Zenith ultrasonic remote

Autor:
Data de publicació: 17-07-2016

Six Decades of Channel Surfing:
http://www.cnet.com/pictures/remembering-eugene-polley-and-his-flash-matic-remote-photos/13/

El millor amic dels addictes a la televisió (coach potatoe): El comandament a distància, que compleix 50 anys aquest any, s'ha convertit en una de les peces més indispensables d'aparells a la llar americà modern.

Per Michael Stroh personal Sun publicat originalment novembre 22 l'any 2000

Feu clic.

"El clicker", "el zapper," el canviador "- el que vam triar anomenar-lo, la distància de la televisió és l'avi de tots els aparells, gairebé tan indispensable per a la sala d'estar com el mateix televisor S'ha culpat de les cintures en globus. , la reducció de capacitat d'atenció i les relacions tenses.

Aquest any, el comandament a distància és de 50 anys d'edat. Gairebé no puc recordar la meva vida sense ella - especialment quan la televisió de balenes està en el seu apogeu, ja que durant els dies festius. Però igual que amb altres dispositius moderns - des microones als telèfons mòbils - els seus orígens i funcionament segueixen sent en gran mesura desconegut per a les persones que esperen que l'aparell funcioni sense falta.

La idea de la distància de la televisió va començar amb Eugene McDonald, el fundador de Zenith Ràdio Corp Era l'any 1950, un moment en el qual podria comptar el nombre de canals en qualsevol ciutat d'una banda. McDonald, un exmilitar excèntric conegut com "el comandant" pels seus empleats, no estava pensant sobre la conveniència, sinó sobre els anuncis publicitaris.

En concret, McDonald estava pensant en el molt que menyspreava anuncis. Segons la seva opinió, sense comercials, televisió de pagament un millor model de negoci per a la indústria. "Ell va pensar televisió per publicitat no volaria", diu John Taylor, historiador corporativa de Zenith.

Fins que els esdeveniments li podrien resultar dreta, McDonald volia oferir als clients que van comprar televisors Zenith una manera d'evitar la publicitat. El resultat va ser un dispositiu anomenat Lazy Bones: "! Prest-O Change-O només cal prémer un botó ... per canviar una emissora!" va dir un anunci d'hora.

Lazy Bones era car - al voltant de $ 355 en dòlars d'avui - i primitiu: Els seus dos botons podrien encendre el TV encesa i apagat i canviar de canal. Va ser lligat a la televisió per un cable prim, de manera que el dispositiu podria ser perillós: És subjecció sovint convertit en un filferro de viatge.

McDonald va ordenar als seus enginyers per tornar a intentar-ho. Un enginyer de Zenith jove anomenat Eugene Polley va tenir la idea d'utilitzar la llum per controlar la televisió. Jugant amb les peces de recanvi per aquí el seu laboratori, va crear una llanterna trucat format per semblar-se a una arma de foc "que la gent pogués disparar el comercial", diu Polley.

El dispositiu va ser anomenat el flash-Matic. Va arribar amb un televisor especialment equipat que tenia zones sensibles a la llum incrustats a cada cantonada del conjunt. Zap una cantonada amb el flaix-Matic i la televisió parpellejat encès o apagat. Apunten a una altra i el canal voltejat. Va ser Polley que va idear el que podria ser la característica més estimada de tots: el botó de silenci.

"Em fa pensar que potser la meva vida no va ser en va," Polley diu avui. "Potser vaig fer alguna cosa per la humanitat - com el tipus que va inventar el vàter."

Zenith ven en forma de pistola prop de 30.000 flash-tica després del llançament del producte en 1955, i va donar Polley un bo de $ 1,000 pels seus esforços. Un anunci primerenca va prometre, "llançar molestos anuncis a través de la cambra amb espurna de llum màgica."

Però, ja que alguns clients aviat van aprendre, Flash-Matic deixa marge per a la millora. La gent no podia recordar què cantonada de la pantalla controlada per què. Però els grans problemes provenen dels sensors de llum, els quals van resultar ser sensibles tant al control remot, però postes de sol i els llums de pis mal col·locats.

Zenith físic Robert Adler, qui va ajudar a dirigir el departament d'investigació de la companyia, va ser lliurat a la tasca de millorar el disseny de Polley. El departament de màrqueting Zenith va donar l'equip d'Adler un requisit addicional de disseny: El comandament a distància no podia fer servir les bateries, per evitar que un client de pensar en ell televisió havia trencat si les piles del comandament a distància es va tallar.

Adler i el seu equip d'enginyers consideren l'ús d'ones de ràdio, però van abandonar la idea perquè les onades podrien viatjar a través de les finestres i les parets. "Les ones de ràdio funcionava bé", va comentar una vegada Adler. Però també va funcionar bé per al seu veí ".

A continuació, els enginyers van trobar una solució: ultrasons, ones sonores d'alta freqüència inaudibles per l'oïda humana.

Els investigadors Zenith va construir un dispositiu de control remot que conté quatre varetes d'alumini, cadascuna lleugerament diferent en longitud. En prémer un dels botons remots '4 causar un petit martell de ressort per colpejar el seu corresponent plançó com una forquilla d'ajust, que emet ones sonores ultrasòniques. Com cadascuna de les barres va ser una longitud lleugerament diferent, cada vibrar a una freqüència diferent, que un micròfon i el receptor al TV podien distingir.

