

HIGH FREQUENCY

AT&S

AT&S supports your growing high-frequency (1GHz ~ 140 GHz) requirements for IoT, 5G, mobile, autonomous driving and aerospace applications

Thank you for visiting the AT&S booth. Visit ats.net for more information.

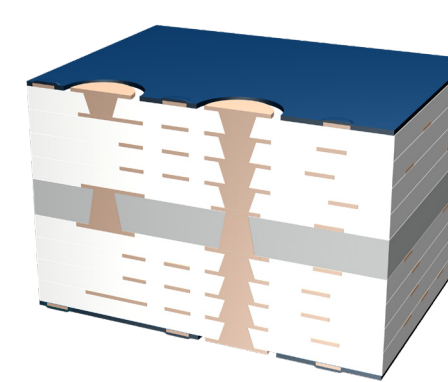


General design rule

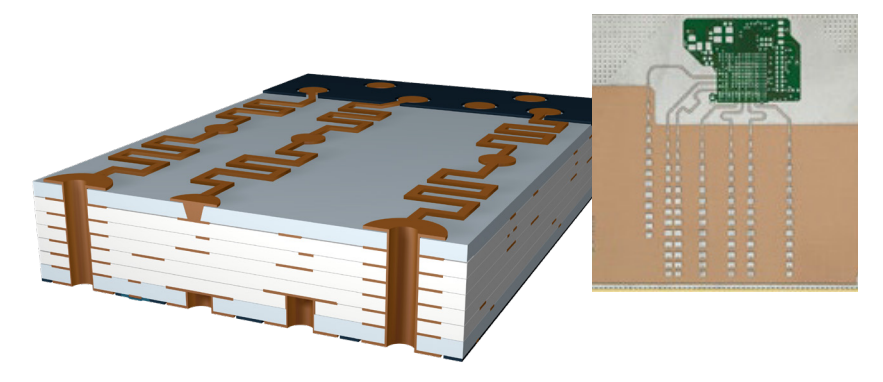
Layer count	4 - 28 layers
Thickness	0.32 - 2.4 mm
Stack-up	Core & Hybrid Build-up
Material	Epoxy based, PTFE, PPE
Co foil thickness	9µm / 18µm / 35µm / 70µm
Surface finish	<ul style="list-style-type: none"> OSP / HAL Lead Free / Immersion Tin Immersion Ni/Au, Plated Ni/Au Immersion Ag
Plating	Subtractive, mSAP

Applications

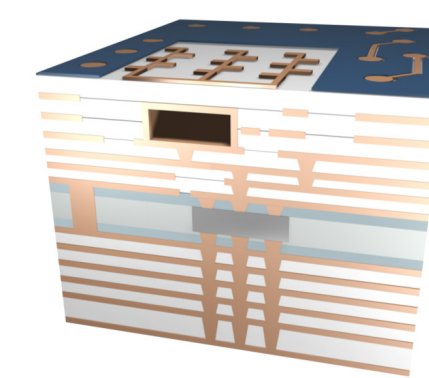
- Optical Transceiver
- 28/77/79GHz automotive radar
- 140GHz antenna for 6G wireless communication
- 140GHz radar



