

REQUEST FOR PROPOSAL (RFP)
INVITATION OF BIDS FOR DEVELOPMENT OF LAB PROTOTYPES FOR CUSTOMIZED
HARDWARE BASED BLACK BOXES

LIMITED TENDER ENQUIRY

To,

M/s.....
As per approved list of vendors for LTE
.....

ITW/R&D Prototype/216

13 Sep 18

REQUEST FOR PROPOSAL (RFP) NO. 23 DATED 13 SEP 2018

1. Bids in sealed cover (**Techno-Commercial**) are invited for "Development of Lab Prototypes for Customized Hardware Based Black Boxes". The Contract will be an agreement between the Customer/ Purchaser and the Bidder/ Supplier for the scope of the work as listed in Part II of this RFP. **Please super scribe the above mentioned Title, RFP number and date of opening of the Bids on the sealed cover to avoid the Bid being declared invalid.**


2. The address and contact numbers for sending bids or seeking clarifications regarding this RFP are given below -

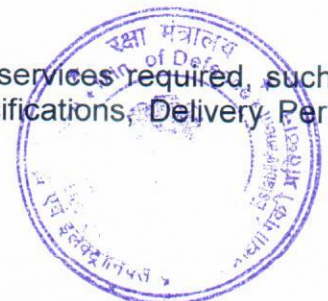
- (a) Bids/queries to be addressed to : Director General WESEE,
(For HOD (IT&IW))
West Block V, RK Puram,
New Delhi – 110066
- (b) Postal address for sending the Bids : West Block V, RK Puram,
New Delhi-66
- (c) Name/designation of the contact personnel: Cdr Ritesh Wahni
SSM (IT&IW)
- (d) Telephone numbers of the contact personnel: 011 – 26104815
- (e) Fax number: 011– 26101143

3. This RFP is divided into five Parts as detailed below and contains 17 pages.

(a) Part I – Contains General Information and Instructions for the Bidders about the RFP such as the time, place of submission and opening of tenders, Validity period of tenders, etc.

(b) Part II – Contains essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Mode of Delivery and Consignee details.


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(c) Part III – Contains Standard Conditions of RFP, which will form part of the Contract with the successful Bidder.

(d) Part IV – Contains Special Conditions applicable to this RFP and which will also form part of the contract with the successful Bidder.

(e) Part V – Contains Evaluation Criteria and Format for Price Bids.

4. This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the RFP, should it become necessary at any stage.



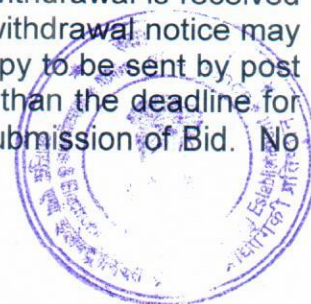

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Part I – General Information

1. **Last date and time for depositing the Bids:** **03 Oct 18 at 1430 hrs**. The sealed Bids should be deposited/reach by the due date and time. The responsibility to ensure this lies with the Bidder.
2. **Manner of depositing the Bids:** Sealed Bids (**Techno-Commercial**) should be either dropped in the Tender Box marked as **WESEE Tender Box** or sent by registered post at the address given above so as to reach by the due date and time. Late tenders will not be considered. No responsibility will be taken for postal delay or non-delivery/non-receipt of Bids documents. Bids sent by FAX or e-mail will not be considered (unless they have been specifically called for by these modes due to urgency).
3. **Time and date for opening of Bids:** **Techno-Commercial** bids will be opened at **1500 Hrs on 03 Oct 18**. If due to any exigency, the due date for opening of the Bids is declared a closed holiday, the Bids will be opened on the next working day at the same time or on any other day/time, as intimated by the Buyer. The time and date for the PNC would be intimated subsequent to evaluation of the Technical bids.
4. **Location of the Tender Box:** **Tender Box is located at Reception of West Block-V, RK Puram, New Delhi - 110066**. Only those Bids that are found in the tender box will be opened. Bids dropped in the wrong Tender Box will be rendered invalid.
5. **Place of opening of the Bids:** Bids will be opened at **Logistic Office, WESEE, West Block-V, RK Puram, New Delhi – 110066**. The Bidder may depute their representative, duly authorized in writing, to attend the opening of Bids on the due date and time. Rates and important commercial/technical clauses quoted by Bidder will be read out in the presence of the representatives of the Bidder. This event will not be postponed due to non-presence of your representative.
6. **Type of Tender and Bids.** This is a **Limited Tender Enquiry** and no unsolicited bids will be accepted/ entertained by this office in accordance with GFR 2017. This procurement is on **Single Bid** basis where both the technical and commercial bids, along with other information, as sought are to be submitted together in a single sealed cover by the bidder.
7. **Forwarding of Bids:** Bids should be forwarded by the Bidder under his original memo / letter pad *inter alia* furnishing details like TIN number, GSTIN number, Bank address with NEFT Account if applicable, etc and complete postal & e-mail address of their office.
8. **Clarification regarding contents of the RFP:** A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 14 (fourteen) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have received the bidding documents.
9. **Modification and Withdrawal of Bids:** A bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of Bid. A withdrawal notice may be sent by fax but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bid. No bid shall be modified after the deadline for submission of Bid. **No**


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bid may be withdrawn in the interval between the deadline for submission of Bid and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in Bidder's forfeiture of bid security.

10. **Clarification regarding contents of the Bids:** During evaluation and comparison of bid, the Buyer may, at its discretion, ask the bidder for clarification of his bid. The request for clarification will be given in writing and no change in prices or substance of the bid will be sought, offered or permitted. No post-bid clarification on the initiative of the bidder will be entertained.

11. **Rejection of Bids:** Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected.

12. **Unwillingness to quote:** Bidder unwilling to quote should ensure that intimation to this effect reaches WESEE before the due date and time of opening of the Bid, failing which the defaulting Bidder may be delisted for the given scope of work as mentioned in Part II of this RFP.

13. **Validity of Bids:** The Bids should remain valid till **120** days from the last date of submission of the Bids and the rates quoted therein shall be valid for the entire contract period.

