

Version **4.01.13.00** :

**Most important features of version 4.01.13.00 compared to version 4.01.10.02 :**

- ADbasic version 4.01.13 :
  - bugfix : at `SHIFT_LEFT`, `SHIFT_RIGHT`, `ABS`, `SIN`, `COS`, `EXP`, `LOG`, `LN`, `SQRT`, `TAN` if one of these functions uses itself as a function parameter
  - bugfix : accuracy of calculations at division by a constant
  - bugfix : printing in „landscape“- orientation
  - bugfix : at optimization level 2 on calculation with constant expressions
  - new Compiler Option : Remember Device No.
- ADbasic Include files :
  - ADwpdio.inc : new subroutine : `RTC_GET()`
  - ADwpAD.inc : bugfix : `BURST_CREAD()`
  - ADwpext.inc : bugfixes : `RS_RESET()`, `WRITE_FIFO()`, `GET_LINE_STATUS()`
  - ADwCAN.inc : new file for CAN-expansion at ADwin-GOLD
  - PRO-STORAGE\_SP.inc : bugfix : `MEDIA_RD_...`
- ADwin driver bugfixes :
  - occasional problem with `SetData` function on ENET – fixed only together with firmware  $\geq 2.53$  and  $2.64$  respectively
  - occasional problem with `GetFifo` function (ENET)
- Developer Software : Testpoint driver :
  - Realtime Object 1.3.8 : bugfix : Read Parameter returned only unsigned values.
  - A/D Object 1.3.5 : bugfix : at Sample A/D Action (all 16-bit values  $< 32768$  were miscalculated)
- ADEthFlash V2.9 : EEprom Support now also for ADwin Ethernet interface 2
- ADtools V4.9 : diverse buxfixes at TGraph, TDigit, TPoti, TPar\_Fpar
  - TGraph : new : now up to 16 analog channels and 32 digital channels
  - TGraph : new : importing of data from a textfile
  - TGraph : new : timer can be disabled by pressing the SHIFT- key during startup
  - TGraph : new : values can be edited by double-clicking in the Textwindow
  - TProcess : new : ADbasic Debug Errors are displayed
  - TProcess : new : PM, DM, DX and Codesize are displayed
  - TProcess : new : Globaldelay can be set also in frequency units (Hz, kHz, MHz)
  - TPar\_Fpar : new : comments can be imported from ADbasic #defines.
- ADlog V1.0 : datalogging software for ADwin systems. **(on the CD-Rom for the first time)**
- **JAVA** V1.0 : JAVA- interface for ADwin-systems with Ethernet interface **(on the CD-Rom for the first time)**

**Most important features of version 4.01.10.02 compared to version 4.01.01.21 :**

- ADbasic version 4.01.10 :
  - bugfix : if the same Fifo is used several times within an expression
  - diverse bugfixes at optimization level 2 (e. g. at `Digin()`)
  - bugfix : at integer expression `VARIABLE * CONST / CONST` or `VARIABLE / CONST * CONST`
  - now more than 128 characters are allowed for file-/pathname
  - bugfix : occasional problem with libraries
  - bugfix : on task-switch among several low prioritized processes
  - improved checking of the function parameters at `Fifo_Full()`, `Fifo_Empty()`, `Fifo_Clear()`
  - improved checking of the file, which is passed to the `IMPORT` instruction
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL, ADwin10.BTL) :
  - bugfixes at the communication process and at the process-scheduling of low priority processes
- Developer Software :
  - Matlab driver : version 2.05 : new function `Data_Length()`
  - C - driver : sample programs revised
  - ADwinActiveX V 2.0.0.10 : bugfix at function "Boot": If property `Exception_Enable` is used, then no exception was initiated.
- Pro-Storage V1.8 : bugfixes ; now also `FLOAT` can be stored/loaded

