



**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.)  
Halifax  
Nova Scotia  
B3J 1T3  
Bid Fax: (902) 496-5016

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise  
indicated, all other terms and conditions of the Solicitation  
remain the same.

Ce document est par la présente révisé; sauf indication contraire,  
les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

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

**Issuing Office - Bureau de distribution**  
Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
Halifax  
Nova Scot  
B3J 1T3

|  |  |
|--|--|
| <b>Title - Sujet</b> Signal Generator<br>DND (FMFCS) has a requirement for 2 Signal Generators, and related equipment.   |  |
| <b>Solicitation No. - N° de l'invitation</b><br>W355B-215215/A   | <b>Amendment No. - N° modif.</b><br>004      |
| <b>Client Reference No. - N° de référence du client</b><br>W355B-21-5215   | <b>Date</b><br>2021-09-27                    |
| <b>GETS Reference No. - N° de référence de SEAG</b><br>PW-\$HAL-208-11336  |  |
| <b>File No. - N° de dossier</b><br>HAL-1-87029 (208)   | <b>CCC No./N° CCC - FMS No./N° VME</b>       |
| <b>Solicitation Closes - L'invitation prend fin</b><br><b>at - à 02:00 PM</b> Atlantic Daylight Saving Time ADT<br><b>on - le 2021-10-05</b> Heure Avancée de l'Atlantique HAA |  |
| <b>F.O.B. - F.A.B.</b><br><b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>    |  |
| <b>Address Enquiries to: - Adresser toutes questions à:</b><br>LeBlanc, JoAnne   | <b>Buyer Id - Id de l'acheteur</b><br>hal208 |
| <b>Telephone No. - N° de téléphone</b><br>(902) 225-6730 ( )   | <b>FAX No. - N° de FAX</b><br>(902) 496-5016 |
| <b>Destination - of Goods, Services, and Construction:</b><br><b>Destination - des biens, services et construction:</b>  |  |

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

**THIS AMENDMENT NO. 004 TO THE REQUEST FOR PROPOSAL IS BEING RAISED TO ADDRESS SUPPLIER QUESTIONS.**

**Supplier Question 1:**

**Requirement 2.1.6: Must** have pulse waveform with variable edge times.

**Statement:** The specified instrument, KeySight Model N5183B-520, does not specify variable edge time capability or performance in the product data sheet. This would imply that variable edge time is not supported although this is listed as a mandatory requirement.

**Question:** Please specify the variable edge time performance requirements for the solicitation or the variable edge time specifications of the proposed KeySight Model N5183B-520 configuration. If this feature is in fact not supported with the KeySight Model N5183B-520, please remove this requirement from the solicitation.

**Answer:**

Variable edge times **are Not Required**.

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**Supplier Question 2:**

**Requirement 2.1.9: Must** have Dual-channel capability.

**Statement:** The specified instrument, KeySight Model N5183B-520, does not specify dual channel capability in the product data sheet. This would imply that dual channel output is not supported although this is listed as a mandatory requirement.

**Question:** Please confirm the dual channel capability is supported with the proposed instrument and the performance specifications and requirements of the second RF channel. If this feature is in fact not supported with the KeySight Model N5183B-520, please remove this requirement from the solicitation.

**Answer:**

Dual Channel capability **is Not Required**.

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**Supplier Question 3:**

Part of your **mandatory requirements** listed on section 2.1.7. The equipment must have : AM, FM, PM, Multifunction Generator, Pulse, Pulse Train Generator (PTG). Those features required the following options. And these options are not listed in the Annex B Basis of payment.

|        |            |  |
|--------|------------|--|
| N5183B | N5183B-UNT | AM, FM phase modulation                        |
| N5183B | N5183B-UNW | Narrow pulse modulation                        |
| N5183B | N5183B-303 | Multifunction generator                        |
| N5183B | N5183B-320 | Pulse train generator, fixed perpetual license |

For the **mandatory requirement** on line 2.1.9. *Must have Dual-channel capability.* Can you please confirm that you are referring the Baseband Generator: The multifunction generator option (Option 303) consists of 7 waveform generators that can be set independently with up to 5 simultaneously using the composite modulation features in AM, FM/PM plus LF out and not the RF output, because the N5183B only have 1 RF out.

**Answer:**

Dual Channel capability *is Not Required.*

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**Supplier Question 4:**

For the **mandatory requirement** on line 2.1.13. *Must have traceable calibration certificate standard.*

Can you please confirm that the customer also need the accredited certificate of calibration with data. Please note that your **Annex B should include** this option for the calibration: N5183B-UK6 Commercial calibration certificate with test data.

