

Prayas Centre Name Technology Business Incubator @ Kongu Engineering College (TBI@KEC)

City Perundurai, Erode District

State TamilNadu

Fablab Page Link https://www.tbi-kec.org/TBI_KEC_Equipment_List.pdf

Equipment available at TBI@KEC

Section		Prototyping Facility
Sr. No.	Equipment Name	Equipment detail
1	3D Scanner	<p>Brand – SHINING 3D Model - Einscan Pro 2X Specification: Field of View: 208 x 136mm (near); 312 x 204 mm (far) Data Capture Rate: 20 -30 fps; 11,00,000 – 15,00,000 points/s; 100 data capture lines, Single Scan <0.5s, 400mm (Distance) Industrial Pack: Makes a static automatic scan on a tripod possible for a better accuracy. Operational area – Industrial Design & Engineering, Medical Industry, Art & Design Scan Modes: Handheld Rapid Scan, Handheld HD Scan, Fixed Scan Align Modes: Feature alignment, markers alignment, turntable coded targets alignment, and manual alignment Software support – EXSCANPRO, Geomagic Design X & Geomagic Design X Link: https://www.einscan.com/handheld-3d-scanner/einscan-pro-2x/ https://www.youtube.com/watch?v=Cy2uyISFGZ0</p>
2	3D Printer 1	<p>Brand - Ultimaker Model - Ultimaker S5 (Dual Extruder) Specification: Build volume : 330 x 240 x 300 mm / 12.9 x 9.4 x 11.8 in Max layer resolution Nozzle: 20-600 microns / 0.25 – 0.8mm Print technology: FDM, Filament diameter: 2.85 mm, File supported: .stl, G-Code Operational area: Product development, Manufacturing, End-use parts, Architecture, Education Material support: Optimized for: PLA, Tough PLA, Nylon, ABS, CPE, CPE+, PC, TPU 95A, PP, PVA, Breakaway, Also supports third-party materials Software support: CURA Link: https://ultimaker.com/3d-printers/ultimaker-s5 https://www.youtube.com/watch?v=N_r7UYMQwDk</p>

3	3D Printer 2	<p>Brand – 3Ding Model – FabX Pro (Single Extruder) Specification: Build volume : 3375CC Dimension: 150 x 150 x 150 mm Max layer resolution Nozzle: 50-300 microns Speed: 20 – 50 mm/s Print technology: FDM, Filament diameter: 1.75 mm File supported: .stl, G-Code Material support: PLA, PLA+, ABS, HIPS, PETG, Nylon, PVA, Flexible: (TPE, TPU), Composites: Wood, Metal (Aluminium, Brass, Bronze, Copper, Gold), Marble, Silk, Carbon Fiber etc Software support: CURA, Simplify3D Operational area: Product development, Manufacturing, Architecture, Education Link: https://www.3ding.in/3dprinters/fabx https://www.youtube.com/watch?v=Gun07uy3Nf8</p>
4	PCB Printer	<p>Brand - Voltera Model – Voltera V-ONE Specification: Min trace width- 0.02 cm Min pin to pin pitch- 0.065 cm Resistivity - 12 Ω/sq. @70 μm Print area - 12.8 x 10.5 cm Dimension - 390mm x 257mm x 207mm Maximum Board Thickness: 3mm Compatible file format- Gerber Material support - PCB Plate or sheet Software Support: Voltera V-One Operational area: Drills holes, Lays down the track, Dispenses solder paste, Reflow SMDs into Your Circuit Link: https://www.voltera.io/product https://www.youtube.com/watch?v=N6nEgN4THRE</p>
5	CNC Milling Machine	<p>Brand – Roland Model - MDX 540 Specification: XYZ-Axis Travel 19.7(X) x 15.7(Y) x 6.1”(Z) [500 (X) x 400 (Y) x 155 mm (Z)] Maximum 295ipm (7.5m/min) Spindle Speed: 400 to 12,000 rpm; 400 to 3,000 rpm for positioning and centering Loadable Work piece Size:7.0” Diameter x 12.7” Length 177.8mm x 325mm with Rotary, Table Size: 21.7(W) x 16.5”(D) [550(W) x 420mm (D)] File support : STL,IGES & DXF Material Support: Plastic, resin, wood and non-ferrous metals Software Support: SRP Player CAM, V Panel & 3D Engrave Operational area: Designers and Engineers who can mill functional parts with incredible quality on a wide range of materials for Prototyping Link: https://www.rolanddga.com/support/products/milling/modela-pro-ii-mdx-540-3d-milling-machine & https://www.youtube.com/watch?v=90FHLZRVa2A</p>