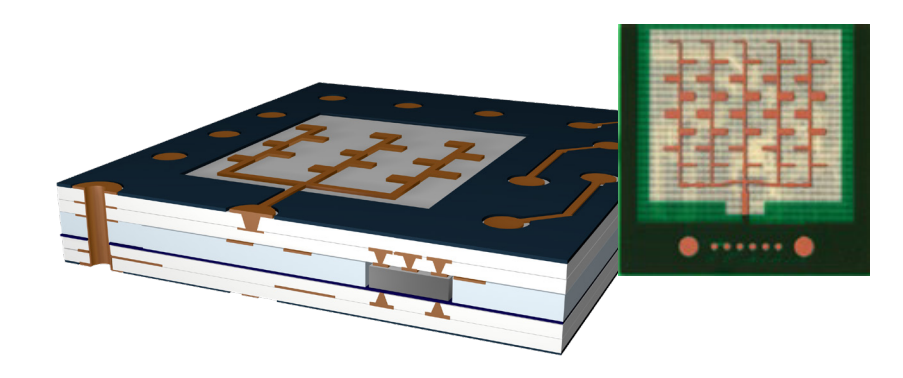
10L Anylayer Structure



HDI Hybrid structure w/ Deep Drilling



AFWG® Air filled Wave Guide

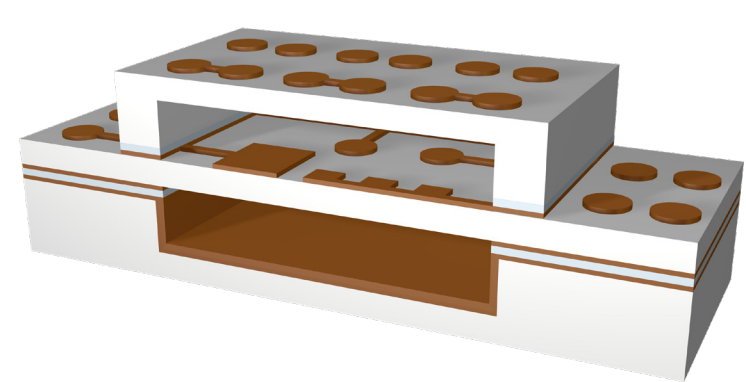


High frequency design + ECP

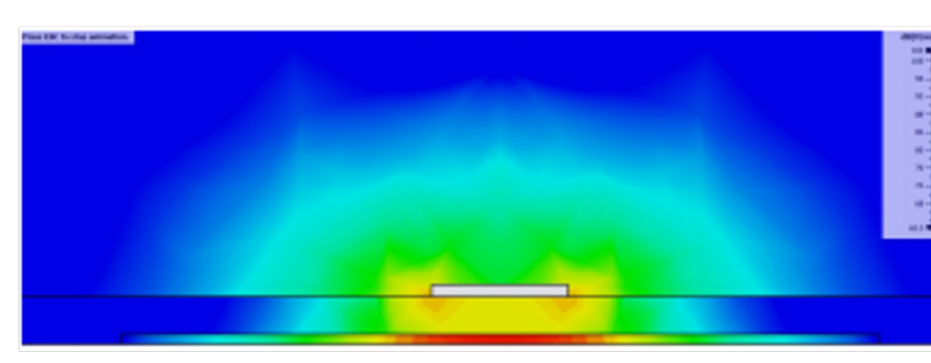
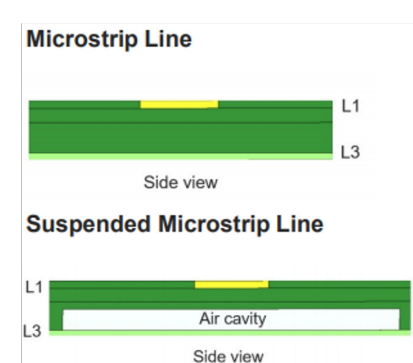
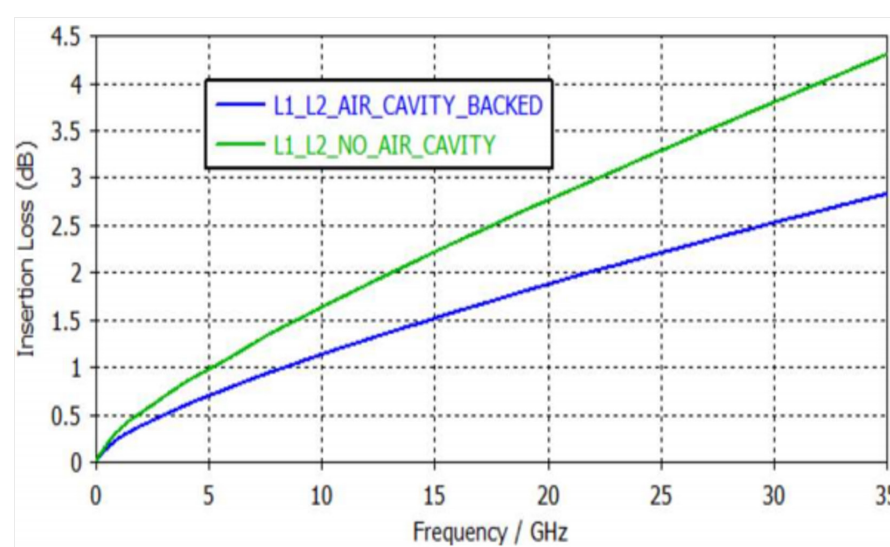
Reduction of transmission loss (R&D)

We provide loss reduction structures for high-frequency transmission lines

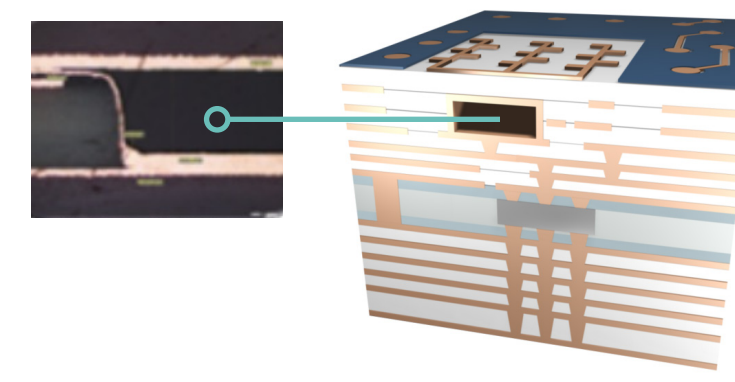
Suspended stripline with metal shielding



