

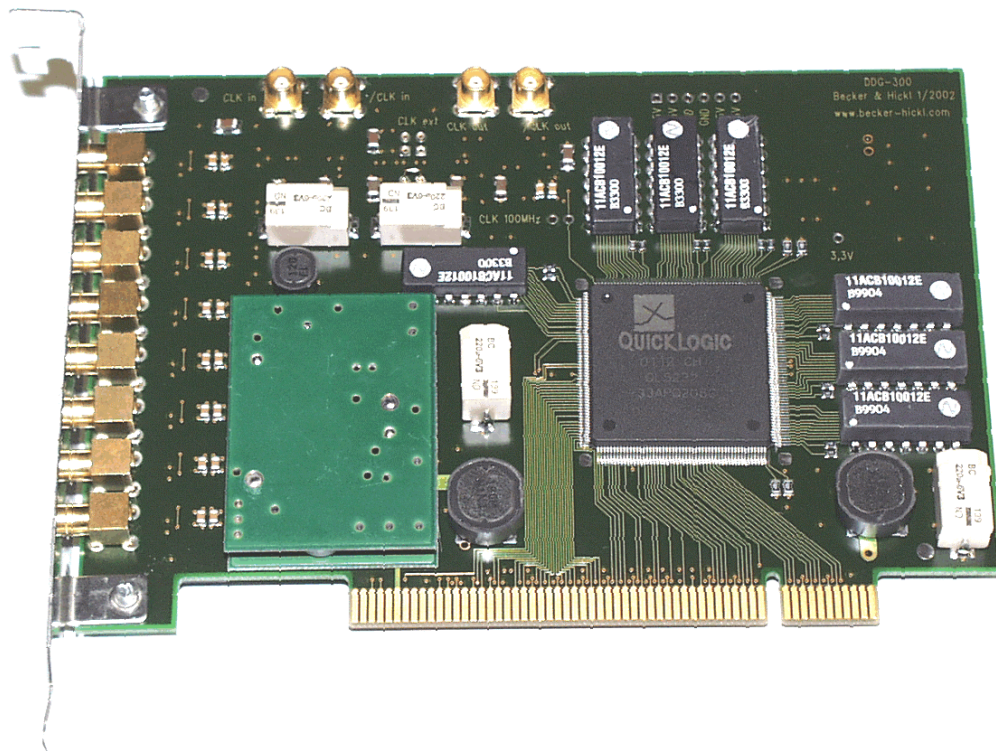
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DDG-200

