

EE 481/581 *Microwave Engineering*

Lecture Notes

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5	Generator and load mismatches on TLs.
6	The Smith chart.
7	Transmission line matching using lumped L networks.
8	Single-stub tuning.
9	Quarter-wave-transformer matching.
10	TEM, TE, and TM modes for waveguides. Rectangular waveguide.
11	Dispersion. Stripline and other planar waveguides.
12	Microstrip. ADS and Linecalc.
13	Simple quasi-static moment method analysis of a microstrip.
14	Impedance and admittance matrices.
15	S parameters and the scattering matrix.
16	Properties of S matrices. Shifting reference planes.
17	S parameters and time average power. Generalized S parameters.
18	Vector network analyzer.
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20	Transmission ($ABCD$) matrix.
21	Signal flow graphs.
22	Measurement errors. TRL calibration of a VNA.
23	Basic properties of dividers and couplers.
24	T-junction and resistive power dividers.
25	Wilkinson power divider.
26	Quadrature (90°) hybrid.
27	The 180° hybrid.
28	Coupled line and Lange directional couplers.
29	Microwave filter design by the insertion loss method.
30	Scaling of low pass prototype filters. Stepped impedance low pass filters.
31	Stub synthesis. Kuroda's identities. Stub low pass filters.
32	High pass and bandpass microwave filters. Resonant stub filters.
33	Active microwave circuits: Two-port power gains.
34	Amplifier stability.
35	Single stage amplifier: Design for maximum gain.
36	Single stage amplifier: Design for specific gain.