



## Telecommunications Regulatory Commission - Jordan

# Technical Requirements for Integrated Mobile Network Testing System Vehicles

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QoS Section, Technical Department TRC Jordan

17-Mar-18

This section of the Tender delivers the technical requirements only for the Integrated Mobile Network Testing System Vehicles, the requirements are divided into two parts, Part A describes the technical requirements for the vehicles, while Part B describes the technical modification requirements for the vehicles

## Technical Requirements for *Integrated Mobile Network Testing System Vehicles*

Any offer submitted to TRC should include both sections (A&B) and shall not be separated by any means.

The below requirements represent required technical specification for the integrated mobile network system vehicles (Section A) and the customized modification needed for the integrated system vehicle (Section B).

Any offers which do not match any of the requirements below shall be deemed as non-complaint and are subject to TRC approval to give a pass.

### A. Vehicle Requirement's

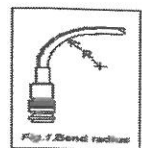
- a. Type of Vehicle : Panel Van
- b. Country of Origin: German, United States of America or Japan
- c. Model Year: 2018 or higher
- d. Drivetrain: 4x2 (FWD)
- e. Engine Specification:
  - i. Max Power Output: at least 200 Hp
- f. Engine Configuration:
  - i. Engine Placement : Front
  - ii. Type of Fuel System: Fuel Injection
  - iii. Displacement Capacity: At least 1900 CC
- g. Suspension and damping:
  - i. Existing of shock absorbs on all axles.
- h. Fuel:
  - i. Fuel Type: Gasoline
- i. Tank Capacity: at least 70 Liters
- j. Transmission:
  - i. Automatic gear with minimum 6 speed levels ( Higher levels are preferable)
- k. Safety Features:
  - i. Blind Spot Assist, Lane Keeping Assist, Collision Assist
  - ii. Revers Camera
  - iii. Front intelligent light system
  - iv. Roof-mounted turn signals
  - v. Front seats row equipped with Airbags and seat belts
- l. Electric Power:
  - i. Two Original batteries (Primary and Auxiliary) with minimum of 100 Ah each.

- ii. 12V socket integrated in the dash pane
- m. Steering Wheel: Multifunction Steering Wheel
- n. Passenger Climate Control: Air Condition / Heating
- o. Seat Capacity: At least 2 seats (This includes driver seat)
- p. Dimensions:
  - i. Internal Cargo Height: At least 130 cm.
  - ii. Internal Cargo Width: At least 160 cm.
  - iii. Internal Cargo Depth: At least 250 cm.
- q. Color: White
- r. Tires: New and Original
- s. General Technical Notes:
  - i. Vehicle specifications shall be in compliance with Jordan traffic regulation road and transport regulation and condition.
  - ii. Vehicle shall be well known make and approved Jordan dealer with service and maintenance facility.
  - iii. Dealer shall guarantee supply of spare parts.
- t. Miscellaneous:
  - i. Reflector.
  - ii. First Aid Kit.
  - iii. Spare wheel, carrier under cargo box, wheel changing tools.
  - iv. Fire extinguisher.
  - v. Owner's manual.
  - vi. Spare parts manual.
  - vii. Work shop manual.

B. Modification Requirements:

Bidder should submit a comprehensive proposal to contract with a professional well known manufacturing company to deliver the modification requirement related to the integrated mobile network system vehicles. The system shall be able to host seven QoS measurement units in a customized cabinet /s, knowing that a measurement unit can be a probe or a scanner. The probe is a Remote Terminal Unit (RTU) which consists of Measurement Data Unit (MDU) and Remote Control Unit (RCU). All elements dimensions related to the probe and the scanner can be found in Annex 1. The modification requirements shall cover all the following work items:

