

ਦਫਤਰ ਡਾਇਰੈਕਟਰ ਸਕੂਲ ਸਿੱਖਿਆ ਵਿਭਾਗ (ਸੈ:ਸਿ:), ਪੰਜਾਬ

ਈ-ਬਲਾਕ ਪੰਜਵੀਂ ਮੰਜਿਲ ਪੰਜਾਬ ਸਕੂਲ ਸਿੱਖਿਆ ਬੋਰਡ ਕੰਪਲੈਕਸ ਫੇਜ਼-8 ਸ.ਅ.ਸ. ਨਗਰ (ਮੋਹਾਲੀ)

ਫੋਨ ਨੰ. 0172-5212345/349 ਈ-ਮੇਲ rmsa.civilworks@punjabeducation.gov.in

ਵੱਲ

ਸਮੂਹ ਜਿਲ੍ਹਾ ਸਿੱਖਿਆ ਅਫਸਰ (ਐ.ਸਿ./ਸੈ.ਸਿ.)

ਪੰਜਾਬ।

ਮੀਮੋ ਨੰ. ਵਰਕਸ ਤੇ ਪਲਾਨਿੰਗ/2025/123456

ਮਿਤੀ 08-05-2025

ਵਿਸ਼ਾ:

ਨਾਬਾਰਡ RIDF XXVIII, XXIX ਅਤੇ XXX ਅਧੀਨ ਕੰਪਿਊਟਰ ਅਤੇ Interactive Panel ਦੀਆਂ Specifications ਜਾਰੀ ਕਰਨ ਸਬੰਧੀ।

ਉਪਰੋਕਤ ਵਿਸ਼ੇ ਸਬੰਧੀ ਦੱਸਿਆ ਜਾਂਦਾ ਹੈ ਕਿ ਸਮੂਹ ਜਿਲ੍ਹਿਆਂ ਵਲੋਂ ਨਾਬਾਰਡ XXVIII ਅਧੀਨ ਕੰਪਿਊਟਰ ਸੈੱਟ ਦੀਆਂ Specifications ਅਤੇ ਨਾਬਾਰਡ XXIX, XXX ਅਧੀਨ ਜਾਰੀ ਕੀਤੇ ਗਏ Holistic Plan ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ ਵਾਲੇ ਕੰਪਿਊਟਰ ਸੈੱਟ ਅਤੇ Interactive Panel ਦੀਆਂ Specifications ਦੀ ਮੰਗ ਕੀਤੀ ਜਾ ਰਹੀ ਹੈ।

2.0 ਉਕਤ ਸਬੰਧੀ ਆਪ ਜੀ ਨੂੰ ਕੰਪਿਊਟਰ ਸੈੱਟ ਅਤੇ Interactive Panel ਦੀਆਂ Specifications ਇਸ ਪੱਤਰ ਨਾਲ ਨੱਥੀ ਕਰਕੇ ਭੇਜੀ ਜਾਂਦੀ ਹੈ ਅਤੇ ਹਦਾਇਤ ਕੀਤੀ ਜਾਂਦੀ ਹੈ ਕਿ ਕੰਪਿਊਟਰ ਸੈੱਟ ਦੀਆਂ Specification ਵਿੱਚ ਲੜੀ ਨੰ. 02 ਤੇ ਦਰਜ Desktop ਅਧੀਨ ਕੇਵਲ Mid-Level ਕੰਪਿਊਟਰ ਸੈੱਟ ਦੀ ਹੀ ਖਰੀਦ ਕੀਤੀ ਜਾਵੇ ਅਤੇ ਖਰੀਦ ਸਮੇਂ ਸਰਕਾਰ ਦੀਆਂ ਹਦਾਇਤਾਂ ਦੀ ਇੰਨ-ਬਿੰਨ ਪਾਲਣਾ ਕਰਨੀ ਯਕੀਨੀ ਬਣਾਈ ਜਾਵੇ।

