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Analog Rebellion

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Analog Rebellion (formerly PlayRadioPlay!) is the solo, independent music project of Aledo, Texas songwriter Daniel Hunter. Hunter's solo career was started under the name PlayRadioPlay! in December 2005. Hunter changed the name to Analog Rebellion in September 2009, stating in his blog "I have come to the point where I no longer feel that the name PlayRadioPlay! represents the music I create".

Hunter writes, records and performs all of his own music, and refers to his sound as "stadium lo-fi", an oxymoronic synthesis of the low fidelity genre and stadium rock genre. Hunter's most recent music has been compared to The Paper Chase, Pixies and Secret Machines. In April 2010, Dallas Observer called Hunter "the most promising 20-year-old musician from DFW since Palomo".

Digital-to-analog converter

a digital-to-analog converter (DAC, D/A, D2A, or D-to-A) is a system that converts a digital signal into an analog signal. An analog-to-digital converter

In electronics, a digital-to-analog converter (DAC, D/A, D2A, or D-to-A) is a system that converts a digital signal into an analog signal. An analog-to-digital converter (ADC) performs the reverse function.

DACs are commonly used in music players to convert digital data streams into analog audio signals. They are also used in televisions and mobile phones to convert digital video data into analog video signals. These two applications use DACs at opposite ends of the frequency/resolution trade-off. The audio DAC is a low-frequency, high-resolution type while the video DAC is a high-frequency low- to medium-resolution type.

There are several DAC architectures; the suitability of a DAC for a particular application is determined by figures of merit including: resolution, maximum sampling frequency and others. Digital-to-analog conversion can degrade a signal, so a DAC should be specified that has insignificant errors in terms of the application.

Due to the complexity and the need for precisely matched components, all but the most specialized DACs are implemented as integrated circuits (ICs). These typically take the form of metal–oxide–semiconductor (MOS) mixed-signal integrated circuit chips that integrate both analog and digital circuits.

Discrete DACs (circuits constructed from multiple discrete electronic components instead of a packaged IC) would typically be extremely high-speed low-resolution power-hungry types, as used in military radar systems. Very high-speed test equipment, especially sampling oscilloscopes, may also use discrete DACs.

Analog-to-digital converter

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In electronics, an analog-to-digital converter (ADC, A/D, or A-to-D) is a system that converts an analog signal, such as a sound picked up by a microphone or light entering a digital camera, into a digital signal. An ADC may also provide an isolated measurement such as an electronic device that converts an analog input voltage or current to a digital number representing the magnitude of the voltage or current. Typically the digital output is a two's complement binary number that is proportional to the input, but there are other

possibilities.

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Analog Devices

Analog Devices, Inc. (ADI), also known simply as Analog, is an American multinational semiconductor company specializing in data conversion, signal processing

Analog Devices, Inc. (ADI), also known simply as Analog, is an American multinational semiconductor company specializing in data conversion, signal processing, and power management technology, headquartered in Wilmington, Massachusetts.

The company manufactures analog, mixed-signal and digital signal processing (DSP) integrated circuits (ICs) used in electronic equipment. These technologies are used to convert, condition and process real-world phenomena, such as light, sound, temperature, motion, and pressure into electrical signals.

Analog Devices has approximately 100,000 customers in the following industries: communications, computer, instrumentation, military/aerospace, automotive, and consumer electronics applications.

