

### Radiation from TWP to Monopole Antenna

#### Problem Definition

Radiation from TWP N.901.916 to monopole antenna is considered. Simulation results are obtained by Radiation Hybrid Analysis Type and compared with measurement data.

Actual view of measurement setup of monopole antenna and TWP N.901.916 above ground with additional closer view of terminations configuration is shown in the figure below.

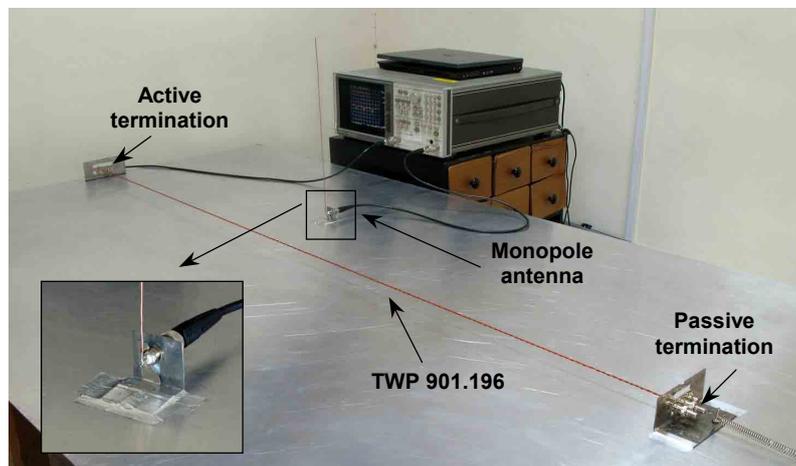


Fig. 1. Measurement setup (general view)

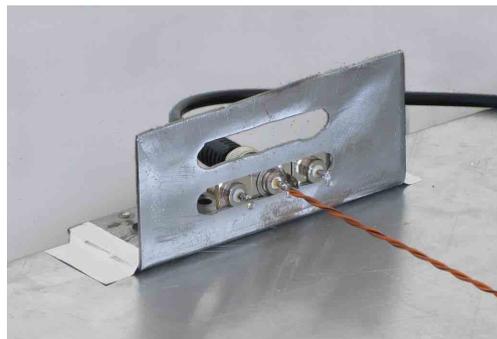


Fig. 2. Active termination

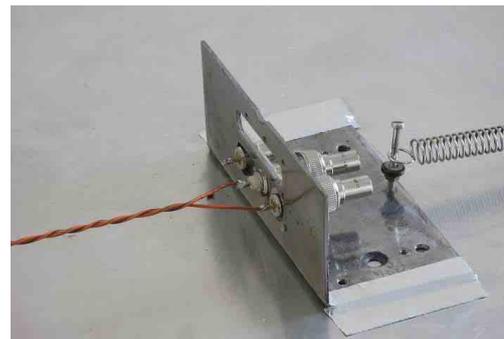
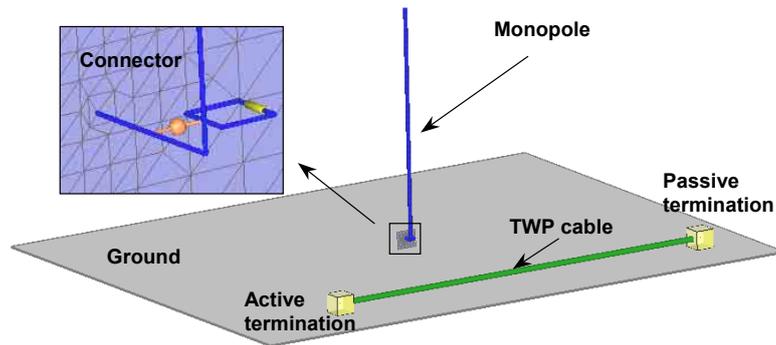


