

# Laptop Computers

## Choosing the right Desktop or Laptop Computer

In choosing a Desktop or a Laptop computer, the key factors to be considered are the work engaged by the user and the frequency of use. For a section of users where the work is limited to creating a document, checking and responding to e-mails, or working in a spreadsheet, their requirements typically do not go beyond the Microsoft Office components. Some may engage in more advanced work, but less frequently. On the other hand, those users who carry out specified tasks such as systems engineering, database management, quantitative analysis, etc., require computers with special features and advanced capabilities. For this reason, we propose not only one but three standard computer types from which the government agencies can select according to the needs of the users.

### Type I

A Type I computer has all the basic features to carry out tasks such as creating a document (e.g., Microsoft Word,

OpenOffice Writer, etc.), a spreadsheet (e.g., Microsoft Excel, OpenOffice Calc, etc.), presentation (e.g., Microsoft PowerPoint, OpenOffice Impress, etc.); checking and responding to emails, facility to use the internet for official purposes, etc. If the user's requirements do not go beyond these limits, the Type I computer is adequate for the purpose. Type I Computers are also sufficient for basic data entry work.

### Type II

This category is good for administrative work including data entry (if the work load is high), compilation of reports and documents (more frequently), checking and responding to emails, using specific packages for finance and management, scientific applications etc. Type II computers can also be used, as decided by the management, by software development professionals, system administrators and other officers carrying out Information systems related functions.

### Type III

A high-end computer (Type III) is recommended only for users of special software applications that require advanced hardware resources. (e.g. GIS software) Most of the times the software requirements themselves call for such a computer. Sometimes the software developers and system administrators too might need high-end computers. They should be assigned to officers purely on their work requirements and not based on the position or seniority.

