EDISON

Electromagnetic Design of
flexIble SensOrs

FNP Team-Tech

Report 8. H-field FEM formulation.

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November 21, 2018

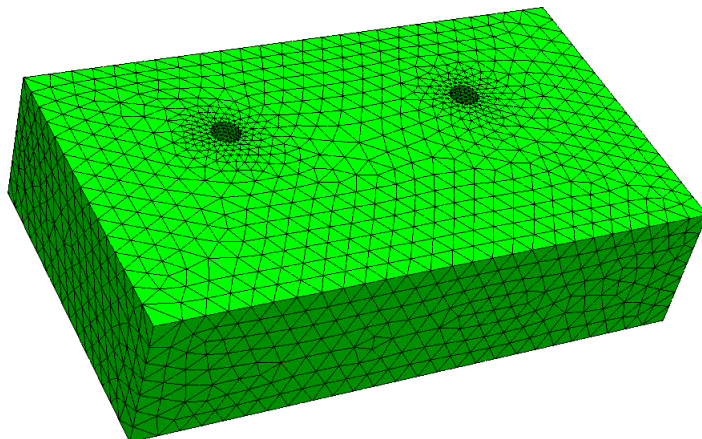| Revision	Date	Author(s)	Description
1.0	05.02.2018	G. Fotyga	created

1 Test 1

The geometry of analyzed structure:

Figure 1: Test structure: WR-90 waveguide, length = 40mm, 2 rods with r = 1mm: 1) x = 11mm, y = 15mm 2) x = 29mm, y = 15mm.
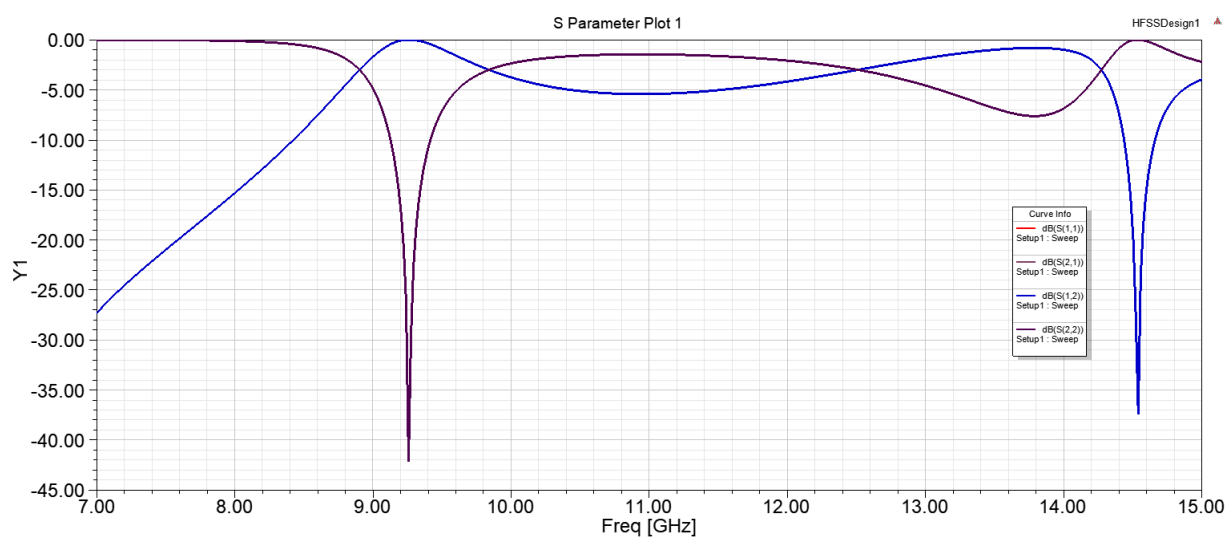

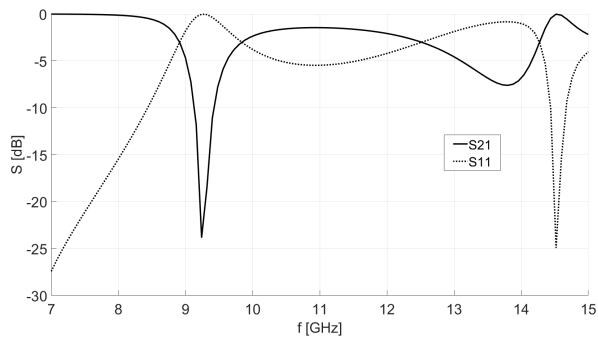Figure 2: **HFSS results** (taken as a reference), 173180 variables