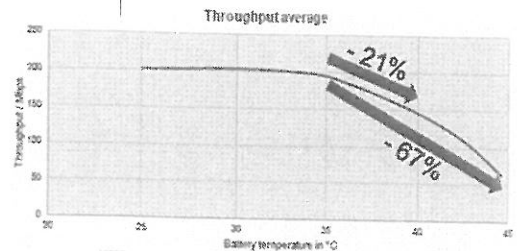
- a. Design and modify rear cargo compartment in the proposed vehicles (Section A) as per the following requirements:
  - i. The general required design for the work environment in the Panel Van cargo space shall consider an office theme set, of which maximum space utilization can be served with good operator accessibility.
  - ii. Space separation between cargo space and the driver and co-driver section using a dielectric partition material with an access door to the back area (Cargo).
  - iii. Cargo floor shall consist of antistatic non slippery flooring.
  - iv. Panel Van Cargo metal sides shall simulate passenger windows by replacing it with a dielectric material (Fiber).
  - v. The office bench shall have two units of drawers and two lockers with locks.
- b. Design and Manufacture rigid customized probe cabinets with the following specifications:
  - i. Cabinet /s shall be able to host at least 6 probes plus scanner set; the design depends on the suggested office orientation theme. The dimensions related to probes shall be considered for the cabinet design and office orientation and it can be found in Annex 1.
  - ii. Cabinet /s base should be equipped with high quality shock absorbers to minimize vibration.
  - iii. Cabinet /s should include railed shelves for the probes for sliding purpose with an individual retractable mechanical arm to maintain power and network wiring flexibility whenever sliding is needed.
  - iv. All CAT6 and Coaxial network cables related to each probe shall maintain minimum recommended bend radius as per the industry cable type recommendations to maintain an acceptable curvature and expected performance.



- v. Cabinet /s location installation and quantity depends on best suggested space saving solution for operators' office bench orientation. The design shall consider the maximum cargo height, width and depth dimensions and the installation of the two rotary seats.

c. Probe Cabinets Climate Control (CCC) design requirements:

- i. As generated temperature can impact data set measurements throughputs, probe cabinets shall consider a proper ventilation mechanism to maintain recommended operating temperature for all probes and heat dissipation.
- ii. A powerful slim aerodynamic air condition unit shall be top mounted on the cargo space sealing to serve CCC goal, cargo space area and maintain probe cabinet inner space at a stable room temperature 25 Celsius ( $\pm 2$  C<sup>o</sup>) while operating probes.
- iii. The overall design shall consider active operating smartphone batteries heat generation which usually can increase by 10 Celsius.
- iv. The suggested design shall consider an effective process to dissipate generated probe heat with an outer exhaust. The design and installation of exhaust shall consider weather conditions while maintaining inner cargo climate control.
- v. Cabinet /s should include digital thermometers for the following purposes:
  1. Visually inform operators with inner space cabinet's temperature.
  2. To automatically trigger and operate air conditioning cargo unit if temperature exceeds threshold.
- vi. If only original heat insulated window glass for the vehicle was not available, then all vehicle window glass shall be heat insulated at 30% level minimum.



d. Power supply requirements shall consider the following:

- i. Power supply of the primary battery at a Minimum 100 Ah that is independent from the equipment operation in cargo space.
- ii. A second auxiliary battery that is independent from the primary vehicle power supply battery to serve cabinet probes and all other equipment operations in the cargo space at a minimum power supply of 100 Ah.

- iii. Install an inverter that is connected to a well-known uninterruptible power supply (UPS) brand that is rack featured (inside the cabinet) to satisfy power needs for office type of electronics.
  - iv. All probes should be connected to an individual reset power buttons that is accessible to operators (not a circuit breaker).
  - v. Install two UPS powered plugs 220 V outputs under each operator bench side knowing that suggested office space should be able to host two operator seats. The power source should operate laptops or computer screens and other internal office use.
- e. Power safety requirements:
- i. All electric operational elements shall be grounded.
  - ii. Auxiliary battery serving probe cabinet /s shall maintain a minimum level of power at 20% threshold battery capacity to avoid total power drainage.
  - iii. General electrical circuit breaker within a protective enclosure to control all power flow in the cargo space.
- f. Install and configure a well-known IP switch make to control all probes network cables and manage probe operation from a laptop/ PC (LAN network). The switch shall be mounted in the cabinet with a minimum of 12 ports.
- g. System antenna array placement:
- i. To maintain quality of experience (QoE) through measurement testing and samples collection while driving (mobility mode), Measurement data unit (MDU) antennas shall be mounted internally (inside the vehicle) on a dielectric shelf within easy access to operators.
  - ii. The MDU system antennas shall be arranged in a specific matrix array to match wave length issues for different operator frequencies, suggested matrix design can be found in Annex 2.
  - iii. The interior matrix array design for the MDU antennas shall consider 24 antennas (4 antennas / probe) separated by minimum 17 cm spacing.
  - iv. Design and install a dielectric exterior ceiling solution (e.g. ski box or Fiber mold) to host at least 40 antennas of which 15 antennas are related to RCU and scanner sets. All antenna cables shall be organized and inserted internally from the exterior solution to the cabinet.
  - v. The suggested exterior solution shall be UV protected and shall consider privacy, security and the air condition unit position.

