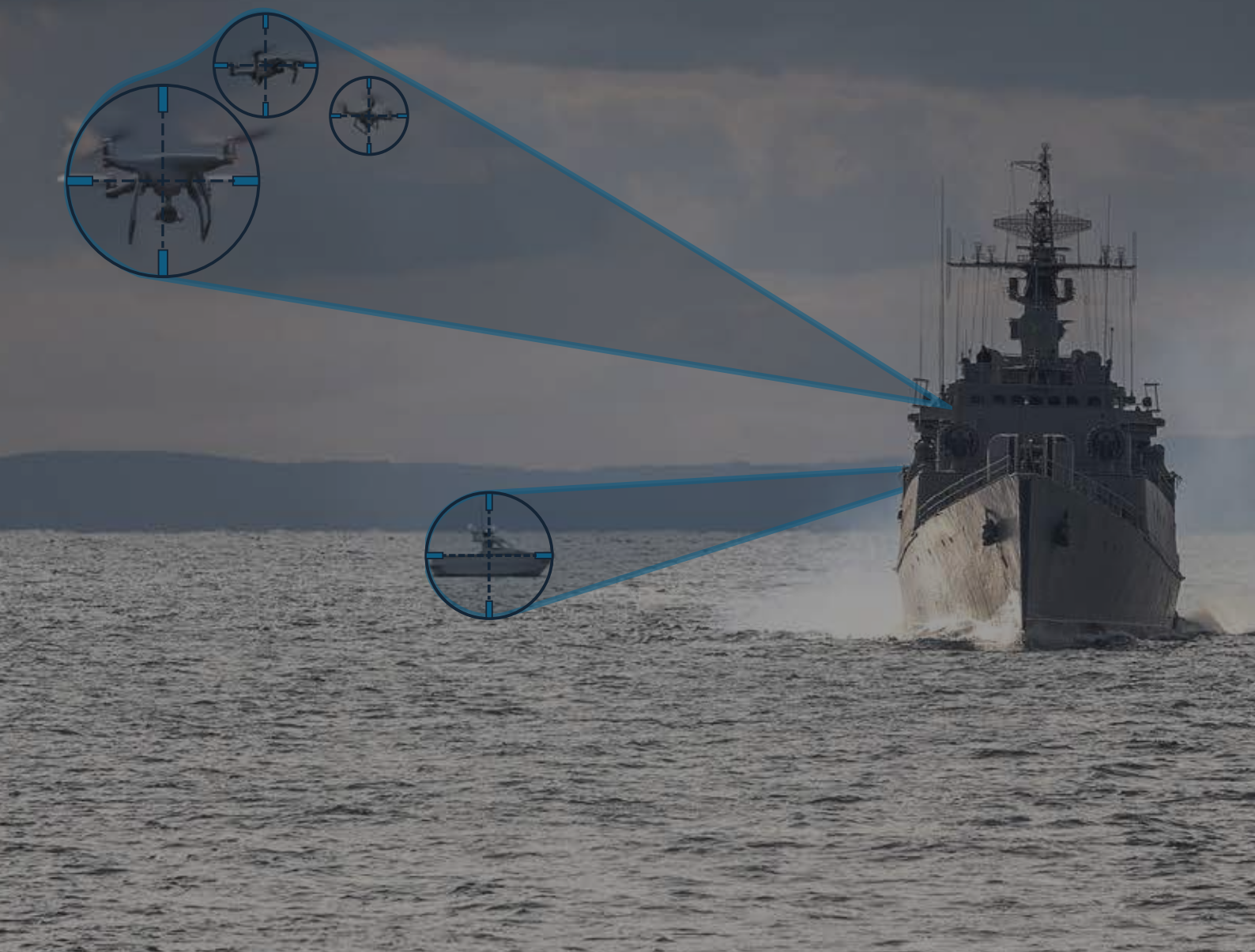
Available now with no development time

Maritime Counter UxV **Defender**

Proven effectiveness.
Straightforward installation.
Maximised survivability.



PPMSYSTEMS.COM

PPM SYSTEMS

Maritime counter UxV

In collaboration with Rohde & Schwarz, PPM Systems provides a modular and scalable Counter-UAS and Counter-USV system. DEFENDER is mission proven with a 5EYES Naval Force.

It combines R&S' signal analysis and generation equipment with PPM's RFoF distribution and transmit equipment to give an operationally proven solution that is designed for effectiveness, optimised for real-world platform installation, and maximises survivability.

The System

Cost-effective

Simple & cost-effective platform integration.

