



دولة الكويت

STATE OF KUWAIT

MINISTRY OF INFORMATION

**Repair, operation, Guarantee and calibration
Of DVB-T2 System**

إصلاح وتشغيل وضمان ومعايرة أجهزة الإرسال التلفزيوني الأرضي الرقمي

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CHAPTER - 1: SCOPE OF WORK

Ministry of Information (MOI) invites the specialized bidders to submit their offers for the **Repair, operation, Guarantee and calibration** of DVB-T2 transmission systems including exciters and transmitter control unit.

Conditions and specifications stated in this document represent the minimum requirements needed to execute this project, any other work/s needed to fulfill this target and not explicitly mentioned in this document must be stated and priced in the detailed BOQ in the offer, otherwise it/they will be executed – free of any charge to MOI – by the contractor and without any variation order.

All bidders shall visit all sites.

The following works are required to be done:

Supplying, Repair, Installation, operation, Testing and Guarantee of the following:

1- Low voltage power supply and Signal processing units to be installed in the following Exciter (Mutlaa TV Station)

APEX M2X(TM) Multi Standard Exciter

The existing M2X exciter is used with the Maxiva ULX Series transmitter. An standby exciter, and drive chain switcher is available M2X configuration, editing, diagnostics and monitoring are possible using the front panel on the TCU display, or via web browser.

not limited to DVB expansion board, signal processor board.

- DVB-T2 Software
- RTAC(TM) (Real-Time Adaptive Correction)
- Easy-to use operator interface via standard Web browser and external PC
- Integrated GPS (Sold separately)
- Built-in Battery backup for exciter frequency processing unit (Sold separately)

- Two ASI inputs with auto switching
- 10MHz and 1PPS inputs

2- LCD Screen, MCM and MCM board to be installed in the Existing Control Unit (TCU) complete unit (Juliaa TV Station).

The front panel user interface is a panel PC touchscreen display. This touchscreen display uses software buttons to control the transmitter.

Hardware buttons for the primary transmitter functions such as ON/OFF, RAISE/LOWER and Remote Enable/Disable are provided on the front panel next to the display.

not limited to:

- TCU chassis.
- Hardware Control Buttons &LEDs.
- TCU Cards - Resets and Memory Cards.
- Graphical User Interface (GUI)
- MCM
- PCM
- MCM (main control module).
- PCM (processor control module
- RF detector
- customer I/O board
- the exciter switcher
- PS monitor
- PA interface (digital I/O) boards.
- PA interface
- Two redundant power supplies redundant.

- 3- Repair the TX Transmitter as per as the recommendation reading approved by Gates Air for ULX transmitter in Mutlaa and Juliaa the bidder Should submit a UHF transmitter test report output power and temperature reading for all power amplifiers and cabinet.
- 4- Calibration the power , temperature and reflection to the d=factory setting and should approved by MOI staff
- 5- All existing DVB-T2 (Transmitters) has been supplied by Gates Air.
(TRANSMITTER, Maxiva ULX Series High Efficiency Broadband Liquid-Cooled, Solid-State, Band 470-806 MHz with HEAT EXCHANGER, DUAL FAN dual pump.
- 6- Complete training program for (8) Hours by the experience engineer for (4) operators within 15 days of delivering & commissioning the project.

CHAPTER – 2

GENERAL, SPECIAL AND TECHNICAL CONDITIONS

2.1 System Engineering, Integration and Verification.

2.2 Project Responsibility.

2.3 Inspection, Commissioning of the Equipment.

2.4 Compliance.

2.5 Warranty.

2.6 Site Visit.

2.7 Site Visit.

2.8 inspection and calibration.

2.9 Replacing the defected parts.

2.10 Pre-Tender meeting.

2.11 Employees qualifications.

2.12 Equipment's, tools and materials.

2.13 Technical reports

2.1 System Engineering, Integration, and Verification

2.1.1 All offered equipment (Audio & Video) must be of very high quality that meet ITU broadcast standards.

2.1.2 The equipment shall be capable of withstanding the conditions of temperature, humidity, and dust, which exist in THE STATE OF KUWAIT.

2.1.3 At the time of approvals of equipment for the project, if a new equipment from the same manufacturer with a new improved technology or format is introduced and is required by Ministry of Information, the MOI have the right to request replacement of the quoted equipment with this newly developed equipment at no extra cost or time added to the contract value and duration.

2.1.4 In case any of the equipment has been discontinued, at the time of execution of project, the bidder shall request an approval to replace any discontinued equipment with the successor model of the same or better specifications at no extra cost or time added to the contract value and duration.

2.1.5 An approval, to finalize the equipment, must be obtained from the engineering team leader who is assigned by the Engineering Sector of the Ministry of Information before the execution of the project.

2.1.6 In case of deviations from tender specifications, the bidder shall give detailed reasons for the deviations to obtain an approval from the MOI Engineering team

2.1.7 The bidder shall submit a compliance table indicating whether he is complying or not to each paragraph and sub-paragraph using the same numerical order. In case if not complying, detailed explanation shall be given.

2.2 Project Responsibility:

- 2.2.1 The project must be executed and handed over to MOI under the full responsibility of the Contractor.
- 2.2.2 Testing equipment is the responsibility of the contractor - for this purpose only (i.e., shall not be the property of MOI).
- 2.2.3 The given BOQ is for illustration only. It is the responsibility of the bidder to provide a turnkey solution as per specifications. Therefore, any item not mentioned here but necessary to make a flawless system must be added and priced.
- 2.2.4 Complete training program for (8) Hours by the contractor experience engineer for (4) operators within 15 days of delivering & commissioning the project.

