

# ArbConnection 4.1

## Waveform Creation and Virtual Remote Control Software



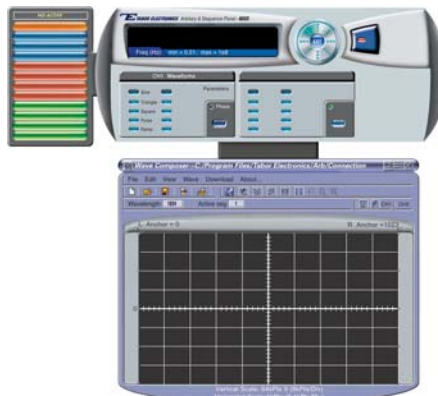
- The only comprehensive software tool in the market that controls instrument operation and programming and waveform creation
- Virtual front panels control all instruments' functions and modes in new looks
- Wave composer generates, edits and downloads complex waveforms
- FM & 3D composer generates and downloads complex modulating signals
- Pulse composer converts a standard arbitrary waveform generator to highly sophisticated Pulse / Pattern Generator
- Equation editor generates waveforms from equations
- Skins Technology for user preference of interface appearance
- Waveform Gallery includes waveforms from various fields
- SCPI command and response editor simulates ATE operation
- Automatic conversion of waveform coordinates from ASCII and other formats
- Simplifies generation of complex sequences

Without an easy way to create arbitrary waveforms, an Arbitrary Waveform Generator is destined to remain idle or at the most, partially used as a function generator. An external software utility such as ArbConnection can unleash the unlimited capabilities and waveform generation built into the product. ArbConnection is a powerful Windows-based waveform generation software that not only allows on-screen creation and editing of waveforms but also provides the means to access all instrument functions and features and exploit the product's full potential.

ArbConnection is supplied free with every Tabor generator. It can be used to access the controls to various parameters and modes. Its waveform composers will assist you in creation of arbitrary waveforms, modulated waveforms and complex pulses. The program can also be used offline as a demonstration tool or learning tool before users write their own interfaces. Either way, ArbConnection is a "must have" for programmers and sales personnel. It is easy to use, intuitive and feels as if you are operating a real instrument from your computer screen.

### New Looks - Skin Technology

This new technology was adopted for ArbConnection Virtual Panels. Change your program skin to best suit your taste. If you get tired of constantly viewing the same panel a change is just a "click" away.



### Virtual Panels

Using the virtual control panels, you can easily access all functions and features that control the instrument. These panels look and feel like real instruments except functions and modes are grouped into logical panels that control specific modes of operations thus simplifying operation. For example, there are panels that control standard waveforms and their parameters, arbitrary waveforms and their parameters, trigger modes etc. The virtual space that is available on the computer screen makes it easy to tile more than one panel and view many functions at a glance without having to scroll through front panel menus.



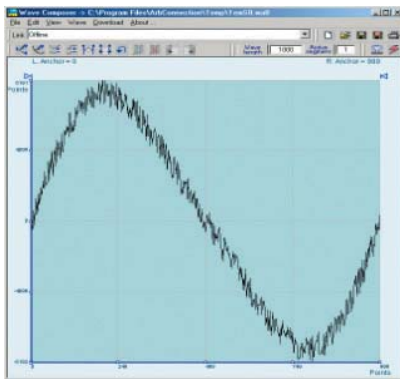
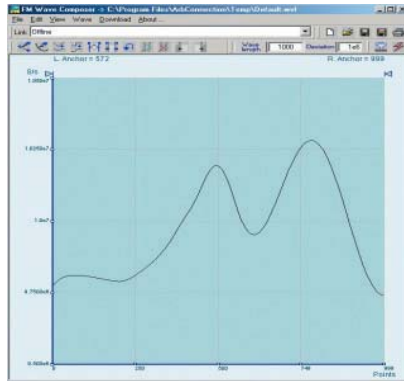
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### The Wave Composer

Use the wave composer to draw waveform on the screen. Waveforms can be drawn in different ways with on screen drafting tools such as sketch and autoline). They can be formulated from fragments of a built-in library of common waveforms such as sine triangle etc. However, for accurate description of waveform coordinates, you can use the equation editor to write equations that describe your waveform mathematically. The Wave Composer separates the entire memory into smaller segments and loads segments with individual waveforms that were created on screen. Waveforms can be stored in the memory for subsequent sessions. Similarly, waveform coordinates can be generated externally using Matlab, Excel, or any other text editor and converted by the Wave Composer to coordinates that can be downloaded to the instrument.

