

# ARCHIVED REPORT

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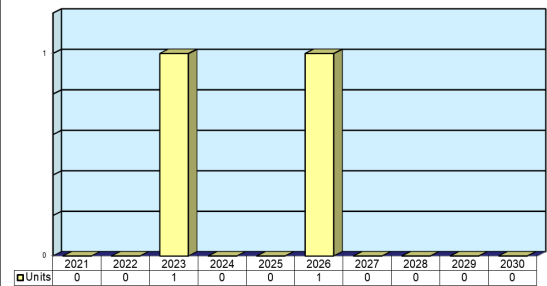
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## Ultra Electronics Series 2500 EOGCS

### Outlook

- No major procurement seen
- Heavy competition among EO fire control system manufacturers
- Small countries seem to be a better market
- Coastal offshore patrol vessels may offer best potential for future sales

Unit Production Forecast  
2021-2030



### Orientation

**Description.** The Ultra Electronics Series 2500 Electro-Optical Gun Control System (EOGCS), originally known as the Radamec System 2500 (renamed after Radamec Defence Systems Ltd was acquired by Ultra Electronics in 2003), is a naval electro-optical tracking and fire control system.

**Sponsor.** Privately sponsored by Ultra Electronics (formerly Radamec Defence Systems Ltd).

**Status.** In service.

**Total Produced.** As of February 2021, an estimated 24 units had been produced and were in service on various platforms around the world.

**Application.** Naval electro-optical tracking and fire control system.

**Price Range.** Per-unit cost is indeterminate but, based upon comparative systems and other Ultra Electronics fire control models, could range between \$1.5 million and \$2.0 million.

### Contractors

#### Prime

Ultra Electronics Command & Control Systems

<http://www.ultra-ccs.com>, Knaves Beech Business Park, Loudwater, High Wycombe, Buckinghamshire, United Kingdom, Tel: + 44 1628 530000, Fax: + 44 44 1628 524557, Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

**Ultra Electronics Series 2500 EOGCS****Technical Data****Specifications****Director**

Azimuth coverage	Continuous 360°
Azimuth slew speed	>3 rad/sec
Elevation movement	Continuous, customer-defined software
Elevation slew speed	>2 rad/sec
Position reporting accuracy	<80 $\mu$ rad

**Thermal Imager**

Type	MCT FPA
Detector elements	640 x 486
Spectral band	3-5 $\mu$ m (8-12 available)
Fields of view (4x switched FOV)	Narrow: 1.3° x 1.45° Wide: 8.6° x 11.3°
Scene illumination	20 lux

**Laser Rangefinder**

Type	ND Yag diode pumped
Operating wavelength	1.54 $\mu$ m
Pulse repetition frequency	10 Hz, 1 Hz, single shot
Maximum range	20,000 m
Minimum range	300 m
Transmitter range	<7.8 mJoule



Ultra Electronics Series 2500 Electro-Optical Gun Control System

Source: Ultra Electronics

## Ultra Electronics Series 2500 EOGCS



Original Radamec System 2500

Source: Radamec Defence Systems Ltd (acquired by Ultra Electronics)



Original Radamec System 2500 EO Tracking and Fire Control System Operator's Terminal

Source: Radamec Defence Systems Ltd (acquired by Ultra Electronics)

## Variants/Upgrades

The Ultra Electronics Series 2500 EOGCS is believed to be an enhanced version of the original Radamec System 2400.

## Program Review

**Background.** Originally produced by Radamec Defence Systems Ltd (now a division of Ultra Electronics), the Ultra Electronics Series 2500 EOGCS is another entry in the company's family of fire control systems. It is a compact, lightweight EO system designed for precision, long-range target tracking, ballistic prediction, and weapons control within the naval environment. Additionally, the system provides control of small- and medium-caliber naval gun

mountings in anti-air, surface, and shore engagements, and can be used as a remote observation and tracking sensor for navigation and surveillance purposes.

The Ultra Electronics Series 2500 EOGCS is believed to have entered the market around 1997 and has had some minor to moderate success with a few of the world's navies. The U.K. Royal Navy's Type 45 Daring class destroyer was the system's primary platform.

## Ultra Electronics Series 2500 EOGCS

### *Brunei Selling Nakhoda Ragam Class Corvettes*

According to a November 9, 2011, forum discussion on pakistaniodefence.com, Brunei wanted to sell its three barely used Nakhoda Ragam class corvettes because the Royal Brunei Navy found the sophisticated ships difficult to operate. At that time, Pakistan was

reportedly interested in the ships, which are equipped with the Ultra Electronics Series 2500 EOGCS. However, in mid-2013 it was reported by several media sources that Indonesia had purchased the three ships from Brunei (at one-fifth the original cost). Two Nakhoda Ragam class corvettes entered service with Indonesia in July 2014. The third ship underwent reactivation and entered service in 2015.

## Funding

The Ultra Electronics Series 2500 EOGCS is believed to have been developed with company funding. No detailed funding information is available at this time.

## Contracts/Orders & Options

No recent contracts valued over \$5 million have been identified.

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Radamec Defence Systems	N/A	Sep 2004 – Contract to equip Romania's two ex-U.K. Royal Navy Type 22 class frigates.

N/A = Not Available

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1997	Radamec System 2500 enters the market
Aug	2001	Contract to supply U.K. Royal Navy Daring class destroyers
Sep	2004	Contract to supply Romanian Type 22 frigates

## Worldwide Distribution/Inventories

The following are known users of the Radamec System 2500/Ultra Electronics Series 2500 EOGCS (this list is not all-inclusive):

<b>Australia</b>	6 Adelaide class frigates (2 active and 4 retired from service) 1 at HMAS Cerberus Gunnery Training School
<b>Indonesia</b>	3 Bung Tomo class corvettes (former Nakhoda Ragam class offshore patrol vessels bought from Brunei)
<b>Romania</b>	2 Regele Ferdinand class frigates (ex-U.K. Type 22 class frigates)
<b>U.K.</b>	6 Type 45 Daring class destroyers

**Ultra Electronics Series 2500 EOGCS**

**Forecast Rationale**

The Ultra Electronics Series 2500 Electro-Optical Gun Control System (EOGCS) is a naval electro-optical tracking and fire control system. It has been reported by users to be a reliable and solid fire control system that is well suited to smaller vessels. However, navies that tend to rely heavily on smaller vessels also tend to be those with less money to spend. Unfortunately for Ultra

Electronics, the naval electro-optical fire control market has many participants, with competition for orders being rather fierce. Any future sales of the Ultra Electronics Series 2500 EOGCS will likely be small owing to the number of competing and less expensive naval fire control systems currently available on the market.

**Ten-Year Outlook**

<b>ESTIMATED CALENDAR YEAR UNIT PRODUCTION</b>												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Ultra Electronics Command &amp; Control Systems (Prime)</b>												
<b>Ultra Electronics Series 2500 &lt;-&gt; Multi-agencies</b>												
	3	0	0	1	0	0	1	0	0	0	0	2
<b>Total</b>	3	0	0	1	0	0	1	0	0	0	0	2