14. **Earnest Money Deposit:** Bidder is required to submit Earnest Money Deposit (EMD) for amount of Rs. 17,131/-. The EMD may be submitted in the form of an Account Payee Demand Draft, Fixed Deposit Receipt, Banker's cheque or Bank Guarantee from any public sector banks or private sector bank authorized to conduct government business as per Form DPM-16 (Available in MoD website and can be provided on request). EMD is to be valid for a period of forty-five days beyond the final bid validity period. EMD of the unsuccessful bidder will be returned to them at the earliest after expiry of the final bid validity and latest on or before the 30th day after the award of the contract. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from them as called for in the contract. However, EMD is not required to be submitted by Bidder who is registered with the Central Purchase Organization (e.g. DGS&D), National Small Scale Industries Corporation (NSIC) or any department of MoD or MoD itself. The EMD will be forfeited if the bidder withdraws or amends, impairs or derogates from the tender in any respect within the validity period of their tender.

15. **Certificate by Vendor.** It is mandatory for the bidder to fill up the compliance matrix at Appendix 'A' to this RFP and ***submit the same along with the Techno-Commercial bid.***



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---END OF PART I---

Part II – Essential Details of Items/Services required

1. **Schedule of Requirements:** The vendor is required to manufacture hardware based prototypes as per WESEE supplied PCB design (Gerber) files. The vendor may undertake minor modifications/ changes and further develop/ customize the WESEE design in consultation with WESEE for optimal placement/ alignment of components on PCB, replacement of obsolete/ obsolescent component in Bill of Material (BOM) without affecting functionality of the designed prototype. The PCB prototypes are required to be housed in suitably designed and manufactured metal Black Box enclosure by the vendor duly approved by WESEE.

Scope of Work and List of Deliverables

2. The Seller shall be responsible for Development of Lab Prototypes housed in Customized Hardware Based Black Boxes (as per Bill of Material (BOM) placed at *Appendix B & Appendix C* to this RFP), testing and delivery at WESEE. Details of final deliverables would be as follows:-

(a) **Design/ Document deliverables.** Initial PCB design and placement file (Gerber) will be developed and handed over by WESEE. All subsequent design updates and component placement with suitable modification/ changes for manufacturing of PCB and correct alignment, as required, will be undertaken by the vendor. All such modified/ created design files (schematics, gerbers and associated files for manufacturing) will be handed over back to WESEE on completion. No such finalised or intermediate design file will be retained by the vendor in any form. The following finalised design documents are to be handed over to WESEE on completion:-

- (i) Final design and placement file (Gerber) for PCB manufacturing.
- (ii) Revised/ updated BOM for both STM32 and FPGA variants.
- (iii) Schematic design of the PCB prototypes.
- (iv) CAD design/ Schematics of the Black Box (Metallic enclosure).

(b) **Hardware Deliverables.** A total of 10 in number (05 each with STM32 controller and FPGA based hardware as tabulated below) lab prototypes manufactured using the WESEE supplied gerber files. The hardware Black Box is required to be powered using COTS external power supply module/ 12V 3A, AC-DC adapter.

Sl. No.	Description	Qty. (Nos.)
(i)	Prototype Manufacturing and Assembly of STM32 MC Engine based Customized Hardware Black Box (as per Bill of Material placed at Appendix B)	05
(ii)	Prototype Manufacturing and Assembly of FPGA Engine based Customized Hardware Black Box (as per Bill of Material placed at Appendix C)	05

(c) **Hardware Test and Compliance Report.** The vendor is required to undertake physical and electrical testing of the lab prototypes. A compliance report comprising of details of placement of components which are in variance with WESEE supplied Gerber, resolution of heat dissipation issues, deviation in BOM due to component obsolescence issues, resolution of grounding/ mechanical issues for mounting of components, any mismatch of PCB legends/ designators for components, Design Rule Check (DRC), DFM (Design for Manufacturability) Check, details of Test Points with test parameters and acceptable values/ ranges is also required to be submitted.


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Pre-Bid Meeting

3. The specific details of development and implementation details will be discussed/ furnished with authorised representatives of the bidders during the pre-bid meeting against Non-Disclosure Agreement.

4. Technical Details

- (a) Specifications/drawings, as applicable – As mentioned in Para 2(a) and 2(b) of Part-II of this RFP
- (b) Technical details with technical parameters – As mentioned in Para 2(a) and 2(b) of Part-II of this RFP
- (c) Requirement of Training / On-job training – NA.
- (d) Requirement of installation / commissioning – NA
- (e) Requirement of Acceptance Trials – Testing at User Premises
- (f) Requirement of Technical Documentation – As mentioned in Para 2(a) and 2(c) of Part-II of this RFP.
- (g) Nature of assistance required after completion of warranty – Nil
- (h) Requirement of pre-site/equipment inspection – NA

Delivery Period

5. Delivery period for supply of hardware would be **08 Weeks** from the date of signing of Supply Order. Please note that Supply Order can be cancelled unilaterally by the Buyer in case items are not received within the contracted delivery period. Extension of contracted delivery period will be at the sole discretion of the Buyer, with applicability of LD clause.

---END OF PART II---



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Part III – Standard Conditions of RFP

The Bidder is required to give confirmation of their acceptance of the Standard Conditions of the Request for Proposal mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.

