THE COSWORTH ECU FAMILY EXPANDS

The Antares range of ECUs are highly-developed control platforms featuring multiple FPGAs and processors for class-leading performance and high-fidelity data logging. Designed to accommodate a wide range of powertrain technologies and configurations – whether that be ICE (DI/PI), hybrid, or EV – Antares offers an impressive number of inputs and outputs, making it adaptable across diverse market segments, from motorsport to high-performance automotive.

Antares is built upon Cosworth's powerful and hugely successful CHP2 platform, which brings vast control and logging capabilities, a dramatic increase in processor performance, and an open platform for the creation of custom code via Cosworth's Auto Coding platform utilising MATLAB Simulink tools.

Antares features the most advanced integrated feature set of strategies as demanded by leading motorsport customers:

- Multi-pulse/Stratified GDI and PI control
- Active torque control, currently used in LMH and Hybrid applications
- Real-time FIA compliant PPU limit and BOP control
- Paddle shift/sequential gearbox control
- Pit lane speed limiter via a variety of control sources including per cylinder cut control
- Active knock control (Advance and retard via cycle, time or lap beacon-based events)
- Traction control including grip estimation and track position-based control
- 200kHz logging synchronous to engine position
- Fuel flow control
- Active aero control
- Control sensor estimation and limp mode strategies
- Advanced start line control via time and speed ramps
- Quad Lambda, Quad VVT, Dual FBW
- Multistage setup locking and security access levels
- Vast IO up to:
  40x AIN (8x HS @ 200kHz)
  12x DIN
  5 H-Bridges
  6 CAN Ports
  3 Ethernet / 1 EtherCAT
- IO Expansion via EtherCAT– SJU 24x 16-bit AINs

COSWORTH

ANTARES

Enabling Greatness for over 65 years

The Antares is often only found at the pinnacle of motorsport competition, until now. Cosworth is pleased to introduce and expand the Antares family line up by launching the **Antares 4 and 6:** Cost-effective ECUs designed to bring the power and precision of Cosworth technology to a wider range of motorsport applications.

Retaining many of the advanced features, the 4 and 6 variants are tailored to meet budget-conscious applications whilst retaining the flexibility to be utilised as a complete vehicle controller and data logger.

The Antares family of devices is fully supported by Cosworth's application-specific and industry leading software tools to enable OEMs, teams and individual users alike to streamline development processes and trackside operations. Cosworth's Software Toolchain enables our customers to compete and win at all levels of motorsport.

If users wish to add to the capabilities of the included control software, this is accommodated via Cosworth's real-time embedded software generation using an advanced developer platform which supports the creation of custom code in MATLAB Simulink.

This allows users to deploy complex powertrain and chassis control algorithms, signal processing routines, dynamic models and ultra high-speed data processing within the development toolchain. For race-winning performance, develop strategies utilising Simulink **Neural Network** blocks to create the ultimate **Machine Learning** driven traction control to be one step ahead of the competition.

Pi CalTool

Cosworth's ECU Calibration tool to interface with highly developed, class-leading control strategies included with the Antares ECU as standard. Patch calibration updates and view live ECU data.

Pi Toolbox

Analyse and interrogate simulation, telemetry and logged data via motorsport specific graphical displays.

Pi Toolset

Used to configure logging, chassis control devices and manage telemetry streams. Create complex maths and logic channels, along with generating powerful, graphical driver displays.

COSWORTH

ANTARES

Variant Matrix*

		Antares Family		
		Antares 4	Antares 6	Antares 8
Combustion	• Cylinders Supported (GDI/PI)	4/8	6/10	8/12
	• Peak and Hold Injector Drivers	16	20	24
	• GDI Injector Drivers	4	6	8
	• IGBT Ignition Drivers	8	8	8
	• TTL Ignition Drivers	8	10	12
IO	• Analogue Inputs	19	24	28
	• PT1000 / Analogue Alternate	1	2	4
	• High Speed Analogues	4	6	8
	• Digital Inputs	10	12	16
	• Crank	1	2	2
	• Onboard Lambda (NTK, Bosch 4.9/ADV)	2	2	4
	• Knock	2	4	8
	• Thermocouple	2	2	4
	• H-Bridge	3	4	5
	• Total Outputs (inclusive of alternate functions)	34	44	62
Comms	• CAN	3	4	6
	• LIN	1	1	2
	• Ethernet (100 Base-T) System Network, Dash Display etc.	2	2	2
	• Ethernet (1000 Base-T) PC	1	1	1
	• EtherCAT	1	1	1
Logging	• Capacity	4GB	6GB	16GB
	• Max Rate (Continuous) Hz	1000	1000	1000
	• Max Rate (Burst) Hz	20000	50000	200000
	• Maths Channels	500	750	1000
Strategies**	• FBW	Included	Included	Included
	• Knock Control			
	• GDI Pump Control			
	• Launch Control			
	• VVT			
	• Wastegate Control (Pressure or Turbo Speed)			
	• Anti-Lag			
	• Traction Control			
	• Pit Limit inc per cylinder cut control			
Gearbox Advanced	• Advanced Gearbox Control (Paddle/Megaline E-Shift etc.)	Feature Set 1 Upgrade	Feature Set 1 Upgrade	Included
Forced Induction Advanced	• Electronic Wastegate	Feature Set 2 Upgrade	Included	Included
	• Fill/Empty inc Capsule Pressure Control			
	• Independent Dual Plenum			
Torque	• Torque Structure Control	Feature Set 3 Upgrade	Included	Included

*Variant matrix shows max capability of 'Ultra' level per device. Pro and Plus variant specification and pricing is available on request.
**List is not exhaustive, please contact Cosworth for full strategy list.
Information correct at time of printing and is subject to change without notice.

ANTARES CASE STUDIES

All of these applications trust the Antares product line for precise vehicle and powertrain control.

Aston Martin Valkyrie AMR-Pro
6.5L N/A V12 Hybrid

Aston Martin Valkyrie AMR-LMH
6.5L N/A V12

British Touring Car Championship
2.0L GDI Turbo I4 Hybrid

WRC Ford Puma R1 Hybrid
1.6L GDI EcoBoost Hybrid

VSC Subaru Rally
2.4L Turbo Boxer 4-CYL

SuperFormula Lights
1.6 GDI Turbo I3

Antares, the power to perform, engineered to win!

Engineered by Cosworth to bring the pinnacle of motorsport technology to your fingertips.

The full capabilities of each Antares variant are shown on the matrix (previous page)

To register your interest for the Antares 4 and 6 ahead of delivery, please scan the QR code and enter your details or visit cosworth.com

COSWORTH
ANTARES

Enabling Greatness for over 65 years