**Answer:**

Yes, we want Calibration Certificate

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**Supplier Question 5:**

For the **mandatory requirement** on line 2.1.3. *Must have Type -N (f) RF Output connectors:* we were asked to quote the option N5183B-1ED :Type-N (f) RF output connector, however, you are also asking to have 2.2.3. *Must have 3.5SMA male, 50  $\Omega$  (nom) connectors* . You can't have both connector for the same output. Customers need to choose between the Standard connector (3.5mm) or to optional N-Type (option: N5183B-1ED).

**Answer:**

We want the N-Type connector

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**Supplier Question 6:**

On the Annex B - Table A & Table B, it is required to quote 2x 8 hours of training. We believe this is a mistake. It should be only qty of 1 : 8 hours remote training for each Table. Please confirm.

**Answer:**

Training is NO longer required under this requirement, and will be removed in its entirety.

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

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### **Supplier Question 7:**

Base on the technical requirement; the correct configuration should be as follows:

| <b>Product No</b> | <b>Product Option</b> | <b>Description</b>                                |
|-------------------|-----------------------|---|
| N5183B            | N5183B                | MXG X-Series Microwave Analog Signal Generator    |
| N5183B            | N5183B-1E1            | Step attenuator, 115 dB                           |
| N5183B            | N5183B-1EA            | High output power                                 |
| N5183B            | N5183B-1ED            | Type-N (f) RF output connector                    |
| N5183B            | N5183B-303            | Multifunction generator                           |
| N5183B            | N5183B-320            | Pulse train generator, fixed perpetual license    |
| N5183B            | N5183B-520            | Frequency range, 9 kHz to 20 GHz                  |
| N5183B            | N5183B-CVR            | Front panel cover                                 |
| N5183B            | N5183B-UNT            | AM, FM phase modulation                           |
| N5183B            | N5183B-UNW            | Narrow pulse modulation                           |
| N5183B            | N5183B-UNY            | Enhanced low phase noise                          |
| N5183B            | N5183B-UK6            | Commercial calibration certificate with test data |

**Answer:**

Yes, the above configuration will work for us.

**NOTE TO BIDDERS:** PLEASE REFER TO THE **REVISED ANNEXES**, FOUND AT THE END OF THIS REQUEST FOR PROPOSAL AMENDMENT, FOR RELEVANT ASSOCIATED CHANGES.

**THE REVISED ANNEXES “A”, “B” and “C” ARE INCLUDED  
ON THE FOLLOWING PAGES.**

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**REFER TO: ANNEX A – STATEMENT OF REQUIREMENT**

**DELETE: IN ITS ENTIRETY.**

**INSERT:**

**REVISED ANNEX "A" - STATEMENT OF REQUIREMENT**

**1. GENERAL DESCRIPTION**

1.1. The Department of Defence (DND) Fleet Maintenance Facility Cape Scott (FMFCS) has a requirement for the supply of two (2) Signal Generators (N5183B-520), two (2) Step Attenuators (N5183B-1E1), two (2) High Output Power (N5183B-1EA), two (2) Enhanced Low Phase Noise (N5183B-UNY), two (2) Type -N (f) RF Output connectors (N5183B-1ED) and two (2) Front panel covers (N5183B-CVR) as per the purchase description

**2. SPECIFICATIONS**

**2.1. Microwave Analog Signal Generators, - Qty. (2)**

**MANDATORY SPECIFICATIONS:**

- 2.1.1. **Must** have Frequency range, 9 kHz to 20 GHz
- 2.1.2. **Must** have Frequency reference accuracy (Reference output) amplitude of  $\geq +4$  dBm, (nom) into 50  $\Omega$  load
- 2.1.3. **Must** have Type -N (f) RF Output connectors
- 2.1.4. **Must** have 5.6 in colour TFT LCD Display for full confidence in settings waveform shape
- 2.1.5. **Must** have Phase offset capable of adjustment in nominal 0.1° increments
- 2.1.6. **Must** have AM, FM, PM, Multifunction Generator, Pulse, Pulse Train Generator (PTG)
- 2.1.7. **Must** have Sweep modes, Step sweep and List sweep
- 2.1.8. **Must** have USB connectivity for storage of waveforms
- 2.1.9. **Must** have LXI Class C compliant USB Version 2.0, GPIB IEEE-488.2, 1987 listen and talk LAN 1000BaseT LAN interface
- 2.1.10. **Must** have a front cover
- 2.1.11. **Must** have traceable calibration certificate standard
- 2.1.12. **Must** have Enhanced low phase noise
- 2.1.13. **Must** have output parameters, settable range of +30 to -135 dB
- 2.1.14. **Must** have Step attenuator Output parameters of 0 to 115dB in 10dB steps Mechanical type