Figure 3: **InventSim**, **H**-field formulation, **analytically** defined field at the ports with 96782 variables.
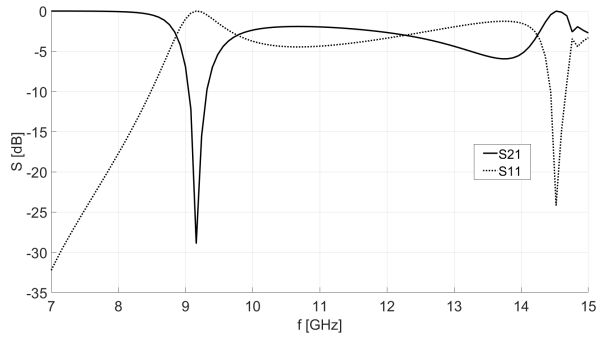

Figure 4: **InventSim**, **H**-field formulation, **numerically** defined field at the ports with 96782 variables.
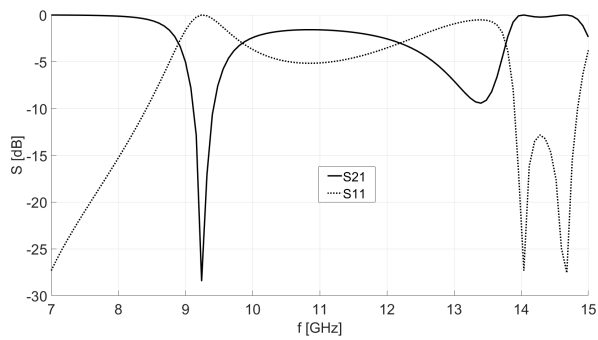

Figure 5: **InventSim**, **E**-field formulation, 81928 variables, **analytically** defined.
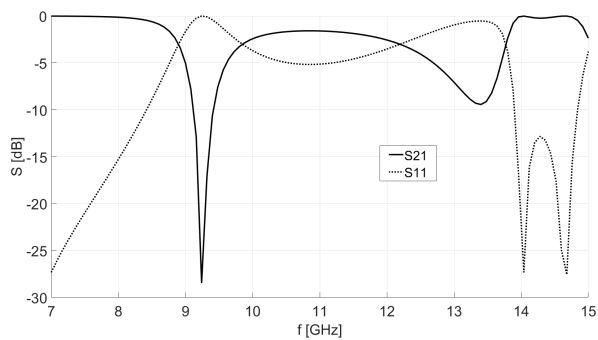

Figure 6: **InventSim**, **E**-field formulation, 81928 variables, **numerically** defined.
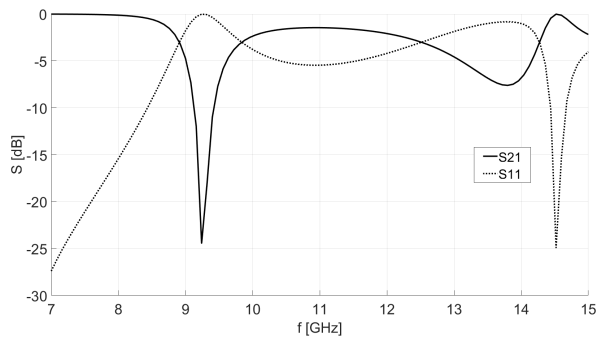
Figure 7: **InventSim**, **H**-field formulation, **analytically** defined field at the ports with 43726 variables.
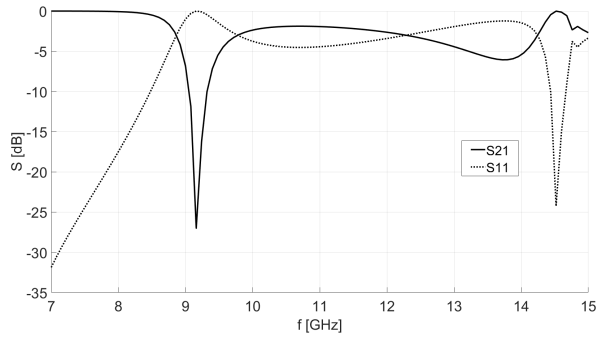

