



राष्ट्रीय प्रौद्योगिकी संस्थान सिलचर

National Institute of Technology Silchar

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CORRIGENDUM

F/N.PS-26/ECE/Corrigendum/et/2020

Date: 30.01.2020

Sub. : CORRIGENDUM of e-Tender.

Tender Ref.:

1. NITS/PS-26/ECE/Equipment/BE Lab/(et)/19, dtd.17.12.19

Modified Specs of BE Lab Equipment (NITS/PS-26/ECE/Equipment/BE Lab/(et)/19)

SL No	Description	Qty. Required
1.	Digital Storage Oscilloscope Bandwidth : 50 MHz Memory Depth : 32k points or higher Real time Sample Rate : 500 MSa/s to 1 GSa/s (all channels) Equivalent Sample rate : 50 GSa/s Waveform update rate: 50,000 wfms/s or higher No. of Channel: Dual Channel, Individual simultaneous Volts/div control for each channel Vertical Sensitivity : 2mV/div to 10V/div 1-2-5 steps Vertical Resolution : 8 bits Accuracy : 2 mV/ div Variable gain ranges: + 4 % 5 mV/ div to 10 V / div in fixed gain ranges : + 3% Rise Time <7 ns Input Impedance : 1 M ohm 16 pF Input Coupling : AC, DC & GND Time Base Range : 5 ns/div to 50 s/div Time Base Accuracy : ± 100ppm measured over 1ms interval Trigger Sources : CH1, CH2, EXT, EXT/5, AC-Line Trigger Mode : Auto, Normal, Single Trigger Type : Edge, Pulse, width, Video, Slope, Alternative Trigger Coupling : AC, DC, LF-Rej, HF-Rej Auto Measure : Min 32 measurements including Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVshoot, FOVshoot, RPREshoot, FPRESshoot, Rise time, Fall	10

	<p>time, Freq, Period, + Wid, - Wid, + Dut, - Dut, BWid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF</p> <p>Math Function : Addition, Subtract, Multiply, Divide & 1024 pt. FFT</p> <p>Scale : 8 x 18 div</p> <p>Probe attenuation factor set: X 1, x 5, x 10, x 50, x 100, x 500, x 1000</p> <p>Direct print function : Should be available</p> <p>Help function on front panel : Should be available</p> <p>Storage: Internal 2 reference waveforms, 20 Setups files & 10 traces files</p> <p>X-Y Bandwidth : 50 MHz</p> <p>Interface: RS-232, USB host, USB Device & pass/fail out</p> <p>PC application Software :Should be provided</p> <p>Display: 7" TFT LCD</p> <p>Waveform Interpolation : Sinx/x, Linear</p> <p>Standard Accessories : Mains Cord, User Manual, Probes- 2No., USB Cable, Standard Software CD</p> <p>Power supply : as per Indian standard</p> <p>Weight : Approx 2.5kg to 3 Kg</p> <p>Warranty: standard 3 years</p>	
2.	<p>50MHz ARBITRARY FUNCTION GENERATOR</p> <p>Maximum Output Frequency : 50 MHz</p> <p>Sampling Rate : 125MSa/s</p> <p>Arbitrary Waveform Length : 16kpts</p> <p>Frequency Resolution : 1μHz</p> <p>Vertical Resolution : 14 bits</p> <p>Waveform : Sine, Square, Ramp/Triangle, Pulse, Gaussian Noise, 46-built-in arbitrary waveform including DC</p> <p>Modulation : AM, DSB-AM, FM, PM, FSK, ASK, PWM, Sweep, Burst</p> <p>Accuracy: \pm 50ppm within 90 days \pm 100ppm within 1 year</p> <p>Temperature coefficient <5ppm/$^{\circ}$C</p> <p>Sine</p> <p>Frequency Range : 1μHz to 50MHz.</p> <p>Total Harmonic Distortion <0.2% (DC-20KHz, 1Vpp)</p> <p>Square wave</p> <p>Frequency Range: 1μHz to 50MHz.</p> <p>Rise-/ Fall time <15ns (10% - 90%)</p> <p>Overshoot <5% (typical, 1kHz, 1Vpp)</p> <p>Variable Duty Cycle: 20% to 80% (to 10MHz), 40% to 60% (to 25MHz).</p> <p>Ramp/Triangle</p> <p>Frequency Range : 1μHz to 500kHz.</p> <p>Linearity <0.1% of peak value output (typical, 1kHz, 1Vpp, 100% symmetric)</p> <p>Symmetry : 0-100%</p> <p>Pulse</p> <p>Frequency Range : 500μHz to 5MHz</p> <p>Pulse width : 16ns-2000s</p> <p>Resolution : 1ns</p> <p>Rise/Fall time : 7ns (10%-90% typical), 1kHz, 1Vpp</p> <p>Duty Cycle : 0.1% Resolution</p> <p>Arbitrary</p>	10


