

**PERKHIDMATAN MEMBEKAL ALAT GANTI DAN AKSESORI KOMPUTER UNTUK KEGUNAAN PEJABAT MAJLIS BANDARAYA
ISKANDAR PUTERI BAGI TAHUN 2026 / 2027**

SPESIFIKASI TEKNIKAL

BIL.	BAHAGIAN	MUKA SURAT
A	PAPARAN & VISUAL	2/0% P%
B	AUDIO & KOMUNIKASI	4/0% P%
C	WIRELESS VIDEO	7/0% P%
D	KABEL VIDEO & DATA	8/0% P%
E	PERKAKASAN DALAMAN	10/0% P%
F	SAMBUNGAN PERANTI	13/0% P%
G	INPUT DEVICE	15/0% P%
H	PERALATAN RANGKAIAN	19/0% P%
I	BEKALAN KUASA	20/0% P%
J	PERALATAN KESELAMATAN	22/ 30
K	AKSESORI PINTAR	24/ 30
L	ERGONOMIK & AKSESORI MEJA	25/ 30
M	PERALATAN KHAS	27/ 30
N	AKSESORI PERANTI	28/ 30
O	AKSESORI KAMERA	29/ 30
P	PERANTI MUDAH ALIH	30/ 30

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																
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A.1	Feelworld FW759 7 inch Field Monitor atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Monitor</td><td>Field Monitor 7" untuk kamera / video</td></tr><tr><td>2. Paparan (Display)</td><td>IPS LCD, 7.0" diagonal</td></tr><tr><td>3. Resolusi</td><td>1280 × 800 (HD+ / 16:10)</td></tr><tr><td>4. Brightness & Contrast</td><td>Brightness min. 400 cd/m²; Contrast > 800:1</td></tr><tr><td rowspan="2">5. Input / Connectivity</td><td>• HDMI input (4K UHD support)</td></tr><tr><td>• AV composite input</td></tr><tr><td>6. Sokongan Video Format</td><td>480i/p, 576i/p, 720p, 1080i/p, 4K UHD @ up to 30Hz</td></tr><tr><td>7. Fungsi Video Assist</td><td>Fokus peaking, safe area marker, image flip, image freeze, check field</td></tr><tr><td rowspan="2">8. Audio</td><td>• Stereo speaker</td></tr><tr><td>• 3.5mm headphone jack</td></tr><tr><td rowspan="2">9. Reka Bentuk & Dimensi</td><td>• Slim & ringan (< 300g)</td></tr><tr><td>• Ketebalan sekitar 17 mm</td></tr><tr><td>10. Kompatibiliti Power / Battery</td><td>Sony L-Series battery plate (NP-F970 compatible) / DC power input</td></tr><tr><td>12. Aksesori Standard</td><td>Mini HDMI cable, sunshade, hot shoe mount, HDMI lock</td></tr><tr><td>13. Jaminan</td><td>Minimum 12 bulan dari tarikh penghantaran</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Monitor	Field Monitor 7" untuk kamera / video	2. Paparan (Display)	IPS LCD, 7.0" diagonal	3. Resolusi	1280 × 800 (HD+ / 16:10)	4. Brightness & Contrast	Brightness min. 400 cd/m²; Contrast > 800:1	5. Input / Connectivity	• HDMI input (4K UHD support)	• AV composite input	6. Sokongan Video Format	480i/p, 576i/p, 720p, 1080i/p, 4K UHD @ up to 30Hz	7. Fungsi Video Assist	Fokus peaking, safe area marker, image flip, image freeze, check field	8. Audio	• Stereo speaker	• 3.5mm headphone jack	9. Reka Bentuk & Dimensi	• Slim & ringan (< 300g)	• Ketebalan sekitar 17 mm	10. Kompatibiliti Power / Battery	Sony L-Series battery plate (NP-F970 compatible) / DC power input	12. Aksesori Standard	Mini HDMI cable, sunshade, hot shoe mount, HDMI lock	13. Jaminan	Minimum 12 bulan dari tarikh penghantaran						
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A.2	Arzopa ARZOPA Z3FC Grey atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Saiz Skrin</td><td>16.1 inci</td></tr><tr><td>Resolusi Paparan</td><td>Minimum 2560 × 1440 (QHD)</td></tr><tr><td>Panel</td><td>IPS (178°)</td></tr><tr><td>Refresh Rate</td><td>180 Hz</td></tr><tr><td>Adaptive Sync</td><td>AMD FreeSync atau setara</td></tr><tr><td>Warna & Brightness</td><td>Brightness 350 nits; gamut warna sRGB 95%</td></tr><tr><td rowspan="2">Input/Ports</td><td>• USB-C (Full-Function) 2</td></tr><tr><td>• Mini HDMI 1</td></tr><tr><td>Sokongan HDR</td><td>HDR10</td></tr><tr><td>Audio</td><td>Pembesar suara terbina 2 channel</td></tr><tr><td>Power Delivery (PD)</td><td>USB-C PD support (minimum 5V/3A)</td></tr><tr><td>Aksesori Standard</td><td>Cables: USB-C to USB-C, USB-C to HDMI tangkapan signal, Protective case / stand</td></tr><tr><td>Jaminan</td><td>Minimum 12 bulan dari tarikh penghantaran</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Saiz Skrin	16.1 inci	Resolusi Paparan	Minimum 2560 × 1440 (QHD)	Panel	IPS (178°)	Refresh Rate	180 Hz	Adaptive Sync	AMD FreeSync atau setara	Warna & Brightness	Brightness 350 nits; gamut warna sRGB 95%	Input/Ports	• USB-C (Full-Function) 2	• Mini HDMI 1	Sokongan HDR	HDR10	Audio	Pembesar suara terbina 2 channel	Power Delivery (PD)	USB-C PD support (minimum 5V/3A)	Aksesori Standard	Cables: USB-C to USB-C, USB-C to HDMI tangkapan signal, Protective case / stand	Jaminan	Minimum 12 bulan dari tarikh penghantaran								
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A.3	3D Hologram Projector 50cm atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Display Type</td><td>LED Rotating Holographic Fan Display</td></tr><tr><td>Fan Diameter</td><td>~50 cm</td></tr><tr><td>Display Resolution</td><td>±1024 × 1024 pixels (typical)</td></tr><tr><td>Brightness</td><td>High brightness LED (visible indoor & semi-outdoor)</td></tr><tr><td>Viewing Angle</td><td>160° – 176° wide viewing angle</td></tr><tr><td>Frame Rate</td><td>Up to 30 FPS</td></tr><tr><td>Supported Media</td><td>MP4, AVI, GIF, JPG, PNG</td></tr><tr><td>Control Method</td><td>Mobile app / WiFi / SD card</td></tr><tr><td>Storage</td><td>MicroSD / TF card support</td></tr><tr><td>Connectivity</td><td>WiFi 2.4 GHz</td></tr><tr><td>Mounting</td><td>Wall mount / bracket mounting</td></tr><tr><td>Power Input</td><td>AC 100–240V adapter</td></tr><tr><td>Power Consumption</td><td>±10–20 W</td></tr><tr><td>Operating Temperature</td><td>-10 °C ~ 45 °C</td></tr><tr><td>Noise Level</td><td>Low noise motor rotation</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Display Type	LED Rotating Holographic Fan Display	Fan Diameter	~50 cm	Display Resolution	±1024 × 1024 pixels (typical)	Brightness	High brightness LED (visible indoor & semi-outdoor)	Viewing Angle	160° – 176° wide viewing angle	Frame Rate	Up to 30 FPS	Supported Media	MP4, AVI, GIF, JPG, PNG	Control Method	Mobile app / WiFi / SD card	Storage	MicroSD / TF card support	Connectivity	WiFi 2.4 GHz	Mounting	Wall mount / bracket mounting	Power Input	AC 100–240V adapter	Power Consumption	±10–20 W	Operating Temperature	-10 °C ~ 45 °C	Noise Level	Low noise motor rotation			
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A.4	Teamgee P2 Pro / P2 Portable Triple Monitor atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Portable Laptop Screen Extender / Triple Monitor System</td></tr><tr><td>Display Quantity</td><td>Dual external monitor (left & right) for laptop</td></tr><tr><td>Screen Size</td><td>Minimum 12" IPS panel (each screen)</td></tr><tr><td>Display Technology</td><td>IPS LCD panel with wide viewing angle (178°)</td></tr><tr><td>Resolution</td><td>Full HD 1920 × 1080 per screen</td></tr><tr><td>Aspect Ratio</td><td>16:9</td></tr><tr><td>Brightness</td><td>Minimum 250 cd/m²</td></tr><tr><td>Contrast Ratio</td><td>800:1</td></tr><tr><td>Refresh Rate</td><td>60 Hz</td></tr><tr><td>Colour Support</td><td>16.7 million colours (8-bit colour)</td></tr><tr><td>Connectivity</td><td>USB-C (DisplayPort Alt Mode) & HDMI input support</td></tr><tr><td>Power Source</td><td>Powered via laptop USB-C or USB-A (no external adapter required)</td></tr><tr><td>Compatibility</td><td>Supports Windows 10/11, macOS & selected Android devices</td></tr><tr><td>Laptop Size Support</td><td>Compatible with laptop screen size 13" – 17.3"</td></tr><tr><td>Mounting Mechanism</td><td>Adjustable clamp mounting frame with rear kickstand support</td></tr><tr><td>Screen Adjustment</td><td>Adjustable tilt angle 180° rotation / folding design</td></tr><tr><td>Portability</td><td>Foldable portable design with protective carry case</td></tr><tr><td>Installation</td><td>Plug & play (no driver installation required)</td></tr><tr><td>Audio</td><td>Built-in stereo speaker or audio passthrough via HDMI/USB</td></tr><tr><td>Accessories</td><td>USB-C cable, USB-A to USB-C cable, HDMI cable, mounting frame, carry pouch</td></tr><tr><td>Application</td><td>Multitasking workstation, monitoring dashboard, remote administration & presentation</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Portable Laptop Screen Extender / Triple Monitor System	Display Quantity	Dual external monitor (left & right) for laptop	Screen Size	Minimum 12" IPS panel (each screen)	Display Technology	IPS LCD panel with wide viewing angle (178°)	Resolution	Full HD 1920 × 1080 per screen	Aspect Ratio	16:9	Brightness	Minimum 250 cd/m²	Contrast Ratio	800:1	Refresh Rate	60 Hz	Colour Support	16.7 million colours (8-bit colour)	Connectivity	USB-C (DisplayPort Alt Mode) & HDMI input support	Power Source	Powered via laptop USB-C or USB-A (no external adapter required)	Compatibility	Supports Windows 10/11, macOS & selected Android devices	Laptop Size Support	Compatible with laptop screen size 13" – 17.3"	Mounting Mechanism	Adjustable clamp mounting frame with rear kickstand support	Screen Adjustment	Adjustable tilt angle 180° rotation / folding design	Portability	Foldable portable design with protective carry case	Installation	Plug & play (no driver installation required)	Audio	Built-in stereo speaker or audio passthrough via HDMI/USB	Accessories	USB-C cable, USB-A to USB-C cable, HDMI cable, mounting frame, carry pouch	Application	Multitasking workstation, monitoring dashboard, remote administration & presentation	Warranty	Minimum 12 months					
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A.5	Gigabyte M27Q X Monitor atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>27" Professional IPS Monitor</td></tr><tr><td>Panel Size</td><td>27 inch</td></tr><tr><td>Panel Type</td><td>SuperSpeed IPS (SS IPS)</td></tr><tr><td>Native Resolution</td><td>2560 × 1440 (QHD)</td></tr><tr><td>Aspect Ratio</td><td>16:9</td></tr><tr><td>Refresh Rate</td><td>Up to 240 Hz</td></tr><tr><td>Response Time</td><td>1 ms (GTG)</td></tr><tr><td>Brightness</td><td>Typical 400 cd/m²</td></tr><tr><td>Contrast Ratio</td><td>1000:1</td></tr><tr><td>Colour Gamut</td><td>100% sRGB / 92% DCI-P3</td></tr><tr><td>HDR Support</td><td>VESA DisplayHDR 400</td></tr><tr><td>Viewing Angle</td><td>178° (H/V)</td></tr><tr><td>Adaptive Sync</td><td>AMD FreeSync Premium & NVIDIA G-Sync Compatible</td></tr><tr><td>Video Inputs</td><td>2 × HDMI 2.0, 1 × DisplayPort 1.4</td></tr><tr><td>USB-C</td><td>1 × USB-C (Display + Data + Charging)</td></tr><tr><td>USB Hub</td><td>2 × USB 3.0 downstream</td></tr><tr><td>KVM Feature</td><td>Built-in KVM switch (control 2 devices with 1 keyboard & mouse)</td></tr><tr><td>Audio</td><td>3.5 mm headphone out</td></tr><tr><td>Stand Adjustment</td><td>Tilt, Height Adjustment, Swivel</td></tr><tr><td>Mounting</td><td>VESA 100 × 100 mm</td></tr><tr><td>Power</td><td>AC 100–240V, 50/60Hz</td></tr><tr><td>Special Features</td><td>OSD Sidekick software, Aim Stabilizer, Low Blue Light, Flicker-Free</td></tr><tr><td>Warranty</td><td>Minimum 3 Years</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	27" Professional IPS Monitor	Panel Size	27 inch	Panel Type	SuperSpeed IPS (SS IPS)	Native Resolution	2560 × 1440 (QHD)	Aspect Ratio	16:9	Refresh Rate	Up to 240 Hz	Response Time	1 ms (GTG)	Brightness	Typical 400 cd/m²	Contrast Ratio	1000:1	Colour Gamut	100% sRGB / 92% DCI-P3	HDR Support	VESA DisplayHDR 400	Viewing Angle	178° (H/V)	Adaptive Sync	AMD FreeSync Premium & NVIDIA G-Sync Compatible	Video Inputs	2 × HDMI 2.0, 1 × DisplayPort 1.4	USB-C	1 × USB-C (Display + Data + Charging)	USB Hub	2 × USB 3.0 downstream	KVM Feature	Built-in KVM switch (control 2 devices with 1 keyboard & mouse)	Audio	3.5 mm headphone out	Stand Adjustment	Tilt, Height Adjustment, Swivel	Mounting	VESA 100 × 100 mm	Power	AC 100–240V, 50/60Hz	Special Features	OSD Sidekick software, Aim Stabilizer, Low Blue Light, Flicker-Free	Warranty	Minimum 3 Years			
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B.1	Edifier R1700BTs Bookshelf Speaker atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Jenis Speaker</td><td>2.0 bookshelf speaker aktif (with built-in amplifier)</td></tr><tr><td>Amplifier & Power Output</td><td>Total RMS 66 W (15 W × 2 tweeter + 18 W × 2 midbass)</td></tr><tr><td>Bluetooth Connectivity</td><td>Bluetooth V5.0 dengan aptX HD</td></tr><tr><td>Driver Units</td><td>• 4" midbass driver ×2 • 19 mm silk dome tweeter ×2</td></tr><tr><td>Frequency Response</td><td>52 Hz – 20 kHz</td></tr><tr><td>Signal-to-Noise Ratio</td><td>85 dB(A)</td></tr><tr><td>Audio Inputs</td><td>• Dual RCA line-in • Bluetooth</td></tr><tr><td>Subwoofer Output</td><td>Sub-Out untuk external subwoofer</td></tr><tr><td>Controls & Extras</td><td>Side panel knobs + remote control</td></tr><tr><td>Enclosure</td><td>MDF wood enclosure (acoustic resonance reduction)</td></tr><tr><td>Jaminan</td><td>Minimum 12 bulan</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Jenis Speaker	2.0 bookshelf speaker aktif (with built-in amplifier)	Amplifier & Power Output	Total RMS 66 W (15 W × 2 tweeter + 18 W × 2 midbass)	Bluetooth Connectivity	Bluetooth V5.0 dengan aptX HD	Driver Units	• 4" midbass driver ×2 • 19 mm silk dome tweeter ×2	Frequency Response	52 Hz – 20 kHz	Signal-to-Noise Ratio	85 dB(A)	Audio Inputs	• Dual RCA line-in • Bluetooth	Subwoofer Output	Sub-Out untuk external subwoofer	Controls & Extras	Side panel knobs + remote control	Enclosure	MDF wood enclosure (acoustic resonance reduction)	Jaminan	Minimum 12 bulan			
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B.2	TP-Link Bluetooth 5.3 Nano USB (UB500) atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Peranti</td><td>Bluetooth USB Nano Adapter</td></tr><tr><td>2. Standard Bluetooth</td><td>Bluetooth 5.3 (termasuk BLE support)</td></tr><tr><td>3. Backward Compatibility</td><td>Backward compatible dengan BT 5.2/5.0/4.0/3.0/2.1</td></tr><tr><td>4. Interface USB</td><td>USB Type-A (USB 2.0)</td></tr><tr><td>5. Range & Connectivity</td><td>Sehingga ~10-20 m</td></tr><tr><td>6. Operating Systems</td><td>Windows 11/10/8.1/7</td></tr><tr><td>7. Multi-Device Support</td><td>Supports connection of 7 Bluetooth devices simultaneously</td></tr><tr><td>8. Power & Plug-and-Play</td><td>USB bus-powered; Plug-and-Play</td></tr><tr><td>9. Dimensi Fizikal</td><td>Nano form factor</td></tr><tr><td>10. Operating Conditions</td><td>Temperature: 0 °C–40 °C</td></tr><tr><td>11. Warranty</td><td>Minimum 12 bulan</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Peranti	Bluetooth USB Nano Adapter	2. Standard Bluetooth	Bluetooth 5.3 (termasuk BLE support)	3. Backward Compatibility	Backward compatible dengan BT 5.2/5.0/4.0/3.0/2.1	4. Interface USB	USB Type-A (USB 2.0)	5. Range & Connectivity	Sehingga ~10-20 m	6. Operating Systems	Windows 11/10/8.1/7	7. Multi-Device Support	Supports connection of 7 Bluetooth devices simultaneously	8. Power & Plug-and-Play	USB bus-powered; Plug-and-Play	9. Dimensi Fizikal	Nano form factor	10. Operating Conditions	Temperature: 0 °C–40 °C	11. Warranty	Minimum 12 bulan			
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1. Jenis Peranti	Bluetooth USB Nano Adapter																											
2. Standard Bluetooth	Bluetooth 5.3 (termasuk BLE support)																											
3. Backward Compatibility	Backward compatible dengan BT 5.2/5.0/4.0/3.0/2.1																											
4. Interface USB	USB Type-A (USB 2.0)																											
5. Range & Connectivity	Sehingga ~10-20 m																											
6. Operating Systems	Windows 11/10/8.1/7																											
7. Multi-Device Support	Supports connection of 7 Bluetooth devices simultaneously																											
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10. Operating Conditions	Temperature: 0 °C–40 °C																											
11. Warranty	Minimum 12 bulan																											
B.3	KEBIDUMEI Bluetooth 6.0 Audio Receiver atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Peranti</td><td>Bluetooth 6.0 USB Audio Receiver & Adapter (Transmitter/Receiver)</td></tr><tr><td>2. Bluetooth Standard</td><td>Bluetooth 5.4 / 6.0 backward compatible dengan 5.3/5.2/5.1/5.0/4.0</td></tr><tr><td>3. Interface USB</td><td>USB Type-A (USB 2.0)</td></tr><tr><td>4. Jarak Operasi</td><td>Minimum 10–20 m</td></tr><tr><td>5. Audio Codec</td><td>Support A2DP, SBC, AAC 48 kHz CD-quality</td></tr><tr><td>6. Multi-Device Support</td><td>Sokongan sehingga 5 devices serentak</td></tr><tr><td>7. Sistem Operasi</td><td>Plug-and-Play</td></tr><tr><td>8. Dimensi Fizikal</td><td>Nano USB form factor</td></tr><tr><td>9. Operating Conditions</td><td>Operating temp: -20°C - 70°C</td></tr><tr><td>10. Warranty</td><td>Minimum 12 bulan</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Peranti	Bluetooth 6.0 USB Audio Receiver & Adapter (Transmitter/Receiver)	2. Bluetooth Standard	Bluetooth 5.4 / 6.0 backward compatible dengan 5.3/5.2/5.1/5.0/4.0	3. Interface USB	USB Type-A (USB 2.0)	4. Jarak Operasi	Minimum 10–20 m	5. Audio Codec	Support A2DP, SBC, AAC 48 kHz CD-quality	6. Multi-Device Support	Sokongan sehingga 5 devices serentak	7. Sistem Operasi	Plug-and-Play	8. Dimensi Fizikal	Nano USB form factor	9. Operating Conditions	Operating temp: -20°C - 70°C	10. Warranty	Minimum 12 bulan					