1. **Law.** The Contract shall be considered and made in accordance with the laws of the Republic of India. The contract shall be governed by and interpreted in accordance with the laws of the Republic of India.
2. **Effective Date of the Contract.** The contract shall come into effect on the date of signatures of both the parties on the contract (Effective Date) and shall remain valid until the completion of the obligations of the parties under the contract. The deliveries and supplies and performance of the services shall commence from the effective date of the contract.
3. **Arbitration.** All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to construction or performance, which cannot be settled amicably, may be resolved through arbitration. In case of arbitration with the firm and this establishment, the final decision would be of Director General WESEE, New Delhi.
4. **Penalty for use of Undue influence.** The Seller undertakes that he has not given, offered or promised to give, directly or indirectly, any gift, consideration, reward, commission, fees, brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contracts or for bearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the present Contract or any other Contract with the Government of India for showing or forbearing to show favour or disfavour to any person in relation to the present Contract or any other Contract with the Government of India. Any breach of the aforesaid undertaking by the Seller or any one employed by him or acting on his behalf (whether with or without the knowledge of the Seller) or the commission of any offers by the Seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1986 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the contract and all or any other contracts with the Seller and recover from the Seller the amount of any loss arising from such cancellation. A decision of the Buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the Seller towards any officer/employee of the Buyer or to any other person in a position to influence any officer/employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amounts paid by the Buyer.
5. **Agents / Agency Commission.** The seller confirms and declares to the Buyer that the Seller is the original manufacturer of the stores/provider of the services referred to in this Contract and has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to the Govt. of India or



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any of its functionaries, whether officially or unofficially, to the award of the contract to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from entering into any supply contract with the Government of India for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract either wholly or in part, without any entitlement or compensation to the Seller who shall in such an event be liable to refund all payments made by the Buyer in terms of the Contract along with interest at the rate of 2% per annum above LIBR rate, The Buyer will also have the right to recover any such amount from any contracts concluded earlier with the Government of India.

6. **Access to Books of Accounts.** In case it is found to the satisfaction of the buyer that the Seller has engaged an Agent or paid commission or influenced any person to obtain the contract as described in clauses relating to Agents/Agency Commission and penalty for use of undue influence, the Seller, on a specific request of the Buyer, shall provide necessary information/ inspection of the relevant financial documents/information.

7. **Non-disclosure of Contract documents.** Except with the written consent of the Buyer/ Seller, other party shall not disclose the contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party. Also, the seller shall bind each staff member associated with the implementation of the contract to confidentiality in respect of work carried out and other information regarding WESEE that they may acquire during their tenure of conduct of their work.

8. **Liquidated Damages.** In the event of the Seller's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods and conduct trials, installation of equipment, training etc. as specified in the contract, the Buyer may, at his discretion, withhold any payment until the completion of the contract. The BUYER may also deduct from the SELLER as agreed, liquidated damages to the sum of 0.5% of the contract price of the delayed/undelivered stores/services mentioned above for every week of delay or part of a week, subject to the maximum value of the Liquidated Damages being not higher than 10% of the value of delayed stores/services.

9. **Termination of Contract.** The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases:-

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- (a) The delivery of the material/services is delayed for causes not attributable to Force Majeure for more than 01 month after the scheduled date of delivery/completion.
 - (b) The Seller is declared bankrupt or becomes insolvent.
 - (c) The delivery of material/services is delayed due to causes of Force Majeure by more than 01month provided Force Majeure clause is included in contract.
 - (d) The Buyer has noticed that the Seller has utilized the services of any Indian/Foreign agent in getting this contract and paid any commission to such

individual/company etc.

(e) As per decision of the Arbitration Tribunal.

10. **Notices**. Any notice required or permitted by the contract shall be written in the English language and may be delivered personally or may be sent by FAX or registered pre-paid mail/airmail, addressed to the last known address of the party to whom it is sent.

11. **Transfer and Sub-letting**. The Seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.

12. **Patent Rights Security, Ownership Rights and Non-Disclosure**.

(a) The Seller has to confirm that there are no infringements of any Patent Rights in accordance with the laws prevailing in their respective countries. Buyer shall hold all Intellectual Property Rights (IPR), ownership and copyrights on all the software developed for this project. In addition, Buyer shall hold all IPR, ownership and copyrights on this document and any other document, data and information, supplied in response to this RFP.

(b) This document is classified as 'COMMERCIAL CONFIDENTIAL'. No part of this document is to be copied or reproduced either in part or as a whole nor are its contents to be disclosed to a third party.

(c) The Seller shall ensure that all persons employed by them on any work in connection with this RFP have been notified that the Indian Official Secrets Act, 1923 applies to them and will continue to so apply even after the submission of the proposal, technical and price negotiations. These conditions shall also apply to the sub-Seller(s) of the Sellers.

(d) The information, data and documents provided by Buyer to the Seller during the submission of the proposal and price negotiations is solely provided for the purpose of this project. The information obtained from Buyer and the proposals/ reports/ documents generated by the Seller are not to be used by them for any other purpose or revealed to any other person or party not directly involved in the project either in writing, or otherwise.

13. **Amendments**. No provision of present Contract shall be changed or modified in any way (including this provision) either in whole or in part except by an instrument in writing made after the date of this Contract and signed on behalf of both the parties and which expressly states to amend the present Contract.

14. **Taxes and Duties**. As applicable, payable at actuals. Copy of HSN code as per GST to be provided.

(i) If Bidder desires to ask for Duty/Tax/GST extra, the same must be specifically stated. In the absence of any such stipulation, it will be presumed that the prices include all such charges and no claim for the same will be entertained.

(ii) If reimbursement of any Duty/Tax/GST is intended as extra over the

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quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duty/tax/GST will be entertained after the opening of tenders.

(iii) If a Bidder chooses to quote a price inclusive of any duty/tax/GST and does not confirm inclusive of such duty/tax/GST so included is firm and final, he should clearly indicate the rate of such duty/tax/GST and quantum of such duty/tax/GST included in the price. Failure to do so may result in ignoring of such offers summarily.

(iv) If a Bidder is exempted from payment of any duty/tax/GST up to any value of supplies from them, he should clearly state that no such duty/tax will be charged by him up to the limit of exemption which he may have. If any concession is available in regard to rate/quantum of any Duty/tax/GST, it should be brought out clearly. Stipulations like, the said duty/tax/GST was presently not applicable but the same will be charged if it becomes leviable later on, will not be accepted unless in such cases it is clearly stated by a Bidder that such duty/tax/GST will not be charged by him even if the same becomes applicable later on. In respect of the Bidders, who fail to comply with this requirement, their quoted prices shall be loaded with the quantum of such duty/tax/GST which is normally applicable on the item in question for the purpose of comparing their prices with other Bidders.

(v) Any change in any duty/tax/GST upward/downward as a result of any statutory variation in excise taking place within contract terms shall be allowed to the extent of actual quantum of such duty/tax/GST paid by the supplier. Similarly, in case of downward revision in any duty/tax/GST, the actual quantum of reduction of such duty/tax shall be reimbursed to the Buyer by the Seller. All such adjustments shall include all reliefs, exemptions, rebates, concession etc. if any obtained by the Seller.

