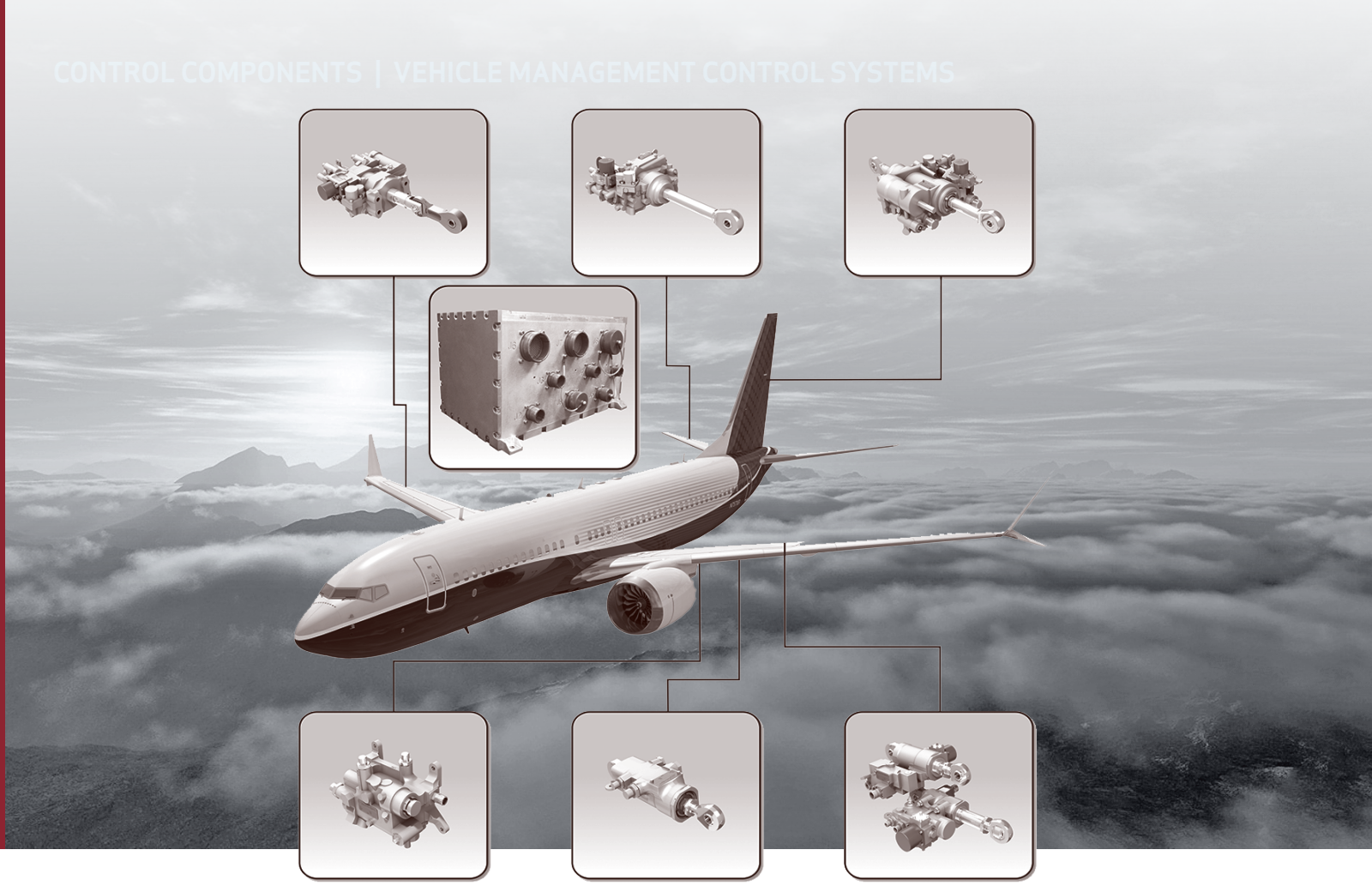
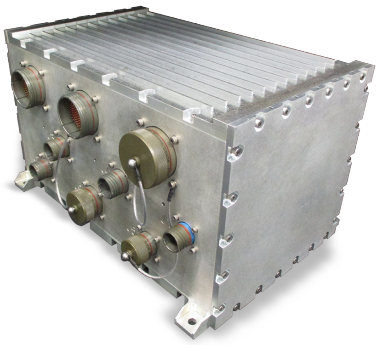


VEHICLE MANAGEMENT SYSTEM COMPUTER

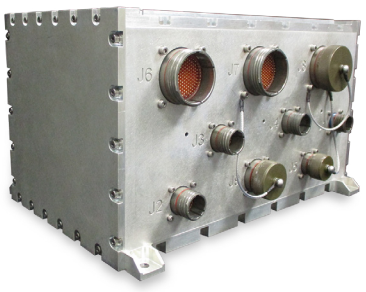
Moog Inc, Aircraft Group has developed a state-of-the-art Vehicle Management Computer System that is based on existing flight certified fly-by-wire technology used in high-redundancy flight critical applications for both civil and military aircraft and unmanned aerial vehicles (UAVs).

