



**Bharat Heavy Electricals Limited**  
(A Govt. of India Undertaking)  
Corporate Office, New Delhi

**RECRUITMENT OF EXPERIENCED ENGINEERING PROFESSIONALS ON LATERAL BASIS  
FOR ELECTRONICS DIVISION (EDN), BANGALORE**

Bharat Heavy Electricals Limited (BHEL), is India's premier engineering and manufacturing enterprise since 1964, providing world class products and services, and catering to the core sectors of the Indian economy viz., Power (Thermal, Nuclear, Hydro & Solar) Generation, Power Transmission, Defence, Aerospace, Rail Transportation, Oil & Gas, e-mobility, with over 180 product offerings. Leveraging its extensive network of 16 Manufacturing Facilities, 08 Service Centres, 15 Regional Marketing Centres, 04 Regional Offices, 02 Repair Units, 3 active joint ventures, and more than 150 current project sites across India and abroad, BHEL delivers a wide range of high quality & reliable products adhering to national and international standards. The company achieved a turnover in excess of Rs 23,000 Crores in 2022-23. The Company has its footprint in all the inhabited 6 continents of the world with references in 89 countries.

BHEL offers a challenging and rewarding career to committed, qualified and experienced Engineers/Specialists for its Unit at EDN, Bangalore for Product Development/ Engineering in the field of Transportation, Control & Instrumentation, Drives and Inverters, Defence & Battery Pack/ACC Cells

**Vacancies:**

Post/ Grade & Scale of Pay	Total Vacancies*
<b>Senior Engineer/ E2</b> (Rs 70,000-2,00,000)	19
<b>Deputy Manager/ E3</b> (Rs 80,000-2,20,000)	10
<b>Senior Manager/ E5</b> (Rs 1,00,000-2,60,000)	4
<b>Total</b>	<b>33</b>

*\*The number of vacancies given above are tentative and actual requirement may vary on review, based on which the number of vacancies reserved for various categories may also undergo revision*

**Electronics Division (EDN), Bangalore (33 Vacancies)**

Sl No.	Post & Position Code/ Link Ref No.	Grade & No. of vacancies	Qualification* from a recognized University	Experience requirement (As on 01.03.2024)	Age Limit (As on 01.03.24)
1.	<b>Senior Engineer/ Power Electronics</b> <a href="#">EDN-COE-JD-01-A</a> <a href="#">EDNCOE001</a>	E2-04	<b>Essential:</b> Full time Degree- BE/B.Tech/B.Sc Engg. in Electrical /Electrical & Electronics Engg	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years

			<b>Desirable:</b> ME/M.Tech in Electrical Engineering or Power Electronics		
2.	<b>Senior Engineer/ Power Electronics (Mechanical)</b> <a href="#">EDN-COE-JD-03-A</a> <a href="#">EDNCOE005</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech/B.Sc Engg. in Mechanical Engineering <b>Desirable:</b> ME/M.Tech in Mechanical or any of the specialized branches of essential qualification	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
3.	<b>Senior Manager/ System Architect – Embedded H/W &amp; S/W</b> <a href="#">EDN-PDG-JD-01-A</a> <a href="#">EDNPDG006</a>	E5-02	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering/ Electronics & Communication Engineering/ Electrical & Electronics Engineering. <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialization related to Embedded systems	Total post qualification experience of minimum 15 years in areas as depicted in <a href="#">JD Link Ref</a>	42 Years
4.	<b>Senior Engineer/CE Module Development – Embedded H/W</b> <a href="#">EDN-PDG-JD-02-A</a> <a href="#">EDNPDG007</a>	E2-02	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering/ Electronics & Communication Engineering <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialization related to Embedded systems	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
5.	<b>Deputy Manager/CE Module Development - Embedded H/W</b> <a href="#">EDN-PDG-JD-02-B</a> <a href="#">EDNPDG007</a>	E3-01		Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref.</a>	36 Years
6.	<b>Senior Engineer/CE Module Development – Embedded RTOS S/W</b> <a href="#">EDN-PDG-JD-03-A</a> <a href="#">EDNPDG009</a>	E2-02	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering/ Electronics & Communication Engineering/ Computer Science <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialization related to Embedded systems	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
7.	<b>Deputy Manager/CE Module Development – Embedded RTOS S/W</b> <a href="#">EDN-PDG-JD-03-B</a> <a href="#">EDNPDG09</a>	E3-01		Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years
8.	<b>Senior Engineer/CE Module Development – Embedded FPGA</b> <a href="#">EDN-PDG-JD-04-A</a> <a href="#">EDNPDG011</a>	E2-02	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering/ Electronics &	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years

9.	<b>Deputy Manager/CE Module Development – Embedded FPGA</b> <a href="#">EDN-PDG-JD-04-B</a> <a href="#">EDNPDG011</a>	E3-01	Communication Engineering  <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialization related to Embedded systems	Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years
10.	<b>Senior Engineer/CE Module Development – PCB Design</b> <a href="#">EDN-PDG-JD-06-A</a> <a href="#">EDNPDG014</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering / Electronics & Communication Engineering  <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
11.	<b>Senior Manager/ CE Module Development – PCB Design</b> <a href="#">EDN-PDG-JD-06-B</a> <a href="#">EDNPDG014</a>	E5-01	<b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches	Total post qualification experience of minimum 15 years in areas as depicted in <a href="#">JD Link Ref</a>	42 Years
12.	<b>Senior Engineer/CE Model based Embedded S/W Development</b> <a href="#">EDN-PDG-JD-07-A</a> <a href="#">EDNPDG016</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics/ Electronics & Communication/ Electrical & Electronics Engineering  <b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
13.	<b>Senior Manager/ Power Electronics</b> <a href="#">EDN-SA-JD-01-A</a> <a href="#">EDNSAS017</a>	E5-01		Total post qualification experience of minimum 15 years in areas as depicted in <a href="#">JD Link Ref</a>	42 Years
14.	<b>Deputy Manager/ Power Electronics</b> <a href="#">EDN-SA-JD-02-A</a> <a href="#">EDNSAS017</a>	E3-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Electrical /Electrical & Electronics Engineering.  <b>Desirable:</b> ME/M.Tech in Power Electronics Engineering	Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years
15.	<b>Senior Engineer/ Power Electronics</b> <a href="#">EDN-SA-JD-03-A</a> <a href="#">EDNSAS019</a>	E2-01		Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
16.	<b>Senior Engineer/ Power Module (Mechanical)</b> <a href="#">EDN-SA-JD-04-A</a> <a href="#">EDNSAS020</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Mechanical Engineering  <b>Desirable:</b> ME/M.Tech in Mechanical Engineering	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
17.	<b>Senior Engineer/ Transportation</b> <a href="#">EDN-TPTN-JD-01-A</a> <a href="#">EDNSAS021</a>	E2-01	<b>Essential:</b> Full time BE/B.Tech Degree in Electrical / Electrical & Electronics Engineering/Electronics & Communication Engineering  <b>Desirable:</b>	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years