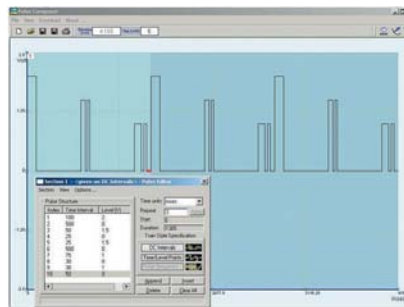


### The FM Composer

The FM wave composer generates and downloads arbitrary modulating waveforms which can be very complex. Because the FM system works by modulating the frequency of the clock, you can generate very complicated waveforms, and then frequency modulate them with other arbitrary waveforms. The FM Composer looks and feels almost like the waveform composer with a major difference-- these waveforms will represent frequency changes and not amplitude changes. It's a great tool for controlling frequency agility by generating the agility curve as an arbitrary waveform. The resolution and accuracy of the modulated waveform is unsurpassed and can only be duplicated by mathematical simulation.

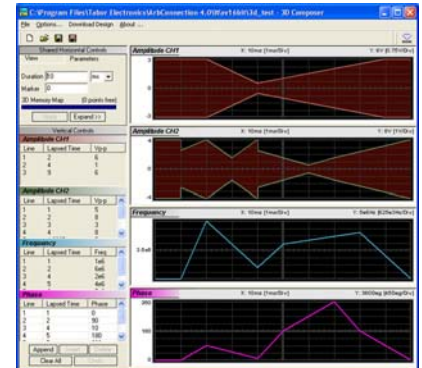
### The Pulse Composer

Generating complex pulse trains has never been easier. The Pulse Composer is a powerful tool that converts your Arbitrary Waveform Generator to a very sophisticated Pulse/Pattern Generator. It allows you to create pulses exactly as you would draw them on a blank piece of paper. Design your pulse using transition points or level intervals. Once designed, the pulse composer defines and distributes the pulse sections in different segments without user intervention and selects the appropriate function and mode that will best suit your pulse train requirements.



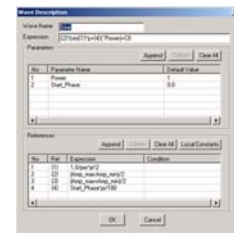
### The 3D Composer

The 3D Composer is a unique and powerful tool for generating carrier waveforms (sinewaves) that have simultaneous variations of amplitude, frequency and phase. The profiles for each channel are drawn separately for each channel right on the screen and downloaded to the instrument as modulation profiles. Frequency and phase profiles are common to both channels but each channel can be designed to output a unique amplitude pattern.



### The Equation Editor

One of ArbConnection's most powerful features and probably the most useful is the Equation Editor. The Equation Editor let you write equations the same way as you would on a blank piece of paper. Just write it and ArbConnection processes the mathematical expressions and converts them into waveform coordinates displayed on the waveform screen. The Equation Editor will detect and inform you of syntax errors and, with its self adjusting feature, will automatically adjust parameters so that none of the points on your waveform exceeds maximum scale limits.



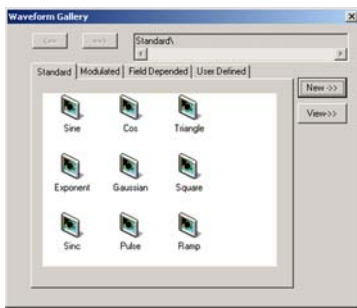
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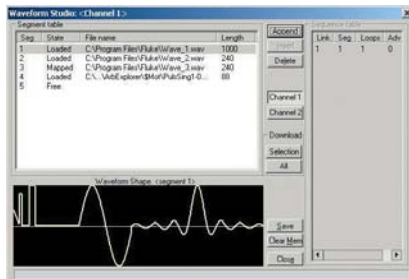
### The Waveform Gallery

The waveform gallery is comprised of common waveforms that are usually required for most applications. Waveforms are added constantly to the pool thus making it easier for the user to develop his/her application from a known and demonstrated starting line. The waveform gallery supports an array of applications, requiring standard sine waveform to complex video signals.



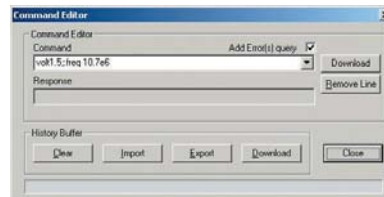
### The Waveform Studio

Having a large memory to store waveforms does not necessarily mean that you have to use the entire memory every time you download a waveform. The Waveform Studio is basically the sequence generator manager of the instrument. It allows you to either capture or upload waveforms into the various segments, displaying them on a small preview screen. These segments can be either used as individual arbitrary waveforms or replayed as part of the complete waveform without losing valuable memory space and without sacrificing waveform coherences or integrity.



### The Command Editor

ArbConnection also includes an editor for SCPI remote control commands. Using this, ArbConnection can be used as a controller for testing sequences of SCPI commands, which can then be used in applications such as ATE. Validate or test various commands using the command editor to assure that commands or syntax that you use in your application will respond exactly the same way as it responds to the editor commands.