**Most important features of version 4.01.01.21 compared to version 4.01.0106 :**

- ADbasic library files : new : FFT library now also for T10 (FFT.Lia)
- ADbasic include files :
  - ADwpcdio.inc : new : instructions for the COMP16 module ; bugfix on Pro-Storage (RTC)
  - ADwpcxt.inc : corrected : SET\_RS ( )
  - ADwpcda.inc : new instructions for memory option (for example Pro-Aout-4/16-M2)
- ADwin driver bugfixes and optimizations :
  - occasional problem with SetData function on ENET
  - occasional problem with access from several PCs to one ADwin-system (ENET)
  - better usage of the transmission bandwidth on simultaneous access from one PC to several ADwin-systems with the same TCP/IP port.
  - ENET optimizations at SetFifo function , especially active with Win9X/ME PCs
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL , ADwin10.BTL) :
  - Bugfix : on starting a second process
- Developer Software :
  - VisualBasic driver : return value of the function Get\_Globaldelay
  - Testpoint driver : A/D Objekt now also for GOLD and L16
  - Labview driver : Acquire.vi now also for GOLD and L16
  - InTouch driver : sample programs are on the CD for the first time
  - Matlab driver : some functions returned a duplicate result
- GoldCalib V1.0 this is the calibration program for ADwin-Gold-ENET/USB
- Pro-Storage V1.6 : now also module addresses > 99
- ADEthFlash V2.2 : supports now also firmware 2.52

#### **Most important features of version 4.01.0106 compared to version 4.00.0600 :**

- ADbasic version 4.01.01 :
  - Mark Controlblock now also for SELECTCASE
  - new functions : CAST\_FLOATTOLONG ( ) , CAST\_LONGTOFLOAT ( )
  - bugfixes :
    - at optimization level 2
    - constant -2147483648 was not accepted
    - problem with Fifo (Float) as LValue
    - Open All Includes did not work in certain cases
    - Debugmode did not work in LowInit section
    - problem on handling with strings
    - on ADC instruction if the first function parameter is not a constant
    - error on nested libraries with T10 if array is in external memory (DX)
- ADbasic include files :
  - ADwinpro.inc : new function : CPU\_DIGIN ( )
  - ADwpcdio.inc : new: Pro-Storage : PCMCIA- memory and real-time clock
- Developer Software :
  - Testpoint driver : support of the T10 processor
  - Labview driver : paths adapted for Labview 7 and sample programs
  - C - driver : reworked
- ADEthFlash V2.1 : support of ADwin Ethernet interface 2

#### **Most important features of version 4.00.0600 compared to version 4.00.0500 :**

- ADbasic version 4.00.06 :
  - bugfix : old incompatible libraries are now rejected
  - FFT- library newly generated with ADbasic 4
- ADconfig V2.7 :
  - bugfix (problem, if all Device\_No have been deleted)
- ADPro Version 4.1 :
  - support of the new Pro-AIN 8/14, Pro-AIN-32/14, Pro-AIn-8/16 Rev C, Pro-AIn-32/16 Rev C

#### **Most important features of version 4.00.0500 compared to version 3.20.1200 :**

- ADbasic version 4.00.05 :
  - T10 Processor (80 MHz) is now supported (\*1)
  - Projectmanagement : A projectfile can be created, which is able to open several ADbasic files (\*1)

- new optimisations for T10 : up to 10 % less program memory (PM) needed, compared with the T9
- support also of the ADwin-Gold-ENET and ADwin-Gold-USB (both Rev. B1 or greater)
- for ADwin-Gold : multiplexer settling time changed from 1,5 to 2,5 µs for the **ADC12** instruction. Programs with the ADC12 instruction now need more CPU- time and eventually have to be reworked.
- Load Standardprocesses : If "No" => approx. 11 kByte bigger free program memory (PM)
- Default Settings for Directory (BTL, INC, LIB) now also for several Users under NT, W2K, XP
- commandline functionality
- improved user interface :
  - all 80 PARs/FPARs in Parameter window
  - simultaneous control over all 10 processes in the "Processes Window" (\*1)
  - new button: "Enable cyclic update"
  - new button: "Parameter Scan" (\*1)
  - system (Gold, Pro, Light-16, ..) is now selectable. (= replacement for: "16 bit resolution")
  - shortcuts für Boot, Compile, Start, Stop, Parameter Scan, (Un-)Comment Block, In-/Outdent
  - permanent display of the options :
    - Process X delay (= former called : (Global-) Delay)
    - Initial Processdelay (= former called : (Global-) Delay)
    - Device No. , Eventsources , Priority , Process number , Optimize Level
- new instructions :
  - Sleep()
  - AT DM\_LOCAL, AT DRAM\_EXTERN can optionally be specified on BYREF parameters of libraries (for the reason of code optimisation
  - #IF PROZESSOR = T10 THEN
- bugfixes :
  - #DEFINE now also allowed on strings
  - at powerfunction ( ^ ), at optimisation level 2, at IMPORT instruction
- revised editions of ADbasic Manual and Tutorial
- revised edition of context- sensitive ADbasic Online Help

