

Komma igång med ADS

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Advanced Design System

- Ledande kretssimulator för mikrovågskretsar
- Kretsdesign och layout
- EM simulator

Få tag på ADS

- Pröva på licens från Keysight (Agilent)
 - www.keysight.com/find/eesof-evaluation
 - Vi använder ADS 2015.01 i kursen
- Använd Chalmers licensserver
 - Anslut till Chalmers VPN
 - Ange licensserver i ADS
 - 27002@mc2-m148.mc2.chalmers.se
- ADS finns på alla Linuxdatorer på Chalmers
 - Skriv *ads* i kommandopromten

Ladda hem ADS

www.keysight.com/find/eesof-evaluation

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Apply for a FREE Trial

Thank you for your interest in Keysight EESof EDA software, the leading supplier for high-frequency and high-speed system, circuit, and modeling applications.

Applying for a FREE trial license is easy:

1. Request a FREE evaluation by selecting and completing an *Evaluation License Request Form* below.
Your evaluation request will be reviewed. Once approved, you will receive an email with your evaluation license.
2. Once you have received your license, [download and install the software](#).

Product Description	Apply for a Free Trial	Download Software
Advanced Design System (ADS) offers complete design integration for products such as cellular and portable phones, wireless networks, and radar and satellite communications systems.	ADS Evaluation License Request	ADS Downloads
Electromagnetic Professional (EMPro) is the industry's first 3D EM platform that completely integrates 3D EM simulation and the ADS design environment. The new and modern architecture offers unparalleled intuitiveness and removes the expense and overhead of maintaining disconnected tools.	EMPro Evaluation License Request	EMPro Downloads
SystemVue software for electronic system-level (ESL) design enables system architects and algorithm developers to innovate the physical layer (PHY) of next-generation wireless and aerospace/defense communications systems.	SystemVue Evaluation License Request	SystemVue Downloads
Genesys provides self-supporting RF Board engineers affordable, practical design tools for RF component design to complete transceiver design including multi-element antenna arrays.	Genesys Evaluation License Request	Genesys Downloads
GoldenGate is an advanced simulation and analysis solution for integrated mixed signal RFIC designs. GoldenGate software is fully integrated into the Cadence Analog Design Environment (ADE).	GoldenGate Evaluation License Request	GoldenGate Downloads
Integrated Circuit Characterization & Analysis Program (IC-CAP) is a complete device modeling solution for semiconductor modeling processes.	IC-CAP Evaluation License Request	IC-CAP Downloads
Model Builder Program (MBP) is a one-stop solution that provides both automation and flexibility for silicon device modeling.	MBP Evaluation License Request	MBP Downloads
Model Quality Assurance (MQA) provides the complete solution and framework to fabless design companies, IDMs, and foundries for SPICE model library validation, comparison, and documentation.	MQA Evaluation License Request	MQA Downloads
WaferPro Express is a wafer-level measurement and programming test software for use with a variety of instruments and wafer probes.	WaferPro Express Evaluation License Request	WaferPro Express Downloads
Keysight's High Speed Digital solution includes EDA design and simulation tools that will help you cut through the challenges of gigabit digital designs. Our tools provide views into the time and frequency domains, revealing the underlying problems and ensuring compliant designs.	See ADS	See ADS

ADS Prövo Licens

- Öppna kommandoprompten i Windows
- Skriv *getmac*
- Skriv in din *Physical Address* utan "-"

Assign licenses to hosts, then click Continue to proceed. [? Help](#)

Select the host to assign licenses to

Enter new host information: [? How do I find my Host ID?](#)

CPU ID :

Valid CPU IDs:

- server cpu id (7-10 hex characters)
- mac address (12 hex characters - no spaces. Example: 123456abcdef)
- hardware key (9-1234abcd or 10-1234abcd)
- hardware key (8- followed by 12 hex characters - no spaces)

You may enter one or three CPU IDs (separated by a space).

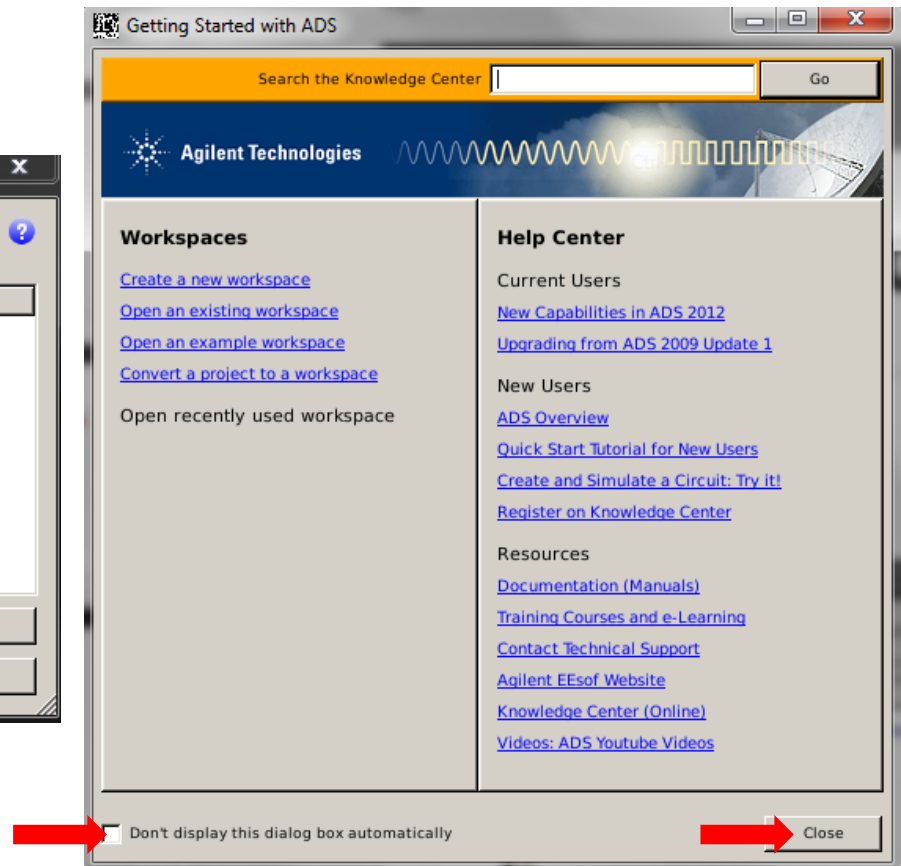
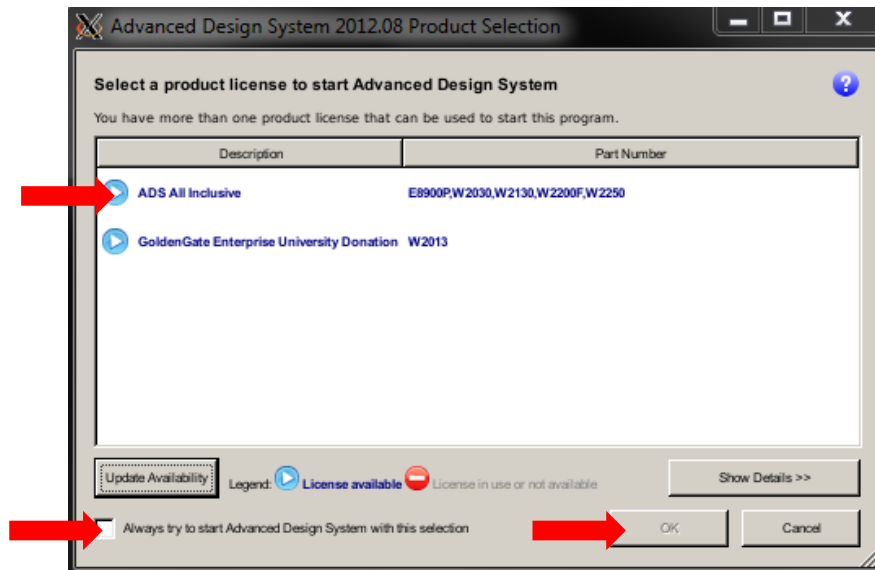
Select the licenses to assign

☒	☐	License	Version	Quantity Available	Quantity to Assign
☒	☐	W2200F-1U1-TRL ADS Evaluation License - floating	N/A	1	