**2.2. 115 dB Step Attenuators, - Qty. (2)**

**MANDATORY SPECIFICATIONS:**

- 2.2.1. **Must** have Attenuator hold range -15 dBm to maximum specified output power with step attenuator in 0 dB state; can be offset using mechanical attenuator
- 2.2.2. **Must** have Step attenuator Output parameters of 0 to 115dB in 10dB steps mechanical type
- 2.2.3. **Must** include commercial calibration certificate with test data

### 2.3. High output power, - Qty. (2)

#### **MANDATORY SPECIFICATIONS:**

- 2.3.1. **Must** provide maximum output power of 9kHz to 3.2GHz +23dBm, >3.2 to 13 GHz +20 dBm, 13 to 20 GHz +19 dBm
- 2.3.2. **Must** include commercial calibration certificate with test data

### 3. Electrical Certification

- 3.1. The Equipment being supplied must be certified by an acceptable electrical certified organisation. The electrical control **MUST** bear a label from one of these organizations in order to be recognized approved.

- 3.1.1. Canadian Standards Association (CSA),
- 3.1.2. QPS/Entela,
- 3.1.3. Intertek Testing Services,
- 3.1.4. Underwriters Laboratories of Canada (ULC),
- 3.1.5. Underwriters Laboratories Inc. (UL),
- 3.1.6. Met Laboratories Inc. (MET),
- 3.1.7. TUV Rheinland of North America,
- 3.1.8. Quality Auditing Institute (QAI),
- 3.1.9. TUV America Inc.,
- 3.1.10. NSF International,
- 3.1.11. Nemko Canada Inc.
- 3.1.12. Curtis-Straus LLC
- 3.1.13. OTL Omni Test Laboratories
- 3.1.14. FM Approvals LLL

- 3.2. Electrical equipment that is not certified by one of the above agencies can only be accepted if the equipment is "field" inspected and labelled by the Canadian Standards Association (CSA), QPS/Entela, Intertek Testing Services, MET Laboratories, TUV America Inc., Underwriters Laboratories of Canada under the Special Inspection Program. **This inspection must take place before equipment delivery to FMF Cape Scott and a copy of verification documentation report must accompany the machine with delivery:**

- 3.2.1. Canadian Standards Association (CSA) C22.2 No. 61010-1-12,
- 3.2.2. QPS/Entela,
- 3.2.3. Intertek Testing Services,
- 3.2.4. Met Laboratories Inc. (MET),
- 3.2.5. TUV America Inc.,
- 3.2.6. Underwriters Laboratories of Canada (ULC).
- 3.2.7. ESA Electrical Safety Authority

- 3.3. **NOTE:** Labels from all Organizations above (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.

### 4. Manufacturer, Model and options:

- 4.1. The equipment supplied must be as follows, or equivalent:
  - 4.1.1. Keysight, model N5183B, MXG X-Series Microwave Analog Signal Generator
  - 4.1.2. Keysight, model N5183B-520, Pulse Train Generator, Fixed Perpetual License,
  - 4.1.3. Keysight, option N5183B-1EA, High Output Power,
  - 4.1.4. Keysight, option N5183B-1E1, Step Attenuator 115dB,
  - 4.1.5. Keysight, option N5183B-UNY, Enhanced Low Phase Noise

- 4.1.6.Keysight, option N5183B-1ED, Type-N (f) RF Output Connector,
- 4.1.7.Keysight, option N5183B-CVR, Front Panel Cover
- 4.1.8.Keysight, option N5183B-303 Multifunction Generator
- 4.1.9.Keysight, option N5183B-320 Pulse Train Generator, Fixed Perpetual License
- 4.1.10. Keysight, option N5183B-UNW, Narrow Pulse Modulation
- 4.1.11. Keysight, option N5183-UNT AM, FM Phase Modulation.
- 4.1.12. Keysight, option N5183B-UK6 Commercial Calibration Certificate wit Test Data

**5. Special / Additional Instructions:**

- 5.1. **Quotes are to include shipping / delivery costs.**
- 5.2. **Must have a minimum one (1) year warranty.**
- 5.3. Supply owner with two (2) copies of material and maintenance manuals.
- 5.4. **Training is NO longer required under this requirement, and is being removed in its entirety.**

