HP Sure View Reflect

Integrated privacy solution

HP Sure View is an integrated privacy screen solution to mitigate the risk of data being compromised visually when observed by a bystander. The integrated nature of HP Sure View enables maximum flexibility by a single key press. HP Sure View Gen Reflect offers the user increased privacy using unique, reflective technology. This paper covers HP Sure View technologies offered on HP business notebooks.

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The risk of visual data exposure

Visual hacking is the act of unauthorized individuals capturing or viewing confidential, sensitive, or private information for unauthorized use. Visual hacking happens quickly most times - sometimes minutes or seconds. Often a victim is unaware of the attack.

In the office, a visual hacker may never be noticed. This is either because people don't understand the danger of stolen data or their awareness has not been heightened due to the familiar environment.

A social engineering security firm consultant recently described the ease of stealing company data. In fact, the security team reported that they were successful in visual hacking attempts 90 percent of the time. The consultant relates how companies spend millions on cyber security but fail to address the human element.[1]

Nearly two-thirds of companies report that they have been compromised in the past 12 months by attacks which originated at endpoints (e.g., PCs), a 17-percent increase year-on-year.[2] As a result, company privacy policies must adapt. This drives the need for new approaches, such as the NIST Framework for Improving Critical Infrastructure Cybersecurity.[3] This discusses the importance of an organization's risk strategy to protect the confidentiality, integrity, and availability of information, including data leaks while in transit or at rest.

HP Sure View allows users to work confidently from any location without fear of on-screen data being compromised by prying eyes. Yet users maintain the flexibility to share the screen with clients and colleagues with a single keystroke, toggling the feature on and off.

Business impact from a security breach

Downtime from a cyber-attack harms more than the IT department, it harms the entire organization and the brand. Consider the ripple effect of these business losses resulting from a security breach:

- Loss of brand equity and customer trust
- Customer data breach resulting in fines and litigation
- Loss of critical operation data
- Loss of productive business operation time that should be spent serving customers
- Loss of sales and operations revenue

Worldwide, cybercrime will be a $6T problem by 2021.[4] The Ponemon Institute published its annual Cost of a Data Breach Report, which revealed the average cost of a data breach in 2019 is $3.92 million. Further, 36% of the cost of a data breach comes from the loss of business stemming from loss of customer trust after a data breach incident.[5]

It's more than just a hassle. Downtime from attacks can destroy your bottom line.

Feature controls

Enable/Disable Privacy Mode

- To enable privacy mode, press F2 key.
- The white LED on the F2 key will illuminate when privacy mode is ON.
  Note: Not all models have an LED indicator for Sure View.

- To disable privacy mode, press F2 key.
- No LED will be visible when privacy mode is OFF.
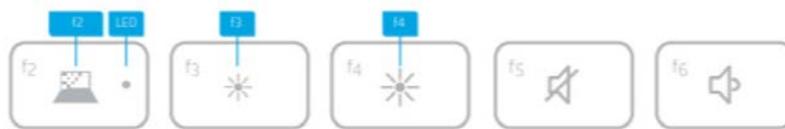
Setting Privacy Level

- To increase the brightness in privacy mode, press F4 key until the desired level is achieved.
- To decrease the brightness in privacy mode, press F3 key until the desired level is achieved.
- The system will remember the last used privacy level.

Key differences between HP Sure View generations

HP Sure View Gen 2 provided a marked improvement from Gen 1, by improving the privacy experience, and simplifying the feature activation with a single, pre-programmed function key. When privacy mode is activated on Gen 2, the screen contrast is reduced off-axis to obscure the on-screen image. This provides a bright white privacy experience.

Figure 2. HP Sure View Gen2 bright white privacy experience.

The introduction of HP Sure View Gen 3 returned to a dark privacy experience reminiscent of our Gen 1 solution, with an entirely new implementation and improved privacy.

Figure 3. HP Sure View Gen3 luminance-based privacy experience.