El dispositiu va ser nomenat Comando Espacial. El primer va sortir de la línia de muntatge a la tardor de 1956. La tecnologia ha afegit $ 100 a l'etiqueta de preu del conjunt, de manera que les vendes van ser lentes per enlairar-se. Però en 1959, els comandaments a distància per ultrasons es va convertir en l'estàndard de la indústria per a televisors top-of-the-line. Segons Zenith, més de 9 milions de comandaments a distància ultrasònics es van vendre durant el proper quart de segle.

El soroll produït per aquests primers comandaments mecànics també va prestar el dispositiu del seu sobrenom durador - "el clic."

A partir de la dècada de 1980, els comandaments a distància per ultrasons van ser reemplaçats per dispositius que depenien de polsos de baixa freqüència de la llum infraroja invisible per a l'ull humà. Aquests dispositius són més barats de fabricar i poden controlar un major nombre de funcions, donant lloc als comandaments a distància 50 de botó vist en l'actualitat.

Només qui ha de porta el crèdit per la invenció del comandament a distància ha estat un tema sensible per Eugene Polley, qui va observar Robert Adler al programa de Jay Leno fa uns anys s'atribueixen el mèrit per al dispositiu.

"Estem pugna", diu Polley, un vivaç de 85 anys d'edat, que munta al voltant del camp de golf a prop de casa als afores de Chicago que portava una gorra que diu "Rei del comandament a distància." En el seu àtic, que té uns primers prototips de Flash-Matic i dispositius Lazy Bones.

"Crec que la baralla està molt exagerada", diu Zenith John Taylor. "Una invenció va durar un any, els altres 25 anys. La indústria en general considera Bob Adler el pare del comandament a distància."

El 1997, Zenith va guanyar un Emmy pel seu treball en el clic; aquest any, Adler, que ha dit que prefereix la ràdio i rellotges només al voltant d'una hora de televisió a la setmana, va ser inclòs en el Saló de la Fama de l'Associació d'Electrònica de Consum pel seu treball.

La llar mitjana té almenys quatre controls remots, segons l'Associació d'Electrònica de Consum. La majoria són per a televisors i equips de música. No obstant això, altres controlen aparells d'aire condicionat, persianes, ventiladors de sostre, xemeneies de gas, llums de la casa i les portes del vehicle.

Els ossos mandrosos i els seus successors han "totalment revolucionat" el mitjà de la televisió, diu Robert Thompson, director del Centre per a l'Estudi de la Televisió Popular a la Universitat de Syracuse. No només ha canviat la forma de veure, sinó també la forma de cinema i televisió escriptors treballar.

"La possessió del dispositiu vol dir que vostè ha de prendre una decisió cada segon. És això avorrida? ¿Estic encara avorrit?" escriu James Gleick a "més ràpid: L'acceleració de gairebé tot." "Ara tots els programadors de televisió treballa en l'ombra de la consciència que s'armi el públic."

Però si bé va donar lloc a addictes a la televisió i el canal de navegació, la tecnologia no sempre fan la vida més fàcil. "Veure la televisió no és tan relaxant com el que solia ser", diu Thompson. "Hi ha una pressió, aquesta veu realment irritant a la part posterior del cap que segueix dient, 'Que s'està perdent alguna cosa en un altre canal.

"Fa que t'agradaria poder tornar als vells temps."

History of the TV Remote Control

Channel surfing was born more than six decades ago. The first TV remote control, called the “Lazy Bones,” was developed in 1950 by Zenith (then known as Zenith Radio Corporation and now a wholly owned subsidiary of LG Electronics USA).

The Lazy Bones used a cable that ran from the TV set to the viewer. A motor in the TV set operated the tuner through the remote control. By pushing buttons on the remote control, viewers rotated the tuner clockwise or counterclockwise, depending on whether they wanted to change the channel to a higher or lower number. The remote control included buttons that turned the TV on and off.

Although customers liked having remote control of their television, they complained that people tripped over the unsightly cable that meandered across the living room floor.

Commander Eugene F. McDonald Jr., Zenith’s late founder-president, believed TV viewers would not tolerate commercials and was convinced that sooner or later commercial television would collapse. While developing and promoting the concept of commercial-free subscription television, McDonald yearned for a way to mute the sound of commercials.

Flash-Matic: The First Wireless TV Remote

Zenith engineer Eugene J. Polley invented the “Flash-Matic,” which represented the industry’s first wireless TV remote. Introduced in 1955, Flash-Matic operated by means of four photo cells, one in each corner of the TV screen.

The viewer used a highly directional flashlight to activate the four control functions, which turned the picture and sound on and off and changed channels by turning the tuner dial clockwise and counter-clockwise.

Flash-Matic pioneered the concept of wireless TV remote control, although it had some limitations. It was a simple device that had no protection circuits and, if the TV sat in an area in which the sun shone directly on it, the tuner might start rotating.

