# Malaviya National Institute of Technology Jaipur – 302017

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## CORRIGENDUM

## With regards to the Tender Notice No. F5(963)ST/MNIT/ECE/2021

The due date of opening of tender for "Benchtop Vector network Analyzer" for ECE Engg. Deptt. which is scheduled to be opened on 21.01.2022. The following amendments are hereby made to the NIQ. For details visit: www.mnit.ac.in and https://eprocure.gov.in/epublish/app

| S. No. | Name of fixed assets/Equipment | Before Amendment | After Amendment<br>**Revised Tentative Final Specs** |
|---|---|---|---|
| 1. | Vector Network Analyzer | Benchtop model with 2-ports with display minimum 12 inches | Benchtop model with 2-ports with display minimum 12 inches |
| 2. | Frequency Range | ≤ 10 MHz to 40 GHz or more | ≤ 10 MHz to 40 GHz or more |
| 3. | Number of Ports and Source | 2 Port or more | 2 Port or more |
| 4. | Test Port connector type | 2.4mm (ruggedized male) or 2.92 mm or 1.85 mm/50 ohms | 2.4mm (ruggedized male) or 2.92 mm or 1.85 mm/50 ohms |
| 5. | Frequency Resolution | 1 Hz or better | 1 Hz or better |
| 6. | Frequency Stability (in ppm/yr) | +/- 7 ppm/yr or better | +/- 7 ppm/yr or better |
| 7. | Frequency Accuracy | +/- 7ppm or better | +/- 7ppm or better |
| 8. | Test port output power range | ≤ -20 dBm to 0 dBm or more | ≤ -20 dBm to 0 dBm or more |
| 9. | Power Sweep Range | ≥ 31 dB at 20GHz | ≥ 31 dB at 20GHz |
| | | ≥ 20 dB at 40 GHz | ≥ 20 dB at 40 GHz |
| 10. | System Dynamic Range | ≥ 90 dB at 20GHz | ≥ 90 dB at 20GHz |
| | | ≥ 104 dB at 40 GHz | ≥ 104 dB at 40 GHz |
| 11. | Directivity<br>(for measurement bandwidth of 10 Hz) | ≥ 38dB @ 20 GHz | ≥ 38dB @ 20 GHz |
| | | ≥ 34 dB @ 40 GHz | ≥ 34 dB @ 40 GHz |
| 12. | Source Match<br>(for measurement bandwidth of 10 Hz) | ≥ 36dB @ 20 GHz | ≥ 36dB @ 20 GHz |
| | | ≥ 31 dB @ 40 GHz | ≥ 31 dB @ 40 GHz |
| 13. | Load Match<br>(for measurement bandwidth of 10 Hz) | ≥ 37 dB @ 20 GHz | ≥ 37 dB @ 20 GHz |
| | | ≥ 35 dB @ 40 GHz | ≥ 35 dB @ 40 GHz |
| 14. | Reflection Tracking<br>(for measurement bandwidth of 10 Hz) | ≤ ±0.1 dB @ 10 MHz to 40 GHz | ≤ ±0.1 dB @ 10 MHz to 40 GHz |
| 15. | Transmission Tracking<br>(for measurement bandwidth of 10 Hz) | ≤ ±0.073 dB @ 20 GHz | ≤ ±0.073 dB @ 20 GHz |
| | | ≤ ±0.13dB @ 40 GHz | ≤ ±0.13dB @ 40 GHz |
| 16. | Receiver Noise floor @ 10Hz IF BW | ≤-95dBm @ 40GHz | ≤-95dBm @ 40GHz |
| 17. | Source Phase noise<br>@ 10KHz offset over full frequency range | ≤-60 dBc/Hz@10 MHz to 40 GHz | ≤-60 dBc/Hz@10 MHz to 40 GHz |
| 18. | IF Bandwidth | 1 Hz to 0.5 MHz or more | 1 Hz to 0.5 MHz or more |
| 19. | Number of measurement point | ≤2 to 20000 or more | ≤2 to 20000 or more |
| 20. | Measurement Parameters | S11, S21, S12, S22, a1, b1, 2, b2, arbitrary ratio | S11, S21, S12, S22, a1, b1, 2, b2, arbitrary ratio |
| 21. | Sweep type | Linear frequency, log frequency, power, segmented | Linear frequency, log frequency, power, segmented |

