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Chapter 1 : Electronics engineers' handbook - Donald G. Fink, Donald Christiansen - Google Books

This operation could also and possibly more economically be carried out by a further control of the phase of fVSB. Although the operations are described hereinbefore at baseband, they could just as well and maybe better be performed at IF, especially where line delays, time companders and filters are concerned. Required bandwidth would be around 17 MHz, i. Required bandwidth would be upwards of MHz, and possibly much more depending on the downlink power budget, i. In principle, it is not absolutely necessary to generate and transmit line differential signals as described hereinbefore. However, the bandwidth required by the HDTV color picture signal would then be about 2 MHz larger, and for cable distribution systems the signal would occupy four standard NTSC channels. For direct broadcast satellite DBS transmission via FM, the VSB signal would not only be of larger bandwidth, it would also be of higher power than with a line-difference signal. Thus, FM would require additional deviation and, therefore, additional bandwidth. Finally, unless a line-difference signal is used on the VSB carrier the benefits of companding cannot be realized, and for a given DBS downlink power budget the received SNR will be lower. A procedure and system for doing so is accomplished in two steps, the first of which is shown in FIG. Also, the low-pass filter 71 might be replaced by a bandstop filter centered at 4. The arrangement of FIG. The switch-over frequency is approximately F. However, because of the line repeating, the frequency interleaving of NTSC is not maintained, and simple comb filtering is not completely effective. Another would be to use a time varying filtering operation. This operation must be independent from line to line because of the occasional degree phase shift in the color subcarrier. Also, as before for FIG. However, picture quality will not be up to NTSC potential. In the first place, no comb filtering would be done on the luminance signal. Thus, the color subcarrier pattern would be quite visible causing the familiar serrations and crawling of colored edges. A compromise might be to extend the luminance comb filtering of the FIG. This will occur over the frequency band 1. Many alternatives exist in the design of NTSC receiver circuitry. For example, in FIG. Any design will require a trade-off between economics and picture quality. It is to be understood that the above-described embodiments are simply illustrative of the principles of the invention. Various other modifications and changes may be made by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof. For example, instead of generating a HDTV composite color picture signal with twice the number of lines of an associated conventional television system color picture, such picture may be formed with some other multiple as, for example, three times the number of picture lines and three times the line scan rate of the associated conventional television system. Also, the line approximation or prediction signal formed by averagers 45 and 62 could be formed from linear or other combinations of additional lines either in the same field or in previous fields. In this case additional memory would be required in memories 44 and 61 in order to make available said additional lines. Claims 18 What is claimed is: An arrangement for generating a compatible high-definition television CHDTV color picture signal including a predetermined bandwidth and format, the arrangement comprising: An arrangement for generating a CHDTV color picture signal according to claim 1 wherein the transmitting means is further capable of transmitting an audio signal associated with the CHDTV color picture signal in a frequency band which is associated with an audio subcarrier comprising a frequency substantially equal to the addition of an audio subcarrier frequency and a color subcarrier frequency of the associated conventional television system color picture signal format. An arragement for generating a compatible high-definition, television CHDTV color picture signal according to claim 1 wherein the arrangement further comprises: An arrangement for generating a CHDTV color picture signal according to claim 3 or 4 wherein the time stretching means is capable of receiving the at least first and second line signal of the HDTV composite signal in