**6. OPTIONAL REQUIREMENTS**

- 6.1. The Government of Canada must be able to exercise an option to purchase an additional 2 Keysight, model, N5183B-520 with all options as listed in this document on an as required basis of up to one year from receiving the initial equipment.
- 6.2. Delivery of optional equipment could be requested to be delivered to either one of the two addresses below:

Central Store Facility, Fleet Maintenance Cape Breton  
CFB Esquimalt (Dockyard), Building D250, Door 33  
1600 Esquimalt Road, Victoria, BC  
V9A 7N2

or

CFB HALIFAX,  
Fleet Maintenance Facility Cape Scott  
Building D-200, Door 13  
Halifax, Nova Scotia  
B3K 5X5

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HAL-1-87029

Buyer ID - Id de l'acheteur  
HAL208  
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**REFER TO: ANNEX B – BASIS OF PAYMENT**

**DELETE: IN ITS ENTIRETY.**

**INSERT: REVISED ANNEX "B" – BASIS OF PAYMENT**

The prices are in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, DDP Incoterms 2000, Canadian Customs Duties Taxes included.

Delivery is Delivery Duty Paid (DDP) Incoterms 2000.

The contractor is responsible for all delivery charges, administration cost and risks of transport and customs clearance, including the payment of customs duties and taxes to the destination.

**TABLE A - Firm Requirement**

| ITEM  | U of I | QTY | UNIT PRICE | EXTENDED |
|---|--------|-----|------------|----------|
| Keysight, model N5183B, MXG X-Series Signal Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                       | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1EA, High Output Power, as fully detailed in Annex A<br><b>Make and Model:</b>                              | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1E1, Step Attenuator 115dB, as fully detailed in Annex A<br><b>Make and Model:</b>                          | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1ED, Type-N (f) RF Output Connector, as fully detailed in Annex A<br><b>Make and Model:</b>                 | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-303, Multifunction Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                        | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-320, Pulse Train Generator, Fixed Perpetual License, as fully detailed in Annex A<br><b>Make and Model:</b> | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-520, MXG X-Series Signal Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                  | EA     | 2   | \$         | \$       |
| Keysight, Keysight, option N5183B-CVR, Front Panel Cover, as fully detailed in Annex A<br><b>Make and Model:</b>                    | EA     | 2   | \$         | \$       |

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| ITEM   | U of I | QTY | UNIT PRICE | EXTENDED |
|--|--------|-----|------------|----------|
| Keysight, option N5183B-UNT, AM, FM Phase Modulation, as fully detailed in Annex A<br><b>Make and Model:</b>                           | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UNW, Narrow Pulse Modulation, as fully detailed in Annex A<br><b>Make and Model:</b>                           | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UNY, Enhanced Low Phase Noise, as fully detailed in Annex A<br><b>Make and Model:</b>                          | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UK6, Commercial Calibration Certificate with Test Data, as fully detailed in Annex A<br><b>Make and Model:</b> | EA     | 2   | \$         | \$       |
| <b>TOTAL COST (H.S.T. Extra)</b>   |        |     |            | \$       |

**TABLE B – Optional Requirement**

| ITEM  | U of I | QTY | UNIT PRICE | EXTENDED |
|---|--------|-----|------------|----------|
| Keysight, model N5183B, MXG X-Series Signal Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                       | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1EA, High Output Power, as fully detailed in Annex A<br><b>Make and Model:</b>                              | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1E1, Step Attenuator 115dB, as fully detailed in Annex A<br><b>Make and Model:</b>                          | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-1ED, Type-N (f) RF Output Connector, as fully detailed in Annex A<br><b>Make and Model:</b>                 | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-303, Multifunction Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                        | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-320, Pulse Train Generator, Fixed Perpetual License, as fully detailed in Annex A<br><b>Make and Model:</b> | EA     | 2   | \$         | \$       |

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| ITEM   | U of I | QTY | UNIT PRICE | EXTENDED |
|--|--------|-----|------------|----------|
| Keysight, option N5183B-520, MXG X-Series Signal Generator, as fully detailed in Annex A<br><b>Make and Model:</b>                     | EA     | 2   | \$         | \$       |
| Keysight, Keysight, option N5183B-CVR, Front Panel Cover, as fully detailed in Annex A<br><b>Make and Model:</b>                       | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UNT, AM, FM Phase Modulation, as fully detailed in Annex A<br><b>Make and Model:</b>                           | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UNW, Narrow Pulse Modulation, as fully detailed in Annex A<br><b>Make and Model:</b>                           | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UNY, Enhanced Low Phase Noise, as fully detailed in Annex A<br><b>Make and Model:</b>                          | EA     | 2   | \$         | \$       |
| Keysight, option N5183B-UK6, Commercial Calibration Certificate with Test Data, as fully detailed in Annex A<br><b>Make and Model:</b> | EA     | 2   | \$         | \$       |
| <b>TOTAL COST (H.S.T. Extra)</b>   |        |     |            | \$       |

Bidders must submit a total firm price, for all items listed above. A financial bid addressing only a portion of the requirement will be declared non-responsive.