Q-analog

interested in q-analogs that arise naturally, rather than in arbitrarily contriving q-analogs of known results. The earliest q-analog studied in detail

In mathematics, a q-analog of a theorem, identity or expression is a generalization involving a new parameter q that returns the original theorem, identity or expression in the limit as $q \rightarrow 1$. Typically, mathematicians are interested in q-analogs that arise naturally, rather than in arbitrarily contriving q-analogs of known results. The earliest q-analog studied in detail is the basic hypergeometric series, which was introduced in the 19th century.

q-analogs are most frequently studied in the mathematical fields of combinatorics and special functions. In these settings, the limit $q \rightarrow 1$ is often formal, as q is often discrete-valued (for example, it may represent a prime power).

q-analogs find applications in a number of areas, including the study of fractals and multi-fractal measures, and expressions for the entropy of chaotic dynamical systems. The relationship to fractals and dynamical systems results from the fact that many fractal patterns have the symmetries of Fuchsian groups in general (see, for example Indra's pearls and the Apollonian gasket) and the modular group in particular. The connection passes through hyperbolic geometry and ergodic theory, where the elliptic integrals and modular forms play a prominent role; the q-series themselves are closely related to elliptic integrals.

q-analogs also appear in the study of quantum groups and in q-deformed superalgebras. The connection here is similar, in that much of string theory is set in the language of Riemann surfaces, resulting in connections to elliptic curves, which in turn relate to q-series.

Analog stick

An analog stick (analogue stick in British English), also known as a control stick, thumbstick or joystick, is an input method designed for video games

An analog stick (analogue stick in British English), also known as a control stick, thumbstick or joystick, is an input method designed for video games that translates thumb movement into directional control. It consists of a protruding stick mounted on a pivot, with movement registered through continuous electrical signals rather than discrete switches, allowing for greater nuance than traditional digital inputs.

Unlike D-pads, which rely on fixed electrical contacts, analog sticks use potentiometers to measure their position across a full range of motion. Many models allow the stick to be pressed down like a button, allowing users to execute commands without removing their thumb from the stick. Since its introduction, the analog stick has largely replaced the D-pad as the primary directional input in modern game controllers.

Analog television

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Analog television is the original television technology that uses analog signals to transmit video and audio. In an analog television broadcast, the brightness, colors and sound are represented by amplitude, phase and frequency of an analog signal.

Analog signals vary over a continuous range of possible values which means that electronic noise and interference may be introduced. Thus with analog, a moderately weak signal becomes snowy and subject to interference. In contrast, picture quality from a digital television (DTV) signal remains good until the signal level drops below a threshold where reception is no longer possible or becomes intermittent.

Analog television may be wireless (terrestrial television and satellite television) or can be distributed over a cable network as cable television.

All broadcast television systems used analog signals before the arrival of DTV. Motivated by the lower bandwidth requirements of compressed digital signals, beginning just after the year 2000, a digital television transition is proceeding in most countries of the world, with different deadlines for the cessation of analog broadcasts. Several countries have made the switch already, with the remaining countries still in progress mostly in Africa, Asia, and South America.

Digital television transition

conversion to digital cable or Internet Protocol television, as well as analog to digital satellite television. Transition of land based broadcasting had

The digital television transition, also called the digital switchover (DSO), the analogue switch/sign-off (ASO), the digital migration, or the analogue shutdown, is the process in which older analogue television broadcasting technology is converted to and replaced by digital television. Conducted by individual nations on different schedules, this primarily involves the conversion of analogue terrestrial television broadcasting infrastructure to Digital terrestrial television (DTT), a major benefit being extra frequencies on the radio spectrum and lower broadcasting costs, as well as improved viewing qualities for consumers.

The transition may also involve analogue cable conversion to digital cable or Internet Protocol television, as well as analog to digital satellite television. Transition of land based broadcasting had begun in some countries around 2000. By contrast, transition of satellite television systems was well underway or completed in many countries by this time. It is an involved process because the existing analogue television receivers owned by viewers cannot receive digital broadcasts; viewers must either purchase new digital TVs, or digital converter boxes which have a digital tuner and change the digital signal to an analog signal or some other

form of a digital signal (i.e. HDMI) which can be received on the older TV. Usually during a transition, a simulcast service is operated where a broadcast is made available to viewers in both analogue and digital at the same time. As digital becomes more popular, it is expected that the existing analogue services will be removed. In most places this has already happened, where a broadcaster has offered incentives to viewers to encourage them to switch to digital. Government intervention usually involves providing some funding for broadcasters and, in some cases, monetary relief to viewers, to enable a switchover to happen by a given deadline. In addition, governments can also have a say with the broadcasters as to what digital standard to adopt – either DVB-T2 ISDB-T2 DTMB-T2

