

Amendment 01 Questions RFQ-1333ND21QNB640525

1. In Specifications, hardware, CLIN 0001 description you mention that “A Vector network analyzer, based QCM ...” is needed.

a. Could you please clarify why only this type of QCM analyzer is accepted?

A Vector Network Analyzer (VNA) was initially specified because it is generally accepted that VNA instruments offer superior performance in terms of both sensitivity and drift in comparison to conventional exponential decay (QCM-D) instruments. However, upon further consideration, NIST realizes this is a generalization and not a specification. The VNA is not critical to our needs.

b. Do you accept QCM analyzer based on non VNA based operation?

NIST will consider a non VNA based QCM analyzer if it meets all performance specifications.

2. In the same paragraph, you mention: “..ability to track primary resonance frequency plus at least 5 overtones over a frequency range of 4 to 160 MHz... “

a. Please clarify why do you need up to 160MHz range if the 5 overtones of a 5MHz crystal is only 55MHz ?

The primary specifications for this procurement are written around the use of a standard 1 inch, AT torsional cut crystal that operates at 5 MHz. The inquirer is correct in observing that the 5 overtones of this 5 MHz crystal would only require a frequency range of 55 MHz. However, the ability to measure frequencies over a much wider range gives NIST the flexibility of also using much thinner, higher sensitivity crystals that have a higher resonant frequency. This will give NIST flexibility in using the system for a wider range of experiments than described in the introductory paragraph of the Statement of Requirements of this combined synopsis -solicitation.

b. Do you accept the quote if the frequency range is up to 65MHz which allows to measure 6 overtones (3rd, 5th, 7th, 9th, 11th, 13th) ?

NIST will consider an instrument with the frequency range noted above if it meets all other performance specifications.

3. In CLIN0003 description you mention that the QCM cell should be temperature controlled but we do not find temperature specification.

The first sentence of CLIN 0003 states “A QCM measurement cell capable of providing all of the temperature control and gas handling capabilities of CLIN 0002.” This includes the temperature specification. CLIN 0003 should meet the same temperature specifications as CLIN 0002.

4. In the Statement of requirements its written that. “ The QCM wafers/substrates will be coated with uniform films of PEI with thickness in the range of 5nm to 5mm. “ Do you accept an offer if the QCM analyzer can measure QCM crystals which has a total thickness (crystal + coating) about 0.5 mm ?

There was a font conversion error in the Statement of Requirements. The thickness range of relevant PEI films that are of interest to NIST is 5 nanometers (nm) to 5 micrometers (mm). The Statement of Requirements has been clarified/corrected in the solicitation amendment.

5. In Specifications, hardware , CLIN 0001 description you mention that “ A Vector network analyzer, based QCM ...” is needed. In the same paragraph its written “Data acquisition rate of at least 200 datapoints per second ” should be fulfilled. According to our knowledge, VNA based systems can fulfil about ~1 datapoint /second data acquisition rate. Do you accept an offer for a VNA based QCM analyzer with a data acquisition rate in the range of ~1 datapoint /second or do you accept an offer for a non-VNA based system with 200 datapoints per second data acquisition rate?

In response to question 1, the requirement for providing only a VNA-based QCM analyzer has been relaxed. NIST will consider any QCM analyzer that meets the performance specifications as detailed in the Statement of Requirements.