



**INDIAN INSTITUTE OF TECHNOLOGY MADRAS**  
**Chennai 600 036**

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The Senior Manager (Project Purchase)

**Ref: ELE/2020/023/RADH/5G HEAT SINK**

Date: 22/09/2020

**Open Tender No: ELE/2020/023/RADH/5G HEAT SINK**

**Due Date: 14.10.2020 3:00 PM**

**Pre-Bid meeting: - NA**

**Technical Bid opening meeting on 14/10/2020, 3:15 PM at Department of Electrical Engineering, IIT-Madras**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras (5G testbed), offers are invited for the **BOM, Procurement, Fabrication, and Assembly (HEAT SINK)** of items as specified in Annexure -1.

S. NO.	ITEM NAME	QUANTITY
1	16 channel heatsink	5
2	32 channel heatsink	4
3	64 channel heatsink	2
4	mm-Wave heatsink	10
5	Table Mount Stand	9
6	Pole Mount Stand	12

**SCOPE:** The manufacturing involves sourcing and procurement of Aluminium grade 6082 T6. 3 -Axis CNC milling on aluminium parts, surface treatment, and powder coating the parts with the specified colour. Some of the parts have to be manufactured in Stainless Steel-316 grade 316 and Acrylic / Poly-carbonate sheets. *The individual CAD (or required) diagrams of the respective assembly will be given upon request by mail to one of the following e-mail addresses with valid justification for participating in the tender.*

- [rganti@ee.iitm.ac.in](mailto:rganti@ee.iitm.ac.in)
- [ajithan@5gtbiitm.in](mailto:ajithan@5gtbiitm.in)

For clarification contact: **CSD 400 Electrical sciences department IIT Madras Chennai – 600 036**  
**Phone Number: 044-22578962.**

## **Instructions to the Bidder**

- I. **Preparation of Bids:** - The tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- II. **Delivery of the tender:** - The tender shall be sent to the address mentioned below, either by post or by courier so as to reach our office before the due date and time specified in our schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule.  
  
The tender box is kept in the office of the:  
  
**The Senior Manager,  
Project Purchase,  
IC & SR Building, 2<sup>nd</sup> floor,  
I.I.T. Madras,  
Chennai – 600 036**
- III. **Opening of the tender:** - The offer/bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and will be examined by a technical committee which will decide the suitability of the bids as per our specifications and requirements.
- IV. **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to the **Department of Electrical Engineering**. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. Kindly note that IIT Madras is eligible for concessional GST and relevant certificate will be issued.  
  
In case of import supply, the price should be quoted without custom duty. IIT Madras is exempted from levy of IGST on Imports and eligible for concessional custom duty (not exceeding 5%) and the price should be quoted on EX WORKS and CIP basis (stating the Cost, Insurance, Freight separately) and indicating the mode of shipment.
- V. **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in rupees after receipt of the equipment and its satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in the tender document even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The Foreign Principal should indicate the percentage of payment and it should be included in the basic price quoted originally (if any).
- VI. **Terms of Delivery:** - The item should be supplied to the **Department of Electrical Engineering, IIT Madras** as per the Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
- VII. **Technical Bid Opening:** The technical bid will be opened on **14/10/2020, 3:15 PM** at the **Department of Electrical Engineering, IIT-Madras**. The financial bids of those tenderers who are technically qualified will be opened at a later date under intimation to them.

**VIII. IIT Madras** reserves the full right to accept / reject any tender at any stage without assigning any reason.

- i) IIT Madras also reserve the right to purchase none or only a subset of the items (as shown in Table 1) without assigning any reason.
- ii) The actual quantities ordered may differ based on the requirement at the placement of order.

Yours sincerely,

**The Senior Manager (Project Purchase)**  
**IC&SR Building, I.I.T. Madras,**  
**Chennai – 600 036.**

## SCHEDULE

### Important Conditions of the tender

- 1) The due date for the submission of the tender is **14.10.2020, 3 p.m.** Tenders received after the due date will not be considered.
  
- 2) The offers / bids should be submitted under two bid system (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Open Tender for supply of **“BOM, Procurement, Fabrication, and Assembly (HEAT SINK) - 16 channel RRH,32 channel RRH, 64 channel RRH, mm-Wave RRH, table mount stand and pole mount stand”** should be written on the left side of the Outer bigger cover and sealed.
  
