

Slotted Waveguide ANTennas analysis and design - Design



DESIGN PARAMETERS

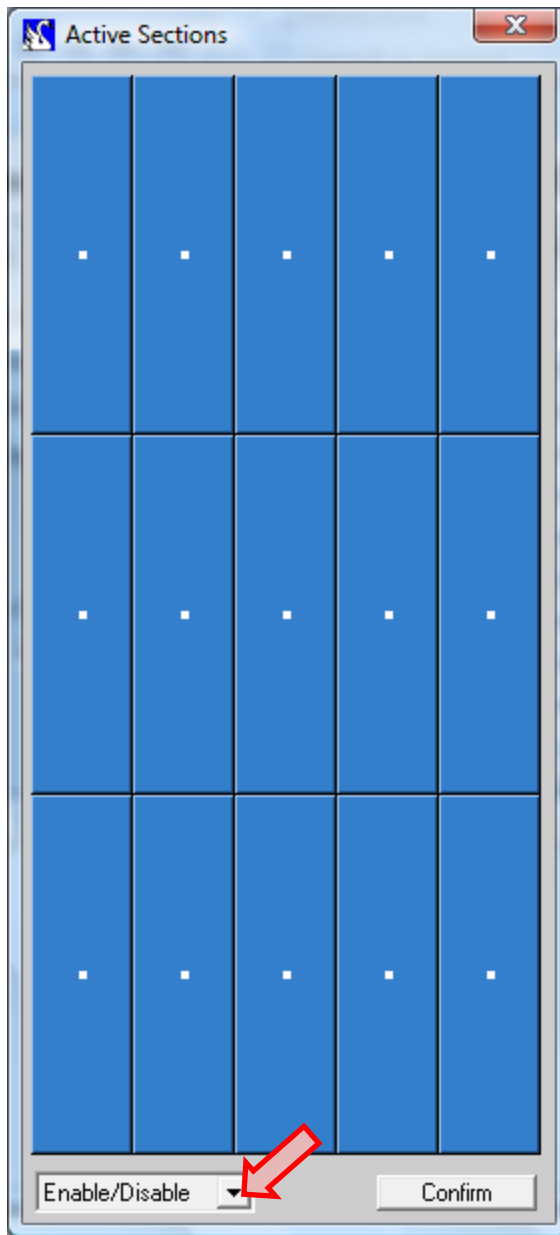
Waveguides:	<input type="text" value="5"/>	Slots for waveguide:	<input type="text" value="12"/>
Active Sect.	<input type="text" value="Sections"/>	Waveguide sections:	<input type="text" value="3"/>
Elevation angle:	<input type="text" value="90"/>	Centre freq. (GHz):	<input type="text" value="9.375"/>
Section Yin/G0:	<input type="text" value="1"/>	WGs spacing (mm):	<input type="text" value="0"/>
Array type:	<input type="text" value="Resonant"/>		
Array shape:	<input type="text" value="Rectangular"/>		
Lattice:	<input type="text" value="Rectangular"/>	<input type="checkbox"/> WG Feed	<input type="text" value="Set.."/>
Excitation point:	<input type="text" value="Centre 180"/>	Phase:	<input checked="" type="radio"/> 0 <input type="radio"/> 180
Slots (H-plane):	<input type="text" value="Uniform"/>		
WGs (E-plane):	<input type="text" value="Uniform"/>		

