**High-Level Comments**

* Read it out loud in entirety, in a normal voice, meaning don't skip over everything. I think you'll see the point.
* Delete results that are not needed.
* Avoid describing standard methods.
* Interesting work, but this content has not been selected or filtered.
* It is our responsibility to write up the work as a research paper. Much of this reads like a detailed whitepaper and datasheet. The content is not advanced, but the paper is very hard to read, even for me.
* In many passages, it is unclear or hard to figure out what the point is, and how the details at each section and hierarchical level relate to each other.
* There are trivial errors of nomenclature throughout. Minor ones that you would not normally make.
* Nomenclature to use
  1. tactile display
  2. architecture
  3. encoding tactile signals as video (or similar)
  4. optical control
  5. video hardware
  6. magnetic pin
  7. element / tactile element (actuated element?)
* Nomenclature to avoid
  1. graphics pipelines (beyond the one ref in the abstract and in Fig 1)
  2. light-orchestrated
  3. high-resolution
  4. fingertip-scale
  5. general-purpose (probably)
  6. video synthesis (unless used in relation to generation of video content)
  7. unit cell (too abstract)
  8. optotactile

**Additional Data Capture**

* Demos
* Videos

1. Video of line moving across device
   * 1. Zoomed In
     2. Zoomed Out
   1. Videos of experiments
2. Interactive demos
   * 1. Monitor with ball bouncing
     2. Projector?
     3. Motion Graphics (truck moving across screen?)
     4. Gradient following (proportional control)

* Consider using greyscale rather than color graphics for the video graphics shown in the figures. The phototransistors respond to intensity not color.
* Magnitude estimation study: I think this would be a good idea. It's very quick to run, aligns with the mechanical measurements, and probably avoids the need to generate quite as much video content to drive the point home. You and Max both have the code. N=6 is probably fine. Single impulses.

**Introduction**

* Modify content and language throughout to align with title and abstract. Then proofread to doublecheck. Examples throughout seem either misaligned with the content of this paper or ambiguous (at times straw-man like)
* Introduction, structure: The structure and logic in the introduction does not lend itself to a convincing argument.
* 33: Lead with content on the topic of the paper. The paper is not about what is described in the first sentence.
* 48: This sentence does not make sense, and is off topic.
* 47-65: Little of this content sheds favorable light on the contributions of the paper, which is not about high resolution displays.
* 67-82: Avoid writing in broad strokes about existing technologies, and especially avoid critiquing general categories of technologies loosely related to the research. This is a research paper. Write about the research. It is easier that way.
* 80: A display cannot strive, because it lacks that sort of agency.
* 67, 82: The leading sentences in each paragraph are too generic.
* 83: More recent than what?
* 84: What is a general purpose application?
* 85: The choice of references here seems eclectic and it is hard to see where this is going.
* 99: The argument here is specious. It cites the cost of a device produced in volumes of 1-3, and anyway is never compared to anything.
* 100: Alternative to what? Unclear.
* 105: hat does success mean?
* 106: I would omit anything microfluidic

**Section II**

* General principle: This is a research paper, and you can assume the reader has skills and knowledge in the relevant general areas of engineering.
* 148-154: Throughout this section avoid discussing "applications". This is not the place for it. Motivation and rationale in the introduction. (Anyway, avoid reference to legacy technologies. Your work is visionary.) – **Want to demonstrate that this is a family of devices and can be integrated with different types of video displays. How much to narrate here / what to show in Figure 1D?**
* 167: "convert … to …" is ambiguous, but I think the purpose statement should have appeared in the beginning of this section not way at the end. – **Ask Yon for clarity here**
* 188-242: This does not read like a research paper, it reads like a lab report. You could just put salient values in a table, but they are mainly in the figure. Certainly don't narrate those, or other details that are obvious in the circuit diagram. Streamline this content.
* 243: Wasn't this already discussed? Do you mean the actuator or the array? - **Look at terminology with Yon: Optocoupled Driving Circuit, Actuator Array**
* I think you can skip most of the first 3 paragraphs in subsection C. Just describe the design.
* 260: This is not the place to describe the challenge. Just describe the design, with concise rationale for the design details. Certainly don't cite general scientific literature.
* 272: Just describe the design, don't compare with alternatives ("resonant..") that are never really described, and that the paper is not about.
* 301-316: This is too belabored and repetitious.

**Section III**

* Move some sections/equations to appendix
* 319: First paragraph is mostly not needed. Just lead with line 324. You don't need to define anything about z, just introduce it as e.g. F(z), where z is displacement normal to the surface and F is force in the z-direction. I just saved an entire sentence.
* 357: All I see here are a bunch of numbers. Paragraph does not seem to be doing anything other than listing values narratively, which is not a good idea.
* 360: Avoid "final".
* 370: Key take away is too colloquial.
* Figure 4: Describe the results not the method n the caption. Just describe what the figures show. There's too much ancillary content.
* 386: Paragraph is not particularly readable as english. Read it aloud.
* 377-419: I'm trying to read this, but it's extremely unrewarding. It kind of reads like a bunch of things that could be done or were done without actually communicating results. All I'm looking for, really, are results. One could reasonably reeduce this entire set of paragraphs to a single sentence or so:
* "We compared results of the electromagnetic model to results obtained using FEA numerical analysis, finding that (insert text)."
* Details like "Shielding factor" (among others) are referenced exactly once in the paper (here) and never mentioned elsewhere.
* 402: avoid listing stuff not modeled.
* 421: Same comment about "contact with user"
* Same comment about readability of paragraph at 421-438. This is not a datasheet, it is a research paper.
* 436: Avoid "lastly". This is not a model, it is a physical law. It does not require an entire paragraph.
* 442: The preceding content inhibits readability and retention, so when I reached 442-446 I did not understand which element in (10) comes from the FEA and which from the analytical model. One does not need to write "Newton's second law", nor does one need to write the equation number immediately before writing the equation.
* 447: Just state the most important result. They don't need a leading sentence.
* 457: The reader probably has no idea what to focus on. Here, there is a description of energy. Elsewhere force. But at the outset momentum is emphasized. It is unclear what is important.
* 470: Avoid describing matlab in the paper. Reading this paragraph at the end of page 7, I have two concerns. First, the only reward for parsing what is generally fairly standard content that need not be elaborated in detail is a statement that "the system responds rapidly", and (etc). However, I'm not actually sure the result here is meaningful, since the timescale is supposed to be < 5 ms? Figure 5 shows a timescale of 30 ms. I can't remember what the distinction is.

**Section IV**

* 591: Don't describe "before thermal failure", avoid "still be operated", etc.
* Similar comments for the thermal section as for the sections noted above.
* 603: I really cannot remember which part is supposed to be the heat sink.
* Similar comments for the other parts of the paper not mentioned.

**Section V**

* 657-: Describe the task in language that makes clear why it is meaningful. Users are not primarily sliding on a monitor, they are spatially exploring a planar domain, etc. The point is not to elevate the language, but to emphasize the function not the technological components.
* Figure 7D is quite difficult to understand.