

Touchscreen Technology Comparison



Key	Best in category	+++
	Some advantage	++
	Neutral	
	Perhaps not acceptable	--
	Not possible, worst in category	---

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Characteristic ▼	Technology ►	Resistive		Surface Wave (SAW)			Capacitive		Infrared
		AT4 4-wire	AccuTouch 5-wire	IntelliTouch	SecureTouch	iTouch	Surface Capacitive	Projected Capacitive	CarrollTouch
Performance	Speed	+++	+++	+++	+++	+++	+++	--	
	Sensitivity			++	++	+++	+++		+++
	Resolution	+++	+++	+++	+++	+++	+++		+++
	Accuracy		+++	+++	+++	+++	--	--	+++
	Calibration Stability		+++	+++	+++	+++	--		+++
	Drag					++	+++		+++
	Z-axis	---	---	+++	+++	+++	---	---	---
	Double Touch	1	--	--	+++	+++	+++	--	
Parallax (lack of)					+++	2	--	--	
Input Flexibility	Glove	+++	+++	+++	+++	+++	---	+++	+++
	Fingernail	+++	+++	---	---	---	---	--	++
	Credit Card	+++	+++	---	---	---	---	---	++
	Pen	+++	+++	---	---	---	---	---	++
	Signature Capture	+++	+++	---	---	---	---	---	---
	Handwriting Recognition	--	--	---	---	---	---	---	---
Optics	Light Transmission	--	--	+++	+++	+++	5	--	+++
	Reflection (lack of)			+++	+++	+++	5	---	+++
	Clarity			+++	+++	+++			+++
	Color Purity	--	--	+++	+++	+++			+++
Mechanical	Small Sizes (<10")	+++	--	--	--	---		--	--
	Large Sizes (>19")	---	--	+++	---	---	--	6	+++
	Curved CRTs	---			---	+++		---	---
	Ease of Integration	+++	+++	--	--	--	++	--	
	Sealability	+++	+++	--	7	--	7	+++	+++
	IP65/NEMA4	+++	+++	---	---	---	---	+++	+++
Electrical	Controller Chip Available	+++	+++					+++	+++
	Low Power/Battery Operation	+++							
	Operation with Poor Ground							---	---
	ESD		+++	+++	+++	+++	--		+++
	EMI/RFI	+++	+++	+++	+++	+++	--	---	+++
Environmental	Temperature						+++	+++	+++
	Humidity							+++	+++
	Shock/Vibration	+++	+++						+++
	Altitude								+++
	In-vehicle	++	++						+++
	Chemical Resistance	+++	+++				---	+++	+++
	Scratch Resistance			+++	+++	+++		+++	8
	Breakeage Resistance				+++	+++		+++	8
	Safe Break Pattern	++	++		+++			+++	+++
	Dust/Dirt	+++	+++				+++	+++	--
	Liquids	+++	+++	--	9	--	9	+++	+++
	Rain	---	10	---	10	---	---	---	+++
	Snow	---	---	---	---	---	---	--	+++
	Ice	---	---	---	---	---	---	---	+++
	Ambient/UV Light	--	11	--	11				
	Fly on Screen								---
	Non-Glass Surface Possible	12	+++	+++					+++
Works Through Other Materials								+++	
Durability/Wear	--	++	+++	+++	+++	++	+++	+++	
Surrounding/Nearby Metal						--	--		
Reliability/Warranty Length		---		+++	+++				+++
Lowest Cost		+++				++	--	--	

Notes

AT4 8-wire resistive touchscreens are similar to 4-wire construction; extra sense lines improve drift on sizes $\geq 10"$, but longevity is not improved
AccuTouch 6- or 7-wire resistive are similar to 5-wire construction; no additional benefits over AccuTouch 5-wire resistive
IntelliTouch Constructed with 3mm thick glass
SecureTouch Same as IntelliTouch, but constructed with 6mm or 12mm tempered or heat-strengthened glass
iTouch CRTs only -- touch sensors applied directly to faceplate, no overlay
Surface Capacitive Also called Capacitive
Projected Capacitive Available in DirectTouch (8mm glass) or ThruTouch (6mm glass behind customer-supplied material up to 18mm thick)
CarrollTouch Low profile 4.5mm bezel with glass, acrylic, or customer-supplied overlay to protect display

- 1 -- = incorrect (averaged) coordinate reported; +++ = simultaneous touches rejected, nearly simultaneous touches reported accurately
- 2 Touch is closest to image as no overlay
- 3 Touch activates just before actual contact (1mm)
- 4 Only technology recommended for metal gloves
- 5 The utmost possible since no overlay
- 6 For LCDs only, plasma not possible due to EMI
- 7 Special sealing materials required (Elo touchmonitors are watertight sealed)
- 8 Assuming proper materials used
- 9 While splashing liquids are OK, extended rain and humidity exposure can lead to internal condensation
- 10 Works with stationary water drops, excessive or moving water must be wiped away
- 11 Polyester coversheet may yellow after years of exposure
- 12 Required for food processing and some in-vehicle applications

No guarantee of acceptability of the technology to the application is implied by this quick reference table
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