- 3) **EMD: - The EMD (Should be in INR) in the form of Account Payee Demand Draft / Banker’s Cheque for 2% of the quoted value of the item; drawn in favor of The Registrar-IIT Madras, payable at Chennai should be enclosed in the cover containing financial bid.** Any offer not accompanied with the EMD shall be rejected summarily as non-responsive.

The EMD of the unsuccessful bidders shall be returned within 30 days of the end of the bid validity period. The same shall be forfeited, if the tenderers withdraw their offer after the opening during the bid validity period. The Institute shall not be liable for payment of any interest on EMD. EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) and Startups as recognised by Department of Industrial Policy & Promotion (DIPP).

*When a foreign vendor does not have a local agent in India, he can submit a demand draft equal to 2% or wire transfer the amount to our account as detailed in the attachment (Annexure II) and enclose the proof with the financial bid.*

- 4) **Performance Security: -** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD, FD Receipt from the commercial bank, Bank Guarantee from any nationalized bank in India. **The performance security should be furnished within 14 days from the delivery of the purchase order.**

**Performance Security in the form of Bank Guarantee: -** In case the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.

The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

- 5) **Indian agent:** If an Indian agent is involved, the following documents must be enclosed:  
Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
- ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
- 6) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid.
- 7) Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
- 8) **Validity:** The validity of Quotation should not be less than 90 days from the due date of tender.
- 9) **Delivery Schedule:** - The tenderer should indicate clearly the time required for delivery of the item (subjected to the executive committee-IITMadras approval). In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.  
If there is delay, the penalty will be @1% per week of delay subject to a max of 10% of the value of purchase order and if the delay is more than accepted time frame by IITM, the PO would be cancelled and liquidated damages will be enforced.
- 10) **Risk Purchase Clause:** - In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
- 11) **Payment:** -
- (i) No Advance payment will be made for Indigenous purchase. The payment is based on the schedule provided in the later sections.
  - (ii) **Advance Payment:** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Vendor has to submit a Bank Guarantee from a Nationalized Bank of India equal to the amount of advance payment.
- 12) **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within number of days (as prescribed by PI) from the date of receipt of the item at site of IIT Madras
- 13) **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately (For more details please refer our Technical Specifications).
- 14) **Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
- 15) **Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

**16) Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**17) Disputes and Jurisdiction:**

**Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate an arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceeding shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai.

- a. **The Applicable Law:** This Purchase Order shall be construed, Interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- b. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

**18)** All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

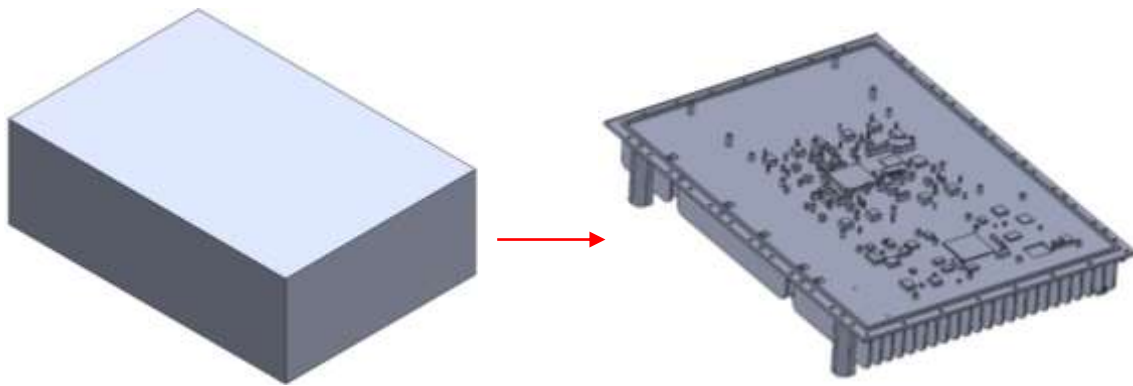
**Acknowledgement:** - It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANY WITH DATE**

## ANNEXURE -1

We require appropriate heatsinks, stands and associated parts be manufactured as per the specifications provided below.