Digital Pulse / Delay Generator

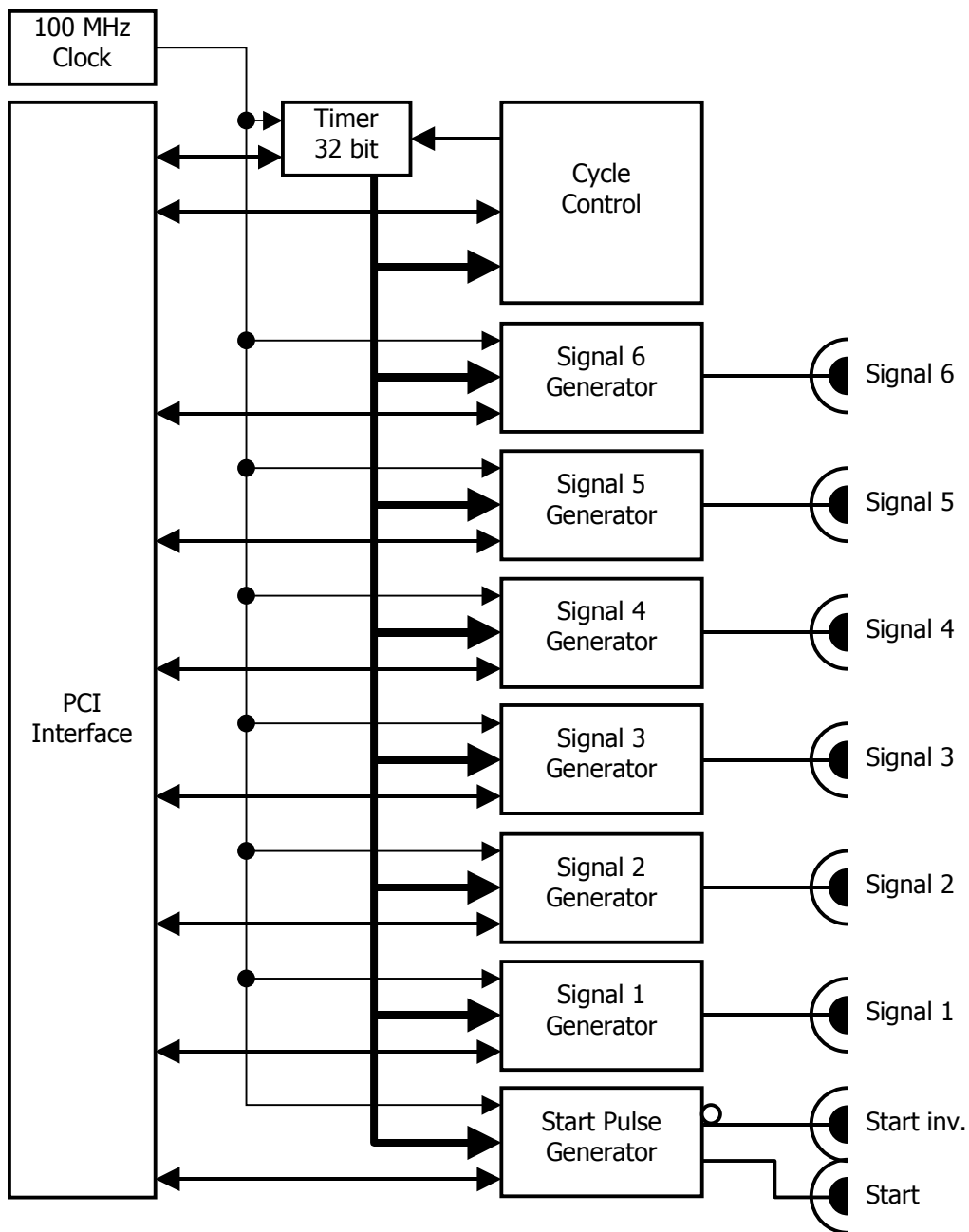
- **2 Synchronous Reference Outputs**
- **6 Delayed Output Channels**
- **Delay resolution 1.25 ns**
- **Pulse width (Signal) from 10 ns to 5.2 ms**
- **Maximum Cycle time 42.9 s**
- **Outputs TTL- / CMOS compatible**
- **PCI Plug-in Module**
- **Works under Windows 95, 98, NT, 2000 and XP**



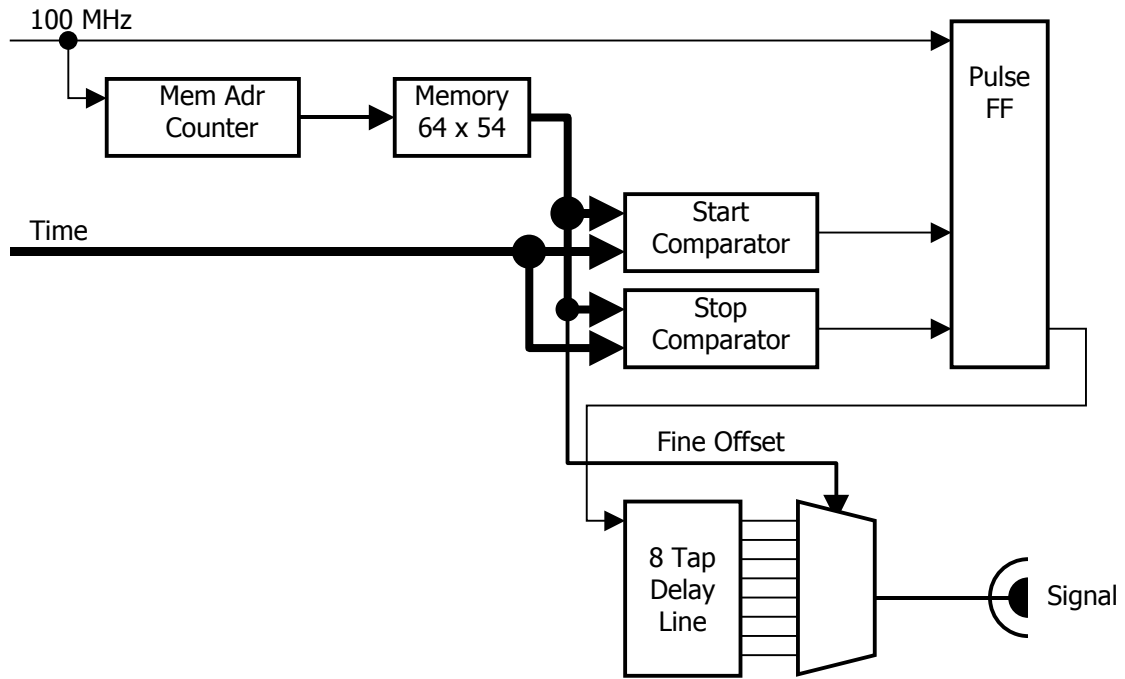
General Information

DDG-200 is a Digital Delay Generator which can control experiments as a master device. Timing is referenced to the leading edge of the START pulse. There are 6 signal outputs available on which a sequence of up to 64 pulses can be defined. This sequence is called a cycle. The hardware allows to execute one to 4,095 cycles without interruption or indefinite repetition of the cycle. The polarity of the signal outputs is selectable.