**For Evaluation Purposes:**

Total cost of TABLE A \$ \_\_\_\_\_ (H.S.T. Extra)

Total cost of TABLE B \$ \_\_\_\_\_ (H.S.T. Extra)

**TOTAL COST (TABLE A + TABLE B) \$ \_\_\_\_\_ (HST extra )  
(delivery charges included)**

NAME OF BIDDING COMPANY / BIDDER: \_\_\_\_\_

Date: \_\_\_\_\_

**REFER TO: ANNEX C – STATEMENT OF REQUIREMENT – CROSS REFERENCES**

**DELETE: IN ITS ENTIRETY.**

**INSERT: REVISED ANNEX C – STATEMENT OF REQUIREMENT – CROSS REFERENCES**

**Instructions:** Bidders should include two (2) copies of descriptive literature; if available, for the item(s) offered in sufficient detail to clearly indicate compliance with each of the individual requirements from the Statement of Requirement (SOR) detailed herein.

Bidders should cross reference the page number and highlight the specification in your technical data sheets or brochure to demonstrate and support your compliance for each of the Mandatory Technical Criteria within the SOR. You may add any comments to support your bid.

It will be to your advantage to furnish as much detail as possible to support your comments and your claims of compliance for each specification.

**NOTE:** The Crown is under NO obligation to seek clarification of the bid(s) or the supporting technical documentation provided. Failure to meet any of the following will render your proposal non-compliant and will be given no further consideration.

| NO.    | SPECIFICATIONS   | PAGE NUMBER OR CROSS REFERENCE | COMMENT(S) |
|--------|--|--------------------------------|------------|
| 2.1.1  | Must have Frequency range, 9 kHz to 20 GHz   |                                |            |
| 2.1.2  | Must have Frequency reference accuracy (Reference output) amplitude of $\geq +4$ dBm, (nom) into 50 $\Omega$ load  |                                |            |
| 2.1.3  | Must have Type -N (f) RF Output connectors   |                                |            |
| 2.1.4  | Must have 5.6 in colour TFT LCD Display for full confidence in settings waveform shape                             |                                |            |
| 2.1.5  | Must have Phase offset capable of adjustment in nominal 0.1° increments  |                                |            |
| 2.1.6  | Must have AM, FM, PM, Multifunction Generator, Pulse, PTG  |                                |            |
| 2.1.7  | Must have Sweep modes, Step sweep and List sweep   |                                |            |
| 2.1.8  | Must have USB connectivity for storage of waveforms  |                                |            |
| 2.1.9  | Must have LXI Class C compliant USB Version 2.0, GPIB IEEE-488.2, 1987 listen and talk LAN 1000BaseT LAN interface |                                |            |
| 2.1.10 | Must have a front cover  |                                |            |

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| NO.    | SPECIFICATIONS  | PAGE NUMBER OR CROSS REFERENCE | COMMENT(S) |
|--------|---|--------------------------------|------------|
| 2.1.11 | Must have traceable calibration certificate standard  |                                |            |
| 2.1.12 | Must have Enhanced low phase noise  |                                |            |
| 2.1.13 | Must have output parameters, settable range of +30 to -135 dB   |                                |            |
| 2.1.14 | Must have Step attenuator Output parameters of 0 to 115dB in 10dB steps Mechanical type   |                                |            |
| 2.2.1  | Must have Attenuator hold range -15 dBm to maximum specified output power with step attenuator in 0 dB state; can be offset using mechanical attenuator |                                |            |
| 2.2.2  | Must have Step attenuator Output parameters of 0 to 115dB in 10dB steps mechanical type   |                                |            |
| 2.2.3  | Must include commercial calibration certificate with test data  |                                |            |
| 2.3.1  | Must provide maximum output power of 9kHz to 3.2GHz +23dBm, >3.2 to 13 GHz +20 dBm, 13 to 20 GHz +19 dBm  |                                |            |
| 2.3.2  | Must include commercial calibration certificate with test data  |                                |            |
| 3      | Electrical Certification  |                                |            |

**ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED**