have my animated adventure game. It has sixteen solid colors. Also, it has more memory -- K -- and it takes a lot of memory to do animation. And this is all done with graphics as beautiful as those from The Dark Crystal? The graphics are great. Your character is full color and the game has sound going most of the time. You hear little birds singing and doors creaking open and other things like that. Nostalgia wears rose-colored glasses, though, so I find it necessary to point out a couple of things that changed since that interview: They were able to port it so quickly because of the great design of their gaming interpreter, which they used for many different games and sequels from to This was a far cry from the true replayability of Wizardry or Ultima, however, which she mentioned in the interview.

Chapter 9 : News, Tips, and Advice for Technology Professionals - TechRepublic

Following the success of the IBM PC business computer three years earlier, IBM attempted to capture the home market as well, with the IBM PCjr. The PCjr was based on the same technology as the PC, and was compatible enough to run most of the software applications written for the PC.

Overview[edit] Announced November 1, , and first shipped in late January , [1] the PCjrâ€™”nicknamed "Peanut" before its debut [2] â€™”came in two models: The PCjr promised a high degree of compatibility with the IBM PC , which was already a popular business computer, in addition to offering built-in color graphics and 3 voice sound that was better than the standard PC-speaker sound and color graphics of the standard IBM PC and compatibles of the day. The PCjr is also the first PC compatible machine that was expressly designed to support page flipping for graphics operations. Since the PCjr uses system RAM to store video content, and the location of this storage area can be changed, it could perform flicker-free animation and other effects that were either difficult or impossible to produce on contemporary PC clones. Upgrading the memory by other means, such as adding a RAM "sidecar" adapter, is not adequate to support the high-bandwidth graphics modes. The fully programmable color palette logic in the PCjr allows any set of colors from among the color RGBI color setâ€™”the same set of colors available in CGA text modesâ€™”in each mode. That is, in each graphics mode, each pixel "color" value can be independently mapped to any one of the 16 real RGBI colors. The IBM Technical Reference is unclear as to whether the programmable palette is active in the text modes, where all 16 colors are available even without palette mapping. Programs specifically written to use PCjr graphics can subsequently reprogram the palette table to use any colors desired. Palette changes must be made during horizontal or vertical blanking periods of a video frame in order to avoid corrupting the display. However, the provision of a vertical retrace interrupt on IRQ5 simplifies this and also makes seamless page-flipping much easier. The video hardware of the PCjr is the first to offer a vertical retrace interrupt, or any raster interrupt. The PCjr video subsystem also has a little-known graphics blink feature, which toggles the palette between the first and second groups of eight palette registers at the same rate used for the text blink feature, and a palette bit-masking feature that could be used to switch between palette subsets without reprogramming palette registers, by forcing one or more bits of each pixel value to zero before the value is used to look up the color in the palette table. Software[edit] From a software perspective, the PCjr video hardware is an upward-compatible extension of the CGA, but differences in the hardware that affect mode and color selection make it incompatible from a strict hardware perspective. In general, the PCjr video hardware can do anything that a CGA can, but the design of hardware-control registers and the programming rules and techniques are different. Programs written for the CGA using any mode or modes work correctly and produce equivalent displays on the PCjr if they set modes only through the BIOS and control the image either through the BIOS or by directly accessing the display buffer based at address 0xB without attempting to write to or read from any video hardware registers, except certain registers of the CRTC. Those are the cursor-related registers, the light pen registers, and the start address registers. Hardware[edit] The PCjr display hardware consists primarily of two chips on the system board: Only one sound source can be selected at a time; the sources cannot be mixed. IBM claimed that an average of two wait states are added, but the designers of the Tandy claimed that six was a more accurate figure. Therefore, under some circumstances the in the PCjr actually can run at the rated 4. The most common instances in which this maximum speed would be achieved are when running games or productivity applications from ROM cartridges; this would be a reason for PCjr users to prefer software in cartridges to software on disk media. A keyboard cord option, which plugged into the keyboard with a modular 4-position telephone plug and into the back of the computer with a 6-pin 2x3 header connected, was also available for increased security and reliability and to eliminate dependence on batteries; the keyboard IR receiver was automatically disabled when the keyboard cord was attached to the computer. However, the single pin D-subminiature joystick port common on later PCs supports two two-axis, two-button joysticks like those supported by the PCjr, and the pin port can be split out to two separate joystick ports with a passive Y-adapter cable. Further reinforcing the "home-friendly" goal, the PCjr also introduced

two ROM cartridge slots on the front of the unit, meant to load software quickly and easily. The cartridges are plugged in from the front, prompting the computer to automatically reboot and run the software. This is more user-friendly than other home computer systems, which must be powered off when a cartridge was removed or inserted and come with warnings about damage to the computer if this requirement is ignored. Loading and saving data from cartridge software is possible via the floppy drive. The cartridge BASIC for the PCjr, in particular, gives programmers the advantage of a real programming language always ready without taking up system memory, as it was firmware, with its own address space. Cartridges can also replace the system BIOS and other firmware. Expansions such as additional parallel ports, serial ports, memory, etc. Multiple expansions are stacked together, increasing the width of the machine. Two obvious solutions exist: The keycaps are blank; labels appear between keys to permit overlays. The PCjr also has a light pen port. Besides being used for a light pen a rarely purchased option, this port was used in combination with the serial port to supply voltage to a Mouse Systems optical mouse of the same design as those for Sun workstations.