

DIOEasy

DIGITAL I/O VECTOR DEVELOPMENT SOFTWARE

- Graphical vector development environment for GX5050, GX5150, GX5280, GX5290 and GX5295 dynamic digital I/O products
- File compression algorithm reduces DIO file size
- Converts ASCII vector formats to / from DIO formats for Marvin Test Solutions' digital I/O instruments
- GUI environment supports interactive control and status of dynamic digital instruments
- DIOEasy-FIT option supports importing and converting WGL, VCD, & eVCD file formats



DESCRIPTION

DIOEasy offers test engineers an efficient tool for developing, debugging, and executing digital test vectors for Marvin Test Solutions' GX5050 series, GX5150 series, GX5280 series and GX5291, GX5292, GX5293 and GX5295 dynamic digital instruments.

Digital I/O (DIO) systems are very complex and typically require a substantial amount of programming effort to define data vectors. In order to simplify vector development, Marvin Test Solutions developed Windows-based DIOEasy, providing users with an easy to use interface. Toolbars and menus provide quick access to vector editing and viewing tools.

ARCHITECTURE

DIOEasy offers two methods for creating and editing digital test vectors:

- Graphical User Interface (GUI) Environment
- Scripting Environment

Vectors can be loaded to and from DIO instrument(s) using the DIO Virtual Panel. After loading the vectors, the user can arm and trigger the instrument for generation / acquisition. Data captured from the boards can be saved to a file and/or loaded to DIOEasy for viewing or for comparison against a previously defined vector data file.

GRAPHICAL USER INTERFACE

The DIOEasy GUI offers interactive digital vector editing and viewing capabilities. Its generic structure allows it to easily support all of Marvin Test Solutions' dynamic digital instrument hardware configurations. DIOEasy produces vector data files that can be directly used by the digital instrument's driver (GTDIO). The DIOEasy GUI is similar to a spreadsheet application. Each cell represents the state of a single data bit in a given step. The data bits (channels) are represented by trace lines in the rows of cells, and each step is a column of cells. Data creation, analysis, and editing capabilities include:

- Setting cell attributes
- Direction: In or Out
- Level (state): High, Low or H-Z/ignore

Each attribute is represented by a different color and shape. By simply pointing and clicking the mouse, the user can change the attribute of one cell or a group of cells. DIOEasy supports filling selected ranges of steps and channels with a variety of data patterns including:

- All ones
- All zeros
- Checkerboard
- Invert the current data
- Ramp
- Toggle
- Clock
- Shift/Rotate
- Rotate
- Pseudo random data
- Value set by the user

DIOEasy

Other data generation, editing and analysis tools include:

- Vector Importing/Exporting
- Cut/Copy/Insert/Delete for a range of selected steps
- Compare two vectors - differences in any cell are highlighted.
- Vector conversion - DIOEasy can read and convert data vectors from ASCII files generated by other simulators and pattern generators, or you can save the created data file in a simple ASCII format file, with or without commands. The resulting file may then be edited with any text editor.

Supported sequencing commands include branching instructions such as Loop, Jump, Call or commands that assign a given value to a specific register. Most commands can be conditional.

Supported branching conditions include EQ, NEQ, GT, LT, etc. Inserting/editing commands are done simply by clicking on any step and then filling in the cells when the Command Properties dialog box appears. Sequence steps can be assigned a label, a command, or both.

SCRIPTING ENVIRONMENT

DIOEasy allows you to create, design and edit vectors using Microsoft Visual Basic Script™ (VBScript)—a popular scripting language. Using the capabilities of VBScript and DIO ActiveX objects, the user can write complex programs that create and modify DIO vectors.

The DIOEasy ActiveX object allows you to:

- Create and change any DIO files
- Setup / configure a digital instrument, i.e. set frequency, trigger mode, etc.
- Create DIO File Blocks that are composed of grouped channels (in any order) and steps
- Fill DIO File, Channels, Steps and Blocks with command and data
- Interact with DIOEasy graphical environment to display and compare DIO vector files using DIOEasy objects such as Window, Application, and more
- Create vector libraries that can be re-used in different steps and files

APPLICATIONS

- Digital test systems
- Automatic Test Equipment (ATE)
- Mixed signal testers
- Digital emulation systems
- Hybrid Component Test

ORDERING INFORMATION

DIOEasy	Digital I/O control software including a vector generator and vector comparison
TRAINING	
DIOEasy-DS	2 days DIOEasy training at Marvin Test Solutions (Irvine, CA) for 1-3 persons. Call for larger groups.
DIOEasy-DS2	On-site, 2-days DIOEasy training seminars for 1-3 persons. Call for larger groups.
OPTION	
DIOEasy-FIT	DIOEasy file import tool kit converts STIL, WGL, VCD/EVCD files to Marvin Test Solutions digital file formats for the GX529x and GX5055 digital I/O cards
DIOEasy-FIT-UG	Upgrade for DIOeasy file import tool kit