## Specifications for Laptop Computers

Criteria	Type I (2.1.1V)	Type II (2.1.1V)	Type III (2.1.1V)
<b>Make &amp; Model</b>	(Branded)	(Branded)	(Branded)
<b>Country of manufacture</b>	(Branded)	(Branded)	(Branded)
<b>Country of origin</b>	(Branded)	(Branded)	(Branded)
<b>Form Factor</b>	Business Laptop Computer (Manufacture Confirmation must be attached)	Business Laptop Computer (Manufacturer Confirmation must be attached)	Business Laptop Computer (Manufacture Confirmation must be attached)
<b>Chipset</b>	(Specify)	(Specify)	(Specify)
<b>Processor</b>	Option 1: Intel® Core i3-1115G4 11th Generation Processor or Later Option 2: AMD Ryzen™ 3 5400U Processor or Later	Option 1: Intel® Core i5-1135G7 11th Generation Processor or Later Option 2: AMD Ryzen™ 5 5600U Processor or Later	Option 1: Intel® Core i7-1165G7 11th Generation Processor with IPU or Later Option 2: AMD Ryzen™ 7 5800U Processor or Later
<b>Processor Frequency</b>	Intel: 4.10GHz Max Turbo Frequency or Higher AMD: 2.6GHz Base Frequency or Higher	Intel: 4.20GHz Max Turbo Frequency or Higher AMD: 2.3GHz Base Frequency or Higher	Intel: 4.70GHz Max Turbo Frequency or Higher AMD: 1.9GHz Base Frequency or Higher
<b>Cache</b>	Intel: 6MB or Higher AMD: 10MB L2+L3 Cache or Higher	Intel: 8MB or Higher AMD: 19MB L2+L3 Cache or Higher	Intel: 12MB or Higher AMD: 20MB L2+L3 Cache or Higher
<b>RAM</b>	4 GB of Single Channel, DDR4 System Memory Upgradable to 16 GB or Higher Capacity	8 GB of Single Channel, DDR4 System Memory, Upgradable to 16 GB or Higher Capacity	16 GB of DDR4 System Memory, Upgradable to 32 GB or Higher Capacity
<b>RAM Speed</b>	2666 MHz, DDR4 or Higher	2666 MHz, DDR4 or Higher	2666 MHz, DDR4 or Higher
<b>Hard Disk</b>	256 SSD or Above	512GB SSD or Above	1TB SSD or Above
<b>Graphics</b>	Intel UHD Graphics / AMD Radeon™ Graphics or Better	Intel UHD Graphics / AMD Radeon™ Graphics or Better	Intel UHD Graphics / AMD Radeon™ Graphics or Better
<b>Keyboard</b>	(Specify)	(Specify)	(Specify)
<b>Touch Pad</b>	Multi-Gesture Touchpad, Supporting Two-Finger Scroll	Multi-Gesture Touchpad, Supporting Two-Finger Scroll	Multi-Gesture Touchpad, Supporting Two-Finger Scroll
<b>Audio, Audio Integrated Speakers, Microphone</b>	Integrated High Definition Audio, Integrated Internal Speakers, Built-In Microphone	Integrated High Definition Audio, Integrated Internal Speakers, Built-In Microphone	Integrated High Definition Audio, Integrated Internal Speakers, Built-In Microphone
<b>Communications, Modern Ethernet, Wireless Bluetooth</b>	WLAN: 802.11ac, WPAN: Bluetooth 4.0	WLAN: 802.11ac, WPAN: Bluetooth 4.0	WLAN: 802.11ac, WPAN: Bluetooth 4.0
<b>Inbuilt Camera</b>	720p HD Camera	720p HD Camera	720p HD Camera
<b>Expansion Options, PC Card I/O Ports</b>	SDTM Card reader, Microphone / Earphone - In jack, USB 2.0 Port, 2 x USB 3.0 Ports, HDMI® Port, DC-In Jack for AC adapter	SDTM Card reader, Microphone / Earphone - In jack, USB 2.0 Port, 2 x USB 3.0 Ports, HDMI® Port, DC-In Jack for AC adapter	SDTM Card reader, Microphone / Earphone - In jack, USB 2.0 Port, 2 x USB 3.0 Ports, HDMI® Port, DC-In Jack for AC adapter, Fingerprint Reader
<b>Display Type</b>	Option 1: 14 Inch TFT LCD HD Resolution Option 2: 15.6 Inch TFT LCD HD Resolution	Option 1: 14 Inch TFT LCD HD Resolution Option 2: 15.6 Inch TFT LCD HD Resolution	Option 1: 14 Inch TFT LCD HD Resolution Option 2: 15.6 Inch TFT LCD HD Resolution
<b>Quality Stability and Reliability Tests of the Product Quoted</b>			The quoted product should possess test reports of the following, Spill-resistant keyboard to Provides protection against water spillage. (Should provide lab test as proof)
<b>Operating System</b>	Windows 10 Pro / Linux / Ubuntu 18.04+	Windows 10 Pro / Linux / Ubuntu 18.04+	Windows 10 Pro / Linux / Ubuntu 18.04+
<b>Application Software</b>	Sinhala and Tamil Unicode Software, Commercial Anti-Virus with License for 3 Year	Sinhala and Tamil Unicode Software, Commercial Anti-Virus with License for 3 Year	Sinhala and Tamil Unicode Software, Commercial Anti-Virus with License for 3 Year
<b>Battery</b>	Minimum 8 Hours Battery Life (Specify Type / mAh / Hours)	Minimum 8 Hours Battery Life (Specify Type / mAh / Hours)	Minimum 8 Hours Battery Life (Specify Type / mAh / Hours)

<b>Security</b>	Kensington Lock Slot	Kensington Lock Slot	Kensington Lock Slot
<b>Accessories - The Carrying Bag</b>	Should be Same Brand	Should be Same Brand	Should be Same Brand
<b>Product certifications of the quoted Model</b>	Energy Star or any other equal certificate to Energy Star, issued by authorized body who has the authority to do so, Documentary evidence must be provided. Valid ISO 9001: 2015, and ISO 14001:2015	Energy Star or any other equal certificate to Energy Star, issued by authorized body who has the authority to do so, Documentary evidence must be provided. Valid ISO 9001: 2015, and ISO 14001:2015	Energy Star or any other equal certificate to Energy Star, issued by authorized body who has the authority to do so, Documentary evidence must be provided. Valid ISO 9001: 2015, and ISO 14001:2015
<b>Manufacture Experience</b>	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)
<b>Manufacturer Authorization Certificate</b>	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)
<b>Warranty</b>	Comprehensive on-site manufacturer authorized warranty for 36 months (Labor and Parts) excluding consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network. Documentary evidence to be provided of the following under bidders' name. (a) Address, Contact Details and Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional)	Comprehensive on-site manufacturer authorized warranty for 36 months (Labor and Parts) Excluding Consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network. Documentary evidence to be provided of the following under bidders' name. (a) Address, Contact Details and Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional)	Comprehensive on-site manufacturer authorized warranty for 36 months (Labor and Parts) Excluding Consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network. Documentary evidence to be provided of the following under bidders' name. (a) Address, Contact Details and Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional)
<b>Additional Warranty Conditions</b>	1-year warranty for Battery and Power Adapter	1-year warranty for Battery and Power Adapter	1-year warranty for Battery and Power Adapter
<b>Warranty Information</b>	A sticker with	A sticker with	A sticker with
	-Supplier name	-Supplier name	-Supplier name
	-Contact Numbers	-Contact Numbers	-Contact Numbers
	-Date of Commissioning of Hardware	-Date of Commissioning of Hardware	-Date of Commissioning of Hardware
	-Warranty period	-Warranty period	-Warranty period
	On all Laptops	On all Laptops	On all Laptops
<b>Brochure</b>	Supplier should provide original brochure of make/model quoted as per above specification	Supplier should provide original brochure of make/model quoted as per above specification	Supplier should provide original brochure of make/model quoted as per above specification

