

भारतीय प्रौद्योगिकी संस्थान मद्रास  
INDIAN INSTITUTE OF TECHNOLOGY MADRAS  
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Ref. No. FORM FOR INVITING QUOTATIONS

Date: 02.09.2015  
DUE DATE: 22.09.2015

CEC	15-16	001	VJK	BGA	1
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To

Dear Sirs,

1. Quotations are invited in duplicate for the BGA Rework Station (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
8. The rate of sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to non Government Educational Institutions run with no profit motive for which a concession. Sales Tax Certificate will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. Payment : Every attempt will be made to make payment within 30 days from the date of receipt of bill/acceptance of goods, whichever is later.

*(Handwritten signature)*

Yours faithfully,  
*(Handwritten signature)* 7/9/2015  
Head of the Dept/Centre

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IIT Madras, Chennai

BGA REWORK STATION

QUANTY - 1 NO

S.N	PARAMETER	SPECIFICATION REQUIRED	
1	BGA Rework System	General	System must have two head system i.e. one for placement (Fine pitch components) and another for removal/reflow (Mandatory)
		Type	The system Offered Must be Full Convection System
		ESD	All components that come in contact with a PCBA must be static dissipative
2	PCB Size	Min PCB Size	at least 1"
		Max PCB Size	at least 13.5 " or more
		PCB Thickness	Thickness range from min 0.5 to at least 6 mm
3	PCB Holder	General	Should consists of a frame that performs gross X and Y movement of the PCB with fine X & Y movement with micrometers to bring the rework component into position of removal and placement. Mandatory
		ODD Shape PCB	The board holder should be capable to holding ODD shape PCB atleast at 4 Points.
		Bottom Side Clearance	After Mounting the PCB there should be atleast 1" clearance at the bottom side to take care of Double sided PCB Rework
		Top Side Clearance	After Mounting the PCB there should be atleast 2" clearance at the Top side to take care of Through Hole Component Heights while moving the PCB.
		Bottom Support	The system should be supplied with Bottom side Support to prevent PCB Warpages.
4	Type of Heating	General	The System should be Fully Convection or Hot Gas rework system mandatory
		Reflow Head Heater	Should be Full Convection or Hot Gas Type.
			Capable to go upto 500 Watts.
			Capable to have source temperature of at least 400 Deg C
			Should be "Nitrogen capable" to handle Sensitive leadfree Component if required.
		Bottom Preheater	Should have the capability to pump in Ambient Air for cooling the PCB in Cooling Zone. Mandatory
			Should be Full Convection or Hot Air Type. Mandatory
Bottom Preheater should have capability to do dual stage heating with the ability of concurrent operation for both stages. Mandatory			
5	Thermal Profiling	Air Source	The system should have Built in Air Source. Mandatory
		Air Flow	The system should have programmable Air Flow. Supplier should specify the same.
		Thermal Repeatability of Profile	Should be +/- 5 Deg C
		No of Zones	Should have the Programmable zones minimum 14 Zones Mandatory
		Auto Profiling	Should have Auto Profile mode for reworking of unknown PCB/Component based on LF or SnPb Alloy. Mandatory

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		On The Fly Profiling	The system should have capability to change Time Temperatures or add and remove zones while reworking. <b>Mandatory</b>
		Real Time Display	The system should provide Real time Graphical display of the Temperatures of the joint.
		Thermal Control	Should be Closed Loop Control
		Storage	Should have facility to store the Profiles and Recall the same.
6	Vision	General	Should be Dual Full Color HD Camera with LED Lighting for shadow free component alignment. Able to see both PCB and Component simultaenously aligned and merged picture
		Zoom	Should be capable of atleast 50X Zoom
		Viewing Area	At Least able to see 45 x 45 Mm BGA Component
		Views	Should be able to have a choice to see the PCB Image alone, Component Leads Image alone or Meged Images
		Storage	Should have facility to store the images.
		Calibration	The system should be supplied with the optical Calibration Kit
7	Components to be reworked	Types	Chips like .0201, SMD, Advanced Packages like BGA, Mirco BGA, CSP, POP, SMD Connectors etc
		Size	Component size from .0.5mm x 0.5mm to least 45mm x 45mm BGA/CSP
		Weight	Maximum upto 50 Gms
8	Component Placements	Placement Head Accuracy	Should have Placement accuracy of at least 0.0018" or lower
		Theta	Should have adjustable theta of 360 Degrees. The Fine motor control of 0.25° $\Theta$ or better during alignment of the component to the pad should be possible
		Force Feedback	Should have Force Feedback Control to Enables the system to accurately pick and place components without disturbing the component or solder paste
		Pick up Nozzles	The supplier should provide the list of pick up nozzles being provided and optional available
	Component Removal	Thermal Nozzles for POP	The supplier must specify the Thermal Nozzles availaible for removal of POP Stack in one go
		ODD Form Components	The equipment should have a capability to remove odd Form Components with Tweezer Nozzles where vacumm tube cannot be used.
10	Others	Power Supply	208-240VAC, 50Hz, 15 Amp Single Phase

*U. D. Sharma*

*CC: [Signature]*

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 CHENNAI  
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