VIT-TBI

Vellore Institute of Technology –
Technology Business Incubator
VIT UNIVERSITY
Vellore - 632 014, Tamil Nadu, India

Electronics Facility

@

VIT-TBI

Microsoft HoloLens Development Edition

Microsoft HoloLens is the first self-contained, holographic computer, enabling you to engage with your digital content and interact with holograms in the world around you.

Optics	See-through holographic lenses (waveguides) 2 HD 16:9 light engines Automatic pupillary distance calibration Holographic Resolution: 2.3M total light points Holographic Density: >2.5k radiant (light points per radian)
Sensors	1 Inertial Measurement Unit (IMU),4 environment understanding cameras,1 depth camera,1 2MP photo / HD video camera, Mixed reality capture,4 microphones 1 ambient light sensor
Human Understanding	Spatial sound, Gaze tracking, Gesture input, Voice support
Input / Output / Connectivity	Built-in speakers, Audio 3.5mm jack, Volume up/down, Brightness up/down, Power button, Battery status LEDs,Wi-Fi 802.11ac,Micro USB 2.0,Bluetooth 4.1 LE
Power	Battery life: • 2-3 hours of active use • Up to 2 weeks of standby time • Fully functional when charging Passively cooled (no fans)
Processors	Intel 32 bit architecture Custom-built Microsoft Holographic processing unit (HPU 1.0)
Weight	1.28 lbs. (579g)
Memory	64GB Flash 2GB RAM
OS and apps	Windows 10 Windows Store

What you need to develop	Windows 10 PC able to run Visual Studio 2015 and Unity 5.4, 2GB RAM

ETS – PCBMATE – 1500W

A **PCB milling system** is a single machine that can perform all of the required actions to create a prototype board, with the exception of inserting vias and through hole plating

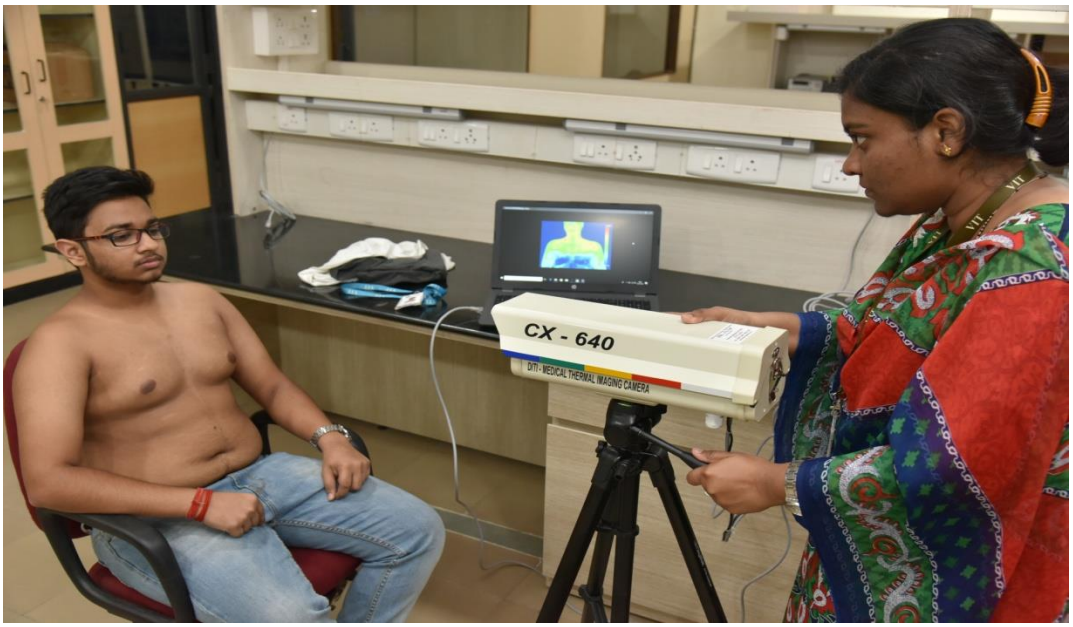
Working Area	400x300x100mm
Volume	650x550x540mm
Main Axle Power Rate	1.5KW
Main Axle Rotating Speed	24000RPM
Max. Working Speed	3500mm/min
Feeding Height	150mm
Engraving Tool	1-7mm
System	Mach3
Working Drive	0.02-0.05mm
Repositioning Accuracy	0.01-0.02mm
Power	AC – 220V
Weight	65Kg

