



COCHIN PORT TRUST  
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**E-QUOTATION DOCUMENT FOR "SUPPLY, INSTALLATION,  
TESTING & COMMISSIONING OF PUBLIC ADDRESS SYSTEM FOR  
OUTSIDE USE AT THE NEW CRUISE TERMINAL  
BUILDING(SAGARIKA) OF ERNAKULAM WHARF,  
COCHIN PORT TRUST"**

Website:www.tenderwizard.com/CPT; [www.cochinport.gov.in](http://www.cochinport.gov.in); www.eprocure.gov.in

DY. CHIEF MECHANICAL ENGINEER(ELE)'S OFFICE  
FIRST FLOOR, NEW ADMINISTRATIVE BUILDING,  
COCHIN PORT TRUST  
COCHIN-682009

Due Date & Time for submission : **14.30 hrs. on 30.06.2021**

Date & Time of Opening : **15.00 hrs. on 30.06.2021**

**E-QUOTATION No. F2/ADDTL.PASYSTEM-SAGARIKA/2021/M Date: 21.06.2021**

**COCHIN PORT TRUST**

**Willingdon Island**

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Deputy Chief Mechanical Engineer(Ele)'s Office,  
Cochin 682 009.

No. F2/ADDTL.PASYSTEM-SAGARIKA/2021/M

Date: 21.06.2021

**e-QUOTATION NOTICE**

1. Electronic Quotations (e-Quotations) on percentage basis are invited from Contractors for carrying out the work of "SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF PUBLIC ADDRESS SYSTEM FOR OUTSIDE USE AT THE NEW CRUISE TERMINAL BUILDING(SAGARIKA) OF ERNAKULAM WHARF, COCHIN PORT TRUST". Quotations shall be submitted before 2.30 pm on 30.06.2021 and shall be opened at 3.00 pm on the same day. Bill of Quantities of Work, General Conditions, Scope of Work & Technical Specifications for carrying out the work are enclosed.
2. **The e-Quotations are invited on percentage basis.** The estimated amount is excluding GST. The Bidders shall quote percentage above or below the Departmental estimate as given in the Bill Of Quantities(BoQ) and submit it ONLINE in e-tender portal [www.tenderwizard.com/CPT](http://www.tenderwizard.com/CPT)
3. The bidders are to obtain the one time User ID & password for log-in to the e-tendering Portal [www.tenderwizard.com/CoPT](http://www.tenderwizard.com/CoPT) from the service provider M/s.KEONICS by paying registration amount of Rs.1124/- through online Payment using Credit/Debit Card/Net banking or DD in favour of "KSEDCL, Bangalore".
4. The intending bidder must have valid Class-II or III digital signature certificate to submit the bid. For further details, please contact e-Tender Help Desk No. 080-40482000/ 080-49352000/ 9746118529/ 9605557738.
5. e-Quotations are invited from **FIRMS WITH EXPERIENCE IN CARRYING OUT PA SYSTEM SUPPLY, INSTALLATION & COMMISSIONING WORKS** and the bidders **shall submit scanned copy of the work orders and completion /performance certificates from the owner of the installations in support.**
6. The Quotation document will be available as two separate files in the e-quotation Portal; containing the following:
  - i. Quotation Notice with General Conditions, Scope of Work and Technical Specifications.
  - ii. Bill of Quantities of Work.
7. Both 6(i) & filled in 6(ii) above shall be submitted "Online" only. The name and address of the Bidder shall be necessarily entered in the space provided in the Bill of Quantities of Work.
8. The Bidder shall inspect the site before submitting the quotation in order to make them fully aware of the Scope of Work, Site and its conditions.

