


Frequently Asked Questions

(and less-frequent, interesting points)


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PC-therm

Is there any applet or something that can read results and post them on the web site? (Max Kirilin)

 Check Claudio Lanconelli's WebTherm at www.cs.unibo.it/~lanconel or <http://www.lancos.com/>

Why not the DS1820, that needs only two wires? (Neil)


 I know the 1820, and I have discarded it because his strict time requirements make it difficult (if not impossible) to drive with a Visual Basic program. In addition to this, an external drive as a mosfet is required for two wires operation. On the other hand, the 1621 requires 4 wires instead of 2, but its interface is not very time sensitive. Using the very same 4 wires for up to 8 sensors in parallel sounds not so bad, tough. There are many worked examples of 1820 applications on the net, try pointing at the Parallax's Basic Stamp world searching for "LOSA, list of basic stamp applications".

Do you by any chance have an english version of the SETUP software?


(Micheal Korck)

 Sorry, no (note: the program can be customized editing the .INI file)

Do you have a PCBs of Pc-therm?


 No, but being a cut-down version of the [SI-PROG](#) programmer by Claudio Lanconelli can ask him for a PCB.

Why not the printer port?

 Driving the parallel port is more difficult from Visual Basic(*), while the serial port is available through the mscomm control. Not to mention Windows NT difficulties accessing hardware.

(* there are several DLL on the 'net, but I never tried one.


I have a Pentium 600, do I need to add delay loops?

 No, fortunately VB and Windows are slow enough :-)


Can I use your sources with Visual Basic 6?

 Yes.


Where can I get the DS1621?

 Europe: <http://www.distrelec.com/> --- USA and Canada: <http://www.newark.com/>
(about \$4 each)


Here in Finland it's really cold:-30 to - 40 °C. Is it possible to misure it with PC therm?(Juha Suuronen)

 The DS1621 is specified to work down to -55 °C: I'm not as sure for the other components, especially the 5V regulator. You can either search for the military specification parts (*hmmm, sounds hard to find*), or use standard parts and checking if it works at such low temperatures (cheap parts have large operating margins), **alternatively** expose to low temp the DS1621 only.

When the computer is used heavily in another task, say compiling a program, temperature misreads (seems to be 0 or -0,5)


 This is a known problem: I don't know the reason, but it seems like heavy loading causes the serial port to miss events. I'm looking forward to a better explanation.

Can I add more sensors and call the temperature(0) routine with a different id ie 0 to 7?

 Yes, the only problem could arise from power supply. Some serial ports can't supply enough current to power all the sensor at once, so better to start with one sensor attached than adding other sensors one at a time. Maybe you eventually have to add an external 9V battery to help the voltage regulator.

Bingo - Chrono

I can't find a 16 MHz AT90S1200. Does this part really exist?


 Yes, look at the picture here...




I can't find a 16 MHz AVR, can I overclock a 12 MHz part?

 Although not guaranteed, it usually works.


Where can I buy unprogrammed AVR parts?

 From Elektor's ads (1999): VIEWCOM Electronics, 77 Upperton Road West, Plaistow, London E13 9LT tel. 0181-4719338, fax 0181-5520946 e-mail sales@viewcom.force9.co.uk offers the AT90S1200-16 for 6.68 english pounds (not so cheap).


When you say the AVR90S1200 is cheap, how cheap is it?

 My quote (1998) was about 1.5 USD qty. 3000

Can I replace the MC34064P5 with a MAX809 is a valid replacement for the MC34064P5?


 Yes, Choose an appropriate threshold (4,65 V or 4,40V). The higher, the better, even if the chip can work below 4V.

Can I omit the reset chip? I've seen schematics where RESET is tied to Vcc


 The main reason for reset circuitry is EEPROM data loss: when the power is switched off, it takes some time before the voltage goes to zero. The chip can enter an instable state when the supply is under its operating limits. The only way to keep it stable is to keep RESET low, otherwise it can hurt itself starting a spurious eeprom write cycle. Hagen Patzke tried successfully a transistor-based reset from the [Atmel](#) web site.

