

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 1T3
Bid Fax: (902) 496-5016

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet HANDHELD CABLE & ANTENNA ANALYZER	
Solicitation No. - N° de l'invitation W355B-141439/A	Date 2014-01-15
Client Reference No. - N° de référence du client W355B-14-1439	
GETS Reference No. - N° de référence de SEAG PW-\$HAL-321-9188	
File No. - N° de dossier HAL-3-71171 (321)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-02-25	Time Zone Fuseau horaire Atlantic Standard Time AST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Gillis, Floyd	Buyer Id - Id de l'acheteur hal321
Telephone No. - N° de téléphone (902) 496-5566 ()	FAX No. - N° de FAX (902) 496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE 7 HD WAREHOUSE, HMCS DOCKYARD HFX BLDG D200 DR 1 TO 13 HALIFAX NOVA SCOTIA B3K5X5 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 3C9

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with this bid solicitation.

2. Statement of Requirement

Fleet Maintenance Facility, Cape Scott has a requirement for a hand held cable and antenna analyzer as described in **Annex A-Statement of Requirement**.

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual*

(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The **2003 (2013-06-01)** Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of **2003, Standard Instructions** - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: ninety (90) days

2. Submission of Bids

Bids must be submitted to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on **page 1** of the bid solicitation. Bids submitted to this office by email **will not** be accepted.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **five (5)** calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in **Nova Scotia**.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (two (2) hard copies)

Section II: Financial Bid (One (1) hard copy)

Section III: Certifications (One (1) hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the **hard copy** will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In **April 2006**, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html)

(<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

1.1 Exchange Rate Fluctuation

C3010T (2013-11-06) Exchange Rate Fluctuation,

Section III: Certifications

Bidders must submit the certifications required under **Part 5**.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

-
- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

The Fleet Maintenance Facility (FMF), Cape Scott, CFB Halifax, HMC Dockyard, Halifax, Nova Scotia has a requirement for the following:

Purchase Description: Handheld Cable and Antenna Analyzer (Quantity 1) complete with options as shown below:

1. 2-Port cable loss (source module, detector, power monitor, DIN to D-sub adapter, 2MHz low frequency extension)
2. Additional rechargeable NiMH battery
3. Battery charger w/universal power supply
4. Open/Short DC to 18 GHz N(m)
5. Precision termination DC to 18GHz 40dB N(m) (Qty 2)
6. Open/Short DC to 18GHz N(f)
7. Precision termination DC to 18GHz 40dB N(f)
8. Test port extension cable, armoured, 1.5M, DC to 18GHz, 50Ω
9. Precision adapter, DC to 18GHz, 50 Ω, N(f)-N(f)
10. Precision adapter, DC to 18GHz, 50 Ω, N(m)- N(m)
11. WR90-Waveguide CAL /Adapter Kit
12. WR112 - Waveguide CAL / Adapter kit
13. hard-sided transit case
14. 1/8 Offset Short, US, 7.05 to 10.00 GHz
15. 3/8 Offset Short, US, 7.05 to 10.00 GHz
16. 1/8 Offset Short, US, 8.20 to 12.40 GHz
17. 3/8 Offset Short, US, 8.20 to 12.40 GHz
18. Precision load - 7.05 to 10.00 GHz
19. Precision load - 8.20 to 12.40 GHz

General Description: Handheld, battery operated, broadband microwave transmission line and Antenna Analyzer used in the verification, troubleshooting, and repair of microwave cables and communications systems. C/W built in DTF k(f) test port connector.

Minimum Specifications:

1.0 Frequency:

- 1.1 Range:
 - 1.1.1 25MHz to 20000MHz

- 1.2 Accuracy:
 - 1.2.1 <3 ppm at +25°C
- 1.3 Resolution:
 - 1.3.1 10 KHz (100KHz for distance to fault)
- 1.4 Output power (from RF out port)
 - 1.4.1 <0dBm

2.0 Immunity to interfering signals:

- 2.1 On channel: +13dBm
- 2.2 On frequency: -10dBm

3.0 Measurement speed:

- 3.1 Return loss, SWR, DTF:
 - 3.1.1 CW on: = sec/sweep for 517 data points
 - 3.1.2 CW off: = for 517 data points
- 3.2 Number of data points: 130, 259, 517