sequence and generating as an output at least a first and a second line signal in parallel on separate paths at the second line scan rate of the CHDTV color picture signal; and the transmitting means comprises: A receiver for converting a compatible high-definition television CHDTV color picture signal into a HDTV composite color picture signal capable of use by a HDTV receiver, the CHDTV color picture signal comprising a predetermined bandwidth, a line scan rate which is the same as an associated conventional television color picture signal, a first line signal which is sent as is and containing a first color subcarrier frequency in a first portion of the predetermined bandwidth of the CHDTV color picture signal, and a second line signal which is sent concurrent with the first line signal in a second portion of the predetermined bandwidth of the CHDTV color picture signal either one of as is or as a line differential signal on a vestigial sideband carrier frequency which is separated from the first color subcarrier frequency by a frequency equal to that of a baseband color subcarrier frequency of the associated conventional television system color picture signal, the receiver comprising: A receiver according to claim 6 wherein the transforming means comprises: A receiver for converting a compatible high-definition television CHDTV color picture signal into an associated conventional television system color picture signal, the CHDTV color picture signal comprising a predetermined bandwidth, a line scan rate which is the same as that of the associated conventional television color picture signal, a first line signal which is sent as is and containing a first color subcarrier frequency in a first portion of the predetermined bandwidth of the CHDTV color picture signal, and a second line signal which is sent concurrent with the first line signal in a second portion of the predetermined bandwidth of the CHDTV color picture signal either one of as is or as a line differential signal on a vestigial sideband carrier frequency which is separated from the first color subcarrier frequency by a frequency equal to that of a baseband color subcarrier frequency of the associated conventional television system color picture signal, the receiver comprising: A receiver according to claim 8 wherein the modulating means comprises: An arrangement for generating a high definition television HDTV composite color picture signal capable of use by a HDTV receiver, the arrangement comprising: An arrangement for converting a conventional television system color picture signal including sequential line signals at a first line scan rate and audio signals disposed on a sound carrier above the line signals into a High Definition Television HDTV composite color picture signal for subsequent viewing on a HDTV receiver, the arrangement comprising: An arrangement according to claim 10 or 11 wherein the arrangement further comprises: A method of generating a compatible high-definition television CHDTV color picture signal including a predetermined bandwidth and format, the method comprising the steps of: The method of generating a CHDTV color picture signal according to claim 13 wherein the method comprises the further step of: A method of generating a compatible high-definition television CHDTV color picture signal capable of being converted into either one of a high-definition televeision HDTV composite color picture signal or an associated conventional television system color picture signal, the method comprising the steps of: A method of generating a CHDTV color picture signal according to claim 15 wherein the method comprises the further steps of: A method of converting a compatible high-definition television CHDTV color picture signal into a HDTV composite color picture signal for use by a HDTV receiver, the CHDTV color picture signal including a predetermined bandwidth wherein a first line signal of at least two line signals is received as is in one portion of the bandwidth at a first line scan rate and a second line signal of the at least two line signals is received as a line differential signal in a second portion of the bandwidth at the first line scan rate which is the same as the line scan rate of a conventional television system color picture signal, the method comprising the steps of: US Technique for providing compatibility between high-definition and conventional color television Expired - Lifetime USA en Priority Applications 1.

