



Supersonic Transport Applications



X-59 QueSST Aircraft

Vehicle Management Computer (VMC) and Remote Interface Unit (RIU)

NAI's solution begins with two rugged [SIU35](#) systems; a Vehicle Management Computer (VMC) and Remote Interface Unit (RIU), connected via Gig-E. The VMC hosts Lockheed's vehicle management control and application software program on NAI's Single Board Computer, configured with additional Gigabit Ethernet (Gig-E) interfaces and modular I/O and includes four additional 3U [multifunction I/O boards](#). The VMC also integrates Lockheed Martin's tuned FPGA PID control loops for direct LVDT measurement, D/A drive actuator control, greatly minimizing the host processing burden. The RIU houses an additional five 3U multifunction I/O boards, communicating to the VMC over GbE ports. The system supports hundreds of digital and analog I/O, including programmable Discrete, A/D, D/A, Thermocouple, RTD, SYN/RSL/LVDT/RVDT and AC Reference measurement signals along with several communications interfaces including MIL-STD-1553, RS-422, ARINC-429 and Ethernet. [Function Modules available](#)

X-59 QueSST Tri-Redundant, COTS Flight Control Computer

North Atlantic Industries
www.nai.com

Features

- Vehicle Management Computer (VMC) and Remote Interface Unit (RIU) Configurations
- Tri-Redundant
- 5x 3U cPCI Card Slots
- Dimensions w/ Connectors (w x h x d): 7.7" x 4.8" x 8.7", < 16 lbs.
- Est. Typ. Power Dissipation: 90 W
- 3U 150-Watt DC/DC Converter w/Holdup Power Supply
- Ethernet: 4 x 10/100/1000Base-T

VEHICLE MANAGEMENT COMPUTER (VMC)			
75PPC1 P2041 SBC	TTL/CMOS TL2 (24)	NIC Interface EM1 (2)	MIL-STD-1553 FT3 (4, Redundant)
75G5 3U cPCI MFIO	SYNRSL/LVDT/ RVDT LR2 (4)	High Current DIA DA3 (4)	Discrete I/O DTB (24)
75G5 3U cPCI MFIO	LVDT Measurement LD2 (4)	High CV DIA DA5 (4)	AC Excitation AC2 (2)
75G5 3U cPCI MFIO	Analog Input AD4 (16)	ARINC429 AR1 (12)	RS-232/422/485 SC3 (8)
75G5 3U cPCI MFIO	RS-232/422/485 SC3 (8)	RS-232/422/485 SC3 (8)	ARINC429 AR1 (12)

REMOTE INTERFACE UNIT (RIU)			
75G5 3U cPCI MFIO	SYNRSL/LVDT/ RVDT LR2 (4)	High Current DIA DA3 (4)	AC Excitation AC2 (2)
75G5 3U cPCI MFIO	Discrete I/O DT1 (24)	TC/RTD Measurement TR1 (8)	Analog Output DA2 (16)
75G5 3U cPCI MFIO	Analog Input AD4 (16)	Analog Output DA1 (12)	Discrete I/O DT1 (24)
75G5 3U cPCI MFIO	Discrete I/O DT1 (24)	Discrete I/O DT1 (24)	Discrete I/O DT1 (24)
75G5 3U cPCI MFIO	SYNRSL/LVDT/ RVDT LR2 (4)	High Current DIA DA3 (4)	AC Excitation AC2 (2)

External Vision System



WOLF Advanced Technology ("WOLF") is pleased to announce that NASA has chosen two WOLF video graphics modules to take part in the development of NASA's X-59 Quiet SuperSonic Technology (QueSST) aircraft. The X-59 is designed to reduce the noise generated by a sonic boom. The chosen products, the XMC-E9171-VO (WOLF-3196) and the XMC-FGX2-SDI-4IO (WOLF-3180), provide video capture, process, encode, and display capabilities to help enable NASA's "windowless cockpit display system", the eXternal Vision System (XVS). NASA's XVS is designed to replace a front windshield with video display technology in NASA's Low-Boom Flight Demonstration mission.

[Company Overview](#)

[Company Brochure](#)

[WOLF Products](#)

TPT KK is a Wolf System Integrator



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