			ME/M.Tech in Electrical/Electronics/Communication/Signaling Engineering		
18.	<b>Senior Engineer/ Battery Pack Development</b> <a href="#">ESD-LMF-PDG-JD-01-A</a> <a href="#">ESDPDG022</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Mechanical Engineering  <b>Desirable:</b> ME/M.Tech in Mechanical Engineering	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
19.	<b>Senior Engineer/ Battery BMS Development</b> <a href="#">ESD-LMF-PDG-JD-02-A</a> <a href="#">ESDPDG023</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Electronics Engineering  <b>Desirable:</b> ME/M.Tech in Electronics Engineering or Power Electronics	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
20.	<b>Senior Engineer/ ACC Cell Design Development</b> <a href="#">ESD-LMF-PDG-JD-03-A</a> <a href="#">ESDPDG024</a>	E2-01	<b>Essential:</b> Full time Degree- BE/B.Tech in Chemical Engineering/Electroche mical Engineering  <b>Desirable:</b> ME/M.Tech in Chemical Engineering/Electroche mical Engineering	Total post qualification experience of minimum 5 years in areas as depicted in <a href="#">JD Link Ref</a>	32 Years
21.	<b>Deputy Manager/ Naval Control Systems</b> <a href="#">EDN-DABG-DE-JD-01-A</a> <a href="#">EDNDAB025</a>	E3-03	<b>Essential:</b> Full time Degree- BE/B.Tech Graduate in Electronics/ Electrical/Instrumentatio n/Computer Science Engg.  <b>Desirable:</b> ME/M.Tech in Control Systems or any of the specialized branches of the essential qualification.	Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years
22.	<b>Deputy Manager/ Active Protection System</b> <a href="#">EDN-DABG-DE-JD-02-A</a> <a href="#">EDNDAB026</a>	E3-02	<b>Essential:</b> Full time Degree- BE/B.Tech Graduate in Electronics/ Computer Science Engg.  <b>Desirable:</b> ME/M.Tech in Opto- electronics, Telemetry, Mission Critical Embedded Systems.	Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years
23.	<b>Deputy Manager/ Naval Battery Packaging</b> <a href="#">EDN-DABG-DE-JD-03-A</a> <a href="#">EDNDAB027</a>	E3-01	<b>Essential:</b> Full time Degree- BE/B.Tech Graduate in Electronics/ Electrical Engg.  <b>Desirable:</b> ME/M.Tech in Electronics or Power Electronics Engineering	Total post qualification experience of minimum 9 years in areas as depicted in <a href="#">JD Link Ref</a>	36 Years

**Note: -**

- In case of candidates possessing a full – time Post-Graduate Technical Degree, a relaxation in age limit shall be given upto the course duration and for a maximum of 2 years.
- In case of candidates possessing more than required no. of years of relevant experience for a particular position, age relaxation shall be given for equivalent no. of years (Full completed years, ignoring the decimal points) over and above minimum prescribed experience eligibility for that position, subject to a maximum of 2 years.
- BE/ B -Tech degree or ME/ M-Tech Degree, as applicable should be recognized by AICTE and from a recognized University\*

*\*University incorporated by an Act of the Central or State Legislature in India or other Educational Institutions established by an Act of Parliament or declared to be deemed as Universities under Section 3 of the University Grants Commission Act, 1956*

- Period of service spent under Internship training shall not be considered as work experience.
- Candidates would be allowed to apply for each position separately. In case of candidates' eligibility in experience falling short of the required no. of years for particular position, the application would be rejected and no provision shall be made to consider the application for a lower position

**Reservations & Relaxations:**

The above vacancies are reserved as follows:

Unit	UR	EWS	OBC	SC	ST	Total*
EDN, Bangalore	12	4	9	4	4	33

UR–Unreserved, OBC–Other Backward Class (NCL), SC–Scheduled Caste, ST–Scheduled Tribe

\*Reservations for EWS & PWD will be done in accordance with the Government guidelines

1. Vacancies reserved for OBC category are meant only for OBC candidates coming under 'Non-Creamy Layer' (NCL) as defined under Government Rules. The OBC candidates who do not belong to Non Creamy Layer should indicate their category as General only (Latest amendment in Annual Income criteria notified vide DOPT OM No.36033/1/2013-Estt. (Res) dated 13.09.2017).
2. Upper age limit is relaxable by 5 years for SC/ST and 3 years for OBC (Non-creamy Layer) candidates. For PwD category candidates age is relaxable by 10 years for General candidates, 13 years for OBC (Non-Creamy Layer) and 15 years for SC/ST category as per rules.
3. The above notified positions are identified suitable for the disabilities as indicated under the relevant provisions of Rights of Persons with Disability Act (RPwD) 2016 and subsequent rules on the matter
  - (a)Locomotor disability
  - (b) Leprosy cured
  - (c) Dwarfism
  - (d) Acid Attack Victims
  - (e) Blindness (Single Eye)
  - (f) Deaf
  - (g) Hard of Hearing and
  - (h) Speech & Language Disability
4. The age concession to the PwD shall be admissible irrespective of the fact whether the post is reserved for person with disabilities or not, provided the post is identified suitable for the relevant category of disability.
5. Upper age limit is relaxed by 5 years for the candidates who had ordinarily domiciled in the state of Jammu & Kashmir during the period from 01/01/1980 to 31/12/1989.

**Emoluments and Benefits:**

The selected candidates will be normally placed at the minimum of the pay scale and will be on probation for a period of one year.

Post & Grade*	Pay Scale (IDA-Pattern)
Senior Engineer - E2	70000-200000
Deputy Manager – E3	80000-220000
Senior Manager – E5	100000-260000

**\* Candidates joining in their respective grades after selection by BHEL shall be put under probation for a period one year.**

Besides the Basic pay (normally the minimum of the scale), selected candidates will be entitled to a Cafeteria of perks, Industrial Dearness Allowance. Other allowances and benefits such as Leave, Medical facilities for self and dependent family members, Provident Fund, Gratuity, Uniform, Company's accommodation or HRA etc. will be admissible as per Company Rules as applicable from time to time.

### **Selection Process:**

Selection process will comprise of Personal interviews only. However, in case the number of applications received from eligible candidates are more than ten times the number of vacancies, candidates will be shortlisted for being called for interview in the ratio of 1:10 to the number of vacancies on the basis of aggregate marks of all semesters/ years secured in B.E/ B.Tech degree.

(1) Candidates invited for Personal Interview will be paid fare restricted to AC 2 Tier Class to and fro rail fare (irrespective of the mode of travel) from the starting station or the mailing address whichever is nearer to the place of interview by the shortest route on production of proof of journey.

(2) Candidates presently employed in Central/ State Government, Autonomous bodies, PSUs may apply through 'Proper channel' or submit 'No Objection Certificate' at the time of Interview and shall be required to produce relieving order from their organization, in the event of selection.

(3) Incomplete applications (columns of the format not filled in or all requisite documents not enclosed) or those in format other than the one prescribed in the Online Application Form will not be entertained.

**Position/Post-Code (For Ex. "Senior Engineer/ Power Electronics ") applied for should be super-scribed on the envelope carrying the duly filled-in application.**

### **Health Standards:**

Applicants should possess sound health. Before joining, selected candidates will have to undergo medical examination by the Company's Authorized Medical Officer and the appointment will be subject to meeting the health standards prescribed by the Company. No relaxation in health standards is allowed. The Company's Medical Examination rules can be accessed on the website <http://careers.bhel.in>.

The Persons with Disability candidates are required to furnish self-attested copy of duly stamped Medical Certificate in relation to their benchmark disability from Government Hospital or Medical Board attached to Special Employment Exchange for the handicapped.