ITEM	SPESIFIKASI MINIMUM																											
1. Jenis Peranti	Bluetooth 6.0 USB Audio Receiver & Adapter (Transmitter/Receiver)																											
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10. Warranty	Minimum 12 bulan																											

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																																		
B.4	Jabra Speak2 75 MS Speakerphone with Link380A Dongle atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Portable USB & Bluetooth Speakerphone (conference speaker)</td></tr><tr><td>Certified Platform</td><td>Microsoft Teams Certified (MS version)</td></tr><tr><td>Connectivity</td><td>USB-C wired • Bluetooth 5.2 • USB-A dongle (Link380A)</td></tr><tr><td>Wireless Range</td><td>Up to ~30 m (open environment)</td></tr><tr><td>Microphone System</td><td>4-microphone beamforming array (360° voice pickup)</td></tr><tr><td>Speaker Size</td><td>65 mm full-range speaker</td></tr><tr><td>Audio Processing</td><td>Full-duplex audio + Echo cancellation + Noise suppression</td></tr><tr><td>Voice Pickup Range</td><td>±2.5 m radius (meeting table coverage)</td></tr><tr><td>Frequency Response (Speaker)</td><td>~80 Hz – 20 kHz</td></tr><tr><td>Frequency Response (Mic)</td><td>~150 Hz – 14 kHz</td></tr><tr><td>Supported Modes</td><td>Music mode & Voice conference mode</td></tr><tr><td>Bluetooth Pairing</td><td>Up to 8 devices (2 active simultaneously)</td></tr><tr><td>USB Dongle</td><td>Jabra Link380A USB-A wireless adapter</td></tr><tr><td>Battery Type</td><td>Built-in rechargeable Li-ion</td></tr><tr><td>Battery Capacity</td><td>~4700 mAh</td></tr><tr><td>Battery Life</td><td>Up to ±32 hours talk time</td></tr><tr><td>Charging Time</td><td>±2.5 hours</td></tr><tr><td>Charging Port</td><td>USB-C</td></tr><tr><td>Water/Dust Protection</td><td>IP64 (dust resistant & splash resistant)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Portable USB & Bluetooth Speakerphone (conference speaker)	Certified Platform	Microsoft Teams Certified (MS version)	Connectivity	USB-C wired • Bluetooth 5.2 • USB-A dongle (Link380A)	Wireless Range	Up to ~30 m (open environment)	Microphone System	4-microphone beamforming array (360° voice pickup)	Speaker Size	65 mm full-range speaker	Audio Processing	Full-duplex audio + Echo cancellation + Noise suppression	Voice Pickup Range	±2.5 m radius (meeting table coverage)	Frequency Response (Speaker)	~80 Hz – 20 kHz	Frequency Response (Mic)	~150 Hz – 14 kHz	Supported Modes	Music mode & Voice conference mode	Bluetooth Pairing	Up to 8 devices (2 active simultaneously)	USB Dongle	Jabra Link380A USB-A wireless adapter	Battery Type	Built-in rechargeable Li-ion	Battery Capacity	~4700 mAh	Battery Life	Up to ±32 hours talk time	Charging Time	±2.5 hours	Charging Port	USB-C	Water/Dust Protection	IP64 (dust resistant & splash resistant)													
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Water/Dust Protection	IP64 (dust resistant & splash resistant)																																																					
B.5	Behringer MPA40BT-Pro Portable Speaker with 2 wireless Mic atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Portable Battery Powered Public Address (PA) Speaker System</td></tr><tr><td>Speaker Configuration</td><td>Minimum 8" full-range speaker driver</td></tr><tr><td>Amplifier Power</td><td>Minimum 40 Watts RMS Class-D amplifier</td></tr><tr><td>Frequency Response</td><td>Approx. 50 Hz – 18 kHz</td></tr><tr><td>Maximum Sound Pressure Level</td><td>100 dB SPL</td></tr><tr><td>Audio Inputs</td><td>Minimum 2 × Microphone input (6.3 mm jack) & 1 × AUX / Line input</td></tr><tr><td>Wireless Connectivity</td><td>Bluetooth audio streaming support</td></tr><tr><td>Built-in Mixer</td><td>Integrated 2-channel mixer with independent volume control</td></tr><tr><td>Tone Control</td><td>Master bass & treble equalizer control</td></tr><tr><td>Wireless Microphone</td><td>Complete with 2 × UHF wireless handheld microphone set</td></tr><tr><td>Wireless Mic Range</td><td>Minimum 15 – 25 meters operating distance (line-of-sight)</td></tr><tr><td>Microphone Receiver</td><td>Built-in or external compatible wireless receiver module</td></tr><tr><td>Audio Output</td><td>Line out / link output for additional speaker (if available)</td></tr><tr><td>Battery Type</td><td>Built-in rechargeable battery</td></tr><tr><td>Battery Operation Time</td><td>Minimum 8 hours continuous operation</td></tr><tr><td>Charging</td><td>AC charging 220–240V, 50/60Hz</td></tr><tr><td>Portability</td><td>Integrated carry handle & lightweight portable design</td></tr><tr><td>Mounting</td><td>Compatible with standard speaker tripod stand (35 mm pole mount)</td></tr><tr><td>Enclosure</td><td>Impact-resistant ABS cabinet</td></tr><tr><td>Indicators</td><td>Power, charging & signal status indicators</td></tr><tr><td>Additional Features</td><td>USB/SD MP3 player support (if available)</td></tr><tr><td>Application</td><td>Outdoor event, public announcement, training, briefing & presentation</td></tr><tr><td>Accessories</td><td>Power adapter/charging cable, 2 × wireless microphones, user manual</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Portable Battery Powered Public Address (PA) Speaker System	Speaker Configuration	Minimum 8" full-range speaker driver	Amplifier Power	Minimum 40 Watts RMS Class-D amplifier	Frequency Response	Approx. 50 Hz – 18 kHz	Maximum Sound Pressure Level	100 dB SPL	Audio Inputs	Minimum 2 × Microphone input (6.3 mm jack) & 1 × AUX / Line input	Wireless Connectivity	Bluetooth audio streaming support	Built-in Mixer	Integrated 2-channel mixer with independent volume control	Tone Control	Master bass & treble equalizer control	Wireless Microphone	Complete with 2 × UHF wireless handheld microphone set	Wireless Mic Range	Minimum 15 – 25 meters operating distance (line-of-sight)	Microphone Receiver	Built-in or external compatible wireless receiver module	Audio Output	Line out / link output for additional speaker (if available)	Battery Type	Built-in rechargeable battery	Battery Operation Time	Minimum 8 hours continuous operation	Charging	AC charging 220–240V, 50/60Hz	Portability	Integrated carry handle & lightweight portable design	Mounting	Compatible with standard speaker tripod stand (35 mm pole mount)	Enclosure	Impact-resistant ABS cabinet	Indicators	Power, charging & signal status indicators	Additional Features	USB/SD MP3 player support (if available)	Application	Outdoor event, public announcement, training, briefing & presentation	Accessories	Power adapter/charging cable, 2 × wireless microphones, user manual	Warranty	Minimum 12 months			
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Warranty	Minimum 12 months																																																					

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																				
B.6	Boya Boyalink 2.4Ghz Wireless Microphone System atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Wireless Lavalier Microphone System</td></tr><tr><td>Transmission Technology</td><td>2.4 GHz digital wireless transmission</td></tr><tr><td>Microphone Type</td><td>Built-in omnidirectional condenser microphone</td></tr><tr><td>Channel</td><td>Dual transmitter (2-person recording)</td></tr><tr><td>Frequency Response</td><td>20 Hz – 20 kHz</td></tr><tr><td>Transmission Range</td><td>Up to approx. 100 m (line-of-sight)</td></tr><tr><td>Latency</td><td>Very low latency real-time audio monitoring</td></tr><tr><td>Noise Reduction</td><td>Built-in DSP noise reduction</td></tr><tr><td>Output Interface</td><td>USB-C, Lightning & 3.5 mm TRS/TRRS (interchangeable adapter)</td></tr><tr><td>Compatibility</td><td>Smartphone (Android/iPhone), camera, laptop, tablet</td></tr><tr><td>Gain Control</td><td>Adjustable input gain on receiver</td></tr><tr><td>Monitoring</td><td>Real-time audio monitoring supported</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Wireless Lavalier Microphone System	Transmission Technology	2.4 GHz digital wireless transmission	Microphone Type	Built-in omnidirectional condenser microphone	Channel	Dual transmitter (2-person recording)	Frequency Response	20 Hz – 20 kHz	Transmission Range	Up to approx. 100 m (line-of-sight)	Latency	Very low latency real-time audio monitoring	Noise Reduction	Built-in DSP noise reduction	Output Interface	USB-C, Lightning & 3.5 mm TRS/TRRS (interchangeable adapter)	Compatibility	Smartphone (Android/iPhone), camera, laptop, tablet	Gain Control	Adjustable input gain on receiver	Monitoring	Real-time audio monitoring supported													
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Compatibility	Smartphone (Android/iPhone), camera, laptop, tablet																																							
Gain Control	Adjustable input gain on receiver																																							
Monitoring	Real-time audio monitoring supported																																							
B.7	Logitech Zone Vibe 100 Headphone atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Wireless stereo headset with microphone</td></tr><tr><td>Wearing Style</td><td>Over-ear (lightweight office design)</td></tr><tr><td>Connectivity</td><td>Bluetooth 5.2 wireless</td></tr><tr><td>Wireless Range</td><td>Up to approx. 30 m (open space)</td></tr><tr><td>Driver Size</td><td>40 mm audio drivers</td></tr><tr><td>Frequency Response (Headphone)</td><td>20 Hz – 20 kHz</td></tr><tr><td>Impedance</td><td>~45 ohms</td></tr><tr><td>Compatibility</td><td>Windows, macOS, Android, iOS, tablets</td></tr><tr><td>Multipoint Connection</td><td>Yes (2 devices simultaneously)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Wireless stereo headset with microphone	Wearing Style	Over-ear (lightweight office design)	Connectivity	Bluetooth 5.2 wireless	Wireless Range	Up to approx. 30 m (open space)	Driver Size	40 mm audio drivers	Frequency Response (Headphone)	20 Hz – 20 kHz	Impedance	~45 ohms	Compatibility	Windows, macOS, Android, iOS, tablets	Multipoint Connection	Yes (2 devices simultaneously)																			
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B.8	Retevis Ailunce HA2 Walkie Talkie atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Radio Type</td><td>Dual-Band Analog Handheld Transceiver</td></tr><tr><td>Frequency Range</td><td>VHF: 136-174 MHz • UHF: 400-470 MHz</td></tr><tr><td>RF Output Power</td><td>High 8 W • Medium 4 W • Low 1 W selectable</td></tr><tr><td>Channel Capacity</td><td>Up to 128 programmable channels</td></tr><tr><td>Channel Spacing</td><td>12.5 kHz (Narrowband) / 25 kHz (Wideband)</td></tr><tr><td>Modulation</td><td>Analog FM (F3E)</td></tr><tr><td>Frequency Stability</td><td>±2.5 ppm</td></tr><tr><td>Operating Voltage</td><td>7.4 V DC</td></tr><tr><td>Battery Type</td><td>Rechargeable Li-ion battery pack</td></tr><tr><td>Battery Capacity</td><td>2800 mAh</td></tr><tr><td>Battery Life</td><td>±14–20 hours (5-5-90 duty cycle typical)</td></tr><tr><td>Receiver Sensitivity</td><td>0.18 µV (12 dB SINAD)</td></tr><tr><td>Audio Output Power</td><td>1 W high-power speaker</td></tr><tr><td>Antenna</td><td>Detachable High-Gain Dual-Band Antenna (SMA-Female)</td></tr><tr><td>Waterproof Rating</td><td>IP67 (dust-tight & heavy rain resistant)</td></tr><tr><td>Weight</td><td>±300 g (battery + antenna)</td></tr><tr><td>Accessory Connector</td><td>Kenwood-type 2-Pin (earpiece & shoulder mic compatible)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Radio Type	Dual-Band Analog Handheld Transceiver	Frequency Range	VHF: 136-174 MHz • UHF: 400-470 MHz	RF Output Power	High 8 W • Medium 4 W • Low 1 W selectable	Channel Capacity	Up to 128 programmable channels	Channel Spacing	12.5 kHz (Narrowband) / 25 kHz (Wideband)	Modulation	Analog FM (F3E)	Frequency Stability	±2.5 ppm	Operating Voltage	7.4 V DC	Battery Type	Rechargeable Li-ion battery pack	Battery Capacity	2800 mAh	Battery Life	±14–20 hours (5-5-90 duty cycle typical)	Receiver Sensitivity	0.18 µV (12 dB SINAD)	Audio Output Power	1 W high-power speaker	Antenna	Detachable High-Gain Dual-Band Antenna (SMA-Female)	Waterproof Rating	IP67 (dust-tight & heavy rain resistant)	Weight	±300 g (battery + antenna)	Accessory Connector	Kenwood-type 2-Pin (earpiece & shoulder mic compatible)			
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BIL.	SPEKIFIKASI	YA	TIDAK	CATATAN																																
C	WIRELESS VIDEO																																			
C.1	Hollyland Pyro H Wireless Video Transmission (TX + RX) atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Wireless HDMI Video Transmission System (TX + RX)</td></tr><tr><td>Transmission Technology</td><td>5 GHz wireless video (Hollyland Auto Dual-Band Hopping)</td></tr><tr><td>Max Transmission Range</td><td>Up to ±400 m (Line-of-Sight)</td></tr><tr><td>Latency</td><td>~60 ms (low latency monitoring)</td></tr><tr><td>Video Resolution</td><td>Up to 1080p60 Full HD</td></tr><tr><td>Frequency Bands</td><td>5.1 – 5.8 GHz ISM band</td></tr><tr><td>Channels</td><td>Auto channel scan & interference avoidance</td></tr><tr><td>Inputs (TX)</td><td>1× HDMI input</td></tr><tr><td>Outputs (RX)</td><td>1× HDMI output</td></tr><tr><td>Loop Out (TX)</td><td>HDMI loop-out for on-camera monitor</td></tr><tr><td>Audio Support</td><td>Embedded HDMI audio</td></tr><tr><td>Antenna</td><td>External detachable dual antennas</td></tr><tr><td>Power Input</td><td>USB-C (5–12V)</td></tr><tr><td>Battery Support</td><td>Sony NP-F battery compatible (F550/F750/F970)</td></tr><tr><td>Power Consumption</td><td>~6 W</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Device Type	Wireless HDMI Video Transmission System (TX + RX)	Transmission Technology	5 GHz wireless video (Hollyland Auto Dual-Band Hopping)	Max Transmission Range	Up to ±400 m (Line-of-Sight)	Latency	~60 ms (low latency monitoring)	Video Resolution	Up to 1080p60 Full HD	Frequency Bands	5.1 – 5.8 GHz ISM band	Channels	Auto channel scan & interference avoidance	Inputs (TX)	1× HDMI input	Outputs (RX)	1× HDMI output	Loop Out (TX)	HDMI loop-out for on-camera monitor	Audio Support	Embedded HDMI audio	Antenna	External detachable dual antennas	Power Input	USB-C (5–12V)	Battery Support	Sony NP-F battery compatible (F550/F750/F970)	Power Consumption	~6 W			
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C.2	Hollyland Pyro H Wireless Video Transmission (RX) atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Wireless Video Receiver (RX only)</td></tr><tr><td>Compatible System</td><td>Hollyland Pyro H transmitter (TX)</td></tr><tr><td>Transmission Band</td><td>5 GHz wireless video</td></tr><tr><td>Max Range</td><td>Up to ±400 m line-of-sight (bergantung persekitaran)</td></tr><tr><td>Latency</td><td>~60 ms</td></tr><tr><td>Video Output</td><td>1× HDMI output</td></tr><tr><td>Supported Resolution</td><td>Up to 1080p60 Full HD</td></tr><tr><td>Audio</td><td>Embedded HDMI audio pass-through</td></tr><tr><td>Channel Selection</td><td>Auto scan & interference avoidance</td></tr><tr><td>Monitoring</td><td>Real-time camera monitoring</td></tr><tr><td>Antenna</td><td>Dual external antennas (detachable)</td></tr><tr><td>Power Input</td><td>USB-C (5–12V DC)</td></tr><tr><td>Battery Support</td><td>Sony NP-F battery (F550 / F750 / F970)</td></tr><tr><td>Power Consumption</td><td>~6 W</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Device Type	Wireless Video Receiver (RX only)	Compatible System	Hollyland Pyro H transmitter (TX)	Transmission Band	5 GHz wireless video	Max Range	Up to ±400 m line-of-sight (bergantung persekitaran)	Latency	~60 ms	Video Output	1× HDMI output	Supported Resolution	Up to 1080p60 Full HD	Audio	Embedded HDMI audio pass-through	Channel Selection	Auto scan & interference avoidance	Monitoring	Real-time camera monitoring	Antenna	Dual external antennas (detachable)	Power Input	USB-C (5–12V DC)	Battery Support	Sony NP-F battery (F550 / F750 / F970)	Power Consumption	~6 W					
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Power Input	USB-C (5–12V DC)																																			
Battery Support	Sony NP-F battery (F550 / F750 / F970)																																			
Power Consumption	~6 W																																			