---END OF PART III---



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Part IV – Special Conditions of RFP

The Bidder is required to give confirmation of their acceptance of Special Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of Bid submitted by the Bidder.

1. **Performance Guarantee**. The Bidder will be required to furnish a Performance Guarantee by way of Bank Guarantee through a public sector bank or a private sector bank authorized to conduct government business (ICICI Bank Ltd., Axis Bank Ltd., or HDFC Bank Ltd.) for a sum equal to 10% of the contract value within 30 days of receipt of the confirmed order. Performance Bank Guarantee should be valid up to 60 days beyond the date of warranty.
2. **Option Clause**. The contract will have an Option Clause, wherein the Buyer can exercise an option to procure an additional 50% of the original contracted quantity in accordance with the same terms & conditions of the present contract. This will be applicable within the currency of contract. The Bidder is to confirm the acceptance of the same for inclusion in the contract. It will be entirely the discretion of the Buyer to exercise this option or not.
3. **Repeat Order Clause**. The contract will have a Repeat Order Clause, wherein the Buyer can order up to 50% quantity of the items under the present contract within six months from the date of supply/successful completion of this contract, the cost, terms & conditions remaining the same. The Bidder is to confirm acceptance of this clause. It will be entirely the discretion of the Buyer to place the Repeat order or not.
4. **Tolerance Clause**. To take care of any change in the requirement during the period starting from issue of RFP till placement of the contract, Buyer reserves the right to 50% plus/minus increase or decrease the quantity of the required goods up to that limit without any change in the terms & conditions and prices quoted by the seller. While awarding the contract, the quantity ordered can be increased or decreased by the Buyer within this tolerance limit.
5. **Payment Terms for Indigenous Sellers**: It will be mandatory for the Bidders to indicate their bank account numbers and other relevant e-payment details so that payments could be made through ECS/EFT mechanism instead of payment through cheques, wherever feasible. The payment will be made as per the following terms, on production of the requisite documents:-
100% payment upon satisfactory performance certification by WESEE post testing of hardware, subject to submission of Bank Guarantee for 10% of the Order Value.
6. **Advance Payments**: No advance payment(s) will be made.
7. **Paying Authority**. The CDA(Navy/ CG), West Block 5, RK Puram, New Delhi-110066. The payment of bills will be made through CDA(Navy/ CG), New Delhi on submission of the following documents by the Seller to the Paying Authority along with the bill:
 - (a) Ink-signed copy of contingent bill / Seller's bill.
 - (b) Ink-signed copy of Commercial invoice / Seller's bill.
 - (c) Copy of Supply Order/Contract, where required under delegation of powers.


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- (d) CRVs in duplicate.
- (e) Inspection note.
- (f) Claim for statutory and other levies to be supported with requisite documents/ proof of payment such as Excise duty challan, Customs duty clearance certificate, etc. as applicable.
- (g) Exemption certificate for Excise duty / Customs duty, if applicable.
- (i) Guarantee / Warranty certificate.
- (j) DP extension letter with CFA's sanction, where required under delegation of powers, indicating whether extension is with or without LD.
- (k) Details for electronic payment viz. Account holder's name, Bank name, Branch name and address, Account type, Account number, IFSC code, MICR code (if these details are not incorporated in supply order/contract).
- (l) Any other document / certificate that may be provided for in the Supply Order / Contract.
- (n) User Acceptance.

8. **Fall Clause.** The following Fall clause will form part of the contract placed on successful Bidder -

(a) The price charged for the stores supplied under the contract by the Seller shall in no event exceed the lowest prices at which the Seller sells the stores or offer to sell stores of identical description to any persons/ Organization including the purchaser or any department of the Central government or any Department of state government or any statutory undertaking the central or state government as the case may be during the period till performance of all supply Orders placed during the currency of the rate contract is completed.

(b) If at any time, during the said period the Seller reduces the sale price, sells or offer to sell such stores to any person/organization including the Buyer or any Dept., of central Govt. or any Department of the State Government or any Statutory undertaking of the Central or state Government as the case may be at a price lower than the price chargeable under the contract, the shall forthwith notify such reduction or sale or offer of sale to the Director general of Supplies & Disposals and the price payable under the contract for the stores of such reduction of sale or offer of the sale shall stand correspondingly reduced. The above stipulation will, however, not apply to:--

- (i) Exports by the Seller.
- (ii) Sale of goods as original equipment at price lower than lower than the prices charged for normal replacement.
- (iii) Sale of goods such as drugs which have expiry dates.
- (iv) Sale of goods at lower price on or after the date of completion of sale/ placement of the order of goods by the authority concerned under the existing or previous Rate Contracts as also under any previous contracts entered into with the Central or State Govt. Depts., including their undertakings excluding joint sector companies and/or private parties and bodies.

(c) The Seller shall furnish the following certificate to the Paying Authority along with each bill for payment for supplies made against the Rate contract –
 “We certify that there has been no reduction in sale price of the stores of description identical to the stores supplied to the Government under the contract herein and such stores have not been offered/sold by me/us to any

person/organization including the purchaser or any department of Central Government or any Department of a state Government or any Statutory Undertaking of the Central or state Government as the case may be upto the date of bill/the date of completion of supplies against all supply orders placed during the currency of the Rate Contract at price lower than the price charged to the government under the contract except for quantity of stores categories under sub-clauses (a), (b) and (c) of sub-para (ii) above details of which are given below -

9. **Risk & Expense Clause.**

(a) Should the stores or any installment thereof not be delivered within the time or times specified in the contract documents, or if defective delivery is made in respect of the stores or any installment thereof, the Buyer shall after granting the Seller 45 days to cure the breach, be at liberty, without prejudice to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.

(b) Should the stores or any installment thereof not perform in accordance with the specifications / parameters provided by the SELLER during the check proof tests to be done in the BUYER's country, the BUYER shall be at liberty, without prejudice to any other remedies for breach of contract, to cancel the contract wholly or to the extent of such default.

