Phased Array Antennas

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Project Summary

As a senior embedded software engineer at Hanwha Phasor, I played a key role in the development of an advanced phased array antenna control system working with LEO and GEO satellites. These systems were tailored for high-speed, on-the-move applications, enhancing communication reliability in dynamic environments.

This involved designing software architecture, developing production firmware, and creating hardware drivers for critical components such as antenna ICs, shift registers, SDRAM, and Ethernet switches. I also implemented and tested phased array control algorithms, ensuring optimal system performance and reliability.

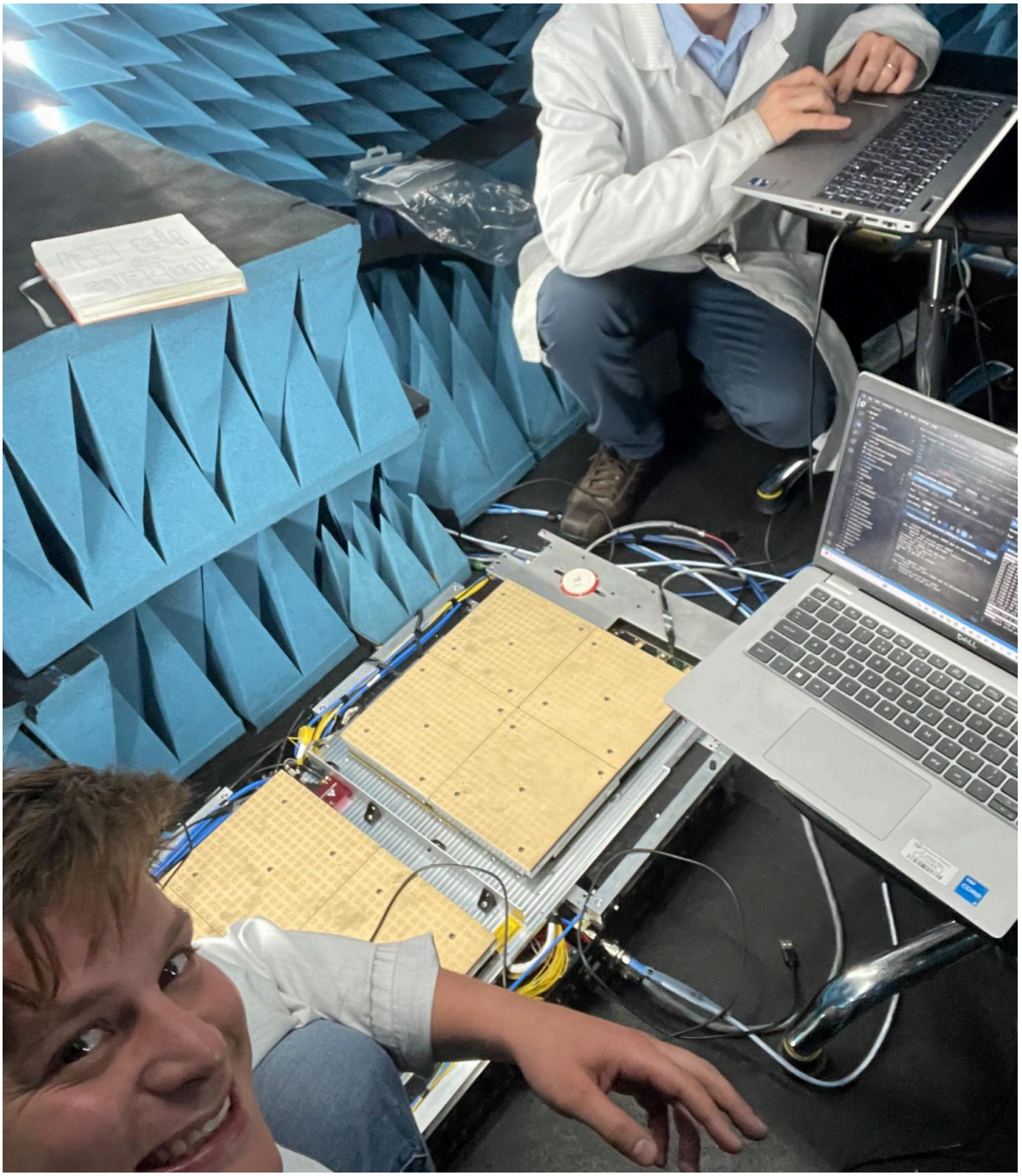
In collaboration with antenna, system and electronics engineers, I helped develop the control algorithms for the phased array antennas. I was involved in system integration, and PCB schematics reviews using Altium. I conducted extensive hardware and software integration tests, and managed development workflows using Jira and Git. These skills have been instrumental in delivering phased array systems that meet demanding operational requirements.

