Summary

This reference manual describes the script examples available in Altium Designer.

Script Examples Gallery Reference

This Script Examples Gallery Reference covers the script examples in the `Examples\Scripts` folder of your Altium Designer installation. Within the Scripts folder are the subfolders which are organized according to scripting language. For example, DelphiScript scripts are in the DelphiScript Scripts folder. The language specific scripts available are:

- *DelphiScript Examples*
- *JScript Examples*
- *VBScript Examples.*
- *EnableBasic Examples*
- *TCL Examples*
- *Query Script Examples*

DelphiScript Script Examples

All DelphiScript scripts whether they are script units or script forms have a `*.pas` extension. The DelphiScript script examples are sorted in the following script folders:

- *General Scripts*
- *PCB Scripts*
- *Processes Scripts*
- *DXP Scripts*
- *SCH Scripts*
- *Workspace Manager Scripts*

General Scripts

\DelphiScript Scripts\General\General_Scripts.PRJSCR

Script Filename	Description
IniFileEg	This script demonstrates the use of TIniFile object and the Read/Write methods.
Mandelbrot	This script demonstrates the use of graphics to build a Mandelbrot set on a script form.
MM	This script demonstrates the use of TMediaPlayer component. The Protel.avi file is needed for this MM script.
ShowModalEg	This script demonstrates the use of ShowModal property for the script form.
SineWave	This script demonstrates how to generate and plot a sine wave on a script form.
TextFileConvert	The input.txt file is provided for demo purposes.
TicTac	A Tic Tac Toe game!
UpdateTime	This script demonstrates the use of TTimer component and the Time function.

\DelphiScript Scripts\General\HelloWorld.PRJSCR

Script Filename	Description
HelloWorldDialog	A simple hello world message using the Script form.
HelloWorld	A simple hello world - an introduction to DelphiScript language.

\DelphiScript Scripts\General\Zipper.PRJSCR

Script Filename	Description
ZipperForm	This script uses the zipping API exposed in the scripting engine. This project zips up a Design project and its associated files.

DXP Scripts

\DelphiScript Scripts\DXP\DXP_Scripts.PrjScr

Script Filename	Description
ClientServerInterfacesReport	This script demonstrates how to use Client interfaces and retrieves information on server installation files, window kinds, commands and panels.
ExtractFilesFromIntLibs	This script demonstrates how to extract source library files from integrated library files with an INTLIB extension.
IntLibSearchDemo	This script demonstrates how to find footprints and 3d models in integrated library files and in PCBLIB files.
OpenADoc	This script demonstrates how to open a text document using Client's OpenDocument method.
ReportIntLibData	This script demonstrates use of Integrated Library Manager and Model Type Manager interfaces to extract data associated with each interface.
ReportPCBViews	This script reports all opened PCB documents and its views in DXP.
ServerProcessReport	This script demonstrates how to generate a report for all installed servers' processes in DXP.
SettingDocumentDirty	This script demonstrates how to set a document dirty, so it gets saved when Save command is invoked.

\DelphiScript Scripts\DXP\DXPVersion.PrjScr

Script Filename	Description
DXPVersionUnit	This script demonstrates how to find the version number of the DXP application.