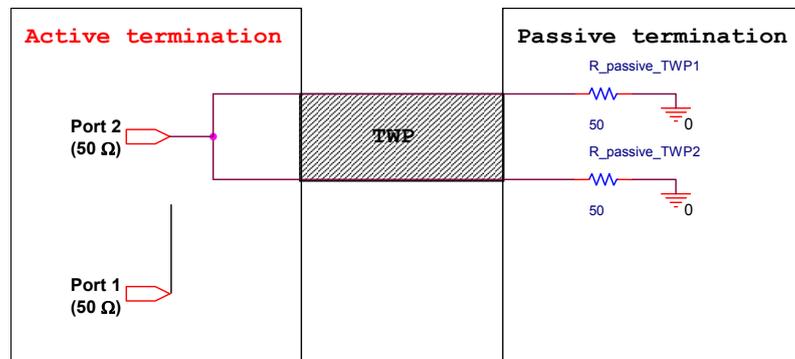
Fig. 3. Passive termination

Electromagnetic interference between cable harness and single wire is measured in EMCoS measurement laboratory. Simulation model is represented in the following figure.



**Fig. 4. Monopole antenna and TWP cable**

Devices at active (connected to network analyzer) and passive terminations of cable system are schematically shown in the figure below.



**Fig. 5. Schematic representation of terminations**

### Numerical Results

Comparisons of transmission coefficient between TWP cable and antenna simulation results and measurement data are shown below.

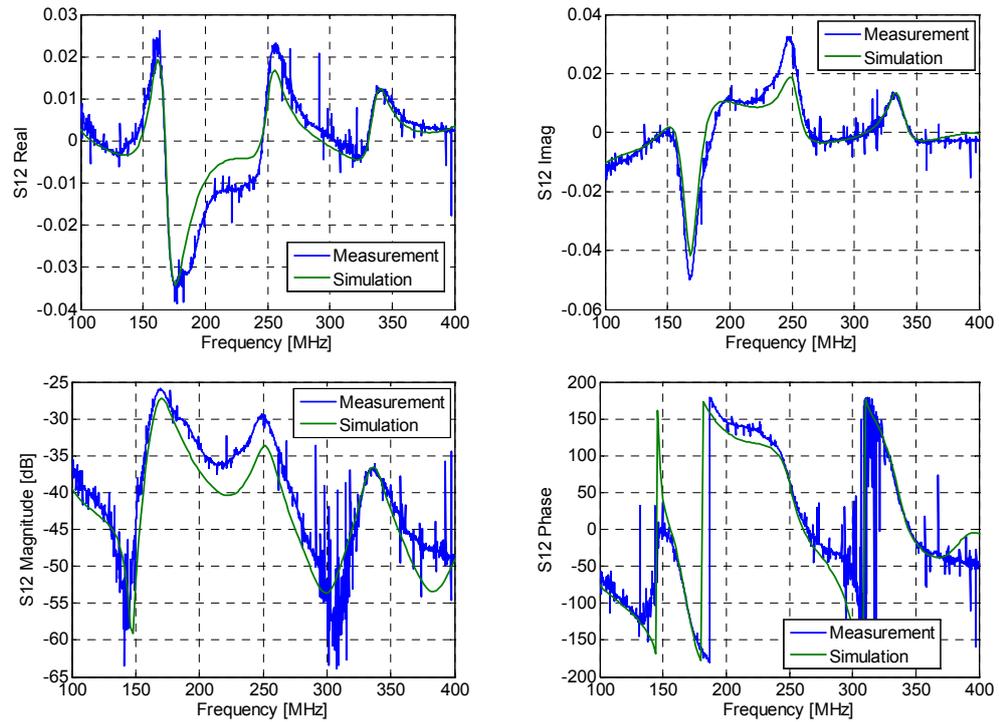


Fig. 6. Transmission coefficient ( $S_{12}$ )

### Conclusions

Results of application example show that simulation results are in good agreement with measurements.