(c) In case of a material breach that was not remedied within 45 days, the BUYER shall, having given the right of first refusal to the SELLER be at liberty to purchase, manufacture, or procure from any other source as he thinks fit, other stores of the same or similar description to make good:-

(i) Such default.

(ii) In the event of the contract being wholly determined the balance of the stores remaining to be delivered there under.

(d) Any excess of the purchase price, cost of manufacturer, or value of any stores procured from any other supplier as the case may be, over the contract price appropriate to such default or balance shall be recoverable from the SELLER. Such recoveries shall not exceed actual cost of the value of the contract."

10. **Force Majeure clause.**

(a) Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as war, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

(b) In such circumstances the time stipulated for the performance of an obligation under the present contract is extended correspondingly for the period of time of action of these circumstances and their consequences.

(c) The party for which it becomes impossible to meet obligations under this



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contract due to Force Majeure conditions, is to notify in written form the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from the moment of their beginning.

(d) Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of the respective country shall be a sufficient proof of commencement and cessation of the above circumstances.

(e) If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

11. **Specification.** The following Specification clause will form part of the contract placed on successful Bidder – The Seller guarantees to meet the specifications as per Part-II of RFP and to incorporate the modifications to the existing design configuration to meet the specific requirement of the Buyer Services as per modifications/requirements (if any) recommended after the trials. All technical literature and drawings shall be amended as the modifications by the Seller before supply to the Buyer. The Seller, in consultation with the Buyer, may carry out technical upgradation/alterations in the design, drawings and specifications due to change in manufacturing procedures, indigenization or obsolescence. This will, however, not in any way, adversely affect the end specifications of the system. Changes in technical details, drawings repair and maintenance techniques alongwith necessary tools as a result of upgradation/alterations will be provided to the Buyer free of cost within 30 days of affecting such upgradation/alterations.

12. **Quality.** The quality of the stores/services delivered according to the present Contract shall correspond to the technical conditions and standards valid for the deliveries of the same stores/services for in specifications enumerated as per RFP and shall also include therein modification to the stores/services suggested by the Buyer. Such modifications will be mutually agreed to.

13. **Quality Assurance.** Seller would provide the standard Acceptance Test Procedure (ATP). Buyer reserves the right to modify the ATP.

14. **Inspection Authority:** The Inspection will be carried out by WESEE. The mode of Inspection will be Departmental Inspection / User Inspection / Joint Inspection / Self-certification. The prototype will be accepted after successful testing at WESEE.

15. **Franking clause.** The following Franking clause will form part of the contract placed on bidder:-

(a) Franking clause in the case of acceptance of goods/services – “The fact that the goods/services have been inspected after the delivery period and passed by the Inspecting officer will not have the effect of keeping the contract alive. The goods / services are being passed without prejudice to the rights of the Buyer under the terms and conditions of the contract”

(b) Franking clause in the case of Rejection of goods/services – “The fact that the goods /services have been inspected after the delivery period and rejected by the Inspecting officer will not bind the Buyer in any manner. The goods/services are being rejected without prejudice to the rights to the Buyer under the terms and

conditions of the contract.”

16. **Warranty:** The following Warranty will form part of the contract placed on the successful Bidder –

Except as otherwise provided in the invitation tender, the Seller hereby declares that the goods, stores, articles sold/supplied to the Buyer under this contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained / mentioned in contract. The Seller hereby guarantees that the said goods/stores/articles would continue to conform to the description and quality aforesaid for a **period of 12 months** from the date of delivery of the said goods stores/articles and that notwithstanding the fact that the Buyer may have inspected and/or approved the said goods/stores/articles, if during the aforesaid period of 12 months the said goods/stores/articles be discovered not to conform to the description and quality aforesaid not giving satisfactory performance or have deteriorated, and the decision of the Buyer in that behalf shall be final and binding on the Seller and the Buyer shall be entitled to call upon the Seller to rectify the goods/stores/articles or such portion thereof as is found to be defective by the Buyer within a reasonable period, or such specified period as may be allowed by the Buyer in his discretion on application made thereof by the Seller, and in such an event, the above period shall apply to the goods/stores/articles rectified from the date of rectification mentioned in warranty thereof, otherwise the Seller shall pay to the Buyer such compensation as may arise by reason of the breach of the warranty therein contained.

17. **Product Support:** The product support clause will form part of the contract placed on the bidder-

(a) The Seller agrees to provide product support in the form of hardware and software defect ratification as and when required by the Buyer for a period of one year after the delivery of the system.

(b) Any improvement/modification/ up-gradation being undertaken by the Seller on the product being purchased under the Contract will be communicated by the Seller to the Buyer and, if required by the Buyer, these will be carried out by the Seller at Buyer's cost.

---END OF PART IV---



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Part V – Evaluation Criteria & Price Bid issues

1. **Evaluation Criteria** - The broad guidelines for evaluation of Bid will be as follows:

(a) Only those Bids will be evaluated which are found to be fulfilling all the eligibility and qualifying requirements of the RFP, both technically and commercially.

(b) The Bidders are required to spell out the rates of Customs duty, Excise duty, Taxes, etc. in unambiguous terms; otherwise their offers will be loaded with the maximum rates of duties and taxes for the purpose of comparison of prices. If reimbursement of Customs duty / Excise Duty / Taxes is intended as extra, over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duties will be entreated after the opening of tenders. If a Bidder chooses to quote a price inclusive of any duty and does not confirm inclusive of such duty so included is firm and final, he should clearly indicate the rate of such duty and quantum of excise duty included in the price. Failure to do so may result in ignoring of such offers summarily. If a Bidder is exempted from payment of Customs duty / Excise Duty / Taxes duty upto any value of supplies from them, they should clearly state that no excise duty will be charged by them up to the limit of exemption which they may have. If any concession is available in regard to rate/quantum of Customs duty / Excise Duty / Taxes, it should be brought out clearly. Stipulations like, excise duty was presently not applicable but the same will be charged if it becomes leviable later on, will not be accepted unless in such cases it is clearly stated by a Bidder that excise duty will not be charged by him even if the same becomes applicable later on. In respect of the Bidders who fail to comply with this requirement, their quoted prices shall be loaded with the quantum of excise duty which is normally applicable on the item in question for the purpose of comparing their prices with other Bidders. The same logic applies to Customs duty and other taxes also.