C.3	Lemorele R15 Wireless Screen Sharing Device atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Wireless HDMI Screen Sharing System (TX + RX)</td></tr><tr><td>Transmission Technology</td><td>5 GHz wireless casting (point-to-point)</td></tr><tr><td>Max Resolution</td><td>Up to 1080p Full HD</td></tr><tr><td>Latency</td><td>~50–80 ms (presentation latency)</td></tr><tr><td>Transmission Range</td><td>±30 m line-of-sight (meeting room)</td></tr><tr><td>Transmitter (TX)</td><td>USB-C plug-and-play (laptop / tablet / phone)</td></tr><tr><td>Receiver (RX)</td><td>HDMI output to TV / projector</td></tr><tr><td>Power Input (RX)</td><td>USB-A / USB-C 5V</td></tr><tr><td>Operating Mode</td><td>No WiFi network required</td></tr><tr><td>Compatibility</td><td>Windows / macOS / Android / iPadOS (USB-C DP Alt Mode)</td></tr><tr><td>Audio</td><td>HDMI audio pass-through</td></tr><tr><td>Pairing</td><td>Pre-paired factory set</td></tr><tr><td>Security</td><td>Private peer-to-peer connection</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Device Type	Wireless HDMI Screen Sharing System (TX + RX)	Transmission Technology	5 GHz wireless casting (point-to-point)	Max Resolution	Up to 1080p Full HD	Latency	~50–80 ms (presentation latency)	Transmission Range	±30 m line-of-sight (meeting room)	Transmitter (TX)	USB-C plug-and-play (laptop / tablet / phone)	Receiver (RX)	HDMI output to TV / projector	Power Input (RX)	USB-A / USB-C 5V	Operating Mode	No WiFi network required	Compatibility	Windows / macOS / Android / iPadOS (USB-C DP Alt Mode)	Audio	HDMI audio pass-through	Pairing	Pre-paired factory set	Security	Private peer-to-peer connection							
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Audio	HDMI audio pass-through																																			
Pairing	Pre-paired factory set																																			
Security	Private peer-to-peer connection																																			

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																								
D	KABEL VIDEO & DATA																											
D.1	KAMEHA KA169R HDMI Cable 50M atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Kabel</td><td>Active hybrid fiber HDMI cable (outdoor-grade armoured)</td></tr><tr><td>2. Model</td><td>KAMEHA KA169R atau setara</td></tr><tr><td>3. Standard HDMI</td><td>HDMI 2.0 / 18 Gbps compliant</td></tr><tr><td>4. Length</td><td>50 m ± 0.3 m</td></tr><tr><td>5. Supported Resolutions</td><td>Up to 4K@60 Hz & 1080p (HDTV/PC)</td></tr><tr><td>6. HDCP & EDID</td><td>Support HDCP1.4 / HDCP2.2 & bi-directional EDID</td></tr><tr><td>7. Connector</td><td>HDMI Type-A male (standard)</td></tr><tr><td>8. Cable Construction</td><td>Armoured hybrid fiber + copper conductors (high crush/ tensile resistance)</td></tr><tr><td>9. Power</td><td>No external power required (self-powered through HDMI)</td></tr><tr><td>10. Operating / Storage</td><td>-40 °C to 80 °C</td></tr><tr><td>11. Physical</td><td>Max outer diameter ~5.8 mm</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Kabel	Active hybrid fiber HDMI cable (outdoor-grade armoured)	2. Model	KAMEHA KA169R atau setara	3. Standard HDMI	HDMI 2.0 / 18 Gbps compliant	4. Length	50 m ± 0.3 m	5. Supported Resolutions	Up to 4K@60 Hz & 1080p (HDTV/PC)	6. HDCP & EDID	Support HDCP1.4 / HDCP2.2 & bi-directional EDID	7. Connector	HDMI Type-A male (standard)	8. Cable Construction	Armoured hybrid fiber + copper conductors (high crush/ tensile resistance)	9. Power	No external power required (self-powered through HDMI)	10. Operating / Storage	-40 °C to 80 °C	11. Physical	Max outer diameter ~5.8 mm			
ITEM	SPESIFIKASI MINIMUM																											
1. Jenis Kabel	Active hybrid fiber HDMI cable (outdoor-grade armoured)																											
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8. Cable Construction	Armoured hybrid fiber + copper conductors (high crush/ tensile resistance)																											
9. Power	No external power required (self-powered through HDMI)																											
10. Operating / Storage	-40 °C to 80 °C																											
11. Physical	Max outer diameter ~5.8 mm																											
D.2	KAMEHA KA211 HDMI Armored Cable 100M atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Kabel</td><td>Active Armored Fiber HDMI Cable</td></tr><tr><td>2. Model</td><td>KAMEHA KA211 atau setara</td></tr><tr><td>3. Standard HDMI</td><td>HDMI 2.1 compliant, 48 Gbps</td></tr><tr><td>4. Panjang Kabel</td><td>100 m ± toleransi pemasangan</td></tr><tr><td rowspan="3">5. Supported Resolutions</td><td>• 8K@60 Hz</td></tr><tr><td>• 4K@120 Hz</td></tr><tr><td>• 4K@60 Hz & ke bawah</td></tr><tr><td>6. Advanced HDMI Features</td><td>eARC, ALLM, VRR, QFT, QMS (variable refresh & fast transport)</td></tr><tr><td>7. Audio & Codec Support</td><td>DTS:X, Dolby TrueHD, Dolby Atmos, Dolby Vision, HDR</td></tr><tr><td>8. HDCP</td><td>HDCP 1.4, 2.0 & 2.2</td></tr><tr><td>9. Connector</td><td>HDMI Type-A Male to Male</td></tr><tr><td>10. Construction</td><td>Armored optical fiber + copper hybrid, durable housing</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Kabel	Active Armored Fiber HDMI Cable	2. Model	KAMEHA KA211 atau setara	3. Standard HDMI	HDMI 2.1 compliant, 48 Gbps	4. Panjang Kabel	100 m ± toleransi pemasangan	5. Supported Resolutions	• 8K@60 Hz	• 4K@120 Hz	• 4K@60 Hz & ke bawah	6. Advanced HDMI Features	eARC, ALLM, VRR, QFT, QMS (variable refresh & fast transport)	7. Audio & Codec Support	DTS:X, Dolby TrueHD, Dolby Atmos, Dolby Vision, HDR	8. HDCP	HDCP 1.4, 2.0 & 2.2	9. Connector	HDMI Type-A Male to Male	10. Construction	Armored optical fiber + copper hybrid, durable housing			
ITEM	SPESIFIKASI MINIMUM																											
1. Jenis Kabel	Active Armored Fiber HDMI Cable																											
2. Model	KAMEHA KA211 atau setara																											
3. Standard HDMI	HDMI 2.1 compliant, 48 Gbps																											
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8. HDCP	HDCP 1.4, 2.0 & 2.2																											
9. Connector	HDMI Type-A Male to Male																											
10. Construction	Armored optical fiber + copper hybrid, durable housing																											
D.3	UGREEN 240W Thunderbolt 5 cable atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Kabel</td><td>Thunderbolt 5 certified / USB4 Gen4 Type-C cable</td></tr><tr><td>2. Max Power Delivery (PD)</td><td>240W (48V × 5A PD 3.1)</td></tr><tr><td>3. Data Transfer Bandwidth</td><td>80 Gbps bidirectional</td></tr><tr><td>4. Video Output Support</td><td>• 16K@60 Hz • Dual 8K@60 Hz • Triple 4K@144 Hz</td></tr><tr><td>5. Backward Compatibility</td><td>Thunderbolt 4/3, USB4, USB-C Gen 3.2/2.0</td></tr><tr><td>6. Connector Type</td><td>USB-C male to USB-C male (24-pin)</td></tr><tr><td>7. Cable Construction</td><td>Shielded braided / reinforced material with E-Marker chip</td></tr><tr><td>8. E-Marker / Safety</td><td>Built-in E-Marker chip, over-voltage, over-current & over-temp protection</td></tr><tr><td>9. Length</td><td>Typically 1 m ± tolerance</td></tr><tr><td>10. Operating / Storage Conditions</td><td>Operating: 0–45 °C Storage: -15–70 °C</td></tr><tr><td>11. Compliance / Certs</td><td>Intel Thunderbolt certification (as applicable)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Kabel	Thunderbolt 5 certified / USB4 Gen4 Type-C cable	2. Max Power Delivery (PD)	240W (48V × 5A PD 3.1)	3. Data Transfer Bandwidth	80 Gbps bidirectional	4. Video Output Support	• 16K@60 Hz • Dual 8K@60 Hz • Triple 4K@144 Hz	5. Backward Compatibility	Thunderbolt 4/3, USB4, USB-C Gen 3.2/2.0	6. Connector Type	USB-C male to USB-C male (24-pin)	7. Cable Construction	Shielded braided / reinforced material with E-Marker chip	8. E-Marker / Safety	Built-in E-Marker chip, over-voltage, over-current & over-temp protection	9. Length	Typically 1 m ± tolerance	10. Operating / Storage Conditions	Operating: 0–45 °C Storage: -15–70 °C	11. Compliance / Certs	Intel Thunderbolt certification (as applicable)			
ITEM	SPESIFIKASI MINIMUM																											
1. Jenis Kabel	Thunderbolt 5 certified / USB4 Gen4 Type-C cable																											
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11. Compliance / Certs	Intel Thunderbolt certification (as applicable)																											

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																												
D.4	UGREEN DP 1.4 8K60Hz Cable 3M atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Kabel</td><td>DisplayPort 1.4 male-to-male cable</td></tr><tr><td>2. Model / Series</td><td>DP 1.4 8K60Hz – 3 m</td></tr><tr><td>3. Supported Resolution</td><td>• 8K @ 60 Hz • 4K @ 144 Hz • 2K @ 165 Hz</td></tr><tr><td>4. Bandwidth</td><td>32.4 Gbps (VESA DP1.4)</td></tr><tr><td>5. Audio Support</td><td>Digital audio (7.1, 5.1 LPCM)</td></tr><tr><td>6. Connector Material</td><td>Gold-plated DisplayPort male connectors</td></tr><tr><td>7. Cable Construction</td><td>Nylon braided jacket + triple-shielding</td></tr><tr><td>8. Cable Length</td><td>3 m</td></tr><tr><td>9. Backward Compatibility</td><td>Compatible DP1.3 / DP1.2 / DP1.1</td></tr><tr><td>10. Mode Support</td><td>Mirror & Extend display modes</td></tr><tr><td>11. Compliance</td><td>VESA DisplayPort 1.4 / HDCP</td></tr><tr><td>12. Operating Conditions</td><td>Standard ambient use</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Kabel	DisplayPort 1.4 male-to-male cable	2. Model / Series	DP 1.4 8K60Hz – 3 m	3. Supported Resolution	• 8K @ 60 Hz • 4K @ 144 Hz • 2K @ 165 Hz	4. Bandwidth	32.4 Gbps (VESA DP1.4)	5. Audio Support	Digital audio (7.1, 5.1 LPCM)	6. Connector Material	Gold-plated DisplayPort male connectors	7. Cable Construction	Nylon braided jacket + triple-shielding	8. Cable Length	3 m	9. Backward Compatibility	Compatible DP1.3 / DP1.2 / DP1.1	10. Mode Support	Mirror & Extend display modes	11. Compliance	VESA DisplayPort 1.4 / HDCP	12. Operating Conditions	Standard ambient use					
ITEM	SPESIFIKASI MINIMUM																															
1. Jenis Kabel	DisplayPort 1.4 male-to-male cable																															
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10. Mode Support	Mirror & Extend display modes																															
11. Compliance	VESA DisplayPort 1.4 / HDCP																															
12. Operating Conditions	Standard ambient use																															
D.5	Vention Mini HDMI to HDMI Cable atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Cable Type</td><td>Mini HDMI to Standard HDMI Cable</td></tr><tr><td>HDMI Version</td><td>HDMI 2.0 compliant</td></tr><tr><td>Resolution Support</td><td>Up to 4K @ 60Hz (3840 × 2160)</td></tr><tr><td>Bandwidth</td><td>Up to 18 Gbps high-speed transmission</td></tr><tr><td>Video Features</td><td>HDR video, 3D video, Deep Color support</td></tr><tr><td>Audio Support</td><td>Multi-channel digital audio (Dolby / DTS pass-through)</td></tr><tr><td>Connector Material</td><td>Gold-plated corrosion-resistant connectors</td></tr><tr><td>Conductor Material</td><td>Oxygen-Free Copper (OFC) core</td></tr><tr><td>Shielding</td><td>Multi-layer shielding (foil + braided shielding)</td></tr><tr><td>Jacket Type</td><td>PVC or nylon braided outer jacket (model dependent)</td></tr><tr><td>Plug Type</td><td>Mini HDMI Type-C (male) to HDMI Type-A (male)</td></tr><tr><td>Plug & Play</td><td>Yes (no driver required)</td></tr><tr><td>Compatibility</td><td>DSLR camera, mirrorless camera, field monitor, projector, TV, capture card</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Cable Type	Mini HDMI to Standard HDMI Cable	HDMI Version	HDMI 2.0 compliant	Resolution Support	Up to 4K @ 60Hz (3840 × 2160)	Bandwidth	Up to 18 Gbps high-speed transmission	Video Features	HDR video, 3D video, Deep Color support	Audio Support	Multi-channel digital audio (Dolby / DTS pass-through)	Connector Material	Gold-plated corrosion-resistant connectors	Conductor Material	Oxygen-Free Copper (OFC) core	Shielding	Multi-layer shielding (foil + braided shielding)	Jacket Type	PVC or nylon braided outer jacket (model dependent)	Plug Type	Mini HDMI Type-C (male) to HDMI Type-A (male)	Plug & Play	Yes (no driver required)	Compatibility	DSLR camera, mirrorless camera, field monitor, projector, TV, capture card			
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Plug & Play	Yes (no driver required)																															
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																														
E	PERKAKASAN DALAMAN																																	
E.1	Kingston NV3 NVMe SSD 1TB atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Form Factor</td><td>NVMe PCIe 4.0 x4 SSD, M.2 2280</td></tr><tr><td>2. Kapasiti</td><td>1 TB usable storage (minimum 1 TB)</td></tr><tr><td>3. Interface</td><td>PCIe Gen4 x4 (NVMe 1.4)</td></tr><tr><td rowspan="2">4. Sequential Performance</td><td>Read 6000 MB/s</td></tr><tr><td>Write 4000 MB/s</td></tr><tr><td rowspan="2">5. NAND & Endurance</td><td>3D NAND</td></tr><tr><td>Endurance TBW 320 TB</td></tr><tr><td>6. Reliability</td><td>MTBF 2,000,000 jam</td></tr><tr><td rowspan="2">7. Operating Conditions</td><td>Operating Temp: 0 °C–70 °C</td></tr><tr><td>Storage Temp: -40 °C–85 °C</td></tr><tr><td>8. Physical</td><td>Dimension: 22 mm × 80 mm</td></tr><tr><td>9. Warranty</td><td>Minimum 5 tahun limited warranty atau setara</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Form Factor	NVMe PCIe 4.0 x4 SSD, M.2 2280	2. Kapasiti	1 TB usable storage (minimum 1 TB)	3. Interface	PCIe Gen4 x4 (NVMe 1.4)	4. Sequential Performance	Read 6000 MB/s	Write 4000 MB/s	5. NAND & Endurance	3D NAND	Endurance TBW 320 TB	6. Reliability	MTBF 2,000,000 jam	7. Operating Conditions	Operating Temp: 0 °C–70 °C	Storage Temp: -40 °C–85 °C	8. Physical	Dimension: 22 mm × 80 mm	9. Warranty	Minimum 5 tahun limited warranty atau setara										
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E.2	GIGABYTE GeForce RTX 5060 WINDFORCE MAX OC 8G GDDR7 atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>GPU Architecture</td><td>NVIDIA Ada-Next Architecture</td></tr><tr><td>Graphics Processor</td><td>GeForce RTX 5060</td></tr><tr><td>CUDA Cores</td><td>~3840 cores</td></tr><tr><td>Boost Clock</td><td>±2.5 GHz (factory overclock – WINDFORCE OC)</td></tr><tr><td>Memory Type</td><td>GDDR7</td></tr><tr><td>Memory Size</td><td>8 GB</td></tr><tr><td>Memory Interface</td><td>128-bit</td></tr><tr><td>Memory Speed</td><td>±28 Gbps effective</td></tr><tr><td>Memory Bandwidth</td><td>~448 GB/s</td></tr><tr><td>Ray Tracing Cores</td><td>3rd/4th Gen RT Cores (hardware ray tracing)</td></tr><tr><td>Tensor Cores</td><td>AI Tensor Cores (DLSS / AI acceleration)</td></tr><tr><td>PCI Express</td><td>PCIe 4.0 x8 interface</td></tr><tr><td>Max Resolution</td><td>Up to 7680 × 4320 (8K)</td></tr><tr><td>Multi-Display Support</td><td>Up to 4 displays</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	GPU Architecture	NVIDIA Ada-Next Architecture	Graphics Processor	GeForce RTX 5060	CUDA Cores	~3840 cores	Boost Clock	±2.5 GHz (factory overclock – WINDFORCE OC)	Memory Type	GDDR7	Memory Size	8 GB	Memory Interface	128-bit	Memory Speed	±28 Gbps effective	Memory Bandwidth	~448 GB/s	Ray Tracing Cores	3rd/4th Gen RT Cores (hardware ray tracing)	Tensor Cores	AI Tensor Cores (DLSS / AI acceleration)	PCI Express	PCIe 4.0 x8 interface	Max Resolution	Up to 7680 × 4320 (8K)	Multi-Display Support	Up to 4 displays			
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PCI Express	PCIe 4.0 x8 interface																																	
Max Resolution	Up to 7680 × 4320 (8K)																																	
Multi-Display Support	Up to 4 displays																																	
E.3	Micron 16GB DDR4 ECC UDIMM CL22 atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Memory Type</td><td>DDR4 ECC UDIMM (Error-Correcting Code Unbuffered DIMM)</td></tr><tr><td>Capacity</td><td>16 GB</td></tr><tr><td>Speed</td><td>3200 MT/s (PC4-25600)</td></tr><tr><td>CAS Latency</td><td>CL22</td></tr><tr><td>Module Form Factor</td><td>288-pin DIMM</td></tr><tr><td>Voltage</td><td>1.2 V</td></tr><tr><td>Data Width</td><td>72-bit (64-bit data + 8-bit ECC parity)</td></tr><tr><td>Buffered Type</td><td>Unbuffered (UDIMM)</td></tr><tr><td>ECC Support</td><td>Yes – single-bit error correction</td></tr><tr><td>Operating Temperature</td><td>0 °C – 85 °C</td></tr><tr><td>Compatibility</td><td>Server & workstation</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Memory Type	DDR4 ECC UDIMM (Error-Correcting Code Unbuffered DIMM)	Capacity	16 GB	Speed	3200 MT/s (PC4-25600)	CAS Latency	CL22	Module Form Factor	288-pin DIMM	Voltage	1.2 V	Data Width	72-bit (64-bit data + 8-bit ECC parity)	Buffered Type	Unbuffered (UDIMM)	ECC Support	Yes – single-bit error correction	Operating Temperature	0 °C – 85 °C	Compatibility	Server & workstation									
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Compatibility	Server & workstation																																	

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																																								
