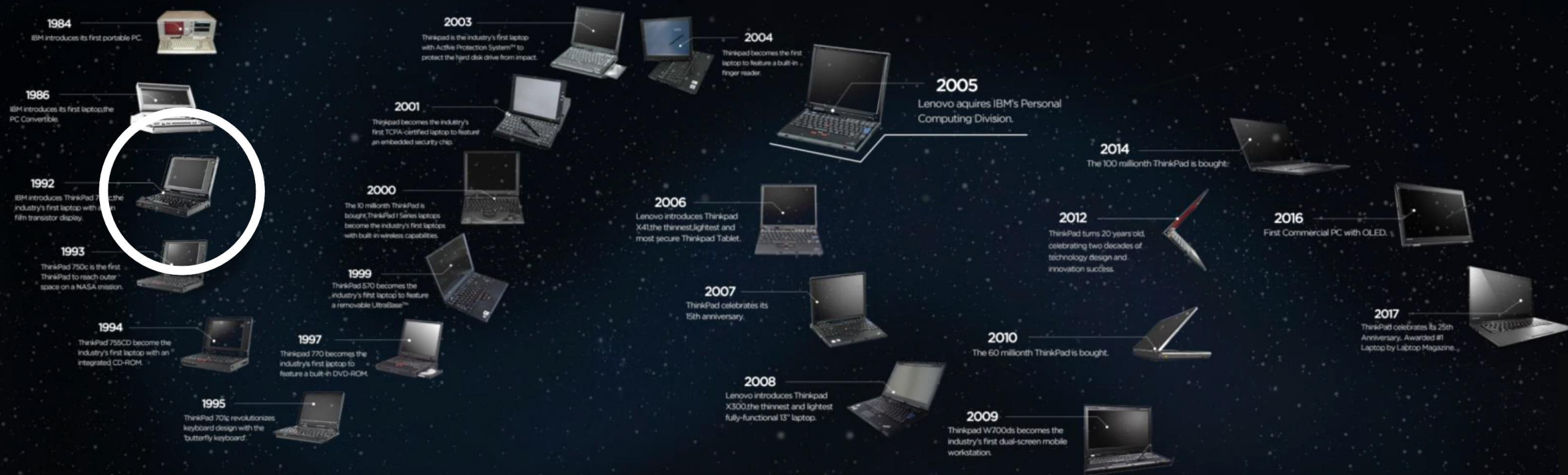


# ThinkPad 25



# ThinkPad 25

We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten years. Don't let yourself be lulled into inaction.

Bill Gates

Arthur C. Clarke  
talks about one of  
his predictions for future  
technology.

BBC Horizon - 1964



**One day a Computer will fit on a desk (Arthur C. Clarke 1974)**





# ThinkPad 25 INNOVATION





1995 - 701c Butterfly



ThinkPad 25



1995 - 701c Butterfly





2001 - TransNote





2009 - W700ds



# ThinkPad X1 Series





# → THINKPAD 2018 INNOVATION STORY

Think

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# ThinkPad 2018 Innovations – Smarter Experience

DESIGN &  
ENGINEERING

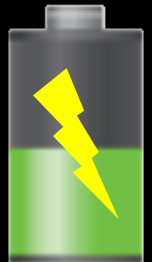
SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

## Improved Performance: Rapid Charge for more ThinkPad travelers

- Offers 80% charge in 60 minutes with a 65W AC adapter for mobile users



A screenshot of the Windows Settings application. The 'Hardware Settings' window is open, showing the 'Power' section. The 'Battery Status' is displayed as 99%. Below this, it indicates '45W USB-C power is connected.' and 'Battery Status Messages: The battery is in good condition.' To the right, detailed battery information is shown for '1 - Main Battery', including 'Condition: Good', 'Status: No activity', 'Remaining percentage: 99%', 'Remaining capacity: 36.64 Wh', 'Full charge capacity: 36.91 Wh', 'Voltage: 16.82 V', 'Temperature: 32 °C', and 'Cycle count: 224'. At the bottom, there is a section for 'Airplane Power Mode' with a warning to protect the airplane AC power outlet. System information at the very bottom includes Device Make (ThinkPad X1 Yoga 2nd), Serial Number (R90N4D0W), Product Number (20GZ38RUS), and BIOS (N1NET32W 1.19). Navigation tabs for 'Apps &amp; Offers', 'Health &amp; Support', 'Hardware Settings', and 'System Update' are visible at the top right of the settings window.