- vi. All related wiring shall be organized within cable management structure and shall consider article (B.b.iv).
  
- h. GPS antennas placement:
  - i. All probe / scanner GPS antennas shall be placed exteriorly within the suggested dielectric aerodynamic enclosure in article B.g.iv to host at least 10 GPS antennas. GPS antennas dimensions as indicated in Annex 2.
  
- i. Install two comfortable operator seats with the following requirements:
  - i. Are able to have a full rotation.
  - ii. Equipped with head support and foldable armrest.
  - iii. Include a safety belt.
  - iv. Seats selection and location s shall consider interior dimensions for the office bench design and the internal cargo dimensions.
  - v. Both seats shall have a mechanism to be able to slide (front and back) under the bench surface.
  
- j. Install a navigation system for driver use, the system shall include all Jordanian route maps.
  
- k. Bidder shall be familiar with the network measurement units TEMS probes from Infovista.
  
- l. Bidder shall install, operate and test 8 TEMS probes sets plus 1 scanner set in the vehicles mentioned in section A. The process shall be based on TRC instructions and approvals.
  
- m. Overall onsite training at the delivery time for TRC QoS Engineers shall be delivered.

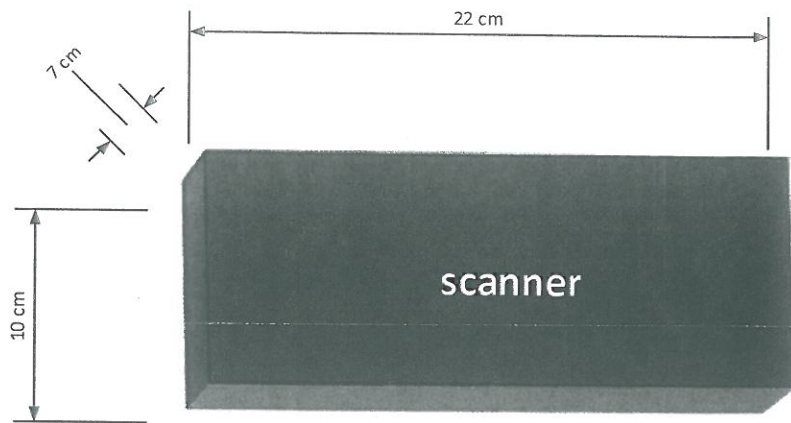
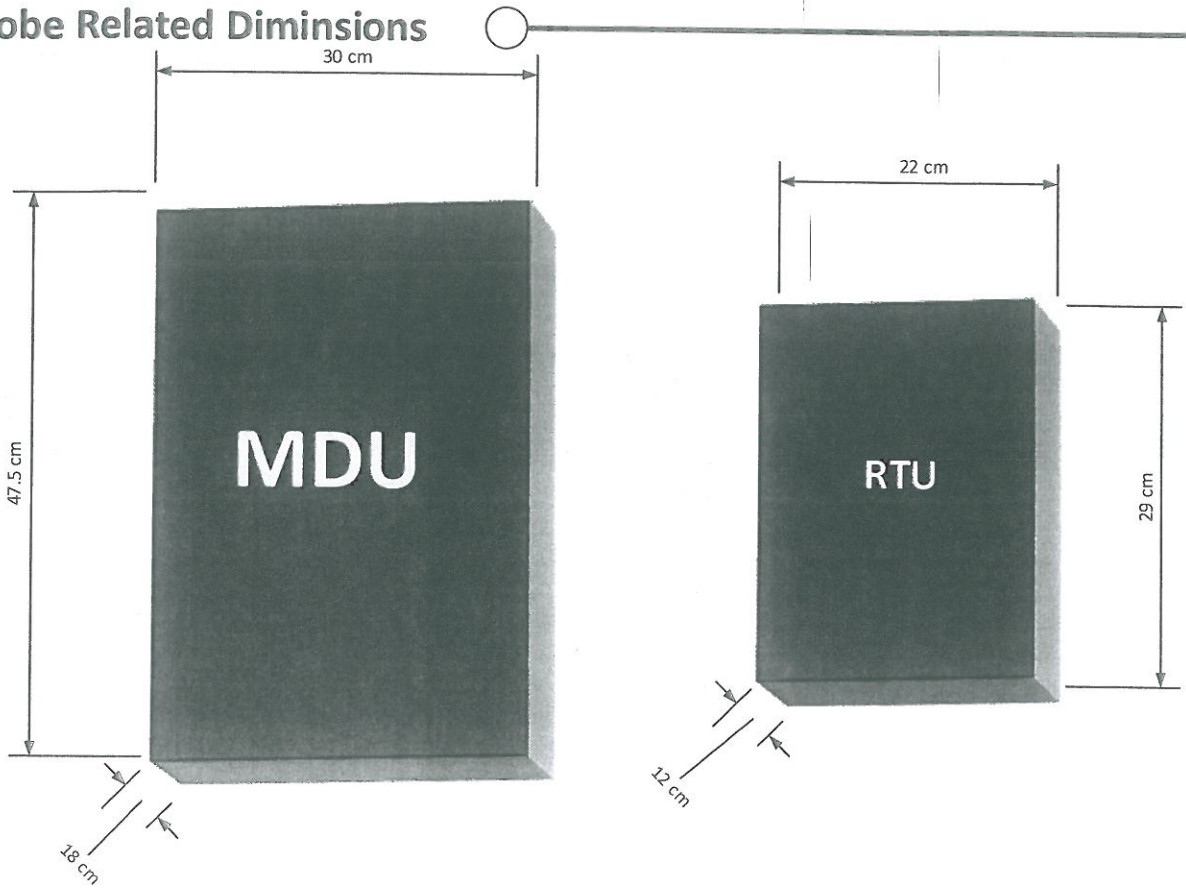
**Annex 1**