E.4	COOLER MASTER MWE Gold 750 - Full Modular atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>ATX Fully Modular Power Supply Unit</td></tr><tr><td>Rated Power Output</td><td>750 Watts</td></tr><tr><td>Efficiency Certification</td><td>80 PLUS Gold</td></tr><tr><td>Typical Efficiency</td><td>Up to ~90% efficiency at typical load</td></tr><tr><td>Input Voltage</td><td>100 – 240V AC</td></tr><tr><td>Input Frequency</td><td>50 – 60 Hz</td></tr><tr><td>Power Factor Correction</td><td>Active PFC</td></tr><tr><td>Protection Features</td><td>OVP, UVP, OPP, OTP, SCP, OCP protection</td></tr><tr><td>+12V Rail</td><td>Single rail design</td></tr><tr><td>+12V Maximum Output</td><td>Up to 744 W</td></tr><tr><td>+5V Rail</td><td>20 A</td></tr><tr><td>+3.3V Rail</td><td>20 A</td></tr><tr><td>Standby Power</td><td>+5VSB 3 A</td></tr><tr><td>Modularity</td><td>Fully Modular cable management</td></tr><tr><td>Cooling Fan</td><td>120 mm HDB (Hydro Dynamic Bearing) fan</td></tr><tr><td>Fan Control</td><td>Temperature controlled smart fan</td></tr><tr><td>MTBF</td><td>>100,000 hours</td></tr><tr><td>Operating Temperature</td><td>0°C – 50°C ambient</td></tr><tr><td>Form Factor</td><td>ATX</td></tr><tr><td>Dimensions</td><td>Approx. 160 × 150 × 86 mm</td></tr><tr><td>Main Connector</td><td>1 × 24-pin ATX</td></tr><tr><td>CPU Connector</td><td>2 × 8-pin (4+4) EPS</td></tr><tr><td>PCIe Connector</td><td>4 × 6+2 pin PCIe</td></tr><tr><td>SATA Connector</td><td>8</td></tr><tr><td>Peripheral Connector</td><td>4 × Molex</td></tr><tr><td>Cable Type</td><td>Flat black modular cables</td></tr><tr><td>Design Topology</td><td>DC-to-DC voltage regulation</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	ATX Fully Modular Power Supply Unit	Rated Power Output	750 Watts	Efficiency Certification	80 PLUS Gold	Typical Efficiency	Up to ~90% efficiency at typical load	Input Voltage	100 – 240V AC	Input Frequency	50 – 60 Hz	Power Factor Correction	Active PFC	Protection Features	OVP, UVP, OPP, OTP, SCP, OCP protection	+12V Rail	Single rail design	+12V Maximum Output	Up to 744 W	+5V Rail	20 A	+3.3V Rail	20 A	Standby Power	+5VSB 3 A	Modularity	Fully Modular cable management	Cooling Fan	120 mm HDB (Hydro Dynamic Bearing) fan	Fan Control	Temperature controlled smart fan	MTBF	>100,000 hours	Operating Temperature	0°C – 50°C ambient	Form Factor	ATX	Dimensions	Approx. 160 × 150 × 86 mm	Main Connector	1 × 24-pin ATX	CPU Connector	2 × 8-pin (4+4) EPS	PCIe Connector	4 × 6+2 pin PCIe	SATA Connector	8	Peripheral Connector	4 × Molex	Cable Type	Flat black modular cables	Design Topology	DC-to-DC voltage regulation			
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E.5	ADATA DDR5 RAM 16GB (Desktop) atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Desktop Memory Module (RAM)</td></tr><tr><td>Memory Type</td><td>DDR5 SDRAM</td></tr><tr><td>Capacity</td><td>16GB (1 × 16GB module)</td></tr><tr><td>Form Factor</td><td>288-pin U-DIMM (Desktop)</td></tr><tr><td>Memory Speed</td><td>Up to 5600 MHz</td></tr><tr><td>JEDEC Base Speed</td><td>4800 MHz</td></tr><tr><td>CAS Latency</td><td>Approx. CL46</td></tr><tr><td>Voltage</td><td>1.1V operating voltage</td></tr><tr><td>Error Correction</td><td>On-die ECC (internal error correction)</td></tr><tr><td>Power Management</td><td>Built-in PMIC (Power Management IC)</td></tr><tr><td>Bandwidth</td><td>Up to ~38.4 GB/s data bandwidth</td></tr><tr><td>Compatibility</td><td>Latest Intel & AMD desktop platforms</td></tr><tr><td>Performance Feature</td><td>Higher frequency vs DDR4-3200</td></tr><tr><td>Upgrade Support</td><td>Single-module upgrade compatible</td></tr><tr><td>Warranty</td><td>Limited lifetime warranty</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Desktop Memory Module (RAM)	Memory Type	DDR5 SDRAM	Capacity	16GB (1 × 16GB module)	Form Factor	288-pin U-DIMM (Desktop)	Memory Speed	Up to 5600 MHz	JEDEC Base Speed	4800 MHz	CAS Latency	Approx. CL46	Voltage	1.1V operating voltage	Error Correction	On-die ECC (internal error correction)	Power Management	Built-in PMIC (Power Management IC)	Bandwidth	Up to ~38.4 GB/s data bandwidth	Compatibility	Latest Intel & AMD desktop platforms	Performance Feature	Higher frequency vs DDR4-3200	Upgrade Support	Single-module upgrade compatible	Warranty	Limited lifetime warranty																											
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E.6	Aigo GP650 Power Supply atau yang setara <table><tr><th>ITEM</th><th>MINIMUM SPECIFICATION</th></tr><tr><td>Product Type</td><td>ATX Desktop Computer Power Supply Unit (PSU)</td></tr><tr><td>Rated Power</td><td>650W</td></tr><tr><td>Peak Power</td><td>Up to 750W – 850W</td></tr><tr><td>Efficiency Certification</td><td>80 PLUS Bronze</td></tr><tr><td>Efficiency</td><td>Approximately up to 80–85% efficiency</td></tr><tr><td>Form Factor</td><td>Intel ATX 12V standard</td></tr><tr><td>PFC Type</td><td>Active PFC</td></tr><tr><td>Cooling System</td><td>120mm Hydraulic Bearing Cooling Fan</td></tr><tr><td>Input Voltage</td><td>160V – 264V AC</td></tr><tr><td>Input Frequency</td><td>50–60 Hz</td></tr><tr><td>Protection Features</td><td>OCP, OVP, UVP, SCP, OPP, OTP protection</td></tr><tr><td rowspan="5">Connector</td><td>1 × 20+4 Pin ATX</td></tr><tr><td>2 × 4+4 Pin CPU</td></tr><tr><td>4 × 6+2 Pin PCIe</td></tr><tr><td>4 × SATA power connectors</td></tr><tr><td>2 × Molex connectors</td></tr><tr><td>Cooling Control</td><td>PWM temperature control fan</td></tr><tr><td>Compatibility</td><td>Supports Intel and AMD platform</td></tr></table>	ITEM	MINIMUM SPECIFICATION	Product Type	ATX Desktop Computer Power Supply Unit (PSU)	Rated Power	650W	Peak Power	Up to 750W – 850W	Efficiency Certification	80 PLUS Bronze	Efficiency	Approximately up to 80–85% efficiency	Form Factor	Intel ATX 12V standard	PFC Type	Active PFC	Cooling System	120mm Hydraulic Bearing Cooling Fan	Input Voltage	160V – 264V AC	Input Frequency	50–60 Hz	Protection Features	OCP, OVP, UVP, SCP, OPP, OTP protection	Connector	1 × 20+4 Pin ATX	2 × 4+4 Pin CPU	4 × 6+2 Pin PCIe	4 × SATA power connectors	2 × Molex connectors	Cooling Control	PWM temperature control fan	Compatibility	Supports Intel and AMD platform			
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F	SAMBUNGAN PERANTI																																																																	
F.1	UGREEN 10Gbps 9-in-1 USB-c Hub atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>USB-C Multiport Docking Hub</td></tr><tr><td>Host Interface</td><td>USB-C male connector</td></tr><tr><td>USB Standard</td><td>USB 3.2 Gen 2</td></tr><tr><td>Maximum Data Speed</td><td>Up to 10 Gbps</td></tr><tr><td>Plug & Play</td><td>Yes (no driver installation required)</td></tr><tr><td>Housing Material</td><td>Aluminium alloy (passive heat dissipation)</td></tr><tr><td>Cable Length</td><td>Built-in cable ±15–20 cm</td></tr><tr><td>HDMI Output</td><td>4K @ 60Hz (3840 × 2160)</td></tr><tr><td>USB-C Power Delivery</td><td>Up to 100W passthrough charging (85–95W to laptop)</td></tr><tr><td>USB-C Data Port</td><td>10 Gbps high-speed data</td></tr><tr><td>USB-A 3.2 Gen2</td><td>10 Gbps (external SSD / storage)</td></tr><tr><td>USB-A 3.0 ×2</td><td>5 Gbps (keyboard, mouse, printer)</td></tr><tr><td>RJ45 LAN</td><td>Gigabit Ethernet 10/100/1000 Mbps</td></tr><tr><td>SD Card Slot</td><td>SD / SDHC / SDXC (UHS-I)</td></tr><tr><td>MicroSD Slot</td><td>microSD / microSDHC / microSDXC</td></tr><tr><td>Maximum Display Resolution</td><td>3840 × 2160 @ 60Hz</td></tr><tr><td>Display Mode</td><td>Mirror & Extended display</td></tr><tr><td>Video Standard</td><td>DisplayPort Alt Mode via USB-C</td></tr><tr><td>HDR</td><td>Supported (depending on laptop & monitor)</td></tr><tr><td>Charging Protocol</td><td>USB-C Power Delivery (PD 3.0)</td></tr><tr><td>Power Input</td><td>Up to 100W</td></tr><tr><td>Laptop Charging</td><td>Charging supported while all ports are in use</td></tr><tr><td>Network Controller</td><td>Gigabit Ethernet controller</td></tr><tr><td>LAN Speed</td><td>10 / 100 / 1000 Mbps auto-negotiation</td></tr><tr><td>LAN Driver</td><td>Auto-detect Windows / macOS / Linux</td></tr><tr><td>Memory Card Standard</td><td>UHS-I</td></tr><tr><td>Card Reader Speed</td><td>±104 MB/s (theoretical)</td></tr><tr><td>Simultaneous Reading</td><td>SD & microSD simultaneously</td></tr><tr><td>System Compatibility</td><td>Windows 10/11, macOS, Linux (basic), iPadOS USB-C, Android USB-C DP Alt Mode</td></tr><tr><td>Cooling System</td><td>Passive cooling via aluminium housing</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Device Type	USB-C Multiport Docking Hub	Host Interface	USB-C male connector	USB Standard	USB 3.2 Gen 2	Maximum Data Speed	Up to 10 Gbps	Plug & Play	Yes (no driver installation required)	Housing Material	Aluminium alloy (passive heat dissipation)	Cable Length	Built-in cable ±15–20 cm	HDMI Output	4K @ 60Hz (3840 × 2160)	USB-C Power Delivery	Up to 100W passthrough charging (85–95W to laptop)	USB-C Data Port	10 Gbps high-speed data	USB-A 3.2 Gen2	10 Gbps (external SSD / storage)	USB-A 3.0 ×2	5 Gbps (keyboard, mouse, printer)	RJ45 LAN	Gigabit Ethernet 10/100/1000 Mbps	SD Card Slot	SD / SDHC / SDXC (UHS-I)	MicroSD Slot	microSD / microSDHC / microSDXC	Maximum Display Resolution	3840 × 2160 @ 60Hz	Display Mode	Mirror & Extended display	Video Standard	DisplayPort Alt Mode via USB-C	HDR	Supported (depending on laptop & monitor)	Charging Protocol	USB-C Power Delivery (PD 3.0)	Power Input	Up to 100W	Laptop Charging	Charging supported while all ports are in use	Network Controller	Gigabit Ethernet controller	LAN Speed	10 / 100 / 1000 Mbps auto-negotiation	LAN Driver	Auto-detect Windows / macOS / Linux	Memory Card Standard	UHS-I	Card Reader Speed	±104 MB/s (theoretical)	Simultaneous Reading	SD & microSD simultaneously	System Compatibility	Windows 10/11, macOS, Linux (basic), iPadOS USB-C, Android USB-C DP Alt Mode	Cooling System	Passive cooling via aluminium housing			
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F.2	UGREEN 6-in-1 USB Hub atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>HDMI Output</td><td>1 × HDMI sehingga 4K @ 60Hz</td></tr><tr><td>USB-A</td><td>2 × USB-A 3.2 Gen2 (10Gbps data transfer)</td></tr><tr><td>USB-C Data</td><td>1 × USB-C 3.2 Gen2 (10Gbps data transfer)</td></tr><tr><td>USB-C PD</td><td>1 × USB-C Power Delivery sehingga 100W passthrough charging</td></tr><tr><td>LAN Port</td><td>1 × RJ45 Gigabit Ethernet (10/100/1000 Mbps)</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	HDMI Output	1 × HDMI sehingga 4K @ 60Hz	USB-A	2 × USB-A 3.2 Gen2 (10Gbps data transfer)	USB-C Data	1 × USB-C 3.2 Gen2 (10Gbps data transfer)	USB-C PD	1 × USB-C Power Delivery sehingga 100W passthrough charging	LAN Port	1 × RJ45 Gigabit Ethernet (10/100/1000 Mbps)																																																					
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F.3	Vention 15-in-1 USB-C MST Docking Station atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Expansion Ports</td><td>15-in-1 ports: HDMI, DisplayPort (MST), USB-A, USB-C, RJ45 Ethernet, SD/TF card reader, 3.5mm audio jack</td></tr><tr><td>Multi-Display Support</td><td>Supports MST (Multi-Stream Transport) for multiple external displays</td></tr><tr><td>Data Transfer</td><td>USB 3.2 high-speed data transmission</td></tr><tr><td>Power Delivery</td><td>USB-C Power Delivery pass-through charging supported</td></tr><tr><td>Network Interface</td><td>Gigabit Ethernet via RJ45 port</td></tr><tr><td>Card Reader</td><td>SD and microSD (TF) memory card support</td></tr><tr><td>Audio</td><td>3.5 mm headphone / microphone combo port</td></tr><tr><td>Housing Material</td><td>Aluminium body with TPU protective finishing</td></tr><tr><td>Compatibility</td><td>USB-C laptops supporting DisplayPort Alt Mode</td></tr><tr><td>Installation</td><td>Plug-and-Play (no additional driver required)</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Expansion Ports	15-in-1 ports: HDMI, DisplayPort (MST), USB-A, USB-C, RJ45 Ethernet, SD/TF card reader, 3.5mm audio jack	Multi-Display Support	Supports MST (Multi-Stream Transport) for multiple external displays	Data Transfer	USB 3.2 high-speed data transmission	Power Delivery	USB-C Power Delivery pass-through charging supported	Network Interface	Gigabit Ethernet via RJ45 port	Card Reader	SD and microSD (TF) memory card support	Audio	3.5 mm headphone / microphone combo port	Housing Material	Aluminium body with TPU protective finishing	Compatibility	USB-C laptops supporting DisplayPort Alt Mode	Installation	Plug-and-Play (no additional driver required)																																											
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																				
F.4	UGREEN USB 3.0 Extension cable 3M <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>USB 3.0 Extension Cable (Male to Female)</td></tr><tr><td>Cable Length</td><td>3 Meter (±10%)</td></tr><tr><td>USB Standard</td><td>USB 3.0 SuperSpeed</td></tr><tr><td>Data Transfer Rate</td><td>Up to 5 Gbps</td></tr><tr><td>Connector Type</td><td>USB Type-A Male to USB Type-A Female</td></tr><tr><td>Backward Compatibility</td><td>Compatible with USB 2.0 & USB 1.1 devices</td></tr><tr><td>Conductor Material</td><td>Tinned copper / high-conductivity copper core</td></tr><tr><td>Shielding</td><td>Multi-layer shielding (aluminium foil + braided shielding)</td></tr><tr><td>Connector Plating</td><td>Gold-plated connectors for corrosion resistance</td></tr><tr><td>Cable Gauge</td><td>Approx. 24/28 AWG (data & power lines)</td></tr><tr><td>Power Support</td><td>Supports USB bus-powered devices (keyboard, mouse, flash drive, webcam, dongle)</td></tr><tr><td>Insulation</td><td>PVC or equivalent durable outer jacket</td></tr><tr><td>Plug & Play</td><td>No driver required</td></tr><tr><td>Operating System Support</td><td>Windows, macOS, Linux compatible</td></tr><tr><td>Application</td><td>Extension for USB peripherals such as keyboard, mouse, printer, webcam, WiFi/Bluetooth adapter & storage devices</td></tr><tr><td>Safety</td><td>Over-signal loss protection with stable data transmission</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	USB 3.0 Extension Cable (Male to Female)	Cable Length	3 Meter (±10%)	USB Standard	USB 3.0 SuperSpeed	Data Transfer Rate	Up to 5 Gbps	Connector Type	USB Type-A Male to USB Type-A Female	Backward Compatibility	Compatible with USB 2.0 & USB 1.1 devices	Conductor Material	Tinned copper / high-conductivity copper core	Shielding	Multi-layer shielding (aluminium foil + braided shielding)	Connector Plating	Gold-plated connectors for corrosion resistance	Cable Gauge	Approx. 24/28 AWG (data & power lines)	Power Support	Supports USB bus-powered devices (keyboard, mouse, flash drive, webcam, dongle)	Insulation	PVC or equivalent durable outer jacket	Plug & Play	No driver required	Operating System Support	Windows, macOS, Linux compatible	Application	Extension for USB peripherals such as keyboard, mouse, printer, webcam, WiFi/Bluetooth adapter & storage devices	Safety	Over-signal loss protection with stable data transmission	Warranty	Minimum 12 months			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																																				
G	INPUT DEVICE																																																							
G.1	Apple Magic Keyboard for ipad pro 11 inch M4/M5 atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Peranti</td><td>Aksesori Keyboard & Trackpad untuk iPad</td></tr><tr><td>2. Model & Compatibility</td><td>iPad Pro 11-inch (M5) & backward compatible M4</td></tr><tr><td>3. Keyboard Type</td><td>Full-size backlit keyboard dengan scissor mechanism</td></tr><tr><td>4. Trackpad</td><td>Large glass trackpad with haptic feedback</td></tr><tr><td>5. Function Row</td><td>14-key function row (brightness, volume, media, etc.)</td></tr><tr><td>6. Connectivity / Interface</td><td>Magnetic attach + USB-C pass-through charging</td></tr><tr><td>7. Viewing Adjustability</td><td>Floating cantilever design untuk multiple angles</td></tr><tr><td>8. Protection / Form Factor</td><td>Front & back protection case for iPad</td></tr><tr><td>9. Material & Build</td><td>Aluminium palm rest & premium build quality</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Peranti	Aksesori Keyboard & Trackpad untuk iPad	2. Model & Compatibility	iPad Pro 11-inch (M5) & backward compatible M4	3. Keyboard Type	Full-size backlit keyboard dengan scissor mechanism	4. Trackpad	Large glass trackpad with haptic feedback	5. Function Row	14-key function row (brightness, volume, media, etc.)	6. Connectivity / Interface	Magnetic attach + USB-C pass-through charging	7. Viewing Adjustability	Floating cantilever design untuk multiple angles	8. Protection / Form Factor	Front & back protection case for iPad	9. Material & Build	Aluminium palm rest & premium build quality																																			
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8. Protection / Form Factor	Front & back protection case for iPad																																																							
9. Material & Build	Aluminium palm rest & premium build quality																																																							
