1

GPS (Global Position System)

| 1 | GPRMC | 2 | GPS | 3 | PC | 4 | GPS |

### 1 GPRMC

$GPRMC,$<c1>,<c2>,<c3>,<c4>,<c5>,<c6>,<c7>,<c8>,<c9>,<c10>,<c11>,<c12>*hh
<1> UTC <2> hhhmmss <3> A=0 <4> A=1 <5> V=0 <6> V=1
<7> ddmmmmmm <8> ddmmmmmm <9> <10> UTC <11> hhhmmss <12> UTC
<13> 0000.0-100.0 <14> 0000.0-359.9 <15> 0000.0-999.9 <16> 0000.0-100.0
<17> <18> <19> <20> <21> <22> <23> <24> <25> <26> <27> <28> <29> <30>

2 GPS

| 4 | PC | 2 | GPS | 1 | GPRMC |

### 2 PC

- Windows API
- Windows
- _inp_.inpw._inpd.
- _outp_.outpw._outpd

### 3 VC++6.0 GPS PC

- Windows
- _inpd_.inpw._inpd.
- _outp_.outpw._outpd

m_hCom =CreateFile ( " COM1" ,GENERIC_READ |GENERIC_WRITE,0,NULL,OPEN_EXISTING,FILE_FLAG_OVERLAPPED,NULL);
以异步方式打开串口。创建数据结构，将结构参数设置到串口。调用回调函数进行读写操作。关闭定时器。设置读写操作的时间溢出。读串口。关闭串口。

下面就是对程序主体的描述，它实现了从串口缓冲区读取数据。由于帧内各数据段由逗号分割，因此在处理缓存数据时，一般是通过搜索“$”来判断是否是帧头，在对帧头的类别进行识别后再通过对所经历逗号个数的计数来判断出当前正在处理的是哪一种定位导航参数，并做出相应的处理。下面就是对缓存数据进行解帧处理的主要代码。

读完之后要重新启动定时器。由于需要处理的数据量较大，所以读取数据时，如果能收到有效的数据，就将帧头和帧尾发送到串口，并设置帧头和帧尾为逗号计数器；如果不能收到有效的数据，就将数据计数清零。

现在已将所需信息提取到内存，即时间、日期以及经纬度分别保存在$@F-D[和$A@?gH/A@A V-W；$A@-@,/?gH/A@A V-W和$A.0D\[-@,/?gH/A@A V-W中，在实际应用中往往根据需要对其做进一步的运算处理，比如从天线接收的GPS信号为本地时间，因此需要在获取时间上加9小时才为我国标准时间。而且GPS使用的坐标系也与我国采用的坐标系不同，有时也要对此加以变换，而这些变换运算必须通过数值运算完成，因此需要将前面获取的字符型变量转化为数值型变量，这部分工作可放在检测到帧尾完成。

小结
本文结合主要的相关程序代码对GPS全球定位系统的定位导航信息的接收和参数数据的提取进行了讨论，同时也对串口的程序设计作了简要的讲述。本文提供的方法是对GPS的一些基本信息而言的，该系统在实际的应用中可能因为各种现场因素影响程序调试，此时可利用抗干扰性能较好的单片机系统等进行处理。

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used in embedded systems.

**Key words:** USB; mass storage protocol; FAT16; single–chip computer

005–04–82 The variable frequency control to the asynchronism motor drive air compressor for its less energy consumption

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**Abstract:** The actuality and disadvantages of traditional high–power asynchronism motor drive air compressor are discussed. In order to reduce the energy consumption and safety running, a variable frequency control method to the motor is supplied and computer monitor system is added to the control system. It also gives energy consumption analysis caused by the variable frequency control method.

**Key words:** variable frequency control; air compressor; energy saving

005–04–84 The design of pneumatic controlled multiple cylinder repeat system

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**Abstract:** This system is used for foodstuff industry and this article amply analyses the design of electric–pneumatic controlled multiple cylinder repeat system. The process includes the process analysis, the process check, the motion process designed by X–D diagram, the drawing of X–D diagram, the account of every motion implement signal by X–D diagram, the drawing of control logic element diagram, the drawing of electric control element diagram and so on.

**Key words:** sequence control; pneumatic control; cylinder; implement framework; electromagnetism commutator; telecom signal; logic loop process; relay

005–04–88 Application of MSComm on serial communication between PC and CNC

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**Abstract:** The paper introduces an applied software about serial communication with MSComm controller, which can transmit data between PC and CNC through RS232 interface.

**Key words:** serial communication; MSComm; VC++; CNC

005–04–90 A measurement to the speed of vehicle with ABS during braking

WU Gao–gui, ZHOU Quan, LIAO Jun (South China University of Technology, Guangzhou 510640, China)

**Abstract:** Anti–lock braking system is an important device to improve the active safety of vehicles. By regulating brake force vehicles obtain good brake efficiency and control ability. Regulating brake force is based on the slip ratio so the speed of vehicle is an indispensable parameter. The paper put forward a measurement to the speed of vehicle with ABS during braking by integral of acceleration and validated it by a test.

**Key words:** ABS; speed of vehicle; acceleration transducer; DSP

005–04–93 Application of Keil µVision IDE in the simulation of single–chip microcomputer controlling system

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**Abstract:** Keil µVision IDE is a powerful development tools for the application of single–chip microcomputer. In this paper, using its simulating ability and DLL programmed with VC++ a keyboard and a stepping motor are simulated and single–chip microcomputer controlling the stepping motor is implemented.

**Key words:** single–chip microcomputer; dynamic link library; stepping motor; simulation

005–04–96 A new attempt to actualize serial communication between PC and GPS by means of VC++6.0

CHEN Yong–hai, WU Bin, JIAO Feng–chuan, WANG Gang (Beijing Jiaotong University, Beijing 100044, China)

**Abstract:** This article, based on an amelioration project of navigation system of vehicles in some city, explores how to receive and separate serial data to actualize dynamic display using computers and the position data regularly sent by GPS receiver. Starting with an introduction of the present use of GPS and GPS sentences conforming to NMEA0183 agreement, the article proposes a new attempt of GPS serial communication, placing an emphasis on how to self–define message function and separate the received serial data effectively.

**Key words:** NMEA0183; GPS; Windows communication API function; multi–system timer

005–04–98 A new type of platform for servo driver system

ZENG Jian–an, ZENG Yue–nan, JI Mian–hao (Guangdong university of technology, Guangzhou 210090, China)

**Abstract:** The paper introduces a new type of platform for servo driver system based on vector control algorithm. The IRMCS201 is a design platform for a complete servo drive system based on IRMCS201 IC. The system has a simple and low cost yet very flexible structure, It also allows users to configure the algorithm for specific application needs. Permanent magnet motor or AC induction motor are supported.

**Key words:** servomotor; vector control; IRMCS201

005–04–101 The error analysis about the process numerical controlled

CHEN Chun (Sichuan electromechanical institute of vocation and technology, Panzhihua 617064, China)

**Abstract:** The numerical control system has well automatic capability, but it’s auto–adaptability is bad. There for, when the process is programmed, we must notice to the every detail, and do our best to nicety. In this way, the numerical controlled machining can smoothly run.

**Key words:** numerical control manufacture; design program; error analysis