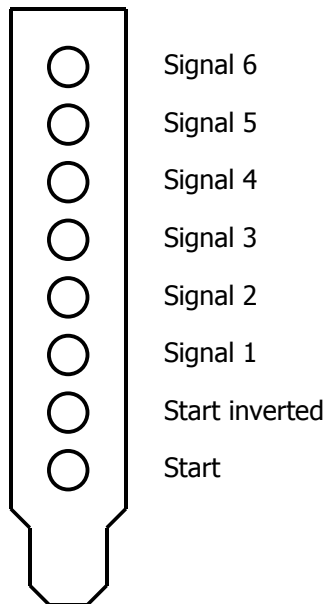
Simplified Block Diagram of DDG-200



Simplified Block Diagram of a Signal Generator



Connector Layout



Specification

Max. Cycle Time	42.94967295 s
Min. Pulse width (all Outputs)	10 ns
Max. Pulse width (Start)	42.94967294 s
Max. Pulse width (Signal)	5.24288 ms
Max. no. of pulses per signal and cycle	64
Max. no. of cycles	4,095 or endless
Time resolution of nominal Pulse Position	10 ns
Time resolution of Pulse Fine Offset	1/8 of 10 ns
Output high level load)	+5V (no load); +2,5 V (50 Ω
Output low level	0V
Output impedance	50 Ω
Output connector type	MCX

Hardware Installation

To install the device, switch off the computer and insert the DDG-200 module into a free slot. To avoid damage due to electrostatic discharge we recommend to touch the module at the metallic back shield. Then touch a metallic part of the computer with the other hand. Then insert the module into a free slot of the computer. Keep the DDG module as far as possible apart from loose cables or other computer modules to avoid noise pick-up.

Windows has a list of hardware components, and on the start of the operating system, it automatically assigns the required hardware resources to the components of this list. If you have several DDG-200 modules in the computer each module gets its own address range.

When the computer is started the first time with the DDG-200 Windows detects the DDG module and attempts to update the list of hardware components. Therefore it may ask for driver information from a disk. In case of Windows 98 / NT / 2000 / XP the driver "bh.inf" from the root directory of the installation CD-ROM will be found automatically. In case of Windows 95 the driver from the "Windows95_driver" directory should be used.

Software Installation

The DDG-200 modules come with the 'DDG Standard Software' which controls all hardware and software parameters of the module. Up to 4 DDG-200 modules in one computer can be operated by one DDG application.

The DDG-200 Standard Software runs under Windows 95, 98, 2000, NT and XP. To facilitate the development of user-specific software a DLL library is available.

The installation of the DDG-200 Standard Software is simple. Start "setup.exe" from the directory \DDG_1.0 of the installation CD-ROM and follow the instructions of the installation software.

The DDG-200 software is based on 'LabWindows/CVI' of National Instruments. Therefore the so-called 'CVI Run-Time Engine' is required to run the DDG software. The 'Run-Time Engine' contains the library functions of LabWindows CVI and is loaded together with the DDG software. The installation routine suggests a special directory to install the Run-Time Engine. If the required version of the Run-Time Engine is already installed for another application, it is detected by the installation software and shared with the existing LabWindows CVI applications.

Description of Setup File

This description is included in the file "ddg200.set" which is located in the installation directory of DDG.

Manual Update

The complete manual will be published on our website <http://www.becker-hickl.de> as soon as it is available. Please check our website from time to time.

Technical Support

We are pleased to assist you in case of any problems you may have with your DDG-200 module. To fix the problem we ask you to send us a setup file (.set) with your system settings.

Furthermore, please add as much as possible of following information:

- Description of the Problem
- DEL-350 Serial Number
- Software Version
- Trigger signal source
- Trigger signal shape, amplitude and repetition rate
- System Connections: Cable Lengths, Ground Connections. Add a drawing if necessary.
- Environment: Possible Noise Sources
- Your personal data: E-mail, Telephone Number, Postal Address

The fastest way is to send us an email with the setup file(s) attached. We will check your system settings and – if necessary – reproduce the problem in our lab. Usually we will be able to send you an answer within one or two days.



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