

TITLE: Heterodyne 50 GHz Electrical Spectrum Analyzer

Requesting Laboratory / Division / Group:

Communications Technology Laboratory  
Radio Frequency Technology Division  
High-Speed Waveform Metrology Group (672.03)

General Statement of Need:

An electrical spectrum analyzer is required to measure the beat frequency of the NIST heterodyne system used to calibrate the magnitude frequency response of photodiodes. A maximum measurement frequency of 50 GHz is required to match the response range of RF power sensors used in the system. The spectrum analyzer must track the slow-moving beat frequency and have a 10 MHz external frequency reference to provide traceability to the SI unit of time. The analyzer must be capable of front panel operation (integral display or external CPU operation with display; must be compatible with a Windows based computer) as well as remote control through USB/VISA software interface

Items and Ancillary Services:

Item 1:	50 GHz Electrical Spectrum Analyzer	
Quantity:	1	
Specifications:	1.1	Measurement BW range: 1 MHz to 50 GHz
	1.2	Measurement BW span: 10 kHz to 50 GHz
	1.3	Resolution BW range: 1 Hz to 3 MHz
	1.4	Video BW range: 1 Hz to 3 MHz
	1.5	Amplitude range: -60 dBm to +10 dBm
	1.6	10 MHz external reference frequency input
	1.7	Sweep mode: continuous
	1.8	Peak marker detection with centering and tracking
	1.9	Front panel interface (internal or external w/CPU-Window Compatible)
	1.10	Remote operation with USB/VISA software interface
		Electrical input connection: coaxial to 50 GHz

Service Requirements / Item Specifications:

Section	Requirements/Specifications
Planning Considerations <input checked="" type="checkbox"/> N/A	<div><input type="checkbox"/> List any visits required to allow potential vendors to see site specific constraints. [Explain Requirements.]</div> <div><input type="checkbox"/> US citizen required on-site (foreign nationals require pre-registration 30 days prior to visit.)</div> <div><input type="checkbox"/> Vendor Representative On-Site more than three (3) days.</div> <div><input type="checkbox"/> Other Considerations: [List other considerations to ensure an accurate quote.]</div>
Shipping & Delivery <input type="checkbox"/> N/A	<div>Shipping Address:<div><input checked="" type="checkbox"/> NIST-Boulder ATTN: Tasshi Dennis MS 672.03 325 Broadway Boulder, CO 80305</div><div><input type="checkbox"/> [Alternate Shipping Address]</div></div> <div>Shipping Criteria:<div><input type="checkbox"/> Partial Delivery Acceptable</div><div><input type="checkbox"/> [Enter Shipping and Delivery information by item.]</div><div><input type="checkbox"/> Direct Delivery to Building Required [Explain Need for Requirement]<div><input type="checkbox"/> Building has Loading Dock</div>Containerization Preference: [Enter Container Type]</div>Other Requirements: [List Any Other Requirement]</div>

Delivery Date Criteria:

☐ Delivery of Goods, Installation, and Training shall be competed no later than: 30 Days After Award

☐ Delivery No Earlier Than: Click or tap to enter a date.

☐ Other: [List other shipping, delivery, or special requirements.]  
[List Other Shipping, Delivery or Special Requirements.]

- ☐ Equipment Set Up
- ☐ Start-Up Services
- ☐ Turnkey Installation
- ☐ Other:  
[Enter Details]
- NOTE:  
When installation is required, TPOC shall be the coordination point.

Facility / Utility Considerations

☒ N/A

[List Site Specific Utility Considerations by Item]

☐ OFPM Work Order Numbers  
[List Work Order Numbers]

☐ Power Available  
Voltage: [Enter voltage] (V)  
Maximum Current: [Enter max current draw] (A)  
Phase: [Choose Phase]  
Frequency: [Typically 60Hz] (Hz)  
NEMA Plug Type: [Enter Plug Type] (i.e.: NEMA L5-20P)  
Environment: [Choose Environment]  
Other Power Considerations:  
[List Any Other Power Considerations.]

☐ Utility Connections:  
[List Relevant Available Utilities, Pressure(s) and Flowrate(s).]

☐ Other Considerations:  
[List Other Considerations to Ensure an Accurate Quote.]

Warranty

☐ N/A

Base Manufacturer Warranty is acceptable

[If you require an Extended Manufacturer Warranty, describe the warranty requirements per item.]

What is included?

☐ Labor ☐ Parts ☐ Travel ☐ Cost and Liability for Returns

☐ Other  
[Enter Other Requirements]

☐ Warranty Length: [i.e. 3 - Years]

Training

☒ N/A

[Training Requirements (Who, When, What, Where)]

☐ On-Site  
Is Travel Required: [Choose Answer]

☐ Off-Site Location: [Enter Location(s)]

☐ Number of Trainees: [Enter Number of Trainees]

Scope of Training

☐ Operations ☐ Maintenance ☐ Troubleshooting ☐ Safety

☐ Other  
[Enter Other Scope Requirements]

☐ Training materials to be provided:  
[Describe Requirements]

☐ Other  
[Enter Other Training Requirements]

NOTE: When training is required, TPOC shall be coordinator.

Inspection and Acceptance

☐ N/A

[Inspection Requirements Per Item (Who, When, What, Where)]

☒ On-Site

[Inspection Requirements Per Item]

☐ Government Acceptance Expected to Not to Exceed 7 Business Days

☒ Government Acceptance Expected to Exceed 7 Business Days  
14 Days

☒ Inspection and Acceptance Plan:  
Existing heterodyne system software to be adapted to control purchased equipment and tracking functionality demonstrated.

☐ Other:  
[Enter Other Requirements]

Maintenance

☒ N/A

[Describe Maintenance Requirements Per Item]

Service Plan Length: [i.e. 3 - Years]

What is Included?

☐ Labor ☐ Spare Parts ☐ Consumables ☐ Travel

☐ Cost and Liability for Returns ☐ Software Updates

☐ Manuals I

☐ Other  
[Enter Other Requirements]

☐ Requirements:  
[Enter Requirements] (i.e.: On-Site Within 72 hours, etc.)

☐ 1 Option Period

☐ 2 Option Periods

☐ 3 Option Periods

☐ 4 Option Periods (Maximum)

Government Furnished Material / Equipment

☒ N/A

[List Any Government Furnished Material / Equipment Per Item]

☒ Samples for Testing

☐ Government Equipment which will leave Government Site (TPOC must coordinate with Division Property Custodian)

Description: [Enter Description]

Serial Number: [Enter Serial Number]

NIST Property Number: [Enter NIST Property Number]

# Requirements / Specification Document

☐ Other:

[Enter Other Details]

Travel

☒ N/A

[Describe any Travel Requirements Per Item]

☐ Explain:

[Enter Justification / Requirement]

☐ Other:

[Enter Other Requirements]

NOTE TO VENDOR: To the maximum extent possible, include travel requirement estimates as part of pertinent sections above (Installation, Maintenance, Repair, etc.). Otherwise, Travel will be a separate line item, reimbursable per the Federal Travel Regulation.