



Factsheet: Systems, Wearables

A technology field created by ip-search

1 Definition

Wearables in general are smart electronic devices worn on the body, such as smart watches, body worn or body immersed sensors, video goggles, head-mounted displays and virtual reality devices. The devices are most often used for virtual and augmented reality (smart glasses); for measuring, recording and tracking medical parameters on humans or for sensing and guiding exercises (smart watches, activity trackers) etc. Handheld devices, such as smartphones, are also considered as being a wearable, if they are of a wristwatch type. Smart phones per se are not considered as wearables.

2 CPC / IPC

2.1.1 Cooperative Patent Classification (CPC)

CPC/IPC/FI Symbols	Description
A	HUMAN NECESSITIES
A61	MEDICAL OR VETERINARY SCIENCE; HYGIENE
A61B	DIAGNOSIS; SURGERY; IDENTIFICATION (analysing biological material G01N, e.g. G01N33/48; obtaining records using waves other than optical waves, in general G03B42/00)
<u>A61B5/00</u>	Detecting, measuring or recording for diagnostic purposes (radiation diagnosis A61B6/00; diagnosis by ultrasonic, sonic or infrasonic waves A61B8/00); Identification of persons
A61B5/68	. {Arrangements of detecting, measuring or recording means, e.g. sensors, in relation to patient}
<u>A61B5/6801</u>	.. {specially adapted to be attached to or worn on the body surface}
A61B5/6802	... {Sensor mounted on worn items}
<u>A61B5/681</u> {Wristwatch-type devices}
A61B2562/00	Details of sensors; Constructional details of sensor housings or probes; Accessories for sensors
<u>A61B2562/02</u>	. Details of sensors specially adapted for in-vivo measurements
A61F	FILTERS IMPLANTABLE INTO BLOOD VESSELS; PROSTHESES; DEVICES PROVIDING PATENCY TO, OR PREVENTING COLLAPSING OF, TUBULAR STRUCTURES OF THE BODY, e.g. STENTS; ORTHOPAEDIC, NURSING OR CONTRACEPTIVE DEVICES; FOMENTATION; TREATMENT OR PROTECTION OF EYES OR EARS; BANDAGES, DRESSINGS OR ABSORBENT PADS; FIRST-AID KITS (dental prosthetics A61C)
<u>A61F4/00</u>	Methods or devices enabling invalids to operate an apparatus or a device not forming part of the body (operating or control means for prostheses A61F2/68; {serving devices for one-handed persons A47G21/08})
A63	SPORTS; GAMES; AMUSEMENTS
A63B	APPARATUS FOR PHYSICAL TRAINING, GYMNASTICS, SWIMMING, CLIMBING, OR FENCING; BALL GAMES; TRAINING EQUIPMENT (apparatus for passive exercising, massage A61H)
<u>A63B24/00</u>	Electric or electronic controls for exercising apparatus of preceding groups; {Controlling or monitoring of exercises, sportive games, training or athletic performances}