Development Challenges

Commander McDonald loved the concepts proven by Polley’s Flash-Matic and directed his engineers to explore other technologies for the next generation. First thoughts pointed to radio. But, because they travel through walls, radio waves could inadvertently control a TV set in an adjacent apartment or room.

Using distinctive sound signals was discussed, but Zenith engineers believed people might not like hearing a certain sound that would become characteristic of operating the TV set through a remote control. It also would be difficult to find a sound that wouldn’t accidentally be duplicated by either household noises or by the sound coming from TV programming.

Regardless of the specific system chosen, Zenith sales people were against using batteries in the remote control. In

those days, batteries were used primarily in flashlights. If the battery went dead, the sales staff said, the customer might think something was wrong with the TV. If the remote control didn't emit light or show any other visible sign of functioning, people would think it was broken once the batteries died.

Next Generations: Space Command

Zenith's Dr. Robert Adler suggested using "ultrasonics," that is, high-frequency sound, beyond the range of human hearing. He was assigned to lead a team of engineers to work on the first use of ultrasonics technology in the home as a new approach for a remote control.

The transmitter used no batteries; it was built around aluminum rods that were light in weight and, when struck at one end, emitted distinctive high-frequency sounds. The first such remote control used four rods, each approximately 2-1/2 inches long: one for channel up, one for channel down, one for sound on and off, and one for on and off.

They were very carefully cut to lengths that would generate four slightly different frequencies. They were excited by a trigger mechanism that stretched a spring and then released it so that a small hammer would strike the end of the aluminum rod.

Quarter Century of Ultrasonic Remotes

The original Space Command remote control was expensive because an elaborate receiver in the TV set, using six additional vacuum tubes, was needed to pick up and process the signals. Although adding the remote control system increased the price of the TV set by about 30 percent, it was a technical success and was adopted in later years by other manufacturers.

The ultrasonic device was developed quickly, with the design phase beginning in 1955. Called "Zenith Space Command," the remote went into production in the fall of 1956.

In the early 1960s, solid-state circuitry (i.e., transistors) began to replace vacuum tubes. Handheld, battery-powered control units could now be designed to generate the inaudible sound electronically. In this modified form, Dr. Adler's ultrasonic remote control invention lasted through the early 1980s, a quarter century from its inception. More than 9 million ultrasonic remote control TVs were sold by the industry during the 25-year reign of this Zenith innovation.

Today's Infrared Remote Controls

By the early 1980s, the industry moved to infrared, or IR, remote technology. The IR remote works by using a low-frequency light beam, so low that the human eye cannot see it, but which can be detected by a receiver in the TV. Zenith's development of cable-compatible tuning and teletext technologies in the 1980s greatly enhanced the capabilities for infrared TV remotes.

In recognition for their visionary work, remote control co-inventors Adler and Polley jointly received Zenith's Emmy from the National Academy of Television Arts and Sciences in 1997 for "Pioneering Development of Wireless Remote Controls for Consumer Television." Broadcasting & Cable Magazine recognized "their groundbreaking contribution to television viewing – indeed, to the use of so many electronic devices" with the B&C Technology Leadership Award in 2006.

Polley, who died on May 20, 2012 at age 96, was honored in 2009 with the IEEE Consumer Electronics Society's highest technical honor, the Masaru Ibuka Consumer Electronics Award. Adler, who died on Feb. 15, 2007, at age 93, received the IEEE Consumer Electronics Outstanding Achievement Award and Inventor-of-the-Year Award from George Washington University's Patent, Trademark and Copyright Research Institute, among other honors.

Their legacy continues today. Wireless remote control is now a standard feature on virtually all consumer electronics products, including TVs, DVD players and recorders, VCRs, cable and satellite boxes, and home audio receivers, to name a few.

This year the remote control is 50 years old. We can hardly remember life without it - especially when television-watching is at its height, as during holidays. But as with other modern devices - from microwaves to cell phones - its origins and workings remain largely unknown to people who expect the apparatus to work without fail.

The idea for the television remote began with Eugene McDonald, the founder of Zenith Radio Corp. The year was 1950, a time when you could count the number of channels in any city on one hand. McDonald, an eccentric former military man known as "the Commander" by his employees, was thinking not about convenience but about commercials.

Specifically, McDonald was thinking how much he despised ads. He considered commercial-free, pay TV a better business model for the industry. "He thought advertiser-supported television would never fly," says John Taylor, Zenith's corporate historian.

Until events might prove him right, McDonald wanted to offer customers who bought Zenith TVs a way to avoid commercials. The result was a device called Lazy Bones: "Prest-o! Change-o! Just Press a Button ... to Change A Station!" said an early ad.

Lazy Bones was pricey - about $355 in today's dollars - and primitive: Its two buttons could flick the TV on and off and change channels. It was tethered to the television by a thin cable, so the device could be dangerous: It's tether often turned into a trip wire.

McDonald ordered his engineers to try again. A young Zenith engineer named Eugene Polley hit on the idea of using light to control the television. Tinkering with spare parts lying around his laboratory, he created a souped-up flashlight fashioned to look like a gun "so people could shoot out the commercial," says Polley.