# ThinkPad 2018 Innovations – Enhanced Security & Authentication

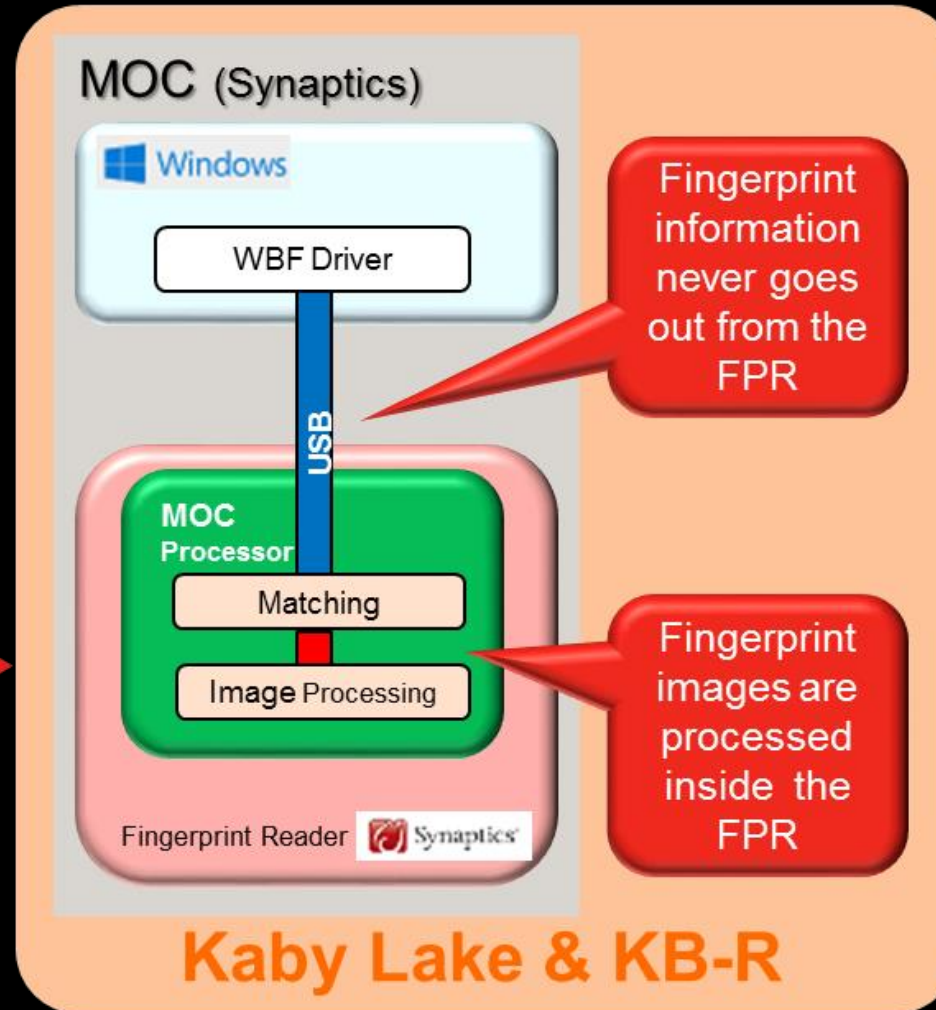
DESIGN &  
ENGINEERING

SMARTER PC  
EXPERIENCE

## Match on Chip (MoC) Fingerprint Reader

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING



- Secure domain
- Raw image flow
- Processed data flow

Think

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# ThinkPad 2018 Innovations – Enhanced Security & Authentication

Prevent biometric hacking

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING



## Fingerprint Spoofing

- Fingerprint systems are vulnerable to **spoof** presentations [1]



Making artificial fingerprints directly from a live finger [1]

- **Liveness detection** distinguishes **live** human biometric presentations from spoof artifacts [2],[3],[4]
- The liveness of a fingerprint is assessed by a **numerical** entity

Machine learning based algorithm for industry-leading anti-spoof protection

Think

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# ThinkPad 2018 Innovations – Enhanced Security & Authentication

DESIGN &  
ENGINEERING

SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

## Safer Online Authentication – Intel Online Connect & FIDO

**fido**<sup>®</sup>  
alliance

**INTEL**<sup>®</sup> **ONLINE CONNECT**  
Security made simple.

- Intel Online Connect on 8th Gen Intel Core™
- PayPal®, Google™, Dropbox™ and Facebook™.
- Universal 2nd Factor (U2F).



**Think**

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All 2018 ThinkPad with FingerPrint

**Lenovo**



# ThinkPad 2018 Innovations – Enhanced Security & Authentication

DESIGN &  
ENGINEERING

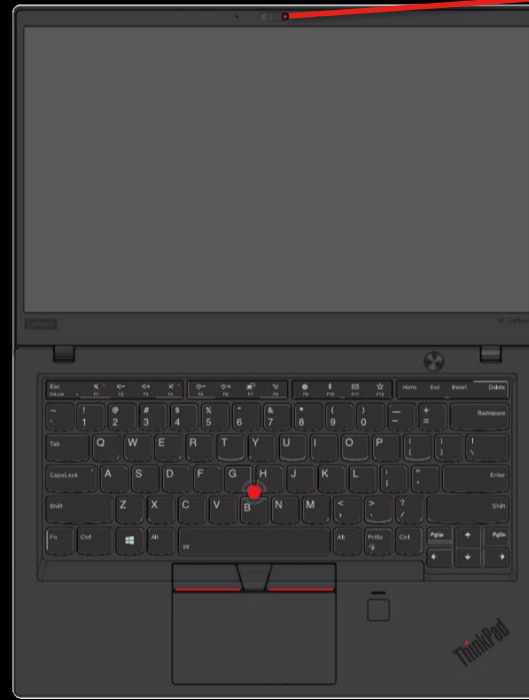
SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

## ThinkShutter



Lenovo

Think

\* This feature does not block the IR camera to ensure Windows Hello log-in with face

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X1Y, X1C, All T Series, X280

# ThinkPad 2018 Innovations – Enhanced Security & Authentication

DESIGN &  
ENGINEERING

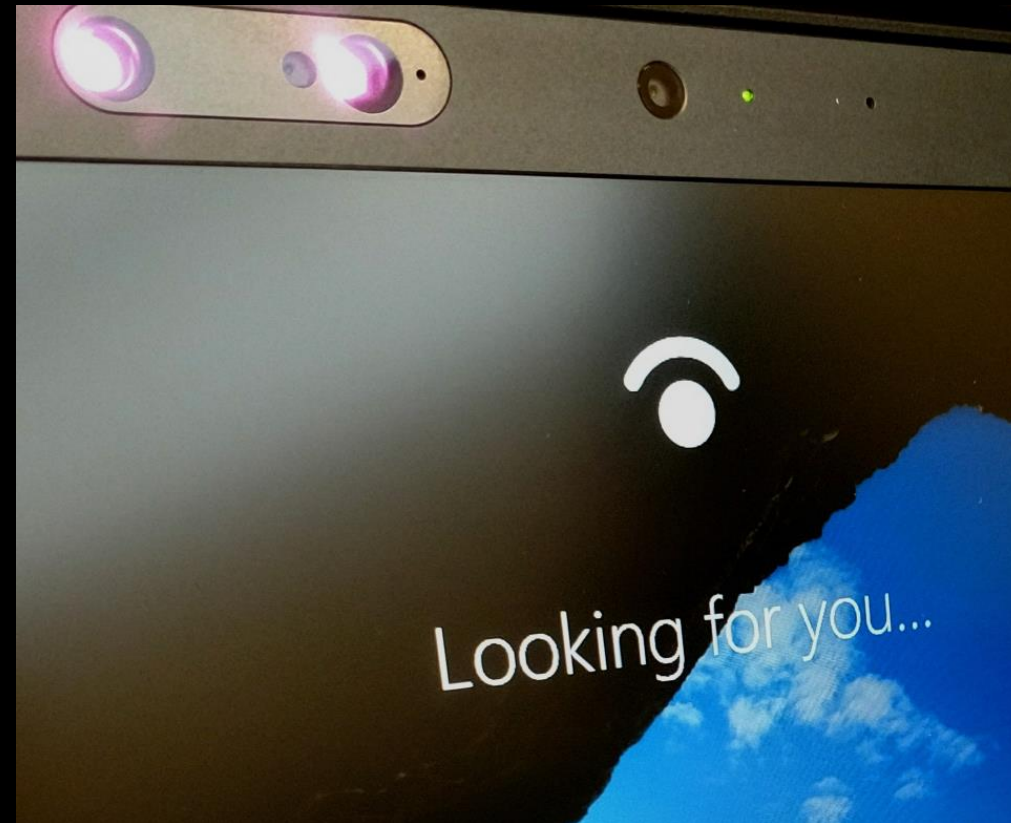
SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

