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# obj= app.GetActiveProject()
# fileDirPath= obj.GetFileDir ()
# filePath= obj.GetFilePath()
# fileName= obj.GetFileName()
# oApp.GetProjectDirectory()
# oApp.GetProjectList()
# oApp.GetVersion()
# obj= app.ImportAnfFile('C:\KWH\GSG.anf')
# obj= app.OpenProject('C:\KWH\GSG_model.siw')
# oApp.Quit()
# oApp.RestoreWindow()
# obj.Save()
# result = obj.ScrActivateCktElem('Port1', 'port', False)
# outcome= doc.ScrAddEquipotentialRegion('T1_A', 'U1', '10', True)
# oDoc.ScrAddError('Thisismyerror.')
# oDoc.ScrAddInfo('Thisismyinformation.')
# obj.ScrAddLayer('new layer name', 'referencelayer name', True, 1, 0.1, 'copper')
# obj.ScrAddMaterial('conductor', 'matName', 0.1, 0.1)
# obj.ScrAddMaterial('dielectric', 'matName', 0.1, 0.1)
# obj.ScrAddOneLayerPadstack('NEW_PADSTACK', 'METAL-1', 'Circle', '0.5mm', '0.5mm')
# oDoc.ScrAddWarning('Thisismywarning.')
# outcome= obj.ScrAppendSteppedSweep('syz', 5000000.0, 5005000000.0, 100000000.0)
# obj.ScrAssign4PtBondwireProfile('die2_die3', 0.3, 0.3, 0.01, 'Signal', 'Power')
# obj.ScrAssign5PtBondwireProfile('die1_die3', 0.31, 0.32, 0.011, 85.1, 5.1, 'Top', 'Ground')
# obj.ScrAssignBondwireTerminalType('*Net_2*', 'RT*', '100-*', True)
# obj.ScrAssignComplexSolderballProfile('BGA', 0.5, 0.18, 0.225, 0.1666, 0, 0)
# obj.ScrAssignSimpleSolderballProfile('BGA', 0.5, 0.225, 0, 0)
# obj.ScrAssignSolderballTerminalType('*Net_2*', 'RT*', '100-*', True)
# outcome= doc.ScrBooleanUnite(netNames)
# obj.ScrCleanUpOverlappingtraces(layerNames)
# netNames= ['VCC', 'GND', 'Heg', 'NET-1', 'NET-2', 'PWR'] points= [0.0, 0.0, 10.0, 20.0, 40.0, 40.0, 40.0, 0.0,
16.0, 4.0]
# outcome= obj.ScrClipDesign(netNames, points)
# obj.ScrClipDesignAroundNets(netNames, '1mm', True, 0, True, False)
# oDoc.ScrCloseProject()
# oDoc.ScrCloseProjectNoSave()
# outcome= obj.ScrComputeFwsSubckt ('SYZ Sweep1', 'C:\sweep1')
# outcome= doc.ScrConvertPlanesToTraces(netNames)
# obj.ScrConvertTracesToPlanes('layer name', 'net name', True, 0.001, 'mm')
# outcome= doc.ScrConvertTracesToPlanesByNet (netNames)
# oDoc.ScrCopyImageToClipboard()
# outcome= doc.ScrCreatePinGroupByDist('T1_A', 'U1', '14', 'TestPinGroupA', '450um', True)

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# doc.ScrCreatePinGroupsByGrid('DDR4_X4_FPGA78-10X13,,', 'U1', 3, 2, False, True)