Chapter 2 : Barton Fink - Movie Reviews and Movie Ratings | TV Guide

Fundamentals of Psychoanalytic Technique is an introduction to psychoanalytic technique from a Lacanian perspective that is based on Fink's many years of experience working as an analyst and supervising clinicians, including graduate students in clinical psychology, social workers, psychiatrists, psychotherapists, and psychoanalysts. Designed.

Background[edit] Integrating the lens within the body of the camera had both positive and negative effects. On the positive side, it meant the optical nodal point of the camera was close to the centre of gravity, which could make operation easier and more instinctive when used on movable camera mounts such as pedestals. The downside was that lens manufacturers were limited to which lenses they could adapt to fit to the camera. This made the less attractive for outside broadcasts. The was both heavy and large. The pull-out handles at each corner needed four people to safely move the camera with the lens in place. Independent outfits such as the early cable television stations Rediffusion Cablevision , Sheffield Cablevision and the educational television arm of the Inner London Education Authority also purchased the camera. Furthermore, when EMI closed-down the Broadcast Equipment Division in the late s, studios were deprived of technical and spares support for their cameras. In , prior to the development of the , an experimental four tube camera [2] was constructed by EMI engineers. In addition, the experimental camera had an integrally mounted Varotal III zoom lens. It was demonstrated to the BBC in [4] where it received a mixed reception. Pictures from the camera had disappointing colorimetry , but sharp luminance detail. A production version of this camera was planned, the EMI , but this camera was never built. The construction took only six weeks of intensive effort, aided by the cannibalization of parts from existing EMI cameras. Items were taken from an EMI Type image Orthicon monochrome studio camera, [16] for the luminance channel, and a Type industrial colour camera, [17] [18] for the colour channels. This camera contained 3 Vidicon tubes and a colour-splitting system using plate glass dichroic mirrors. In addition, a Varotal III zoom lens was integrated into the body of the experimental camera. The camera was housed in a simple box-shaped structure with ribs of extruded aluminium and with plain side panels. At that time, the BBC was evaluating an early Philips 3-tube camera which used some newly available Plumbicon pick-up tubes. In order to better judge the performance of the then existing cameras, the BBC organized comparison tests between the experimental EMI camera, a Philips camera, and a Marconi three I. There were several reasons for the delay. Secondly, there was indecision regarding where to place the work but, eventually, the Colour TV Department of the Research Labs. Thirdly, there was concern regarding the reliability of supply of Plumbicon tubes, as Philips was the only supplier. After the EMI board granted approval for the new camera, in late , work on it progressed rapidly. The camera was to use four Plumbicon pick-up tubes, to use solid state circuitry, include a zoom lens as standard and to use prism optics. After the late start, the first fully operational prototype was shown to the BBC and others in , only just in time to meet BBC time-scales for the introduction of their new colour service. All other circuitry in the cameras, apart from the pick-up tubes, was solid state. Sales of the Type were very successful in the UK. The BBC and many of the independent TV companies installed the cameras in their studios during the rapid expansion of the UK colour services after However, by the time EMI had fulfilled its UK orders towards the end of the decade , the boom in the US market had been missed and the European market had yet to fully develop or was already dominated by Philips cameras. In addition, rival companies were already bringing out new designs and EMI now found only a limited market for a camera with a 4-tube configuration. These new assemblies used the property of total internal reflection, within the prisms, to direct the light to the pick-up tubes. The techniques were described in a patent first filed in The problems previously experienced with double imaging common with plate glass dichroic mirrors were also eliminated. Furthermore, because of the near-normal incidence of light onto the dichroic surfaces, sensitivity to polarised light was reduced. However, devising a single prism arrangement for four tubes was less easy than for three and several alternatives were initially considered. In an early configuration of the prism block, shown in the thumbnail, three of the pick-up tubes were envisaged to be in a common plane, but with the fourth red tube sticking up, nearly at right angles to the other three. This configuration was to be used in the Russian 4-tube camera type

KTM. When viewed from the back of a camera the four tubes were seen as a diagonal cross. The French company offered two zoom lenses for the camera; the first was a Both could be accommodated within the body of the camera, although the O. To accommodate a 4-way prism splitter, extra distance was needed, from the back of the lens to the image focal plane, when compared to a 3-tube splitter. Early cameras used this arrangement, but with later zoom designs these lenses became unnecessary. The servo motors and the servo amplifiers were supplied by Evershed Power Optics. The servo-driven zoom lens and the associated amplifier circuitry added considerably to the weight of the camera. In addition, incorporating the servo drivers within the camera body precluded the use of other makes of zoom lens. In addition, pictures produced while panning had a more natural look. The operational flexibility of the camera was demonstrated in training videos. Most camera manufacturers claimed that a format where the lens protrudes out in front of the camera gave greater choice of lens supplier and, of course, it was a format that made life easier for camera designers, so the enthusiasm of cameramen for the integral zoom concept was found to have little long term influence on camera designers. This circuit was easily adapted for various uses. In the normal, non-inverting mode, the bottom of resistor R2 is grounded and the input is via Vin 1. In this mode, the base of TR1 is grounded and the input is via Vin 2 and the series resistor R2. Band defining linear phase filters[edit] Band defining filter circuits The EMI used band defining filters in all four channels. Its design follows the lattice filter methods of Bode.

Chapter 3 : EMI - Wikipedia

Donald Glen Fink (November 8, - May 3,) was an American electrical engineer, a pioneer in the development of radio navigation systems and television standards, vice president for research of Philco, president of the Institute of Radio Engineers, General Manager of the IEEE, and an editor of many important publications in electrical engineering.

