



**GOVERNMENT OF PAKISTAN
PAKISTAN ORDNANCE FACTORIES
TENDER ENQUIRY**

To,

Dear Sirs,

Reference: **TENDER ENQUIRY NO. 0011-LP-52-SCM (R&D) Capt-Pur-III, Dated 30-04-2022**

You are requested to submit quotations for the item(s) noted in the Schedule to the Tender. Offer should be sent duly sealed in an envelope. Please note the following instructions for filling the tender:-

1. **SUBMISSION OF TENDER**

1.1 Tenders will be opened at **12:00 hours on 30.05.2022** and must reach **Bid Center adjacent to Rabita Hall on or before 11:30 hours** up to due date. The tender received late will not be entertained. You may witness the opening of the tender if you so desire. If a representative is deputed, he should bring a letter of authority from you.

1.2 Only one tender should be included in one envelope. The outside of the envelope should be inscribed with:-

Tender Enquiry No. **0011-LP-52-SCM (R&D) Capt-Pur-III, Dated 30-04-2022**

Tender to be opened on: **30.05.2022**

Address as follows:-

"GM-Purchase-I POF Wah Cantt – Pakistan."

1.3 If envelope does not indicate reference of T.E or received late the same may be returned un-opened.

2. **GENERAL INSTRUCTIONS REGARDING PREPARATION OF QUOTATIONS AND EVALUATION CRITERIA**

2.1 Case will be processed exactly as per **PPRA Rules** i.e. in favour of lowest evaluated bidder and single stage two envelope procedure will be utilized for open competitive bidding. The price should be filled in column 5 and delivery date in column 6 of the schedule to this Tender Enquiry. The undertaking should be signed at the bottom of the Schedule which shall form the Quotation. You may use a separate sheet if necessary.

2.2 For Plant and Machinery, you are required to quote in two parts:-

Part I "Technical Offer": It should exclusively give technical details and literatures/brochures of the offered plant, machinery and equipment; validity date; delivery schedule; and signed undertaking given on the schedule to this Tender Enquiry. It must not indicate price, costs etc.

Part II "Commercial Offer" It should indicate the commercial terms e.g. price, terms of payment, mode of payment, mode of supply.

Each part should be placed in a separate sealed cover. The envelopes should be inscribed with: **Part I "Technical Quotation without price" and Part II "Commercial Quotation with Price."**

- 2.3 The quotation must remain valid for, at least 120 days from the date of opening of tenders.
- 2.4 The quotation should hold good for any reduced quantities without notice.
- 2.5 In the event of non-acceptance of offer, intimation may be given to the Tenderers on their request.
- 2.6 Conditional offers or alternative offers are likely to be ignored.
- 2.7 Quotations should be based on:-
F.O.R. station of Dispatch basis, i.e. delivered free on rail / Road, inclusive of packing and forwarding charges. The stores will be booked under Military Credit Note, to be provided by the purchaser, and/or **free delivery at POF's stores at Central Stores POF Wah Cantt. In this case octroi duty will be payable by the supplier.**
- 2.8 **Taxes and Duties etc. where applicable, must be shown separately, quoting reference to Registration No. in cases of Sales Tax and relevant authority in the case of others. Offer without these clarifications and inclusive of Taxes and Duties may be ignored.**
- 2.9 Taxes and duties levied on or after Tender opening date or on or after the date offer was signed and dispatched will be allowed to include in the offered rates provided that clause 2.8 has been conformed properly.
- 2.10 "Suppliers will furnish a certificate, issued by Excise & Taxation Deptt, that he has cleared all Professional Tax payable by him" offers received without this certificate will be rejected.
- 2.11 Suppliers will render necessary information regarding hazardous effects on environment, of the materials/products supplied by them, and material Safety Data Sheet (MSDS), in their quotations and shipping/dispatch documents.
- 2.12 If the requisite information is not furnished on the T.E forms or offer received is not conformity with the requirement of the T.E such offer shall be ignored.
- 2.13 Special Conditions must be carefully studied and conformed.

3. **INSPECTION**

- 3.1 Supplies shall be subject to the inspection and acceptance by the competent inspection authority nominated by the Purchaser, who will arrange it at his own cost. Inspection facilities such as tools, test equipment, instruments etc will, however, be provided by the Suppliers in accordance with the relevant specifications.
- 3.2 Where considered necessary by the Purchaser, stores may be obtained on Warranty/Guarantee, subject to inspection on receipt. Rejected stores will be removed and replaced with the acceptable stores by the Supplier at his own expense, within a specified time.

4. **TENDER FEE** The tender must be accompanied by a non-refundable fee by means of a crossed postal order/pay order for Rs 500/- in favour of Director Admin POFs Wah Cantt.

4.1 **TENDER SAMPLE**

Where required, offer must a company tender sample, strictly according to the description and specification given in Tender Enquiry. Offer not accompanied by tender sample will NOT be entertained excepting the established and reputable firms who have either previously satisfactorily supplied the same or similar stores or have submitted an acceptable sample thereof against previous T.E.

5. **BID Security**

- 5.1 Bid Security at the rate of **2%** (for firms **registered** with POF) and **5%** (for **un-registered** firms) of the quoted value, should accompany the tender in the shape of Call Deposit Receipt/Pay Order/Banker's Cheque, from a scheduled Bank drawn in favour of:-

“General Manager-Purchase-I POF Wah Cantt.”