PCB Scripts

\DelphiScript Scripts\PCB\PCB_Scripts.PrjScr

Script Filename	Description
Count_Connection_Lines	This script demonstrates how to count connection lines (unrouted tracks) on a PCB document and displays the results on the Messages panel.
CreateAVia	This script demonstrates how to create a new Via object on a PCB document.
CreateComponentOnPCB	This script demonstrates how to create a new component on a PCB document.
CreateFootprintInLibrary	This script demonstrates how to create a new footprint on a Library document.
CreatePCBObjects	This script has various functions to create different PCB objects on a PCB document. This script uses the SendMessageToRobots method to send PCB messages
CreateRules	This script demonstrates how to create two different rules – maximum – minimum width rule and a room definition rule (confinement constraint).
Cycle_Pcb_Cursor_Type	This script cycles through available cursor types on a PCB document.
DeletePCBObjects	This script demonstrates how to delete PCB Objects and update the Undo System properly.
EmbeddedObjects	This script demonstrates the use of embedded objects; that is, creates and fetches these embedded objects on a current PCB document.
NetObjectAssign	This script demonstrates how to assign a net property to a new object that has been placed on a PCB document.
PadViaCacheProperties	This script demonstrates the use of TPadCache record and GetObjectAtCursor method for Pad and Via Objects. Load PadViaExamples.PcbDoc from the *Examples\Scripts\DelphiScript Scripts\PCB* folder of your Altium Designer installation before running the script.
PadStackInfo	This script demonstrates how to fetch different pad stack information on a PCB document.
QueryBoard	This script queries the current PCB document for board settings information.
Undo	This script demonstrates the PCB's Undo system. Two procedures to demonstrate how the Undo system works - as one large Undo or multiple smaller Undos.

\DelphiScript Scripts\PCB\BoardOutline Copier\CopyBoardOutline.PrjScr

Script Filename	Description
CopyBoardOutlineForm	This script copies the board outline as tracks and arcs onto specified layer. Layer and Width values to be specified by the user before proceeding.

\DelphiScript Scripts\PCB\CreateRegionsFromBitmap\PCBPictureCreator.PrjScr

Script Filename	Description
ConvertPicture	Main form for the script.
ConstructContourSetFromPicture	Script that deals with creating the contour set from loaded bitmap.
ConstructRegionsFromContourSet	Script that deals with creating regions from each contour set.

\DelphiScript Scripts\PCB\FootprintFinder\FootprintFinder.PrjScr

Script Filename	Description
FindFootprintUnit	Look for a footprint in a PCB library using PCB API

\DelphiScript Scripts\PCB\FromTosGenerator\FromTosGenerator.PrjScr

Script Filename	Description
CreateInterComponentFromTos	A script to ask the user to select two components then it connects pads with same net assignments. Limitations of this script: You need to move the cursor away from a

	component to exit. All nets need to be rebuilt manually after this script is run.
formFormTos	Script Form for this project.

\DelphiScript Scripts\PCB\Hole Size Editor\Hole Size Editor.PrjScr

Script Filename	Description
HSForm	This is the Specific Hole Size Editor dialog to change one of the hole sizes.
HSEditForm	This is the main script for the Hole Size editor.
Customsort	This customsort script contains sorting routines for the Hole Size Editor script.

\DelphiScript Scripts\PCB\Mill Exporter\MillExporter.PrjScr

Script Filename	Description
MillExporter	A Project file. Export a PCB design into a format that can be milled by a CNC Milling machine. Currently only Roland RML milling language is supported.
MillExporter	This unit converts a Board Outline of the PCB document to a polygon so that data can be generated for the PCB document and be milled by a CNC milling machine.
MMExportDlg	This unit controls the settings for exporting a PCB document to be routed on a milling machine.
MMSetup	Setup the default values for a milling machine to be used by MillExporter in an INI text file.

\Delphiscript Scripts\PCB\PCB_Class_Generator.PrjScr

Script Filename	Description
PCB_Class_Generator.PrjScr	A PCB Class Generator Project file.
PCB_Class_Generator_Form.dfm	This script form is associated with the PCB_Class_Generator_Form script.
PCB_Class_Generator_Form.pas	This script adds nets of selected PCB objects into a net class and has a corresponding script form.

\DelphiScript Scripts\PCB\PCB Iterators\PCB_Iterators.PrjScr

Script Filename	Description
Count_pads	This script counts the number of pads on a current PCB document.
CountTracksInComponent	This script counts tracks of five different components on a current PCB document.
IterateComponentBodies	This script fetches component bodies from the current PCB document.
IterateNets	This script demonstrates how to iterate for Nets of the current PCB document.
IteratePolygons	This script iterates Polygons from the current PCB document.
IterateRegions	This script iterates regions from the current PCB document.
LibraryIterator	This script demonstrates the use of the library iterator and displays the number of child objects (primitives of a footprint) for each footprint found in a PCB library
SpatialIterator	This script demonstrates the use of ChooseRectangleByCorners method and the spatial iterator. Selects free primitives only on the focused PCB.