See Article History Television TV , the electronic delivery of moving images and sound from a source to a receiver. By extending the senses of vision and hearing beyond the limits of physical distance, television has had a considerable influence on society. Conceived in the early 20th century as a possible medium for education and interpersonal communication, it became by mid-century a vibrant broadcast medium, using the model of broadcast radio to bring news and entertainment to people all over the world. Television is now delivered in a variety of ways: The technical standards for modern television, both monochrome black-and-white and colour, were established in the middle of the 20th century. Improvements have been made continuously since that time, and today television technology is in the midst of considerable change. Much attention is being focused on increasing the picture resolution high-definition television and on changing the dimensions of the television receiver to show wide-screen pictures. In addition, the transmission of digitally encoded television signals is being instituted, with the ultimate goal of providing interactive service and possibly broadcasting multiple programs in the channel space now occupied by one program. Despite this continuous technical evolution, modern television is best understood first by learning the history and principles of monochrome television and then by extending that learning to colour. The emphasis of this article, therefore, is on first principles and major developmentsâ€"basic knowledge that is needed to understand and appreciate future technological developments and enhancements. The development of television systems Mechanical systems The dream of seeing distant places is as old as the human imagination. Priests in ancient Greece studied the entrails of birds, trying to see in them what the birds had seen when they flew over the horizon. They believed that their gods, sitting in comfort on Mount Olympus , were gifted with the ability to watch human activity all over the world. For ages it remained a dream, and then television came along, beginning with an accidental discovery. In , while investigating materials for use in the transatlantic cable, English telegraph worker Joseph May realized that a selenium wire was varying in its electrical conductivity. Further investigation showed that the change occurred when a beam of sunlight fell on the wire, which by chance had been placed on a table near the window. Although its importance was not realized at the time, this happenstance provided the basis for changing light into an electric signal. He envisaged a photoelectric cell that would look upon only one portion at a time of the picture to be transmitted. Starting at the upper left corner of the picture, the cell would proceed to the right-hand side and then jump back to the left-hand side, only one line lower. It would continue in this way, transmitting information on how much light was seen at each portion, until the entire picture was scanned, in a manner similar to the eye reading a page of text. A receiver would be synchronized with the transmitter, reconstructing the original image line by line. The concept of scanning, which established the possibility of using only a single wire or channel for transmission of an entire image, became and remains to this day the basis of all television. LeBlanc, however, was never able to construct a working machine. Nor was the man who took television to the next stage: Paul Nipkow , a German engineer who invented the scanning disk. It would be placed so that it blocked reflected light from the subject. The next hole would do the same thing slightly lower, and so on. In Jenkins sent a still picture by radio waves, but the first true television success, the transmission of a live human face, was achieved by Baird in The word television itself had been coined by a Frenchman, Constantin Perskyi, at the Paris Exhibition. Courtesy of Malcolm Baird The efforts of Jenkins and Baird were generally greeted with ridicule or apathy. As far back as an article in the British journal Nature had speculated that television was possible but not worthwhile: A later article in Scientific American thought there might be some uses for television, but entertainment was not one of them. Most people thought the concept was lunacy. Nevertheless, the work went on and began to produce results and competitors. GE used a system designed by Ernst F. That same year Jenkins began to sell television kits by mail and established his own television station, showing cartoon pantomime programs. In Baird convinced the British Broadcasting Corporation BBC to allow him to produce half-hour shows at midnight three times a week. Not everyone was entranced. Scott, editor of the Manchester Guardian, warned: The word is half Greek and half Latin. No good will come of it. The pictures, formed of only 30 lines repeating approximately 12 times per second, flickered badly on dim receiver screens only a few inches high. Programs were simple, repetitive, and ultimately boring. Nevertheless, even while the boom collapsed a competing development was taking place in the realm of the electron. Electronic systems The final, insurmountable problems with any form of mechanical scanning were the limited number of scans per second, which produced a flickering image, and the relatively large size of each hole in the disk, which resulted in poor resolution. In a Scottish electrical engineer, A. Cathode ray s are beams of electron s generated in a vacuum tube. Because the rays move at nearly the speed of light , they would avoid the flicker problem, and their tiny size would allow excellent resolution. Swinton never built a set for, as he said, the possible financial reward would not be enough to make it worthwhile , but unknown to him such work had already begun in Russia. In Boris Rosing, a lecturer at the St. Petersburg Institute of Technology, put together equipment consisting of a mechanical scanner and a cathode-ray-tube receiver. There is no record of Rosing actually demonstrating a working television, but he had an interested student named