Sd/-

**DY.CHIEF MECHANICAL ENGINEER(ELE)**

## GENERAL CONDITIONS

1. **Validity of Quotation :** The Quotations shall be valid for a period of 90 days from the due date of submission of quotation.
2. **Completion Period:** The whole work shall be completed within 60 days from the date of receipt of work order. In case the Bidder is not permitted to carry out the work due to some problem from Employer's side, he should maintain a record of such time lost, duly counter signed by the Engineer-in-Charge and this period will not be included while determining the delay in completion period. In case the works are not completed within the specified completion periods due to any fault of the Bidder, it will be considered as a breach of contract and the Bidder will not be considered for any other work in future.
3. **Payment Term :** Payments will be made online after completing the work to the entire satisfaction of the Engineer-in-Charge and also after deducting the taxes prevailing in force at the time of payment of bills. The quantities specified in the schedule of quantities of work are only approximate and shall be increased or decreased at the discretion of the Engineer-in-Charge according to actual requirements. Payment will be made as per actual measurements, according to the percentage quoted.
4. **Liquidated Damages:** In case of delay in completion of the contract, liquidated damages (L.D) may be levied at the rate of half percent (½%) of the Contract Price per week of delay, subject to a maximum of 10% of the Contract Price. The amount of Liquidated Damages can be adjusted or set-off against any sum payable to the Bidder.
5. **Defects Liability Period:** All the equipments supplied shall have a warranty of one year from the date of commissioning. The defects liability period for the entire work shall be 12 months from the date of commissioning of the installations. In the event of any defect/ deficiency being noticed during the period, which is attributable to the defective materials/design/ workmanship, the Bidder shall make good the same at his cost.
6. **Security Deposit:** Security deposit @ 3% of Contract Price shall be recovered from the Bidder's bill. The amount towards Security Deposit so deducted will be released only after successful completion of the defect liability period, subject to certification from the Engineer-in-Charge.
7. **Execution of Agreement:** The successful Bidder will be required to execute within 14 days from the date of receipt of work order, an agreement at his expense on proper value Kerala State Stamp Paper in the prescribed departmental form, consisting of the work order issued to the Bidder, together with the Quotation submitted by him including General Conditions, for the due and proper fulfillment of the contract. Till signing of agreement, the Quotation together with the acceptance letter shall constitute a binding contract between the Bidder and Cochin Port.
8. **Engineer-in-Charge:** The Engineer-in-Charge of the work is the Superintending Engineer (Ele), CoPT. Clarifications if any required can be obtained by contacting the Superintending Engineer (Ele) / Executive Engineer(Ele-P) of the Electrical Division of CoPT (0484-2582351 OR 0484-2582320).

**9. Water & Electricity:**

Water: Water, if required for the work, shall be arranged by the Bidder at his own cost.

Electricity: The Bidder shall make his own arrangements for the temporary connection for electricity required, if any, and make necessary payment for it direct to the Department concerned.

10. The Bidder shall have valid GST Registration number. GST as applicable for the work will be paid extra by the Port. The GST applicable as per law can be billed on the Port Trust, which will be paid to the Bidder by the Board along with the bills, for which the Bidder shall hold valid GST Registration number.
11. The Contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Public Liability Policy, Provident Fund Regulations, Employees Provident Fund and ESI Act etc. amended from time to time and rules framed there under and other laws affecting the Contract labour that may be brought in to force from time to time.
12. The Contractor shall be registered under EPF and ESI act and the employees employed under them shall be covered in the EPF and ESI Scheme, if required as per applicable rules. The Contractors shall regularly remit, the Employer & Employee contribution to the authorities in such cases. If not, the Dept. would be required to remit the same and the amount so remitted shall be deducted from the part/ final bill of Contractors.
13. All materials, tools, plants and equipments required for completing the work shall be provided by the Contractor at his own cost. All materials required for the work shall be got approved by the Engineer-in-Charge before using in the work. Any fittings or accessories which may not be specifically mentioned in the specification but are usual or necessary as per good industry practice, shall be provided by the Bidder without extra cost to the Port. All works shall be carried out as per relevant ISS.
14. All labour, skilled or unskilled for the work shall be provided by the Contractor at his own cost and settling any disputes with the labour shall be the Contractor's responsibility.
15. All care and precautionary measures for avoiding any kind of damage/ accidents in the work site shall be taken by the Contractor. All safety precautions shall be taken while carrying out the work. The Contractor shall supply the necessary safety equipments to the workers employed by him and also ensure that they use it, while carrying out the work. The Contractor shall be solely liable and responsible for accidents if any, occurring during the period of Contract.
16. The work shall be completed without causing any damage to the existing structures/cables etc. In case any damage is caused, the same has to be rectified at Bidder's risk and cost.
17. The Port will in no way be responsible for any loss/damages caused in connection with the work.