Electronic Test Bench

The basic **test bench** is ideal for high school and college students, hobbyists, and tinkerers who dabble in an infinite number of possible electronics applications, ranging from audio and communications to robotics and wireless…and a multitude of applications in between.

Digital Oscilloscope	100Mhz; 2GS/s: 2.5k Record length; 2-Ch; Color Display
Function Generator	2 Channel:60Mhz; Bandwidth: 300MS a/s; Sampling Rate: 1M points; Arbitrary Waveform Memory: 14-bits; Vertical Resolution: 3.9; Color LCD: 2U; Half Rack: USB Host/Device
Digital Multimeter	5.5 DIGIT DMM (USB ONLY) 240V Version
Power Supply	Programmable Triple Channel DC Power Supply

DITI – CX 640 – Thermal Image Camera with Computer Support



Medical DITI is a noninvasive diagnostic technique that allows the examiner to visualize and quantify changes in skin surface temperature. An infrared scanning device is used to convert infrared radiation emitted from the skin surface into electrical impulses that are visualized in colour on a monitor. This visual image graphically maps the body temperature and is referred to as a thermogram. The spectrum of colours indicates an increase or decrease in the amount of infrared radiation being emitted from the body surface. Since there is a high degree of thermal symmetry in the normal body, subtle abnormal temperature asymmetry's can be easily identified.

- High Resolution - 640x480
- Fully Radiometric
- Housing Inclusive
- Tripod Stand
- Laptop Software
- Power Cord
- Ether Port Cord & CD

Deep Learning Machine

Deep learning is part of a broader family of machine learning methods based on learning data representations, as opposed to task-specific algorithms. Learning can be supervised, semi-supervised or unsupervised. This process requires high processing power and memory. The Computer set installed with the following specifications will assist students in faster processing and shorter time for the processes to complete.

CPU	Core i9- 7900X; 3.3FGhz; 10- Core Processor
CPU Cooler	Corsair – H115i PRO 55.4 CFM Liquid CPU Cooler
Motherboard	Asus – ROG RAMPAGE VI EXTREME EATX LGA2066
RAM	Corsair – Vengeance (16GB) DDR4-3000 Memory*4 (64GB RAM)
SSD	Samsung – 960EVO 1TB M.2-280 Solid State Device
HDD	Seagate- Barracuda 4TB 3.5'' 5400RPM Internal Hard Drive*3=12TB
Graphics Card	NVIDIA – Titan Xp 12GB Video Card (4 way SLI)
Case	Cooler Master Cosmos 2 Full Tower
Power Supply	Cooler Master 1500W 80+Gold Certified Semi-Modular ATX Power Supply
Monitor	LG 24MP88HV 24-inch full HD IPS Monitor
Case Fans	Cooler Master Sickle flow 120mm
Mechanical Keyboard	Corsair K70
Wireless Mouse	Logitech M337
External HDD	Seagate Backup Plus 4TB

Amazon Echo, Echo Dot and Echo Plus

Amazon Echo (shortened and referred to as **Echo**) is a brand of smart speakers developed by Amazon.com. The devices connect to the voice-controlled intelligent personal assistant service Alexa, which responds to the name "Alexa". This "wake word" can be changed by the user to "Amazon", "Echo" or "Computer".It can also control several smart devices acting as a home automation hub.Echo devices also have access to 'skills' built with the Alexa Skills Kit. These are third-party-developed voice experiences that add to the capabilities of any Alexa-enabled device (such as the Echo). Examples of skills include the ability to play music, answer general questions, set an alarm, order a pizza, get an Uber, and more. Skills are continuously being added to increase the capabilities available to the user.