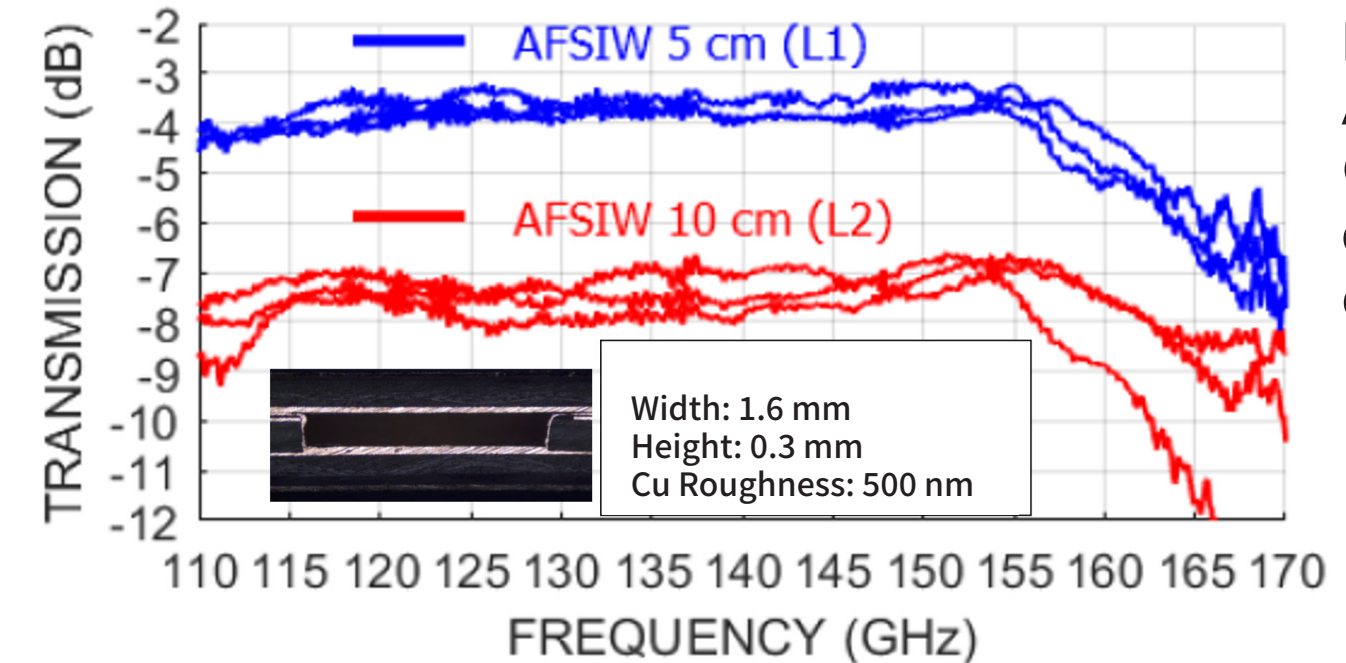
- Suspended microstrip
- Reduced insertion loss for each line
- Radiation loss reduction thanks to shielding structure, EMC restriction
- Useful for in-vehicle and satellite installations with strict requirements



Hollow waveguide structure with chip embedding



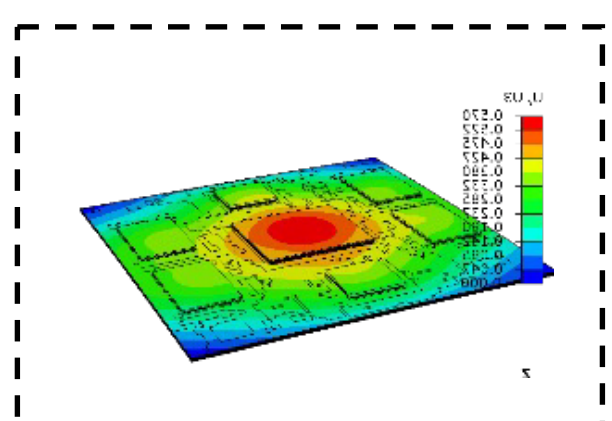
- For Substrate Integrated Air filled Waveguide (AFWG®)
- Achieves waveguide-level low loss
- Shortening of transmission line length by chip embedding
- Heat dissipation structure with thermal vias