G.2	Keychron Black Myth Wukong Wireless Mechanical (Deluxe Edition) atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Wireless Mechanical Keyboard – Deluxe Edition Themed Bundle</td></tr><tr><td>Layout</td><td>75% ANSI compact layout (with function row, without numeric keypad)</td></tr><tr><td>Mounting Structure</td><td>Gasket Mount design</td></tr><tr><td>Body Material</td><td>Aluminium top frame with reinforced base construction</td></tr><tr><td>Plate Material</td><td>Steel / Aluminium switch plate</td></tr><tr><td>Switch Type</td><td>Mechanical tactile switch – Bluish White (non-clicky, low noise)</td></tr><tr><td>Switch Feedback</td><td>Tactile feedback suitable for long typing sessions</td></tr><tr><td>Hot-Swap Support</td><td>Yes (compatible with 3-pin & 5-pin MX switches)</td></tr><tr><td>Connectivity</td><td>USB-C wired, 2.4 GHz wireless receiver, Bluetooth 5.1</td></tr><tr><td>Multi-Device Pairing</td><td>Minimum 3 Bluetooth devices</td></tr><tr><td>Polling Rate</td><td>Up to 1000 Hz (wired & 2.4 GHz)</td></tr><tr><td>Key Rollover</td><td>Full N-Key Rollover (NKRO)</td></tr><tr><td>Backlight</td><td>Per-key RGB backlight (south-facing LED)</td></tr><tr><td>Programmability</td><td>QMK / VIA programmable firmware with macro support</td></tr><tr><td>Onboard Memory</td><td>Profile & macro storage supported</td></tr><tr><td>Keycaps</td><td>Premium themed PBT keycaps (special edition dye-sublimation / double-shot)</td></tr><tr><td>Stem Compatibility</td><td>MX-style cross stem compatible</td></tr><tr><td>Rotary Encoder</td><td>Programmable control knob included</td></tr><tr><td>Battery</td><td>Built-in rechargeable battery 4000 mAh</td></tr><tr><td>Charging Interface</td><td>Detachable USB-C cable</td></tr><tr><td>Compatibility</td><td>Windows, macOS & Linux compatible</td></tr><tr><td>Typing Angle</td><td>Adjustable multi-angle feet</td></tr><tr><td>Deluxe Accessories</td><td>Themed desk mat, artisan / extra themed keycaps, collectible packaging, USB cable & wireless receiver</td></tr><tr><td>Application</td><td>Programming, system administration, office productivity & general computing</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Wireless Mechanical Keyboard – Deluxe Edition Themed Bundle	Layout	75% ANSI compact layout (with function row, without numeric keypad)	Mounting Structure	Gasket Mount design	Body Material	Aluminium top frame with reinforced base construction	Plate Material	Steel / Aluminium switch plate	Switch Type	Mechanical tactile switch – Bluish White (non-clicky, low noise)	Switch Feedback	Tactile feedback suitable for long typing sessions	Hot-Swap Support	Yes (compatible with 3-pin & 5-pin MX switches)	Connectivity	USB-C wired, 2.4 GHz wireless receiver, Bluetooth 5.1	Multi-Device Pairing	Minimum 3 Bluetooth devices	Polling Rate	Up to 1000 Hz (wired & 2.4 GHz)	Key Rollover	Full N-Key Rollover (NKRO)	Backlight	Per-key RGB backlight (south-facing LED)	Programmability	QMK / VIA programmable firmware with macro support	Onboard Memory	Profile & macro storage supported	Keycaps	Premium themed PBT keycaps (special edition dye-sublimation / double-shot)	Stem Compatibility	MX-style cross stem compatible	Rotary Encoder	Programmable control knob included	Battery	Built-in rechargeable battery 4000 mAh	Charging Interface	Detachable USB-C cable	Compatibility	Windows, macOS & Linux compatible	Typing Angle	Adjustable multi-angle feet	Deluxe Accessories	Themed desk mat, artisan / extra themed keycaps, collectible packaging, USB cable & wireless receiver	Application	Programming, system administration, office productivity & general computing	Warranty	Minimum 12 months			
ITEM	SPESIFIKASI MINIMUM																																																							
Product Type	Wireless Mechanical Keyboard – Deluxe Edition Themed Bundle																																																							
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Backlight	Per-key RGB backlight (south-facing LED)																																																							
Programmability	QMK / VIA programmable firmware with macro support																																																							
Onboard Memory	Profile & macro storage supported																																																							
Keycaps	Premium themed PBT keycaps (special edition dye-sublimation / double-shot)																																																							
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Application	Programming, system administration, office productivity & general computing																																																							
Warranty	Minimum 12 months																																																							

BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																
G.3	Lenovo Preferred Pro II USB Keyboard atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Keyboard Type</td><td>Full-size Wired Membrane Keyboard</td></tr><tr><td>Layout</td><td>Standard 104-key (Full size with numpad)</td></tr><tr><td>Interface</td><td>USB Type-A</td></tr><tr><td>Key Technology</td><td>Quiet membrane switch (low-force actuation)</td></tr><tr><td>Key Profile</td><td>Low-profile ergonomic keys</td></tr><tr><td>Key Life Cycle</td><td>±10 million keystrokes (typical membrane rating)</td></tr><tr><td>Multimedia Keys</td><td>Dedicated hotkeys (volume, mute, media control)</td></tr><tr><td>Shortcut Keys</td><td>Windows function shortcuts (Fn key support)</td></tr><tr><td>Spill Resistance</td><td>Basic spill-resistant design</td></tr><tr><td>LED Indicators</td><td>Num Lock • Caps Lock • Scroll Lock indicators</td></tr><tr><td>Cable Length</td><td>±1.8 meter</td></tr><tr><td>Plug & Play</td><td>Yes</td></tr><tr><td>Compatibility</td><td>Windows 7 / 8 / 10 / 11 • Linux basic support</td></tr><tr><td>Power Source</td><td>USB powered</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Keyboard Type	Full-size Wired Membrane Keyboard	Layout	Standard 104-key (Full size with numpad)	Interface	USB Type-A	Key Technology	Quiet membrane switch (low-force actuation)	Key Profile	Low-profile ergonomic keys	Key Life Cycle	±10 million keystrokes (typical membrane rating)	Multimedia Keys	Dedicated hotkeys (volume, mute, media control)	Shortcut Keys	Windows function shortcuts (Fn key support)	Spill Resistance	Basic spill-resistant design	LED Indicators	Num Lock • Caps Lock • Scroll Lock indicators	Cable Length	±1.8 meter	Plug & Play	Yes	Compatibility	Windows 7 / 8 / 10 / 11 • Linux basic support	Power Source	USB powered					
ITEM	SPESIFIKASI MINIMUM																																			
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Plug & Play	Yes																																			
Compatibility	Windows 7 / 8 / 10 / 11 • Linux basic support																																			
Power Source	USB powered																																			
G.4	Logitech Signature M650 Mouse atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Connection Type</td><td>• Logi BOLT USB Receiver (2.4 GHz) • Bluetooth Low Energy (BLE)</td></tr><tr><td>Wireless Range</td><td>Up to 10 m (depending on environment)</td></tr><tr><td>Sensor Technology</td><td>Logitech Advanced Optical Tracking</td></tr><tr><td>DPI (Min–Max)</td><td>400 - 4,000 DPI</td></tr><tr><td>Buttons</td><td>5 total: Left/Right click, Back/Forward, Scroll wheel (middle click)</td></tr><tr><td>SmartWheel Scrolling</td><td>Precision line-by-line or fast scroll (auto switch)</td></tr><tr><td>Silent Touch Technology</td><td>Click noise reduced 90 % vs standard mouse</td></tr><tr><td>Battery</td><td>1× AA battery (included)</td></tr><tr><td>Battery Life</td><td>• Logi BOLT: ~24 months • Bluetooth: ~20 months</td></tr><tr><td>Indicator Lights</td><td>LED battery & connectivity indicators</td></tr><tr><td>Dimensions</td><td></td></tr><tr><td>Weight</td><td>~101.4 g (with battery)</td></tr><tr><td>Compatibility OS</td><td>Windows, macOS, Linux, ChromeOS, iPadOS, Android</td></tr><tr><td>Customization App</td><td>Supported via Logi Options+ (Windows/macOS)</td></tr><tr><td>Sustainability Material</td><td>Post-consumer recycled plastic (Graphite 64 %)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Connection Type	• Logi BOLT USB Receiver (2.4 GHz) • Bluetooth Low Energy (BLE)	Wireless Range	Up to 10 m (depending on environment)	Sensor Technology	Logitech Advanced Optical Tracking	DPI (Min–Max)	400 - 4,000 DPI	Buttons	5 total: Left/Right click, Back/Forward, Scroll wheel (middle click)	SmartWheel Scrolling	Precision line-by-line or fast scroll (auto switch)	Silent Touch Technology	Click noise reduced 90 % vs standard mouse	Battery	1× AA battery (included)	Battery Life	• Logi BOLT: ~24 months • Bluetooth: ~20 months	Indicator Lights	LED battery & connectivity indicators	Dimensions		Weight	~101.4 g (with battery)	Compatibility OS	Windows, macOS, Linux, ChromeOS, iPadOS, Android	Customization App	Supported via Logi Options+ (Windows/macOS)	Sustainability Material	Post-consumer recycled plastic (Graphite 64 %)			
ITEM	SPESIFIKASI MINIMUM																																			
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Customization App	Supported via Logi Options+ (Windows/macOS)																																			
Sustainability Material	Post-consumer recycled plastic (Graphite 64 %)																																			
G.5	Acer Ergonomic Vertical Computer Mouse atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Ergonomic Vertical Computer Mouse</td></tr><tr><td>Connection Type</td><td>2.4 GHz Wireless USB receiver</td></tr><tr><td>Sensor Type</td><td>Optical sensor</td></tr><tr><td>DPI Resolution</td><td>Adjustable DPI (typically 800 / 1200 / 1600 DPI)</td></tr><tr><td>Buttons</td><td>6 buttons (Left, Right, Scroll, DPI switch, Forward, Back)</td></tr><tr><td>Ergonomic Design</td><td>Vertical hand-shake grip position</td></tr><tr><td>Scroll Wheel</td><td>Anti-slip rubberized wheel</td></tr><tr><td>Compatibility</td><td>Windows / macOS / Linux basic support</td></tr><tr><td>Plug & Play</td><td>Yes (no driver required)</td></tr><tr><td>Wireless Range</td><td>±8–10 meters</td></tr><tr><td>Receiver Type</td><td>Nano USB receiver (2.4GHz RF)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Ergonomic Vertical Computer Mouse	Connection Type	2.4 GHz Wireless USB receiver	Sensor Type	Optical sensor	DPI Resolution	Adjustable DPI (typically 800 / 1200 / 1600 DPI)	Buttons	6 buttons (Left, Right, Scroll, DPI switch, Forward, Back)	Ergonomic Design	Vertical hand-shake grip position	Scroll Wheel	Anti-slip rubberized wheel	Compatibility	Windows / macOS / Linux basic support	Plug & Play	Yes (no driver required)	Wireless Range	±8–10 meters	Receiver Type	Nano USB receiver (2.4GHz RF)											
ITEM	SPESIFIKASI MINIMUM																																			
Device Type	Ergonomic Vertical Computer Mouse																																			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																				
G.6	Zebra DS2278 (SR7U2100PRW) cordless 2D Barcode Scanner atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Jenis Peranti</td><td>Cordless 2D Imager Barcode Scanner</td></tr><tr><td>Scanning Technology</td><td>Area Imaging (digital imager sensor)</td></tr><tr><td>Supported Codes</td><td>1D & 2D barcode (QR Code, DataMatrix, PDF417, Code128, EAN, dll)</td></tr><tr><td>Connectivity</td><td>Bluetooth wireless</td></tr><tr><td>Wireless Range</td><td>±10 m (typical indoor)</td></tr><tr><td>Interface Support</td><td>USB HID, USB COM, RS232 (via cradle)</td></tr><tr><td>Aiming Pattern</td><td>LED aimer</td></tr><tr><td>Trigger Mode</td><td>Manual trigger & presentation mode</td></tr><tr><td>Motion Tolerance</td><td>±13 cm/sec</td></tr><tr><td>Drop Resistance</td><td>Drop resistance up to approximately 1.5 m onto a concrete surface</td></tr><tr><td>Sealing Rating</td><td>IP42</td></tr><tr><td>Battery Type</td><td>Rechargeable Li-ion</td></tr><tr><td>Battery Capacity</td><td>±2400 mAh</td></tr><tr><td>Scan Per Charge</td><td>±14,000 scans</td></tr><tr><td>Charging Method</td><td>Charging cradle (base station)</td></tr><tr><td>Charging Time</td><td>±4 hour full</td></tr><tr><td>Indicator</td><td>LED + beep + vibration feedback</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Jenis Peranti	Cordless 2D Imager Barcode Scanner	Scanning Technology	Area Imaging (digital imager sensor)	Supported Codes	1D & 2D barcode (QR Code, DataMatrix, PDF417, Code128, EAN, dll)	Connectivity	Bluetooth wireless	Wireless Range	±10 m (typical indoor)	Interface Support	USB HID, USB COM, RS232 (via cradle)	Aiming Pattern	LED aimer	Trigger Mode	Manual trigger & presentation mode	Motion Tolerance	±13 cm/sec	Drop Resistance	Drop resistance up to approximately 1.5 m onto a concrete surface	Sealing Rating	IP42	Battery Type	Rechargeable Li-ion	Battery Capacity	±2400 mAh	Scan Per Charge	±14,000 scans	Charging Method	Charging cradle (base station)	Charging Time	±4 hour full	Indicator	LED + beep + vibration feedback			
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Charging Method	Charging cradle (base station)																																							
Charging Time	±4 hour full																																							
Indicator	LED + beep + vibration feedback																																							
G.7	DELL G3-15 Keyboard atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Internal Laptop Replacement Keyboard</td></tr><tr><td>Compatibility Series</td><td>Dell G3 15 Series</td></tr><tr><td>Keyboard Layout</td><td>Full-size laptop layout with numeric keypad</td></tr><tr><td>Backlight</td><td>White or Red backlit</td></tr><tr><td>Interface</td><td>Ribbon cable</td></tr><tr><td>Key Type</td><td>Membrane scissor-switch laptop keys</td></tr><tr><td>Key Material</td><td>ABS keycaps</td></tr><tr><td>Language Layout</td><td>US</td></tr><tr><td>Installation Type</td><td>Internal replacement</td></tr><tr><td>Operating Voltage</td><td>Powered via motherboard connector</td></tr><tr><td>Function Keys</td><td>Multimedia hotkeys & FN shortcuts supported</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Internal Laptop Replacement Keyboard	Compatibility Series	Dell G3 15 Series	Keyboard Layout	Full-size laptop layout with numeric keypad	Backlight	White or Red backlit	Interface	Ribbon cable	Key Type	Membrane scissor-switch laptop keys	Key Material	ABS keycaps	Language Layout	US	Installation Type	Internal replacement	Operating Voltage	Powered via motherboard connector	Function Keys	Multimedia hotkeys & FN shortcuts supported															
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Operating Voltage	Powered via motherboard connector																																							
Function Keys	Multimedia hotkeys & FN shortcuts supported																																							

BIL.	SPEKIFIKASI	YA	TIDAK	CATATAN																																																						
G.8	Keychron Q6 Ultra Mechanical Keyboard atau yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Full-Size Wireless Magnetic Mechanical Keyboard</td></tr><tr><td>Layout</td><td>100% ANSI layout with dedicated numeric keypad</td></tr><tr><td>Mounting Structure</td><td>Double-Gasket Mount design</td></tr><tr><td>Body Material</td><td>CNC-machined full aluminium chassis</td></tr><tr><td>Plate Material</td><td>Aluminium / Steel switch plate</td></tr><tr><td>Switch Technology</td><td>Hall-Effect Magnetic Switch</td></tr><tr><td>Key Feel Requirement</td><td>Tactile / Brown-type feedback (non-clicky, low noise operation)</td></tr><tr><td>Adjustable Actuation</td><td>Approx. 0.1 mm – 4.0 mm adjustable actuation distance</td></tr><tr><td>Rapid Trigger</td><td>Supported (dynamic reset input detection)</td></tr><tr><td>Connectivity</td><td>USB-C wired, 2.4 GHz wireless receiver, Bluetooth 5.3</td></tr><tr><td>Multi-Device Pairing</td><td>Minimum 3 Bluetooth devices</td></tr><tr><td>Polling Rate</td><td>Up to 8000 Hz (wired / 2.4 GHz mode)</td></tr><tr><td>Key Rollover</td><td>Full N-Key Rollover (NKRO)</td></tr><tr><td>Backlight</td><td>Per-key RGB backlight (south-facing LED)</td></tr><tr><td>Programmability</td><td>QMK / VIA programmable firmware with macro support</td></tr><tr><td>Onboard Memory</td><td>Support profile and macro storage</td></tr><tr><td>Compatibility</td><td>Windows, macOS & Linux compatible</td></tr><tr><td>Keycap Support</td><td>Compatible with MX-style keycaps</td></tr><tr><td>Rotary Encoder</td><td>Programmable control knob included</td></tr><tr><td>Battery</td><td>Built-in rechargeable battery 4000 mAh</td></tr><tr><td>Charging Interface</td><td>Detachable USB-C cable</td></tr><tr><td>Typing Angle</td><td>Adjustable multi-angle feet</td></tr><tr><td>Dimensions</td><td>Approx. 440 × 137 × 31 mm</td></tr><tr><td>Accessories</td><td>USB-C cable, wireless receiver, keycap puller, switch puller, spare keycaps</td></tr><tr><td>Application</td><td>Productivity</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Product Type	Full-Size Wireless Magnetic Mechanical Keyboard	Layout	100% ANSI layout with dedicated numeric keypad	Mounting Structure	Double-Gasket Mount design	Body Material	CNC-machined full aluminium chassis	Plate Material	Aluminium / Steel switch plate	Switch Technology	Hall-Effect Magnetic Switch	Key Feel Requirement	Tactile / Brown-type feedback (non-clicky, low noise operation)	Adjustable Actuation	Approx. 0.1 mm – 4.0 mm adjustable actuation distance	Rapid Trigger	Supported (dynamic reset input detection)	Connectivity	USB-C wired, 2.4 GHz wireless receiver, Bluetooth 5.3	Multi-Device Pairing	Minimum 3 Bluetooth devices	Polling Rate	Up to 8000 Hz (wired / 2.4 GHz mode)	Key Rollover	Full N-Key Rollover (NKRO)	Backlight	Per-key RGB backlight (south-facing LED)	Programmability	QMK / VIA programmable firmware with macro support	Onboard Memory	Support profile and macro storage	Compatibility	Windows, macOS & Linux compatible	Keycap Support	Compatible with MX-style keycaps	Rotary Encoder	Programmable control knob included	Battery	Built-in rechargeable battery 4000 mAh	Charging Interface	Detachable USB-C cable	Typing Angle	Adjustable multi-angle feet	Dimensions	Approx. 440 × 137 × 31 mm	Accessories	USB-C cable, wireless receiver, keycap puller, switch puller, spare keycaps	Application	Productivity	Warranty	Minimum 12 months			