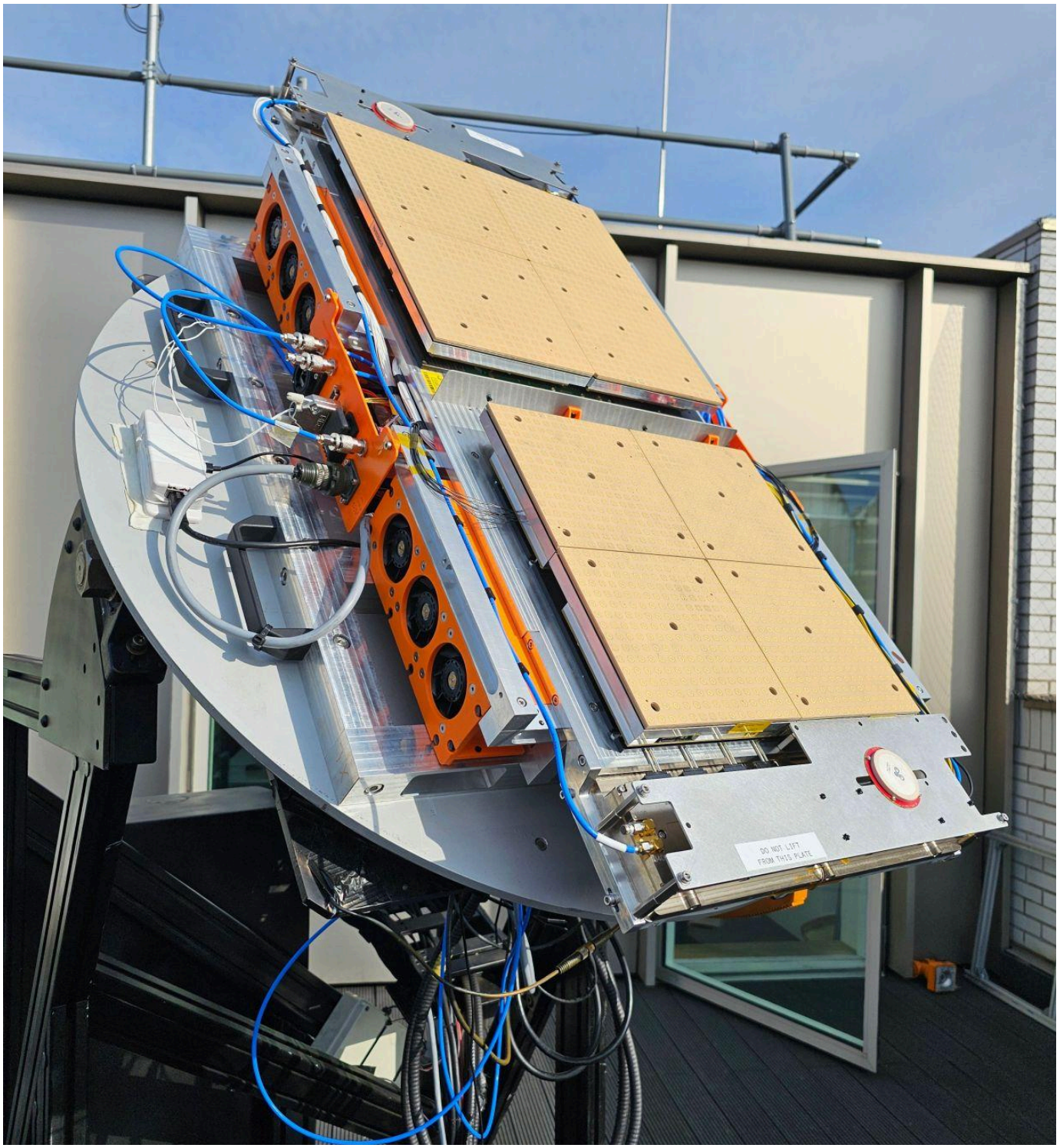
As a senior engineer I helped run the daily stand up meetings and plan the team goals working with my team members and management to ensure an optimal and efficient work flow.