6	PCB Milling Machine	<p>Brand – Bantam Tools Model – Desktop PDB Milling Machine Specification: Dimension - 12.75 × 12 × 12.875 in (324 × 305 × 327 mm) Working Volume: 5.5 × 4.5 × 1.35 in (140 × 114 × 34.3 mm) Spindle Speed: 8,500 to 26,000 rpm Max XYZ Traverse Speed: 2,600 mm/min (100 in/min) PCB Cut Speed: Up to 100 in/min 2,600 mm/min File support : Eagle BRD (.brd), Gerber RS-274X (.gtl and .grb), G-Code Materials Support: FR-1 PCB Blanks Single-sided & Double-sided, Copper Boards Operational area: Software Support: Bantam Tools Link: https://www.bantamtools.com/pcb-milling-machine https://www.youtube.com/watch?v=DCGLEa2UUaY</p>
7	CNC Router Machine	<p>Brand- SIL Model- 1212 (Single Phase) Specification- Max working area- 1200 x 1200 x 100 mm Stepper Motor System with Driver, 18000rpm, 2.2 kW Water Cooled Spindle, Resolution 0.03mm,DSP Control System, T-Slot Table Surface, XYZ Structure, Graphic Format Supported - *.cdr, *.al, *.dwg, *.dst, *.dxf, *.bmp, *.jpeg,*.tiff,.pcx Materials- Wood, Acrylic, Aluminium, MDF, Metal etc. Link: https://silasers.com/cnc-router-pro/</p>
8	CNC Laser Cutting & Engraving Machine	<p>Brand- SIL Model- Accu Cut 1212 (Single Phase) Specification: Max working area- 1200x1200mm Laser Type- CO2 EFR Glass Tube Stepper Motor with belt drive system on x & Y imported rails Cutting Speed - 0 ~ 30000 mm/min, Thickness – 15mm, Engraving Speed - 0 ~ 64000 mm/min Graphic Format Supported: *.plt, *.cdr, *.dwg, *.dxf, *.bmp, *.jpeg,*.tiff Materials: Acrylic, Fabric, MDF, Paper, Leather, PVC, Glass, Wood, etc. Link: https://silasers.com/laser-engraving-and-cutting-machine/ https://www.youtube.com/watch?v=mJGezVfhb_Y</p>
9	SMT Pick and Place	<p>Brand – Wenzhou Yingxing Model - YX - SMT 660 Specification - Dimension:1450*1370*1550 mm, 6 Heads with Mark camera attached, 6 – Juki Nozzle, 64 – Yamaha Pneumatic feeders, Panasonic high Speed DSP drive, Vision System - 1 Mark recognition camera, 6 Quick-recognition cameras (HSPD), 1 Precise-recognition camera (HD), Max & Min Circuit Board Size with Height - 600X455 mm, Positioning Precision – 0.01mm, Max & Average Mounting Speed - 12000 CPH, SMT Splice tape (8mm, 12mm, 16mm) is adaptive for CUT Tape SMD components, Customized IC Tray and Mounting stands are adaptive for Loose components(IC's) Software : Full-automatic chip mounted operating system independently, features attached. Operational area - Place a wide variety of components on a single board – or thousands of boards. Link: https://www.zjyingxing.com/pick-and-place-machine/smd-pick-and-place-machine.html</p>