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Body Material	CNC-machined full aluminium chassis																																																									
Plate Material	Aluminium / Steel switch plate																																																									
Switch Technology	Hall-Effect Magnetic Switch																																																									
Key Feel Requirement	Tactile / Brown-type feedback (non-clicky, low noise operation)																																																									
Adjustable Actuation	Approx. 0.1 mm – 4.0 mm adjustable actuation distance																																																									
Rapid Trigger	Supported (dynamic reset input detection)																																																									
Connectivity	USB-C wired, 2.4 GHz wireless receiver, Bluetooth 5.3																																																									
Multi-Device Pairing	Minimum 3 Bluetooth devices																																																									
Polling Rate	Up to 8000 Hz (wired / 2.4 GHz mode)																																																									
Key Rollover	Full N-Key Rollover (NKRO)																																																									
Backlight	Per-key RGB backlight (south-facing LED)																																																									
Programmability	QMK / VIA programmable firmware with macro support																																																									
Onboard Memory	Support profile and macro storage																																																									
Compatibility	Windows, macOS & Linux compatible																																																									
Keycap Support	Compatible with MX-style keycaps																																																									
Rotary Encoder	Programmable control knob included																																																									
Battery	Built-in rechargeable battery 4000 mAh																																																									
Charging Interface	Detachable USB-C cable																																																									
Typing Angle	Adjustable multi-angle feet																																																									
Dimensions	Approx. 440 × 137 × 31 mm																																																									
Accessories	USB-C cable, wireless receiver, keycap puller, switch puller, spare keycaps																																																									
Application	Productivity																																																									
Warranty	Minimum 12 months																																																									
G.9	Apple Magic Mouse (USB C) dan yang setara <table><tr><th>ITEM</th><th>SPEKIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Wireless Multi-Touch Optical Mouse</td></tr><tr><td>Connectivity</td><td>Bluetooth wireless</td></tr><tr><td>Sensor Type</td><td>Optical tracking sensor</td></tr><tr><td>Multi-Touch Feature</td><td>Full multi-touch gesture surface (scroll, swipe, navigation)</td></tr><tr><td>Compatibility</td><td>macOS compatible (native), Windows basic function supported</td></tr><tr><td>Button Configuration</td><td>Touch surface integrated left & right click</td></tr><tr><td>Scrolling</td><td>Touch-sensitive 360° smooth scrolling</td></tr><tr><td>Battery Type</td><td>Built-in rechargeable lithium-ion battery</td></tr><tr><td>Charging Interface</td><td>USB-C charging port</td></tr><tr><td>Battery Life</td><td>Up to ±1 month per charge (typical usage)</td></tr><tr><td>Charging Cable</td><td>USB-C charging cable included</td></tr><tr><td>Tracking Technology</td><td>Laser/optical precision tracking</td></tr><tr><td>Surface Requirement</td><td>Compatible with most desk surfaces (recommended mousepad)</td></tr><tr><td>Operating System Support</td><td>macOS (full feature), Windows / Linux (basic cursor operation)</td></tr><tr><td>Gesture Support</td><td>Swipe between pages, smart zoom, momentum scrolling</td></tr><tr><td>Power Management</td><td>Automatic sleep & wake function</td></tr><tr><td>Installation</td><td>Plug & play pairing via Bluetooth</td></tr><tr><td>Colour</td><td>White / Black (subject to availability)</td></tr><tr><td>Application</td><td>Office productivity, document editing, general computing</td></tr><tr><td>Warranty</td><td>Minimum 12 months</td></tr></table>	ITEM	SPEKIFIKASI MINIMUM	Product Type	Wireless Multi-Touch Optical Mouse	Connectivity	Bluetooth wireless	Sensor Type	Optical tracking sensor	Multi-Touch Feature	Full multi-touch gesture surface (scroll, swipe, navigation)	Compatibility	macOS compatible (native), Windows basic function supported	Button Configuration	Touch surface integrated left & right click	Scrolling	Touch-sensitive 360° smooth scrolling	Battery Type	Built-in rechargeable lithium-ion battery	Charging Interface	USB-C charging port	Battery Life	Up to ±1 month per charge (typical usage)	Charging Cable	USB-C charging cable included	Tracking Technology	Laser/optical precision tracking	Surface Requirement	Compatible with most desk surfaces (recommended mousepad)	Operating System Support	macOS (full feature), Windows / Linux (basic cursor operation)	Gesture Support	Swipe between pages, smart zoom, momentum scrolling	Power Management	Automatic sleep & wake function	Installation	Plug & play pairing via Bluetooth	Colour	White / Black (subject to availability)	Application	Office productivity, document editing, general computing	Warranty	Minimum 12 months															
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																										
H	PERALATAN RANGKAIAN																													
H.1	RJ45 CAT6A Tool-Free Connector atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Component Type</td><td>RJ45 tool-free modular connector (8P8C)</td></tr><tr><td>2. Standard</td><td>Category 6A (10GBASE-T) compliant</td></tr><tr><td>3. Tool-Free Installation</td><td>Crimp tool free</td></tr><tr><td>4. Supported Cable</td><td>Cat6A UTP/STP twisted pair cable</td></tr><tr><td>5. Data Rate & Bandwidth</td><td>10 Gbps, bandwidth 500 MHz</td></tr><tr><td>6. Wiring Scheme</td><td>T568A & T568B</td></tr><tr><td>7. Conductor / Wire Size</td><td>Solid/Stranded cables 23–26 AWG</td></tr><tr><td>8. Contact Material</td><td>Gold-plated phosphor bronze contacts</td></tr><tr><td>9. Contact & IDC Life</td><td>750 mating cycles</td></tr><tr><td>10. Operating Temp</td><td>-10 °C to 60 °C</td></tr><tr><td>11. Physical / Housing</td><td>Durable housing</td></tr><tr><td>12. Compliance & Certifications</td><td>ISO/IEC 11801 / ANSI/TIA-568 standards (Cat6A)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Component Type	RJ45 tool-free modular connector (8P8C)	2. Standard	Category 6A (10GBASE-T) compliant	3. Tool-Free Installation	Crimp tool free	4. Supported Cable	Cat6A UTP/STP twisted pair cable	5. Data Rate & Bandwidth	10 Gbps, bandwidth 500 MHz	6. Wiring Scheme	T568A & T568B	7. Conductor / Wire Size	Solid/Stranded cables 23–26 AWG	8. Contact Material	Gold-plated phosphor bronze contacts	9. Contact & IDC Life	750 mating cycles	10. Operating Temp	-10 °C to 60 °C	11. Physical / Housing	Durable housing	12. Compliance & Certifications	ISO/IEC 11801 / ANSI/TIA-568 standards (Cat6A)			
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H.2	NOYAFA NF8508 Multifunction Network Cable Tester atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Jenis Peranti</td><td>Multifunction network cable tester</td></tr><tr><td>2. Supported Cable Types</td><td>RJ45 Ethernet (CAT5/CAT6), RJ11 telephone, BNC coax</td></tr><tr><td>3. Main Functions</td><td>• Wire mapping & continuity test• Cable tracing/scan• Port flash (port identification)• Cable length measurement• PoE check (af/at & non-standard detection)• Crystal head QC test</td></tr><tr><td>4. Optical Functions</td><td>• Optical Power Meter (OPM) support multiple wavelengths• Visual Fault Locator (VFL) 10 mW laser</td></tr><tr><td>5. NCV & Safety</td><td>Non-contact voltage (NCV) detection</td></tr><tr><td>6. Display</td><td>LCD display with backlight</td></tr><tr><td>7. Power & Battery</td><td>Rechargeable lithium battery (~3.7 V / ~1500 mAh) with USB-C charging</td></tr><tr><td>8. Measurement Ranges</td><td>Cable length measurement up to ~200 m</td></tr><tr><td>9. Operating Environment</td><td>Operating temperature ~0 °C to ~40 °C</td></tr><tr><td>10. Connectivity / Interfaces</td><td>RJ45, RJ11, optical ports (with adapters)</td></tr><tr><td>11. Physical</td><td>Portable handheld design</td></tr><tr><td>12. Compliance / Certification</td><td>CE / FCC / other safety & EMC standards (as applicable)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Jenis Peranti	Multifunction network cable tester	2. Supported Cable Types	RJ45 Ethernet (CAT5/CAT6), RJ11 telephone, BNC coax	3. Main Functions	• Wire mapping & continuity test• Cable tracing/scan• Port flash (port identification)• Cable length measurement• PoE check (af/at & non-standard detection)• Crystal head QC test	4. Optical Functions	• Optical Power Meter (OPM) support multiple wavelengths• Visual Fault Locator (VFL) 10 mW laser	5. NCV & Safety	Non-contact voltage (NCV) detection	6. Display	LCD display with backlight	7. Power & Battery	Rechargeable lithium battery (~3.7 V / ~1500 mAh) with USB-C charging	8. Measurement Ranges	Cable length measurement up to ~200 m	9. Operating Environment	Operating temperature ~0 °C to ~40 °C	10. Connectivity / Interfaces	RJ45, RJ11, optical ports (with adapters)	11. Physical	Portable handheld design	12. Compliance / Certification	CE / FCC / other safety & EMC standards (as applicable)			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																
I	BEKALAN KUASA																																			
I.1	UGREEN 45W GaN Charger with Retractable USB-C cable atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>1. Device Type</td><td>Wall charger GaN fast charger dengan kabel USB-C built-in retractable</td></tr><tr><td>2. Charger Technology</td><td>GaN (Gallium Nitride) high-efficiency fast charging</td></tr><tr><td>3. Max Output Power</td><td>45 W total</td></tr><tr><td>4. Output Ports</td><td>• Kabel USB-C built-in (retractable, ±0.7 m)• USB-C tambahan 1 port</td></tr><tr><td>5. Supported Charging Protocols</td><td>USB Power Delivery (PD 3.0/2.0), PPS, QC 3.0, QC2.0, SCP, AFC, Apple/Samsung safe profiles</td></tr><tr><td>6. Cable Design</td><td>Retractable TPE cable (±69 cm extended) with auto retract mechanism</td></tr><tr><td>7. Safety Protections</td><td>Protections: over-voltage, over-current, over-temperature, short-circuit, etc.</td></tr><tr><td>8. Input Voltage</td><td>100–240 Vac, 50/60 Hz</td></tr><tr><td>9. Compatibility Devices</td><td>Smartphones, tablets, laptops with USB-C charging</td></tr><tr><td>10. Form Factor</td><td>Compact wall-plug design, portable for travel</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	1. Device Type	Wall charger GaN fast charger dengan kabel USB-C built-in retractable	2. Charger Technology	GaN (Gallium Nitride) high-efficiency fast charging	3. Max Output Power	45 W total	4. Output Ports	• Kabel USB-C built-in (retractable, ±0.7 m)• USB-C tambahan 1 port	5. Supported Charging Protocols	USB Power Delivery (PD 3.0/2.0), PPS, QC 3.0, QC2.0, SCP, AFC, Apple/Samsung safe profiles	6. Cable Design	Retractable TPE cable (±69 cm extended) with auto retract mechanism	7. Safety Protections	Protections: over-voltage, over-current, over-temperature, short-circuit, etc.	8. Input Voltage	100–240 Vac, 50/60 Hz	9. Compatibility Devices	Smartphones, tablets, laptops with USB-C charging	10. Form Factor	Compact wall-plug design, portable for travel													
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I.2	Heavy Duty IP66 Weatherproff Extension Trailing socket 15M atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Heavy Duty Weatherproof Extension Trailing Socket</td></tr><tr><td>Socket Outlets</td><td>2-Way outlet</td></tr><tr><td>Ingress Protection</td><td>IP66 waterproof & dustproof</td></tr><tr><td>Rated Power</td><td>Up to 3000 W</td></tr><tr><td>Rated Voltage</td><td>240 V AC (50 Hz)</td></tr><tr><td>Rated Current</td><td>13 A</td></tr><tr><td>Cable Length</td><td>15 meter</td></tr><tr><td>Cable Type</td><td>Industrial rubber insulated cable</td></tr><tr><td>Plug Type</td><td>UK / Type-G 3-pin fused plug</td></tr><tr><td>Safety Protection</td><td>Splash-proof cover with sealing gasket</td></tr><tr><td>Overload Protection</td><td>Built-in fuse protection</td></tr><tr><td>Operating Environment</td><td>Indoor & outdoor use</td></tr><tr><td>Cable Jacket</td><td>Heavy duty weather-resistant insulation</td></tr><tr><td>Mounting</td><td>Portable trailing cable / hangable use</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Heavy Duty Weatherproof Extension Trailing Socket	Socket Outlets	2-Way outlet	Ingress Protection	IP66 waterproof & dustproof	Rated Power	Up to 3000 W	Rated Voltage	240 V AC (50 Hz)	Rated Current	13 A	Cable Length	15 meter	Cable Type	Industrial rubber insulated cable	Plug Type	UK / Type-G 3-pin fused plug	Safety Protection	Splash-proof cover with sealing gasket	Overload Protection	Built-in fuse protection	Operating Environment	Indoor & outdoor use	Cable Jacket	Heavy duty weather-resistant insulation	Mounting	Portable trailing cable / hangable use					
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I.3	Masterplug Surge Protector 4 Gang 2 USB (3.1A) 2 Meter atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Name / Model</td><td>Masterplug Surge Protector 4 Gang + 2 USB (3.1A) 2 m Cable</td></tr><tr><td>Mains Sockets</td><td>4 × UK Type G 13 A outlets</td></tr><tr><td>USB Ports</td><td>2 × USB-A charging ports (shared 3.1 A total)</td></tr><tr><td>Surge Protection</td><td>Yes - protects against surges & spikes</td></tr><tr><td>Peak Surge Current / Energy</td><td>~13,000 A / ~370–375 J (MOV + gas tube protection)</td></tr><tr><td>Response Time</td><td>25 ns</td></tr><tr><td>Indicators</td><td>LED Power indicator & LED Surge Status indicator</td></tr><tr><td>Power Switch</td><td>Yes (mains power ON/OFF switch)</td></tr><tr><td>Safety Shutters</td><td>Yes (socket child-safety shutters)</td></tr><tr><td>Cable Length</td><td>2 meters</td></tr><tr><td>Input Rating</td><td>13 A, 220–240 V AC (standard mains)</td></tr><tr><td>Wall Mounting</td><td>Yes (wall fixing holes)</td></tr><tr><td>Plug Type</td><td>UK Type G plug</td></tr><tr><td>Colour / Finish</td><td>Polished Black (or variants)</td></tr><tr><td>Warranty</td><td>~3 years connected equipment warranty</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Name / Model	Masterplug Surge Protector 4 Gang + 2 USB (3.1A) 2 m Cable	Mains Sockets	4 × UK Type G 13 A outlets	USB Ports	2 × USB-A charging ports (shared 3.1 A total)	Surge Protection	Yes - protects against surges & spikes	Peak Surge Current / Energy	~13,000 A / ~370–375 J (MOV + gas tube protection)	Response Time	25 ns	Indicators	LED Power indicator & LED Surge Status indicator	Power Switch	Yes (mains power ON/OFF switch)	Safety Shutters	Yes (socket child-safety shutters)	Cable Length	2 meters	Input Rating	13 A, 220–240 V AC (standard mains)	Wall Mounting	Yes (wall fixing holes)	Plug Type	UK Type G plug	Colour / Finish	Polished Black (or variants)	Warranty	~3 years connected equipment warranty			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																