Probe Related Diminsions

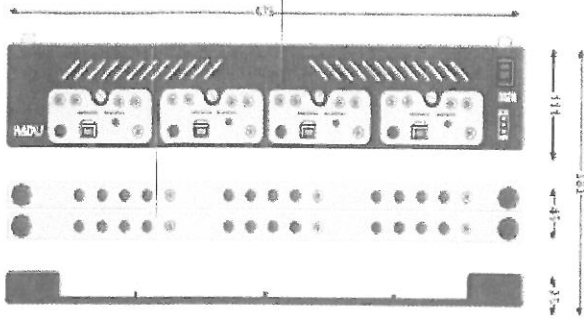
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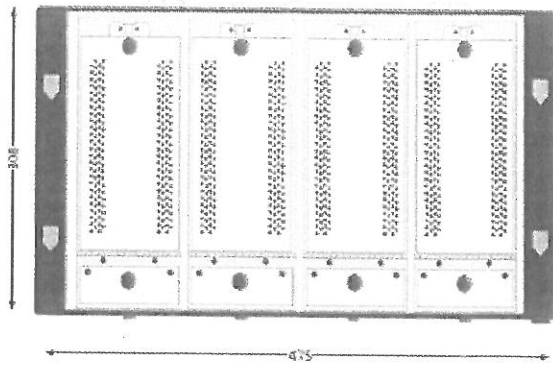
# Probe Related Diminsions