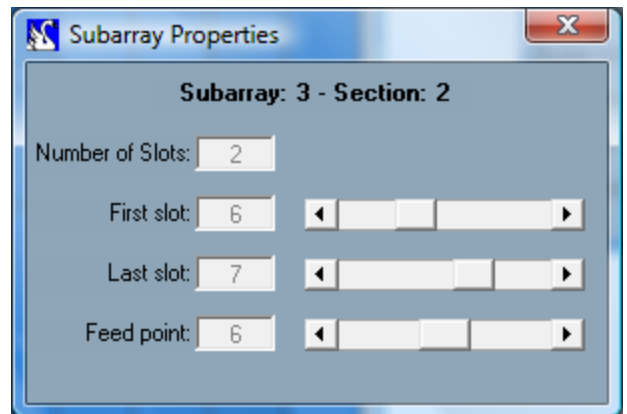
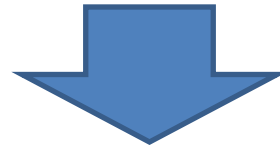
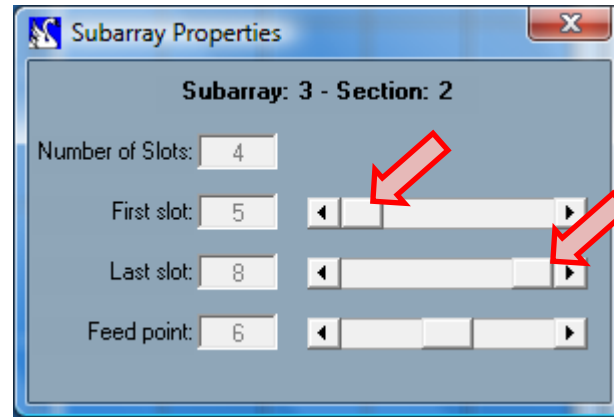
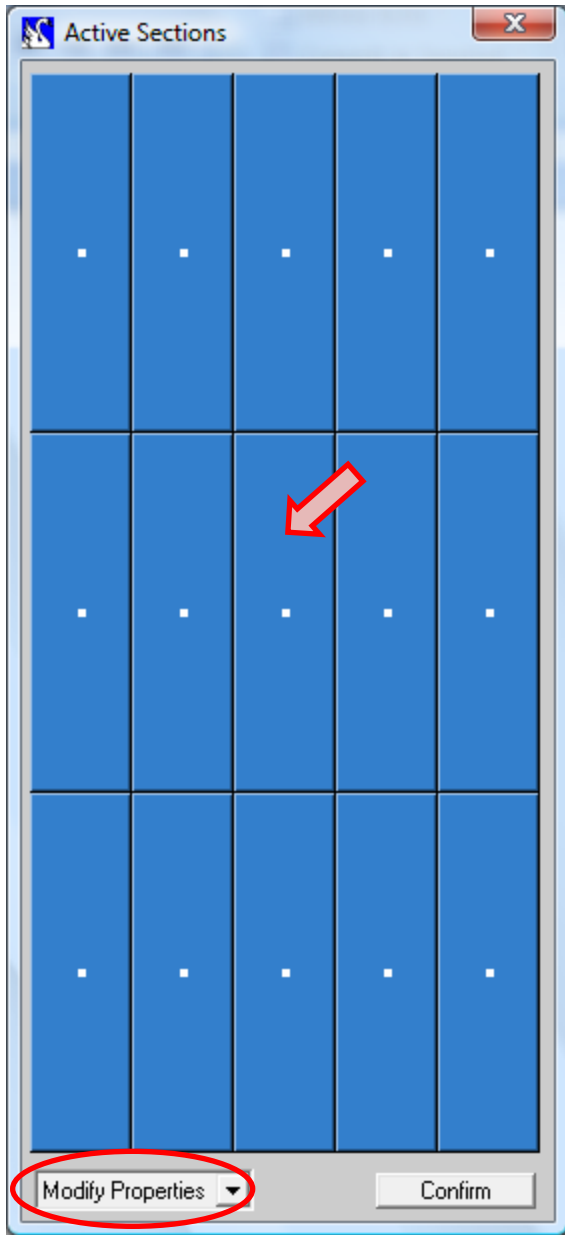
SLOT PARAMETERS