**SIGNATURE OF THE BIDDER**

## SCOPE OF WORK

The scope of work is for **Supply, installation, testing & commissioning of Public Address system for outside use ( At pier, outside of building, new parking area, HATT areas etc.) at the new cruise terminal building(Sagarika) of Ernakulam Wharf, Cochin Port Trust.** Detailed scope of work is as below.

- a. SITC of 7 Nos. 30 watts outdoor horn type speaker unit with all accessories.
- b. SITC of 1 No. PA control unit with amplifier and all accessories.
- c. Rack for fixing the PA unit
- d. SITC of 3 Nos. wireless MIC with transmitter and receiver complete.
- e. SITC of 1 No. table top MIC.
- f. Supply of 475 metres of UG Armoured FR copper cable for speaker and laying of speaker cables by clamping along the wall, above ceiling, through HDPE pipes, through ground / below pavement tiles etc.
- g. Supply and laying of 175 metres of 40 mm HDPE pipe for laying the cables.
- h. Testing & Commissioning of the entire PA systems.

## TECHNICAL SPECIFICATIONS

### **1. AMPLIFIER AND MIXER**

#### **Mixer amplifier, 240 W, USB/BT**

Mixer amplifier, 240 W, 4 microphone/line inputs and 1 BGM input, USB/ Bluetooth.

Inbuilt Bluetooth for audio streaming Supports, audio playback from USB pen drive, 4 microphone/line inputs, plus music source input, Insert feature to use as a pre/power amplifier, Optional 2- tone chime generation for input 1.

#### **Power**

The mixer amplifiers 240 W output power. This power is directly available on 100 V constant voltage connections and on a low impedance connection for a 4-ohm load. Moreover, the amplifiers have a separate 100 V call-only output channel for addressing areas where only priority announcements are required. The call-only output can also be used for 3-wire remote volume control override.

#### **Inputs**

All mic/line inputs can be switched between microphone level and line level sensitivity. The inputs are balanced, but can be used as unbalanced inputs.

Phantom power can be switched-on to provide power to condenser microphones.

Input channel 1 can take priority over all other microphone, AUX & music inputs:

- Input 1 can be activated by contact closure on the PTT (push to talk). A 2-tone chime can be configured to precede an announcement.

#### **Music source and AUX input**

The unit has an internal music source and AUX input option. The internal music source plays audio files from an USB pen drive (with a capacity of up to 32GB)

## Technical specifications

### Electrical

Mains power supply

Voltage PLE-1MExxx-3IN 220-230 V, AC, 50 Hz /

240 W (reduced power at lower mains)

Inrush current

PLE- 1ME240- 3IN 40 A

Performance

Frequency response 80 Hz to 18 kHz (+1/- 3 dB @ - 10 dB ref. rated output)

Distortion <1% @ rated output power, 1 kHz

Bass Control Max.  $\pm$  8 dB

Treble Control Max.  $\pm$  8 dB

AUX input

Connector Cinch, stereo converted to mono Sensitivity 200 mV to 300 mV

Impedance 22 k ohm S/N (flat at max. volume)  $\geq$ 70 dB

Headroom >25 dB Insert 1 x Connector RCA Cinch

Sensitivity 1 V Impedance >10 k ohm

Loudspeaker output 100 V ,Connector Screw terminal, floating

Max. / rated PLE-1ME240-3IN 240 W

Loudspeaker output 4 ohm

Connector Screw terminal, floating ,Max. / rated PLE-1ME240-3IN 31 V (240 W)