The device was dubbed the Flash-Matic. It came with a specially-equipped television that had light-sensitive areas embedded in each corner of the set. Zap one corner with the Flash-Matic and the television flickered on or off. Aim at another and the channel flipped. It was Polley who devised what might be the most beloved feature of all: the mute button.

"It makes me think maybe my life wasn't wasted," Polley says today. "Maybe I did something for humanity - like the guy who invented the flush toilet."

Zenith sold nearly 30,000 gun-shaped Flash-Matics after the product's launch in 1955, and gave Polley a $1,000 bonus for his efforts. An early ad promised, "Shoot off annoying commercials from across the room with flash of magic light."

But, as some customers soon learned, the Flash-Matic left room for improvement. People couldn't remember which corner of the screen controlled what. But the big problems came from the light sensors, which turned out to be sensitive not only to the remote control but sunsets and ill-placed floor lamps.

Zenith physicist Robert Adler, who helped run the company research department, was handed the task of improving Polley's design. The Zenith marketing department gave Adler's team an additional design requirement: The remote couldn't use batteries, to prevent a customer from thinking his TV had broken if the remote's batteries went dead.

Adler and his team of engineers considered using radio waves but abandoned the idea because the waves could travel through windows and walls. "Radio waves worked fine," Adler once remarked. But they also worked fine for your neighbor."

Then the engineers found a solution: ultrasonics, high-frequency sound waves inaudible to the human ear.

The Zenith researchers built a remote-control device containing four aluminum rods, each slightly different in length. Pressing one of the remotes' four buttons caused a small spring-loaded hammer to strike its corresponding rod like a tuning fork, emitting ultrasonic sound waves. Since each of the rods was a slightly different length, each vibrated at a

different frequency, which a microphone and receiver in the TV could distinguish.

The device was named Space Command. The first one emerged from the assembly line in the fall of 1956. The technology added $100 to the price tag of the set, so sales were slow to take off. But by 1959, ultrasonic remotes became the industry standard for top-of-the-line TVs. According to Zenith, more than 9 million ultrasonic remotes were sold during the next quarter-century.

The noise made by these early mechanical remotes also lent the device its enduring nickname - "the clicker."

Eugene Polley and the Television Remote
May 25, 2012 Nikola Tesla patented the first remote control device in 1898. He used radio and a coherer detector to control a boat just a decade after Heinrich Hertz demonstrated the existence of radio waves. Tesla's 1898 patent was referenced by another patent as late as 2005.[1]

A collection of infrared remote control devices in my house. The Verizon FIOS remote gets the most use.

(Photo by author).

The remote control devices that are most used, today, don't use radio waves. Television remote controls (see photograph, above) use infrared light, a technology that was practical to implement only after the development of the light-emitting diode. Television, however, has been with us since the late 1940s, and it's understandable that some form of remote control was wanted shortly thereafter. The simplest, but not very aesthetic, nor safe, solution was to have a wire connect a television with remote buttons. Eugene Polley, who worked for Zenith Electronics, a major television manufacturer, created the first true television remote in 1955.[2] Polley's device used light, but not digitally encoded light as is used in today's remotes. Polley's data was spatially encoded; that is, you needed to point a light at certain portions of the television set for control. Polley died on May 20, 2012, at age 96.[3-9] In a story that was common in the past, but not much today, Polley, who was not a college graduate, began work at Zenith as a stock boy, and he worked his way into the engineering department. During World War II, he worked on ship-detecting radar and fuses for bombs.[6] A patent application for his remote control device, called the Flash-Matic, was filed in 1955, but he continued inventing after that time, spending forty-seven years with Zenith and earning eighteen US patents. Polley received a $1,000 bonus for the Flash-Matic.[6] The invention, which was only marketed for one year, grossed about three million dollars for Zenith. One of Polley's other inventions, which I wrote about in a previous article (Couch Potato Hero, February 22, 2007), was an ultrasonic version of his optical remote. He developed this with physicist, Robert Adler, who died in 2007 at age ninety-three.[10] The ultrasonic idea was Polley's, and Adler's design was novel in that it didn't need batteries. Mechanical motion would ring metal tines that vibrated at ultrasonic frequencies. The ultrasonic remote was named the "Space Command."[3]

This later version of the ultrasonic remote, the Zenith Space Commander 600, was sold with color television sets between 1965 and 1972.

(Via Wikimedia Commons).

The metal tines were of different length, so they vibrated at different frequencies. These frequencies were detected at

the television, although there was sometimes interference from other sound sources, such as jangling keys and spilled coins. Zenith sold more than nine million of the ultrasonic remotes between 1956 and 1982. Polley's "Flash-Matic" remote worked by flashing a light beam from a handheld unit onto one of four photodetectors in the television (see diagram). One photodetector turned the set on and off, two others changed the channel up or down, and a third muted the sound.[6] The mute feature appealed to Zenith's founder and president, Eugene F McDonald, who thought that commercials were too distracting. One advertisement for the Flash-Matic states, "You can even shut off annoying commercials while the picture remains on the screen. Just a flash of light does it."[7] The device worked, but televisions would sometimes be triggered by sunlight and room lights. The remote feature added about 20% to the cost of a television set.[9] Nonetheless, Zenith sold nearly 30,000 "Flash-Matic" equipped televisions. Another problem was that Polley's unit needed a battery, and these were much larger and didn't last as long as the batteries in today's remotes. The ultrasonic remote solved the battery problem.