\*1 = [a new ADbasic4 license is necessary for this feature](#)

- ADbasic include files :
  - Adapted for processor T10 : ADwpAD.inc, ADwpDA.inc, ADwpDIO.inc, ADwinPro.inc, ADwpEXT.inc
  - ADwpAD.inc : new for Pro-AIN-F-X/14 (Rev B2) : BURST\_CSTART() , BURST\_CREAD() , SYNC\_MODE()  
new instructions for sequence control : SEQ\_...()
  - ADWgcnt.inc : new for ADwin-Gold-ENET/-USB (Rev. B1 or greater) with CO1 Option :  
CNT\_GETSTATUS() , CNT\_RESETSTATUS() , CNT\_SE\_DIFF()
- ADbasic Library files : new : ADwpEXT\_lib.Li9, ADwpEXT\_lib.LiA
- ADwin driver bugfixes :
  - occasional problem (errorcode 2000) with SetFifo function on ENET
  - occasional problem with path-/filename with function ADwin\_Debug\_Mode\_On
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL) :
  - ADwinS9.BTL : approx. 11 kByte bigger free program memory (PM)
- Developer Software :
  - Labview driver : improvements on Stopdac, Startdac, Acquire, Process\_Status
  - Delphi Treiber : improvements on Get\_last\_error\_text
- ADtools V4.6 : TProcess : Processor T10 is now supported ; bugfixes at TPoti and TPar\_FPar ; improvements at TGraph
- ADEthFlash V2.0 : Processor T10 is now supported
- ADPro Version 4.0 : Processor T10 is now supported
- ADtest V1.7 : (settings are now stored in the registry in location „HKEY\_CURRENT\_USER“ )
- ADwinTCPIPserver V1.2 : on errors, now errorcodes are displayed
- ADbootload V3.4 : bugfix

### Most important features of this version compared to version 3.20.0804 :

- ADbasic version 3.20.12 :
  - Bugfixes on libraries and sleep instruction in optimization level 2
  - Bugfix on sin-, cos- and powerfunction ( ^ ) at processes with low priority
- ADwin driver :

- improved USB driver
- ADwin operating system (ADwin9.BTL) :
  - Bugfix on Booting the ADwin-Pro system (undefined behaviour)
- Developer Software :
  - Matlab driver : (license key for this is required).
- ADtest V1.6 : (settings are now stored in the registry in location „HKEY\_CURRENT\_USER“ )
- ADwinTCPIPserver V1.1 : (for the first time on the ADwin-CD)

#### Most important features of this version compared to version 3.20.0703 :

- ADbasic version 3.20.08 :
  - Bugfixes on libraries and on calculations with signed constants
  - The default setting for “16 Bit resolution” is now “Yes”
- ADbasic include files improved : ADwL16.inc , ADwgcnt.inc , ADwpad.inc  
ADwpDIO.inc ( new: instructions for Pro-CO4 , Pro-DIO-32 (Rev B) )
- ADbasic example “Bas\_Dmo7.bas” improved
- FFT– library available for the first time in : C:\ADwin\ADbasic3\lib
- ADwin driver improvements :
  - On using the functions GetData\_Float / GetFifo\_Float / GetFPar\_All , possibly existing invalid bit patterns (e.g. because of not initialized data) are now set to Q-NAN
- Developer Software :
  - improvements in Labview and C – driver
  - **ADwinActiveX V 2.0** available for the first time in : C:\ADwin\Developer\ActiveX  
Therefore for the first time a driver for the developer environment :
    - **Visual Studio .NET**: C#, VC++ 7, VB.NET
 As well as for the developer environments :
    - Visual C++ 6, Visual Basic 6 , Borland Delphi , Borland C-Builder , Agilent VEE, etc.
- ADPro Version 2.9 : The revision identifier is now displayed for all (i.e. also old) modules
- Windows Installer Engine version 2.0 :
  - The new engine version will be installed automatically, if necessary.
  - Problem on deinstalling older versions (Error 1316) is now fixed
  - Service pack 6 is now required for WinNT (SP6 is available on CD in directory : NT4\_SP6a).