2.3 Inspection, Testing and Commissioning:

Under the MOI assigned engineers supervision, the contractor shall inspect and test the equipment specified in this tender in the MOI premises. The contractor must provide successful inspection and testing letter authorized from the manufacturer.

2.4 Compliance:

The bidder considered in full agreement with the contents of this Tender Document (All Arabic text, technical Chapters, sub chapters, and Annexes) must respond to all and each point of the specifications. In case the Bidder has any comments, disagreement, or deviation from this document, they should clearly indicate so by filling separate tables (Non-Compliance Schedules) formed by the bidder and divided into columns for: Chapter No., Page No., Item No., and Reasons of Non-Compliance.

2.5 Warranty:

The contractor must guarantee all the work executed by him or by his sub-contractors for a period of 12 months after the date of provisional Acceptance Handing Over Certificate (PHOC)

2.6 SITE VISIT:

For proper / realistic pricing of the offers and for the proper estimating and realizing of the required work of this project.

All Bidders must pay a visit to the site at Mutlaa and Juliaa TV Station

2.7 TIME SCALE:

- 2.7.1 The whole works shall be completed and commissioned within (4) months from the date of signing the contract. This will include the weekends, holidays and bad- weather days.
- 2.7.2 After the completion & commissioning of all the required works as stated in this document a PHOC (Preliminary Handing Over Certificate) will be issued from the Ministry of Information
- 2.7.3 The guarantee period for three months, will start after the date of issuing the (PHOC).

2.8 INSPECTION AND CALIBRATION:

A complete inspection must be done according to Factory test and to the manufacturer recommendations.

The contractor must submit a complete written plan for his inspection procedures, which must be approved by the MOI engineer's, before starting the work.

The following points must be taken into consideration in the inspection but it is clearly understood that the Inspection process is not limited to these points .and must be done according to manufacturer recommendations.

- 2.8.1 Calibration needed as per as manufacturer recommendations.
- 2.8.2 Measure the cabinet Output power.
- 2.8.3 Measure the cabinet reflection power.
- 2.8.4 Measure all PA's output power.
- 2.8.5 Check the cabinet In/Out Temps.
- 2.8.6 Check all PA's Temps.
- 2.8.7 Check that there is no reflection in cabinet.
- 2.8.8 Check that there is no water leak in cabinet.

2.9 REPLACING THE DEFECTED PARTS

According to the above Inspection results, replacing the existing defected parts, a complete maintenance and fixing any problems in the system.

2.10 Pre Tender Meeting

For any questions, inquires or clarifications the pre-tender meeting will be organized later. The site survey will be specified in the pre tender meeting.

2.11 THE CONTRACTOR'S EMPLOYEES QUALIFICATIONS

All the required works must be done under complete supervision of special qualified Engineer with DVB experiance.

2.12 EQUIPMENTS, TOOLS AND MATERIALS :-

It is the full responsibility of the contractor to use his own equipments & tools and to supply materials, required and necessary to do all the above-mentioned works.

All costs relevant to this item are full responsibility of the contractor

2.13 TECHNICAL REPORTS.

Upon completion of all works, a complete official detailed written report – for the whole work done, relevant-Signed by the supervisor engineer on behalf of his company, must be submitted to MOI. Also a technical report from manufacturer shall be submitted.

CHAPTER - 3: Technical Specifications.

The following is the technical required

3.1 Low voltage power supply Qty (2).

3.2 Main Control Module Qty (1).

3.3 Processing control module Qty (1).

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3.4 Transmitter Control Unit Front Panel Qty (2).

3.5 Up/Down Converter Module Qty (1).

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3.6 Ribbon Cable Qty (2).

3.7 LCD Screen Qty (2) , MCM and MCM board to be installed in the Existing Control Unit (TCU) complete unit (Juliaa TV Station).

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- 3.8 Repair the TX Transmitter as per as the recommendation reading approved by Gates Air for ULX transmitter in Mutlaa and Juliaa the bidder Should submit a UHF transmitter test report output power and temperature reading for all power amplifiers and cabinet.
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- 3.10 All existing DVB-T2 (Transmitters) has been supplied by Gates Air. (TRANSMITTER, Maxiva ULX Series High Efficiency Broadband Liquid-Cooled, Solid-State, Band 470-806 MHz with HEAT EXCHANGER, DUAL FAN dual pump.
- 3.11 Complete training program for (8) Hours by the experience engineer for (4) operators within 15 days of delivering & commissioning the project.

Chapter (4)

THE BILL OF QUANTITIES:

Any items / works not mentioned in the attached BOQ's (Price schedule) but indispensable- from the contractor point of view- for implementation the works of this project , must be stated and priced otherwise all these items / works shall be provided / done free of any charge to MOI before the PHOC .

Bill Of Quantities

Item	Description	QTY	Unit Price	Total price
1	LVPS included Optional Battery Backup board	2		
2	TCU front panel	2		
3	PCM Card	1		
4	MCM Card	1		
5	Signal Processor for M2X exciter	1		
6	Up/Down Converter	1		
7	Ribbon Cable	2		
8	Training	LS		
	Any items not mentioned in this BOQ but indispensable to complete the entire work as per the TD as well as bidder's recommendation.			