Figure one of US Patent No. 2,903,575, "Control System," by E. J. Polley,
September 8, 1959.

I've highlighted the photocell locations in red.

(Via Google Patents).

Since Polley had developed the "Flash-Matic," and both Polley and Adler were involved with the ultrasonic remote, they are credited as co-inventors of remote technology. Adler and Polley were awarded an Emmy in 1997 by the National Academy of Television Arts and Sciences. In a controversy reminiscent of the invention of another optical device, the laser, it appeared that Adler took most of the credit for the invention of the television remote. It was Adler, not Polley, who appeared on "The Tonight Show with Jay Leno."[3] Polley's son is quoted in the Los Angeles Times as saying, "My father's point of view was that when somebody came up with the jet engine for the airplane, he didn't take credit away from the Wright Brothers... But Bob Adler tried to steal his thunder as the inventor of the remote control."[3] Polley is quoted in The New York Times as saying, in a 2002 interview, "A father has to be present at conception... And if you're not, you're not the father."[6] Zenith considered Polley and Adler to be co-inventors of the television remote.[3] Adler, late in his life, admitted that Polley didn't receive enough of the credit. Adler thought that the remote was one of his least-important inventions.[3] Polley disagreed, comparing the invention of the remote to the invention of the flush toilet, and saying it was almost as important as sex.[6,9] He would proudly show the original remote to visitor to his home.[5]

References:

Nikola Tesla, "Method and Apparatus for Controlling Mechanism of Moving Vessels or Vehicles," US Patent No. 613,809, November 8, 1898.

E. J. Polley, "Control System," US Patent No. 2,903,575, September 8, 1959.

Brian Slodysko, "Eugene Polley dies at 96; inventor of wireless TV remote control," Los Angeles Times, May 23, 2012.

Eugene Polley, inventor of TV remote control, dies at 96, Guardian (UK), May 23, 2012.

Hannah Furness, "Eugene Polley, inventor of the remote control, dies aged 96," Telegraph (UK), May 23, 2012.

Margalit Fox, "Eugene Polley, Conjuror of a Device That Changed TV Habits, Dies at 96," The New York Times, May 22, 2012.

Hannah Rand, "The couch potato's hero: Inventor of the world's first remote television control dies," Daily Mail (UK), May 22, 2012.

TV remote control inventor Eugene Polley dies at 96, BBC News, May 22, 2012.

Emily Langer, "Eugene J. Polley, engineer who invented the first wireless TV remote control, dies at 96," Washington Post, May 22, 2012.

Patricia Sullivan, "Robert Adler, 93; Engineer, Co-Inventor of TV Remote Control." (Washington Post)

1959 Zenith Space Command Television, YouTube video, May 29, 2009.

Transcripción de the remote control
by:
Ana paulina ramirez
Laura olarte
10 c the remote control A remote control is a component of an electronics device, most commonly a television set, DVD player and home theater systems originally used for operating the television device wirelessly from a short line-of-sight distance. Remote control has continually evolved and advanced over recent years to include Bluetooth connectivity, motion sensor enabled capabilities and voice control History

One of the earliest examples of remote control was developed in 1898 by Nikola Tesla, and described in his patent, U.S. Patent 613,809, named Method of an Apparatus for Controlling Mechanism of Moving Vehicle or Vehicles. In 1898, he demonstrated a radio-controlled boat to the public during an electrical exhibition at Madison Square Garden. Tesla called his boat a "teleautomaton".

In 1903, Leonardo Torres Quevedo presented the Telekino at the Paris Academy of Science, accompanied by a brief, and making an experimental demonstration. In the same time he obtained a patent in France, Spain, Great Britain, and the United States. The Telekino consisted of a robot that executed commands transmitted by electromagnetic waves. It constituted the world's first apparatus for radio control and was a pioneer in the field of remote control. In 1906, in the presence of the king and before a great crowd, Torres successfully demonstrated the invention in the port of Bilbao, guiding a boat from the shore. Later, he would try to apply the Telekino to projectiles and torpedoes, but had to abandon the project for lack of financing. The first remote intended to control a television was developed by Zenith Radio Corporation in 1950. The remote, called "Lazy Bones", was connected to the television by a wire. A wireless remote control, the "Flashmatic", was developed in 1955 by Eugene Polley. It worked by shining a beam of light onto a photoelectric cell, but the cell did not distinguish between light from the remote and light from other sources. The Flashmatic also had to be pointed very precisely at the receiver in order to work.

In 1956, Robert Adler developed "Zenith Space Command", a wireless remote.It was mechanical and used ultrasound to change the channel and volume. When the user pushed a button on the remote control, it clicked and struck a bar, hence the term "clicker". Each bar emitted a different frequency and circuits in the television detected this sound. The invention of the transistor made possible cheaper electronic remotes that contained a piezoelectric crystal that was fed by an oscillating electric current at a frequency near or above the upper threshold of human hearing, though still audible to dogs.