- The manufacturing of some of these parts would require milling of the metal blocks to the required design. The bottom figure illustrates an example wherein a block is milled to the appropriate design.
- Some of the components require work with polycarbonate sheets, moulding them to required shape.
- Some of the components require working with cylindrical pipes.



Only manufacturers who can do high precision CNC machining and assembly on **Aluminium material of grade 6082 T-6** and **Stainless-Steel material of grade 316** as well as Acrylic / Poly-carbonate sheets should respond to the tender.

Please provide a detailed compliance table for the below specifications.

### **Technical specification**

1. The firm should have existed for at least **5 years**.
2. The fabrication and assembly facility should be in and around Chennai, India within 30 Km from the IIT Main gate on the shortest road (as seen in google maps).
3. Material test certificates for the stock material used for machining have to be submitted along with the delivery of the product and the information be provided and be approved before fabrication.
4. The assembly plant should be ready for inspection of the work being proposed for the quality control during the stages of fabrication.
5. The assembly plant should be ready for some basic rework as the case arises.

6. The whole process of machining, assembly, and surface coating should comply with RoHS 3 standards.
7. The bidder should have proven experience in machining **Aluminium 6082-T6 and Stainless Steel-grade 316** parts as well as machining **Acrylic / Poly-carbonate sheets**, the proof for which has to be attached along with the other documents.
  - a. Proof of experience in manufacturing similar parts in the specified material.
  - b. Vendors lacking such prior experience may be disqualified.
8. The technical capabilities of the machines used in production should be specified.

S.no	Parameter	Required Value	Complied (Yes/No) and value
1	Bed size for machining (x,y,z)mm	900mm x 500mm x 200mm or bigger	
2	No of the simultaneous working axis	Minimum of 3 axis	
3	Positional uncertainty/deviation for all linear axes	Less than or equal to 0.02mm	
4	Precision	Better than 0.01mm	

9. The number of such machines that the vendor has along with the make and model should be provided.
10. All-female threads below M6 in the part must be inserted with helicoils.
11. All the coating and surface treatments should be done as specified in the 2D diagrams.
12. The vendor can meet the time lines provided below

Stage	Deadline	Compliance (Yes/No)
Stage 1	4 weeks from PO	
Stage 2	6 weeks after go ahead from IITM	
Stage 3	4 weeks after go ahead from IITM	

### **Manufacturing and delivery**

1. The manufacturing of the specified components will happen in three stages.
2. Partial shipment will be allowed.



3. All the finished products should be delivered to IITM, 5G TESTBED LAB (third floor CSD) or IIT Madras research park (third floor) after fabrication at the cost of the vendor as indicated by IITM at the time of delivery.
4. Payment will be made on the completion of each stage according to the following schedule:
  - a. Stage 1: 20 % of the total
  - b. Stage 2: 50 % of the total
  - c. Stage 3: 30 % of the total

**Stage 1:**

In the first batch, the manufacturing, assembly, and delivery of the following components have to happen on or before **4 weeks from the release of PO.**

S.NO.	ITEM NAME	QUANTITY
1	16 Channel Heatsink	1
2	32 Channel Heatsink	1
3	64 Channel Heatsink	1
4	Table Mount Stand	2
5	Pole Mount Stand	1

The components will be evaluated and tested by the team in IIT Madras and any changes to the design will be communicated to the vendor which has to be incorporated in the stage 2 production cycle.

**Stage 2:**

In the second batch, the manufacturing, assembly, and delivery of the following components have to happen on or before **6 weeks from the time of approval of IIT Madras.**

S.NO.	ITEM NAME	QUANTITY
1	16 Channel Heatsink	4
2	32 Channel Heatsink	3
3	64 Channel Heatsink	1
4	mm-Wave Heatsink	1
5	Table Mount Stand	6
6	Pole Mount Stand	3

**Stage 3:**

In the third batch, the manufacturing, assembly, and delivery of the following components have to happen on or before **4 weeks from the time of approval of IIT Madras.**

S.NO.	ITEM NAME	QUANTITY
1	mm-Wave Heatsink	9
2	Table Mount Stand	3
3	Pole Mount Stand	6

The BOM, with the dimensions and weight, are provided below for each part. If required, the diagrams will be provided upon the request. Please e-mail to [rganti@ee.iitm.ac.in](mailto:rganti@ee.iitm.ac.in) and [ajithan@5gtbiitm.in](mailto:ajithan@5gtbiitm.in) for the appropriate drawings.