## IR Camera:

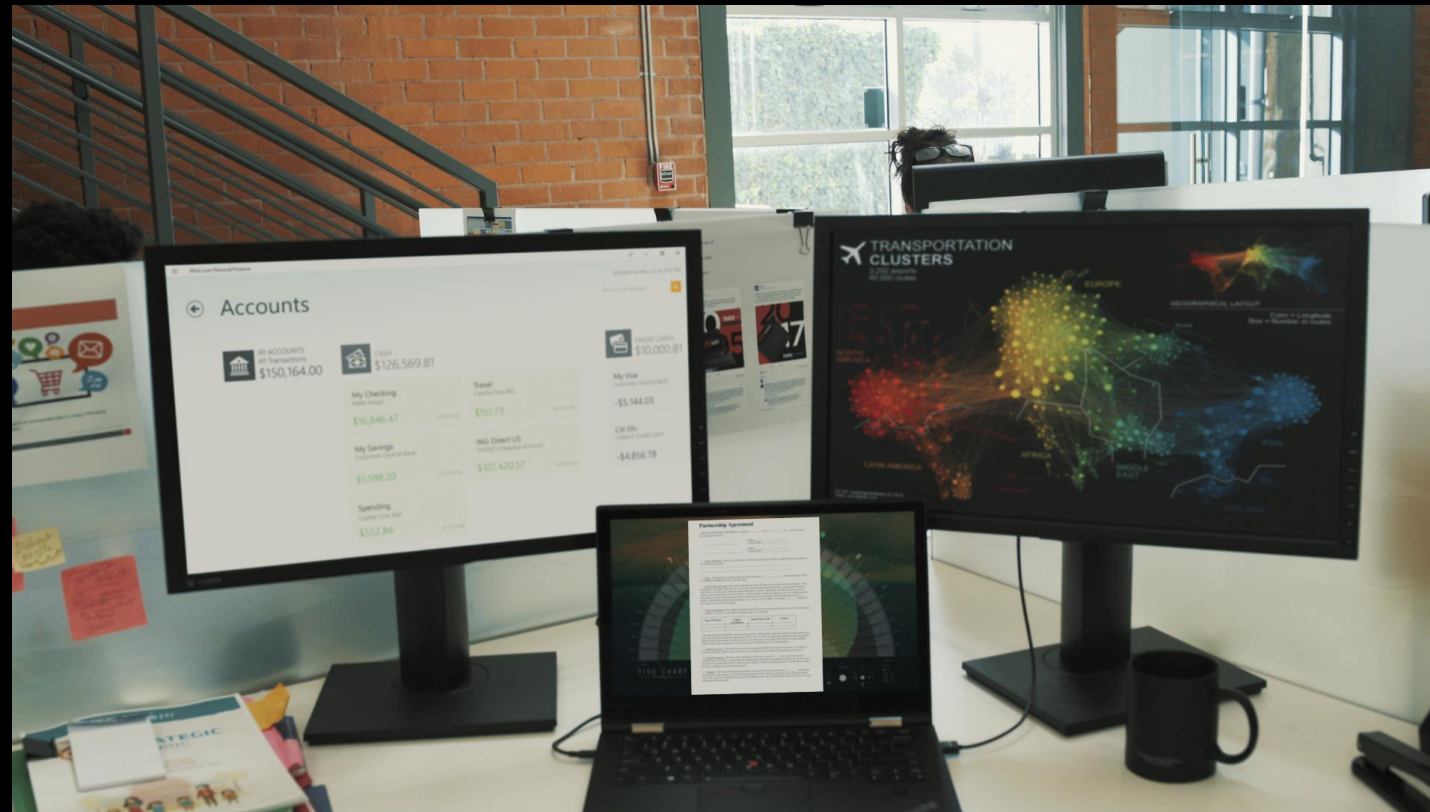
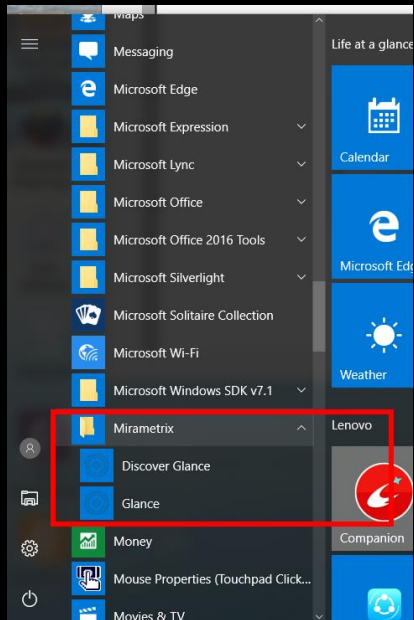


Think

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# Lenovo Glance Eye Tracking





# ThinkPad 2018 Innovations – Design and Engineering

DESIGN &  
ENGINEERING

SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

## HDR Display:



(High Dynamic Range)

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# Trusted Quality & Reliability