ਸਹੀ/-

ਡਾਇਰੈਕਟਰ

ਸਕੂਲ ਸਿੱਖਿਆ ਵਿਭਾਗ (ਸੈਕੰਡਰੀ), ਪੰਜਾਬ

ਪਿ. ਅੰ. ਨੰ. ਵਰਕਸ ਤੇ ਪਲਾਨਿੰਗ/2025/ਉਕਤ

ਮਿਤੀ: 08.05.2025

ਉਕਤ ਦਾ ਉਤਾਰਾ ਹੇਠ ਲਿਖਿਆਂ ਨੂੰ ਸੂਚਨਾ ਹਿੱਤ ਭੇਜਿਆ ਜਾਂਦਾ ਹੈ:-

1. ਪੀ.ਐਸ. ਟੂ ਸਕੱਤਰ, ਸਕੂਲ ਸਿੱਖਿਆ ਵਿਭਾਗ, ਪੰਜਾਬ।
2. ਪੀ.ਏ. ਟੂ ਵਿਸ਼ੇਸ਼ ਸਕੱਤਰ ਸਕੂਲ ਸਿੱਖਿਆ (K), ਪੰਜਾਬ।
3. ਪੀ.ਏ. ਟੂ ਡਾਇਰੈਕਟਰ ਸਕੂਲ ਸਿੱਖਿਆ (ਸੈ:ਸਿ:), ਪੰਜਾਬ।
4. ਪੀ.ਏ. ਟੂ ਡਾਇਰੈਕਟਰ ਸਕੂਲ ਸਿੱਖਿਆ (ਐ:ਸਿ:), ਪੰਜਾਬ।

ਸਹਾਇਕ ਡਾਇਰੈਕਟਰ (ਸਿਵਲ ਵਰਕਸ)



ਪੰਜਾਬ ਸਰਕਾਰ
ਪ੍ਰਸ਼ਾਸਨਿਕ ਸੁਧਾਰ ਵਿਭਾਗ

GOVERNMENT OF PUNJAB
DEPARTMENT OF GOVERNANCE REFORMS

To

1. All Administrative Secretaries
2. All Deputy Commissioners

Letter no: DGRPG/Specifications/E-837120/2025/02/04
Dated: 04.02.2025

Subject: Technical Specifications for commonly used IT items– 2025.

1. Please refer to letter no: DGRPG/Technical Sanctions/123853/I/811566/2024 dated 27.03.2024 vide which the specifications of IT items were issued.
2. Now, the technical specifications of the commonly used IT items have been revised and are enclosed as **Annexure – A**. These specifications shall remain in force until reviewed as per requirement.

Girish Dayalan, IAS
Special Secretary to Government
and Director

Specifications of commonly used IT hardware

1. All-in-one

SN	Parameter	Entry-Level	Mid-Level	High-End *
1.	Processor	12th Generation Intel Core i5 12400 / 5000 series AMD Ryzen 5 5600G OR 12th Generation Intel Core i7 12700 / 5000 series AMD Ryzen 7 5700G	13th Generation Intel Core i5 / AMD Ryzen 5 7000 series OR 13th Generation Intel Core i7 AMD Ryzen 7 7000 series	14th Generation Intel Core i5 / AMD Ryzen 5 8000 series OR 14th Generation Intel Core i7 / AMD Ryzen 7 8000 series
2.	Webcam	Integrated HD webcam	Integrated HD webcam	Integrated 5MP FHD webcam
3.	RAM	16 GB DDR 4 (3200 MHz) with 32 GB expandability	16 GB DDR 5 (4800 MHz) with 32 GB expandability	16 GB or higher (<i>as per requirement</i>) DDR 5 (4800 MHz) with 64 GB expandability
4.	Chipset	Compatible chipset	Intel Q series / AMD Pro series	Intel Q series / AMD Pro series
5.	Storage Disk	SSD NVMe 512 GB / 1 TB (<i>as per requirement</i>)		
6.	Graphics	Integrated Graphics Card		
7.	Operating System	Pre-installed original Windows 11 Professional (Factory Loaded by OEM)		