CPC/IPC/FI Symbols	Description
<u>A63B24/0003</u>	. {Analysing the course of a movement or motion sequences during an exercise or trainings sequence, e.g. swing for golf or tennis}
G	PHYSICS
G02	OPTICS
<u>G02B</u>	OPTICAL ELEMENTS, SYSTEMS, OR APPARATUS (G02F takes precedence; measuring instruments, see the relevant subclass of G01, e.g. optical rangefinders G01C; testing of optical elements, systems, or apparatus G01M11/00; spectacles G02C; sound lenses G10K11/30; electron and ion "optics" H01J; X-ray "optics" H01J, H05G1/00; optical elements structurally combined with electric discharge tubes H01J5/16, H01J29/89, H01J37/22; microwave "optics" H01Q; combination of optical elements with television receivers H04N5/72; heating arrangements specially adapted for transparent or reflecting areas H05B3/84)
<u>G02B25/00</u>	Eyepieces; Magnifying glasses (simple lenses G02B3/00)
G02B27/00	Other optical systems; Other optical apparatus (means for bringing about special optical effects in shop-windows, showcases A47F, e.g. A47F11/06; optical toys A63H33/22; designs or pictures characterised by special light effects B44F1/00)
<u>G02B27/0093</u>	. {with means for monitoring data relating to the user, e.g. head-tracking, eye-tracking}
G02B27/01	. Head-up displays
<u>G02B27/017</u>	.. {Head mounted}
G02C	SPECTACLES; SUNGLASSES OR GOGGLES INSOFAR AS THEY HAVE THE SAME FEATURES AS SPECTACLES; CONTACT LENSES (trial frames for testing the eyes A61B3/04; goggles or eyeshields not having the same features as spectacles A61F9/00)
<u>G02C7/00</u>	Optical parts (characterised by the material G02B1/00)
G06	COMPUTING; CALCULATING; COUNTING
G06F	ELECTRIC DIGITAL DATA PROCESSING (computer systems based on specific computational models G06N)
G06F3/00	Input arrangements for transferring data to be processed into a form capable of being handled by the computer; Output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements (typewriters B41J; conversion of physical variables F15B5/00, G01; image acquisition G06T1/00, G06F9/00; coding, decoding or code conversion in general H03M; transmission of digital information H04L; {in regulating or control systems G05B})
G06F3/01	. Input arrangements or combined input and output arrangements for interaction between user and computer (G06F3/16 takes precedence)
<u>G06F3/011</u>	.. {Arrangements for interaction with the human body, e.g. for user immersion in virtual reality (for handicapped people in general A61F4/00; robot control B25J; tactile signalling G08B; blind teaching G09B21/00; for electrophonic musical instruments G10H1/344; electronic switches characterised by the way in which the control signals are generated H03K17/94)}
<u>G06F3/048</u>	.. Interaction techniques based on graphical user interfaces [GUI]
H	ELECTRICITY
H04	ELECTRIC COMMUNICATION TECHNIQUE
H04N	PICTORIAL COMMUNICATION, e.g. TELEVISION
H04N13/00	Stereoscopic video systems; Multi-view video systems; Details thereof
H04N2013/0074	. {Stereoscopic image analysis}
<u>H04N2013/0085</u>	.. {Motion estimation from stereoscopic image signals}
H04N13/30	. Image reproducers (optical systems for producing stereoscopic or other three-dimensional effects G02B27/22)
H04N13/332	.. Displays for viewing with the aid of special glasses or head-mounted displays [HMD]
<u>H04N13/344</u>	... with head-mounted left-right displays
<u>H04N13/361</u>	.. Reproducing mixed stereoscopic images; Reproducing mixed monoscopic and stereoscopic images, e.g. a stereoscopic image overlay window on a monoscopic image background
H04N13/366	.. using viewer tracking

CPC/IPC/FI Symbols	Description
<u>H04N13/383</u>	... for tracking with gaze detection, i.e. detecting the lines of sight of the viewer's eyes

The complete description of the CPC classes with IPC- and FI-concordances can be found in the Internet at <http://web2.wipo.int/classifications/ipc/ipcpub?notion=scheme&fipcpc=yes&indexes=yes>.

2.1.2 Japanese F-Terms Classification

FTCLA Symbols	Description
2H088	LIQUID CRYSTAL 1 (APPLICATIONS AND PRINCIPLES)
2H088/EA00	APPLICATION OF LIQUID CRYSTAL
2H088/EA01	. Special uses as display elements
2H088/EA02	.. Liquid crystal displays
2H088/EA10	... Head-mounted displays (HMD)
2H199	OTHER OPTICAL SYSTEMS OR APPARATUS; INTERFERENCE OR CONTROL OF THE COLOUR
2H199/CA00	HEAD-MOUNTED DISPLAY (HMD)
2H199/CA01	. Kinds
2H199/CA12	.. See-through types
2H199/CA21	. Display devices
2H199/CA32	.. Scanning types

The complete description of the F-Terms can be found in the Internet at https://www5.j-platpat.inpit.go.jp/pms/tokujitsu/pmgs_en/PMGS_EN_GM101_Top.action.

3 Keywords

The following keyword concepts were used:

- Wearable, augmented reality, video goggle, ...
- Wireless, mobile, network, communicate, ...

4 Confidence Interval for Precision

Precision is expressed in percent of relevant counts. The 95 % confidence interval for the precision of a technology field is assessed on a set of 100 randomly selected patent families based on a binomial distribution.

Precision Confidence Interval: 67 – 84 %

5 History

Version	latest update	Comment
_01_19	15.01.2019	
_05_19	09.05.2019	no change
_09_19	28.08.2019	no change
_03_20	09.03.2020	no change
_09_20	06.08.2020	no change
_03_21	03.03.2021	no change
_09_21	16.08.2021	no change



IGE | IPI
ip-search

Table 1: History

6 Contact

For specific information regarding the technology field please contact info@ip-search.swiss

Eidgenössisches Institut für Geistiges Eigentum
Institut Fédéral de la Propriété Intellectuelle
Istituto Federale della Proprietà Intellettuale
Swiss Federal Institute of Intellectual Property

ip-search
Stauffacherstrasse 65/59g | CH-3003 Bern
T +41 31 377 77 77 | F +41 31 377 77 78
info@ip-search.swiss | www.ip-search.swiss