2. **Price Bid Format**. The Price Bid Format is given below and Bidders are required to fill this up correctly with full details:

(a) Basic cost of the item/items:

S. No.	Description	Unit Price (Rs.)	Qty (Nos.)	Total Price (Rs.)
(I)	Prototype Manufacturing and Assembly of STM32 MC Engine based Customized Hardware Black Box		05	
(II)	Prototype Manufacturing and Assembly of FPGA Engine based Customized Hardware Black Box		05	

Total of Basic Price:

(b) Is Taxes/GST extra?
If Yes, then mention the following:
(i) Total value on which VAT/GST is leviable
(ii) Rate of VAT/GST
(iii) Total value of VAT/GST leviable:


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- (iv) GSTIN Number:
- (c) Any other Taxes / Duties / Overheads / Other costs:
- (d) Grand Total:

---End of Part V---



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COMPLIANCE MATRIX BY THE VENDOR

(It is mandatory to submit this compliance matrix, failing which the Buyer reserves the right to reject the bid submitted)

Ser. No	Check off list /Clause	Compliance	Yes/No
01	RFP No, Title and Date of opening of bids mentioned at bid envelop		
02	Price Bid is as per format mentioned at Para 2 of Part V of RFP		
03	Para 7 part I of RFP. Documentary proof of GSTIN registration, TIN No. or any other registration by any government organization mandatory for executing the contract should be enclosed.	Self-attested documentary proof attached	
04	Para 14 part I of RFP- EMD for amount of Rs. 17,131/- enclosed	Documentary proof in form of BG, FD, DD etc. attached	
05	Acceptance to all AMC specifications Essential Details of Items/Services required as per Part II of RFP.	Please specify variations if any clearly in the bid.	
06	Acceptance of Standard Conditions of RFP mentioned at Part III of RFP	Standard Conditions of RFP as per DPM-09 have been read and understood in all aspects, and acceptable, and there is no objection to including the same in the Contract Agreement.	
07	Acceptance of Special Conditions of RFP mentioned at Part IV of RFP	Special Conditions of RFP as per DPM-09 have been read and understood in all aspects, and acceptable, and there is no objection to including the same in the Contract Agreement.	

**Vendor/ Firm's
Office Stamp**

Signature of Bidder



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Appendix 'B'

Bill of Material (BOM) for 'Prototype Manufacturing & Assembly of STM32 MC Engine based Customized Hardware Black Box'

S.No	Description	Designator	Value	Comment	Footprint	Quantity
1	PCB 152 x 100 mm FR4 Double sided PTH, Green Masking, ENG Finish, PCB Thickness 1.6 mm (Mother Board)					1
2	PCB 5x4mm 6 Layer, FR4, PTH, Green masking, ENG Finish, Thickness 1.6mm (Expansion board)					1
3	12V 3A AC/DC Power Adapter with 2 Pin Circular Connector		12V 3A			1
4	CR2032 Coin Cell Battery	BT1				1
5	Capacitor	C1, C23, C66, C84	CR2032	CR2032		1
6	Polarized Capacitor (Radial), Electrolytic Capacitor, Electrolytic Capacitor, Electrolytic Capacitor	C2, C17, C45, C77	10uF 100uF/16V	0603 Elec	0603_Cap CAP_ELEC_100uF/16V(5X11mm)	1 4 4
7	Capacitor	C3	22uF	0805	0805_CAP_3D	1
8	Polarized Capacitor (Radial)	C4	220uF/50V	Elec	CAP_ELEC_220uF/35V (8X11.5mm)	1
9	Capacitor	C5, C7, C8, C10, C11, C12, C13, C14, C15, C16, C19, C20, C21, C22, C24, C25, C29, C30, C34, C35, C36, C37, C38, C39, C41, C42, C46, C47, C49, C52, C54, C55, C56, C57, C59, C60, C67, C68, C69, C70, C71, C72, C73, C75, C76, C79, C80, C85, C86	100nF	0603	0603_Cap	49
10	Capacitor	C6, C18, C53	10nF	0603	0603_Cap	3
11	Capacitor	C9	10uF	0805	0805_CAP_3D	1
12	Capacitor	C26, C27, C28, C63, C64, C65	4.7uF	0603	0603_Cap	1
13	Capacitor	C31, C32, C43, C44, C50, C51, C61, C62, C83, C87	27pF	0603	0603_Cap	6
14	Capacitor	C33, C40, C48, C58, C74, C78	2.2uF	0603	0603_Cap	10
15	Capacitor	C81, C82	47pF	0603	0603_Cap	6
16	USB Connector Female/USB A/4-Position/Right Angle/Through hole	CON1, CON2, CON3	USB-A/HSW6	USB Connector Female	USB_Horizontal	2
17	Bidirectional ESD protection	D1	SMAJ15CA	D-Littlefuse-SMAJ15CA-Schotky	TVS_LITTLEFUSE_SMAJ30CA	3
18	Schottky Diode	D2	SS34	SS34	SS34 DO-214AB (SMC)	1
19	Schottky Barrier Double Diode	D3	BAT54C	BAT54C	SO123 N	1
20	High Conductance Fast Diode	D4	BAT54C	IN4148	DO-35	1
21	Typical RED GaAs LED	D5, D6, D7, D8, D9	SMD LED Red	LED1	LED SMD 1206	1
22	Low Voltage Power Supply Connector	J1	DC Jack	PWR2.5	DC Jack 3D	5
23	Power Supply FB 10A	L1	36R@100MHz	Inductor	IND 68uH SRN6045 Series	1
24	Inductor	L2	4.7uH	Inductor	IND 68uH SRN6045 Series	1
25	600R@100MHz	L3, L4, L5, L6, L7, L8, L9, L10, L11	600R@100MHz	Inductor	IND 68uH SRN6045 Series	1
26	Liquid Crystal Display, 4 Lines, 20 characters, White BL	LCD1	NHD-0420HI-Z-FSW-GBW-33V3	20x4 LCD, 3.3V	LCD_20X4_Newhaven	9
27	LED Dual, Red & Green	LD1, LD2		LED Dual		1
28	Header, 2-Pin	P1, P3, P4, P5, P10		Header 2	HDR1X2	2
(Ritesh Wahlye)	Header, 8-Pin	P2		Header 8	HDR1X8	5
Commander	Header, 7-Pin	P6, P8, P12		Header 7	HDR1X7	1
3-Header	Header, 3-Pin	P7, P9, P11		Header 3	HDR1X3	3