		<i>Note: For education purposes, use “Windows 11 STF [Shape the Future]”</i>
8.	Display	23.8" or higher (<i>as per requirement</i>), IPS / VA / WVA, FHD, Antiglare
9.	Speakers & MIC	Integrated dual Speakers with MIC
10.	Connectivity	10/100/1000 Gigabit Ethernet Port
11.	WiFi and Bluetooth	Integrated WiFi 6 and Bluetooth 5.2
12.	Ports	4 x USB 3.2, 1 x Type-C and 1 x HDMI out
13.	Keyboard	Wired / wireless - 100 keys or higher
14.	Mouse	Wired / wireless two button optical mouse with mouse pad
15.	Power Supply	Compatible power supply with 85% efficiency or better
16.	Warranty	3 OR 5 years onsite OEM warranty (<i>as per requirement</i>). Warranty should be online verifiable.
17.	Certifications	Energy Star or EPEAT registered in India, BIS Certification and OS Certification – Windows
18.	Compliance	RoHS
19.	Accessories	All necessary connectors, power cables and power adapters as per Indian Standards
20.	General	Display, keyboard and mouse should be of the same OEM

Note 1: High-end option is to be used only for senior officers or where there is requirement of high end computing

Note 2: Procuring entity may update the specification wherever “as per requirement” has been mentioned

2. Desktop

SN	Parameter	Entry-Level	Mid-Level	High-End *
1.	Processor	12th Generation Intel Core i5 12400 / 5000 series AMD Ryzen 5 5600G OR 12th Generation Intel Core i7 12700 / 5000 series AMD Ryzen 7 5700G	13th Generation Intel Core i5 / AMD Ryzen 5 7000 series OR 13th Generation Intel Core i7 AMD Ryzen 7 7000 series	14th Generation Intel Core i5 / AMD Ryzen 5 8000 series OR 14th Generation Intel Core i7 / AMD Ryzen 7 8000 series
2.	RAM	16 GB DDR 4 (3200 MHz) with 32 GB expandability	16 GB DDR 5 (4800 MHz) with 32 GB expandability	16 GB or higher (<i>as per requirement</i>) DDR 5 (4800 MHz) with 64 GB expandability
3.	Chipset	Compatible chipset	Intel Q series / AMD Pro series	Intel Q series / AMD Pro series
4.	Display	19" or higher (<i>as per requirement</i>), IPS / VA / WVA, FHD, Antiglare	21.5" or higher (<i>as per requirement</i>), IPS / VA / WVA, FHD, Antiglare	21.5" or higher (<i>as per requirement</i>), IPS / VA / WVA, FHD, Antiglare
5.	Storage Disk	SSD NVMe 512 GB / 1 TB (<i>as per requirement</i>)		
6.	Graphics	Integrated Graphics Card		
7.	Operating System	Pre-installed original Windows 11 Professional (Factory Loaded by OEM) <i>Note: For education purposes, use "Windows 11 STF [Shape the Future]"</i>		

8.	Connectivity	10/100/1000 Gigabit Ethernet Port
9.	Ports	4 x USB 3.2, 1 x Type-C and 1 x HDMI out
10.	Keyboard	Wired / wireless - 100 keys or higher
11.	Mouse	Wired / wireless two button optical mouse with mouse pad
12.	Power Supply	Compatible power supply with 85% efficiency or better
13.	Warranty	3 OR 5 years onsite OEM warranty (<i>as per requirement</i>). Warranty should be online verifiable.
14.	Certifications	Energy Star or EPEAT registered in India, BIS Certification, OS Certification – Windows and TCO 9.0 certification for monitor
15.	Compliance	RoHS
16.	Accessories	All necessary connectors, power cables and power adapters as per Indian Standards
17.	General	Display, keyboard and mouse should be of the same OEM

Note 1: High-end option is to be used only for senior officers or where there is requirement of high end computing

Note 2: Procuring entity may update the specification wherever “as per requirement” has been mentioned