Novel technology

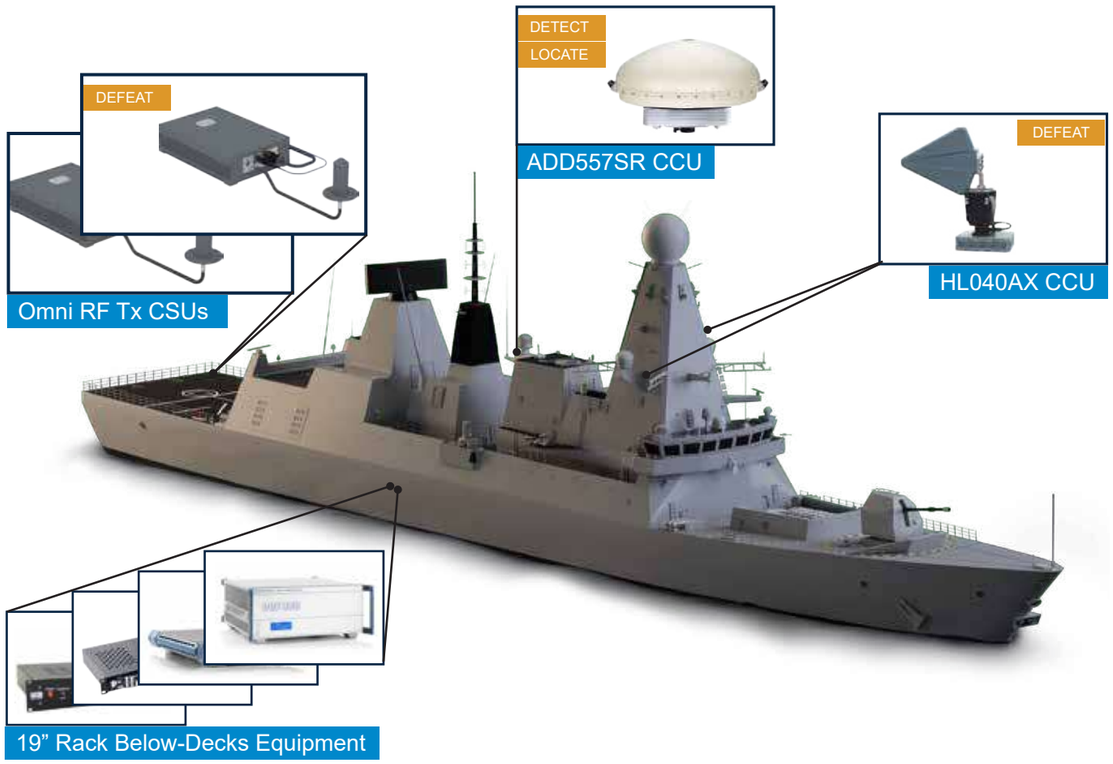
Innovative RF power amplification solution.

Operationally proven

In use across multiple 5EYES platforms.

Multi-threat defeat

Effective against swarm & long-range attacks.



DETECT → **LOCATE** → **DEFEAT**

Command and Control (C2), video downlink and GNSS position signals from UAS or USV are detected.

The location of the UAS or USV is found using the detected RF signals.

Dual Tx signals used to defeat individual threats at range with 'slew to cue' directional antenna or swarm attacks with omni antenna.

An intuitive operator GUI enables the control of the system from a workstation next to the Below Decks Equipment. An automated tracking option enables the Tx antenna assembly to automatically track the operator selected threat ready for the Tx signal to be triggered – a manual control option via a joystick is available.

Frequency range	400 MHz to 6 GHz for long range defeat, with swarm defeat optimised for WiFi bands but with coverage either side of these bands.
RF performance	Transmit ERP from 50 to 120 W dependent on frequency. Optimised for barrage jamming but compatible with complex / modulated signals.
Threats	Class 1 to 3 UAS and USVs; long range engagement and swarms. Inherent EW capability up to 6 GHz.
Azimuth & elevation control	+/- 90° azimuth and +/- 60° elevation with a beam width of 30° to enable fast moving targets to be efficiently defeated. Increased azimuth and elevation options are available.
Environmental	IP67 rated with operating temperature -40°C to +55°C for all external equipment; corrosive salt environment protected. Designed for harsh maritime environments as per DefStan 00-035.
Dimensions	ADD557R CCU: ø1000 x 580 mm; HL040AX CCU: 395 x 750 x 778 mm. All Below Decks Equipment is 19" rack mounted.
Weight	Man portable, 54 kg maximum for ADD557SR CCU.
Operator control	Intuitive web-based GUI accessed through the workstation laptop or PC next to the Below Decks Equipment.
Power supply and consumption	100-240 VAC 50/60 Hz for all equipment; 150 W typical power consumption for CCUs when transmitting, and 30 to 104 W typical for below decks equipment.
Ease of installation	Minimised topside equipment that is designed for ease of installation. All below decks equipment is 19" rack mounted and only requires 13U rack space maximum (inc. cable routing space). No limitation on cable routing lengths, and no TEMPEST issues due to RFoF distribution.

The solution can be configured to match customer needs, tailoring how the DETECT, LOCATE, and DEFEAT chain is delivered. For example, the Omni RF Tx CSUs provide Swarm DEFEAT, whilst the HL040AX CCUs provide long range DEFEAT.

DEF – 1 – B / E – B / E – A

DETECT & LOCATE

1 - ADD557SR CCU

DEFEAT (THREATS AT RANGE)

B - Basic Protection
1x HL040AX
CCU per platform

E - Enhanced Protection
2x HL040AX
CCU per platform
(port & starboard)

DEFEAT (SWARM THREATS)

B - Basic Protection
1x set of Omni RF Tx
CSUs per platform

E - Enhanced Protection
2x sets of Omni RF Tx
CSUs per platform
(port & starboard)

OPTIONAL EXTRAS

A - Automated threat tracking software module
(with slew to cue)

OPERATIONALLY PROVEN RF DEFEAT OF C-UAS AT SEA AT 12KM PLUS

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