



The

Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

Steve Church

1955 - 2012

Steve Church passed away at his home in Cleveland on September 28th, after a three year battle against brain cancer. He was 57.

Perhaps best known for his Telos telephone hybrids and Zephyr digital codecs that changed talk shows and remote broadcasting, and later the Livewire technology that made digital audio consoles much more robust and flexible, Church launched Telos Systems in 1985.



Steve Church
1955 – September 28, 2012

Steve was born in San Diego, California, and began his broadcast engineering career in 1975 at WFMK in Lansing, Mich. He later worked at W4 (WWWW) in Detroit before moving to Indianapolis, Indiana to become chief engineer at WFBQ/WNDE.

Church's first innovation transformed the sound of radio talk shows. Having hosted such shows in addition to his engineering duties, he was frustrated by the poor sound delivered by the analog telephone adapters then in use, which were plagued by sidetone distortion. The problem was thought to be unsolvable even by Bell Labs engineers, but by applying DSP adaptive filtering, Church solved the problem and was able to eliminate sidetone distortion. This became the basis for his first product, the Telos 10 telephone hybrid, and Telos Systems was launched in 1985 as a part-time project.

Church later moved to Cleveland to become chief engineer of WMMS/WHK, still building the company in his spare time. Sales of the Telos 10 telephone hybrid increased, to the point that Church decided to quit his day job and commit to his company full-time. The rest, as they say, is history.

Church's second breakthrough changed the way radio stations do remote broadcasts. What was once an expensive, complex and time-consuming undertaking with long distance telephone lines or satellite links was simplified when Church combined then-new MP3 audio coding with ISDN technology. The result

was the Telos Zephyr, which enabled stations to set up and transmit broadcast-quality point-to-point digital audio in a matter of seconds. Zephyr has since become the most successful digital broadcast audio product of all time.

Next, Church applied packet switching and Ethernet technology to the routing of audio signals around the broadcast plant. The result was Livewire IP-Audio, which employs a linear audio-over-IP method. This technology has fundamentally altered broadcast studio infrastructure and spurred a new wave of signal routing within broadcast plants.

In 2010, Church, together with Skip Pizzi, authored the book *Audio over IP: Building Pro AoIP Systems with Livewire*. He has been well-published in numerous trade publications, has written many white papers, and given numerous technical presentations at NAB, AES (Audio Engineering Society), IEEE, SMPTE, and various other technical forums. In 2010 Church received the NAB's radio engineering award.

At the heart of Steve's work was a deep, abiding love for the medium of radio itself, a love manifested since childhood. He wrote, in 2008:

"Radio is a bit like a kiss, no? When passion takes a grip, a kiss connects two humans in an exchange of secrets and emotions. We kiss furtively, lasciviously, gently, shyly, hungrily and exuberantly. We kiss in broad daylight and in the dead of night. We give ceremonial kisses, affectionate kisses, Hollywood air kisses, kisses of death and (in fairytales) pecks that revive princesses. At its best, and in our imagination, radio has such a variety, and a similar power.

"It is well-known that one's lifelong musical taste is pretty much imprinted during the teen years. Our connection to radio might be, as well. How many of us, during those sensitive years, listening to a great DJ or talk host, decided we wanted to be a part of that? ... Think about the vast numbers of people for whom work is just work, and consider how fortunate we are to have found a vocation bound in such a way to our inner spirit."

Church fought a three-year battle with brain cancer. He passed away quietly at his home near Cleveland, on September 28, 2012. He is survived by his loving wife Lana, stepson Dimitri, mother Jacqueline Burgess, and brothers Brent Church, Dann Church and Todd Church. He was 57 years old.

A fuller look at Steve's life in text and pictures is available from the people that knew him well, on the Telos Systems web site:

<http://telosalliance.com/stevechurch/remembered>

Our thanks to Telos Systems for much of the above material.

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