Tenders received without / less Bid security will be rejected.

- 5.2 Bid Money of the unsuccessful Tenderers will be returned as soon as the scrutiny of the tenders is completed. Bid Money of the successful Tenderers will be retained until the contract is finalized. Bid Money will be forfeited in case the quotation is withdrawn before the expiry of its validity date.

- 5.3 **State owned organizations are not required to provide Bid Money.**

6. **ACCEPTANCE OF OFFERS**

- 6.1 POF may reject all bids or proposals at any time prior to the acceptance of a bid or proposals, but is not required to justify grounds for its rejection. POF shall incur no liability towards suppliers or contractors who have submitted bids or proposals.

6.2 **PERFORMANCE BOND**

- (a) The successful bidders shall provide Performance bond at the rate, prescribed by POF Board according to the value of contract which shall not exceed **10%** of contract value, in the form of a Deposit At Call Receipt from a scheduled Bank; or, **an un-conditional Bank Guarantee valid for 12 months** (03 months extendable to 12 months in case of cloth items required by Clothing Fy.) after receipt of store in POFs on a prescribed format. The Performance Bond will be in favour of C.M.A. POF Wah Cantt. It will be returned on satisfactory completion of the contract.
- (b) If the Supplier fails to furnish the Performance Bond within the specified time, such failure will constitute a breach of the contract and the Purchaser shall be entitled to make other arrangements for purchase of the stores at the risk and expense of the Supplier.

- 6.3 Performance Bond from State owned organizations may be waived off at the discretion of the Purchaser.

6.4 **FAILURE TO SUPPLY THE STORES**

All deliveries must be completed by the specified date. If the failure to deliver the stores within the scheduled time should have arisen from "Force Majeure", which the Purchaser may admit as reasonable ground for further time, he will allow such additional time as he may consider to have been required by the circumstances of the case. Otherwise, he will be entitled, at his discretion, to cancel the contract; and/or, claim liquidated damages upto 2% but not less than 1% of the contract price of the items and their quantities for each and every month or part of a month, beyond the specified delivery date, during which these may not be delivered, subject to a maximum of 10% of the total contract value of the particular stores which remained unsupplied either in part or in full: or, to purchase, from elsewhere, the unsupplied stores at the risk and cost of the Supplier.

6.5 **PAYMENT**

- a. Payment will be made by the C.M.A (POF) through crossed cheque on receipt/acceptance of stores on our prescribed bill form supported by receipt voucher on part/full supply basis.
- b. Payment of duties /Taxes including professional tax(where applicable) must be supported by proof of having paid these to concerned Govt. Taxation Deptt:

7. **SECURITY OF INFORMATION**

The tenderer and his employees must not communicate any information relating to the sale/purchase of stores under this enquiry to any person other than the manufacturer or to any press or agent not authorized in writing by POFs to receive it.

Please return the Schedule to the Tender duly signed by the specified date, along with the specifications drawings etc. if any, enclosed herewith - even if you are unable to quote.

WARNING In case the firm abstain from making offers or fail to return/acknowledge the tender form by the specified date on three consecutive occasions, no further tender enquiry may be issued to them and their names would be liable to remove from the approved list.

Yours faithfully,

(IRFAN GHALIB)
DIRECTOR SUPPLY CHAIN MANAGEMENT
PAKISTAN ORDNANCE FACTORIES
WAH CANTT, PAKISTAN.

Contact Info:

☎ 051-9055 - 22269, 21087, 21088

Fax: i. 051-9271400 ii. 051-9314100

Email: procurement@pof.gov.pk

Copy to:-

1. DDFA-POFs-Wah Cantt.
2. Manager-SCM (Coord).
3. F.I.U Rep Bid Centre.
4. Bid Centre.

PAKISTAN ORDNANCE FACTORIES

Schedule to Tender Enquiry No. **0011-LP-52-SCM (R&D) Capt-Pur-III, Dated 30-04-2022** Opened on: **30-05-2022.**

(1) **For Plant and Machinery.**

Item No	Description with Spec etc.	A/U	Qty	Price Rs.		Delivery/ Completion Date
				In Figures	In Words	
1.	Electronic Equipments (10 Items) Specification attached at Annexure-A	No.	10 Items			Immediate

