Tunable Filters for Mitigation of Co-Site Interference and Jamming Sources

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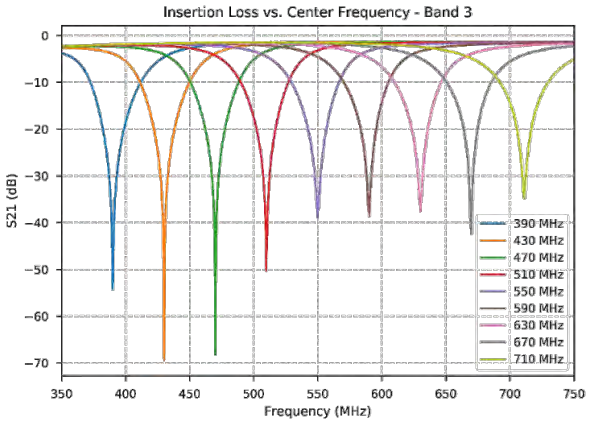

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SYSCOM: Naval Sea Systems Command (NAVSEA) | *www. navsea.navy.mil*

Program Sponsor: PMW/A 170

Other Potential Programs: Other DoD programs operating in contested and congested RF environment including EW systems, radar systems, and wireless communication systems

Current TRL:
Thin-film YIG filters: 3
Absorptive notch filters: 5

Projected TRL: 7 / Q2 2025

Keywords: Tunable Filters, Interference Mitigation, Interference Excision, Anti-Jam, SATCOM

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THE CHALLENGE

Modern wireless systems must be capable of operating in an extremely crowded radio spectrum that contains multiple sources of potential interference sources.

THE INNOVATION

The filters developed during this effort are based upon high-quality factor materials and components. Coupled with novel filter design techniques, the filters are capable of wide tuning ranges, high levels of rejection, and fast tuning speeds.

THE NAVY BENEFIT

The benefits provided by the features and advantages of the filters include maintaining both signal integrity and link performance when operating in hostile and crowded radio spectrums.

The enhancement of system resiliency in such environments will allow the Navy and other DoD components to preserve spectrum and information dominance.

THE FUTURE

Future plans for this technology include further maturation and transition efforts.

Within the next year, the filters will be integrated into a relevant SATCOM system and flight tested. Filter tuning speeds will be increased and environmental testing will be completed.