ADS på Chalmers

- Använd en studentdator med Linux
- Öppna kommandoprompten och skriv *ads*
- Köra hemifrån
 - Installera en X-server (t.ex Xming)
<http://www.straightrunning.com/XmingNotes/>
 - Installera en ssh-klient (t.ex putty)
 - Anslut till *remote11.student.chalmers.se*
 - Starta ADS genom att skriva *ads*

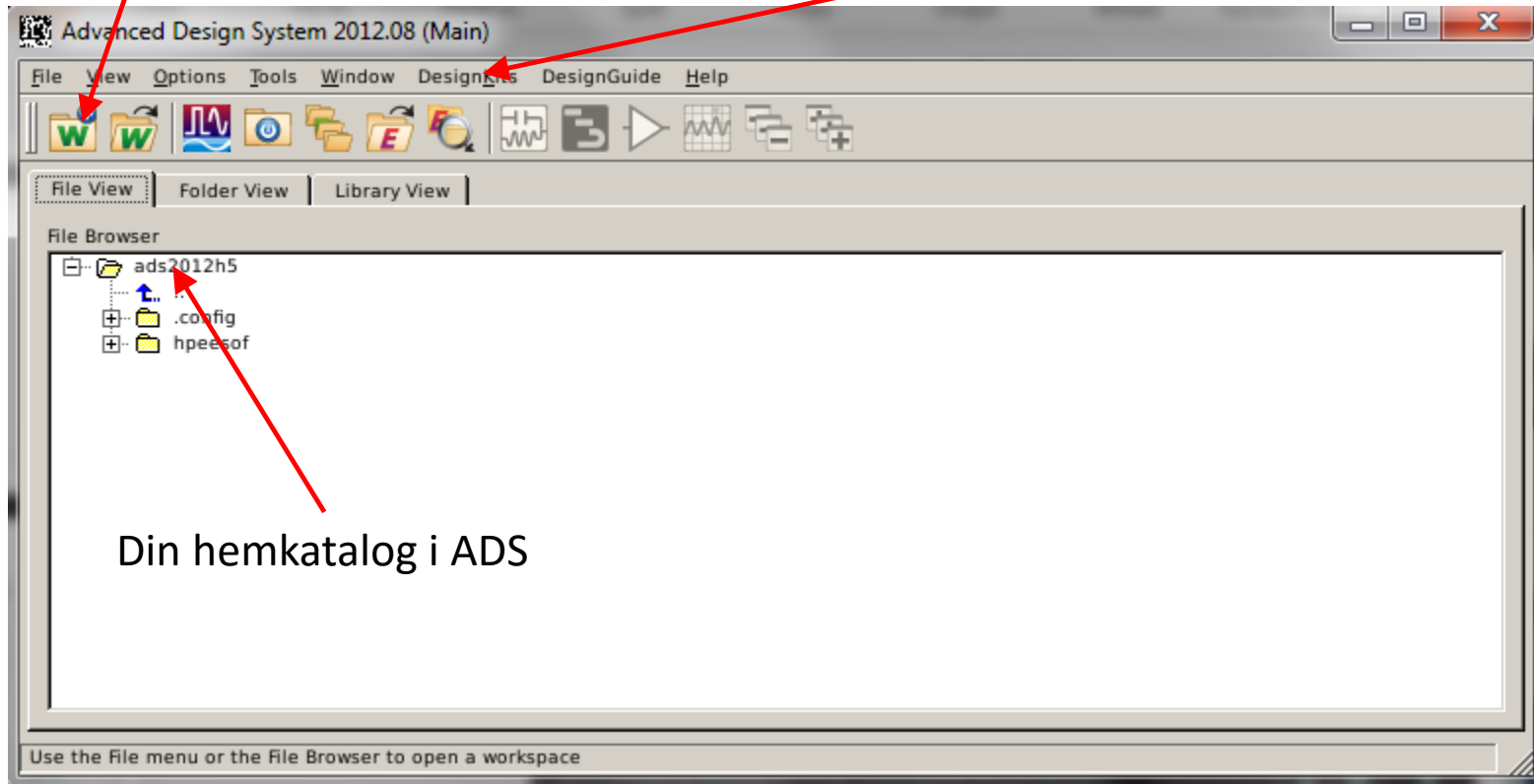
Starta ADS första gången



ADS huvudfönster

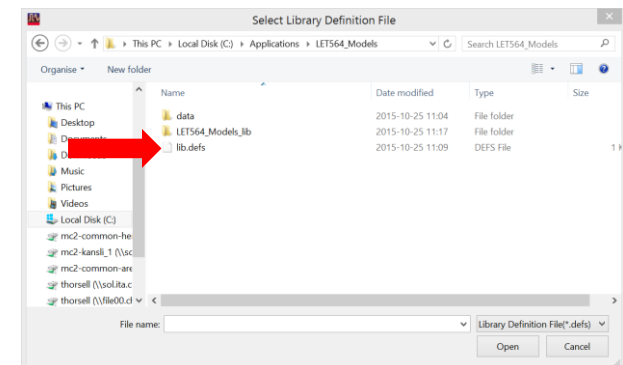
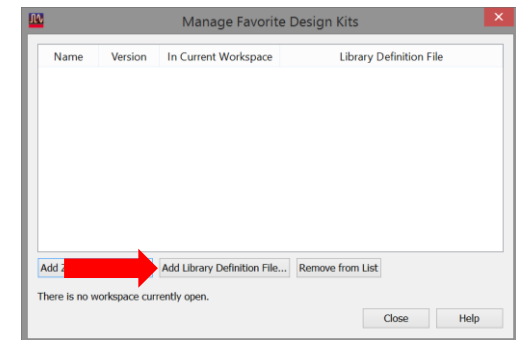
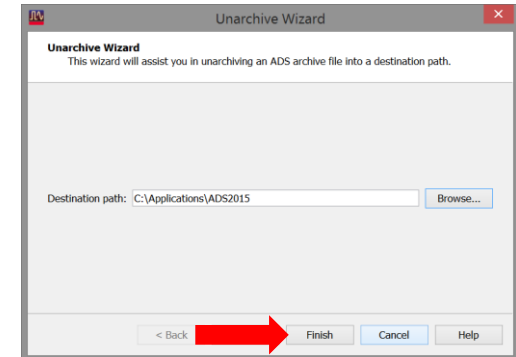
Skapa ett nytt workspace

Installera design-kit och andra bibliotek



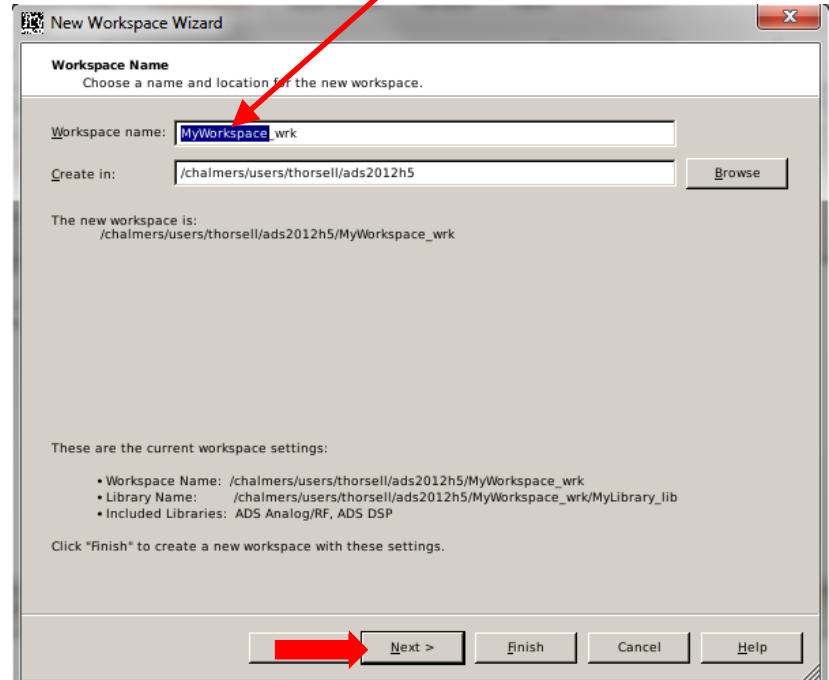
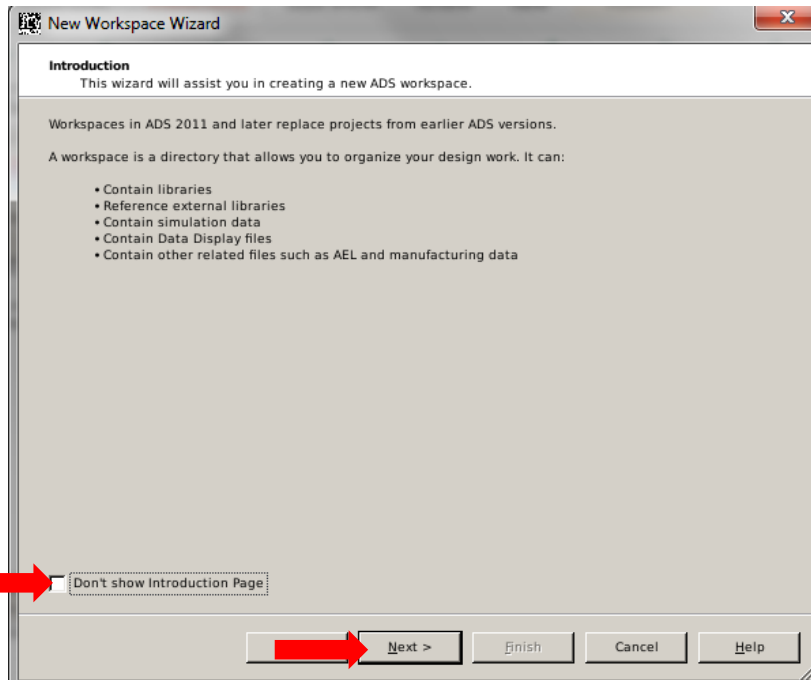
Lägg till modeller