- (2) **Special Conditions and evaluation Criteria.**
- i) **Rate and sales tax** must be shown separately. Otherwise your quoted rates will be considered inclusive of all taxes.
 - ii) Offer without Bid Security and **Tender Fee** may not be considered.
 - iii) **Date and stamp** of the postal order must be visible.
 - iv) PTC should be obtained from Punjab/Relevant Province.
 - v) Only **one rate** should be quoted on the tender schedule. Otherwise offered item having multiple rates may be rejected.
 - vi) Undertaking must be signed.
 - vii) Unregistered firms are required to provide **Annexure-B** duly filled signed and stamped along with quotation.
 - viii) As per **T.E clause, 2 .2** you are required to quote in two parts, each part should be placed in a separate sealed cover. The envelop should be inscribed with: **Part I "Technical Quotation"** without price" and **Part II "Commercial quotation"** with price."
 - ix) Status of firm with POF (Registered/Un-Registered) should be mentioned in your offer.
 - x) Registered firms are required to provide copy of valid registration letter with POF.
 - xi) a. Only registered suppliers (with Sales Tax & Income Tax deptt) who are on Active Taxpayers List (ATL) of FBR are eligible to supply goods/services to Govt. Deptts.
b. The payment to registered persons may be linked with the active taxpayer status of the suppliers as per FBR database. If any registered supplier is not in ATL his payment will be stopped till filing of mandatory returns, and appearance on ATL of FBR.
 - xii) Based upon the information being provided by the firms, only those firms will be awarded contract(s) who fulfill all the **T.E.** requirements.
 - xiii) Case will be processed and contract will be awarded to the firm(s) who will fulfill the evaluation criteria as **per PPRA** Rules.
 - xiv) Grand Total of offer must be mentioned in your quotation.
 - xv) Provision of **Warranty/Guarantee Certificate** for **02 Years** will be required.
 - xvi) Relevant **technical literature** must be provided along with competitive bid i.e., only one offer must be submitted.
 - xvii) Provisioning of **Quality & Test Certificate** of an accredited Lab, if demanded/required

(3) **Undertaking**

Should our offer be accepted, we hereby undertake to supply the store/render the services contracted on the basis of General Conditions of Contract embodied in Form **POF 1281**, and to deposit the performance bond within the prescribed time, failing which it will constitute a breach of contract, and POF will have the right to purchase the store/services elsewhere at our risk and cost.

Place _____	Signature of the Tenderer _____
Date _____	Name _____
_____	Position _____
_____	Address _____
_____	Income Tax G.I.R No. _____

1. SPECIFICATION OF DIGITAL OSCILLOSCOPE

a)	1 Main Features of Machine (Model: Tektronix TBS2204B or Equivalent) Qty=(02 Nos).
a.	4 Analog channels
b.	200 MHz bandwidth
c.	2 GS/s Sampling rate
d.	5 M record length on all channels
e.	9-inch WVGA color display with 15 horizontal grids shows 50% more signal
f.	TekVPI probe interface supports active, differential, and current probes with automatic scaling and units
g.	32 automated measurements, and FFT function for quick waveform analysis
h.	Search and Mark features for easy identification of events that occur in acquired waveform
i.	Instrument user interface and front panel overlay translated into 10 languages
j.	USB 2.0 host port on front panel for quick and easy data storage
k.	USB 2.0 device port on rear panel for easy connection to PC
l.	10/100BASE-T Ethernet port for remote control over LAN
m.	Wi-Fi interface / wireless communications capability support
n.	Fully compatible with TekSmartLab lab management software for education
o.	Autoset, Cursors and Automated measurements can be disabled

b) Specifications**i. Vertical system Analog Channels**

a.	Hardware bandwidth limits	20 MHz
b.	Input Coupling	DC, AC, or GND
c.	Input Impedance	$1\text{ M}\Omega \pm 0\%$, $13\text{ pF} \pm 1.5\text{ pF}$
d.	Input sensitivity range	2 mV/div 10 V/div
e.	Vertical resolution	8 bits
f.	Maximum input voltage, $1\text{ M}\Omega$	$300\text{ V RMS with peaks} \leq \pm 1.5\text{ pF}$
g.	Acquisition Modes	
	Sample	Acquire sampled values.
	Peak Detect	Captures glitches as narrow as 3.5 ns at all sweep speeds. From 2 to 512 waveforms included in average.
	Average	Averages multiple sample of one acquisition interval into one waveform point.
	Hi-Res	Scrolls waveforms right to left across the screen at sweep speeds slower than or equal to 40 ms/div (400 ms/div at 20M record length).
	Roll	
h.	Waveform math	
	Arithmetic:	Add Subtract Multiply FFT
i.	DC balance	$\pm(1\text{ mV} + 0.1\text{ div})$
j.	DC gain accuracy	$\pm 2\%$ $10\frac{\text{V}}{\text{div}}$ through $5\frac{\text{mV}}{\text{div}}$ $\pm 3\%$ typical $1\frac{\text{mV}}{\text{div}}$ and $2\frac{\text{mV}}{\text{div}}$
k.	Vertical position range	$\pm 5\text{ divisions}$
ii.	Horizontal system analog channels	