\DelphiScript Scripts\PCB\PCB Layers\PCB_Layers.PrjScr

Script Filename	Description
Layers_Info	This script fetches Layers information for the layer stack of the PCB.
QueryLayerPairs	This script queries the current PCB document for PCB Layer pairs.
QueryLayersOfMechType	This script queries the current PCB document for mechanical layers.
QueryLayerStack	This script queries the Layer Stack of the current PCB document.
QueryMechLayers	This script queries mechanical layers of the current PCB document.

QueryUsedLayers	This script queries the current PCB document for layers that are used.
RebuildInternalAndSplitPlanes	This script forces a rebuild of the internal and split planes for the PCB.
Toggle_Connect_layer_display	The script toggles the visibility of the connect layer on the current PCB.
ValidateLayerStack	This script validates the layer stack and reports a warning if the stack is invalid.

\DelphiScript Scripts\PCB\PCB Logo Creator\PCBLogoCreator.PrjScr

Script Filename	Description
Converter	Script form as the dialog that prompts user to load a monochrome image and then choose thickness of tracks, whether to mirror or not etc.

\DelphiScript Scripts\PCB\PCBObjectsMover\PCBObjectsMover.PrjScr

Script Filename	Description
OffSetObjectsForm	Form for the project.
OffSetObjects	Demonstrate the use of ChooseRectangleByCorners method and the spatial iterator. Moves the objects within the defined boundary on the PCB.

\DelphiScript Scripts\PCB\PCBOutputs\PCBOutputsProject.PrjScr

Script Filename	Description
PCBOutputGenerator	This unit does the following: 1/ LookForFiducials, 2/ Check Board Outline Dimensions and 3/ Generate an output (PickPlace and BOM)
Violations	Fetch existing violation objects and generate a report outlining different violations
GetObjectClasses	Object Classes Reporter Script Form. You choose which object class before generating a list of object classes of a particular kind as a text file.

\DelphiScript Scripts\PCB\PCB Rules\PCB Rules.PrjScr

Script Filename	Description
IterateRules	This script fetches existing rules for the current PCB and generates a text report on rules used, their IDs and their names.
ModifyWidthRules	This script modifies existing Width Constraints that have a Min, Favored and Max Widths of less than 20 mils in width and updates them to 10 mils in width.

\DelphiScript Scripts\PCB\PCBLIB Outputs\FootprintInfo.PrjScr

Script Filename	Description
FootprintInfoReport	This script generates a CSV formatted report of all footprints with their footprint names, heights and descriptions.

\DelphiScript Scripts\PCB\SwapOrRotateComponents\SwapOrRotateComponents.PrjScr

Script Filename	Description
SwapComponentsUnit	Swaps two similar components or rotate a component. A script to ask the user to select two components then have their positions swapped OR if the same component is selected twice, have it rotated. Limitations of this script: You need to move the cursor away from a component to exit

\DelphiScript Scripts\PCB\Unique Object Checker\UniqueObjectChecker.PrjScr

Script Filename	Description

Common	Common routines to use for the project
ObjectChecker	Checks for duplicated Nets and Components on a current PCB document

\DelphiScript Scripts\PCB\ UnRoute Net Class\UnRoute Net Class.PrjScr

Script Filename	Description
Form_ChooseNetClass	This script form prompts you to choose which net class so that the objects belonging to this net class can be unrouted.

\DelphiScript Scripts\PCB\Values Checker\ValuesChecker.PrjScr

Script Filename	Description
ValuesCheckerUnit	This Script checks whether objects on the PCB document contain valid values before generating an output for loading in the CAM Editor.
PCBAPI functions	Script unit that contains functions to be used for the Values Checker dialog.