DESIGN &  
ENGINEERING

SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

COLD



HEAT



VIBE



HUMID



SHIP VIBE



SHOCK



TEMP



ALTITUDE



RADIATE



FUNGUS



DUST



ATEX\*



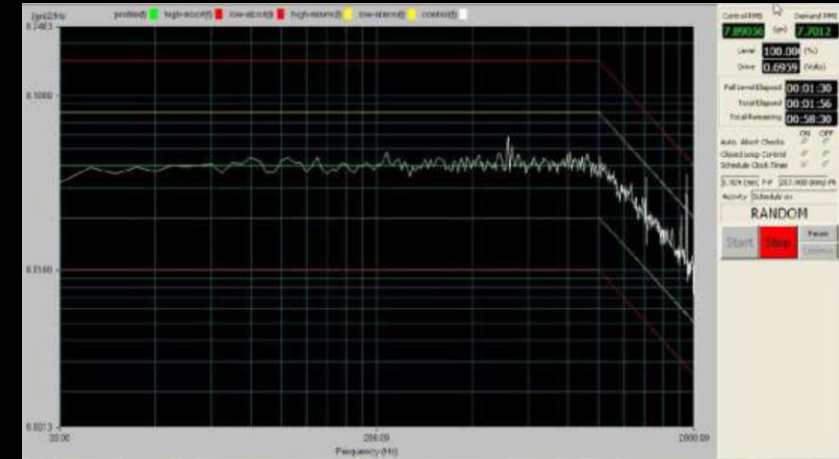
Lenovo

Think

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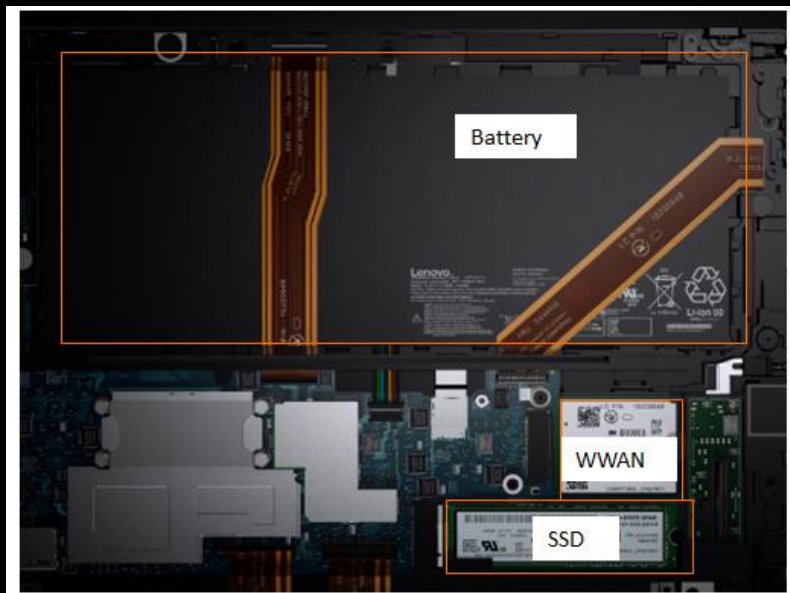
All 2017 Skylake and Kaby Lake ThinkPads are tested

# MIL 810G Tests in external Lab



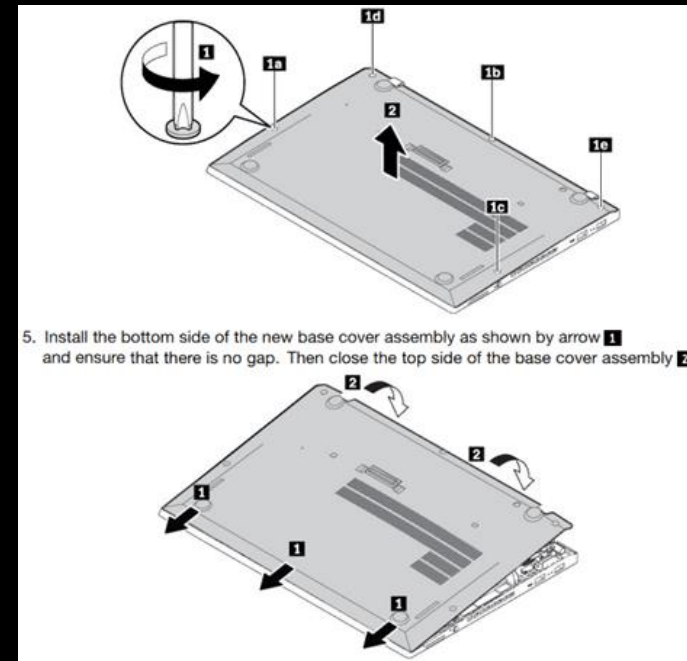
# ThinkPad Innovations – Designed for serviceability

