# State of Kuwait

# Ministry Of Information

## (توريد وتركيب وفحص وتركيب وتشغيل وضمان جهاز مكبر قدرة)

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# *CHAPTER - 1:*

# *SCOPE OF THE PROJECT*

## 1.1- Introduction

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## 1.1- Introduction

The Ministry of Information (MOI) invites **ONLY the Specialized Bidders** to submit their offers for the Supply, Installation, Testing, Commission, and Guarantee of High-Power Tube. The offered equipment and required works shall be of the **latest state-of-the-art technology** and in compliance with the following:

1.1.1 This T.D., explicitly.

1.1.2 CCIR - ITU Recommendations & Reports.

## 1.2- Scope of work

Supply, Installation, Testing, Commission, and Guarantee of High-Power Tube:

- Supply and install high-power power tube in Kabd Radio Station.

## 1.3- Time scale

**1.3.1** The required equipment shall be handed- over within 18 months from the date of signing the contract.

**1.3.2** The guarantee period shall start from the date of handing over the project.

# CHAPTER 2:

# GENERAL AND SPECIAL TECHNICAL CONDITIONS


**2.1. System Engineering, Integration and Verification**

**2.2. Project Responsibility**

**2.3. Insurance**

**2.4. Approval of Equipment**

**2.5. Inspection, Testing, Commissioning of Equipment**

**2.6. Compliance & Offer qualification**

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**2.8. Selection, Rejection, Addition and/or Modification**

**2.12. Final Handing Over Certificate (FHOC)**

**2.13. Pre-Tender Meeting**

**2.14. Site Visit**


## 2.1 System Engineering, Integration and Verification:

2.1.1 The required tube must be designed to the latest state-of-art technology to provide a reliable high-quality performance for medium wave radio transmitter.

2.1.2 The offered equipment must be from **only** reputable, worldwide known manufacturers.

2.1.3 The equipment will be subject to verification testing by MOI and the Contractor engineers as a part of the commissioning to ensure that performance characteristics have been met.

2.1.4 A list of previously executed similar works (when and where) must be submitted with the offer. If not complied, the bidder's offer will be disqualified.

2.1.5 The bidder must provide a "Manufacturer Authorization Letter" for the core system offered.

2.1.6 The bidder must have experienced and certified engineers in broadcasting systems. Proof documents including CVs and certificates must be submitted with the offer.

## 2.2. Project Responsibility:

2.2.1. This project shall be executed and handed over to MOI under the full responsibility of the Contractor.

2.2.2. The contractor is in charge of installing the equipment in the mentioned site and managing activities till the acceptance of the new system.

2.2.3. Installation and testing equipment are the responsibility of the contractor.

2.2.5. MOI will not be responsible for any transfer, housing or per diem fees.

## 2.3. Insurance:

The Contractor must insure the materials and works in the joint name of the Contractor and the Ministry of Information to full value against any loss or damage from whatever cause arising other than the standard "exclusion". The insurance shall incorporate both parties being covered during the period from the date of acceptance of the offer until the project has been taken over by the issue of the "Provisional Handing over Certificate (PHOC)".

## 2.4. Approval of equipment:

Approval of equipment must be submitted to the MOI at least 7 days before use at the site.

## 2.5. Inspection, Testing, Commissioning of Equipment:

2.5.1 **Inspection, testing, and commissioning of Equipment:**

The offered tube must be inspected and tested in the factory by the manufacturer.

2.5.2 Test data sheets shall be revised and verified during commissioning at the site and sent to MOI for revision and approval. A qualified Engineer shall carry out this commissioning. Any Test/Measuring Equipment needed for the commissioning shall be supplied by the Contractor, for this purpose only (i.e. shall not be the property of MOI).

## 2.6. Compliance & Offer Qualification:

2.6.1. The bidder must be considered in full agreement with the contents of this Tender Document Technical, Arabic Text, All Chapters, Annexes, and respond to all and each point and sub-point of the specifications. In case the Bidder has any reservation, disagreement, or deviation from this tender document, he should indicate it by filling separate tables (Non-Compliance Schedules) originated by him and divided into columns for Chapter No., Page No., Item No. and Reasons for Non-Compliance.

2.6.2. The bidder must provide complete detailed data sheets for all equipment proposed which must include all relevant technical information. The bidder's offer must also include a system description and a system block diagram to explain the offered solution. The MOI will cancel and reject any offer not compliant with these requirements.