	<p>Frequency Range : 1μHz to 5MHz. Waveform length : 16 k points Vertical resolution : 14 bits Min. Rise/Fall time : 7 ns (typical) Storage (RAM) : 10 waveform</p> <p>Output Specification Amplitude (50Ω): 2mVpp - 10Vpp (≤10MHz) 2mVpp - 5Vpp(> 10MHz) Amplitude Flatness : ± 0.3 dB</p> <p>Frequency Counter Measurement: Frequency, Period, Positive/Negative pulse width, Duty cycle Frequency range : Single Channel: 100mHz- 200MHz Frequency Resolution : 6bits/s</p> <p>General Specification Display: 3.5" TFT LCD Display. Power Supply : 100 - 240Vrms, 50/60 Hz, CAT II Operating Condition : 0 to 40°C Electromagnetic Compatibility : EN 61326-1:2006 EN 61000-3-2:2006 +A2: 2009 EN 61000-3-3:2008 Safety: 2006/95/EC Low Voltage Directive EN 61010 -1:2010/ EN 61010-031:2002 + A1:2008 UL 61010-1:2012, CAN/CSA-C22.2 No. 61010-1:2012</p>	
3.	<p>Analog Digital Trainer</p> <ul style="list-style-type: none"> <input type="checkbox"/> Built in Power Supply DC. Power Supply: 5V / 1A,± 12V, 500mA 0 - + / -12V 150mA (Variable) AC 12 – 0 – 12, 150mA AC <input type="checkbox"/> Built in Function Generator Output Waveform - Sine, Triangle & Square / TTL Output Frequency - 1 Hz to 200 KHz in 6 ranges, with amplitude & frequency control pots. O/P Voltage 20V p-p max <input type="checkbox"/> Clock Generator: 10 MHz TTL clock. <input type="checkbox"/> Input Data Switches and output LED status indicators for High/Low indication (15+1) No <input type="checkbox"/> Pulsar switches (2 nos.) With four denounced outputs 2no. <input type="checkbox"/> Fixed TTL (5V) clocks : 4 Nos. 1KHz, 100Hz, 5Hz, 1Hz <input type="checkbox"/> Logic probe to detect High/Low level pulses up to 1MHz, with bi-color LEDs to indicate status. <input type="checkbox"/> 2 digit 7 segment display with BCD to 7 segment decoder. <input type="checkbox"/> LED BAR graph with 10 LED indicator to display 0-2.5V or 0-4V input. <input type="checkbox"/> Onboard DPM is provided with mode selection. DC volt / current - 200mA/20V - 1no <input type="checkbox"/> Audio Amplifier with gain 20 <input type="checkbox"/> Onboard POTS: 1K-(1No.) & 1M – (1No) 	10

	<p>Onboard speaker - 8Ω, 0.5 Watt (1no) Resettable fuse and push type terminal •Built in bread board panel with 1280 tie points and 400 distribution points totaling to 1680 points along with 4mm banana sockets for tapping from the trainer +5V, +12V GND for the circuits to be assembled on bread board using single stand (#22/24)wire.</p>	
4.	<p>Supply el DC Output : 0 to 30V / 2A , 0 to ± 15V /1A variable , 4.5V-5.5V/5A Setting Resolution : V : 10mV, I : 5 mA Load Regulation ≤ ± (0.05% + 10 mV) Line Regulation ≤ ± (0.05% + 10 mV) Ripple & Noise ≤ 1mVrms Current Limit adjustment : 100mA to max. Protection : Built in Protection against Overload & short circuit should be provided Recovery time < 50μs Insulation Chassis to output > 10MΩ at 100VDC Chassis to AC Plug > 50MΩ at 500VDC Digital Display : Switchable, 3 digit seven segment LED for Voltage & current Input Supply : 230V AC ± 10%, 50-60Hz Operating Temperature : 0 to 40°C</p>	10
5.	<p>DIGITAL MULTIMETER Resistance, capacitance, continuity, beeper, diode, ac amps and dc amps Range : 400mV ~ 1000V AC voltage Range : 400mV ~ 750V DC Current Range : 400μA ~ 10A AC Current Range : 400μA ~ 10A Resistance Range : 400 Ω ~ 40MΩ Frequency : 100Hz ~ 30MHz Capacitance : 4nF ~ 200μF Temperature : -20deg. C ~ 1000 deg. C Basic Accuracy : ± (0.5% + 4) Special Function : Transistor Test, Diode Test, Continuity Buzzer, Low battery Indication, Data Hold, Auto power off, Analog bar graph, Protection : Shockproof protection, overload protection Duty Cycle : 1%~99% Sampling Rate : 3 times/s Input impedance : 10MΩ Maximum Display : 3999 LCD Size : 65×35mm</p>	20

Last Date of Opening of Tender:

Closing Date: 10.02.2020

Opening of Technical Bid: 11.02.2020

 3-11/2020

Nodal Officer,
E-Tendering, Purchase Section