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Navy aviation experts choose 6U VME synchro-resolver from North Atlantic Industries

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PATUXENT RIVER NAS, Md., 31 May 2016. U.S. Navy military aviation experts needed a 6U VME synchro/resolver-to-digital measurement motherboard to track rotating electronics subsystems. They found their solution from North Atlantic Industries (NAI) in Bohemia, N.Y.

Officials of Naval Air Systems Command at Patuxent River Naval Air Station, Md., announced their intention Friday to award a sole-source contract to NAI for the company's 64SD1 VME-6U synchro/resolver-to-digital measurement motherboard.

Resolvers and synchros are transducers that convert the angular position and velocity of a rotating shaft to an electrical signal. A resolver-to-digital or synchro-to-digital converter converts these signals to a digital output corresponding to the shaft angle and velocity. The specific application for the NAI 64SD1 was not specified in the Navy announcement. In July 2013, however, Naval Air Systems Command announced their intention to buy the NAI 64SD1 for the AN/UPX-29(V) Interrogator System Mode 5 shipboard identification-friend-or-foe (IFF) system aboard Navy Arleigh Burke-class guided missile destroyers.

The AN/UPX-24(V) interrogator set is manufactured by Northrop Grumman Corp. and integrates the NAI 64SD1. The AN/UPX-24(V) is the core identification-friend-or-foe (IFF) processor of the AN/UPX-29(V) shipboard interrogator system. It identifies aircraft and surface vessels equipped with selective identification feature (SIF) modes 1, 2, 3A, and C, and provides secure identification of cooperative mode 4 targets.

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The IFF data from one AN/UPX-24(V) can be synchronized with as many as four individual radars, and provides the operator with synthetic IFF symbology for target recognition and tracking. The system is installed in Ticonderoga-class cruisers, Arleigh Burke-class destroyers, Wasp-class amphibious assault ships, San Antonio-class amphibious transport docks, and Nimitz-class aircraft carriers.

Friday's announcement says the Navy needs nine of NAI's 64SD1 VME-6U synchro/resolver-to-digital measurement motherboards for this purchase. No dollar value for the upcoming order was announced.

Navy officials say they plan to buy the boards from NAI sole-source because the company's 64SD1 is the only part that meets the form, fit, and function requirements and that works with existing software.

The NAI 64SD1 is a VME synchro/resolver measurement board that provides 16 synchro-to-digital converter channels, with accurate velocity outputs, that can be used in single-speed or two-speed modes.

The board provides wrap-around self-test, optional programmable reference supply, and is available for military or commercial applications. NAI officials point out that the 64SD1 is a mature product with limited support. For new designs they recommend the company's 64C2 or 64C3 products.

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The 64SD1 has 16-bit resolution, with optional 24 bits combined; plus-or-minus 1 arc-minute accuracy; continuous background built-in testing with reference and signal loss detection; self-calibration; 50 Hz to 10 kHz operation; tracking rate to 150 revolutions per second; programmable 2-speed ratios if 2 to 255; power-on self-test; and digital velocity outputs.

The board also has an optional programmable encoder (A & B) plus index outputs; optional equivalent Hall Effect (A, B, C) commutation outputs; optional on-board programmable reference supply; watchdog timer and soft reset; angle change alert; and software support for VxWorks.