4.0 Return Loss:

- 4.1 Range: 0.00 to 60.00 dB
- 4.2 Resolution: 0.01 dB

5.0 VSWR:

- 5.1 Range: 1.00 to 65.53
- 5.2 Resolution: 0.01

6.0 Coax waveguide (1-port) insertion loss:

- 6.1 Range: 0.00 to 30.00 dB
- 6.2 Resolution: 0.01 dB

7.0 Measurement accuracy:

- 7.1 < 5 GHz: = 42 dB
- 7.2 <15 GHz: = 36 dB
- 7.3 >15 GHz: > 32 dB

8.0 Distance to fault:

- 8.1 **Vertical Range:**
 - 8.1.1 Return loss: 0.00 TO 60DB
 - 8.1.2 VSWR: 1.00 to 65.53
- 8.2 **Horizontal Range:** 0 to (# of data points -1) X horizontal resolution

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Buyer ID - Id de l'acheteur

hal321

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File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

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HAL-3-71171

8.3 Horizontal resolution:

8.3.1 Coaxial Cable (rectangular windowing): $(1.5 \times 10 \exp.8) (V_p)/rF$

V_p = cable's relative propagation velocity/

rF = stop frequency - start frequency (Hz)

8.3.2 Waveguide: $(1.5 \times 10 \exp.8) (r \cdot 1 - (F_c/F_1)^2) / rF$
 F_c =waveguide cut-off frequency (Hz)
 F_1 = start frequency (Hz)
 rF = stop frequency - start frequency (Hz)

9.0 Test port connector:

9.1 connector: Precision K(f)

10.0 2 - port cable loss:

10.1 CW source module:

10.1.1 Frequency range: 2MHz to 20000MHz

10.1.2 Frequency accuracy: = ppm at +25°C

10.1.3 Max power at RF out port: +15dBm, maximum

10.1.4 Ports: N(f), ±15V DC, +20dBm, max input

10.2 2 - port cable loss measurement:

10.2.1 Detector range:-50 to +20 dBm, 10nW, 100mW

10.2.2 Display range:-60 to +60 dB(m)

10.2.3 Resolution: 0.1 Db

10.2.4 Measurement accuracy:

10.2.4.1 <10dB cable loss: ±0.85dB maximum

10.2.4.2 <30 dB cable loss: ±1.35dB maximum

11.0 Warranty:

ONE (1) year return to manufacturer all parts and labour included.

12.0 Certification:

The equipment shall be certified by an acceptable Certification Organization. The following Certification Organizations are acceptable. The electrical control must bear a label from one of these organizations in order to be recognized as approved. Identify which Organization shall be used:

NOTE: Labels from all Organizations below (with the exception of CSA and ULC), must be accompanied by a small "c" at the eight o'clock position or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

- A. Canadian Standards Association (CSA)
- B. Entela (see note)
- C. Intertek Testing Services (see note)
- D. ETL Testing Laboratories (see note)
- E. Warnock Hersey (WH) (see note)
- F. Underwriters Laboratories of Canada (ULC)

G. Underwriters Laboratories Inc. (UL) (see note)

H. MET Laboratories Inc. (MET) (see note)

I. TUV Rheinland of North America (see note)

J. Quality Auditing Institute (QAI) (see note)

K. TUV America Inc. (see note)

L. Factory Mutual (FM) Approvals (see note)

M. Omni-Test Laboratories Inc. (see note)

N. Curtis-Straus LLC (see note)

O. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labelled (complete with verification documentation) by the Canadian Standards Association (CSA), Cantest Ltd, Entela, Intertek Testing Services, MET Laboratories, TUV SUD America Inc, Underwriters Laboratories of Canada, Electrical Safety Authority (ESA), or QPS Evaluation Services Inc. under the Special Inspection Program. This inspection must take place before equipment delivery.

1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

2.1 A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with this request will also render the bid non-responsive or will constitute a default under the Contract.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Human Resources and Skills Development Canada (HRSDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list at the time of contract award.

2. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Certification:

The equipment shall be certified by an acceptable Certification Organization. The following Certification Organizations are acceptable. The electrical control must bear a label from one of these organizations in order to be recognized as approved. Identify which Organization shall be used:

NOTE: Labels from all Organizations below (with the exception of CSA and ULC), must be accompanied by a small "c" at the eight o'clock position or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

- A. Canadian Standards Association (CSA)
- B. Entela (see note)
- C. Intertek Testing Services (see note)
- D. ETL Testing Laboratories (see note)

- E. Warnock Hersey (WH) (see note)
- F. Underwriters Laboratories of Canada (ULC)
- G. Underwriters Laboratories Inc. (UL) (see note)
- H. MET Laboratories Inc. (MET) (see note)
- I. TUV Rheinland of North America (see note)
- J. Quality Auditing Institute (QAI) (see note)
- K. TUV America Inc. (see note)
- L. Factory Mutual (FM) Approvals (see note)
- M. Omni-Test Laboratories Inc. (see note)
- N. Curtis-Straus LLC (see note)
- O. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labelled (complete with verification documentation) by the Canadian Standards Association (CSA), Cantest Ltd, Entela, Intertek Testing Services, MET Laboratories, TUV SUD America Inc, Underwriters Laboratories of Canada, Electrical Safety Authority (ESA), or QPS Evaluation Services Inc. under the Special Inspection Program. This inspection must take place before equipment delivery.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement applicable to this Contract.