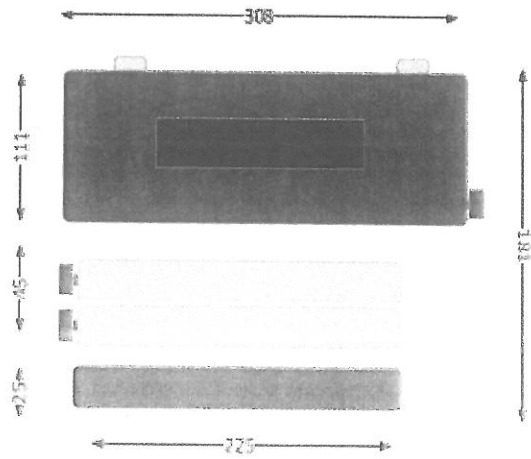
Front View



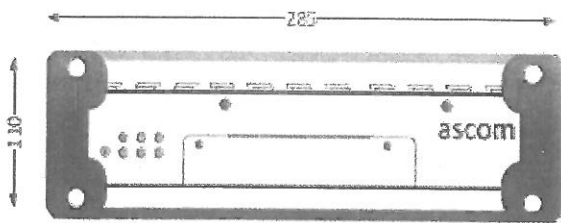
Top View



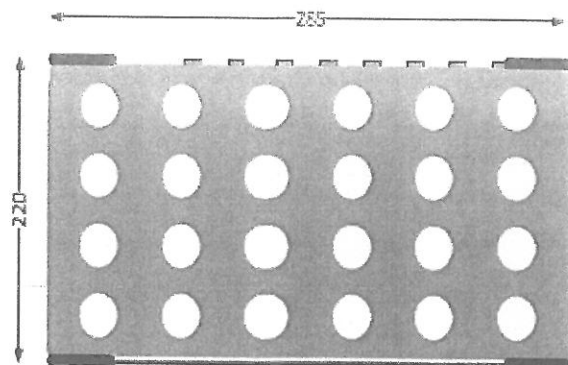
Side View



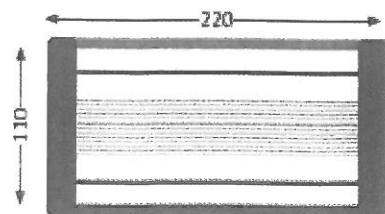
Front View



Top View



Side View

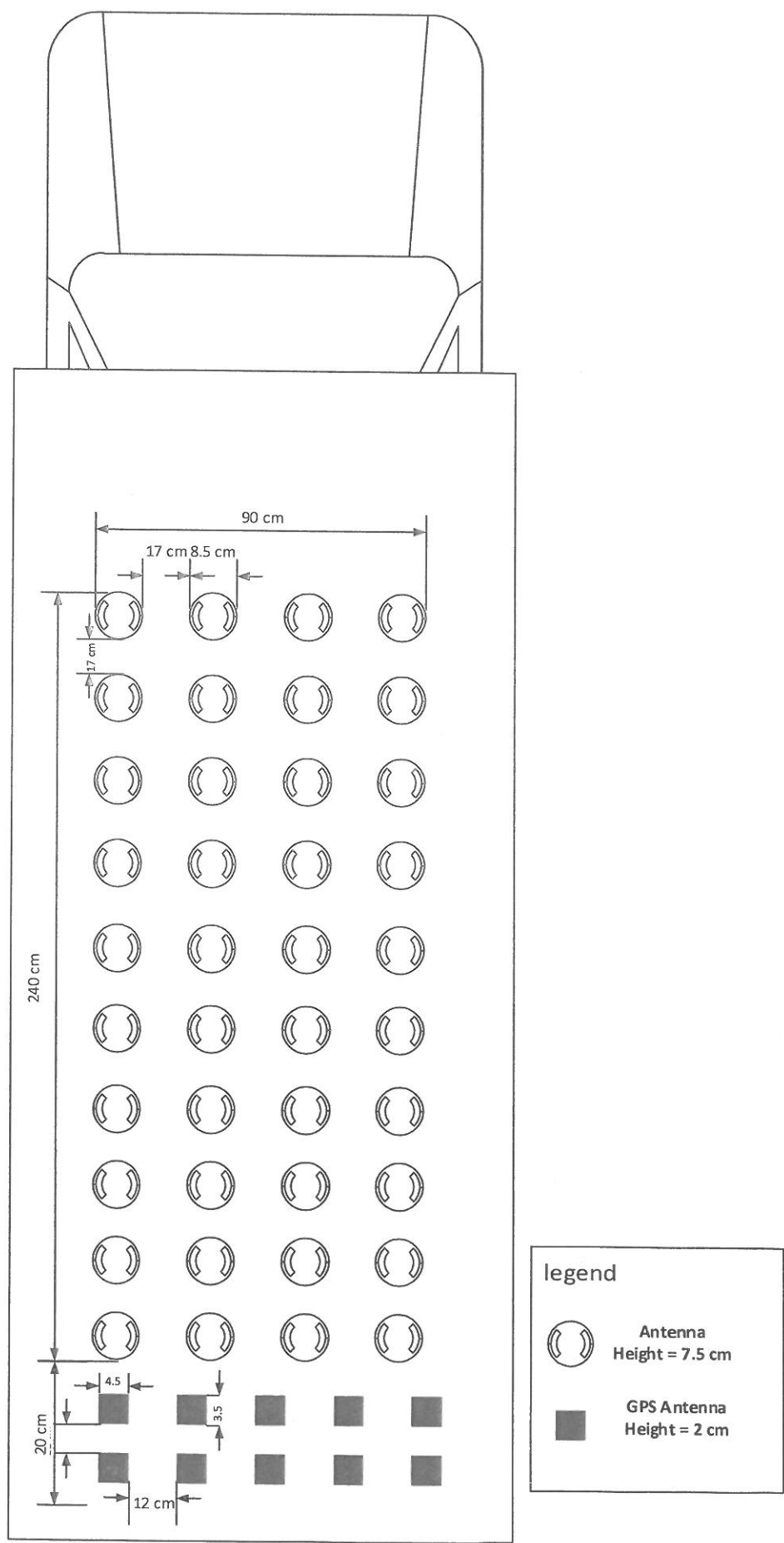


**Annex 2**

**Antennas Internal and External Configuration**

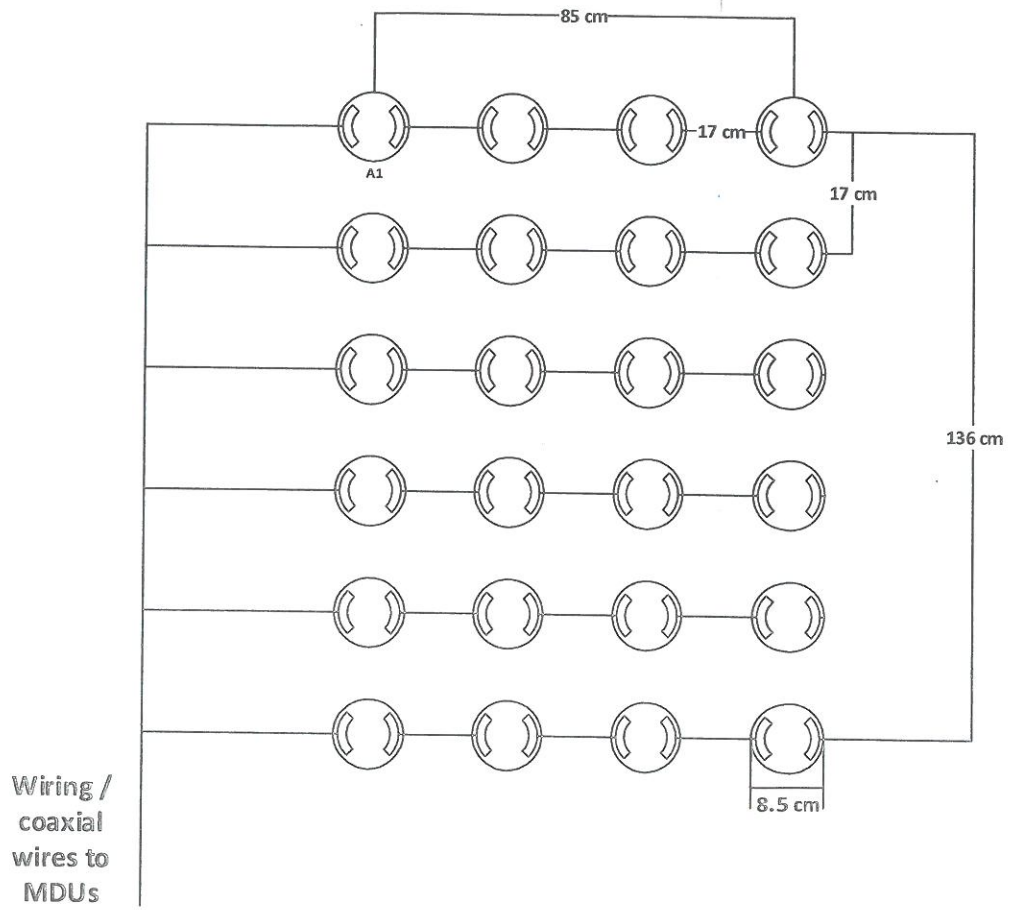
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# Antenna setup and dimensions