- a. Maximum duration of time captured at highest sample rate (all channels) 5ms
- b. Time base range TBS220x: 1ns/div to 100 sec/div
TBS207x, TBS 210x: 2 ns/div to 100 sec/div
- c. Time base delay time range -15 divisions to 5000s
- d. Deskew range ± 100 ns
- e. Time base accuracy ± 25 ppm over any ≥ 1 ms interval
- iii. Trigger system**
 - a. Trigger modes Auto, Normal, and single
 - b. Trigger holdoff range 20 ns to 8 s
 - c. Trigger types
 - Edge Positive or negative slope on any channel, coupling includes DC, HF reject, LF reject, and noise reject.
 - Pulse width Trigger on width of positive or negative pulses that are $>$, $<$, $=$, or \neq a specified period of time.
 - Runt Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again.
 - d. Trigger coupling analog channels DC, Noise reject, high freq reject, low freq reject.
 - e. Sensitivity, edge-type trigger, DC coupled 200MHz models (Sensitivity = 0.7 Division)
 - f. Trigger level ranges Input channels: ± 4.90 divisions from center screen
- iv. Data storage**
 - a. Nonvolatile memory retention time, typical No time limit for front panel settings, saved waveforms, setups, and calibration constants.
 - b. Real-time clock A programmable clock providing time in years, months, days, hours, minutes, and seconds.
- v. Waveform Measurements**
 - a. Cursors Time, amplitude and screen.
 - b. Gating Isolate the specific occurrence within an acquisition to take measurements on, using either the screen, between waveform cursors or full record length.
- vi. Waveform math**
 - a. Arithmetic Add, subtract, and multiply waveforms.
 - b. FFT Spectral magnitude. Set FFT vertical scale to linear RMS or dBV RMS, and FFT window to rectangular, hamming, hanning, or blackman-harris.
- vii. Remote control software**
 - a. Web page Built-in web page enables remote control of horizontal and vertical scale, trigger settings, and measurements. To Allow waveform and image save to USB flash drive.
- viii. Display System**
 - a. Display type 9 inch (228 mm) wide format liquid crystal TFT color display.
 - b. Display Resolution 800 horizontal by 480 vertical displayed pixels (WVGA)
 - c. Waveform styles Vectors, variable persistence, and infinite persistence
 - d. Graticules Grid, None.
 - e. Format YT and XY.
- ix. Input output ports**

- a. USB 2.0 high-speed host port Supports USB mass storage devices, Wi-Fi dongle, one port available on rear panel and one on front panel.
- b. USB 2.0 high-speed device port
Device Port Rear-panel connector allows for communication/control of oscilloscope through USBTMC or GPIB with a TEK-USB-488. NETGEAR WNA 1000M, WNA3100M, D-LINK DWA-131, TP-LINK TL-WN823N
Compatible USB-WiFi dongles
- c. LAN port (Ethernet) RJ-45 connector, supports 10/100BASE-T
- d. Probe compensator
Amplitude 5 V
Frequency 1 kHz
- e. Kensington-style lock Rear panel security slot connects to standard Kensington-style lock.
- x. Power Source**
- a. Power source voltage 100 to 240 V_{AC} RMS $\pm 10\%$
- b. Power source frequency 47 Hz to 63 Hz (100 to 240 V)
360 Hz to 440 Hz (100 to 132 V)
- c. Power consumption 40 W maximum
- xi. Physical Characteristics**
- a. Dimensions (max) Height: 201.5mm (7.93in)
Width: 412.8mm (16.25in)
Depth: 128.1mm (5.58in)
- b. Weight (max) 4.08 kg (9 lbs.), stand-alone instrument
6.89 kg (15.2 lbs.), when packaged for domestic shipment.
- c. Cooling clearance 50 mm (2 in) required on left side and rear of instrument.

c)	Inspection & Training
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

d)	Installation & Commissioning
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machine(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
e)	OEM Country of Origin
a.	EU, UK, USA OEMs or under their license manufacturing in World.
f)	Payment Terms and Condition
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

2. SPECIFICATION OF FUNCTION GENERATOR Qty=(01 No)

a)	Specifications (Model: Function Generator AFG1000 Series or Equivalent)	
i)	Key Performance	
a.	Dual-channel, 25 MHz or 60 MHz sine waveforms, 12.5 MHz or 30 MHz square waveforms	
b.	14 bits, 125 MS/s or 300 MS/s arbitrary waveforms with 8 k points or 1 M points record length	
c.	Amplitude 1 mVp-p to 10 Vp-p into 50 Ω loads	
ii)	Key Features	
a.	Continuous, sweeping, burst, and modulation modes (AM, FM, PM, ASK, FSK, PSK, PWM)	
b.	64-MByte internal non-volatile memory for arbitrary waveform storage	
c.	Built-in 200 MHz counter with 6-digit resolution to offer an easy and precise way of frequency/period/pulse width/duty cycle measurement	
d.	Standard USB host/device for memory expansion and remote control	
e.	Free ArbExpress to make user defined waveforms editing extremely easy through an external USB memory stick	
f.	Built-in waveforms (Sine, Square, Pulse, Ramp, Noise, and 45 frequently used arbitrary waveforms)	
iii)	DC offset	
a.	Range	$\pm(5 \text{ Vpk} - \text{Amplitude}_{p-p}/2)$, 50 Ω load $\pm(10 \text{ Vpk} - \text{Amplitude}_{p-p}/2)$, open circuit or high Z load
b.	Accuracy	$\pm(1\% \text{ of } \text{setting} + 1 \text{ mV} + 0.5\% \text{ of amplitude (Vp-p)})$
c.	Resolution	1 mV or 4 digits
iv)	Display	
a.	Display type	3.95-inch
b.	Display resolution	480 by 320
c.	Display colors	65,536
v)	Power Source	
a.	Supply	220-240 VAC, 100-120 VAC, 50/60 Hz, CAT II
b.	Consumption	Less than 28 W or Less than 35 W
c.	Fuse	110 V: 250 V, F1AL 220 V: 250 V, F0.5AL
d.	Warm-up time	30 minutes (typical)
vi)	Physical Characteristics	
a.	Dimensions (W, H, D)	230 × 110 × 306 mm (9.0 × 4.4 × 12.1 in) (max)
b.	Weight Net	3.4 kg (7.5 lbs) (max)
vii)	Auxiliary inputs and outputs	
a.	External modulation input Input frequency range Input voltage range Input impedance	DC to 20 kHz All except FSK: $\pm 1 \text{ V}$ full scale, FSK: 3.3 V logic level 12 kΩ (typical)
b.	External trigger input Level Slope Pulse Width	TTL-compatible Rising or falling (selectable) >100 ns
c.	External reference clock input Impedance Requested Input voltage swing Locking range	(Shared with Frequency Counter Input) 400 Ω, AC coupled 100 mVp-p to 5 Vp-p 10 MHz $\pm 9 \text{ kHz}$
d.	External reference clock output Frequency Impedance Amplitude	10 MHz 50 Ω, DC coupled 1.6 Vp-p into 50 Ω load
e.	Communication interface USB	Host and device, USB TMC compliance
viii)	Frequency counter	
a.	Voltage Range and Sensitivity,	