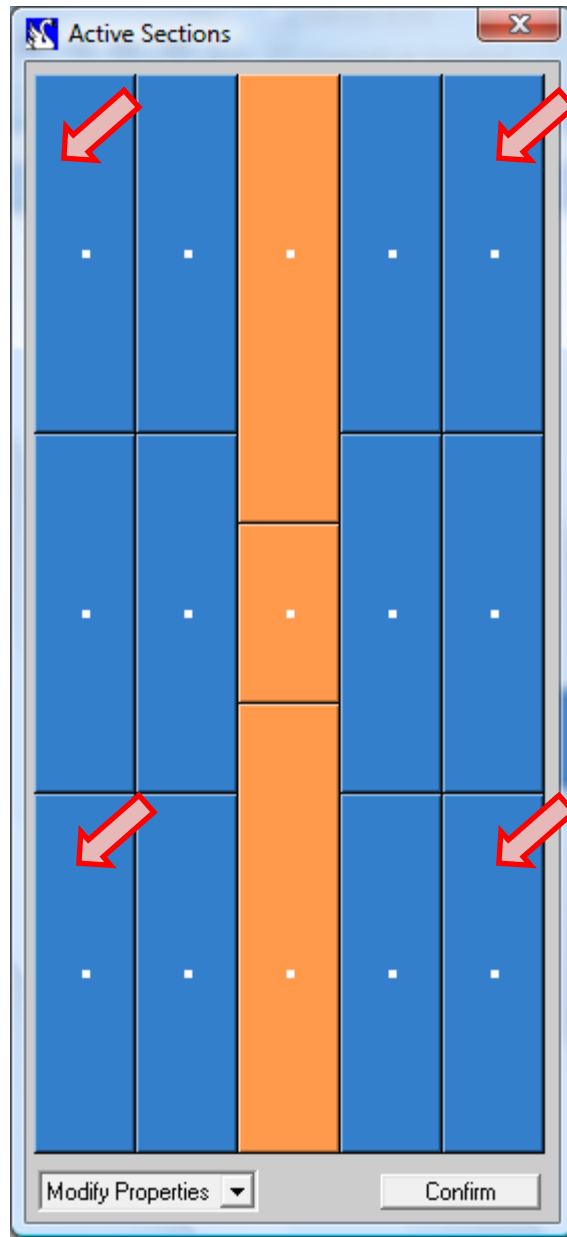
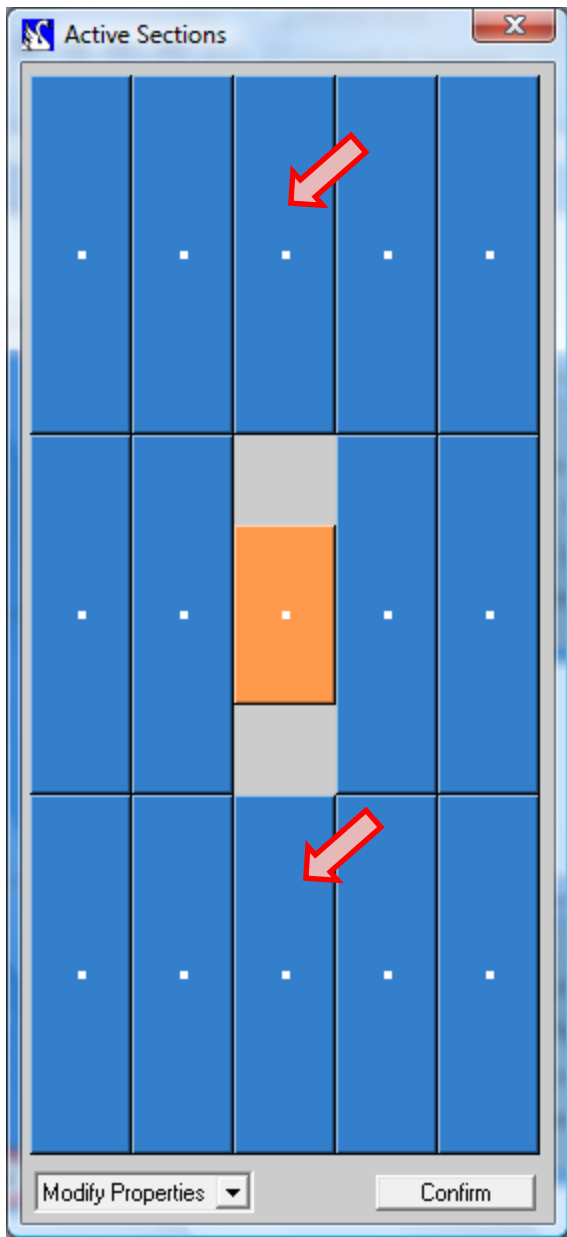
Slot file:	<input type="text" value="WR90"/>
Centre frequency (GHz):	<input type="text" value="9.375"/>
<input type="checkbox"/> SIW	Slot width (mm): <input type="text" value="1.5875"/>
	Slot thickness (mm): <input type="text" value="1.27"/>
	Rounded edges radius (mm): <input type="text" value="0"/>
	Waveguide width (mm): <input type="text" value="22.86"/>
	Waveguide height (mm): <input type="text" value="10.16"/>
	Waveguide thickness (mm): <input type="text" value="1.27"/>
	Relative dielectric constant: <input type="text" value="1"/>
	Radome thickness (mm): <input type="text" value="0"/>
	Radome dielectric constant: <input type="text" value="1"/>
<input type="checkbox"/> Internal e.m. engine	<input type="text" value="Options.."/>