Additionally, I integrated and controlled the Vectornav Inertial Sensor within phased array systems. This required designing precise interfaces to ensure orientation and stability under varying conditions, a critical factor in achieving consistent performance.

My technical expertise includes STM32H7 multi-core microcontrollers, programming in C, C++ and python, and using tools such as Altium for PCB design and Jenkins for CI/CD pipelines.

Images

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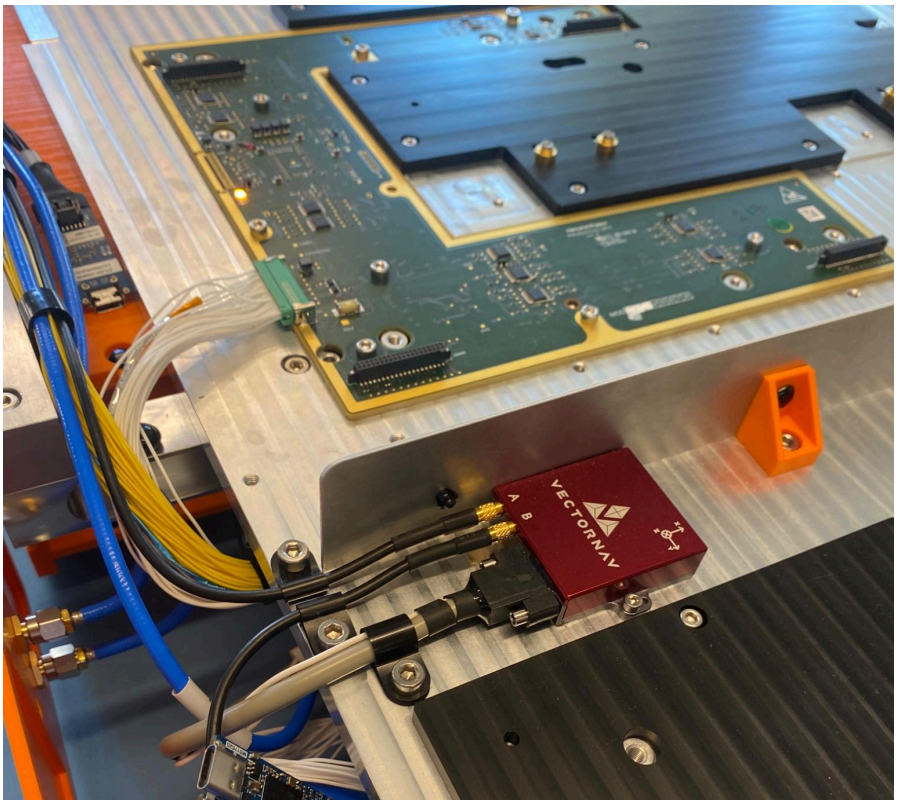
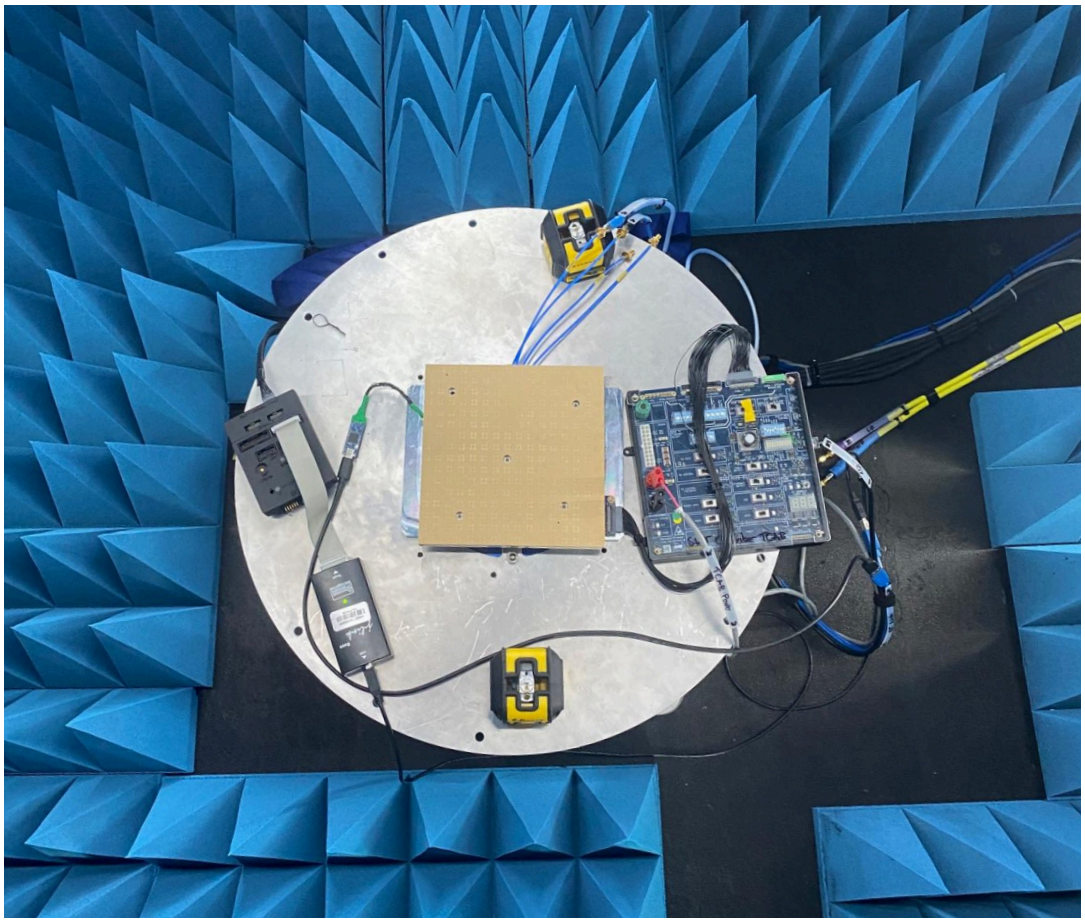
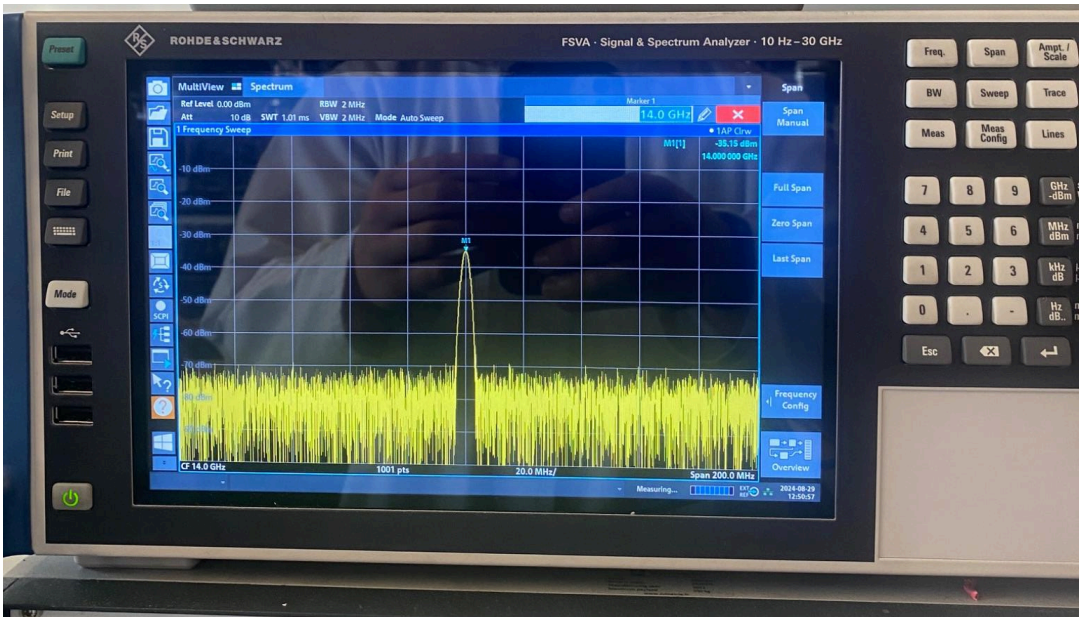

VECTORNAV
A
B


Symétrie




ROHDE&SCHWARZ
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Spectrum
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RBW 2 MHz
Att 10 dB
SWT 1.01 ms
VBW 2 MHz
Mode Auto Sweep
1 Frequency Sweep
Marker 1
14.0 GHz
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-35.15 dBm
14.000 000 GHz
CF 14.0 GHz
1001 pts
20.0 MHz/
Span 200.0 MHz
Measuring...
Span
Span Manual
Full Span
Zero Span
Last Span
Frequency Config
Overview
Preset
Setup
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File
Mode
Freq.
Span
Ampt. / Scale
BW
Sweep
Trace
Meas
Meas Config
Lines
Esc