	DC coupled (non-modulation signal) 100 MHz to 100 MHz 100 MHz to 200 MHz	250 mVp-p to 5 Vp-p (AC + DC) 450 mVp-p to 3 Vp-p (AC + DC)
b.	Voltage range and sensitivity, AC coupled (non-modulation signal) 1 Hz to 100 MHz 100 MHz to 200 MHz	250 mVp-p to 5 Vp-p 450 mVp-p to 4 Vp-p
c.	Pulse width and duty cycle measure	1 Hz to 10 MHz
d.	Input impedance	1 M Ω in parallel with 100 pF
e.	High frequency noise restraint (HFR)	On / Off (HFR frequency = 500 kHz)
f.	Sensitivity	Low, middle, or high
g.	Trigger level range	-2.5 V to +2.5 V

b) Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c) Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machine(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
d) OEM Country of Origin	
a.	EU, UK, USA OEMs or under their license manufacturing in World.
e) Payment Terms and Condition	
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

3. SPECIFICATION OF HANDY-SCOPE DIFF USB OSCILLOSCOPE Qty= (02 Nos)

a) Specifications (Model: Handy-scope HS6 DIFF-1000 or Equivalent)		
i) Physical		
d.	Height	25 mm (max)
e.	Length	170 mm (max)
f.	Width	140 mm (max)
g.	Weight	500 g / 17.6 ounce (max)
h.	USB Cord Length	1.8 m
ii) Power		
a.	Power	From USB or external input
b.	Consumption	5 Vdc, 1300 mA max
c.	External Power	From second USB port or power adaptor
iii) Acquisition System		
a.	Number of input channels	4 analog
b.	CH1, CH2, CH3, CH4	Isolated male BNC
c.	Maximum sampling rate 8 bit Measuring one channel	1 GS/s

	Measuring two channels Measuring three or four channels 12 bit Measuring one channel Measuring two channels Measuring three or four channels 14 bit 16 bit	500 MS/s 200 MS/s 500 MS/s 200 MS/s 100 MS/s 100 MS/s 6.25 MS/s
d.	Sampling source Internal Accuracy Stability Time base aging External Input range	TCXO ±0.0001 % ±1 ppm over 0 °C to 55 °C ±1 ppm per year LVDS, on auxiliary connectors 10 MHz, 16.369 MHz
e.	Memory 8 bit Measuring one channel Measuring two channels Measuring three or four channels	Standard mode 1 MS / channel 512 KS / channel 256 KS / channel
f.	12, 14, 16 bit Measuring one channel Measuring two channels Measuring three or four channels	512 KS / channel 256 KS / channel 128 KS / channel
iv)	Isolated male BNC inputs CH1, CH2, CH3, CH4	
a.	Type	Differential inputs
b.	Resolution	8, 12, 14, 16 bit user selectable
c.	DC Accuracy	0.25 % (0.1 % typical) of full scale ± 1 LSB at 20 to 25 °C To achieve rated accuracy, allow the instrument to settle for 20 minutes. When subjected to extreme temperatures, allow additional time for internal temperatures to stabilize
d.	Ranges	±200 mV to ±80 V full scale
e.	Coupling	AC/DC
f.	Impedance	2 MΩ / 12 pF ± 1 % 1 MΩ / 20 pF ± 1 % when Safe Ground enabled
g.	Maximum input voltage	200 V (DC + AC peak < 10 kHz)
h.	Maximum common mode voltage	200 mV to 800 mV ranges
i.	Bandwidth (-3dB) at 75 % of full scale input	250 MHz
j.	AC coupling cut off frequency (-3dB)	±1.5 Hz
v)	Trigger	
a.	System	Digital, 2 levels
b.	Source	CH1, CH2, CH3, CH4, digital external, OR
c.	Trigger modes	Rising/falling/any edge, inside/outside window, enter/exit window, pulse width, runt pulse
d.	Level adjustment	0 to 100 % of full scale
e.	Hysteresis adjustment	0 to 100 % of full scale
f.	Resolution	0.024 % (12 bits)/0.006 % (14/16 bits)
g.	Pre trigger	0 to selected record length, 1 sample resolution
h.	Post trigger	0 to selected record length, 1 sample resolution
vi)	Multi instrument synchronization	
a.	Maximum number of instruments	Limited by number available USB ports
b.	Synchronization accuracy	0 ppm