3. Laptop

SN	Parameter	Entry-Level	Mid-Level	High-End *
1.	Processor	12th Generation Intel Core i5 1245U / 5000 series AMD Ryzen 5 5625U OR 12th Generation Intel Core i7 1265U / 5000 series AMD Ryzen 7 5825U	13th Generation Intel Core i5 / AMD Ryzen 5 7000 series OR 13th Generation Intel Core i7 / AMD Ryzen 7 7000 series	Intel Core Ultra 5 / AMD Ryzen 5 8000 series OR Intel Core Ultra 7 / AMD Ryzen 7 8000 series
2.	Power Adapter	Standard OEM power adapter	65W OEM power adapter	65W OEM power adapter
3.	RAM	16 GB DDR 4 (3200 MHz) with 32 GB expandability	16 GB DDR 5 (4800 MHz) with 32 GB expandability	16 GB or higher (<i>as per requirement</i>) DDR 5 (4800 MHz) with 64 GB expandability
4.	Webcam	Integrated HD webcam		
5.	Storage Disk	SSD NVMe 512 GB / 1 TB (<i>as per requirement</i>)		
6.	Graphics	Integrated Graphics Card		
7.	Operating System	Pre-installed original Windows 11 Professional (Factory Loaded by OEM)		
8.	Display	14" (<i>or as per requirement</i>), IPS / VA / WVA, FHD, Antiglare		
9.	Speakers & MIC	Integrated dual Speakers with MIC		

10.	Connectivity	10/100/1000 Gigabit Ethernet Port
11.	WiFi and Bluetooth	Integrated WiFi 6 and Bluetooth 5.2
12.	Ports	2 x USB 3.2, 1 x Type-C and 1 x HDMI out
13.	Keyboard	Backlit and Spill Resistant keyboard
14.	Touchpad	Touchpad with multi-touch gestures enabled
15.	Battery	Li-ion, 3 Cell 45 Whr with a minimum backup of 8 Hrs
16.	Chassis	Metallic
17.	Weight	Not more than 1.5 kg
18.	Warranty	3 OR 5 years onsite OEM warranty (including battery and adapter). Warranty should be online verifiable.
19.	Certifications	Energy Star or EPEAT registered in India, BIS Certification and OS Certification – Windows
20.	Compliance	RoHS
21.	Accessories	OEM carry bag, power cables and power adapters as per Indian Standards

Note 1: High-end option is to be used only for senior officers or where there is requirement of high end computing

Note 2: Procuring entity may update the specification wherever “as per requirement” has been mentioned

4. UPS

SN	Parameter	Value
1.	UPS Capacity	1 KVA
2.	Mode	Line Interactive
3.	Inverter efficiency	60% or better
4.	Enclosure	ABS or better
5.	Input	Single phase AC (160 - 280 V)
6.	Rated Output	230V AC 50 Hz
7.	Backup	Minimum 30 minutes on full load
8.	Protection	Low battery
9.	Indicator	Mains On / On Battery / Low Battery / Fault / Overload
10.	Alarm	On battery, Fault, overload, low battery
11.	Plug and cable	Input cable of 3 pin Indian plug and output should have minimum 3 nos. of 5 pin Indian socket
12.	Certification	IS16242-Part 1 CRS
13.	Compliance	RoHS (Only UPS)
14.	Test report	Certificate from Govt. / NABL accredited lab to prove the conformity of product as per specification
15.	Warranty	1 year onsite OEM warranty for battery and 2 years onsite OEM warranty for UPS

5. Printer (Single function, monochrome)

SN	Parameter	Entry-Level	Mid-Level	High-End
1.	Functions	Print		
2.	Print Technology	Laser / Ink-tank		
3.	Paper size	A4		
4.	Print Output	Mono		
5.	Cartridge Technology	Composite / Ink Tank		
6.	Duplex	Manual	Auto	Auto
7.	Connectivity	USB	USB, Wi-fi, ethernet	USB, Wi-fi, ethernet
8.	Duty cycle (monthly)	5,000 pages	10,000 pages	10,000 pages
9.	Memory	16 MB	128 MB	256 MB
10.	Minimum print speed as per ISO/IEC 24734 in (A4) Size	18 PPM	25 PPM	30 PPM

11.	Input paper tray capacity	100 pages	150 pages	200 pages
12.	Certification	BIS		
13.	Cable/Accessories	All the required cables and accessories		
14.	Compliance	RoHS		
15.	Warranty	1 year onsite OEM warranty		