- Ladda hem *LET564_Models.7zads*
- Välj *File*
 - *Unarchive...*
 - Leta upp *LET564_Models.7zads*
- Välja din hemkatalog i ADS
- Tryck Finish
- Välj *DesignKits*
 - *Manage Favorite Design Kits...*
 - Tryck på Add Library Definition File...
- Sök upp *LET564_Models*
 - Välj *lib.defs*

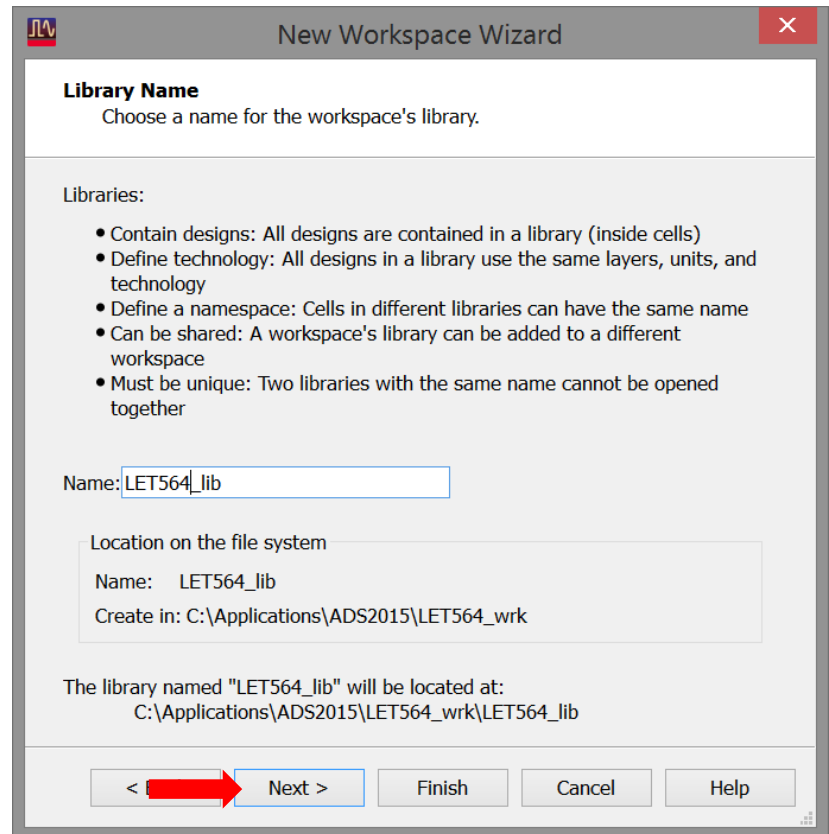
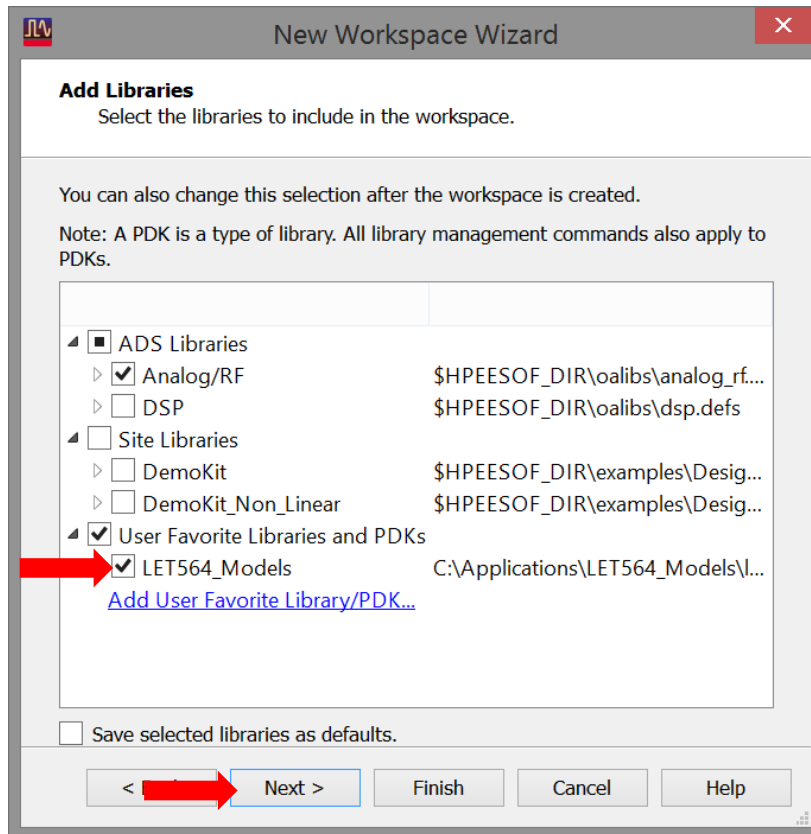