2. Statement of Requirement

The Department of National Defense, Fleet Maintenance Facility, Cape Scott, (FMF CS) , HMC Dockyard has a requirement for a Hand held cable and antenna analyzer as detailed in **ANNEX A-Statement of Requirement.**

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual*

(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>)
issued by Public Works and Government Services Canada.

3.1 General Conditions

2010A (2013-04-25), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

4. Term of Contract

4.1 Delivery Date

All the deliverables must be received on or before **31 March/2014**.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Floyd Gillis
Supply Officer
Atlantic Region Acquisitions
1713 Bedford Row, Halifax, NS B3J 3C9
Téléphone: 902.496.5566
Facsimile | 902.496.5016
floyd.gillis@pwgsc-tpsgc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Project Authority

The Project Authority for the Contract is: **(TO BE COMPLETED AT AWARD)**

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____

Facsimile: _____

E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative

5.3 Contractor's Representative

(TO BE COMPLETED BY BIDDER)

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____

Facsimile: _____

E-mail address: _____

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit price(s) as specified in **Annex B** for a cost of \$ _____ **TO BE ANNOUNCED AT AWARD**. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.2 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.3 Single Payment

Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada

7. Certifications

7.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

8. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in **Nova Scotia**.

9. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (B) General Conditions 2010A - Goods (Medium Complexity) (2013-04-25)
- (C) Annex A, Statement of Requirement;
- (D) Annex B, Basis Of Payment
- (E) the Contractor's bid dated _____

10. Defence Contract

Solicitation No. - N° de l'invitation

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File No. - N° du dossier

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Buyer ID - Id de l'acheteur

hal321

CCC No./N° CCC - FMS No/ N° VME

A9006C (2012-07-16) Defence Contract

11. Condition of Material

The Contractor must provide material that is new production of current manufacture supplied by the principal manufacturer or its accredited agent. The material must conform to the latest issue of the applicable drawing, specification and part number, as applicable, that was in effect on the bid closing date.

12. SACC Manual Clauses

B150C (2006-06-16) Electrical Equipment

ANNEX A

STATEMENT of REQUIREMENT

The Fleet Maintenance Facility (FMF), Cape Scott, CFB Halifax, HMC Dockyard, Halifax, Nova Scotia has a requirement for the following:

Purchase Description: Handheld Cable and Antenna Analyzer (Quantity 1) complete with options as shown below:

1. 2-Port cable loss (source module, detector, power monitor, DIN to D-sub adapter, 2MHz low frequency extension)
2. Additional rechargeable NiMH battery
3. Battery charger w/universal power supply
4. Open/Short DC to 18 GHz N(m)
5. Precision termination DC to 18GHz 40dB N(m) (Qty 2)
6. Open/Short DC to 18GHz N(f)
7. Precision termination DC to 18GHz 40dB N(f)
8. Test port extension cable, armoured, 1.5M, DC to 18GHz, 50Ω
9. Precision adapter, DC to 18GHz, 50 Ω, N(f)-N(f)
10. Precision adapter, DC to 18GHz, 50 Ω, N(m)- N(m)
11. WR90-Waveguide CAL /Adapter Kit
12. WR112 - Waveguide CAL / Adapter kit
13. hard-sided transit case
14. 1/8 Offset Short, US, 7.05 to 10.00 GHz
15. 3/8 Offset Short, US, 7.05 to 10.00 GHz
16. 1/8 Offset Short, US, 8.20 to 12.40 GHz
17. 3/8 Offset Short, US, 8.20 to 12.40 GHz
18. Precision load - 7.05 to 10.00 GHz
19. Precision load - 8.20 to 12.40 GHz

General Description: Handheld, battery operated, broadband microwave transmission line and Antenna Analyzer used in the verification, troubleshooting, and repair of microwave cables and communications systems. C/W built in DTF k(f) test port connector.