# outcome= obj.ScrCreatePinGroupByNet ('T1_A', 'U1', 'GND', 'U1_GND', False)
# obj.ScrDeleteAllNets()
# outcome= doc.ScrDeleteCktElem('C_1')
# obj.ScrDeleteDcSolution()
# obj.ScrDeleteFrequencySweepSolution()
# obj.ScrDeleteLayer ('layer name')
# obj.ScrDeleteNearFieldSolutions()
# outcome= obj.ScrDeleteNet ('net-24')
# obj.ScrDeleteNets(netNames)
# obj.ScrDeleteNetsGivenInFile('C:\netFiles\nets_to_delete.txt')
# obj.ScrDeletePadstack('VIA_M1_M2')
# obj.ScrDeletePinGroup("U1_GND_Group", True)
# obj.ScrDeleteResonantModeSolution()
# obj.ScrDeleteSpiceSubcktSolution()
# obj.ScrDeleteSyzParameterSolution()
# obj.ScrDrawCircle(100, 100, 20, 'TopMetal', 'NET-1', 'mm')
# obj.ScrDrawPolygon(points, 'TopMetal', 'NET-1', 'mm')
# obj.ScrDrawRectangle(100, 100, 200, 200, 'TopMetal', 'NET-1', 'mm')
# obj.ScrDrawTrace(points, 0.2, 'TopMetal', 'NET-1', 'mm')
# obj.ScrDrawVia(100, 100, 'TopMetal', 'Bot Metal', 'ThruVia', 'NET-1', 0.0, 0.0, 0.0, 'mm')
# obj.ScrEditLayerName('layer name', 'new layer name')
# obj.ScrEditMaterial('conductor', 'matName', 0.1, 0.1)
# obj.ScrEditMaterial('dielectric', 'matName', 0.1, 0.1)
# obj.ScrEditNetName('net name', 'new net name')
# obj.ScrEditPadStackName('VIA_M1_M2', 'VIA_M0A_M0B')
# obj.ScrEnableCoPlaneCoupling(True)
# obj.ScrEnableFwsRelativeErrorTol(False)
# obj.ScrEnableIntraPlaneCoupling(True)
# obj.ScrEnableSplitPlaneCoupling(False)
# obj.ScrEnableTraceCoupling(True)
# obj.ScrExport3DModel('Q3D', 'test.q3dx')
# doc.ScrExportAnf ('D:\Tests\US139113\testExport.anf')
# doc.ScrExportComponentFile('D:\Tests\US139113\testExport.cmp')
# oDoc.ScrExportCpaSimReport('CPA Sim1', 'C:\Directory')
# oDoc.ScrExportDcPowerDataToIcepak(True)
# obj.ScrExportDcSimReport ('DC IR Sim1', 'white', 'C:\Project1\report.htm')
# obj.ScrExportDcSimReportOptions(True, 'C:\Projects\filter.xml')
# outcome= oDoc.ScrExportIcepakProject('d:/icepakProj', 'DC Sim1')
# outcome= doc.ScrExportIcepakSimReport("IcepakScript Sim", "d:\AutomationTest\ScriptReportTest.htm")
# obj.ScrExportLayerStackup('filename')
# outcome= obj.ScrExportNamedSimToTouchstone('hfss_syz', 'Sim1', 'd:\results')
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# outcome= obj.ScrExportSyzSimToTouchstone('SYZ Sweep1', 'C:\sweep1')
