

The Road To Wearable Computing

**An exhibition '*On You: A Story of Wearable Computing*' and
online interactive timeline curated by Thad Starner and Clint Zeagler**

Data Paper

Appendix item for PhD thesis;

The Socio-ethical Implications of Body-Worn Video Recorders: An Ethnographic Study

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Description

This data paper is a condensed text version of the '*The Road To Wearable Computing: Interactive Timeline*', a comprehensive assay of wearable computing at the Computer History Museum of Mountain View, California, curated by Thad Starner and Clint Zeagler of Georgia Institute of Technology in an exhibition titled '*On You: A Story of Wearable Computing*'. This data paper lists a various wearable and supportive technologies that were either prototypes, advancements or retail available products from across a range of sources based on the interactive timeline online, which also provides an option to view device types by category; '*Power & Heat*', '*Networking*', '*Mobile Input*', '*Virtual Reality*', '*Video Viewers*', '*Professional*', '*Maker*' or '*Consumer*'.¹

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¹ Additional information has been added from the Jarrell Pair website regarding the 'Charmit' device. - <http://www.jarrellpair.com/the-charmit-wearable-computing-kit/> and the Google 'X' Moonshot Company about Google Glass Enterprise Edition - <https://www.x.company/glass/>

YEAR	TITLE	DETAILS
1962	Ultrasonic TV Remote Control	RCA: Ultrasonic frequency channel changing device
1989	Reflection Technology	LED HMD with 280 LEDS Retailed at \$795
1991	Flight Helmet	Virtual Research Systems 100 degree stereoscopic LCD screens
1991	'Handy Key'	Twiddler 1 chording input mobile touch typing with tilt sensor mouse
1992	'Active Badge'	Xerox PARC / Olivetti Research Lab - infrared location device LAN precursor
1994	'Herbert 1'	Greg Priest-Dorman, Vassar College - audio based wearable computer
1994	'VuMan 3'	Carnegie Mellon University; wearable computer; industrial, military, medical application
1995	'12 V Lead-acid Gel Cell'	Battery for early wearable computers; rechargeable
1995	'Chorder'	Greg Priest-Dorman; Vassar College; donning/doffing device for 'Herbert 1' computer
1995	'Lizzy 2'	Thad Starner; MIT Wearable Computing project; wearable computer with Twiddler and HMD in collaboration with design firm Fitch.
1995	'Datel'	DC-DC converter; 12 V to 5V
1995	'Virtual Boy'	Video game console; portable 3D immersive gameplay device
1995	'Virtual i-O i-glasses'	Personal 3D viewer HMD; VR goggles with head tracking Retailed at \$395
1997	802.11 Wavelan	IEEE; PCMCIA card; WiFi for wearables Retailed at \$295
1997	'MicroOptical'	Mark Spitzer; prescription eyeglasses; LCD panel and beam splitter to wearers eye

1997	'Audible'	Audio based book wearable player Retailed at \$200
1997	'Ricochet'	Wireless modem by Metricom Inc Retailed at \$350
1997	'Scuba VR Visor'	HMD; VR helmet for the Atari Jaguar home game system Retailed at \$299
1998	'Herbert 3'	Greg Priest-Dorman; Liquid image M1 display, wearable computing vest; audio interface
1998	'Lithium-ion'	Camcorder battery & holder; wearables rechargeable battery Retailed at \$150
1998	'PC Glasstron' PLM-S700	Sony; 3D VR system; adjustable opacity for researchers in augmented reality
1998	WSS 1000 'Symbol'	Wearable computing system; RS1 Ring Scanner; industry applications Retailed at \$3,500
1999	'Liteye Systems'	Military application HMD or helmet Retailed at \$3,995
1999	MA-IV 'Xybernaut'	Wearable Computer; MMX processor 128 MB RAM Retailed at \$7500
2000	'Charmlt'	Charmed Technology; Linux based wearable computer system; PCMCIA, USB 1.0, ethernet, COM 1, keyboard, Twiddler, VGA ports Retailed at \$3000
2000	'FitSense' FS-1 Speedometer	Wireless shoe-pod and heart strap wearable computer Retailed at \$200
2000	'Glasstron' PLM-A35	Two eye opaque display glasses for home video / DVD Retailed at \$499
2000	'MIThril'	MIT Wearable Computing project vest; X86 processor, Micro Optical display
2000	UNS-5/3-D12A	Datel; DC-DC convertor; low running temperatures Retailed at \$34
2000	'VisualEYEzer 3250'	Triplett; multimeter HUD with LED display and probes Retailed at \$500
2001	'Co-3 Display'	'MicroOptical'; eyebox HMD; 24 bit colour Retailed at \$2000
2001	'Garmin' GPS 35-LVS	GPS device; accurate to 20 metres Retailed at \$200