### **General Instructions:**

1. The submission of applications will be ONLINE through our website <https://edn.bhel.com> or <http://careers.bhel.in>, followed by Hard Copy submission of documents. Applicant must read the instructions and ensure that the application is submitted successfully and transaction with reference to payment of processing fee is successfully transacted. No other mode of application shall be entertained.
2. Application Processing fee will be applicable as indicated below:

<b>Applicable Fees for BHEL Lateral Recruitment – 2024</b>	
Category	Processing Fee
UR/EWS/OBC	Rs 400 + 18% GST (Rs. 472/-)
SC/ST/PWD/Ex-Servicemen	

3. This fee is to be paid online by depositing the amount of Rs 400/- + 18% GST (Rs. 472/-) in favour of M/s BHEL, EDN through SBI Collect Portal. Details of depositing fees are available under tab "Instruction" at website <http://www.careers.bhel.in>. After depositing the fees, the candidate will be allotted a Bank Reference No. This number is to be entered by the candidate while filling the online application form. Candidates are required to send a copy of this Bank Transaction receipt along with the Acknowledgement slip generated at the time of applying. No other mode of payment is acceptable.
4. In case of multiple submission of ONLINE applications from same applicant, only the last eligible application shall be considered as final submission for candidature in BHEL.
5. The applicant may have to bear Bank Charges over & above the processing fees, depending upon fees payment through Internet banking/Debit card/ Credit Card etc.
6. The applicant /Candidate should ensure that they fulfil the eligibility criteria and other requirements and that the particulars furnished by them are correct in all respect. In case it is detected at any stage of recruitment process that the candidate does not meet the eligibility criteria and/or the candidate has furnished any incorrect/false information or has suppressed any material fact(s), the candidature of such a candidate is liable to be rejected. If any of the above shortcoming(s) is/are detected, even after appointment, his/her services are liable for suitable actions including termination and prosecution.
7. Candidates not having relevant post qualification experience in areas mentioned under "**Experience Requirements**" need not apply. (Note: Post qualification experience should be exclusive of Trainee/Apprenticeships period, if any.)
8. Wherever CGPA/OGPA/DGPA or Letter Grade in a degree / diploma is awarded, its equivalent percentage of marks must be indicated in the application form as per norms adopted by University / Institute. Proof of norms adopted by the University/ Institute to convert CGPA/OGPA/DGPA into percentage is to be submitted at the time of interview, if called for.
9. Short listed candidates will be individually informed through e-mail (E-Mail Id as provided in the application form) about the Personal Interview.
10. SC, ST, OBC (Non-Creamy Layer), EWS, PwD, J&K domiciled candidates and ex- servicemen should carefully mention the categories, since these details may not be allowed to be changed later. Accordingly, candidates are required to enclose necessary documentary proof with the application. SC/ST/OBC Candidates, while applying for a post where there are no vacancies in their respective reserved categories, will be treated as General candidates and no relaxation will be applicable to these candidates.
11. Candidates applying under EWSs category should fulfil the conditions stipulated for applying under 'Reservation for Economically Weaker Sections (EWSs) in civil posts and services in Government of India' issued vide DoPT OM dt.31.01.2019. Such candidates should attach the requisite certificate certifying their "Income and Asset of the family", from an officer not below the rank of Tehsildar, along with their application and at the time of Document Verification/ Scrutiny.
12. Applications that are not in conformity with the requirements indicated in this advertisement/ incomplete application will not be entertained.
13. Candidates who have left a PSU after voluntary retirement shall be considered only if he/she agrees to return the VRS compensation received to the PSU concerned.
14. Candidates shall be allowed to apply for each position separately, in case of candidates' eligibility in experience falling short of the required no. of years for particular position, the application shall be rejected and no provision shall be made to consider the application for a lower position.
15. For the first five years after date of joining, no applications initiated by selected candidates for Transfer shall be entertained, however, on Company's requirements, the candidates may be transferred to any of the Company offices/ Divisions, anywhere in India or abroad.
16. Applications which are incomplete in any detail, not legible or without all the required enclosures or received after the last date for receipt of applications will be rejected and no correspondence on this will be entertained.

17. The candidature of applicants at all stages of selection process will be provisional and is subject to satisfying the prescribed eligibility conditions. Mere issue of Interview call letter to the candidate will not imply that his/her candidature has been finally cleared by BHEL. BHEL takes up verification of eligibility conditions with reference to original documents once again, at the time of Interview and after the candidate has been selected for the post.
18. Candidates are advised to possess a valid e-mail ID, which is to be entered in the on-line Application Form. They are also advised to retain this e-mail ID active for at least one year as any important intimation to the candidates shall be provided by BHEL through e-mail. They are further requested to check regularly their e-mail (including message in SPAM folder) for any communication from BHEL in this regard. Any important information including Corrigendum/Changes/Updates and information / general instructions during the course of recruitment process and on selected candidates shall be made available either through the website or on the email id and keep it active for at least one year, simultaneously tracking the website for updates.
19. BHEL reserves the right to cancel/ restrict/increase/ reopen the recruitment process, if the need so arises, without issuing any further notice or assigning any reason thereof. Posts indicated herein may be kept unfilled at the discretion of management.
20. In case of non-joining of a candidate or candidate found medically unfit, waitlist may be operated at the discretion of management.
21. Any legal proceedings in respect of any matter of claim or dispute arising out of this advertisement and/or an application in response thereto shall be subject to jurisdiction of the Courts/ Tribunals/Forums (Jurisdiction Courts) at New Delhi.
22. BHEL recruitment website <http://careers.bhel.in/> or <https://edn.bhel.com> will provide necessary details regarding, important dates/ FAQs/ Document Verification/ Interview call letters etc. No separate communication shall be sent to the candidate by post. It shall be the responsibility of candidate to read the detailed instructions on the website and adhere to application requirements. Candidates are advised to visit the website <https://edn.bhel.com> or <http://careers.bhel.in/> regularly for updates.
23. Mere conformity to the job requirements will not entitle a candidate, for calling for Interview.
24. Indian Nationals only need to apply.
25. Canvassing in any form will be a disqualification.
26. No correspondence will be entertained from candidates not invited / selected for interview.
27. For any queries regarding this recruitment please send email to [recruit.edn@bhel.in](mailto:recruit.edn@bhel.in)

#### **How to apply:**

1. The applications for selection to the above posts will be accepted ONLY ONLINE through our recruitment website <https://careers.bhel.in> or <https://edn.bhel.com>. **No other mode of application shall be entertained.**
2. The candidates are required to fill the online application and the particulars of the fee, if applicable. A non-refundable fee of Rs.400/- + 18 % GST (Rs. 472/-) is to be paid online through SBI Collect [Link provided in the website]. The receipt/journal no. given by the bank on payment of fee needs to be entered in the online Application Form and print-out of the receipt wherever applicable needs to be sent along with the application form. Any other mode of payment i.e Demand Draft, Money Order, Postal Order, Cheque, etc. is NOT acceptable
3. Our website <http://careers.bhel.in/> or <https://edn.bhel.com> will provide necessary details regarding how to apply, general instructions, last date of submission of applications, requisite Formats to be downloaded, etc.

After successfully submitting the online application, the candidate is required to print the application format which will have the unique acknowledgement No. and send it along with fee receipt and requisite documents to AGM (HR), BHEL and to reach the below address **on or before 03.04.2024.**

**Post Box No. 3842  
BHEL House, Sirifort,  
New Delhi – 110049**



5. BHEL shall not be responsible for any postal loss/ postal delay in receipt of applications.
6. The envelope containing the application form should be super-scribed as “BHEL - Lateral Recruitment - Position/Post-Code (For Ex. “Senior Engineer/ Power Electronics “)”.
7. The necessary documents as listed below (self- attested photo copy) are required to be sent along with the application **on or before 03.04.2024**
- i. Fee receipt as mentioned in the Application Form.
  - ii. SSLC/HSC mark sheet of Birth Certificate (in support of Date of Birth)
  - iii. Qualification mark sheets and certificates of B.E/B Tech Degree (for all positions) & M. Tech of all semesters (In case, claiming age relaxation or applicable positions)
  - iv. Community certificate –SC/ST/OBC as per prescribed certificate in various government notifications from time to time. OBC(NCL) certificate to be as per latest guidelines of government and in any event not more than one year old. In case of OBC a self-undertaking regarding non creamy layer status is also to be submitted which is available on BHEL Careers website.
  - v. If claiming age relaxation as candidate from J & K, relevant certificate.
  - vi. Mark sheets of all semesters/consolidated mark sheet of Degree/ME qualification.
  - vii. Additional qualification, if any.
  - viii. Proof of norms adopted by the University/ Institute to convert CGPA/OGPA/DGPA into percentage.
  - ix. Certificates as proof of experience: In the absence of proper service certificates, candidates shall be required to send (joining letter/relieving order) and in case of serving employees, (latest salary certificate/ slip) may be sent in place of relieving order along with Joining Letter.