# doc.ScrExportToTouchstone('D:\Tests\US139113\testExport.s2p')
# outcome= obj.ScrExportVprobeData('AC Sweep1', 'C:\probe_data.vpb')
# oDoc.ScrExportXfl('C:\Directory\filename.xfl')
# obj.ScrFitAll()
# obj.ScrFitSelection()
# obj.ScrFwsEnforceCausality(True)
# outcome= doc.ScrGenerateConnectionReport ('D:/connRpt.html')
# names= doc.ScrGetActiveComponentList ('All')
# bwList = obj.ScrGetBondwiresOfBwModel('WB_loop1')
# bwModelNameList = obj.ScrGetBwModelNameList ()
# outcome= obj.ScrGetCktElemTerminalNetNames('C1', 'cap', pnet, nnet)
# names= doc.ScrGetComponentList ('rlc, ports, integratedcircuits')
# outcome= doc.ScrGetDcConnectedNets(netsIn, nets3, elems3)
# dieNameList = obj.ScrGetDieNameList ()
# matName= obj.ScrGetLayerMaterial('conduct1')
# layerNames= obj.ScrGetLayerNameList ()
# typeCode= obj.ScrGetLayerType('conduct1')
# matName= obj.ScrGetMetalLayerFillerMaterial('conduct1')
# netNames= obj.ScrGetNetNameList ()
# outcome= doc.ScrGetNetsAndCktElemsBetweenNets('VDD', 'GND', nets, elems)
# names= doc.ScrGetPadstackNameList ()
# outcome= doc.ScrGetPinsOnNet ('GND', 'ANY', '', pins, parts, refDesList)
# outcome= doc.ScrGetPinsOnPart ('T1_A', 'U1', pins, nets)
# pwrNets= doc.ScrGetPwrGndNetNameList ()
# uniqueSimName= obj.ScrGetUniqueSimulationName('syz')
# outcome= obj.ScrImportAnf ('C:\anfFiles\design1.anf')
# oDoc.ScrImportCapacitorDeratingTable('C:\\csvfiles\\derating_table.csv','errors')
# outcome= obj.ScrImportComponentFile('C:\ComponentFiles\design1.cmp')
# oDoc.ScrImportCpmOrPloc('C:\SAMPLEFILES\cpmfile.cpm','CSP_BGA','BGA','')
# obj.ScrImportLayerStackup('filename')
# outcome= obj.ScrImportLayerStackupFile('C:\LayerFiles\design1.stk')
# outcome= doc.ScrImportPmap('E:\foo.pmap')
# oDoc.ScrImportXfl('C:\Directory\filename.xfl')
# obj.ScrInterpolateSpectrum(True)
# oDoc.ScrLogMessage('Thisismymessage.')
# outNetNameList = obj.ScrMergeConnectedNets(inNetNameList)
# len= obj.ScrNetGetLength('HOT_INS_DIS', 'D1:HOT_INS_DIS:292', 'P1:HOT_INS_DIS:E4')
# boolRet = obj.ScrNetsIsDisjoint ('net name')
# boolVal= obj.ScrNetsIsSelected('net name')
# obj.ScrNetSeparate('net name')
# obj.ScrNetSetDummy('net name')
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# obj.ScrNetSetSelected('net name', 1) obj.ScrNetSetSelected('net name', 0)
# result = doc.ScrPlaceFreqDependentSrc('I1', 4, 2, '1.0', '1.0', 'METAL-1', 2, '2.0', '1.0', 'METAL-1',
'e:\SrcFreqData.txt')
# doc.ScrPlacePortsAtPinsOnSelectedNetsExcludePart (50.0, 'GND', 'T1_A', 'U1', false, ports)
# doc.ScrPlacePortsAtPinsOnSelectedNetsPinNamesOut (50.0, 'GND', false, ports, posPins, refPins)
# outcome= obj.ScrPlotResModeVoltageDiff ('Resonant Sim1', 'SURFACE', 'INNER1')
# obj.ScrRestoreResonantModeMinFreq()
# doc.ScrRunIcepakSimulation('Icepak4', 'DC IR Sim1')
# obj.ScrRunInducedVoltageSimulation(1500000, 10, 45, 1, 3, 1)
# outcome= obj.ScrRunSimulation('syz', 'SYZ Sweep1')
# results= obj.ScrRunValidationCheck()
# doc.ScrSanitizeLayout ()
# outcome= obj.ScrSaveProjectAs('C:\Users\Ansys\Documents\ANSYS\pcb1')
# obj.ScrSaveToPngFile('D:/capture.png')
# outcome= doc.ScrSelectDcConnectedNets(netsIn)
# outcome= doc.ScrSelectNetsBetweenComponents('288DIMMDDR4_EDGE_CONN-BASE', 'J1',
'DDR4_X4_FPGA78-10X13,,', 'U1')
