Resonant Frequency Report

Input Parameters:

Parameter	Value	Unit
Length	20	mm
Width	30	mm
Height of Substrate	10	mm
Permittivity	4.4000000000000004	

Calculated Resonant Frequency:
4.03 GHz

Unit Conversion Report

Input Parameters:

Parameter	Value	Unit
Trace Width	10.00	mils
Trace Thickness	20.00	oz/sq ft
Trace Length	50.00	mm

Calculated Units:

Parameter	Value	Unit
Trace Width	0.25	mm
Trace Width	0.01	inches
Trace Width	10.00	mils
Trace Thickness	0.70	mm
Trace Thickness	27.40	mils
Trace Thickness	20.00	oz
Trace Length	50.00	mm
Trace Length	1968.51	mils
Trace Length	1.97	inches

Trace Width Calculation Report

Input Parameters:

Parameter	Value	Unit
Current	2.00	A
Copper Thickness	1.00	oz/sq ft
Temperature Rise	40.00	°C
Layer Type	External	
High Frequency PCB	TRUE	
frequency	1000.00	MHz

Calculated Units:

High Frequency Results:

Parameter	Value	Unit
High-Frequency Mode:	TRUE	
Skin Depth	2.09	µm
Recommendation	Consider increasing trace width or using silver/gold p lating for high-frequency performance.	
Effective Area	0.70	mm^ 2
Additional Remarks	Consider wider traces or thicker copper to mitigate sk in effect	

Trace Width Results:

Parameter	Value	Unit
Recommended Trace Width (basic)	13.26	mils
Recommended Trace Width (High Frequency)	14.59	mils

Voltage Drop Calculation Report

Input Parameters:

Parameter	Value	Unit
Current	2.00	A
Copper Thickness	10.00	oz/sq ft
Trace Length	10.00	mm
Trace Width	30.00	mils
Layer Type	Internal	
High Frequency PCB	TRUE	
frequency	1000.00	MHz

Calculated Units:

High Frequency Results:

Parameter	Value	Unit
High-Frequency Mode:	TRUE	
Cross-sectional Area (High Frequency):	1.499e-03	mm²
Resistance (High Frequency):	112.09	mΩ
Voltage Drop (High Frequency):	224.18	mV
Power Loss (High Frequency):	0.45	W

Voltage Drop and Power Loss Results:

Parameter	Value	Unit
Trace Type:	Internal	
Cross-sectional Area (Basic):	2.652e-01	mm²
Resistance (Basic):	0.79	mΩ
Voltage Drop (Basic):	1.58	mV
Power Loss (Basic):	0.00	W

Current Carrying Capacity Report

Input Parameters:

Parameter	Value	Unit
Trace Width	10.00	mils
Trace Thickness	30.00	oz/sq ft
Trace Type	External	
Allowed Temperature Rise	40.00	°C
frequency	1000.00	MHz

Calculated Units:

Parameter	Value	Unit
Trace Type:	External	
Estimated Max Current Capacity:	0.14	A
Skin Depth:	2.09	µm

Impedance Calculator Report

Input Parameters:

Parameter	Value	Unit
Trace Width	10.00	mils
Trace Thickness	20.00	oz/sq ft
Height of Substrate	30.00	mm
Frequency	40.00	MHz
Trace Type	Microstrip	
Permittivity	4.40	

Calculated Units:

Parameter	Value	Unit
Estimated Impedance	248.10	Ω
Effective Permittivity	2.75	
Skin Depth	0.01	mm
Converted Width	0.25	mm
Converted Thickness	0.70	mm