6. Printer (Single function, Colour)

SN	Parameter	Value
1.	Functions	Print
2.	Print Technology	Laser / Ink-tank
3.	Paper size	A4
4.	Print Output	Colour
5.	Cartridge Technology	Composite / Ink Tank
6.	Duplex	Auto
7.	Connectivity	USB, Wi-fi, ethernet

8.	Duty cycle (monthly)	8,000 pages
9.	Memory	256 MB
10.	Minimum print speed as per ISO/IEC 24734 in (A4) Size	20 PPM
11.	Input paper tray capacity	150 pages
12.	Certification	BIS
13.	Cable/Accessories	All the required cables and accessories
14.	Compliance	RoHS
15.	Warranty	1 year onsite OEM warranty

7. Multifunction Laser Printer

SN	Parameter	Entry-Level	Mid-Level	High-End
1.	Functions	Print, scan, copy		
2.	Print Technology	Laser / Ink-tank		
3.	Paper size	A4		
4.	Print Output	Mono		
5.	Cartridge	Composite / Ink Tank		

	Technology			
6.	Duplex	Manual	Auto	Auto
7.	Connectivity	USB, Wi-fi, ethernet		
8.	Duty cycle (monthly)	5,000 pages	10,000 pages	20,000 pages
9.	Memory	64 MB	128 MB	256 MB
10.	Minimum print speed as per ISO/IEC 24734 in (A4) Size	20 PPM	30 PPM	35 PPM
11.	Input paper tray capacity	100 pages	150 pages	200 pages
12.	Scan type	Flatbed	Flatbed with ADF	Flatbed with ADF
13.	Certification	BIS		
14.	Cable/Accessories	All the required cables and accessories		
15.	Compliance	RoHS		
16.	Warranty	1 year onsite OEM warranty		

8. Scanner

a. Flatbed Scanner with ADF

SN	Parameter	Value
1.	Type	Flatbed with ADF
2.	Daily Duty Cycle	1,000 pages
3.	Scan Speed	25 ppm
4.	Paper Size Support	A4, legal
5.	Duplex paper support	A4
6.	Scan format	Pdf, jpg / jpeg
7.	Certification	BIS
8.	Compliance	ROHS
9.	ADF feeder capacity	50 sheets
10.	Interface	USB
11.	Accessories	All required cables and accessories
12.	Warranty	3 years onsite OEM warranty

b. Sheet Feed Scanner

SN	Parameter	Value
1.	Type	Sheet feed scanner
2.	Scanning	Single pass duplex
3.	Daily Duty Cycle	2,500 pages
4.	Scan Speed	25 ppm
5.	Paper Size Support	A4, legal
6.	Scan format	Pdf, jpg / jpeg
7.	Accessories	All required cables and accessories
8.	Certification	BIS
9.	Compliance	ROHS
10.	ADF capacity	50 sheets
11.	Interface	USB
12.	Warranty	3 years onsite OEM warranty

9. Web Cam

SN	Parameter	Value
1.	Lens (Mega Pixel)	3
2.	Max. Video Resolution	1920 * 1080
3.	Warranty	1 year OEM warranty

10. Office Software

SN	Parameter	Value
1.	Office Package	MS office / Open Office as per requirement of the organization

11. Video Conferencing System (VC Setup) - for conference rooms

SN	Parameter	Value
1.	VC system Resolution	1080, 30fps
2.	Minimum Bandwidth	2048
3.	Type of Camera	PTZ
4.	Camera Control	Automatic
5.	Optical Zoom	12 X
6.	Field of view at Zoom (Degree)	70
7.	Pan range Min to Max (+/- Degree)	+ / - 170 degree
8.	Tilt Range (Degree)	+ / - 20 degree
9.	Video Coding support protocol	H.264 AVC, H.265
10.	System Support sharing of video & graphics content during video call	1080, 30 fps
11.	Microphone Supported	3
12.	Microphone Supplied	2
13.	Number of camera support from same OEM	1 or more