ThinkPad X1 Tablet



5 screws

ThinkPad T480s



5 captive screws

# Trusted Quality & Reliability

DESIGN &  
ENGINEERING

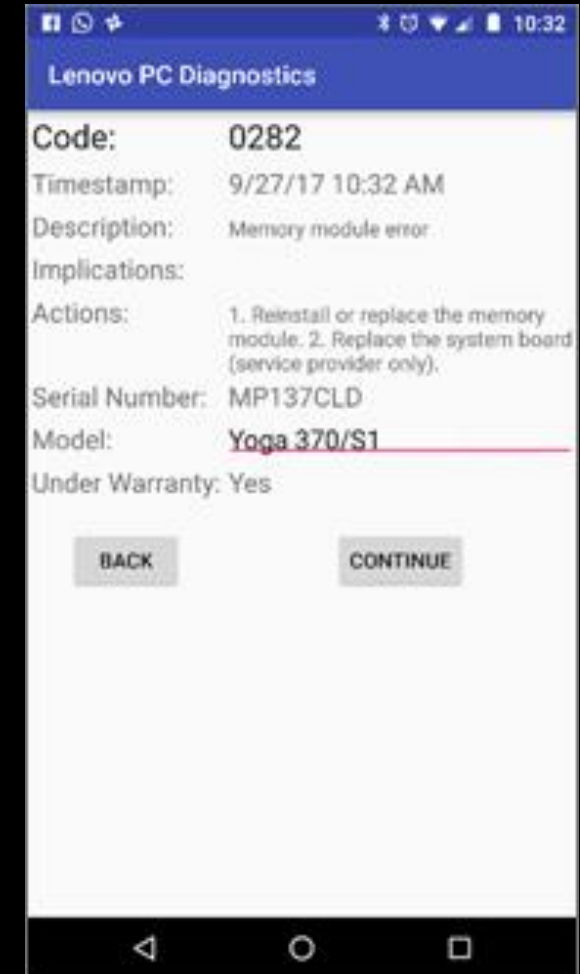
SMARTER PC  
EXPERIENCE

ENHANCED SECURITY &  
AUTHENTICATION

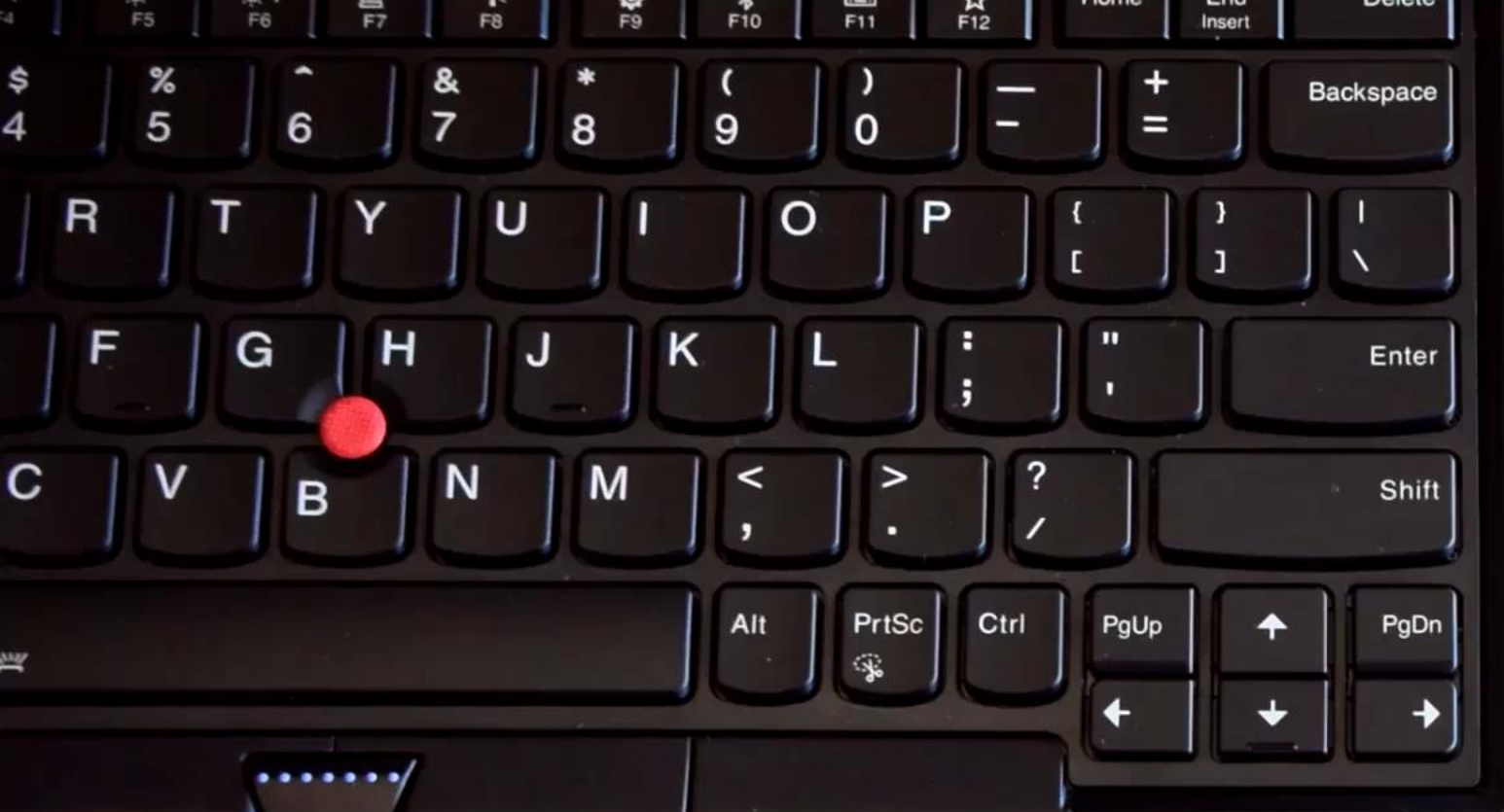
TRUSTED QUALITY &  
RELIABILITY

SOFTWARE &  
IMAGING

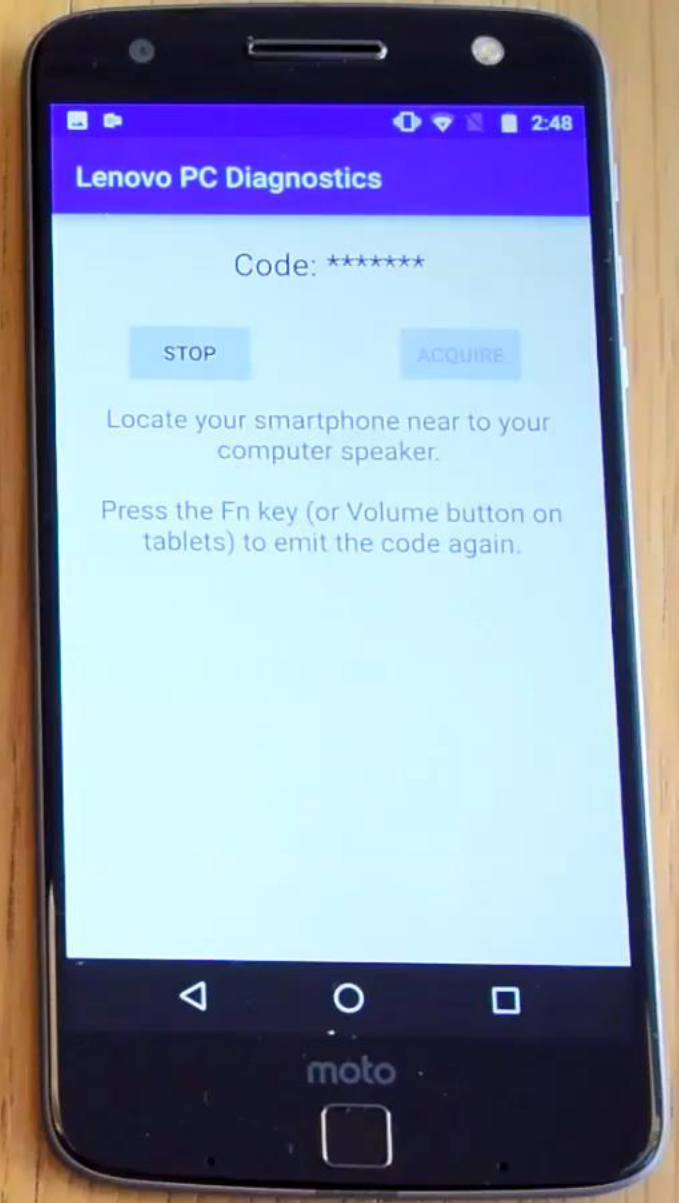
## Intelligent PC Diagnostics



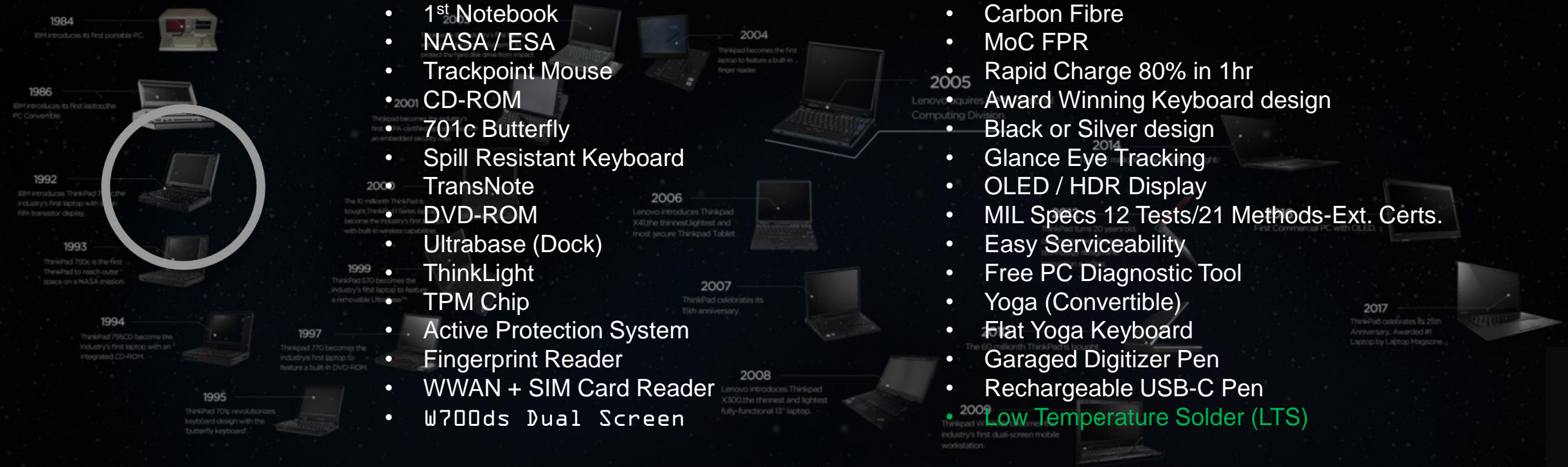




ThinkPad



# ThinkPad 25 INNOVATION



- 1<sup>st</sup> Notebook
- NASA / ESA
- Trackpoint Mouse
- CD-ROM
- 701c Butterfly
- Spill Resistant Keyboard
- TransNote
- DVD-ROM
- Ultrabase (Dock)
- ThinkLight
- TPM Chip
- Active Protection System
- Fingerprint Reader
- WWAN + SIM Card Reader
- W700ds Dual Screen