Schematic Scripts

\DelphiScript Scripts\SCH\Sch_Scripts.PrjScr

Script Filename	Description
AddModelToComponentScript	This script demonstrates on how to add a simulation model to a 555 component. This is done by adding a 555.ckt file to this component.
CountPorts	This script uses an iterator to count ports
CreateComponent_on_Sch	This script demonstrates how to place a component on a schematic document.
CreateSchObjects	This script creates Schematic Objects two ways; 1/ the first procedure places two ports and only one undo will remove both 2/ the second procedure places two ports and need two undos to remove both. This script uses the RobotManager interface to send schematic messages.
DeleteSchObjects	The script demonstrates how to delete Schematic Objects and Updating the Undo System by using the RobotManager interface to send schematic messages.
FetchParameters	This script has two procedures. The first procedure fetches system parameters (document parameters) and the second one how to fetch parameters of a component.
IterateSchSheets	This script shows how to fetch open schematic sheet handles in Altium Designer.
ModelsOfaComponent	This script obtains models for each component on a schematic document and generate a report with a list of components and their associated (linked) models.
ModifySchObjects	This script shows how to fetch and modify Schematic Objects and update the undo system by using the RobotManager interface to send schematic messages.
MoveParameters	This script shows how to move parameters graphically of a parent object such as a component using the Location property and its get/set methods.
ParentChild_Iterators	This script uses an iterator to look for sheet symbols and then within each sheet symbol, use the sheet symbol's iterator to look for sheet entries.
PlaceAPort	This simple script shows how to place a new port object on a Schematic sheet.
PlaceSchObjects	This simple script places different objects on a schematic sheet.
ReplaceSchObjects	This script replaces cross sheet connectors with port objects and transferring net information automatically.
SchDocsRenamer	This script utilises the FileCopy function from Windows unit in Borland Delphi to copy existing files with different filenames.
SimModelsOfComponents	This script fetches Simulation models and their relevant parameters for each component and then generate a text report on these models and parameters.
UndoRedo	This script demonstrates how to use the Undo system when a schematic document is being modified.
UsingaSpatialIterator	This script demonstrates the use of a spatial iterator to conduct a search within a defined region.
UsingSchInterfaces	This script demonstrates the Schematic interfaces.
UsingWSMInterfaces	This script demonstrates the WorkSpace Manager interfaces.

\DelphiScript Scripts\SCH\SchLib_Scripts.Prjscr

Script Filename	Description
CheckPins	This script checks for valid pins of symbols in a library.
CreateComp_in_Lib	This script demonstrates how to create a new symbol in the library.
CompLibReader	This script uses the CreateLibCompInfoReader method to extract component data of a specified Schematic Library.
LibIterator	This script shows how to iterate through a schematic library and fetch symbols.
ParametersOfSymbolsInA Library	This script shows how to fetch parameters of symbols in a schematic library using an iterator.
SymbolPrimsIterator	This script shows how to fetch primitives of a symbol.

\DelphiScript Scripts\SCH\Circad Translator\Sch Translator.PrjScr

Script Filename	Description
StringUtils	This unit deals with the data types.
DesignSettings	This unit deals with reading the Settings table for the CirCad data.
Log	This unit deals with the generation of a log file with results.
ImportUtils	This unit deals with the translation of CirCad data for Altium Designer.
InputForm	This unit deals with the translator dialog.
Test	This standalone unit deals with testing of CirCad data.

\DelphiScript Scripts\SCH\CompReplace\ComponentReplacer.PrjScr

Script Filename	Description
ReplaceSelectedComponent	Replaces a selected component on the schematic with a 2N3904 symbol from the Miscellaneous Devices.IntLib library.

\DelphiScript Scripts\SCH\Connectivity\NetInfoPrj.PrjScr

Script Filename	Description
Connectivity	This unit generate Parameters with Pin Net Info for pins of components from a focused schematic or selected schematics of a PCB Project
DefnForm	The script form to handle User input.

\DelphiScript Scripts\SCH\Font Editor\Fonts Editor.PrjScr

Script Filename	Description
FontsDialog	This script demonstrates the use of Schematic Font Manager interface.