Skapa nytt workspace

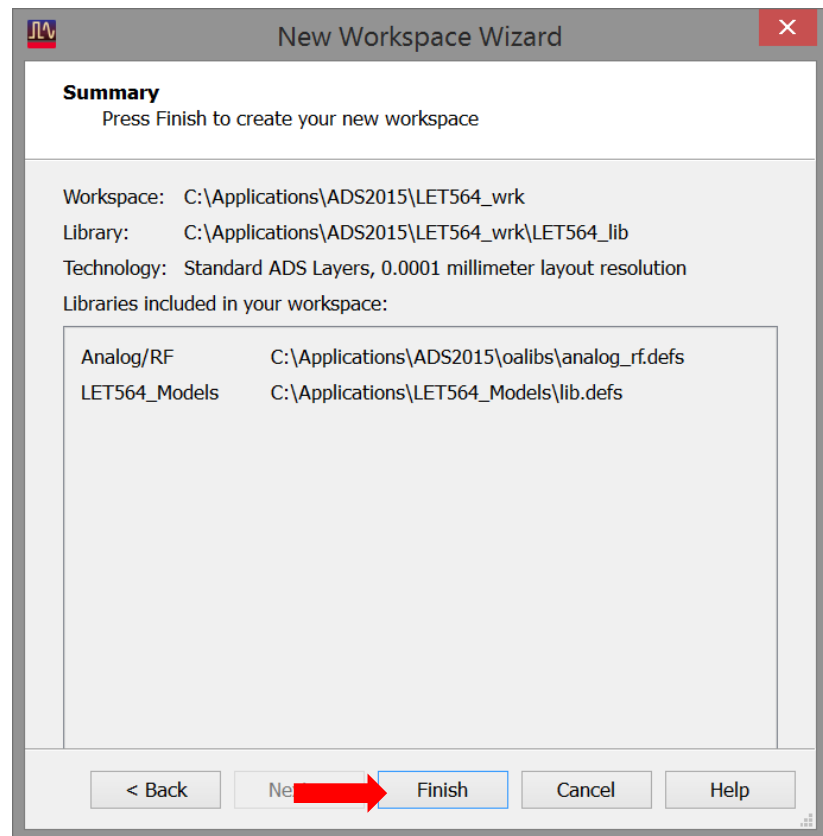
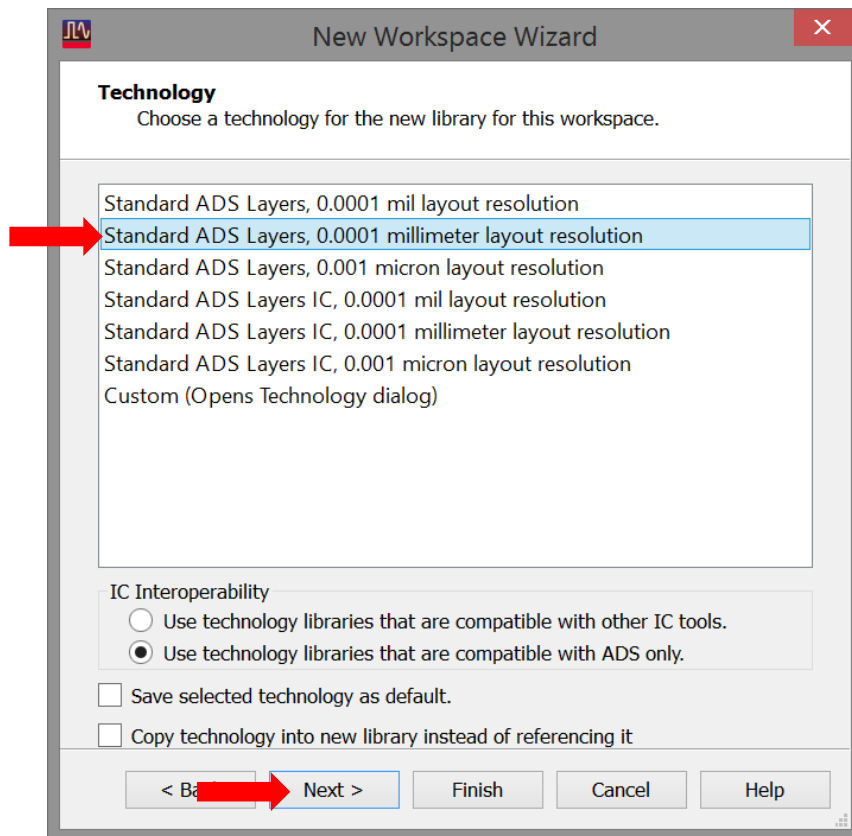
Namnge ditt workspace,
t.ex LET564



Välj designkit och bibliotek

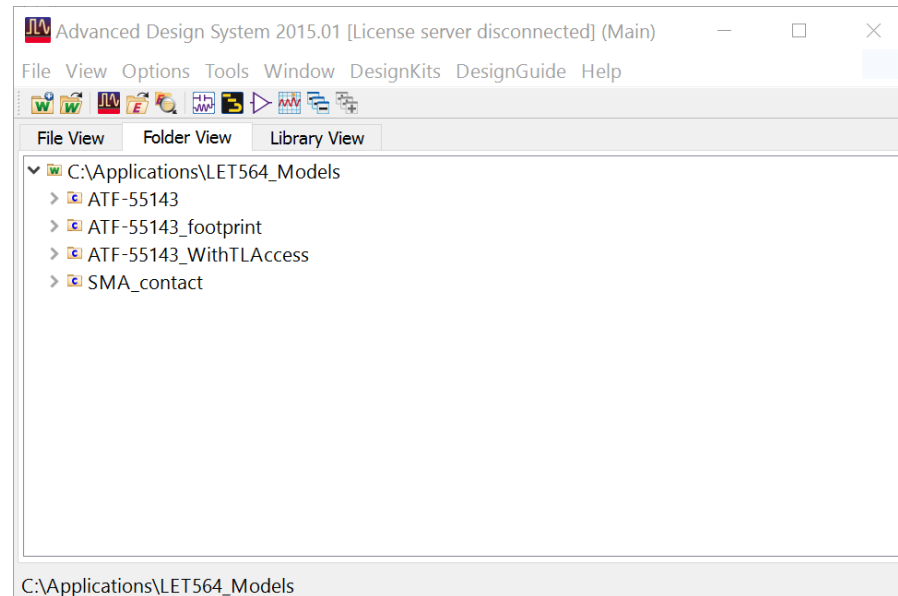


Välja måttenhet



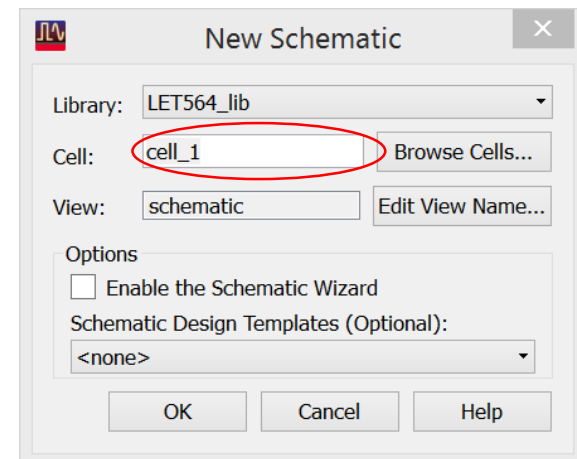
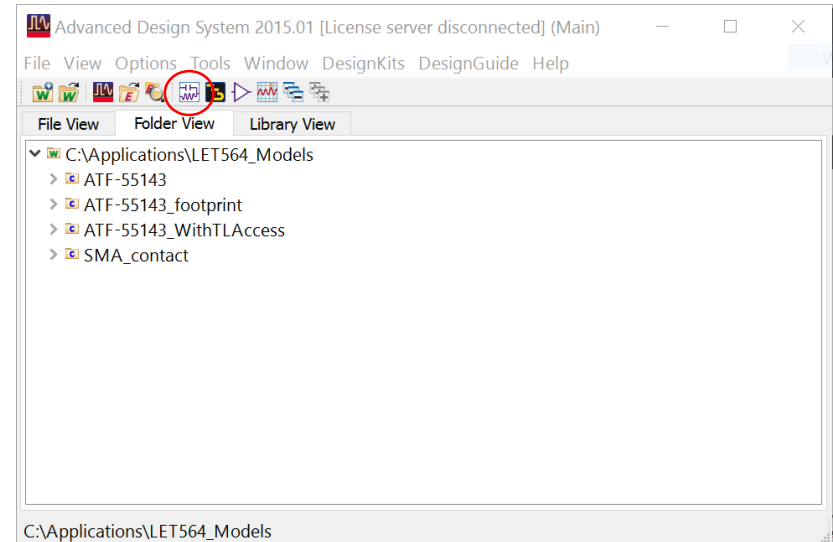
Inkluderade modeller

- ATF-55143
 - Originalmodell från tillverkare, används inte i kursen
- ATF-55143_footprint
 - Används vid generering av layout
- ATF-55143_WithTLAccess
 - Används vid design
- SMA_contact
 - Används vid layout