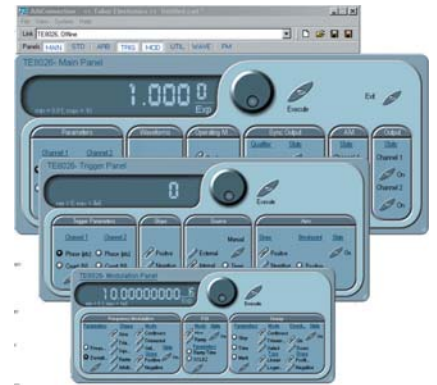
### Info Tips

Computer screens are constantly improving resolution and intensity but unfortunately, as we age our eyes our eyes do the opposite. When panels are tiled, they are resized to fit the screen and sometimes, the letters become difficult to read. Position your mouse on the controls and parameters and an Info Tip turns on, showing the control name and, in some cases, current parameter setting and range.



### Re-sizing of Virtual Panels

Panels can be adjusted to fit different screen resolutions and sizes. Use smallest, normal or largest panel setting for optimum viewing or pull down on the skirt to select intermediate sizes. Just like any other Windows program, you can tile or cascade panels if you have more than one panel open on the screen. Add or remove panels as you program the instrument with a "click."

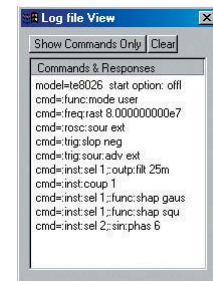


### Save configuration, Load and update instrument.

Saving your work at the end of the session will store all front panel settings for subsequent use or for a different test setup. Front panel parameters and waveform coordinates are saved in a familiar format which can be edited and adjusted with an external text editor. Save as many settings as you need and use the Update Front Panel feature in ArbConnection to download the required test configuration to the instrument registers.

### Logging ArbConnection History

ArbConnection commands are logged automatically in a log file enabling programmers to validate remote interface programming by sending commands to the instrument from the virtual panels and evaluating the way the commands are executed. The commands can be saved in a text file and used in external applications, exactly as they were used by ArbConnection.

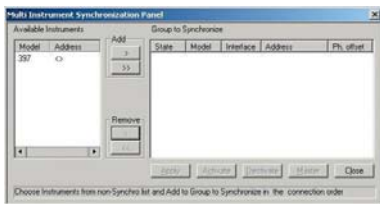


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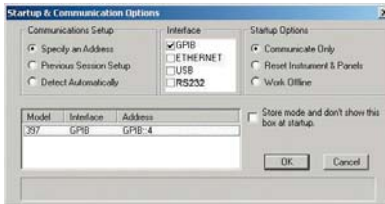


**Multi-Instrument Synchronization Center**  
Need to synchronize multiple channels? ArbConnection does it all for you, including setting up the master and slave units for their functions in the system. The interface is clear and easy to set up. ArbConnection will even set phase offsets between channels for you without the hassle of programming individual instrument.



### Interfaces

Uniformity is important for a line of products that share functionality but not platforms and so ArbConnection now employs every interface that is supported by Tabor. These include: GPIB, RS232, USB, LAN PCI, PXI and VXI. LAN and USB are evolving as the industry standards of the future and therefore, not only ArbConnection but also all future Tabor products will be equipped with these interfaces.



### Applications

For expert technical assistance with your specific needs and objectives, contact your local sales representative or our in-house applications engineers.

### Complimentary free of charge solution

Every instrument comes equipped with a dedicated copy of the ArbConnection software. However, if your copy is lost or outdated, Tabor Electronics makes it possible to log-on to its Download Center and get the latest version "in a click".

### Product Demonstrations

For your convenience, if you want to evaluate the software before you purchase the instrument, you may download a demo version of the ArbConnection to use as a real-time hands-on demonstration.

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### Technical Specifications

#### MINIMUM PC REQUIREMENTS

##### OPERATING SYSTEM

Microsoft Windows NT 4.0 SP 6 or higher, Windows 2000 and Windows XP

##### HARDWARE

Pentium III or better  
High resolution screen (at least 1024 x 768 pixels is recommended)  
50 MB free disk space  
Pointing device, mouse or ball

##### SOFTWARE

NI-VISA 2.6 or higher (Not needed in DEMO mode)

#### HARDWARE CONNECTIVITY OPTIONS

Ethernet, GPIB, RS232, USB, PCI, PXI and VXI

#### SUPPORTED GPIB INTERFACES

##### NATIONAL INSTRUMENTS

AT-GPIB/TNT, AT-GPIB/TNT (PnP), AT-GPIB/TNT+, PCI-8212, PCI-GPIB, PCI-GPIB/LP, PCI-GPIB+, GPIB-ENET, GPIB-ENET/100, GPIB-USB, GPIB-USB-A, GPIB-USB-B, PCMCIA-GPIB, PCMCIA-GPIB+

##### KEITHLEY

KPC-488 and KPCI-488 (Only with driver version 6.03 or higher)

##### CEC

PC-488 and PCI-488 (Only with driver version 6.03 or higher)

#### ORDERING INFORMATION

**MODEL** ArbConnection 4.1

Waveform Creation and Virtual Remote Control Software

#### OPTIONS

**Virtual Skins Pack:** Skins pack for custom view  
**Product Support:** DII's pack for multi instrument support