10	Solder Paste Stencil Printer	<p>Brand - Wenzhou Yingxing Model – YX 3050 Specification – Print Table Size: 320*450mm, Frame Size: 370*470mm, 420*520mm, 50*650mm, Substrate Size - 320*230mm, Substrate Thickness – 0.2 – 2.2mm, Positioning – PCB Outer / Pin Positioning, Min distance – 0.25mm, Air Pressure - 4-6Kgf/Cm2 Operational area - Applying solder paste to a PCB Link - https://www.zyingxing.com/stencil-printer/semi-automatic-printer/semi-automatic-pcb-stencil-printer.html</p>
11	Reflow Oven	<p>Brand – EPS Model – RF-300 Specification - 3 Zones Heating (3 top 3 bottom), Heated Tunnel Length - 850 mm, Max PCB Width x Height – 250 mm(10”) x 35 mm(1.375”), Conveyor – Mesh belt, Heater - 5.5 kw Operational Area - PCB manufacturing Material support - Solder paste Link - https://www.mectronics.in/principal-product/eps/table-top/rf300-conveyor-reflow-oven/169/251</p>
12	Wave Soldering Machine	<p>Brand – EPS Model – WSM 300S Specification – 118”(L) X 26”(W) X 39”(H) Single wave and flux interval sensors, Foam Fluxer Tank 0.8gal/3 ltrs, Solder pot capacity – 200 lbs / 90 kgs, Max Wave Height – 0-10mm, Wave Width – 300mm, Preheat temp – 200° C, Approx Warm-up time – 50min, Max conveyor Speed – 2m/min, Pallets – 300x400mm Operational area: PCB manufacturing Link - https://www.mectronics.in/principal-product/eps/table-top/rf300-conveyor-reflow-oven/169/251</p>
13	Vinyl Cutter	<p>Brand – Roland Model - CAMM-1 GS 24 Specification: Max cutting speed- 500 mm/s, Max cutting media thickness-50cm, Replot memory- 2 MB, Mechanical resolution- 0.0125 mm/step, Loadable Material Width -2 to 27.5 in, Maximum cutting area (50 to 700mm) Width: 22.9 in. (584 mm) Length: 984 in.(25000 mm) Dimension: 33.8 (W) x 12.5 (D) x 92.5 (H) in. (860 (W) x 319 (D) x 235 (H) mm) Material support: Vinyl roll, cardboard and cardstock, paper, stickers and stencils. Operational area: Design apparels, Signand stickers, Party board, Making calendar, Card designing, Project presentation, School decoration,etc. Software support: CutStudio , Inkscape, R-Wear Studio, CoreIDRAW Link: https://www.rolanddg.co.in/products/vinyl-cutters/camm-1-gs-24-desktop-vinyl-cutter & https://www.youtube.com/watch?v=tpxcg_bGrcA</p>

Section	Electronics	
Sr. No.	Equipment Name	Equipment detail
14	DC Regulated Power Supply	Brand - Mighty Model - RPS Specification – Number of outputs-3, Output voltage range- +5V, +12V, & -12V Output current range- 2A & 1A
15	Regulated DC Power Supply	Brand - Aplab Model – LQ6324T Specification - Number of outputs- 3, Output voltage range- 0V to 32V, +/- 12V to +/-15V, & 5V, Output current range- 0A to 2A, 0.5A & 5A
16	DC Regulated Power Supply	Brand - M-Tek Model - NA Specification – Number of outputs-1, Output voltage range- 0 to 300V, Output current range- 1A
17	Digital Storage Oscilloscope	Brand - TEKTRONIX Model - TPS 2014 Specification - Bandwidth- 100 MHz, Sampling rate- 1.0 GS/s, Channels- 4, Record length- 2500 point record length for each channel
18	Digital Storage Oscilloscope	Brand - TEKTRONIX Model - TDS 2012 Color display Specification - Bandwidth- 100 MHz, Sample rate- 1 GS/s, Channels- 2, Record length- 2500 points
19	Mixed Signal Oscilloscope	Brand - AGILENT Model – 54622D Specification - Bandwidth- 100 MHz, Sampling rate- 200 MSa/s, Channels- 2+16 Record length- 4MB
20	AC Current Probe	Brand - TEKTRONIX Model – A621 Specification - Output: 1/10/100 mV/A, Frequency range: 5 Hz to 50 kHz Accuracy: ±2% at 1 mV/A and 10 mV/A, ±3% at 100 mV/A
21	AC / DC Current Probe	Brand - TEKTRONIX Model – A622 Specification - Output: 50 mA to 100 A, Frequency range: 100 kHz Accuracy: ±2% at 1 mV/A and 10 mV/A, ±3% at 100 mV/A
22	Function Generator	Brand - µ-Tek Model - FG702 C
23	USB Microscope with digital camera	Brand - WELLER Model – T0051383599 Specification – 1/3" Colour CMOS, Up to 30FPS video frame rate, LED on/off controlled by software
24	Rework Station	Brand - WELLER Model – WMD 3 Specification – Multi Digital Rework Station – 3 Channels
25	SMD Rework Station	Brand - MAX Model – 8550 Specification – Hot air soldering & de-soldering station, S.M.D rework Station, Micro Soldering Station.
26	Ultra Sonic Cleaning System	Brand - EXCEL SONICS Model - NA Specification - Single Stage, with suitable US Power Output with Drain facility 450 (L)x130 (W) x220 (H)mm