**BOM OF 16 CHANNEL HEATSINK**

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	base deployable rev 2 td	1	513.0 x 366 x 87.2	7550	Aluminium 6082 T6	chromatin/powd er coating	Milling
2	bottom wall single piece (protector) td	2	75.0 x 30.0 x 12.0	70	Stainless Steel-316		Milling
3	Bottom wall single piece td	1	366.0 x 100.0 x 20.0	512	Aluminium 6082 T6	chromatin/powd er coating	Milling
4	Cap for side opening	2	12.0 x11.9 x 2.0	1.75	Stainless Steel-316		Milling
5	front wall with mounting holes Heatpipe version td	1	463.4 x 357.8 x 6.0	1063	Aluminium 6082 T6	chromatin/powd er coating	Milling
6	Handle for fab	1	150.0 x 50.0 x 15.0	293	Stainless Steel-316	chromatin/powd er coating	Milling
7	Pin for side opening	2	9.8 x 9.4 x 5.8	2	Stainless Steel-316		Milling
8	RH wall lid rev3 td	1	287.7 x 87.8 x 10.26	206	Aluminium 6082 T6	chromatin/powd er coating	Milling
9	Top wall td	1	358 x 100 x 52.9	584	Aluminium 6082 T6	chromatin/powd er coating	Milling
10	wall LH rev1 (without opening) td	1	501.0 x 100.0 x 18.0	684	Aluminium 6082 T6	chromatin/powd er coating	Milling
11	wall RH rev3 td	1	501.0 x 100.0 x 18.0	628	Aluminium 6082 T6	chromatin/powd er coating	Milling

12	Protection board mounting bracket rev 1	5	94.0 x 10.0 x 10.0	8	Aluminium 6082 T6	chromatin	Milling
13	heatsink v1,1 rev1 bottom td	1	251 x 152.2 x 23.0	555	Aluminium 6082 T6	chromatin	Milling
14	heatsink v1,1 rev1 top td	1	250.9 x 164.7 x 23.0	583	Aluminium 6082 T6	chromatin	Milling
15	Heatpipe cover v2.0 td	1	198.5 x 120.8 x 6.0	126	Aluminium 6082 T6	chromatin	Milling
16	AFE Cover v2.0 td	2	219.9 x 133.1 x 25.0	383	Aluminium 6082 T6	chromatin	Milling
17	Antenna cavity 16ch v2.0	1	339.0 x 271.5 x 29.0	1480	Aluminium 6082 T6	chromatin	Milling
18	Radome 16 ch	1	339.0 x 271.5 x 29.0		Poly-carbonate		Moulding
19	Required Fasteners						Bom List on request

### BOM OF 32 CHANNEL HEATSINK

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	Base_32 channel_TENDER	1	740.0 x 405.0 x 87.0	13792	Aluminium 6082 T6	chromatin/powder coating	Milling
2	Top Wall_32 channel_TENDER	1	399.0 x 95.0 x 54.6	557	Aluminium 6082 T6	chromatin/powder coating	Milling
3	Bottom Wall_32 channel_TENDER	1	399.0 x 100 x 20.0	789	Aluminium 6082 T6	chromatin/powder coating	Milling
4	Right Wall_32 channel_TENDER	1	740.0 x 100.0 x 20.0	1312	Aluminium 6082 T6	chromatin/powder coating	Milling
5	Left Wall_32 channel_TENDER	1	740.0 x 100.0 x 20.0	1312	Aluminium 6082 T6	chromatin/powder coating	Milling
6	AFE Frame_32 channel_TENDER	1	694.5 x 394 x 9.0	2151	Aluminium 6082 T6	chromatin/powder coating	Milling
7	AFE Heatsink_1_8_D1.2_rev2_TENDER	1	245.7 x 158.0 x 23.0	511	Aluminium 6082 T6	chromatin/powder coating	Milling
8	AFE Heatsink_3_4_5_6_D1.2_rev2_TENDER	2	246.80 x 149.60 x 23	532	Aluminium 6082 T6	chromatin/powder coating	Milling