I have "scaled down" your code so it produces a stable display at 4Mhz ; it is essentially the same with some tweaking and fiddles. (16Mhz parts seem to be scarce).


I wish to use this in a project which will have PD source. Do you have any objection to this (you will be credited for the video part of it, of course) (Paul Robson)

 No objections until the code remains public domain and you send me a copy of it as a warrant that it is effectively available to the public. Click here to see Paul Robson's code.


What programmer do you use?

 Only the best one:SI-prog (<http://www.artek.it/>) with free Pony Prog prog software (<http://www.lancos.com/>), but Claudio is a friend of mine, so maybe I'm biased...

What is a SCART connector?


 The SCART connector (also known as PERITEL) is a standard connector on european TV sets. This 21 pole connector provides: RGB input (best suited for consoles and used to put images in color on my projects), videocomposite input and output, audio input and output, plus a couple of inputs for real-time video source switching (fast blanking on my projects) and slow video source switching (AV switch). In case you don't have the SCART, you need either an RGB input connector or an RGB to videocomposite converter to feed the VC input provided on most TV and VCR. In both cases, some modifications on the original circuit are needed.

Do they work with NTSC tv sets?


 No, video designs are for 50 Hz field rate, 15625 Hz line rate. Please note that these projects generate a non-interlaced video display, that is a display with half the lines. I don't know of any porting of the video-dvm or bingo or crono code to NTSC (60Hz), but I think it should be feasible.

Depending on your programming skill and previous video experience, you can put your hands on the design and modify it. The point is to choose a suitable clock frequency to adjust for exact line frequency. Then adjust the frame rate selecting the appropriate line count.


I've got sync, but all charachters appear as white blocks or do not display at all

 Probably you forgot to program eeprom data (reprogramming flash on AVR's automatically erases eeprom data, so program flash first).


I want to mix broadcast video and text for use as a display in a home automation controller (Peter Williams)

 You need to sync to incoming signal. Look here for a worked example. Check [here](#) also.

How does PAL works? How can I get PAL output?

 As regards the PAL basics, I found that the video generator project published on <http://www.picpoint.com/> is very well documented (and describes a simple circuit to make a video composite signal from RGB components)

Do the video projects work without a SCART?

 Video-DVM will work, the others I fear not. They use the Fast Blanking (pixelwise) input of the SCART to switch between the black&white signal (from the composite input) to the R-G-B signals.

Can I modify the code to make a clock?


 Yes, check also <http://www.brouhaha.com/~eric/pic/pictock.html> to see a worked solution.

Did you ever think about an **midi-data monitor that displays the names of the received midi-bytes (note-on/note of, program change and so on) on a TV**, would be a great help-gadget for musicians.....There are computer-programs for this goal, but there is always a big computer needed.....if you like this idea, you may use the idea for free. But if you really publish such a project please name me as the bringer of the idea. (Gert Bouland, The Netherlands)


 *Anyone wants to put his teeth on the idea?*

Quick's: remote control

Do you know what carrier frequency does all remote controls have ? What >IR-Decoder should I buy? 36, 38, 40kHz ?

 In Europe, RC5 encoding is used by Philips and many other brands, and uses 36kHz.

Is there a code how to sample a remote control signal?


 Check the Tomi Engdahl's pages for encoding description, and [Claudio Lanconelli's](#) pages for sample code using his "minithreads" system.

I want to do Irda. Where can I find info & parts?

 Lots of info can be found at <http://www.irda.org/> ; the RS-components catalog shows some IRDA modules. (try <http://www.rs-components.com/>)


Casio data logger

Did You ever tried to built an interface to let the cfx act as a terminal ? (Thomas Nabfert)


 Some time ago I saw a program that claimed to work as a "terminal" using two CFXs. Now it has disappeared. I can't figure how it worked, because as far as I know, the "Send(X)" instruction on the Casio **does not work** as expected (i.e., symmetrically to the Receive(X)).

I don't know the PIC16C84 - is it able to handle two serial ports ? In this case the PIC could act as an Protocol-interface between the cfx and >a VT100-device.