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| 22. | Measurement channels and traces | ≥16 | ≥16 |
| 23. | Calibration types | SOLT, QSOLT, TRM, Ecal etc. | SOLT/QSOLT/TRM/Ecal either one to be offered |
| 24. | Test port damage level | ≥+20 dBm (0.1 Watt) | ≥+20 dBm (0.1 Watt) |
| 25. | Supply Power | 220 to 240 VAC, 50/60 Hz | 220 to 240 VAC, 50/60 Hz |
| 26. | Operating Temperature | ≤5 to 40° C or more | ≤5 to 40° C or more |
| 27. | Operating software | Windows 7 or later | Windows 10 or later |
| 28. | Warranty | 1 year or more standard warranty | 1 year or more standard warranty |
| 29. | General | Onsite installation, commissioning and training for 2 Days. | Onsite installation, commissioning and training for 2 Days. |
| 30. | Accessories | a.2.4 mm Calibration kit | a. 2.4 mm/2.92 mm/ 1.85mm Calibration kit (compatible to instrument) |
| | | b. 2.4 mm test port cables | b. 2.4 mm/2.92 mm/ 1.85mm test port cables (compatible to instrument) |
| | | c. 2.92mm to 2.92 mm Male to Male connector | c. 2.92mm to 2.92 mm Male to Male connector |
| | | d.2.92mm to 2.92 mm Male to Female connector | d.2.92mm to 2.92 mm Male to Female connector |
| | | e.2.92mm to 2.92 mm Female to Female connector | e.2.92mm to 2.92 mm Female to Female connector |
| | | f. 2.92mm to 2.4 mm Male to Male connector | f. 2.92mm to 2.4 mm Male to Male connector |
| | | g. 2.92mm to 2.4 mm Male to Female connector | g. 2.92mm to 2.4 mm Male to Female connector |
| | | h. 2.92mm to 2.4 mm Female to Female connector | h. 2.92mm to 2.4 mm Female to Female connector |
| | | i. 2.4mm to 2.4 mm Male to Male connector | i. 2.4mm to 2.4 mm Male to Male connector |
| | | j. 2.4mm to 2.4 mm Male to Female connector | j. 2.4mm to 2.4 mm Male to Female connector |
| | | k. 2.4mm to 2.4 mm Female to Female connector | k. 2.4mm to 2.4 mm Female to Female connector |
| | | l. SMA to N-type connector (both Male and female) | l. SMA to N-type connector (both Male and female) |
| | | m. 6 pieces of 50 Ω load | m. 6 pieces of 50 Ω load |
| | | | n. 2 pieces of adapter for making the VNA test port connector compatible with SMA connector |
| 31. | 2 Year AMC cost quotation | The quotation of next 2 year of AMC for above equipment is also required. | A separate quotation for the next 2 year of AMC cost for above equipment is also required. However, the bid value of AMC quotation will not be considered while deciding the lowest price bidder for the equipment. |
| **Additional Desirable Features** | | | |
| 32. | Spectrum Analyzer Feature (Future upgradable) | Instrument should be upgradeable to accommodate built in high performance microwave spectrum analyzer enabling for stepped -FFT sweeps & spurious searches over broadband frequency range in future. | Instrument should be upgradeable to accommodate built in high performance microwave spectrum analyzer enabling for stepped -FFT sweeps & spurious searches over broadband frequency range in future. |
| 33. | Upgrade Features | Instrument to have the capability to be upgraded to determine the | Instrument to have the capability to be upgraded to determine the intrinsic |

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| | | intrinsic electromagnetic properties of many dielectric materials , Measures complex permittivity for products like Capacitor, substrates, PCB, PCB antenna, ferrites, magnetic recording heads, absorbers, SAR phantom materials, sensor. It should be able to measure parameters like (εr', ε r '', tan δ, μr', μ r '', tan δm and Cole-Cole) for solids, palette, torroids, etc. wrt to wide frequency range | electromagnetic properties of many dielectric materials , Measures complex permittivity for products like Capacitor, substrates, PCB, PCB antenna, ferrites, magnetic recording heads, absorbers, SAR phantom materials, sensor. It should be able to measure parameters like (εr', ε r '', tan δ, μr', μ r '', tan δm and Cole-Cole) for solids, palette, torroids, etc. wrt to wide frequency range |
| 34. | Upgradability | Proposed System should be upgradable to 50GHz | Proposed System should be upgradable to 50GHz or more |

However, all the terms & conditions of the original NIQ will remain unchanged.

Deputy Registrar
(Store & Purchase)