9	AFE Heatsink_2_7_D1.2_rev2_TENDER	1	246.8 x 167.4 x 23.0	538	Aluminium 6082 T6	chromatin/powder coating	Milling
10	Heatpipe cover v2.0 td	4	198.5 x 120.9 x 6.0	126	Aluminium 6082 T6	chromatin/powder coating	Milling
11	AFE Cover v2.0 td	4	220.0 x 133.1 x 25.0	383	Aluminium 6082 T6	chromatin/powder coating	Milling
12	Antenna cavity_32channel_TENDER	1	646.0 x 311.9 x 29.6	2254	Aluminium 6082 T6	chromatin/powder coating	Milling
13	Radome_32 channel_TENDER	1	646.0 x 311.9 x 29.6		Poly-carbonate		Moulding
14	Bracket for interface boardBrackets_TENDER	2	80.0 x 20.0 x 8.0	5	Aluminium 6082 T6	chromatin	Milling
15	Handle for fab td	2	150.0 x 50.0 x 15.0	293	Aluminium 6082 T6	chromatin/powder coating	Milling
16	Fasteners						BOM on request

### BOM OF 64 CHANNEL HEATSINK

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	MIMO Heatsink Base D1.2_rev1_TENDER	1	810.0 x 493.0 x 90.5	16350	Aluminium 6082 T6	chromatin/powder coating	Milling
2	MIMO Heatsink Bottom D1.2_rev1_TENDER	1	521.4 x 91.0 x 31.2	756	Aluminium 6082 T6	chromatin/powder coating	Milling
3	MIMO Heatsink Left D1.2_rev1_TENDER	1	768.0 x 91.0 x 35.2	1037	Aluminium 6082 T6	chromatin/powder coating	Milling
4	MIMO Heatsink Right D1.2_rev1_TENDER	1	782.0 x 91.0 x 35.2	1037	Aluminium 6082 T6	chromatin/powder coating	Milling
5	MIMO Heatsink Top D1.2_rev1_TENDER	1	521.0 x 91.0 x 33.2	987	Aluminium 6082 T6	chromatin/powder coating	Milling
6	AFE FRAME_D1.2_TENDER	1	838.4 x 521.4 x 10.0	2121	Aluminium 6082 T6	chromatin/powder coating	Milling
7	AFE Heatsink_1_8_D1.2_rev2_TENDER	2	245.65 x 158.0 x 23.0	511	Aluminium 6082 T6	chromatin/powder coating	Milling
8	AFE Heatsink_3_4_5_6_D1.2_rev2_TENDER	4	246.8 x 149.6 x 23.0	532	Aluminium 6082 T6	chromatin/powder coating	Milling
9	AFE Heatsink_2_7_D1.2_rev2_TENDER	2	246.8 x 167.4 x 23.0	538	Aluminium 6082 T6	chromatin/powder coating	Milling

10	Heatpipe cover v2.0 td	8	198.5 x 120.9 x 6.0	126	Aluminium 6082 T6	chromatin/powder coating	Milling
11	AFE Cover v2.0 td	8	220.0 x 133.1 x 25.0	383	Aluminium 6082 T6	chromatin/powder coating	Milling
12	Antenna cavity__TENDER	1	546.0 x 646.0 x 29.0	3072	Aluminium 6082 T6	chromatin/powder coating	Milling
13	Radome__TENDER	1	546.0 x 646.0 x 29.0		Poly-carbonate		Moulding
14	Bracket for interface boardBrackets__TENDER	2	80.0 x 20.0 x 8.0	5	Aluminium 6082 T6	chromatin	Milling
15	Handle for fab	2	150.0 x 50.0 x15.0	293	Aluminium 6082 T6	chromatin/powder coating	Milling
16	Fasteners						BOM on request