(Thomas Nabfert)

 There is enough horsepower in a PIC to handle a second serial port in software, provided you don't need too large a buffer. Just in case, the XTAL frequency can be increased to 10 MHz instead of actual 4MHz.


Can I get negative temperatures out of an LM35?

 The LM35 gives negative temperatures in the form of negative voltages (relative to ground pin). You can change the software to operate the AD converter in bipolar mode, but it's probably easier to add a positive offset to the GND pin so that it reads as positive at 0 degrees. You don't need a very stable voltage: in fact you can use another AD input to measure the amount of offset and then subtract it in software from the temperature read. Check National's datasheet for details, they usually give good application notes.


What Maxim part should be used? Digi-Key list two different chips,Max186bcpp with ref and Max186dcpv with v ref. (Albert Hance)

 If I interpret correctly the Maxim data sheets, the letter following the 186 is the component selection (from A the better to D the worst). Then "C" means "commercial" temperature range (0-70 deg. C), and PP = dil plastic package. I'm not sure to understand what with ref and with v ref means.


How much does a Casio calculator cost?

 From Bob Weir (Colorado, USA): The local Wal-Mart is selling the 9850 for \$60. and that includes a rebate coupon good for another \$20 (1999).

How much do the chips cost?


 You should be able to get both chips for less than \$15 (retail, 1999).

Cannot read the LCD pictures from PDF file


 The pictures of the LCD screen from the .PDF file can be fuzzy: here is a clearer version (Note: the LCD sample has been removed from the html version)

Parking Sonar


What type/brand of ultrasonic transducers you used and approximate price.(Bobby Echevarria, Manila, Philippines)

 I got the parts from the German MONACOR catalogue, I'm unable to supply a part number but these kind of piezos were quite popular at the time. Nowadays, they are widely used on car burglar alarms. Any TX-RX couple working at 40 kHz should do the job.

Strange pinout for 7808 voltage regulator (Bobby Echevarria, Manila, Philippines)

 You are right, the schematic is drawn with Protel that uses such a misleading pin numbering.

Is an assembly scheme available?

 No (gone with the car).


Where do those pin go?

 Pin list:

- pin 12 of U3 is unconnected (depicted by the 'X' symbol)
- pin 2 of U10 goes to pin 16 of 4017 AND to pin 14 of 40106 (Vcc)
- pin 3 of U10 goes to pin 8 of 4017 AND to pin 7 of 40106 (GND)

Miscellaneous


Suggestion for overlaying text on existing video

 You can get , 25 rows by 40 columns color text display with block graphics using the EXISTING teletext circuitry on the tv set.


Most of the actual tv sets use ICs compatible to the Philips/Siemens standard. They have an IIC bus and writing characters to the tv screen is a matter of bringing out the bus (two wires and ground, a simple jack plug can do) and issuing IIC commands from the PC. I've tried this several years ago on an ordinary tv and **it worked**. Maybe the simple IIC interface used in my pcTherm design is capable to drive your tv. It is then a matter of issuing the right IIC commnad from the PC

If you don't want to touch the TV, then you can use the same chip that is inside the tv to build an external board! It produces RGB signals that can be brought to the SCART connector. These teletext chips are usually found on surplus teletext boards or as spare parts.

Assembler generates errors

 The AVR code of Bingo, Chrono and Video-DVM was assembled using one of the early versions of AVRASM. I'm doing guesswork, but I think newer versions include (as embedded pseudo-commands) the macros I had to include in earlier versions. Try eliminating them or - just to be sure not to introduce errors due to slightly different implementations - renaming them eg. skipne -> myskipne (be sure to rename ALL occurences of the macro). This problem is not a concern if you don't need to modify the software, as AVR the executables are supplied as well.

I cant find the MM53200 data sheet!

 The chip was made by National but it is now obsolete, so they don't have any info on their site :-)

If you can read italian, try this link: <http://www.freeweb.org/hobby/i2viu/rx53200.htm>

Net english anymore?

 I don't have any URLs about net-english, it is just a name to figure out an idea!