- Carbon Fibre
- MoC FPR
- Rapid Charge 80% in 1hr
- Award Winning Keyboard design
- Black or Silver design
- Glance Eye Tracking
- OLED / HDR Display
- MIL Specs 12 Tests/21 Methods-Ext. Certs.
- Easy Serviceability
- Free PC Diagnostic Tool
- Yoga (Convertible)
- Flat Yoga Keyboard
- Garaged Digitizer Pen
- Rechargeable USB-C Pen
- Low Temperature Solder (LTS)

# 2018 Notebook Commercial Portfolio

PREMIUM

MAINSTREAM

	 <p>T480s</p>	 <p>X1 Carbon</p>	 <p>X1 Tablet</p>	 <p>X1 YOGA</p>
 <p>T580/P52s</p>		 <p>T480 / A485</p>	 <p>X280 / A285</p>	 <p>X380 YOGA</p>
 <p>L580</p>	 <p>L480</p>		 <p>L380</p>	 <p>L380 YOGA</p>
 <p>E580 E575</p>	 <p>E480</p>			

CS = Clean Sheet

17"

15"

14"

12-13"

Yoga



Aug./Sept. 2018



# Comparison Off/On

- Brightness (nits) is the Unit of Measure.
- Privacy Guard reduces brightness as the viewing angle increases.

Privacy Guard Off

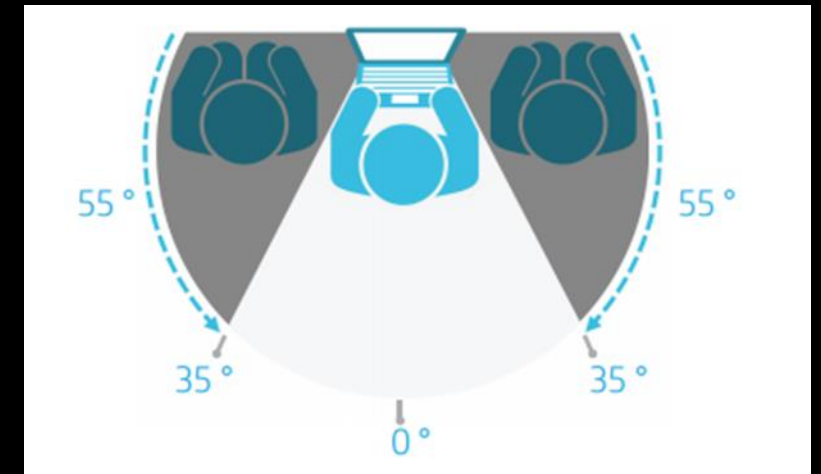


Privacy Guard On



# ThinkPad Privacy Guard vs. SureView

White haze (HP) vs. shadow technique (T480s) to block angled viewing



# 2018 X1 Extreme

## THE ULTIMATE PERFORMANCE

- 1.7KG & 18 MM THIN
- 4K HDR DISPLAY WITH DOLBY VISION & DOLBY ATMOS\*
- OPTIONAL MULTI-TOUCH WITH PEN
- 360° FAR-FIELD MICROPHONES
- THINKSHUTTER CAMERA PRIVACY
- NVIDIA GEFORCE GTX 1050 Ti w/ 4GB GDDR5
- 25% SMALLER 135W POWER SUPPLY

\*via headphones



**THIN. LIGHT. PERFORMANCE.**

# ThinkPad P1

## Stunning Ultra Light Design

- 18.4mm thin, 1.7kg
- Up to 13hrs battery life w/ Rapid Charge
- 35% Smaller 135W power supply
- Blackout Paint and Logos

## Uncompromised Performance

- Intel 8<sup>th</sup> Gen 6-core i5,i7 & Xeon CPUs
- NVIDIA Quadro P1000 & P2000 GPUs
- Dual DIMM Up to 64GB
- Dual M.2 Storage Up to 4TB

## Immersive Display and Sound

- Stellar 15.6" UHD Touch Display  
Dolby Vision
- Dolby Atmos for Headphone
- ThinkPad Pen Pro Compatible

## Superior Security


- Camera Privacy Shutter
- Windows Hello w/ IR Camera
- Touch FPR
- Smartcard Reader





# P1 & X1 Extreme | Ultra Thin, Extreme Performance

## P1

- Fight against Dell 5520 MWS
- Acquire MBP users of Adobe 
- Customers needing ISV certs
- Most Powerful: Xeon + Quadro

- Attack in SMB & Consumer Channels
- LE Mobile Travelers requiring 15"
- Data Intensive Users
- Prosumer Photo, Video, and Graphics