Skapa en ny Schematic

- Tryck ny Schematic
- Namnge i Cell rutan
- Stäng Schematic Wizard



Schematic

Meny för val av
komponenter /
simuleringar

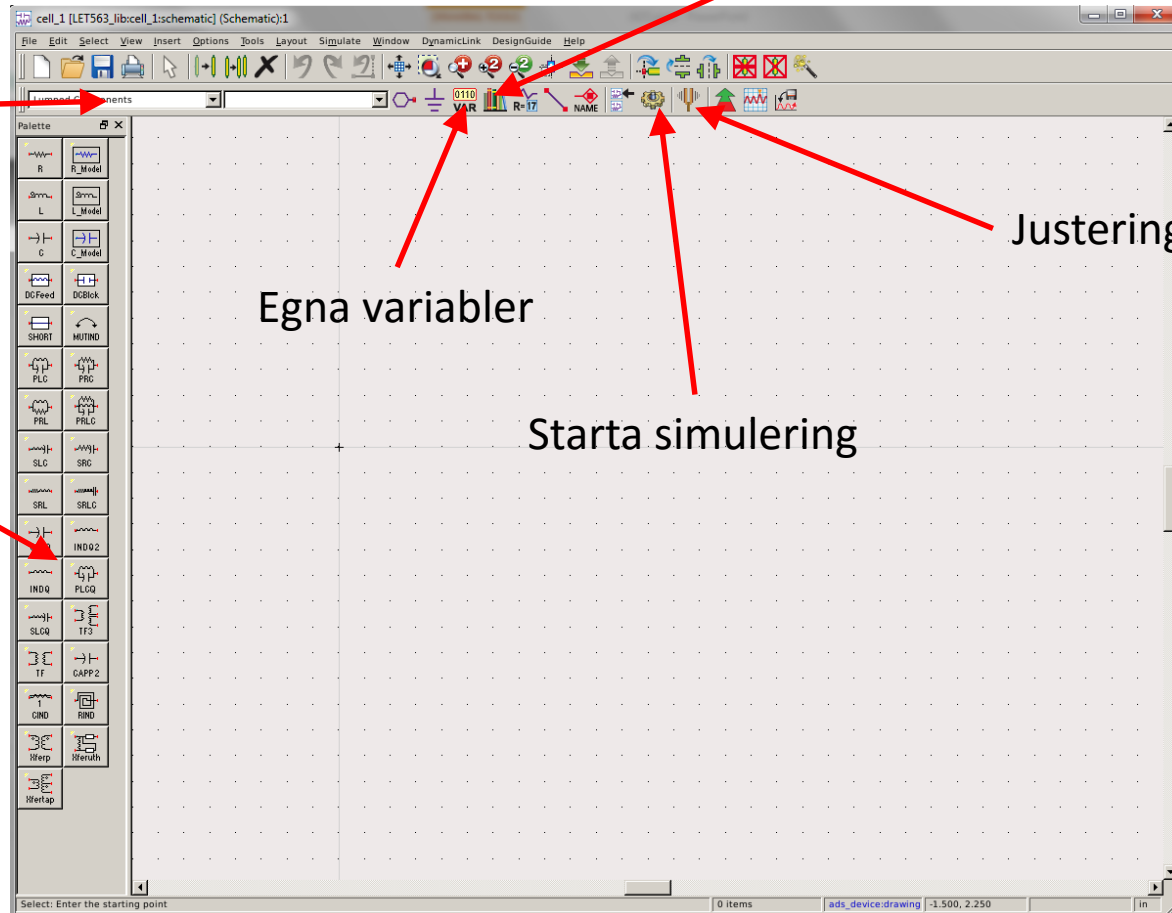
Modellbibliotek

Justering av variabler

Egna variabler

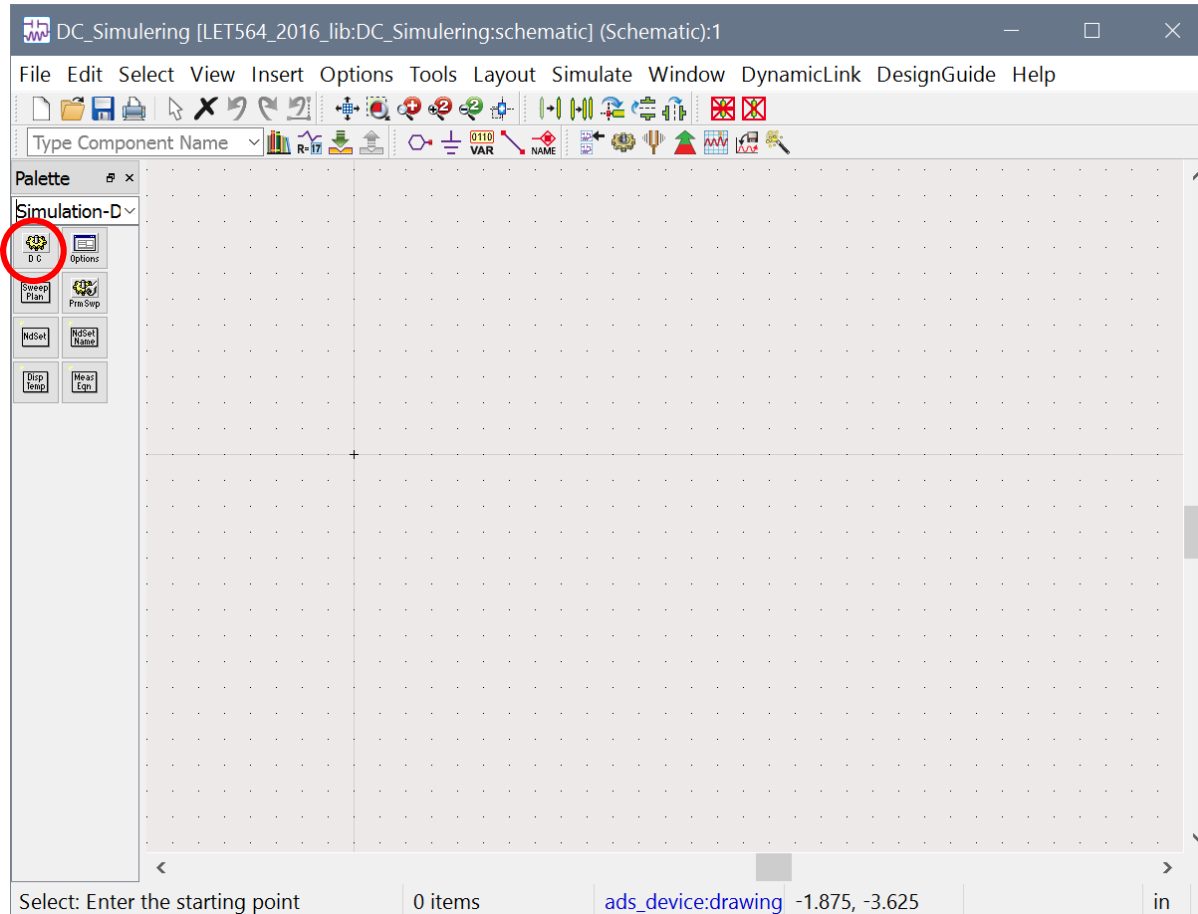
Starta simulering

Komponentpalett



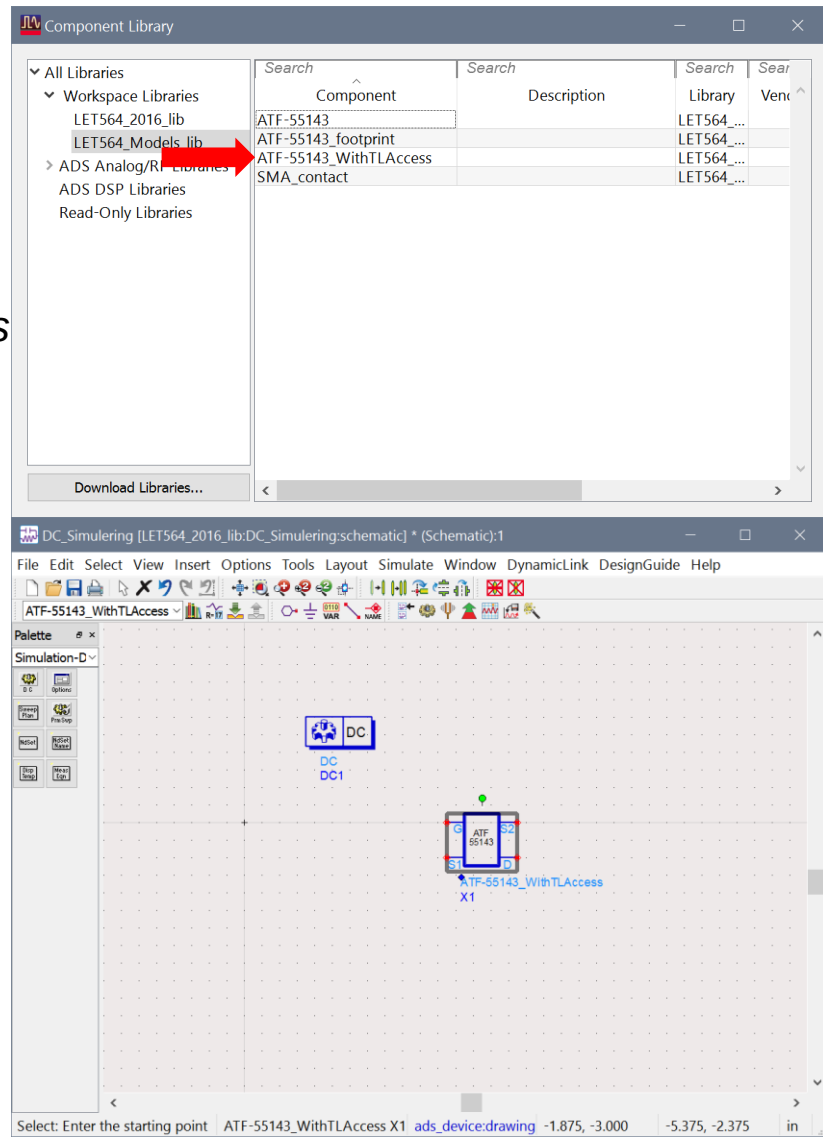
Simulering: DC

Simulatorn
Simulation-DC



Placera transistor

- Välj *Component Library*
- Öppna *workspace Libraries*
 - Välj *LET564_Models_lib*
 - Markera *ATF-55143_WithTLAccess*
- Högerklicka, *Place component*
- Placera komponent i Schematic