**IMPORTANT DATES:**

<b>Milestones</b>	<b>Scheduled Date</b>
Start of Online submission of application	11.03.2024 [10.00 AM onwards]
Close of Online submission of application	31.03.2024 [Up Till 11:00 PM]
Last date of receipt of hard copy of online submitted Applications and Documents	03.04.2024
Last Date of receipt of Hard copies of online submitted Applications and Documents from far flung areas*	05.04.2024

\*For far Flung area: For candidates residing in Assam, Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Sikkim, Jammu & Kashmir, Lahaul & Spiti District, and Pangti Sub-Division of Chamba District of Himachal Pradesh, Andaman & Nicobar Islands or Lakshadweep.

Beware of Job Racketeers trying to deceive the candidates by false promises of securing Job in BHEL either through influence or by use of unfair and unethical means. BHEL has not authorized any person/institution/body to recruit on its behalf. Please refer to Public Notice issued by BHEL on our website – [careers.bhel.in](http://careers.bhel.in)

## Job Description for Sr. Engineer– Power Electronics(COE)

<b>JD Link Ref No.</b>	<b>EDNCOE001</b>
<b>Position:</b>	Senior Engineer (E2) - COE for Power Electronics
<b>Position code(s):</b>	<b>EDN-COE-JD-01-A</b>
<b>Grade/Pay Scale</b>	Senior Engineer (E2)- Rs 70000-200000
<b>Qualification:</b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech/B.Sc Engg. in Electrical Engineering/Electrical &amp; Electronics Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Electrical Engineering or Power Electronics.</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 05 years of post-qualification experience for applying to Senior Engineer (E2) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <ul style="list-style-type: none"> <li>• Design / Development, System engineering, testing and commissioning MW range of Thyristor/IGBT based Power Electronics converters for Industrial /Renewable/Electric Power Grid applications.</li> <li>• Application software development using different embedded tools like Code Composer Studio.</li> <li>• Modelling, simulation and code generation using MATLAB/Simulink or similar software for Power electronics related system.</li> <li>• Generation of manufacturing documents for Power electronics Converter systems.</li> <li>• Experience of/Exposure to in EMC agency certification processes: UL / others.</li> <li>• Experience in Prototype, test, and validate Power electronic circuits and systems according to industry standards.</li> </ul> <p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of IGBT / Thyristor based high power inverters with insatiable quest for excellence and passion for continuous profession growth</p>
<b>Desirable Skills:</b>	<p>Experience of handling Power Electronics Based Projects of PCU-Solar Power Conditioning Unit / PCS- Power Conversion systems for BESS.</p> <p>Experience handling Power Electronics Based Systems of MV Variable Frequency drives (Current source/Voltage Source Inverters).</p> <p>Experience of handling Power Electronics Based Systems Like HVDC/STATCOM</p>

## Job Description for Sr. Engineer– Mechanical (COE)

<b><u>JD Link Ref No.</u></b>	<b>EDNCOE005</b>
<b><u>Position:</u></b>	Senior Engineer(E2) - COE for Power Electronics (Mechanical)
<b><u>Position code(s):</u></b>	<b>EDN-COE-JD-03-A</b>
<b><u>Grade &amp; Pay Scale</u></b>	Senior Engineer(E2) - Rs 70000-200000
<b><u>Qualification:</u></b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech/B.Sc Engg. in Mechanical Engineering from a recognized University</p> <p><b>Desirable:</b> ME/M.Tech in Mechanical Engineering or any of the specialized branches of the essential qualification.</p>
<b><u>Experience Requirements:</u></b>	<p>The prospective candidate should have at least 05 years of post-qualification experience for applying to Senior Engineer(E2) position and exposure in handling the following areas in relevant industry shall be given preference :</p> <ul style="list-style-type: none"> <li>• Mechanical Design / Development of MW range IGBT based Power Electronics converters for Industrial /Renewable/Electric Power Grid applications.</li> <li>• Thermal modelling and simulation heat flow in IGBT based inverter systems.</li> <li>• Design of cooling systems for IGBT based inverters with forced air / water cooling systems.</li> <li>• 3D modelling of IGBT based power electronics systems and control panels in Autodesk Inventor or similar Software packages.</li> <li>• Generating manufacturing documents for IGBT based power electronics systems.</li> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of IGBT based high power inverters with insatiable quest for excellence and passion for continuous profession growth.</li> </ul>
<b><u>Desirable Skills:</u></b>	<p>Experience of mechanical design Power Electronics Based Systems of Solar Power Conditioning Unit /Variable Frequency drives/HVDC/STATCOM.</p> <p>Experience in Design of Power Converter Panel for outdoor duty.</p> <p>Experience in Shock and vibration analysis</p>

## Job Description for Senior Manager- System Architect in Embedded Hardware and Software

<b><u>JD Link Ref No.</u></b>	<b>EDNPDG006</b>
<b><u>Position:</u></b>	Senior Manager(E5)- System Architect in Embedded Hardware and Software
<b><u>Position code(s):</u></b>	<b>EDN-PDG-JD-01-A</b>
<b><u>Grade/ Pay Scale</u></b>	Senior Manager(E5) - Rs 100000 -260000
<b><u>Qualification:</u></b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering / Electrical &amp; Electronics Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches of the essential qualification.</p>
<b><u>Experience Requirements:</u></b>	<p>The prospective candidate should have at least 15 years for applying to Senior Manager (E5) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <ul style="list-style-type: none"> <li>• Working experience with role &amp; responsibilities of System/Control architect in Designing of control cards using Domain knowledge of locomotive/ train control</li> <li>• Work experience in Hardware, leading the teams in the following areas <ul style="list-style-type: none"> <li>○ Microcontroller – ARM based Hardware Circuit Design / Processor- Intel Atom SBC Design</li> <li>○ DSP -Analog Devices TigerSharc/Sharc, Texas Instruments - Delfino &amp; other DSP</li> <li>○ FPGA - Intel/Xilinx Cyclone/SOC/Arria/Artix/Virtex</li> <li>○ High Speed Digital Design, Analog Design, Power supply Design</li> <li>○ Minimum &gt;= 8-layer PCB designs</li> </ul> </li> <li>• Work experience in Software, leading the teams in the following areas <ul style="list-style-type: none"> <li>○ Porting of RTOS-UCos/ Qnx /LinuxRT/VxWorks</li> <li>○ Development of ARM based Board Support Package</li> <li>○ Development of Device Drivers , USB, Ethernet etc.,,</li> <li>○ Knowledge of Communication Protocols (CAN, MVB/TRDP, TCP_IP etc., )</li> <li>○ Worked on Programming languages - C (big projects &gt;150KLOC)</li> <li>○ DSP - MATLAB, Simulink</li> <li>○ FPGA based Software design</li> <li>○ Locomotive/ train control /DCS middleware and Applications</li> </ul> </li> </ul>
<b><u>Desirable Skills:</u></b>	<ul style="list-style-type: none"> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for Control &amp; Instrumentation or Propulsion equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth</li> <li>• Good understanding of relevant Train IEC standards</li> <li>• Experience of/exposure to Cybersecurity features, devices and software packages</li> </ul>

