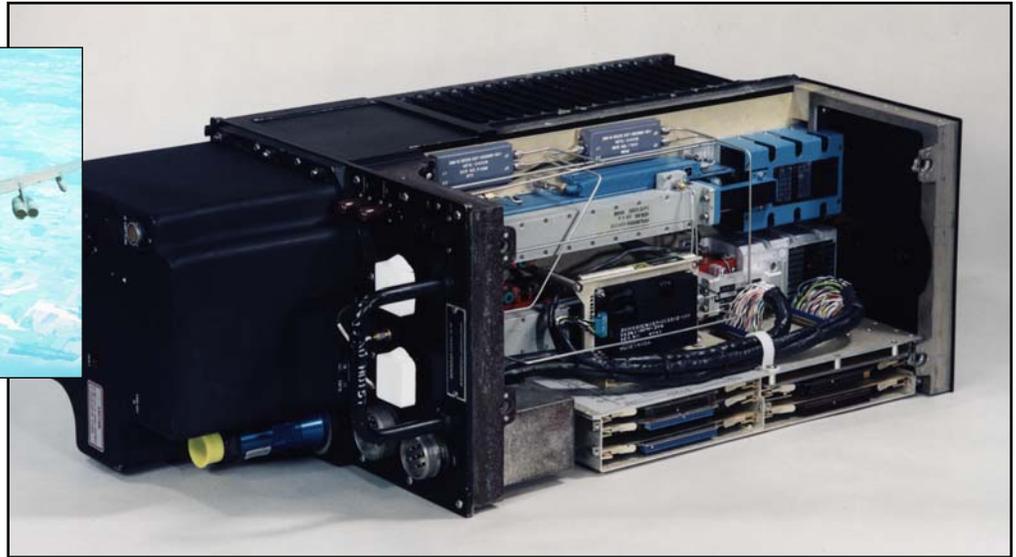


NORTHROP GRUMMAN*Electronic Systems*

AN/ALQ-155(V) R&M Sustainment

Best Value for the Air Force



As the Best Value, Northrop Grumman's Reliability and Maintainability (R&M) solution is the right choice to sustain the B-52's AN/ALQ-155(V) countermeasures system. Our solution keeps the ALQ-155 system capabilities, but looks forward to the B-52's ever changing threat environment by positioning the system to take advantage of enhanced techniques to counter existing and new threats, while requiring no Group A modifications. These improvements to the ALQ-155 result in a system that exceeds current requirements at a lower life cycle cost than competing systems.

The Northrop Grumman AN/ALQ-155(V) R&M Sustainment delivers:

- **A Supportable, Maintainable System.** By replacing the obsolete backward wave oscillators (BWOs) with proven, available traveling wave tubes (TWTs), and by replacing 1970's technology with state of the art electronics from existing systems in the U.S. Air Force inventory, the ALQ-155 benefits from modern, flight qualified components that are highly supportable – with

dual sources of supply and testable with common U.S. Air Force support equipment.

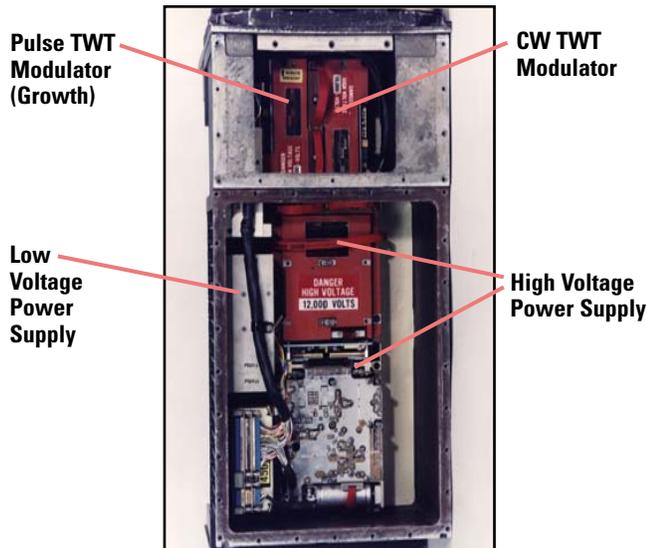
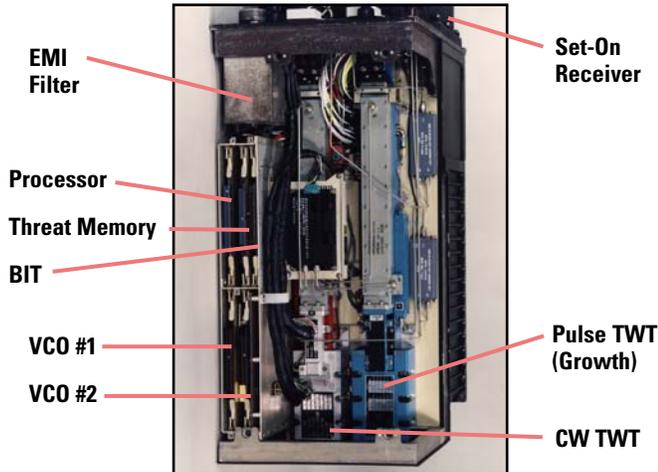
- **Significantly Improved R&M.** The ALQ-155 enhancement eliminates older, unreliable technology and significantly reduces the parts count while increasing system reliability. The result is an improved system MTBF prediction by a factor of seven.
- **Improved Aircraft Survivability.** Future addition of a Continuous Wave (CW) TWT enables the ALQ-155 to use advanced techniques to counter new or modified threats and increase nominal power out by a factor of five – significantly extending jamming coverage and minimizing the effect of "burnthrough." Furthermore, a forward-looking engineering program has made possible the addition of a pulse TWT for even more capability.

This is all accomplished with existing flight qualified components, sustained at WR-ALC translates into low overall cost.

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Supportable, Maintainable Growable System



Significantly Improved R&M Pulse/CW TWT MTBF Summary

- Power dissipation is reduced by over 1000 W for each receiver/transmitter (RT) resulting in increased efficiency and reliability. The Band A RT is calculated at 3063 W while the Band B RT is calculated at 3059 W.
- The RT's MTBF is predicted to increase 2.6 times to 668 hours.

Improved Aircraft Survivability Pulse/CW TWT Transmitter Goals

	BWO Baseline	ALQ-155 With TWTs
Power Out (Avg)	X	X
Power Out (Pk)	2X	5X
Peak Power DC	50%	7%
Minimum PW	2000t	0.2t
Minimum Barrage BW (1 to J/S)	50Y	10Y
Time Sharing Capable	No	Yes
Coherent Jamming Capable	No	Yes
PTT	No	Yes

- Use of voltage control oscillators (VCOs) enables the Pulse and CW TWTs to simultaneously transmit at separate frequencies so that up to four concurrent threats can be effectively countered by each RT.
- Insertion of the TWTs and a Pulse Train Tracker (PTT) enables use of advanced techniques to counter new and modified threats.
- The reduced pulsewidth (PW) and barrage bandwidth (BW) result in an increase in effective output power. The Pulse TWT boosts peak power to five times nominal power.
- Increasing the maximum down modulation by 60 dB enables a new repertoire of techniques that counter home-on-jam missiles.

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Specifications and features subject to change without notice.