### Mechanical

Mounting Stand-alone, 19" rack

### Environmental

Operating temperature -5 oC to +45 oC

Relative humidity <95%

3 | PLE-1MExxx-3IN Mixer amplifier, USB/BT

### 2. SPEAKER

Horn loudspeaker 30 W, circular, aluminum/ABS material, water and dust protected according IP65 .High efficiency drivers Up to 45 W (max. power) , Wide opening angle , Excellent speech reproduction , Simple power setting high-efficiency horn loudspeakers provide excellent speech reproduction and sound distribution for a wide scope of outdoor applications. They are ideal for sports grounds, parks, exhibitions, factories and swimming pools.

### System overview

The LBC 3481/12 is a circular horn loudspeaker, and the LBC 3491/12 is a rectangular model. Both are 10 W, and are made from ABS. The LBC 3492/12 is a circular, 20 W horn loudspeaker with a large horn measuring 354 mm in diameter. It is made from a combination of

aluminum with ABS for optimum strength and low weight. The edge of the horn is covered with a PVC profile for protection against impact damage.

The LBC 3493/12 is a circular, 30 W horn loudspeaker with a large horn measuring 400 mm in diameter. It is made from a combination of aluminum with ABS for optimum strength and low weight. The edge of the horn is covered with PVC for protection against impact damage.

**Functions**

All four models are for direct connection to a 100 V line output and are finished in light grey (RAL 7035). The horns are water and dust protected.

The horn loudspeakers include a 100 V transformer with taps on the primary winding to allow different power settings. Nominal full-power, half-power or quarter-power radiation (in 3 dB steps) can easily be selected by connecting the amplifier output to the appropriate tap. A 2 m four-core cable is fitted to the horns. Each core is a different color, and is connected to one of the primary taps on the transformer. The horn loudspeakers are supplied complete with sturdy adjustable mounting brackets, allowing the sound beam to be accurately directed.

**Certifications and approvals**

All loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. The speakers shall be comply Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures extra reliability under extreme conditions, leading to Horn loudspeaker 30 W, circular, Aluminum/ABS material, water and dust protected according IP65, fixed 2 m, 4-wire connection cable, light gray RAL 7035.

**Accessories**

**Connection Adapter**

Emergency connection adapter, 3-pole screw ceramic connector with a pre-mounted thermal fuse, to be installed in series with the 100 V primary connection.

**Electrical**

Max power 30 W

Sound pressure level at rated power / 1 W(1 kHz, 1 m)123 dB / 110 dB (SPL)

Sound pressure level at rated power / 1 W (2 kHz, 1 m) 125 dB / 112 dB (SPL)

Effective frequency range(-10 dB) 5kHz - 380Hz to 5.5kHz Opening angle

Rated voltage 100 V , Rated impedance 500 ohm

Operating temperature- -25 °C to +55 °C ,Relative humidity <95%

**3.WIRELESS/REMOTE UNIT**

Single-channel non-diversity VHF wireless microphone system with Dual “ Pilo Tone & Noise Lock ” squelch prevents random noise interference sources like computers, karaoke machines and DVD players. Ideal for DJ、 Karaoke. Stable , easy to install, most affordable fool-proof unit.

Main Frame Size	EIA standard 1/2-rack unit
Frequency Range	VHF 160~250 Mhz
Receiving Mode	Non-Diversity
Oscillation Mode	Quartz Controlled Fixed Frequency
Stability	