## Job Description for Senior Engineer/Deputy Manager - Embedded Hardware Senior Engineer/ Team Lead

<b>JD Link Ref No.</b>	<b>EDNPDG007</b>
<b>Position:</b>	Senior Engineer - Embedded Hardware Senior Engineer Deputy Manager- Embedded Hardware team Lead
<b>Position code(s):</b>	<b>EDN-PDG-JD-02-A, EDN-PDG-JD-02-B</b>
<b>Grade &amp; Pay Scale</b>	Senior Engineer: E2 - Rs 70000 -200000 Deputy Manager: E3 - Rs 80000 -220000
<b>Qualification:</b>	<p><b>Essential for Sr Engineer &amp; Deputy Manager:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches related to Embedded systems</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 5 years of post-qualification experience for applying to Senior Engineer (E2) position and at least 9 years of post-qualification experience for applying to Deputy Manager (E3) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <p><b>Experience for Senior Engineer / Deputy Manager: -</b> Working experience with role &amp; responsibilities in Designing of control cards using</p> <ul style="list-style-type: none"> <li>• Hardware – <ul style="list-style-type: none"> <li>○ Microcontroller - ARM based Hardware Circuit Design/ Processor- Intel x86 Atom / ARM7tdmi / ARM Cortex</li> <li>○ DSP - Analog Devices DSP- TigerSharc / Texas Instruments - Delfino</li> <li>○ FPGA- Intel/Xilinx --Cyclone/SOC/Arria/Spartan</li> <li>○ High Speed Digital Design, Analog Design, Power supply Design</li> <li>○ Minimum &gt;= 8 layer PCB designs</li> <li>○ High speed protocols - PCI Express, Ethernet, USB, CAN, MVB/ TRDP, TCP_IP</li> </ul> </li> <li>• Understanding of Signal Integrity Analysis in High speed design using any one or more simulation tools such as ANSYS SiWave / Cadence Allegro / Hyperlynx, etc, <ul style="list-style-type: none"> <li>○ Experience in Prototype bring-up, debugging, functional verification</li> <li>○ Interfacing with PCB Design, Software and System Design Team</li> </ul> </li> </ul> <p><b>Experience Additionally for Deputy Manager: -</b></p> <ul style="list-style-type: none"> <li>• Working experience with role &amp; responsibilities of Team Lead and the following <ul style="list-style-type: none"> <li>○ Understanding of Power Distribution Network Analysis methodologies for Power Integrity Analysis,</li> <li>○ Understanding of Thermal Analysis -air and conduction cooled</li> <li>○ EMI/EMC pre &amp; compliance testing and analysis using ANSYS SiWave or other tools</li> </ul> </li> </ul>
<b>Desirable Skills:</b>	<ul style="list-style-type: none"> <li>• Problem Solving/Root Cause Analysis Skills for Embedded Systems</li> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for control &amp; instrumentation or Propulsion equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth.</li> </ul>

## Job Description for Senior Engineer/Deputy Manager - Embedded RTOS Software Senior Engineer/ Team Lead

<b>JD Link Ref No</b>	<b>EDNPDG009</b>
<b>Position:</b>	Sr Engineer- Embedded RTOS Software Senior Engineer Deputy Manager - Embedded RTOS Software Team Lead
<b>Position code(s):</b>	<b>EDN-PDG-JD-03-A, EDN-PDG-JD-03-B</b>
<b>Grade/Pay Scale</b>	Senior Engineer (E2) - Rs 70000 -200000 Deputy Manager (E3) - Rs 80000 -220000
<b>Qualification:</b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering / Computer Science from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches related to Embedded systems</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 5 years of post-qualification experience for applying to Senior Engineer (E2) position and at least 9 years of post-qualification experience for applying to Deputy Manager (E3) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <p><b>Experience for Senior Engineer / Deputy Manager:-</b> Working experience in Designing of Embedded RTOS Software for Intel x86, ARM processors control cards using</p> <ul style="list-style-type: none"> <li>• Porting of RTOS Software - UCos / Linuxrt/ QNX / VxWorks</li> <li>• Working with Board support package for Intel x86 Atom, ARM processors- ARM7TDMI / cortex</li> <li>• Experience working with Protocols - Networking-( CAN, MVB,WTB, TRDP, TCP/IP) , Storage(USB, Flash), Input/output &amp; graphics</li> <li>• Experience in Programming languages - C, C#, VB (above 100 KLOC)</li> <li>• Experience of Reverse engineering</li> </ul> <p>Interfacing with the Hardware design and System Design Team and well versed with unit, functional and integration testing</p> <p><b>Additionally, for Deputy Manager:</b></p> <ul style="list-style-type: none"> <li>• Working experience with role &amp; responsibilities of Team Lead and the following <ul style="list-style-type: none"> <li>○ Development of Board support packages</li> <li>○ Development of Device Drivers, - USB, Ethernet,</li> <li>○ addressing the critical aspects of the (UCos / Linuxrt/ QNX / VxWorks) OS kernel for an embedded device</li> </ul> </li> </ul>
<b>Desirable Skills:</b>	<ul style="list-style-type: none"> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for control &amp; instrumentation or Propulsion equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth</li> <li>• Experience of best practices in software development processes</li> <li>• Experience of continuous integration , automated test tools and frameworks.</li> <li>• Experience of/exposure to Cybersecurity features, devices and software packages</li> <li>• Exposure of coding standards for defence techniques and standards such as MISRA</li> </ul>

## Job Description for Senior Engineer/Deputy Manager - Embedded FPGA Design Senior Engineer/ Team Lead

<b>JD Link Ref No.</b>	<b>EDNPDG011</b>
<b>Position:</b>	Senior Engineer - Embedded FPGA Design Senior Engineer Deputy Manager- Embedded FPGA Design team Lead
<b>Position code(s):</b>	<b>EDN-PDG-JD-04-A, EDN-PDG-JD-04-B</b>
<b>Grade / Pay Scale</b>	Senior Engineer: E2 - Rs 70000 -200000 Deputy Manager: E3 - Rs 80000 -220000
<b>Qualification:</b>	<p><b>Essential for Sr Engineer &amp; Deputy Manager:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches related to Embedded systems</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 5 years of post-qualification experience for applying to Senior Engineer (E2) position and at least 9 years of post-qualification experience for applying to Deputy Manager (E3) position and exposure in handling the following areas in relevant industry shall be given preference :</p> <p><b>Experience for Senior Engineer / Deputy Manager:-</b> Working experience in</p> <ul style="list-style-type: none"> <li>• Thorough experience of using Intel/ Altera development tool chains</li> <li>• Experience in RTL design using VHDL/verilog-design complexity ~16K</li> <li>• Understand CDC, STA and other timing considerations in the context of FPGA.</li> <li>• Advanced knowledge of clocking, memory and other FPGA needs.</li> <li>• Knowledge of Designing of control cards using Intel FPGA devices</li> <li>• Understanding Latest Standard Communication Protocols (CAN,TCP_IP, and or MVB/TRDP )</li> <li>• Experience of functional testing and test tools</li> </ul> <p style="padding-left: 40px;">Interfacing with the Hardware, software, PCB design and System Design Team</p> <p><b>Experience additionally for Deputy Manager: -</b> Working experience with role &amp; responsibilities of Team Lead and the following</p> <ul style="list-style-type: none"> <li>• Design of IP cores/protocols: HDLC/ SPI etc.,</li> <li>• FPGA Design detailed architecture and interface specification</li> <li>• Experience in using constraints to achieve timing requirement</li> <li>• Experience in building test bench for verification.</li> <li>• Experience in board level testing and system debugging.</li> <li>• Experience of Reverse engineering</li> <li>• Basic Porting knowledge of Linux/QNX/VxWorks on SOC</li> </ul>
<b>Desirable Skills:</b>	<p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for control &amp; instrumentation or Propulsion equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth</p> <ul style="list-style-type: none"> <li>• Design of IP cores/protocols: Ethernet redundancy /HDLC, SPI etc.,</li> <li>• Design based on System On Chip(SOC)</li> <li>• Experience of best practices in software development processes</li> <li>• Experience of continuous integration, automated test tools and frameworks.</li> <li>• Exposure of coding standards for defence techniques and standards such as MISRA</li> </ul>