c.	CMI interface	2x, CMI 1, CMI 2
d.	Required coupling cable	TP-C50H
e.	Maximum coupling cable length	50 cm
vii)	I/O connectors	
a.	Front CH1, CH2, CH3, CH4 Extra ground	Isolated male BNC 2 mm gold plated banana socket next to Ch1, only with option E EMI
b.	Rear USB Extension connector Power CMI connectors 1 to 2	Fixed cable with USB type A plug, 1.8 m D-sub 9 pins female 3.5 mm power socket HDMI type C socket
c.	Interface	USB 3.0 SuperSpeed (5 Gbit/s)
viii)	System requirements	
a.	PC I/O connection	USB 2.0 USB 3.0 or USB 3.1
b.	Operating System	Windows 7/8/10, 32 and 64 bits Linux (SDK only)

b)	Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.	
b.	100% inspection will be carried out in firm premises.	

c)	Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machine(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.	
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.	
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine. 	
d)	OEM Country of Origin	
a.	EU, UK, USA OEMs or under their license manufacturing in World.	
e)	Payment Terms and Condition	
a.	Payment to the supplier will be made through CMA.	
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.	

4. SPECIFICATION OF PORTABLE LEEB HARDNESS TESTER Qty=(01 No).

a)	Specifications (Model: INSIZE ISH-PHB or Equivalent)	
a.	Minimum Reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
b.	Accuracy	±6HLD (when HLD = 800)
c.	Display	Leeb(HLD), converted hardness, material, impact direction, test times, average value, date
d.	Output	Bluetooth
e.	Applicable workpiece	Minimum weight: 5kg, 2kg (on solid support), 0.1kg (coupled on plate). Minimum Thickness: 5mm Minimum radius of curved surface: 11mm Maximum roughness (Ra): 1.6µm
f.	Power Supply	3x AAA batteries
g.	Dimensions	150x84x28mm (max)
h.	Weight	200g (max)
i)	Optional Accessory	

a.	Wireless printer	ISH-DS-PRINTER
b.	Couplant	ISH-COUPPLANT
c.	Support rings	
ii)	Characteristics	
a.	Impact device to be included.	
b.	Measurement times (1~9) to have average value (setting).	
c.	Based on leeb (held), converted to (hv), (hb), (hrc and hrb); Shore (hs) and tensile strength (mpa).	
d.	Memory of 99 measurement values for browsing.	
e.	Connected with printer via Bluetooth.	

b)	Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.	
b.	100% inspection will be carried out in firm premises.	

c)	Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machines(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.	
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.	
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine. 	
d)	OEM Country of Origin	
a.	EU, UK, USA and China OEMs or under their license manufacturing in World.	
e)	Payment Terms and Condition	
a.	Payment to the supplier will be made through CMA.	
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.	

5. SPECIFICATION OF MANUAL SMD PICK AND PLACE MACHINE Qty = (01 No).

a)	Specifications	
a.	Placement rate	500 - 800 SMDs per hour
b.	Dimensions	900 x 880 x 340 mm (max)
c.	Max. PCB size	590 x 510 mm
d.	Max. placement area	575 x 435 mm
e.	PCB thickness	0.5 mm up to ~ 4 mm
f.	Components	chip 0201 up to size 40 x 40 mm
g.	Accuracy of motor-driven eye	0.1 mm
h.	The motor-driven eye should automatically move to the next placing position in the list.	
i.	Have Automatic feeders such as carousels or paternosters	
j.	To create new assembly projects with ease, a universal CAD data converter should read in existing CAD information for the machine.	
k.	1.1 Have an Offline Software availability	
l.	1.2 With a camera attached to the assembly head, one should view the whole Pick & Place process - magnified on a monitor.	

b)	Inspection & Training
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 03x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c)	Other terms & conditions
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machines(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
d)	OEM Country of Origin
a.	EU, UK, USA and China OEMs or under their license manufacturing in World.
e)	Payment Terms and Condition
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

6. SPECIFICATION OF MINI SOLDER CURING OVEN Qty = (01 No).

a)	Specifications	
a.	Dimension	L2100 x W1750 x H2050 mm (max)
b.	Weight	Approx. 1500 kg
c.	Max. PCB size	250 x 300 mm
d.	Object Weight	Max 2kg/layer
e.	Space height for object	Approx. 25.4mm
f.	Process side	Approx. 5mm
g.	Total layers No.	60 layers
h.	Conveyer height	900+/-30mm
i.	Frequency time	13S
j.	Available for inspection conveyer	In-line
k.	Lifting motor	Step motor
l.	Conveyer rails width adjust	Manual + Auto
m.	Set temperature	Max. 250°C
n.	Heating configuration	4 x 2 = 8 heating modules (customizable 6 x 2 =12 heating modules)
o.	Heating Power	8x6KW
p.	Temperature controlling precision	+/-1°C
q.	Inner temperature difference	T≤+/-2°C

b) Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 03x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c) Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machines(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful installation and commissioning of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
d) OEM Country of Origin	
a.	EU, UK, USA and China OEMs or under their license manufacturing in World.
e) Payment Terms and Condition	
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