Vladimir Kosma Zworykin , who soon emigrated to America. In , while working for the Westinghouse Electric Company in Pittsburgh, Pennsylvania, Zworykin filed a patent application for an all-electronic television system, although he was as yet unable to build and demonstrate it. Meanwhile, the first demonstration of a primitive electronic system had been made in San Francisco in by Philo Taylor Farnsworth , a young man with only a high-school education. With his first hundred thousand dollars of RCA research money, Zworykin developed a workable cathode-ray receiver that he called the Kinescope. At the same time, Farnsworth was perfecting his Image Dissector camera tube shown in the photograph. At that point a healthy cooperation might have arisen between the two pioneers, but competition, spurred by the vision of corporate profits, kept them apart. Iconoscope television camera tubeConceived in by V. The scene to be televised was focused on a light-sensitive mosaic of tiny globules of treated silver, which assumed an electric charge proportional to the strength of the illumination. A narrow scanning beam, shot from an electron gun and traced across the mosaic by magnetic deflection coils, caused a succession of voltages to pass to a signal plate. The picture signal then passed to an amplifier for transmission to a television receiver. In England the Gramophone Company, Ltd. Baird never really recovered; he died several years later, nearly forgotten and destitute. By the conflict between RCA and Farnsworth had moved to the courts, both sides claiming the invention of electronic television. Years later the suit was finally ruled in favour of Farnsworth, and in RCA signed a patent-licensing agreement with Farnsworth Television and Radio, Inc. This was the first time RCA ever agreed to pay royalties to another company. Roosevelt became the first U. Important questions had to be settled regarding basic standards before the introduction of public broadcasting services, and these questions were not everywhere fully resolved until about The United States adopted a picture repetition rate of 30 per second, while in Europe the standard became All the countries of the world came to use one or the other, just as all countries eventually adopted the U. By the early s technology had progressed so far, and television had become so widely established, that the time was ripe to tackle in earnest the problem of creating television images in natural colours. Colour television Colour television was by no means a new idea. In the late 19th century a Russian scientist by the name of A. Polumordvinov devised a system of spinning Nipkow disks and concentric cylinders with slits covered by red, green, and blue filters. But he was far ahead of the technology of the day; even the most basic black-and-white television was decades away. In , Baird gave demonstrations in London of a colour system using a Nipkow disk with three spirals of 30 apertures, one spiral for each primary colour in sequence. The light source at the receiver was composed of two gas-discharge tubes, one of mercury vapour and helium for the green and blue colours and a neon tube for red. The quality, however, was quite poor. In the early 20th century, many inventors designed colour systems that looked sound on paper but that required technology of the future. They proposed to scan the picture with three successive filters coloured red, blue, and green. Unfortunately, this method required too fast a rate of scanning for the crude television systems of the day. Also, existing black-and-white receivers would not be able to reproduce the pictures. In , Harold McCreary designed such a system using cathode-ray tubes. He planned to use a separate cathode-ray camera to scan each of the three primary-colour components of a picture. He would then transmit the three signals simultaneously and use a separate cathode-ray tube for each colour at the receiving end. The result would be three coloured images, each composed of one primary colour. A series of mirrors would then combine these images into one picture. Although McCreary never made this apparatus actually work, it is important as the first simultaneous patent, as well as the first to use a separate camera tube for each primary colour and glowing colour phosphors on the receiving end. At the same time, Sarnoff whipped his troops at RCA into developing the first all-electronic compatible colour system. However, out of 12 million television sets in existence, only some two dozen could receive the CBS colour signal, and after only a few months the broadcasts were abandoned. The design used dichroic mirrors to separate the blue, red, and green components of the original image and focus each component on its own monochrome camera tube. Each tube created a signal corresponding to the red, green, or blue component of the image. The receiving tube consisted of three electron guns, one for each primary-colour signal. The screen in turn comprised a grid of hundreds of thousands of tiny triangles of discrete phosphors, one for each primary colour. And the RCA colour system was compatible with existing black-and-white sets. It managed this by converting the three colour signals into two: The Y signal corresponded to a regular monochrome signal, so that any black-and-white receiver could pick it up and simply ignore the colour signal. It was not until the s that colour television became profitable. In Europe, two different systems came into prominence over the following decade:

Chapter 4 : Donald G. Fink - Wikipedia

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Chapter 5 : Fink, Donald G. [WorldCat Identities]

in television operation is rather more like the sound -pickup technique in motion - picture production than in sound broadcasting, but again there is the important difference that action must be continuous.

Chapter 6 : Television | www.nxgvision.com

Television: Television (TV), the electronic delivery of moving images and sound from a source to a receiver. By extending the senses of vision and hearing beyond the limits of physical distance, television has had a considerable influence on society.