## Job Description for Senior Engineer/Senior Manager - PCB Design Senior Engineer/ Team Lead

<b>JD Link Ref No.</b>	<b>EDNPDG014</b>
<b>Position:</b>	Senior Engineer (E2)- PCB Designer Senior Manager(E5)- Lead in PCB Design, Signal , Power Integrity and EMC Analysis
<b>Position code(s):</b>	<b>EDN-PDG-JD-06-A, EDN-PDG-JD-06-B</b>
<b>Grade/ Pay Scale</b>	Senior Engineer (E2)- Rs 70000 – 200000 Senior Manager(E5) - Rs 100000 -260000
<b>Qualification:</b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches related to the field of Embedded systems.</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 5 years of post-qualification experience for applying to Senior Engineer (E2) position and at least 15 years of post-qualification experience for applying to Senior Manager (E5) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <p><b>Experience for Senior Engineer(E2) /Senior Manager(E5):-</b> Working experience in PCB Designing of control cards</p> <ul style="list-style-type: none"> <li>• PCB Designing on any one or more PCB EDA Platforms Altium Tools / zuken tools- CADSTAR</li> <li>• PCB Design Minimum &gt;= 8 layer PCB design, Library management, PCB Layout and routing</li> <li>• PCB Design for Propulsion-Train/ Aerospace / Mil standard Class 3 pcbs</li> <li>• Understanding of PCB Design Standards, Design for Manufacturing and Testing</li> <li>• PCB design based on the following devices <ul style="list-style-type: none"> <li>○ Intel Atom/ i3 Processor / PowerPC /Microcontroller – ARM7TDMI/ ARM Cortex</li> <li>○ DSP - Analog Devices TigerSharc / Texas Instruments - Delfino / other DSP</li> <li>○ FPGA -Intel/Xilinx --Cyclone/SOC/Arria/Spartan</li> </ul> </li> <li>• High Speed Digital Design, Analog Design, Power supply Design,</li> <li>• Knowledge of Communication protocols-PCI Express, Ethernet, USB , CAN,TCP_IP, and or MVB/TRDP etc.,</li> <li>• Experience in Interfacing with the PCB fabricator, PCB Assembler, Hardware design and System Design Teams</li> </ul> <p><b>Experience additionally for Sr Manager:-</b> Working Experience in Handling both big &amp; small projects within deadlines &amp; able to lead a group of pcb engineers.</p> <ul style="list-style-type: none"> <li>• PCB Designing on any one or more PCB EDA Platforms Altium Tools / Zuken tools -CADSTAR/ Cadence tools –ALLEGRO, ORCAD</li> <li>• Experience in Signal Integrity Analysis in High speed design using any one or more simulation tools such as ANSYS SiWave / Cadence Allegro / Hyperlynx, etc,</li> <li>• Power Distribution Network Analysis methodologies for Power Integrity Analysis,</li> <li>• Understanding of Thermal Analysis -air and conduction cooled</li> <li>• EMI/EMC analysis using ANSYS SiWave or other tools,</li> </ul>
<b>Desirable Skills:</b>	<ul style="list-style-type: none"> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for control &amp; instrumentation or Propulsion equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth</li> <li>• Problem Solving/Root Cause Analysis Skills in PCB's of Embedded Systems</li> </ul>



## Job Description for Senior Engineer - Embedded Model based Software Development

<b>JD Link Ref No.</b>	<b>EDNPDG016</b>
<b>Position:</b>	Senior Engineer(E2) - Embedded Model based Software Development
<b>Position code(s):</b>	<b>EDN-PDG-JD-07-A</b>
<b>Grade &amp; Pay Scale</b>	Senior Engineer(E2) - Rs 70000 - 200000
<b>Qualification:</b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech in Electronics Engineering / Electronics &amp; Communication Engineering / Electrical / Electrical &amp; Electronics Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Embedded systems or any of the specialized branches of the essential qualification.</p>
<b>Experience Requirements:</b>	<p>The prospective candidate should have at least 5 years of post-qualification experience for applying to Senior Engineer (E2) position and exposure in handling the following areas in relevant industry shall be given preference :</p> <p>Working experience in Coding Embedded software of control cards using software</p> <ul style="list-style-type: none"> <li>• MathWorks tools (MATLAB, Simulink, Stateflow, HDL Coder) for DSP of OEMs- Analog Devices-TigerSharc / Texas Instruments-Delfino &amp; other DSP</li> <li>• Basic Knowledge in Prototyping and implementing Hardware and software designs on FPGAs , ARM7TDMI microcontrollers</li> <li>• Knowledge in Standard Communication Protocols (CAN,TCP_IP, and or MVB/TRDP etc., )</li> <li>• Working experience in Programming languages - C</li> <li>• Experience of Reverse engineering and automated test tools</li> <li>• Preparation of System Requirement/Design Specifications and Documentation</li> <li>• Exposure of coding standards for Railway/Train architecture</li> <li>• Experience in Interfacing with the Hardware design and System Design Team</li> </ul>
<b>Desirable Skills:</b>	<ul style="list-style-type: none"> <li>• Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for Propulsion equipment of Rail Transportation applications or C&amp;I applications with insatiable quest for excellence and passion for continuous professional growth</li> <li>• Experience of best practices in software development processes</li> <li>• Should have experience in managing conflicting priorities and cross functional teams to successfully implement complex projects.</li> </ul>