## Specifications for Chromebook & Notebook Computers

Criteria	Chromebook	Notebook
<b>Brand</b>	(Specify)	(Specify)
<b>Model</b>	(Specify)	(Specify)
<b>Country of Origin</b>	(Specify)	(Specify)
<b>Country of Manufacture</b>	(Specify)	(Specify)
<b>Form Factor</b>	Tab Device	Business Note Book
<b>Processor</b>	2.0 GHz Base Frequency Per Core in at Least 4 Cores	2.4 GHz Base Frequency Per Core in at Least 4 Cores
<b>Storage</b>	32 GB eMMC minimum with upgradability (Specify)	64 GB eMMC minimum with upgradability (Specify)
<b>RAM</b>	Minimum 4 GB	Minimum 4GB upgradable up to 8GB
<b>Display</b>	Capacitive Touch Screen, Scratch Resistant Glass Convertible to 360°	FHD Scratch Proof Touch Screen
<b>Display Size</b>	9" Display with IPS Technology 2048x1536 LED-Backlit Touch or above	Diagonal 13"-14" or Higher
<b>I/O Port</b>	1x USB C-Type	1x USB A Type and 1x USB C-Type
<b>Web Cam</b>	HD Web cam Front and Rear ( 2MP/5MP ) or higher	HD Web cam
<b>Stylus Pen</b>	EMR Technology supported stylus pen	
<b>OS</b>	Chrome OS	Chrome OS
<b>Communication</b>	Wi-Fi 802.11n, Bluetooth	Wi-Fi 802.11n, Bluetooth, Nano SIM slot x 1 (3G/4G LTE )
<b>Sound</b>	2x Built in stereo speaker, inbuilt microphone	2x Built in stereo speaker, inbuilt microphone
<b>Accessories</b>	Battery charger with cable, original box and manuals must be provided.	Battery charger with cable, original box and manuals must be provided.
<b>The Carrying Bag</b>	Should be Same Brand	Should be Same Brand
<b>Quality/Stability and Reliability Tests</b>		Keyboard-switch life Spill-resistant keyboard. Provides protection against at least up to 300ml of water spillage. Free drop, Hard Disk protection for Shock and vibration
<b>Warranty</b>	Comprehensive on-site manufacturer authorized warranty for 12 months (Labor and Parts) Excluding Consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network. Documentary evidence to be provided of the following under bidder's name.	Comprehensive on-site manufacturer authorized warranty for 36 months (labor and parts) Excluding Consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network. Documentary evidence to be provided of the following under bidder's name.

	Address, Contact Details and Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional)	Address, Contact Details and Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional)
<b>Average Battery Life</b>	At least 8 hours	At least 8 hours
<b>Product Certification</b>	FCC or CE (the bidder should possess a valid product certification)	FCC or CE (the bidder should possess a valid product certification)
<b>Manufacture Experience</b>	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)
<b>Bidders Experience</b>		
<b>Manufacturer Authorization Certificate</b>	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)
<b>Additional Warranty Conditions</b>	1-year warranty for Battery and Power Adapter	1-year warranty for Battery and Power Adapter
<b>Warranty Information</b>	A Sticker with	A sticker with
	-Supplier name	-Supplier name
	-Contact Numbers	-Contact Numbers
	-Date of Commissioning of Hardware	-Date of Commissioning of Hardware
	-Warranty period	-Warranty period
	on all Chromebooks.	on all Notebooks.
<b>Brochure</b>	Supplier should provide original brochure of make/model quoted as per above specification	Supplier should provide original brochure of make/model quoted as per above specification