14.	Number of Ethernet connection points for System support for RJ-45, 10/100/1000 Mbps Base-T Ethernet connection	1
15.	System to be IPv6 ready from day one	Yes
16.	Protocol & the offered system in inter operable H-323 AVC/SVC based VC equipment in a P to P call on VC end points	Yes
17.	Input HDMI	3
18.	Output HDMI	2
19.	Type of Microphone	Omni Directional
20.	UL/CE certification	Yes
21.	Warranty	1 year onsite OEM warranty
	Note: - The VC system should have inbuilt USB Pass-through functionality to use the VC system as an external camera and microphone when connected to a Laptop/PC to join any cloud-based VC platform like Webex, MS Teams, Blue Jeans, Google Meet, NIC Bharat VC, NIC Vidyo, etc. It should be possible to Mute/Unmute all the microphones and control camera functionality from the same remote control/touch control panel during USB pass-through mode. The system should be supplied with a 9mtrs single USB 3.0 cable from the same OEM for USB Pass-thru mode for seamless functionality).	

2. Interactive Flat Panel: -

Specification	Minimum Requirement
Display Type	IPS
Display Panel Diagonal size (mm)	1905 or higher
Backlight Technology	LED
Display Resolution (Pixels)	3840 X 2160 or higher
Display Brightness (Nits)	350 or higher
Display Aspect Ratio	16:9 or better

Specification	Minimum Requirement
Touch interface	Touch sensitive as well as pen driven
Touch Technology	Infrared optical/Capacitive
Number of touch points (Number)	10 or higher
Response time (milli seconds)	8 or better
In-built speakers	40 Watt or higher (OEM of Interactive display should provide external speakers, if required, if the wattage of inbuilt speakers is less than the required wattage)
Bluetooth connectivity	Yes
Wi-Fi connectivity	Yes
On Site OEM Warranty (Year)	5 or more
Other Parameters	Processor - Quad core (1.5 Ghz) or higher; Touch Accuracy – 2mm or lower, Viewing angle – 178 X 178: Protection Glass (Min 4 mm)– Tempered / toughened, scratch resistant, anti-glare coating; HDMI cable with minimum 5m length to be provided Number of pen or stylus to be supplied with the board (Nos) – Battery Free- 2
Memory	RAM- 4 GB or higher, Internal Storage - 32 GB or higher
Inbuilt OS	Windows 11 or Android 11 or higher
Ports	HDMI- 2 or higher, USB 3.0 – 2 or higher, USB 2.0 –1 or higher OPS slot- 1, Audio out - 1, USB Type C – 1, RJ 45- 1,
Certification	BIS/BEE, RoHS,
OEM Manufacturing	ISO 9001, ISO 14001/ ISO 20001/ISO 270001