2.6.3. The bidder's proposal package must include the itemized price and total price for the requirements as per bill of quantity. The detailed price list must include the unit's brand, model number, and all features and licenses included in each unit.

## 2.7. Guarantee:

2.7.1. The Contractor must guarantee the tube for a period of **12 months** after the date of the Preliminary/ Provisional Acceptance Certificate (PAC). All defective units, devices, or components during this period shall be replaced by the Contractor, free of any charge to MOI. If during the guarantee period, repetitive or epidemic faults take place in such a way that affects the performance, reliability, or availability of any of the project sub-systems, the Contractor must bear full responsibility to correct and amend these problems in a good engineering practice free of any charge to MOI.

## 2.8. Selection, Rejection, Addition, and/or Modification:

**The MOI reserves the right to:**

2.8.1. Select the most preferred Manufacturer to MOI in case the Bidder offers more than one manufacturer for the same type of product for any item, which must conform with the Tender Document's specifications and requirements.

2.8.2. Reject/cancel any auxiliary items (or quantities) in the offer within 15% max., of the total value of the offered price of the project. Deductions for these items shall be accomplished according to the contract rates.

2.8.3. It is confirmed that canceled items – if any – shall not affect the overall performance of this turn-key system.

2.8.4. Add any auxiliary item/s (or quantities) similar to those in the offer within 15% maximum of the total value of the offered price for the project. Payments for these items shall be accomplished according to the contractual rates.

## 2.9. Final Hand Over Certificate (FHOC):

This FHOC shall be issued by the Assistant Under Secretary for Engineering Affairs (MOI), 30 days after the Test Completion date. In case of abnormal defects, PHO shall be delayed until restoring the equipment to the normal acceptable state.

## 2.10 Pre-Tender Meeting:

A pretender meeting shall be held between Bidders and MOI representatives after (1) week from publishing the tender.

## 2.11 Site Visits:

For proper & realistic quotation of the offers, all Bidders MUST have a site visit. These visits shall be arranged during the pretender meeting.

**CHAPTER - 3**

**TECHNICAL SPECIFICATIONS OF REQUIRED EQUIPMENT**

Supplying, Installing, Testing, commissioning, and Guarantee of one TH558E Tube for 540MHZ Medium wave transmitter in Kabd radio station.

- Ceramic-metal tetrode with coaxial structure.
- Pyrobloc grids.
- Thoriated tungsten cathode with direct heating.
- Anode cooled by Hypervapotron.
- Anode dissipation: 500 kW.
- Designed for use in AF and RF amplifiers for broadcasting applications.
- Output power up to 650 kW in LW and MW.
- Operating position: vertical, anode up.
- Maximum heater surge current:1000 A
- Screen grid dissipation:8 kW
- Control grid dissipation:3 kW
- Anode voltage:15 kV
- Screen grid voltage:1250 V
- Peak voltage between the control grid and screen grid:4 kV
- Peak cathode current:600 A
- Maximum pressure at water jacket inlet:5 bar
- Maximum temperature of outlet water:
  - without back pressure: 80 °C
  - with back pressure > 0.7 bar:100 °C
- Amplification factor (VG2 = 1000/1500 V, Ia = 10 A, Va = 12 kV): Min: 3.7, Max: 4.9 V/V.
- Transconductance (VG2 = 1000 V, Ia = 10/15 A, Va = 12 kV): min180 mA/V

## CHAPTER - 4:
## *BILL OF QUANTITIES*

### 4.1– Important Notes:

4.1.1- Any items/works not mentioned in the previous pages and/or the attached B.O.Q. but indispensable for proper installations / implementations/performance of

the different sub-systems of this project MUST be inserted, described and priced in the relevant schedule/s. Otherwise, these items/works shall be provided/done free of any charge to MOI, before PHO.

4.1.2- The contractor MUST include in his B.O.Q all the
Items/works either mentioned/required in all previous pages or in the following B.O.Q.

4.1.3- Detailed breakdown lists of all offered items/works shall be submitted in the requested B.O.Q including manufacturer's name and part number.

4.1.4 - All items must be priced. No option items will be accepted in the BOQ.

## 4.2- BILL OF QUANTITIES (BOQ)

| Ser. | Description | QTY | Unit Price KD | Total Price KD |
|---|---|---|---|---|
| 1 | Power Tube (as specified in this TD) | 1 | | |
| 2 | Installation, testing, commissioning, and verification | LS | | |
| 3 | Additional equipment /work that is mentioned in the TD and required to complete the system but not mentioned in the BOQ | LS | | |
| **GRAND TOTAL:** | | | | |