## Job Description for Deputy Manager/ Senior Manager– Power Electronics (SA)

<b><u>JD Link Ref No.</u></b>	<b>EDNSAS017</b>
<b><u>Position:</u></b>	Deputy Manager(E3) -Power Electronics Senior Manager(E5)-Power Electronics
<b><u>Position code(s):</u></b>	<b>EDN-SA-JD-01-A, EDN-SA-JD-02-A</b>
<b><u>Grade/Pay Scale</u></b>	Deputy Manager(E3) - Rs 80000 -220000 Senior Manager(E5) - Rs100000 -260000
<b><u>Qualification:</u></b>	<b>Essential:</b> Full time Degree - BE/B.Tech in Electrical / Electrical and Electronics Engineering from a recognized University. <b>Desirable:</b> ME/M.Tech in Power Electronics Engineering
<b><u>Experience Requirements:</u></b>	The prospective candidate should have at least 9 years of post-qualification experience for applying to Dy Manager (E3) position and at least 15 years of post-qualification industrial experience for applying to Senior Manager (E5) position and exposure in handling the following areas in relevant industry shall be given preference: <b>Experience for Deputy Manager/Senior Manager:</b> <ul style="list-style-type: none"> <li>• Designing of high power IGBT based power Stack/module including thermal design (Air cooled and liquid cooled), gate driver, interface electronics for traction application / drives application.</li> <li>• Prototyping, assembly &amp; type testing of high power IGBT based power module.</li> <li>• Preparation of component specification, manufacturing and technical documents for high power IGBT based power modules.</li> <li>• Industry standards and best practices for IGBT module design, including electrical, thermal, and mechanical considerations.</li> <li>• Design of control cards using microprocessor/ DSP/ FPGA.</li> <li>• Knowledge of hardware and software applicable for traction application.</li> <li>• Knowledge of simulation and code generation using software such as Matlab etc</li> </ul> <p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronics for Railway Transport Systems with insatiable quest for excellence and passion for continuous profession growth.</p> <b>Experience Additionally for Senior Manager:</b> <ul style="list-style-type: none"> <li>• Working Experience in Handling high power IGBT based Power electronic system within deadlines &amp; able to lead a group of Power electronics engineers.</li> <li>• Understanding customer specification and designing power module to meet the requirement.</li> <li>• Knowledge of design/ development, System engineering, testing and commissioning of electrics for rail transport systems such as passenger / freight loco / Electrical multiple units(EMU)/ mainline electrical multiple units(MEMU)/ metro etc.</li> <li>• Knowledge of trouble shooting / failure analysis / Root cause analysis.</li> </ul>
<b><u>Desirable Skills:</u></b>	<ul style="list-style-type: none"> <li>• Experience of handling Electronics Based Systems of Railway Transport.</li> <li>• Analytical and problem-solving skills to identify and resolve design challenges, ensuring optimal performance and efficiency of IGBT-based power modules.</li> <li>• Continuous learning mind set to stay updated with the latest advancements in power electronics</li> </ul>

## Job Description for Senior Engineer – Power Electronics (SA)

<b><u>JD Link Ref No.</u></b>	<b>EDNSAS019</b>
<b><u>Position:</u></b>	Senior Engineer(E2) -Power Electronics
<b><u>Position code(s):</u></b>	<b>EDN-SA-JD-03-A</b>
<b><u>Grade &amp; Pay Scale</u></b>	Senior Engineer(E2) - Rs 70000 -200000
<b><u>Qualification:</u></b>	<p><b>Essential:</b> Full time Degree - BE/B.Tech in Electrical / Electrical and Electronics Engineering from a recognized University.</p> <p><b>Desirable:</b> ME/M.Tech in Electrical Engineering /Power Electronics.</p>
<b><u>Experience Requirements:</u></b>	<p>The prospective candidate should have at least 05 years of post-qualification industrial experience for applying to Senior Engineer(E2) position and exposure in handling the following areas in relevant industry shall be given preference:</p> <ul style="list-style-type: none"> <li>• Designing of high power IGBT based power modules including thermal design for drives / traction application.</li> <li>• Prototyping, assembly and testing of high power IGBT based power modules.</li> <li>• Preparation of component specification and manufacturing documents for high power IGBT power modules.</li> <li>• Knowledge of gate driver requirements, interface electronics for power module for traction / drives application.</li> <li>• Knowledge of industry standards and best practices for IGBT module design, including electrical, thermal, and mechanical considerations.</li> <li>• Knowledge of simulation and code generation using software such as Matlab etc</li> </ul> <p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of power stacks for IGBT based high power inverters with insatiable quest for excellence and passion for continuous profession growth.</p>
<b><u>Desirable Skills:</u></b>	<ul style="list-style-type: none"> <li>• Experience of handling High Power IGBT stacks.</li> <li>• Analytical and problem-solving skills to identify and resolve design challenges, ensuring optimal performance and efficiency of IGBT-based power modules.</li> <li>• Continuous learning mind set to stay updated with the latest advancements in power electronics</li> </ul>

## Job Description for Senior Engineer– Mechanical (SA)

**JD Link Ref No.** EDNSAS020

**Position** Senior Engineer(E2) –Mechanical

**Position code(s):** EDN-SA-JD-04-A

**Grade & Pay Scale** Senior Engineer(E2) - Rs 70000 -200000

**Qualification:** **Essential:**  
Full time Degree - BE/B.Tech in Mechanical Engineering from a recognized University.

**Desirable:**  
ME/M.Tech in Mechanical Engineering.

**Experience Requirements:** The prospective candidate should have at least 05 years of post-qualification industrial experience for applying to Senior Engineer(E2) position and exposure in handling the following areas in relevant industry shall be given preference :

- Mechanical Design of high power IGBT based power modules for traction/ drives application.
- Prototyping, assembly and testing of power modules.
- 3D and 2D Modelling, simulation, thermal, structural, fluid flow analysis of electronic modules like IGBT based power stack used in traction/drives application.
- Analysing mechanical stress, thermal stresses and vibration effects on electronic systems, implementing suitable mitigation strategies to ensure proper functioning and longevity of power modules under varying operating conditions.
- Knowledge of industry standards and best practices for IGBT module design, including electrical, thermal, and mechanical considerations

Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of power stacks for IGBT based high power inverters with insatiable quest for excellence and passion for continuous professional growth.

**Desirable Skills:**

- Experience of handling High Power IGBT stacks.
- Analytical and problem-solving skills to identify and resolve design challenges, ensuring optimal performance and efficiency of IGBT-based power modules.
- Continuous learning mind set to stay updated with the latest advancements in power electronics

# Job Description for Senior Engineer – (Rail) Transportation Business

**JD Link Ref No** EDNSAS021

**Position** Senior Engineer (Software design, development and Testing for TCAS, Signalling)

**Position code(s):** EDN- TPTN –JD-01-A

**Grade/Pay Scale** E2 - Rs 70000 -200000

**Qualification:** **Essential:**

Full time Degree - BE/B.Tech in Electrical /Electrical & Electronics /Electronics & Communication Engineering from a recognized University.

**Desirable:**

ME/M.Tech in Electrical /Electronics /Communication / Signalling Engineering

**Experience**

The prospective candidate should have at least 5 years of post-qualification experience for applying to E2 position and exposure in handling the following areas in relevant industry shall be given preference:

**Requirements:**

Working experience in the roles & responsibilities of Software design engineer/Software testing engineer in the areas of Train simulators/ Train HMI systems/ Driver Display Unit/ Remote Monitoring system/ Train Control Management system/ Vehicle control unit / Anti-collision device / Train collision Avoidance system for Electrical Multiple Units (EMU) / Mainline Electrical Multiple Units (MEMU)/ Metro / Train 1 / Rajdhani / Shatabdi

- Experience in software Programming - C / Embedded C for design/development /testing of Automotive / Railway transportation products / RF applications
- Experience in Application code development – Ethernet/ USB/ CAN for Automotive / Railway transportation applications
- Knowledge in Software product life cycle
- Knowledge in testing the control hardware / software
- Understanding in Railway Signalling – Scheme preparation / Specification preparation/ Test protocol preparation/ Selection of components for sub-system components of large Traction/Automotive applications.
- Understanding of FPGA and circuit schemes

**Desirable Skills:**

- Knowledge in Model based Software : MATLAB
- Knowledge in PCB design Software : Allegro / Altium
- Knowledge in RAMS Documentation / Independent Safety Assessment (ISA).
- Experience in RAMS design / development / validation activities for system and subsystem components of large Traction/Automotive applications.
- Experience of handling software development in SIL 2/3/4 Products as per EN 50121, EN 50126, EN 50128, EN 50155, EN 50159 Standards.
- Knowledge in Software product life cycle along with RAMS testing.
- Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic systems for Signalling equipment of Rail Transportation applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth.
- Training at IRISSET on Kavach / Electronic interlocking /CBTC.