# outcome= doc.ScrSelectNetsBetweenNets('VDD', 'GND')
# numSeparated= obj.ScrSeparateDisjointNets()
# obj.ScrSet4PtBwProfile('WB_PROFILE_1', 100, 200, 20)
# obj.ScrSet5PtBwProfile('WB_PROFILE_1', 100, 200, 20, 85, 5)
# obj.ScrSetAntiPadOnLayer ('VIA_M1_M2', 'METAL-1', 'Rectangle', '0.1cm', '0.1cm')
# obj.ScrSetBwModel(bwList, 'WB_profile_1')
# obj.ScrSetBwSuppLayer (bwList, 'CU-1')
# obj.ScrSetBwTermLayer (bwList, 'WB_loop2')
# oDoc.ScrSetCapacitorDcBiasDeratingSim('SimulationName')
# oDoc.ScrSetCapacitorTemperatureDeratingSim('SimulationName')
# obj.ScrSetConformalCoatLayers(1)
# outcome= obj.ScrSetCrossTalkThreshold(-60.0)
# obj.ScrSetDieElevation('DIE_1', 100.0)
# obj.ScrSetDieThickness('DIE_1', 100.0)
# obj.ScrSetEmiScannerParameters('C:/Projects/rules.xml', 0, 'C:/Projects/tags.tgs')
# obj.ScrSetExternalExcitations('C:\sources.txt')
# obj.ScrSetFwsColFitOptions(0)
# obj.ScrSetFwsPassivityAlg(1)
# obj.ScrSetFwsPortRefZ (True, 75.0)
# obj.ScrSetFwsPzOptions(0.001, 200)
# obj.ScrSetFwsSsfAlg(0)
# obj.ScrSetFwsSubcktFormat (0)
# obj.ScrSetFwsUseCommonGround(True)
# outcome= obj.ScrSetHFSS3DLayoutSimOptions( 'c:\simsettings.dss')
# outcome= oDoc.ScrSetIcepakBoardOutlineFidelity(1.5)

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# doc.ScrSetIcepakCabinetDimensions(35.0, 125.0, 55.0)
# doc.ScrSetIcepakComponentConfig('D:\Tests\IcepakScriptTest.pwr')
# doc.ScrSetIcepakMeshingDetail('basic')
# outcome= oDoc. ScrSetIcepakSimReportImageHeight(1024)
# outcome= oDoc. ScrSetIcepakTemperatureFile('d:/abcd.sitemp')
# doc.ScrSetIcepakThermalEnv(True, True, 22.3, '+Y', 2.5, 0.0, '', 0.0, 0.0, 0.0, 0.0)
# obj.ScrSetInducedVoltageMultipleIncidenceSpherical(0, 20, 5, 90, 105, 5, true, true, true, 1)
# obj.ScrSetInducedVoltageSingleIncidenceCartesian(1, 0, 0, 0, 1, 1, 1)
# obj.ScrSetInducedVoltageSingleIncidenceSpherical(10, 45, 1, 3, 1)
# outcome= obj.ScrSetLayerMaterial('SURFACE', 'copper')
# outcome= obj.ScrSetLayerThickness('SURFACE', 0.035, True)
# obj.ScrSetLayerType('layer name', 1)
# outcome= obj.ScrSetLayerVisibility('L1', True, True, True, True, False)
# obj.ScrSetLayoutLengthUnit ('um')
# obj.ScrSetLowBwProfile('WB_PROFILE_1', 100, 200, 20, 85, 5, 'mm')
# obj.ScrSetMaxRefinePassesInDcSimulation(5)
# obj.ScrSetMeshViasInDcSimulation(True)
# outcome= obj.ScrSetMetalLayerFillerMaterial('SURFACE', 'FR-4')
# obj.ScrSetMinCutoutArea(10, 'mm')
# obj.ScrSetMinRefinePassesInDcSimulation(1)
# outcome= obj.ScrSetNearFieldSurfaceOffset (1.0, 1.0, 1.0, 1.0, 1.0, 1.0)
# obj.ScrSetNumCpusToUse(4)
# obj.ScrSetNumModesToCompute(10)
# obj.ScrSetNumViaSidesInDcSimulation(8)
# obj.ScrSetOptionsFor3DModelExport ('d:\settings.config')
# obj.ScrSetPadOnLayer ('VIA_M1_M2', 'METAL-1', 'Circle', '0.6mm', '0.6mm')
# obj.ScrSetPadstackMaterial('VIA_M1_M2', 'magnesium')
# obj.ScrSetPadstackViaPlatingAbsolute('VIA_M1_M2', '0.1mm' )
# obj.ScrSetPadstackViaPlatingRatio('VIA_M1_M2', 0.6)
# obj.ScrSetPlotAfterDcSimulation(True)
# obj.ScrSetPsiOptionsFromFile('D:\Tests\Test.sps')
# obj.ScrSetPsiPortType('Port1', 'Lumped')
# obj.ScrSetPsiSyzInterpOptions(False, False, False, False)
# obj.ScrSetRefineDcSimulation(True)
# obj.ScrSetRemoveCutoutsByArea(True)
# doc.ScrSetRLCValues('RLC_XYZ_R', '1.5kohm', '1e-12h', '1uf')
# outcome= obj.ScrSetSimulationName('syz', 'S-paramnocaps')
# obj.ScrSetSketchedBwProfile('WB_PROFILE_1', 'SketchedProfile.bwp', 20)
# obj.ScrSetSketchedBwProfileFromArray('WB_PROFILE_1', 'micron', bwPointArray, 20)
# outcome= obj.ScrSetSolderballParameters('BALL600', False, 500, 200)
# outcome= obj.ScrSetSolderballParameters('BUMPPAD', True, 100, 30)
# outcome= doc.ScrSetSourceMagnitude('I_1', '2.5A')
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# obj.ScrSetStackupLayerThicknessUnit ('um')