#### Most important features of this version compared to version 3.20.0109 :

- ADbasic version 3.20.07 :
  - Bugfixes on strings, libraries, ADC12, optimization level 2, power function (^)
  - Escape sequences for strings
  - Constants are now combined/calculated at compile-time, no longer at runtime. This is valid for all optimization-levels. Advantage : programs are executed faster. But **ATTENTION** : waiting times (e. g. for multiplexer settling time) , which have been implemented by program code containing calculations with constants, are now shorter. They have to be reworked respectively.
- ADbasic include files : ADwpEXT.inc (new instruction because CAN-LS : **GET\_LINE\_STATUS**  
ADwL16.inc (for ADwin-L16-DIO1 and ADwin-L16-CO1)
- ADwin driver bugfixes :
  - improved errorhandling for diverse functions
  - improved USB driver (errorhandling)
- ADwin operating system (ADwin9.BTL) :
  - decrease in the influence of the process- timing, which could be caused by :
    - **BEGIN\_CRITICAL\_SECTION** (often used in : ADwin-Pro)
    - or division in a process with low priority
- Developer Software :
  - improvements in Visual Basic, Labview and C - driver
- ADPro Version 2.7 : new : identification/calibration of new module Pro-AIN-F-4/14, Pro-AIN-F-8/14
- L16Calib V1.0 this is the calibration program for ADwin-Light16
- ADconfig V2.2 : (configuring of several Devices is more user friendly now)
- ADtools V4.4 :
  - new : TString ( for displaying and editing of ADbasic- strings)
  - TPar\_FPar : new : individual labelling of each Par / FPar-line
  - Bugfixes

- ADfind\_dll V 1.0 searches for all ADwin- DLL and BTL files, which are stored on the PC

### Most important features of this version compared to version 3.20.0101 :

- ADwin driver feature :
  - higher data transfer rates with GetData\_Long, ...\_Float, ...\_String, ...\_Double on ENET, if firmware of the ADwin ENET interface >= 2.5 and if <= 1750 data are transferred from the ADwin- system
- ADwin driver bugfixes :
  - occasional problem (windows- protection fault) with GetData function on networks, which have a lot of traffic
  - occasional problem (wrong errorcode) with SetFifo function on ENET
- ADPro version 2.6 : new : identification of new counter module Pro-CO4
- ADbasic include files : ADwpAD.inc (because of new Pro-AIN-8/16-RB , Pro-AIN-32/16-RB , Pro-AIN-F-4/14, Pro-AIN-F-8/14)  
ADwpDIO.inc ( new: instructions for Pro-CO4 (and SSI))
- Developer Software :
  - Testpoint driver version 1.3.6 with the following new actions :
    - Get\_Last\_Error
    - Read Parameter All, Read Parameter Block
  - Labview driver version 2.0 with the following new functions:
    - errorhandling conformable with Labview (error wiring via Error In, Error Out : based on Get\_Last\_Error, Get\_Last\_Error\_Text )
    - Get\_Par\_Block, Get\_FPar\_Block
    - GetData\_String, SetData\_String, String\_Length
    - Process\_Status, Data\_Length, Set\_Globaldelay, Get\_Globaldelay, Set\_Language
- ADEthFlash V1.5 (new : EEprom support)
- ScanAEI V1.2 (new : If DIL-switch 1 is present, the version number is displayed with an appended ".1" )
- ADtools : bugfixes on Tgraph and TProcess
- ADconfig V2.1 : easier user guidance for the configuration of Ethernet