I.4	Cityork 11800mAh NP-F9900 battery atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Battery Type</td><td>Rechargeable Lithium-Ion (Sony NP-F series compatible)</td></tr><tr><td>Model Class</td><td>NP-F990 equivalent high-capacity</td></tr><tr><td>Capacity</td><td>11800 mAh</td></tr><tr><td>Nominal Voltage</td><td>7.4 V</td></tr><tr><td>Energy</td><td>~87 Wh</td></tr><tr><td>Charging Method</td><td>External NP-F charger / dual charger dock</td></tr><tr><td>Output Interface</td><td>Standard Sony NP-F plate contact</td></tr><tr><td>Protection Circuit</td><td>Over-charge, over-discharge, short-circuit protection</td></tr><tr><td>Battery Indicator</td><td>LED level indicator button</td></tr><tr><td>Compatibility</td><td>Field monitor, wireless video TX/RX, LED light, DSLR rig</td></tr><tr><td>Size Class</td><td>Large capacity NP-F battery (long runtime)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Battery Type	Rechargeable Lithium-Ion (Sony NP-F series compatible)	Model Class	NP-F990 equivalent high-capacity	Capacity	11800 mAh	Nominal Voltage	7.4 V	Energy	~87 Wh	Charging Method	External NP-F charger / dual charger dock	Output Interface	Standard Sony NP-F plate contact	Protection Circuit	Over-charge, over-discharge, short-circuit protection	Battery Indicator	LED level indicator button	Compatibility	Field monitor, wireless video TX/RX, LED light, DSLR rig	Size Class	Large capacity NP-F battery (long runtime)											
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I.5	Maxell CR2032 Battery atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Battery Type</td><td>Lithium Coin Cell (Primary / non-rechargeable)</td></tr><tr><td>Model</td><td>CR2032</td></tr><tr><td>Nominal Voltage</td><td>3 V DC</td></tr><tr><td>Capacity</td><td>±220–240 mAh</td></tr><tr><td>Chemistry</td><td>Lithium Manganese Dioxide (Li-MnO2)</td></tr><tr><td>Diameter</td><td>20 mm</td></tr><tr><td>Thickness</td><td>3.2 mm</td></tr><tr><td>Operating Temperature</td><td>~20 °C to +60 °C</td></tr><tr><td>Shelf Life</td><td>Up to ±5–10 years (sealed storage)</td></tr><tr><td>Rechargeable</td><td>No (single-use battery)</td></tr><tr><td>Leak Resistance</td><td>High leak-resistant sealing design</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Battery Type	Lithium Coin Cell (Primary / non-rechargeable)	Model	CR2032	Nominal Voltage	3 V DC	Capacity	±220–240 mAh	Chemistry	Lithium Manganese Dioxide (Li-MnO2)	Diameter	20 mm	Thickness	3.2 mm	Operating Temperature	~20 °C to +60 °C	Shelf Life	Up to ±5–10 years (sealed storage)	Rechargeable	No (single-use battery)	Leak Resistance	High leak-resistant sealing design											
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I.6	LED Digital Type Power Supply Tester <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Computer ATX Power Supply Diagnostic Tester</td></tr><tr><td>Compatibility</td><td>Support ATX, ITX, BTX standard power supply</td></tr><tr><td>Main Connector Support</td><td>20-Pin & 24-Pin ATX connector</td></tr><tr><td>Additional Connector Support</td><td>4-Pin / 8-Pin CPU, PCIe 6-Pin, PCIe 8-Pin, SATA & Molex connector</td></tr><tr><td>Display Type</td><td>Integrated LCD Display Screen</td></tr><tr><td>Voltage Detection</td><td>Automatic voltage detection and display</td></tr><tr><td>Detected Voltage Rails</td><td>+12V, +5V, +3.3V, -12V, +5VSB</td></tr><tr><td>Power-Good (PG) Detection</td><td>Display PG signal timing (ms)</td></tr><tr><td>Alarm Indicator</td><td>Audible buzzer alarm for abnormal voltage</td></tr><tr><td>Accuracy</td><td>Voltage tolerance detection within ±0.1V</td></tr><tr><td>Test Method</td><td>Plug-and-play automatic PSU startup</td></tr><tr><td>Power Source</td><td>Powered directly from tested PSU (no external adapter required)</td></tr><tr><td>Safety Feature</td><td>Reverse connection protection & over-voltage alert</td></tr><tr><td>Indicator</td><td>Visual LCD reading and audible warning</td></tr><tr><td>Material</td><td>ABS insulated casing</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Computer ATX Power Supply Diagnostic Tester	Compatibility	Support ATX, ITX, BTX standard power supply	Main Connector Support	20-Pin & 24-Pin ATX connector	Additional Connector Support	4-Pin / 8-Pin CPU, PCIe 6-Pin, PCIe 8-Pin, SATA & Molex connector	Display Type	Integrated LCD Display Screen	Voltage Detection	Automatic voltage detection and display	Detected Voltage Rails	+12V, +5V, +3.3V, -12V, +5VSB	Power-Good (PG) Detection	Display PG signal timing (ms)	Alarm Indicator	Audible buzzer alarm for abnormal voltage	Accuracy	Voltage tolerance detection within ±0.1V	Test Method	Plug-and-play automatic PSU startup	Power Source	Powered directly from tested PSU (no external adapter required)	Safety Feature	Reverse connection protection & over-voltage alert	Indicator	Visual LCD reading and audible warning	Material	ABS insulated casing			
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J.1	ZKTECO Multibio 600/ID Multi-Biometric atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Multi-Biometric Access Control & Time Attendance Terminal</td></tr><tr><td>Authentication Method</td><td>Fingerprint + RFID Card + Password (PIN)</td></tr><tr><td>Fingerprint Capacity</td><td>Up to ±3,000 fingerprints</td></tr><tr><td>Card Capacity</td><td>Up to ±10,000 RFID users</td></tr><tr><td>Transaction Log</td><td>Up to ±100,000 records</td></tr><tr><td>Fingerprint Sensor</td><td>Optical fingerprint sensor</td></tr><tr><td>Card Type</td><td>125 kHz RFID (EM card)</td></tr><tr><td>Display</td><td>2.8" TFT color screen</td></tr><tr><td>Verification Time</td><td>< 1 second</td></tr><tr><td>Communication</td><td>TCP/IP LAN, USB host</td></tr><tr><td>Access Control Output</td><td>Relay output (NO/NC)</td></tr><tr><td>Wiegand Interface</td><td>Wiegand input & output supported</td></tr><tr><td>Door Control</td><td>Maglock / electric strike / door release button</td></tr><tr><td>Alarm Function</td><td>Door open timeout, tamper alarm</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Multi-Biometric Access Control & Time Attendance Terminal	Authentication Method	Fingerprint + RFID Card + Password (PIN)	Fingerprint Capacity	Up to ±3,000 fingerprints	Card Capacity	Up to ±10,000 RFID users	Transaction Log	Up to ±100,000 records	Fingerprint Sensor	Optical fingerprint sensor	Card Type	125 kHz RFID (EM card)	Display	2.8" TFT color screen	Verification Time	< 1 second	Communication	TCP/IP LAN, USB host	Access Control Output	Relay output (NO/NC)	Wiegand Interface	Wiegand input & output supported	Door Control	Maglock / electric strike / door release button	Alarm Function	Door open timeout, tamper alarm																					
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J.3	TP-Link tapo D235 Smart Video Doorbell atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>Smart Wi-Fi Video Doorbell (Battery Powered)</td></tr><tr><td>Camera Resolution</td><td>5MP (2K) high-definition video</td></tr><tr><td>Viewing Angle</td><td>180° ultra-wide head-to-toe field of view</td></tr><tr><td>Night Vision</td><td>Full-color night vision with spotlight and IR mode</td></tr><tr><td>Audio</td><td>Two-way audio (built-in microphone & speaker)</td></tr><tr><td>Motion Detection</td><td>AI detection: human, vehicle, pet & package</td></tr><tr><td>Notification</td><td>Real-time push notification via mobile application</td></tr><tr><td>Indoor Alert</td><td>Wireless indoor chime unit included</td></tr><tr><td>Alarm</td><td>Built-in siren & customizable ringtone</td></tr><tr><td>Wireless Standard</td><td>IEEE 802.11 b/g/n</td></tr><tr><td>Wi-Fi Frequency</td><td>2.4 GHz Wi-Fi</td></tr><tr><td>Mobile Application</td><td>Tapo App (Android & iOS)</td></tr><tr><td>Smart Assistant</td><td>Google Assistant & Amazon Alexa compatible</td></tr><tr><td>Local Storage</td><td>microSD card support (up to 512GB)</td></tr><tr><td>Cloud Storage</td><td>Tapo Care cloud recording</td></tr><tr><td>Recording Type</td><td>Motion-triggered & manual live recording</td></tr><tr><td>Power Source</td><td>Rechargeable battery or wired doorbell supply</td></tr><tr><td>Battery Type</td><td>Built-in lithium rechargeable battery</td></tr><tr><td>Battery Life</td><td>Up to approximately 5–6 months (typical usage)</td></tr><tr><td>Charging Method</td><td>USB charging</td></tr><tr><td>Installation</td><td>Wall mounting bracket</td></tr><tr><td>Weather Resistance</td><td>Outdoor weather-resistant housing</td></tr><tr><td>Color</td><td>Matte black finish</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	Smart Wi-Fi Video Doorbell (Battery Powered)	Camera Resolution	5MP (2K) high-definition video	Viewing Angle	180° ultra-wide head-to-toe field of view	Night Vision	Full-color night vision with spotlight and IR mode	Audio	Two-way audio (built-in microphone & speaker)	Motion Detection	AI detection: human, vehicle, pet & package	Notification	Real-time push notification via mobile application	Indoor Alert	Wireless indoor chime unit included	Alarm	Built-in siren & customizable ringtone	Wireless Standard	IEEE 802.11 b/g/n	Wi-Fi Frequency	2.4 GHz Wi-Fi	Mobile Application	Tapo App (Android & iOS)	Smart Assistant	Google Assistant & Amazon Alexa compatible	Local Storage	microSD card support (up to 512GB)	Cloud Storage	Tapo Care cloud recording	Recording Type	Motion-triggered & manual live recording	Power Source	Rechargeable battery or wired doorbell supply	Battery Type	Built-in lithium rechargeable battery	Battery Life	Up to approximately 5–6 months (typical usage)	Charging Method	USB charging	Installation	Wall mounting bracket	Weather Resistance	Outdoor weather-resistant housing	Color	Matte black finish			
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J.4	5MP SriHome NVR WiFi Touch Screen Monitor + 4pc 2K PTZ Camera Night Vision 2-Way Audio NVS010-IPC047 atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Wireless CCTV Surveillance Kit (NVR Monitor + 4 WiFi PTZ IP Camera)</td></tr><tr><td>NVR Type</td><td>Built-in WiFi Network Video Recorder with Touch Screen Monitor</td></tr><tr><td>Monitor Display</td><td>Minimum 10.1 inch IPS Touch Screen</td></tr><tr><td>Video Compression</td><td>H.265 / H.265+</td></tr><tr><td>Recording Resolution</td><td>Up to 5MP (2592 × 1944)</td></tr><tr><td>Channel Support</td><td>Minimum 4 Channel Wireless IP Camera</td></tr><tr><td>Storage Support</td><td>1 × SATA HDD Slot (support up to 6TB)</td></tr><tr><td>Network Connectivity</td><td>Built-in 2.4GHz WiFi Hotspot + LAN Port</td></tr><tr><td>Mobile Monitoring</td><td>Android & iOS Remote Viewing via Mobile Application</td></tr><tr><td>Recording Mode</td><td>Continuous Recording & Motion Detection Recording</td></tr><tr><td>Camera Resolution</td><td>Minimum 2K / 3MP (2304 × 1296) per camera</td></tr><tr><td>Camera Type</td><td>Outdoor WiFi PTZ Camera</td></tr><tr><td>PTZ Movement</td><td>Pan 355° , Tilt 90°</td></tr><tr><td>Night Vision</td><td>Infrared & Full Color Night Vision (minimum 20m distance)</td></tr><tr><td>Audio</td><td>Built-in Microphone & Speaker (2-Way Audio Communication)</td></tr><tr><td>Smart Detection</td><td>Human Motion Detection with Push Notification</td></tr><tr><td>Weather Protection</td><td>Minimum IP66 Weatherproof</td></tr><tr><td>Video Playback</td><td>Remote Playback & Video Backup via USB</td></tr><tr><td>Power Input</td><td>DC Adapter powered (NVR & Cameras)</td></tr><tr><td>Operating Frequency</td><td>2.4GHz Wireless Transmission</td></tr><tr><td>Accessories</td><td>Complete with 4 Cameras, Power Adapter, Mounting Kit & Accessories</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Wireless CCTV Surveillance Kit (NVR Monitor + 4 WiFi PTZ IP Camera)	NVR Type	Built-in WiFi Network Video Recorder with Touch Screen Monitor	Monitor Display	Minimum 10.1 inch IPS Touch Screen	Video Compression	H.265 / H.265+	Recording Resolution	Up to 5MP (2592 × 1944)	Channel Support	Minimum 4 Channel Wireless IP Camera	Storage Support	1 × SATA HDD Slot (support up to 6TB)	Network Connectivity	Built-in 2.4GHz WiFi Hotspot + LAN Port	Mobile Monitoring	Android & iOS Remote Viewing via Mobile Application	Recording Mode	Continuous Recording & Motion Detection Recording	Camera Resolution	Minimum 2K / 3MP (2304 × 1296) per camera	Camera Type	Outdoor WiFi PTZ Camera	PTZ Movement	Pan 355° , Tilt 90°	Night Vision	Infrared & Full Color Night Vision (minimum 20m distance)	Audio	Built-in Microphone & Speaker (2-Way Audio Communication)	Smart Detection	Human Motion Detection with Push Notification	Weather Protection	Minimum IP66 Weatherproof	Video Playback	Remote Playback & Video Backup via USB	Power Input	DC Adapter powered (NVR & Cameras)	Operating Frequency	2.4GHz Wireless Transmission	Accessories	Complete with 4 Cameras, Power Adapter, Mounting Kit & Accessories			
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K.1	PLAUD Note NB-100 AI Voice Recorder atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Device Type</td><td>AI-powered portable voice recorder</td></tr><tr><td>Recording Method</td><td>Air conduction microphone + Vibration (phone call pickup)</td></tr><tr><td>Storage</td><td>64 GB internal memory</td></tr><tr><td>Recording Format</td><td>WAV / AI processed transcript</td></tr><tr><td>Microphone</td><td>Dual MEMS microphone array</td></tr><tr><td>Noise Reduction</td><td>AI noise filtering & voice enhancement</td></tr><tr><td>Connectivity</td><td>Bluetooth + Mobile App (iOS / Android)</td></tr><tr><td>Transcription</td><td>AI speech-to-text (multi-language supported)</td></tr><tr><td>AI Features</td><td>Auto summary, meeting notes, speaker separation</td></tr><tr><td>Battery Life</td><td>Up to ~30 hours recording</td></tr><tr><td>Charging Port</td><td>USB-C</td></tr><tr><td>Mounting</td><td>Magnetic attach (belakang phone / table)</td></tr><tr><td>Thickness</td><td>~3 mm ultra-thin design</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Device Type	AI-powered portable voice recorder	Recording Method	Air conduction microphone + Vibration (phone call pickup)	Storage	64 GB internal memory	Recording Format	WAV / AI processed transcript	Microphone	Dual MEMS microphone array	Noise Reduction	AI noise filtering & voice enhancement	Connectivity	Bluetooth + Mobile App (iOS / Android)	Transcription	AI speech-to-text (multi-language supported)	AI Features	Auto summary, meeting notes, speaker separation	Battery Life	Up to ~30 hours recording	Charging Port	USB-C	Mounting	Magnetic attach (belakang phone / table)	Thickness	~3 mm ultra-thin design									
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L.1	Flexispot AlcoveRise Standing Desk Converters M7MB - 35inch atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Standing Desk Converter (Tabletop Workstation Riser)</td></tr><tr><td>Model</td><td>FlexiSpot AlcoveRise M7MB</td></tr><tr><td>Desktop Width</td><td>Minimum 35 inch (±89 cm)</td></tr><tr><td>Load Capacity</td><td>Minimum 15 kg</td></tr><tr><td>Height Adjustment</td><td>Gas Spring Assisted Lift Mechanism</td></tr><tr><td>Height Range</td><td>Approximately 12 cm – 50 cm adjustable</td></tr><tr><td>Adjustment Method</td><td>Manual lift with pneumatic spring (single handle)</td></tr><tr><td>Keyboard Tray</td><td>Integrated retractable keyboard & mouse tray</td></tr><tr><td>Desktop Material</td><td>High-density particle board / laminated finish</td></tr><tr><td>Frame Material</td><td>Powder-coated steel frame</td></tr><tr><td>Ergonomic Feature</td><td>Sit-Stand ergonomic working position support</td></tr><tr><td>Monitor Support</td><td>Support single or dual monitor setup</td></tr><tr><td>Stability</td><td>Anti-wobble structure with X-frame support</td></tr><tr><td>Installation</td><td>Pre-assembled / minimal installation required</td></tr><tr><td>Safety Feature</td><td>Smooth lift with locking height positions</td></tr><tr><td>Colour</td><td>Black (or equivalent)</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Standing Desk Converter (Tabletop Workstation Riser)	Model	FlexiSpot AlcoveRise M7MB	Desktop Width	Minimum 35 inch (±89 cm)	Load Capacity	Minimum 15 kg	Height Adjustment	Gas Spring Assisted Lift Mechanism	Height Range	Approximately 12 cm – 50 cm adjustable	Adjustment Method	Manual lift with pneumatic spring (single handle)	Keyboard Tray	Integrated retractable keyboard & mouse tray	Desktop Material	High-density particle board / laminated finish	Frame Material	Powder-coated steel frame	Ergonomic Feature	Sit-Stand ergonomic working position support	Monitor Support	Support single or dual monitor setup	Stability	Anti-wobble structure with X-frame support	Installation	Pre-assembled / minimal installation required	Safety Feature	Smooth lift with locking height positions	Colour	Black (or equivalent)			