# obj.ScrSetSweepFreqRange(5MHz,5GHz)
# obj.ScrSetSweepMaxFreq(5GHz)
# obj.ScrSetSweepMinFreq(5MHz)
# obj.ScrSetSweepNumFreqPoints(200)
# obj.ScrSetSyzInterpSweep(True) obj.ScrSetSyzInterpSweep(False)
# outcome= obj.ScrSetSyzInterpSweepParams(0.005, 150)
# obj.ScrSetThermalPadOnLayer ('VIA_M1_M2', 'METAL-1', 'Rectangle', '1.2mm', '1.2mm')
# outcome= doc.ScrSetTouchstonePortOrder( Array[str](['port1','port2']))
# outcome= doc.ScrSetTouchstonePortRemapping('left', 'foo')
# obj.ScrSIwaveEnable_3D_DDM(True)
# obj.ScrSIwaveSyzComputeExactDcPoint (True)
# oDoc.ScrTPADeleteNetsNotBeingSolvedFor()
# xycoord= obj.ScrTPAGetExcitationCoord('HOT_INS_DIS', 'D1:HOT_INS_DIS:292')
# numPartition= obj.ScrTPAGetNumberOfPartitions()
# sinkCount = obj.ScrTPAGetNumSinks('net name')
# sourceCount = obj.ScrTPAGetNumSources('net name')
# sinkNames= obj.ScrTPAGetSinkNameList ('net name')
# sourceNames= obj.ScrTPAGetSourceNameList ('net name')
# obj.ScrTpaIgnoreBondwiresWhileCoupling(True)
# obj.ScrTpaIgnoreDummyNets(True)
# obj.ScrTpaIgnoreNonFunctionalPads(True)
# obj.ScrTpaMergeDivergentBondwires(True)
# obj.ScrTPASetACResistanceFrequency(100.0)
# obj.ScrTPASetCuttingDistance(12.345, 'mm')
# obj.ScrTpaSetDielectricExtent (0.1, 'mm')
# obj.ScrTpaSetExtendedExportOptions('OnlyDC_RL', False)
# obj.ScrTPASetIgnorePowerGround(True)
# obj.ScrTPASetInfiniteGroundExists(True)
# obj.ScrTPASetInfiniteGroundLocation(-10.0, 'mm')
# obj.ScrTPASetLooselyCoupledNetsPercentage(15.0)
# obj.ScrTPASetMaximumEdgeLength(0.6)
# obj.ScrTPASetMergeSinks(True)
# obj.ScrTPASetMergeSources(True)
# obj.ScrTpaSetMoldingCompoundMaterial('porcelain')
# obj.ScrTpaSetMoldingCompoundThickness(0.1, 'mm')
# obj.ScrTPASetNumberOfProcesses(4)
# obj.ScrTPASetPowerGroundNet ('Net_24', True)
# obj.ScrTPASetPowerGroundNets(NetSet, True)
# obj.ScrTPASetPowerGroundNetsFromFile('c:\KWH\power_ground.txt', false)
# obj.ScrTPASetPreferredNetGroupSize(11)
# obj.ScrTpaSetRefinementACRLMaxNumPasses(2)
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# obj.ScrTpaSetRefinementACRLPercentError (2)
# obj.ScrTpaSetRefinementACRLPercentPerPass(2)
# obj.ScrTpaSetRefinementCGMaxNumPasses(2)
# obj.ScrTpaSetRefinementCGPercentError (2)
# obj.ScrTpaSetRefinementCGPercentPerPass(2)
# obj.ScrTPASetRefinementMethod('Balanced')
# obj.ScrTPASetRemoveLooselyCoupledNets(True)
# obj.ScrTPASetSignalNetsToSolveFromFile('c:\KWH\signal_nets.txt', False)
# obj.ScrTPASetSignalNetsToSolve(NetSet, True)
# obj.ScrTPASetSignalNetsToSolveFromFile('c:\KWH\signal_nets.txt', False)
# obj.ScrTPASetSignalNetToSolve('Net_24', True)
# obj.ScrTPASetSolutionMode(1, 2)
# obj.ScrTPASetSolutionName('Solution_1')
# obj.ScrTPASetSolveSelectedNetsOnly(True)
# obj.ScrTPASetUseZCuttingDistance(True)
# obj.ScrTPASetXYCouplingDistance(2.1212, 'mm')
# obj.ScrTPASetZCouplingDistance(5.531, 'mm')
# obj.ScrTPASetZCuttingDistance(10.0, 'mm')
# obj.ScrTpaSolve()
# obj.ScrTPASolveForParameters(True, False, False, False)
# doc.ScrUnselectAll()
# obj.ScrUpdateComponentTree()
# oDoc. ScrUseIcepakTemperatureDataInDc(True)
# outcome= doc.ScrUseTouchstonePortRemapping(True)
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