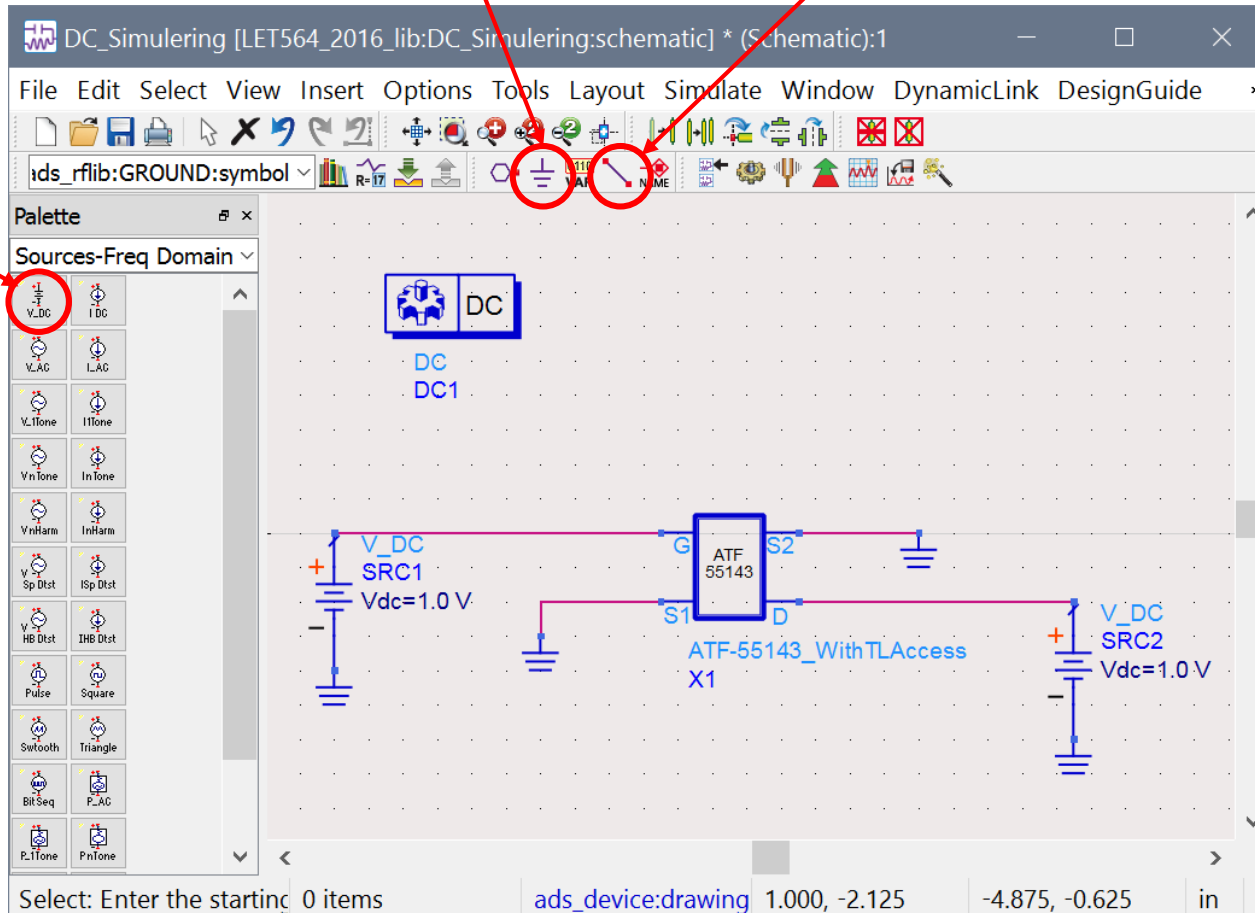


Lägg till spänningskällor

Jord

Ledning

DC källa
Sources-Freq Domain



Införa variabler och svep

Inför Variabler

Öppna DC simulatorn och
ställ in grundsvepet

Lägg till PrmSwp

DC_Simulering [LET564_2016_lib:DC_Simulering:schematic] (Schematic):1

File Edit Select View Insert Options Tools Layout Simulate Window DynamicLink DesignGuide Help

Type Component Name

Palette

Simulation-S_Param

PrmSwp

PARAMETER SWEEP

Param Sweep

Sweep1

SweepVar="VGS"

SimInstanceName[1]="DC1"