# Job Description for Senior Engineer – ACC Battery Pack Design and Modelling – DABG

<b><u>JD Link Ref No.</u></b>	<b>ESDPDG022</b>
<b><u>Position</u></b>	Senior Engineer – Defense and Aerospace Business Group (Battery Pack development)
<b><u>Position code(s):</u></b>	<b>ESD-LMF-PDG-JD-01-A</b>
<b><u>Grade / Pay Scale</u></b>	E2 - Rs 70000 -200000
<b><u>Qualification:</u></b>	<b>Essential:</b> Full time Degree - BE/ B.Tech in Mechanical Engineering from a recognized University.  <b>Desirable:</b> ME/M.Tech in Mechanical Engineering.
<b><u>Experience Requirements:</u></b>	<p>The prospective candidate should have at least 05 years of post-qualification experience for applying to E2 position and exposure in handling the following areas in relevant industry shall be given preference:</p> <ul style="list-style-type: none"><li>• Knowledge and experience on 3D design/ parametric software package like: Inventor, SolidWorks, Siemens NX etc. and in Analysis software like Siemens SIMCENTER, Altair HyperWorks, Ansys, MATLAB etc.</li></ul> <p>Experience is desirable in Battery pack design, battery testing, Energy storage, Electronics design related fields.</p> <p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of Li-ion batteries with insatiable quest for excellence and passion for continuous profession growth.</p>

# Job Description for Senior Engineer – Battery Management System Design and Testing – DABG

**JD Link Ref No.** ESDPDG023  
**Position** Senior Engineer – Defense and Aerospace Business Group (Battery BMS development)

**Position code(s):** ESD-LMF-PDG-JD-02-A

**Grade / Pay Scale** E2 - Rs 70000 -200000

**Qualification:** **Essential:**  
Full time Degree - BE/B.Tech in Electronics Engineering from a recognized University.

**Desirable:**  
ME/M.Tech in Electronics Engineering or Power Electronics

**Experience Requirements:** The prospective candidate should have at least 05 years of post-qualification experience for applying to E2 position and exposure in handling the following areas in relevant industry shall be given preference:

- Knowledge and experience in Embedded systems design knowledge of electronics design software like Autocad Electrical, Fusion 360, Altium etc.
- Experience in BMS design for Li-Ion batteries.
- Experience in various communication protocols used in EVs.
- Experience in HIL testing, bench testing of electronics circuits.

Experience is desirable in Battery management systems, design of Energy storage systems, Electronics design related fields.

Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of Li-ion batteries with insatiable quest for excellence and passion for continuous profession growth.

# Job Description for Senior Engineer – ACC Cell Design and Development – DABG

<b><u>JD Link Ref No.</u></b>	<b>ESDPDG024</b>
<b><u>Position</u></b>	Senior Engineer – (ACC Cell Design & Development)
<b><u>Position code(s):</u></b>	<b>ESD-LMF-PDG-JD-03-A</b>
<b><u>Grade / Pay Scale</u></b>	E2 - Rs 70000 -200000
<b><u>Qualification:</u></b>	<b>Essential:</b> Full time Degree - BE/B.Tech in Chemical / Electrochemical Engineering from a recognized University.  <b>Desirable:</b> ME/M.Tech in Chemical / Electrochemical Engineering.
<b><u>Experience Requirements:</u></b>	<p>The prospective candidate should have at least 05 years of post-qualification experience for applying to E2 position and exposure in handling the following areas in relevant industry shall be given preference:</p> <ul style="list-style-type: none"><li>• Work experience in Lithium ion cell design and development</li><li>• Li-ion battery manufacturing</li><li>• Comprehensive knowledge and experience in physical, thermal, and mechanical characterization of Li ion cells<ul style="list-style-type: none"><li>• Experience in cell failure analysis.</li></ul></li></ul> <p>Experience is desirable in Design and Development of Advanced Chemistry Cell, Design of electrodes for ACC batteries.</p> <p>Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of Li-ion batteries with insatiable quest for excellence and passion for continuous profession growth.</p>



# Job Description for Deputy Manager- Naval Control system

<b><u>JD Link Ref No.</u></b>	<b>EDNDAB025</b>
<b><u>Position</u></b>	Deputy Manager (Naval Control System)
<b><u>Position code(s):</u></b>	<b>EDN-DABG-DE-JD-01-A</b>
<b><u>Grade / Pay Scale</u></b>	E3 - Rs 80000 -220000

**Qualification:**           **Essential:**  
Full time Degree - BE/B.Tech in Electronics / Electrical / Instrumentation / Computer Science from a recognized University.

**Desirable:**  
ME/M.Tech in Control Systems or any of the specialized branches of the essential qualification.

**Experience Requirements:**           The prospective candidate should have at least 9 years of post-qualification experience for applying to E3 position and experience/exposure/knowledge in handling the following areas in relevant industry shall be given preference:

- Design & development of Control Systems (preferably Naval Controls)
- VME / PLC based Systems and Application SW development (preferably VME)
- Working/Interfacing with various communication Protocols
- Hardware Validation & Qualification of Modules/Systems
- Testing & commissioning of Control System (preferably Naval Controls)

Experience is desirable in handling Electronics Based Systems for Naval applications.

Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for Naval applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth.

# Job Description for Deputy Manager- Active Protection system

**JD Link Ref No.** EDNDAB026  
**Position** Deputy Manager (Active Protection System)

**Position code(s):** EDN-DABG-DE-JD-02-A

**Grade / Pay Scale** E3 - Rs 80000 -220000

**Qualification:** **Essential:**  
Full time Degree - BE/B.Tech in Electronics / Computer Science from a recognized University.

**Desirable:**  
ME/M.Tech in Opto-electronics, Telemetry, Mission Critical Embedded Systems.

**Experience Requirements:** The prospective candidate should have at least 9 years of post-qualification experience for applying to E3 position and experience/exposure/knowledge in handling the following areas in relevant industry shall be given preference:

- Opto-electronics, Telemetry, Mission Critical Embedded Systems
- Familiarity in using different communication Protocols
- Artificial Intelligence and Machine Learning
- Design & implement high-speed image processing algorithms
- Firmware development, including device driver/hardware-software interaction
- Implementation of Deep Neural Networks (DNNs) and Convolution Neural Networks (CNNs)
- Design & development of high speed digital electronic boards

Experience is desirable in handling Electronics Based Systems for Defense applications.

Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for Defence applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth.

# Job Description for Deputy Manager- Naval Battery Packaging

**JD Link Ref No.** EDNDAB027  
**Position** Deputy Manager (Naval Battery Packaging)

**Position code(s):** EDN-DABG-DE-JD-03-A

**Grade / Pay Scale** E3 - Rs 80000 -220000

**Qualification:** **Essential:**  
Full time Degree - BE/B.Tech in Electronics / Electrical from a recognized University.

**Desirable:**  
ME/M.Tech in Electronics or Power Electronics Engineering.

**Experience Requirements:** The prospective candidate should have at least 9 years of post-qualification experience for applying to E3 position and experience/exposure/knowledge in handling the following areas in relevant industry shall be given preference:

- Li-Ion batteries
- Battery Management System
- Design of battery packs
- Installation & Commissioning of Battery Systems
- Familiarity with Vibration, Thermovac, Acoustics, Radiation and MIL-STD-461F EMI/EMC standard
- Operation and maintenance of Battery Systems

Experience is desirable in handling Electronics Based Systems for Naval applications.

Candidate should possess inspiring leadership qualities and in-depth of knowledge about the execution and delivery of electronic modules/ sub-assemblies/systems for Electrical applications or other relevant applications with insatiable quest for excellence and passion for continuous professional growth.