HP Sure View Reflect uses proprietary reflective technology to reflect the light in the environment, obscuring the screen when viewed at an angle. This provides an improved privacy experience in light and dark environments.

Figure 4. HP Sure View Reflect copper-tinted privacy experience.

Experience differentiators

HP currently offers a choice of Sure View options to provide the best privacy experience for users based on their primary locations that require use of privacy mode.

	HP Sure View Reflect	HP Sure View Gen 3	HP Sure View Gen 2
Experience	Copper tint	Dark	Bright
Bright Environments	Best	Good	Better
Dark Environments	Best	Better	Good
Image Clarity	Best	Better	Good

Figure 4. Use case examples of HP Sure View.

Visible Experience

- Bright, contrast-based privacy solution
- Dark, luminance-based privacy solution
- Copper, reflective privacy solution

Bright Environments

- Examples: outdoors, modern workspaces, windows offices, customer service environments (to instill confidence of privacy to the customer)

Dark Environments

- Examples: planes, late night travel, standard offices, conference rooms, indoor cafes, courtrooms, law offices

Image Clarity

- While in privacy mode, HP Sure View Reflect uses reflective technology to reduce visibility off-axis and minimizes the impact on image clarity.

Improvements with HP Sure View Reflect

The implementation of Sure View Reflect is powered by a proprietary, reflective technology that uses the light of the environment to obscure visibility when the user activates privacy mode.

This reduction of light from the panel improves the user experience in two ways. First, reduction of light gives improved front-of-screen performance in darker environments, and also attracts less attention by not illuminating users who are trying to stay private. Secondly, by implementing a solution that draws less power from the battery, battery life can be extended gen over gen while in privacy mode. On the HP Elite Dragonfly with HP Sure View Reflect, testing has revealed over 9 hours of improvement in battery life[6] over the HP EliteBook x360 1040 G5 with HP Sure View Gen 2.

	HP Sure View Reflect HP ELITE DRAGONFLY	HP Sure View Gen 3 HP ELITEBOOK X360 1040 G6	HP Sure View Gen 2 HP ELITEBOOK X360 1040 G5
Sharing Mode	Up to 19 hrs, 15 min	Up to 19 hrs, 30 min	Up to 14 hrs, 00 min
Privacy Mode	Up to 20 hrs, 15 min	Up to 20 hrs, 30 min	Up to 11 hrs, 15 min

Figure 5. MM14 battery duration comparisons between HP Sure View Gen2 and HP Sure View Gen3 on the HP EliteBook x360 1040 G5 vs. G6 and HP Sure View Reflect on the HP Elite Dragonfly.

Panel brightness impacts

Privacy configurations, including touch and anti-glare, will impact the perceived brightness of the panel.

Competitive positioning

HP developed the world's first integrated privacy screen and continues to offer our customers the latest privacy technologies.

While many competing integrated privacy solutions design their technology by adding layers in front of the panel, HP delivers the latest technology to create a thin and elegant design.

Defining effective privacy

HP's cutting-edge design enables less than 1.5% of the screen to show through at a 45-degree angle, which is the industry-accepted threshold of privacy. Competitors frequently only achieve 4% at the same angle. The result is a less-effective privacy experience.

Form Factors

HP has a broad selection of form factors that support an integrated privacy screen including ProBook and EliteBook PC's with on touch and non-touch display options. HP Sure View Reflect is available on select HP ProBook and EliteBook PCs with touch and non-touch displays.

Technical Whitepaper

1. https://www.govtech.com/security/Confessions-of-an-Identity-Thief.html AND https://www.cybintsolutions.com/employee-education-reduces-risk/
2. https://securityintelligence.com/posts/whats-new-in-the-2019-cost-of-a-data-breach-report/
3. https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.04162018.pdf
4. https://www.healthcareitnews.com/news/global-cybercrime-costs-will-exceed-6t-annually-2021
5. https://www.businesswire.com/news/home/20181016005758/en/Study-Reveals-64-Organizations-Experienced-Successful-Endpoint
6. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

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