Minimum Specifications:

1.0 Frequency:

- 1.1 Range:
 - 1.1.1 25MHz to 20000MHz
- 1.2 Accuracy:
 - 1.2.1 <3 ppm at +25°C
- 1.3 Resolution:
 - 1.3.1 10 KHz (100KHz for distance to fault)
- 1.4 Output power (from RF out port)

1.4.1 <0dBm**2.0 Immunity to interfering signals:**

2.1 On channel: +13dBm

2.2 On frequency: -10dBm

3.0 Measurement speed:

3.1 Return loss, SWR, DTF:

3.1.1 CW on: = sec/sweep for 517 data points

3.1.2 CW off: = for 517 data points

3.2 Number of data points: 130, 259, 517

4.0 Return Loss:

4.1 Range: 0.00 to 60.00 dB

4.2 Resolution: 0.01 dB

5.0 VSWR:

5.1 Range: 1.00 to 65.53

5.2 Resolution: 0.01

6.0 Coax waveguide (1-port) insertion loss:

6.1 Range: 0.00 to 30.00 dB

6.2 Resolution: 0.01 dB

7.0 Measurement accuracy:

7.1 < 5 GHz: = 42 dB

7.2 <15 GHz: = 36 dB

7.3 >15 GHz: > 32 dB

8.0 Distance to fault:**8.1 Vertical Range:**

8.1.1 Return loss: 0.00 TO 60DB

8.1.2 VSWR: 1.00 to 65.53

8.2 Horizontal Range: 0 to (# of data points -1) X horizontal resolution**8.3 Horizontal resolution:**8.3.1 Coaxial Cable (rectangular windowing): $(1.5 \times 10 \exp.8) (V_p)/rF$

VP= cable's relative propagation velocity/

rF= stop frequency - start frequency (Hz)

8.3.2 Waveguide: $(1.5 \times 10 \exp.8) (r \cdot 1 - (F_c/F_1)^2) / rF$
 F_c =waveguide cut-off frequency (Hz)
 F_1 = start frequency (Hz)
 rF = stop frequency - start frequency (Hz)

9.0 Test port connector:

9.1 connector: Precision K(f)

10.0 2 - port cable loss:

10.1 CW source module:

10.1.1 Frequency range: 2MHz to 20000MHz

10.1.2 Frequency accuracy: = ppm at +25°C

10.1.3 Max power at RF out port: +15dBm, maximum

10.1.4 Ports: N(f), ±15V DC, +20dBm, max input

10.2 2 - port cable loss measurement:

10.2.1 Detector range:-50 to +20 dBm, 10nW, 100mW

10.2.2 Display range:-60 to +60 dB(m)

10.2.3 Resolution: 0.1 Db

10.2.4 Measurement accuracy:

10.2.4.1 <10dB cable loss: ±0.85dB maximum

10.2.4.2 <30 dB cable loss: ±1.35dB maximum

11.0 Warranty:

1 year return to manufacturer all parts and labour included.

12.0 Certification:

The equipment shall be certified by an acceptable Certification Organization. The following Certification Organizations are acceptable. The electrical control must bear a label from one of these organizations in order to be recognized as approved. Identify which Organization shall be used:

NOTE: Labels from all Organizations below (with the exception of CSA and ULC), must be accompanied by a small "c" at the eight o'clock position or Canadian Standard number to indicate the product has been certified to the Canadian Standard.

- A. Canadian Standards Association (CSA)
- B. Entela (see note)
- C. Intertek Testing Services (see note)
- D. ETL Testing Laboratories (see note)
- E. Warnock Hersey (WH) (see note)
- F. Underwriters Laboratories of Canada (ULC)

G. Underwriters Laboratories Inc. (UL) (see note)

H. MET Laboratories Inc. (MET) (see note)

I. TUV Rheinland of North America (see note)

J. Quality Auditing Institute (QAI) (see note)

K. TUV America Inc. (see note)

L. Factory Mutual (FM) Approvals (see note)

M. Omni-Test Laboratories Inc. (see note)

N. Curtis-Straus LLC (see note)

O. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labelled (complete with verification documentation) by the Canadian Standards Association (CSA), Cantest Ltd, Entela, Intertek Testing Services, MET Laboratories, TUV SUD America Inc, Underwriters Laboratories of Canada, Electrical Safety Authority (ESA), or QPS Evaluation Services Inc. under the Special Inspection Program. This inspection must take place before equipment delivery.

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Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

hal321

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

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HAL-3-71171

ANNEX B
Basis of Payment

Evaluation of Price: The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian Customs Duties and Excise Taxes included.

Basis of Selection: A bid must comply with the requirements of the bid solicitation and **meet all minimum specifications as per Annex A** to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

Note: Bidders are required to complete the pricing table shown below. An incomplete bid (financial or technical) will be deemed non-responsive and will not be considered for further evaluation.

All pricing entered in the table below is to **exclude** GST/HST.

Delivery Date

All the deliverables must be received on or before **31 March/2014**

Description	Total
Handheld Cable and Antenna Analyzer (Quantity 1) complete with options as shown in ANNEX A.	\$ _____
Mandatory Delivery Date: 31 March/2014	YES/NO (Circle One)

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