	Speaker Size	**Device Size**	**Device Weight**
Echo Dot	0.6'' tweeter	32x84x84mm	163g
Amazon Echo	2.5'' woofer, 0.6'' tweeter	148x88x88mm	821g
Echo Plus	2.5'' woofer, 0.8'' tweeter	235x84x84mm	954g

3D PRINTERS

1. Ultimaker 3 Extended

A desktop 3D printer is a small 3D printer that's able to build objects from raw material. Desktop 3D printers generally have a smaller build volume and produce smaller, high-quality 3D printed parts. the print head contains small chambers of heated liquid ink that squirts onto the paper through tiny nozzles. Designers use 3D printers to quickly create product models and prototypes, but they're increasingly being used to make final products.

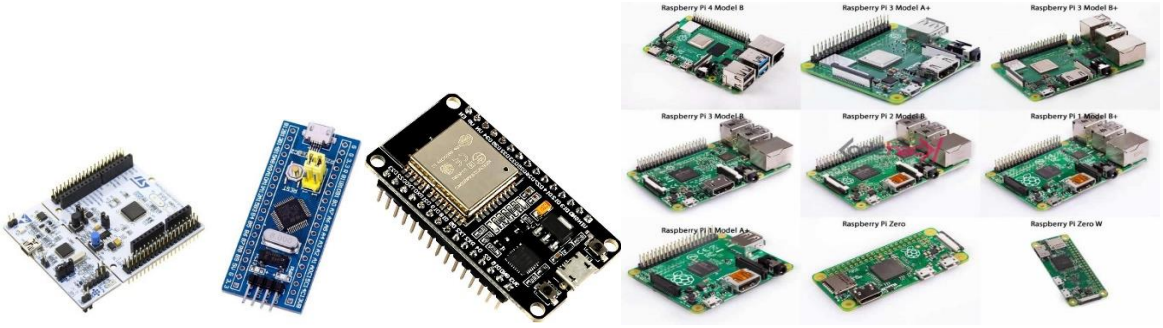
Technology	Fused Deposition Modeling (FDM)
Print head	Dual extrusion print head with a unique auto-nozzlelifting system and swappable print cores
Build volume	Left nozzle: 215 x 215 x 300 mm Right nozzle: 215 x 215 x 300 mm Dual material: 197 x 215 x 300 mm
Filament diameter	2.85 mm
Layer resolution	0.4 mm nozzle: 20 - 200 micron
Print head travel speed	30 - 300 mm/s
Build speed	0.40 nozzle: up to 16 mm^3/s
Connectivity Monitoring	Wi-Fi, LAN, USB port, Live camera
Supported materials	Nylon, PLA, ABS, CPE, PVA
Dimensions	342 x 380 x 489 mm
Input	100 - 240V,4A, 50-60Hz 221 W max.
Output	24 V DC, 9.2 A
Supplied software	Cura, our free print preparation software

3D PRINTERS

1. Ultimaker 3 Extended

Technology	Fused Deposition Modeling (FDM)
Print head	Dual extrusion print head with a unique auto-nozzle lifting system and swappable print cores
Print volume	280*250*300mm (11*9.8*11.8IN)
Filament diameter	1.75mm (0.069IN)
Layer resolution	0.1mm-0.4mm ±0.2mm
Print speed	30-200mm/s
Build speed	30-200mm/s
Connectivity Monitoring	USB cable, USB stick, Wi-Fi, Ethernet, FlashCloud, PolarCloud
Working Environment	15-30℃ (59-86℉)
Supported materials	PLA, ABS, PETG
Dimensions	550*490*570mm (21.7*19.3*22.4IN)
Input	AC100-240V, 47-63Hz,500W
Output	24V, 20.8A
Supplied software	FlashPrint

SBC &Development Boards



Raspberry Pi
Jestson Nano
STM 32
Arduino
LPC2148
ESP32
NODE MCU
Sensors