## X1 Extreme

Precision 5520

zBook Studio G4

MBP 15

Dell XPS 15

P1

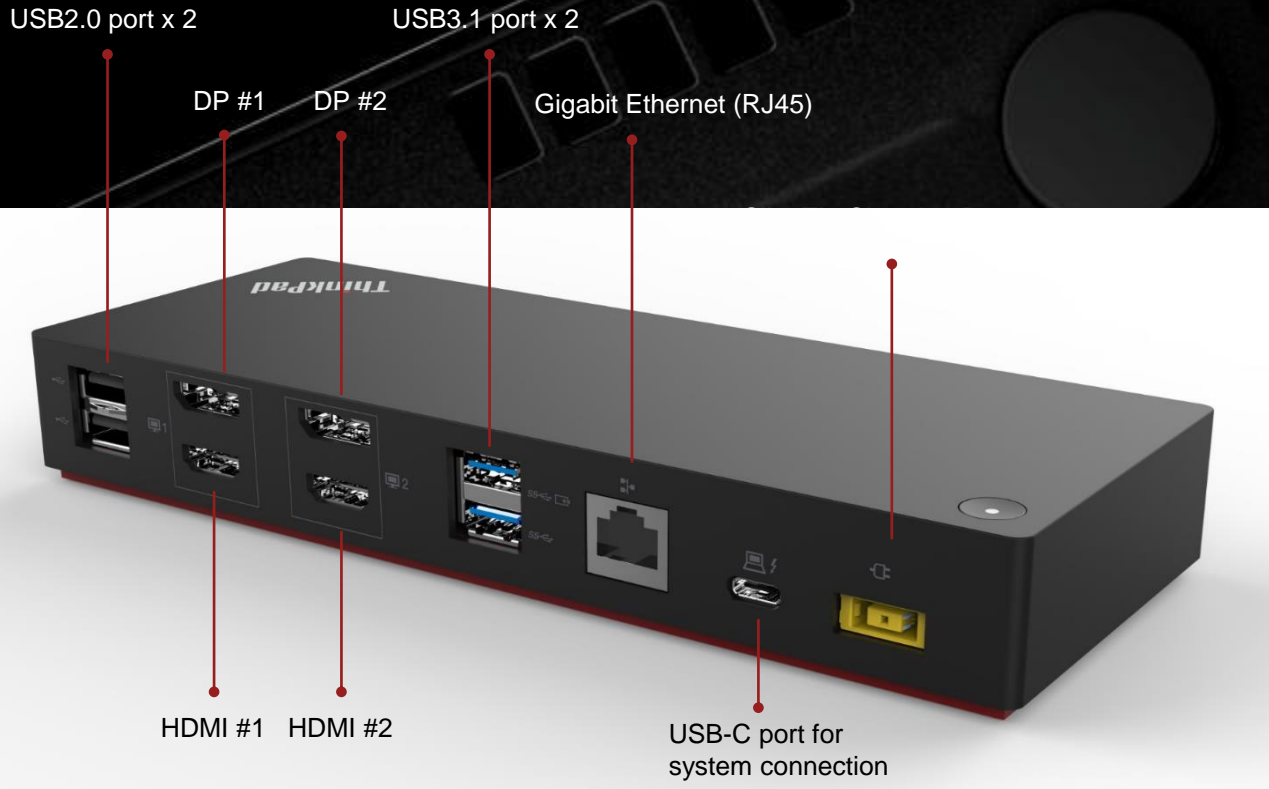
X1 Extreme



# P1 vs X1 Extreme

	P1	X1 Extreme
<b>Dimension</b>	361.8 x 245.7 x 18 (18.3 w/touch) mm	361.8 x 245.7 x 18 (18.3 w/touch) mm
<b>Weight</b>	3.75lbs / 1.7kg (4.7lbs / 1.8kg)	3.75lbs / 1.7kg (4.0lbs / 1.8kg)
<b>Screen Size &amp; Resolution</b>	15.6": FHD IPS AG 300nits, 4K IPS AR/AS w\ touch 400nits	15.6": FHD IPS AG 300nits, 4K IPS AR/AS w\ touch 400nits
<b>CPU</b>	CFL-H: i5/i7, i5/i7 vPro & <b>Xeon</b>	<b>CFL-H: i5/i7, i5/i7 vPro</b>
<b>Graphics</b>	Nvidia Quadro P1x00 maxP w/4GB GDDR5 Nvidia Quadro P2x00 maxQ w/4GB GDDR5	<b>Nvidia GeForce 1050 Ti (MaxQ w/4GB GDDR5)</b>
<b>Memory</b>	DDR4 (2666MHz): 8/16/32GB/64GB Non ECC & <b>ECC</b> Dual DIMM	<b>DDR4 (2666MHz): 8/16/32GB/64GB Non ECC Dual DIMM</b>
<b>Storage</b>	2 Devices (2x M.2 2280 PCIe TLC & MLC w/ Raid 0/1 <b>Up to 4TB (2x 2TB PCIe SSD)</b> )	<b>2 Devices (2x M.2 2280 PCIe TLC &amp; SATA w/ Raid 0/1 Up to 2TB (2x 1TB PCIe SSD)</b> )
<b>Camera</b>	HD w/ThinkShutter, HD + IR	HD w/ThinkShutter, HD + IR
<b>Battery (Size / Life)</b>	80Whr / Up to 13hrs	80Whr / Up to 13hrs
<b>Rapid Charge – 80%</b>	Yes (w\ 135W AC)	Yes (w\ 135W AC)
<b>Keyboard</b>	Dual Pointing CS18 Keyboard w/o Num Pad, Backlight	Dual Pointing CS18 Keyboard w/o Num Pad, Backlight
<b>Pen</b>	Yes (optional, not garaged)	Yes (optional, not garaged)
<b>Docking</b>	<b>Thunderbolt 3 WS Cable Dock w/PD</b>	<b>Thunderbolt 3 WS Cable Dock w/PD</b>
<b>Ethernet</b>	Via Ethernet Dongle	Via Ethernet Dongle
<b>I/O Ports</b>	2x USB3.1 (1x PWR), 2x TBT3, 1x SD	2x USB3.1 (1x PWR), 2x TBT3, 1x SD
<b>Video Ports / Audio</b>	HDMI 2.0, TBT3 (DP 1.4), Dolby Premium Audio	HDMI 2.0, TBT3 (DP 1.4), Dolby Premium Audio
<b>Wireless Communication</b>	WLAN	WLAN
<b>Biometric / Security</b>	Touch FPR, IR Camera, <b>ThinkShutter</b> , SCR, dTPM 2.0	Touch FPR, IR Camera, <b>ThinkShutter</b> , SCR, dTPM 2.0
<b>AC Adapter</b>	135W Slim Tip, 118 x 77x 22mm (220cc)	135W Slim Tip, 118 x 77x 22mm (220cc)

# HYBRID USB-C DOCK



# THUNDERBOLT 3 DOCK GEN 2



## Key features include:

- Refreshed USB-C docking solution with Intel Thunderbolt 3 Titan Ridge Chip set
- 2DPs and 2HDMI ports support single UHD (5k@60Hz) video output, or dual 4k@60Hz displays \*
- One USB-C downstream port (TBT3) provides up to 22Gbps data transfer or 5k@60Hz UHD video, and 5V, 3A power for mobile charging
- Provide up to 65W power for mainstream system charging (follow PD3.0 profile)-mainstream sku
- Standard TBT 3 Cable with 0.7m length, providing 40Gbps bandwidth
- 5 x USB 3.1 Gen2 ports
- Support WOL, PXE boot on selected ThinkPad notebook systems
- Power Button minor, Control system power ON/OFF

\* Thunderbolt 3 Dock Gen2 could support DP1.4 and HDMI2.0, the real video resolution could be different depends on NB side.