\DelphiScript Scripts\SCH\Import Pins\ImportPins.PrjScr

Script Filename	Description

ImportPinsForm	The ImportPinsForm is the main form. You need a CSV file that contains data for pins to import and create new Pins onto a SchLib document. To use the script: 1/ Execute the ImportPins procedure and the Pins Importer dialog appears. 2/ Click on browse button to load in the CSV file of schematic pins data. 3/ Click on the **Update Mapping** button to refresh the links between text fields and pin properties, then click on Import button to generate a list of different pins on a Sch library page.
ChangeMappingForm	Change Mapping Dialog to map fields from a CSV text file. This script is used by the main Import Pin dialog
ConvUtils	This script has the Conversion of Schematic Types To Strings and Vice Versa routines
PinData.CSV	This file contains pin information which is used for the ImportPins script.

\DelphiScript Scripts\SCH\UpdateFootprintLocations\FootprintPathUpdater.PrjScr

Script Filename	Description
UpdateFootprintPathsOfComps	A Schematic Component has a Footprint (PCB Model) property and its Library Path property. There are situations when components have the same footprint name but come from different libraries. This script allows you to choose a footprint name from the currently open schematic and then choose one of available footprint locations. The locations are based on existing components footprint' locations. Then when dialog is closed, all the components that have the same footprint name have their locations updated with the specified location. Make sure you have libraries installed for the Schematic Components so that footprint library locations (paths) can appear.

\DelphiScript Scripts\SCH\UserDefinedParameters\UserDefinedCompParameters.PrjScr

Script Filename	Description
ComponentParameters	This script demonstrates how to create, modify and delete user defined parameters for components in schematic designs of a hierarchical project.

Processes Scripts

\DelphiScript Scripts\Processes\Process_Scripts.PrjScr

Script Filename	Description
Clrins1	This script demonstrates how to delete objects within an area defined by user.
Clrins2	This script demonstrates how to delete objects within an area defined by user. But the user is prompted before objects are cleared.
CirWiz	This script form generates a simple filter circuit and place on a schematic sheet.
PCBColor	This script demonstrates how to change PCB Colors for a PCB document using the SetupPreferences process.
PCBLayer	This script demonstrates how to toggle the visibility of PCB Layers using the DocumentPreference process.
PlacePCBPolygon	This script places a new PCB polygon object on a PCB document using the PlacePolygonPlane process.
PlaceSchPort	This script places a new Schematic Port object on a Schematic document using the PlacePort process.
PublishToPDFScript	This script publishes from a current project's OutJob document to a PDF and bypasses the *Publish to PDF Settings* dialog.
QuikCopy	This script demonstrates how to select objects, then copy and paste them using ToggleSelection, Deselect, Paste and Copy processes.

RunCommonDialog	This script demonstrates how to invoke the Client module's Common dialog and to fetch parameters.
ShowNetlist	This script demonstrates how easy it is to generate a report using WorkspaceManager's GenerateReport process.
SimpleExample	This script demonstrates the use of AddIntegerParameter and GetIntegerParameter functions.

Workspace Manager Scripts

\DelphiScript Scripts\WSM\WSM_Scripts.PrjScr

Script Filename	Description
AddDocToProject	This script demonstrates how to insert a schematic sheet in a new PCB Project. There needs to be a sheet1.schdoc file in C:\ folder first.
Netlister	This script demonstrates how to generate a specific PackingList format file for a Schematic project
ProjectReporter	This script finds currently open projects including Free projects in DXP. A free project is a group of documents that are not related to any project.
UsingMessagePanel	This script demonstrates how to insert text messages in the Message Panel in Altium Designer. This is a useful debugging tool.

\DelphiScript Scripts\WSM\ProtelNetlister\ScripterProtelNetlist.PrjScr

Script Filename	Description
ScripterProtelNetlist	This script demonstrates the use of WorkSpace Manager interfaces to generate a Protel Netlist. The Netlist file is generated in Generated folder for the current Project on the Projects Panel. To run this script, you need to have the `ScripterProtelNetlist.PRJSCR` project opened, then call **Run script** command from the DXP System menu and select the `ScripterProtelNetlist.pas` file from the *Select Item to Run* dialog. The script will then generate a netlist for the current project, so make sure you have that project focused before you run the script.