Figure 8: **InventSim**, **H**-field formulation, **numerically** defined field at the ports with 43726 variables.
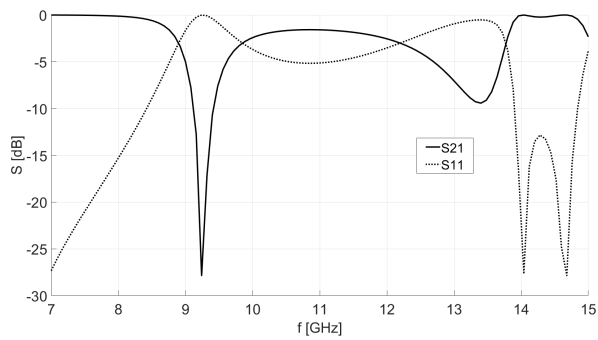

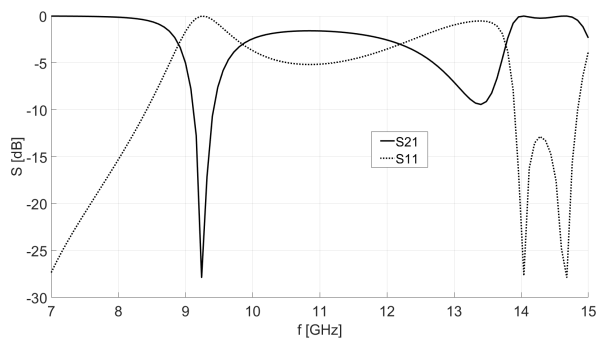Figure 9: **InventSim**, **E**-field formulation, 36902 variables, **analytically** defined field at the ports.

Figure 10: **InventSim**, **E**-field formulation, 36902 variables, **numerically** defined field at the ports.

2 Test 2

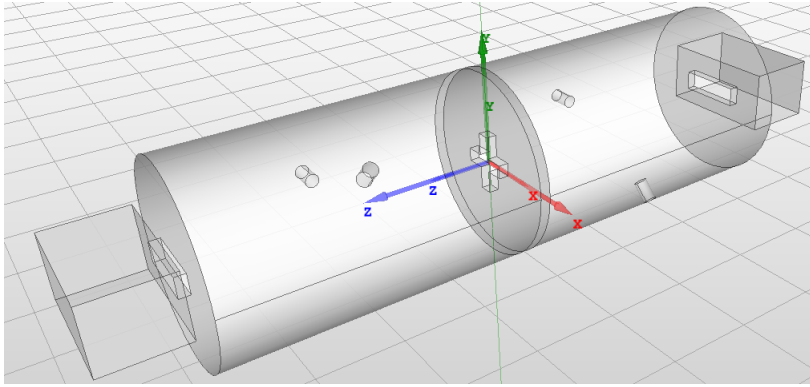The second test deals with the dual-mode filter, shown below:

Figure 11: **InventSim**, **E**-field formulation, 36902 variables, **numerically** defined field at the ports.
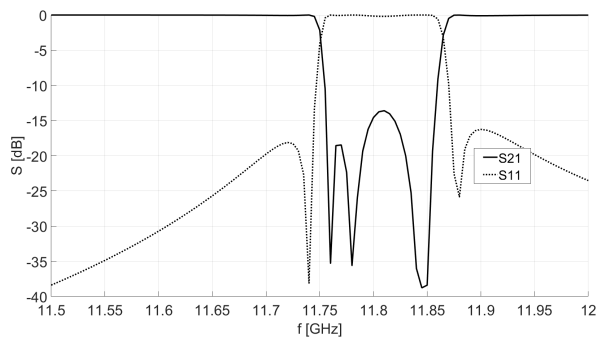

Figure 12: **InventSim**, **E**-field formulation, **numerically** defined field at the ports.
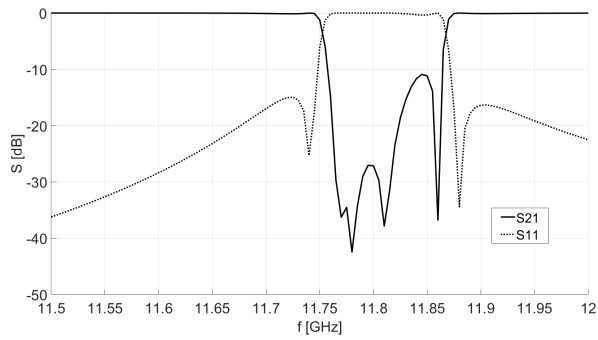

Figure 13: **InventSim**, **H**-field formulation, **analytically** defined field at the ports.