### Most important features of this version compared to version 3.00.3011 :

- Window XP support (new USB driver)
- ADbasic version 3.20.01 : new :
  - Libraries (see : ADbasic3.20-lib\_eng.pdf)
  - String functions (see : ADbasic manual : ADbasic3\_eng.pdf)
  - „Syntax Color“ (highlighting of ADbasic keywords, comments, etc.)
  - Autoindent
  - multiple “Undo“ and “Redo“
  - “Open All Includes“ (opens all files, which are included by the #INCLUDE command)
  - “Tabsize“ now adjustable (Default Tabsize = 2 , therefore it may be necessary to check the format of those ADbasic programs, which are using TABs)
  - On right mouseclick :
    - (Un-)Comment Block (changing multiple codelines to comments and vice versa)
    - Indent/Outdent
    - Mark Controlblock (on right mouseclick on a line, which contains IF , ELSE or ENDIF, the whole textblock of the IF – ELSE – ENDIF structure will be highlighted ; the same is also valid for : DO .. UNTIL, FOR .. NEXT )
  - Info window (shows several compiler- error messages and warnings)
  - diverse bugfixes (e.g. at SELECTCASE)
- ADPro version 2.4 : new : calibration function now has adjustable gain; binary input possible; ability to switch between UNI/BIP voltage ranges; identification of new module AIN32/16RB
- ADtest V1.4 : last used Device No. is now saved
- ADconfig V2.0 : diverse improvements, timeout now adjustable with resolution of 100 ms
- ADwin driver :
  - better error handling
  - bugfix at Set\_Fifo ( error occurred only with Ethernet, if Float Data were converted to Long DATA(s) )
  - bugfix at process-scheduling of low priority processes
- Developer Software : Visual Basic , Delphi and C – driver with the following new functions :
  - Get\_Last\_Error, Get\_Last\_Error\_Text

- Get\_Par\_All, Get\_FPar\_All
- GetData\_String, SetData\_String, String\_Length
- Process\_Status, Data\_Length, Set\_Globaldelay, Get\_Globaldelay, Set\_Language
- etc.
- ADtools V4.1 (new : TFifo and TBin)
- ScanAEI V1.0 (scans all ADwin-Ethernet interfaces, which are located in the same TCP/IP- subnet as the PC )
- Linux : latest driver and (for the first time) XADbasic\_beta (= ADbasic-GUI)

**Most important features of this version compared to version 3.00.2735 :**

- ADPro version 2.2 : new : calibration function for Rev. B modules
- ADtest V1.3 : now also GOLD and Light-16 is supported ; Info window shows all installed ADwin software packages
- ADconfig version 1.7 : now available : 4-digit Linkaddress
- ADbasic : diverse bugfixes on : DAC- instruction, libraries, external event, integer division
- diverse updates and bugfixes on : ethernet, profibus, ADserver.exe, standard processes, Bootloader (Link), process-timing of low priority processes, communication problem on very big blocktransfer of data under WinNT and Win2000 fixed, problem on starting and stopping of processes under Testpoint fixed
- developer software :
  - Labview driver adapted for Labview 6.0
- for the first time on CD : ADbasic development system and drivers for Linux

**Most important features of version 3.00.2735 compared with version 3.00.2733 :**

- ADEthFlash V1.2 (for programming the bootloader and updating the firmware of ADwin-systems with Ethernet interface)
- ADTools V 3.6
- Significant improvement of the transfer rate of ADwin-light-16

**Most important features of version 3.00.2733 compared with version 3.00.2332 :**

- support of ADwin-systems with Ethernet interface
- under Win2000 also ADPCMCIA and PCI is now supported.
- under Win2000 the ISA-LINK cards are managed now in the "Device Manager".
- new ADbasic instruction : **SELECTCASE**
- "16 Bit resolution" is now the default setting in the ADbasic Compiler Options
- improvements in the accuracy of calculations with the power- function ( ^ )
- improvements of the functionality and the (transfer rate) performance of USB