

**JUSTIFICATION FOR SOLE SOURCE  
(SIMPLIFIED ACQUISITIONS UNDER \$150K)**

PR: \_\_\_\_\_

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GODDARD SPACE FLIGHT CENTER**

I recommend that NASA, Goddard Space Flight Center procure the following brand name items manufactured by International Rectifier: quantity twenty-five (25) Rad-Hard P Channel MOSFET and quantity twenty-five (25) Rad-Hard P-Channel 30V, 56A MOSFET to be used by Science Data Processing Branch, code 587 for the SpaceCube that will serve as the flight avionics for the Department of Defense's Space Test Program's Houston-5 mission.

1. The following parts are needed to assemble the Goddard SpaceCube Power Slice Low-Voltage Power Card (LVPC). (Reference Goddard Drawing# PL2098687).

International Rectifier Part Number: IRHNA597160SCSD, Rad-Hard P Channel MOSFET. The IRHNA597160SCSD is the only part number that is approved for use to assemble the SpaceCube Power Slice Low-Voltage Power Card.

Quantity: 25

International Rectifier Part Number: IRHNA597Z60SCSD, Rad-Hard P-Channel 30V, 56A MOSFET. The IRHNA597Z60SCSD is the only part number that is approved for use to assemble the SpaceCube Power Slice Low-Voltage Power Card.

Quantity: 25

These parts are needed 26 weeks from date of award. These parts are for the SpaceCube which will serve as the flight avionics for the Department of Defense's Space Test Program's Houston-5 mission. The delivery of the SpaceCube is very critical and delay in procurement of these parts will impact the schedule of the SpaceCube. A delay in delivery will cause GSFC to miss flight hardware delivery timelines, thus impacting the launch schedule of the system causing GSFC not to fulfill its delivery agreement with the Space Test Program resulting in extra costs to both groups. Only International Rectifier parts can fulfill the Government's delivery schedule and are approved for use to assemble the SpaceCube Power Slice Low-Voltage Power Card.

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2. There are no know equivalents, either Qualified Parts List (QPL) or commercial connector available that meet the design and high voltage requirement for the SpaceCube LVPC. There are no known alternate sources of supply for these parts that would meet the space requirements because the above exact part numbers are required.

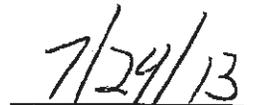
3. The SpaceCube LVPC assembly is specifically designed with these International Rectifier MOSFETs. These items are on the parts list and the SpaceCube LVPC has been tested and flown in space and qualified to Technology Readiness Level 9 using these specific part numbers.

Only these specific International Rectifier MOSFET part numbers, and no other, can be utilized to build this design because these specific part numbers have been flown in space and proven to be flight ready.

Further research to qualify additional manufacturers would cause unacceptable delays in fulfilling the Project's requirement and would cause significant cost impacts that would not be expected to be recovered through competition. To qualify additional manufactures the SpaceCube LVPC would have to be redesigned to use the different part numbers, under go in-depth electrical functionality testing, thermal vacuum testing and vibration testing along with space flight demonstration. These delays, totaling over 1 year, and the associated costs to perform this qualification would cause harm to the program.

This recommendation is made pursuant to FAR 13.106, for the acquisition of supplies or services determined to be reasonably available from only one source. Based on the above, it is concluded that our minimum needs are only reasonably available from the selected source.

  
\_\_\_\_\_  
Signature & Title

  
\_\_\_\_\_  
Date

Pursuant to NFS 1805.207 and 1804.570, the proposed contract action was synopsisized on NAIS and pursuant to FAR 5.201, the proposed contract action was synopsisized in the Federal Business Opportunity.

I hereby accept the above stated recommendation and determine that the circumstances of the contract action deem only one source reasonably available.

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Contracting Officer

7/25/13  
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Date