# LENOVO ACTIVE PEN 2



Bluetooth connectivity



Paper like writing



Configurable buttons

- Bluetooth 4.0
- 2 side buttons and 1 top button
- Up to 4,096 levels of pressure sensitivity
- 2000 hours battery life
- Nominal Voltage: 1.5V
- Pen Size: 152\*9.5\*9.5mm
- Pen Weight: 17.8g
- Pen, USB pen holder, three replacement tips and tip change tool, 1AAA battery(not for Korea and Columbia) and 2 coin battery, Quick Start Guide, Warranty card in box
- Battery: 1 AAAA (for writing) and 2 SR527SW coin battery (for Bluetooth) required

**SHIP SUPPORT:** August 2018

**COUNTRY AVAILABILITY:**





# Top Button Configure in Pen & Windows Ink

- Active Pen 2 only



# Windows 10

## Add Active Pen 2 as Bluetooth devices

To pair a pen with your PC, select the **Start** button, then select **Settings** > **Devices** > **Bluetooth & other devices**. Hold down the Top button on your pen for seven seconds until the LED indicator flashes in white to turn on pairing mode, then choose the pen from the list of devices and select **Pair**.

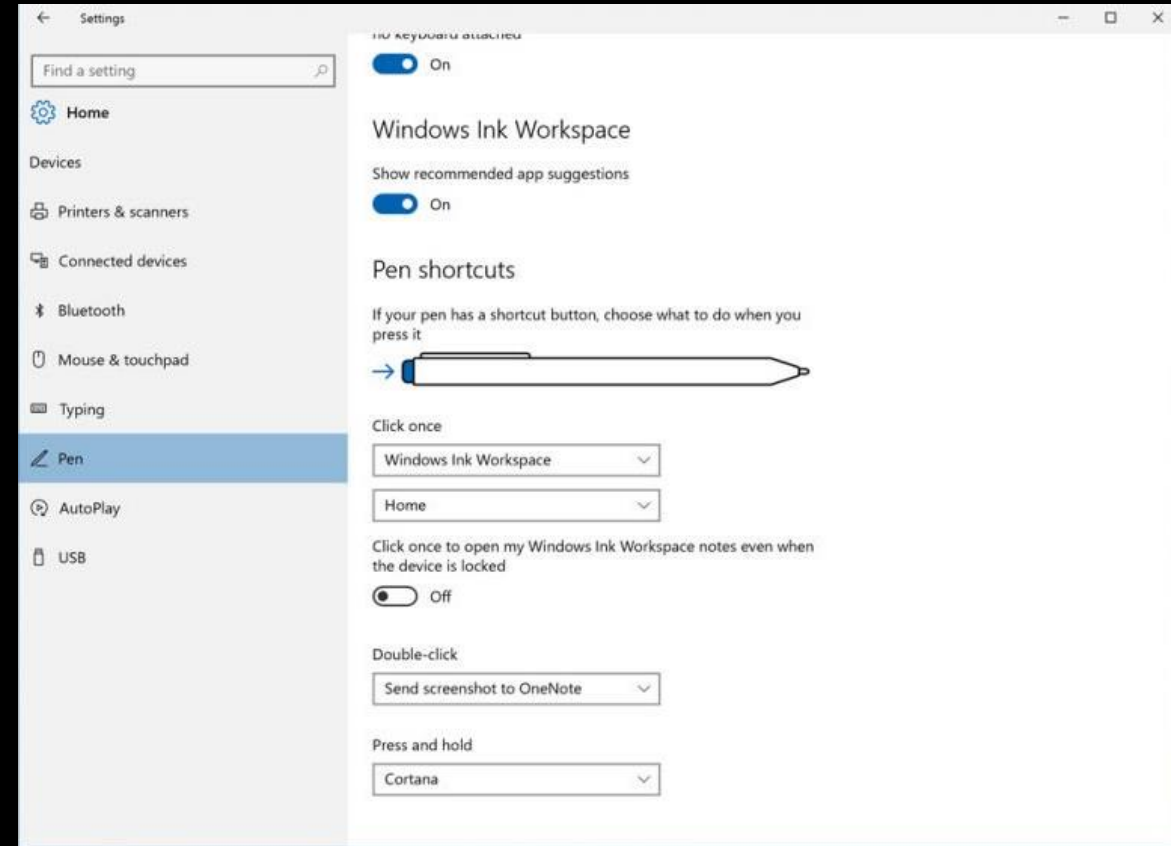
## Configure Top Button in Pen Shortcut

Customize what your pen does and how it works with your PC. Choose which hand you write with or what your PC does when you click or hold down the pen's shortcut button.

1. To change settings, select the **Start** button, then select **Settings** > **Devices** > **Pen & Windows Ink**.
2. Configure top button **Click once**, **Double-click**, **Press and hold**
  - Windows Ink Workspace, One Note, Sticky Notes, Drawings, Sketch, Cortana, any other app
3. Example: Configure '**Click once**' as [Windows Ink Workspace](#)

To open the [Windows Ink Workspace](#) when you click the pen button, select the drop-down list under **Click once**. Choose the workspace from the first drop-down list, then choose what part of the workspace you want to open in the second drop-down list.

4. To open the workspace even when your PC is locked, turn on **Click once to open my Windows Ink Workspace notes even when the device is locked**.



# THINKSMART HUB 500 SKYPE ROOM SYSTEM



# ThinkSmart

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# THINKSMART HUB 500

## TOP FEATURES



3-COLOR  
RING LED FOR SKYPE STATUS



SECURE  
CABLE MANAGEMENT DOOR



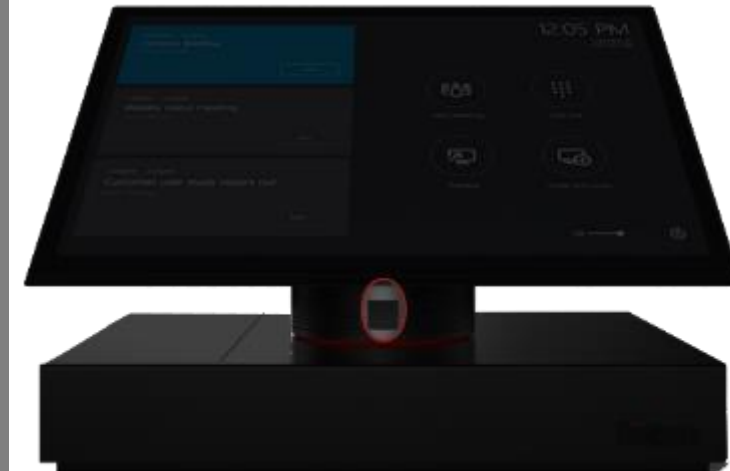
KEY FEATURE  
360° ROTATABLE SCREEN



DOLBY® PREMIUM  
AUDIO



AUTO-ON WITH HUMAN  
PROXIMITY SENSOR





# THINKSMART HUB 500 Physical Ports and Cable Management





thanks.