### BOM OF mm-WAVE HEATSINK

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	RRH Base	1	540.0 x 315.0 x 90.0	7440	Aluminium 6082 T6	chromatin/powder coating	Milling
2	RRH Wall Sides	2	550.0 x 50.0 x 10.0	413	Aluminium 6082 T6	chromatin/powder coating	Milling
3	RRH Wall TOP	1	315.0 x 50.0 x 10.0	200	Aluminium 6082 T6	chromatin/powder coating	Milling
4	RRH wall Bottom	1	315.0 x 50.0 x 10.0	217	Aluminium 6082 T6	chromatin/powder coating	Milling
5	Power Board EMF shield	1	530.0 x 40.0 x 10.0	136	Aluminium 6082 T6	chromatin/powder coating	Milling
6	AFE EMF shield	3	80.0 x 38.0 x 8.0	13	Aluminium 6082 T6	chromatin/powder coating	Milling
7	Antenna HS	1	196.0 x 126.0 x 65.0	1300	Aluminium 6082 T6	chromatin/powder coating	Milling
8	Interface pillar	4	35 x Ø3	3	Aluminium 6082 T6	chromatin/powder coating	Milling
9	Handle for fab	2	150.0 x 50.0 x15.0	293	Aluminium 6082 T6	chromatin/powder coating	Milling
10	Fasteners						BOM on Request
11	Radome_mmwave		540x315x30		Poly carbonate		Moulding

## BOM OF TABLE MOUNT STAND ASSEMBLY

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	Angle Rod D.1. M1	2	20.0 x 20.0 x 125.0	170	Stainless Steel-316		Milling
2	Angle Rod Pin_10mm D1.1 M1	2	Ø7.0 x 11.0	2	Stainless Steel-316		Turning/Lathe
3	Angle Rod Pin_15mm D1.1 M1	4	Ø7.0 x 19.9	4	Stainless Steel-316		Turning/Lathe
4	Base Angle Rod 1 D1.1 M1	2	193.5 x 20.0 x 10.0	64	Aluminium 6082 T6	Chromatin	Milling
5	Base Angle Rod 2 D1.1 M1	2	193.5 x 20.0 x 10.0	64	Aluminium 6082 T6	Chromatin	Milling
6	Base Connecting Block D1.1 M1 Rev1	2	50.0 x 50.0 x 60.0	216	Aluminium 6082 T6	Chromatin	Milling
7	Base Leg D1.1 M1 Rev1	2	50.0 x 30.0 x 15.5	53	Aluminium 6082 T6	Chromatin	Milling
8	Base Plate LH D1.1 M1 Rev1	1	450.0 x 50.0 x 10.0	598	Aluminium 6082 T6	Chromatin	Milling
9	Base Plate RH D1.1 M1 Rev1	1	450.0 x 50.0 x 10.0	598	Aluminium 6082 T6	Chromatin	Milling
10	Bottom Leg Back D1.1 M1 Rev1	2	50.0 x 25.0 x 15.0	28	Aluminium 6082 T6	Chromatin	Milling
11	Bottom Leg Center D1.1 M1 Rev1	2	50.0 x 50.0 x 15.0	100	Aluminium 6082 T6	Chromatin	Milling
12	Bottom Leg Front D1.1 M1 Rev1	2	50.0 x 30.0 x 15.0	59	Aluminium 6082 T6	Chromatin	Milling
13	Side Pin D1.1 M1	2	Ø44.0 x 41.0	141	Stainless Steel-316		Turning/Lathe
14	Supporting Rod D1.1 M1 Rev1	2	598.0 x 50.0 x 30.0	1282	Aluminium 6082 T6	Chromatin	Milling
15	Fasteners						BOM on request
16	E-clip	6					

## BOM OF POLE MOUNT STAND ASSEMBLY

S. No.	Part Name	Quantity	Size (lxbxh) (mm <sup>3</sup> )	Weight approx. (grams)	Material	Surface Treatment	Operation
1	Back Support PS D1.1 M1	2	300.0 x 100 x 42.6	3577	Stainless Steel-316		Milling
2	Front Support Top PS D1.1 M1	1	300.0 x 100.0 x 42.6	3577	Stainless Steel-316		Milling
3	Front Support Bottom PS D1.1 M1	1	300.0 x 100.0 x 123.0	4631	Stainless Steel-316		Milling
4	16 CH Connector PS D1.1 M1	2	366.0 x 25.0 x 50.0	314	Aluminium 6082 T6	Chromatin	Milling
5	32 CH Connector PS D1.1 M1	6	405.0 x 25.0 x 50.0	330	Aluminium 6082 T6	Chromatin	Milling
6	64 CH Connector PS D1.1 M1	4	500.0 x 25.0 x 50.0	320	Aluminium 6082 T6	Chromatin	Milling
7	mm-Wave Connector PS D1.1 M1	12	366.0 x 25.0 x 50.0	314	Aluminium 6082 T6	Chromatin	Milling
8	Angle Controller PS D1.1 M1	1	271.7 x 70.0 x 30.0	128	Aluminium 6082 T6	Chromatin	Milling
9	Thick Base PS D1.1 M1	1	220.0 x 100.0 x 53.0	1204	Aluminium 6082 T6	Chromatin	Milling
10	Side Pin PS D1.1 M1	1	Ø29.0 x 64.5	60	Stainless Steel-316		Turning/Lathe
11	Fasteners						BOM on request
12	E-clip	1					