7. SPECIFICATION OF SEMI-AUTO SMD SOLDER PASTE DISPENSER Qty= (01 No).

a) Specifications		
a.	Size	23.5 x 20.5 x 6.3 cm (max)
b.	Timer mode dispensing time	0.01-99.99 seconds
c.	Timer mode cycle interval	0.1-9.9 seconds
d.	Manual mode dispensing time	Controlled by the foot pedal
e.	Input voltage	220V
f.	Internal voltage	24VDC
g.	Air input	70-100 psi
h.	Air output	1-100 psi
i.	Weight	3kg (max)
j.	Manual or timer operation modes	
k.	Foot pedal controlled	
l.	Suck-back feature to ensure no dripping	
m.	Complete with an accessory dispensing kit	
n.	Manual mode, materials could be dispensed continuously until operator release the foot pedal	
o.	The unit need to be connected to air compressor (1.5HP or above)	

b) Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 03x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c) Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machines(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.

d) OEM Country of Origin	
a.	EU, UK, USA and China OEMs or under their license manufacturing in World.
e) Payment Terms and Condition	
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

8. SPECIFICATION OF SMD Workstation Qty = (03 Nos.)

a) Specifications	
a.	Easy to read digital display for both temperature and air level.
b.	Slender hand piece with integrated start/stop button.
c.	Ability to store up to 5 user programmable presets for temperature, airflow and time.
d.	New Preset Chain feature that should allow the operator to link up to 5 presets to run in sequence.
e.	Should Simulate a 5-heating zone reflow profile for SMD components.
f.	Overall Power consumption modes
	AC100V : 700W
	AC110V : 840W
	AC120V : 820W
	AC220V : 1,100W
	AC230V : 1,200W
	AC240V : 1,300W
g.	Temperature range
	50 to 600°C
i) Station	
a.	Power consumption
	30W
b.	Air flow
	1-9 (5 to 115L/min)
c.	Dimensions
	160(W)×145(H)×220(D)mm (max)
d.	Weight
	1.5 kg (max)
ii) Hand-piece (Hot air)	
a.	Power consumption modes
	AC100V : 670W
	AC110V : 810W
	AC120V : 790W
	AC220V : 1,070W
	AC230V : 1,170W
	AC240V : 1,270W
b.	Standard nozzle
	Φ4mm (No.N51-02)
c.	Total length
	250mm (max)

b) Inspection & Training	
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c) Other terms & conditions	
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machine(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
d) OEM Country of Origin	
a.	EU, UK, USA and Japan OEMs or under their license manufacturing in World.
e) Payment Terms and Condition	

a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

9. SPECIFICATION OF SPECTROSCOPY SETUP FOR MATERIAL ANALYSIS Qty= (01 No).

a)	Specifications (Model: S1 Titan 500S or Equivalent)
i.	Characteristics
a.	To quickly and accurately report the elemental analysis of sample.
b.	Ergonomic pistol grip and trigger design.
c.	The color touchscreen LCD easily seen in all lighting conditions.
d.	Weighing at max. 1.5kg (3.3 lbs) & Size: 25 cm x 28 cm x 9 cm (max).
e.	Designed as a “point and shoot” analyzer, the spectroscope should require minimal setup and operator training.
ii.	Detector Technology:
a.	Model equipped with the high-performance graphene window Silicon Drift Detector (SDD).
b.	Can measure both light and heavier elements simultaneously.
c.	Wide application range and best light element performance for Mg, Al and Si.
iii.	Easy to Use:
a.	Data management and transfer should be easy to use, Intuitive user interface, Requiring very little operator training and Multiple fields for sample identification.
iv.	Environmental Conditions:
a.	IP54 rated and designed to withstand field operation in all environments, including humid and dusty conditions.
b.	Ruggedized with rubber over-molding.
c.	Operating Temperature: $-10^{\circ}C$ to $+50^{\circ}$.
d.	Sample stand for measurement of small and complex samples.
e.	Sample Temperature (intermittent use): 150oC for Ultralene window. 350oC for Kapton window (max. 5 sec measurement, min. 60 sec cool down).
v.	Detector Shield:
a.	Accessory to protect the detector window from being punctured by sharp objects like scrap shavings and wire, while still allowing rapid and accurate analysis of almost any material.
vi.	Integrated camera & small spot collimator:
a.	The Spectroscope can be equipped with an integrated camera (640 x 480 pixels) to provide sample visualization and accurate positioning of the measurement spot.
b.	Small spot to isolate specific sampling area, Camera to ensure accurate measurement positioning and Images easily import into reports.
vii.	Data Management:
a.	Images, spectra, sample identification, and results should be stored in a single protected file for easy storage and access.
b.	Results should be available in both protected and unprotected file formats – The unprotected file format can be imported directly into Excel or other database programs.
c.	External GPS receiver providing GPS coordinates to the Spectroscope.
d.	Data may be stored in internal instrument memory or a USB flash drive or both.
e.	The assay’s GPS coordinates can be exported to GIS compatible software.
f.	Portable, ruggedized thermal printer and bar code reader.
g.	PC software for control and communications (licensed software with reinstallation option free upgrades & backup). Communicate with the instrument and manipulate data from the Spectroscope. Features to include: Report generator, Grade table editor, Spectrum viewer, software updates.