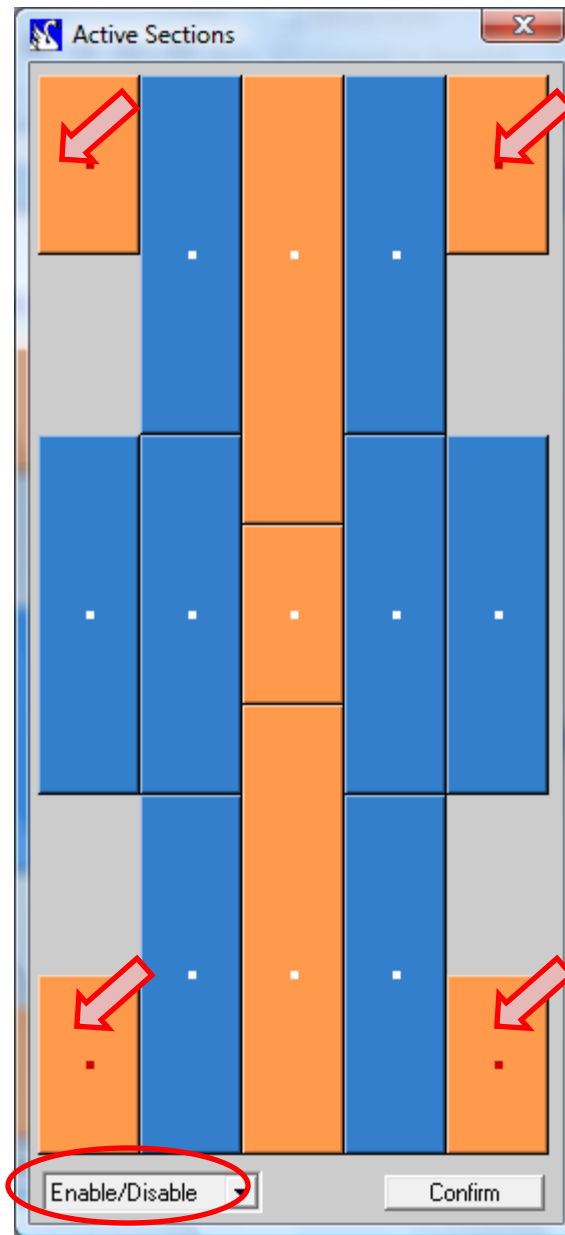
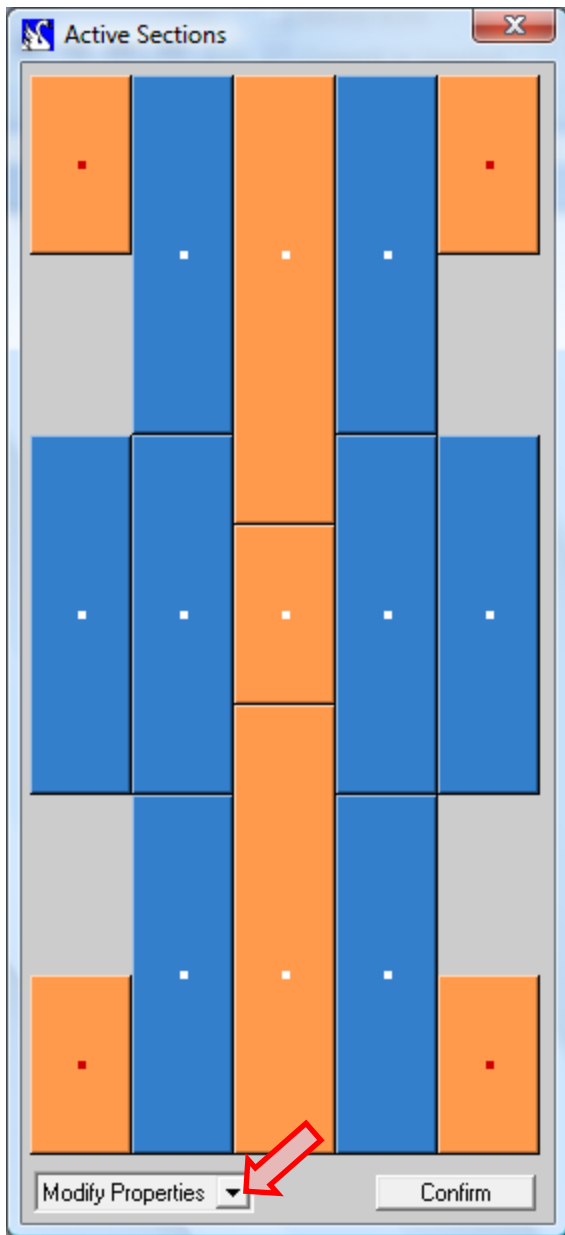
CLICK HERE

