



59 -- Flip Chip Bonder

General Information

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Contracting Office Address

Department of the Navy, Office of Naval Research, Naval Research Laboratory, 4555 Overlook Ave.
S.W., Washington, DC, 20375

Description

This is a combined synopsis/solicitation for commercial items prepared in accordance with the format in Federal Acquisition Regulations (FAR) Subpart 12.6, as supplemented with additional information included in this notice. This announcement constitutes the only solicitation; proposals are being requested and a written solicitation will not be issued. The solicitation, N00173-04-R-SK03, is issued as a Request for Proposal (RFP). The solicitation document and incorporated provisions and clauses are those in effect through FAC 2001-24 and DFARS Change Notice 20040810. The associated NAICS code is 334419 and the small business size standard is 500 employees. NRL has a requirement for Contract Line Item(s) CLIN(s) as follows: CLIN 0001 - The Contractor shall provide a Flip Chip Bonder, quantity: 1 each in accordance with the following specification. The Bonder must support adhesive, eutectic, preform, solder, thermocompression, and thermosonic bonding. Flexibility to handle a wide variety of bonding techniques and devices is important; speed of operation is unimportant. The flip chip bonder should also be able to perform conventional die attach with controlled dispensing of

epoxy or solder paste. The equipment's end use is in a laboratory research environment. The system shall meet the following specifications: Placement accuracy must be 1 micron or better. Minimum die size must be 200 microns x 200 microns or smaller. Maximum die size must be at least 2 inches x 2 inches with heating capability (temperature specified below). Maximum substrate size must be at least 100 mm x 100 mm. Strong preference will be given to a system able to heat and bond a 100 mm x 10 mm die and a similarly-sized substrate. Both substrate and die holders must be capable of temperature control to 400 C for thermocompression bonding. Applied force must be controllable, with a minimum force of 30 grams or less and a maximum force of 9 kg or more, with an upgrade path to at least 50 kg. It is not necessary to cover the entire force range without hardware changes. The range may be adequately covered in multiple ranges with hardware changes, provided all necessary hardware is included and the hardware change can be easily performed by user. Transducer must be able to supply at least 40W of ultrasonic power for thermosonic bonding and enough force to perform at least 64 gold stud bump bonds. Ultrasonic collet must be heatable to at least 100C. Ultrasonic operation must be programmable. System programming must allow multiple forces, temperatures, and distances to be specified in a single bond profile. Must be able to store multiple bond cycles and backup and access all files and data using standard PC storage media or network interface. The bonder must be able to supply inert gas into the bonding area to minimize oxidation during bonding. Must have the ability to planarize the upper and lower bonding surfaces by bringing the actual bonding surfaces into contact but without bonding in order to level the actual surfaces through the use of an air bearing, magnetic, or similar flexible universal joint. Optical system must be capable of resolving 1-micron lines and allow the use of alignment marks separated by at least 50 mm. Must display realtime stage position, applied force, and temperature for both upper and lower chucks. Must have dark-field lighting for non-reflective parts. The bonder must include a dispensing system with X-Y-Z control to dispense viscous materials such as epoxy or flux in the work area either aided by the optical system or in a programmable mode. UV source must be included to allow in-situ curing of UV-cured epoxy. Theta control must allow rotation of +/-20 degrees or more with a resolution of 0.002 degrees or less. Must include a high magnification side view camera to observe bonding site or alternate feedback method to monitor bonding process to aid in process development. Z-position must be adjustable by at least 5 mm to enable stacking multiple die. **INSTALLATION:** The contractor shall provide complete system installation and conduct operational training at NRL-DC. **WARRANTY:** The contractor shall provide a standard commercial warranty against all parts and labor. Delivery and acceptance is at NRL, Washington, D.C. 20375, FOB Destination. Delivery shall be no later than 120 days from date of award. The provision at 52.212-1, Instructions to Offerors-Commercial, applies to this acquisition. The Government intends to award a contract resulting from this solicitation to that responsible offeror proposing the lowest price for the items that have been determined to comply with the requirements of the specifications and solicitation. The proposal must demonstrate an understanding of the requirement and the ability to meet the specifications. Offeror must complete and submit with its proposal, FAR 52.212-3 Offeror Representations and Certifications-Commercial Items and DFARs 252.212-7000 Offeror Representations and Certifications-Commercial Items; which are identified as B and available electronically at: <http://heron.nrl.navy.mil/contracts/repandcerts.htm>. The clause at FAR 52.212-4, Contract Terms and Conditions-Commercial Items and FAR 52.212-5, Contract Terms and Conditions Required To Implement Statutes or Executive Orders-Commercial Items, applies to this acquisition. The additional clauses cited within this clause are applicable: 52.203-6, 52.219-4, 52.219-8, 52.222-3, 52.222-19, 52.222-21, 52.222-26, 52.222-35, 52.222-36, 52.222-37, 52.223-9, and 52.232-33. The DFARs clause at 252.212-7001, Contract Terms and Conditions Required to Implement Statutes or Executive Orders Applicable to Defense Acquisitions of Commercial Items applies to this acquisition. The additional clauses cited within this clause are applicable: 52.203-3, 252.227-7015. The following additional DFARs clauses apply: 252.204-7004, 252.232-7003, 252.243-7002, 252.247-7023 and 252.247-7024. Any resultant contract will be DO Rated under the Defense Priorities and Allocations System (DPAS). The Contract Specialist must receive any questions no later than 10 calendar days before the response date of this solicitation. An original and two (2) copies of the offeror proposal shall be received on or before the response date noted above, 4:00 P.M., local time at the NRL address above, Attn: Contracting Officer. The package should be marked with the solicitation number, due date and time. Other business opportunities for NRL are available at our website. The U.S. Postal Service continues to irradiate

letters, flats, Express and Priority Mail with stamps for postage and other packages with stamps for postage destined to government agencies in the ZIP Code ranges 202 through 205. Due to potential delays in receiving mail, offerors are encouraged to use alternatives to the mail when submitting proposals. Other business opportunities for NRL are available at our website
<http://heron.nrl.navy.mil/contracts/rfplist.htm>

Original Point of Contact

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Place of Performance

Address: Contractor's Facility

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