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L.2	Cooler Master Notepal Ergostand IV Laptop Cooling Pad atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Design</td><td>Ergonomic adjustable stand</td></tr><tr><td>Cooling System</td><td>Large 200 mm cooling fan</td></tr><tr><td>Surface Material</td><td>Mesh metal surface with anti-slip rubber pads</td></tr><tr><td>Power Source</td><td>USB-powered (no external adapter required)</td></tr><tr><td>Cable Management</td><td>Built-in cable routing management</td></tr><tr><td>Airflow Direction</td><td>Upward airflow for laptop heat dissipation</td></tr><tr><td>Noise Level</td><td>Low-noise operation</td></tr><tr><td>Fan Control</td><td>Adjustable fan speed controller</td></tr><tr><td>Compatibility</td><td>Suitable for laptops up to 17-inch display</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Design	Ergonomic adjustable stand	Cooling System	Large 200 mm cooling fan	Surface Material	Mesh metal surface with anti-slip rubber pads	Power Source	USB-powered (no external adapter required)	Cable Management	Built-in cable routing management	Airflow Direction	Upward airflow for laptop heat dissipation	Noise Level	Low-noise operation	Fan Control	Adjustable fan speed controller	Compatibility	Suitable for laptops up to 17-inch display																	
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L.3	Spiral Cable Management Organizer (10mm) 9M atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Spiral Cable Wrap / Spiral Cable Management Organizer</td></tr><tr><td>Material</td><td>Flexible Polyethylene (PE) / Polypropylene (PP) insulation grade</td></tr><tr><td>Structure</td><td>Helical spiral open-wrap design</td></tr><tr><td>Function</td><td>Cable bundling, protection & routing management</td></tr><tr><td>Diameter Options</td><td>10 mm</td></tr><tr><td>Bundle Capacity</td><td>Supports multiple cable grouping</td></tr><tr><td>Length (Typical)</td><td>5 m per roll (cuttable & extendable)</td></tr><tr><td>Operating Temperature</td><td>-20 °C to +80 °C</td></tr><tr><td>Flame Resistance</td><td>Basic insulation grade (non-conductive protective covering)</td></tr><tr><td>Flexibility</td><td>Bendable & reusable (non-permanent installation)</td></tr><tr><td>Installation Method</td><td>Tool-free manual wrap installation</td></tr><tr><td>Cable Exit</td><td>Cables boleh keluar di mana-mana titik tanpa potong wrap</td></tr><tr><td>Protection Function</td><td>Anti-abrasion, anti-kink, dust protection, minor impact protection</td></tr><tr><td>Electrical Property</td><td>Non-conductive insulating material</td></tr><tr><td>Color</td><td>Black</td></tr><tr><td>Application</td><td>Office workstation, server rack, AV system, CCTV, network cabling</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Spiral Cable Wrap / Spiral Cable Management Organizer	Material	Flexible Polyethylene (PE) / Polypropylene (PP) insulation grade	Structure	Helical spiral open-wrap design	Function	Cable bundling, protection & routing management	Diameter Options	10 mm	Bundle Capacity	Supports multiple cable grouping	Length (Typical)	5 m per roll (cuttable & extendable)	Operating Temperature	-20 °C to +80 °C	Flame Resistance	Basic insulation grade (non-conductive protective covering)	Flexibility	Bendable & reusable (non-permanent installation)	Installation Method	Tool-free manual wrap installation	Cable Exit	Cables boleh keluar di mana-mana titik tanpa potong wrap	Protection Function	Anti-abrasion, anti-kink, dust protection, minor impact protection	Electrical Property	Non-conductive insulating material	Color	Black	Application	Office workstation, server rack, AV system, CCTV, network cabling			
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																
L.4	GBC Fusion 3000L A3 Laminator atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Office Laminating Machine</td></tr><tr><td>Model</td><td>GBC Fusion 3000L</td></tr><tr><td>Laminating Size</td><td>Up to A3</td></tr><tr><td>Warm-up Time</td><td>1 minute</td></tr><tr><td>Laminating Speed</td><td>Minimum 500 mm/min</td></tr><tr><td>Pouch Thickness</td><td>Support 75 – 125 micron laminating pouch</td></tr><tr><td>Heating Technology</td><td>Dual Roller Heat System</td></tr><tr><td>Control Indicator</td><td>LED Ready Indicator & Audible Alert</td></tr><tr><td>Operation Mode</td><td>Automatic temperature control</td></tr><tr><td>Anti-Jam Feature</td><td>Jam Release Lever Mechanism</td></tr><tr><td>Power Supply</td><td>220 – 240V AC, 50/60Hz</td></tr><tr><td>Safety Feature</td><td>Auto shut-off after idle period</td></tr><tr><td>Usage Category</td><td>Medium Duty Office Use</td></tr><tr><td>Application</td><td>Suitable for certificates, ID notice, signage, posters & documents</td></tr><tr><td>Build</td><td>Compact desktop design</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Office Laminating Machine	Model	GBC Fusion 3000L	Laminating Size	Up to A3	Warm-up Time	1 minute	Laminating Speed	Minimum 500 mm/min	Pouch Thickness	Support 75 – 125 micron laminating pouch	Heating Technology	Dual Roller Heat System	Control Indicator	LED Ready Indicator & Audible Alert	Operation Mode	Automatic temperature control	Anti-Jam Feature	Jam Release Lever Mechanism	Power Supply	220 – 240V AC, 50/60Hz	Safety Feature	Auto shut-off after idle period	Usage Category	Medium Duty Office Use	Application	Suitable for certificates, ID notice, signage, posters & documents	Build	Compact desktop design			
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L.5	Greenwipes Electronic Cleaning Wipes <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Electronic Equipment Cleaning Wipes</td></tr><tr><td>Cleaning Type</td><td>Pre-moistened anti-static cleaning wipes</td></tr><tr><td>Chemical Content</td><td>Alcohol-free / Ammonia-free solution</td></tr><tr><td>Surface Compatibility</td><td>LCD/LED Monitor, Laptop, Keyboard, Mouse, Printer & Electronic Devices</td></tr><tr><td>Anti-Static Feature</td><td>Yes (safe for electronic components & PCB surface)</td></tr><tr><td>Residue</td><td>Non-streak & non-residue cleaning</td></tr><tr><td>Material</td><td>Non-abrasive lint-free microfiber wipes</td></tr><tr><td>Packaging</td><td>Sealed canister / dispenser type</td></tr><tr><td>Quantity</td><td>Minimum 80 wipes per canister</td></tr><tr><td>Safety</td><td>Safe for coated screen & touch screen display</td></tr><tr><td>Application</td><td>Removal of dust, fingerprint, oil & light dirt on electronic equipment</td></tr><tr><td>Storage</td><td>Resealable cover to prevent drying</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Electronic Equipment Cleaning Wipes	Cleaning Type	Pre-moistened anti-static cleaning wipes	Chemical Content	Alcohol-free / Ammonia-free solution	Surface Compatibility	LCD/LED Monitor, Laptop, Keyboard, Mouse, Printer & Electronic Devices	Anti-Static Feature	Yes (safe for electronic components & PCB surface)	Residue	Non-streak & non-residue cleaning	Material	Non-abrasive lint-free microfiber wipes	Packaging	Sealed canister / dispenser type	Quantity	Minimum 80 wipes per canister	Safety	Safe for coated screen & touch screen display	Application	Removal of dust, fingerprint, oil & light dirt on electronic equipment	Storage	Resealable cover to prevent drying									
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BIL.	SPESIFIKASI	YA	TIDAK	CATATAN																																				
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M.1	Creality CR-Scan Ferret Pro 3D Scanner atau yang setara <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Handheld Portable 3D Scanner</td></tr><tr><td>Model</td><td>Creality CR-Scan Ferret Pro</td></tr><tr><td>Scanning Technology</td><td>Structured Light / NIR (Near-Infrared) Optical Scanning</td></tr><tr><td>Scanning Accuracy</td><td>Up to 0.1 mm</td></tr><tr><td>Resolution</td><td>Up to 0.16 mm 3D point distance</td></tr><tr><td>Scan Range</td><td>Approx. 150 mm – 2000 mm object size</td></tr><tr><td>Frame Rate</td><td>Up to 30 FPS scanning</td></tr><tr><td>Colour Capture</td><td>Full Colour Texture Scanning (RGB camera)</td></tr><tr><td>Tracking Method</td><td>Visual Tracking + Anti-Shake Algorithm</td></tr><tr><td>Connectivity</td><td>USB Type-C & WiFi Wireless Connection</td></tr><tr><td>Supported Device</td><td>Windows PC, Android & iOS Smartphone</td></tr><tr><td>Software</td><td>Creality Scan software (real-time preview & mesh generation)</td></tr><tr><td>Output Format</td><td>STL / OBJ / PLY</td></tr><tr><td>Light Requirement</td><td>Works in indoor & outdoor environment</td></tr><tr><td>Power Supply</td><td>Powered via USB (no external power adapter required)</td></tr><tr><td>Application</td><td>Reverse engineering, asset digitizing, modelling & 3D printing</td></tr><tr><td>Portability</td><td>Lightweight handheld portable design</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Handheld Portable 3D Scanner	Model	Creality CR-Scan Ferret Pro	Scanning Technology	Structured Light / NIR (Near-Infrared) Optical Scanning	Scanning Accuracy	Up to 0.1 mm	Resolution	Up to 0.16 mm 3D point distance	Scan Range	Approx. 150 mm – 2000 mm object size	Frame Rate	Up to 30 FPS scanning	Colour Capture	Full Colour Texture Scanning (RGB camera)	Tracking Method	Visual Tracking + Anti-Shake Algorithm	Connectivity	USB Type-C & WiFi Wireless Connection	Supported Device	Windows PC, Android & iOS Smartphone	Software	Creality Scan software (real-time preview & mesh generation)	Output Format	STL / OBJ / PLY	Light Requirement	Works in indoor & outdoor environment	Power Supply	Powered via USB (no external power adapter required)	Application	Reverse engineering, asset digitizing, modelling & 3D printing	Portability	Lightweight handheld portable design			
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N.1	Alatganti Laptop Asus Tuf FX505 <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Laptop External Chassis / Outer Body Replacement Parts</td></tr><tr><td>Compatibility</td><td>ASUS TUF FX505 Series</td></tr><tr><td>Component Included</td><td>Bottom Cover, Palmrest Upper Case, LCD Back Cover (Top Lid) & Screen Bezel Frame</td></tr><tr><td>Material</td><td>ABS + Polycarbonate composite (high-impact plastic)</td></tr><tr><td>Finish</td><td>Matte / textured anti-scratch surface</td></tr><tr><td>Colour</td><td>Black / Gunmetal atau setara asal</td></tr><tr><td>Ventilation</td><td>Integrated cooling ventilation grills (factory design)</td></tr><tr><td>Mounting</td><td>Complete internal screw mounting points & bracket alignment</td></tr><tr><td>Hinge Support</td><td>Compatible with original display hinge assembly</td></tr><tr><td>Port Alignment</td><td>Exact cut-out for USB, HDMI, LAN, audio & power port</td></tr><tr><td>Keyboard Support</td><td>Compatible with original k</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Laptop External Chassis / Outer Body Replacement Parts	Compatibility	ASUS TUF FX505 Series	Component Included	Bottom Cover, Palmrest Upper Case, LCD Back Cover (Top Lid) & Screen Bezel Frame	Material	ABS + Polycarbonate composite (high-impact plastic)	Finish	Matte / textured anti-scratch surface	Colour	Black / Gunmetal atau setara asal	Ventilation	Integrated cooling ventilation grills (factory design)	Mounting	Complete internal screw mounting points & bracket alignment	Hinge Support	Compatible with original display hinge assembly	Port Alignment	Exact cut-out for USB, HDMI, LAN, audio & power port	Keyboard Support	Compatible with original k					
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N.2	MAGEASY CoverBuddy Lite Magnetic Case for iPad Pro 11" atau yang setara <table><tr><th>ITEM</th><th>TECHNICAL SPECIFICATION</th></tr><tr><td>Product Type</td><td>Magnetic Protective Back Case for Tablet</td></tr><tr><td>Compatibility</td><td>iPad Pro 11" (2025 M5 / 2024 M4)</td></tr><tr><td>Keyboard Compatibility</td><td>Fully compatible with Apple Magic Keyboard without removing the case</td></tr><tr><td>Connection Technology</td><td>Smart Connector pass-through support for seamless Magic Keyboard connectivity</td></tr><tr><td>Magnetic System</td><td>Built-in strong magnetic attachment for secure connection with Magic Keyboard</td></tr><tr><td>Material</td><td>Polycarbonate (PC) with PU coating</td></tr><tr><td>Product Dimensions</td><td>Approximately 252 × 176 × 8 mm</td></tr><tr><td>Protection</td><td>Protects the back and sides of the iPad from scratches and minor impacts</td></tr><tr><td>Design</td><td>Slim and lightweight design that does not add significant bulk</td></tr><tr><td>Apple Pencil Support</td><td>Supports Apple Pencil magnetic attachment and wireless charging</td></tr><tr><td>Inner Lining</td><td>Soft microfiber inner layer to prevent scratches on device surface</td></tr><tr><td>Magnetic Design</td><td>Precision magnetic alignment for quick and secure installation</td></tr></table>	ITEM	TECHNICAL SPECIFICATION	Product Type	Magnetic Protective Back Case for Tablet	Compatibility	iPad Pro 11" (2025 M5 / 2024 M4)	Keyboard Compatibility	Fully compatible with Apple Magic Keyboard without removing the case	Connection Technology	Smart Connector pass-through support for seamless Magic Keyboard connectivity	Magnetic System	Built-in strong magnetic attachment for secure connection with Magic Keyboard	Material	Polycarbonate (PC) with PU coating	Product Dimensions	Approximately 252 × 176 × 8 mm	Protection	Protects the back and sides of the iPad from scratches and minor impacts	Design	Slim and lightweight design that does not add significant bulk	Apple Pencil Support	Supports Apple Pencil magnetic attachment and wireless charging	Inner Lining	Soft microfiber inner layer to prevent scratches on device surface	Magnetic Design	Precision magnetic alignment for quick and secure installation			
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O.2	Ulanzi Zero V Carbon Fiber Camera Tripod <table><tr><th>ITEM</th><th>SPESIFIKASI MINIMUM</th></tr><tr><td>Product Type</td><td>Professional Portable Camera Tripod</td></tr><tr><td>Model</td><td>Ulanzi Zero V Carbon Fiber</td></tr><tr><td>Material</td><td>Carbon Fiber Legs + Aluminium Alloy Components</td></tr><tr><td>Maximum Height</td><td>Minimum 155 cm</td></tr><tr><td>Minimum Height</td><td>Approximately 15–20 cm (low angle shooting)</td></tr><tr><td>Folded Length</td><td>45 cm (compact travel size)</td></tr><tr><td>Maximum Load Capacity</td><td>Minimum 18 kg</td></tr><tr><td>Leg Sections</td><td>5 Section Foldable Legs</td></tr><tr><td>Lock Mechanism</td><td>Quick Twist Lock System</td></tr><tr><td>Tripod Head</td><td>Ball Head with 360° Panoramic Rotation</td></tr><tr><td>Quick Release</td><td>Arca-Swiss Compatible Quick Release Plate</td></tr><tr><td>Level Indicator</td><td>Built-in Bubble Level</td></tr><tr><td>Leg Adjustment</td><td>Multi-angle leg adjustment (low angle/macro mode)</td></tr><tr><td>Mounting Thread</td><td>Standard 1/4" camera screw</td></tr><tr><td>Feet Type</td><td>Anti-slip rubber feet</td></tr><tr><td>Weight</td><td>1.2 kg</td></tr><tr><td>Application</td><td>DSLR / Mirrorless Camera / Video Recording / Photography</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Product Type	Professional Portable Camera Tripod	Model	Ulanzi Zero V Carbon Fiber	Material	Carbon Fiber Legs + Aluminium Alloy Components	Maximum Height	Minimum 155 cm	Minimum Height	Approximately 15–20 cm (low angle shooting)	Folded Length	45 cm (compact travel size)	Maximum Load Capacity	Minimum 18 kg	Leg Sections	5 Section Foldable Legs	Lock Mechanism	Quick Twist Lock System	Tripod Head	Ball Head with 360° Panoramic Rotation	Quick Release	Arca-Swiss Compatible Quick Release Plate	Level Indicator	Built-in Bubble Level	Leg Adjustment	Multi-angle leg adjustment (low angle/macro mode)	Mounting Thread	Standard 1/4" camera screw	Feet Type	Anti-slip rubber feet	Weight	1.2 kg	Application	DSLR / Mirrorless Camera / Video Recording / Photography			
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P	PERANTI MUDAH ALIH																													
P.1	Sandisk Ultra Dual Drive 256GB atau yang setara <table><tr><td>ITEM</td><td>SPESIFIKASI MINIMUM</td></tr><tr><td>Jenis Peranti</td><td>Dual Interface USB Flash Drive</td></tr><tr><td>Capacity</td><td>256 GB</td></tr><tr><td>Connector 1</td><td>USB Type-C</td></tr><tr><td>Connector 2</td><td>USB Type-A (standard PC port)</td></tr><tr><td>USB Standard</td><td>USB 3.1 / USB 3.2 Gen 1</td></tr><tr><td>Max Read Speed</td><td>Up to ±150 MB/s (read)</td></tr><tr><td>Write Speed</td><td>Up to ±40 MB/s</td></tr><tr><td>Compatibility</td><td>Windows, macOS, Linux, Android OTG</td></tr><tr><td>Mobile Support</td><td>Android phone/tablet (USB-C OTG)</td></tr><tr><td>App Support</td><td>SanDisk Memory Zone (auto backup phone)</td></tr><tr><td>Plug & Play</td><td>Yes</td></tr><tr><td>Power Source</td><td>Bus powered</td></tr></table>	ITEM	SPESIFIKASI MINIMUM	Jenis Peranti	Dual Interface USB Flash Drive	Capacity	256 GB	Connector 1	USB Type-C	Connector 2	USB Type-A (standard PC port)	USB Standard	USB 3.1 / USB 3.2 Gen 1	Max Read Speed	Up to ±150 MB/s (read)	Write Speed	Up to ±40 MB/s	Compatibility	Windows, macOS, Linux, Android OTG	Mobile Support	Android phone/tablet (USB-C OTG)	App Support	SanDisk Memory Zone (auto backup phone)	Plug & Play	Yes	Power Source	Bus powered			
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