Geometry:

.param R=.336 ; loop radius in m
.param W=.0037; diameter of coax cable in m
.param A=pi *R* R ; loop area in m*m
.param LOOPLENGTH=pi*R ; half loop length in m

Transmission line:

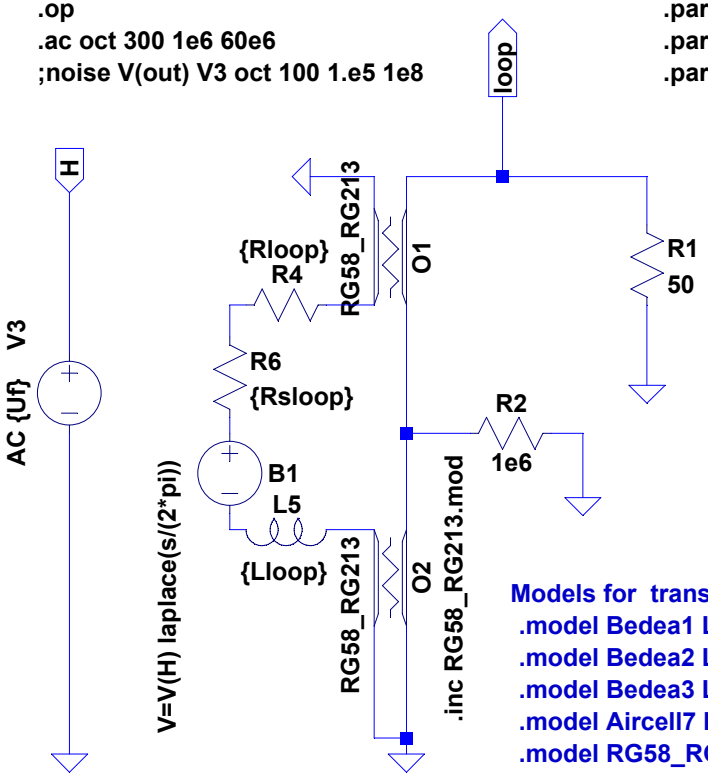
.param Rtline=.1 ; transmission line resistance in Ohm/m
.param Lloop=1.266e-06*R *(log(16*R/W)-2.) ; inductance of total loop sheath in uH
.param Rloop=.1 ; loop loss resistance in Ohm
.param Rsloop=.1 ; loop radiation resistance in Ohm

Operations:

.op
.ac oct 300 1e6 60e6
;noise V(out) V3 oct 100 1.e5 1e8

Fields and Voltages:

.param Ehf=1. ; peak to peak electrical hf-field in V/m
.param H=Ehf/376.7 ; magnetic hf-field
.param Uf=1.26e-6*A *H*2*pi ; induced Voltage in V per Hz



Typ2a Loop

Models for transmission lines:

.model Bedea1 LTRA(len={LOOPLENGTH} R={Rtline} L=315n C=56p) ; 75 Ohm, v=0.82, R=2.0/4.9mm (Bedea TLASS BGAL C100/C40)
.model Bedea2 LTRA(len={LOOPLENGTH} R={Rtline} L=280n C=50p) ; 75 Ohm, v=0.89, D=7mm (Bedea TLASS LR170)
.model Bedea3 LTRA(len={LOOPLENGTH} R={Rtline} L=370n C=67p) ; 75 Ohm, v=0.66, R=4.5mm (Bedea TLASS 88)
.model Aircell7 LTRA(len={LOOPLENGTH} R={Rtline} L=185n C=74p) ; 50 Ohm, v=0.84, D=5mm
.model RG58_RG213 LTRA(len={LOOPLENGTH} R={Rtline} L=250n C=100p) ; 50 Ohm, v=0.66, D=3.7/7.2mm
.model 25Ohm LTRA(len={LOOPLENGTH} R={Rtline} L=119n C=190p) ; 25 Ohm, v=0.69, R=3.0 Semi Rigid, PTFE