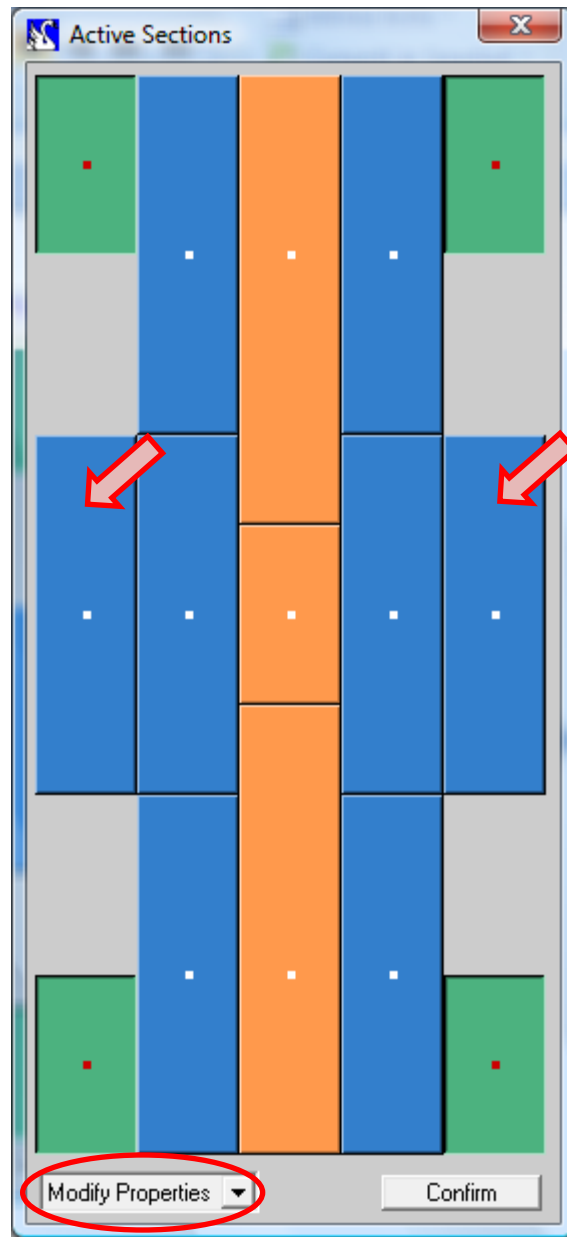
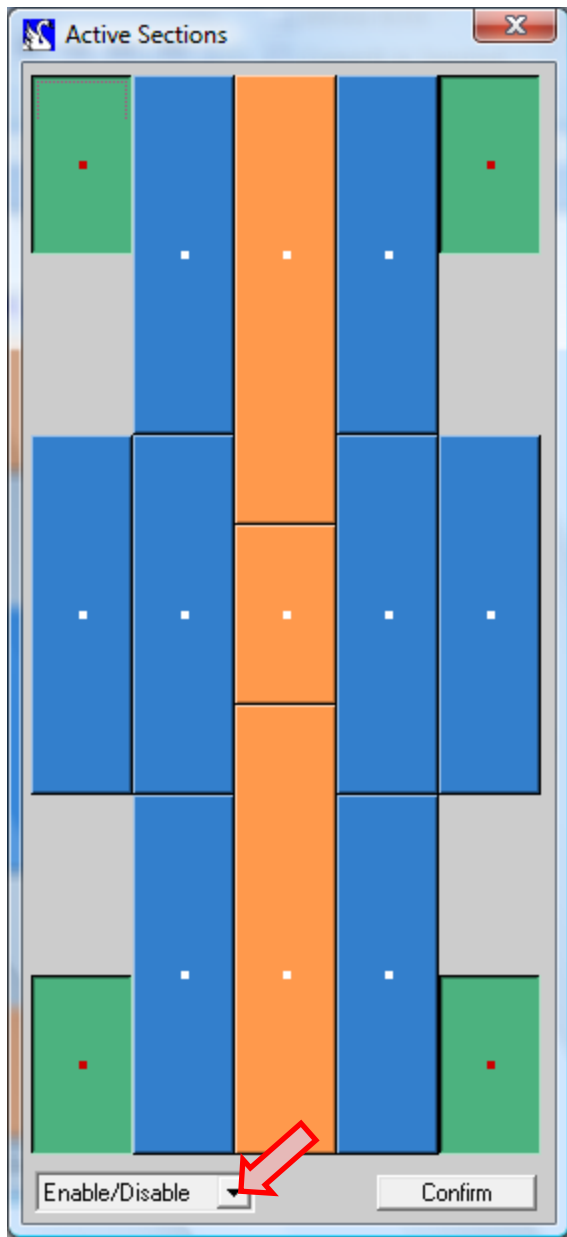