The receiver contained a microphone attached to a circuit that was tuned to the same frequency. Some problems with this method were that the receiver could be triggered accidentally by naturally occurring noises, and some people could hear the piercing ultrasonic signals. There was an incident in which a toy xylophone changed the channels on such sets because some of the overtones from the xylophone matched the remote's ultrasonic frequency
The Zenith Space Commander Six hundred remote control (cc) image by nuonsolarteam on Flickr
The first remote-controlled model aeroplane flew in 1932, and the use of remote control technology for military purposes was worked intensively during the Second World War, one result of this being the German Wasserfall missile.

By the late 1930s, several radio manufacturers offered remote controls for some of their higher-end models. Most of these were connected to the set being controlled by wires, but the Philco Mystery Control (1939) was a battery-operated low-frequency radio transmitter, thus making it the first wireless remote control for a consumer electronics device.

The first remote intended to control a television was developed by Zenith Radio Corporation in 1950. The remote, called "Lazy Bones", was connected to the television by a wire. A wireless remote control, the "Flashmatic", was developed in 1955 by Eugene Polley. It worked by shining a beam of light onto a photoelectric cell, but the cell did not distinguish between light from the remote and light from other sources. The Flashmatic also had to be pointed very precisely at the receiver in order to work. In 1956, Robert Adler developed "Zenith Space Command", a wireless remote.It was mechanical and used ultrasound to change the channel and volume. When the user pushed a button on the remote control, it clicked and struck a bar, hence the term "clicker".

Each bar emitted a different frequency and circuits in the television detected this sound. The invention of the transistor made possible cheaper electronic remotes that contained a piezoelectric crystal that was fed by an oscillating electric current at a frequency near or above the upper threshold of human hearing, though still audible to dogs. The receiver contained a microphone attached to a circuit that was tuned to the same frequency. Some problems with this method were that the receiver could be triggered accidentally by naturally occurring noises, and some people could hear the piercing ultrasonic signals. There was an incident in which a toy xylophone changed the channels on such sets because some of the overtones from the xylophone matched the remote's ultrasonic frequency

The Zenith Space Commander Six hundred remote control l Most remote controls for electronic appliances use a near infrared diode to emit a beam of light that reaches the device. A 940 nm wavelength LED is typical. This infrared light is invisible to the human eye, but picked up by sensors on the receiving device. Video cameras see the diode as if it produces visible purple light.

With a single channel (single-function, one-button) remote control the presence of a carrier signal can be used to trigger a function. For multi-channel (normal multi-function) remote controls more sophisticated procedures are necessary

---

Remote Control - Pàgina 58 - Resultat de Google Llibres

https://books.google.es/books?isbn=1628923458 - Tradueix aquesta pàgina

Caetlin Benson-Allott - 2015 - ?Literary Criticism

decided to go straight down the pathway Zenith had tracked out. In fact ... Radio-frequency remotes were less reliable than ultrasonics because they might share ...

IEEE UFFC | Frequency Control | In Memoria | Robert Adler

www.ieee-uffc.org/frequency-control/memoria-adler.asp

Tradueix aquesta pàgina

The ultrasonics community lost one of its most prolific inventors when Robert Adler ... he joined the research group at Zenith, he played an increasingly important role ... His recent work has largely been in the field of display devices and touch ...

Fifties TV Remote Zenith Space Command - Rewind The Fifties

www.loti.com/fifties_TV_remote.htm

Tradueix aquesta pàgina

A short year later, a man working for the Zenith Radio Corporation by the name of ... a button down, against a specific bar which created a specific frequency. ... Using the ultrasonic method, the "Zenith Space Command" television remote was ...

Vale Robert Adler, 1913-2007 - TV Remote Control Co-Inventor

www.gizmag.com/go/6847/

Tradueix aquesta pàgina

16 febr. 2007 - Dr. Adler's "Space Command" ultrasonic remote control for TV sets was ... or IEEE) for his "original work on ultrasonic remote controls" for television. ... Dr. Adler's six-decade career with Zenith Electronics Corporation ... During World War II, Dr. Adler worked on high-frequency magnetostrictive oscillators for ...

[PDF]Frequency modulated pulse for ultrasonic ... - RIT Scholar Works

scholarworks.rit.edu/cgi/viewcontent.cgi?article=1375...

Tradueix aquesta pàgina

per N Rao - ?1990 - ?Citat per 11 - ?Articles relacionats

Rao, Navalgund, "Frequency modulated pulse for ultrasonic imaging in an ... Within the frame work of short microsecond pulses used in ... digitized with a Zenith computer oscilloscope (RS232 interfaced to IBM-XT) at a sampling rate of.

Encyclopedia of Modern Everyday Inventions

https://books.google.es/books?isbn=0313313458 - Tradueix aquesta pàgina

David John Cole, ?Eve Browning, ?Fred E. H. Schroeder - 2003 - ?History

Lower radio frequencies are onmidirectional. ... used, a user of a radio remote control had a good chance of operating another's garage door. ... recorders) AC wire carrier (X-10 home lighting control) Ultrasonic (Zenith Space Commander; ...

