

# Parlex Technology Roadmap for Polymer Thick Film Circuits (as of Feb 2009)

METRIC	Driver	Standard User	Advanced User	Future	Long Term
Time Frame		Today	Limited Production	1-3 years	≥ 4 years
<u>Key Parameters</u>					
• Minimum Line & Space (mm)	Disposable sensors	0.25/0.25	0.15/0.15	<0.1/0.1 (digital print)	0.025
• Hole Diameter (mm)	Displays, POS terminals	0.40	0.175 (laser)	0.05 (blind vias)	0.025 (landless vias)
<u>Functionality &amp; Materials</u>					
• Substrate & thickness (mm)	Flexing, roll-roll, RFID	0.075-0.25 PET, PC	≥0.05 PI, PEN, PEI, Paper	0.025 RFID	0.012
• Substrate format	Flexing, RFID, sensors	Sheet & card	Sheet & limited roll-roll	Roll-roll, paper	Next generation substrates
• Conductors	Disposable medical products, RFID	<a href="#">PF012/14 Ag</a> , <a href="#">PF308 Carbon ink</a>	<a href="#">PF026 Ag</a> <a href="#">PF025 Ag/AgCl Print-Plate</a>	Nano-material inks	Semiconducting inks
• Dielectrics (mm)	RFID, medical products, printed electronics	<a href="#">PF114</a> <a href="#">0.035</a>	<a href="#">Improved PF114</a> <a href="#">0.015</a>	Thinner dielectrics for printed transistors & OLED/PLED	0.001 for printed transistors
• Assembly	POS terminals, medical and appliance products, Displays, Smart Cards, RFID	SMT: PTF-ICA & ACA SMT: Cu/PET-ICA & ACA	SMT on PI, RoHS, Flip Chip <20 I/O, min 0.8x0.8 mm	Roll-roll assembly, design & materials Flip Chip >20 I/O	Roll-roll printed electronics, OLEDs for displays & lighting, Flip Chip >60 I/O Min 0.25x0.25 mm