Specification	Minimum Requirement											
certification												
DMS	Device Management Software to check the device utilization											
Availability of test reports from Central Govt /NABL / ILAC accredited Lab covering all the parameters	Yes											
OPS	(10th Generation Intel Core i3, RAM- 8 GB DDR 4, SSD- 256 GB, HDMI out port- 1, Audio out port-1, Mic-1, USB-3.0- 2, USB 2.0- 1, Ethernet port-1, Built in Wi-Fi- Yes, OS- Window 11 Professional) or higher.											
Software features	<table><tr><td>Support multi touch & multi writing</td></tr><tr><td>Native handwriting recognition of English</td></tr><tr><td>Support Gesture Recognition like zoom, pan, tilt, flicks (optional) etc.</td></tr><tr><td>Have following interactive tools/features like Pen, Eraser, spotlight, curtain (optional), shape recognition, shape editing, auto grouping infinite color options for annotation, color bucket, back ground pattern, lines & arrows screen capture tools (freehand capture is must), import/export files, recycle bin, unlimited pages, Cut & Paste, page navigation save page(s), Undo/Redo, Geometric Tools like protractor/ compass, ruler etc.</td></tr><tr><td>Recognition up to four-sided figures (preferably upto six-sided figures)</td></tr><tr><td>Capable to annotate on any 3rd party applications.</td></tr><tr><td>Recording feature</td></tr><tr><td>Finger touch enabled.</td></tr><tr><td>Capability of taking Snapshot from running video</td></tr><tr><td>Real time interaction and writing speed without any time lag</td></tr><tr><td>Must have inbuilt appropriate software for the following: 1. View pictures [all major formats like jpg, jpeg, png, gif, etc should be supported] 2. View pdf, MS word, MS excel, MS presentation, .odt, .ods, etc files etc. 3. Listen to audio files [all major formats like mp3, m4a, etc should be supported] 4. Play video files [all major formats like mp4, mpeg, avi, etc should be supported]</td></tr></table>	Support multi touch & multi writing	Native handwriting recognition of English	Support Gesture Recognition like zoom, pan, tilt, flicks (optional) etc.	Have following interactive tools/features like Pen, Eraser, spotlight, curtain (optional), shape recognition, shape editing, auto grouping infinite color options for annotation, color bucket, back ground pattern, lines & arrows screen capture tools (freehand capture is must), import/export files, recycle bin, unlimited pages, Cut & Paste, page navigation save page(s), Undo/Redo, Geometric Tools like protractor/ compass, ruler etc.	Recognition up to four-sided figures (preferably upto six-sided figures)	Capable to annotate on any 3rd party applications.	Recording feature	Finger touch enabled.	Capability of taking Snapshot from running video	Real time interaction and writing speed without any time lag	Must have inbuilt appropriate software for the following: 1. View pictures [all major formats like jpg, jpeg, png, gif, etc should be supported] 2. View pdf, MS word, MS excel, MS presentation, .odt, .ods, etc files etc. 3. Listen to audio files [all major formats like mp3, m4a, etc should be supported] 4. Play video files [all major formats like mp4, mpeg, avi, etc should be supported]
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Must have inbuilt appropriate software for the following: 1. View pictures [all major formats like jpg, jpeg, png, gif, etc should be supported] 2. View pdf, MS word, MS excel, MS presentation, .odt, .ods, etc files etc. 3. Listen to audio files [all major formats like mp3, m4a, etc should be supported] 4. Play video files [all major formats like mp4, mpeg, avi, etc should be supported]												

Specification	Minimum Requirement
	No LMS is required but the vendor may provide at no additional cost Inbuilt Pen Holder with up to two pens Inbuilt whiteboard software for teaching/ training using Interactive display with features like (Pen, thickness of pen, colours of pen, Pixels eraser and Region eraser, Shapes (Circle, Triangle, Rectangle, arrows),Background of White board (multiple colours also use picture, shape), Redo/Undo, Next/Previous, Select & Drag option, Switching between single touch and multiple touch, Clear screen, List of pages with deleting option, Switching tool bar right to left, Many other Tools (Compass, Protector, Insert Table, Calculator, Curtain, Timer, Calendar, Camera, Spotlight, Multiscreen (divide board in 2,3,and 4 parts with background and different pen colour), on screen annotation. Interactive software of the interactive Display should detect the Visual Presenter/ Visualiser and should be able to annotate on the image captured by the Visual Presenter/ Visualiser. Interactive display should allow user to share/mirror the content of Laptop/Desktop and mobile device (Android) wirelessly and should have Screen Share software Toolbar should be available on all screen for quick access tools and same should be customized as per user requirement. Built in Google Play store to download applications direct from Play store OR Similar App store. Built in YouTube application Interactive display should have inbuilt cloud drive access from Google drive / one drive etc. Device should support software-based VC with internal android platform like Google meet, Cisco WebEx, Skype, Microsoft teams & zoom applications. Device should have inbuilt virtual keyboard with English language support. However, System should support other language Punjabi, Hindi from inbuilt software or through any other 3rd party software or through OPS. Provision to lock all the USB port (optional), Screen Lock, application lock to restrict unwanted access. In-built Volume equalizer with optional surround sound support to enhance the sound quality. Built in screen shot option using single click After opening of bids, Bidder(s) may be required to provide demonstration of the features requested in the bid.

Specification	Minimum Requirement
	Above all features may be inbuilt OR through 3rd party application OR through OPS.