Before digital television, PAL and NTSC were used for both video processing within TV stations and for broadcasting to viewers. Because of this, the switchover process may also include the adoption of digital equipment using serial digital interface (SDI) on TV stations, replacing analogue PAL or NTSC component or composite video equipment. Digital broadcasting standards are only used to broadcast video to viewers; Digital TV stations usually use SDI irrespective of broadcast standard, although it might be possible for a station still using analogue equipment to convert its signal to digital before it is broadcast, or for a station to use digital equipment but convert the signal to analogue for broadcasting, or they may have a mix of both digital and analogue equipment. Digital TV signals require less transmission power to be broadcast and received satisfactorily.

The switchover process is being accomplished on different schedules in different countries; in some countries it is being implemented in stages as in Australia, Greece, India or Mexico, where each region has a separate date to switch off. In others, the whole country switches on one date, such as the Netherlands. On 3 August 2003, Berlin became the world's first city to switch off terrestrial analogue signals. Luxembourg was the first country to complete its terrestrial switchover, on 1 September 2006.

Field-programmable analog array

A field-programmable analog array (FPAA) is an integrated circuit device containing computational analog blocks (CABs) and interconnects between these

A field-programmable analog array (FPAA) is an integrated circuit device containing computational analog blocks (CABs) and interconnects between these blocks offering field-programmability. Unlike their digital cousin, the FPGA, the devices tend to be more application driven than general purpose as they may be current mode or voltage mode devices. For voltage mode devices, each block usually contains an operational amplifier in combination with programmable configuration of passive components. The blocks can, for example, act as summers or integrators.

FPAAs usually operate in one of two modes: continuous time and discrete time.

Discrete-time devices possess a system sample clock. In a switched capacitor design, all blocks sample their input signals with a sample and hold circuit composed of a semiconductor switch and a capacitor. This feeds a programmable op amp section which can be routed to a number of other blocks. This design requires more complex semiconductor construction. An alternative, switched-current design, offers simpler construction and does not require the input capacitor, but can be less accurate, and has lower fan-out - it can drive only one following block. Both discrete-time device types must compensate for switching noise, aliasing at the system sample rate, and sample-rate limited bandwidth, during the design phase.

Continuous-time devices work more like an array of transistors or op amps which can operate at their full bandwidth. The components are connected in a particular arrangement through a configurable array of switches. During circuit design, the switch matrix's parasitic inductance, capacitance and noise contributions must be taken into account.

Currently there are very few manufactures of FPAAs. On-chip resources are still very limited when compared to that of an FPGA. This resource deficit is often cited by researchers as a limiting factor in their

research.

Analog photography

Film photography or classical photography, also known by the retronym analog photography, is a term usually applied to photography that uses chemical processes

Film photography or classical photography, also known by the retronym analog photography, is a term usually applied to photography that uses chemical processes to capture an image, typically on paper, film or a hard plate. These processes were the only methods available to photographers for more than a century prior to the invention of digital photography, which uses electronic sensors to record images to digital media. Analog electronic photography was sometimes used in the late 20th century but soon died out.

Photographic films utilize silver halide crystals suspended in emulsion, which when exposed to light record a latent image, which is then processed making it visible and insensitive to light.

Despite a steep decline in popularity since the advent of digital photography, film photography has seen a limited resurgence due to social media and the ubiquity of digital cameras. With the renewed interest in traditional photography, new organizations (Film Is Not Dead, Lomography) were established and new lines of products helped to perpetuate film photography. In 2017 B&H Photo & Video stated that film sales were increasing by 5% each year in the recent past.

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