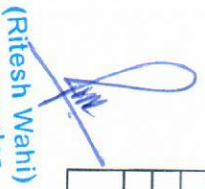
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32	Header, 5-Pin	P13																
33	Header, 10-Pin	P14, P15																
34	Potentiometer Resistor	Q1																
35	NPN General-purpose Transistor	Q2	200E															
36	Semiconductor Resistor	R1	BC847	SMD														
37	Semiconductor Resistor	R2	52.3K	SOT-23														
38	Semiconductor Resistor	R3, R6, R8, R9, R10, R11, R15, R22, R23, R24, R25, R26, R36, R37	2K	0603														
39	Semiconductor Resistor	R4	10K	0603														
40	Semiconductor Resistor	R5, R7, R20, R28, R38	100E	0603														
41	Semiconductor Resistor	R12, R30	470E	0603														
42	Semiconductor Resistor	R13, R16, R31, R39	560E	0603														
43	Semiconductor Resistor	R14	0E	0603														
44	Semiconductor Resistor	R17, R32	47E	0603														
45	Semiconductor Resistor	R18, R35, R40, R42, R47	4.7K	0603														
46	Semiconductor Resistor	R19, R34	15E	0603														
47	Semiconductor Resistor	R21, R29	12.0K, 1%	0603														
48	Semiconductor Resistor	R27, R33, R48	10M	0603														
49	Semiconductor Resistor	R41, R43, R45, R46	150E	0603														
50	Semiconductor Resistor	R44	330E	0603														
51	Push Button Switch	S1	100K	0603														
52	Metal Shield	SH1	SPDT Pushbutton 50x50 mm Shield/ Tamper Proofing	0603														
53	EZBuck(TM) 3A Synchronous Buck Regulator	U1	AOZ3013PI	Metal Shield														
54	800mA Low-Dropout Linear Regulator	U2	AOZ3013PI															
55	Single Channel Power Distribution Switch	U3, U4, U5	MIC2025	LM1117MP-3.3														
56	Hi-Speed USB Host, Device or OTG PHY with ULP/PI Low Pin Interface	U6, U12	USB3300	MIC2025-1														
57	Very low capacitance ESD protection, USB ESD Protector, USB ESD Protector	U7, U11, U15	USBLC6-2P6	USB3300														
58	ARM Cortex-M4 32b MCU+FPV, 210DMIPS, up to 1MB Flash/192+4KB RAM, USB OTG HS/FS, Ethernet, 17 TIMs, 3 ADCs, 15 comm. interfaces & camera	U8, U10, U14	STM32F407VGT6	USBLC6-2P6														
59	1024Kbit, 400KHz, 5V, I2C Serial EEPROM, 8-Pin DFN, Extended Temperature	U9	AT24C1024B	STM32F407VGT6														
60	8Mb Advanced LPDDR4 (1024k word x 8bit)	U13		24C1024														
61	Crystal Oscillator	Y1, Y3	24MHz	R1LV0808ASB-5SI														
62	Crystal Oscillator	Y2, Y4, Y5	12MHz	12MHz														
63	Aluminum Chassis 3mm thickness as per pcb dimension																	
64	Chassis mount illuminated push button switch																	
65	Chassis Mount Power button with Red led																	
66	Mounting Screw M3																	
67	Chassis Mount 1/2 AAA Battery Holder	M1, M2, M3, M4, M5, M6, M7, M8	M3															
68	CR2032 Coin Cell Battery	BAT1	3.3V															
69	Lithium Thionil Chloride battery	BAT2	3.6V 2400mAh	EBE														

Appendix 'C'

Bill Of Material for Prototype Manufacturing & Assembly of FPGA Engine based customized hardware Black Box

S.No.	Reference Designator	Qty	Part Number	Manufacturer	Value	Description
1	U4	1		Generic	2-pin Jumper	Header 2-Pin 2.54mm Pitch Male Through Hole
2	Y2	1		CTS-Frequency Controls	12MHz/SMD/	Crystal/Oscillator/Output Frequency: 12MHz/Frequency Tolerance: 20ppm/307/HC49/SMD-2
3	Q7-9	3	2STR1215	ST Microelectronics	2STR1215	SMD SOT23 Package
4	J3-5	3		Generic	3 Pin Berg Stick	Header 3 Pin 2.54mm pitch through hole Male
5	U10	1	74AC08SC	Fairchild	74AC08	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow
6	IC1-3,IC8	4	AOZ3013PI	Alpha & Omega	AOZ3013PI	SO-8 EP1
7	D15	1	BAT54C	ON semi	BAT54C	SOT-23
8	BATTERY1	1		Energizer	3.0V	Battery, Lithium Coin, 3.0V, CR2032
9	C37 C51 C65 C73 C83 C93 C103 C125	8		Generic	.47uF	CAP SMD 0603
10	C14-15	2		Generic	0.1uF	CAP SMD 0603
11	C16 C105 C109-110 C115-119	9		Generic	100nF	CAP SMD 0603
12	C32 C39-44 C53-58 C64 C67-68 C75-78 C8	31		Generic	10nF	CAP SMD 0603
13	C19	1		Generic	10uF	CAP SMD 1206
14	C3 C6 C9 C107	4		Generic	10uF/25V	CAP SMD 1206
15	C4 C7 C10 C108	4		Generic	22uF	CAP SMD 1206
16	C38 C52 C66 C74 C84 C94 C104 C126	8		Generic	4.7uF	CAP SMD 0603
17	C33-36 C45-50 C59-63 C69-72 C79-82 C89-92 C99-102 C120-124	36		Generic	47nF	CAP SMD 0603
18	C11-12	2		Generic	4x100n	CAP ARRAY SMD 0603
19	C18 C21-22 C24-25 C27 C29-31 C127-128	22		Generic	100nF	CAP SMD 0603
20	C132-142	1		Generic	100uF/16V	Capacitor/Aluminium/100uF/16V/±5%/Radial SMD
21	C129	1		Generic	10nF	CAP SMD 0603
22	C111-114	4		Generic	10uF/6.3V	CAP SMD 0603
23	C26	1		Generic	2.2uF/6.3V	CAP SMD 0603
24	C13 C17	2		Generic	2.2uF/6.3V	CAP SMD 0603
25	C2 C5 C8 C106	4		Generic	2n2	CAP SMD 1206
26	C130-131	2		Generic	47pF	CAP SMD 0603
27	C1	1		Nichicon	220uF/25V	Capacitor/Aluminium/100uF/16V/±5%/Radial SMD
28	IC4	1	MT46V32M1GP-5B	Micron	512Mb DDR	TSOP-66pin (DDR_SDRAM_256Mx16)
29	D12	1	NSQA6V8AW5T2G	ON semi	SDRAM RAM	
29	IC5	1	FTZ32RL	Future Devices	FTZ32RLSSOP	ESD Protection 28 PIN SSOP
30	P1-2	2		Generic	2x10 pin header	Header 2x10 Double Row 2.54mm Pitch Male Through Hole



