

REQUEST FOR QUOTATION



BHARAT HEAVY ELECTRICALS LIMITED
Electronics Division
PB No. 2606, Mysore Road Bangalore - 560026
INDIA

RFQ NUMBER:
AKSPROP017

RFQ DATE :
21.07.2022

Due Date/Day: 02.08.2022 TUE
Time : 13:00 HRS

MMI:PU:RF:003

(address for communication) :

(for all correspondence)

Purchase Executive : ABHISHEK
Phone : 26998102
Fax : 00918026989215
E-mail: singh.abhishek@bhel.in

1) This RFQ is for entering into Rate contract (RC) with BHEL for the tendered item. Validity of the RC will be 1 year from the award of rate contract. Firm orders will be placed during the tenure of rate contract. Prices will remain firm till the validity of RC or till the completion of supplies against the Purchase Orders placed against this rate contract whichever is later. Please note that these quantities are projections based on the current business scenario and expected orders from customers. In the eventuality of business not coming through, BHEL is not obligated to exhaust the ordering of RC quantities.

2) Quantity distribution shall be applicable for the tendered item in the following manner:

L1 will be decided by considering total cost to BHEL and

- a. L1 bidder shall be awarded 60 % of tender quantity.
- b. L2 bidder shall be offered 40% of tender quantity.

NOTE: 40 % quantity shall be offered to L2 bidder at L1 unit rate. If L2 bidder do not agree to supply at L1 unit rate, BHEL may consider offering entire tender quantity to L1 bidder.

3) Reverse Auction Clause: BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	TI0668086211 WTB-MVB Gateway Module * HSN/SAC : 9032 [REDACTED] [REDACTED] [REDACTED] Test Certificate WTB-MVB Gateway Module along with the mating connectors and accessories required for Power, Communication and Service ports As per Specification PS4452712 Rev02	250	NO	250	[REDACTED]

Total Number of Items - 1

- 1.
- 2.

NOTES:

1. This RFQ is governed by:

- a) INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at <http://edn.bhel.com> (RFQ-PO Terms & Conditions)
- b) Any other specific Terms and Conditions mentioned.

* The HSN/SAC no mentioned against the line items in the RFQ are indicative only.

For and On behalf of BHEL.

ABHISHEK
Control Equipment

1 OF 1



PREQUALIFICATION CRITERIA (PQC)
FOR WTB to MVB GATEWAY
GROUP: TRACTION ENGINEERING

Ref: 445/PQ_GW/21

Rev. No.: 01

Page 1 of 1

1.0 PRE QUALIFICATION CRITERIA (PQC)

1. The Bidder should be Supplier of Gateways used in Traction applications.
2. BHEL shall approach and submit credentials/details furnished by vendor with their offers to customer and await customer's decision for a maximum of one month from the date of tender opening. If approval is not received within the above period, BHEL shall treat the offer as "Not meeting" Pre-qualification criteria and offer shall be rejected.
3. It is preferred that the bidder is the manufacturer of this item. If the bidder is importing some portion of the components, then minimum value addition shall be 20%. Bidder to confirm this in the offer. Value addition less than 20% is not acceptable

2.0 DOCUMENTS SUBMISSION

1. Bidder to submit clause by clause compliance to complete technical specification (Technical specification no. PS4452712 Rev. No.02, dated 23-05-2022) along with copy of type test report.
2. Should possess a valid type test report, not older than five years, conducted at a NABL accredited laboratory as per relevant standards mentioned in the specification with respect to time during the bid submission.
3. Proof of supply of WTB to MVB Gateway used in traction applications directly or through any agency to Indian Railways during the last 5 years to be submitted.

3.0 REFERENCE DOCUMENTS

- a) Purchase Specification No PS4452712, Rev. No. 02 for WTB to MVB Gateway.

REVISION 01

APPROVED

AGOSH CHANDRAN R S

PREPARED

SUNITHA L

ISSUED

TRACTION ENGG

DATE

16.07.2022



A4 - 12

PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2712

REV. NO: 02

PAGE 00 OF 04

REVISION HISTORY SHEET

REV. NO	DATE	NATURE OF CHANGE	REASONS	PREPARED BY	APPROVED BY
00	02.02.2021	FIRST ISSUE	--	L Sunitha	R S Agosh Chandran
01	24.02.2021	Minor changes	--	L Sunitha	R S Agosh Chandran
02	23.05.2022	Minor changes	--	L Sunitha	R S Agosh Chandran

THIS DOCUMENT IS A SPECIFICATION CUM DATA SHEET. VENDOR TO FILL UP ALL CONFIRMATIONS AND DATA AS REQUIRED AND SUBMIT THE SAME TO BHEL / EDN, BANGALORE. ANY DEVIATIONS TO THIS DOCUMENT TO BE BROUGHT OUT CLEARLY BY VENDOR.

REVISIONS 02 DT: 23.05.2022

APPROVED BY:

Agosh Chandran R S, Manager/TE

PREPARED BY:

ISSUED BY

DATE

L Sunitha
Dy Manager/TE

TE

23.05.2022



A4 – 10

PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2712

REV. NO: 02

PAGE 01 OF 04

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SPECIFICATION FOR
WTB TO MVB GATEWAY



A4 – 11

PURCHASE SPECIFICATION

GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2712

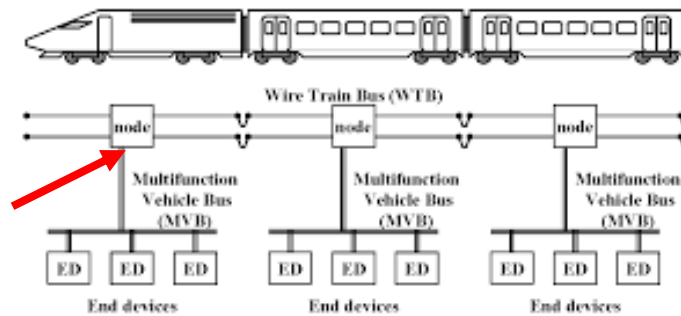
REV.NO: 02

PAGE 02 OF 04

1.0 INTRODUCTION:

Purpose of this technical specification document is to give requirement information about WTB to MVB Gateway used in AC locomotives for Train Communication Network.

2.0 FUNCTION:



A Gateway is a hardware device that acts as a "gate" between two networks.

The WTB to Vehicle Bus Gateway family is a group of devices developed to connect the Wire Train Bus (WTB) to the common on board vehicle buses used in railway application. WTB to MVB Gateway is used to connect the Wire Train Bus (WTB) to the Multifunctional Vehicle Bus (MVB). Its main application is to act as a vehicle node for IEC 61375 and UIC556 application.

WTB to MVB Gateway should be equipped of Voting Unit (VU) module for complete redundancy application and "sleep" function, "fritting" unit module on WTB and digital I/O module (Max 16 in and 4 out).

In compliance with UIC556 (information transmission in the train) the gateways should implement: the inauguration procedure, the mapping server, the Process Data Marshalling (PDM) and the management of static and dynamic properties.

The core of every gateway implements the Real Time Protocol (RTP) for message routing as required in IEC 61375-1 (Train communication network).

Supplier should support BHEL in understanding, commissioning and troubleshooting the tool required for WTB and MVB configuration database required for the gateway.

**A4 – 11**

PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2712

REV. NO: 02

PAGE 03 OF 04

3.0 CHARACTERISTICS

S. No.	Parameter	Value
1	Power Supply	a) 72V DC to 137.5V DC b) Reverse polarity protection c) Thermal shutdown protection d) Over-voltage protection e) Under-voltage protection
2	Operating Environment	a) Operating temperature -40°C to +70°C. b) Storage temperature -40°C to +85°C c) Relative humidity: <= 75% average and <= 95% for 30 consecutive days in a year d) Any moisture condensation not leads to any malfunction or failure.
3	Operating system	Latest Windows, or Linux based OS
4	CPU	Low power type, because of the high ambient temperature
5	Memory	RAM: Min 1 MB
6	Dimensions	145 (W) x 130 (H) x 175 (D) mm
7	Construction	a) Casing and connector panel: High-grade steel, matt pickled
8	IP Rating	IP-20
9	Reliability, Maintainability, Lifetime	a) MTBF > 50,000 hours b) Lifetime > 15 years
10	Interfaces	a) RS232 interface b) I/O interface (with various type of connector) c) 2 WTB line (4 D-connector) d) Vehicle Bus interface: ➤ MVB with ESD, EMD, OGF functionality ➤ Ethernet connection ➤ CAN connection
11	PCBs	Printed Circuit Boards must have conformal coating as relative humidity > 95%, and during 3-4 months of rainy season per year frequent condensation can occur.
12	Applicable standards	EN 50155, EN 50121-3-2, IEC-60571, EN61373, IEC 61375
13	Power consumption	20W max
14	Weight	Approx. 2kg
15	WTB transmission distance	Upto 850m
16	WTB maximum configuration	Upto 32 nodes
17	Maximum trainset length	Upto 6 vehicles for one node
18	WTB data transmission rate	1 Mbps
19	MVB data transmission rate	1.5 Mbps
20	Installation	Rack mounted

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A4 – 11

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P.S NO. : PS/445/2712

REV. NO: 02

PAGE 04 OF 04

4.0 INSPECTION

The type test reports from a NABL accredited laboratory to be provided along with the technical offer. For series supplies, Routine test reports are to be provided.

5.0 APPLICABLE NORMATIVE STANDARD

The offered system shall generally conform to the following normative standards

- IEC 60529 for IP68 protection
- EN 50121-2 EMC: Emissions to external environments
- IEC 60077 Rules for equipment for onboard rail vehicles
- IEC 61287 Power Converters on board rolling stock
- IEC 61373 Electric Railway Equipment-Rolling Stock-Shock & Vibrations Requirements