Patent US3855575 - Ultrasonic remote control receiver - Google Patents

www.google.com/patents/US3855575

Tradueix aquesta pàgina

An ultrasonic remote control receiver wherein an incoming ultrasonic signal is converted to square wave pulses of the same frequency by a ... 2 is a diagram explaining the mode of operation of the circuit according to FIG. ..... US4010423 *, Jun 26, 1975, Mar 1, 1977, Zenith Radio Corporation, Multi-function remote control ic.

New Scientist - 22 Jul. 1971 - Pàgina 197 - Resultat de Google Llibres

https://books.google.es/books?id=__yJhmDfE7cC - Tradueix aquesta pàgina

Vol. 51, núm. 761 - ?Revista

The sound of an onion skin shows up the cells Zenith's new acoustic ... acoustic miscroscope to have been built but it uses a higher ultrasonic frequency than its ...

[PDF]Remote Controls - SCTE

www.scte.org/documents/pdf/issue%203-04.pdf

Tradueix aquesta pàgina

of the ultrasonic remote, once again pioneered by Zenith. ... 70s, some short-term improvements were gained by modulating the ultrasonic frequencies onto ... the late 1970s, Matsushita, Philips, Zenith and others were all working on signaling ...

Popular Mechanics

https://books.google.es/books?id=H-EDAAAAMBAJ - Tradueix aquesta pàgina

Vol. 106, núm. 4 - ?Revista

No wires or connections of any kind are required by ultrasonic control box ... the Zenith Radio Corporation announces a remote-control device employing ultrasonic ... but eight ounces, the waves are at too high a frequency to be heard or felt.

el millor amic de dispositius sofà de papa: El comandament a distància, que compleix 50 anys aquest any, s'ha convertit en una de les peces més indispensables d'aparells a la llar americà modern.
---------- ---------- Per Michael Stroh personal Sun publicat originalment novembre 22 l'any 2000

"Avui 'Oprah' ..."

Feu clic.

"... Els tribunals de la Florida han de decidir si un saboga que penja ..."

Feu clic.

"Jo! Wazzzzup ..."

Feu clic.

"El clicker", "el zapper," el canviador "- el que vam triar anomenar-lo, la distància de la televisió és l'avi de tots els aparells, gairebé tan indispensable per a la sala d'estar com el mateix televisor S'ha culpat de les cintures en globus. , la reducció de capacitat d'atenció i les relacions tenses.

Aquest any, el comandament a distància és de 50 anys d'edat. Gairebé no puc recordar la meva vida sense ella - especialment quan la televisió de balenes està en el seu apogeu, ja que durant els dies festius. Però igual que amb altres dispositius moderns - des microones als telèfons mòbils - els seus orígens i funcionament segueixen sent en gran mesura desconegut per a les persones que esperen que l'aparell funcioni sense falta.

La idea de la distància de la televisió va començar amb Eugene McDonald, el fundador de Zenith Ràdio Corp Era l'any 1950, un moment en el qual podria comptar el nombre de canals en qualsevol ciutat d'una banda. McDonald, un exmilitar excèntric conegut com "el comandant" pels seus empleats, no estava pensant sobre la conveniència, sinó sobre els anuncis publicitaris.

En concret, McDonald estava pensant en el molt que menyspreava anuncis. Segons la seva opinió, sense comercials, televisió de pagament un millor model de negoci per a la indústria. "Ell va pensar televisió per publicitat no volaria", diu John Taylor, historiador corporativa de Zenith.

Fins que els esdeveniments li podrien resultar dreta, McDonald volia oferir als clients que van comprar televisors Zenith una manera d'evitar la publicitat. El resultat va ser un dispositiu anomenat Lazy Bones: "! Prest-O Change-O només cal prémer un botó ... per canviar una emissora!" va dir un anunci d'hora.

Lazy Bones era car - al voltant de $ 355 en dòlars d'avui - i primitiu: Els seus dos botons podrien encendre el TV encesa i apagat i canviar de canal. Va ser lligat a la televisió per un cable prim, de manera que el dispositiu podria ser perillós: És subjecció sovint convertit en un filferro de viatge.

McDonald va ordenar als seus enginyers per tornar a intentar-ho. Un enginyer de Zenith jove anomenat Eugene Polley va tenir la idea d'utilitzar la llum per controlar la televisió. Jugant amb les peces de recanvi per aquí el seu laboratori, va crear una llanterna trucat format per semblar-se a una arma de foc "que la gent pogués disparar el comercial", diu Polley.

El dispositiu va ser anomenat el flash-Matic. Va arribar amb un televisor especialment equipat que tenia zones sensibles a la llum incrustats a cada cantonada del conjunt. Zap una cantonada amb el flaix-Matic i la televisió parpellejat encès o apagat. Apunten a una altra i el canal voltejat. Va ser Polley que va idear el que podria ser la característica més estimada de tots: el botó de silenci.

"Em fa pensar que potser la meva vida no va ser en va," Polley diu avui. "Potser vaig fer alguna cosa per la humanitat - com el tipus que va inventar el vàter."