Sensitivity	±0.005%(-10~50°C)
Max. Deviation Range	S/N>70dB@10dBμV input
S/N Ratio	±22KHz
T.H.D.	>105dB(A)
Frequency Response	<0.5% @ 1KHz
Squelch Control	60Hz~18KHz
Volume Output	Dual "PiloTone & NoiseLock" Output level accurately pre-adjusted to match microphone capsule sensitivity so that users don't need to adjust the volume of receiver.
Max. Output Level	Three options : +10dBV / 0dBV / -6dBV
Power Supply External	AC Power Supply, 0.5A, 12~15V DC or as per stds.
Transmitters	MH-20 or as per stds.
Note:	Varied specifications on carrier frequency range and maximum deviation to comply regulation of different countries

#### 4. **MIC**

Stylish tabletop unidirectional condenser microphone on a flexible stem Phantom powered by amplifier , Momentary or toggle PTT-key for calls with priority contact, Green LED, indicating microphone active , Stable metal base design with fixed 2 m cable and lockable DIN connector.

The tabletop microphone shall be stylish and state of art technology, high quality tabletop unidirectional condenser microphone, mainly intended for making calls in a public address system. Its heavy metal base and rubber feet ensure stability on any flat surface. The special design also allows the unit to be neatly flush-mounted in desktops.

#### **Certifications and approvals**

**Region Regulatory compliance/quality marks/standards in India as applicable.**

The PTT-key (press-to-talk), not only switches on the microphone, but also provides priority contacts, that are compatible with the Plena range of amplifiers. The switching characteristic of the PTT-key can be configured internally for PTT-mode (on as long as pressed) or toggle-mode (press to switch on, press again to switch off).

The microphone is equipped with a fixed, flexible 2 m cable and a 5- pin DIN connector for the balanced signal and the priority contacts. If the priority contacts are not required, the microphone can be connected to amplifiers with 3- pin XLR-inputs, using the DIN to XLR adapter. A green LED indicates when the microphone is active.

#### **Controls and indicators**

- PTT-key
- PTT status LED

#### **Environmental**

Operating temperature -10 °C to +55 °C (14 °F to +131 °F)  
Relative humidity <95%

#### **Table-top microphone**

Tabletop unidirectional condenser microphone on a flexible stem.

#### **Accessories**

##### **Microphone cable, 4-core, 25M**

Microphone cable for permanent installations, black, 2 + 2 core screened cables (4 x 0.14 mm2), suitable for microphone connections with remote control or priority functions.

## **Technical specifications**

### **Electrical**

Phantom power supply Voltage range 12 to 48 V

Current consumption <8 mA

Performance Sensitivity 0.7 mV @ 85 dB SPL (2 mV/Pa)

Maximum input sound level 110 dB SPL

Distortion <0.6% (maximum input)

Input noise level (equiv.) 28 dB SPLA (S/N 66 dBA ref. 1 Pa)

Frequency response 100 Hz to 16 kHz

Output impedance 200 ohm

### **General specification for cable laying**

The cable shall be laid through the ground at a depth of 60 cm from the ground level and filled with loose excavated good soil/earth with brick protection after cable laying as per the standard specification. In case, the cable is laid below pavement tiles, the tiles shall be replaced and surface brought to the original condition. The cable shall be clamped along the wall / drawn above the ceiling as required.

Laying of HDPE pipe for laying LT cables

40 mm dia. HDPE pipe shall be laid at a depth of 60 CM from the ground level for laying the cables at road crossing/hard surfaces. After taking the trench and laying the pipe in loose/ hard surface, the trench area shall be filled with excavated loose soil and top surface shall be neatly cleared.

### **Approved Make:**

PA system	: Bosch /Honeywell /TOA/ Mipro
Horn Loud Speaker	: Bosch /Honeywell /TOA
Table Top Mic	: Bosch /Honeywell /TOA
Cordless Mic	: Bosch /Honeywell /TOA/ Mipro
HDPE pipe	: KONDUR or any other make with IS
UG armoured FR Copper conductor cable	: CCI / INCAB/ UNIVERSAL/ RPG/ NICCO/ TORRENT/POLYCAB / PARAMOUNT/ KEI/ HAVELLS/ FINOLEX / V-GUARD/ L&T / PRIMECAB / RR KABEL / GLOSTER

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