

Requirements / Specification Document

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	<input type="checkbox"/> List any visits required to allow potential vendors to see site specific constraints. [Explain Requirements.] <input type="checkbox"/> US citizen required on-site (foreign nationals require pre-registration 30 days prior to visit.) <input type="checkbox"/> Vendor Representative On-Site more than three (3) days. <input type="checkbox"/> Other Considerations: [List other considerations to ensure an accurate quote.]
Shipping & Delivery <input type="checkbox"/> N/A	Shipping Address: <input checked="" type="checkbox"/> NIST-Boulder ATTN: Tasshi Dennis MS 672.03 325 Broadway Boulder, CO 80305 <input type="checkbox"/> [Alternate Shipping Address] Shipping Criteria: <input type="checkbox"/> Partial Delivery Acceptable <input type="checkbox"/> [Enter Shipping and Delivery information by item.] <input type="checkbox"/> Direct Delivery to Building Required [Explain Need for Requirement] <input type="checkbox"/> Building has Loading Dock Containerization Preference: [Enter Container Type] Other Requirements: [List Any Other Requirement] Delivery Date Criteria: <input type="checkbox"/> Delivery of Goods, Installation, and Training shall be competed no later than: 30 Days After Award <input type="checkbox"/> Delivery No Earlier Than: Click or tap to enter a date. <input type="checkbox"/> Other: [List other shipping, delivery, or special requirements.] [List Other Shipping, Delivery or Special Requirements.]
Electronic Media <input checked="" type="checkbox"/> N/A	[Enter Electronic Media Requirements by Item.] <input type="checkbox"/> Software <input type="checkbox"/> Electronic Manuals <input type="checkbox"/> License Key <input type="checkbox"/> Other: [List Any Other Electronic Media Requirements] <input type="checkbox"/> Email address for Software Delivery: [Enter Address]
Installation <input checked="" type="checkbox"/> N/A	[Enter Installation Requirements by Item] <input type="checkbox"/> Vendor Technician on Site <input type="checkbox"/> Rigging <input type="checkbox"/> Uncrating / Unpackaging <input type="checkbox"/> Removal of Packaging Material

Requirements / Specification Document

- 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]

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Other:
[Enter Other Details]

Travel [Describe any Travel Requirements Per Item]

N/A **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.