Section	Power Tools	
Sr No.	Equipment Name	Equipment detail
27	Bench Top Mitre Saw	Brand – Bosch Model – GCM 10 MX Link: https://www.bosch-pt.co.in/in/en/products/gcm-10-mx-0601B290F0
28	Bench Top Table Saw	Brand – Bosch Model – GTS 10 J Professional Link: https://www.bosch-pt.co.in/in/en/products/gts-10-j-0601B305K1
29	Dust Extractors	Brand – Bosch Model – GAS 35 L SFC Link: https://www.bosch-pt.co.in/in/en/products/gas-35-l-sfc-06019C3000
30	Impact Drill	Brand – Bosch Model – GSB 13RE Link: https://www.bosch-pt.co.in/in/en/products/gsb-13-re-06012171F3
31	Hand Drill	Brand – Bosch Model – GBM 10 RE Link: https://www.bosch-pt.co.in/in/en/products/gbm-10-re-06014735F0
32	Small Angle Grinder	Brand – Bosch Model – GWS 14-125 CI Link: https://www.bosch-pt.co.in/in/en/products/gws-14-125-ci-06018242F1
33	Angle Grinder High Torque Sander	Brand – Bosch Model – GWS 22U Link: https://www.bosch-professional.com/br/pt/products/lixadeira-angular-bosch-gws-22-u-2200w-127v-com-1-chave-de-aperto-prato-de-apoio-e-punho-auxiliar-06018A70D0
34	Straight Grinders	Brand – Bosch Model – GGS 28 LCE Link: https://www.bosch-pt.co.in/in/en/products/ggs-28-lce-0601221100
35	Orbital Sander	Brand – Bosch Model – GSS 2300 Link: https://www.bosch-pt.co.in/in/en/products/gss-2300-06012980F0
36	Orbital Jigsaw	Brand – Bosch Model – GST 150 BCE Link: https://www.bosch-pt.co.in/in/en/products/gst-150-bce-06015130F0
37	Screwdriver	Brand – Bosch Model – GSR 6-25 TE Professional Link: https://www.bosch-pt.co.in/in/en/products/gsr-6-25-te-0601445000
38	Shears	Brand – Bosch Model – GSC 2,8 Link: https://www.bosch-pt.co.in/in/en/products/gsc-2-8-0601506103
39	Air Blower	Brand – Bosch Model – GBL 80-270 Link: https://www.bosch-pt.co.in/in/en/products/gbl-82-270-06019804F5
40	Cordless Drill/Driver	Brand – Bosch Model – GSR 18V-EC Professional Link: https://www.bosch-pt.co.in/in/en/products/gsr-18-v-ec-06019E81K0
41	Cordless Multi Cutter	Brand – Bosch Model – GOP 30-28 Link: https://www.bosch-pt.co.in/in/en/products/gop-30-28-06012370F0
42	Moto Saw	Brand – Dremel Model – MS20-1/5 Link: https://www.dremel.com/gn/en/p/dremel-moto-saw-ms20-1-5-v514

43	High Performance Rotary Tool Kit	Brand – Dremel Model – 3000-1/25 CN80 Link: https://www.dremel.com/za/en/p/dremel-3000-3000-1-25ez-v685
44	Multi-Vise	Brand – Dremel Model – 2500 Link: https://www.dremel.com/gn/en/p/dremel-multi-vise-2500-v331
45	3-in-1 Workstation Drill Press, Rotary Tool Holder & Flex-Shaft Tool Stand	Brand – Dremel Model – Work Station 220 Link: https://www.dremel.com/gn/en/p/dremel-workstation-220-v277
46	Scroll Saw	Brand – Ferm Model – SSM 1007 Link: https://ferm-diy.com/en/scroll-saw-120w.html
47	Bench Grinder	Brand – Ferm Model – BGM 1020 Link: https://ferm-diy.com/en/bench-grinder-250w-150mm.html
48	Bench-Pillar-Drill	Brand – Ferm Model – TDM 1026 Link: https://ferm-diy.com/en/bench-pillar-drill-350w-13mm.html

Section		Measuring equipment
Sr. No.	Equipment Name	Equipment detail
49	Digital Precision Multimeter	Brand - ESCORT Model – ESCORT 97 Specification – Dual display No. of digits- 5, Current measure AC max- 10 A, Voltage measure AC max- 750V, Accuracy- ±0.06 %
5	Digital Precision Multimeter	Brand - FLUKE Model - 111 Specification - No. of digits- 4, True RMS Multimeter, Current measure AC max- 10 A, Voltage measure AC max- 600 V
51	LCR Meter	Brand - ESCORT Model - ELC 3131D Specification - Test frequency- 1kHz & 120Hz, Basic accuracy- ±0.6 %
52	Vernier Caliper	Brand - FOWLER Specification - Resolution: 0.0005"/0.1mm, Accuracy: ± 0.001"/0.02mm