Active Sections

Modify Properties ▾ Confirm

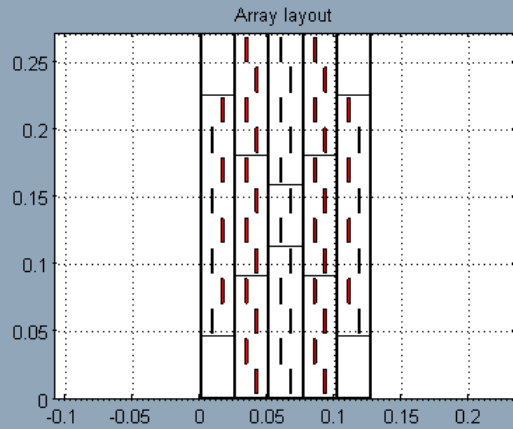
The dialog box displays a 5x5 grid of colored blocks. The top and bottom rows consist of green blocks at the corners and blue blocks in the middle. The middle three rows are primarily orange blocks, with blue blocks interspersed. Small white dots are present in the center of most blocks, and small red dots are located in the center of the four green blocks. A red arrow points to the 'Confirm' button at the bottom right.



Active Sections

Enable/Disable ▾ Confirm

The dialog box displays a 5x5 grid of colored blocks. The top and bottom rows consist of green blocks at the corners and blue blocks in the middle. The middle three rows are entirely blue blocks. Small white dots are present in the center of all blocks. The 'Confirm' button at the bottom right is now highlighted.



Theoretical Array Performance

Number of Active Slots = 52

Max. Directivity = 25.6 dBi

Aperture Efficiency = 86.7 %

E-plane BW_{3dB} = 14.1 Degrees

H-plane BW_{3dB} = 6.7 Degrees

E-plane SLR = 16.1 dB

H-plane SLR = 16.4 dB

Size = 271.0 mm x 127.0 mm

