

K&L Internship Presentation

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a **DOVER** company



Company Overview

- K&L Microwave in Salisbury, MD was established in 1971 and acquired by Dover Corporation in 1983.
- They design and manufacture a wide range of hardware used to control and filter electronic signals.
 - Relies on custom software applications to aid in sales, marketing, and internal modeling.
- K&L works with prominent names in technology & defense sectors (ie. Kratos Defense, GE Aerospace, Honeywell, etc.)



PROJECTS

MY ROLE & WORK DONE

Quotable

SalesAssistant

ATS Setter

S-Parameter
Viewer

FilterWizard

Honorable Mentions:

- ProtoLPKF
- Intranet

FRAMEWORKS & TECHNOLOGIES USED



PLURALSIGHT



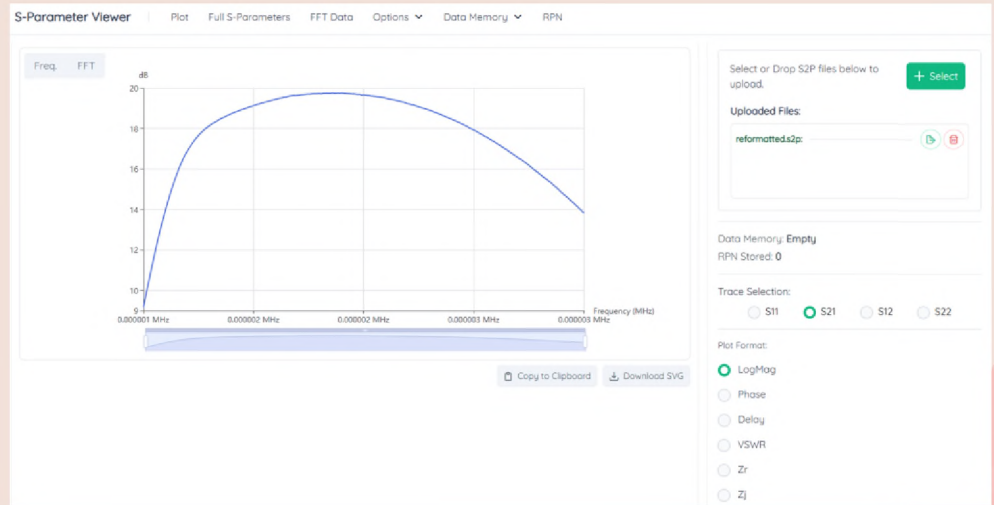
QUOTABLE

Created internal web-application for the Sales team to generate custom quote datasheets for consumers.

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S-PARAMETER VIEWER

Created web-application that allows users to upload Torchstone files (*.s2p) and analyze the S-parameter (Scattering parameter) data for two-port networks.



SALESASSISTANT

- Internal web-application
- Acts as intermediary between FilterWizard clients & Sales/Engineering teams.
- Allows for employees to manage and execute product quote requests.

FILTERWIZARD

- External web-application
- Allows for external users to view, create, and request product quotes.

Steps
Step 1: Specs → Step 2: Results → Step 3: Details → Step 4: Quote

Download S2P Print Page Create PDF Request Quote »

Filter Wizard® Part: 31B40-1000/T50-O/O

This part is a product of K&L Microwave®, click here for information on all K&L Microwave® product offerings.

	Spec:	Typical:
Center Frequency:	1000 MHz	999.1 MHz
3.0 dB Bandwidth:	50 MHz	55.5 MHz
Insertion Loss:	2.6 dBa	2.34 dBa
Stopband Atten. (920 MHz):	25 dBc	28.24 dBc
Stopband Atten. (1080 MHz):	22 dBc	24.61 dBc
Filter Type:	Chip & Wire	
Spec Return Loss:	14.0 dB (1.5:1 VSWR)	
Typ Ult Rej:	4000 MHz	
Power Handling*:	30 dBm (avg), 33 dBm (peak)	
Inches:	0.75 x 0.50 x 0.40 inches	
Millimeters:	19.05 x 12.70 x 10.16 mm	

Filter Response

Insertion Loss (dBc) / Return Loss (dB) vs Frequency (MHz) and Group Delay (ns) vs Frequency (MHz). The graph shows a passband centered at 1000 MHz with a 3.0 dB bandwidth. The insertion loss is approximately 2.6 dBa, and the group delay is approximately 15 ns. The stopband attenuation is 25 dBc at 920 MHz and 22 dBc at 1080 MHz.

MAIN CHALLENGES

- Began working with unfamiliar tech stacks and RF terminologies, having to rely on my team and online resources (+ PluralSight) to get work done.
- New Workflows: Adapted to documentation, verification, and testing- finding the processes manageable despite their initial complexity.
- The entire knowledge domain of RF technologies, filter specifications, terminology, etc. and applying them in software applications sufficiently.
- Balancing the combination of work, school, and social life.

CONNECTION TO COURSEWORK

- Software Engineering (COSC 425/426): Applied the full SDLC and project management to build internal tools from initial wireframes.
- Frameworks: Coursework provided the structural foundation needed to quickly learn and implement new development stacks.
- Database Systems

CONCLUSION

- Greatly appreciated the opportunity to build applications in entirely new domains/environment.
- Gained end-to-end experience: from wireframing to technical documentation and verification testing.
 - Gained more technical insight through hands-on application development than in the classroom.
- Thrived in a (very) patient, supportive team atmosphere that encouraged my individual growth.

THANK YOU!

Questions? (I(or) ²¹