Measured AFSIW in 140 GHz band obtained by TRL calibration

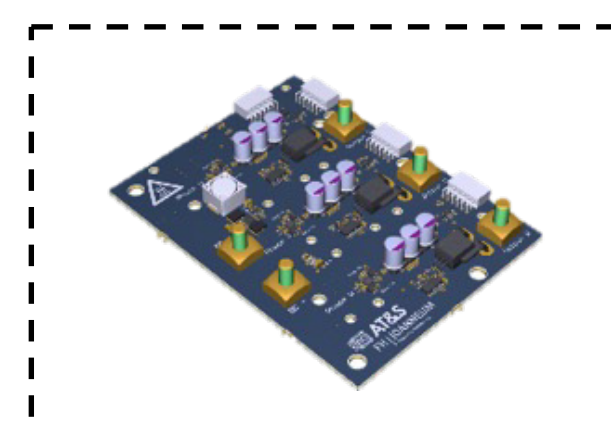
PCB(A) ONE STOP SHOP

PPS
Product & Process Simulation



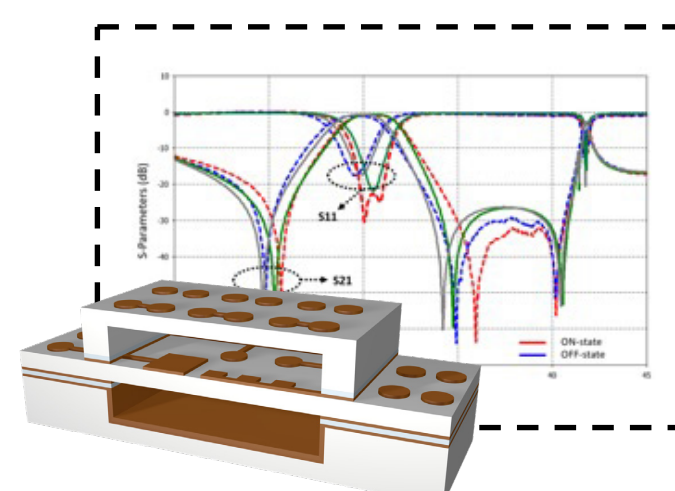
- Warpage simulation
- Reliability simulation
- Failure analysis
- Heat management

HDC
Hardware Development Center



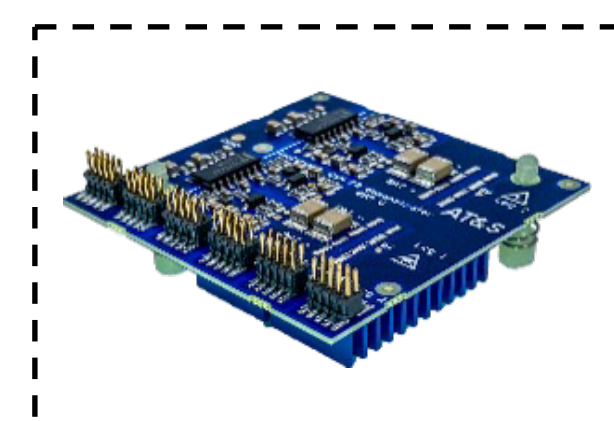
- PCB/Substrate – Layout
- Technical concepts
- Data conversion
- Drawings

RF
Radio Frequency



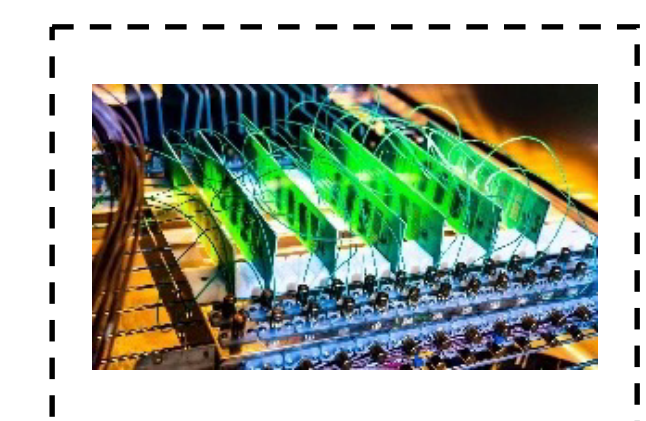
- RF – Simulation service
- Integration of passive RF functionality
- Integrated antenna systems

PDS
Product Development Services



- Project management
- Assembly services
- Technology consulting

FTD
Functional Test Development



- Test services
- Laboratory services