The VMSC can be offered in triplex configuration using three dissimilar multi-core processors. The system's advanced functionality will enable fly-by-wire control, actuation control, support autonomy and unmanned operation, and allow the system to host multiple applications as shown below:

- Navigation
- Mission Systems
- Stores Management
- Environmental Controls
- Data Consolidation
- Ground Maintenance
- Fire Control
- Flight Controls
- Fuel Management
- Power Generation
- Brake Control
- AD/AHRS
- Propulsion



VMSC Right Side View



VMSC Left Side View

MOOG

VMSC DESIGN ATTRIBUTES

VSMC Attributes	Description
Envelope	12.6 x 9.0 x 7.3 inches (width/depth/height)
Material and Finish	6061-T6 Aluminum Machined Chassis Chemical conversion coating per MIL-DTL-5541, Type I, Class 3
Weight	26 lbs
Nominal Input Voltage	28 VDC, MIL-STD-704
Nominal Input Power	< 75 watts (on-ground quiescent)
Operating Temperature	-40 °C to +71 °C , component selection -40 °C to +125 °C
Type of Cooling	Convection
Modules (8)	VMSC Processor Module (1) Supervisory Processor Platform (1) 1394 Mezzanine (1) Actuator Control Module (3) Power Supply (1) Motherboard/Filterboard (1)
VMSC Processor	NXP QorIQ T1022 dual core / T1042 quad core/T2081 quad core dual threaded, 64 bit processor with e5500 /e6500 cores built on Power Architecture technology, 1.4 Ghz
Memory	2GB of DDR3L SDRAM memory with 64 bit data lines interface and ECC. 16MB MRAM memory with 16 bit data lines interface 128MB NOR Flash memory with 16bit data lines interface 1GB NAND Flash
Supervisory Processor	MPC 5674F, 32 bit, 264 Mhz Flash memory: 4 MB, SRAM: 256 KB Non-Volatile Memory - 512KB
Environmental	EMC/EMI, MIL-STD-461F Shock & Vibration, MIL-STD-810G ESD/Lightening, DO-160G

ACTUATOR CONTROL INTERFACES

Interfaces Types	Total	Comments
Valid, Vote, Sync Discretes	6	Differential discretes, RS-422 style
Channel ID Discretes	5	Discretes 0-3, plus Parity
Flight Terminate Discretes	4	28V/Open signals
DDV Current Drive	12	independent of EHSV drive, current feedback included
EHSV Current Drive	12	independent of DDV drive, current feedback included
Ram Position LVDT	12	
Main Control Valve (MCV) Position LVDT	12	valve drive position feedback
Mode Select Valve (MSV) Position LVDT	12	used for Delta Pressure LVDT
SOV Drives	20	unipolar SOV drive, engage and hold, high and low side monitors
Serial Bus Interface	4	RS-422 / RS 485 Serial bus Interface - 4 ports
	2	MIL-STD-1553B Serial Bus Interface - 2 ports
	4 Tx, 4Rx	ARINC-429 Interface – 4 Tx and 4 RX ports
	2	ARINC-825 (CAN) Interface –2 ports
	1	RS232 serial interface – 1 port
Ethernet	5	SGMII Ethernet interface - 5 channels, 1 Gbp
IEEE 1394 Firewire	1	1 Node & 3 Ports
CCDL	4 Tx, 3 Rx	RS-485 Style 4 TX and 3 RX
Discrete Interface	16	Open/GND DOUT with 250mA min sink current - 16
	8	28V/Open DOUT with 250mA min sourcing current – 8
	48	Configurable DIN Interface (TTL, OPEN/GND and 28V/OPEN) – 48
Analog Interface	8	Single-ended DC AOUT Interface, +/-10V
	8	Differential DC AIN Interface, +/-10V

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AIRCRAFT GROUP

Moog Inc. East Aurora, New York 716.652-2000 www.moog.com/aircraft