## Specimen Bidder's Compliance Check Sheet

### Important:

It is compulsory to use the most recent version of the ICTA Specifications at the time of the Bidding Document Publication. The purchaser should mention the particular version of the specification in the Technical Specification section of the bidding document in the following format:

Example: If the purchaser refers the Type II of this Laptop Specification Version

### ICTA Version: Laptop Computers | ICT-ES-2.1.1V | Type II

Features	Required Minimum Specification	Bidder's Compliance	
		Yes/No	If "No", Bidder's Response
Brand			
Model			
Country of Origin & Country of Manufacture / assembly			
Processor			
Base Frequency			
Cache			
Form Factor			
Chassis			
Chipset			
Motherboard			
Memory			
Maximum memory			
Memory Dims			
Hard disk			
Keyboard			
Mouse			
Optical drive			
Expansion slots			
Video controller			
Network interface			
I/O ports			
Power Supply			
Operating system			
Application Software			
Product certifications of the quoted Model			
Display			
Manufacturer Experience			
Bidders Experience			
Manufacturer Authorization Certificate			
Warranty			
Warranty Information			
Brochure			

## Other Relevant Information

### Laptop Types

#### Notebook

The general term for a full-sized laptop that strikes a balance between portability and functionality. These can vary greatly in overall size and specification – processor speed, storage capacity, memory (RAM) and screen size. They can vary greatly in price from low-cost budget models to high-performance productivity and gaming laptops.

#### Ultraportable

Thin, light laptops designed for mobility (also sometimes called a subnotebook). Maintaining a super-slim profile means they have to cut out some features such as built-in CD/DVD drive and reduce the number of connection ports.

#### Ultrabook

A term invented by computer chipmaker Intel for a special type of ultraportable notebook (hence Ultrabook). Ultrabook must meet specific criteria for various things such as size/weight, battery life, type of chipset (including built-in security features). Among their strong points is strong security and anti-theft protection built in at the hardware level. Although the original MacBook Air is regarded as the inspiration for the Ultrabook class, it's not actually an Ultrabook.

#### Netbook

Small, inexpensive laptops that run off the low-powered Intel Atom processor. These have been largely phased out, to be replaced by tablets, Ultrabooks and Ultraportables.

### Chromebook

Chromebooks run the Chrome-OS (which is based on Linux) operating system. These are designed to work primarily with web apps and data being saved to the Cloud rather than on the laptop itself. Apps need to be downloaded from the Chrome Web Store. Recent model Chromebooks can also run Android apps. Chromebooks are popular in some schools, as many cheaper models are available and their minimal configuration offers easier centralized administration and security.

### MacBook

Apple's laptop computers come in two families – the ultra-thin MacBook Air, and the high-performance MacBook Pro in 13-inch and 16-inch sizes (the latter recently replacing the 15-inch size). They all run the mac-OS operating system.

### Convertible (2-in-1)

These combine the features of a laptop and a tablet. They're also known as 2-in1 laptops or hybrids. They can quickly switch between touchscreen tablet mode and traditional keyboard mode, transforming in a variety of ways, including detaching, sliding, twisting and fold-back mechanisms. Most models now use the fold-back method, though a few still have detachable screens.

### Tablet as a Laptop

Just as convertible laptops can do double-duty as a tablet, some tablets can be used as a laptop with the addition of a detachable keyboard. Most notable for this are Windows-based tablets such as Microsoft's own Surface Pro series and smaller Surface Go, which really benefit from having a keyboard as they use the Windows 10



operating system. However, unlike a 2-in-1, they can quickly be used in tablet mode without the added weight and bulk of a keyboard. The iPad and iPad Pro also have optional detachable keyboards and can be used as a laptop, though they use Apple's iPad OS mobile operating system and work best with apps that support laptop functionality.

## Content References

- <https://byte-notes.com>
- <https://pcpartpicker.com>
- <https://www.choice.com.au>

- <https://www.cnet.com>
- <http://www.globusinfocom.com>
- <https://www.icta.lk>
- <https://www.itbusiness.ca>
- <https://www.pcworld.com>
- <https://www.streetdirectory.com>

## Need Help?

Telephone : +94 (11) 236 9099  
Fax : +94 (11) 236 9091  
Email : [ict-equip-specs@icta.lk](mailto:ict-equip-specs@icta.lk)