b)	Inspection & Training
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 05x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

c)	Other terms & conditions
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machines(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> i. Operation and maintenance manual. ii. Control circuit diagram of machine.
d)	OEM Country of Origin
a.	EU, UK, USA OEMs or under their license manufacturing in World.
e)	Payment Terms and Condition
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

10. SPECIFICATION OF SMD REWORK STATION Qty = (01 No).

a)	Specifications	
a.	Model	FINEPLACER Core Plus or Equivalent
b.	Placement Accuracy	≤10 um
c.	Field of view (min)	12.1 mm x 7.6 mm
d.	Field of view (max)	65 mm x 45 mm
e.	Component size (min)	0.125 mm x 0.125 mm
f.	Component size (max)	90 mm x 90 mm
g.	Board size (max)	400 mm x 310 mm
h.	Board thickness (max)	6 mm
i.	Thermocouples	4
j.	Top Heating: Power Gas temperature (max) Temperature ramp rate Flow range	900 W 380°C 1 K/ s - 50 K/ s 10 NI/ min - 70 NI/ min
k.	Board Heating: Power Gas temperature (max) Flow range Heated area (max)	1600 W 360°C 32 NI/ min - 160 NI/ min 280 mm x 250 mm
l.	Processes	<ul style="list-style-type: none"> • Component removal / De- soldering • Site cleaning • Re- balling • Paste printing (component, PCB) • Paste dipping • Fluxing • Soldering
m.	Applicability	<ul style="list-style-type: none"> • Soldering of: <ul style="list-style-type: none"> ○ BGA, μBGA/ CSP, QFN, DFN, PoP, QFP, PGA, ○ SON ○ Small passives down to 01005 ○ RF shields, RF frames ○ Connectors, sockets ○ Sub-assemblies, daughter boards • Pin in Paste (PiP) • Trough Hole Reflow (THR) • Reworkable underfill, conformal coating

b)	Spare Parts, Calibration Equipment
a.	Calibration equipment
b.	Electrical and mechanical spare parts for 5000 operating hrs
c.	Tool Kit
d.	Tropicalisation all electrical components and motors.

c)	Inspection & Training
a.	Free of cost training on operating, functionality, maintenance, and troubleshooting to 04x POF Engineers / Technicians in POF premises.
b.	100% inspection will be carried out in firm premises.

d)	Other terms & conditions
a.	100% functioning and testing of the machine(s) at POF Wah Cantt shall be the responsibility of the machine supplier. The machine(s) will be tried out for capacity run for at least one day full capacity as claimed by manufacturer.
b.	The supplier will provide 02 years warranty/guarantee certificate, which will be valid for a period of 24 months after successful functioning and testing of the machine and during warranty period spares will be replace free of cost.
c.	03 x SETS of following documents in English language will be provided by the supplier: <ul style="list-style-type: none"> iii. Operation and maintenance manual. iv. Control circuit diagram of machine. v. List of essential spares with application data may be provided along with quotation.
d.	The supplier will provide 10 years (less warranty period) paid spare provision certificate (including repair and maintenance) after successful installation and commissioning of the machine.
e)	OEM Country of Origin
a.	EU, UK, USA and Japan OEMs or under their license manufacturing in World.
f)	Payment Terms and Condition
a.	Payment to the supplier will be made through CMA.
b.	100% payment will be made after necessary inspection at firm premises and acceptance of store.

SUPPLIER'S CAPABILITY

1. NAME OF THE FIRM: _____
ADDRESS: _____

1.1 - TELE:NO: _____
1.2- FAX NO: _____
1.3- E.MAIL ADDRESS: _____

2. WHETHER PUBLIC LTD, PRIVATE LTD, PARTNERSHIP
OR SOLE PROPRIETORSHIP: _____

3. ESTABLISHED SINCE: _____

4. CAPACITY: (Manufacturer / Stockist/Agent to foreign Firm): _____

5. IF MANUFACTURER, PROVIDE FOLLOWING DETAILS:

5.1- RANGE OF PRODUCTS MANUFACTURED: _____

5.2- DETAIL OF PLANTS, MACHINERY AND MAJOR EQUIPMENTS:
(Attach separate sheet if required):

6. INSPECTION/QUALITY ASSURANCE FACILITIES: _____

7. ISO-9000 CERTIFIED IF SO ATTACH NECESSARY DOCUMENTS

8. IF STOCKIST, PROVIDE FOLLOWING:-

8.1- DETAILS OF STOCKS HELD: - _____

8.2- APPROX. STOCK VALUE _____

8.3- LOCATION OF STOCKS: _____

ORGANISATIONAL DETAILS.

9. WHETHER THE FIRM IS REGISTERED WITH THE FOLLOWING DEPTTS.
(Give registration No., Date and attach copies of the necessary documents).

9.1 DP/ARMY OR ANY GOVT./SEMI GOVT. DEPTT: _____

9.2- IMPORT TRADE CONTROL DEPTT: _____

9.3- SALES TAX DEPTT: _____

9.4- INCOME TAX DEPTT: _____

FINANCIAL STATUS: _____

(Bank certificate to be attached)

Signature _____

Name: _____

Position: _____

Stamp