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31	HEADER_IO	1		Generic	2x5 pin header	Header 2x5 Double Row 2.54m Pitch Male Through Hole
32	L1-4	4		TE Connectivity	4.7uH	Ferrite/Chip/6000hm/200mA/0805/SMD
33	L5-6	2		TE Connectivity	600R/200mA	Ferrite/Chip/6000hm/200mA/0805/SMD
34	D17-18	2		Generic	LED-yellow	LED/Yellow/0805/SMD
35	D5-11 D13-14	9		Generic	LED-green	LED/Green/0805/SMD
36	D1-4 D16	5		Generic	LED-Red	LED/Red/0805/SMD
37	MH1-4	4		Generic	Metallic Spacer	Threaded Metallic Spacer for M3
38	U5	1	MIC2025	MICREL	MIC2025	8-PIN SOIC
39	Q1-6	6	BC847	IXP	BC847	SOT23
40	SW-SPDT1	1		SPT Switch		Chassis Mount SPDT
41	IC6	1	XCF08P	Xilinx	XCF08P	VOG48 - Package
42	J1	1	PWR_JACK	Generic	PWR_JACK	Power Jack/3 Pin/Through Hole 2.5 ID 5.5 OD
43	R19	1		Generic	OE	RES SMD 0603
44	R22	1		Generic	10K	RES SMD 0604
45	R18	1		Generic	150E	RES SMD 0605
46	R15 R20-21	3		Generic	15E	RES SMD 0606
47	R23 R27	2		Generic	1M	RES SMD 0607
48	R61-62	2		Generic	33K	RES SMD 0608
49	U7	1		Renesas Electronics America	R1LV0808ASB	IC SRAM 44 TSOP
50	R34-35 R58-59	4		Generic	100E	RES SMD 0608
51	R60	1		Generic	10E	RES SMD 0609
52	R63-64	2		Generic	10K	RES SMD 0610
53	R28-29 R31 R52-57 R65-66 R69	12		Generic	1K	RES SMD 0611
54	R3	1		Generic	1K2	RES SMD 0612
55	R24-26	3		Generic	200E	RES SMD 0613
56	R13-14	2		Generic	220E	RES SMD 0614
57	R4 R8 R11 R37	4		Generic	2K4	RES SMD 0615
58	R12 R16-17 R30 R33 R38-51 R67 R70-71	22		Generic	330E	RES SMD 0616
59	R5	1		Generic	3K	RES SMD 0617
60	R32 R36 R73	3		Generic	4.7K	RES SMD 0618
61	R1 R6-7 R9	4		Generic	5K4	RES SMD 0619
62	R2	1		Generic	7K4	RES SMD 0620
63	R10	1		Generic	7K5	RES SMD 0621
64	LED1	2	VS NRD8	Victory Electronics	VS NRD8	Tricolour LED SMD
65	SB1	1		Generic	OE	RES SMD 0603
66	Y1	1	SG80021F	Epson Tbyocom	100MHz	SMD crystal Oscillator
67	U8-9 U12-13	4	SN741VC827A		SN741VC827A	SMD Buffer/Driver With 3-State Outputs SSOP - 24

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68	U6 U11	2	SN74LVCH8T245	Texas Instruments	SN74LVCH8T245	SN74LVCH8T245 8-BIT Dual-Supply Bus Transceiver With Configurable Level-Shifting, Voltage Translation, and 3-State Outputs
69	CN1	1		Generic	6-Pin Jumper	3X2-Pin Jumper, Through Hole
70	U3	1		ST Microelectronics	STM32F417VET6	IC MCU 32BIT 512KB Flash 100 LQFP
71	S1	1		C & K	3-Pin	DPDT ROCKER SWITCH, VERTICAL PCB MOUNT
72	BTN1-3	3				Push Button, SMD, 2-Pin
73	J2	1		C&K Components	PN11SHSA03QE	Switch/Push/SPDT/0.2A/30V/Through Hole
74	S2	1	36003500	Würth Electronics	36003500	50x50mm shield /temper proofing
75	USB1	1	USB-A1HSW6	Molex	USB-A1HSW6	USB connector female/USB A/ 4 POS/Right Angle/TH
76	J6	1	565790576	Molex	565790576	Connector/Receptacle/USB Mini AB/5-Position/Right Angle/SMD
77	U1	1	Spartan	Xilinx	XC6SLX25-FTG256	FTG-256 BGA
78	IC7	1	Xilinx JTAG Header	Generic	14 pin Male Header	2x7, 14 Pin, 2.54 mm Pitch Through hole, male Header
79		1				PCB 5x4mm 6 Layer,FR4, PTH, Green masking, ENG Finish, Thickness 1.6mm
80	IC11	1	S25FL128SAGMFI100	spanision	S25FL128SAGMFI100	128Mbit QSPI Memory SOIC-16

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