Zenith ven en forma de pistola prop de 30.000 flash-tica després del llançament del producte en 1955, i va donar Polley un bo de $ 1,000 pels seus esforços. Un anunci primerenca va prometre, "llançar molestos anuncis a través de la cambra amb espurna de llum màgica."

Però, ja que alguns clients aviat van aprendre, Flash-Matic deixa marge per a la millora. La gent no podia recordar què cantonada de la pantalla controlada per què. Però els grans problemes provenen dels sensors de llum, els quals van resultar ser sensibles tant al control remot, però postes de sol i els llums de pis mal col·locats.

Zenith físic Robert Adler, qui va ajudar a dirigir el departament d'investigació de la companyia, va ser lliurat a la tasca de millorar el disseny de Polley. El departament de màrqueting Zenith va donar l'equip d'Adler un requisit addicional de disseny: El comandament a distància no podia fer servir les bateries, per evitar que un client de pensar en ell televisió havia trencat si les piles del comandament a distància es va tallar.

Adler i el seu equip d'enginyers consideren l'ús d'ones de ràdio, però van abandonar la idea perquè les onades podrien viatjar a través de les finestres i les parets. "Les ones de ràdio funcionava bé", va comentar una vegada Adler. Però també va funcionar bé per al seu veí ".

A continuació, els enginyers van trobar una solució: ultrasons, ones sonores d'alta freqüència inaudibles per l'oïda humana.

Els investigadors Zenith va construir un dispositiu de control remot que conté quatre varetes d'alumini, cadascuna lleugerament diferent en longitud. En prémer un dels botons remots '4 causar un petit martell de ressort per colpejar el seu corresponent plançó com una forquilla d'ajust, que emet ones sonores ultrasòniques. Com cadascuna de les barres va ser una longitud lleugerament diferent, cada vibrar a una freqüència diferent, que un micròfon i el receptor al TV podien distingir.

El dispositiu va ser nomenat Comando Espacial. El primer va sortir de la línia de muntatge a la tardor de 1956. La tecnologia ha afegit $ 100 a l'etiqueta de preu del conjunt, de manera que les vendes van ser lentes per enlairar-se. Però en 1959, els comandaments a distància per ultrasons es va convertir en l'estàndard de la indústria per a televisors top-of-the-line. Segons Zenith, més de 9 milions de comandaments a distància ultrasònics es van vendre durant el proper quart de segle.

El soroll produït per aquests primers comandaments mecànics també va prestar el dispositiu del seu sobrenom durador - "el clic."

A partir de la dècada de 1980, els comandaments a distància per ultrasons van ser reemplaçats per dispositius que depenien de polsos de baixa freqüència de la llum infraroja invisible per a l'ull humà. Aquests dispositius són més barats de fabricar i poden controlar un major nombre de funcions, donant lloc als comandaments a distància 50 de botó vist en l'actualitat.

Només qui ha de porta el crèdit per la invenció del comandament a distància ha estat un tema sensible per Eugene Polley, qui va observar Robert Adler al programa de Jay Leno fa uns anys s'atribueixen el mèrit per al dispositiu.

"Estem pugna", diu Polley, un vivaç de 85 anys d'edat, que munta al voltant del camp de golf a prop de casa als afores de Chicago que portava una gorra que diu "Rei del comandament a distància." En el seu àtic, que té uns primers prototips de Flash-Matic i dispositius Lazy Bones.

"Crec que la baralla està molt exagerada", diu Zenith John Taylor. "Una invenció va durar un any, els altres 25 anys. La indústria en general considera Bob Adler el pare del comandament a distància."

El 1997, Zenith va guanyar un Emmy pel seu treball en el clic; aquest any, Adler, que ha dit que prefereix la ràdio i rellotges només al voltant d'una hora de televisió a la setmana, va ser inclòs en el Saló de la Fama de l'Associació d'Electrònica de Consum pel seu treball.

La llar mitjana té almenys quatre controls remots, segons l'Associació d'Electrònica de Consum. La majoria són per a televisors i equips de música. No obstant això, altres controlen aparells d'aire condicionat, persianes, ventiladors de sostre, xemeneies de gas, llums de la casa i les portes del vehicle.

Els ossos mandrosos i els seus successors han "totalment revolucionat" el mitjà de la televisió, diu Robert Thompson, director del Centre per a l'Estudi de la Televisió Popular a la Universitat de Syracuse. No només ha canviat la forma de veure, sinó també la forma de cinema i televisió escriptors treballar.

"La possessió del dispositiu vol dir que vostè ha de prendre una decisió cada segon. És això avorrida? ¿Estic encara avorrit?" escriu James Gleick a "més ràpid: L'acceleració de gairebé tot." "Ara tots els programadors de televisió treballa en l'ombra de la consciència que s'armi el públic."

Però si bé va donar lloc a addictes a la televisió i el canal de navegació, la tecnologia no sempre fan la vida més fàcil. "Veure la televisió no és tan relaxant com el que solia ser", diu Thompson. "Hi ha una pressió, aquesta veu realment irritant a la part posterior del cap que segueix dient, 'Que s'està perdent alguna cosa en un altre canal.

"Fa que t'agradaria poder tornar als vells temps."