SimInstanceName[2]=

SimInstanceName[3]=

SimInstanceName[4]=

SimInstanceName[5]=

SimInstanceName[6]=

Start=0

Stop=1

Step=0.1

DC

DC DC1

Var Egn

VAR1

VGS=0.5

VDS=2

DC Operating Point Simulation:1

DC Instance Name

DC1

Sweep Parameters Output Display

Parameter to sweep VDS

Parameter sweep

Sweep Type Linear

Start/Stop Center/Span

Start 0 None

Stop 4 None

Step-size 0.25

Num. of pts. 17

Use sweep plan

OK Apply Cancel Help

Select: Enter the starting point

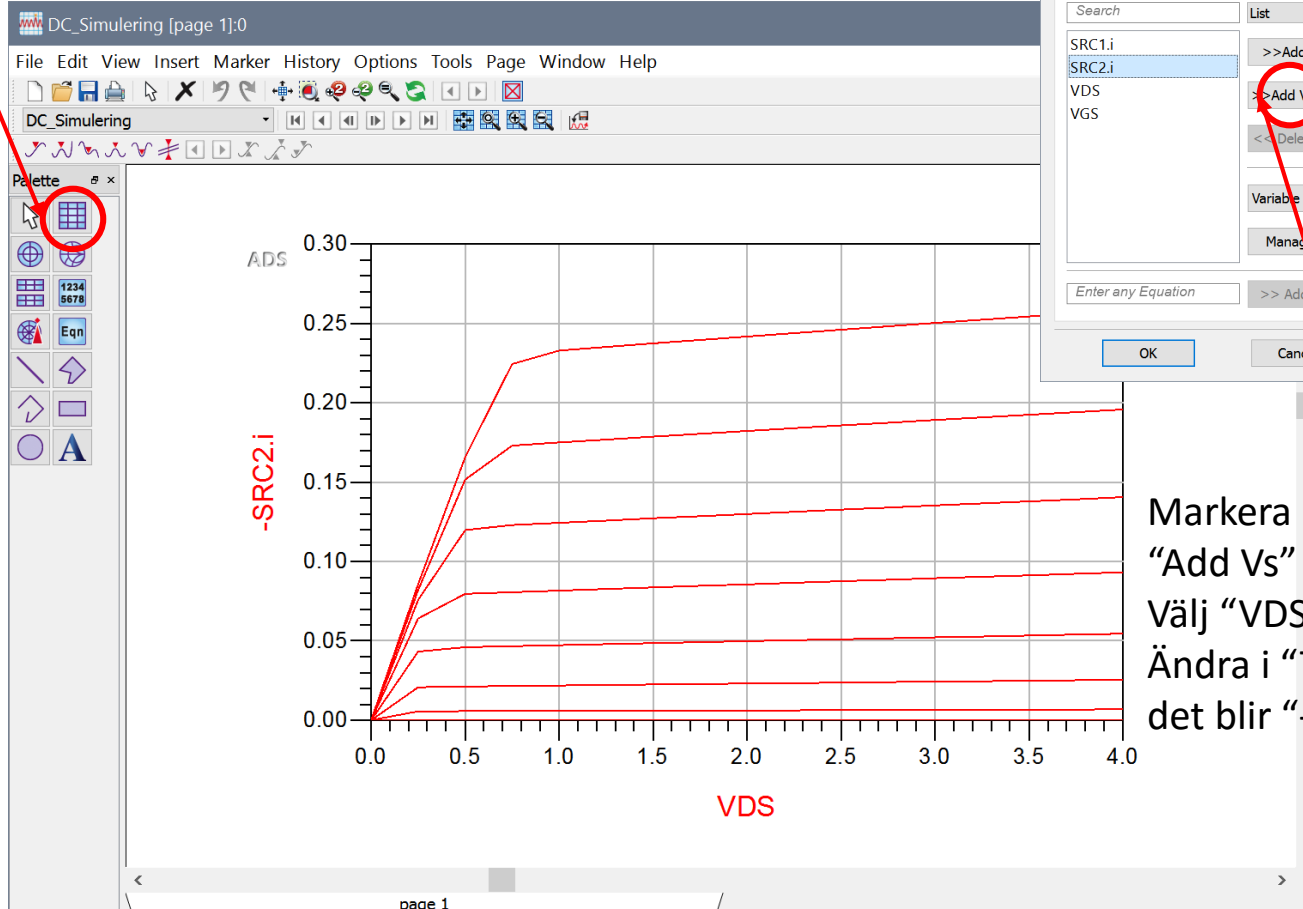
0 items

ads_device:drawing 7.375, -1.625

Sist, tryck Simulate

Data display

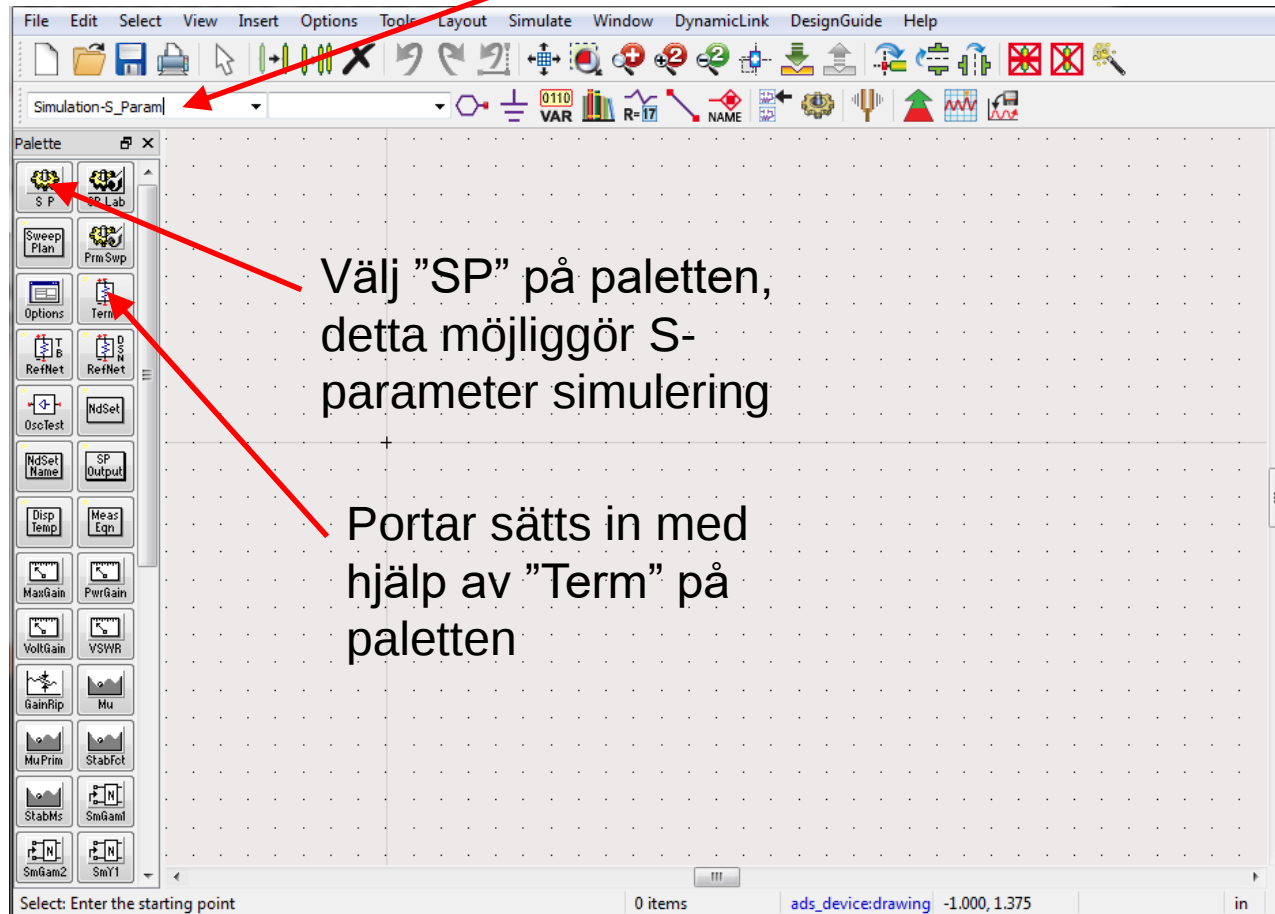
Lägg till rektangulär plot



Markera "SRC2.i" klicka
"Add Vs"
Välj "VDS"
Ändra i "Trace Options" så
det blir "-SRC2.i"

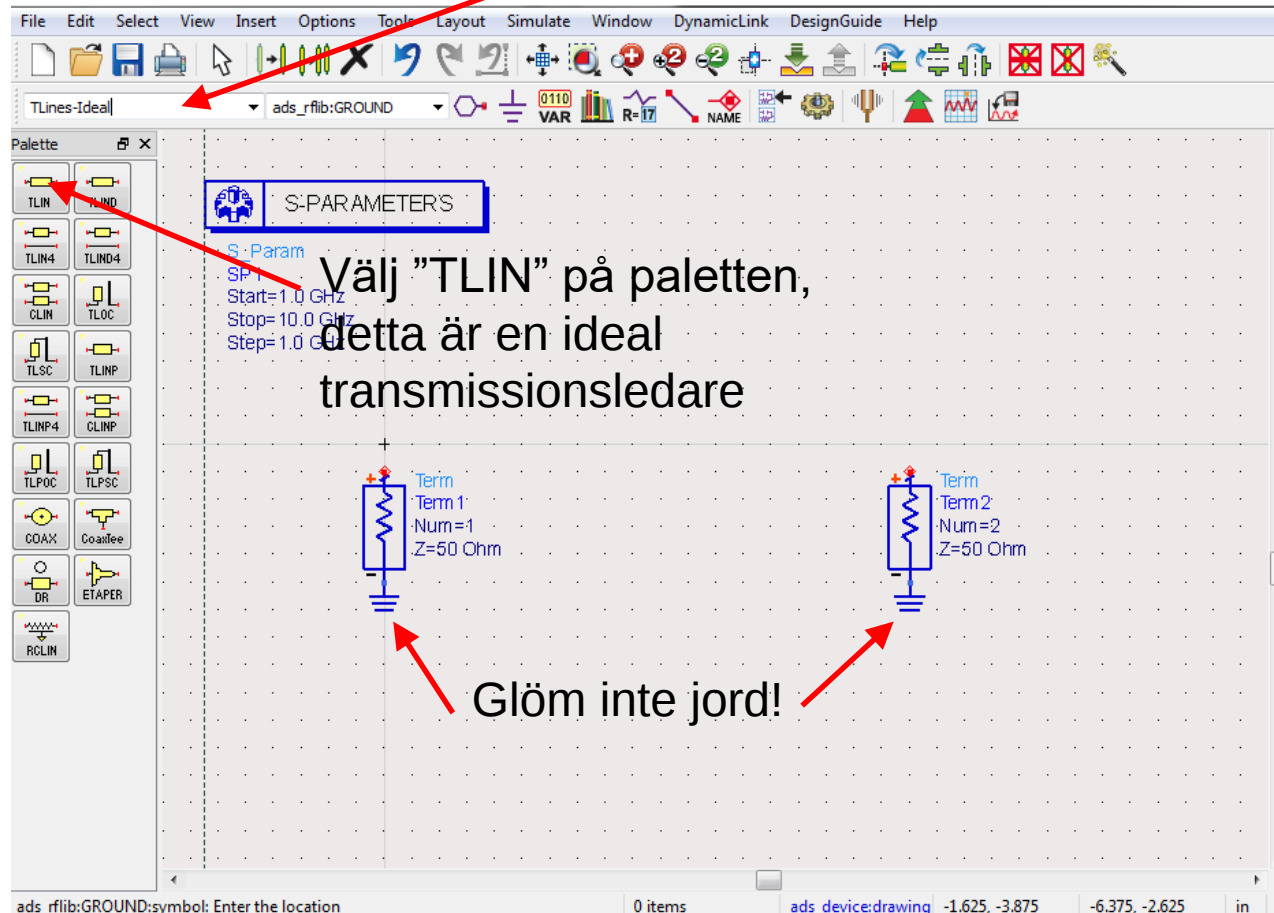
Simulering: S-Parametrar

Välj "Simulation-S_Param"