# Antenna setup and dimensions

## Internal shelf



legend



**Antenna**  
Height = 7.5 cm

## الشروط الخاصة بدعوة العطاء رقم (٢٠١٨/٣)

تعتبر هذه الشروط مكملة لتعليمات الدخول في العطاء والشروط العامة للتعاقد وتكون لها في التطبيق قوة العقد لشراء اللوازم والخدمات وتكون ملزمة للمناقضين واللجنة حق استبعاد أي عرض غير ملتزم بكل أو بأحد هذه الشروط :-

١. يرفق بالعروض تامين للدخول في العطاء على شكل كفالة بنكية أو شيك مصدق صادرة / صادر عن بنك محلي بنسبة لا تقل عن (٣%) من قيمة العرض الإجمالية أو القيمة المحددة بدعوة العطاء وحسب النموذج المرفق وسوف لن ينظر في أي عرض غير معزز بالتامين المطلوب .

٢. يعتبر صدور قرار الإحالة المبدئي وإشعار المناقص به ملزماً له إذا كان عرض المتعهد ساري المفعول على أن يصدر قرار الإحالة النهائي خلال فترة سريان العرض والكفالة .

٣. تقدم العروض على نسختين متطابقتين أصل وصورة .

٤. يجب ذكر الاسم بشكل واضح ورقم صندوق البريد ورقم الفاكس والهاتف وتحديد المنطقة والرمز البريدي .

٥. يجب تقديم الكتالوجات والنشرات الفنية (نسخ أصلية) مع العروض وتوضيح رقم المادة واسم المناقص على كل عينه وكتالوج ونشرة فنية وكذلك ختمه وتوقيعه .

٦. يجب أن تكون المواصفات الواردة في عرض المناقص واضحة ومبوية بشكل جيد بحيث تكون الوحدة والكمية والسعر الإفرادي والإجمالي وفترة التسليم وبلد المنشأ واسم الشركة الصانعة مبينة إزاء كل مادة .

٧. يعتبر تقديم العرض من قبل المناقص تأكيداً منه بأنه أجرى التزاماً مع الشركة المصنعة بكامل اللوازم المعروضة وضمن مواصفات وشروط دعوة العطاء (العرض المقدم من قبله) .

٨. يعتبر تقديم عرض المناقص التزاماً منه بأنه مطلع ومتفهم لجميع مواد تعليمات العطاءات رقم (١) لسنة ٢٠٠٨م ووثائق دعوة العطاء .

٩. في حال عرض المناقص لمادة (بنفس الموديل ومن نفس الشركة الصانعة) من أكثر من منشأ واحد فيجب أن يتقدم المناقص بسعر منفصل لكل منشأ .

١٠. تقدم الأسعار بالدينار الأردني متضمنة التوريد والتركيب والتشغيل في الموقع الذي تحدده الهيئة، وبحيث تكون الأسعار

شاملة الرسوم الجمركية والضريبة العامة على المبيعات والرسوم والضرائب الأخرى وأية عوائد حكومية أو غير حكومية .

١١. يلتزم المتعهد بالصيانة المجانية لمدة ثلاث سنوات شاملةً لقطع الغيار من خلال تقديم كفالة صيانة بنسبة (٣%) من قيمة

اللوازم ولمدة ثلاث سنوات من تاريخ الاستلام النهائي وحسب النموذج المرفق .

١٢. يلتزم المناقص بتوفير ورش الصيانة وقطع الغيار لمدة لا تقل عن (٨) ثماني سنوات ولمدة العمر التشغيلي إذا زاد على

(٨) ثماني سنوات

١٣. يلتزم المتعهد بتقديم كفالة حُسن تنفيذ بنسبة (١٠%) من قيمة اللوازم المحالة عليه وحسب النموذج المرفق

١٤. على المناقص اعتماد دعوة العطاء ومرفقاتها لتعبئة عرضه عليها .

١٥. يقدم المتعهد ضماناً من سوء المصنعية لمدة سنة من تاريخ الاستلام النهائي للمواد وحسب النموذج المرفق .

١٦. يتم الدفع بعد التوريد والاستلام النهائي .