2001	'Half Keyboard'	Matias; One handed keyboard for wearable devices
2001	'MAV' Computer	Xybernaut; industrial wearable; Windows XP, 5GB disk; Olympus Eye-trek Retailed at \$5000
2001	'Twiddler 2'	HandyKey; Isometric joystick; PS/2 or USB PC connection Retailed at \$219
2002	Aladdin Power Generator	Nissho Electronic; Wind up generator to charge phone or flashlight Retailed at \$40
2002	'VI/POMA/WIA' computer	Xybernaut / Hitachi; Inverted optical mouse, wearable headset Retailed at \$1500
2003	'DV-1 Display'	MicroOptical; bluetooth prototype
2003	'M1100 Display & Driver'	Second Sight 2003; CompactFlash; MicroOptical headset Retailed at \$2000
2003	'SV-6 Display'	MicroOptical; 18 bit colour high resolution display Retailed at \$1995
2004	'Eyetop' Centra DVD bundle	Portable video viewer, eyeglasses; composite video Retailed at \$599
2006	'MyVu'	Personal viewer; VR glasses (MyVu Crystal) Retailed at \$270
2007	'Doctors Wristband'	Universitat Bremen; wearIT@work Consortium; medical applications for patient-doctor
2007	'LilyPad Arduino Toolkit'	Leah Buechley; Microcontroller boards; interactive accessories Retailed at \$25
2008	'Firefighter Boot'	Universitat Bremen; wearIT@work Consortium; sensor and processor firefighters boot
2008	'Vuzix'	iWear glasses; ipod connector and HMD
2009	'EZ430' Chronos Wristwatch	Texas Instruments; smartwatch platform application Retailed at \$49
2010	'Embroided Textile Interfaces'	MIT; touch sensitive capacitive sensing conductive e-textile
2010	'Pack'	Google Glass prototype; GPS, mobile keyboard, headset, TacEye display
2010	'LiveView' MN8000 Wristwatch	Sony Ericsson; Smartwatch; touchpad, calls; social network feeds Retailed at \$180

2010	'Portable Solar Charge/Battery'	XTG technology; Solar power USB battery; led flashlight Retailed at \$60
2010	'Tac-Eye LT HUD'	Vuzix; Rugged HUD for military; high resolution Retailed at \$3000
2010	'Wrap 230'	Vuzix; (Icuiti); lightweight HMD eyeglasses; Earbuds Retailed at \$170
2011	'The Google Glass Project'	'Ant', 'Bat' and 'Cat' prototypes repurposing Nexus One phones
2011	'MOD'	Recon Instruments; Ski Goggles with speedometer, GPS, location, altitude, jump height, stats - retailled at \$400
2012	'FitBit 1'	FitBit; track steps, energy, sleep time; miniature wearable computer Retailed at \$100
2012	'Ibex'	'The Google Glass Project'; refined wearable 'living lab; computer
2012	'Moverio BT-100'	Epson; Self contained Android wearable computer Retailed at \$700
2012	'Sportiiiis'	4iiii Innovations; HUD, glasses, chest mounted heart monitor Retailed at \$150
2013	'FIDO' vest computer	Facilitating Interactions for Dogs With Occupations; military; search and rescue
2013	'Google Glass Explorers'	Public edition; community of users;
2013	'Oculus Rift' Dev Kit 1 VR	Oculus (Facebook); HMD 110 degree diagonal field of view Retailed at \$300
2014	'LG Tone Pro' Headset	LG: Bluetooth 1.1 wireless stereo headphones Retailed at \$70
2014	'Multimeter watch'	Chad Ramey; Georgia Tech; Multimeter; bluetooth to Google Glass prototype
2015	Twiddler 3	Tek Gear Inc. - Chording input; bluetooth or USB
2017	'The Google Glass Project'	<i>Google Glass Enterprise Edition</i> release July 2017: optical head-mounted display