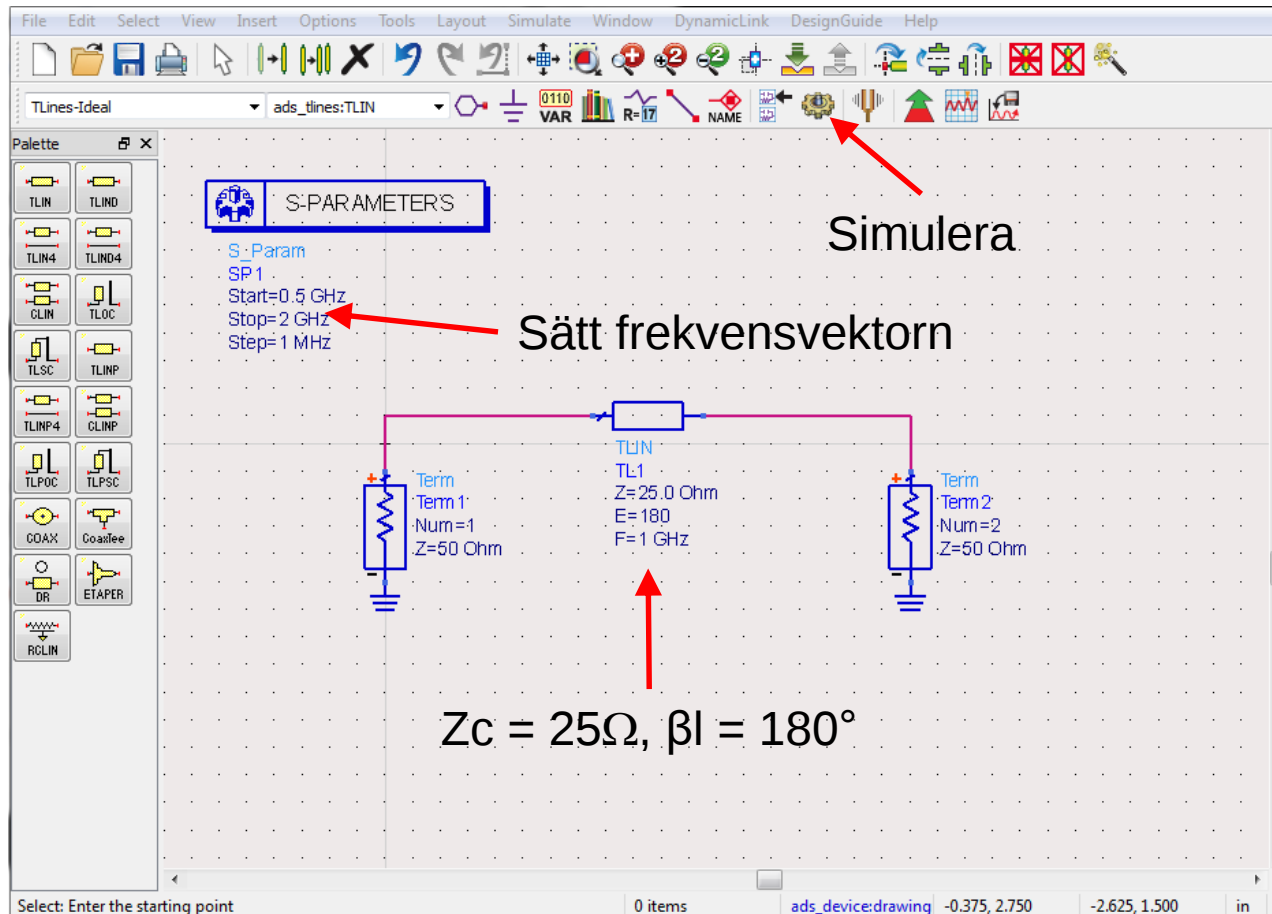


Simulering: S-Parametrar

Välj "Tlines-Ideal"



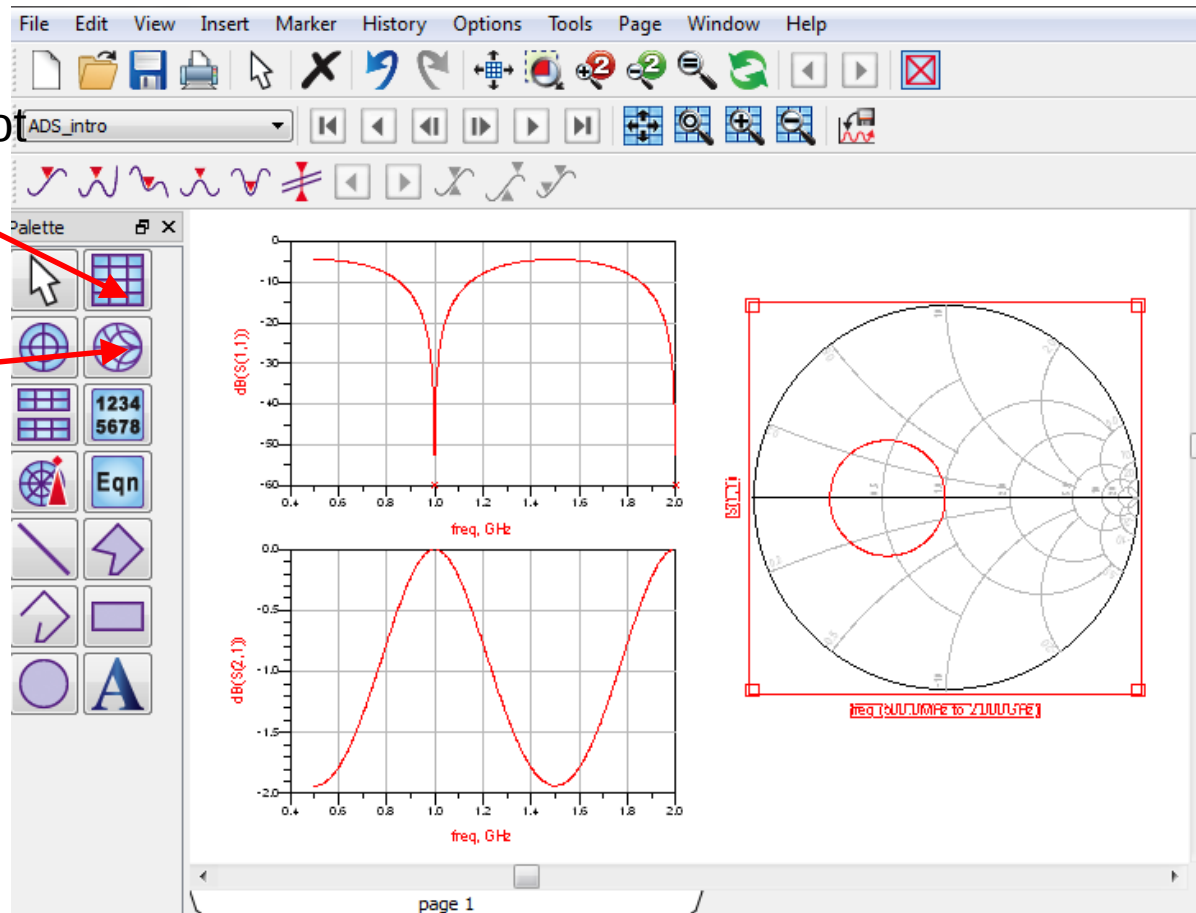
Simulering: S-Parametrar



Visa simuleringsdata

Rektangulär plot

Smithchart



Att göra själv!

- Simulera S-parameterar vid en fix biaspunkt (VGS, VDS)
- Kom ihåg!
 - DC_block och DC_feed så att inte DC/RF läcker ut genom fel portar (Se lumped components paletten)