EnableBasic Script Examples

The script examples are in `\Examples\Scripts\EnableBasic\` folder. The EnableBasic scripts have a `*.bas` extension.

Script Filename	Description
CirWiz	The script demonstrates the use of processes in placing/connecting parts together.
Clrins1	Delete objects within an area defined by user.
Clrins2	Delete objects within an area defined by user. Confirm before deleting.
PcbColor	This script demonstrates the use of processes in changing PCB Colors.
PcbLayer	This script demonstrates the use of processes in changing PCB Layers.
PlaceSchPort	Place Schematic Port Object with the PlacePort process.
Quikcopy	This script demonstrates how to select objects and then Copy and Paste.

JScript Script Examples

The script examples are in the `\Examples\Scripts\JScript Scripts\` folder. The JScript scripts have a `*.js` extension.

Script Filename	Description
AddDocToProject	This script demonstrates how to insert a sheet in a PCB Project. There needs to be a sheet1.schdoc file in C:\ folder first.
BuiltInFunctions	This script demonstrates how to use built in date and math objects and display the results using the ShowMessage function..
CopyBoardOutlineForm	This script copies the board outline as tracks and arcs onto specified layer.
GetScriptEngineInfo	Retrieves the Microsoft Scripting Engine version number.
HelloWorld	A simple hello world - an introduction to JScript language.
ParentChild_Iterators	This script uses an iterator to look for sheet symbols and then within each sheet symbol, use the sheet symbol's iterator to look for sheet entries.
ServerProcessReport	This script demonstrates how to generate a report for all installed servers' processes in Altium Designer.
SineWave	This script demonstrates how to plot a sine wave on a script form.
ViaCreation	This script demonstrates how to create a new Via object on a PCB.

TCL Script Examples

No examples at present.

VBScript Scripts Examples

The script examples are in the `\Examples\Scripts\VBScript Scripts\` folder. The VBScript scripts have a `*.vbs` extension.

VBScript examples

Script Filename	Description
AddDocToProject	This script demonstrates how to insert a schematic sheet in a new PCB Project. There needs to be a sheet1.schdoc file in C:\ folder first.
CopyBoardOutline	This script copies the board outline as tracks and arcs onto specified layer. Layer and Width values to be specified by the user before proceeding. Uses PCB Object Model.
GetScriptEngineInfo	Retrieves the Microsoft Scripting Engine version number.
HelloWorld	A simple hello world - an introduction to VBScript language.
ParentChild_Iterators	This script uses an iterator to look for sheet symbols and then within each sheet symbol, use the sheet symbol's iterator to look for sheet entries. Uses Schematic Object Model.
ServerProcessReport	This script demonstrates how to generate a report for all installed servers' processes in Altium Designer.
SineWave	This script demonstrates how to generate and plot a sine wave on a script form. Uses Components and a Script form.
ViaCreation	This script demonstrates how to create a new Via object on a PCB document. Uses PCB Object model.

Query Script Examples

The script examples are in `\Examples\Scripts\Query Scripts\` folder.

Query Script examples

Script Filename	Description
SimpleExpression	Demonstration of a query script to execute in the Filter panel's query window for a PCB document. Query scripts need to be installed in the Installed Projects list from DXP » Preferences » Scripting System » Global Projects page.

Revision History

Date	Version No.	Revision
09-Dec-2004	1.0	New product release
26-Apr-2005	1.1	Updated for Altium Designer 2004
9 Nov 2005	1.2	New release for Altium Designer 6
2 Feb 2006	1.3	Updated for Altium Designer 6
31 Mar 2006	1.4	New script examples added
5-Apr 2006	1.5	Fixed up formatting inconsistencies with footers and text.
21-Apr 2006	1.6	Reformatting applied.
1 May 2007	1.7	New script examples added.
28 Dec 2007	1.8	Updated for Altium Designer 6.9
28-Feb-2008	1.9	Updated Page Size to A4
26-Jun-2008	2.0	Added new scripts for Altium Designer Winter 08 Edition.
8-Sep-2008	2.1	Added 2 more new scripts (Connection Lines and PCB Class Generator).
31-Aug-2011	-	Updated template.