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INDIAN INSTITUTE OF TECHNOLOGY MADRAS  
CHENNAI 600 036



**ELECTRONIC CLEARING SERVICE (Credit Clearing) / REAL TIME  
GROSS SETTLEMENT (RTGS) FACILITY FOR RECEIVING PAYMENTS**

**A. Details of Account Holder**

Name of the Institution	Indian Institute of Technology - Madras
Complete Contact Address	Industrial Consultancy and Sponsored Research Indian Institute of Technology-Madras, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
Telephone No./ Fax No.	Tel - 044-22578355 / Fax - 044-22570545
E- mail ID of the FO/AO/REG/DIR	dricrsr@iitm.ac.in

**B. Bank Account Details:**

Institution Account Name (As per Bank Record)	The Registrar, Indian Institute of Technology - Madras
Account No.	2722101001741
Account Print Name	IIT F A/C , The Registrar IIT Madras
IFSC CODE	CNRB0002722
Bank Name (in full)	Canara Bank
Branch Name	IIT-Madras Branch
Complete Branch Address	Canara Bank, IIT-Madras Branch, IIT- Madras Campus Post Office, Sardar Patel Road, Guindy, CHENNAI - 600 036
MICR No.	600015085
Account Type	Savings Account

Certified that the Institute's account is in an RTGS enabled branch.  
I hereby declare that the particulars given above are correct and complete.

Date:

Signature of the Competent Authority  
of the Institution with seal.

*K. M. Ganesan*  
DEPUTY REGISTRAR (IC&SR) (IC)  
IC & SR, I.I.T. MADRAS  
CHENNAI - 600 036

Certified that the particulars furnished above are correct as per our records.

Date:



for CANARA BANK  
*B. Sekar*  
SENIOR MANAGER  
I.I.T. MADRAS CHENNAI 600 036.

Signature of the Authorized  
Bank Official with Bank Seal.

**B. SEKAR**  
Senior Manager  
SP No. 39312





CENTRE FOR INDUSTRIAL CONSULTANCY & SPONSORED RESEARCH (IC&SR)  
 INDIAN INSTITUTE OF TECHNOLOGY MADRAS  
 CHENNAI 600 036



K VIJAYALAKSHMI  
 DEPUTY REGISTRAR (IC&SR) *KL*

Project Accounts  
 July 5, 2019

TO WHOMSOEVER IT MAY CONCERN

In connection with project, US currency may be transferred to CANARA BANK, IIT – MADRAS  
 Branch In connection with the following details.

**FOR TRANSFER OF CURRENCY US DOLLAR**

**Please Credit in USD** (THROUGH)

JP MORGAN CHASE, NEW YORK  
 SWIFT CODE: CHASUS33

**For credit to**

USD ACCOUNT No: 001 – 1395969, of CANARA BANK INTERNATIONAL DIVISION MUMBAI

**For Further Credit to**

ACCOUNT NO: 2722101001741 of IIT Chennai – Swift Code: CNRBINBBIT OF THE  
 REGISTRAR, IIT, MADRAS

*K Vijay*  
 DEPUTY REGISTRAR(IC & SR) i/c

This is to certify that particulars furnished are correct.

*[Signature]*  
 Senior Manager  
 Canara Bank – IIT Madras branch

B. SEKAR  
 Senior Manager  
 SP No. 39312



DEPUTY REGISTRAR (IC&SR) (i/c)  
 IC & SR, I.I.T. MADRAS  
 CHENNAI - 600 036